YANKEE ATOMIC ELECTRIC COMPANY

Telephone (413) 424-5261

49 Yankee Road, Rowe, Massachusetts 01367

April 21, 2014
BYR 2014-021

Mr. David Howland
Department of Environmental Protection
Western Regional Office
436 Dwight Street
Springfield, MA 01103

Subject: Post-Closure Maintenance and Monitoring Report – 2014

This letter transmits the Post-Closure Maintenance and Monitoring Report documenting the results of the monitoring required by the Massachusetts Department of Environmental Protection as stipulated in the "Filed" Deed Notices for the Southeast Construction Fill Area (SCFA) and the Beneficial Use Determination (BUD) Area and the SCFA Closure Certification Report Financial Assurance Mechanism review. The attached report documents the results of the following post-closure monitoring activities:

- Groundwater and Surface Water Monitoring (Attachment 1)
- Soil Stability Monitoring – Settlement, Cracks, Erosion and Vegetative Cover (Attachment 2)
- Southeast Construction Fill Area (SCFA) Financial Assurance Mechanism (FAM) review (Attachment 3)

Should you require additional information please contact me at (413) 424-5261 Extension 303.

Sincerely,

YANKEE ATOMIC ELECTRIC COMPANY

Robert Mitchell
ISFSI Manager

c w/encl.; E. Waterman, US Environmental Protection Agency, Region 1
B. Anderson, Acting Director, MA DPH Radiation Control Program
Citizen Awareness Network – Business Office
Franklin Regional Council of Governments (FRCOG)

April 21, 2014
BYR 2014-021

ATTACHMENT 1

Groundwater and Surface Water Monitoring

Post Closure Groundwater and Surface Water Monitoring Report, Spring 2014

Yankee Nuclear Power Station

Prepared for:
Yankee Atomic Electric Company
Yankee Nuclear Power Station
49 Yankee Road
Rowe, Massachusetts

Prepared by:
AMEC Environment & Infrastructure, Inc.
511 Congress Street
Portland, Maine 04101

April 18, 2014

Project No. 3617147318

Post Closure Groundwater and Surface Water Monitoring Report, Spring 2014 Yankee Nuclear Power Station

Prepared for:

Yankee Atomic Electric Company
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49 Yankee Road
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Eugene Shephard
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1.0 INTRODUCTION

AMEC Environment & Infrastructure, Inc. (AMEC) has been contracted by Yankee Nuclear Power Station (YNPS) to conduct the Post Closure Groundwater and Surface Water Monitoring Program at their site, located at 49 Yankee Road in Rowe, Massachusetts.

YNPS completed its decommissioning in 2007, under the oversight of the Nuclear Regulatory Commission (NRC). However, as part of the closure process, ongoing groundwater and surface water monitoring is still required under the Massachusetts Department of Environmental Protection (MassDEP). This work is to demonstrate that the groundwater is in compliance with the Massachusetts Contingency Plan (MCP) and for post closure monitoring of the Beneficial Use Determination (BUD) Area and the Southeast Construction Fill Area (SCFA). This report presents the findings from samples collected in March 2014 in support of the site closure requirements under the MCP.

2.0 BACKGROUND

Through the site closure process, a comprehensive investigation was conducted to characterize environmental conditions and to develop the conceptual site model, not only to identify source areas and impacted media, but to also describe the fate and transport of both chemicals and radionuclides in soils, groundwater, and surface water. These findings have been published in numerous reports and have achieved the appropriate regulatory approvals. The conceptual site model for groundwater at YNPS was published in the Final Groundwater Conditions Report, submitted to the NRC on February 15, 2007 (YNPS, 2007).

As part of the decommissioning project, 81 groundwater monitoring wells were installed to characterize the hydrogeology, and groundwater quality. Currently there are 15 wells that remain on site. Of these wells, seven groundwater monitoring wells were sampled in March 2014 to demonstrate compliance with the MCP and to support post closure monitoring. Results are presented and discussed in the following report.

3.0 SCOPE OF WORK

Groundwater monitoring for closure under the License Termination Plan (LTP) has been completed. However, groundwater and surface water monitoring is still required to reach closure under the MassDEP and to support post closure monitoring. In keeping with this goal this program was completed in accordance with the MassDEP-approved Groundwater Monitoring Plan to Support Closure under the MCP (ERM, 2007) as well as the Phase II - Comprehensive Site Assessment Report (MassDEP, April 08, 2009).

The March 2014 sampling program included the sampling of seven groundwater monitoring wells and nine surface water sample locations. The sampling program is summarized in Table 1. The sampling locations are shown on Figure 1. Groundwater samples were collected in accordance with Low Stress (Low Flow) Purging and Sampling guidance (USEPA, 1996a) and in accordance with the Health and Safety Plan (AMEC, 2010). Field data records are presented in Appendix A, and a summary of the field data parameters is presented in Table 2.

The radiochemistry data were validated in accordance with Site procedure RP-05, Rev. 5 (YNPS, 2012). Chemical analytical data were validated in accordance with EPA Region 1, New England Validation Guidelines (USEPA, 1989 and 1996b). A summary of the data validation findings and tabulated validated data are provided in Appendix B-1 (radiological), B-2 (chemical), and B-3 (validation checklists).

4.0 FINDINGS

Groundwater samples were submitted for both radiological and chemical parameters. The results and findings from the sampling events are presented in the following subsections.

4.1 RADIOLOGICAL PARAMETERS

Radionuclides in groundwater are compared to the United States Environmental Protection Agency's (USEPA's) Maximum Contaminant Level (MCL). In additional to these criteria, data are also evaluated over time to assess if trends are decreasing, stable, or increasing. Consistent with evaluations presented in previous Annual Post Closure Groundwater and Surface Water

Monitoring Reports, a change of 15 percent over previous sampling events has been used to identify trends.

Groundwater samples were collected from four monitoring wells and four surface water locations for analysis of radionuclides in March 2014. The tritium results are presented on Table 3 with previous data to demonstrate that there continues to be a generally downward and/or stable trend in tritium concentrations. Tritium was not detected in any of the surface water locations sampled during this event.

Consistent with historical results, the highest concentration of tritium was detected at MW-107C at 8,910 picocuries per liter (pCi/L), with the next highest detection reported at monitoring well MW-105B (1,640 pCi/L). The MCL for tritium is 20,000 pCi/L. As shown on Table 3, these detections are consistent with the conceptual site model.

No other radionuclides were detected in any of the groundwater or surface water sample locations sampled during the March 2014 event.

Validated radiological data from the sampling event is provided in Appendix B-1.

4.2 CHEMICAL PARAMETERS

Groundwater chemical data are evaluated using the GW-1 groundwater standards (310 CMR 40.0974(2)) (MassDEP, 2008). For the analyses where GW-1 standards are not published, data are compared to Massachusetts MCLs or Massachusetts Secondary MCLs (SMCLs) (MassDEP, 2007). Surface water chemical data are evaluated using USEPA Ambient Water Quality Criteria (AWQC) (USEPA, 2002). For the analyses where AWQC are not published, data are compared to Massachusetts MCLs or SMCLs (MassDEP, 2007).

Former Southeast Construction Fill Area. Samples were collected from three groundwater monitoring wells (CFW-1, CFW-5, and CFW-6) and five surface water locations (SW-1 through SW-5) to assess the potential environmental impacts from the Former SCFA. A summary of the sampling program is presented in Table 1.

Methylene chloride was detected in estimated concentrations from groundwater and surface water samples. No other volatile organic compounds (VOCs) were detected in any of the groundwater or surface water samples. Several metals and other naturally occurring compounds were detected in both groundwater and surface water samples; however the concentrations are consistent with background and historic data. Only iron and manganese were detected at concentrations that exceed the SMCLs. SMCLs are used to assess the aesthetic qualities of drinking water and are not health-based standards; concentrations that exceed SMCLs are not necessarily indicative of potential health risks.

A summary of the groundwater data for wells downgradient of the SCFA is presented on Table 4. A summary of the surface water data for locations associated with the SCFA is presented in Table 5.

Sherman Spring. Sampling was completed at the Sherman Spring surface water location (SP-1) and samples were analyzed for VOCs and total Resource Conservation and Recovery Act (RCRA) 8 metals plus thallium. Barium and silver were detected below applicable criteria. Other results were reported as not detected. Validated data is included in Appendix B-2.

Sherman Reservoir. Sampling was completed at the Sherman Reservoir surface water location (SW-011) and samples were analyzed for dissolved RCRA 8 metals. Barium was detected below applicable criteria. Other results were reported as not detected. Validated data is included in Appendix B-2.

Background Location. Background sampling was completed at the location where the Deerfield River enters the Sherman Reservoir (SW-408) and samples were analyzed for dissolved RCRA 8 metals. Barium was detected below applicable criteria. Other results were reported as not detected. Validated data is included in Appendix B-2.

5.0 CONCLUSIONS

The results from the March 2014 groundwater sampling event were consistent with the approved conceptual site model. Based on the data collected during the March 2014 sampling event, tritium concentrations continue to be stable or decreasing across the site, with the highest concentration reported at MW-107C at an activity of 8,910 pCi/L compared to the MCL of 20,000 pCi/L.

No additional sampling is warranted at this time. In accordance with the Post Closure Groundwater and Surface Water Monitoring Plan, the next groundwater sampling event is scheduled for March 2016.

6.0 RECOMMENDATIONS

As the groundwater monitoring program is progressing, wells that are no longer part of the active network were recommended for closure in accordance with MassDEP Guidelines in previous reports. The monitoring wells remaining at the Site include the seven wells that are sampled as part of the long-term monitoring program and eight wells that are no longer sampled but, at the request of MassDEP, are kept active for potential future sampling events. In consultation with the MassDEP, YAEC maintenance responsibilities for the eight (8) wells that will be left for possible future monitoring will be to protect from damage, and complete a visual inspection and lock replacement once every three years, which began in 2012 (MassDEP, 2011).

7.0 ACRONYMS

AMEC	AMEC Environment & Infrastructure, Inc.
AWQC	Ambient Water Quality Criteria
BUD	Beneficial Use Determination
LTP	License Termination Plan
MassDEP	Massachusetts Department of Environmental Protection
MCL	Maximum Contaminant Level
MCP	Massachusetts Contingency Plan
mg/L	milligrams per liter
NRC	Nuclear Regulatory Commission
pCi/L	picocuries per liter
RCRA	Resource Conservation and Recovery Act
SCFA	Southeast Construction Fill Area
SMCL	Secondary Maximum Concentration Limit
USEPA	United States Environmental Protection Agency
VOC	volatile organic compound
YNPS	Yankee Nuclear Power Station

8.0 REFERENCES

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Figures

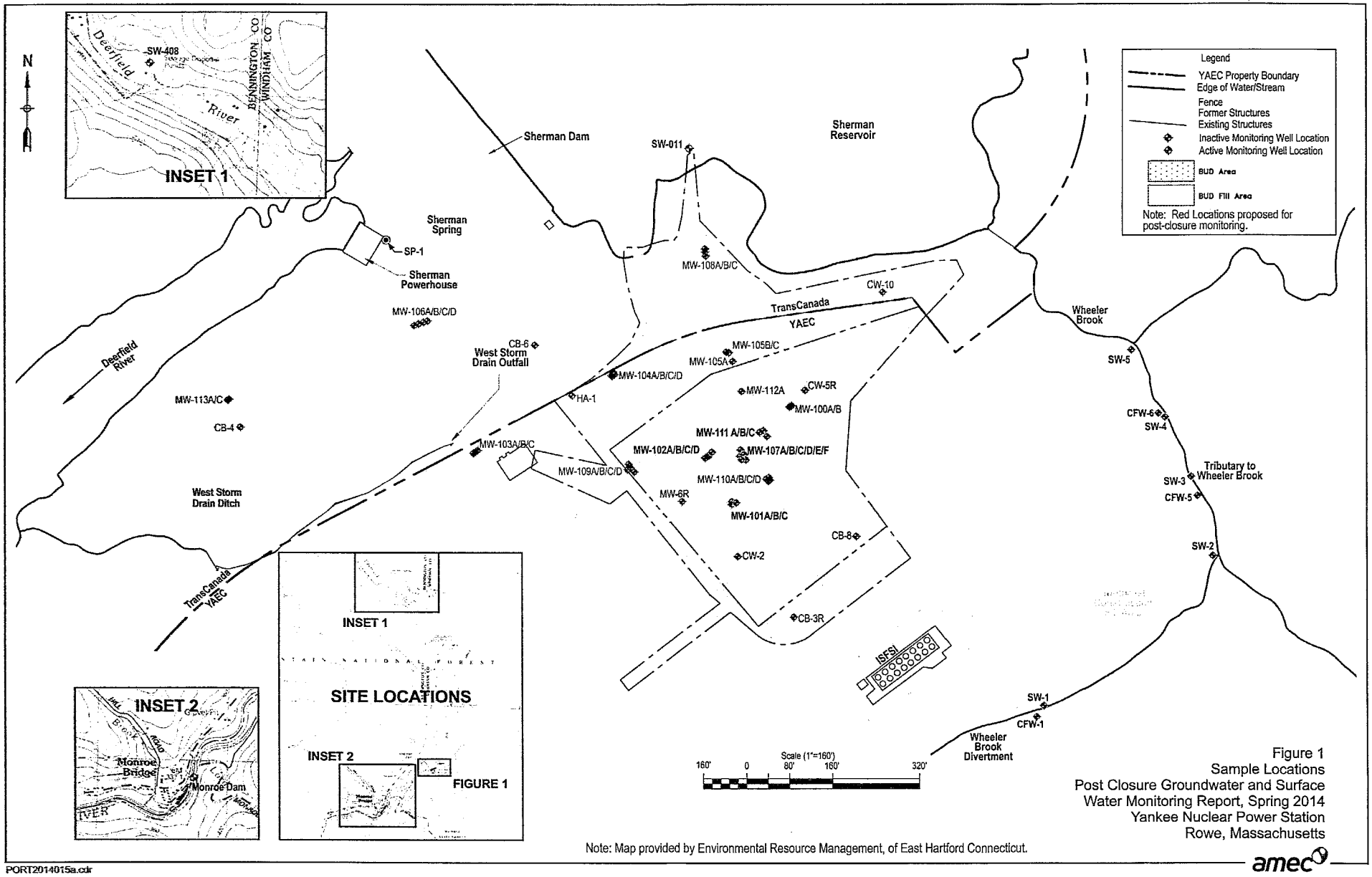

Figure 1
Sample Locations
Post Closure Groundwater and Surface Water Monitoring Report, Spring 2014
Yankee Nuclear Power Station
Rowe, Massachusetts

Note: Map provided by Environmental Resource Management, of East Hartford Connecticut.

PORT2014015a.cdr

amec

Tables

Table 1
Groundwater and Surface Water Monitoring Program Summary
March 2014

Post Closure Groundwater and Surface Water Monitoring Report Spring 2014
Yankee Nuclear Power Station
Rowe, Massachusetts

				March 2014 Event												
			Analysis Method	VOC - (8260)	VOC - (8011)	Metals List 1 - (6020A/7470)	Metals List 2 - (6020A/7470)	RCRA 8 Metals - (6020A/7470)	Cyanide - (9012B)	Nitrate/Chloride/Sulfate (9056A)	TDS - (SM2540C)	Alkalinity - (SM2320B)	COD - (EPA 410.4)	Gamma isotopic[1] - (Gamma Spec)	Strontium-90 - (GPC, LSC)	Tritium - (LSC)
			Fraction	T	T	T	T	D	T	T	T	T	T	T	T	T
			Bottle Size	40	40	250	250	250	125	250	125	250	250	1	1	250
			Bottle Size Units	mL	mL	mL	mL	mL	mL	mL	mL	mL	mL	Liter	Liter	mL
			Bottle Material	Glass Vial	Glass Vial	Poly	Poly	Poly	Poly	Poly	Poly	Poly	Amber Glass	Poly	Poly	Poly
			Preservative	HCl	HCl	HNO3	HNO3	HNO3	NaOH	4 Deg C	4 Deg C	4 Deg C	H2SO4	HNO3	HNO3	None
			Lab ID	GEL	GEL	GEL	GEL	GEL	GEL	GEL	GEL	GEL	GEL	GEL	GEL	GEL
Media	**Loc Name**	**Field Sample ID**	**QC Code**													
GW	CFW-1	CFW-1	FS	X	X	X			X	X	X	X	X			
GW	CFW-5	CFW-5	FS	X	X	X			X	X	X	X	X			
GW	CFW-5	CFW-5DUP	FD	X	X	X			X	X	X	X	X			
GW	CFW-5	CFW-5MS	MS	X	X	X			X	X	X	X	X			
GW	CFW-5	CFW-5MSD	MSD	X	X	X			X	X	X	X	X			
GW	CFW-6	CFW-6	FS	X	X	X			X	X	X	X	X			
GW	MW-104A	MW-104A	FS											X	X	X
GW	MW-104A	MW-104ADUP	FD											X	X	X
GW	MW-104A	MW-104AMS	MS											X	X	X
GW	MW-104A	MW-104AMSD	MSD											X	X	X
GW	MW-105B	MW-105B	FS											X	X	X
GW	MW-106A	MW-106A	FS											X	X	X
GW	MW-107C	MW-107C	FS											X	X	X
SW	Monroe Dam	Monroe Dam	FS											X	X	X
SW	SP-1	SP-1	FS	X	X		X							X	X	X
SW	SW-1	SW-1	FS	X	X	X			X	X	X	X	X			
SW	SW-2	SW-2	FS	X	X	X			X	X	X	X	X			
SW	SW-3	SW-3	FS	X	X	X			X	X	X	X	X			
SW	SW-4	SW-4	FS	X	X	X			X	X	X	X	X			
SW	SW-5	SW-5	FS	X	X	X			X	X	X	X	X			
SW	SW-011	SW-011	FS					X						X	X	X
SW	SW-408	SW-408	FS					X						X	X	X
QC	EB-005	EB-005	EB											X	X	X
QC	TB-009	TB-009	TB	X	X											
QC	TB-010	TB-010	TB	X	X											
TOTAL				**14**	**14**	**11**	**1**	**2**	**11**	**11**	**11**	**11**	**11**	**12**	**12**	**12**

Prepared/Date: MGV 03/14/14
Checked/Date: RPA 04/16/14

Table 1
Groundwater and Surface Water Monitoring Program Summary
March 2014

Post Closure Groundwater and Surface Water Monitoring Report Spring 2014
Yankee Nuclear Power Station
Rowe, Massachusetts

Notes:
Metals List 1 - RCRA 8 plus copper, iron, manganese, zinc, calcium, sodium
Metals List 2 - RCRA 8 plus thallium
[1] = Gamma isotopic includes: Co-60, Cs-134, Cs-137, Nb-94, Sb-125, Eu-152, Eu-154, Eu-155, Ag-108m

4 Deg C	4 Degrees Celsius
COD	chemical oxygen demand
D	Dissolved
EB	Equipment Blank
FD	Field Duplicate
FS	Field Sample
GEL	General Engineering Laboratories
GPC	Gross Proportional Counter
GW	Groundwater Sample
H2SO4	Sulfuric Acid
HCl	Hydrochloric Acid
HNO3	Nitric Acid
LSC	Liquid Scintillation Counter
mL	milliliter
MS	Matrix Spike
MSD	Matrix Spike Duplicate
NaOH	Sodium Hydroxide
QC	Quality Control
RCRA	Resource Conservation and Recovery Act
SW	Surface Water Sample
T	Total
TB	Trip Blank
TDS	Total Dissolved Solids
TICs	Tentatively Identified Compounds
VOC	volatile organic compound
X	indicates parameter scheduled for analysis.

Table 2
Field Parameter Measurements

Post Closure Groundwater and Surface Water Monitoring Report Spring 2014
Yankee Nuclear Power Station
Rowe, Massachusetts

	Parameter	Conductivity	DO	Eh	pH	Temperature	Turbidity
	Units	µSiemens/cm	mg/L	mv	S.U.	Deg C	NTUs
Field Sample ID	Sample Date						
CFW-1	3/5/2014	40	10.2	81	6.8	3	37.3
CFW-5	3/4/2014	330	0.5	-11	6.4	3	9.0
CFW-6	3/5/2014	226	0.8	49	6.0	4	1.4
Monroe Dam	3/4/2014	91	24.7	89	6.4	1	3.0
MW-104A	3/6/2014	349	0.6	120	6.5	6	0.6
MW-105B	3/5/2014	625	0.4	-120	7.4	6	1.6
MW-106A	3/4/2014	342	0.7	150	6.3	5	2.0
MW-107C	3/5/2014	429	0.8	53	6.9	7	2.1
SP-1	3/4/2014	90	22.1	82	7.0	1	2.3
SW-1	3/5/2014	30	10.5	100	6.4	0	8.7
SW-2	3/4/2014	20	20.0	120	5.7	0	1.7
SW-3	3/4/2014	16	18.6	78	6.4	0	0.7
SW-4	3/4/2014	27	19.9	110	6.3	0	1.4
SW-5	3/4/2014	25	20.8	75	6.8	0	0.6
SW-011	3/6/2014	41	17.7	84	6.2	1	2.7
SW-408	3/6/2014	41	20.7	88	7.2	1	1.8

Notes:
Deg C - Degrees Celsius
DO - dissolved oxygen
Eh - oxidation/reduction potential
µSiemens/cm - microseimens per centimeter
mg/L - milligrams per liter
mv - millivolts
NTUs - Nephlemetric Units
S.U. - Standard Units

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Table 3
Summary of Tritium Analytical Data and Trend Analysis

Post Closure Groundwater and Surface Water Monitoring Report Spring 2014
Yankee Nuclear Power Station
Rowe, Massachusetts

Location	Aug-03 pCi/L	Sep-03 pCi/L	Nov-03 pCi/L	Mar-04 pCi/L	May-04 pCi/L	Dec-06 pCi/L	Mar-07 pCi/L	Mar-08 pCi/L	Mar-09 pCi/L	Mar-10 pCi/L	Mar-12 pCi/L	Mar-14 pCi/L	Trend Analysis*
CFW-5	-		-		-	-	392	-	-				
CFW-6	-		-		-	581	4000/4210	-	2440				
MW-102D						6530	8580	1590	-	-			Decrease
MW-104A						2850	3100/2930	1850	831/900	967/774	456 / -	- / -	Decrease
MW-105B	4850		5220	4890	4530	2900	3440	4710	3490	3890	2500	1640	Decrease
MW-106A						3010	- /2850	846	484	530	-	-	Decrease
MW-107C		48000	45780	8880**	39020	29100	30900	25700	21300	20100	11400	8910	Decrease
MW-107D		9150	9710	5940	10910	9310	9440	9380	8210	7280			Stable
MW-107E						5700	6420	5060 / 5160	4650	5470			Stable
MW-107F						9210	9220	9890	8150	8940			Stable
Monroe Dam									-	-	-	-	Not Applicable
SP-1	-		-	210	890	1100	452	-	-	244	-	-	Stable
SW-011									-	-	-		Not Applicable
SW-408									-	-	-		Not Applicable

Prepared/Date: MGV 03/28/14
Checked/Date: RPA 04/16/14

* Trend analysis is based on a concentration change of greater than 15% from previous four events.
** Result outside expected range and considered questionable. Subsequent results match conceptual site model.
967/774 - shows sample and duplicate sample
"-" signifies concentration less than minimum detectable activity
pCi/L - picocuries per liter

Table 4
Summary of Chemical Data From SCFA Monitoring Wells

Post Closure Groundwater and Surface Water Monitoring Report Spring 2014
Yankee Nuclear Power Station
Rowe, Massachusetts

Analysis	Parameter	Location / Sample Date / Sample ID / Qc Code / MCP Criteria	CFW-1 8/7/2003 CFW-1-080703 FS	CFW-1 3/18/2004 CFW-1-031804 FS	CFW-1 6/8/2004 CFW-1-060804 FS	CFW-1 8/18/2004 CFW-1-081804 FS	CFW-1 3/15/2005 CFW-1-031505 FS	CFW-1 8/19/2005 CFW-1-081905 FS	CFW-1 8/25/2005 CFW-1-082505 FS	CFW-1 9/18/2006 CFW-1-091806 FS	CFW-1 9/19/2006 CFW-1-091906 FS	CFW-1 3/15/2007 CFW-1-031507 FS	CFW-1 3/16/2007 CFW-1-031607 FS	CFW-1 3/25/2008 CFW-1 FS
VOCs	4-Methyl-2-pentanone	0.35	-			-		0.0014 J		-		-		-
	Acetone	3	R			-		-		R		-		0.0027
	Chloromethane	NA	-			0.00069 J		0.0007 J		-		-		
	Methylene chloride	0.005	-			-		-		-		-		-
	Naphthalene	0.14	-			-		-		-		-		-
	Toluene	1	-			0.00043 J		-		-		-		-
Metals	Arsenic	0.01	-			-		-			-		-	-
	Barium	2	0.017			0.014		0.012			0.0451		0.0138	-
	Cadmium	0.005	-			-		-			-		0.0005 J	-
	Calcium	NA											1.83	1.5
	Chromium	0.1	-			-		-			0.0036 J		-	-
	Copper	1.3	-			-		-			0.0091		0.0026 J	-
	Iron	0.3*	***1.8***			***1.2*** J		***0.706*** J			***10.7***		***1.98***	***5.8*** J
	Lead	0.015	-			-		-			0.0056 J		0.0041 J	-
	Manganese	0.05*	0.047			***0.11***		***0.0533***			***0.305***		***0.12***	***0.15***
	Mercury	0.002	-			-		-			-		-	-
	Selenium	0.05	-			-		-			-		-	-
	Silver	0.1*	-			-		-			-		0.0013 J	-
	Sodium	20											1.28	0.94
	Zinc	5	-			-		-			-		0.0126	-
Cyanide	Cyanide, Total	0.2												-
Wet Chemistry	Total Alkalinity, as CaCO3	NA	6			5.1		7		5		7.14		3.4
	Chemical Oxygen Demand	NA	-			-		-		14.4			17.8	-
	Chloride	250*	-			-		-		-		0.67 J		-
	Nitrate as N	10	-			-			-		0.08 J		-	-
	Sulfate	250*	4.4 J			4.9		3.81 J		3.7		3.32		3.2
	Total Dissolved Solids	500*	-			4		22	13		29		12	46

Notes:
All results in milligrams per liter (mg/L)
Bold Italics indicates an exceedance of applicable criteria.
Applicable criteria is the MCP GW-1 standard (310 CMR 40.0974(2); effecitve 2/14/2008) and, if not avaible, the Maximum Contaminant Level or Secondary Maximum Contaminant Level
* indicates SMCL; not a health-based standard
FD - Field Duplicate
FS - Field Sample
J - estimated value
NA - Not Available
QC - Quality Control
R - data rejected during validation; unusable
VOCs - volatile organic compounds
"-" indicates analyte not detected

Table 4
Summary of Chemical Data From SCFA Monitoring Wells

Post Closure Groundwater and Surface Water Monitoring Report Spring 2014
Yankee Nuclear Power Station
Rowe, Massachusetts

		Location	CFW-1	CFW-1	CFW-1	CFW-1	CFW-5	CFW-5	CFW-5	CFW-5	CFW-5	CFW-5	CFW-5	CFW-5	CFW-5	CFW-5	CFW-5
		Sample Date	3/11/2009	3/3/2010	3/8/2012	3/5/2014	8/5/2003	3/22/2004	6/8/2004	8/18/2004	3/15/2005	8/17/2005	9/13/2006	3/8/2007	3/26/2008	3/26/2008	3/10/2009
		Sample ID	CFW-1	CFW-1	CFW-1	CFW-1	CFW-5-080503	CFW-5-032204	CFW-5-060804	CFW-5-081804	CFW-5-031505	CFW-5-081705	CFW-5-091306	CFW-5-030807	CFW-5	CFW-5 DUP	CFW-5
		Qc Code	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	FD	FS
Analysis	Parameter	MCP Criteria															
VOCs	4-Methyl-2-pentanone	0.35	-	-	-	-	-			-		0.0006 J	-	-	-	-	-
	Acetone	3	-	-	-	-	-			-		-	R	-	-	-	-
	Chloromethane	NA					-			0.00069 J		0.0009 J	-	-			
	Methylene chloride	0.005	-	-	-	-	-			-		-	-	-	-	-	-
	Naphthalene	0.14	-	-	-	-	-					-	-	-	-	-	-
	Toluene	1	-	-	-	-	-			-		-	-	-	-	-	-
Metals	Arsenic	0.01	-	-	-	-	-			-		-	-	0.0063	-	-	-
	Barium	2	-	-	0.0248	0.0417	0.043			0.061		0.0612	0.0638	0.0537	-	-	0.051
	Cadmium	0.005	-	-	-	-	-			-		-	-	-	-	-	-
	Calcium	NA	1.7	1.3	1.9	2.51								29.1	16	15	28
	Chromium	0.1	-	-	0.00263 J	0.00673 J	-			-		-	-	-	-	-	-
	Copper	1.3	-	-	0.00406	0.00752	-			-		-	-	-	-	-	-
	Iron	0.3*	***3.6*** J	***5.7***	***9.15***	***13.4***	***38***			***67***		***89.2***	***75.1***	***70.6***	***32*** J	***31*** J	***65*** J
	Lead	0.015	-	-	0.0012 J	0.002	R			-		-	0.0036 J	-	-	-	-
	Manganese	0.05*	***0.14***	***0.2***	***0.22***	***0.233***	***3.5***			***4.4***		***4.16*** J	***4.62***	***4.28***	***1.9***	***1.8***	***3.7***
	Mercury	0.002	-	-	-	-	-			-		-	-	-	-	-	-
	Selenium	0.05	-	-	-	-	-			-		-	0.007 J	-	-	-	-
	Silver	0.1*	-	-	-	0.00134	-			-		-	-	-	-	-	0.017
	Sodium	20	-	0.81	0.958	0.935								3.71	1.8	1.6	-
	Zinc	5	-	-	0.0142	0.0189	-			-		-	-	-	-	-	-
Cyanide	Cyanide, Total	0.2	-	-	-	-									-	-	0.012
Wet Chemistry	Total Alkalinity, as CaCO3	NA	3.4 J	4.6	5.64	4.07 J	87			93		101	130	127	69	63	130 J
	Chemical Oxygen Demand	NA	-	-	13.2 J	6.9 J	26			32		27.3	36.9	51.9	18	17	35
	Chloride	250*	-	-	0.6	0.594	-			2.7		1.91	15.5 J	9.12	2.3	2.2	4.8
	Nitrate as N	10	-	-	-	-	-			-		-	-	0.04 J	-	-	-
	Sulfate	250*	3.3	2.6	2.78	3.43	1.2			1.2		0.58 J	-	0.44 J	2.3	2.3	-
	Total Dissolved Solids	500*	1	-	15 J	8.57 J	120			200		111	170	170	110	100	110

Notes:
All results in milligrams per liter (mg/L)
Bold Italics indicates an exceedance of applicable criteria.
Applicable criteria is the MCP GW-1 standard (310 CMR 40.0974(2); effecitve 2/14/2008) and, if not avaible, the Maximum Contaminant Level or Secondary Maximum Contaminant Level
* indicates SMCL; not a health-based standard
FD - Field Duplicate
FS - Field Sample
J - estimated value
NA - Not Available
QC - Quality Control
R - data rejected during validation; unusable
VOCs - volatile organic compounds
"-" indicates analyte not detected

Table 4

Summary of Chemical Data From SCFA Monitoring Wells

Post Closure Groundwater and Surface Water Monitoring Report Spring 2014
Yankee Nuclear Power Station
Rowe, Massachusetts

Analysis	Parameter	Location / Sample Date / Sample ID / Qc Code / MCP Criteria	CFW-5 3/10/2009 CFW-5DUP FD	CFW-5 3/2/2010 CFW-5 FS	CFW-5 3/2/2010 CFW-5 Dup FD	CFW-5 3/6/2012 CFW-5 FS	CFW-5 3/6/2012 CFW-5DUP FD	CFW-5 3/4/2014 CFW-5 FS	CFW-5 3/4/2014 CFW-5 DUP FD	CFW-6 8/11/2003 CFW-6-081103 FS	CFW-6 3/22/2004 CFW-6-032204 FS	CFW-6 6/8/2004 CFW-6-060804 FS	CFW-6 8/18/2004 CFW-6-081804 FS	CFW-6 3/22/2005 CFW-6-032205 FS	CFW-6 8/24/2005 FD001-082405 FD	CFW-6 8/24/2005 CFW-6-082405 FS	CFW-6 4/19/2006 CFW-6-042006 FS
VOCs	4-Methyl-2-pentanone	0.35	-	-	-	-	-	-	-	-			-		0.0009 J	0.0008 J	-
	Acetone	3	-	-	-	-	-	-	-	-			-		-	0.008 J	0.0026 J
	Chloromethane	NA								-			-		-	-	-
	Methylene chloride	0.005	-	-	-	-	-	0.00159 J	0.00165 J	-			-		-	-	-
	Naphthalene	0.14	-	-	-	-	-	-	-	-					-	-	-
	Toluene	1	-	-	-	-	-	-	-	-			-		-	-	-
Metals	Arsenic	0.01	-	-	-	-	-	-	-	-			-		-	-	-
	Barium	2	0.052	0.053	0.053	0.0681	0.0685 J	0.0487	0.0489	0.069			0.077		0.0641	0.0629	
	Cadmium	0.005	-	-	-	-	-	-	-	-			-		-	-	-
	Calcium	NA	28	28	27	31.9	33 J	28.3	28.7								
	Chromium	0.1	-	-	-	-	-	-	-	-			-		-	-	-
	Copper	1.3	-	-	-	-	-	-	-	-			-		-	-	-
	Iron	0.3*	***63*** J	***70***	***71***	***85.5***	***86.4*** J	***45.7***	***47.4***	***67***			***51*** J		***71.5***	***71***	
	Lead	0.015	-	-	-	-	-	-	-	-			-		-	-	-
	Manganese	0.05*	***3.7***	***3.8***	***3.7***	***5.32***	***5.36*** J	***3.61***	***3.76***	***8.8***			***6.9***		***7.65***	***7.54***	
	Mercury	0.002	-	-	-	-	-	-	-	-			-		-	-	-
	Selenium	0.05	-	0.021 J	0.022 J	-	-	-	-	-			-		-	-	-
	Silver	0.1*	0.018	-	-	-	-	-	-	-			-		-	-	-
	Sodium	20	-	2.9	2.9	3.11	2.95 J	2.36	2.29								
	Zinc	5	-	-	-	-	-	-	-	-			-		-	-	-
Cyanide	Cyanide, Total	0.2	0.012	-	-	-	-	-	-								
Wet Chemistry	Total Alkalinity, as CaCO3	NA	170 J	110	140	R	152	136 J	139 J	100			110		136	116	
	Chemical Oxygen Demand	NA	30	29	26	59.7	52.7	34.4	34.4	38			33		30.1	31.8	
	Chloride	250*	4.2	5.1 J	5 J	R	3.92	1.37	1.37	-			2.3		9.12	7.79	
	Nitrate as N	10	-	-	-	R	-	-	-	-			-		-	-	
	Sulfate	250*	-	-	-	R	0.557	0.226 J	0.249 J	-			-		-	-	
	Total Dissolved Solids	500*	150	130 J	140 J	R	180	163	190	180			200		204	214	

Notes:
All results in milligrams per liter (mg/L)
Bold Italics indicates an exceedance of applicable criteria.
Applicable criteria is the MCP GW-1 standard (310 CMR 40.0974(2); effecitve 2/14/2008) and, if not avaible, the Maximum Contaminant Level or Secondary Maximum Contaminant Level
* indicates SMCL; not a health-based standard
FD - Field Duplicate
FS - Field Sample
J - estimated value
NA - Not Available
QC - Quality Control
R - data rejected during validation; unusable
VOCs - volatile organic compounds
"-" indicates analyte not detected

Table 4
Summary of Chemical Data From SCFA Monitoring Wells

Post Closure Groundwater and Surface Water Monitoring Report Spring 2014
Yankee Nuclear Power Station
Rowe, Massachusetts

		Location	CFW-6	CFW-6	CFW-6	CFW-6	CFW-6	CFW-6	CFW-6	CFW-6	CFW-6
		Sample Date	9/13/2006	9/13/2006	3/8/2007	3/8/2007	3/25/2008	3/10/2009	3/2/2010	3/6/2012	3/5/2014
		Sample ID	CFW-6-091306	FD001-091306	CFW-6-030807	FD007-030807	CFW-6	CFW-6	CFW-6	CFW-6	CFW-6
		Qc Code	FS	FD	FS	FD	FS	FS	FS	FS	FS
Analysis	**Parameter**	**MCP Criteria**									
VOCs	4-Methyl-2-pentanone	0.35	-	-	-	-	-	-	-	-	-
	Acetone	3	R	R	-	-	-	-	-	-	-
	Chloromethane	NA	-	-	-	-					
	Methylene chloride	0.005	-	-	-	-	-	0.00071 J	-	-	-
	Naphthalene	0.14	-	-	-	-	-	-	-	-	-
	Toluene	1	-	-	-	-	-	-	-	-	-
Metals	Arsenic	0.01	-	-	0.0054 J	0.0049 J	-	-	-	-	-
	Barium	2	0.0544	0.0592	0.0612	0.0592	-	-	-	0.0602	0.0647
	Cadmium	0.005	-	-	0.0005 J	0.0002 J	-	-	-	-	0.000135 J
	Calcium	NA			25.5	25.4	7.4	14	14	16.7	15.9
	Chromium	0.1	0.0024 J	0.0027 J	0.0022 J	0.0028 J	-	-	-	-	-
	Copper	1.3	-	-	-	-	-	-	-	-	-
	Iron	0.3*	***64.6***	***68.1***	***56.8***	***58.8***	***0.57 J***	***39 J***	***20***	***67.1***	***35.5***
	Lead	0.015	0.0031 J	0.003 J	0.0029 J	-	-	-	-	-	-
	Manganese	0.05*	***6.69***	***7.2***	***6.74***	***6.8***	***0.2***	***3.6***	***2.9***	***4.93***	***3.74***
	Mercury	0.002	0.00018 J	-	0.00006 J	-	-	-	-	-	-
	Selenium	0.05	0.0091 J	0.0101 J	-	-	-	-	-	-	-
	Silver	0.1*	-	-	-	-	-	0.013	-	-	-
	Sodium	20			1.56	1.52	1.3	-	2.7	5.05	4
	Zinc	5	0.0134	-	-	0.0056	-	-	-	-	0.00581 J
Cyanide	Cyanide, Total	0.2					-	-	-	0.00412 J	-
Wet Chemistry	Total Alkalinity, as CaCO3	NA	108	131	100	128	17	100 J	71	126	108 J
	Chemical Oxygen Demand	NA	35.1	36.4	26.3	51.9	27	23	12	59.7	39.4
	Chloride	250*	14.7 J	16.1 J	12.5	11.8	-	3.2	2.7 J	1.53	0.911
	Nitrate as N	10	0.04 J	-	0.04 J	0.04 J	-	-	-	-	-
	Sulfate	250*	-	-	0.7 J	0.68 J	4.7	5.8	4.3 J	0.755	1.49
	Total Dissolved Solids	500*	147	172	189	181	33	77	89 J	187	130

Notes:
All results in milligrams per liter (mg/L)
Bold Italics indicates an exceedance of applicable criteria.
Applicable criteria is the MCP GW-1 standard (310 CMR 40.0974(2); effecitve 2/14/2008) and, if not avaible, the Maximum Contaminant Level or Secondary Maximum Contaminant Level
* indicates SMCL; not a health-based standard
FD - Field Duplicate
FS - Field Sample
J - estimated value
NA - Not Available
QC - Quality Control
R - data rejected during validation; unusable
VOCs - volatile organic compounds
"-" indicates analyte not detected

Table 5
Summary of Chemical Data for SCFA Surface Water Locations

Post Closure Groundwater and Surface Water Monitoring Report Spring 2014
Yankee Nuclear Power Station
Rowe, Massachusetts

		Location	SW-1	SW-1	SW-1	SW-1	SW-1	SW-2	SW-2
		Sample Date	3/25/2008	3/10/2009	3/3/2010	3/8/2012	3/5/2014	3/25/2008	3/10/2009
		Sample ID	SW-1	SW-1	SW-1	SW-1	SW-1	SW-2	SW-2
		Qc Code	FS	FS	FS	FS	FS	FS	FS
Analysis	**Param Name**	**Screening Values**							
VOCs	Methylene chloride	0.005	-	-	-	-	-	-	-
Metals	Barium	2	-	-	-	0.0123	0.00967	-	-
	Calcium		2.5	2.2	2.6	2.39	2.84	2.3	2.1
	Chromium	0.011	-	-	-	-	0.00215 J	-	-
	Iron	0.3*	0.016 J	0.064 J	0.032	0.133	-	0.021 J	0.063 J
	Manganese	0.05*	-	-	-	0.0144	0.0202	-	-
	Sodium		1.1	-	0.78	0.878	1.1	1.1	-
	Zinc	0.12	-	-	-	0.00451 J	-	-	-
Cyanide	Cyanide, Total	0.0052	-	-	-	-	-	-	-
Wet Chemistry	Total Alkalinity, as CaCO3		1.9	2.3	5.4	2.57	4.07 J	1.1	2.1
	Chemical Oxygen Demand		-	-	-	-	-	-	-
	Chloride	250*	-	-	-	0.591	0.47	-	-
	Nitrate as N	10	-	-	-	0.25	0.14	-	-
	Sulfate	250*	5	4.2	5.5	4.97	5.91	5	5.4
	Total Dissolved Solids	500	21	5	19 J	20	4.29 J	54	16

Notes:
All results in milligrams per liter (mg/L)
Screening value is the USEPA Ambient Water Quality Criteria (AWQC) and, if not available, the Maximum Contaminant Level or Secondary Maximum Contaminant Level (MADEP, 2007)
* indicates criteria is from the Secondary Maximum Contaminant Level; not a health-based standard
FS - Field Sample
J - estimated value
NA - Not Available
QC - Quality Control
VOCs - volatile organic compounds
"-" indicates analyte not detected

Table 5
Summary of Chemical Data for SCFA Surface Water Locations

Post Closure Groundwater and Surface Water Monitoring Report Spring 2014
Yankee Nuclear Power Station
Rowe, Massachusetts

		Location	SW-2	SW-2	SW-2	SW-3	SW-3	SW-3	SW-3
		Sample Date	3/3/2010	3/8/2012	3/4/2014	3/25/2008	3/10/2009	3/3/2010	3/8/2012
		Sample ID	SW-2	SW-2	SW-2	SW-3	SW-3	SW-3	SW-3
		Qc Code	FS	FS	FS	FS	FS	FS	FS
Analysis	**Param Name**	**Screening Values**							
VOCs	Methylene chloride	0.005	-	-	0.00151 J	-	-	-	-
Metals	Barium	2	-	0.0107	0.0108	-	-	-	0.0106
	Calcium		2.5	1.89	2.25	2.2	2	2.4	1.95
	Chromium	0.011	-	-	-	-	-	-	-
	Iron	0.3*	0.037	0.0483 J	-	0.029 J	0.061 J	***0.5***	***0.362***
	Manganese	0.05*	-	0.00437 J	0.00835	-	-	***0.074***	0.0242
	Sodium		0.8	0.675	0.857	1.1	-	0.6	0.654
	Zinc	0.12	-	0.00491 J	0.00356 J	-	-	-	0.00362 J
Cyanide	Cyanide, Total	0.0052	-	-	-	-	-	-	-
Wet Chemistry	Total Alkalinity, as CaCO3		5.4	2.05	-	-	1.7	5.6	3.08
	Chemical Oxygen Demand		-	-	11.9 J	-	-	-	-
	Chloride	250*	-	0.556	0.571	-	-	-	0.553
	Nitrate as N	10	-	0.227	0.0937 J	-	-	-	0.228
	Sulfate	250*	5.5	4.26	5.22	5.9	5.3	4.8	4.28
	Total Dissolved Solids	500	19 J	15.7	5.71 J	8	26	13 J	8.57 J

Notes:
All results in milligrams per liter (mg/L)
Screening value is the USEPA Ambient Water Quality Criteria (AWQC) and, if not available, the Maximum Contaminant Level or Secondary Maximum Contaminant Level (MADEP, 2007)
* indicates criteria is from the Secondary Maximum Contaminant Level; not a health-based standard
FS - Field Sample
J - estimated value
NA - Not Available
QC - Quality Control
VOCs - volatile organic compounds
"-" indicates analyte not detected

Table 5
Summary of Chemical Data for SCFA Surface Water Locations

Post Closure Groundwater and Surface Water Monitoring Report Spring 2014
Yankee Nuclear Power Station
Rowe, Massachusetts

		Location	SW-3	SW-4	SW-4	SW-4	SW-4	SW-4	SW-5
		Sample Date	3/4/2014	3/25/2008	3/10/2009	3/2/2010	3/6/2012	3/4/2014	3/25/2008
		Sample ID	SW-3	SW-4	SW-4	SW-4	SW-4	SW-4	SW-5
		Qc Code	FS	FS	FS	FS	FS	FS	FS
Analysis	**Param Name**	**Screening Values**							
VOCs	Methylene chloride	0.005	0.00173 J	-	-	-	-	-	-
Metals	Barium	2	0.0103	-	-	-	0.0142	0.0118	-
	Calcium		2.54	2.6	2.2	2.4	3.12	3.04	2.3
	Chromium	0.011	-	-	-	-	-	-	-
	Iron	0.3*	***0.514***	***1.1*** J	***0.55*** J	***0.9***	***2.08***	***1.81***	0.26 J
	Manganese	0.05*	***0.0661***	***0.14***	***0.076***	***0.13***	***0.24***	***0.212***	0.04
	Sodium		0.893	1.1	-	0.65	0.96	0.967	1
	Zinc	0.12	-	-	-	-	0.00456 J	-	-
Cyanide	Cyanide, Total	0.0052	-	-	-	-	-	-	-
Wet Chemistry	Total Alkalinity, as CaCO3		5.6 J	3.5	2.9	6.5	6.67	8.14 J	1.5
	Chemical Oxygen Demand		19.4 J	-	-	-	13.2 J	-	-
	Chloride	250*	0.673	-	-	-	0.711	0.61	-
	Nitrate as N	10	0.0986 J	-	-	-	0.205	0.0932 J	-
	Sulfate	250*	5.13	5.1	5.2	4.8 J	4.79	5.05	5
	Total Dissolved Solids	500	4.29 J	19	35	11 J	28.6	15.7	31

Notes:
All results in milligrams per liter (mg/L)
Screening value is the USEPA Ambient Water Quality Criteria (AWQC) and, if not available, the Maximum Contaminant Level or Secondary Maximum Contaminant Level (MADEP, 2007)
* indicates criteria is from the Secondary Maximum Contaminant Level; not a health-based standard
FS - Field Sample
J - estimated value
NA - Not Available
QC - Quality Control
VOCs - volatile organic compounds
"-" indicates analyte not detected

Table 5
Summary of Chemical Data for SCFA Surface Water Locations

Post Closure Groundwater and Surface Water Monitoring Report Spring 2014
Yankee Nuclear Power Station
Rowe, Massachusetts

		Location	SW-5	SW-5	SW-5	SW-5
		Sample Date	3/10/2009	3/2/2010	3/6/2012	3/4/2014
		Sample ID	SW-5	SW-5	SW-5	SW-5
		Qc Code	FS	FS	FS	FS
Analysis	**Param Name**	**Screening Values**				
VOCs	Methylene chloride	0.005	-	-	-	-
Metals	Barium	2	-	-	0.0126	0.0105
	Calcium		2.2	2	2.77	2.33
	Chromium	0.011	-	-	-	-
	Iron	0.3*	***0.48*** J	0.27	***1.52***	***0.496***
	Manganese	0.05*	***0.071***	0.044	***0.141***	***0.0657***
	Sodium		-	0.6	0.883	0.859
	Zinc	0.12	-	-	-	-
Cyanide	Cyanide, Total	0.0052	-	-	-	-
Wet Chemistry	Total Alkalinity, as CaCO3		2.7	4.3	13.9	3.56 J
	Chemical Oxygen Demand		-	-	13.2 J	31.9
	Chloride	250*	-	-	0.662	0.526
	Nitrate as N	10	-	-	0.195	0.087 J
	Sulfate	250*	5.3	4.2 J	4.67	4.72
	Total Dissolved Solids	500	3	4 J	20	37.1

Notes:
All results in milligrams per liter (mg/L)
Screening value is the USEPA Ambient Water Quality Criteria (AWQC) and, if not available, the Maximum Contaminant Level or Secondary Maximum Contaminant Level (MADEP, 2007)
* indicates criteria is from the Secondary Maximum Contaminant Level; not a health-based standard
FS - Field Sample
J - estimated value
NA - Not Available
QC - Quality Control
VOCs - volatile organic compounds
"-" indicates analyte not detected

APPENDIX A

FIELD DATA RECORDS – MARCH 2014

GROUND WATER SAMPLING FIELD LOG
Form 1

Sample Location CFW-1 Well Designation CFW-1

Sampling Team M. van Noordennen Sample Period March 2014

Date 3.5.14 Time 0945-1015 Sample: 0955

Depth to Mid Screen — (ft)

Measuring Point TOR Diameter of Well 2 (in)

Well Depth (from measuring point) (D) 8.90 (ft)

Depth to water (DTW) 4.07 (ft)

Length of Water Column (LWC) 4.83 (ft) (LWC=D-DTW)

Volume of Water in Well (VW) 0.77 gal Conversion Factor 0.16

Volume of Purge (VTP) (VTP = VW x 3) 2.31 (gal)

At Time of Measurements:

Color Clear Odor None

Total volume purged Dry Duration of purging NA

Purging method Geo Pump Did well go dry? Yes

Weather conditions Snowy, 15°F

Pump Serial Number S008-27

Water Quality Monitor Serial Number YSI 556 (10E100322), HACH 2100P (CM024.13)

Analyses Requested VOCs, metals, cyanide, alkalinity, TDS, COD, anions

Previous Final Readings: pH 7.26 Cond 0.026 Turb 25.7 DO 13.28 Temp 5.35 ORP 68.9 DTW 3.36

Flow NA ^{3}H NA

WATER QUALITY PARAMETERS

Form 2

Sample Round: March 2014 — CFW-1

Current Readings

Time (min)	pH	Cond mS/cm	Turb (NTU)	D.O (mg/L)	Temp (°C)	ORP (mv)	DTW (feet)	Comments
0	+/- 0.1 std.unit	+/- 3%	+/- 10% NA <10NTU	+/-10%	+/- 1 E	+/-10 mv		
3-5-14								
0955	6.75	0.040	32.3	10.22	3.18	81.2	4.07	Collect Samples
10								
15	Well was purged day 3-4-14 and Sampled upon recharge							
20								
25								
30								
35								
40								
45								
50								
55								
60								
65								
70								
75								
80								
85								
90								
95								
100								
105								
110								
115								
120								

GROUND WATER SAMPLING FIELD LOG
Form 1

Sample Location CFW-5 Well Designation CFW-5

Sampling Team RENE AUBE Sample Period MARCH 2014

Date 3/4/14 Time 0945 - 1205 SAMPLE: 1056

	Depth to Mid Screen	——— (ft)
Measuring Point TOR	Diameter of Well	2.0 (in)
Well Depth (from measuring point) (D)		8.10 (ft)
Depth to water (DTW)		4.96 (ft)
Length of Water Column (LWC)	3.14	(ft) (LWC=D-DTW)
Volume of Water in Well (VW)	0.50	gal Conversion Factor 0.16
Volume of Purge (VTP) (VTP = VW x 3)	1.50	(gal)

At Time of Measurements:

Color CLEAR Odor NONE

Total volume purged 1.97 Duration of purging 46 MIN

Purging method GEO-PUMP Did well go dry? NO

Weather conditions SUNNY, COLD, CALM

Pump Serial Number S008-22

Water Quality Monitor Serial Number 06C1579AH (YSI 556) MO24-20 (HACH 2100P)

Analyses Requested VOC's, METALS, TDS, COD, ALKALINITY, CYANIDE, ANIONS,

Previous Final Readings: pH 6.26 Cond. 459 Turb 1.27 DO 5.86 Temp 4.64 ORP -102.9 DTW 5.36

Flow 250 ^{3}H NA

WATER QUALITY PARAMETERS

Form 2

Sample Round MARCH 2014 ~~MW~~ RPA 3/4/14 CFW-5

1010 BEGIN PURGE Current Readings

Time (min)	pH	Cond mS/cm	Turb (NTU)	D.O (mg/L)	Temp (°C)	ORP (mv)	DTW (feet)	Comments
0 3/4/14	+/- 0.1 std.unit	+/- 3%	+/- 10% NA <10NTU	+/-10%	+/- 1 E	+/-10 mv		PURGE RATE *
5 1015	6.24	.335	59.1	4.99	2.77	-25.7	5.23	165 ML/MN
10 1020	6.18	.335	44.5	3.08	2.50	-26.1	5.27	165
15 1025	6.26	.332	27.4	1.80	2.63	-15.6	5.27	165
20 1030	6.30	.331	24.8	1.21	2.63	-12.1	5.27	165
25 1035	6.32	.331	22.1	0.90	2.65	-16.2	5.27	165
30 1040	6.33	.331	14.7	0.66	2.62	-14.9	5.27	165
35 1045	6.34	.331	10.5	0.49	2.60	-12.0	5.27	165
40 1050	6.35	.330	9.23	0.48	2.62	-11.9	5.27	165
45 1055	6.35	.330	8.99	0.46	2.59	-10.6	5.27	165
~~50~~ 1058 RPA 3/4/14	COLLECT SAMPLES							
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105								
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115								
120								

* LOWEST POSSIBLE PURGE RATE.

GROUND WATER SAMPLING FIELD LOG
Form 1

Sample Location CFW-6 Well Designation CFW-6

Sampling Team RENE AUBE Sample Period MARCH 2014

Date 3/5/14 Time 1015-1140 SAMPLE: 1111

Depth to Mid Screen ——— (ft)

Measuring Point TOR Diameter of Well 2.0 (in)

Well Depth (from measuring point) (D) 8.42 (ft)

Depth to water (DTW) 6.38 (ft)

Length of Water Column (LWC) 2.04 (ft) (LWC=D-DTW)

Volume of Water in Well (VW) 0.33 gal Conversion Factor 0.16

Volume of Purge (VTP) (VTP = VW x 3) 0.99 (gal)

At Time of Measurements:

Color CLEAR Odor NONE

Total volume purged 2.15 Duration of purging 46 MIN

Purging method GEO-PUMP Did well go dry? NO

Weather conditions CLOUDY, COLD, CALM, FLURRIES

Pump Serial Number S008-22

Water Quality Monitor Serial Number (YSI 556) 06C1579AH
(HACH 2100P) M024-20

Analyses Requested VOC's, METALS, TDS, COD, ALKALINITY, CYANIDE, ANIONS.

Previous Final Readings: pH 6.14 Cond .387 Turb 0.84 DO 0.71 Temp 4.3 ORP -4.1 DTW 7.08

Flow 150 ^{3}H NA

WATER QUALITY PARAMETERS

Form 2

Sample Round MARCH 2014 CFW-6

1025 BEGIN PURGE Current Readings

Time (min)	pH	Cond mS/cm	Turb (NTU)	D.O (mg/L)	Temp (°C)	ORP (mv)	DTW (feet)	Comments
0	+/- 0.1 std.unit	+/- 3%	+/- 10% NA <10NTU	+/-10%	+/- 1 E	+/-10 mv		PURGE RATE ML/MN
5 1030	5,80	.179	7,55	2,70	3,90	34,3	6,95	180
10 1035	5,83	,187	5,01	1,21	3,62	42,0	7,16	180
15 1040	5,85	.196	3,89	1,04	3,57	38,4	7,45	180
20 1045	5,88	,205	2,75	0,86	3,60	33,6	7,54	180
25 1050	5,90	,211	1,88	0,78	3,60	37,3	7,55	180
30 1055	5,92	,217	1,62	0,79	3,55	43,1	7,55	180
35 1100	5,93	,220	1,53	0,81	3,53	46,6	7,55	180
40 1105	5,94	,224	1,48	0,80	3,55	48,3	7,55	180
45 1110	5,95	,226	1,37	0,79	3,54	48,6	7,55	180
~~50~~ 1111	COLLECT SAMPLES							
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100								
105								
110								
115								
120								

3/5/14

RPA 3/5/14

GROUND WATER SAMPLING FIELD LOG
Form 1

Sample Location Monroe Dam Well Designation Monroe Dam

Sampling Team M. van Noordennen Sample Period March 2014

Date 3.4.14 Time 1400 - 1425 Sample: 1415

Depth to Mid Screen _____ (ft)

Measuring Point _____ Diameter of Well _____ (in)

Well Depth (from measuring point) (D) _____ (ft)

Depth to water (DTW) _____ (ft)

Length of Water Column (LWC) _____ (ft) (LWC=D-DTW)

Volume of Water in Well (VW) N/A _____ gal Conversion Factor ____

Volume of Purge (VTP) (VTP = VW x 3) _____ (gal)

3.4.14

At Time of Measurements:

Color Clear Odor None

Total volume purged NA Duration of purging NA

Purging method NA Did well go dry? NA

Weather conditions Sunny, cold, 20°F

Pump Serial Number NA

Water Quality Monitor Serial Number YSI 556 (10E100322), HACH 2100P (mo24.13)

Analyses Requested 8 Spec, Sr-90, H-3

Previous Final Readings: pH 6.55 Cond 0.035 Turb 2.54 DO 14.05 Temp 2.10 ORP -282.9 DTW NA

Flow NA ^{3}H ND

WATER QUALITY PARAMETERS

Form 2

Sample Round March 2014 Monroe Dam

Current Readings

Time (min)	pH	Cond mS/cm	Turb (NTU)	D.O (mg/L)	Temp (°C)	ORP (mv)	DTW (feet)	Comments
0	+/- 0.1 std.unit	+/- 3%	+/- 10% NA <10NTU	+/-10%	+/- 1 E	+/-10 mv		
3.4.14 1415	6.38	0.091	3.03	24.65	0.54	88.9	NA	Collect Sample
10								
15								
20								
25								
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120								

GROUND WATER SAMPLING FIELD LOG
Form 1

Sample Location MW-104A Well Designation MW-104A
Sampling Team RENE AUBE Sample Period MARCH 2014
Date 3/6/2014 Time 0915-1245 SAMPLE: 1026

	Depth to Mid Screen	——— (ft)
Measuring Point TOR	Diameter of Well	2.0 (in)
Well Depth (from measuring point) (D)		27.75 (ft)
Depth to water (DTW)		21.33 (ft)
Length of Water Column (LWC)	6.42	(ft) (LWC=D-DTW)
Volume of Water in Well (VW)	1.03	gal Conversion Factor 0.16
Volume of Purge (VTP) (VTP = VW x 3)	3.09	(gal)

At Time of Measurements:

Color CLEAR Odor NONE
Total volume purged 1.99 Duration of purging 51 MIN
Purging method GEO-PUMP Did well go dry? NO
Weather conditions SUNNY, COLD, CALM

Pump Serial Number S008-22
Water Quality Monitor Serial Number (YSI 556) 06C1579AH
Analyses Requested (HACH 2100P) M024-20

Previous Final Readings: pH 6.01 Cond. 307 Turb 0.31 DO 3.21 Temp 8.86 ORP 174.0 DTW 20.89
Flow 225 H 456

WATER QUALITY PARAMETERS

Form 2

Sample Round MARCH 2014 MW-104A

0935 BEGIN PURGE Current Readings

Time (min)	pH	Cond mS/cm	Turb (NTU)	D.O (mg/L)	Temp (°C)	ORP (mv)	DTW (feet)	Comments
0	+/- 0.1 std.unit	+/- 3%	+/- 10% NA <10NTU	+/-10%	+/- 1 E	+/-10 mv		PURGE RATE ML/MN
5 0940	6.57	.352	2.95	2.92	6.92	127.6	21.40	150
10 0945	6.53	.348	2.07	1.12	6.76	120.2	21.40	150
15 0950	6.53	.347	1.28	0.84	6.63	118.3	21.40	150
20 0955	6.52	.347	1.06	0.82	6.45	117.4	21.40	150
25 1000	6.51	.348	0.92	0.76	6.36	116.3	21.40	150
30 1005	6.51	.346	0.80	0.71	6.40	121.3	21.40	150
35 1010	6.50	.348	0.65	0.74	6.29	119.2	21.40	150
40 1015	6.50	.348	0.60	0.59	6.24	118.9	21.40	150
45 1020	6.50	.349	0.57	0.58	6.20	117.0	21.40	150
50 1025	6.49	.349	0.55	0.56	6.22	117.3	21.40	150
55 1026	COLLECT SAMPLES							
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75								
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100								
105								
110								
115								
120								

3/6/14

RPA 3/6/14

GROUND WATER SAMPLING FIELD LOG
Form 1

Sample Location MW-105B Well Designation MW-105B

Sampling Team RENE AUBE Sample Period MARCH 2014

Date 3/5/14 Time 1315-1715 SAMPLE: 1616

	Depth to Mid Screen ———	(ft)
Measuring Point TOR	Diameter of Well 2.0	(in)
Well Depth (from measuring point) (D)	75.52	(ft)
Depth to water (DTW)	24.47	(ft)
Length of Water Column (LWC)	51.05	(ft) (LWC=D-DTW)
Volume of Water in Well (VW)	8.17 gal	Conversion Factor 0.16
Volume of Purge (VTP) (VTP = VW x 3)	24.51	(gal)

At Time of Measurements:

Color CLEAR Odor NONE

Total volume purged 3.67 Duration of purging 141 MIN

Purging method BLADDER PUMP Did well go dry? NO

Weather conditions CLOUDY, COLD, WINDY

Pump Serial Number 9990 SET @ 65.59' BTOR

Water Quality Monitor Serial Number (YSI 556) 06C1579AH (HACH 2100P) M024-20

Analyses Requested GAMMA SPEC, SR-90, H3

Previous Final Readings: pH 7.32 Cond 0.602 Turb 2.20 DO 0.57 Temp 10.13 ORP -133.7 DTW 28.64

Flow 100 ^{3}H 2500

WATER QUALITY PARAMETERS

Form 2

Sample Round MARCH 2014 MW-105B Pg 1 OF 2

1355 BEGIN PURGE Current Readings

Time (min)	pH	Cond mS/cm	Turb (NTU)	D.O (mg/L)	Temp (°C)	ORP (mv)	DTW (feet)	Comments
0 3/5/14	+/- 0.1 std.unit	+/- 3%	+/- 10% NA <10NTU	+/-10%	+/- 1 E	+/-10 mv		PURGE RATE ML/MN
5 1400	7,36	.541	7,66	6,82	6,17	-4,5	25,33	100
10 1405	7,56	.588	11,5	2,96	6,28	-56,7	23,82	100
15 1410	7,67	.624	18,9	1,65	6,52	-79,9	26,31	100
20 1415	7,72	.635	18,5	1,09	6,56	-89,5	26,73	100
25 1420	7,73	.638	18,1	0,88	6,64	-94,7	27,08	100
30 1425	7,71	,638	13,0	0,75	6,79	-90,0	27,40	100
35 1430	7,66	.632	9,24	0,68	6,90	-93,8	27,68	100
40 1435	7,61	.628	7,07	0,63	6,91	-88,7	27,92	100
45 1440	7,57	.623	5,36	0,58	6,77	-92,6	28,14	100
50 1445	7,53	.619	4,85	0,56	6,66	-102,1	28,34	100
55 1450	7,51	.615	4,11	0,55	6,62	-106,2	28,49	100
60 1455	7,49	.613	3,09	0,52	6,52	-110,0	28,63	100
65 1500	7,48	.612	2,88	0,51	6,47	-111,0	28,76	100
70 1505	7,47	.611	2,61	0,52	6,45	-120,1	28,84	100
75 1510	7,46	.612	2,44	0,50	6,38	-119,0	28,92	100
80 1515	7,46	.612	2,37	0,47	6,29	-118,4	28,98	100
85 1520	7,45	.615	2,19	0,50	6,11	-111,0	29,04	100
90 1525	7,45	.614	2,08	0,45	6,17	-118,1	29,09	100
95 1530	7,45	.614	2,00	0,45	6,43	-120,5	29,14	100
100 1535	7,45	.618	1,96	0,46	6,25	-113,7	29,19	100
105 1540	7,44	.619	1,95	0,43	6,17	-120,4	29,24	100
110 1545	7,43	.621	1,89	0,44	6,10	-115,7	29,29	100
115 1550	7,43	.622	1,80	0,41	6,22	-117,1	29,34	100
120 1555	7,43	.623	1,73	0,42	6,14	-117,8	29,37	100

Sample Round MARCH 2014			MW-105B				Pg 2 of 2	
Current Readings								
Time (min)	pH	Cond mS/cm	Turb (NTU)	D.O (mg/L)	Temp (°C)	ORP (mv)	DTW (feet)	Comments
0	+/- 0.1 std.unit	+/- 3%	+/- 10% NA <10NTU	+/-10%	+/- 1 E	+/-10 mv		PURGE RATE ML/MN
125 1600	7,43	.623	1,68	0,42	6,13	-117,5	29,39	100
130 1605	7,43	.624	1,65	0,41	6,13	-116,1	29,40	100
135 1610	7,42	.624	1,63	0,40	6,15	-118,3	29,40	100
140 1615	7,43	.625	1,60	0,39	6,16	-119,4	29,40	100
~~145~~ 1616	COLLECT SAMPLES							
150								
155								

RPA 3/5/14

GROUND WATER SAMPLING FIELD LOG
Form 1

Sample Location MW-106A Well Designation MW-106A

Sampling Team RENE AUBE Sample Period MARCH 2014

Date 3/4/14 Time 1410 - 1615 SAMPLE: 1526

	Depth to Mid Screen ———	(ft)
Measuring Point TOR	Diameter of Well 2.0	(in)
Well Depth (from measuring point) (D)	21.80	(ft)
Depth to water (DTW)	6.24	(ft)
Length of Water Column (LWC)	15.56	(ft) (LWC=D-DTW)
Volume of Water in Well (VW)	2.49 gal	Conversion Factor 0.16
Volume of Purge (VTP) (VTP = VW x 3)	7.47	(gal)

At Time of Measurements:

Color CLEAR Odor NONE

Total volume purged 1.98 Duration of purging 61 MIN

Purging method GEO-PUMP Did well go dry? No

Weather conditions SUNNY, COLD, CALM

Pump Serial Number 5008-22

Water Quality Monitor Serial Number 06C1579AH (YSI 556) M024-20 (HACH 2100P)

Analyses Requested GAMMA SPEC, SR-90, H-3

Previous Final Readings: pH 6.28 Cond 318 Turb 49 DO 5.5 Temp 6.7 ORP 293 TW 804

Flow 140 ^{3}H ND

WATER QUALITY PARAMETERS

Form 2

Sample Round MARCH 2014 MW-106A

1425 BEGIN PURGE Current Readings

Time (min)	pH	Cond mS/cm	Turb (NTU)	D.O (mg/L)	Temp (°C)	ORP (mv)	DTW (feet)	Comments
0	+/- 0.1 std.unit	+/- 3%	+/- 10% NA <10NTU	+/-10%	+/- 1 E	+/-10 mv		PURGE RATE *
3/4/14								
5 1430	6.35	.348	5.15	2.66	5.44	116.8	7.45	125 ML/MN
10 1435	6.34	.350	4.97	1.12	5.76	123.4	7.88	125
15 1440	6.35	.352	4.80	0.93	5.74	122.3	8.18	125
20 1445	6.31	.353	5.62	0.90	5.53	130.7	8.35	125
25 1450	6.33	.353	4.41	0.73	5.46	128.7	8.47	125
30 1455	6.32	.352	4.50	0.79	5.26	136.2	8.50	125
35 1500	6.32	.350	6.73	0.71	5.55	143.3	8.53	125
40 1505	6.30	.351	4.25	0.75	5.35	147.9	8.56	125
45 1510	6.31	.349	3.71	0.77	5.37	151.4	8.57	125
50 1515	6.31	.347	3.00	0.74	5.40	153.5	8.58	125
55 1520	6.29	.345	2.18	0.71	5.41	151.6	8.58	125
60 1525	6.28	.342	2.02	0.72	5.42	150.1	8.58	125
RPA 3/4/14 65 1526	COLLECT SAMPLES							
70								
75								
80								
85								
90								
95								
100								
105								
110								
115								
120								

* LOWEST POSSIBLE PURGE RATE.

GROUND WATER SAMPLING FIELD LOG
Form 1

Sample Location MW-102C Well Designation MW-102C

Sampling Team M. van Noordennen Sample Period March 2014

Date 3-5-14 Time 1300 - 1600 Sample: 1450

Depth to Mid Screen — (ft)

Measuring Point TOR Diameter of Well 2 (in)

Well Depth (from measuring point) (D) 42.81 (ft)

Depth to water (DTW) 24.17 (ft)

Length of Water Column (LWC) 18.64 (ft) (LWC=D-DTW)

Volume of Water in Well (VW) 2.98 gal Conversion Factor 0.16

Volume of Purge (VTP) (VTP = VW x 3) 8.94 (gal)

At Time of Measurements:

Color Clear Odor None

Total volume purged 2.39 gal Duration of purging 92 min

Purging method Bladder Pump Did well go dry? No

Weather conditions Cloudy, breezy, 20's F

Pump Serial Number 9989

Water Quality Monitor Serial Number YSI 556 (10E100322), HACH 2100P (cm024.13)

Analyses Requested Gspec, Sr-90, H-3

Previous Final Readings: pH 7.35 Cond 0.419 Turb 4.65 DO 4.74 Temp 7.49 ORP -2.0 DTW 28.12

Flow 100 ^{3}H 10,600

WATER QUALITY PARAMETERS

Form 2

Sample Round: March 2014 — MW-107C

Current Readings

	Time (min)	pH	Cond mS/cm	Turb (NTU)	D.O (mg/L)	Temp (°C)	ORP (mv)	DTW (feet)	Comments
3.5.14	0 1325	+/- 0.1 std.unit	+/- 3%	+/- 10% NA <10NTU	+/-10%	+/- 1 E	+/-10 mv	24.17	Purge rate: 100 ml/min
1330	5	6.82	0.421	5.61	1.39	7.45	54.3	26.14	
1335	10	6.84	0.421	3.56	1.30	7.23	54.0	26.68	
1340	15	6.84	0.421	3.37	1.22	6.81	55.0	27.11	
1345	20	6.84	0.425	3.14	1.28	5.84	56.4	27.08	
1350	25	6.79	0.425	3.46	1.32	5.74	58.1	27.28	
1355	30	6.78	0.424	2.87	1.22	5.92	57.6	27.50	
1400	35	6.80	0.426	3.44	1.13	6.17	56.6	27.78	
1405	40	6.82	0.428	2.54	1.09	6.31	56.0	28.05	
1410	45	6.83	0.429	2.48	1.05	6.48	55.8	28.31	
1415	50	6.85	0.430	2.71	1.02	6.40	55.0	28.55	
1420	55	6.85	0.430	2.36	0.98	6.53	54.2	28.77	
1425	60	6.87	0.430	2.20	0.94	6.56	54.1	28.97	
1430	65	6.89	0.429	2.41	0.90	6.79	54.4	29.15	
1435	70	6.90	0.430	2.09	0.87	6.72	54.5	29.32	
1440	75	6.90	0.430	2.23	0.84	6.56	55.0	29.47	
1445	80	6.91	0.429	2.13	0.81	6.50	54.4	29.60	
1450	85	6.90	0.429	1.73	0.78	6.54	54.1	29.76	
1455	90	6.92	0.429	2.09	0.76	6.66	53.4	29.89	
	~~95~~ 1457	Collect Samples							
	~~100~~ 1600	Sampling Complete							
	105								
	110								
	115								
	120								

GROUND WATER SAMPLING FIELD LOG
Form 1

Sample Location SP-1 Well Designation SP-1

Sampling Team M. van Noordennen Sample Period March 2014

Date 3-4-14 Time 1450 - 1515 Sample: 1505

Depth to Mid Screen _____ (ft)

Measuring Point _____ Diameter of Well _____ (in)

Well Depth (from measuring point) (D) 3.4.14 _____ (ft)

Depth to water (DTW) _____ (ft)

Length of Water Column (LWC) NA _____ (ft) (LWC=D-DTW)

Volume of Water in Well (VW) _____ gal Conversion Factor ____

Volume of Purge (VTP) (VTP = VW x 3) _____ (gal)

At Time of Measurements:

Color Clear Odor None

Total volume purged NA Duration of purging NA

Purging method NA Did well go dry? NA

Weather conditions Sunny, cold, 25°F

Pump Serial Number NA

Water Quality Monitor Serial Number YSI 556 (10E100322), HACH 2100P (CM024.13)

Analyses Requested γ-Spec, Sr-90, H-3, VOCs, metals

Previous Final Readings: pH 7.20 Cond 0.102 Turb 10.2 DO 14.1 Temp 2.61 ORP -182 DTW NA

Flow NA ^{3}H ND

WATER QUALITY PARAMETERS

Form 2

Sample Round	March 2014							SP-1
	Current Readings							
Time (min)	pH	Cond mS/cm	Turb (NTU)	D.O (mg/L)	Temp (°C)	ORP (mv)	DTW (feet)	Comments
0	+/- 0.1 std.unit	+/- 3%	+/- 10% NA <10NTU	+/-10%	+/- 1 E	+/-10 mv		
1505	6.96	0.090	2.26	22.13	1.01	82.4	NA	Collect Sample
10								
15								
20								
25								
30								
35								
40								
45								
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70								
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80								
85								
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115								
120								

3.4.14

GROUND WATER SAMPLING FIELD LOG

Form 1

Sample Location SW-1 Well Designation SW-1

Sampling Team M. van Noordennen Sample Period March 2014

Date 3.5.14 Time 1018-1045 Sample: 1030

Depth to Mid Screen _____ (ft)

Measuring Point _____ Diameter of Well _____ (in)

Well Depth (from measuring point) (D) _____ (ft)

Depth to water (DTW) _____ (ft)

Length of Water Column (LWC) _____ (ft) (LWC=D-DTW)

Volume of Water in Well (VW) NA _____ gal Conversion Factor ____

Volume of Purge (VTP) (VTP = VW x 3) _____ (gal)

3.5.14

At Time of Measurements:

Color Clear Odor None

Total volume purged NA Duration of purging NA

Purging method NA Did well go dry? NA

Weather conditions Snowy, 15°F

Pump Serial Number NA

Water Quality Monitor Serial Number YSI 556 (10E100322), HACH 2100P (M024.13)

Analyses Requested VOCs, metals, COD, TOS, alkalinity, cyanide, anions

Previous Final Readings: pH 6.99 Cond 0.025 Turb 1.69 DO 11.56 Temp 1.74 ORP 58.3 DTW NA

Flow NA ^{3}H NA

WATER QUALITY PARAMETERS

Form 2

Sample Round March 2014 SW-1

3.5.14

Current Readings								
Time (min)	pH	Cond mS/cm	Turb (NTU)	D.O (mg/L)	Temp (°C)	ORP (mv)	DTW (feet)	Comments
0	+/- 0.1 std.unit	+/- 3%	+/- 10% NA <10NTU	+/-10%	+/- 1 E	+/-10 mv		
5	6.36	0.030	8.66	10.50	0.45	99.)	NA	Collect Samples
10								
15								
20								
25								
30								
35								
40								
45								
50								
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60								
65								
70								
75								
80								
85								
90								
95								
100								
105								
110								
115								
120								

GROUND WATER SAMPLING FIELD LOG

Form 1

Sample Location SW-2 Well Designation SW-2

Sampling Team M. van Noordennen Sample Period March 2014

Date 3.4.14 Time 1120-1140 Sample: 1130

Depth to Mid Screen _____ (ft)

Measuring Point _____ Diameter of Well _____ (in)

Well Depth (from measuring point) (D) _____ (ft)

Depth to water (DTW) _____ (ft)

Length of Water Column (LWC) NA _____ (ft) (LWC=D-DTW)

Volume of Water in Well (VW) _____ gal Conversion Factor ____

Volume of Purge (VTP) (VTP = VW x 3) _____ (gal)

3.4.14

At Time of Measurements:

Color Clear Odor None

Total volume purged NA Duration of purging NA

Purging method NA Did well go dry? NA

Weather conditions Sunny, cold, 15°F

Pump Serial Number NA

Water Quality Monitor Serial Number YSI 556 (10E100322), HACH 2100P (cm024.13)

Analyses Requested VOCs, metals, TDS, COD, alkalinity, cyanide, anions

Previous Final Readings: pH 6.28 Cond 0.019 Turb 1.44 DO 4.82 Temp 0.56 ORP -128.9 DTW NA

Flow NA ^{3}H NA

WATER QUALITY PARAMETERS

Form 2

Sample Round March 2014 SW-2

Current Readings								
Time (min)	pH	Cond mS/cm	Turb (NTU)	D.O (mg/L)	Temp (°C)	ORP (mv)	DTW (feet)	Comments
0	+/- 0.1 std.unit	+/- 3%	+/- 10% NA <10NTU	+/-10%	+/- 1 E	+/-10 mv		
3.4.14								
~~5~~ 1136	5.24	0.020	1.23	19.99	0.18	121.1	NA	Collect Samples
10								
15								
20								
25								
30								
35								
40								
45								
50								
55								
60								
65								
70								
75								
80								
85								
90								
95								
100								
105								
110								
115								
120								

GROUND WATER SAMPLING FIELD LOG
Form 1

Sample Location SW-3 Well Designation SW-3

Sampling Team M. van Noordennen Sample Period March 2014

Date 3.4.14 Time 1050 - 1110 Sample: 1100

Depth to Mid Screen _____ (ft)

Measuring Point _____ Diameter of Well _____ (in)

Well Depth (from measuring point) (D) _____ (ft)

Depth to water (DTW) _____ (ft)

Length of Water Column (LWC) NA _____ (ft) (LWC=D-DTW)

Volume of Water in Well (VW) _____ gal Conversion Factor ____

Volume of Purge (VTP) (VTP = VW x 3) _____ (gal)

3.4.14

At Time of Measurements:

Color Clear Odor None

Total volume purged NA Duration of purging NA

Purging method NA Did well go dry? NA

Weather conditions Sunny, Cold, 15°F

Pump Serial Number NA

Water Quality Monitor Serial Number YSI 556 (10E100322), HACH 2100P (M024.13)

Analyses Requested VOCs, metals, TDS, COD, alkalinity, cyanide, anions

Previous Final Readings: pH 6.40 Cond 0.020 Turb 1.89 DO 15.22 Temp 0.53 ORP -136.0 DTW NA

Flow NA ^{3}H NA

WATER QUALITY PARAMETERS

Form 2

Sample Round	March 2014							SW-3
Current Readings								
Time (min)	pH	Cond mS/cm	Turb (NTU)	D.O (mg/L)	Temp (°C)	ORP (mv)	DTW (feet)	Comments
0	+/- 0.1 std.unit	+/- 3%	+/- 10% NA <10NTU	+/-10%	+/- 1 E	+/-10 mv		
3.4.14 1100	6.43	0.016	0.65	18.56	0.29	>8.2	NA	Collect Samples
10								
15								
20								
25								
30								
35								
40								
45								
50								
55								
60								
65								
70								
75								
80								
85								
90								
95								
100								
105								
110								
115								
120								

GROUND WATER SAMPLING FIELD LOG

Form 1

Sample Location SW-4 Well Designation SW-4

Sampling Team M. van Noordennen Sample Period March 2014

Date 3.4.14 Time 1015-1035 Sample: 1025

Depth to Mid Screen _____ (ft)

Measuring Point _____ Diameter of Well _____ (in)

Well Depth (from measuring point) (D) _____ (ft)

Depth to water (DTW) _____ (ft)

Length of Water Column (LWC) NA 3.4.14 _____ (ft) (LWC=D-DTW)

Volume of Water in Well (VW) _____ gal Conversion Factor ____

Volume of Purge (VTP) (VTP = VW x 3) _____ (gal)

At Time of Measurements:

Color Clear Odor None

Total volume purged NA Duration of purging NA

Purging method NA Did well go dry? NA

Weather conditions Sunny, cold, 10°F

Pump Serial Number NA

Water Quality Monitor Serial Number YSI 556 (10E100322), HACH 2100P (cm024.13)

Analyses Requested VOCs, metals, COD, TDS, alkalinity, cyanide, anions

Previous Final Readings: pH 6.39 Cond 0.033 Turb 1.32 DO 14.99 Temp 0.59 ORP -246.8 DTW NA

Flow NA ^{3}H NA

WATER QUALITY PARAMETERS

Form 2

Sample Round March 2014 SW-4

3.4.14

Current Readings								
Time (min)	pH	Cond mS/cm	Turb (NTU)	D.O (mg/L)	Temp (°C)	ORP (mv)	DTW (feet)	Comments
0	+/- 0.1 std.unit	+/- 3%	+/- 10% NA <10NTU	+/-10%	+/- 1 E	+/-10 mv		
~~5~~ 1025	6.25	0.027	1.39	19.85	0.21	108.7	NA	Collect Samples
10								
15								
20								
25								
30								
35								
40								
45								
50								
55								
60								
65								
70								
75								
80								
85								
90								
95								
100								
105								
110								
115								
120								

GROUND WATER SAMPLING FIELD LOG

Form 1

Sample Location SW-5 Well Designation SW-5

Sampling Team M. van Noordennen Sample Period March 2014

Date 3.4.14 Time 0940-1000 Sample: 0950

Depth to Mid Screen _____ (ft)

Measuring Point _____ Diameter of Well _____ (in)

Well Depth (from measuring point) (D) _____ (ft)

Depth to water (DTW) _____ (ft)

Length of Water Column (LWC) N _____ (ft) (LWC=D-DTW)

Volume of Water in Well (VW) A _____ gal Conversion Factor ____

Volume of Purge (VTP) (VTP = VW x 3) _____ (gal)

At Time of Measurements:

Color Clear Odor None

Total volume purged NA Duration of purging NA

Purging method NA Did well go dry? NA

Weather conditions Sunny, cold, 16°F

Pump Serial Number NA

Water Quality Monitor Serial Number YSI 556 (16E100322), HACH 2100P (m024-13)

Analyses Requested VOCs, metals, TDS, COD, alkalinity, cyanide, anions

Previous Final Readings: pH 6.61 Cond 0.062 Turb 1.48 DO 15.12 Temp 0.16 ORP -23.7 DTW NA

Flow NA ^{3}H NA

WATER QUALITY PARAMETERS

Form 2

Sample Round	March 2014							SW-5
	Current Readings							
Time (min)	pH	Cond mS/cm	Turb (NTU)	D.O (mg/L)	Temp (°C)	ORP (mv)	DTW (feet)	Comments
0	+/- 0.1 std.unit	+/- 3%	+/- 10% NA <10NTU	+/-10%	+/- 1 E	+/-10 mv		
3.4.14 0950	6.75	0.025	0.62	20.77	0.09	>4.8	—	Collect Samples
10								
15								
20								
25								
30								
35								
40								
45								
50								
55								
60								
65								
70								
75								
80								
85								
90								
95								
100								
105								
110								
115								
120								

GROUND WATER SAMPLING FIELD LOG

Form 1

Sample Location SW-011 Well Designation SW-011

Sampling Team M. van Noordennen Sample Period March 2014

Date 3.6.14 Time 1115-1135 Sample: 1125

Depth to Mid Screen _____ (ft)

Measuring Point _____ Diameter of Well _____ (in)

Well Depth (from measuring point) (D) _____ (ft)

Depth to water (DTW) _____ (ft)

Length of Water Column (LWC) N/A (ft) (LWC=D-DTW)

Volume of Water in Well (VW) _____ gal Conversion Factor ____

Volume of Purge (VTP) (VTP = VW x 3) _____ (gal)

3.6.14

At Time of Measurements:

Color Clear Odor None

Total volume purged NA Duration of purging NA

Purging method NA Did well go dry? NA

Weather conditions Sunny, 20°F

Pump Serial Number S008-27

Water Quality Monitor Serial Number YSI 556 (10E100322), HACH 2100P (Cmo24.13)

Analyses Requested 8 Spec, Sr-90, H-3, metals

Previous Final Readings: pH 7.35 Cond 0.933 Turb 2.16 DO 15.06 Temp 3.16 ORP -33.0 DTW NM

Flow NA ^{3}H ND

WATER QUALITY PARAMETERS

Form 2

Sample Round	March 2014							SW-011
Current Readings								
Time (min)	pH	Cond mS/cm	Turb (NTU)	D.O (mg/L)	Temp (°C)	ORP (mv)	DTW (feet)	Comments
0	+/- 0.1 std.unit	+/- 3%	+/- 10% NA <10NTU	+/-10%	+/- 1 E	+/-10 mv		
~~5~~ 1125	6.17	0.041	2.69	17.68	0.62	84.2	NA	Collect Samples
10								
15								
20								
25								
30								
35								
40								
45								
50								
55								
60								
65								
70								
75								
80								
85								
90								
95								
100								
105								
110								
115								
120								

3.6.14

GROUND WATER SAMPLING FIELD LOG

Form 1

Sample Location SW-408 Well Designation SW-408

Sampling Team M. VanNoordenne Sample Period March 2014

Date 3-6-14 Time 0945 - 1015 Sample: 1000

Depth to Mid Screen _____ (ft)

Measuring Point _____ Diameter of Well _____ (in)

Well Depth (from measuring point) (D) _____ (ft)

Depth to water (DTW) _____ (ft)

Length of Water Column (LWC) NA _____ (ft) (LWC=D-DTW)

Volume of Water in Well (VW) _____ gal Conversion Factor ____

Volume of Purge (VTP) (VTP = VW x 3) _____ (gal)

3.6.14

At Time of Measurements:

Color Clear Odor None

Total volume purged NA Duration of purging NA

Purging method NA Did well go dry? NA

Weather conditions Sunny, 15°F

Pump Serial Number S008-27

Water Quality Monitor Serial Number YSI 556 (10E100322), HACH 2100P (M024-13)

Analyses Requested 8 Specs, Sr-90, H-3, Metals

Previous Final Readings: pH 6.42 Cond 0.059 Turb 0.8 DO 12.69 Temp 4.01 ORP [illegible] DTW NA

Flow NA ^{3}H NO

WATER QUALITY PARAMETERS

Form 2

Sample Round March 2014 SW-408

3.6.14

Current Readings								
Time (min)	pH	Cond mS/cm	Turb (NTU)	D.O (mg/L)	Temp (°C)	ORP (mv)	DTW (feet)	Comments
0	+/- 0.1 std.unit	+/- 3%	+/- 10% NA <10NTU	+/-10%	+/- 1 E	+/-10 mv		
-5 1000	7.22	0.041	1.77	20.72	0.93	88.2	NA	Collect Samples
10								
15								
20								
25								
30								
35								
40								
45								
50								
55								
60								
65								
70								
75								
80								
85								
90								
95								
100								
105								
110								
115								
120								

APPENDIX B

ANALYTICAL DATA – MARCH 2014

APPENDIX B-1

RADIOLOGICAL DATA - MARCH 2014

APPENDIX B-1
Radiological Data - March and April 2014

Yankee Nuclear Power Station

			Location	MW-104A			MW-104A			MW-105B		
			Sample ID	MW-104A			MW-104A DUP			MW-105B		
			Sample Date	3/6/2014			3/6/2014			3/5/2014		
			Qc Code	FS			FD			FS		
Lab Id	Analysis	Parameter	Units	Result	Qualifier	Uncertainty	Result	Qualifier	Uncertainty	Result	Qualifier	Uncertainty
GEL	EPA 901.1	Antimony-125	pCi/L	-6.59	U	9.24	-11.5	U	10.6	2.1	U	9.74
GEL	EPA 901.1	Cesium-134	pCi/L	0.874	U	3.33	-0.739	U	4.1	1.57	U	3.9
GEL	EPA 901.1	Cesium-137	pCi/L	-2.28	U	4.04	-1.47	U	4	-0.922	U	4.14
GEL	EPA 901.1	Cobalt-60	pCi/L	0.694	U	2.98	-0.547	U	3.06	-1.06	U	3.75
GEL	EPA 901.1	Europium-152	pCi/L	4.4	U	10.4	-3.15	U	9.36	-7.41	U	11.8
GEL	EPA 901.1	Europium-154	pCi/L	3.3	U	8.46	-3.19	U	8.99	10.1	U	18.7
GEL	EPA 901.1	Europium-155	pCi/L	-4.67	U	14	-7.6	U	12.9	-8.97	U	10.8
GEL	EPA 901.1	Niobium-94	pCi/L	3.61	U	3.9	-2.65	U	2.93	5.32	U	6.19
GEL	EPA 901.1	Silver-108	pCi/L	1.96	U	3.01	0.691	U	2.88	1.03	U	3.23
GEL	EPA 905.0 Modified	Strontium-90	pCi/L	-0.507	U	0.943	0.918	U	1.17	0.143	U	1.04
GEL	EPA 906.0 Modified	Tritium	pCi/L	189	U	308	419	U	337	1640		512

Notes:
FS = Field Sample
FD = Field Duplicate
EB = Equipment Rinsate Blank
pCi/L = Picocuries per liter
U = Not detected
R = Rejected during data validation
J = Result is estimated

Prepared/Date: BJS 04/16/14
Checked/Date: MGV 04/16/14

APPENDIX B-1
Radiological Data - March and April 2014

Yankee Nuclear Power Station

			Location	MW-106A			MW-107C			SP-1		
			Sample ID	MW-106A			MW-107C			SP-1		
			Sample Date	3/4/2014			3/5/2014			3/4/2014		
			Qc Code	FS			FS			FS		
Lab Id	Analysis	Parameter	Units	Result	Qualifier	Uncertainty	Result	Qualifier	Uncertainty	Result	Qualifier	Uncertainty
GEL	EPA 901.1	Antimony-125	pCi/L	0.847	U	8.39	4.86	U	8.39	1.58	U	7.37
GEL	EPA 901.1	Cesium-134	pCi/L	-1.33	U	2.98	0.117	U	2.51	2.82	U	3.32
GEL	EPA 901.1	Cesium-137	pCi/L	-0.163	U	2.95	-2.16	U	3.21	2.44	U	2.98
GEL	EPA 901.1	Cobalt-60	pCi/L	-2.08	U	2.78	0.193	U	2.85	-2.5	U	3.34
GEL	EPA 901.1	Europium-152	pCi/L	0.272	U	9.06	1.02	U	8.55	-2.06	U	8.29
GEL	EPA 901.1	Europium-154	pCi/L	-6.69	U	9.48	5.01	U	6.36	-2.92	U	7.36
GEL	EPA 901.1	Europium-155	pCi/L	2.87	U	10.2	5.75	U	12.7	7.47	U	12.1
GEL	EPA 901.1	Niobium-94	pCi/L	0.402	U	2.57	-0.02	U	2.28	0.271	U	2.72
GEL	EPA 901.1	Silver-108	pCi/L	-0.0791	U	2.46	1.31	U	2.72	-1.37	U	2.57
GEL	EPA 905.0 Modified	Strontium-90	pCi/L	0.731	U	1.13	-0.0662	U	0.481	0.378	U	1.06
GEL	EPA 906.0 Modified	Tritium	pCi/L	39.3	U	293	8910		1880	127	U	303

Notes:
FS = Field Sample
FD = Field Duplicate
EB = Equipment Rinsate Blank
pCi/L = Picocuries per liter
U = Not detected
R = Rejected during data validation
J = Result is estimated

Prepared/Date: BJS 04/16/14
Checked/Date: MGV 04/16/14

APPENDIX B-1
Radiological Data - March and April 2014

Yankee Nuclear Power Station

			Location	SW-011			SW-408			Monroe Dam		
			Sample ID	SW-011			SW-408			Monroe Dam		
			Sample Date	3/6/2014			3/6/2014			3/4/2014		
			Qc Code	FS			FS			FS		
Lab Id	Analysis	Parameter	Units	Result	Qualifier	Uncertainty	Result	Qualifier	Uncertainty	Result	Qualifier	Uncertainty
GEL	EPA 901.1	Antimony-125	pCi/L	4.28	U	6.56	0.973	U	7.65	4.81	U	8.12
GEL	EPA 901.1	Cesium-134	pCi/L	-1.6	U	2.93	-1.2	U	3	-0.714	U	3.13
GEL	EPA 901.1	Cesium-137	pCi/L	1.98	U	2.7	0.00067	U	3.22	-0.0557	U	2.52
GEL	EPA 901.1	Cobalt-60	pCi/L	2.13	U	3.54	1.82	U	3.14	-2.39	U	3.33
GEL	EPA 901.1	Europium-152	pCi/L	8.04	U	8.37	-0.124	U	9.6	7.46	U	9.09
GEL	EPA 901.1	Europium-154	pCi/L	4.3	U	8.02	-0.0006	U	7.61	-3.23	U	7.05
GEL	EPA 901.1	Europium-155	pCi/L	2.21	U	9.99	-8.7	U	12.2	-0.478	U	11.8
GEL	EPA 901.1	Niobium-94	pCi/L	-1.25	U	2.66	1.58	U	2.87	-0.0215	U	2.89
GEL	EPA 901.1	Silver-108	pCi/L	-0.892	U	1.91	0.812	U	2.73	-0.699	U	2.69
GEL	EPA 905.0 Modified	Strontium-90	pCi/L	-0.061	U	0.976	-0.165	U	1.03	-0.699	U	0.963
GEL	EPA 906.0 Modified	Tritium	pCi/L	3.14	U	291	-63.9	U	286	-142	U	280

Notes:
FS = Field Sample
FD = Field Duplicate
EB = Equipment Rinsate Blank
pCi/L = Picocuries per liter
U = Not detected
R = Rejected during data validation
J = Result is estimated

Prepared/Date: BJS 04/16/14
Checked/Date: MGV 04/16/14

APPENDIX B-1
Radiological Data - March and April 2014

Yankee Nuclear Power Station

			Location	QC		
			Sample ID	EB-005		
			Sample Date	3/6/2014		
			Qc Code	EB		
Lab Id	Analysis	Parameter	Units	Result	Qualifier	Uncertainty
GEL	EPA 901.1	Antimony-125	pCi/L	-3.1	U	6.58
GEL	EPA 901.1	Cesium-134	pCi/L	0.704	U	2.82
GEL	EPA 901.1	Cesium-137	pCi/L	2.48	U	2.63
GEL	EPA 901.1	Cobalt-60	pCi/L	-0.979	U	2.68
GEL	EPA 901.1	Europium-152	pCi/L	-1.18	U	6.7
GEL	EPA 901.1	Europium-154	pCi/L	4.93	U	7.33
GEL	EPA 901.1	Europium-155	pCi/L	2.2	U	8.33
GEL	EPA 901.1	Niobium-94	pCi/L	-1.54	U	2.05
GEL	EPA 901.1	Silver-108	pCi/L	-0.389	U	2.13
GEL	EPA 905.0 Modified	Strontium-90	pCi/L	-0.514	U	0.952
GEL	EPA 906.0 Modified	Tritium	pCi/L	-86.1	U	281

Notes:
FS = Field Sample
FD = Field Duplicate
EB = Equipment Rinsate Blank
pCi/L = Picocuries per liter
U = Not detected
R = Rejected during data validation
J = Result is estimated

Prepared/Date: BJS 04/16/14
Checked/Date: MGV 04/16/14

APPENDIX B-2

CHEMICAL DATA – MARCH 2014

APPENDIX B-2
Chemical Data - March 2014

Yankee Nuclear Power Station

Lab Id	Analysis	Parameter	Units	Location / Sample ID / Sample Date / Qc Code	CFW-1 CFW-1 3/5/2014 FS		CFW-5 CFW-5 3/4/2014 FS		CFW-5 CFW-5 DUP 3/4/2014 FD		CFW-6 CFW-6 3/5/2014 FS	
					Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
GEL	SW846 8260B	1,1,1,2-Tetrachloroethane	ug/L		1	U	1	U	1	U	1	U
GEL	SW846 8260B	1,1,1-Trichloroethane	ug/L		1	U	1	U	1	U	1	U
GEL	SW846 8260B	1,1,2,2-Tetrachloroethane	ug/L		1	U	1	U	1	U	1	U
GEL	SW846 8260B	1,1,2-Trichloroethane	ug/L		1	U	1	U	1	U	1	U
GEL	SW846 8260B	1,1-Dichloroethane	ug/L		1	U	1	U	1	U	1	U
GEL	SW846 8260B	1,1-Dichloroethene	ug/L		1	U	1	U	1	U	1	UJ
GEL	SW846 8260B	1,2,4-Trichlorobenzene	ug/L		1	U	1	U	1	U	1	U
GEL	SW846 8260B	1,2-Dichlorobenzene	ug/L		1	U	1	U	1	U	1	U
GEL	SW846 8260B	1,2-Dichloroethane	ug/L		1	U	1	U	1	U	1	U
GEL	SW846 8260B	1,2-Dichloropropane	ug/L		1	U	1	U	1	U	1	U
GEL	SW846 8260B	1,3-Dichlorobenzene	ug/L		1	U	1	U	1	U	1	U
GEL	SW846 8260B	1,3-Dichloropropene (total)	ug/L		2	U	2	U	2	U	2	U
GEL	SW846 8260B	1,4-Dichlorobenzene	ug/L		1	U	1	U	1	U	1	U
GEL	SW846 8260B	2-Butanone	ug/L		5	U	5	U	5	U	5	U
GEL	SW846 8260B	4-Methyl-2-pentanone	ug/L		5	U	5	U	5	U	5	U
GEL	SW846 8260B	Acetone	ug/L		5	U	5	U	5	U	5	U
GEL	SW846 8260B	Benzene	ug/L		1	U	1	U	1	U	1	U
GEL	SW846 8260B	Bromodichloromethane	ug/L		1	U	1	U	1	U	1	U
GEL	SW846 8260B	Bromoform	ug/L		1	U	1	U	1	U	1	U
GEL	SW846 8260B	Bromomethane	ug/L		1	U	1	U	1	U	1	U
GEL	SW846 8260B	Carbon tetrachloride	ug/L		1	U	1	U	1	U	1	U
GEL	SW846 8260B	Chlorobenzene	ug/L		1	U	1	U	1	U	1	U
GEL	SW846 8260B	Chlorodibromomethane	ug/L		1	U	1	U	1	U	1	U
GEL	SW846 8260B	Chloroform	ug/L		1	U	1	U	1	U	1	U
GEL	SW846 8260B	Cis-1,2-Dichloroethene	ug/L		1	U	1	U	1	U	1	U
GEL	SW846 8260B	Ethyl benzene	ug/L		1	U	1	U	1	U	1	U
GEL	SW846 8260B	Methyl Tertbutyl Ether	ug/L		1	U	1	U	1	U	1	U
GEL	SW846 8260B	Methylene chloride	ug/L		5	U	1.59	J	1.65	J	5	U
GEL	SW846 8260B	Naphthalene	ug/L		1	U	1	U	1	U	1	U
GEL	SW846 8260B	Styrene	ug/L		1	U	1	U	1	U	1	U
GEL	SW846 8260B	Tetrachloroethene	ug/L		1	U	1	U	1	U	1	U
GEL	SW846 8260B	Toluene	ug/L		1	U	1	U	1	U	1	U
GEL	SW846 8260B	trans-1,2-Dichloroethene	ug/L		1	U	1	U	1	U	1	U
GEL	SW846 8260B	Trichloroethene	ug/L		1	U	1	U	1	U	1	U
GEL	SW846 8260B	Vinyl chloride	ug/L		1	U	1	U	1	U	1	U
GEL	SW846 8260B	Xylenes, Total	ug/L		3	U	3	U	3	U	3	U
GEL	SW846 8011	1,2-Dibromoethane	ug/L		0.0197	U	0.0196	U	0.0196	U	0.0199	U
GEL	SW846 3005A/6020A	Arsenic	ug/L		1.7	U	1.7	U	1.7	U	1.7	U
GEL	SW846 3005A/6020A	Barium	ug/L		41.7		48.7		48.9		64.7	
GEL	SW846 3005A/6020A	Cadmium	ug/L		0.11	U	0.11	U	0.11	U	0.135	J

Prepared/Date: BJS 04/16/14
Checked/Date: MGV 04/16/14

APPENDIX B-2
Chemical Data - March 2014

Yankee Nuclear Power Station

			Location	CFW-1		CFW-5		CFW-5		CFW-6	
			Sample ID	CFW-1		CFW-5		CFW-5 DUP		CFW-6	
			Sample Date	3/5/2014		3/4/2014		3/4/2014		3/5/2014	
			Qc Code	FS		FS		FD		FS	
Lab Id	Analysis	Parameter	Units	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
GEL	SW846 3005A/6020A	Calcium	ug/L	2,510		28,300		28,700		15,900	
GEL	SW846 3005A/6020A	Chromium	ug/L	6.73	J	2	U	2	U	2	U
GEL	SW846 3005A/6020A	Copper	ug/L	7.52		0.358	U	0.35	U	0.783	U
GEL	SW846 3005A/6020A	Iron	ug/L	13,400		45,700		47,400		35,500	
GEL	SW846 3005A/6020A	Lead	ug/L	2		0.5	U	0.5	U	0.5	U
GEL	SW846 3005A/6020A	Manganese	ug/L	233		3610		3760		3740	
GEL	SW846 3005A/6020A	Selenium	ug/L	1.5	U	1.5	U	1.5	U	1.5	U
GEL	SW846 3005A/6020A	Silver	ug/L	1.34		0.2	U	0.2	U	0.2	U
GEL	SW846 3005A/6020A	Sodium	ug/L	935		2360		2290		4000	
GEL	SW846 3005A/6020A	Thallium	ug/L								
GEL	SW846 3005A/6020A	Zinc	ug/L	18.9		3.5	U	3.5	U	5.81	J
GEL	SW846 7470A	Mercury	ug/L	0.067	U	0.067	U	0.067	U	0.067	U
GEL	SW846 9012B	Cyanide, Total	ug/L	1.67	U	1.67	U	1.67	U	1.67	U
GEL	EPA 410.4	Chemical Oxygen Demand	mg/L	6.9	J	34.4		34.4		39.4	
GEL	SM 2320B	Total Alkalinity, as CaCO3	mg/L	4.07	J	136	J	139	J	108	J
GEL	SM 2540C	Total Dissolved Solids	mg/L	8.57	J	163		190		130	
GEL	SW846 9056A	Chloride	mg/L	0.594		1.37		1.37		0.911	
GEL	SW846 9056A	Nitrate as N	mg/L	0.033	U	0.033	U	0.033	U	0.033	U
GEL	SW846 9056A	Sulfate	mg/L	3.43		0.226	J	0.249	J	1.49	

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APPENDIX B-2
Chemical Data - March 2014

Yankee Nuclear Power Station

			Location	SP-1		SW-011		SW-1		SW-2	
			Sample ID	SP-1		SW-011		SW-1		SW-2	
			Sample Date	3/4/2014		3/6/2014		3/5/2014		3/4/2014	
			Qc Code	FS		FS		FS		FS	
Lab Id	Analysis	Parameter	Units	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
GEL	SW846 8260B	1,1,1,2-Tetrachloroethane	ug/L	1	U			1	U	1	U
GEL	SW846 8260B	1,1,1-Trichloroethane	ug/L	1	U			1	U	1	U
GEL	SW846 8260B	1,1,2,2-Tetrachloroethane	ug/L	1	U			1	U	1	U
GEL	SW846 8260B	1,1,2-Trichloroethane	ug/L	1	U			1	U	1	U
GEL	SW846 8260B	1,1-Dichloroethane	ug/L	1	U			1	U	1	U
GEL	SW846 8260B	1,1-Dichloroethene	ug/L	1	U			1	U	1	U
GEL	SW846 8260B	1,2,4-Trichlorobenzene	ug/L	1	U			1	U	1	U
GEL	SW846 8260B	1,2-Dichlorobenzene	ug/L	1	U			1	U	1	U
GEL	SW846 8260B	1,2-Dichloroethane	ug/L	1	U			1	U	1	U
GEL	SW846 8260B	1,2-Dichloropropane	ug/L	1	U			1	U	1	U
GEL	SW846 8260B	1,3-Dichlorobenzene	ug/L	1	U			1	U	1	U
GEL	SW846 8260B	1,3-Dichloropropene (total)	ug/L	2	U			2	U	2	U
GEL	SW846 8260B	1,4-Dichlorobenzene	ug/L	1	U			1	U	1	U
GEL	SW846 8260B	2-Butanone	ug/L	5	U			5	U	5	U
GEL	SW846 8260B	4-Methyl-2-pentanone	ug/L	5	U			5	U	5	U
GEL	SW846 8260B	Acetone	ug/L	5	U			5	U	5	U
GEL	SW846 8260B	Benzene	ug/L	1	U			1	U	1	U
GEL	SW846 8260B	Bromodichloromethane	ug/L	1	U			1	U	1	U
GEL	SW846 8260B	Bromoform	ug/L	1	U			1	U	1	U
GEL	SW846 8260B	Bromomethane	ug/L	1	U			1	U	1	U
GEL	SW846 8260B	Carbon tetrachloride	ug/L	1	U			1	U	1	U
GEL	SW846 8260B	Chlorobenzene	ug/L	1	U			1	U	1	U
GEL	SW846 8260B	Chlorodibromomethane	ug/L	1	U			1	U	1	U
GEL	SW846 8260B	Chloroform	ug/L	1	U			1	U	1	U
GEL	SW846 8260B	Cis-1,2-Dichloroethene	ug/L	1	U			1	U	1	U
GEL	SW846 8260B	Ethyl benzene	ug/L	1	U			1	U	1	U
GEL	SW846 8260B	Methyl Tertbutyl Ether	ug/L	1	U			1	U	1	U
GEL	SW846 8260B	Methylene chloride	ug/L	5	U			5	U	1.51	J
GEL	SW846 8260B	Naphthalene	ug/L	1	U			1	U	1	U
GEL	SW846 8260B	Styrene	ug/L	1	U			1	U	1	U
GEL	SW846 8260B	Tetrachloroethene	ug/L	1	U			1	U	1	U
GEL	SW846 8260B	Toluene	ug/L	1	U			1	U	1	U
GEL	SW846 8260B	trans-1,2-Dichloroethene	ug/L	1	U			1	U	1	U
GEL	SW846 8260B	Trichloroethene	ug/L	1	U			1	U	1	U
GEL	SW846 8260B	Vinyl chloride	ug/L	1	U			1	U	1	U
GEL	SW846 8260B	Xylenes, Total	ug/L	3	U			3	U	3	U
GEL	SW846 8011	1,2-Dibromoethane	ug/L	0.0198	U			0.0201	U	0.0197	U
GEL	SW846 3005A/6020A	Arsenic	ug/L	1.7	U	1.7	U	1.7	U	1.7	U
GEL	SW846 3005A/6020A	Barium	ug/L	23		10.4		9.67		10.8	
GEL	SW846 3005A/6020A	Cadmium	ug/L	0.11	U	0.11	U	0.11	U	0.11	U

Prepared/Date: BJS 04/16/14
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APPENDIX B-2
Chemical Data - March 2014

Yankee Nuclear Power Station

			Location	SP-1		SW-011		SW-1		SW-2	
			Sample ID	SP-1		SW-011		SW-1		SW-2	
			Sample Date	3/4/2014		3/6/2014		3/5/2014		3/4/2014	
			Qc Code	FS		FS		FS		FS	
Lab Id	Analysis	Parameter	Units	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
GEL	SW846 3005A/6020A	Calcium	ug/L					2,840		2,250	
GEL	SW846 3005A/6020A	Chromium	ug/L	2	U	2	U	2.15	J	2	U
GEL	SW846 3005A/6020A	Copper	ug/L					0.424	U	0.643	U
GEL	SW846 3005A/6020A	Iron	ug/L					198	U	203	U
GEL	SW846 3005A/6020A	Lead	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
GEL	SW846 3005A/6020A	Manganese	ug/L					20.2		8.35	
GEL	SW846 3005A/6020A	Selenium	ug/L	1.5	U	1.5	U	1.5	U	1.5	U
GEL	SW846 3005A/6020A	Silver	ug/L	0.627	J	0.2	U	0.2	U	0.2	U
GEL	SW846 3005A/6020A	Sodium	ug/L					1100		857	
GEL	SW846 3005A/6020A	Thallium	ug/L	0.45	U						
GEL	SW846 3005A/6020A	Zinc	ug/L					3.5	U	3.56	J
GEL	SW846 7470A	Mercury	ug/L	0.067	U	0.067	U	0.067	U	0.067	U
GEL	SW846 9012B	Cyanide, Total	ug/L					1.67	U	1.67	U
GEL	EPA 410.4	Chemical Oxygen Demand	mg/L					6.67	U	11.9	J
GEL	SM 2320B	Total Alkalinity, as CaCO3	mg/L					4.07	J	0.725	UJ
GEL	SM 2540C	Total Dissolved Solids	mg/L					4.29	J	5.71	J
GEL	SW846 9056A	Chloride	mg/L					0.47		0.571	
GEL	SW846 9056A	Nitrate as N	mg/L					0.14		0.0937	J
GEL	SW846 9056A	Sulfate	mg/L					5.91		5.22	

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APPENDIx B-2
Chemical Data - March 2014

Yankee Nuclear Power Station

			Location	SW-3		SW-4		SW-408		SW-5	
			Sample ID	SW-3		SW-4		SW-408		SW-5	
			Sample Date	3/4/2014		3/4/2014		3/6/2014		3/4/2014	
			Qc Code	FS		FS		FS		FS	
Lab Id	Analysis	Parameter	Units	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
GEL	SW846 8260B	1,1,1,2-Tetrachloroethane	ug/L	1	U	1	U			1	U
GEL	SW846 8260B	1,1,1-Trichloroethane	ug/L	1	U	1	U			1	U
GEL	SW846 8260B	1,1,2,2-Tetrachloroethane	ug/L	1	U	1	U			1	U
GEL	SW846 8260B	1,1,2-Trichloroethane	ug/L	1	U	1	U			1	U
GEL	SW846 8260B	1,1-Dichloroethane	ug/L	1	U	1	U			1	U
GEL	SW846 8260B	1,1-Dichloroethene	ug/L	1	U	1	U			1	U
GEL	SW846 8260B	1,2,4-Trichlorobenzene	ug/L	1	U	1	U			1	U
GEL	SW846 8260B	1,2-Dichlorobenzene	ug/L	1	U	1	U			1	U
GEL	SW846 8260B	1,2-Dichloroethane	ug/L	1	U	1	U			1	U
GEL	SW846 8260B	1,2-Dichloropropane	ug/L	1	U	1	U			1	U
GEL	SW846 8260B	1,3-Dichlorobenzene	ug/L	1	U	1	U			1	U
GEL	SW846 8260B	1,3-Dichloropropene (total)	ug/L	2	U	2	U			2	U
GEL	SW846 8260B	1,4-Dichlorobenzene	ug/L	1	U	1	U			1	U
GEL	SW846 8260B	2-Butanone	ug/L	5	U	5	U			5	U
GEL	SW846 8260B	4-Methyl-2-pentanone	ug/L	5	U	5	U			5	U
GEL	SW846 8260B	Acetone	ug/L	5	U	5	U			5	U
GEL	SW846 8260B	Benzene	ug/L	1	U	1	U			1	U
GEL	SW846 8260B	Bromodichloromethane	ug/L	1	U	1	U			1	U
GEL	SW846 8260B	Bromoform	ug/L	1	U	1	U			1	U
GEL	SW846 8260B	Bromomethane	ug/L	1	U	1	U			1	U
GEL	SW846 8260B	Carbon tetrachloride	ug/L	1	U	1	U			1	U
GEL	SW846 8260B	Chlorobenzene	ug/L	1	U	1	U			1	U
GEL	SW846 8260B	Chlorodibromomethane	ug/L	1	U	1	U			1	U
GEL	SW846 8260B	Chloroform	ug/L	1	U	1	U			1	U
GEL	SW846 8260B	Cis-1,2-Dichloroethene	ug/L	1	U	1	U			1	U
GEL	SW846 8260B	Ethyl benzene	ug/L	1	U	1	U			1	U
GEL	SW846 8260B	Methyl Tertbutyl Ether	ug/L	1	U	1	U			1	U
GEL	SW846 8260B	Methylene chloride	ug/L	1.73	J	5	U			5	U
GEL	SW846 8260B	Naphthalene	ug/L	1	U	1	U			1	U
GEL	SW846 8260B	Styrene	ug/L	1	U	1	U			1	U
GEL	SW846 8260B	Tetrachloroethene	ug/L	1	U	1	U			1	U
GEL	SW846 8260B	Toluene	ug/L	1	U	1	U			1	U
GEL	SW846 8260B	trans-1,2-Dichloroethene	ug/L	1	U	1	U			1	U
GEL	SW846 8260B	Trichloroethene	ug/L	1	U	1	U			1	U
GEL	SW846 8260B	Vinyl chloride	ug/L	1	U	1	U			1	U
GEL	SW846 8260B	Xylenes, Total	ug/L	3	U	3	U			3	U
GEL	SW846 8011	1,2-Dibromoethane	ug/L	0.0197	U	0.0197	U			0.0198	UJ
GEL	SW846 3005A/6020A	Arsenic	ug/L	1.7	U	1.7	U	1.7	U	1.7	U
GEL	SW846 3005A/6020A	Barium	ug/L	10.3		11.8		10.3		10.5	
GEL	SW846 3005A/6020A	Cadmium	ug/L	0.11	U	0.11	U	0.11	U	0.11	U

Prepared/Date: BJS 04/16/14
Checked/Date: MGV 04/16/14

APPENDIX B-2
Chemical Data - March 2014

Yankee Nuclear Power Station

			Location	SW-3		SW-4		SW-408		SW-5	
			Sample ID	SW-3		SW-4		SW-408		SW-5	
			Sample Date	3/4/2014		3/4/2014		3/6/2014		3/4/2014	
			Qc Code	FS		FS		FS		FS	
Lab Id	Analysis	Parameter	Units	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
GEL	SW846 3005A/6020A	Calcium	ug/L	2,540		3,040				2,330	
GEL	SW846 3005A/6020A	Chromium	ug/L	2	U	2	U	2	U	2	U
GEL	SW846 3005A/6020A	Copper	ug/L	0.669	U	0.807	U			0.365	U
GEL	SW846 3005A/6020A	Iron	ug/L	514		1,810				496	
GEL	SW846 3005A/6020A	Lead	ug/L	0.5	U	0.5	U	0.5	U	0.5	U
GEL	SW846 3005A/6020A	Manganese	ug/L	66.1		212				65.7	
GEL	SW846 3005A/6020A	Selenium	ug/L	1.5	U	1.5	U	1.5	U	1.5	U
GEL	SW846 3005A/6020A	Silver	ug/L	0.2	U	0.2	U	0.2	U	0.2	U
GEL	SW846 3005A/6020A	Sodium	ug/L	893		967				859	
GEL	SW846 3005A/6020A	Thallium	ug/L								
GEL	SW846 3005A/6020A	Zinc	ug/L	3.5	U	3.5	U			3.5	U
GEL	SW846 7470A	Mercury	ug/L	0.067	U	0.067	U	0.067	U	0.067	U
GEL	SW846 9012B	Cyanide, Total	ug/L	1.67	U	1.67	U			1.67	U
GEL	EPA 410.4	Chemical Oxygen Demand	mg/L	19.4	J	6.67	U			31.9	
GEL	SM 2320B	Total Alkalinity, as CaCO3	mg/L	5.6	J	8.14	J			3.56	J
GEL	SM 2540C	Total Dissolved Solids	mg/L	4.29	J	15.7				37.1	
GEL	SW846 9056A	Chloride	mg/L	0.673		0.61				0.526	
GEL	SW846 9056A	Nitrate as N	mg/L	0.0986	J	0.0932	J			0.087	J
GEL	SW846 9056A	Sulfate	mg/L	5.13		5.05				4.72	

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APPENDIX B-2
Chemical Data - March 2014

Yankee Nuclear Power Station

Lab Id	Analysis	Parameter	Location / Sample ID / Sample Date / Qc Code / Units	QC TB-009 3/4/2014 TB Result	Qualifier	QC TB-010 3/5/2014 TB Result	Qualifier
GEL	SW846 8260B	1,1,1,2-Tetrachloroethane	ug/L	1	U	1	U
GEL	SW846 8260B	1,1,1-Trichloroethane	ug/L	1	U	1	U
GEL	SW846 8260B	1,1,2,2-Tetrachloroethane	ug/L	1	U	1	U
GEL	SW846 8260B	1,1,2-Trichloroethane	ug/L	1	U	1	U
GEL	SW846 8260B	1,1-Dichloroethane	ug/L	1	U	1	U
GEL	SW846 8260B	1,1-Dichloroethene	ug/L	1	U	1	U
GEL	SW846 8260B	1,2,4-Trichlorobenzene	ug/L	1	U	1	U
GEL	SW846 8260B	1,2-Dichlorobenzene	ug/L	1	U	1	U
GEL	SW846 8260B	1,2-Dichloroethane	ug/L	1	U	1	U
GEL	SW846 8260B	1,2-Dichloropropane	ug/L	1	U	1	U
GEL	SW846 8260B	1,3-Dichlorobenzene	ug/L	1	U	1	U
GEL	SW846 8260B	1,3-Dichloropropene (total)	ug/L	2	U	2	U
GEL	SW846 8260B	1,4-Dichlorobenzene	ug/L	1	U	1	U
GEL	SW846 8260B	2-Butanone	ug/L	5	U	5	U
GEL	SW846 8260B	4-Methyl-2-pentanone	ug/L	5	U	5	U
GEL	SW846 8260B	Acetone	ug/L	5	U	5	U
GEL	SW846 8260B	Benzene	ug/L	1	U	1	U
GEL	SW846 8260B	Bromodichloromethane	ug/L	1	U	1	U
GEL	SW846 8260B	Bromoform	ug/L	1	U	1	U
GEL	SW846 8260B	Bromomethane	ug/L	1	U	1	U
GEL	SW846 8260B	Carbon tetrachloride	ug/L	1	U	1	U
GEL	SW846 8260B	Chlorobenzene	ug/L	1	U	1	U
GEL	SW846 8260B	Chlorodibromomethane	ug/L	1	U	1	U
GEL	SW846 8260B	Chloroform	ug/L	1	U	1	U
GEL	SW846 8260B	Cis-1,2-Dichloroethene	ug/L	1	U	1	U
GEL	SW846 8260B	Ethyl benzene	ug/L	1	U	1	U
GEL	SW846 8260B	Methyl Tertbutyl Ether	ug/L	1	U	1	U
GEL	SW846 8260B	Methylene chloride	ug/L	5	U	5	U
GEL	SW846 8260B	Naphthalene	ug/L	1	U	1	U
GEL	SW846 8260B	Styrene	ug/L	1	U	1	U
GEL	SW846 8260B	Tetrachloroethene	ug/L	1	U	1	U
GEL	SW846 8260B	Toluene	ug/L	1	U	1	U
GEL	SW846 8260B	trans-1,2-Dichloroethene	ug/L	1	U	1	U
GEL	SW846 8260B	Trichloroethene	ug/L	1	U	1	U
GEL	SW846 8260B	Vinyl chloride	ug/L	1	U	1	U
GEL	SW846 8260B	Xylenes, Total	ug/L	3	U	3	U
GEL	SW846 8011	1,2-Dibromoethane	ug/L	0.02	U	0.02	U
GEL	SW846 3005A/6020A	Arsenic	ug/L				
GEL	SW846 3005A/6020A	Barium	ug/L				
GEL	SW846 3005A/6020A	Cadmium	ug/L				

Prepared/Date: BJS 04/16/14
Checked/Date: MGV 04/16/14

APPENDIX B-2
Chemical Data - March 2014

Yankee Nuclear Power Station

Lab Id	Analysis	Parameter	Location / Sample ID / Sample Date / Qc Code / Units	QC TB-009 3/4/2014 TB Result	Qualifier	QC TB-010 3/5/2014 TB Result	Qualifier
GEL	SW846 3005A/6020A	Calcium	ug/L				
GEL	SW846 3005A/6020A	Chromium	ug/L				
GEL	SW846 3005A/6020A	Copper	ug/L				
GEL	SW846 3005A/6020A	Iron	ug/L				
GEL	SW846 3005A/6020A	Lead	ug/L				
GEL	SW846 3005A/6020A	Manganese	ug/L				
GEL	SW846 3005A/6020A	Selenium	ug/L				
GEL	SW846 3005A/6020A	Silver	ug/L				
GEL	SW846 3005A/6020A	Sodium	ug/L				
GEL	SW846 3005A/6020A	Thallium	ug/L				
GEL	SW846 3005A/6020A	Zinc	ug/L				
GEL	SW846 7470A	Mercury	ug/L				
GEL	SW846 9012B	Cyanide, Total	ug/L				
GEL	EPA 410.4	Chemical Oxygen Demand	mg/L				
GEL	SM 2320B	Total Alkalinity, as CaCO3	mg/L				
GEL	SM 2540C	Total Dissolved Solids	mg/L				
GEL	SW846 9056A	Chloride	mg/L				
GEL	SW846 9056A	Nitrate as N	mg/L				
GEL	SW846 9056A	Sulfate	mg/L				

Prepared/Date: BJS 04/16/14
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APPENDIX B-3

VALIDATION CHECKLISTS – MARCH 2014

DATA VALIDATION SUMMARY
YANKEE NUCLEAR POWER STATION
ROWE, MASSACHUSETTS
SDG: YR-009

1.0 INTRODUCTION

Groundwater and surface water samples were collected on March 4, 2014, through March 6, 2014, at the Yankee Nuclear Power Station, located in Rowe, Massachusetts. Sample analysis was performed by GEL Laboratories, located in Charleston, South Carolina. Samples were analyzed by one or more of the following methods:

- Volatile Organic Compounds (VOCs) by Method 8260B
- 1,2-Dibromoethane (EDB) by Method 8011
- RCRA Metals by Methods 6020A/7470A
- Cyanide by Method 9012B
- Anions by Method 9056A
- Alkalinity by Method 2320B
- Total Dissolved Solids (TDS) by Method 2540C
- Chemical Oxygen Demand (COD) by Method 410.4
- Isotopes by Gamma Spectroscopy Method 901.1
- Strontium-90 by Method 905.0 Modified
- Tritium by Method 906.0 Modified

A chemist review was performed on the samples analysis using information supplied by the laboratory. The data package was validated using USEPA Region I EPA-New England Data Validation Functional Guidelines for Evaluating Environmental Analyses (USEPA, 1996), the Yankee Nuclear Power Station Groundwater Monitoring Program, Document RP-05, Revision 5 (YNPS, 2012), and "Laboratory Data Validation Guidelines for Evaluating Radionuclide Analyses," Revision 7 (SAIC, 2002).

Results were reported in sample delivery group (SDG): YR009 (GEL Lab Number 344004). A listing of samples included in this chemistry review is presented in Table 1. A summary of the analytical results is presented in Table 2. A summary of sample results qualified during this review is presented in Table 3 (Qualification Action Summary).

The following data qualifiers are used in the final data presentation:

U = target analyte is not detected at or above the reported detection limit or is qualified as not detected
J = concentration is estimated
UJ = target analyte is not detected and the reporting limit or method detection limit is considered to be estimated

Results are interpreted to be usable as reported by the laboratory unless discussed in the following sections.

2.0 DATA REVIEW SUMMARY

2.1 VOCs

Data were evaluated for the following parameters:

* Collection and Preservation

* Holding Times
* Data Completeness
* Surrogate Recoveries
* Blank Contamination
* Duplicates
  Laboratory Control Samples (LCS)
* Matrix Spikes (MS)
* Miscellaneous

* - all criteria were met for this parameter

LCS

Percent recovery of 1,1-dichloroethene (78) in the LCS associated with sample CFW-6 was below the 80-128 laboratory control limits, indicating potential low bias. 1,1-Dichloroethene was not detected in the sample and the reporting limit was qualified estimated (UJ). The qualified result is included in Table 3 and was assigned qualification reason code LCS-L.

2.2 EDB

Data were evaluated for the following parameters:

* Collection and Preservation
* Holding Times
* Data Completeness
  Surrogate Recoveries
* Blank Contamination
* Duplicates
* LCS
* MS
* Miscellaneous

* - all criteria were met for this parameter

Surrogate Recoveries

Percent recovery of bromofluorobenzene (68) in sample SW-5 was below the 73-135 laboratory control limits, indicating potential low bias. The target compound 1,2-dibromoethane was not detected in the sample and the reporting limit was qualified estimated (UJ). The qualified result is included in Table 3 and was assigned reason code SS-L.

2.3 Metals

Data were evaluated for the following parameters:

* Collection and Preservation
* Holding Times
* Data Completeness
  Blank Contamination
* Duplicates
* LCS
* MS

* Miscellaneous

* - all criteria were met for this parameter

Blank Contamination

Iron (89 ug/L) and copper (0.51 ug/L) were reported in the method blanks. Action levels were calculated at five times the blank concentrations and then were compared to sample results. Low level detections of iron in samples SW-1 and SW-2 were below the action level and were qualified non-detect (U). Low level detections of copper in a subset of samples were below the action level and were qualified non-detect (U). Qualified results are summarized in Table 3 and were assigned qualification reason code BL1.

2.4 Wet Chemistry

Data were evaluated for the following parameters:

* Collection and Preservation
* Holding Times
* Data Completeness
* Blank Contamination
* Duplicates
* LCS
  MS
* Miscellaneous

* - all criteria were met for this parameter

MS

Percent recovery of alkalinity (49) in the MS associated with sample CFW-5 was below the 80-120 laboratory control limits, indicating potential low bias. Positive and non-detected results for alkalinity in all samples were qualified estimated (J/UJ). Qualified results are summarized in Table 3 and were assigned reason code MS-L.

2.5 Radiological Parameters

Data were evaluated for the following parameters:

* Collection and Preservation
* Holding Times
* Data Completeness
* Blank Contamination
* Duplicates
* LCS
* MS
* Miscellaneous

* - all criteria were met for this parameter

The results of all associated quality control measurements were within control limits, and sample results were determined to be usable as reported by the laboratory.

References:

U.S. Environmental Protection Agency (USEPA), 1996. "Region I, EPA-New England Data Validation Functional Guidelines for Evaluating Environmental Analyses, Parts I and II," Quality Assurance Unit Staff; Office of Environmental Measurement and Evaluation; December, 1996.

Yankee Nuclear Power Station (YNPS), 2012. "YNPS Groundwater Monitoring Program." ISFSI Radiation Protection, RP-05: Revision 5, October 18, 2012.

Science Applications International Corporation (SAIC), 2002. "Laboratory Data Validation Guidelines for Evaluating Radionuclide Analyses." Thomas L. Rucker, Ph.D. and C. Matrin Johnson, Jr.; Revision 7, April, 2002.

Data Validator: Julie Ricardi April 9, 2014

Julie Ricardi

Senior Reviewed: Bradley B. LaForest, NRCC-EAC April 16, 2014

Bradley B. LaForest

TABLE 1 - SUMMARY OF SAMPLE[illegible]ND ANALYTICAL METHODS
DATA VALIDATION SUMMARY
YANKEE NUCLEAR POWER STATION
ROWE, MASSACHUSETTS

SDG: YR-009

SDG	Media	Location	Sample Date	Sample ID	Class / Analysis Method / Fraction / QC Code	VOC SW846 8260B Total	COD EPA 410.4 Total	Alk SM 2320B Total	Metals SW846 6020A Total
YR-009	GW	CFW-1	3/5/2014	CFW-1	FS	36	1	1	13
YR-009	GW	CFW-5	3/4/2014	CFW-5	FS	36	1	1	13
YR-009	GW	CFW-5	3/4/2014	CFW-5 DUP	FD	36	1	1	13
YR-009	GW	CFW-6	3/5/2014	CFW-6	FS	36	1	1	13
YR-009	GW	MW-104A	3/6/2014	MW-104A	FS				
YR-009	GW	MW-104A	3/6/2014	MW-104A DUP	FD				
YR-009	GW	MW-105B	3/5/2014	MW-105B	FS				
YR-009	GW	MW-106A	3/4/2014	MW-106A	FS				
YR-009	GW	MW-107C	3/5/2014	MW-107C	FS				
YR-009	BW	QC	3/4/2014	TB-009	TB	36			
YR-009	BW	QC	3/5/2014	TB-010	TB	36			
YR-009	BW	QC	3/6/2014	EB-005	EB				
YR-009	SW	Monroe Dam	3/4/2014	Monroe Dam	FS				
YR-009	SW	SP-1	3/4/2014	SP-1	FS	36			8
YR-009	SW	SW-011	3/6/2014	SW-011	FS				
YR-009	SW	SW-1	3/5/2014	SW-1	FS	36	1	1	13
YR-009	SW	SW-2	3/4/2014	SW-2	FS	36	1	1	13
YR-009	SW	SW-3	3/4/2014	SW-3	FS	36	1	1	13
YR-009	SW	SW-4	3/4/2014	SW-4	FS	36	1	1	13
YR-009	SW	SW-408	3/6/2014	SW-408	FS				
YR-009	SW	SW-5	3/4/2014	SW-5	FS	36	1	1	13

NOTES:

QC Code -
FS = field sample, FD = field duplicate, TB = trip blank, EB = equipment blank

Media -
GW = groundwater
SW = surface water
BW = blank water

Prepared by: BJS 4/7/2014
Checked by: JAR 4/9/2014

TABLE 1 - SUMMARY OF SAMPLE[illegible]ND ANALYTICAL METHODS
DATA VALIDATION SUMMARY
YANKEE NUCLEAR POWER STATION
ROWE, MASSACHUSETTS

SDG: YR-009

SDG	Media	Location	Sample Date	Sample ID	Class / Analysis Method / Fraction / QC Code	Metals SW846 6020A Dissolved	Metals SW846 7470A Total	Metals SW846 7470A Dissolved	EDB SW846 8011 Total
YR-009	GW	CFW-1	3/5/2014	CFW-1	FS		1		1
YR-009	GW	CFW-5	3/4/2014	CFW-5	FS		1		1
YR-009	GW	CFW-5	3/4/2014	CFW-5 DUP	FD		1		1
YR-009	GW	CFW-6	3/5/2014	CFW-6	FS		1		1
YR-009	GW	MW-104A	3/6/2014	MW-104A	FS				
YR-009	GW	MW-104A	3/6/2014	MW-104A DUP	FD				
YR-009	GW	MW-105B	3/5/2014	MW-105B	FS				
YR-009	GW	MW-106A	3/4/2014	MW-106A	FS				
YR-009	GW	MW-107C	3/5/2014	MW-107C	FS				
YR-009	BW	QC	3/4/2014	TB-009	TB				1
YR-009	BW	QC	3/5/2014	TB-010	TB				1
YR-009	BW	QC	3/6/2014	EB-005	EB				
YR-009	SW	Monroe Dam	3/4/2014	Monroe Dam	FS				
YR-009	SW	SP-1	3/4/2014	SP-1	FS		1		1
YR-009	SW	SW-011	3/6/2014	SW-011	FS	7		1	
YR-009	SW	SW-1	3/5/2014	SW-1	FS		1		1
YR-009	SW	SW-2	3/4/2014	SW-2	FS		1		1
YR-009	SW	SW-3	3/4/2014	SW-3	FS		1		1
YR-009	SW	SW-4	3/4/2014	SW-4	FS		1		1
YR-009	SW	SW-408	3/6/2014	SW-408	FS	7		1	
YR-009	SW	SW-5	3/4/2014	SW-5	FS		1		1

NOTES:

QC Code -
FS = field sample, FD = field duplicate, TB = trip blank, EB = equipment blank

Media -
GW = groundwater
SW = surface water
BW = blank water

Prepared by: BJS 4/7/2014
Checked by: JAR 4/9/2014

TABLE 1 - SUMMARY OF SAMPLE. ND ANALYTICAL METHODS
DATA VALIDATION SUMMARY
YANKEE NUCLEAR POWER STATION
ROWE, MASSACHUSETTS

SDG: YR-009

SDG	Media	Location	Sample Date	Sample ID	Class / Analysis Method / Fraction / QC Code	Cyanide SW846 9012B Total	Anions SW846 9056A Total	RAD EPA 901.1 Total	RAD EPA 905.0 Modified Total
YR-009	GW	CFW-1	3/5/2014	CFW-1	FS	1	3		
YR-009	GW	CFW-5	3/4/2014	CFW-5	FS	1	3		
YR-009	GW	CFW-5	3/4/2014	CFW-5 DUP	FD	1	3		
YR-009	GW	CFW-6	3/5/2014	CFW-6	FS	1	3		
YR-009	GW	MW-104A	3/6/2014	MW-104A	FS			9	1
YR-009	GW	MW-104A	3/6/2014	MW-104A DUP	FD			9	1
YR-009	GW	MW-105B	3/5/2014	MW-105B	FS			9	1
YR-009	GW	MW-106A	3/4/2014	MW-106A	FS			9	1
YR-009	GW	MW-107C	3/5/2014	MW-107C	FS			9	1
YR-009	BW	QC	3/4/2014	TB-009	TB				
YR-009	BW	QC	3/5/2014	TB-010	TB				
YR-009	BW	QC	3/6/2014	EB-005	EB			9	1
YR-009	SW	Monroe Dam	3/4/2014	Monroe Dam	FS			9	1
YR-009	SW	SP-1	3/4/2014	SP-1	FS			9	1
YR-009	SW	SW-011	3/6/2014	SW-011	FS			9	1
YR-009	SW	SW-1	3/5/2014	SW-1	FS	1	3		
YR-009	SW	SW-2	3/4/2014	SW-2	FS	1	3		
YR-009	SW	SW-3	3/4/2014	SW-3	FS	1	3		
YR-009	SW	SW-4	3/4/2014	SW-4	FS	1	3		
YR-009	SW	SW-408	3/6/2014	SW-408	FS			9	1
YR-009	SW	SW-5	3/4/2014	SW-5	FS	1	3		

NOTES:

QC Code -
FS = field sample, FD = field duplicate, TB = trip blank, EB = equipment blank

Media -
GW = groundwater
SW = surface water
BW = blank water

Prepared by: BJS 4/7/2014
Checked by: JAR 4/9/2014

TABLE 1 - SUMMARY OF SAMPLE[illegible]ND ANALYTICAL METHODS
DATA VALIDATION SUMMARY
YANKEE NUCLEAR POWER STATION
ROWE, MASSACHUSETTS

SDG: YR-009

					Class	RAD	TDS
					Analysis Method	EPA 906.0 Modified	SM 2540C
					Fraction	Total	Total
SDG	Media	Location	Sample Date	Sample ID	QC Code		
YR-009	GW	CFW-1	3/5/2014	CFW-1	FS		1
YR-009	GW	CFW-5	3/4/2014	CFW-5	FS		1
YR-009	GW	CFW-5	3/4/2014	CFW-5 DUP	FD		1
YR-009	GW	CFW-6	3/5/2014	CFW-6	FS		1
YR-009	GW	MW-104A	3/6/2014	MW-104A	FS	1	
YR-009	GW	MW-104A	3/6/2014	MW-104A DUP	FD	1	
YR-009	GW	MW-105B	3/5/2014	MW-105B	FS	1	
YR-009	GW	MW-106A	3/4/2014	MW-106A	FS	1	
YR-009	GW	MW-107C	3/5/2014	MW-107C	FS	1	
YR-009	BW	QC	3/4/2014	TB-009	TB		
YR-009	BW	QC	3/5/2014	TB-010	TB		
YR-009	BW	QC	3/6/2014	EB-005	EB	1	
YR-009	SW	Monroe Dam	3/4/2014	Monroe Dam	FS	1	
YR-009	SW	SP-1	3/4/2014	SP-1	FS	1	
YR-009	SW	SW-011	3/6/2014	SW-011	FS	1	
YR-009	SW	SW-1	3/5/2014	SW-1	FS		1
YR-009	SW	SW-2	3/4/2014	SW-2	FS		1
YR-009	SW	SW-3	3/4/2014	SW-3	FS		1
YR-009	SW	SW-4	3/4/2014	SW-4	FS		1
YR-009	SW	SW-408	3/6/2014	SW-408	FS	1	
YR-009	SW	SW-5	3/4/2014	SW-5	FS		1

NOTES:

QC Code -
FS = field sample, FD = field duplicate, TB = trip blank, EB = equipment blank

Media -
GW = groundwater
SW = surface water
BW = blank water

Prepared by: BJS 4/7/2014
Checked by: JAR 4/9/2014

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA VALIDATION SUMMARY
YANKEE NUCLEAR POWER STATION
ROWE, MASSACHUSETTS

SDG: YR-009 CHEMICAL DATA

		Sample Delivery Group		YR-009		YR-009		YR-009		YR-009		YR-009	
		Location		CFW-1		CFW-5		CFW-5		CFW-6		QC	
		Sample Date		3/5/2014		3/4/2014		3/4/2014		3/5/2014		3/4/2014	
		Sample ID		CFW-1		CFW-5		CFW-5 DUP		CFW-6		TB-009	
		Qc Code		FS		FS		FD		FS		TB	
Analysis	Fraction	Parameter	Units	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
SW846 8260B	T	1,1,1,2-Tetrachloroethane	ug/L	1	U	1	U	1	U	1	U	1	U
SW846 8260B	T	1,1,1-Trichloroethane	ug/L	1	U	1	U	1	U	1	U	1	U
SW846 8260B	T	1,1,2,2-Tetrachloroethane	ug/L	1	U	1	U	1	U	1	U	1	U
SW846 8260B	T	1,1,2-Trichloroethane	ug/L	1	U	1	U	1	U	1	U	1	U
SW846 8260B	T	1,1-Dichloroethane	ug/L	1	U	1	U	1	U	1	U	1	U
SW846 8260B	T	1,1-Dichloroethene	ug/L	1	U	1	U	1	U	1	UJ	1	U
SW846 8260B	T	1,2,4-Trichlorobenzene	ug/L	1	U	1	U	1	U	1	U	1	U
SW846 8260B	T	1,2-Dichlorobenzene	ug/L	1	U	1	U	1	U	1	U	1	U
SW846 8260B	T	1,2-Dichloroethane	ug/L	1	U	1	U	1	U	1	U	1	U
SW846 8260B	T	1,2-Dichloropropane	ug/L	1	U	1	U	1	U	1	U	1	U
SW846 8260B	T	1,3-Dichlorobenzene	ug/L	1	U	1	U	1	U	1	U	1	U
SW846 8260B	T	1,3-Dichloropropene (total)	ug/L	2	U	2	U	2	U	2	U	2	U
SW846 8260B	T	1,4-Dichlorobenzene	ug/L	1	U	1	U	1	U	1	U	1	U
SW846 8260B	T	2-Butanone	ug/L	5	U	5	U	5	U	5	U	5	U
SW846 8260B	T	4-Methyl-2-pentanone	ug/L	5	U	5	U	5	U	5	U	5	U
SW846 8260B	T	Acetone	ug/L	5	U	5	U	5	U	5	U	5	U
SW846 8260B	T	Benzene	ug/L	1	U	1	U	1	U	1	U	1	U
SW846 8260B	T	Bromodichloromethane	ug/L	1	U	1	U	1	U	1	U	1	U
SW846 8260B	T	Bromoform	ug/L	1	U	1	U	1	U	1	U	1	U
SW846 8260B	T	Bromomethane	ug/L	1	U	1	U	1	U	1	U	1	U
SW846 8260B	T	Carbon tetrachloride	ug/L	1	U	1	U	1	U	1	U	1	U
SW846 8260B	T	Chlorobenzene	ug/L	1	U	1	U	1	U	1	U	1	U
SW846 8260B	T	Chlorodibromomethane	ug/L	1	U	1	U	1	U	1	U	1	U
SW846 8260B	T	Chloroform	ug/L	1	U	1	U	1	U	1	U	1	U
SW846 8260B	T	Cis-1,2-Dichloroethene	ug/L	1	U	1	U	1	U	1	U	1	U
SW846 8260B	T	Ethyl benzene	ug/L	1	U	1	U	1	U	1	U	1	U
SW846 8260B	T	Methyl Tertbutyl Ether	ug/L	1	U	1	U	1	U	1	U	1	U
SW846 8260B	T	Methylene chloride	ug/L	5	U	1.59	J	1.65	J	5	U	5	U
SW846 8260B	T	Naphthalene	ug/L	1	U	1	U	1	U	1	U	1	U
SW846 8260B	T	Styrene	ug/L	1	U	1	U	1	U	1	U	1	U
SW846 8260B	T	Tetrachloroethene	ug/L	1	U	1	U	1	U	1	U	1	U
SW846 8260B	T	Toluene	ug/L	1	U	1	U	1	U	1	U	1	U
SW846 8260B	T	trans-1,2-Dichloroethene	ug/L	1	U	1	U	1	U	1	U	1	U
SW846 8260B	T	Trichloroethene	ug/L	1	U	1	U	1	U	1	U	1	U
SW846 8260B	T	Vinyl chloride	ug/L	1	U	1	U	1	U	1	U	1	U
SW846 8260B	T	Xylenes, Total	ug/L	3	U	3	U	3	U	3	U	3	U
SW846 6020A	T	Arsenic	ug/L	1.7	U	1.7	U	1.7	U	1.7	U		
SW846 6020A	T	Barium	ug/L	41.7		48.7		48.9		64.7			
SW846 6020A	T	Cadmium	ug/L	0.11	U	0.11	U	0.11	U	0.135	J		

Prepared by: BJS 4/14/2014
Checked by: JAR 4/14/2014

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA VALIDATION SUMMARY
YANKEE NUCLEAR POWER STATION
ROWE, MASSACHUSETTS

SDG: YR-009 CHEMICAL DATA

		Sample Delivery Group	YR-009		YR-009		YR-009		YR-009		YR-009	
		Location	CFW-1		CFW-5		CFW-5		CFW-6		QC	
		Sample Date	3/5/2014		3/4/2014		3/4/2014		3/5/2014		3/4/2014	
		Sample ID	CFW-1		CFW-5		CFW-5 DUP		CFW-6		TB-009	
		Qc Code	FS		FS		FD		FS		TB	
Analysis	Fraction	Parameter	Units	Result Qualifier	Result Qualifier		Result Qualifier		Result Qualifier		Result Qualifier	
SW846 6020A	T	Calcium	ug/L	2,510	28,300		28,700		15,900			
SW846 6020A	T	Chromium	ug/L	6.73 J	2 U		2 U		2 U			
SW846 6020A	T	Copper	ug/L	7.52	0.358 U		0.35 U		0.783 U			
SW846 6020A	T	Iron	ug/L	13,400	45,700		47,400		35,500			
SW846 6020A	T	Lead	ug/L	2	0.5 U		0.5 U		0.5 U			
SW846 6020A	T	Manganese	ug/L	233	3610		3760		3740			
SW846 6020A	T	Selenium	ug/L	1.5 U	1.5 U		1.5 U		1.5 U			
SW846 6020A	T	Silver	ug/L	1.34	0.2 U		0.2 U		0.2 U			
SW846 6020A	T	Sodium	ug/L	935	2360		2290		4000			
SW846 6020A	T	Thallium	ug/L									
SW846 6020A	T	Zinc	ug/L	18.9	3.5 U		3.5 U		5.81 J			
SW846 6020A	D	Arsenic	ug/L									
SW846 6020A	D	Barium	ug/L									
SW846 6020A	D	Cadmium	ug/L									
SW846 6020A	D	Chromium	ug/L									
SW846 6020A	D	Lead	ug/L									
SW846 6020A	D	Selenium	ug/L									
SW846 6020A	D	Silver	ug/L									
SW846 7470A	T	Mercury	ug/L	0.067 U	0.067 U		0.067 U		0.067 U			
SW846 7470A	D	Mercury	ug/L									
EPA 410.4	T	Chemical Oxygen Demand	mg/L	6.9 J	34.4		34.4		39.4			
SM 2320B	T	Total Alkalinity, as CaCO3	mg/L	4.07 J	136 J		139 J		108 J			
SM 2540C	T	Total Dissolved Solids	mg/L	8.57 J	163		190		130			
SW846 8011	T	1,2-Dibromoethane	ug/L	0.0197 U	0.0196 U		0.0196 U		0.0199 U		0.02 U	
SW846 9012B	T	Cyanide, Total	ug/L	1.67 U	1.67 U		1.67 U		1.67 U			
SW846 9056A	T	Chloride	mg/L	0.594	1.37		1.37		0.911			
SW846 9056A	T	Nitrate as N	mg/L	0.033 U	0.033 U		0.033 U		0.033 U			
SW846 9056A	T	Sulfate	mg/L	3.43	0.226 J		0.249 J		1.49			

NOTES:
Units -
ug/L = microgram per liter
mg/L = milligram per liter
Validation Qualifiers -
U = Not detected or qualified not detected due to blank contamination
J = Value is estimated
Fraction -
D = Dissolved
T = Total

Prepared by: BJS 4/14/2014
Checked by: JAR 4/14/2014

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA VALIDATION SUMMARY
YANKEE NUCLEAR POWER STATION
ROWE, MASSACHUSETTS

SDG: YR-009 CHEMICAL DATA

		Sample Delivery Group	YR-009		YR-009		YR-009		YR-009		YR-009	
		Location	QC		SP-1		SW-011		SW-1		SW-2	
		Sample Date	3/5/2014		3/4/2014		3/6/2014		3/5/2014		3/4/2014	
		Sample ID	TB-010		SP-1		SW-011		SW-1		SW-2	
		Qc Code	TB		FS		FS		FS		FS	
Analysis	Fraction	Parameter	Units	Result Qualifier	Result Qualifier		Result Qualifier		Result Qualifier		Result Qualifier	
SW846 8260B	T	1,1,1,2-Tetrachloroethane	ug/L	1 U	1 U				1 U		1 U	
SW846 8260B	T	1,1,1-Trichloroethane	ug/L	1 U	1 U				1 U		1 U	
SW846 8260B	T	1,1,2,2-Tetrachloroethane	ug/L	1 U	1 U				1 U		1 U	
SW846 8260B	T	1,1,2-Trichloroethane	ug/L	1 U	1 U				1 U		1 U	
SW846 8260B	T	1,1-Dichloroethane	ug/L	1 U	1 U				1 U		1 U	
SW846 8260B	T	1,1-Dichloroethene	ug/L	1 U	1 U				1 U		1 U	
SW846 8260B	T	1,2,4-Trichlorobenzene	ug/L	1 U	1 U				1 U		1 U	
SW846 8260B	T	1,2-Dichlorobenzene	ug/L	1 U	1 U				1 U		1 U	
SW846 8260B	T	1,2-Dichloroethane	ug/L	1 U	1 U				1 U		1 U	
SW846 8260B	T	1,2-Dichloropropane	ug/L	1 U	1 U				1 U		1 U	
SW846 8260B	T	1,3-Dichlorobenzene	ug/L	1 U	1 U				1 U		1 U	
SW846 8260B	T	1,3-Dichloropropene (total)	ug/L	2 U	2 U				2 U		2 U	
SW846 8260B	T	1,4-Dichlorobenzene	ug/L	1 U	1 U				1 U		1 U	
SW846 8260B	T	2-Butanone	ug/L	5 U	5 U				5 U		5 U	
SW846 8260B	T	4-Methyl-2-pentanone	ug/L	5 U	5 U				5 U		5 U	
SW846 8260B	T	Acetone	ug/L	5 U	5 U				5 U		5 U	
SW846 8260B	T	Benzene	ug/L	1 U	1 U				1 U		1 U	
SW846 8260B	T	Bromodichloromethane	ug/L	1 U	1 U				1 U		1 U	
SW846 8260B	T	Bromoform	ug/L	1 U	1 U				1 U		1 U	
SW846 8260B	T	Bromomethane	ug/L	1 U	1 U				1 U		1 U	
SW846 8260B	T	Carbon tetrachloride	ug/L	1 U	1 U				1 U		1 U	
SW846 8260B	T	Chlorobenzene	ug/L	1 U	1 U				1 U		1 U	
SW846 8260B	T	Chlorodibromomethane	ug/L	1 U	1 U				1 U		1 U	
SW846 8260B	T	Chloroform	ug/L	1 U	1 U				1 U		1 U	
SW846 8260B	T	Cis-1,2-Dichloroethene	ug/L	1 U	1 U				1 U		1 U	
SW846 8260B	T	Ethyl benzene	ug/L	1 U	1 U				1 U		1 U	
SW846 8260B	T	Methyl Tertbutyl Ether	ug/L	1 U	1 U				1 U		1 U	
SW846 8260B	T	Methylene chloride	ug/L	5 U	5 U				5 U		1.51 J	
SW846 8260B	T	Naphthalene	ug/L	1 U	1 U				1 U		1 U	
SW846 8260B	T	Styrene	ug/L	1 U	1 U				1 U		1 U	
SW846 8260B	T	Tetrachloroethene	ug/L	1 U	1 U				1 U		1 U	
SW846 8260B	T	Toluene	ug/L	1 U	1 U				1 U		1 U	
SW846 8260B	T	trans-1,2-Dichloroethene	ug/L	1 U	1 U				1 U		1 U	
SW846 8260B	T	Trichloroethene	ug/L	1 U	1 U				1 U		1 U	
SW846 8260B	T	Vinyl chloride	ug/L	1 U	1 U				1 U		1 U	
SW846 8260B	T	Xylenes, Total	ug/L	3 U	3 U				3 U		3 U	
SW846 6020A	T	Arsenic	ug/L		1.7 U				1.7 U		1.7 U	
SW846 6020A	T	Barium	ug/L		23				9.67		10.8	
SW846 6020A	T	Cadmium	ug/L		0.11 U				0.11 U		0.11 U	

Prepared by: BJS 4/14/2014
Checked by: JAR 4/14/2014

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA VALIDATION SUMMARY
YANKEE NUCLEAR POWER STATION
ROWE, MASSACHUSETTS

SDG: YR-009 CHEMICAL DATA

		Sample Delivery Group	YR-009		YR-009		YR-009		YR-009		YR-009	
		Location	QC		SP-1		SW-011		SW-1		SW-2	
		Sample Date	3/5/2014		3/4/2014		3/6/2014		3/5/2014		3/4/2014	
		Sample ID	TB-010		SP-1		SW-011		SW-1		SW-2	
		Qc Code	TB		FS		FS		FS		FS	
Analysis	Fraction	Parameter	Units	Result Qualifier	Result Qualifier		Result Qualifier		Result Qualifier		Result Qualifier	
SW846 6020A	T	Calcium	ug/L						2,840		2,250	
SW846 6020A	T	Chromium	ug/L		2 U				2.15 J		2 U	
SW846 6020A	T	Copper	ug/L						0.424 U		0.643 U	
SW846 6020A	T	Iron	ug/L						198 U		203 U	
SW846 6020A	T	Lead	ug/L		0.5 U				0.5 U		0.5 U	
SW846 6020A	T	Manganese	ug/L						20.2		8.35	
SW846 6020A	T	Selenium	ug/L		1.5 U				1.5 U		1.5 U	
SW846 6020A	T	Silver	ug/L		0.627 J				0.2 U		0.2 U	
SW846 6020A	T	Sodium	ug/L						1100		857	
SW846 6020A	T	Thallium	ug/L		0.45 U							
SW846 6020A	T	Zinc	ug/L						3.5 U		3.56 J	
SW846 6020A	D	Arsenic	ug/L				1.7 U					
SW846 6020A	D	Barium	ug/L				10.4					
SW846 6020A	D	Cadmium	ug/L				0.11 U					
SW846 6020A	D	Chromium	ug/L				2 U					
SW846 6020A	D	Lead	ug/L				0.5 U					
SW846 6020A	D	Selenium	ug/L				1.5 U					
SW846 6020A	D	Silver	ug/L				0.2 U					
SW846 7470A	T	Mercury	ug/L		0.067 U				0.067 U		0.067 U	
SW846 7470A	D	Mercury	ug/L				0.067 U					
EPA 410.4	T	Chemical Oxygen Demand	mg/L						6.67 U		11.9 J	
SM 2320B	T	Total Alkalinity, as CaCO3	mg/L						4.07 J		0.725 UJ	
SM 2540C	T	Total Dissolved Solids	mg/L						4.29 J		5.71 J	
SW846 8011	T	1,2-Dibromoethane	ug/L	0.02 U	0.0198 U				0.0201 U		0.0197 U	
SW846 9012B	T	Cyanide, Total	ug/L						1.67 U		1.67 U	
SW846 9056A	T	Chloride	mg/L						0.47		0.571	
SW846 9056A	T	Nitrate as N	mg/L						0.14		0.0937 J	
SW846 9056A	T	Sulfate	mg/L						5.91		5.22	

NOTES:
Units -
ug/L = microgram per liter
mg/L = milligram per liter
Validation Qualifiers -
U = Not detected or qualified not detected due to blank contamination
J = Value is estimated
Fraction -
D = Dissolved
T = Total

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA VALIDATION SUMMARY
YANKEE NUCLEAR POWER STATION
ROWE, MASSACHUSETTS

SDG: YR-009 CHEMICAL DATA

		Sample Delivery Group		YR-009		YR-009		YR-009		YR-009	
		Location		SW-3		SW-4		SW-408		SW-5	
		Sample Date		3/4/2014		3/4/2014		3/6/2014		3/4/2014	
		Sample ID		SW-3		SW-4		SW-408		SW-5	
		Qc Code		FS		FS		FS		FS	
Analysis	Fraction	Parameter	Units	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
SW846 8260B	T	1,1,1,2-Tetrachloroethane	ug/L	1	U	1	U			1	U
SW846 8260B	T	1,1,1-Trichloroethane	ug/L	1	U	1	U			1	U
SW846 8260B	T	1,1,2,2-Tetrachloroethane	ug/L	1	U	1	U			1	U
SW846 8260B	T	1,1,2-Trichloroethane	ug/L	1	U	1	U			1	U
SW846 8260B	T	1,1-Dichloroethane	ug/L	1	U	1	U			1	U
SW846 8260B	T	1,1-Dichloroethene	ug/L	1	U	1	U			1	U
SW846 8260B	T	1,2,4-Trichlorobenzene	ug/L	1	U	1	U			1	U
SW846 8260B	T	1,2-Dichlorobenzene	ug/L	1	U	1	U			1	U
SW846 8260B	T	1,2-Dichloroethane	ug/L	1	U	1	U			1	U
SW846 8260B	T	1,2-Dichloropropane	ug/L	1	U	1	U			1	U
SW846 8260B	T	1,3-Dichlorobenzene	ug/L	1	U	1	U			1	U
SW846 8260B	T	1,3-Dichloropropene (total)	ug/L	2	U	2	U			2	U
SW846 8260B	T	1,4-Dichlorobenzene	ug/L	1	U	1	U			1	U
SW846 8260B	T	2-Butanone	ug/L	5	U	5	U			5	U
SW846 8260B	T	4-Methyl-2-pentanone	ug/L	5	U	5	U			5	U
SW846 8260B	T	Acetone	ug/L	5	U	5	U			5	U
SW846 8260B	T	Benzene	ug/L	1	U	1	U			1	U
SW846 8260B	T	Bromodichloromethane	ug/L	1	U	1	U			1	U
SW846 8260B	T	Bromoform	ug/L	1	U	1	U			1	U
SW846 8260B	T	Bromomethane	ug/L	1	U	1	U			1	U
SW846 8260B	T	Carbon tetrachloride	ug/L	1	U	1	U			1	U
SW846 8260B	T	Chlorobenzene	ug/L	1	U	1	U			1	U
SW846 8260B	T	Chlorodibromomethane	ug/L	1	U	1	U			1	U
SW846 8260B	T	Chloroform	ug/L	1	U	1	U			1	U
SW846 8260B	T	Cis-1,2-Dichloroethene	ug/L	1	U	1	U			1	U
SW846 8260B	T	Ethyl benzene	ug/L	1	U	1	U			1	U
SW846 8260B	T	Methyl Tertbutyl Ether	ug/L	1	U	1	U			1	U
SW846 8260B	T	Methylene chloride	ug/L	1.73	J	5	U			5	U
SW846 8260B	T	Naphthalene	ug/L	1	U	1	U			1	U
SW846 8260B	T	Styrene	ug/L	1	U	1	U			1	U
SW846 8260B	T	Tetrachloroethene	ug/L	1	U	1	U			1	U
SW846 8260B	T	Toluene	ug/L	1	U	1	U			1	U
SW846 8260B	T	trans-1,2-Dichloroethene	ug/L	1	U	1	U			1	U
SW846 8260B	T	Trichloroethene	ug/L	1	U	1	U			1	U
SW846 8260B	T	Vinyl chloride	ug/L	1	U	1	U			1	U
SW846 8260B	T	Xylenes, Total	ug/L	3	U	3	U			3	U
SW846 6020A	T	Arsenic	ug/L	1.7	U	1.7	U			1.7	U
SW846 6020A	T	Barium	ug/L	10.3		11.8				10.5	
SW846 6020A	T	Cadmium	ug/L	0.11	U	0.11	U			0.11	U

Prepared by: BJS 4/14/2014
Checked by: JAR 4/14/2014

TABLE 2 - SUMMARY OF A[illegible]YTICAL RESULTS
DATA VALIDATION SUMMARY
YANKEE NUCLEAR POWER STATION
ROWE, MASSACHUSETTS

SDG: YR-009 CHEMICAL DATA

		Sample Delivery Group	YR-009		YR-009		YR-009		YR-009	
		Location	SW-3		SW-4		SW-408		SW-5	
		Sample Date	3/4/2014		3/4/2014		3/6/2014		3/4/2014	
		Sample ID	SW-3		SW-4		SW-408		SW-5	
		Qc Code	FS		FS		FS		FS	
Analysis	Fraction	Parameter	Units	Result Qualifier	Result Qualifier		Result Qualifier		Result Qualifier	
SW846 6020A	T	Calcium	ug/L	2,540	3,040				2,330	
SW846 6020A	T	Chromium	ug/L	2 U	2 U				2 U	
SW846 6020A	T	Copper	ug/L	0.669 U	0.807 U				0.365 U	
SW846 6020A	T	Iron	ug/L	514	1,810				496	
SW846 6020A	T	Lead	ug/L	0.5 U	0.5 U				0.5 U	
SW846 6020A	T	Manganese	ug/L	66.1	212				65.7	
SW846 6020A	T	Selenium	ug/L	1.5 U	1.5 U				1.5 U	
SW846 6020A	T	Silver	ug/L	0.2 U	0.2 U				0.2 U	
SW846 6020A	T	Sodium	ug/L	893	967				859	
SW846 6020A	T	Thallium	ug/L							
SW846 6020A	T	Zinc	ug/L	3.5 U	3.5 U				3.5 U	
SW846 6020A	D	Arsenic	ug/L				1.7 U			
SW846 6020A	D	Barium	ug/L				10.3			
SW846 6020A	D	Cadmium	ug/L				0.11 U			
SW846 6020A	D	Chromium	ug/L				2 U			
SW846 6020A	D	Lead	ug/L				0.5 U			
SW846 6020A	D	Selenium	ug/L				1.5 U			
SW846 6020A	D	Silver	ug/L				0.2 U			
SW846 7470A	T	Mercury	ug/L	0.067 U	0.067 U				0.067 U	
SW846 7470A	D	Mercury	ug/L				0.067 U			
EPA 410.4	T	Chemical Oxygen Demand	mg/L	19.4 J	6.67 U				31.9	
SM 2320B	T	Total Alkalinity, as CaCO3	mg/L	5.6 J	8.14 J				3.56 J	
SM 2540C	T	Total Dissolved Solids	mg/L	4.29 J	15.7				37.1	
SW846 8011	T	1,2-Dibromoethane	ug/L	0.0197 U	0.0197 U				0.0198 UJ	
SW846 9012B	T	Cyanide, Total	ug/L	1.67 U	1.67 U				1.67 U	
SW846 9056A	T	Chloride	mg/L	0.673	0.61				0.526	
SW846 9056A	T	Nitrate as N	mg/L	0.0986 J	0.0932 J				0.087 J	
SW846 9056A	T	Sulfate	mg/L	5.13	5.05				4.72	

NOTES:
Units -
ug/L = microgram per liter
mg/L = milligram per liter
Validation Qualifiers -
U = Not detected or qualified not detected due to blank contamination
J = Value is estimated
Fraction -
D = Dissolved
T = Total

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA VALIDATION SUMMARY
YANKEE NUCLEAR POWER STATION
ROWE, MASSACHUSETTS

SDG: YR-009 RADIOLOGICAL DATA

		Sample Delivery Group	YR-009			YR-009			YR-009		
		Location	Monroe Dam			MW-104A			MW-104A		
		Sample Date	3/4/2014			3/6/2014			3/6/2014		
		Sample ID	Monroe Dam			MW-104A			MW-104A DUP		
		QC Code	FS			FS			FD		
Analysis	**Parameter**	**Units**	Result	Qualifier	Uncertainty	Result	Qualifier	Uncertainty	Result	Qualifier	Uncertainty
EPA 901.1	Antimony-125	pCi/L	4.81	U	8.12	-6.59	U	9.24	-11.5	U	10.6
EPA 901.1	Cesium-134	pCi/L	-0.714	U	3.13	0.874	U	3.33	-0.739	U	4.1
EPA 901.1	Cesium-137	pCi/L	-0.0557	U	2.52	-2.28	U	4.04	-1.47	U	4
EPA 901.1	Cobalt-60	pCi/L	-2.39	U	3.33	0.694	U	2.98	-0.547	U	3.06
EPA 901.1	Europium-152	pCi/L	7.46	U	9.09	4.4	U	10.4	-3.15	U	9.36
EPA 901.1	Europium-154	pCi/L	-3.23	U	7.05	3.3	U	8.46	-3.19	U	8.99
EPA 901.1	Europium-155	pCi/L	-0.478	U	11.8	-4.67	U	14	-7.6	U	12.9
EPA 901.1	Niobium-94	pCi/L	-0.0215	U	2.89	3.61	U	3.9	-2.65	U	2.93
EPA 901.1	Silver-108	pCi/L	-0.699	U	2.69	1.96	U	3.01	0.691	U	2.88
EPA 905.0 Modified	Strontium-90	pCi/L	-0.699	U	0.963	-0.507	U	0.943	0.918	U	1.17
EPA 906.0 Modified	Tritium	pCi/L	-142	U	280	189	U	308	419	U	337

NOTES:

Units -

pCi/L = picocurie per liter

Validation Qualifiers -

U = Not detected or qualified not detected due to blank contamination

Prepared by: BJS 4/14/2014
Checked by: JAR 4/14/2014

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA VALIDATION SUMMARY
YANKEE NUCLEAR POWER STATION
ROWE, MASSACHUSETTS

SDG: YR-009 RADIOLOGICAL DATA

	Sample Delivery Group	YR-009			YR-009			YR-009		
	Location	MW-105B			MW-106A			MW-107C		
	Sample Date	3/5/2014			3/4/2014			3/5/2014		
	Sample ID	MW-105B			MW-106A			MW-107C		
	QC Code	FS			FS			FS		
Analysis	**Parameter**	**Units**	Result	Qualifier	Uncertainty	Result	Qualifier	Uncertainty	Result	Qualifier	Uncertainty
EPA 901.1	Antimony-125	pCi/L	2.1	U	9.74	0.847	U	8.39	4.86	U	8.39
EPA 901.1	Cesium-134	pCi/L	1.57	U	3.9	-1.33	U	2.98	0.117	U	2.51
EPA 901.1	Cesium-137	pCi/L	-0.922	U	4.14	-0.163	U	2.95	-2.16	U	3.21
EPA 901.1	Cobalt-60	pCi/L	-1.06	U	3.75	-2.08	U	2.78	0.193	U	2.85
EPA 901.1	Europium-152	pCi/L	-7.41	U	11.8	0.272	U	9.06	1.02	U	8.55
EPA 901.1	Europium-154	pCi/L	10.1	U	18.7	-6.69	U	9.48	5.01	U	6.36
EPA 901.1	Europium-155	pCi/L	-8.97	U	10.8	2.87	U	10.2	5.75	U	12.7
EPA 901.1	Niobium-94	pCi/L	5.32	U	6.19	0.402	U	2.57	-0.02	U	2.28
EPA 901.1	Silver-108	pCi/L	1.03	U	3.23	-0.0791	U	2.46	1.31	U	2.72
EPA 905.0 Modified	Strontium-90	pCi/L	0.143	U	1.04	0.731	U	1.13	-0.0662	U	0.481
EPA 906.0 Modified	Tritium	pCi/L	1640		512	39.3	U	293	8910		1880

NOTES:
Units -
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Validation Qualifiers -
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TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA VALIDATION SUMMARY
YANKEE NUCLEAR POWER STATION
ROWE, MASSACHUSETTS

SDG: YR-009 RADIOLOGICAL DATA

Sample Delivery Group			YR-009			YR-009			YR-009		
Location			QC			SP-1			SW-011		
Sample Date			3/6/2014			3/4/2014			3/6/2014		
Sample ID			EB-005			SP-1			SW-011		
QC Code			EB			FS			FS		
Analysis	**Parameter**	**Units**	Result	Qualifier	Uncertainty	Result	Qualifier	Uncertainty	Result	Qualifier	Uncertainty
EPA 901.1	Antimony-125	pCi/L	-3.1	U	6.58	1.58	U	7.37	4.28	U	6.56
EPA 901.1	Cesium-134	pCi/L	0.704	U	2.82	2.82	U	3.32	-1.6	U	2.93
EPA 901.1	Cesium-137	pCi/L	2.48	U	2.63	2.44	U	2.98	1.98	U	2.7
EPA 901.1	Cobalt-60	pCi/L	-0.979	U	2.68	-2.5	U	3.34	2.13	U	3.54
EPA 901.1	Europium-152	pCi/L	-1.18	U	6.7	-2.06	U	8.29	8.04	U	8.37
EPA 901.1	Europium-154	pCi/L	4.93	U	7.33	-2.92	U	7.36	4.3	U	8.02
EPA 901.1	Europium-155	pCi/L	2.2	U	8.33	7.47	U	12.1	2.21	U	9.99
EPA 901.1	Niobium-94	pCi/L	-1.54	U	2.05	0.271	U	2.72	-1.25	U	2.66
EPA 901.1	Silver-108	pCi/L	-0.389	U	2.13	-1.37	U	2.57	-0.892	U	1.91
EPA 905.0 Modified	Strontium-90	pCi/L	-0.514	U	0.952	0.378	U	1.06	-0.061	U	0.976
EPA 906.0 Modified	Tritium	pCi/L	-86.1	U	281	127	U	303	3.14	U	291

NOTES:
Units -
pCi/L = picocurie per liter
Validation Qualifiers -
U = Not detected or qualified not detected due to blanl

Prepared by: BJS 4/14/2014
Checked by: JAR 4/14/2014

TABLE 2 - SUMMARY OF ANALYTICAL RESULTS
DATA VALIDATION SUMMARY
YANKEE NUCLEAR POWER STATION
ROWE, MASSACHUSETTS

SDG: YR-009 RADIOLOGICAL DATA

	Sample Delivery Group		YR-009		
	Location		SW-408		
	Sample Date		3/6/2014		
	Sample ID		SW-408		
	QC Code		FS		
Analysis	**Parameter**	**Units**	Result	Qualifier	Uncertainty
EPA 901.1	Antimony-125	pCi/L	0.973	U	7.65
EPA 901.1	Cesium-134	pCi/L	-1.2	U	3
EPA 901.1	Cesium-137	pCi/L	0.0007	U	3.22
EPA 901.1	Cobalt-60	pCi/L	1.82	U	3.14
EPA 901.1	Europium-152	pCi/L	-0.124	U	9.6
EPA 901.1	Europium-154	pCi/L	-0.0006	U	7.61
EPA 901.1	Europium-155	pCi/L	-8.7	U	12.2
EPA 901.1	Niobium-94	pCi/L	1.58	U	2.87
EPA 901.1	Silver-108	pCi/L	0.812	U	2.73
EPA 905.0 Modified	Strontium-90	pCi/L	-0.165	U	1.03
EPA 906.0 Modified	Tritium	pCi/L	-63.9	U	286

NOTES:
Units -
pCi/L = picocurie per liter
Validation Qualifiers -
U = Not detected or qualified not detected due to blanl

Prepared by: BJS 4/14/2014
Checked by: JAR 4/14/2014

TABLE 3 - SUMMARY OF DATA ALIFICATION ACTIONS
DATA VALIDATION SUMMARY
YANKEE NUCLEAR POWER STATION
ROWE, MASSACHUSETTS

SDG: YR-009

SDG	Analysis Method	Lab Sample ID	Field Sample ID	Parameter Name	Lab Result	Lab Qualifier	Validated Result	Validation Qualifier	Val Reason Code	Units
YR-009	SM 2320B	344004001	CFW-5	Total Alkalinity, as CaCO3	136		136	J	MS-L	mg/L
YR-009	SM 2320B	344004002	CFW-5 DUP	Total Alkalinity, as CaCO3	139		139	J	MS-L	mg/L
YR-009	SM 2320B	344004003	SW-2	Total Alkalinity, as CaCO3	0.725	U	0.725	UJ	MS-L	mg/L
YR-009	SM 2320B	344004004	SW-3	Total Alkalinity, as CaCO3	5.6		5.6	J	MS-L	mg/L
YR-009	SM 2320B	344004005	SW-4	Total Alkalinity, as CaCO3	8.14		8.14	J	MS-L	mg/L
YR-009	SM 2320B	344004006	SW-5	Total Alkalinity, as CaCO3	3.56		3.56	J	MS-L	mg/L
YR-009	SM 2320B	344004008	CFW-1	Total Alkalinity, as CaCO3	4.07		4.07	J	MS-L	mg/L
YR-009	SM 2320B	344004009	SW-1	Total Alkalinity, as CaCO3	4.07		4.07	J	MS-L	mg/L
YR-009	SM 2320B	344004014	CFW-6	Total Alkalinity, as CaCO3	108		108	J	MS-L	mg/L
YR-009	SW846 6020A	344004001	CFW-5	Copper	0.358	J	0.358	U	BL1	ug/L
YR-009	SW846 6020A	344004003	SW-2	Copper	0.643	J	0.643	U	BL1	ug/L
YR-009	SW846 6020A	344004003	SW-2	Iron	203		203	U	BL1	ug/L
YR-009	SW846 6020A	344004004	SW-3	Copper	0.669	J	0.669	U	BL1	ug/L
YR-009	SW846 6020A	344004005	SW-4	Copper	0.807	J	0.807	U	BL1	ug/L
YR-009	SW846 6020A	344004006	SW-5	Copper	0.365	J	0.365	U	BL1	ug/L
YR-009	SW846 6020A	344004009	SW-1	Copper	0.424	J	0.424	U	BL1	ug/L
YR-009	SW846 6020A	344004009	SW-1	Iron	198		198	U	BL1	ug/L
YR-009	SW846 6020A	344004014	CFW-6	Copper	0.783	J	0.783	U	BL1	ug/L
YR-009	SW846 8011	344004006	SW-5	1,2-Dibromoethane	0.0198	U	0.0198	UJ	SS-L	ug/L
YR-009	SW846 8260B	344004014	CFW-6	1,1-Dichloroethene	1	U	1	UJ	LCS-L	ug/L

NOTES:

Val Reason Codes:

MS-L = Matrix spike percent recovery below control limits
BL1 = Method or instrument blank contamination
SS-L = Surrogate percent recovery below control limits
LCS-L = Laboratory control sample percent recovery below control limits

Prepared by: BJS 4/10/2014
Checked by: JAR 4/11/2014

ATTACHMENT C

ASSESSMENT OF DATA QUALITY

List each analysis individually. Use a separate table for QC. Duplicates, Blanks and Spikes. (Several pages will be required for each batch)

Alkalinity

Sample ID	Analysis Date	Sample Designator (Note 1)	All Scheduled Analyses Performed?	Sample Processing Comments?	Units Correct?	Assessment Criteria (Note 2) (Note 3)
CFW-5	3/7/14	FS	Yes	O.K.	Yes	See attached checklist
CFW-5 DUP	3/7/14	DU (Field)	Yes	O.K.	Yes	See attached checklist
SW-2	3/7/14	FS	Yes	O.K.	Yes	See attached checklist
SW-3	3/7/14	FS	Yes	O.K.	Yes	See attached checklist
SW-4	3/7/14	FS	Yes	O.K.	Yes	See attached checklist
SW-5	3/7/14	FS	Yes	O.K.	Yes	See attached checklist
CFW-1	3/7/14	FS	Yes	O.K.	Yes	See attached checklist
SW-1	3/7/14	FS	Yes	O.K.	Yes	See attached checklist
CFW-6	3/7/14	FS	Yes	O.K.	Yes	See attached checklist
Laboratory QC						
QC1203046490	3/7/14	BL	Yes	O.K.	Yes	See attached checklist
QC1203046500	3/7/14	QC	Yes	O.K.	Yes	See attached checklist
QC1203046493	3/7/14	DU	Yes	O.K.	Yes	See attached checklist
QC1203046494	3/7/14	SK	Yes	O.K.	Yes	See attached checklist

NOTE

1.0 FS = Field Sample, BL = Blank, QC = Lab Quality Control. DU = Duplicate, SK = Spike

2.0 Reported MDC ≤ Required MDC for FS, DU, BL. Yield for all samples evaluated when reported.

3.0 Requirements for SK, DU, and QC per section D.

I. All Requested analyses performed on all samples? ____X___Yes _____No

II. Resolution of Sample Processing/Missing Analytes comments:

No processing issues or missing analytes.

III. Resolution of Sample Processing/Missing Analytes comments:

IV. No processing issues or missing analytes.

V. Resolution of Anomalies in QC, Duplicates, Spikes, or Blanks (Identified above):

See attached checklist for details; sample qualifications required.

ATTACHMENT C
ASSESSMENT OF DATA QUALITY

VI. Data verification calculation sheets are attached(at least one calculation per batch) NA

Reviewer Julie Nicholas Date April 9, 2014

ATTACHMENT C

ASSESSMENT OF DATA QUALITY

List each analysis individually. Use a separate table for QC. Duplicates, Blanks and Spikes. (Several pages will be required for each batch)

Nitrate/Chloride/Sulfate

Sample ID	Analysis Date	Sample Designator (Note 1)	All Scheduled Analyses Performed?	Sample Processing Comments?	Units Correct?	Assessment Criteria (Note 2) (Note 3)
CFW-5	3/5/14	FS	Yes	O.K.	Yes	See attached checklist
CFW-5 DUP	3/5/14	DU (Field)	Yes	O.K.	Yes	See attached checklist
SW-2	3/5/14	FS	Yes	O.K.	Yes	See attached checklist
SW-3	3/5/14	FS	Yes	O.K.	Yes	See attached checklist
SW-4	3/5/14	FS	Yes	O.K.	Yes	See attached checklist
SW-5	3/5/14	FS	Yes	O.K.	Yes	See attached checklist
CFW-1	3/6/14	FS	Yes	O.K.	Yes	See attached checklist
SW-1	3/6/14	FS	Yes	O.K.	Yes	See attached checklist
CFW-6	3/6/14	FS	Yes	O.K.	Yes	See attached checklist
Laboratory QC						
QC1203045859	3/5/14	BL	Yes	O.K.	Yes	See attached checklist
QC1203045862	3/5/14	QC	Yes	O.K.	Yes	See attached checklist
QC1203045860	3/5/14	DU	Yes	O.K.	Yes	See attached checklist
QC1203045861	3/5/14	SK	Yes	O.K.	Yes	See attached checklist
QC1203046335	3/6/14	BL	Yes	O.K.	Yes	See attached checklist
QC1203046338	3/6/14	QC	Yes	O.K.	Yes	See attached checklist
QC1203046336	3/6/14	DU	Yes	O.K.	Yes	See attached checklist
QC1203046337	3/6/14	SK	Yes	O.K.	Yes	See attached checklist

NOTE

1.0 FS = Field Sample, BL = Blank, QC = Lab Quality Control. DU = Duplicate, SK = Spike

2.0 Reported MDC ≤ Required MDC for FS, DU, BL. Yield for all samples evaluated when reported.

3.0 Requirements for SK, DU, and QC per section D.

I. All Requested analyses performed on all samples? ____X___Yes _____No

II. Resolution of Sample Processing/Missing Analytes comments:

No processing issues or missing analytes.

III. Resolution of Sample Processing/Missing Analytes comments:

ATTACHMENT C

ASSESSMENT OF DATA QUALITY

IV. No processing issues or missing analytes.

V. Resolution of Anomalies in QC, Duplicates, Spikes, or Blanks (Identified above):

See attached checklist for details; no sample qualifications required.

VI. Data verification calculation sheets are attached(at least one calculation per batch) NA

Reviewer Julie Nilan Date April 9, 2014

ATTACHMENT C
ASSESSMENT OF DATA QUALITY

List each analysis individually. Use a separate table for QC. Duplicates, Blanks and Spikes. (Several pages will be required for each batch)

Chemical Oxygen Demand (COD)

Sample ID	Analysis Date	Sample Designator (Note 1)	All Scheduled Analyses Performed?	Sample Processing Comments?	Units Correct?	Assessment Criteria (Note 2) (Note 3)
CFW-5	3/7/14	FS	Yes	O.K.	Yes	See attached checklist
CFW-5 DUP	3/7/14	DU (Field)	Yes	O.K.	Yes	See attached checklist
SW-2	3/7/14	FS	Yes	O.K.	Yes	See attached checklist
SW-3	3/7/14	FS	Yes	O.K.	Yes	See attached checklist
SW-4	3/7/14	FS	Yes	O.K.	Yes	See attached checklist
SW-5	3/7/14	FS	Yes	O.K.	Yes	See attached checklist
CFW-1	3/7/14	FS	Yes	O.K.	Yes	See attached checklist
SW-1	3/7/14	FS	Yes	O.K.	Yes	See attached checklist
CFW-6	3/7/14	FS	Yes	O.K.	Yes	See attached checklist
Laboratory QC						
QC1203046857	3/7/14	BL	Yes	O.K.	Yes	See attached checklist
QC1203046862	3/7/14	QC	Yes	O.K.	Yes	See attached checklist
QC1203046858	3/7/14	DU	Yes	O.K.	Yes	See attached checklist
QC1203046860	3/7/14	SK	Yes	O.K.	Yes	See attached checklist

NOTE

1.0 FS = Field Sample, BL = Blank, QC = Lab Quality Control. DU = Duplicate, SK = Spike

2.0 Reported MDC ≤ Required MDC for FS, DU, BL. Yield for all samples evaluated when reported.

3.0 Requirements for SK, DU, and QC per section D.

I. All Requested analyses performed on all samples? ____X___Yes _____No

II. Resolution of Sample Processing/Missing Analytes comments:

No processing issues or missing analytes.

III. Resolution of Sample Processing/Missing Analytes comments:

IV. No processing issues or missing analytes.

V. Resolution of Anomalies in QC, Duplicates, Spikes, or Blanks (Identified above):

See attached checklist for details; no sample qualifications required.

ATTACHMENT C
ASSESSMENT OF DATA QUALITY

VI. Data verification calculation sheets are attached(at least one calculation per batch) NA

Reviewer Julie Nicoud Date April 9, 2014

ATTACHMENT C
ASSESSMENT OF DATA QUALITY

List each analysis individually. Use a separate table for QC. Duplicates, Blanks and Spikes. (Several pages will be required for each batch)

Cyanide

Sample ID	Analysis Date	Sample Designator (Note 1)	All Scheduled Analyses Performed?	Sample Processing Comments?	Units Correct?	Assessment Criteria (Note 2) (Note 3)
CFW-5	3/7/14	FS	Yes	O.K.	Yes	See attached checklist
CFW-5 DUP	3/7/14	DU (Field)	Yes	O.K.	Yes	See attached checklist
SW-2	3/7/14	FS	Yes	O.K.	Yes	See attached checklist
SW-3	3/7/14	FS	Yes	O.K.	Yes	See attached checklist
SW-4	3/7/14	FS	Yes	O.K.	Yes	See attached checklist
SW-5	3/7/14	FS	Yes	O.K.	Yes	See attached checklist
CFW-1	3/7/14	FS	Yes	O.K.	Yes	See attached checklist
SW-1	3/7/14	FS	Yes	O.K.	Yes	See attached checklist
CFW-6	3/7/14	FS	Yes	O.K.	Yes	See attached checklist
Laboratory QC						
QC1203046003	3/7/14	BL	Yes	O.K.	Yes	See attached checklist
QC1203046006	3/7/14	QC	Yes	O.K.	Yes	See attached checklist
QC1203046660	3/7/14	DU	Yes	O.K.	Yes	See attached checklist
QC1203046662	3/7/14	SK	Yes	O.K.	Yes	See attached checklist

NOTE

1.0 FS = Field Sample, BL = Blank, QC = Lab Quality Control. DU = Duplicate, SK = Spike

2.0 Reported MDC ≤ Required MDC for FS, DU, BL. Yield for all samples evaluated when reported.

3.0 Requirements for SK, DU, and QC per section D.

I. All Requested analyses performed on all samples? ___X___Yes _____No

II. Resolution of Sample Processing/Missing Analytes comments:

No processing issues or missing analytes.

III. Resolution of Sample Processing/Missing Analytes comments:

IV. No processing issues or missing analytes.

V. Resolution of Anomalies in QC, Duplicates, Spikes, or Blanks (Identified above):

See attached checklist for details; no sample qualifications required.

ATTACHMENT C
ASSESSMENT OF DATA QUALITY

VI. Data verification calculation sheets are attached(at least one calculation per batch) NA

Reviewer Julie Rivard Date April 9, 2014

ATTACHMENT C

ASSESSMENT OF DATA QUALITY

List each analysis individually. Use a separate table for QC. Duplicates, Blanks and Spikes. (Several pages will be required for each batch)

Dissolved Mercury

Sample ID	Analysis Date	Sample Designator (Note 1)	All Scheduled Analyses Performed?	Sample Processing Comments?	Units Correct?	Assessment Criteria (Note 2) (Note 3)
SW-011	3/20/14	FS	Yes	O.K.	Yes	See attached checklist
SW-408	3/20/14	FS	Yes	O.K.	Yes	See attached checklist
Laboratory QC						
QC1203052361	3/20/14	BL	Yes	O.K.	Yes	See attached checklist
QC1203052362	3/20/14	QC	Yes	O.K.	Yes	See attached checklist
QC1203052370	3/20/14	SK	Yes	O.K.	Yes	See attached checklist
QC1203052369	3/20/14	DU	Yes	O.K.	Yes	See attached checklist

NOTE

1.0 FS = Field Sample, BL = Blank, QC = Lab Quality Control. DU = Duplicate, SK = Spike

2.0 Reported MDC ≤ Required MDC for FS, DU, BL. Yield for all samples evaluated when reported.

3.0 Requirements for SK, DU, and QC per section D.

I. All Requested analyses performed on all samples? ____X___Yes _____No

II. Resolution of Sample Processing/Missing Analytes comments:

No processing issues or missing analytes.

III. Resolution of Sample Processing/Missing Analytes comments:

IV. No processing issues or missing analytes.

V. Resolution of Anomalies in QC, Duplicates, Spikes, or Blanks (Identified above):

See attached checklist for details; no sample qualifications required.

VI. Data verification calculation sheets are attached(at least one calculation per batch) NA

Reviewer Julie Miranda Date April 9, 2014

ATTACHMENT C
ASSESSMENT OF DATA QUALITY

List each analysis individually. Use a separate table for QC. Duplicates, Blanks and Spikes. (Several pages will be required for each batch)

Dissolved Metals (excluding Mercury)

Sample ID	Analysis Date	Sample Designator (Note 1)	All Scheduled Analyses Performed?	Sample Processing Comments?	Units Correct?	Assessment Criteria (Note 2) (Note 3)
SW-011	3/19/14	FS	Yes	O.K.	Yes	See attached checklist
SW-408	3/19/14	FS	Yes	O.K.	Yes	See attached checklist
Laboratory QC						
QC1203048202	3/19/14	BL	Yes	O.K.	Yes	See attached checklist
QC1203048203	3/19/14	QC	Yes	O.K.	Yes	See attached checklist
QC1203048204	3/19/14	SK	Yes	O.K.	Yes	See attached checklist
QC1203048205	3/19/14	SK	Yes	O.K.	Yes	See attached checklist

NOTE

1.0 FS = Field Sample, BL = Blank, QC = Lab Quality Control. DU = Duplicate, SK = Spike

2.0 Reported MDC ≤ Required MDC for FS, DU, BL. Yield for all samples evaluated when reported.

3.0 Requirements for SK, DU, and QC per section D.

I. All Requested analyses performed on all samples? ____X___Yes _____No

II. Resolution of Sample Processing/Missing Analytes comments:

No processing issues or missing analytes.

III. Resolution of Sample Processing/Missing Analytes comments:

IV. No processing issues or missing analytes.

V. Resolution of Anomalies in QC, Duplicates, Spikes, or Blanks (Identified above):

See attached checklist for details; no sample qualifications required.

VI. Data verification calculation sheets are attached(at least one calculation per batch) NA

Reviewer Julie Rivard Date April 9, 2014

ATTACHMENT C

ASSESSMENT OF DATA QUALITY

List each analysis individually. Use a separate table for QC. Duplicates, Blanks and Spikes. (Several pages will be required for each batch)

1,2-Dibromoethane (EDB)

Sample ID	Analysis Date	Sample Designator (Note 1)	All Scheduled Analyses Performed?	Sample Processing Comments?	Units Correct?	Assessment Criteria (Note 2) (Note 3)
CFW-5	3/17/14	FS	Yes	O.K.	Yes	See attached checklist
CFW-5 DUP	3/17/14	DU (Field)	Yes	O.K.	Yes	See attached checklist
SW-2	3/17/14	FS	Yes	O.K.	Yes	See attached checklist
SW-3	3/17/14	FS	Yes	O.K.	Yes	See attached checklist
SW-4	3/17/14	FS	Yes	O.K.	Yes	See attached checklist
SW-5	3/17/14	FS	Yes	O.K.	Yes	See attached checklist
TB-009	3/17/14	BL (Trip)	Yes	O.K.	Yes	See attached checklist
CFW-1	3/17/14	FS	Yes	O.K.	Yes	See attached checklist
SW-1	3/17/14	FS	Yes	O.K.	Yes	See attached checklist
SP-1	3/17/14	FS	Yes	O.K.	Yes	See attached checklist
CFW-6	3/17/14	FS	Yes	O.K.	Yes	See attached checklist
TB-010	3/17/14	BL (Trip)	Yes	O.K.	Yes	See attached checklist
Laboratory QC						
QC1203046506	3/17/14	BL	Yes	O.K.	Yes	See attached checklist
QC1203046507	3/17/14	QC	Yes	O.K.	Yes	See attached checklist
QC1203046508	3/17/14	SK	Yes	O.K.	Yes	See attached checklist
QC1203046509	3/17/14	SK	Yes	O.K.	Yes	See attached checklist

NOTE

1.0 FS = Field Sample, BL = Blank, QC = Lab Quality Control. DU = Duplicate, SK = Spike

2.0 Reported MDC ≤ Required MDC for FS, DU, BL. Yield for all samples evaluated when reported.

3.0 Requirements for SK, DU, and QC per section D.

I. All Requested analyses performed on all samples? ___X___ Yes _____ No

II. Resolution of Sample Processing/Missing Analytes comments:

No processing issues or missing analytes.

III. Resolution of Sample Processing/Missing Analytes comments:

IV. No processing issues or missing analytes.

ATTACHMENT C
ASSESSMENT OF DATA QUALITY

V. Resolution of Anomalies in QC, Duplicates, Spikes, or Blanks (Identified above):
See attached checklist for details; sample qualifications required.

VI. Data verification calculation sheets are attached(at least one calculation per batch) NA
Reviewer Julie Marki Date April 8, 2014

ATTACHMENT C

ASSESSMENT OF DATA QUALITY

List each analysis individually. Use a separate table for QC. Duplicates, Blanks and Spikes. (Several pages will be required for each batch)

Gamma Spec

Sample ID	Analysis Date	Sample Designator (Note 1)	All Scheduled Analyses Performed?	Sample Processing Comments?	Units Correct?	Assessment Criteria (Note 2) (Note 3)
SP-1	3/12/14	FS	Yes	O.K.	Yes	See attached checklist
Monroe Dam	3/12/14	FS	Yes	O.K.	Yes	See attached checklist
MW-106A	3/12/14	FS	Yes	O.K.	Yes	See attached checklist
MW-107C	3/12/14	FS	Yes	O.K.	Yes	See attached checklist
MW-105B	3/12/14	FS	Yes	O.K.	Yes	See attached checklist
MW-104A	3/12/14	FS	Yes	O.K.	Yes	See attached checklist
MW-104A DUP	3/12/14	DU (Field)	Yes	O.K.	Yes	See attached checklist
SW-011	3/12/14	FS	Yes	O.K.	Yes	See attached checklist
SW-408	3/12/14	FS	Yes	O.K.	Yes	See attached checklist
EB-005	3/12/14	BL (Equipment)	Yes	O.K.	Yes	See attached checklist
Laboratory QC						
QC1203047877	3/12/14	BL	Yes	O.K.	Yes	See attached checklist
QC1203047879	3/12/14	QC	Yes	O.K.	Yes	See attached checklist
QC1203047878	3/12/14	DU	Yes	O.K.	Yes	See attached checklist

NOTE

1.0 FS = Field Sample, BL = Blank, QC = Lab Quality Control. DU = Duplicate, SK = Spike

2.0 Reported MDC ≤ Required MDC for FS, DU, BL. Yield for all samples evaluated when reported.

3.0 Requirements for SK, DU, and QC per section D.

I. All Requested analyses performed on all samples? ___X___Yes _____No

II. Resolution of Sample Processing/Missing Analytes comments:

No processing issues or missing analytes.

III. Resolution of Sample Processing/Missing Analytes comments:

IV. No processing issues or missing analytes.

V. Resolution of Anomalies in QC, Duplicates, Spikes, or Blanks (Identified above):

ATTACHMENT C

ASSESSMENT OF DATA QUALITY

See attached checklist for details; no sample qualifications required.

VI. Data verification calculation sheets are attached(at least one calculation per batch) NA

Reviewer Julie Miard Date April 4, 2014

ATTACHMENT C

ASSESSMENT OF DATA QUALITY

List each analysis individually. Use a separate table for QC. Duplicates, Blanks and Spikes. (Several pages will be required for each batch)

Strontium-90

Sample ID	Analysis Date	Sample Designator (Note 1)	All Scheduled Analyses Performed?	Sample Processing Comments?	Units Correct?	Assessment Criteria (Note 2) (Note 3)
SP-1	3/26/14	FS	Yes	O.K.	Yes	See attached checklist
Monroe Dam	3/26/14	FS	Yes	O.K.	Yes	See attached checklist
MW-106A	3/26/14	FS	Yes	O.K.	Yes	See attached checklist
MW-107C	3/26/14	FS	Yes	O.K.	Yes	See attached checklist
MW-105B	3/26/14	FS	Yes	O.K.	Yes	See attached checklist
MW-104A	3/26/14	FS	Yes	O.K.	Yes	See attached checklist
MW-104A DUP	3/26/14	DU (Field)	Yes	O.K.	Yes	See attached checklist
SW-011	3/26/14	FS	Yes	O.K.	Yes	See attached checklist
SW-408	3/26/14	FS	Yes	O.K.	Yes	See attached checklist
EB-005	3/26/14	BL (Equipment)	Yes	O.K.	Yes	See attached checklist
Laboratory QC						
QC1203047444	3/26/14	BL	Yes	O.K.	Yes	See attached checklist
QC1203047447	3/26/14	QC	Yes	O.K.	Yes	See attached checklist
QC1203047445	3/26/14	DU	Yes	O.K.	Yes	See attached checklist
QC1203047446	3/26/14	SK	Yes	O.K.	Yes	See attached checklist

NOTE

1.0 FS = Field Sample, BL = Blank, QC = Lab Quality Control. DU = Duplicate, SK = Spike

2.0 Reported MDC ≤ Required MDC for FS, DU, BL. Yield for all samples evaluated when reported.

3.0 Requirements for SK, DU, and QC per section D.

I. All Requested analyses performed on all samples? ____X___Yes _____No

II. Resolution of Sample Processing/Missing Analytes comments:

No processing issues or missing analytes.

III. Resolution of Sample Processing/Missing Analytes comments:

IV. No processing issues or missing analytes.

ATTACHMENT C

ASSESSMENT OF DATA QUALITY

V. Resolution of Anomalies in QC, Duplicates, Spikes, or Blanks (Identified above):

See attached checklist for details; no sample qualifications required.

VI. Data verification calculation sheets are attached(at least one calculation per batch) NA

Reviewer Julie Miranda Date April 4, 2014

ATTACHMENT C
ASSESSMENT OF DATA QUALITY

List each analysis individually. Use a separate table for QC. Duplicates, Blanks and Spikes. (Several pages will be required for each batch)

Total Dissolved Solids (TDS)

Sample ID	Analysis Date	Sample Designator (Note 1)	All Scheduled Analyses Performed?	Sample Processing Comments?	Units Correct?	Assessment Criteria (Note 2) (Note 3)
CFW-5	3/7/14	FS	Yes	O.K.	Yes	See attached checklist
CFW-5 DUP	3/7/14	DU (Field)	Yes	O.K.	Yes	See attached checklist
SW-2	3/7/14	FS	Yes	O.K.	Yes	See attached checklist
SW-3	3/7/14	FS	Yes	O.K.	Yes	See attached checklist
SW-4	3/7/14	FS	Yes	O.K.	Yes	See attached checklist
SW-5	3/7/14	FS	Yes	O.K.	Yes	See attached checklist
CFW-1	3/7/14	FS	Yes	O.K.	Yes	See attached checklist
SW-1	3/7/14	FS	Yes	O.K.	Yes	See attached checklist
CFW-6	3/7/14	FS	Yes	O.K.	Yes	See attached checklist
Laboratory QC						
QC1203046673	3/7/14	BL	Yes	O.K.	Yes	See attached checklist
QC1203046677	3/7/14	QC	Yes	O.K.	Yes	See attached checklist
QC1203046674	3/7/14	DU	Yes	O.K.	Yes	See attached checklist

NOTE

1.0 FS = Field Sample, BL = Blank, QC = Lab Quality Control. DU = Duplicate, SK = Spike

2.0 Reported MDC ≤ Required MDC for FS, DU, BL. Yield for all samples evaluated when reported.

3.0 Requirements for SK, DU, and QC per section D.

I. All Requested analyses performed on all samples? ____X___Yes _____No

II. Resolution of Sample Processing/Missing Analytes comments:

No processing issues or missing analytes.

III. Resolution of Sample Processing/Missing Analytes comments:

IV. No processing issues or missing analytes.

V. Resolution of Anomalies in QC, Duplicates, Spikes, or Blanks (Identified above):

See attached checklist for details; no sample qualifications required.

ATTACHMENT C

ASSESSMENT OF DATA QUALITY

VI. Data verification calculation sheets are attached(at least one calculation per batch) NA

Reviewer Julie Rivard Date April 9, 2014

ATTACHMENT C
ASSESSMENT OF DATA QUALITY

List each analysis individually. Use a separate table for QC. Duplicates, Blanks and Spikes. (Several pages will be required for each batch)

Total Mercury

Sample ID	Analysis Date	Sample Designator (Note 1)	All Scheduled Analyses Performed?	Sample Processing Comments?	Units Correct?	Assessment Criteria (Note 2) (Note 3)
CFW-5	3/20/14	FS	Yes	O.K.	Yes	See attached checklist
CFW-5 DUP	3/20/14	DU (Field)	Yes	O.K.	Yes	See attached checklist
SW-2	3/20/14	FS	Yes	O.K.	Yes	See attached checklist
SW-3	3/20/14	FS	Yes	O.K.	Yes	See attached checklist
SW-4	3/20/14	FS	Yes	O.K.	Yes	See attached checklist
SW-5	3/20/14	FS	Yes	O.K.	Yes	See attached checklist
CFW-1	3/20/14	FS	Yes	O.K.	Yes	See attached checklist
SW-1	3/20/14	FS	Yes	O.K.	Yes	See attached checklist
CFW-6	3/20/14	FS	Yes	O.K.	Yes	See attached checklist
Laboratory QC						
QC1203052361	3/20/14	BL	Yes	O.K.	Yes	See attached checklist
QC1203052362	3/20/14	QC	Yes	O.K.	Yes	See attached checklist
QC1203052369	3/20/14	DU	Yes	O.K.	Yes	See attached checklist
QC1203052370	3/20/14	SK	Yes	O.K.	Yes	See attached checklist

NOTE

1.0 FS = Field Sample, BL = Blank, QC = Lab Quality Control. DU = Duplicate, SK = Spike

2.0 Reported MDC ≤ Required MDC for FS, DU, BL. Yield for all samples evaluated when reported.

3.0 Requirements for SK, DU, and QC per section D.

I. All Requested analyses performed on all samples? ___X___Yes _____No

II. Resolution of Sample Processing/Missing Analytes comments:

No processing issues or missing analytes.

III. Resolution of Sample Processing/Missing Analytes comments:

IV. No processing issues or missing analytes.

V. Resolution of Anomalies in QC, Duplicates, Spikes, or Blanks (Identified above):

See attached checklist for details; no sample qualifications required.

ATTACHMENT C
ASSESSMENT OF DATA QUALITY

VI. Data verification calculation sheets are attached(at least one calculation per batch) NA

Reviewer Julie Miranda Date April 9, 2014

ATTACHMENT C
ASSESSMENT OF DATA QUALITY

List each analysis individually. Use a separate table for QC. Duplicates, Blanks and Spikes. (Several pages will be required for each batch)

Total Metals (excluding Mercury)

Sample ID	Analysis Date	Sample Designator (Note 1)	All Scheduled Analyses Performed?	Sample Processing Comments?	Units Correct?	Assessment Criteria (Note 2) (Note 3)
CFW-5	3/20-26/14	FS	Yes	O.K.	Yes	See attached checklist
CFW-5 DUP	3/20-26/14	DU (Field)	Yes	O.K.	Yes	See attached checklist
SW-2	3/20-26/14	FS	Yes	O.K.	Yes	See attached checklist
SW-3	3/20-26/14	FS	Yes	O.K.	Yes	See attached checklist
SW-4	3/20-26/14	FS	Yes	O.K.	Yes	See attached checklist
SW-5	3/20-26/14	FS	Yes	O.K.	Yes	See attached checklist
CFW-1	3/20-26/14	FS	Yes	O.K.	Yes	See attached checklist
SW-1	3/20-26/14	FS	Yes	O.K.	Yes	See attached checklist
SP-1	3/20-26/14	FS	Yes	O.K.	Yes	See attached checklist
CFW-6	3/20-26/14	FS	Yes	O.K.	Yes	See attached checklist
Laboratory QC						
QC1203046393	3/20-22/14	BL	Yes	O.K.	Yes	See attached checklist
QC1203046394	3/20-22/14	QC	Yes	O.K.	Yes	See attached checklist
QC1203046395	3/20-22/14	SK	Yes	O.K.	Yes	See attached checklist
QC1203046396	3/20-22/14	SK	Yes	O.K.	Yes	See attached checklist
QC1203055827	3/26/14	BL	Yes	O.K.	Yes	See attached checklist
QC1203055828	3/26/14	QC	Yes	O.K.	Yes	See attached checklist
QC1203055829	3/26/14	SK	Yes	O.K.	Yes	See attached checklist
QC1203055830	3/26/14	SK	Yes	O.K.	Yes	See attached checklist

NOTE

1.0 FS = Field Sample, BL = Blank, QC = Lab Quality Control. DU = Duplicate, SK = Spike

2.0 Reported MDC ≤ Required MDC for FS, DU, BL. Yield for all samples evaluated when reported.

3.0 Requirements for SK, DU, and QC per section D.

I. All Requested analyses performed on all samples? ___X___ Yes _____ No

II. Resolution of Sample Processing/Missing Analytes comments:

No processing issues or missing analytes.

ATTACHMENT C

ASSESSMENT OF DATA QUALITY

III. Resolution of Sample Processing/Missing Analytes comments:

IV. No processing issues or missing analytes.

V. Resolution of Anomalies in QC, Duplicates, Spikes, or Blanks (Identified above):

See attached checklist for details; sample qualifications required.

VI. Data verification calculation sheets are attached(at least one calculation per batch) NA

Reviewer Julie Rinard Date April 9, 2014

ATTACHMENT C

ASSESSMENT OF DATA QUALITY

List each analysis individually. Use a separate table for QC. Duplicates, Blanks and Spikes. (Several pages will be required for each batch)

Tritium

Sample ID	Analysis Date	Sample Designator (Note 1)	All Scheduled Analyses Performed?	Sample Processing Comments?	Units Correct?	Assessment Criteria (Note 2) (Note 3)
SP-1	3/13/14	FS	Yes	O.K.	Yes	See attached checklist
Monroe Dam	3/13/14	FS	Yes	O.K.	Yes	See attached checklist
MW-106A	3/13/14	FS	Yes	O.K.	Yes	See attached checklist
MW-107C	3/13/14	FS	Yes	O.K.	Yes	See attached checklist
MW-105B	3/21/14	FS	Yes	O.K.	Yes	See attached checklist
MW-104A	3/13/14	FS	Yes	O.K.	Yes	See attached checklist
MW-104A DUP	3/13/14	DU (Field)	Yes	O.K.	Yes	See attached checklist
SW-011	3/13/14	FS	Yes	O.K.	Yes	See attached checklist
SW-408	3/13/14	FS	Yes	O.K.	Yes	See attached checklist
EB-005	3/13/14	BL (Equipment)	Yes	O.K.	Yes	See attached checklist
Laboratory QC						
QC1203047308	3/13/14	BL	Yes	O.K.	Yes	See attached checklist
QC1203047311	3/13/14	QC	Yes	O.K.	Yes	See attached checklist
QC1203047309	3/13/14	DU	Yes	O.K.	Yes	See attached checklist
QC1203047310	3/13/14	SK	Yes	O.K.	Yes	See attached checklist
QC1203051255	3/21/14	BL	Yes	O.K.	Yes	See attached checklist
QC1203051258	3/21/14	QC	Yes	O.K.	Yes	See attached checklist
QC1203051256	3/21/14	DU	Yes	O.K.	Yes	See attached checklist
QC1203051257	3/21/14	SK	Yes	O.K.	Yes	See attached checklist

NOTE

1.0 FS = Field Sample, BL = Blank, QC = Lab Quality Control. DU = Duplicate, SK = Spike

2.0 Reported MDC ≤ Required MDC for FS, DU, BL. Yield for all samples evaluated when reported.

3.0 Requirements for SK, DU, and QC per section D.

I. All Requested analyses performed on all samples? ___X___Yes _____No

II. Resolution of Sample Processing/Missing Analytes comments:

No processing issues or missing analytes.

ATTACHMENT C
ASSESSMENT OF DATA QUALITY

III. Resolution of Sample Processing/Missing Analytes comments:

IV. No processing issues or missing analytes.

V. Resolution of Anomalies in QC, Duplicates, Spikes, or Blanks (Identified above):
See attached checklist for details; no sample qualifications required.

VI. Data verification calculation sheets are attached(at least one calculation per batch) NA
Reviewer Julie Miranda Date April 4, 2014

Yankee Rowe GW Monitoring
SDG YR-009
GEL Work Order 344004
Duplicate Error Ratio (DER) Calculation Check

			Result	TPU	Duplicate Result	TPU		RPD	DER		QC Type
MW-105B	Tritium		1640	512	1520	491		8	0.17	OK	Lab Dup

RPD relative percent difference
DER duplicate error ratio
TPU total propagated error

Produced by: JAR 4/9/2014

ATTACHMENT C
ASSESSMENT OF DATA QUALITY

List each analysis individually. Use a separate table for QC. Duplicates, Blanks and Spikes. (Several pages will be required for each batch)

Volatile Organic Compounds (VOCs)

Sample ID	Analysis Date	Sample Designator (Note 1)	All Scheduled Analyses Performed?	Sample Processing Comments?	Units Correct?	Assessment Criteria (Note 2) (Note 3)
CFW-5	3/18/14	FS	Yes	O.K.	Yes	See attached checklist
CFW-5 DUP	3/18/14	DU (Field)	Yes	O.K.	Yes	See attached checklist
SW-2	3/18/14	FS	Yes	O.K.	Yes	See attached checklist
SW-3	3/18/14	FS	Yes	O.K.	Yes	See attached checklist
SW-4	3/18/14	FS	Yes	O.K.	Yes	See attached checklist
SW-5	3/18/14	FS	Yes	O.K.	Yes	See attached checklist
TB-009	3/18/14	BL (Trip)	Yes	O.K.	Yes	See attached checklist
CFW-1	3/18/14	FS	Yes	O.K.	Yes	See attached checklist
SW-1	3/18/14	FS	Yes	O.K.	Yes	See attached checklist
SP-1	3/18/14	FS	Yes	O.K.	Yes	See attached checklist
CFW-6	3/19/14	FS	Yes	O.K.	Yes	See attached checklist
TB-010	3/19/14	BL (Trip)	Yes	O.K.	Yes	See attached checklist
Laboratory QC						
QC1203052660	3/18/14	BL	Yes	O.K.	Yes	See attached checklist
QC1203052663	3/18/14	QC	Yes	O.K.	Yes	See attached checklist
QC1203052661	3/18/14	SK	Yes	O.K.	Yes	See attached checklist
QC1203052662	3/18/14	SK	Yes	O.K.	Yes	See attached checklist
QC1203057979	3/19/14	BL	Yes	O.K.	Yes	See attached checklist
QC1203057980	3/18/14	QC	Yes	O.K.	Yes	See attached checklist

NOTE

1.0 FS = Field Sample, BL = Blank, QC = Lab Quality Control. DU = Duplicate, SK = Spike

2.0 Reported MDC ≤ Required MDC for FS, DU, BL. Yield for all samples evaluated when reported.

3.0 Requirements for SK, DU, and QC per section D.

I. All Requested analyses performed on all samples? ____X___Yes _____No

II. Resolution of Sample Processing/Missing Analytes comments:

No processing issues or missing analytes.

ATTACHMENT C

ASSESSMENT OF DATA QUALITY

III. Resolution of Sample Processing/Missing Analytes comments:

IV. No processing issues or missing analytes.

V. Resolution of Anomalies in QC, Duplicates, Spikes, or Blanks (Identified above):

See attached checklist for details; sample qualifications required.

VI. Data verification calculation sheets are attached(at least one calculation per batch) NA

Reviewer Julie Miranda Date April 4, 2014

REGION I TIER II VALIDATION CHECKLIST
Criteria and Qualifications: REGION I Organics Guideline (Draft 12/96)
VOLATILE **

Site: Yankee Rowe Project #: 3617147318.1 Box #: 34404

Sample IDs: See attached tracking sheet or samples listed.

CFW-5	SW-4	CFW-1	TB-010
CFW-SPLIT	SW-5	SW-1	
SW-2	TB009	SP-1	
SW-3		CFW-6	

This checklist is used to document Tier II validation. It can also be used to document Level III validation. During Level III validation, calculation and transcription checks are completed for instrument tuning, surrogates, target compounds, spike recoveries, calibration data, and internal standards as specified in the guideline. These checks are documented on attached validation notes.

** 8260 VOCs and 8011 EDB

YES	NO		
☑	☐	Hold Times (collected 3/4-3/5	Attach list of samples which exceed hold times. Indicate total hold time and qualifiers.
Data completeness			Comments on missing information (if any) and action taken.
☑	☐	Cover page, Forms I-VIII, DC-1, DC-2, and raw data	
☑	☐	Original shipping and receiving documents Chain of Custody (copies)	
☑	☐	All original lab records of sample preparation and analysis (copies)	
GC/MS Instrument Performance Check Chemist Review			Attach copy of Form V if criteria was not met. Highlight criteria not met, list samples affected, and list qualifiers added.
☐ N/A	☐	Form V present and complete for all samples for each 12-hour period samples were analyzed	
☐	☐	Appropriate number of significant figures reported (at least 2)	
☐	☐	Mass/Charge list (m/z) criteria met	
GC/MS Initial Calibration Chemist Review			Attach copy of Form VI if criteria was not met. Highlight criteria not met, list samples affected, and list qualifiers added.
☐ N/A	☐	Form VI present and complete for all samples	
☐	☐	%RSD less than or equal to 30%	
☐	☐	RRF greater than or equal to 0.05	
GC/MS Continuing Calibration Chemist Review			Attach copy of Form VII if criteria was not met. Highlight criteria not met, list samples affected, and list qualifiers added.
☐ N/A	☐	Form VII present and complete for all samples	
☐	☐	%D less than or equal to 25%	
☐	☐	RRF greater than or equal to 0.05.	
Method Blanks			Attach copy of Form IV for all samples. List all contaminants, concentrations and action level.
☑	☐	Form I & IV present and complete for all blanks	
☑	☐	One analyzed per GC/MS system per tune	Attach copy of Form I for contaminated field or trip blanks. Circle all contaminants. Field QC blanks will not be used to determine action levels for non-aqueous samples. Flag samples EB (equipment blank), TB (trip blank), or BB (bottle blank) as indicated in the guideline.
☑	☐	One analyzed per matrix/concentration level	
☐	☑	Contaminants ND	
☐ N/A	☐	A cleaning blank was analyzed after any high concentration sample (exceeding calibration range)	

REGION I TIER II VALIDATION CHECKLIST
Criteria and Qualifications: REGION I Organics Guideline (Draft 12/96)
VOLATILE **

Site: Yankee Rowe Project #: 3617147318.1 Box #: 344004
** 8260 and 8011 (EDB)

Trip/Equipment Blanks TB-009 (3/4): ND TB-010 (3/5): ND			Describe professional judgements and qualifiers if applied.
☐	☐	Contaminants	
Surrogate/System Monitoring Compounds Recovery			Attach copies of Form II (Part 2) for all non-compliant %R. Circle outliers & indicate qualifier.
☑	☐	Form II present and complete for all samples	
☐	☑	Percent recovery criteria met (1)	
CFW-5 MS/MSD			Attach copy of Form III for all non-compliant % and RPD. Circle all non-compliances and indicate qualifiers.
Matrix Spike/Matrix Spike Duplicate			
☑	☐	Form I and III present and complete	
☑	☐	Percent recovery criteria met	
☑	☐	non-target compound RPD criteria met	
			LCS (2)
Field Duplicates CFW-5/CFW-5 DUP			Identify field duplicate pair and attach list of all compounds with non-compliant RfDs. Indicate qualifiers.
☑	☐	Form I's present and complete	
☑	☐	RPD criteria (water <30%, soils <50%) met	
Internal Standard Chemist Review			Attach copy of Form VIII if criteria was not met. Highlight criteria not met, list samples affected, and list qualifiers added.
☐ N/A	☐	Form VIII present and complete for all samples	
☐	☐	Area counts within -50 to +100 percent of calib. std.	
☐	☐	Retention Time within 30 seconds of calib. std.	
Target Compounds List (TCL)			Call (Fax) lab for re-submittals. Attach copy of facsimile transmission to this review.
☑	☐	Form I present and complete for all samples	
☑	☐	Reviewed narrative for anomalies	
Tentatively Identified Compounds (TICs)			Call lab for missing data. Fill out TIC Form and submit to data entry.
☐ N/A	☐	Form I Part B present and complete for all samples	
☐	☑	TCL compounds reported as TICs	TICs are not reported as part of Yankee Rowe program; N/A.
Table 1 Check			
☑	☐	Check Table 1 results against Form I's and ensure all data on Table 1 is correct.	

Reviewer's Signature: Julie Mirabile

Date: 4/2/14

Comments:

(1) SW-5 EDB analysis (method 8011) BFB = 68% (73-135 lab limits); J (UJ) result; re-ext. confirmed matrix interference.

(2) LCS VOC 3/18 11:26 - All OK
LCS VOC 3/18 23:17 - 1,1-DCE 78% (80-128) J (UJ)
associated samples analyzed 3/19
CFW-6

REGION I TIER II VALIDATION CHECKLIST
Criteria and Qualifiers: Region I Guidelines (6/13/88 Modified 2/89)
INORGANIC

SITE: Yankee Rowe Project #: 3617147318 Box #: 344004

Sample IDs: See attached tracking sheet or samples listed:

CFW-5, CFW-5 DUP, SW-2, SW-3, SW-4, SW-5, CFW-1, SW-1, CFW-6 } RCRA + Cu, Fe, Mn, Zn, Ca, Na
SP-1 : RCRA + TL
SW-011, SW-406 } RCRA (DISS.)

YES	NO	VALIDATION CHECK	NONCOMPLIANCE NOTES
☑	☐	Hold Times Met	Attach list of samples which exceed hold times. Indicate total hold time and qualifiers.
☑	☐	Samples preserved	
Data Completeness			Comments on missing information (if any) and action taken.
☑	☐	Cover page, Forms I - XIV, DC-1, DC-2, and raw data.	
☑	☐	Original shipping and receiving documents (copies)	Chain of Custody
☑	☐	Lab records of sample transfer, preparation and analysis	Internal laboratory chain of custody
Calibration Chemist Review			
☐ N/A	☐	Appropriate number of standards used to establish calibration curve.	ICP: at least one blank and one standard AA and CN^-: at least one blank and three standards, with one standard at the CRDL for AA. Hg: at least one blank and four standards
☐	☐	Correlation coefficient > 0.995.	Correlation coefficient criteria applicable to all analyses except ICP If correlation coefficient is not acceptable, discuss deficiencies, affected samples and action taken.
☐	☐	Calibrated daily.	
☐	☐	CRI/CRA analyzed at the proper frequency in the analytical run sequence.	See method.
☐	☐	CRI/CRA %R within acceptance range.	No acceptance range dictated by CLP methods or National Functional Guidelines. See regional guidelines for guidance.
☐	☐	ICV/CCV %R within acceptance range.	90-110% for ICP, 85-115% for CN^-, 80-120% for Hg
☐	☐	CCVs analyzed at the proper frequency.	Every 10 samples or every 2 hrs. Attach copy of Form II (2A) for all noncompliant ICVs and CCVs. Circle non-compliances and indicate qualifiers.
☐	☐	Traceable ICV source.	

Blanks	
Method:	
☑ ☐ Method blank was prepared with each batch of samples or with a maximum of 20 samples	Attach copy of Form III (3). Circle all contaminants; indicate action to be taken, action level if applicable, and samples affected.
☑ ☐ Results >IDL	Establish action level at 5Xcontamination level. Qualify data per Region I Guidelines.
☐ ☑ Absolute value negative method blank results > 2xIDL	Establish action level at 5X abs value of result. J (+<AL) and UJ (ND).
☐N/A☐ Reanalysis was conducted if necessary	MB QC1203046393: Fe 89 J 4.9 L (U) SW-2,SW-1 (3/21 Batch 1370920) Mn 1.52 J ↓ ~~(U)~~ ~~SW-2~~ ok MB QC1203055827: Cu 0.514 J 4.9 L (U) CFW-5 (3/26 Batch 1374994) ~~CFW-5 Dup~~ SW-2 SW-3 SW-4 SW-5 SW-1 CFW-6
Calibration Blanks Chemist Review	
☐N/A☐ ICB/CCB results > IDL	See above under method blank for action.
☐ ☐ Absolute value of negative ICB/CCB results > 2xIDL	See above under method blank for action.
☐ ↓ ☐ CCB analyzed every 10 samples or 2 hrs.	Attach copy of Form III (3). Circle all contaminants; indicate action to be taken, action level if applicable, and samples affected.
Field Blanks	
☐N/A ☐ Results >IDL	
Interference Check Sample Chemist Review	
☐ N/A☐ ICS analyzed at proper frequency	An ICS must be run at the beginning and end of run or every 8 hours.
☐ ↓ ☐ ICS AB %R 80%-120%	
For samples with interference concentrations > 50% of interference concentration in ICS solution A:	Interference's are Calcium, Aluminum, Iron and Magnesium.
☐N/A☐ Are positive ICS A results >IDL for analytes not present in the ICS A solution?	If yes, J sample result (>2XIDL) for that analyte.
☐ ↓ ☐ Are negative ICS A results >2XIDL for analytes not present in the ICS A solution?	If yes, UJ (ND) sample result for that analyte.
Matrix Spikes CFW-5 MS/MSD and SW-01 MS/MSD	
☑ ☐ All compounds are within %R of 75-125% excluding results exceeding the spike concentration by ≥4x	Attach copy of Form V (Part 1) 5A for noncompliant % Recoveries.
☐ N/A ☐ Were post-digestion spikes reported on VB for ICP, flame, Hg and CN for unacceptable pre-digestion spike recoveries	Circle all non-compliances and indicate qualifiers.
☐ ☑ Was a field blank used for spike analysis	

Laboratory Duplicate CFW-S (Hg) ☐ ☑ Was a field blank used as the lab duplicate ☑ ☐ Is the RPD within control limits of ±20% (35% for soil) for sample values >5x CRDL ☑ ☐ Is the control limit of ± CRDL (35% for soil) met for sample values <5x CRDL ☑ ☐ Was a duplicate analyzed for every matrix and every 20 samples or batch	Attach copy of Lab-Duplicate form for criteria not met. Indicate exceeded limits, samples affected, and action taken.
Field Duplicate CFW-S / CFW-S DUP ☑ ☐ For sample values >5x CRDL, the RPD control limit of ± 30% (50% for soil) was met ☑ ☐ For sample values <5x CRDL, the control limit of ±2x CRDL (4x CRDL for soil) was met	Attach list of samples that did not meet criteria requirements and qualifiers used.
Laboratory Control Samples (LCS) ☑ ☐ Percent recoveries are within limits of 80-120% for aqueous samples and within control limits for soils. ☑ ☐ An LCS was analyzed for each matrix, batch of samples, or every 20 samples.	Attach copy of Form VII (7) from for all noncompliant recoveries. Circle non-compliances and indicate qualifiers, and samples affected.
Furnace AA Analysis ☐ N/A ☐ Spike recovery criteria (85 ≤ % R ≤ 115) was met ☐ ☐ Duplicate injection criteria met ☐ ☐ Are "M" flags present on Form I's indicating failing duplicate injection criteria ☐ ☐ Are "S" flags present on Form I's indicating MAS analysis was required	Attach sheet indicating criteria not met and qualifiers used.
Serial Dilution CFW-S and SW-011 ☐ ☑ Are any percent difference criteria > 15% ☐ N/A ☐ Are results of the diluted samples > the original sample results	Attach copy of Serial Dilution Form for criteria not met. Circle criteria not met, samples affected, and qualifiers used.
Reviewer's Signature: Julie Mineau Date 4/2/14	Comments:

Project: Yankee Rowe
Project #: 3617147318.1
Date: 4/2/14

Method : CN⁻ 9012B ; 9056A* ; TDs 2540C ; COD 410.4 ; Alk. 2320B
Laboratory and SDG: 344004
Reviewer: Julie Rikardi
* Nitrate, Sulfate, Chloride

Sample IDs: CFW-5, CFW-5DUP, SW-2, SW-3, SW-4, SW-5, CFW-1, SW-1, CFW-6

1. **Case Narrative and Data Package Completeness**

QC problems noted as summarized below.

2. **Holding Time**

All OK

3. **QC Blanks**

All ND

4. **Initial Calibration Results**

Chemist Review: NA

5. **Continuing Calibration Results**

Chemist Review: NA

6. **Laboratory Control Sample Review**

All OK

7. **Field Duplicate Precision**

CFW-5/CFW-5DUP: All OK

8. **Matrix Spike Results (if applicable)**

CFW-5 : All OK except Alkalinity 48.8% (80-120)
(J/UJ) all alkalinity results
(matrix interference noted in narrative)

No Quals
4/3/14

RADIONUCLIDE ANALYSES
VALIDATION CHECKLIST for YANKEE ROWE
γ-Spec; Sr-90; H3+
TIER I / II / III / Chemist Review (circle one)

SITE: Yankee Rowe Project #: 36171473181 SDG #: 344004 5 2
LAB #: YR009

Sample IDs: SP-1 MW-107C MW-104A DUP EB-005
Monroe Dam MW-105B SW-011
MW-106A MW-104A SW-408

YES NO NA		
Data completeness		
☑ ☐	All data summaries, QC forms and raw data available from hard copy or electronic data package	Contact lab if missing data. Lab to respond with 24 hours.
☑ ☐	Data summaries match EDD	
Holding Times and Preservation		
☑ ☐	Hold times met (6 months)	
☑ ☐ ☐	Preserved	
Blanks (Background Checks)		EB-005: ND
☑ ☐	Method blank was prepared with each batch of samples or with a maximum of 20 samples	
☑ ☐	Are result <MDA qualify not detected (U)	
☐ N/A ☐	Are results > 5 times blank concentration	
Tracer Recovery		
☑ ☐ ☐	Recovery > 50% and <100%	
☐ ☑ ☐	Recovery >100%	
Matrix Spikes MW-104A; MW-105B (Antimony)		
☑ ☐ ☐	Percent recovery of 75-125% excluding results exceeding the spike concentration by ≥4x	
☐ ☑ ☐	Was a field blank used for spike analysis	
Laboratory Control Samples (LCS)		
☑ ☐ ☐	Percent recoveries are within limits of 75-125%	
☑ ☐ ☐	LCS was analyzed for each matrix, batch of samples, or every 20 samples.	

RADIONUCLIDE ANALYSES
VALIDATION CHECKLIST for YANKEE ROWE

TIER I / II / III (Chemist Review (circle one)

Laboratory Duplicate MW-104A ☐ ☑ Was a field blank used as the lab duplicate ☑ ☐ RPD within 20% for results greater than 5X CRDL ☐ ☑ Is the AZS >3 All result ND; ∴ no AZS calcs needed. ☑ ☐ ☐ Duplicate analyzed for every matrix and every 20 samples or batch	If the AZS for a particular radionuclide is > 3, qualify the results for that radionuclide in all associated samples of the same matrix as estimated (J). Also for Tritium only: MW-105B 1640 pCi/L 1520 pCi/L OK
Field Duplicate MW 104A / MW-104A DUP; All OK (inc 512) ☑ ☐ RPD within 20% for results greater than 5X CRDL ☑ ☐ Is the AZS >3 All ND)	
Quantitation ☑ ☐ Results <DL qualified as non-detect (U)	

Validator's Signature: Julie Nieves

Date: 4/3/14

Reviewed By: _____

Date: _____

April 21, 2014
BYR 2014-021

ATTACHMENT 2

Soil Stability Monitoring – Settlement, Cracks, Erosion and Vegetative Cover

Monitoring of the soil stability of the Southeast Construction Fill Area (SCFA) and the Beneficial Use Determination (BUD) Area was performed in 2012 and 2013. The following provides results of the monitoring:

Southeast Construction Fill Area

No problems were noted with the soil stability during the post-closure monitoring of the SCFA in 2012 and 2013. No settlement, cracks or erosion was noted and the grassy cover remained intact.

Beneficial Use Determination Area

No problems were noted with the soil stability during the post-closure monitoring of the BUD Area in 2012 and 2013. No settlement, cracks or erosion was noted and the grassy cover remained intact.

April 21, 2014
BYR 2014-021

ATTACHMENT 3

Southeast Construction Fill Area (SCFA) Financial Assurance Mechanism (FAM) review

As required by the Southeast Construction Fill Area Closure Certification Report; Condition 13, the Financial Assurance Mechanism for the SCFA is evaluated every two years and the results reported to the Massachusetts Department of Environmental Protection.

The Financial Assurance Mechanism for the SCFA has been reviewed and no changes are required at this time.

Attachment D
Regulatory Correspondence Review Form

SECTION I – REGULATORY CORRESPONDENCE SUMMARY

Letter Title or Subject	Post-Closure Maintenance + Monitoring Report - 2014 BYR 2014-021			
Regulator or Correspondence Coordinator	**Posting Required by 10 CFR 19.11(a)(4)**	**License Fee Required**	**Letter Date**	**Letter #**
DW Yorke for R.M. Mitchell	☐ Yes ☒ No	☐ Yes ☒ No	4-21-14	BYR 2014-021

SECTION II – ISFSI MANAGER REVIEW OF INCOMING CORRESPONDENCE

ISFSI Manager Concurrence	Date	Second Reviewer Required	Second Reviewer Concurrence	Date
- N/A -	- N/A -	☐ Yes ☒ No	- N/A -	- N/A -

SECTION III – OUTGOING CORRESPONDENCE REVIEW (TECHNICAL AND VALIDATION)

Title or Group	Required	Reviewer Name	Reviewer Concurrence	Date
Licensing	☐			
Technical Reviewer	☒	Joseph Bowrassa	Joseph Bowrassa	4/21/14
Legal	☐			
Quality Assurance	☐			
Chief Financial Officer	☐			
Other	☐			
ISFSI Manager	☒	David W. Yorke	DW Yorke	04-21-14
President and CEO	☐			

SECTION IV – OBLIGATION(S), REGULATORY COMMITMENT(S), AND ACTION(S)

Type	Description	Owner	Due Date	Tracking #
☐ Obligation ☐ Commitment ☐ Action				
☐ Obligation ☐ Commitment ☐ Action	N/A			

SECTION V – DISTRIBUTION AND POSTING

External distribution of outgoing correspondence is made as defined in the letter (address and cc list). Overnight, if required.

Internal distribution will be established by the ISFSI Manager (Incoming/Outgoing) and Correspondence Coordinator (Outgoing).

Transmittal to Nuclear Records.

Posting, if required, is performed as directed by the ISFSI Manager in accordance with Section 6.2.2.g.1 of this procedure.