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Rev. 1

UMTRA GROUND WATER PROJECT

Final Site Observational Work Plan for the UMTRA Project New Rifle Site

Volume II

September 1999

Prepared by the
U.S. Department of Energy
Grand Junction Office

Appendix B

Surface Water Analytical Results

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0439
REPORT DATE: 7/27/1999 4:55 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Ammonia as NH4	mg/L	02/26/1998	0001	2.990			#	-	-
Chloride	mg/L	02/26/1998	0001	221.000			#	-	-
Nitrate	mg/L	02/26/1998	0001	2.330			#	-	-
pH	s.u.	02/26/1998	N001	9.24			#	-	-
Redox Potential	mV	02/26/1998	N001	200			#	-	-
Specific Conductance	umhos/c	02/26/1998	N001	1751			#	-	-
Sulfate	mg/L	02/26/1998	0001	243.000			#	-	-
Temperature	C	02/26/1998	N001	1.2			#	-	-
Total Dissolved Solids	mg/L	02/26/1998	0001	1010			#	-	-

RECORDS: SELECTED FROM USEE102 WHERE site_code='RFN01' AND location_code in('1206','1207','1208','1209','1210','1211','1212','1213','1214','1215','0574','0575','0545','0548','0439') AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #1/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0545
REPORT DATE: 7/27/1999 4:55 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	02/26/1998	N001	150			#	-	-
	mg/L	08/19/1998	0001	135			#	-	-
	mg/L	08/19/1998	N001	125			#	-	-
	mg/L	01/27/1999	0001	109			#	-	-
	mg/L	01/27/1999	N001	130			#	-	-
Ammonia as NH4	mg/L	02/26/1998	0001	0.0710	B		#	-	-
	mg/L	08/19/1998	0001	0.0156	B	U	#	-	-
	mg/L	01/27/1999	0001	0.131			#	-	-
Antimony	mg/L	02/26/1998	0001	0.0010	U		#	0.001	-
	mg/L	08/19/1998	0001	0.0010	U		#	0.001	-
	mg/L	01/27/1999	0001	0.0010	U		#	0.001	-
Arsenic	mg/L	02/26/1998	0001	0.0010	U		#	0.001	-
	mg/L	08/19/1998	0001	0.0010	U		#	0.001	-
	mg/L	01/27/1999	0001	0.00010	U		#	0.0001	-
Cadmium	mg/L	02/26/1998	0001	0.0010	U		#	0.001	-
	mg/L	08/19/1998	0001	0.0010	U		#	0.001	-
	mg/L	01/27/1999	0001	0.0010	U		#	0.001	-
Calcium	mg/L	02/26/1998	0001	65.000			#	-	-
	mg/L	08/19/1998	0001	66.000			#	-	-
	mg/L	01/27/1999	0001	69.700			#	-	-
Chloride	mg/L	02/26/1998	0001	151.000			#	-	-
	mg/L	08/19/1998	0001	138.000			#	-	-
	mg/L	01/27/1999	0001	175.000			#	-	-
Fluoride	mg/L	01/27/1999	0001	0.264			#	-	-
Gross Alpha	pCi/L	02/26/1998	0001	3.91		UJ	#	3.9	± 2.68
	pCi/L	08/19/1998	0001	5.56	U	J	#	5.56	± 3.17
	pCi/L	01/27/1999	0001	5.98	U		#	5.98	± 3.48
Gross Beta	pCi/L	02/26/1998	0001	4.38	U		#	4.38	± 2.68
	pCi/L	08/19/1998	0001	6.01	U		#	6.01	± 3.51
	pCi/L	01/27/1999	0001	5.77	U		#	5.77	± 3.44
Hardness	mg/L	01/27/1999	0001	243			#	-	-
Iron	mg/L	02/26/1998	0001	0.0078	B	U	#	-	-
	mg/L	08/19/1998	0001	0.0130	B*	UJ	#	-	-
	mg/L	01/27/1999	0001	0.0030	U		#	0.003	-

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0545
REPORT DATE: 7/27/1999 4:55 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Lead	mg/L	02/26/1998	0001	0.0010	U		#	0.001	-
	mg/L	08/19/1998	0001	0.0010	U		#	0.001	-
	mg/L	01/27/1999	0001	0.0010	U		#	0.001	-
Lead-210	pCi/L	02/26/1998	0001	0.97	U		#	0.97	± 0.58
	pCi/L	08/19/1998	0001	0.89	U		#	0.89	± 0.52
	pCi/L	01/27/1999	0001	1.06	U		#	1.06	± 0.64
Magnesium	mg/L	02/26/1998	0001	16.000			#	-	-
	mg/L	08/19/1998	0001	13.800			#	-	-
	mg/L	01/27/1999	0001	16.800			#	-	-
Manganese	mg/L	02/26/1998	0001	0.0249			#	-	-
	mg/L	08/19/1998	0001	0.0059	B		#	-	-
	mg/L	01/27/1999	0001	0.0214			#	-	-
Molybdenum	mg/L	02/26/1998	0001	0.0080	B		#	-	-
	mg/L	08/19/1998	0001	0.0096	BE		#	-	-
	mg/L	01/27/1999	0001	0.0061	B		#	-	-
Nitrate	mg/L	02/26/1998	0001	0.502	B		#	-	-
	mg/L	08/19/1998	0001	0.104	B	U	#	-	-
	mg/L	01/27/1999	0001	1.050			#	-	-
Nitrite	mg/L	01/27/1999	0001	0.163			#	-	-
pH	s.u.	02/26/1998	N001	8.91			#	-	-
	s.u.	08/19/1998	N001	8.89			#	-	-
	s.u.	01/27/1999	N001	8.41			#	-	-
Polonium-210	pCi/L	02/26/1998	0001	0.24	U		#	0.24	± 0.21
	pCi/L	08/19/1998	0001	0.07	U		#	0.07	± 0.08
	pCi/L	01/27/1999	0001	0.07	U		#	0.07	± 0.08
Radium-226	pCi/L	02/26/1998	0001	0.25			#	0.02	± 0.08
	pCi/L	08/19/1998	0001	0.20	U		#	0.2	± 0.11
	pCi/L	01/27/1999	0001	0.17			#	0.13	± 0.09
Radium-228	pCi/L	02/26/1998	0001	0.7	U		#	0.7	± 0.40
	pCi/L	08/19/1998	0001	1.03	U		#	1.03	± 0.61
	pCi/L	01/27/1999	0001	0.73	U		#	0.73	± 0.44
Redox Potential	mV	02/26/1998	N001	147			#	-	-
	mV	08/19/1998	N001	144			#	-	-

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0545
REPORT DATE: 7/27/1999 4:55 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Redox Potential	mV	01/27/1999	N001	193			#	-	-
Selenium	mg/L	02/26/1998	0001	0.0010	U		#	0.001	-
	mg/L	08/19/1998	0001	0.0010	U		#	0.001	-
	mg/L	01/27/1999	0001	0.00048	B		#	-	-
Sodium	mg/L	02/26/1998	0001	101.000			#	-	-
	mg/L	08/19/1998	0001	92.600			#	-	-
	mg/L	01/27/1999	0001	121.000			#	-	-
Specific Conductance	umhos/c	02/26/1998	N001	1018			#	-	-
	umhos/c	08/19/1998	N001	884			#	-	-
	umhos/c	01/27/1999	N001	1188			#	-	-
Sulfate	mg/L	02/26/1998	0001	120.000			#	-	-
	mg/L	08/19/1998	0001	111.000	N	J	#	-	-
	mg/L	01/27/1999	0001	135.000			#	-	-
Temperature	C	02/26/1998	N001	2.9			#	-	-
	C	08/19/1998	N001	19.7			#	-	-
	C	01/27/1999	N001	3.2			#	-	-
Thorium-230	pCi/L	02/26/1998	0001	0.80	U		#	0.8	±
	pCi/L	08/19/1998	0001	1.2	U		#	1.2	±
	pCi/L	01/27/1999	0001	0.80	U		#	0.8	±
Total Dissolved Solids	mg/L	02/26/1998	0001	525			#	-	-
	mg/L	08/19/1998	0001	532			#	-	-
	mg/L	01/27/1999	0001	658			#	-	-
Total Suspended Solids	mg/L	01/27/1999	0001	34.0			#	-	-
Turbidity	NTU	01/27/1999	N001	25.2			#	-	-
Uranium	mg/L	02/26/1998	0001	0.0022			#	-	-
	mg/L	08/19/1998	0001	0.0018			#	-	-
	mg/L	01/27/1999	0001	0.0026			#	-	-
Vanadium	mg/L	02/26/1998	0001	0.0052	B	U	#	-	-
	mg/L	08/19/1998	0001	0.0020	U		#	0.002	-
	mg/L	01/27/1999	0001	0.0010	U		#	0.001	-

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0545
REPORT DATE: 7/27/1999 4:55 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE102 WHERE site_code='RFN01' AND location_code in('1206','1207','1208','1209','1210','1211','1212','1213','1214','1215','0574','0575','0545','0548','0439') AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #1/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

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- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0548
REPORT DATE: 7/27/1999 4:55 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	02/25/1998	N001	132			#	-	-
	mg/L	08/19/1998	0001	121			#	-	-
	mg/L	08/19/1998	N001	131			#	-	-
	mg/L	01/27/1999	0001	131			#	-	-
	mg/L	01/27/1999	N001	178			#	-	-
Ammonia as NH4	mg/L	02/25/1998	0001	0.0961	B		#	-	-
	mg/L	08/19/1998	0001	0.0326	B	U	#	-	-
	mg/L	01/27/1999	0001	0.0374	B		#	-	-
Antimony	mg/L	02/25/1998	0001	0.0010	U		#	0.001	-
	mg/L	08/19/1998	0001	0.0010	U		#	0.001	-
	mg/L	01/27/1999	0001	0.0010	U		#	0.001	-
Arsenic	mg/L	02/25/1998	0001	0.0010	U		#	0.001	-
	mg/L	08/19/1998	0001	0.0010	U		#	0.001	-
	mg/L	01/27/1999	0001	0.00010	U		#	0.0001	-
Cadmium	mg/L	02/25/1998	0001	0.0010	U		#	0.001	-
	mg/L	08/19/1998	0001	0.0010	U		#	0.001	-
	mg/L	01/27/1999	0001	0.0010	U		#	0.001	-
Calcium	mg/L	02/25/1998	0001	63.500			#	-	-
	mg/L	08/19/1998	0001	66.000			#	-	-
	mg/L	01/27/1999	0001	67.000			#	-	-
Chloride	mg/L	02/25/1998	0001	155.000			#	-	-
	mg/L	08/19/1998	0001	139.000			#	-	-
	mg/L	01/27/1999	0001	178.000			#	-	-
Gross Alpha	pCi/L	02/25/1998	0001	4.00	U		#	4	± 2.71
	pCi/L	08/19/1998	0001	8.24	U	J	#	8.24	± 4.28
	pCi/L	01/27/1999	0001	9.56	U	J	#	9.56	± 5.43
Gross Beta	pCi/L	02/25/1998	0001	5.18			#	4.69	± 2.94
	pCi/L	08/19/1998	0001	11.82	U		#	11.82	± 7.05
	pCi/L	01/27/1999	0001	11.42	U		#	11.42	± 6.86
Iron	mg/L	02/25/1998	0001	0.0135	B		#	-	-
	mg/L	08/19/1998	0001	0.0173	B*	UJ	#	-	-
	mg/L	01/27/1999	0001	0.0136	B	U	#	-	-
Lead	mg/L	02/25/1998	0001	0.0010	U		#	0.001	-
	mg/L	08/19/1998	0001	0.0010	U		#	0.001	-

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0548
REPORT DATE: 7/27/1999 4:55 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Lead	mg/L	01/27/1999	0001	0.0010	U		#	0.001	-
Lead-210	pCi/L	02/25/1998	0001	0.94	U		#	0.94	± 0.55
	pCi/L	08/19/1998	0001	0.99	U		#	0.99	± 0.58
	pCi/L	01/27/1999	0001	1.00	U		#	1	± 0.59
Magnesium	mg/L	02/25/1998	0001	14.900			#	-	-
	mg/L	08/19/1998	0001	13.400			#	-	-
	mg/L	01/27/1999	0001	15.300			#	-	-
Manganese	mg/L	02/25/1998	0001	0.0404			#	-	-
	mg/L	08/19/1998	0001	0.0056	B		#	-	-
	mg/L	01/27/1999	0001	0.0196			#	-	-
Molybdenum	mg/L	02/25/1998	0001	0.0082	B		#	-	-
	mg/L	08/19/1998	0001	0.0104	E		#	-	-
	mg/L	01/27/1999	0001	0.0062	B		#	-	-
Nitrate	mg/L	02/25/1998	0001	0.574	B		#	-	-
	mg/L	08/19/1998	0001	0.0578	B	U	#	-	-
	mg/L	01/27/1999	0001	0.973	B		#	-	-
pH	s.u.	02/25/1998	N001	9.21			#	-	-
	s.u.	08/19/1998	N001	8.72			#	-	-
	s.u.	01/27/1999	N001	8.39			#	-	-
Polonium-210	pCi/L	02/25/1998	0001	0.46	U		#	0.46	± 0.44
	pCi/L	08/19/1998	0001	0.07	U		#	0.07	± 0.09
	pCi/L	01/27/1999	0001	0.08	U		#	0.08	± 0.09
Radium-226	pCi/L	02/25/1998	0001	0.21			#	0.02	± 0.08
	pCi/L	08/19/1998	0001	0.10	U		#	0.1	± 0.06
	pCi/L	01/27/1999	0001	0.24			#	0.13	± 0.09
Radium-228	pCi/L	02/25/1998	0001	1.0	U		#	1	± 0.60
	pCi/L	08/19/1998	0001	0.47	U		#	0.47	± 0.28
	pCi/L	01/27/1999	0001	0.73	U		#	0.73	± 0.44
Redox Potential	mV	02/25/1998	N001	33			#	-	-
	mV	08/19/1998	N001	145			#	-	-
	mV	01/27/1999	N001	216			#	-	-
Selenium	mg/L	02/25/1998	0001	0.0010	U		#	0.001	-
	mg/L	08/19/1998	0001	0.0010	U		#	0.001	-
	mg/L	01/27/1999	0001	0.00041	B		#	-	-

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0548
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PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Sodium	mg/L	02/25/1998	0001	106.000			#	-	-
	mg/L	08/19/1998	0001	95.000			#	-	-
	mg/L	01/27/1999	0001	127.000			#	-	-
Specific Conductance	umhos/c	02/25/1998	N001	1017			#	-	-
	umhos/c	08/19/1998	N001	890			#	-	-
	umhos/c	01/27/1999	N001	1182			#	-	-
Sulfate	mg/L	02/25/1998	0001	114.000			#	-	-
	mg/L	08/19/1998	0001	105.000	N	J	#	-	-
	mg/L	01/27/1999	0001	119.000			#	-	-
Temperature	C	02/25/1998	N001	4.5			#	-	-
	C	08/19/1998	N001	18.4			#	-	-
	C	01/27/1999	N001	5.8			#	-	-
Thorium-230	pCi/L	02/25/1998	0001	0.80	U		#	0.8	±
	pCi/L	08/19/1998	0001	1.2	U		#	1.2	±
	pCi/L	01/27/1999	0001	0.80	U		#	0.8	±
Total Dissolved Solids	mg/L	02/25/1998	0001	508			#	-	-
	mg/L	08/19/1998	0001	525			#	-	-
	mg/L	01/27/1999	0001	665			#	-	-
Turbidity	NTU	01/27/1999	N001	30.0			#	-	-
Uranium	mg/L	02/25/1998	0001	0.0022			#	-	-
	mg/L	08/19/1998	0001	0.0017			#	-	-
	mg/L	01/27/1999	0001	0.0025			#	-	-
Vanadium	mg/L	02/25/1998	0001	0.0040	U		#	0.004	-
	mg/L	08/19/1998	0001	0.0020	U		#	0.002	-
	mg/L	01/27/1999	0001	0.0010	U		#	0.001	-

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFN01, RIFLE (NEW)
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SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

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- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0574
REPORT DATE: 7/27/1999 4:55 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	08/19/1998	0001	120			#	-	-
	mg/L	08/19/1998	N001	137			#	-	-
	mg/L	01/27/1999	0001	126			#	-	-
	mg/L	01/27/1999	N001	131			#	-	-
Ammonia as NH4	mg/L	08/19/1998	0001	0.0440	B		#	-	-
	mg/L	01/27/1999	0001	0.0393	B		#	-	-
Antimony	mg/L	08/19/1998	0001	0.0010	U		#	0.001	-
	mg/L	01/27/1999	0001	0.0010	U		#	0.001	-
Arsenic	mg/L	08/19/1998	0001	0.0010	U		#	0.001	-
	mg/L	01/27/1999	0001	0.00010	U		#	0.0001	-
Cadmium	mg/L	08/19/1998	0001	0.0010	U		#	0.001	-
	mg/L	01/27/1999	0001	0.0010	U		#	0.001	-
Calcium	mg/L	08/19/1998	0001	64.200			#	-	-
	mg/L	01/27/1999	0001	67.600			#	-	-
Chloride	mg/L	08/19/1998	0001	140.000			#	-	-
	mg/L	01/27/1999	0001	198.000			#	-	-
Fluoride	mg/L	01/27/1999	0001	0.275			#	-	-
Gross Alpha	pCi/L	08/19/1998	0001	5.48	U	J	#	5.48	± 3.53
	pCi/L	01/27/1999	0001	6.14	U		#	6.14	± 3.01
Gross Beta	pCi/L	08/19/1998	0001	6.02	U		#	6.02	± 3.61
	pCi/L	01/27/1999	0001	5.75	U		#	5.75	± 3.56
Iron	mg/L	08/19/1998	0001	0.0185	B*	UJ	#	-	-
	mg/L	01/27/1999	0001	0.0030	U		#	0.003	-
Lead	mg/L	08/19/1998	0001	0.0010	U		#	0.001	-
	mg/L	01/27/1999	0001	0.0010	U		#	0.001	-
Lead-210	pCi/L	08/19/1998	0001	0.91	U		#	0.91	± 0.52
	pCi/L	01/27/1999	0001	1.03	U		#	1.03	± 0.60
Magnesium	mg/L	08/19/1998	0001	13.000			#	-	-
	mg/L	01/27/1999	0001	15.300			#	-	-
Manganese	mg/L	08/19/1998	0001	0.0059	B		#	-	-
	mg/L	01/27/1999	0001	0.0160			#	-	-
Molybdenum	mg/L	08/19/1998	0001	0.0098	BE		#	-	-
	mg/L	01/27/1999	0001	0.0062	B		#	-	-

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0574
REPORT DATE: 7/27/1999 4:55 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Nitrate	mg/L	08/19/1998	0001	0.0543	B	U	#	-	-
	mg/L	01/27/1999	0001	0.904	B		#	-	-
pH	s.u.	08/19/1998	N001	8.93			#	-	-
	s.u.	01/27/1999	N001	8.45			#	-	-
Polonium-210	pCi/L	08/19/1998	0001	0.06		U	#	0.06	± 0.08
	pCi/L	01/27/1999	0001	0.07		U	#	0.06	± 0.09
Radium-226	pCi/L	08/19/1998	0001	0.15	U		#	0.15	± 0.09
	pCi/L	01/27/1999	0001	0.16	U		#	0.16	± 0.10
Radium-228	pCi/L	08/19/1998	0001	0.78	U		#	0.78	± 0.46
	pCi/L	01/27/1999	0001	0.85	U		#	0.85	± 0.51
Redox Potential	mV	08/19/1998	N001	142			#	-	-
	mV	01/27/1999	N001	232			#	-	-
Selenium	mg/L	08/19/1998	0001	0.0010	U		#	0.001	-
	mg/L	01/27/1999	0001	0.00021	B		#	-	-
Sodium	mg/L	08/19/1998	0001	91.900			#	-	-
	mg/L	01/27/1999	0001	129.000			#	-	-
Specific Conductance	umhos/c	08/19/1998	N001	876			#	-	-
	umhos/c	01/27/1999	N001	1201			#	-	-
Sulfate	mg/L	08/19/1998	0001	106.000			#	-	-
	mg/L	01/27/1999	0001	127.000			#	-	-
Temperature	C	08/19/1998	N001	21.7			#	-	-
	C	01/27/1999	N001	4.2			#	-	-
Thorium-230	pCi/L	08/19/1998	0001	1.2	U		#	1.2	±
	pCi/L	01/27/1999	0001	0.80	U		#	0.8	±
Total Dissolved Solids	mg/L	08/19/1998	0001	503			#	-	-
	mg/L	01/27/1999	0001	662			#	-	-
Turbidity	NTU	01/27/1999	N001	11.8			#	-	-
Uranium	mg/L	08/19/1998	0001	0.0018			#	-	-
	mg/L	01/27/1999	0001	0.0025			#	-	-
Vanadium	mg/L	08/19/1998	0001	0.0020	U		#	0.002	-
	mg/L	01/27/1999	0001	0.0010	U		#	0.001	-

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0574
REPORT DATE: 7/27/1999 4:55 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE102 WHERE site_code='RFN01' AND location_code in('1206','1207','1208','1209','1210','1211','1212','1213','1214','1215','0574','0575','0545','0548','0439') AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #1/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFN01, RIFLE (NEW)
.LOCATION: 0575
REPORT DATE: 7/27/1999 4:55 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	02/26/1998	N001	318			#	-	-
	mg/L	08/18/1998	0001	279			#	-	-
	mg/L	08/18/1998	N001	298			#	-	-
	mg/L	01/27/1999	0001	241			#	-	-
	mg/L	01/27/1999	N001	253			#	-	-
Ammonia as NH4	mg/L	02/26/1998	0001	88.200			#	-	-
	mg/L	08/18/1998	0001	33.200			#	-	-
	mg/L	08/18/1998	0002	25.300		U	#	-	-
	mg/L	01/27/1999	0001	57.400			#	-	-
	mg/L	01/27/1999	0002	57.200			#	-	-
Antimony	mg/L	02/26/1998	0001	0.0010	U		#	0.001	-
	mg/L	08/18/1998	0001	0.0010	U		#	0.001	-
	mg/L	08/18/1998	0002	0.0010	U		#	0.001	-
	mg/L	01/27/1999	0001	0.0010	U		#	0.001	-
	mg/L	01/27/1999	0002	0.0010	U		#	0.001	-
Arsenic	mg/L	02/26/1998	0001	0.0010	U		#	0.001	-
	mg/L	08/18/1998	0001	0.0010	U		#	0.001	-
	mg/L	08/18/1998	0002	0.0010	U		#	0.001	-
	mg/L	01/27/1999	0001	0.00010	U		#	0.0001	-
	mg/L	01/27/1999	0002	0.00010	U		#	0.0001	-
Cadmium	mg/L	02/26/1998	0001	0.0010	U		#	0.001	-
	mg/L	08/18/1998	0001	0.0011			#	-	-
	mg/L	08/18/1998	0002	0.0011			#	-	-
	mg/L	01/27/1999	0001	0.0010	U		#	0.001	-
	mg/L	01/27/1999	0002	0.0010	U		#	0.001	-
Calcium	mg/L	02/26/1998	0001	371.000			#	-	-
	mg/L	08/18/1998	0001	400.000			#	-	-
	mg/L	08/18/1998	0002	401.000			#	-	-
	mg/L	01/27/1999	0001	363.000			#	-	-
	mg/L	01/27/1999	0002	350.000			#	-	-
Chloride	mg/L	02/26/1998	0001	296.000			#	-	-
	mg/L	08/18/1998	0001	334.000			#	-	-
	mg/L	08/18/1998	0002	337.000			#	-	-
	mg/L	01/27/1999	0001	277.000			#	-	-
	mg/L	01/27/1999	0002	279.000			#	-	-

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0575
REPORT DATE: 7/27/1999 4:55 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Fluoride	mg/L	01/27/1999	0001	0.546			#	-	-
	mg/L	01/27/1999	0002	0.531			#	-	-
Gross Alpha	pCi/L	02/26/1998	0001	115.2		J	#	34.5	± 34.1
	pCi/L	08/18/1998	0001	164.6			#	51.5	± 48.0
	pCi/L	08/18/1998	0002	106.3		J	#	51.9	± 41.9
	pCi/L	01/27/1999	0001	49.37			#	36.56	± 26.3
	pCi/L	01/27/1999	0002	36.49			#	36.03	± 24.3
Gross Beta	pCi/L	02/26/1998	0001	104.3			#	41.5	± 28.8
	pCi/L	08/18/1998	0001	80.80			#	60.71	± 38.7
	pCi/L	08/18/1998	0002	82.89			#	60.38	± 38.6
	pCi/L	01/27/1999	0001	80.09			#	34.82	± 23.9
	pCi/L	01/27/1999	0002	90.7			#	34.7	± 24.4
Hardness	mg/L	01/27/1999	0001	1360			#	-	-
	mg/L	01/27/1999	0002	1310			#	-	-
Iron	mg/L	02/26/1998	0001	0.0050	U		#	0.005	-
	mg/L	08/18/1998	0001	0.0083	B*	UJ	#	-	-
	mg/L	08/18/1998	0002	0.0068	B*	UJ	#	-	-
	mg/L	01/27/1999	0001	0.0030	U		#	0.003	-
	mg/L	01/27/1999	0002	0.0030	U		#	0.003	-
Lead	mg/L	02/26/1998	0001	0.0010	U		#	0.001	-
	mg/L	08/18/1998	0001	0.0010	U		#	0.001	-
	mg/L	08/18/1998	0002	0.0010	U		#	0.001	-
	mg/L	01/27/1999	0001	0.0010	U		#	0.001	-
	mg/L	01/27/1999	0002	0.0010	U		#	0.001	-
Lead-210	pCi/L	02/26/1998	0001	0.95	U		#	0.95	± 0.57
	pCi/L	08/18/1998	0001	0.88	U		#	0.88	± 0.51
	pCi/L	08/18/1998	0002	0.91	U		#	0.91	± 0.53
	pCi/L	01/27/1999	0001	0.97	U		#	0.97	± 0.57
	pCi/L	01/27/1999	0002	1.07	U		#	1.07	± 0.63
Magnesium	mg/L	02/26/1998	0001	115.000			#	-	-
	mg/L	08/18/1998	0001	112.000			#	-	-
	mg/L	08/18/1998	0002	113.000			#	-	-
	mg/L	01/27/1999	0001	111.000			#	-	-
	mg/L	01/27/1999	0002	107.000			#	-	-

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0575
REPORT DATE: 7/27/1999 4:55 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Manganese	mg/L	02/26/1998	0001	0.784			#	-	-
	mg/L	08/18/1998	0001	1.060			#	-	-
	mg/L	08/18/1998	0002	1.010			#	-	-
	mg/L	01/27/1999	0001	0.470			#	-	-
	mg/L	01/27/1999	0002	0.450			#	-	-
Molybdenum	mg/L	02/26/1998	0001	0.503			#	-	-
	mg/L	08/18/1998	0001	0.521	E		#	-	-
	mg/L	08/18/1998	0002	0.517	E	U	#	-	-
	mg/L	01/27/1999	0001	0.436			#	-	-
	mg/L	01/27/1999	0002	0.434			#	-	-
Nitrate	mg/L	02/26/1998	0001	424.000			#	-	-
	mg/L	08/18/1998	0001	435.000			#	-	-
	mg/L	08/18/1998	0002	433.000			#	-	-
	mg/L	01/27/1999	0001	380.000			#	-	-
	mg/L	01/27/1999	0002	381.000			#	-	-
Nitrite	mg/L	01/27/1999	0001	0.589			#	-	-
	mg/L	01/27/1999	0002	0.577			#	-	-
pH	s.u.	02/26/1998	N001	8.16			#	-	-
	s.u.	08/18/1998	N001	7.89			#	-	-
	s.u.	01/27/1999	N001	7.40			#	-	-
Polonium-210	pCi/L	02/26/1998	0001	0.22	U		#	0.22	± -0.12
	pCi/L	08/18/1998	0001	0.03		U	#	0.03	± 0.04
	pCi/L	08/18/1998	0002	0.09		U	#	0.06	± 0.09
	pCi/L	01/27/1999	0001	0.08		U	#	0.07	± 0.10
	pCi/L	01/27/1999	0002	0.09		U	#	0.05	± 0.08
Radium-226	pCi/L	02/26/1998	0001	0.09			#	0.01	± 0.04
	pCi/L	08/18/1998	0001	0.14	U		#	0.14	± 0.08
	pCi/L	08/18/1998	0002	0.09	U		#	0.09	± 0.05
	pCi/L	01/27/1999	0001	0.13	U		#	0.13	± 0.07
	pCi/L	01/27/1999	0002	0.14	U		#	0.14	± 0.08
Radium-228	pCi/L	02/26/1998	0001	0.8	U		#	0.8	± 0.40
	pCi/L	08/18/1998	0001	0.67	U		#	0.67	± 0.40
	pCi/L	08/18/1998	0002	0.52			#	0.42	± 0.26
	pCi/L	01/27/1999	0001	0.72	U		#	0.72	± 0.43
	pCi/L	01/27/1999	0002	0.75	U		#	0.75	± 0.45

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0575
REPORT DATE: 7/27/1999 4:55 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Redox Potential	mV	02/26/1998	N001	223			#	-	-
	mV	08/18/1998	N001	183			#	-	-
	mV	01/27/1999	N001	253			#	-	-
Selenium	mg/L	02/26/1998	0001	0.0038	B		#	-	-
	mg/L	08/18/1998	0001	0.0040	B		#	-	-
	mg/L	08/18/1998	0002	0.0040	B		#	-	-
	mg/L	01/27/1999	0001	0.0015	B		#	-	-
	mg/L	01/27/1999	0002	0.0015	B		#	-	-
Sodium	mg/L	02/26/1998	0001	942.000			#	-	-
	mg/L	08/18/1998	0001	989.000			#	-	-
	mg/L	08/18/1998	0002	1060.000			#	-	-
	mg/L	01/27/1999	0001	902.000			#	-	-
	mg/L	01/27/1999	0002	897.000			#	-	-
Specific Conductance	umhos/c	02/26/1998	N001	6850			#	-	-
	umhos/c	08/18/1998	N001	5620			#	-	-
	umhos/c	01/27/1999	N001	6220			#	-	-
Sulfate	mg/L	02/26/1998	0001	2710.000			#	-	-
	mg/L	08/18/1998	0001	2720.000			#	-	-
	mg/L	08/18/1998	0002	5920.000	N	J	#	-	-
	mg/L	01/27/1999	0001	2640.000			#	-	-
	mg/L	01/27/1999	0002	2680.000			#	-	-
Temperature	C	02/26/1998	N001	4.9			#	-	-
	C	08/18/1998	N001	23.5			#	-	-
	C	01/27/1999	N001	7.9			#	-	-
Thorium-230	pCi/L	02/26/1998	0001	0.80	U		#	0.8	±
	pCi/L	08/18/1998	0001	1.2	U		#	1.2	±
	pCi/L	08/18/1998	0002	1.2	U		#	1.2	±
	pCi/L	01/27/1999	0001	0.80	U		#	0.8	±
	pCi/L	01/27/1999	0002	0.80	U		#	0.8	±
Total Dissolved Solids	mg/L	02/26/1998	0001	4890			#	-	-
	mg/L	08/18/1998	0001	5440			#	-	-
	mg/L	08/18/1998	0002	5510			#	-	-
	mg/L	01/27/1999	0001	4790			#	-	-
	mg/L	01/27/1999	0002	4810			#	-	-

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0575
REPORT DATE: 7/27/1999 4:55 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Total Suspended Solids	mg/L	01/27/1999	0001	10.0	U		#	10	-
	mg/L	01/27/1999	0002	10.0	U		#	10	-
Turbidity	NTU	01/27/1999	N001	0.87			#	-	-
Uranium	mg/L	02/26/1998	0001	0.152			#	-	-
	mg/L	08/18/1998	0001	0.143			#	-	-
	mg/L	08/18/1998	0002	0.145			#	-	-
	mg/L	01/27/1999	0001	0.148			#	-	-
	mg/L	01/27/1999	0002	0.149			#	-	-
Vanadium	mg/L	02/26/1998	0001	0.0040	U		#	0.004	-
	mg/L	08/18/1998	0001	0.0020	U		#	0.002	-
	mg/L	08/18/1998	0002	0.0020	U		#	0.002	-
	mg/L	01/27/1999	0001	0.0010	U		#	0.001	-
	mg/L	01/27/1999	0002	0.0010	U		#	0.001	-

RECORDS: SELECTED FROM USEE102 WHERE site_code='RFN01' AND location_code in('1206','1207','1208','1209','1210','1211','1212','1213','1214','1215','0574','0575','0545','0548','0439') AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #1/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 1206
REPORT DATE: 7/27/1999 4:55 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Ammonia as NH4	mg/L	05/28/1998	0001	0.102			#	-	-
	mg/L	05/28/1998	N001	0.0681			#	-	-
Arsenic	mg/L	05/28/1998	0001	0.0063	B	U	#	-	-
	mg/L	05/28/1998	N001	0.0086	B		#	-	-
Cadmium	mg/L	05/28/1998	0001	0.0010	U		#	0.001	-
	mg/L	05/28/1998	N001	0.0011	U		#	0.0011	-
Calcium Carbonate	mg/L	05/28/1998	0001	181.000			#	-	-
	mg/L	05/28/1998	N001	222.000			#	-	-
Fluoride	mg/L	05/28/1998	0001	0.674			#	-	-
	mg/L	05/28/1998	N001	0.656			#	-	-
Hardness	mg/L	05/28/1998	0001	419.000			#	-	-
	mg/L	05/28/1998	N001	457.000			#	-	-
Iron	mg/L	05/28/1998	0001	0.0110	U		#	0.011	-
	mg/L	05/28/1998	N001	1.490			#	-	-
Manganese	mg/L	05/28/1998	0001	0.0157			#	-	-
	mg/L	05/28/1998	N001	0.110			#	-	-
Molybdenum	mg/L	05/28/1998	0001	0.0736			#	-	-
	mg/L	05/28/1998	N001	0.0651			#	-	-
Nitrate	mg/L	05/28/1998	0001	0.363			#	-	-
	mg/L	05/28/1998	N001	0.120	B	U	#	-	-
Selenium	mg/L	05/28/1998	0001	0.0020	U		#	0.002	-
	mg/L	05/28/1998	N001	0.0022	U		#	0.0022	-
Strontium	mg/L	05/28/1998	0001	1.360			#	-	-
	mg/L	05/28/1998	N001	1.380			#	-	-
Sulfate	mg/L	05/28/1998	0001	158.000			#	-	-
	mg/L	05/28/1998	N001	151.000			#	-	-
Total Phosphorus as PO4	mg/L	05/28/1998	0001	0.0430	U		#	0.043	-
	mg/L	05/28/1998	N001	0.0570	B		#	-	-
Uranium	mg/L	05/28/1998	0001	0.0365			#	-	-
	mg/L	05/28/1998	N001	0.0357			#	-	-
Vanadium	mg/L	05/28/1998	0001	0.0064	B	U	#	-	-
	mg/L	05/28/1998	N001	0.0056	U		#	0.0056	-

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 1206
REPORT DATE: 7/27/1999 4:55 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Zinc	mg/L	05/28/1998	0001	0.0030	U		#	0.003	-
	mg/L	05/28/1998	N001	0.0063	B	U	#	-	-

RECORDS: SELECTED FROM USEE102 WHERE site_code='RFN01' AND location_code in('1206','1207','1208','1209','1210','1211','1212','1213','1214','1215','0574','0575','0545','0548','0439') AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #1/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 1207
REPORT DATE: 7/27/1999 4:55 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Ammonia as NH4	mg/L	05/28/1998	0001	0.0408			#	-	-
	mg/L	05/28/1998	N001	0.0636			#	-	-
Arsenic	mg/L	05/28/1998	0001	0.0067	B	U	#	-	-
	mg/L	05/28/1998	N001	0.0044	B		#	-	-
Cadmium	mg/L	05/28/1998	0001	0.0010	U		#	0.001	-
	mg/L	05/28/1998	N001	0.0011	U		#	0.0011	-
Calcium Carbonate	mg/L	05/28/1998	0001	253.000			#	-	-
	mg/L	05/28/1998	N001	276.000			#	-	-
Fluoride	mg/L	05/28/1998	0001	0.423			#	-	-
	mg/L	05/28/1998	N001	0.429			#	-	-
Hardness	mg/L	05/28/1998	0001	347.000			#	-	-
	mg/L	05/28/1998	N001	379.000			#	-	-
Iron	mg/L	05/28/1998	0001	0.0110	U		#	0.011	-
	mg/L	05/28/1998	N001	0.208		U	#	-	-
Manganese	mg/L	05/28/1998	0001	0.0159			#	-	-
	mg/L	05/28/1998	N001	0.0195		U	#	-	-
Molybdenum	mg/L	05/28/1998	0001	0.0285	B		#	-	-
	mg/L	05/28/1998	N001	0.0295	B		#	-	-
Nitrate	mg/L	05/28/1998	0001	0.146	B	U	#	-	-
	mg/L	05/28/1998	N001	0.141	B	U	#	-	-
Selenium	mg/L	05/28/1998	0001	0.0020	U		#	0.002	-
	mg/L	05/28/1998	N001	0.0022	U		#	0.0022	-
Strontium	mg/L	05/28/1998	0001	0.795			#	-	-
	mg/L	05/28/1998	N001	0.807			#	-	-
Sulfate	mg/L	05/28/1998	0001	91.700			#	-	-
	mg/L	05/28/1998	N001	87.800			#	-	-
Total Phosphorus as PO4	mg/L	05/28/1998	0001	0.0430	U		#	0.043	-
	mg/L	05/28/1998	N001	0.0430	U		#	0.043	-
Uranium	mg/L	05/28/1998	0001	0.0087			#	-	-
	mg/L	05/28/1998	N001	0.0094			#	-	-
Vanadium	mg/L	05/28/1998	0001	0.0050	U		#	0.005	-
	mg/L	05/28/1998	N001	0.0056	U		#	0.0056	-

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 1207
REPORT DATE: 7/27/1999 4:55 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Zinc	mg/L	05/28/1998	0001	0.0073	B		#	-	-
	mg/L	05/28/1998	N001	0.0082	B	U	#	-	-

RECORDS: SELECTED FROM USEE102 WHERE site_code='RFN01' AND location_code in('1206','1207','1208','1209','1210','1211','1212','1213','1214','1215','0574','0575','0545','0548','0439') AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #1/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 1208
REPORT DATE: 7/27/1999 4:55 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Ammonia as NH4	mg/L	05/28/1998	0001	0.0704			#	-	-
	mg/L	05/28/1998	0002	0.0499			#	-	-
	mg/L	05/28/1998	N001	0.0454			#	-	-
	mg/L	05/28/1998	N002	0.105			#	-	-
Arsenic	mg/L	05/28/1998	0001	0.0068	B		#	-	-
	mg/L	05/28/1998	0002	0.0083	B		#	-	-
	mg/L	05/28/1998	N001	0.0043	B		#	-	-
	mg/L	05/28/1998	N002	0.0041	B		#	-	-
Cadmium	mg/L	05/28/1998	0001	0.0010	U		#	0.001	-
	mg/L	05/28/1998	0002	0.0010	U		#	0.001	-
	mg/L	05/28/1998	N001	0.0011	U		#	0.0011	-
	mg/L	05/28/1998	N002	0.0011	U		#	0.0011	-
Calcium Carbonate	mg/L	05/28/1998	0001	208.000			#	-	-
	mg/L	05/28/1998	0002	217.000			#	-	-
	mg/L	05/28/1998	N001	222.000			#	-	-
	mg/L	05/28/1998	N002	222.000			#	-	-
Fluoride	mg/L	05/28/1998	0001	0.545			#	-	-
	mg/L	05/28/1998	0002	0.502			#	-	-
	mg/L	05/28/1998	N001	0.546			#	-	-
	mg/L	05/28/1998	N002	0.542			#	-	-
Hardness	mg/L	05/28/1998	0001	359.000			#	-	-
	mg/L	05/28/1998	0002	378.000			#	-	-
	mg/L	05/28/1998	N001	387.000			#	-	-
	mg/L	05/28/1998	N002	389.000			#	-	-
Iron	mg/L	05/28/1998	0001	0.0218	B		#	-	-
	mg/L	05/28/1998	0002	0.0227	B		#	-	-
	mg/L	05/28/1998	N001	0.143		U	#	-	-
	mg/L	05/28/1998	N002	0.335			#	-	-
Manganese	mg/L	05/28/1998	0001	0.0139	B		#	-	-
	mg/L	05/28/1998	0002	0.0130	B		#	-	-
	mg/L	05/28/1998	N001	0.0147	B	U	#	-	-
	mg/L	05/28/1998	N002	0.0172		U	#	-	-
Molybdenum	mg/L	05/28/1998	0001	0.0537			#	-	-
	mg/L	05/28/1998	0002	0.0579			#	-	-

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 1208
REPORT DATE: 7/27/1999 4:55 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Molybdenum	mg/L	05/28/1998	N001	0.0595			#	-	-
	mg/L	05/28/1998	N002	0.0600			#	-	-
Nitrate	mg/L	05/28/1998	0001	0.115	B	U	#	-	-
	mg/L	05/28/1998	0002	0.118	B	U	#	-	-
	mg/L	05/28/1998	N001	0.0927	B	U	#	-	-
	mg/L	05/28/1998	N002	0.0902	B	U	#	-	-
Selenium	mg/L	05/28/1998	0001	0.0020	U		#	0.002	-
	mg/L	05/28/1998	0002	0.0024	B		#	-	-
	mg/L	05/28/1998	N001	0.0022	U		#	0.0022	-
	mg/L	05/28/1998	N002	0.0022	U		#	0.0022	-
Strontium	mg/L	05/28/1998	0001	1.050			#	-	-
	mg/L	05/28/1998	0002	1.120			#	-	-
	mg/L	05/28/1998	N001	1.110			#	-	-
	mg/L	05/28/1998	N002	1.110			#	-	-
Sulfate	mg/L	05/28/1998	0001	127.000			#	-	-
	mg/L	05/28/1998	0002	128.000			#	-	-
	mg/L	05/28/1998	N001	126.000			#	-	-
	mg/L	05/28/1998	N002	128.000			#	-	-
Total Phosphorus as PO4	mg/L	05/28/1998	0001	0.0430	U		#	0.043	-
	mg/L	05/28/1998	0002	0.0430	U		#	0.043	-
	mg/L	05/28/1998	N001	0.0430	U		#	0.043	-
	mg/L	05/28/1998	N002	0.0520	B		#	-	-
Uranium	mg/L	05/28/1998	0001	0.0219			#	-	-
	mg/L	05/28/1998	0002	0.0238			#	-	-
	mg/L	05/28/1998	N001	0.0234			#	-	-
	mg/L	05/28/1998	N002	0.0243			#	-	-
Vanadium	mg/L	05/28/1998	0001	0.0050	U		#	0.005	-
	mg/L	05/28/1998	0002	0.0061	B		#	-	-
	mg/L	05/28/1998	N001	0.0056	U		#	0.0056	-
	mg/L	05/28/1998	N002	0.0056	U		#	0.0056	-
Zinc	mg/L	05/28/1998	0001	0.0042	B		#	-	-
	mg/L	05/28/1998	0002	0.0030	U		#	0.003	-
	mg/L	05/28/1998	N001	0.0130	B	U	#	-	-
	mg/L	05/28/1998	N002	0.0062	B	U	#	-	-

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 1208
REPORT DATE: 7/27/1999 4:55 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE102 WHERE site_code='RFN01' AND location_code in('1206','1207','1208','1209','1210','1211','1212','1213','1214','1215','0574','0575','0545','0548','0439') AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #1/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 1209
REPORT DATE: 7/27/1999 4:55 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Ammonia as NH4	mg/L	05/28/1998	0001	0.623			#	-	-
	mg/L	05/28/1998	N001	0.0795			#	-	-
Arsenic	mg/L	05/28/1998	0001	0.0081	B		#	-	-
	mg/L	05/28/1998	N001	0.0067	B		#	-	-
Cadmium	mg/L	05/28/1998	0001	0.0010	U		#	0.001	-
	mg/L	05/28/1998	N001	0.0011	U		#	0.0011	-
Calcium Carbonate	mg/L	05/28/1998	0001	224.000			#	-	-
	mg/L	05/28/1998	N001	233.000			#	-	-
Fluoride	mg/L	05/28/1998	0001	0.556			#	-	-
	mg/L	05/28/1998	N001	0.523			#	-	-
Hardness	mg/L	05/28/1998	0001	395.000			#	-	-
	mg/L	05/28/1998	N001	415.000			#	-	-
Iron	mg/L	05/28/1998	0001	0.0214	B		#	-	-
	mg/L	05/28/1998	N001	0.904			#	-	-
Manganese	mg/L	05/28/1998	0001	0.0136	B		#	-	-
	mg/L	05/28/1998	N001	0.0431		U	#	-	-
Molybdenum	mg/L	05/28/1998	0001	0.0661			#	-	-
	mg/L	05/28/1998	N001	0.0628			#	-	-
Nitrate	mg/L	05/28/1998	0001	2.570			#	-	-
	mg/L	05/28/1998	N001	0.0831	B	U	#	-	-
Selenium	mg/L	05/28/1998	0001	0.0020	U		#	0.002	-
	mg/L	05/28/1998	N001	0.0022	U		#	0.0022	-
Strontium	mg/L	05/28/1998	0001	1.200			#	-	-
	mg/L	05/28/1998	N001	1.220			#	-	-
Sulfate	mg/L	05/28/1998	0001	135.000			#	-	-
	mg/L	05/28/1998	N001	134.000			#	-	-
Total Phosphorus as PO4	mg/L	05/28/1998	0001	0.0570	B		#	-	-
	mg/L	05/28/1998	N001	0.0520	B		#	-	-
Uranium	mg/L	05/28/1998	0001	0.0303			#	-	-
	mg/L	05/28/1998	N001	0.0317			#	-	-
Vanadium	mg/L	05/28/1998	0001	0.0110	B		#	-	-
	mg/L	05/28/1998	N001	0.0056	U		#	0.0056	-

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 1209
REPORT DATE: 7/27/1999 4:55 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Zinc	mg/L	05/28/1998	0001	0.0040	B		#	-	-
	mg/L	05/28/1998	N001	0.0091	B	U	#	-	-

RECORDS: SELECTED FROM USEE102 WHERE site_code='RFN01' AND location_code in('1206','1207','1208','1209','1210','1211','1212','1213','1214','1215','0574','0575','0545','0548','0439') AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #1/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 1210
REPORT DATE: 7/27/1999 4:55 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Ammonia as NH4	mg/L	05/28/1998	0001	0.0931			#	-	-
	mg/L	05/28/1998	N001	0.0681			#	-	-
Arsenic	mg/L	05/28/1998	0001	0.0086	B		#	-	-
	mg/L	05/28/1998	N001	0.0078	B		#	-	-
Cadmium	mg/L	05/28/1998	0001	0.0010	U		#	0.001	-
	mg/L	05/28/1998	N001	0.0011	U		#	0.0011	-
Calcium Carbonate	mg/L	05/28/1998	0001	225.000			#	-	-
	mg/L	05/28/1998	N001	243.000			#	-	-
Fluoride	mg/L	05/28/1998	0001	0.615			#	-	-
	mg/L	05/28/1998	N001	0.545			#	-	-
Hardness	mg/L	05/28/1998	0001	394.000			#	-	-
	mg/L	05/28/1998	N001	421.000			#	-	-
Iron	mg/L	05/28/1998	0001	0.0144	B		#	-	-
	mg/L	05/28/1998	N001	0.362			#	-	-
Manganese	mg/L	05/28/1998	0001	0.0070	B		#	-	-
	mg/L	05/28/1998	N001	0.0198		U	#	-	-
Molybdenum	mg/L	05/28/1998	0001	0.0775			#	-	-
	mg/L	05/28/1998	N001	0.0721			#	-	-
Nitrate	mg/L	05/28/1998	0001	0.103	B	U	#	-	-
	mg/L	05/28/1998	N001	0.0791	B	U	#	-	-
Selenium	mg/L	05/28/1998	0001	0.0020	U		#	0.002	-
	mg/L	05/28/1998	N001	0.0022	U		#	0.0022	-
Strontium	mg/L	05/28/1998	0001	1.220			#	-	-
	mg/L	05/28/1998	N001	1.230			#	-	-
Sulfate	mg/L	05/28/1998	0001	142.000			#	-	-
	mg/L	05/28/1998	N001	140.000			#	-	-
Total Phosphorus as PO4	mg/L	05/28/1998	0001	0.0430	U		#	0.043	-
	mg/L	05/28/1998	N001	0.0430	U		#	0.043	-
Uranium	mg/L	05/28/1998	0001	0.0395			#	-	-
	mg/L	05/28/1998	N001	0.0371			#	-	-
Vanadium	mg/L	05/28/1998	0001	0.0066	B		#	-	-
	mg/L	05/28/1998	N001	0.0056	U		#	0.0056	-

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 1210
REPORT DATE: 7/27/1999 4:55 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Zinc	mg/L	05/28/1998	0001	0.0046	B		#	-	-
	mg/L	05/28/1998	N001	0.0194	B	U	#	-	-

RECORDS: SELECTED FROM USEE102 WHERE site_code='RFN01' AND location_code in('1206','1207','1208','1209','1210','1211','1212','1213','1214','1215','0574','0575','0545','0548','0439') AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #1/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 1211
REPORT DATE: 7/27/1999 4:55 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Ammonia as NH4	mg/L	05/28/1998	0001	98.100			#	-	-
	mg/L	05/28/1998	N001	97.900			#	-	-
Arsenic	mg/L	05/28/1998	0001	0.0057	B		#	-	-
	mg/L	05/28/1998	N001	0.0032	B		#	-	-
Cadmium	mg/L	05/28/1998	0001	0.0010	U		#	0.001	-
	mg/L	05/28/1998	N001	0.0011	U		#	0.0011	-
Calcium Carbonate	mg/L	05/28/1998	0001	919.000			#	-	-
	mg/L	05/28/1998	N001	974.000			#	-	-
Fluoride	mg/L	05/28/1998	0001	0.483			#	-	-
	mg/L	05/28/1998	N001	0.444			#	-	-
Hardness	mg/L	05/28/1998	0001	1380.000			#	-	-
	mg/L	05/28/1998	N001	1470.000			#	-	-
Iron	mg/L	05/28/1998	0001	0.0110	U		#	0.011	-
	mg/L	05/28/1998	N001	0.216		U	#	-	-
Manganese	mg/L	05/28/1998	0001	0.161			#	-	-
	mg/L	05/28/1998	N001	0.232			#	-	-
Molybdenum	mg/L	05/28/1998	0001	0.488			#	-	-
	mg/L	05/28/1998	N001	0.519			#	-	-
Nitrate	mg/L	05/28/1998	0001	444.000			#	-	-
	mg/L	05/28/1998	N001	450.000			#	-	-
Selenium	mg/L	05/28/1998	0001	0.0021	B		#	-	-
	mg/L	05/28/1998	N001	0.0022	U		#	0.0022	-
Strontium	mg/L	05/28/1998	0001	3.280			#	-	-
	mg/L	05/28/1998	N001	3.350			#	-	-
Sulfate	mg/L	05/28/1998	0001	2840.000			#	-	-
	mg/L	05/28/1998	N001	2850.000			#	-	-
Total Phosphorus as PO4	mg/L	05/28/1998	0001	0.0430	U		#	0.043	-
	mg/L	05/28/1998	N001	0.0430	U		#	0.043	-
Uranium	mg/L	05/28/1998	0001	0.152			#	-	-
	mg/L	05/28/1998	N001	0.156			#	-	-
Vanadium	mg/L	05/28/1998	0001	0.0067	B		#	-	-
	mg/L	05/28/1998	N001	0.0056	U		#	0.0056	-

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 1211
REPORT DATE: 7/27/1999 4:55 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Zinc	mg/L	05/28/1998	0001	0.0030	U		#	0.003	-
	mg/L	05/28/1998	N001	0.0104	B	U	#	-	-

RECORDS: SELECTED FROM USEE102 WHERE site_code='RFN01' AND location_code in('1206','1207','1208','1209','1210','1211','1212','1213','1214','1215','0574','0575','0545','0548','0439') AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #1/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 1212
REPORT DATE: 7/27/1999 4:55 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Ammonia as NH4	mg/L	05/28/1998	0001	99.500			#	-	-
	mg/L	05/28/1998	N001	97.000			#	-	-
Arsenic	mg/L	05/28/1998	0001	0.0058	B		#	-	-
	mg/L	05/28/1998	N001	0.0036	B		#	-	-
Cadmium	mg/L	05/28/1998	0001	0.0010	U		#	0.001	-
	mg/L	05/28/1998	N001	0.0011	U		#	0.0011	-
Calcium Carbonate	mg/L	05/28/1998	0001	923.000			#	-	-
	mg/L	05/28/1998	N001	960.000			#	-	-
Fluoride	mg/L	05/28/1998	0001	0.439			#	-	-
	mg/L	05/28/1998	N001	0.447			#	-	-
Hardness	mg/L	05/28/1998	0001	1390.000			#	-	-
	mg/L	05/28/1998	N001	1450.000			#	-	-
Iron	mg/L	05/28/1998	0001	0.0110	U		#	0.011	-
	mg/L	05/28/1998	N001	0.0904	B	U	#	-	-
Manganese	mg/L	05/28/1998	0001	0.165			#	-	-
	mg/L	05/28/1998	N001	0.248			#	-	-
Molybdenum	mg/L	05/28/1998	0001	0.493			#	-	-
	mg/L	05/28/1998	N001	0.506			#	-	-
Nitrate	mg/L	05/28/1998	0001	446.000			#	-	-
	mg/L	05/28/1998	N001	449.000			#	-	-
Selenium	mg/L	05/28/1998	0001	0.0040	B		#	-	-
	mg/L	05/28/1998	N001	0.0022	U		#	0.0022	-
Strontium	mg/L	05/28/1998	0001	3.310			#	-	-
	mg/L	05/28/1998	N001	3.300			#	-	-
Sulfate	mg/L	05/28/1998	0001	2730.000			#	-	-
	mg/L	05/28/1998	N001	2800.000			#	-	-
Total Phosphorus as PO4	mg/L	05/28/1998	0001	0.0430	U		#	0.043	-
	mg/L	05/28/1998	N001	0.0430	U		#	0.043	-
Uranium	mg/L	05/28/1998	0001	0.150			#	-	-
	mg/L	05/28/1998	N001	0.157			#	-	-
Vanadium	mg/L	05/28/1998	0001	0.0073	B		#	-	-
	mg/L	05/28/1998	N001	0.0056	U		#	0.0056	-

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 1212
REPORT DATE: 7/27/1999 4:55 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Zinc	mg/L	05/28/1998	0001	0.0187	B		#	-	-
	mg/L	05/28/1998	N001	0.0177	B	U	#	-	-

RECORDS: SELECTED FROM USEE102 WHERE site_code='RFN01' AND location_code in('1206','1207','1208','1209','1210','1211','1212','1213','1214','1215','0574','0575','0545','0548','0439') AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #1/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 1213
REPORT DATE: 7/27/1999 4:55 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Ammonia as NH4	mg/L	05/28/1998	0001	95.400			#	-	-
	mg/L	05/28/1998	N001	96.400			#	-	-
Arsenic	mg/L	05/28/1998	0001	0.0036	B		#	-	-
	mg/L	05/28/1998	N001	0.0042	B		#	-	-
Cadmium	mg/L	05/28/1998	0001	0.0010	U		#	0.001	-
	mg/L	05/28/1998	N001	0.0011	U		#	0.0011	-
Calcium Carbonate	mg/L	05/28/1998	0001	953.000			#	-	-
	mg/L	05/28/1998	N001	970.000			#	-	-
Fluoride	mg/L	05/28/1998	0001	0.435			#	-	-
	mg/L	05/28/1998	N001	0.440			#	-	-
Hardness	mg/L	05/28/1998	0001	1440.000			#	-	-
	mg/L	05/28/1998	N001	1470.000			#	-	-
Iron	mg/L	05/28/1998	0001	0.0110	U		#	0.011	-
	mg/L	05/28/1998	N001	0.268			#	-	-
Manganese	mg/L	05/28/1998	0001	0.171			#	-	-
	mg/L	05/28/1998	N001	0.237			#	-	-
Molybdenum	mg/L	05/28/1998	0001	0.491			#	-	-
	mg/L	05/28/1998	N001	0.500			#	-	-
Nitrate	mg/L	05/28/1998	0001	454.000			#	-	-
	mg/L	05/28/1998	N001	447.000			#	-	-
Selenium	mg/L	05/28/1998	0001	0.0023	B		#	-	-
	mg/L	05/28/1998	N001	0.0022	U		#	0.0022	-
Strontium	mg/L	05/28/1998	0001	3.450			#	-	-
	mg/L	05/28/1998	N001	3.330			#	-	-
Sulfate	mg/L	05/28/1998	0001	2700.000			#	-	-
	mg/L	05/28/1998	N001	2730.000			#	-	-
Total Phosphorus as PO4	mg/L	05/28/1998	0001	0.0430	U		#	0.043	-
	mg/L	05/28/1998	N001	0.0430	U		#	0.043	-
Uranium	mg/L	05/28/1998	0001	0.158			#	-	-
	mg/L	05/28/1998	N001	0.160			#	-	-
Vanadium	mg/L	05/28/1998	0001	0.0092	B		#	-	-
	mg/L	05/28/1998	N001	0.0056	U		#	0.0056	-

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 1213
REPORT DATE: 7/27/1999 4:55 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Zinc	mg/L	05/28/1998	0001	0.0149	B		#	-	-
	mg/L	05/28/1998	N001	0.0065	B	U	#	-	-

RECORDS: SELECTED FROM USEE102 WHERE site_code='RFN01' AND location_code in('1206','1207','1208','1209','1210','1211','1212','1213','1214','1215','0574','0575','0545','0548','0439') AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #1/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 1214
REPORT DATE: 7/27/1999 4:55 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Ammonia as NH4	mg/L	05/28/1998	0001	98.800			#	-	-
	mg/L	05/28/1998	N001	96.600			#	-	-
Arsenic	mg/L	05/28/1998	0001	0.0039	B		#	-	-
	mg/L	05/28/1998	N001	0.0040	B		#	-	-
Cadmium	mg/L	05/28/1998	0001	0.0010	U		#	0.001	-
	mg/L	05/28/1998	N001	0.0011	U		#	0.0011	-
Calcium Carbonate	mg/L	05/28/1998	0001	947.000			#	-	-
	mg/L	05/28/1998	N001	975.000			#	-	-
Fluoride	mg/L	05/28/1998	0001	0.463			#	-	-
	mg/L	05/28/1998	N001	0.411			#	-	-
Hardness	mg/L	05/28/1998	0001	1430.000			#	-	-
	mg/L	05/28/1998	N001	1470.000			#	-	-
Iron	mg/L	05/28/1998	0001	0.0130	B		#	-	-
	mg/L	05/28/1998	N001	0.210		U	#	-	-
Manganese	mg/L	05/28/1998	0001	0.163			#	-	-
	mg/L	05/28/1998	N001	0.230			#	-	-
Molybdenum	mg/L	05/28/1998	0001	0.503			#	-	-
	mg/L	05/28/1998	N001	0.512			#	-	-
Nitrate	mg/L	05/28/1998	0001	462.000			#	-	-
	mg/L	05/28/1998	N001	446.000			#	-	-
Selenium	mg/L	05/28/1998	0001	0.0020	U		#	0.002	-
	mg/L	05/28/1998	N001	0.0022	U		#	0.0022	-
Strontium	mg/L	05/28/1998	0001	3.440			#	-	-
	mg/L	05/28/1998	N001	3.310			#	-	-
Sulfate	mg/L	05/28/1998	0001	2680.000			#	-	-
	mg/L	05/28/1998	N001	2720.000			#	-	-
Total Phosphorus as PO4	mg/L	05/28/1998	0001	0.0430	U		#	0.043	-
	mg/L	05/28/1998	N001	0.0430	U		#	0.043	-
Uranium	mg/L	05/28/1998	0001	0.157			#	-	-
	mg/L	05/28/1998	N001	0.158			#	-	-
Vanadium	mg/L	05/28/1998	0001	0.0095	B		#	-	-
	mg/L	05/28/1998	N001	0.0056	U		#	0.0056	-

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 1214
REPORT DATE: 7/27/1999 4:55 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Zinc	mg/L	05/28/1998	0001	0.0030	B		#	-	-
	mg/L	05/28/1998	N001	0.0091	B	U	#	-	-

RECORDS: SELECTED FROM USEE102 WHERE site_code='RFN01' AND location_code in('1206','1207','1208','1209','1210','1211','1212','1213','1214','1215','0574','0575','0545','0548','0439') AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #1/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 1215
REPORT DATE: 7/27/1999 4:55 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Ammonia as NH4	mg/L	05/28/1998	0001	97.200			#	-	-
	mg/L	05/28/1998	0002	97.000			#	-	-
	mg/L	05/29/1998	N001	97.000			#	-	-
	mg/L	05/29/1998	N002	97.700			#	-	-
Arsenic	mg/L	05/28/1998	0001	0.0030	B		#	-	-
	mg/L	05/28/1998	0002	0.0047	B		#	-	-
	mg/L	05/29/1998	N001	0.0043	B		#	-	-
	mg/L	05/29/1998	N002	0.0042	B		#	-	-
Cadmium	mg/L	05/28/1998	0001	0.0010	U		#	0.001	-
	mg/L	05/28/1998	0002	0.0010	U		#	0.001	-
	mg/L	05/29/1998	N001	0.0011	U		#	0.0011	-
	mg/L	05/29/1998	N002	0.0011	U		#	0.0011	-
Calcium Carbonate	mg/L	05/28/1998	0001	932.000			#	-	-
	mg/L	05/28/1998	0002	946.000			#	-	-
	mg/L	05/29/1998	N001	955.000			#	-	-
	mg/L	05/29/1998	N002	970.000			#	-	-
Fluoride	mg/L	05/28/1998	0001	0.441			#	-	-
	mg/L	05/28/1998	0002	0.441			#	-	-
	mg/L	05/29/1998	N001	0.438			#	-	-
	mg/L	05/29/1998	N002	0.431			#	-	-
Hardness	mg/L	05/28/1998	0001	1420.000			#	-	-
	mg/L	05/28/1998	0002	1430.000			#	-	-
	mg/L	05/29/1998	N001	1450.000			#	-	-
	mg/L	05/29/1998	N002	1470.000			#	-	-
Iron	mg/L	05/28/1998	0001	0.0110	U		#	0.011	-
	mg/L	05/28/1998	0002	0.0110	U		#	0.011	-
	mg/L	05/29/1998	N001	0.120		U	#	-	-
	mg/L	05/29/1998	N002	0.159		U	#	-	-
Manganese	mg/L	05/28/1998	0001	0.159			#	-	-
	mg/L	05/28/1998	0002	0.160			#	-	-
	mg/L	05/29/1998	N001	0.207			#	-	-
	mg/L	05/29/1998	N002	0.214			#	-	-
Molybdenum	mg/L	05/28/1998	0001	0.512			#	-	-
	mg/L	05/28/1998	0002	0.510			#	-	-

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 1215
REPORT DATE: 7/27/1999 4:55 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Molybdenum	mg/L	05/29/1998	N001	0.509			#	-	-
	mg/L	05/29/1998	N002	0.507			#	-	-
Nitrate	mg/L	05/28/1998	0001	452.000			#	-	-
	mg/L	05/28/1998	0002	446.000			#	-	-
	mg/L	05/29/1998	N001	443.000			#	-	-
	mg/L	05/29/1998	N002	443.000			#	-	-
Selenium	mg/L	05/28/1998	0001	0.0021	B		#	-	-
	mg/L	05/28/1998	0002	0.0020	U		#	0.002	-
	mg/L	05/29/1998	N001	0.0022	U		#	0.0022	-
	mg/L	05/29/1998	N002	0.0022	U		#	0.0022	-
Strontium	mg/L	05/28/1998	0001	3.440			#	-	-
	mg/L	05/28/1998	0002	3.440			#	-	-
	mg/L	05/29/1998	N001	3.300			#	-	-
	mg/L	05/29/1998	N002	3.320			#	-	-
Sulfate	mg/L	05/28/1998	0001	2800.000			#	-	-
	mg/L	05/28/1998	0002	2840.000			#	-	-
	mg/L	05/29/1998	N001	2730.000			#	-	-
	mg/L	05/29/1998	N002	2720.000			#	-	-
Total Phosphorus as PO4	mg/L	05/28/1998	0001	0.0430	U		#	0.043	-
	mg/L	05/28/1998	0002	0.0430	U		#	0.043	-
	mg/L	05/29/1998	N001	0.0430	U		#	0.043	-
	mg/L	05/29/1998	N002	0.0430	U		#	0.043	-
Uranium	mg/L	05/28/1998	0001	0.159			#	-	-
	mg/L	05/28/1998	0002	0.156			#	-	-
	mg/L	05/29/1998	N001	0.155			#	-	-
	mg/L	05/29/1998	N002	0.157			#	-	-
Vanadium	mg/L	05/28/1998	0001	0.0067	B		#	-	-
	mg/L	05/28/1998	0002	0.0061	B		#	-	-
	mg/L	05/29/1998	N001	0.0056	U		#	0.0056	-
	mg/L	05/29/1998	N002	0.0056	U		#	0.0056	-
Zinc	mg/L	05/28/1998	0001	0.0051	B		#	-	-
	mg/L	05/28/1998	0002	0.0030	U		#	0.003	-
	mg/L	05/29/1998	N001	0.0064	B	U	#	-	-
	mg/L	05/29/1998	N002	0.0075	B	U	#	-	-

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 1215
REPORT DATE: 7/27/1999 4:55 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE102 WHERE site_code='RFN01' AND location_code in('1206','1207','1208','1209','1210','1211','1212','1213','1214','1215','0574','0575','0545','0548','0439') AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #1/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 0397
REPORT DATE: 7/27/1999 4:59 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	02/24/1998	N001	317			#	-	-
	mg/L	05/27/1998	N001	272			#	-	-
	mg/L	11/30/1998	0001	239			#	-	-
	mg/L	11/30/1998	N001	248			#	-	-
Ammonia as NH4	mg/L	02/24/1998	0001	0.0162	B		#	-	-
	mg/L	05/27/1998	0001	0.0231	B		#	-	-
	mg/L	11/30/1998	0001	0.0222	B		#	-	-
Antimony	mg/L	02/24/1998	0001	0.0010	U		#	0.001	-
	mg/L	05/27/1998	0001	0.0010	U		#	0.001	-
	mg/L	11/30/1998	0001	0.0010	U		#	0.001	-
Arsenic	mg/L	02/24/1998	0001	0.0010	U		#	0.001	-
	mg/L	05/27/1998	0001	0.0010	U		#	0.001	-
	mg/L	11/30/1998	0001	0.0010	U		#	0.001	-
Cadmium	mg/L	02/24/1998	0001	0.0010	U		#	0.001	-
	mg/L	05/27/1998	0001	0.0010	U		#	0.001	-
	mg/L	11/30/1998	0001	0.0010	U		#	0.001	-
Calcium	mg/L	02/24/1998	0001	134.000			#	-	-
	mg/L	05/27/1998	0001	102.000			#	-	-
	mg/L	11/30/1998	0001	123.000			#	-	-
Chloride	mg/L	02/24/1998	0001	103.000			#	-	-
	mg/L	05/27/1998	0001	120.000			#	-	-
	mg/L	11/30/1998	0001	62.800			#	-	-
Fluoride	mg/L	05/27/1998	0001	0.523			#	-	-
	mg/L	11/30/1998	0001	0.541			#	-	-
Gross Alpha	pCi/L	02/24/1998	0001	22.30			#	8.23	± 7.55
	pCi/L	05/27/1998	0001	13.71		J	#	8.82	± 6.50
	pCi/L	11/30/1998	0001	15.15			#	13.19	± 9.16
Gross Beta	pCi/L	02/24/1998	0001	11.42			#	10.26	± 6.44
	pCi/L	05/27/1998	0001	11.63			#	10.91	± 6.79
	pCi/L	11/30/1998	0001	12.79	U		#	12.79	± 7.97
Iron	mg/L	02/24/1998	0001	0.0050	U		#	0.005	-
	mg/L	05/27/1998	0001	0.0030	U		#	0.003	-
	mg/L	11/30/1998	0001	0.0090	B	U	#	-	-
Lead	mg/L	02/24/1998	0001	0.0010	U		#	0.001	-

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 0397
REPORT DATE: 7/27/1999 4:59 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Lead	mg/L	05/27/1998	0001	0.0010	U		#	0.001	-
	mg/L	11/30/1998	0001	0.0010	U		#	0.001	-
Lead-210	pCi/L	02/24/1998	0001	0.94	U		#	0.94	± 0.55
	pCi/L	05/27/1998	0001	0.99	U		#	0.99	± 0.58
	pCi/L	11/30/1998	0001	1.26	U		#	1.26	± 0.74
Magnesium	mg/L	02/24/1998	0001	81.300			#	-	-
	mg/L	05/27/1998	0001	62.300			#	-	-
	mg/L	11/30/1998	0001	74.900			#	-	-
Manganese	mg/L	02/24/1998	0001	0.0793			#	-	-
	mg/L	05/27/1998	0001	0.0183			#	-	-
	mg/L	11/30/1998	0001	0.0213			#	-	-
Molybdenum	mg/L	02/24/1998	0001	0.0071	B		#	-	-
	mg/L	05/27/1998	0001	0.0058	B		#	-	-
	mg/L	11/30/1998	0001	0.0075	B		#	-	-
Nitrate	mg/L	02/24/1998	0001	0.0662	B		#	-	-
	mg/L	05/27/1998	0001	0.884	B		#	-	-
	mg/L	11/30/1998	0001	0.0304	B	UJ	#	-	-
pH	s.u.	02/24/1998	N001	8.44			#	-	-
	s.u.	05/27/1998	N001	7.80			#	-	-
	s.u.	11/30/1998	N001	7.6			#	-	-
Polonium-210	pCi/L	02/24/1998	0001	0.31	U		#	0.31	± 0.29
	pCi/L	05/27/1998	0001	0.05		U	#	0.05	± 0.07
	pCi/L	11/30/1998	0001	0.06		U	#	0.05	± 0.07
Radium-226	pCi/L	02/24/1998	0001	0.13			#	0.02	± 0.06
	pCi/L	05/27/1998	0001	0.18			#	0.1	± 0.07
	pCi/L	11/30/1998	0001	0.13			#	0.1	± 0.06
Radium-228	pCi/L	02/24/1998	0001	0.4	U		#	0.4	± 0.20
	pCi/L	05/27/1998	0001	0.60	U		#	0.6	± 0.35
	pCi/L	11/30/1998	0001	0.66	U		#	0.66	± 0.39
Redox Potential	mV	02/24/1998	N001	203			#	-	-
	mV	05/27/1998	N001	223			#	-	-
	mV	11/30/1998	N001	71			#	-	-
Selenium	mg/L	02/24/1998	0001	0.0026	B		#	-	-
	mg/L	05/27/1998	0001	0.0062			#	-	-

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 0397
REPORT DATE: 7/27/1999 4:59 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Selenium	mg/L	11/30/1998	0001	0.0011	B		#	-	-
Sodium	mg/L	02/24/1998	0001	145.000			#	-	-
	mg/L	05/27/1998	0001	117.000			#	-	-
	mg/L	11/30/1998	0001	114.000			#	-	-
Specific Conductance	umhos/c	02/24/1998	N001	1419			#	-	-
	umhos/c	05/27/1998	N001	1404			#	-	-
	umhos/c	11/30/1998	N001	1610			#	-	-
Sulfate	mg/L	02/24/1998	0001	562.000			#	-	-
	mg/L	05/27/1998	0001	380.000			#	-	-
	mg/L	11/30/1998	0001	541.000			#	-	-
Temperature	C	02/24/1998	N001	6.5			#	-	-
	C	05/27/1998	N001	19.6			#	-	-
	C	11/30/1998	N001	5.5			#	-	-
Thorium-230	pCi/L	02/24/1998	0001	0.80	U		#	0.8	±
	pCi/L	05/27/1998	0001	0.80	U		#	0.8	±
	pCi/L	11/30/1998	0001	1.6	U		#	1.6	±
Total Dissolved Solids	mg/L	02/24/1998	0001	1210			#	-	-
	mg/L	11/30/1998	0001	1210			#	-	-
Turbidity	NTU	05/27/1998	N001	1.7			#	-	-
	NTU	11/30/1998	N001	71.6			#	-	-
Uranium	mg/L	02/24/1998	0001	0.0546			#	-	-
	mg/L	05/27/1998	0001	0.0210			#	-	-
	mg/L	11/30/1998	0001	0.0304			#	-	-
Vanadium	mg/L	02/24/1998	0001	0.0072	B	U	#	-	-
	mg/L	05/27/1998	0001	0.0046	B		#	-	-
	mg/L	11/30/1998	0001	0.0018	B		#	-	-

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 0397
REPORT DATE: 7/27/1999 4:59 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE102 WHERE site_code='RFO01' AND location_code in('1201','1202','1203','1204','1205','0580','0538','0570','0397','0399','0573') AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #1/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 0399
REPORT DATE: 7/27/1999 4:59 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	02/24/1998	N001	361			#	-	-
	mg/L	05/26/1998	N001	297			#	-	-
	mg/L	12/01/1998	0001	324			#	-	-
	mg/L	12/01/1998	N001	317			#	-	-
Ammonia as NH4	mg/L	02/24/1998	0001	0.0185	B		#	-	-
	mg/L	02/24/1998	0002	0.0162	B		#	-	-
	mg/L	05/26/1998	0001	0.0134	B		#	-	-
	mg/L	12/01/1998	0001	0.0010	U		#	0.001	-
Antimony	mg/L	02/24/1998	0001	0.0010	U		#	0.001	-
	mg/L	02/24/1998	0002	0.0010	U		#	0.001	-
	mg/L	05/26/1998	0001	0.0010	U		#	0.001	-
	mg/L	12/01/1998	0001	0.0010	U		#	0.001	-
Arsenic	mg/L	02/24/1998	0001	0.0010	U		#	0.001	-
	mg/L	02/24/1998	0002	0.0010	U		#	0.001	-
	mg/L	05/26/1998	0001	0.0010	U		#	0.001	-
	mg/L	12/01/1998	0001	0.0010	U		#	0.001	-
Cadmium	mg/L	02/24/1998	0001	0.0010	U		#	0.001	-
	mg/L	02/24/1998	0002	0.0010	U		#	0.001	-
	mg/L	05/26/1998	0001	0.0010	U		#	0.001	-
	mg/L	12/01/1998	0001	0.0010	U		#	0.001	-
Calcium	mg/L	02/24/1998	0001	135.000			#	-	-
	mg/L	02/24/1998	0002	133.000			#	-	-
	mg/L	05/26/1998	0001	241.000			#	-	-
	mg/L	12/01/1998	0001	148.000			#	-	-
Chloride	mg/L	02/24/1998	0001	45.000			#	-	-
	mg/L	02/24/1998	0002	45.000			#	-	-
	mg/L	05/26/1998	0001	110.000			#	-	-
	mg/L	12/01/1998	0001	58.400			#	-	-
Fluoride	mg/L	05/26/1998	0001	0.806			#	-	-
	mg/L	12/01/1998	0001	1.120			#	-	-
Gross Alpha	pCi/L	02/24/1998	0001	10.74			#	7.75	± 5.77
	pCi/L	02/24/1998	0002	17.91			#	7.52	± 6.60
	pCi/L	05/26/1998	0001	17.23		J	#	11.9	± 8.61
	pCi/L	12/01/1998	0001	19.31			#	15.06	± 10.7

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 0399
REPORT DATE: 7/27/1999 4:59 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Gross Beta	pCi/L	02/24/1998	0001	10.09	U		#	10.09	± 6.26
	pCi/L	02/24/1998	0002	10.15	U		#	10.15	± 6.28
	pCi/L	05/26/1998	0001	16.59			#	11.09	± 7.12
	pCi/L	12/01/1998	0001	18.70			#	12.89	± 8.40
Iron	mg/L	02/24/1998	0001	0.0054	B	U	#	-	-
	mg/L	02/24/1998	0002	0.0050	U		#	0.005	-
	mg/L	05/26/1998	0001	0.0030	U		#	0.003	-
	mg/L	12/01/1998	0001	0.0137	B	U	#	-	-
Lead	mg/L	02/24/1998	0001	0.0010	U		#	0.001	-
	mg/L	02/24/1998	0002	0.0010	U		#	0.001	-
	mg/L	05/26/1998	0001	0.0010	U		#	0.001	-
	mg/L	12/01/1998	0001	0.0010	U		#	0.001	-
Lead-210	pCi/L	02/24/1998	0001	0.95	U		#	0.95	± 0.56
	pCi/L	02/24/1998	0002	0.96	U		#	0.96	± 0.57
	pCi/L	05/26/1998	0001	0.91	U		#	0.91	± 0.52
	pCi/L	12/01/1998	0001	1.37	U		#	1.37	± 0.79
Magnesium	mg/L	02/24/1998	0001	97.600			#	-	-
	mg/L	02/24/1998	0002	96.900			#	-	-
	mg/L	05/26/1998	0001	112.000			#	-	-
	mg/L	12/01/1998	0001	107.000			#	-	-
Manganese	mg/L	02/24/1998	0001	0.0065	B		#	-	-
	mg/L	02/24/1998	0002	0.0069	B		#	-	-
	mg/L	05/26/1998	0001	0.0024	B		#	-	-
	mg/L	12/01/1998	0001	0.0112			#	-	-
Molybdenum	mg/L	02/24/1998	0001	0.0126			#	-	-
	mg/L	02/24/1998	0002	0.0127			#	-	-
	mg/L	05/26/1998	0001	0.0100			#	-	-
	mg/L	12/01/1998	0001	0.0111			#	-	-
Nitrate	mg/L	02/24/1998	0001	11.900			#	-	-
	mg/L	02/24/1998	0002	12.000			#	-	-
	mg/L	05/26/1998	0001	7.500			#	-	-
	mg/L	12/01/1998	0001	12.400		J	#	-	-
pH	s.u.	02/24/1998	N001	8.15			#	-	-
	s.u.	05/26/1998	N001	7.15			#	-	-

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 0399
REPORT DATE: 7/27/1999 4:59 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
pH	s.u.	12/01/1998	N001	8.27			#	-	-
Polonium-210	pCi/L	02/24/1998	0001	0.40	U		#	0.4	± -0.34
	pCi/L	02/24/1998	0002	0.21	U		#	0.21	± 0.20
	pCi/L	05/26/1998	0001	0.05	U		#	0.05	± 0.07
	pCi/L	12/01/1998	0001	0.09		U	#	0.05	± 0.08
Radium-226	pCi/L	02/24/1998	0001	0.15			#	0.01	± 0.06
	pCi/L	02/24/1998	0002	0.20			#	0.02	± 0.08
	pCi/L	05/26/1998	0001	0.25			#	0.1	± 0.08
	pCi/L	12/01/1998	0001	0.15			#	0.12	± 0.08
Radium-228	pCi/L	02/24/1998	0001	1.0	U		#	1	± 0.50
	pCi/L	02/24/1998	0002	0.4	U		#	0.4	± 0.20
	pCi/L	05/26/1998	0001	0.62	U		#	0.62	± 0.36
	pCi/L	12/01/1998	0001	0.81	U		#	0.81	± 0.48
Redox Potential	mV	02/24/1998	N001	137			#	-	-
	mV	05/26/1998	N001	134			#	-	-
	mV	12/01/1998	N001	154			#	-	-
Selenium	mg/L	02/24/1998	0001	0.0104			#	-	-
	mg/L	02/24/1998	0002	0.0106			#	-	-
	mg/L	05/26/1998	0001	0.0097			#	-	-
	mg/L	12/01/1998	0001	0.0110			#	-	-
Sodium	mg/L	02/24/1998	0001	79.200			#	-	-
	mg/L	02/24/1998	0002	78.900			#	-	-
	mg/L	05/26/1998	0001	114.000			#	-	-
	mg/L	12/01/1998	0001	94.800			#	-	-
Specific Conductance	umhos/c	02/24/1998	N001	1685			#	-	-
	umhos/c	05/26/1998	N001	2020			#	-	-
	umhos/c	12/01/1998	N001	1619			#	-	-
Sulfate	mg/L	02/24/1998	0001	509.000			#	-	-
	mg/L	02/24/1998	0002	509.000			#	-	-
	mg/L	05/26/1998	0001	953.000			#	-	-
	mg/L	12/01/1998	0001	595.000			#	-	-
Temperature	C	02/24/1998	N001	4.7			#	-	-
	C	05/26/1998	N001	14.2			#	-	-
	C	12/01/1998	N001	5.2			#	-	-

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 0399
REPORT DATE: 7/27/1999 4:59 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Thorium-230	pCi/L	02/24/1998	0001	0.80	U		#	0.8	±
	pCi/L	02/24/1998	0002	0.80	U		#	0.8	±
	pCi/L	05/26/1998	0001	0.80	U		#	0.8	±
	pCi/L	12/01/1998	0001	1.6	U		#	1.6	±
Total Dissolved Solids	mg/L	02/24/1998	0001	1110			#	-	-
	mg/L	02/24/1998	0002	1110			#	-	-
	mg/L	12/01/1998	0001	1360			#	-	-
Turbidity	NTU	05/26/1998	N001	1.72			#	-	-
	NTU	12/01/1998	N001	9.78			#	-	-
Uranium	mg/L	02/24/1998	0001	0.0351			#	-	-
	mg/L	02/24/1998	0002	0.0349			#	-	-
	mg/L	05/26/1998	0001	0.0360			#	-	-
	mg/L	12/01/1998	0001	0.0344			#	-	-
Vanadium	mg/L	02/24/1998	0001	0.0161			#	-	-
	mg/L	02/24/1998	0002	0.0159		U	#	-	-
	mg/L	05/26/1998	0001	0.0082	B		#	-	-
	mg/L	12/01/1998	0001	0.0111			#	-	-

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 0399
REPORT DATE: 7/27/1999 4:59 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE102 WHERE site_code='RFO01' AND location_code in('1201','1202','1203','1204','1205','0580','0538','0570','0397','0399','0573') AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #1/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 0538
REPORT DATE: 7/27/1999 4:59 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	02/25/1998	N001	158			#	-	-
	mg/L	05/27/1998	N001	93			#	-	-
	mg/L	08/18/1998	0001	134			#	-	-
	mg/L	08/18/1998	N001	124			#	-	-
	mg/L	11/30/1998	0001	130			#	-	-
	mg/L	11/30/1998	N001	126			#	-	-
	mg/L	01/27/1999	0001	199			#	-	-
	mg/L	01/27/1999	N001	194			#	-	-
Ammonia as NH4	mg/L	02/25/1998	0001	0.0368	B		#	-	-
	mg/L	05/27/1998	0001	0.0303	B		#	-	-
	mg/L	08/18/1998	0001	0.0156	B	U	#	-	-
	mg/L	11/30/1998	0001	0.0082	B		#	-	-
	mg/L	11/30/1998	0002	0.0054	B		#	-	-
	mg/L	01/27/1999	0001	0.0144	B		#	-	-
Antimony	mg/L	02/25/1998	0001	0.0010	U		#	0.001	-
	mg/L	05/27/1998	0001	0.0010	U		#	0.001	-
	mg/L	08/18/1998	0001	0.0010	U		#	0.001	-
	mg/L	11/30/1998	0001	0.0010	U		#	0.001	-
	mg/L	11/30/1998	0002	0.0010	U		#	0.001	-
	mg/L	01/27/1999	0001	0.0010	U		#	0.001	-
Arsenic	mg/L	02/25/1998	0001	0.0010	U		#	0.001	-
	mg/L	05/27/1998	0001	0.0010	U		#	0.001	-
	mg/L	08/18/1998	0001	0.0010	U		#	0.001	-
	mg/L	11/30/1998	0001	0.0010	U		#	0.001	-
	mg/L	11/30/1998	0002	0.0010	U		#	0.001	-
	mg/L	01/27/1999	0001	0.00010	U		#	0.0001	-
Cadmium	mg/L	02/25/1998	0001	0.0010	U		#	0.001	-
	mg/L	05/27/1998	0001	0.0010	U		#	0.001	-
	mg/L	08/18/1998	0001	0.0010	U		#	0.001	-
	mg/L	11/30/1998	0001	0.0010	U		#	0.001	-
	mg/L	11/30/1998	0002	0.0010	U		#	0.001	-
	mg/L	01/27/1999	0001	0.0010	U		#	0.001	-
Calcium	mg/L	02/25/1998	0001	68.200			#	-	-
	mg/L	05/27/1998	0001	37.000			#	-	-
	mg/L	08/18/1998	0001	64.200			#	-	-

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 0538
REPORT DATE: 7/27/1999 4:59 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Calcium	mg/L	11/30/1998	0001	65.400			#	-	-
	mg/L	11/30/1998	0002	65.400			#	-	-
	mg/L	01/27/1999	0001	71.200			#	-	-
Chloride	mg/L	02/25/1998	0001	158.000			#	-	-
	mg/L	05/27/1998	0001	33.700			#	-	-
	mg/L	08/18/1998	0001	144.000			#	-	-
	mg/L	11/30/1998	0001	171.000			#	-	-
	mg/L	11/30/1998	0002	174.000			#	-	-
	mg/L	01/27/1999	0001	182.000			#	-	-
Fluoride	mg/L	05/27/1998	0001	0.129			#	-	-
	mg/L	11/30/1998	0001	0.257			#	-	-
	mg/L	11/30/1998	0002	0.261			#	-	-
Gross Alpha	pCi/L	02/25/1998	0001	4.56	U	J	#	4.56	± 2.93
	pCi/L	05/27/1998	0001	2.26	U	J	#	2.26	± 1.41
	pCi/L	08/18/1998	0001	8.21	U	J	#	8.21	± 4.99
	pCi/L	11/30/1998	0001	10.60	U		#	10.6	± 5.49
	pCi/L	11/30/1998	0002	10.67	U		#	10.67	± 5.34
	pCi/L	01/27/1999	0001	10.60	U	J	#	10.6	± 5.97
Gross Beta	pCi/L	02/25/1998	0001	5.10	U		#	5.1	± 3.16
	pCi/L	05/27/1998	0001	3.10			#	2.72	± 1.70
	pCi/L	08/18/1998	0001	11.85	U		#	11.85	± 7.13
	pCi/L	11/30/1998	0001	12.56	U		#	12.56	± 7.35
	pCi/L	11/30/1998	0002	12.55	U		#	12.55	± 7.54
	pCi/L	01/27/1999	0001	11.47	U		#	11.47	± 6.67
Iron	mg/L	02/25/1998	0001	0.0249	B		#	-	-
	mg/L	05/27/1998	0001	0.0304			#	-	-
	mg/L	08/18/1998	0001	0.0321	*	UJ	#	-	-
	mg/L	11/30/1998	0001	0.0102	B	U	#	-	-
	mg/L	11/30/1998	0002	0.0117	B	U	#	-	-
	mg/L	01/27/1999	0001	0.0030	U		#	0.003	-
Lead	mg/L	02/25/1998	0001	0.0010	U		#	0.001	-
	mg/L	05/27/1998	0001	0.0010	U		#	0.001	-
	mg/L	08/18/1998	0001	0.0010	U		#	0.001	-
	mg/L	11/30/1998	0001	0.0010	U		#	0.001	-
	mg/L	11/30/1998	0002	0.0010	U		#	0.001	-

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 0538
REPORT DATE: 7/27/1999 4:59 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Lead	mg/L	01/27/1999	0001	0.0010	U		#	0.001	-
Lead-210	pCi/L	02/25/1998	0001	0.98	U		#	0.98	± 0.58
	pCi/L	05/27/1998	0001	0.94	U		#	0.94	± 0.55
	pCi/L	08/18/1998	0001	0.94	U		#	0.94	± 0.54
	pCi/L	11/30/1998	0001	1.33	U		#	1.33	± 0.79
	pCi/L	11/30/1998	0002	1.38	U		#	1.38	± 0.81
	pCi/L	01/27/1999	0001	0.98	U		#	0.98	± 0.59
Magnesium	mg/L	02/25/1998	0001	17.100			#	-	-
	mg/L	05/27/1998	0001	7.670			#	-	-
	mg/L	08/18/1998	0001	13.000			#	-	-
	mg/L	11/30/1998	0001	14.700			#	-	-
	mg/L	11/30/1998	0002	14.700			#	-	-
	mg/L	01/27/1999	0001	24.700			#	-	-
Manganese	mg/L	02/25/1998	0001	0.343			#	-	-
	mg/L	05/27/1998	0001	0.0088	B		#	-	-
	mg/L	08/18/1998	0001	0.0125			#	-	-
	mg/L	11/30/1998	0001	0.0201			#	-	-
	mg/L	11/30/1998	0002	0.0200			#	-	-
	mg/L	01/27/1999	0001	0.0307			#	-	-
Molybdenum	mg/L	02/25/1998	0001	0.0095	B		#	-	-
	mg/L	05/27/1998	0001	0.0011	B		#	-	-
	mg/L	08/18/1998	0001	0.0098	BE	U	#	-	-
	mg/L	11/30/1998	0001	0.0085	B		#	-	-
	mg/L	11/30/1998	0002	0.0096	B		#	-	-
	mg/L	01/27/1999	0001	0.0092	B		#	-	-
Nitrate	mg/L	02/25/1998	0001	0.244	B		#	-	-
	mg/L	05/27/1998	0001	0.602	B		#	-	-
	mg/L	08/18/1998	0001	0.0110	U		#	0.011	-
	mg/L	11/30/1998	0001	0.359	B	J	#	-	-
	mg/L	11/30/1998	0002	0.366	B	J	#	-	-
	mg/L	01/27/1999	0001	0.269	B		#	-	-
pH	s.u.	02/25/1998	N001	8.94			#	-	-
	s.u.	05/27/1998	N001	7.52			#	-	-
	s.u.	08/18/1998	N001	9.01			#	-	-
	s.u.	11/30/1998	N001	8.58			#	-	-

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 0538
REPORT DATE: 7/27/1999 4:59 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
pH	s.u.	01/27/1999	N001	8.53			#	-	-
Polonium-210	pCi/L	02/25/1998	0001	0.22	U		#	0.22	± 0.19
	pCi/L	05/27/1998	0001	0.06	U		#	0.06	± 0.08
	pCi/L	08/18/1998	0001	0.05	U		#	0.05	± 0.06
	pCi/L	11/30/1998	0001	0.07	U		#	0.07	± 0.08
	pCi/L	11/30/1998	0002	0.07	U		#	0.07	± 0.08
	pCi/L	01/27/1999	0001	0.08	U		#	0.08	± 0.10
Radium-226	pCi/L	02/25/1998	0001	0.23			#	0.01	± 0.07
	pCi/L	05/27/1998	0001	0.12			#	0.11	± 0.07
	pCi/L	08/18/1998	0001	0.09	U		#	0.09	± 0.05
	pCi/L	11/30/1998	0001	0.21			#	0.11	± 0.08
	pCi/L	11/30/1998	0002	0.24			#	0.11	± 0.08
	pCi/L	01/27/1999	0001	0.15			#	0.13	± 0.09
Radium-228	pCi/L	02/25/1998	0001	0.6	U		#	0.6	± 0.30
	pCi/L	05/27/1998	0001	0.67	U		#	0.67	± 0.38
	pCi/L	08/18/1998	0001	0.42	U		#	0.42	± 0.25
	pCi/L	11/30/1998	0001	0.71	U		#	0.71	± 0.42
	pCi/L	11/30/1998	0002	0.74	U		#	0.74	± 0.44
	pCi/L	01/27/1999	0001	0.77	U		#	0.77	± 0.46
Redox Potential	mV	02/25/1998	N001	56			#	-	-
	mV	05/27/1998	N001	271			#	-	-
	mV	08/18/1998	N001	65			#	-	-
	mV	11/30/1998	N001	100			#	-	-
	mV	01/27/1999	N001	218			#	-	-
Selenium	mg/L	02/25/1998	0001	0.0010	U		#	0.001	-
	mg/L	05/27/1998	0001	0.0010	U		#	0.001	-
	mg/L	08/18/1998	0001	0.0010	U		#	0.001	-
	mg/L	11/30/1998	0001	0.0010	U		#	0.001	-
	mg/L	11/30/1998	0002	0.0010	U		#	0.001	-
	mg/L	01/27/1999	0001	0.00038	B		#	-	-
Sodium	mg/L	02/25/1998	0001	119.000			#	-	-
	mg/L	05/27/1998	0001	25.100			#	-	-
	mg/L	08/18/1998	0001	96.200			#	-	-
	mg/L	11/30/1998	0001	115.000			#	-	-
	mg/L	11/30/1998	0002	115.000			#	-	-

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 0538
REPORT DATE: 7/27/1999 4:59 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Sodium	mg/L	01/27/1999	0001	180.000			#	-	-
Specific Conductance	umhos/c	02/25/1998	N001	1061			#	-	-
	umhos/c	05/27/1998	N001	3770			#	-	-
	umhos/c	08/18/1998	N001	8720			#	-	-
	umhos/c	11/30/1998	N001	1095			#	-	-
	umhos/c	01/27/1999	N001	1434			#	-	-
Sulfate	mg/L	02/25/1998	0001	133.000			#	-	-
	mg/L	05/27/1998	0001	39.800			#	-	-
	mg/L	08/18/1998	0001	104.000	N	J	#	-	-
	mg/L	11/30/1998	0001	123.000			#	-	-
	mg/L	11/30/1998	0002	126.000			#	-	-
	mg/L	01/27/1999	0001	224.000			#	-	-
Temperature	C	02/25/1998	N001	7.0			#	-	-
	C	05/27/1998	N001	13.2			#	-	-
	C	08/18/1998	N001	20.6			#	-	-
	C	11/30/1998	N001	6.8			#	-	-
	C	01/27/1999	N001	8.6			#	-	-
Thorium-230	pCi/L	02/25/1998	0001	0.80	U		#	0.8	±
	pCi/L	05/27/1998	0001	0.80	U		#	0.8	±
	pCi/L	08/18/1998	0001	1.2	U		#	1.2	±
	pCi/L	11/30/1998	0001	1.6	U		#	1.6	±
	pCi/L	11/30/1998	0002	1.6	U		#	1.6	±
	pCi/L	01/27/1999	0001	0.80	U		#	0.8	±
Total Dissolved Solids	mg/L	02/25/1998	0001	585			#	-	-
	mg/L	08/18/1998	0001	520			#	-	-
	mg/L	11/30/1998	0001	632			#	-	-
	mg/L	11/30/1998	0002	635			#	-	-
	mg/L	01/27/1999	0001	885			#	-	-
Turbidity	NTU	05/27/1998	N001	32.5			#	-	-
	NTU	11/30/1998	N001	8.31			#	-	-
	NTU	01/27/1999	N001	30.0			#	-	-
Uranium	mg/L	02/25/1998	0001	0.0027			#	-	-
	mg/L	05/27/1998	0001	0.0010	U		#	0.001	-
	mg/L	08/18/1998	0001	0.0017			#	-	-
	mg/L	11/30/1998	0001	0.0027			#	-	-

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 0538
REPORT DATE: 7/27/1999 4:59 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Uranium	mg/L	11/30/1998	0002	0.0026			#	-	-
	mg/L	01/27/1999	0001	0.0079			#	-	-
Vanadium	mg/L	02/25/1998	0001	0.0072	B	U	#	-	-
	mg/L	05/27/1998	0001	0.0010	U		#	0.001	-
	mg/L	08/18/1998	0001	0.0020	U		#	0.002	-
	mg/L	11/30/1998	0001	0.0010	U		#	0.001	-
	mg/L	11/30/1998	0002	0.0010	U		#	0.001	-
	mg/L	01/27/1999	0001	0.0010	U		#	0.001	-

RECORDS: SELECTED FROM USEE102 WHERE site_code='RFO01' AND location_code in('1201','1202','1203','1204','1205','0580','0538','0570','0397','0399','0573') AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #1/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 0570 ONE MILE POND
REPORT DATE: 7/27/1999 4:59 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	02/25/1998	N001	322			#	-	-
	mg/L	05/27/1998	N001	222			#	-	-
	mg/L	11/30/1998	0001	298			#	-	-
	mg/L	11/30/1998	N001	288			#	-	-
Ammonia as NH4	mg/L	02/25/1998	0001	0.0276	B		#	-	-
	mg/L	05/27/1998	0001	0.0764	B		#	-	-
	mg/L	11/30/1998	0001	0.0250	B		#	-	-
Antimony	mg/L	02/25/1998	0001	0.0010	U		#	0.001	-
	mg/L	05/27/1998	0001	0.0010	U		#	0.001	-
	mg/L	11/30/1998	0001	0.0010	U		#	0.001	-
Arsenic	mg/L	02/25/1998	0001	0.0010	U		#	0.001	-
	mg/L	05/27/1998	0001	0.0010	U		#	0.001	-
	mg/L	11/30/1998	0001	0.0010	U		#	0.001	-
Cadmium	mg/L	02/25/1998	0001	0.0010	U		#	0.001	-
	mg/L	05/27/1998	0001	0.0010	U		#	0.001	-
	mg/L	11/30/1998	0001	0.0010	U		#	0.001	-
Calcium	mg/L	02/25/1998	0001	112.000			#	-	-
	mg/L	05/27/1998	0001	77.000			#	-	-
	mg/L	11/30/1998	0001	84.000			#	-	-
Chloride	mg/L	02/25/1998	0001	18.400			#	-	-
	mg/L	05/27/1998	0001	28.500			#	-	-
	mg/L	11/30/1998	0001	96.700			#	-	-
Fluoride	mg/L	05/27/1998	0001	0.238			#	-	-
	mg/L	11/30/1998	0001	0.362			#	-	-
Gross Alpha	pCi/L	02/25/1998	0001	18.97		J	#	7.78	± 6.88
	pCi/L	05/27/1998	0001	6.95		J	#	4.96	± 3.57
	pCi/L	11/30/1998	0001	13.51			#	12.41	± 8.51
Gross Beta	pCi/L	02/25/1998	0001	8.87	U		#	8.87	± 5.46
	pCi/L	05/27/1998	0001	5.49	U		#	5.49	± 3.25
	pCi/L	11/30/1998	0001	19.53			#	12.74	± 8.36
Iron	mg/L	02/25/1998	0001	0.0096	B		#	-	-
	mg/L	05/27/1998	0001	0.0341			#	-	-
	mg/L	11/30/1998	0001	0.0466		U	#	-	-
Lead	mg/L	02/25/1998	0001	0.0010	U		#	0.001	-

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 0570 ONE MILE POND
REPORT DATE: 7/27/1999 4:59 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Lead	mg/L	05/27/1998	0001	0.0010	U		#	0.001	-
	mg/L	11/30/1998	0001	0.0010	U		#	0.001	-
Lead-210	pCi/L	02/25/1998	0001	0.98	U		#	0.98	± 0.59
	pCi/L	05/27/1998	0001	0.89	U		#	0.89	± 0.53
	pCi/L	11/30/1998	0001	1.31	U		#	1.31	± 0.76
Magnesium	mg/L	02/25/1998	0001	91.100			#	-	-
	mg/L	05/27/1998	0001	42.500			#	-	-
	mg/L	11/30/1998	0001	56.900			#	-	-
Manganese	mg/L	02/25/1998	0001	0.0341			#	-	-
	mg/L	05/27/1998	0001	0.0379			#	-	-
	mg/L	11/30/1998	0001	0.168			#	-	-
Molybdenum	mg/L	02/25/1998	0001	0.0040	B		#	-	-
	mg/L	05/27/1998	0001	0.0023	B		#	-	-
	mg/L	11/30/1998	0001	0.0110			#	-	-
Nitrate	mg/L	02/25/1998	0001	3.030			#	-	-
	mg/L	05/27/1998	0001	0.229	B	U	#	-	-
	mg/L	11/30/1998	0001	0.0406	B	UJ	#	-	-
pH	s.u.	02/25/1998	N001	8.10			#	-	-
	s.u.	05/27/1998	N001	7.22			#	-	-
	s.u.	11/30/1998	N001	8.44			#	-	-
Polonium-210	pCi/L	02/25/1998	0001	0.37	U		#	0.37	± 0.38
	pCi/L	05/27/1998	0001	0.09	U		#	0.09	± 0.09
	pCi/L	11/30/1998	0001	0.08		U	#	0.07	± 0.10
Radium-226	pCi/L	02/25/1998	0001	0.20			#	0.02	± 0.08
	pCi/L	05/27/1998	0001	0.18			#	0.1	± 0.07
	pCi/L	11/30/1998	0001	0.47			#	0.14	± 0.11
Radium-228	pCi/L	02/25/1998	0001	0.6	U		#	0.6	± 0.40
	pCi/L	05/27/1998	0001	0.62	U		#	0.62	± 0.36
	pCi/L	11/30/1998	0001	0.95	U		#	0.95	± 0.56
Redox Potential	mV	02/25/1998	N001	175			#	-	-
	mV	05/27/1998	N001	20			#	-	-
	mV	11/30/1998	N001	78			#	-	-
Selenium	mg/L	02/25/1998	0001	0.0070			#	-	-
	mg/L	05/27/1998	0001	0.0019	B		#	-	-

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 0570 ONE MILE POND
REPORT DATE: 7/27/1999 4:59 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Selenium	mg/L	11/30/1998	0001	0.0020	B		#	-	-
Sodium	mg/L	02/25/1998	0001	101.000			#	-	-
	mg/L	05/27/1998	0001	63.200			#	-	-
	mg/L	11/30/1998	0001	113.000			#	-	-
Specific Conductance	umhos/c	02/25/1998	N001	1585			#	-	-
	umhos/c	05/27/1998	N001	908			#	-	-
	umhos/c	11/30/1998	N001	1407			#	-	-
Sulfate	mg/L	02/25/1998	0001	538.000			#	-	-
	mg/L	05/27/1998	0001	257.000			#	-	-
	mg/L	11/30/1998	0001	280.000			#	-	-
Temperature	C	02/25/1998	N001	5.5			#	-	-
	C	05/27/1998	N001	23.8			#	-	-
	C	11/30/1998	N001	6.5			#	-	-
Thorium-230	pCi/L	02/25/1998	0001	0.80	U		#	0.8	±
	pCi/L	05/27/1998	0001	0.80	U		#	0.8	±
	pCi/L	11/30/1998	0001	1.6	U		#	1.6	±
Total Dissolved Solids	mg/L	02/25/1998	0001	1080			#	-	-
	mg/L	11/30/1998	0001	912			#	-	-
Turbidity	NTU	05/27/1998	N001	5.31			#	-	-
	NTU	11/30/1998	N001	9.81			#	-	-
Uranium	mg/L	02/25/1998	0001	0.0259			#	-	-
	mg/L	05/27/1998	0001	0.0086			#	-	-
	mg/L	11/30/1998	0001	0.0293			#	-	-
Vanadium	mg/L	02/25/1998	0001	0.0104		U	#	-	-
	mg/L	05/27/1998	0001	0.0018	B		#	-	-
	mg/L	11/30/1998	0001	0.0042	B		#	-	-

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 0570 ONE MILE POND
REPORT DATE: 7/27/1999 4:59 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE102 WHERE site_code='RFO01' AND location_code in('1201','1202','1203','1204','1205','0580','0538','0570','0397','0399','0573') AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #1/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 0573 SEEP UPGRAD FROM ONE MILE POND
REPORT DATE: 7/27/1999 4:59 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	11/30/1998	0001	418			#	-	-
	mg/L	11/30/1998	N001	400			#	-	-
Ammonia as NH4	mg/L	11/30/1998	0001	0.0187	B		#	-	-
Antimony	mg/L	11/30/1998	0001	0.0010	U		#	0.001	-
Arsenic	mg/L	11/30/1998	0001	0.0010	U		#	0.001	-
Cadmium	mg/L	11/30/1998	0001	0.0010	U		#	0.001	-
Calcium	mg/L	11/30/1998	0001	251.000			#	-	-
Chloride	mg/L	11/30/1998	0001	63.900			#	-	-
Fluoride	mg/L	11/30/1998	0001	0.919			#	-	-
Gross Alpha	pCi/L	11/30/1998	0001	32.77			#	29.94	± 20.5
Gross Beta	pCi/L	11/30/1998	0001	32.37			#	25.75	± 16.5
Iron	mg/L	11/30/1998	0001	0.0116	B	U	#	-	-
Lead	mg/L	11/30/1998	0001	0.0010	U		#	0.001	-
Lead-210	pCi/L	11/30/1998	0001	1.36	U		#	1.36	± 0.80
Magnesium	mg/L	11/30/1998	0001	166.000			#	-	-
Manganese	mg/L	11/30/1998	0001	0.0053	B		#	-	-
Molybdenum	mg/L	11/30/1998	0001	0.0161			#	-	-
Nitrate	mg/L	11/30/1998	0001	0.0305	B	UJ	#	-	-
pH	s.u.	11/30/1998	N001	8.35			#	-	-
Polonium-210	pCi/L	11/30/1998	0001	0.09		U	#	0.08	± 0.11
Radium-226	pCi/L	11/30/1998	0001	0.14			#	0.1	± 0.07
Radium-228	pCi/L	11/30/1998	0001	0.67	U		#	0.67	± 0.40
Redox Potential	mV	11/30/1998	N001	219			#	-	-
Selenium	mg/L	11/30/1998	0001	0.0031	B		#	-	-
Sodium	mg/L	11/30/1998	0001	332.000			#	-	-
Specific Conductance	umhos/c	11/30/1998	N001	3530			#	-	-
Sulfate	mg/L	11/30/1998	0001	1690.000			#	-	-
Temperature	C	11/30/1998	N001	4.6			#	-	-
Thorium-230	pCi/L	11/30/1998	0001	1.6	U		#	1.6	±

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 0573 SEEP UPGRAD FROM ONE MILE POND
REPORT DATE: 7/27/1999 4:59 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Total Dissolved Solids	mg/L	11/30/1998	0001	3140			#	-	-
Turbidity	NTU	11/30/1998	N001	3.38			#	-	-
Uranium	mg/L	11/30/1998	0001	0.0534			#	-	-
Vanadium	mg/L	11/30/1998	0001	0.0019	B		#	-	-

RECORDS: SELECTED FROM USEE102 WHERE site_code='RFO01' AND location_code in('1201','1202','1203','1204','1205','0580','0538','0570','0397','0399','0573') AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #1/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 0580 Estimated using ArcView
REPORT DATE: 7/27/1999 4:59 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	02/25/1998	N001	474			#	-	-
	mg/L	05/27/1998	N001	407			#	-	-
	mg/L	08/18/1998	0001	334			#	-	-
	mg/L	08/18/1998	N001	354			#	-	-
	mg/L	11/30/1998	0001	449			#	-	-
	mg/L	11/30/1998	N001	475			#	-	-
Ammonia as NH4	mg/L	02/25/1998	0001	0.0094	B		#	-	-
	mg/L	05/27/1998	0001	0.0182	B		#	-	-
	mg/L	08/18/1998	0001	0.0468	B		#	-	-
	mg/L	11/30/1998	0001	0.0194	B		#	-	-
Antimony	mg/L	02/25/1998	0001	0.0010	U		#	0.001	-
	mg/L	05/27/1998	0001	0.0010	U		#	0.001	-
	mg/L	08/18/1998	0001	0.0010	U		#	0.001	-
	mg/L	11/30/1998	0001	0.0010	U		#	0.001	-
Arsenic	mg/L	02/25/1998	0001	0.0010	U		#	0.001	-
	mg/L	05/27/1998	0001	0.0010	U		#	0.001	-
	mg/L	08/18/1998	0001	0.0010	U		#	0.001	-
	mg/L	11/30/1998	0001	0.0010	U		#	0.001	-
Cadmium	mg/L	02/25/1998	0001	0.0010	U		#	0.001	-
	mg/L	05/27/1998	0001	0.0010	U		#	0.001	-
	mg/L	08/18/1998	0001	0.0010	U		#	0.001	-
	mg/L	11/30/1998	0001	0.0010	U		#	0.001	-
Calcium	mg/L	02/25/1998	0001	84.500			#	-	-
	mg/L	05/27/1998	0001	71.500			#	-	-
	mg/L	08/18/1998	0001	54.600			#	-	-
	mg/L	11/30/1998	0001	79.900			#	-	-
Chloride	mg/L	02/25/1998	0001	176.000			#	-	-
	mg/L	05/27/1998	0001	193.000			#	-	-
	mg/L	08/18/1998	0001	198.000			#	-	-
	mg/L	11/30/1998	0001	203.000			#	-	-
Fluoride	mg/L	05/27/1998	0001	0.803			#	-	-
	mg/L	11/30/1998	0001	0.816			#	-	-
Gross Alpha	pCi/L	02/25/1998	0001	12.79		J	#	11	± 7.82
	pCi/L	05/27/1998	0001	37.86		J	#	11.91	± 10.8

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 0580 Estimated using ArcView
REPORT DATE: 7/27/1999 4:59 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Gross Alpha	pCi/L	08/18/1998	0001	23.02			#	15.34	± 11.3
	pCi/L	11/30/1998	0001	24.53	U		#	24.53	± 16.2
Gross Beta	pCi/L	02/25/1998	0001	14.41			#	12.29	± 7.76
	pCi/L	05/27/1998	0001	11.18	U		#	11.18	± 6.74
	pCi/L	08/18/1998	0001	15.19	U		#	15.19	± 9.24
	pCi/L	11/30/1998	0001	25.45	U		#	25.45	± 15.4
Iron	mg/L	02/25/1998	0001	0.0050	U		#	0.005	-
	mg/L	05/27/1998	0001	0.0030	U		#	0.003	-
	mg/L	08/18/1998	0001	0.0040	B	U	#	-	-
	mg/L	11/30/1998	0001	0.0031	B	U	#	-	-
Lead	mg/L	02/25/1998	0001	0.0010	U		#	0.001	-
	mg/L	05/27/1998	0001	0.0010	U		#	0.001	-
	mg/L	08/18/1998	0001	0.0010	U		#	0.001	-
	mg/L	11/30/1998	0001	0.0010	U		#	0.001	-
Lead-210	pCi/L	02/25/1998	0001	0.97	U		#	0.97	± 0.58
	pCi/L	05/27/1998	0001	0.91	U		#	0.91	± 0.54
	pCi/L	08/18/1998	0001	0.91	U		#	0.91	± 0.52
	pCi/L	11/30/1998	0001	1.37	U		#	1.37	± 0.81
Magnesium	mg/L	02/25/1998	0001	69.500			#	-	-
	mg/L	05/27/1998	0001	75.600			#	-	-
	mg/L	08/18/1998	0001	74.800			#	-	-
	mg/L	11/30/1998	0001	80.700			#	-	-
Manganese	mg/L	02/25/1998	0001	0.108			#	-	-
	mg/L	05/27/1998	0001	0.0045	B		#	-	-
	mg/L	08/18/1998	0001	0.0015	B		#	-	-
	mg/L	11/30/1998	0001	0.0021	B		#	-	-
Molybdenum	mg/L	02/25/1998	0001	0.0193			#	-	-
	mg/L	05/27/1998	0001	0.0198			#	-	-
	mg/L	08/18/1998	0001	0.0241			#	-	-
	mg/L	11/30/1998	0001	0.0239			#	-	-
Nitrate	mg/L	02/25/1998	0001	0.0445	B		#	-	-
	mg/L	05/27/1998	0001	0.0719	B	U	#	-	-
	mg/L	08/18/1998	0001	0.0350	B	U	#	-	-
	mg/L	11/30/1998	0001	0.0467	B	UJ	#	-	-

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 0580 Estimated using ArcView
REPORT DATE: 7/27/1999 4:59 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
pH	s.u.	02/25/1998	N001	8.36			#	-	-
	s.u.	05/27/1998	N001	7.84			#	-	-
	s.u.	08/18/1998	N001	8.64			#	-	-
	s.u.	11/30/1998	N001	8.15			#	-	-
Polonium-210	pCi/L	02/25/1998	0001	0.16		U	#	0.16	± 0.25
	pCi/L	05/27/1998	0001	0.08	U		#	0.08	± 0.09
	pCi/L	08/18/1998	0001	0.06	U		#	0.06	± 0.08
	pCi/L	11/30/1998	0001	0.08	U		#	0.08	± 0.10
Radium-226	pCi/L	02/25/1998	0001	0.84			#	0.21	± 0.52
	pCi/L	05/27/1998	0001	0.10	U		#	0.1	± 0.06
	pCi/L	08/18/1998	0001	0.19	U		#	0.19	± 0.10
	pCi/L	11/30/1998	0001	0.13	U		#	0.13	± 0.08
Radium-228	pCi/L	02/25/1998	0001	0.7	U		#	0.7	± 0.40
	pCi/L	05/27/1998	0001	0.63	U		#	0.63	± 0.37
	pCi/L	08/18/1998	0001	0.92	U		#	0.92	± 0.54
	pCi/L	11/30/1998	0001	0.82	U		#	0.82	± 0.49
Redox Potential	mV	02/25/1998	N001	214			#	-	-
	mV	05/27/1998	N001	208			#	-	-
	mV	08/18/1998	N001	164			#	-	-
	mV	11/30/1998	N001	208			#	-	-
Selenium	mg/L	02/25/1998	0001	0.0010	U		#	0.001	-
	mg/L	05/27/1998	0001	0.0012	B		#	-	-
	mg/L	08/18/1998	0001	0.0010	U		#	0.001	-
	mg/L	11/30/1998	0001	0.0012	B		#	-	-
Sodium	mg/L	02/25/1998	0001	355.000			#	-	-
	mg/L	05/27/1998	0001	396.000			#	-	-
	mg/L	08/18/1998	0001	408.000			#	-	-
	mg/L	11/30/1998	0001	435.000			#	-	-
Specific Conductance	umhos/c	02/25/1998	N001	2380			#	-	-
	umhos/c	05/27/1998	N001	2380			#	-	-
	umhos/c	08/18/1998	N001	2340			#	-	-
	umhos/c	11/30/1998	N001	2960			#	-	-
Sulfate	mg/L	02/25/1998	0001	594.000			#	-	-
	mg/L	05/27/1998	0001	705.000			#	-	-

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 0580 Estimated using ArcView
REPORT DATE: 7/27/1999 4:59 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Sulfate	mg/L	08/18/1998	0001	652.000			#	-	-
	mg/L	11/30/1998	0001	748.000			#	-	-
Temperature	C	02/25/1998	N001	7.5			#	-	-
	C	05/27/1998	N001	19.2			#	-	-
	C	08/18/1998	N001	24.3			#	-	-
	C	11/30/1998	N001	4.9			#	-	-
Thorium-230	pCi/L	02/25/1998	0001	0.80	U		#	0.8	±
	pCi/L	05/27/1998	0001	0.80	U		#	0.8	±
	pCi/L	08/18/1998	0001	1.2	U		#	1.2	±
	pCi/L	11/30/1998	0001	1.6	U		#	1.6	±
Total Dissolved Solids	mg/L	02/25/1998	0001	1510			#	-	-
	mg/L	08/18/1998	0001	1640			#	-	-
	mg/L	11/30/1998	0001	1880			#	-	-
Turbidity	NTU	05/27/1998	N001	3.93			#	-	-
	NTU	11/30/1998	N001	16.9			#	-	-
Uranium	mg/L	02/25/1998	0001	0.0240			#	-	-
	mg/L	05/27/1998	0001	0.0284			#	-	-
	mg/L	08/18/1998	0001	0.0230			#	-	-
	mg/L	11/30/1998	0001	0.0301			#	-	-
Vanadium	mg/L	02/25/1998	0001	0.0079	B	U	#	-	-
	mg/L	05/27/1998	0001	0.0010	U		#	0.001	-
	mg/L	08/18/1998	0001	0.0020	U		#	0.002	-
	mg/L	11/30/1998	0001	0.0010	U		#	0.001	-

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 0580 Estimated using ArcView
REPORT DATE: 7/27/1999 4:59 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE102 WHERE site_code='RFO01' AND location_code in('1201','1202','1203','1204','1205','0580','0538','0570','0397','0399','0573') AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #1/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 1201 Risk Assessment Sample Site
REPORT DATE: 7/27/1999 4:59 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Ammonia as NH4	mg/L	05/29/1998	0001	0.0431			#	-	-
	mg/L	05/29/1998	N001	0.0613			#	-	-
Arsenic	mg/L	05/29/1998	0001	0.0052	B		#	-	-
	mg/L	05/29/1998	N001	0.0064	B		#	-	-
Cadmium	mg/L	05/29/1998	0001	0.0010	U		#	0.001	-
	mg/L	05/29/1998	N001	0.0011	U		#	0.0011	-
Calcium Carbonate	mg/L	05/29/1998	0001	179.000			#	-	-
	mg/L	05/29/1998	N001	188.000			#	-	-
Fluoride	mg/L	05/29/1998	0001	0.299			#	-	-
	mg/L	05/29/1998	N001	0.290			#	-	-
Hardness	mg/L	05/29/1998	0001	366.000			#	-	-
	mg/L	05/29/1998	N001	392.000			#	-	-
Iron	mg/L	05/29/1998	0001	0.0852	B		#	-	-
	mg/L	05/29/1998	N001	0.288			#	-	-
Manganese	mg/L	05/29/1998	0001	0.293			#	-	-
	mg/L	05/29/1998	N001	0.322			#	-	-
Molybdenum	mg/L	05/29/1998	0001	0.0026	B		#	-	-
	mg/L	05/29/1998	N001	0.0028	B	U	#	-	-
Nitrate	mg/L	05/29/1998	0001	0.110	B	U	#	-	-
	mg/L	05/29/1998	N001	0.0629	B	U	#	-	-
Selenium	mg/L	05/29/1998	0001	0.0020	U		#	0.002	-
	mg/L	05/29/1998	N001	0.0022	U		#	0.0022	-
Strontium	mg/L	05/29/1998	0001	1.100			#	-	-
	mg/L	05/29/1998	N001	1.110			#	-	-
Sulfate	mg/L	05/29/1998	0001	262.000			#	-	-
	mg/L	05/29/1998	N001	264.000			#	-	-
Total Phosphorus as PO4	mg/L	05/29/1998	0001	0.0430	U		#	0.043	-
	mg/L	05/29/1998	N001	0.360			#	-	-
Uranium	mg/L	05/29/1998	0001	0.0080			#	-	-
	mg/L	05/29/1998	N001	0.0085			#	-	-
Vanadium	mg/L	05/29/1998	0001	0.0050	U		#	0.005	-
	mg/L	05/29/1998	N001	0.0056	U		#	0.0056	-

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 1201 Risk Assessment Sample Site
REPORT DATE: 7/27/1999 4:59 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Zinc	mg/L	05/29/1998	0001	0.0045	B		#	-	-
	mg/L	05/29/1998	N001	0.0068	B	U	#	-	-

RECORDS: SELECTED FROM USEE102 WHERE site_code='RFO01' AND location_code in('1201','1202','1203','1204','1205','0580','0538','0570','0397','0399','0573') AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #1/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 1202 Risk Assessment Sample Site
REPORT DATE: 7/27/1999 4:59 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Ammonia as NH4	mg/L	05/29/1998	0001	0.111			#	-	-
	mg/L	05/29/1998	N001	0.0295			#	-	-
Arsenic	mg/L	05/29/1998	0001	0.0028	B		#	-	-
	mg/L	05/29/1998	N001	0.0053	B		#	-	-
Cadmium	mg/L	05/29/1998	0001	0.0010	U		#	0.001	-
	mg/L	05/29/1998	N001	0.0011	U		#	0.0011	-
Calcium Carbonate	mg/L	05/29/1998	0001	189.000			#	-	-
	mg/L	05/29/1998	N001	192.000			#	-	-
Fluoride	mg/L	05/29/1998	0001	0.279			#	-	-
	mg/L	05/29/1998	N001	0.284			#	-	-
Hardness	mg/L	05/29/1998	0001	372.000			#	-	-
	mg/L	05/29/1998	N001	382.000			#	-	-
Iron	mg/L	05/29/1998	0001	0.0452	B		#	-	-
	mg/L	05/29/1998	N001	0.256			#	-	-
Manganese	mg/L	05/29/1998	0001	0.199			#	-	-
	mg/L	05/29/1998	N001	0.204			#	-	-
Molybdenum	mg/L	05/29/1998	0001	0.0022	B		#	-	-
	mg/L	05/29/1998	N001	0.0026	B	U	#	-	-
Nitrate	mg/L	05/29/1998	0001	0.0882	B	U	#	-	-
	mg/L	05/29/1998	N001	0.0345	B	U	#	-	-
Selenium	mg/L	05/29/1998	0001	0.0021	B		#	-	-
	mg/L	05/29/1998	N001	0.0022	U		#	0.0022	-
Strontium	mg/L	05/29/1998	0001	1.080			#	-	-
	mg/L	05/29/1998	N001	1.040			#	-	-
Sulfate	mg/L	05/29/1998	0001	249.000			#	-	-
	mg/L	05/29/1998	N001	250.000			#	-	-
Total Phosphorus as PO4	mg/L	05/29/1998	0001	0.449			#	-	-
	mg/L	05/29/1998	N001	0.442			#	-	-
Uranium	mg/L	05/29/1998	0001	0.0084			#	-	-
	mg/L	05/29/1998	N001	0.0088			#	-	-
Vanadium	mg/L	05/29/1998	0001	0.0081	B		#	-	-
	mg/L	05/29/1998	N001	0.0056	U		#	0.0056	-

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 1202 Risk Assessment Sample Site
REPORT DATE: 7/27/1999 4:59 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Zinc	mg/L	05/29/1998	0001	0.0197	B		#	-	-
	mg/L	05/29/1998	N001	0.0193	B	U	#	-	-

RECORDS: SELECTED FROM USEE102 WHERE site_code='RFO01' AND location_code in('1201','1202','1203','1204','1205','0580','0538','0570','0397','0399','0573') AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #1/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 1203 Risk Assessment Sample Site
REPORT DATE: 7/27/1999 4:59 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Ammonia as NH4	mg/L	05/29/1998	0001	0.0431			#	-	-
	mg/L	05/29/1998	0002	0.0681			#	-	-
	mg/L	05/29/1998	N001	0.0340			#	-	-
	mg/L	05/29/1998	N002	0.0408			#	-	-
Arsenic	mg/L	05/29/1998	0001	0.0047	B		#	-	-
	mg/L	05/29/1998	0002	0.0046	B		#	-	-
	mg/L	05/29/1998	N001	0.0054	B		#	-	-
	mg/L	05/29/1998	N002	0.0068	B		#	-	-
Cadmium	mg/L	05/29/1998	0001	0.0010	U		#	0.001	-
	mg/L	05/29/1998	0002	0.0010	U		#	0.001	-
	mg/L	05/29/1998	N001	0.0011	U		#	0.0011	-
	mg/L	05/29/1998	N002	0.0011	U		#	0.0011	-
Calcium Carbonate	mg/L	05/29/1998	0001	182.000			#	-	-
	mg/L	05/29/1998	0002	179.000			#	-	-
	mg/L	05/29/1998	N001	186.000			#	-	-
	mg/L	05/29/1998	N002	187.000			#	-	-
Fluoride	mg/L	05/29/1998	0001	0.298			#	-	-
	mg/L	05/29/1998	0002	0.300			#	-	-
	mg/L	05/29/1998	N001	0.310			#	-	-
	mg/L	05/29/1998	N002	0.304			#	-	-
Hardness	mg/L	05/29/1998	0001	382.000			#	-	-
	mg/L	05/29/1998	0002	378.000			#	-	-
	mg/L	05/29/1998	N001	395.000			#	-	-
	mg/L	05/29/1998	N002	396.000			#	-	-
Iron	mg/L	05/29/1998	0001	0.105			#	-	-
	mg/L	05/29/1998	0002	0.115			#	-	-
	mg/L	05/29/1998	N001	0.315			#	-	-
	mg/L	05/29/1998	N002	0.301			#	-	-
Manganese	mg/L	05/29/1998	0001	0.593			#	-	-
	mg/L	05/29/1998	0002	0.563			#	-	-
	mg/L	05/29/1998	N001	0.591			#	-	-
	mg/L	05/29/1998	N002	0.590			#	-	-
Molybdenum	mg/L	05/29/1998	0001	0.0014	B		#	-	-
	mg/L	05/29/1998	0002	0.0014	B		#	-	-

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 1203 Risk Assessment Sample Site
REPORT DATE: 7/27/1999 4:59 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Molybdenum	mg/L	05/29/1998	N001	0.0018	B	U	#	-	-
	mg/L	05/29/1998	N002	0.0019	B	U	#	-	-
Nitrate	mg/L	05/29/1998	0001	0.0918	B	U	#	-	-
	mg/L	05/29/1998	0002	0.0894	B	U	#	-	-
	mg/L	05/29/1998	N001	0.0332	B	U	#	-	-
	mg/L	05/29/1998	N002	0.0286	B	U	#	-	-
Selenium	mg/L	05/29/1998	0001	0.0020	U		#	0.002	-
	mg/L	05/29/1998	0002	0.0020	U		#	0.002	-
	mg/L	05/29/1998	N001	0.0022	U		#	0.0022	-
	mg/L	05/29/1998	N002	0.0022	U		#	0.0022	-
Strontium	mg/L	05/29/1998	0001	1.150			#	-	-
	mg/L	05/29/1998	0002	1.140			#	-	-
	mg/L	05/29/1998	N001	1.130			#	-	-
	mg/L	05/29/1998	N002	1.120			#	-	-
Sulfate	mg/L	05/29/1998	0001	265.000			#	-	-
	mg/L	05/29/1998	0002	265.000			#	-	-
	mg/L	05/29/1998	N001	265.000			#	-	-
	mg/L	05/29/1998	N002	265.000			#	-	-
Total Phosphorus as PO4	mg/L	05/29/1998	0001	0.0430	U		#	0.043	-
	mg/L	05/29/1998	0002	0.0430	U		#	0.043	-
	mg/L	05/29/1998	N001	0.0520	B		#	-	-
	mg/L	05/29/1998	N002	0.0720	B		#	-	-
Uranium	mg/L	05/29/1998	0001	0.0064			#	-	-
	mg/L	05/29/1998	0002	0.0063			#	-	-
	mg/L	05/29/1998	N001	0.0069			#	-	-
	mg/L	05/29/1998	N002	0.0069			#	-	-
Vanadium	mg/L	05/29/1998	0001	0.0070	B		#	-	-
	mg/L	05/29/1998	0002	0.0050	U		#	0.005	-
	mg/L	05/29/1998	N001	0.0056	U		#	0.0056	-
	mg/L	05/29/1998	N002	0.0056	U		#	0.0056	-
Zinc	mg/L	05/29/1998	0001	0.0072	B		#	-	-
	mg/L	05/29/1998	0002	0.0178	B		#	-	-
	mg/L	05/29/1998	N001	0.0053	B	U	#	-	-
	mg/L	05/29/1998	N002	0.0051	B	U	#	-	-

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 1203 Risk Assessment Sample Site
REPORT DATE: 7/27/1999 4:59 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE102 WHERE site_code='RFO01' AND location_code in('1201','1202','1203','1204','1205','0580','0538','0570','0397','0399','0573') AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #1/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 1204 Risk Assessment Sample Site
REPORT DATE: 7/27/1999 4:59 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Ammonia as NH4	mg/L	05/29/1998	0001	0.0772			#	-	-
	mg/L	05/29/1998	N001	0.120			#	-	-
Arsenic	mg/L	05/29/1998	0001	0.0037	B		#	-	-
	mg/L	05/29/1998	N001	0.0064	B		#	-	-
Cadmium	mg/L	05/29/1998	0001	0.0010	U		#	0.001	-
	mg/L	05/29/1998	N001	0.0011	U		#	0.0011	-
Calcium Carbonate	mg/L	05/29/1998	0001	155.000			#	-	-
	mg/L	05/29/1998	N001	184.000			#	-	-
Fluoride	mg/L	05/29/1998	0001	0.322			#	-	-
	mg/L	05/29/1998	N001	0.332			#	-	-
Hardness	mg/L	05/29/1998	0001	331.000			#	-	-
	mg/L	05/29/1998	N001	401.000			#	-	-
Iron	mg/L	05/29/1998	0001	0.111			#	-	-
	mg/L	05/29/1998	N001	0.293			#	-	-
Manganese	mg/L	05/29/1998	0001	0.695			#	-	-
	mg/L	05/29/1998	N001	0.829			#	-	-
Molybdenum	mg/L	05/29/1998	0001	0.0011	B		#	-	-
	mg/L	05/29/1998	N001	0.0018	B	U	#	-	-
Nitrate	mg/L	05/29/1998	0001	0.0851	B	U	#	-	-
	mg/L	05/29/1998	N001	0.158	B	U	#	-	-
Selenium	mg/L	05/29/1998	0001	0.0020	U		#	0.002	-
	mg/L	05/29/1998	N001	0.0022	U		#	0.0022	-
Strontium	mg/L	05/29/1998	0001	1.020			#	-	-
	mg/L	05/29/1998	N001	1.150			#	-	-
Sulfate	mg/L	05/29/1998	0001	269.000			#	-	-
	mg/L	05/29/1998	N001	276.000			#	-	-
Total Phosphorus as PO4	mg/L	05/29/1998	0001	0.0430	U		#	0.043	-
	mg/L	05/29/1998	N001	0.0430	U		#	0.043	-
Uranium	mg/L	05/29/1998	0001	0.0049	B		#	-	-
	mg/L	05/29/1998	N001	0.0057			#	-	-
Vanadium	mg/L	05/29/1998	0001	0.0050	U		#	0.005	-
	mg/L	05/29/1998	N001	0.0056	U		#	0.0056	-

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 1204 Risk Assessment Sample Site
REPORT DATE: 7/27/1999 4:59 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Zinc	mg/L	05/29/1998	0001	0.0030	U		#	0.003	-
	mg/L	05/29/1998	N001	0.0052	B	U	#	-	-

RECORDS: SELECTED FROM USEE102 WHERE site_code='RFO01' AND location_code in('1201','1202','1203','1204','1205','0580','0538','0570','0397','0399','0573') AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #1/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 1205 Risk Assessment Sample Site
REPORT DATE: 7/27/1999 4:59 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Ammonia as NH4	mg/L	05/29/1998	0001	0.0772			#	-	-
	mg/L	05/29/1998	N001	0.0363			#	-	-
Arsenic	mg/L	05/29/1998	0001	0.0023	B		#	-	-
	mg/L	05/29/1998	N001	0.0028	B		#	-	-
Cadmium	mg/L	05/29/1998	0001	0.0010	U		#	0.001	-
	mg/L	05/29/1998	N001	0.0011	U		#	0.0011	-
Calcium Carbonate	mg/L	05/29/1998	0001	172.000			#	-	-
	mg/L	05/29/1998	N001	178.000			#	-	-
Fluoride	mg/L	05/29/1998	0001	0.408			#	-	-
	mg/L	05/29/1998	N001	0.362			#	-	-
Hardness	mg/L	05/29/1998	0001	400.000			#	-	-
	mg/L	05/29/1998	N001	413.000			#	-	-
Iron	mg/L	05/29/1998	0001	0.0424	B		#	-	-
	mg/L	05/29/1998	N001	0.217		U	#	-	-
Manganese	mg/L	05/29/1998	0001	0.183			#	-	-
	mg/L	05/29/1998	N001	0.441			#	-	-
Molybdenum	mg/L	05/29/1998	0001	0.0010	U		#	0.001	-
	mg/L	05/29/1998	N001	0.0012	B	U	#	-	-
Nitrate	mg/L	05/29/1998	0001	0.103	B	U	#	-	-
	mg/L	05/29/1998	N001	0.139	B	U	#	-	-
Selenium	mg/L	05/29/1998	0001	0.0020	U		#	0.002	-
	mg/L	05/29/1998	N001	0.0022	U		#	0.0022	-
Strontium	mg/L	05/29/1998	0001	1.260			#	-	-
	mg/L	05/29/1998	N001	1.220			#	-	-
Sulfate	mg/L	05/29/1998	0001	291.000			#	-	-
	mg/L	05/29/1998	N001	291.000			#	-	-
Total Phosphorus as PO4	mg/L	05/29/1998	0001	0.0430	U		#	0.043	-
	mg/L	05/29/1998	N001	0.0430	U		#	0.043	-
Uranium	mg/L	05/29/1998	0001	0.0047	B		#	-	-
	mg/L	05/29/1998	N001	0.0049	B		#	-	-
Vanadium	mg/L	05/29/1998	0001	0.0050	U		#	0.005	-
	mg/L	05/29/1998	N001	0.0056	U		#	0.0056	-

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 1205 Risk Assessment Sample Site
REPORT DATE: 7/27/1999 4:59 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Zinc	mg/L	05/29/1998	0001	0.0080	B		#	-	-
	mg/L	05/29/1998	N001	0.0033	U		#	0.0033	-

RECORDS: SELECTED FROM USEE102 WHERE site_code='RFO01' AND location_code in('1201','1202','1203','1204','1205','0580','0538','0570','0397','0399','0573') AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #1/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 0539
REPORT DATE: 7/27/1999 5:02 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	03/16/1993	N001	143			#	-	-
	mg/L	08/05/1993	N001	109			#	-	-
Calcium	mg/L	03/16/1993	N001	70.7			#	0.5	-
	mg/L	08/05/1993	N001	59.3			#	0.5	-
Chloride	mg/L	03/16/1993	N001	187			#	0.5	-
	mg/L	08/05/1993	N001	91.9			#	0.5	-
Chromium	mg/L	03/16/1993	N001	0.01	U		#	0.01	-
	mg/L	08/05/1993	N001	0.01	U		#	0.01	-
Dissolved Organic Carbon	mg/L	03/16/1993	N001	3			#	1	-
	mg/L	08/05/1993	N001	3			#	1	-
Field Ferrous Iron	mg/L	08/05/1993	N001	0.05			#	-	-
Field Total Iron	mg/L	08/05/1993	N001	0.03			#	-	-
Fluoride	mg/L	03/16/1993	N001	0.3			#	0.1	-
	mg/L	08/05/1993	N001	0.2			#	0.1	-
Gross Alpha	pCi/L	03/16/1993	N001	1.4			#	2.1	± 1.70
	pCi/L	08/05/1993	N001	8.3			#	2.5	± 3.10
Gross Beta	pCi/L	03/16/1993	N001	9.3			#	3.4	± 2.60
Iron	mg/L	03/16/1993	N001	1.40	N*		#	0.03	-
	mg/L	08/05/1993	N001	0.14			#	0.03	-
Magnesium	mg/L	03/16/1993	N001	14.8			#	0.1	-
	mg/L	08/05/1993	N001	10.8			#	0.1	-
Manganese	mg/L	03/16/1993	N001	0.08			#	0.01	-
	mg/L	08/05/1993	N001	0.03			#	0.01	-
Molybdenum	mg/L	03/16/1993	N001	0.01	U		#	0.01	-
	mg/L	08/05/1993	N001	0.01	U		#	0.01	-
Nitrate	mg/L	03/16/1993	N001	1			#	1	-
	mg/L	08/05/1993	N001	1	U		#	1	-
pH	s.u.	03/16/1993	N001	8.30			#	-	-
	s.u.	08/05/1993	N001	8.20			#	-	-
Potassium	mg/L	03/16/1993	N001	4.1			#	0.1	-
	mg/L	08/05/1993	N001	2.4			#	0.1	-
Radium-226	pCi/L	03/16/1993	N001	0.5			#	0.5	± 0.40

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 0539
REPORT DATE: 7/27/1999 5:02 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Radium-226	pCi/L	08/05/1993	N001	0.4			#	0.2	± 0.20
Radium-228	pCi/L	03/16/1993	N001	1.1			#	2.8	± 1.70
	pCi/L	08/05/1993	N001	0.2		J	#	0.6	± 0.30
Selenium	mg/L	03/16/1993	N001	0.005	UW		#	0.005	-
	mg/L	08/05/1993	N001	0.005	U		#	0.005	-
Silica	mg/L	03/16/1993	N001	11.8	N		#	0.5	-
	mg/L	08/05/1993	N001	8.4	N*		#	0.5	-
Sodium	mg/L	03/16/1993	N001	115			#	1	-
	mg/L	08/05/1993	N001	62			#	1	-
Specific Conductance	umhos/c	03/16/1993	N001	735			#	-	-
	umhos/c	08/05/1993	N001	600			#	-	-
Sulfate	mg/L	03/16/1993	N001	130			#	1	-
	mg/L	08/05/1993	N001	83			#	1	-
Temperature	C	03/16/1993	N001	8.3			#	-	-
	C	08/05/1993	N001	17.7			#	-	-
Total Dissolved Solids	mg/L	03/16/1993	N001	600			#	10	-
	mg/L	08/05/1993	N001	390			#	10	-
Total Organic Carbon	mg/L	03/16/1993	N001	3			#	1	-
	mg/L	08/05/1993	N001	3			#	1	-
Uranium	mg/L	03/16/1993	N001	0.003			#	0.001	-
	mg/L	08/05/1993	N001	0.002			#	0.001	-
Vanadium	mg/L	03/16/1993	N001	0.01	U		#	0.01	-
	mg/L	08/05/1993	N001	0.01	U		#	0.01	-

SURFACE WATER QUALITY DATA BY LOCATION (USEE102) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 0539
REPORT DATE: 7/27/1999 5:02 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE102 WHERE site_code='RFO01' AND location_code in('0539') AND DATE_SAMPLED between #1/1/1993# and #12/31/1993#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

Appendix C

Ground Water Analytical Results

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0169
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	8/20/1998	0001	545			#	-	-
	mg/L	8/20/1998	N001	535			#	-	-
	mg/L	1/28/1999	0001	557			#	-	-
	mg/L	1/28/1999	N001	564			#	-	-
Ammonia as NH4	mg/L	8/20/1998	0001	0.0213	B		#	-	-
	mg/L	1/28/1999	0001	0.0978	B		#	-	-
	mg/L	1/28/1999	0002	0.0103	B		#	-	-
Antimony	mg/L	8/20/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/28/1999	0001	0.0010	U		#	0.001	-
	mg/L	1/28/1999	0002	0.0010	U		#	0.001	-
Arsenic	mg/L	8/20/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/28/1999	0001	0.00031	B		#	-	-
	mg/L	1/28/1999	0002	0.00011	B		#	-	-
Cadmium	mg/L	8/20/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/28/1999	0001	0.0010	U		#	0.001	-
	mg/L	1/28/1999	0002	0.0010	U		#	0.001	-
Calcium	mg/L	8/20/1998	0001	177.000			#	-	-
	mg/L	1/28/1999	0001	156.000			#	-	-
	mg/L	1/28/1999	0002	157.000			#	-	-
Chloride	mg/L	8/20/1998	0001	91.500			#	-	-
	mg/L	1/28/1999	0001	85.700			#	-	-
	mg/L	1/28/1999	0002	87.600			#	-	-
Fluoride	mg/L	8/20/1998	0001	0.651			#	-	-
	mg/L	1/28/1999	0001	0.595			#	-	-
	mg/L	1/28/1999	0002	0.641			#	-	-
Gross Alpha	pCi/L	8/20/1998	0001	21.56		J	#	21.02	± 14.2
	pCi/L	1/28/1999	0001	22.61		J	#	18.17	± 12.6
	pCi/L	1/28/1999	0002	27.03		J	#	18.08	± 13.1
Gross Beta	pCi/L	8/20/1998	0001	24.05	U		#	24.05	± 14.3
	pCi/L	1/28/1999	0001	14.70	U		#	14.7	± 8.81
	pCi/L	1/28/1999	0002	15.70			#	14.72	± 9.21
Iron	mg/L	8/20/1998	0001	0.0148	B*	UJ	#	-	-
	mg/L	1/28/1999	0001	0.0036	B	U	#	-	-
	mg/L	1/28/1999	0002	0.0039	B	U	#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0169
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Lead	mg/L	8/20/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/28/1999	0001	0.0010	U		#	0.001	-
	mg/L	1/28/1999	0002	0.0010	U		#	0.001	-
Lead-210	pCi/L	8/20/1998	0001	0.98	U		#	0.98	± 0.56
	pCi/L	1/28/1999	0001	0.94	U		#	0.94	± 0.57
	pCi/L	1/28/1999	0002	0.97	U		#	0.97	± 0.58
Magnesium	mg/L	8/20/1998	0001	141.000			#	-	-
	mg/L	1/28/1999	0001	121.000			#	-	-
	mg/L	1/28/1999	0002	121.000			#	-	-
Manganese	mg/L	8/20/1998	0001	0.283			#	-	-
	mg/L	1/28/1999	0001	0.297			#	-	-
	mg/L	1/28/1999	0002	0.297			#	-	-
Molybdenum	mg/L	8/20/1998	0001	0.0067	BE		#	-	-
	mg/L	1/28/1999	0001	0.0235			#	-	-
	mg/L	1/28/1999	0002	0.0059	B		#	-	-
Nitrate	mg/L	8/20/1998	0001	20.200			#	-	-
	mg/L	1/28/1999	0001	20.600			#	-	-
	mg/L	1/28/1999	0002	20.200			#	-	-
pH	s.u.	8/20/1998	N001	6.94			#	-	-
	s.u.	1/28/1999	N001	6.73			#	-	-
Polonium-210	pCi/L	8/20/1998	0001	0.09	U		#	0.09	± 0.09
	pCi/L	1/28/1999	0001	0.05		U	#	0.05	± 0.07
	pCi/L	1/28/1999	0002	0.09		U	#	0.07	± 0.10
Radium-226	pCi/L	8/20/1998	0001	0.14	U		#	0.14	± 0.07
	pCi/L	1/28/1999	0001	0.12	U		#	0.12	± 0.06
	pCi/L	1/28/1999	0002	0.12	U		#	0.12	± 0.07
Radium-228	pCi/L	8/20/1998	0001	0.68	U		#	0.68	± 0.40
	pCi/L	1/28/1999	0001	0.79			#	0.67	± 0.41
	pCi/L	1/28/1999	0002	0.68	U		#	0.68	± 0.41
Redox Potential	mV	8/20/1998	N001	-38			#	-	-
	mV	1/28/1999	N001	146			#	-	-
Selenium	mg/L	8/20/1998	0001	0.0186			#	-	-
	mg/L	1/28/1999	0001	0.0176			#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0169
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Selenium	mg/L	1/28/1999	0002	0.0181			#	-	-
Sodium	mg/L	8/20/1998	0001	270.000			#	-	-
	mg/L	1/28/1999	0001	252.000			#	-	-
	mg/L	1/28/1999	0002	254.000			#	-	-
Specific Conductance	umhos/cm	8/20/1998	N001	1761			#	-	-
	umhos/cm	1/28/1999	N001	2500			#	-	-
Sulfate	mg/L	8/20/1998	0001	831.000			#	-	-
	mg/L	1/28/1999	0001	744.000			#	-	-
	mg/L	1/28/1999	0002	753.000			#	-	-
Temperature	C	8/20/1998	N001	15.9			#	-	-
	C	1/28/1999	N001	10.2			#	-	-
Thorium-230	pCi/L	8/20/1998	0001	2.3		U	#	-	±
	pCi/L	1/28/1999	0001	0.80	U		#	0.8	±
	pCi/L	1/28/1999	0002	0.80	U		#	0.8	±
Turbidity	NTU	8/20/1998	N001	0.39			#	-	-
	NTU	1/28/1999	N001	9.63			#	-	-
Uranium	mg/L	8/20/1998	0001	0.0419			#	-	-
	mg/L	1/28/1999	0001	0.0366			#	-	-
	mg/L	1/28/1999	0002	0.0362			#	-	-
Uranium-234	pCi/L	8/20/1998	0001	24.9			#	-	±
Uranium-235	pCi/L	8/20/1998	0001	0.75	BN		#	-	±
Uranium-238	pCi/L	8/20/1998	0001	15.0	N	J	#	-	±
Vanadium	mg/L	8/20/1998	0001	0.0020	U		#	0.002	-
	mg/L	1/28/1999	0001	0.0023	B		#	-	-
	mg/L	1/28/1999	0002	0.0013	B		#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0169
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE100 WHERE site_code='RFN01' AND quality_assurance = TRUE AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #5/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0170 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	8/20/1998	0001	564			#	-	-
	mg/L	8/20/1998	N001	603			#	-	-
	mg/L	1/20/1999	0001	563			#	-	-
	mg/L	1/20/1999	N001	751			#	-	-
Ammonia as NH4	mg/L	8/20/1998	0001	0.0724	B		#	-	-
	mg/L	1/20/1999	0001	0.212			#	-	-
Antimony	mg/L	8/20/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/20/1999	0001	0.0010	U		#	0.001	-
Arsenic	mg/L	8/20/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/20/1999	0001	0.00079	B		#	-	-
Cadmium	mg/L	8/20/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/20/1999	0001	0.0010	U		#	0.001	-
Calcium	mg/L	8/20/1998	0001	197.000			#	-	-
	mg/L	1/20/1999	0001	198.000			#	-	-
Chloride	mg/L	8/20/1998	0001	223.000			#	-	-
	mg/L	1/20/1999	0001	236.000			#	-	-
Fluoride	mg/L	8/20/1998	0001	0.419			#	-	-
	mg/L	1/20/1999	0001	0.477			#	-	-
Gross Alpha	pCi/L	8/20/1998	0001	49.84		J	#	30.89	± 23.3
	pCi/L	1/20/1999	0001	58.1			#	26.5	± 21.8
Gross Beta	pCi/L	8/20/1998	0001	30.42	U		#	30.42	± 17.9
	pCi/L	1/20/1999	0001	23.52	U		#	23.52	± 14.5
Iron	mg/L	8/20/1998	0001	0.586	*	J	#	-	-
	mg/L	1/20/1999	0001	0.169			#	-	-
Lead	mg/L	8/20/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/20/1999	0001	0.0010	U		#	0.001	-
Lead-210	pCi/L	8/20/1998	0001	0.89	U		#	0.89	± 0.51
	pCi/L	1/20/1999	0001	1.04	U		#	1.04	± 0.61
Magnesium	mg/L	8/20/1998	0001	131.000			#	-	-
	mg/L	1/20/1999	0001	131.000			#	-	-
Manganese	mg/L	8/20/1998	0001	1.240			#	-	-
	mg/L	1/20/1999	0001	0.348			#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0170 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Molybdenum	mg/L	8/20/1998	0001	0.0073	BE		#	-	-
	mg/L	1/20/1999	0001	0.0041	B		#	-	-
Nitrate	mg/L	8/20/1998	0001	61.800			#	-	-
	mg/L	1/20/1999	0001	84.600			#	-	-
pH	s.u.	8/20/1998	N001	7.07			#	-	-
	s.u.	1/20/1999	N001	7.16			#	-	-
Polonium-210	pCi/L	8/20/1998	0001	0.12		U	#	0.04	± 0.09
	pCi/L	1/20/1999	0001	0.12		U	#	0.1	± 0.13
Radium-226	pCi/L	8/20/1998	0001	0.10	U		#	0.1	± 0.06
	pCi/L	1/20/1999	0001	0.13	U		#	0.13	± 0.08
Radium-228	pCi/L	8/20/1998	0001	0.61			#	0.5	± 0.30
	pCi/L	1/20/1999	0001	1.22			#	0.66	± 0.41
Redox Potential	mV	8/20/1998	N001	-176			#	-	-
	mV	1/20/1999	N001	-280			#	-	-
Selenium	mg/L	8/20/1998	0001	0.0029	B		#	-	-
	mg/L	1/20/1999	0001	0.0029	B		#	-	-
Sodium	mg/L	8/20/1998	0001	716.000			#	-	-
	mg/L	1/20/1999	0001	692.000			#	-	-
Specific Conductance	umhos/cm	8/20/1998	N001	2940			#	-	-
	umhos/cm	1/20/1999	N001	4390			#	-	-
Sulfate	mg/L	8/20/1998	0001	1540.000			#	-	-
	mg/L	1/20/1999	0001	1740.000			#	-	-
Temperature	C	8/20/1998	N001	16.8			#	-	-
	C	1/20/1999	N001	14.6			#	-	-
Thorium-230	pCi/L	8/20/1998	0001	1.2	U		#	1.2	±
	pCi/L	1/20/1999	0001	0.87	B	U	#	-	±
Turbidity	NTU	8/20/1998	N001	6.0			#	-	-
	NTU	1/20/1999	N001	9.03			#	-	-
Uranium	mg/L	8/20/1998	0001	0.0553			#	-	-
	mg/L	1/20/1999	0001	0.0574			#	-	-
Vanadium	mg/L	8/20/1998	0001	0.0020	U		#	0.002	-
	mg/L	1/20/1999	0001	0.0010	U		#	0.001	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0170 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE100 WHERE site_code='RFN01' AND quality_assurance = TRUE AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #5/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0171 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	8/27/1998	0001	564			#	-	-
	mg/L	8/27/1998	N001	588			#	-	-
	mg/L	1/25/1999	0001	583			#	-	-
	mg/L	1/25/1999	N001	581			#	-	-
Ammonia as NH4	mg/L	8/27/1998	0001	0.0282	B		#	-	-
	mg/L	8/27/1998	0002	0.0310	B		#	-	-
	mg/L	1/25/1999	0001	0.0449	B		#	-	-
Antimony	mg/L	8/27/1998	0001	0.0010	U		#	0.001	-
	mg/L	8/27/1998	0002	0.0010	U		#	0.001	-
	mg/L	1/25/1999	0001	0.0010	U		#	0.001	-
Arsenic	mg/L	8/27/1998	0001	0.0076			#	-	-
	mg/L	8/27/1998	0002	0.0079			#	-	-
	mg/L	1/25/1999	0001	0.0080			#	-	-
Cadmium	mg/L	8/27/1998	0001	0.0010	U		#	0.001	-
	mg/L	8/27/1998	0002	0.0010	U		#	0.001	-
	mg/L	1/25/1999	0001	0.0010	U		#	0.001	-
Calcium	mg/L	8/27/1998	0001	254.000			#	-	-
	mg/L	8/27/1998	0002	259.000			#	-	-
	mg/L	1/25/1999	0001	247.000			#	-	-
Chloride	mg/L	8/27/1998	0001	295.000			#	-	-
	mg/L	8/27/1998	0002	321.000			#	-	-
	mg/L	1/25/1999	0001	337.000			#	-	-
Fluoride	mg/L	8/27/1998	0001	0.662	B		#	-	-
	mg/L	8/27/1998	0002	1.230			#	-	-
	mg/L	1/25/1999	0001	0.758			#	-	-
Gross Alpha	pCi/L	8/27/1998	0001	46.82	U		#	46.82	± 27.5
	pCi/L	8/27/1998	0002	44.41	U		#	44.41	± 27.7
	pCi/L	1/25/1999	0001	37.74	U		#	37.74	± 18.5
Gross Beta	pCi/L	8/27/1998	0001	48.25	U		#	48.25	± 26.6
	pCi/L	8/27/1998	0002	48.16	U		#	48.16	± 27.5
	pCi/L	1/25/1999	0001	34.52	U		#	34.52	± 19.1
Iron	mg/L	8/27/1998	0001	4.430			#	-	-
	mg/L	8/27/1998	0002	4.570			#	-	-
	mg/L	1/25/1999	0001	4.480			#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0171 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Lead	mg/L	8/27/1998	0001	0.0010	U		#	0.001	-
	mg/L	8/27/1998	0002	0.0010	U		#	0.001	-
	mg/L	1/25/1999	0001	0.0010	U		#	0.001	-
Lead-210	pCi/L	8/27/1998	0001	0.98	U		#	0.98	± 0.57
	pCi/L	8/27/1998	0002	0.99	U		#	0.99	± 0.56
	pCi/L	1/25/1999	0001	0.98	U		#	0.98	± 0.59
Magnesium	mg/L	8/27/1998	0001	201.000			#	-	-
	mg/L	8/27/1998	0002	203.000			#	-	-
	mg/L	1/25/1999	0001	197.000			#	-	-
Manganese	mg/L	8/27/1998	0001	0.252			#	-	-
	mg/L	8/27/1998	0002	0.260			#	-	-
	mg/L	1/25/1999	0001	0.235			#	-	-
Molybdenum	mg/L	8/27/1998	0001	0.0180			#	-	-
	mg/L	8/27/1998	0002	0.0172			#	-	-
	mg/L	1/25/1999	0001	0.0169			#	-	-
Nitrate	mg/L	8/27/1998	0001	0.0110	U		#	0.011	-
	mg/L	8/27/1998	0002	0.0110	U		#	0.011	-
	mg/L	1/25/1999	0001	0.162	B		#	-	-
pH	s.u.	8/27/1998	N001	7.15			#	-	-
	s.u.	1/25/1999	N001	7.13			#	-	-
Polonium-210	pCi/L	8/27/1998	0001	0.09		U	#	0.04	± 0.08
	pCi/L	8/27/1998	0002	0.05		U	#	0.04	± 0.05
	pCi/L	1/25/1999	0001	0.09			#	0.03	± 0.06
Radium-226	pCi/L	8/27/1998	0001	0.14	U		#	0.14	± 0.07
	pCi/L	8/27/1998	0002	0.14	U		#	0.14	± 0.08
	pCi/L	1/25/1999	0001	0.14	U		#	0.14	± 0.09
Radium-228	pCi/L	8/27/1998	0001	0.81			#	0.65	± 0.40
	pCi/L	8/27/1998	0002	0.95			#	0.63	± 0.39
	pCi/L	1/25/1999	0001	0.76	U		#	0.76	± 0.46
Redox Potential	mV	8/27/1998	N001	-142			#	-	-
	mV	1/25/1999	N001	-113			#	-	-
Selenium	mg/L	8/27/1998	0001	0.0010	U		#	0.001	-
	mg/L	8/27/1998	0002	0.0010	U		#	0.001	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0171 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Selenium	mg/L	1/25/1999	0001	0.00010	U		#	0.0001	-
Sodium	mg/L	8/27/1998	0001	973.000			#	-	-
	mg/L	8/27/1998	0002	1000.000			#	-	-
	mg/L	1/25/1999	0001	988.000			#	-	-
Specific Conductance	umhos/cm	8/27/1998	N001	5890			#	-	-
	umhos/cm	1/25/1999	N001	5730			#	-	-
Sulfate	mg/L	8/27/1998	0001	2380.000			#	-	-
	mg/L	8/27/1998	0002	2580.000			#	-	-
	mg/L	1/25/1999	0001	2760.000			#	-	-
Temperature	C	8/27/1998	N001	14.2			#	-	-
	C	1/25/1999	N001	13.9			#	-	-
Thorium-230	pCi/L	8/27/1998	0001	1.2	U		#	1.2	±
	pCi/L	8/27/1998	0002	2.0			#	-	±
	pCi/L	1/25/1999	0001	1.6	B	U	#	-	±
Turbidity	NTU	8/27/1998	N001	8.57			#	-	-
	NTU	1/25/1999	N001	11.3			#	-	-
Uranium	mg/L	8/27/1998	0001	0.0063			#	-	-
	mg/L	8/27/1998	0002	0.0062			#	-	-
	mg/L	1/25/1999	0001	0.0055			#	-	-
Uranium-234	pCi/L	8/27/1998	0001	4.2			#	-	±
	pCi/L	8/27/1998	0002	4.2			#	-	±
Uranium-235	pCi/L	8/27/1998	0001	0.40	UN		#	0.4	±
	pCi/L	8/27/1998	0002	0.40	UN		#	0.4	±
Uranium-238	pCi/L	8/27/1998	0001	2.5	N	J	#	-	±
	pCi/L	8/27/1998	0002	2.4	N	J	#	-	±
Vanadium	mg/L	8/27/1998	0001	0.0020	U		#	0.002	-
	mg/L	8/27/1998	0002	0.0020	U		#	0.002	-
	mg/L	1/25/1999	0001	0.0010	U		#	0.001	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0171 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE100 WHERE site_code='RFN01' AND quality_assurance = TRUE AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #5/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0172
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	8/19/1998	0001	745			#	-	-
	mg/L	8/19/1998	N001	783			#	-	-
	mg/L	1/22/1999	0001	798			#	-	-
	mg/L	1/22/1999	N001	794			#	-	-
Ammonia as NH4	mg/L	8/19/1998	0001	0.0610	B		#	-	-
	mg/L	1/22/1999	0001	0.0493	B		#	-	-
Antimony	mg/L	8/19/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/22/1999	0001	0.0010	U		#	0.001	-
Arsenic	mg/L	8/19/1998	0001	0.0012	B		#	-	-
	mg/L	1/22/1999	0001	0.0014	B		#	-	-
Cadmium	mg/L	8/19/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/22/1999	0001	0.0010	U		#	0.001	-
Calcium	mg/L	8/19/1998	0001	486.000			#	-	-
	mg/L	1/22/1999	0001	467.000			#	-	-
Chloride	mg/L	8/19/1998	0001	2480.000			#	-	-
	mg/L	1/22/1999	0001	2420.000			#	-	-
Fluoride	mg/L	8/19/1998	0001	0.597	B		#	-	-
	mg/L	1/22/1999	0001	0.696			#	-	-
Gross Alpha	pCi/L	8/19/1998	0001	128.18	U	J	#	128.18	± 75.3
	pCi/L	1/22/1999	0001	101.0	U		#	101	± 61.9
Gross Beta	pCi/L	8/19/1998	0001	121.23	U		#	121.23	± 68.0
	pCi/L	1/22/1999	0001	92.72	U		#	92.72	± 53.8
Iron	mg/L	8/19/1998	0001	1.470	*	J	#	-	-
	mg/L	1/22/1999	0001	1.680			#	-	-
Lead	mg/L	8/19/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/22/1999	0001	0.0010	U		#	0.001	-
Lead-210	pCi/L	8/19/1998	0001	0.94	U		#	0.94	± 0.55
	pCi/L	1/22/1999	0001	1.00	U		#	1	± 0.58
Magnesium	mg/L	8/19/1998	0001	573.000			#	-	-
	mg/L	1/22/1999	0001	548.000			#	-	-
Manganese	mg/L	8/19/1998	0001	1.130			#	-	-
	mg/L	1/22/1999	0001	0.813			#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0172
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Molybdenum	mg/L	8/19/1998	0001	0.0091	BE	U	#	-	-
	mg/L	1/22/1999	0001	0.0085	B		#	-	-
Nitrate	mg/L	8/19/1998	0001	0.0522	B	U	#	-	-
	mg/L	1/22/1999	0001	0.375	B		#	-	-
pH	s.u.	8/19/1998	N001	6.98			#	-	-
	s.u.	1/22/1999	N001	6.93			#	-	-
Polonium-210	pCi/L	8/19/1998	0001	0.08		U	#	0.07	± 0.10
	pCi/L	1/22/1999	0001	0.08		U	#	0.07	± 0.10
Radium-226	pCi/L	8/19/1998	0001	0.10	U		#	0.1	± 0.06
	pCi/L	1/22/1999	0001	0.13	U		#	0.13	± 0.08
Radium-228	pCi/L	8/19/1998	0001	0.48	U		#	0.48	± 0.29
	pCi/L	1/22/1999	0001	0.88			#	0.69	± 0.42
Redox Potential	mV	8/19/1998	N001	-57			#	-	-
	mV	1/22/1999	N001	65			#	-	-
Selenium	mg/L	8/19/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/22/1999	0001	0.00010	U		#	0.0001	-
Sodium	mg/L	8/19/1998	0001	3120.000			#	-	-
	mg/L	1/22/1999	0001	3000.000			#	-	-
Specific Conductance	umhos/cm	8/19/1998	N001	9920			#	-	-
	umhos/cm	1/22/1999	N001	14860			#	-	-
Sulfate	mg/L	8/19/1998	0001	5970.000	N	J	#	-	-
	mg/L	1/22/1999	0001	6600.000			#	-	-
Temperature	C	8/19/1998	N001	14.5			#	-	-
	C	1/22/1999	N001	12.7			#	-	-
Thorium-230	pCi/L	8/19/1998	0001	1.2	U		#	1.2	±
	pCi/L	1/22/1999	0001	0.80	U		#	0.8	±
Turbidity	NTU	8/19/1998	N001	3.03			#	-	-
	NTU	1/22/1999	N001	5.22			#	-	-
Uranium	mg/L	8/19/1998	0001	0.0676			#	-	-
	mg/L	1/22/1999	0001	0.0679			#	-	-
Uranium-234	pCi/L	8/19/1998	0001	41.1			#	-	±
Uranium-235	pCi/L	8/19/1998	0001	1.5	BN		#	-	±

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0172
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Uranium-238	pCi/L	8/19/1998	0001	30.8	N	J	#	-	±
Vanadium	mg/L	8/19/1998	0001	0.0020	U		#	0.002	-
	mg/L	1/22/1999	0001	0.0011	B		#	-	-

RECORDS: SELECTED FROM USEE100 WHERE site_code='RFN01' AND quality_assurance = TRUE AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #5/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0173 *Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole*
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	8/24/1998	0001	487			#	-	-
	mg/L	8/24/1998	N001	480			#	-	-
	mg/L	1/26/1999	0001	471			#	-	-
	mg/L	1/26/1999	N001	483			#	-	-
Ammonia as NH4	mg/L	8/24/1998	0001	0.0112	B		#	-	-
	mg/L	8/24/1998	0002	0.0140	B		#	-	-
	mg/L	1/26/1999	0001	0.0319	B		#	-	-
Antimony	mg/L	8/24/1998	0001	0.0010	U		#	0.001	-
	mg/L	8/24/1998	0002	0.0010	U		#	0.001	-
	mg/L	1/26/1999	0001	0.0010	U		#	0.001	-
Arsenic	mg/L	8/24/1998	0001	0.0010	U		#	0.001	-
	mg/L	8/24/1998	0002	0.0010	U		#	0.001	-
	mg/L	1/26/1999	0001	0.00047	B		#	-	-
Cadmium	mg/L	8/24/1998	0001	0.0010	U		#	0.001	-
	mg/L	8/24/1998	0002	0.0010	U		#	0.001	-
	mg/L	1/26/1999	0001	0.0010	U		#	0.001	-
Calcium	mg/L	8/24/1998	0001	146.000			#	-	-
	mg/L	8/24/1998	0002	142.000			#	-	-
	mg/L	1/26/1999	0001	141.000			#	-	-
Chloride	mg/L	8/24/1998	0001	112.000			#	-	-
	mg/L	8/24/1998	0002	108.000			#	-	-
	mg/L	1/26/1999	0001	67.000			#	-	-
Fluoride	mg/L	8/24/1998	0001	0.679			#	-	-
	mg/L	8/24/1998	0002	0.706			#	-	-
	mg/L	1/26/1999	0001	0.830			#	-	-
Gross Alpha	pCi/L	8/24/1998	0001	30.29			#	22.25	± 16.1
	pCi/L	8/24/1998	0002	28.99			#	22.07	± 15.8
	pCi/L	1/26/1999	0001	19.76		U	#	19.76	± 13.3
Gross Beta	pCi/L	8/24/1998	0001	24.16	U		#	24.16	± 14.5
	pCi/L	8/24/1998	0002	24.15	U		#	24.15	± 14.5
	pCi/L	1/26/1999	0001	22.95	U		#	22.95	± 13.9
Iron	mg/L	8/24/1998	0001	0.0067	B	U	#	-	-
	mg/L	8/24/1998	0002	0.0053	B	U	#	-	-
	mg/L	1/26/1999	0001	0.0030	U		#	0.003	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0173 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Lead	mg/L	8/24/1998	0001	0.0010	U		#	0.001	-
	mg/L	8/24/1998	0002	0.0010	U		#	0.001	-
	mg/L	1/26/1999	0001	0.0010	U		#	0.001	-
Lead-210	pCi/L	8/24/1998	0001	0.90	U		#	0.9	± 0.52
	pCi/L	8/24/1998	0002	0.89	U		#	0.89	± 0.52
	pCi/L	1/26/1999	0001	1.08	U		#	1.08	± 0.65
Magnesium	mg/L	8/24/1998	0001	172.000			#	-	-
	mg/L	8/24/1998	0002	167.000			#	-	-
	mg/L	1/26/1999	0001	166.000			#	-	-
Manganese	mg/L	8/24/1998	0001	0.0308			#	-	-
	mg/L	8/24/1998	0002	0.0200			#	-	-
	mg/L	1/26/1999	0001	0.0064	B		#	-	-
Molybdenum	mg/L	8/24/1998	0001	0.0206			#	-	-
	mg/L	8/24/1998	0002	0.0220			#	-	-
	mg/L	1/26/1999	0001	0.0281			#	-	-
Nitrate	mg/L	8/24/1998	0001	6.000			#	-	-
	mg/L	8/24/1998	0002	6.250			#	-	-
	mg/L	1/26/1999	0001	8.730			#	-	-
pH	s.u.	8/24/1998	N001	7.09			#	-	-
	s.u.	1/26/1999	N001	7.28			#	-	-
Polonium-210	pCi/L	8/24/1998	0001	0.06		U	#	0.03	± 0.06
	pCi/L	8/24/1998	0002	0.08		U	#	0.05	± 0.08
	pCi/L	1/26/1999	0001	0.12		U	#	0.07	± 0.11
Radium-226	pCi/L	8/24/1998	0001	0.14	U		#	0.14	± 0.09
	pCi/L	8/24/1998	0002	0.14	U		#	0.14	± 0.08
	pCi/L	1/26/1999	0001	0.12	U		#	0.12	± 0.07
Radium-228	pCi/L	8/24/1998	0001	0.67	U		#	0.67	± 0.40
	pCi/L	8/24/1998	0002	0.76			#	0.63	± 0.39
	pCi/L	1/26/1999	0001	0.67	U		#	0.67	± 0.40
Redox Potential	mV	8/24/1998	N001	108			#	-	-
	mV	1/26/1999	N001	-135			#	-	-
Selenium	mg/L	8/24/1998	0001	0.0168			#	-	-
	mg/L	8/24/1998	0002	0.0171			#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0173 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Selenium	mg/L	1/26/1999	0001	0.0165			#	-	-
Sodium	mg/L	8/24/1998	0001	374.000			#	-	-
	mg/L	8/24/1998	0002	377.000			#	-	-
	mg/L	1/26/1999	0001	349.000			#	-	-
Specific Conductance	umhos/cm	8/24/1998	N001	2700			#	-	-
	umhos/cm	1/26/1999	N001	2980			#	-	-
Sulfate	mg/L	8/24/1998	0001	1130.000			#	-	-
	mg/L	8/24/1998	0002	1080.000			#	-	-
	mg/L	1/26/1999	0001	1230.000			#	-	-
Temperature	C	8/24/1998	N001	18.8			#	-	-
	C	1/26/1999	N001	12.8			#	-	-
Thorium-230	pCi/L	8/24/1998	0001	1.2	U		#	1.2	±
	pCi/L	8/24/1998	0002	1.2	U		#	1.2	±
	pCi/L	1/26/1999	0001	0.80	U		#	0.8	±
Turbidity	NTU	8/24/1998	N001	9.07			#	-	-
	NTU	1/26/1999	N001	7.51			#	-	-
Uranium	mg/L	8/24/1998	0001	0.0289			#	-	-
	mg/L	8/24/1998	0002	0.0298			#	-	-
	mg/L	1/26/1999	0001	0.0331			#	-	-
Uranium-234	pCi/L	8/24/1998	0001	17.9			#	-	±
	pCi/L	8/24/1998	0002	18.2			#	-	±
Uranium-235	pCi/L	8/24/1998	0001	0.52	BN		#	-	±
	pCi/L	8/24/1998	0002	0.49	BN		#	-	±
Uranium-238	pCi/L	8/24/1998	0001	10.7	N	J	#	-	±
	pCi/L	8/24/1998	0002	10.7	N	J	#	-	±
Vanadium	mg/L	8/24/1998	0001	0.0020	U		#	0.002	-
	mg/L	8/24/1998	0002	0.0020	U		#	0.002	-
	mg/L	1/26/1999	0001	0.0012	B		#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0173 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE100 WHERE site_code='RFN01' AND quality_assurance = TRUE AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #5/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0176 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	8/14/1998	0001	575			#	-	-
	mg/L	8/14/1998	N001	544			#	-	-
	mg/L	1/26/1999	0001	579			#	-	-
	mg/L	1/26/1999	N001	575			#	-	-
Ammonia as NH4	mg/L	8/14/1998	0001	0.0038	B	U	#	-	-
	mg/L	1/26/1999	0001	0.0116	B		#	-	-
Antimony	mg/L	8/14/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/26/1999	0001	0.0010	U		#	0.001	-
Arsenic	mg/L	8/14/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/26/1999	0001	0.00033	B		#	-	-
Cadmium	mg/L	8/14/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/26/1999	0001	0.0010	U		#	0.001	-
Calcium	mg/L	8/14/1998	0001	162.000			#	-	-
	mg/L	1/26/1999	0001	151.000			#	-	-
Chloride	mg/L	8/14/1998	0001	64.500			#	-	-
	mg/L	1/26/1999	0001	55.400			#	-	-
Fluoride	mg/L	8/14/1998	0001	0.846			#	-	-
	mg/L	1/26/1999	0001	0.635			#	-	-
Gross Alpha	pCi/L	8/14/1998	0001	25.53			#	16.6	± 12.3
	pCi/L	1/26/1999	0001	24.57			#	18.39	± 13.2
Gross Beta	pCi/L	8/14/1998	0001	18.15	U		#	18.15	± 11.2
	pCi/L	1/26/1999	0001	22.92	U		#	22.92	± 13.8
Iron	mg/L	8/14/1998	0001	0.0153	B	U	#	-	-
	mg/L	1/26/1999	0001	0.0030	U		#	0.003	-
Lead	mg/L	8/14/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/26/1999	0001	0.0010	U		#	0.001	-
Lead-210	pCi/L	8/14/1998	0001	0.98	U		#	0.98	± 0.57
	pCi/L	1/26/1999	0001	1.24			#	0.96	± 0.59
Magnesium	mg/L	8/14/1998	0001	144.000			#	-	-
	mg/L	1/26/1999	0001	133.000			#	-	-
Manganese	mg/L	8/14/1998	0001	0.548			#	-	-
	mg/L	1/26/1999	0001	1.020			#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0176 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Molybdenum	mg/L	8/14/1998	0001	0.0101	E		#	-	-
	mg/L	1/26/1999	0001	0.0131			#	-	-
Nitrate	mg/L	8/14/1998	0001	11.200			#	-	-
	mg/L	1/26/1999	0001	15.300			#	-	-
pH	s.u.	8/14/1998	N001	7.03			#	-	-
	s.u.	1/26/1999	N001	6.97			#	-	-
Polonium-210	pCi/L	8/14/1998	0001	0.06		U	#	0.05	± 0.07
	pCi/L	1/26/1999	0001	0.09		U	#	0.08	± 0.11
Radium-226	pCi/L	8/14/1998	0001	0.13	U		#	0.13	± 0.07
	pCi/L	1/26/1999	0001	0.14	U		#	0.14	± 0.08
Radium-228	pCi/L	8/14/1998	0001	0.62	U		#	0.62	± 0.36
	pCi/L	1/26/1999	0001	0.77	U		#	0.77	± 0.46
Redox Potential	mV	8/14/1998	N001	105			#	-	-
	mV	1/26/1999	N001	179			#	-	-
Selenium	mg/L	8/14/1998	0001	0.0334			#	-	-
	mg/L	1/26/1999	0001	0.0264			#	-	-
Sodium	mg/L	8/14/1998	0001	258.000			#	-	-
	mg/L	1/26/1999	0001	244.000			#	-	-
Specific Conductance	umhos/cm	8/14/1998	N001	1662			#	-	-
	umhos/cm	1/26/1999	N001	1711			#	-	-
Sulfate	mg/L	8/14/1998	0001	813.000	N	J	#	-	-
	mg/L	1/26/1999	0001	838.000			#	-	-
Temperature	C	8/14/1998	N001	13.3			#	-	-
	C	1/26/1999	N001	13.8			#	-	-
Thorium-230	pCi/L	8/14/1998	0001	1.2	U		#	1.2	±
	pCi/L	1/26/1999	0001	0.80	U		#	0.8	±
Turbidity	NTU	8/14/1998	N001	9.39			#	-	-
	NTU	1/26/1999	N001	7.08			#	-	-
Uranium	mg/L	8/14/1998	0001	0.0710			#	-	-
	mg/L	1/26/1999	0001	0.0499			#	-	-
Vanadium	mg/L	8/14/1998	0001	0.0020	U		#	0.002	-
	mg/L	1/26/1999	0001	0.0011	B		#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0176 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE100 WHERE site_code='RFN01' AND quality_assurance = TRUE AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #5/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0179 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	8/20/1998	0001	346			#	-	-
	mg/L	8/20/1998	N001	351			#	-	-
	mg/L	1/20/1999	0001	329			#	-	-
	mg/L	1/20/1999	N001	331			#	-	-
Ammonia as NH4	mg/L	8/20/1998	0001	3.740			#	-	-
	mg/L	1/20/1999	0001	0.174			#	-	-
Antimony	mg/L	8/20/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/20/1999	0001	0.0010	U		#	0.001	-
Arsenic	mg/L	8/20/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/20/1999	0001	0.00010	U		#	0.0001	-
Cadmium	mg/L	8/20/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/20/1999	0001	0.0010	U		#	0.001	-
Calcium	mg/L	8/20/1998	0001	442.000			#	-	-
	mg/L	1/20/1999	0001	470.000			#	-	-
Chloride	mg/L	8/20/1998	0001	219.000			#	-	-
	mg/L	1/20/1999	0001	247.000			#	-	-
Fluoride	mg/L	8/20/1998	0001	0.208	B		#	-	-
	mg/L	1/20/1999	0001	0.354			#	-	-
Gross Alpha	pCi/L	8/20/1998	0001	67.59		J	#	41.97	± 31.7
	pCi/L	1/20/1999	0001	48.48			#	36.36	± 26.1
Gross Beta	pCi/L	8/20/1998	0001	48.24	U		#	48.24	± 28.6
	pCi/L	1/20/1999	0001	34.81	U		#	34.81	± 21.3
Iron	mg/L	8/20/1998	0001	0.0091	B*	UJ	#	-	-
	mg/L	1/20/1999	0001	0.0030	U		#	0.003	-
Lead	mg/L	8/20/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/20/1999	0001	0.0010	U		#	0.001	-
Lead-210	pCi/L	8/20/1998	0001	1.01	U		#	1.01	± 0.59
	pCi/L	1/20/1999	0001	1.01	U		#	1.01	± 0.59
Magnesium	mg/L	8/20/1998	0001	241.000			#	-	-
	mg/L	1/20/1999	0001	239.000			#	-	-
Manganese	mg/L	8/20/1998	0001	0.0077	B		#	-	-
	mg/L	1/20/1999	0001	0.0084	B		#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0179 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Molybdenum	mg/L	8/20/1998	0001	0.0015	BE		#	-	-
	mg/L	1/20/1999	0001	0.0010	U		#	0.001	-
Nitrate	mg/L	8/20/1998	0001	181.000			#	-	-
	mg/L	1/20/1999	0001	232.000			#	-	-
pH	s.u.	8/20/1998	N001	6.86			#	-	-
	s.u.	1/20/1999	N001	6.92			#	-	-
Polonium-210	pCi/L	8/20/1998	0001	0.07		U	#	0.04	± 0.07
	pCi/L	1/20/1999	0001	0.09		U	#	0.09	± 0.12
Radium-226	pCi/L	8/20/1998	0001	0.09	U		#	0.09	± 0.05
	pCi/L	1/20/1999	0001	0.14	U		#	0.14	± 0.08
Radium-228	pCi/L	8/20/1998	0001	0.79			#	0.42	± 0.26
	pCi/L	1/20/1999	0001	1.21			#	0.7	± 0.43
Redox Potential	mV	8/20/1998	N001	-37			#	-	-
	mV	1/20/1999	N001	104			#	-	-
Selenium	mg/L	8/20/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/20/1999	0001	0.00010	U		#	0.0001	-
Sodium	mg/L	8/20/1998	0001	652.000			#	-	-
	mg/L	1/20/1999	0001	649.000			#	-	-
Specific Conductance	umhos/cm	8/20/1998	N001	4710			#	-	-
	umhos/cm	1/20/1999	N001	5660			#	-	-
Sulfate	mg/L	8/20/1998	0001	2530.000			#	-	-
	mg/L	1/20/1999	0001	2900.000			#	-	-
Temperature	C	8/20/1998	N001	16.0			#	-	-
	C	1/20/1999	N001	13.4			#	-	-
Thorium-230	pCi/L	8/20/1998	0001	1.2	U		#	1.2	±
	pCi/L	1/20/1999	0001	0.80	U		#	0.8	±
Turbidity	NTU	8/20/1998	N001	6.13			#	-	-
	NTU	1/20/1999	N001	0.62			#	-	-
Uranium	mg/L	8/20/1998	0001	0.0845			#	-	-
	mg/L	1/20/1999	0001	0.0870			#	-	-
Vanadium	mg/L	8/20/1998	0001	0.0020	U		#	0.002	-
	mg/L	1/20/1999	0001	0.0010	U		#	0.001	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0179 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE100 WHERE site_code='RFN01' AND quality_assurance = TRUE AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #5/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0195 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	8/19/1998	0001	295			#	-	-
	mg/L	8/19/1998	N001	333			#	-	-
Ammonia as NH4	mg/L	8/19/1998	0001	50.000			#	-	-
Antimony	mg/L	8/19/1998	0001	0.0010	U		#	0.001	-
Arsenic	mg/L	8/19/1998	0001	0.0010	U		#	0.001	-
Cadmium	mg/L	8/19/1998	0001	0.0010	U		#	0.001	-
Calcium	mg/L	8/19/1998	0001	367.000			#	-	-
Chloride	mg/L	8/19/1998	0001	346.000			#	-	-
Fluoride	mg/L	8/19/1998	0001	0.331	B		#	-	-
Gross Alpha	pCi/L	8/19/1998	0001	137.2		J	#	48.7	± 43.3
Gross Beta	pCi/L	8/19/1998	0001	103.4			#	48.9	± 33.0
Iron	mg/L	8/19/1998	0001	0.0040	U*	J	#	0.004	-
Lead	mg/L	8/19/1998	0001	0.0010	U		#	0.001	-
Lead-210	pCi/L	8/19/1998	0001	0.93	U		#	0.93	± 0.56
Magnesium	mg/L	8/19/1998	0001	159.000			#	-	-
Manganese	mg/L	8/19/1998	0001	1.670			#	-	-
Molybdenum	mg/L	8/19/1998	0001	0.180	E		#	-	-
Nitrate	mg/L	8/19/1998	0001	377.000			#	-	-
pH	s.u.	8/19/1998	N001	7.14			#	-	-
Polonium-210	pCi/L	8/19/1998	0001	0.08	U		#	0.08	± 0.10
Radium-226	pCi/L	8/19/1998	0001	0.09	U		#	0.09	± 0.05
Radium-228	pCi/L	8/19/1998	0001	0.41	U		#	0.41	± 0.25
Redox Potential	mV	8/19/1998	N001	143			#	-	-
Selenium	mg/L	8/19/1998	0001	0.0010	U		#	0.001	-
Sodium	mg/L	8/19/1998	0001	1160.000			#	-	-
Specific Conductance	umhos/cm	8/19/1998	N001	5320			#	-	-
Sulfate	mg/L	8/19/1998	0001	2910.000	N	J	#	-	-
Temperature	C	8/19/1998	N001	11.7			#	-	-
Thorium-230	pCi/L	8/19/1998	0001	1.2	U		#	1.2	±

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0195 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Turbidity	NTU	8/19/1998	N001	4.75			#	-	-
Uranium	mg/L	8/19/1998	0001	0.177			#	-	-
Vanadium	mg/L	8/19/1998	0001	0.0020	U		#	0.002	-

RECORDS: SELECTED FROM USEE100 WHERE site_code='RFN01' AND quality_assurance = TRUE AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #5/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0196
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	8/18/1998	0001	403			#	-	-
	mg/L	8/18/1998	N001	394			#	-	-
Ammonia as NH4	mg/L	8/18/1998	0001	406.000			#	-	-
Antimony	mg/L	8/18/1998	0001	0.0010	U		#	0.001	-
Arsenic	mg/L	8/18/1998	0001	0.0010	U		#	0.001	-
Cadmium	mg/L	8/18/1998	0001	0.0038			#	-	-
Calcium	mg/L	8/18/1998	0001	491.000			#	-	-
Chloride	mg/L	8/18/1998	0001	318.000			#	-	-
Fluoride	mg/L	8/18/1998	0001	2.500			#	-	-
Gross Alpha	pCi/L	8/18/1998	0001	47.09			#	39.48	± 27.6
Gross Beta	pCi/L	8/18/1998	0001	44.42			#	36.47	± 23.0
Iron	mg/L	8/18/1998	0001	0.610			#	-	-
Lead	mg/L	8/18/1998	0001	0.0010	U		#	0.001	-
Lead-210	pCi/L	8/18/1998	0001	0.97	U		#	0.97	± 0.57
Magnesium	mg/L	8/18/1998	0001	97.800			#	-	-
Manganese	mg/L	8/18/1998	0001	4.940			#	-	-
Molybdenum	mg/L	8/18/1998	0001	2.960	E		#	-	-
Nitrate	mg/L	8/18/1998	0001	713.000			#	-	-
pH	s.u.	8/18/1998	N001	6.76			#	-	-
Polonium-210	pCi/L	8/18/1998	0001	0.07		U	#	0.04	± 0.06
Radium-226	pCi/L	8/18/1998	0001	0.11	U		#	0.11	± 0.06
Radium-228	pCi/L	8/18/1998	0001	0.63			#	0.51	± 0.31
Redox Potential	mV	8/18/1998	N001	126			#	-	-
Selenium	mg/L	8/18/1998	0001	0.0056			#	-	-
Sodium	mg/L	8/18/1998	0001	1140.000			#	-	-
Specific Conductance	umhos/cm	8/18/1998	N001	6730			#	-	-
Sulfate	mg/L	8/18/1998	0001	3460.000	N	J	#	-	-
Temperature	C	8/18/1998	N001	14.2			#	-	-
Thorium-230	pCi/L	8/18/1998	0001	1.2	U		#	1.2	±

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0196
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Turbidity	NTU	8/18/1998	N001	2.43			#	-	-
Uranium	mg/L	8/18/1998	0001	0.0989			#	-	-
Vanadium	mg/L	8/18/1998	0001	0.0020	U		#	0.002	-

RECORDS: SELECTED FROM USEE100 WHERE site_code='RFN01' AND quality_assurance = TRUE AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #5/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0200 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	8/19/1998	0001	303			#	-	-
	mg/L	8/19/1998	N001	345			#	-	-
	mg/L	1/25/1999	0001	279			#	-	-
	mg/L	1/25/1999	N001	282			#	-	-
Ammonia as NH4	mg/L	8/19/1998	0001	36.500			#	-	-
	mg/L	1/25/1999	0001	39.900			#	-	-
Antimony	mg/L	8/19/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/25/1999	0001	0.0010	U		#	0.001	-
Arsenic	mg/L	8/19/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/25/1999	0001	0.00010	U		#	0.0001	-
Cadmium	mg/L	8/19/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/25/1999	0001	0.0010	U		#	0.001	-
Calcium	mg/L	8/19/1998	0001	378.000			#	-	-
	mg/L	1/25/1999	0001	338.000			#	-	-
Chloride	mg/L	8/19/1998	0001	331.000			#	-	-
	mg/L	1/25/1999	0001	316.000			#	-	-
Fluoride	mg/L	8/19/1998	0001	0.845			#	-	-
	mg/L	1/25/1999	0001	0.350			#	-	-
Gross Alpha	pCi/L	8/19/1998	0001	122.7		J	#	47.6	± 41.1
	pCi/L	1/25/1999	0001	75.2			#	43.1	± 33.1
Gross Beta	pCi/L	8/19/1998	0001	106.7			#	48.8	± 33.1
	pCi/L	1/25/1999	0001	74.07			#	46.34	± 30.2
Iron	mg/L	8/19/1998	0001	0.0261	B*	UJ	#	-	-
	mg/L	1/25/1999	0001	0.0030	U		#	0.003	-
Lead	mg/L	8/19/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/25/1999	0001	0.0010	U		#	0.001	-
Lead-210	pCi/L	8/19/1998	0001	1.00	U		#	1	± 0.59
	pCi/L	1/25/1999	0001	0.97	U		#	0.97	± 0.58
Magnesium	mg/L	8/19/1998	0001	167.000			#	-	-
	mg/L	1/25/1999	0001	141.000			#	-	-
Manganese	mg/L	8/19/1998	0001	2.490			#	-	-
	mg/L	1/25/1999	0001	2.280			#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0200 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Molybdenum	mg/L	8/19/1998	0001	0.114	E		#	-	-
	mg/L	1/25/1999	0001	0.177			#	-	-
Nitrate	mg/L	8/19/1998	0001	375.000			#	-	-
	mg/L	1/25/1999	0001	382.000			#	-	-
pH	s.u.	8/19/1998	N001	7.12			#	-	-
	s.u.	1/25/1999	N001	7.01			#	-	-
Polonium-210	pCi/L	8/19/1998	0001	0.10	U		#	0.1	± 0.12
	pCi/L	1/25/1999	0001	0.08	U		#	0.08	± 0.10
Radium-226	pCi/L	8/19/1998	0001	0.09	U		#	0.09	± 0.05
	pCi/L	1/25/1999	0001	0.14	U		#	0.14	± 0.09
Radium-228	pCi/L	8/19/1998	0001	0.57			#	0.4	± 0.25
	pCi/L	1/25/1999	0001	0.80	U		#	0.8	± 0.47
Redox Potential	mV	8/19/1998	N001	155			#	-	-
	mV	1/25/1999	N001	124			#	-	-
Selenium	mg/L	8/19/1998	0001	0.0011	B		#	-	-
	mg/L	1/25/1999	0001	0.00022	B		#	-	-
Sodium	mg/L	8/19/1998	0001	1110.000			#	-	-
	mg/L	1/25/1999	0001	1020.000			#	-	-
Specific Conductance	umhos/cm	8/19/1998	N001	5140			#	-	-
	umhos/cm	1/25/1999	N001	6430			#	-	-
Sulfate	mg/L	8/19/1998	0001	2810.000	N	J	#	-	-
	mg/L	1/25/1999	0001	3010.000			#	-	-
Temperature	C	8/19/1998	N001	11.2			#	-	-
	C	1/25/1999	N001	11.5			#	-	-
Thorium-230	pCi/L	8/19/1998	0001	1.2	U		#	1.2	±
	pCi/L	1/25/1999	0001	0.80	U		#	0.8	±
Turbidity	NTU	8/19/1998	N001	1.42			#	-	-
	NTU	1/25/1999	N001	1.43			#	-	-
Uranium	mg/L	8/19/1998	0001	0.144			#	-	-
	mg/L	1/25/1999	0001	0.143			#	-	-
Vanadium	mg/L	8/19/1998	0001	0.0020	U		#	0.002	-
	mg/L	1/25/1999	0001	0.0010	U		#	0.001	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0200 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE100 WHERE site_code='RFN01' AND quality_assurance = TRUE AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #5/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0201 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	8/18/1998	0001	393			#	-	-
	mg/L	8/18/1998	N001	426			#	-	-
	mg/L	1/29/1999	0001	437			#	-	-
	mg/L	1/29/1999	N001	443			#	-	-
Ammonia as NH4	mg/L	8/18/1998	0001	459.000			#	-	-
	mg/L	1/29/1999	0001	376.000			#	-	-
Antimony	mg/L	8/18/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/29/1999	0001	0.0010	U		#	0.001	-
Arsenic	mg/L	8/18/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/29/1999	0001	0.00022	B		#	-	-
Cadmium	mg/L	8/18/1998	0001	0.0039			#	-	-
	mg/L	1/29/1999	0001	0.0013			#	-	-
Calcium	mg/L	8/18/1998	0001	440.000			#	-	-
	mg/L	1/29/1999	0001	411.000			#	-	-
Chloride	mg/L	8/18/1998	0001	353.000			#	-	-
	mg/L	1/29/1999	0001	219.000			#	-	-
Fluoride	mg/L	8/18/1998	0001	3.050			#	-	-
	mg/L	1/29/1999	0001	2.620			#	-	-
Gross Alpha	pCi/L	8/18/1998	0001	62.97			#	41.78	± 30.9
	pCi/L	1/29/1999	0001	46.30	U	J	#	46.3	± 30.2
Gross Beta	pCi/L	8/18/1998	0001	83.56			#	48.17	± 31.6
	pCi/L	1/29/1999	0001	46.31	U		#	46.31	± 28.5
Iron	mg/L	8/18/1998	0001	0.0220	B	U	#	-	-
	mg/L	1/29/1999	0001	0.0030	U		#	0.003	-
Lead	mg/L	8/18/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/29/1999	0001	0.0010	U		#	0.001	-
Lead-210	pCi/L	8/18/1998	0001	0.97	U		#	0.97	± 0.56
	pCi/L	1/29/1999	0001	1.15	U		#	1.15	± 0.69
Magnesium	mg/L	8/18/1998	0001	99.400			#	-	-
	mg/L	1/29/1999	0001	87.500			#	-	-
Manganese	mg/L	8/18/1998	0001	3.850			#	-	-
	mg/L	1/29/1999	0001	5.710			#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0201 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Molybdenum	mg/L	8/18/1998	0001	3.110	E		#	-	-
	mg/L	1/29/1999	0001	3.150			#	-	-
Nitrate	mg/L	8/18/1998	0001	693.000			#	-	-
	mg/L	1/29/1999	0001	463.000			#	-	-
pH	s.u.	8/18/1998	N001	6.86			#	-	-
	s.u.	1/29/1999	N001	6.40			#	-	-
Polonium-210	pCi/L	8/18/1998	0001	0.07		U	#	0.07	± 0.09
	pCi/L	1/29/1999	0001	0.12		U	#	0.09	± 0.13
Radium-226	pCi/L	8/18/1998	0001	0.13	U		#	0.13	± 0.07
	pCi/L	1/29/1999	0001	0.11	U		#	0.11	± 0.06
Radium-228	pCi/L	8/18/1998	0001	0.60	U		#	0.6	± 0.36
	pCi/L	1/29/1999	0001	0.66	U		#	0.66	± 0.39
Redox Potential	mV	8/18/1998	N001	103			#	-	-
	mV	1/29/1999	N001	205			#	-	-
Selenium	mg/L	8/18/1998	0001	0.0063			#	-	-
	mg/L	1/29/1999	0001	0.0028	B		#	-	-
Sodium	mg/L	8/18/1998	0001	1180.000			#	-	-
	mg/L	1/29/1999	0001	971.000			#	-	-
Specific Conductance	umhos/cm	8/18/1998	N001	6140			#	-	-
	umhos/cm	1/29/1999	N001	6680			#	-	-
Sulfate	mg/L	8/18/1998	0001	3670.000	N	J	#	-	-
	mg/L	1/29/1999	0001	3260.000			#	-	-
Temperature	C	8/18/1998	N001	15.0			#	-	-
	C	1/29/1999	N001	9.8			#	-	-
Thorium-230	pCi/L	8/18/1998	0001	1.2	U		#	1.2	±
	pCi/L	1/29/1999	0001	0.80	U		#	0.8	±
Turbidity	NTU	8/18/1998	N001	2.81			#	-	-
	NTU	1/29/1999	N001	3.26			#	-	-
Uranium	mg/L	8/18/1998	0001	0.0837			#	-	-
	mg/L	1/29/1999	0001	0.101			#	-	-
Uranium-234	pCi/L	8/18/1998	0001	31.0			#	-	±
Uranium-235	pCi/L	8/18/1998	0001	1.6	BN		#	-	±

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0201 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Uranium-238	pCi/L	8/18/1998	0001	32.7	N	J	#	-	±
Vanadium	mg/L	8/18/1998	0001	0.0020	U		#	0.002	-
	mg/L	1/29/1999	0001	0.0010	U		#	0.001	-

RECORDS: SELECTED FROM USEE100 WHERE site_code='RFN01' AND quality_assurance = TRUE AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #5/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0202 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	8/17/1998	0001	602			#	-	-
	mg/L	8/17/1998	N001	600			#	-	-
	mg/L	1/29/1999	0001	606			#	-	-
	mg/L	1/29/1999	N001	608			#	-	-
Ammonia as NH4	mg/L	8/17/1998	0001	213.000			#	-	-
	mg/L	1/29/1999	0001	196.000			#	-	-
Antimony	mg/L	8/17/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/29/1999	0001	0.0010	U		#	0.001	-
Arsenic	mg/L	8/17/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/29/1999	0001	0.00010	U		#	0.0001	-
Cadmium	mg/L	8/17/1998	0001	0.0016			#	-	-
	mg/L	1/29/1999	0001	0.0010	U		#	0.001	-
Calcium	mg/L	8/17/1998	0001	186.000			#	-	-
	mg/L	1/29/1999	0001	174.000			#	-	-
Chloride	mg/L	8/17/1998	0001	127.000			#	-	-
	mg/L	1/29/1999	0001	132.000			#	-	-
Fluoride	mg/L	8/17/1998	0001	4.610			#	-	-
	mg/L	1/29/1999	0001	4.380			#	-	-
Gross Alpha	pCi/L	8/17/1998	0001	115.6			#	25.4	± 26.7
	pCi/L	1/29/1999	0001	94.25		J	#	23.36	± 22.9
Gross Beta	pCi/L	8/17/1998	0001	101.0			#	24.7	± 18.8
	pCi/L	1/29/1999	0001	66.16			#	23.7	± 16.7
Iron	mg/L	8/17/1998	0001	0.0144	B	U	#	-	-
	mg/L	1/29/1999	0001	0.0146	B	U	#	-	-
Lead	mg/L	8/17/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/29/1999	0001	0.0010	U		#	0.001	-
Lead-210	pCi/L	8/17/1998	0001	0.98	U		#	0.98	± 0.58
	pCi/L	1/29/1999	0001	0.94	U		#	0.94	± 0.55
Magnesium	mg/L	8/17/1998	0001	57.100			#	-	-
	mg/L	1/29/1999	0001	49.000			#	-	-
Manganese	mg/L	8/17/1998	0001	1.560			#	-	-
	mg/L	1/29/1999	0001	1.370			#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0202 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Molybdenum	mg/L	8/17/1998	0001	1.310			#	-	-
	mg/L	1/29/1999	0001	1.080			#	-	-
Nitrate	mg/L	8/17/1998	0001	52.600			#	-	-
	mg/L	1/29/1999	0001	27.100			#	-	-
pH	s.u.	8/17/1998	N001	7.24			#	-	-
	s.u.	1/29/1999	N001	7.06			#	-	-
Polonium-210	pCi/L	8/17/1998	0001	0.09		U	#	0.07	± 0.10
	pCi/L	1/29/1999	0001	0.12		U	#	0.04	± 0.09
Radium-226	pCi/L	8/17/1998	0001	0.14	U		#	0.14	± 0.08
	pCi/L	1/29/1999	0001	0.12	U		#	0.12	± 0.07
Radium-228	pCi/L	8/17/1998	0001	0.87			#	0.66	± 0.40
	pCi/L	1/29/1999	0001	0.68	U		#	0.68	± 0.41
Redox Potential	mV	8/17/1998	N001	204			#	-	-
	mV	1/29/1999	N001	-46			#	-	-
Selenium	mg/L	8/17/1998	0001	0.0016	B		#	-	-
	mg/L	1/29/1999	0001	0.00074	B		#	-	-
Sodium	mg/L	8/17/1998	0001	499.000			#	-	-
	mg/L	1/29/1999	0001	486.000			#	-	-
Specific Conductance	umhos/cm	8/17/1998	N001	4180			#	-	-
	umhos/cm	1/29/1999	N001	4320			#	-	-
Sulfate	mg/L	8/17/1998	0001	1380.000			#	-	-
	mg/L	1/29/1999	0001	1400.000			#	-	-
Temperature	C	8/17/1998	N001	16.1			#	-	-
	C	1/29/1999	N001	10.8			#	-	-
Thorium-230	pCi/L	8/17/1998	0001	1.2	U		#	1.2	±
	pCi/L	1/29/1999	0001	0.80	U		#	0.8	±
Turbidity	NTU	8/17/1998	N001	1.05			#	-	-
	NTU	1/29/1999	N001	8.90			#	-	-
Uranium	mg/L	8/17/1998	0001	0.209			#	-	-
	mg/L	1/29/1999	0001	0.191			#	-	-
Vanadium	mg/L	8/17/1998	0001	0.0020	U		#	0.002	-
	mg/L	1/29/1999	0001	0.0010	U		#	0.001	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0202 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE100 WHERE site_code='RFN01' AND quality_assurance = TRUE AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #5/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0205 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	8/24/1998	0001	168		L	#	-	-
	mg/L	8/24/1998	N001	172		L	#	-	-
	mg/L	1/25/1999	0001	180		L	#	-	-
	mg/L	1/25/1999	N001	209		L	#	-	-
Ammonia as NH4	mg/L	8/24/1998	0001	0.692		L	#	-	-
	mg/L	1/25/1999	0001	0.584		L	#	-	-
Antimony	mg/L	8/24/1998	0001	0.0030	B	L	#	-	-
	mg/L	1/25/1999	0001	0.0040		L	#	-	-
Arsenic	mg/L	8/24/1998	0001	0.0181		L	#	-	-
	mg/L	1/25/1999	0001	0.0231		L	#	-	-
Cadmium	mg/L	8/24/1998	0001	0.0010	U	L	#	0.001	-
	mg/L	1/25/1999	0001	0.0010	U	L	#	0.001	-
Calcium	mg/L	8/24/1998	0001	29.800		L	#	-	-
	mg/L	1/25/1999	0001	22.500		L	#	-	-
Chloride	mg/L	8/24/1998	0001	1450.000		L	#	-	-
	mg/L	1/25/1999	0001	1470.000		L	#	-	-
Fluoride	mg/L	8/24/1998	0001	1.490		L	#	-	-
	mg/L	1/25/1999	0001	1.750		L	#	-	-
Gross Alpha	pCi/L	8/24/1998	0001	26.28	U	L	#	26.28	± 15.5
	pCi/L	1/25/1999	0001	30.56	U	L	#	30.56	± 17.1
Gross Beta	pCi/L	8/24/1998	0001	24.28	U	L	#	24.28	± 14.2
	pCi/L	1/25/1999	0001	34.22	U	L	#	34.22	± 19.6
Iron	mg/L	8/24/1998	0001	0.0075	B	UL	#	-	-
	mg/L	1/25/1999	0001	0.0030	U	L	#	0.003	-
Lead	mg/L	8/24/1998	0001	0.0010	U	L	#	0.001	-
	mg/L	1/25/1999	0001	0.0010	U	L	#	0.001	-
Lead-210	pCi/L	8/24/1998	0001	0.93	U	L	#	0.93	± 0.53
	pCi/L	1/25/1999	0001	0.96	U	L	#	0.96	± 0.57
Magnesium	mg/L	8/24/1998	0001	8.060		L	#	-	-
	mg/L	1/25/1999	0001	5.450		L	#	-	-
Manganese	mg/L	8/24/1998	0001	0.0272		L	#	-	-
	mg/L	1/25/1999	0001	0.0352		L	#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0205 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Molybdenum	mg/L	8/24/1998	0001	0.0138		L	#	-	-
	mg/L	1/25/1999	0001	0.0184		L	#	-	-
Nitrate	mg/L	8/24/1998	0001	1.680		L	#	-	-
	mg/L	1/25/1999	0001	0.869	B	L	#	-	-
pH	s.u.	8/24/1998	N001	7.98		L	#	-	-
	s.u.	1/25/1999	N001	8.03		L	#	-	-
Polonium-210	pCi/L	8/24/1998	0001	0.08		UL	#	0.04	± 0.07
	pCi/L	1/25/1999	0001	0.09	U	L	#	0.09	± 0.10
Radium-226	pCi/L	8/24/1998	0001	1.94		L	#	0.14	± 0.20
	pCi/L	1/25/1999	0001	1.47		L	#	0.13	± 0.18
Radium-228	pCi/L	8/24/1998	0001	1.68		L	#	0.63	± 0.41
	pCi/L	1/25/1999	0001	1.39		L	#	0.68	± 0.43
Redox Potential	mV	8/24/1998	N001	26		L	#	-	-
	mV	1/25/1999	N001	214		L	#	-	-
Selenium	mg/L	8/24/1998	0001	0.0043	B	L	#	-	-
	mg/L	1/25/1999	0001	0.0030	B	L	#	-	-
Sodium	mg/L	8/24/1998	0001	926.000		L	#	-	-
	mg/L	1/25/1999	0001	973.000		L	#	-	-
Specific Conductance	umhos/cm	8/24/1998	N001	4500		L	#	-	-
	umhos/cm	1/25/1999	N001	4940		L	#	-	-
Sulfate	mg/L	8/24/1998	0001	43.400		L	#	-	-
	mg/L	1/25/1999	0001	38.400		L	#	-	-
Temperature	C	8/24/1998	N001	16.7		L	#	-	-
	C	1/25/1999	N001	11.7		L	#	-	-
Thorium-230	pCi/L	8/24/1998	0001	1.2	U	L	#	1.2	±
	pCi/L	1/25/1999	0001	0.80	U	L	#	0.8	±
Turbidity	NTU	1/25/1999	N001	3.99		L	#	-	-
Uranium	mg/L	8/24/1998	0001	0.0035		L	#	-	-
	mg/L	1/25/1999	0001	0.0049		L	#	-	-
Vanadium	mg/L	8/24/1998	0001	0.0020	U	L	#	0.002	-
	mg/L	1/25/1999	0001	0.0012	B	L	#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0205 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE100 WHERE site_code='RFN01' AND quality_assurance = TRUE AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #5/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0206 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	8/20/1998	0001	392			#	-	-
	mg/L	8/20/1998	N001	447			#	-	-
	mg/L	1/29/1999	0001	464			#	-	-
	mg/L	1/29/1999	N001	465			#	-	-
Ammonia as NH4	mg/L	8/20/1998	0001	60.400			#	-	-
	mg/L	1/29/1999	0001	618.000			#	-	-
Antimony	mg/L	8/20/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/29/1999	0001	0.0010	U		#	0.001	-
Arsenic	mg/L	8/20/1998	0001	0.0025	B		#	-	-
	mg/L	1/29/1999	0001	0.0022	B		#	-	-
Cadmium	mg/L	8/20/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/29/1999	0001	0.0010	U		#	0.001	-
Calcium	mg/L	8/20/1998	0001	421.000			#	-	-
	mg/L	1/29/1999	0001	407.000			#	-	-
Chloride	mg/L	8/20/1998	0001	770.000			#	-	-
	mg/L	1/29/1999	0001	653.000			#	-	-
Fluoride	mg/L	8/20/1998	0001	0.101	B		#	-	-
	mg/L	1/29/1999	0001	0.157			#	-	-
Gross Alpha	pCi/L	8/20/1998	0001	96.63	U		#	96.63	± 56.5
	pCi/L	1/29/1999	0001	93.61	U	J	#	93.61	± 51.4
Gross Beta	pCi/L	8/20/1998	0001	96.61	U		#	96.61	± 57.5
	pCi/L	1/29/1999	0001	81.29	U		#	81.29	± 45.5
Iron	mg/L	8/20/1998	0001	4.340			#	-	-
	mg/L	1/29/1999	0001	3.670			#	-	-
Lead	mg/L	8/20/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/29/1999	0001	0.0010	U		#	0.001	-
Lead-210	pCi/L	8/20/1998	0001	0.91	U		#	0.91	± 0.53
	pCi/L	1/29/1999	0001	0.95	U		#	0.95	± 0.57
Magnesium	mg/L	8/20/1998	0001	188.000			#	-	-
	mg/L	1/29/1999	0001	210.000			#	-	-
Manganese	mg/L	8/20/1998	0001	2.290			#	-	-
	mg/L	1/29/1999	0001	1.980			#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0206 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Molybdenum	mg/L	8/20/1998	0001	0.0746			#	-	-
	mg/L	1/29/1999	0001	0.0684			#	-	-
Nitrate	mg/L	8/20/1998	0001	0.0228	B	U	#	-	-
	mg/L	1/29/1999	0001	0.475	B		#	-	-
pH	s.u.	8/20/1998	N001	7.29			#	-	-
	s.u.	1/29/1999	N001	6.55			#	-	-
Polonium-210	pCi/L	8/20/1998	0001	0.09		U	#	0.05	± 0.09
	pCi/L	1/29/1999	0001	0.08		U	#	0.08	± 0.10
Radium-226	pCi/L	8/20/1998	0001	0.12	U		#	0.12	± 0.07
	pCi/L	1/29/1999	0001	0.12	U		#	0.12	± 0.07
Radium-228	pCi/L	8/20/1998	0001	0.92			#	0.58	± 0.36
	pCi/L	1/29/1999	0001	1.00			#	0.65	± 0.40
Redox Potential	mV	8/20/1998	N001	-70			#	-	-
	mV	1/29/1999	N001	-127			#	-	-
Selenium	mg/L	8/20/1998	0001	0.0015	B		#	-	-
	mg/L	1/29/1999	0001	0.00052	B		#	-	-
Sodium	mg/L	8/20/1998	0001	2730.000			#	-	-
	mg/L	1/29/1999	0001	2640.000			#	-	-
Specific Conductance	umhos/cm	8/20/1998	N001	9310			#	-	-
	umhos/cm	1/29/1999	N001	11770			#	-	-
Sulfate	mg/L	8/20/1998	0001	6420.000			#	-	-
	mg/L	1/29/1999	0001	5940.000			#	-	-
Temperature	C	8/20/1998	N001	12.0			#	-	-
	C	1/29/1999	N001	12.0			#	-	-
Thorium-230	pCi/L	8/20/1998	0001	1.2	U		#	1.2	±
	pCi/L	1/29/1999	0001	0.80	U		#	0.8	±
Turbidity	NTU	8/20/1998	N001	67.8			#	-	-
	NTU	1/29/1999	N001	3.73			#	-	-
Uranium	mg/L	8/20/1998	0001	0.0053			#	-	-
	mg/L	1/29/1999	0001	0.0039			#	-	-
Vanadium	mg/L	8/20/1998	0001	0.0041	B		#	-	-
	mg/L	1/29/1999	0001	0.0044	B		#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0206 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE100 WHERE site_code='RFN01' AND quality_assurance = TRUE AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #5/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0207 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	8/18/1998	0001	196		L	#	-	-
	mg/L	8/18/1998	N001	187		L	#	-	-
	mg/L	1/27/1999	0001	218		L	#	-	-
	mg/L	1/27/1999	N001	229		L	#	-	-
Ammonia as NH4	mg/L	8/18/1998	0001	1.170		L	#	-	-
	mg/L	1/27/1999	0001	0.744		L	#	-	-
Antimony	mg/L	8/18/1998	0001	0.0010	U	L	#	0.001	-
	mg/L	1/27/1999	0001	0.0010	U	L	#	0.001	-
Arsenic	mg/L	8/18/1998	0001	0.0030	B	L	#	-	-
	mg/L	1/27/1999	0001	0.0049	B	L	#	-	-
Cadmium	mg/L	8/18/1998	0001	0.0010	U	L	#	0.001	-
	mg/L	1/27/1999	0001	0.0010	U	L	#	0.001	-
Calcium	mg/L	8/18/1998	0001	16.800		L	#	-	-
	mg/L	1/27/1999	0001	15.900		L	#	-	-
Chloride	mg/L	8/18/1998	0001	399.000		L	#	-	-
	mg/L	1/27/1999	0001	63.700		L	#	-	-
Fluoride	mg/L	8/18/1998	0001	2.020		L	#	-	-
	mg/L	1/27/1999	0001	1.980		L	#	-	-
Gross Alpha	pCi/L	8/18/1998	0001	11.08	U	L	#	11.08	± 7.40
	pCi/L	1/27/1999	0001	11.21	U	L	#	11.21	± 6.54
Gross Beta	pCi/L	8/18/1998	0001	12.06	U	L	#	12.06	± 6.88
	pCi/L	1/27/1999	0001	11.50	U	L	#	11.5	± 6.60
Iron	mg/L	8/18/1998	0001	0.0148	B	UL	#	-	-
	mg/L	1/27/1999	0001	0.0057	B	UL	#	-	-
Lead	mg/L	8/18/1998	0001	0.0010	U	L	#	0.001	-
	mg/L	1/27/1999	0001	0.0010	U	L	#	0.001	-
Lead-210	pCi/L	8/18/1998	0001	0.93	U	L	#	0.93	± 0.54
	pCi/L	1/27/1999	0001	1.02	U	L	#	1.02	± 0.61
Magnesium	mg/L	8/18/1998	0001	3.510		L	#	-	-
	mg/L	1/27/1999	0001	3.270		L	#	-	-
Manganese	mg/L	8/18/1998	0001	0.0182		L	#	-	-
	mg/L	1/27/1999	0001	0.0281		L	#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0207 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Molybdenum	mg/L	8/18/1998	0001	0.249		L	#	-	-
	mg/L	1/27/1999	0001	0.213		L	#	-	-
Nitrate	mg/L	8/18/1998	0001	0.253	B	L	#	-	-
	mg/L	1/27/1999	0001	0.455	B	L	#	-	-
pH	s.u.	8/18/1998	N001	8.56		L	#	-	-
	s.u.	1/27/1999	N001	8.52		L	#	-	-
Polonium-210	pCi/L	8/18/1998	0001	0.08		UL	#	0.06	± 0.09
	pCi/L	1/27/1999	0001	0.10		UL	#	0.08	± 0.11
Radium-226	pCi/L	8/18/1998	0001	0.15	U	L	#	0.15	± 0.09
	pCi/L	1/27/1999	0001	0.15		L	#	0.14	± 0.09
Radium-228	pCi/L	8/18/1998	0001	0.73	U	L	#	0.73	± 0.43
	pCi/L	1/27/1999	0001	0.80	U	L	#	0.8	± 0.47
Redox Potential	mV	8/18/1998	N001	117		L	#	-	-
	mV	1/27/1999	N001	-117		L	#	-	-
Selenium	mg/L	8/18/1998	0001	0.0010	U	L	#	0.001	-
	mg/L	1/27/1999	0001	0.00010	U	L	#	0.0001	-
Sodium	mg/L	8/18/1998	0001	371.000		L	#	-	-
	mg/L	1/27/1999	0001	379.000		L	#	-	-
Specific Conductance	umhos/cm	8/18/1998	N001	2360		L	#	-	-
	umhos/cm	1/27/1999	N001	2480		L	#	-	-
Sulfate	mg/L	8/18/1998	0001	134.000		L	#	-	-
	mg/L	1/27/1999	0001	95.300		L	#	-	-
Temperature	C	8/18/1998	N001	14.4		L	#	-	-
	C	1/27/1999	N001	13.0		L	#	-	-
Thorium-230	pCi/L	8/18/1998	0001	1.2	U	L	#	1.2	±
	pCi/L	1/27/1999	0001	0.80	U	L	#	0.8	±
Turbidity	NTU	8/18/1998	N001	1000	>	L	#	-	-
	NTU	1/27/1999	N001	405		L	#	-	-
Uranium	mg/L	8/18/1998	0001	0.0013		L	#	-	-
	mg/L	1/27/1999	0001	0.0010	U	L	#	0.001	-
Vanadium	mg/L	8/18/1998	0001	0.0020	U	L	#	0.002	-
	mg/L	1/27/1999	0001	0.0010	B	L	#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0207 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE100 WHERE site_code='RFN01' AND quality_assurance = TRUE AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #5/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0208 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	8/18/1998	0001	347			#	-	-
	mg/L	8/18/1998	N001	351			#	-	-
	mg/L	1/29/1999	0001	365			#	-	-
	mg/L	1/29/1999	N001	371			#	-	-
Ammonia as NH4	mg/L	8/18/1998	0001	172.000			#	-	-
	mg/L	1/29/1999	0001	147.000			#	-	-
Antimony	mg/L	8/18/1998	0001	0.0015	B		#	-	-
	mg/L	1/29/1999	0001	0.0012	B		#	-	-
Arsenic	mg/L	8/18/1998	0001	0.0041	B		#	-	-
	mg/L	1/29/1999	0001	0.0042	B		#	-	-
Cadmium	mg/L	8/18/1998	0001	0.0011			#	-	-
	mg/L	1/29/1999	0001	0.0010	U		#	0.001	-
Calcium	mg/L	8/18/1998	0001	407.000			#	-	-
	mg/L	1/29/1999	0001	392.000			#	-	-
Chloride	mg/L	8/18/1998	0001	706.000			#	-	-
	mg/L	1/29/1999	0001	607.000			#	-	-
Fluoride	mg/L	8/18/1998	0001	0.634			#	-	-
	mg/L	1/29/1999	0001	0.555			#	-	-
Gross Alpha	pCi/L	8/18/1998	0001	44.79	U		#	44.79	± 27.9
	pCi/L	1/29/1999	0001	51.35	U	J	#	51.35	± 32.0
Gross Beta	pCi/L	8/18/1998	0001	48.17	U		#	48.17	± 28.5
	pCi/L	1/29/1999	0001	46.50	U		#	46.5	± 27.5
Iron	mg/L	8/18/1998	0001	0.0146	B	U	#	-	-
	mg/L	1/29/1999	0001	0.0030	U		#	0.003	-
Lead	mg/L	8/18/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/29/1999	0001	0.0010	U		#	0.001	-
Lead-210	pCi/L	8/18/1998	0001	0.94	U		#	0.94	± 0.55
	pCi/L	1/29/1999	0001	1.01	U		#	1.01	± 0.59
Magnesium	mg/L	8/18/1998	0001	124.000			#	-	-
	mg/L	1/29/1999	0001	113.000			#	-	-
Manganese	mg/L	8/18/1998	0001	1.050			#	-	-
	mg/L	1/29/1999	0001	1.720			#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0208 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Molybdenum	mg/L	8/18/1998	0001	0.750	E		#	-	-
	mg/L	1/29/1999	0001	0.898			#	-	-
Nitrate	mg/L	8/18/1998	0001	170.000			#	-	-
	mg/L	1/29/1999	0001	108.000			#	-	-
pH	s.u.	8/18/1998	N001	7.07			#	-	-
	s.u.	1/29/1999	N001	6.37			#	-	-
Polonium-210	pCi/L	8/18/1998	0001	0.06		U	#	0.06	± 0.07
	pCi/L	1/29/1999	0001	0.09	U		#	0.09	± 0.11
Radium-226	pCi/L	8/18/1998	0001	0.13	U		#	0.13	± 0.08
	pCi/L	1/29/1999	0001	0.18			#	0.11	± 0.08
Radium-228	pCi/L	8/18/1998	0001	0.60	U		#	0.6	± 0.36
	pCi/L	1/29/1999	0001	0.82			#	0.63	± 0.39
Redox Potential	mV	8/18/1998	N001	86			#	-	-
	mV	1/29/1999	N001	147			#	-	-
Selenium	mg/L	8/18/1998	0001	0.0034	B		#	-	-
	mg/L	1/29/1999	0001	0.0019	B		#	-	-
Sodium	mg/L	8/18/1998	0001	1180.000			#	-	-
	mg/L	1/29/1999	0001	1120.000			#	-	-
Specific Conductance	umhos/cm	8/18/1998	N001	5890			#	-	-
	umhos/cm	1/29/1999	N001	7340			#	-	-
Sulfate	mg/L	8/18/1998	0001	3000.000	N	J	#	-	-
	mg/L	1/29/1999	0001	2850.000			#	-	-
Temperature	C	8/18/1998	N001	12.9			#	-	-
	C	1/29/1999	N001	11.9			#	-	-
Thorium-230	pCi/L	8/18/1998	0001	1.2	U		#	1.2	±
	pCi/L	1/29/1999	0001	0.80	U		#	0.8	±
Turbidity	NTU	8/18/1998	N001	1.61			#	-	-
	NTU	1/29/1999	N001	2.36			#	-	-
Uranium	mg/L	8/18/1998	0001	0.0564			#	-	-
	mg/L	1/29/1999	0001	0.0611			#	-	-
Vanadium	mg/L	8/18/1998	0001	0.0020	U		#	0.002	-
	mg/L	1/29/1999	0001	0.0010	U		#	0.001	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0208 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE100 WHERE site_code='RFN01' AND quality_assurance = TRUE AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #5/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0210 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	8/27/1998	0001	481			#	-	-
	mg/L	8/27/1998	N001	454			#	-	-
	mg/L	1/26/1999	0001	467			#	-	-
	mg/L	1/26/1999	N001	467			#	-	-
Ammonia as NH4	mg/L	8/27/1998	0001	0.0112	B		#	-	-
	mg/L	1/26/1999	0001	0.0338	B		#	-	-
Antimony	mg/L	8/27/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/26/1999	0001	0.0010	U		#	0.001	-
Arsenic	mg/L	8/27/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/26/1999	0001	0.00010	U		#	0.0001	-
Cadmium	mg/L	8/27/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/26/1999	0001	0.0010	U		#	0.001	-
Calcium	mg/L	8/27/1998	0001	309.000			#	-	-
	mg/L	1/26/1999	0001	317.000			#	-	-
Chloride	mg/L	8/27/1998	0001	372.000			#	-	-
	mg/L	1/26/1999	0001	392.000			#	-	-
Fluoride	mg/L	8/27/1998	0001	0.651			#	-	-
	mg/L	1/26/1999	0001	0.256			#	-	-
Gross Alpha	pCi/L	8/27/1998	0001	63.44			#	35.69	± 27.6
	pCi/L	1/26/1999	0001	34.26	U		#	34.26	± 21.4
Gross Beta	pCi/L	8/27/1998	0001	36.77			#	36.38	± 22.6
	pCi/L	1/26/1999	0001	34.53	U		#	34.53	± 21.3
Iron	mg/L	8/27/1998	0001	0.0048	B	U	#	-	-
	mg/L	1/26/1999	0001	0.0030	U		#	0.003	-
Lead	mg/L	8/27/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/26/1999	0001	0.0010	U		#	0.001	-
Lead-210	pCi/L	8/27/1998	0001	0.93	U		#	0.93	± 0.53
	pCi/L	1/26/1999	0001	0.98	U		#	0.98	± 0.59
Magnesium	mg/L	8/27/1998	0001	172.000			#	-	-
	mg/L	1/26/1999	0001	175.000			#	-	-
Manganese	mg/L	8/27/1998	0001	0.0487			#	-	-
	mg/L	1/26/1999	0001	0.0568			#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0210 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Molybdenum	mg/L	8/27/1998	0001	0.0125			#	-	-
	mg/L	1/26/1999	0001	0.0037	B		#	-	-
Nitrate	mg/L	8/27/1998	0001	8.600			#	-	-
	mg/L	1/26/1999	0001	10.600			#	-	-
pH	s.u.	8/27/1998	N001	6.83			#	-	-
	s.u.	1/26/1999	N001	6.95			#	-	-
Polonium-210	pCi/L	8/27/1998	0001	0.09	U		#	0.09	± 0.10
	pCi/L	1/26/1999	0001	0.10		U	#	0.07	± 0.10
Radium-226	pCi/L	8/27/1998	0001	0.14	U		#	0.14	± 0.07
	pCi/L	1/26/1999	0001	0.13	U		#	0.13	± 0.07
Radium-228	pCi/L	8/27/1998	0001	0.81			#	0.63	± 0.39
	pCi/L	1/26/1999	0001	0.72	U		#	0.72	± 0.42
Redox Potential	mV	8/27/1998	N001	156			#	-	-
	mV	1/26/1999	N001	184			#	-	-
Selenium	mg/L	8/27/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/26/1999	0001	0.00010	U		#	0.0001	-
Sodium	mg/L	8/27/1998	0001	722.000			#	-	-
	mg/L	1/26/1999	0001	669.000			#	-	-
Specific Conductance	umhos/cm	8/27/1998	N001	4430			#	-	-
	umhos/cm	1/26/1999	N001	4960			#	-	-
Sulfate	mg/L	8/27/1998	0001	1970.000			#	-	-
	mg/L	1/26/1999	0001	2210.000			#	-	-
Temperature	C	8/27/1998	N001	13.5			#	-	-
	C	1/26/1999	N001	13.0			#	-	-
Thorium-230	pCi/L	8/27/1998	0001	1.2	U		#	1.2	±
	pCi/L	1/26/1999	0001	0.80	U		#	0.8	±
Turbidity	NTU	8/27/1998	N001	7.90			#	-	-
	NTU	1/26/1999	N001	8.23			#	-	-
Uranium	mg/L	8/27/1998	0001	0.0540			#	-	-
	mg/L	1/26/1999	0001	0.0573			#	-	-
Uranium-234	pCi/L	8/27/1998	0001	24.1			#	-	±
Uranium-235	pCi/L	8/27/1998	0001	0.99	BN		#	-	±

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0210 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Uranium-238	pCi/L	8/27/1998	0001	20.4	N	J	#	-	±
Vanadium	mg/L	8/27/1998	0001	0.0020	U		#	0.002	-
	mg/L	1/26/1999	0001	0.0010	U		#	0.001	-

RECORDS: SELECTED FROM USEE100 WHERE site_code='RFN01' AND quality_assurance = TRUE AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #5/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- \+ Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0211 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	8/20/1998	0001	388			#	-	-
	mg/L	8/20/1998	N001	385			#	-	-
	mg/L	1/20/1999	0001	489			#	-	-
	mg/L	1/20/1999	N001	491			#	-	-
Ammonia as NH4	mg/L	8/20/1998	0001	0.300			#	-	-
	mg/L	1/20/1999	0001	0.314			#	-	-
Antimony	mg/L	8/20/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/20/1999	0001	0.0010	U		#	0.001	-
Arsenic	mg/L	8/20/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/20/1999	0001	0.00010	B		#	-	-
Cadmium	mg/L	8/20/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/20/1999	0001	0.0010	U		#	0.001	-
Calcium	mg/L	8/20/1998	0001	388.000			#	-	-
	mg/L	1/20/1999	0001	388.000			#	-	-
Chloride	mg/L	8/20/1998	0001	264.000			#	-	-
	mg/L	1/20/1999	0001	307.000			#	-	-
Fluoride	mg/L	8/20/1998	0001	0.132	B		#	-	-
	mg/L	1/20/1999	0001	0.263			#	-	-
Gross Alpha	pCi/L	8/20/1998	0001	100.6		J	#	45.3	± 37.5
	pCi/L	1/20/1999	0001	62.4			#	37.6	± 28.5
Gross Beta	pCi/L	8/20/1998	0001	48.58	U		#	48.58	± 29.7
	pCi/L	1/20/1999	0001	40.19			#	34.96	± 22.0
Iron	mg/L	8/20/1998	0001	0.0068	B*	UJ	#	-	-
	mg/L	1/20/1999	0001	0.0142	B	U	#	-	-
Lead	mg/L	8/20/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/20/1999	0001	0.0015	B		#	-	-
Lead-210	pCi/L	8/20/1998	0001	0.91	U		#	0.91	± 0.55
	pCi/L	1/20/1999	0001	0.94	U		#	0.94	± 0.57
Magnesium	mg/L	8/20/1998	0001	211.000			#	-	-
	mg/L	1/20/1999	0001	200.000			#	-	-
Manganese	mg/L	8/20/1998	0001	0.0179			#	-	-
	mg/L	1/20/1999	0001	0.0207			#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0211 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Molybdenum	mg/L	8/20/1998	0001	0.0025	BE		#	-	-
	mg/L	1/20/1999	0001	0.0021	B		#	-	-
Nitrate	mg/L	8/20/1998	0001	77.000			#	-	-
	mg/L	1/20/1999	0001	105.000			#	-	-
pH	s.u.	8/20/1998	N001	6.83			#	-	-
	s.u.	1/20/1999	N001	6.94			#	-	-
Polonium-210	pCi/L	8/20/1998	0001	0.14			#	0.04	± 0.09
	pCi/L	1/20/1999	0001	0.15			#	0.04	± 0.08
Radium-226	pCi/L	8/20/1998	0001	0.08	U		#	0.08	± 0.04
	pCi/L	1/20/1999	0001	0.12	U		#	0.12	± 0.07
Radium-228	pCi/L	8/20/1998	0001	0.39	U		#	0.39	± 0.23
	pCi/L	1/20/1999	0001	0.66	U		#	0.66	± 0.39
Redox Potential	mV	8/20/1998	N001	139			#	-	-
	mV	1/20/1999	N001	62			#	-	-
Selenium	mg/L	8/20/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/20/1999	0001	0.00010	U		#	0.0001	-
Sodium	mg/L	8/20/1998	0001	876.000			#	-	-
	mg/L	1/20/1999	0001	832.000			#	-	-
Specific Conductance	umhos/cm	8/20/1998	N001	5110			#	-	-
	umhos/cm	1/20/1999	N001	5890			#	-	-
Sulfate	mg/L	8/20/1998	0001	2730.000			#	-	-
	mg/L	1/20/1999	0001	2910.000			#	-	-
Temperature	C	8/20/1998	N001	17.9			#	-	-
	C	1/20/1999	N001	13.4			#	-	-
Thorium-230	pCi/L	8/20/1998	0001	1.2	U		#	1.2	±
	pCi/L	1/20/1999	0001	0.97	B	U	#	-	±
Turbidity	NTU	8/20/1998	N001	2.63			#	-	-
	NTU	1/20/1999	N001	5.89			#	-	-
Uranium	mg/L	8/20/1998	0001	0.0911			#	-	-
	mg/L	1/20/1999	0001	0.0895			#	-	-
Vanadium	mg/L	8/20/1998	0001	0.0020	U		#	0.002	-
	mg/L	1/20/1999	0001	0.0010	U		#	0.001	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0211 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE100 WHERE site_code='RFN01' AND quality_assurance = TRUE AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #5/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0212 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	8/18/1998	0001	492			#	-	-
	mg/L	8/18/1998	N001	510			#	-	-
	mg/L	1/22/1999	0001	508		L	#	-	-
	mg/L	1/22/1999	N001	516		L	#	-	-
Ammonia as NH4	mg/L	8/18/1998	0001	43.300			#	-	-
	mg/L	1/22/1999	0001	41.000		L	#	-	-
Antimony	mg/L	8/18/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/22/1999	0001	0.0010	U	L	#	0.001	-
Arsenic	mg/L	8/18/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/22/1999	0001	0.00010	U	L	#	0.0001	-
Cadmium	mg/L	8/18/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/22/1999	0001	0.0010	U	L	#	0.001	-
Calcium	mg/L	8/18/1998	0001	238.000			#	-	-
	mg/L	1/22/1999	0001	229.000		L	#	-	-
Chloride	mg/L	8/18/1998	0001	107.000			#	-	-
	mg/L	1/22/1999	0001	112.000		L	#	-	-
Fluoride	mg/L	8/18/1998	0001	0.429			#	-	-
	mg/L	1/22/1999	0001	0.488		L	#	-	-
Gross Alpha	pCi/L	8/18/1998	0001	59.95		J	#	22.73	± 19.8
	pCi/L	1/22/1999	0001	64.8		L	#	20.5	± 19.0
Gross Beta	pCi/L	8/18/1998	0001	47.53			#	24.33	± 16.2
	pCi/L	1/22/1999	0001	44.59		L	#	23.35	± 15.5
Iron	mg/L	8/18/1998	0001	0.456			#	-	-
	mg/L	1/22/1999	0001	0.0650		L	#	-	-
Lead	mg/L	8/18/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/22/1999	0001	0.0010	U	L	#	0.001	-
Lead-210	pCi/L	8/18/1998	0001	0.89	U		#	0.89	± 0.53
	pCi/L	1/22/1999	0001	1.05	U	L	#	1.05	± 0.61
Magnesium	mg/L	8/18/1998	0001	122.000			#	-	-
	mg/L	1/22/1999	0001	116.000		L	#	-	-
Manganese	mg/L	8/18/1998	0001	0.340			#	-	-
	mg/L	1/22/1999	0001	0.363		L	#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0212 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Molybdenum	mg/L	8/18/1998	0001	0.0386	E		#	-	-
	mg/L	1/22/1999	0001	0.0367		L	#	-	-
Nitrate	mg/L	8/18/1998	0001	158.000			#	-	-
	mg/L	1/22/1999	0001	160.000		L	#	-	-
pH	s.u.	8/18/1998	N001	6.85			#	-	-
	s.u.	1/22/1999	N001	6.90		L	#	-	-
Polonium-210	pCi/L	8/18/1998	0001	0.07		U	#	0.06	± 0.08
	pCi/L	1/22/1999	0001	0.13		UL	#	0.07	± 0.11
Radium-226	pCi/L	8/18/1998	0001	0.14	U		#	0.14	± 0.08
	pCi/L	1/22/1999	0001	0.12	U	L	#	0.12	± 0.07
Radium-228	pCi/L	8/18/1998	0001	0.68	U		#	0.68	± 0.41
	pCi/L	1/22/1999	0001	0.86		L	#	0.61	± 0.38
Redox Potential	mV	8/18/1998	N001	143			#	-	-
	mV	1/22/1999	N001	134		L	#	-	-
Selenium	mg/L	8/18/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/22/1999	0001	0.00010	U	L	#	0.0001	-
Sodium	mg/L	8/18/1998	0001	345.000			#	-	-
	mg/L	1/22/1999	0001	351.000		L	#	-	-
Specific Conductance	umhos/cm	8/18/1998	N001	2520			#	-	-
	umhos/cm	1/22/1999	N001	3400		L	#	-	-
Sulfate	mg/L	8/18/1998	0001	1100.000	N	J	#	-	-
	mg/L	1/22/1999	0001	1160.000		L	#	-	-
Temperature	C	8/18/1998	N001	14.3			#	-	-
	C	1/22/1999	N001	12.4		L	#	-	-
Thorium-230	pCi/L	8/18/1998	0001	1.2	U		#	1.2	±
	pCi/L	1/22/1999	0001	0.80	U	L	#	0.8	±
Turbidity	NTU	8/18/1998	N001	2.27			#	-	-
	NTU	1/22/1999	N001	111		L	#	-	-
Uranium	mg/L	8/18/1998	0001	0.0974			#	-	-
	mg/L	1/22/1999	0001	0.0980		L	#	-	-
Vanadium	mg/L	8/18/1998	0001	0.0020	U		#	0.002	-
	mg/L	1/22/1999	0001	0.0010	U	L	#	0.001	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0212 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE100 WHERE site_code='RFN01' AND quality_assurance = TRUE AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #5/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0213 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	8/19/1998	0001	576			#	-	-
	mg/L	8/19/1998	N001	662			#	-	-
	mg/L	1/26/1999	0001	488			#	-	-
	mg/L	1/26/1999	N001	485			#	-	-
Ammonia as NH4	mg/L	8/19/1998	0001	28.700			#	-	-
	mg/L	1/26/1999	0001	20.900			#	-	-
Antimony	mg/L	8/19/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/26/1999	0001	0.0010	U		#	0.001	-
Arsenic	mg/L	8/19/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/26/1999	0001	0.00010	U		#	0.0001	-
Cadmium	mg/L	8/19/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/26/1999	0001	0.0010	U		#	0.001	-
Calcium	mg/L	8/19/1998	0001	151.000			#	-	-
	mg/L	1/26/1999	0001	137.000			#	-	-
Chloride	mg/L	8/19/1998	0001	44.300			#	-	-
	mg/L	1/26/1999	0001	40.800			#	-	-
Fluoride	mg/L	8/19/1998	0001	0.582			#	-	-
	mg/L	1/26/1999	0001	0.752			#	-	-
Gross Alpha	pCi/L	8/19/1998	0001	31.01		J	#	13.66	± 11.3
	pCi/L	1/26/1999	0001	39.09			#	11.64	± 11.0
Gross Beta	pCi/L	8/19/1998	0001	32.29			#	12.27	± 8.57
	pCi/L	1/26/1999	0001	21.42			#	11.77	± 7.80
Iron	mg/L	8/19/1998	0001	0.0308	*	UJ	#	-	-
	mg/L	1/26/1999	0001	0.0030	U		#	0.003	-
Lead	mg/L	8/19/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/26/1999	0001	0.0010	U		#	0.001	-
Lead-210	pCi/L	8/19/1998	0001	0.90	U		#	0.9	± 0.53
	pCi/L	1/26/1999	0001	1.12			#	0.97	± 0.59
Magnesium	mg/L	8/19/1998	0001	82.700			#	-	-
	mg/L	1/26/1999	0001	72.600			#	-	-
Manganese	mg/L	8/19/1998	0001	0.413			#	-	-
	mg/L	1/26/1999	0001	0.310			#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0213 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Molybdenum	mg/L	8/19/1998	0001	0.0678	E		#	-	-
	mg/L	1/26/1999	0001	0.0756			#	-	-
Nitrate	mg/L	8/19/1998	0001	33.000			#	-	-
	mg/L	1/26/1999	0001	36.300			#	-	-
pH	s.u.	8/19/1998	N001	6.92			#	-	-
	s.u.	1/26/1999	N001	6.88			#	-	-
Polonium-210	pCi/L	8/19/1998	0001	0.08		U	#	0.03	± 0.06
	pCi/L	1/26/1999	0001	0.11		U	#	0.06	± 0.09
Radium-226	pCi/L	8/19/1998	0001	0.17	U		#	0.17	± 0.09
	pCi/L	1/26/1999	0001	0.14	U		#	0.14	± 0.08
Radium-228	pCi/L	8/19/1998	0001	0.82	U		#	0.82	± 0.49
	pCi/L	1/26/1999	0001	0.80	U		#	0.8	± 0.47
Redox Potential	mV	8/19/1998	N001	154			#	-	-
	mV	1/26/1999	N001	102			#	-	-
Selenium	mg/L	8/19/1998	0001	0.0209			#	-	-
	mg/L	1/26/1999	0001	0.0182			#	-	-
Sodium	mg/L	8/19/1998	0001	199.000			#	-	-
	mg/L	1/26/1999	0001	179.000			#	-	-
Specific Conductance	umhos/cm	8/19/1998	N001	1842			#	-	-
	umhos/cm	1/26/1999	N001	1396			#	-	-
Sulfate	mg/L	8/19/1998	0001	581.000	N	J	#	-	-
	mg/L	1/26/1999	0001	580.000			#	-	-
Temperature	C	8/19/1998	N001	11.7			#	-	-
	C	1/26/1999	N001	11.8			#	-	-
Thorium-230	pCi/L	8/19/1998	0001	1.2	U		#	1.2	±
	pCi/L	1/26/1999	0001	0.80	U		#	0.8	±
Turbidity	NTU	8/19/1998	N001	1.26			#	-	-
	NTU	1/26/1999	N001	6.83			#	-	-
Uranium	mg/L	8/19/1998	0001	0.0630			#	-	-
	mg/L	1/26/1999	0001	0.0597			#	-	-
Vanadium	mg/L	8/19/1998	0001	0.0020	U		#	0.002	-
	mg/L	1/26/1999	0001	0.0010	U		#	0.001	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0213 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE100 WHERE site_code='RFN01' AND quality_assurance = TRUE AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #5/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0215 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	8/14/1998	0001	1719			#	-	-
	mg/L	8/14/1998	N001	1504			#	-	-
	mg/L	1/28/1999	0001	183			#	-	-
	mg/L	1/28/1999	N001	180			#	-	-
Ammonia as NH4	mg/L	8/14/1998	0001	5.000			#	-	-
	mg/L	1/28/1999	0001	4.010			#	-	-
Antimony	mg/L	8/14/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/28/1999	0001	0.0010	U		#	0.001	-
Arsenic	mg/L	8/14/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/28/1999	0001	0.00010	U		#	0.0001	-
Cadmium	mg/L	8/14/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/28/1999	0001	0.0010	U		#	0.001	-
Calcium	mg/L	8/14/1998	0001	48.300			#	-	-
	mg/L	1/28/1999	0001	43.500			#	-	-
Chloride	mg/L	8/14/1998	0001	120.000			#	-	-
	mg/L	1/28/1999	0001	74.600			#	-	-
Fluoride	mg/L	8/14/1998	0001	0.828			#	-	-
	mg/L	1/28/1999	0001	0.943			#	-	-
Gross Alpha	pCi/L	8/14/1998	0001	10.55			#	7.93	± 5.71
	pCi/L	1/28/1999	0001	10.49			#	5.22	± 4.19
Gross Beta	pCi/L	8/14/1998	0001	11.88	U		#	11.88	± 6.88
	pCi/L	1/28/1999	0001	5.80	U		#	5.8	± 3.50
Iron	mg/L	8/14/1998	0001	0.0674			#	-	-
	mg/L	1/28/1999	0001	0.0316			#	-	-
Lead	mg/L	8/14/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/28/1999	0001	0.0010	U		#	0.001	-
Lead-210	pCi/L	8/14/1998	0001	0.95	U		#	0.95	± 0.58
	pCi/L	1/28/1999	0001	0.97	U		#	0.97	± 0.57
Magnesium	mg/L	8/14/1998	0001	32.600			#	-	-
	mg/L	1/28/1999	0001	29.100			#	-	-
Manganese	mg/L	8/14/1998	0001	0.370			#	-	-
	mg/L	1/28/1999	0001	0.340			#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0215 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Molybdenum	mg/L	8/14/1998	0001	0.0371	E		#	-	-
	mg/L	1/28/1999	0001	0.0317			#	-	-
Nitrate	mg/L	8/14/1998	0001	0.163	B		#	-	-
	mg/L	1/28/1999	0001	0.409	B		#	-	-
pH	s.u.	8/14/1998	N001	7.53			#	-	-
	s.u.	1/28/1999	N001	7.81			#	-	-
Polonium-210	pCi/L	8/14/1998	0001	0.05		U	#	0.03	± 0.05
	pCi/L	1/28/1999	0001	0.10		U	#	0.03	± 0.08
Radium-226	pCi/L	8/14/1998	0001	0.13	U		#	0.13	± 0.07
	pCi/L	1/28/1999	0001	0.12	U		#	0.12	± 0.07
Radium-228	pCi/L	8/14/1998	0001	0.63	U		#	0.63	± 0.37
	pCi/L	1/28/1999	0001	0.72	U		#	0.72	± 0.42
Redox Potential	mV	8/14/1998	N001	-65			#	-	-
	mV	1/28/1999	N001	-80			#	-	-
Selenium	mg/L	8/14/1998	0001	0.0014	B		#	-	-
	mg/L	1/28/1999	0001	0.00066	B		#	-	-
Sodium	mg/L	8/14/1998	0001	90.000			#	-	-
	mg/L	1/28/1999	0001	83.100			#	-	-
Specific Conductance	umhos/cm	8/14/1998	N001	808			#	-	-
	umhos/cm	1/28/1999	N001	906			#	-	-
Sulfate	mg/L	8/14/1998	0001	122.000	N	J	#	-	-
	mg/L	1/28/1999	0001	141.000			#	-	-
Temperature	C	8/14/1998	N001	13.5			#	-	-
	C	1/28/1999	N001	11.6			#	-	-
Thorium-230	pCi/L	8/14/1998	0001	1.2	U		#	1.2	±
	pCi/L	1/28/1999	0001	0.80	U		#	0.8	±
Turbidity	NTU	8/14/1998	N001	9.21			#	-	-
	NTU	1/28/1999	N001	5.90			#	-	-
Uranium	mg/L	8/14/1998	0001	0.0103			#	-	-
	mg/L	1/28/1999	0001	0.0123			#	-	-
Uranium-234	pCi/L	8/14/1998	0001	4.7			#	-	±
Uranium-235	pCi/L	8/14/1998	0001	0.40	UN		#	0.4	±

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0215 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Uranium-238	pCi/L	8/14/1998	0001	4.4	N	J	#	-	±
Vanadium	mg/L	8/14/1998	0001	0.0020	U		#	0.002	-
	mg/L	1/28/1999	0001	0.0010	U		#	0.001	-

RECORDS: SELECTED FROM USEE100 WHERE site_code='RFN01' AND quality_assurance = TRUE AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #5/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- \+ Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0216
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	8/18/1998	0001	160			#	-	-
	mg/L	8/18/1998	N001	168			#	-	-
	mg/L	1/28/1999	0001	141			#	-	-
	mg/L	1/28/1999	N001	130			#	-	-
Ammonia as NH4	mg/L	8/18/1998	0001	10.000			#	-	-
	mg/L	1/28/1999	0001	10.200			#	-	-
Antimony	mg/L	8/18/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/28/1999	0001	0.0010	U		#	0.001	-
Arsenic	mg/L	8/18/1998	0001	0.0354			#	-	-
	mg/L	1/28/1999	0001	0.0232			#	-	-
Cadmium	mg/L	8/18/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/28/1999	0001	0.0010	U		#	0.001	-
Calcium	mg/L	8/18/1998	0001	63.200			#	-	-
	mg/L	1/28/1999	0001	77.900			#	-	-
Chloride	mg/L	8/18/1998	0001	85.700			#	-	-
	mg/L	1/28/1999	0001	144.000			#	-	-
Fluoride	mg/L	8/18/1998	0001	0.534			#	-	-
	mg/L	1/28/1999	0001	0.491			#	-	-
Gross Alpha	pCi/L	8/18/1998	0001	10.25			#	7.81	± 5.60
	pCi/L	1/28/1999	0001	10.79			#	5.59	± 4.42
Gross Beta	pCi/L	8/18/1998	0001	11.87	U		#	11.87	± 7.15
	pCi/L	1/28/1999	0001	10.45			#	5.81	± 3.85
Iron	mg/L	8/18/1998	0001	0.0976			#	-	-
	mg/L	1/28/1999	0001	0.0585			#	-	-
Lead	mg/L	8/18/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/28/1999	0001	0.0010	U		#	0.001	-
Lead-210	pCi/L	8/18/1998	0001	0.93	U		#	0.93	± 0.54
	pCi/L	1/28/1999	0001	0.99	U		#	0.99	± 0.59
Magnesium	mg/L	8/18/1998	0001	12.900			#	-	-
	mg/L	1/28/1999	0001	15.600			#	-	-
Manganese	mg/L	8/18/1998	0001	0.734			#	-	-
	mg/L	1/28/1999	0001	0.970			#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0216
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Molybdenum	mg/L	8/18/1998	0001	0.0651	E		#	-	-
	mg/L	1/28/1999	0001	0.0502			#	-	-
Nitrate	mg/L	8/18/1998	0001	0.0165	B	U	#	-	-
	mg/L	1/28/1999	0001	0.194	B		#	-	-
pH	s.u.	8/18/1998	N001	7.52			#	-	-
	s.u.	1/28/1999	N001	7.78			#	-	-
Polonium-210	pCi/L	8/18/1998	0001	0.07		U	#	0.04	± 0.06
	pCi/L	1/28/1999	0001	0.08		U	#	0.05	± 0.08
Radium-226	pCi/L	8/18/1998	0001	0.13	U		#	0.13	± 0.07
	pCi/L	1/28/1999	0001	0.13	U		#	0.13	± 0.08
Radium-228	pCi/L	8/18/1998	0001	0.62	U		#	0.62	± 0.37
	pCi/L	1/28/1999	0001	0.75	U		#	0.75	± 0.45
Redox Potential	mV	8/18/1998	N001	-226			#	-	-
	mV	1/28/1999	N001	-213			#	-	-
Selenium	mg/L	8/18/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/28/1999	0001	0.0026	B		#	-	-
Sodium	mg/L	8/18/1998	0001	75.100			#	-	-
	mg/L	1/28/1999	0001	83.700			#	-	-
Specific Conductance	umhos/cm	8/18/1998	N001	757			#	-	-
	umhos/cm	1/28/1999	N001	1062			#	-	-
Sulfate	mg/L	8/18/1998	0001	121.000	N	J	#	-	-
	mg/L	1/28/1999	0001	158.000			#	-	-
Temperature	C	8/18/1998	N001	15.4			#	-	-
	C	1/28/1999	N001	8.9			#	-	-
Thorium-230	pCi/L	8/18/1998	0001	1.2	U		#	1.2	±
	pCi/L	1/28/1999	0001	0.80	U		#	0.8	±
Turbidity	NTU	8/18/1998	N001	7.7			#	-	-
	NTU	1/28/1999	N001	15.7			#	-	-
Uranium	mg/L	8/18/1998	0001	0.0202			#	-	-
	mg/L	1/28/1999	0001	0.0194			#	-	-
Vanadium	mg/L	8/18/1998	0001	0.487			#	-	-
	mg/L	1/28/1999	0001	0.361			#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0216
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE100 WHERE site_code='RFN01' AND quality_assurance = TRUE AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #5/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > *Result above upper detection limit.*

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0217 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	8/18/1998	0001	249			#	-	-
	mg/L	8/18/1998	N001	254			#	-	-
	mg/L	1/21/1999	0001	243			#	-	-
	mg/L	1/21/1999	N001	244			#	-	-
Ammonia as NH4	mg/L	8/18/1998	0001	335.000			#	-	-
	mg/L	1/21/1999	0001	319.000			#	-	-
Antimony	mg/L	8/18/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/21/1999	0001	0.0010	U		#	0.001	-
Arsenic	mg/L	8/18/1998	0001	0.0041	B		#	-	-
	mg/L	1/21/1999	0001	0.0019	B		#	-	-
Cadmium	mg/L	8/18/1998	0001	0.0041			#	-	-
	mg/L	1/21/1999	0001	0.0034			#	-	-
Calcium	mg/L	8/18/1998	0001	486.000			#	-	-
	mg/L	1/21/1999	0001	469.000			#	-	-
Chloride	mg/L	8/18/1998	0001	212.000			#	-	-
	mg/L	1/21/1999	0001	175.000			#	-	-
Fluoride	mg/L	8/18/1998	0001	3.220			#	-	-
	mg/L	1/21/1999	0001	3.640			#	-	-
Gross Alpha	pCi/L	8/18/1998	0001	52.31			#	26.44	± 21.0
	pCi/L	1/21/1999	0001	42.16			#	23.61	± 18.2
Gross Beta	pCi/L	8/18/1998	0001	45.01			#	24.46	± 16.1
	pCi/L	1/21/1999	0001	45.47			#	23.29	± 15.6
Iron	mg/L	8/18/1998	0001	0.505			#	-	-
	mg/L	1/21/1999	0001	0.567			#	-	-
Lead	mg/L	8/18/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/21/1999	0001	0.0010	U		#	0.001	-
Lead-210	pCi/L	8/18/1998	0001	1.03	U		#	1.03	± 0.60
	pCi/L	1/21/1999	0001	0.96	U		#	0.96	± 0.57
Magnesium	mg/L	8/18/1998	0001	49.200			#	-	-
	mg/L	1/21/1999	0001	43.000			#	-	-
Manganese	mg/L	8/18/1998	0001	5.360			#	-	-
	mg/L	1/21/1999	0001	5.260			#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0217 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Molybdenum	mg/L	8/18/1998	0001	1.670	E		#	-	-
	mg/L	1/21/1999	0001	1.540			#	-	-
Nitrate	mg/L	8/18/1998	0001	3.050			#	-	-
	mg/L	1/21/1999	0001	0.393	B		#	-	-
pH	s.u.	8/18/1998	N001	6.95			#	-	-
	s.u.	1/21/1999	N001	6.98			#	-	-
Polonium-210	pCi/L	8/18/1998	0001	0.06	U		#	0.06	± 0.08
	pCi/L	1/21/1999	0001	0.09		U	#	0.06	± 0.09
Radium-226	pCi/L	8/18/1998	0001	0.16			#	0.14	± 0.09
	pCi/L	1/21/1999	0001	0.12			#	0.11	± 0.07
Radium-228	pCi/L	8/18/1998	0001	0.66	U		#	0.66	± 0.39
	pCi/L	1/21/1999	0001	0.59	U		#	0.59	± 0.35
Redox Potential	mV	8/18/1998	N001	-76			#	-	-
	mV	1/21/1999	N001	-48			#	-	-
Selenium	mg/L	8/18/1998	0001	0.0031	B		#	-	-
	mg/L	1/21/1999	0001	0.0018	B		#	-	-
Sodium	mg/L	8/18/1998	0001	467.000			#	-	-
	mg/L	1/21/1999	0001	427.000			#	-	-
Specific Conductance	umhos/cm	8/18/1998	N001	4240			#	-	-
	umhos/cm	1/21/1999	N001	5390			#	-	-
Sulfate	mg/L	8/18/1998	0001	2610.000	N	J	#	-	-
	mg/L	1/21/1999	0001	2670.000			#	-	-
Temperature	C	8/18/1998	N001	13.7			#	-	-
	C	1/21/1999	N001	10.7			#	-	-
Thorium-230	pCi/L	8/18/1998	0001	1.2	U		#	1.2	±
	pCi/L	1/21/1999	0001	0.80	U		#	0.8	±
Turbidity	NTU	8/18/1998	N001	6.42			#	-	-
	NTU	1/21/1999	N001	7.53			#	-	-
Uranium	mg/L	8/18/1998	0001	0.111			#	-	-
	mg/L	1/21/1999	0001	0.107			#	-	-
Vanadium	mg/L	8/18/1998	0001	1.050			#	-	-
	mg/L	1/21/1999	0001	0.402			#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0217 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE100 WHERE site_code='RFN01' AND quality_assurance = TRUE AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #5/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0218 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	8/13/1998	0001	202			#	-	-
	mg/L	8/13/1998	N001	205			#	-	-
	mg/L	1/28/1999	0001	221			#	-	-
	mg/L	1/28/1999	N001	226			#	-	-
Ammonia as NH4	mg/L	8/13/1998	0001	217.000			#	-	-
	mg/L	8/13/1998	0002	211.000			#	-	-
	mg/L	1/28/1999	0001	195.000			#	-	-
Antimony	mg/L	8/13/1998	0001	0.0010	U		#	0.001	-
	mg/L	8/13/1998	0002	0.0010	U		#	0.001	-
	mg/L	1/28/1999	0001	0.0010	U		#	0.001	-
Arsenic	mg/L	8/13/1998	0001	0.0386			#	-	-
	mg/L	8/13/1998	0002	0.0376			#	-	-
	mg/L	1/28/1999	0001	0.0309			#	-	-
Cadmium	mg/L	8/13/1998	0001	0.0040			#	-	-
	mg/L	8/13/1998	0002	0.0041			#	-	-
	mg/L	1/28/1999	0001	0.0010	U		#	0.001	-
Calcium	mg/L	8/13/1998	0001	556.000			#	-	-
	mg/L	8/13/1998	0002	552.000			#	-	-
	mg/L	1/28/1999	0001	498.000			#	-	-
Chloride	mg/L	8/13/1998	0001	129.000			#	-	-
	mg/L	8/13/1998	0002	134.000			#	-	-
	mg/L	1/28/1999	0001	109.000			#	-	-
Fluoride	mg/L	8/13/1998	0001	5.230			#	-	-
	mg/L	8/13/1998	0002	5.510			#	-	-
	mg/L	1/28/1999	0001	4.700			#	-	-
Gross Alpha	pCi/L	8/13/1998	0001	55.03			#	22.87	± 19.3
	pCi/L	8/13/1998	0002	60.24			#	26.11	± 21.8
	pCi/L	1/28/1999	0001	70.61		J	#	24.93	± 21.7
Gross Beta	pCi/L	8/13/1998	0001	44.71			#	24.31	± 16.0
	pCi/L	8/13/1998	0002	47.00			#	24.48	± 16.2
	pCi/L	1/28/1999	0001	35.28			#	23.58	± 15.2
Iron	mg/L	8/13/1998	0001	0.0088	B	U	#	-	-
	mg/L	8/13/1998	0002	0.0050	B	U	#	-	-
	mg/L	1/28/1999	0001	0.0657			#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0218 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Lead	mg/L	8/13/1998	0001	0.0010	U		#	0.001	-
	mg/L	8/13/1998	0002	0.0010	U		#	0.001	-
	mg/L	1/28/1999	0001	0.0010	U		#	0.001	-
Lead-210	pCi/L	8/13/1998	0001	0.97	U		#	0.97	± 0.57
	pCi/L	8/13/1998	0002	0.93	U		#	0.93	± 0.54
	pCi/L	1/28/1999	0001	0.95	U		#	0.95	± 0.56
Magnesium	mg/L	8/13/1998	0001	28.300			#	-	-
	mg/L	8/13/1998	0002	29.000			#	-	-
	mg/L	1/28/1999	0001	25.900			#	-	-
Manganese	mg/L	8/13/1998	0001	3.700			#	-	-
	mg/L	8/13/1998	0002	3.840			#	-	-
	mg/L	1/28/1999	0001	3.240			#	-	-
Molybdenum	mg/L	8/13/1998	0001	3.460	E		#	-	-
	mg/L	8/13/1998	0002	3.550			#	-	-
	mg/L	1/28/1999	0001	2.630			#	-	-
Nitrate	mg/L	8/13/1998	0001	63.700			#	-	-
	mg/L	8/13/1998	0002	47.800			#	-	-
	mg/L	1/28/1999	0001	16.700			#	-	-
pH	s.u.	8/13/1998	N001	6.86			#	-	-
	s.u.	1/28/1999	N001	6.56			#	-	-
Polonium-210	pCi/L	8/13/1998	0001	0.07	U		#	0.07	± 0.08
	pCi/L	8/13/1998	0002	0.07	U		#	0.07	± 0.07
	pCi/L	1/28/1999	0001	0.07		U	#	0.07	± 0.10
Radium-226	pCi/L	8/13/1998	0001	0.15	U		#	0.15	± 0.08
	pCi/L	8/13/1998	0002	0.14	U		#	0.14	± 0.08
	pCi/L	1/28/1999	0001	0.12	U		#	0.12	± 0.07
Radium-228	pCi/L	8/13/1998	0001	0.69	U		#	0.69	± 0.41
	pCi/L	8/13/1998	0002	0.67	U		#	0.67	± 0.40
	pCi/L	1/28/1999	0001	0.67			#	0.65	± 0.39
Redox Potential	mV	8/13/1998	N001	176			#	-	-
	mV	1/28/1999	N001	6			#	-	-
Selenium	mg/L	8/13/1998	0001	0.0320			#	-	-
	mg/L	8/13/1998	0002	0.0325			#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0218 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Selenium	mg/L	1/28/1999	0001	0.0138			#	-	-
Sodium	mg/L	8/13/1998	0001	288.000			#	-	-
	mg/L	8/13/1998	0002	274.000			#	-	-
	mg/L	1/28/1999	0001	283.000			#	-	-
Specific Conductance	umhos/cm	8/13/1998	N001	3760			#	-	-
	umhos/cm	1/28/1999	N001	4500			#	-	-
Sulfate	mg/L	8/13/1998	0001	2110.000	N	J	#	-	-
	mg/L	8/13/1998	0002	2150.000		J	#	-	-
	mg/L	1/28/1999	0001	1990.000			#	-	-
Temperature	C	8/13/1998	N001	15.7			#	-	-
	C	1/28/1999	N001	10.5			#	-	-
Thorium-230	pCi/L	8/13/1998	0001	1.2	U		#	1.2	±
	pCi/L	8/13/1998	0002	1.2	U		#	1.2	±
	pCi/L	1/28/1999	0001	0.87	B	U	#	-	±
Turbidity	NTU	8/13/1998	N001	4.49			#	-	-
	NTU	1/28/1999	N001	2.19			#	-	-
Uranium	mg/L	8/13/1998	0001	0.0991			#	-	-
	mg/L	8/13/1998	0002	0.0996			#	-	-
	mg/L	1/28/1999	0001	0.106			#	-	-
Uranium-234	pCi/L	8/13/1998	0002	34.5			#	-	±
Uranium-235	pCi/L	8/13/1998	0002	1.9	BN		#	-	±
Uranium-238	pCi/L	8/13/1998	0002	38.3	N	J	#	-	±
Vanadium	mg/L	8/13/1998	0001	3.650			#	-	-
	mg/L	8/13/1998	0002	3.560			#	-	-
	mg/L	1/28/1999	0001	2.610			#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0218 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE100 WHERE site_code='RFN01' AND quality_assurance = TRUE AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #5/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0219 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	8/13/1998	0001	465			#	-	-
	mg/L	8/13/1998	N001	439			#	-	-
	mg/L	1/25/1999	0001	442			#	-	-
	mg/L	1/25/1999	N001	437			#	-	-
Ammonia as NH4	mg/L	8/13/1998	0001	467.000			#	-	-
	mg/L	1/25/1999	0001	475.000			#	-	-
Antimony	mg/L	8/13/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/25/1999	0001	0.0010	U		#	0.001	-
Arsenic	mg/L	8/13/1998	0001	0.0030	B		#	-	-
	mg/L	1/25/1999	0001	0.0023	B		#	-	-
Cadmium	mg/L	8/13/1998	0001	0.0051			#	-	-
	mg/L	1/25/1999	0001	0.0010	U		#	0.001	-
Calcium	mg/L	8/13/1998	0001	466.000			#	-	-
	mg/L	1/25/1999	0001	456.000			#	-	-
Chloride	mg/L	8/13/1998	0001	149.000			#	-	-
	mg/L	1/25/1999	0001	154.000			#	-	-
Fluoride	mg/L	8/13/1998	0001	5.340			#	-	-
	mg/L	1/25/1999	0001	4.900			#	-	-
Gross Alpha	pCi/L	8/13/1998	0001	57.06			#	30.54	± 24.0
	pCi/L	1/25/1999	0001	70.6			#	24.5	± 22.0
Gross Beta	pCi/L	8/13/1998	0001	40.84			#	36.09	± 22.6
	pCi/L	1/25/1999	0001	42.27			#	23.53	± 15.5
Iron	mg/L	8/13/1998	0001	3.620			#	-	-
	mg/L	1/25/1999	0001	3.570			#	-	-
Lead	mg/L	8/13/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/25/1999	0001	0.0010	U		#	0.001	-
Lead-210	pCi/L	8/13/1998	0001	0.97	U		#	0.97	± 0.56
	pCi/L	1/25/1999	0001	1.00	U		#	1	± 0.60
Magnesium	mg/L	8/13/1998	0001	51.700			#	-	-
	mg/L	1/25/1999	0001	49.400			#	-	-
Manganese	mg/L	8/13/1998	0001	3.300			#	-	-
	mg/L	1/25/1999	0001	3.080			#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0219 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Molybdenum	mg/L	8/13/1998	0001	5.320	E		#	-	-
	mg/L	1/25/1999	0001	4.640			#	-	-
Nitrate	mg/L	8/13/1998	0001	0.0252	B	U	#	-	-
	mg/L	1/25/1999	0001	0.399	B		#	-	-
pH	s.u.	8/13/1998	N001	6.87			#	-	-
	s.u.	1/25/1999	N001	6.96			#	-	-
Polonium-210	pCi/L	8/13/1998	0001	0.09		U	#	0.06	± 0.09
	pCi/L	1/25/1999	0001	0.09		U	#	0.06	± 0.09
Radium-226	pCi/L	8/13/1998	0001	0.13	U		#	0.13	± 0.07
	pCi/L	1/25/1999	0001	0.11	U		#	0.11	± 0.07
Radium-228	pCi/L	8/13/1998	0001	0.61	U		#	0.61	± 0.36
	pCi/L	1/25/1999	0001	0.62			#	0.61	± 0.37
Redox Potential	mV	8/13/1998	N001	-116			#	-	-
	mV	1/25/1999	N001	-186			#	-	-
Selenium	mg/L	8/13/1998	0001	0.0061			#	-	-
	mg/L	1/25/1999	0001	0.0054			#	-	-
Sodium	mg/L	8/13/1998	0001	479.000			#	-	-
	mg/L	1/25/1999	0001	487.000			#	-	-
Specific Conductance	umhos/cm	8/13/1998	N001	5490			#	-	-
	umhos/cm	1/25/1999	N001	6350			#	-	-
Sulfate	mg/L	8/13/1998	0001	2840.000	N	J	#	-	-
	mg/L	1/25/1999	0001	2820.000			#	-	-
Temperature	C	8/13/1998	N001	13.4			#	-	-
	C	1/25/1999	N001	11.3			#	-	-
Thorium-230	pCi/L	8/13/1998	0001	1.2	U		#	1.2	±
	pCi/L	1/25/1999	0001	0.80	U		#	0.8	±
Turbidity	NTU	8/13/1998	N001	2.55			#	-	-
	NTU	1/25/1999	N001	15.0			#	-	-
Uranium	mg/L	8/13/1998	0001	0.154			#	-	-
	mg/L	1/25/1999	0001	0.141			#	-	-
Vanadium	mg/L	8/13/1998	0001	0.268			#	-	-
	mg/L	1/25/1999	0001	0.231			#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0219 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE100 WHERE site_code='RFN01' AND quality_assurance = TRUE AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #5/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A *TIC is a suspected aldol-condensation product.*
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0220 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole.
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	8/19/1998	0001	496			#	-	-
	mg/L	8/19/1998	N001	543			#	-	-
	mg/L	1/22/1999	0001	449			#	-	-
	mg/L	1/22/1999	N001	448			#	-	-
Ammonia as NH4	mg/L	8/19/1998	0001	0.0071	B	U	#	-	-
	mg/L	1/22/1999	0001	0.0172	B		#	-	-
Antimony	mg/L	8/19/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/22/1999	0001	0.0010	U		#	0.001	-
Arsenic	mg/L	8/19/1998	0001	0.0034	B		#	-	-
	mg/L	1/22/1999	0001	0.0033	B		#	-	-
Cadmium	mg/L	8/19/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/22/1999	0001	0.0010	U		#	0.001	-
Calcium	mg/L	8/19/1998	0001	159.000			#	-	-
	mg/L	1/22/1999	0001	86.400			#	-	-
Chloride	mg/L	8/19/1998	0001	221.000			#	-	-
	mg/L	1/22/1999	0001	184.000			#	-	-
Fluoride	mg/L	8/19/1998	0001	0.282			#	-	-
	mg/L	1/22/1999	0001	0.299			#	-	-
Gross Alpha	pCi/L	8/19/1998	0001	12.69	U	J	#	12.69	± 6.49
	pCi/L	1/22/1999	0001	10.00	U		#	10	± 5.01
Gross Beta	pCi/L	8/19/1998	0001	12.09	U		#	12.09	± 7.04
	pCi/L	1/22/1999	0001	11.39	U		#	11.39	± 6.45
Iron	mg/L	8/19/1998	0001	1.050	*	J	#	-	-
	mg/L	1/22/1999	0001	0.517			#	-	-
Lead	mg/L	8/19/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/22/1999	0001	0.0010	U		#	0.001	-
Lead-210	pCi/L	8/19/1998	0001	0.93	U		#	0.93	± 0.55
	pCi/L	1/22/1999	0001	1.00	U		#	1	± 0.60
Magnesium	mg/L	8/19/1998	0001	63.300			#	-	-
	mg/L	1/22/1999	0001	32.100			#	-	-
Manganese	mg/L	8/19/1998	0001	1.240			#	-	-
	mg/L	1/22/1999	0001	0.652			#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0220 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Molybdenum	mg/L	8/19/1998	0001	0.0069	BE	U	#	-	-
	mg/L	1/22/1999	0001	0.0071	B		#	-	-
Nitrate	mg/L	8/19/1998	0001	0.0110	U		#	0.011	-
	mg/L	1/22/1999	0001	0.246	B		#	-	-
pH	s.u.	8/19/1998	N001	7.23			#	-	-
	s.u.	1/22/1999	N001	7.19			#	-	-
Polonium-210	pCi/L	8/19/1998	0001	0.09		U	#	0.05	± 0.09
	pCi/L	1/22/1999	0001	0.09		U	#	0.05	± 0.08
Radium-226	pCi/L	8/19/1998	0001	0.13	U		#	0.13	± 0.08
	pCi/L	1/22/1999	0001	0.12	U		#	0.12	± 0.08
Radium-228	pCi/L	8/19/1998	0001	0.62	U		#	0.62	± 0.37
	pCi/L	1/22/1999	0001	0.69	U		#	0.69	± 0.41
Redox Potential	mV	8/19/1998	N001	-99			#	-	-
	mV	1/22/1999	N001	-73			#	-	-
Selenium	mg/L	8/19/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/22/1999	0001	0.00010	U		#	0.0001	-
Sodium	mg/L	8/19/1998	0001	257.000			#	-	-
	mg/L	1/22/1999	0001	206.000			#	-	-
Specific Conductance	umhos/cm	8/19/1998	N001	1818			#	-	-
	umhos/cm	1/22/1999	N001	1718			#	-	-
Sulfate	mg/L	8/19/1998	0001	416.000	N	J	#	-	-
	mg/L	1/22/1999	0001	136.000			#	-	-
Temperature	C	8/19/1998	N001	13.4			#	-	-
	C	1/22/1999	N001	10.4			#	-	-
Thorium-230	pCi/L	8/19/1998	0001	1.2	U		#	1.2	±
	pCi/L	1/22/1999	0001	0.80	U		#	0.8	±
Turbidity	NTU	8/19/1998	N001	11.2			#	-	-
	NTU	1/22/1999	N001	4.5			#	-	-
Uranium	mg/L	8/19/1998	0001	0.0029			#	-	-
	mg/L	1/22/1999	0001	0.0019			#	-	-
Uranium-234	pCi/L	8/19/1998	0001	1.6	B		#	-	±
Uranium-235	pCi/L	8/19/1998	0001	0.40	UN		#	0.4	±

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0220 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Uranium-238	pCi/L	8/19/1998	0001	1.3	BN	J	#	-	±
Vanadium	mg/L	8/19/1998	0001	0.0020	U		#	0.002	-
	mg/L	1/22/1999	0001	0.0010	U		#	0.001	-

RECORDS: SELECTED FROM USEE100 WHERE site_code='RFN01' AND quality_assurance = TRUE AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #5/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0225
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	1/25/1999	0001	156		GL	#	-	-
	mg/L	1/25/1999	N001	124		GL	#	-	-
Ammonia as NH4	mg/L	8/20/1998	0001	7.190		GL	#	-	-
	mg/L	1/25/1999	0001	20.300		GL	#	-	-
Antimony	mg/L	8/20/1998	0001	0.0018	B	GL	#	-	-
	mg/L	1/25/1999	0001	0.0013	B	GL	#	-	-
Arsenic	mg/L	8/20/1998	0001	0.0050	B	GL	#	-	-
	mg/L	1/25/1999	0001	0.0041	B	GL	#	-	-
Cadmium	mg/L	8/20/1998	0001	0.0010	U	GL	#	0.001	-
	mg/L	1/25/1999	0001	0.0010	U	GL	#	0.001	-
Calcium	mg/L	8/20/1998	0001	51.600		GL	#	-	-
	mg/L	1/25/1999	0001	38.500		GL	#	-	-
Chloride	mg/L	8/20/1998	0001	886.000		GL	#	-	-
	mg/L	1/25/1999	0001	878.000		GL	#	-	-
Fluoride	mg/L	8/20/1998	0001	1.490		GL	#	-	-
	mg/L	1/25/1999	0001	1.450		GL	#	-	-
Gross Alpha	pCi/L	8/20/1998	0001	20.13	U	GL	#	20.13	± 10.9
	pCi/L	1/25/1999	0001	14.50	U	GL	#	14.5	± 7.62
Gross Beta	pCi/L	8/20/1998	0001	23.89	U	GL	#	23.89	± 14.1
	pCi/L	1/25/1999	0001	11.64	U	GL	#	11.64	± 7.10
Iron	mg/L	8/20/1998	0001	0.0040	U	GL	#	0.004	-
	mg/L	1/25/1999	0001	0.0030	U	GL	#	0.003	-
Lead	mg/L	8/20/1998	0001	0.0010	U	GL	#	0.001	-
	mg/L	1/25/1999	0001	0.0010	U	GL	#	0.001	-
Lead-210	pCi/L	8/20/1998	0001	0.87	U	GL	#	0.87	± 0.50
	pCi/L	1/25/1999	0001	0.98	U	GL	#	0.98	± 0.57
Magnesium	mg/L	8/20/1998	0001	9.200		GL	#	-	-
	mg/L	1/25/1999	0001	5.970		GL	#	-	-
Manganese	mg/L	8/20/1998	0001	0.0029	B	GL	#	-	-
	mg/L	1/25/1999	0001	0.0010	U	GL	#	0.001	-
Molybdenum	mg/L	8/20/1998	0001	0.0610		GL	#	-	-
	mg/L	1/25/1999	0001	0.0831		GL	#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0225
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Nitrate	mg/L	8/20/1998	0001	0.235	B	GL	#	-	-
	mg/L	1/25/1999	0001	0.214	B	GL	#	-	-
pH	s.u.	8/20/1998	N001	11.12		GL	#	-	-
	s.u.	1/25/1999	N001	10.85		GL	#	-	-
Polonium-210	pCi/L	8/20/1998	0001	0.07		UGL	#	0.04	± 0.07
	pCi/L	1/25/1999	0001	0.09		UGL	#	0.07	± 0.10
Radium-226	pCi/L	8/20/1998	0001	0.66		GL	#	0.14	± 0.12
	pCi/L	1/25/1999	0001	0.63		GL	#	0.13	± 0.12
Radium-228	pCi/L	8/20/1998	0001	1.75		GL	#	0.64	± 0.41
	pCi/L	1/25/1999	0001	1.57		GL	#	0.66	± 0.42
Redox Potential	mV	8/20/1998	N001	-15		GL	#	-	-
	mV	1/25/1999	N001	-18		GL	#	-	-
Selenium	mg/L	8/20/1998	0001	0.0030	B	GL	#	-	-
	mg/L	1/25/1999	0001	0.00063	B	GL	#	-	-
Sodium	mg/L	8/20/1998	0001	555.000		GL	#	-	-
	mg/L	1/25/1999	0001	524.000		GL	#	-	-
Specific Conductance	umhos/cm	8/20/1998	N001	2720		GL	#	-	-
	umhos/cm	1/25/1999	N001	3150		GL	#	-	-
Sulfate	mg/L	8/20/1998	0001	27.200		GL	#	-	-
	mg/L	1/25/1999	0001	31.200		GL	#	-	-
Temperature	C	8/20/1998	N001	12.7		GL	#	-	-
	C	1/25/1999	N001	12.4		GL	#	-	-
Thorium-230	pCi/L	8/20/1998	0001	1.2	U	GL	#	1.2	±
	pCi/L	1/25/1999	0001	0.80	U	GL	#	0.8	±
Turbidity	NTU	8/20/1998	N001	147		GL	#	-	-
	NTU	1/25/1999	N001	125		GL	#	-	-
Uranium	mg/L	8/20/1998	0001	0.0010	U	GL	#	0.001	-
	mg/L	1/25/1999	0001	0.0010	U	GL	#	0.001	-
Vanadium	mg/L	8/20/1998	0001	0.0045	B	GL	#	-	-
	mg/L	1/25/1999	0001	0.0106		GL	#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0225
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE100 WHERE site_code='RFN01' AND quality_assurance = TRUE AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #5/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0226 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	8/26/1998	0001	391			#	-	-
	mg/L	8/26/1998	N001	383			#	-	-
	mg/L	1/29/1999	0001	327		L	#	-	-
	mg/L	1/29/1999	N001	353		L	#	-	-
Ammonia as NH4	mg/L	8/26/1998	0001	56.700			#	-	-
	mg/L	1/29/1999	0001	0.302		L	#	-	-
Antimony	mg/L	8/26/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/29/1999	0001	0.0010	U	L	#	0.001	-
Arsenic	mg/L	8/26/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/29/1999	0001	0.00062	B	L	#	-	-
Cadmium	mg/L	8/26/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/29/1999	0001	0.0010	U	L	#	0.001	-
Calcium	mg/L	8/26/1998	0001	484.000			#	-	-
	mg/L	1/29/1999	0001	432.000		L	#	-	-
Chloride	mg/L	8/26/1998	0001	766.000			#	-	-
	mg/L	1/29/1999	0001	711.000		L	#	-	-
Fluoride	mg/L	8/26/1998	0001	0.231	B		#	-	-
	mg/L	1/29/1999	0001	0.509		L	#	-	-
Gross Alpha	pCi/L	8/26/1998	0001	104.9			#	49.5	± 40.4
	pCi/L	1/29/1999	0001	50.25	U	JL	#	50.25	± 33.4
Gross Beta	pCi/L	8/26/1998	0001	48.79	U		#	48.79	± 30.1
	pCi/L	1/29/1999	0001	46.55	U	L	#	46.55	± 27.4
Iron	mg/L	8/26/1998	0001	0.0128	B	U	#	-	-
	mg/L	1/29/1999	0001	0.171		L	#	-	-
Lead	mg/L	8/26/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/29/1999	0001	0.0010	U	L	#	0.001	-
Lead-210	pCi/L	8/26/1998	0001	0.92	U		#	0.92	± 0.53
	pCi/L	1/29/1999	0001	1.01	U	L	#	1.01	± 0.60
Magnesium	mg/L	8/26/1998	0001	170.000			#	-	-
	mg/L	1/29/1999	0001	157.000		L	#	-	-
Manganese	mg/L	8/26/1998	0001	0.125			#	-	-
	mg/L	1/29/1999	0001	0.290		L	#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0226 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Molybdenum	mg/L	8/26/1998	0001	0.115			#	-	-
	mg/L	1/29/1999	0001	0.0480		L	#	-	-
Nitrate	mg/L	8/26/1998	0001	37.700			#	-	-
	mg/L	1/29/1999	0001	3.740		L	#	-	-
pH	s.u.	8/26/1998	N001	6.90			#	-	-
	s.u.	1/29/1999	N001	7.22		L	#	-	-
Polonium-210	pCi/L	8/26/1998	0001	0.06		U	#	0.06	± 0.08
	pCi/L	1/29/1999	0001	0.08		UL	#	0.05	± 0.08
Radium-226	pCi/L	8/26/1998	0001	0.14	U		#	0.14	± 0.08
	pCi/L	1/29/1999	0001	0.33		L	#	0.12	± 0.09
Radium-228	pCi/L	8/26/1998	0001	0.84			#	0.61	± 0.38
	pCi/L	1/29/1999	0001	0.95		L	#	0.69	± 0.42
Redox Potential	mV	8/26/1998	N001	-111			#	-	-
	mV	1/29/1999	N001	-107		L	#	-	-
Selenium	mg/L	8/26/1998	0001	0.0011	B		#	-	-
	mg/L	1/29/1999	0001	0.00010	U	L	#	0.0001	-
Sodium	mg/L	8/26/1998	0001	984.000			#	-	-
	mg/L	1/29/1999	0001	963.000		L	#	-	-
Specific Conductance	umhos/cm	8/26/1998	N001	6590			#	-	-
	umhos/cm	1/29/1999	N001	6620		L	#	-	-
Sulfate	mg/L	8/26/1998	0001	2730.000			#	-	-
	mg/L	1/29/1999	0001	2330.000		L	#	-	-
Temperature	C	8/26/1998	N001	14.1			#	-	-
	C	1/29/1999	N001	11.9		L	#	-	-
Thorium-230	pCi/L	8/26/1998	0001	1.2	U		#	1.2	±
	pCi/L	1/29/1999	0001	0.80	U	L	#	0.8	±
Turbidity	NTU	8/26/1998	N001	14.7			#	-	-
	NTU	1/29/1999	N001	999		L	#	-	-
Uranium	mg/L	8/26/1998	0001	0.106			#	-	-
	mg/L	1/29/1999	0001	0.0776		L	#	-	-
Vanadium	mg/L	8/26/1998	0001	0.0020	U		#	0.002	-
	mg/L	1/29/1999	0001	0.0010	U	L	#	0.001	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0226 Ground elevation was calculated as surveyed TOC elevation minus stick up height reported in the Borehole
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE100 WHERE site_code='RFN01' AND quality_assurance = TRUE AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #5/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0442
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	8/26/1998	0001	427			#	-	-
	mg/L	8/26/1998	N001	429			#	-	-
Ammonia as NH4	mg/L	8/26/1998	0001	0.0566	B		#	-	-
Antimony	mg/L	8/26/1998	0001	0.0011	B		#	-	-
Arsenic	mg/L	8/26/1998	0001	0.0010	U		#	0.001	-
Cadmium	mg/L	8/26/1998	0001	0.0010	U		#	0.001	-
Calcium	mg/L	8/26/1998	0001	324.000			#	-	-
Chloride	mg/L	8/26/1998	0001	250.000			#	-	-
Fluoride	mg/L	8/26/1998	0001	0.188	B		#	-	-
Gross Alpha	pCi/L	8/26/1998	0001	60.09			#	37.45	± 28.2
Gross Beta	pCi/L	8/26/1998	0001	36.45	U		#	36.45	± 21.8
Iron	mg/L	8/26/1998	0001	0.0090	B	U	#	-	-
Lead	mg/L	8/26/1998	0001	0.0180			#	-	-
Lead-210	pCi/L	8/26/1998	0001	0.92	U		#	0.92	± 0.54
Magnesium	mg/L	8/26/1998	0001	181.000			#	-	-
Manganese	mg/L	8/26/1998	0001	0.0346			#	-	-
Molybdenum	mg/L	8/26/1998	0001	0.0028	B		#	-	-
Nitrate	mg/L	8/26/1998	0001	40.100			#	-	-
pH	s.u.	8/26/1998	N001	7.07			#	-	-
Polonium-210	pCi/L	8/26/1998	0001	0.09		U	#	0.05	± 0.09
Radium-226	pCi/L	8/26/1998	0001	0.09	U		#	0.09	± 0.05
Radium-228	pCi/L	8/26/1998	0001	0.46	U		#	0.46	± 0.28
Redox Potential	mV	8/26/1998	N001	231			#	-	-
Selenium	mg/L	8/26/1998	0001	0.0010	U		#	0.001	-
Sodium	mg/L	8/26/1998	0001	771.000			#	-	-
Specific Conductance	umhos/cm	8/26/1998	N001	4680			#	-	-
Sulfate	mg/L	8/26/1998	0001	2270.000			#	-	-
Temperature	C	8/26/1998	N001	24.8			#	-	-
Thorium-230	pCi/L	8/26/1998	0001	1.2	U		#	1.2	±

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0442
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Turbidity	NTU	8/26/1998	N001	4.66			#	-	-
Uranium	mg/L	8/26/1998	0001	0.0735			#	-	-
Vanadium	mg/L	8/26/1998	0001	0.0020	U		#	0.002	-

RECORDS: SELECTED FROM USEE100 WHERE site_code='RFN01' AND quality_assurance = TRUE AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #5/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0589
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	8/27/1998	0001	401			#	-	-
	mg/L	8/27/1998	N001	393			#	-	-
Ammonia as NH4	mg/L	8/27/1998	0001	454.000			#	-	-
Antimony	mg/L	8/27/1998	0001	0.0010	U		#	0.001	-
Arsenic	mg/L	8/27/1998	0001	0.0017	B		#	-	-
Cadmium	mg/L	8/27/1998	0001	0.0021			#	-	-
Calcium	mg/L	8/27/1998	0001	592.000			#	-	-
Chloride	mg/L	8/27/1998	0001	370.000			#	-	-
Fluoride	mg/L	8/27/1998	0001	1.690	B		#	-	-
Gross Alpha	pCi/L	8/27/1998	0001	96.92			#	56.45	± 43.3
Gross Beta	pCi/L	8/27/1998	0001	78.23			#	60.54	± 38.5
Iron	mg/L	8/27/1998	0001	0.0040	U		#	0.004	-
Lead	mg/L	8/27/1998	0001	0.0010	U		#	0.001	-
Lead-210	pCi/L	8/27/1998	0001	0.94	U		#	0.94	± 0.56
Magnesium	mg/L	8/27/1998	0001	87.800			#	-	-
Manganese	mg/L	8/27/1998	0001	4.710			#	-	-
Molybdenum	mg/L	8/27/1998	0001	1.430			#	-	-
Nitrate	mg/L	8/27/1998	0001	635.000			#	-	-
pH	s.u.	8/27/1998	N001	6.86			#	-	-
Polonium-210	pCi/L	8/27/1998	0001	0.10		U	#	0.07	± 0.11
Radium-226	pCi/L	8/27/1998	0001	0.15	U		#	0.15	± 0.08
Radium-228	pCi/L	8/27/1998	0001	0.78			#	0.7	± 0.43
Redox Potential	mV	8/27/1998	N001	225			#	-	-
Selenium	mg/L	8/27/1998	0001	0.0096			#	-	-
Sodium	mg/L	8/27/1998	0001	1330.000			#	-	-
Specific Conductance	umhos/cm	8/27/1998	N001	8190			#	-	-
Sulfate	mg/L	8/27/1998	0001	4430.000			#	-	-
Temperature	C	8/27/1998	N001	15.3			#	-	-
Thorium-230	pCi/L	8/27/1998	0001	1.2	U		#	1.2	±

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0589
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Turbidity	NTU	8/27/1998	N001	1.67			#	-	-
Uranium	mg/L	8/27/1998	0001	0.121			#	-	-
Vanadium	mg/L	8/27/1998	0001	0.305			#	-	-

RECORDS: SELECTED FROM USEE100 WHERE site_code='RFN01' AND quality_assurance = TRUE AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #5/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0590
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	8/12/1998	0001	483			#	-	-
	mg/L	8/12/1998	N001	464			#	-	-
	mg/L	1/29/1999	0001	497			#	-	-
	mg/L	1/29/1999	N001	500			#	-	-
Ammonia as NH4	mg/L	8/12/1998	0001	669.000			#	-	-
	mg/L	1/29/1999	0001	627.000			#	-	-
Antimony	mg/L	8/12/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/29/1999	0001	0.0010	U		#	0.001	-
Arsenic	mg/L	8/12/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/29/1999	0001	0.00073	B		#	-	-
Cadmium	mg/L	8/12/1998	0001	0.0180			#	-	-
	mg/L	1/29/1999	0001	0.0173			#	-	-
Calcium	mg/L	8/12/1998	0001	428.000			#	-	-
	mg/L	1/29/1999	0001	408.000			#	-	-
Chloride	mg/L	8/12/1998	0001	296.000			#	-	-
	mg/L	1/29/1999	0001	242.000			#	-	-
Fluoride	mg/L	8/12/1998	0001	3.700			#	-	-
	mg/L	1/29/1999	0001	3.100			#	-	-
Gross Alpha	pCi/L	8/12/1998	0001	45.94	U		#	45.94	± 28.0
	pCi/L	1/29/1999	0001	51.47	U	J	#	51.47	± 32.0
Gross Beta	pCi/L	8/12/1998	0001	65.04			#	48.19	± 30.7
	pCi/L	1/29/1999	0001	53.74			#	46.49	± 29.3
Iron	mg/L	8/12/1998	0001	0.0066	B	U	#	-	-
	mg/L	1/29/1999	0001	0.0030	U		#	0.003	-
Lead	mg/L	8/12/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/29/1999	0001	0.0010	U		#	0.001	-
Lead-210	pCi/L	8/12/1998	0001	1.05	U		#	1.05	± 0.61
	pCi/L	1/29/1999	0001	0.99	U		#	0.99	± 0.58
Magnesium	mg/L	8/12/1998	0001	66.100			#	-	-
	mg/L	1/29/1999	0001	61.200			#	-	-
Manganese	mg/L	8/12/1998	0001	7.770			#	-	-
	mg/L	1/29/1999	0001	8.820			#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0590
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Molybdenum	mg/L	8/12/1998	0001	2.460	E		#	-	-
	mg/L	1/29/1999	0001	2.450			#	-	-
Nitrate	mg/L	8/12/1998	0001	5.740			#	-	-
	mg/L	1/29/1999	0001	138.000			#	-	-
pH	s.u.	8/12/1998	N001	6.66			#	-	-
	s.u.	1/29/1999	N001	6.04			#	-	-
Polonium-210	pCi/L	8/12/1998	0001	0.08	U		#	0.08	± 0.10
	pCi/L	1/29/1999	0001	0.10		U	#	0.07	± 0.11
Radium-226	pCi/L	8/12/1998	0001	0.14	U		#	0.14	± 0.07
	pCi/L	1/29/1999	0001	0.13	U		#	0.13	± 0.07
Radium-228	pCi/L	8/12/1998	0001	0.68			#	0.63	± 0.38
	pCi/L	1/29/1999	0001	1.09			#	0.69	± 0.42
Redox Potential	mV	8/12/1998	N001	169			#	-	-
	mV	1/29/1999	N001	222			#	-	-
Selenium	mg/L	8/12/1998	0001	0.0197			#	-	-
	mg/L	1/29/1999	0001	0.0195			#	-	-
Sodium	mg/L	8/12/1998	0001	1210.000			#	-	-
	mg/L	1/29/1999	0001	1040.000			#	-	-
Specific Conductance	umhos/cm	8/12/1998	N001	8290			#	-	-
	umhos/cm	1/29/1999	N001	8960			#	-	-
Sulfate	mg/L	8/12/1998	0001	5570.000	N	J	#	-	-
	mg/L	1/29/1999	0001	4060.000			#	-	-
Temperature	C	8/12/1998	N001	15.7			#	-	-
	C	1/29/1999	N001	10.9			#	-	-
Thorium-230	pCi/L	8/12/1998	0001	1.2	U		#	1.2	±
	pCi/L	1/29/1999	0001	0.80	U		#	0.8	±
Turbidity	NTU	8/12/1998	N001	0.98			#	-	-
	NTU	1/29/1999	N001	3.05			#	-	-
Uranium	mg/L	8/12/1998	0001	0.0843			#	-	-
	mg/L	1/29/1999	0001	0.0739			#	-	-
Vanadium	mg/L	8/12/1998	0001	0.363			#	-	-
	mg/L	1/29/1999	0001	0.482			#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0590
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE100 WHERE site_code='RFN01' AND quality_assurance = TRUE AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #5/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0596
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Ammonia as NH4	mg/L	1/26/1999	0001	0.0319	B	L	#	-	-
Antimony	mg/L	1/26/1999	0001	0.0010	U	L	#	0.001	-
Arsenic	mg/L	1/26/1999	0001	0.00020	B	L	#	-	-
Cadmium	mg/L	1/26/1999	0001	0.0010	U	L	#	0.001	-
Calcium	mg/L	1/26/1999	0001	225.000		L	#	-	-
Chloride	mg/L	1/26/1999	0001	201.000		L	#	-	-
Fluoride	mg/L	1/26/1999	0001	0.666		L	#	-	-
Iron	mg/L	1/26/1999	0001	0.0183	B	UL	#	-	-
Lead	mg/L	1/26/1999	0001	0.0010	U	L	#	0.001	-
Magnesium	mg/L	1/26/1999	0001	64.900		L	#	-	-
Manganese	mg/L	1/26/1999	0001	0.0042	B	L	#	-	-
Molybdenum	mg/L	1/26/1999	0001	0.158		L	#	-	-
Nitrate	mg/L	1/26/1999	0001	400.000		L	#	-	-
pH	s.u.	1/26/1999	N001	6.93		L	#	-	-
Redox Potential	mV	1/26/1999	N001	215		L	#	-	-
Selenium	mg/L	1/26/1999	0001	0.0104		L	#	-	-
Sodium	mg/L	1/26/1999	0001	521.000		L	#	-	-
Specific Conductance	umhos/cm	1/26/1999	N001	7570		L	#	-	-
Sulfate	mg/L	1/26/1999	0001	1310.000		L	#	-	-
Temperature	C	1/26/1999	N001	6.7		L	#	-	-
Thorium-230	pCi/L	1/26/1999	0001	0.80	U	L	#	0.8	±
Turbidity	NTU	1/26/1999	N001	213		L	#	-	-
Uranium	mg/L	1/26/1999	0001	0.0882		L	#	-	-
Vanadium	mg/L	1/26/1999	0001	0.0027	B	L	#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0596
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE100 WHERE site_code='RFN01' AND quality_assurance = TRUE AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #5/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0598
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	8/13/1998	0001	556			#	-	-
	mg/L	8/13/1998	N001	552			#	-	-
Ammonia as NH4	mg/L	8/13/1998	0001	179.000			#	-	-
Antimony	mg/L	8/13/1998	0001	0.0010	U		#	0.001	-
Arsenic	mg/L	8/13/1998	0001	0.0010	U		#	0.001	-
Cadmium	mg/L	8/13/1998	0001	0.0021			#	-	-
Calcium	mg/L	8/13/1998	0001	352.000			#	-	-
Chloride	mg/L	8/13/1998	0001	234.000			#	-	-
Fluoride	mg/L	8/13/1998	0001	1.010			#	-	-
Gross Alpha	pCi/L	8/13/1998	0001	89.30		J	#	33.86	± 29.4
Gross Beta	pCi/L	8/13/1998	0001	86.02			#	30.71	± 21.6
Iron	mg/L	8/13/1998	0001	0.0056	B*	UJ	#	-	-
Lead	mg/L	8/13/1998	0001	0.0043			#	-	-
Lead-210	pCi/L	8/13/1998	0001	0.93	U		#	0.93	± 0.54
Magnesium	mg/L	8/13/1998	0001	55.100			#	-	-
Manganese	mg/L	8/13/1998	0001	2.630			#	-	-
Molybdenum	mg/L	8/13/1998	0001	0.769	E		#	-	-
Nitrate	mg/L	8/13/1998	0001	254.000			#	-	-
pH	s.u.	8/13/1998	N001	6.72			#	-	-
Polonium-210	pCi/L	8/13/1998	0001	0.09		U	#	0.03	± 0.07
Radium-226	pCi/L	8/13/1998	0001	0.09	U		#	0.09	± 0.05
Radium-228	pCi/L	8/13/1998	0001	1.12			#	0.46	± 0.28
Redox Potential	mV	8/13/1998	N001	207			#	-	-
Selenium	mg/L	8/13/1998	0001	0.0038	B		#	-	-
Sodium	mg/L	8/13/1998	0001	656.000			#	-	-
Specific Conductance	umhos/cm	8/13/1998	N001	4080			#	-	-
Sulfate	mg/L	8/13/1998	0001	1860.000			#	-	-
Temperature	C	8/13/1998	N001	19.5			#	-	-
Thorium-230	pCi/L	8/13/1998	0001	1.9	B		#	-	±

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0598
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Turbidity	NTU	8/13/1998	N001	0.70			#	-	-
Uranium	mg/L	8/13/1998	0001	0.152			#	-	-
Vanadium	mg/L	8/13/1998	0001	0.0020	U		#	0.002	-

RECORDS: SELECTED FROM USEE100 WHERE site_code='RFN01' AND quality_assurance = TRUE AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #5/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0599
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	8/13/1998	0001	593			#	-	-
	mg/L	8/13/1998	N001	603			#	-	-
Ammonia as NH4	mg/L	8/13/1998	0001	227.000			#	-	-
Antimony	mg/L	8/13/1998	0001	0.0010	U		#	0.001	-
Arsenic	mg/L	8/13/1998	0001	0.0010	U		#	0.001	-
Cadmium	mg/L	8/13/1998	0001	0.0014			#	-	-
Calcium	mg/L	8/13/1998	0001	273.000			#	-	-
Chloride	mg/L	8/13/1998	0001	193.000			#	-	-
Fluoride	mg/L	8/13/1998	0001	1.340			#	-	-
Gross Alpha	pCi/L	8/13/1998	0001	73.51		J	#	34.23	± 27.8
Gross Beta	pCi/L	8/13/1998	0001	98.83			#	30.64	± 22.2
Iron	mg/L	8/13/1998	0001	0.0040	U*	J	#	0.004	-
Lead	mg/L	8/13/1998	0001	0.0010	U		#	0.001	-
Lead-210	pCi/L	8/13/1998	0001	0.86	U		#	0.86	± 0.51
Magnesium	mg/L	8/13/1998	0001	53.400			#	-	-
Manganese	mg/L	8/13/1998	0001	2.370			#	-	-
Molybdenum	mg/L	8/13/1998	0001	0.795	E		#	-	-
Nitrate	mg/L	8/13/1998	0001	189.000			#	-	-
pH	s.u.	8/13/1998	N001	6.82			#	-	-
Polonium-210	pCi/L	8/13/1998	0001	0.14		U	#	0.05	± 0.11
Radium-226	pCi/L	8/13/1998	0001	0.09	U		#	0.09	± 0.05
Radium-228	pCi/L	8/13/1998	0001	0.89			#	0.43	± 0.27
Redox Potential	mV	8/13/1998	N001	213			#	-	-
Selenium	mg/L	8/13/1998	0001	0.0040	B		#	-	-
Sodium	mg/L	8/13/1998	0001	649.000			#	-	-
Specific Conductance	umhos/cm	8/13/1998	N001	4300			#	-	-
Sulfate	mg/L	8/13/1998	0001	1880.000			#	-	-
Temperature	C	8/13/1998	N001	16.3			#	-	-
Thorium-230	pCi/L	8/13/1998	0001	1.4	B		#	-	±

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0599
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Turbidity	NTU	8/13/1998	N001	0.65			#	-	-
Uranium	mg/L	8/13/1998	0001	0.155			#	-	-
Vanadium	mg/L	8/13/1998	0001	0.0020	U		#	0.002	-

RECORDS: SELECTED FROM USEE100 WHERE site_code='RFN01' AND quality_assurance = TRUE AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #5/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- \+ Correlation coefficient for MSA < 0.995.
- A *TIC is a suspected aldol-condensation product.*
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M *GFAA duplicate injection precision not met.*
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0603
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	8/14/1998	0001	277			#	-	-
	mg/L	8/14/1998	N001	287			#	-	-
	mg/L	1/25/1999	0001	264			#	-	-
	mg/L	1/25/1999	N001	265			#	-	-
Ammonia as NH4	mg/L	8/14/1998	0001	16.900			#	-	-
	mg/L	1/25/1999	0001	29.500			#	-	-
Antimony	mg/L	8/14/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/25/1999	0001	0.0010	U		#	0.001	-
Arsenic	mg/L	8/14/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/25/1999	0001	0.00010	U		#	0.0001	-
Cadmium	mg/L	8/14/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/25/1999	0001	0.0010	U		#	0.001	-
Calcium	mg/L	8/14/1998	0001	385.000			#	-	-
	mg/L	1/25/1999	0001	350.000			#	-	-
Chloride	mg/L	8/14/1998	0001	316.000			#	-	-
	mg/L	1/25/1999	0001	312.000			#	-	-
Fluoride	mg/L	8/14/1998	0001	0.777			#	-	-
	mg/L	1/25/1999	0001	0.390			#	-	-
Gross Alpha	pCi/L	8/14/1998	0001	65.73			#	46.79	± 34.0
	pCi/L	1/25/1999	0001	61.8			#	42	± 30.9
Gross Beta	pCi/L	8/14/1998	0001	92.48			#	48.44	± 32.2
	pCi/L	1/25/1999	0001	46.79			#	46.19	± 28.8
Iron	mg/L	8/14/1998	0001	0.0040	U		#	0.004	-
	mg/L	1/25/1999	0001	0.0030	U		#	0.003	-
Lead	mg/L	8/14/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/25/1999	0001	0.0010	U		#	0.001	-
Lead-210	pCi/L	8/14/1998	0001	0.96	U		#	0.96	± 0.56
	pCi/L	1/25/1999	0001	1.03			#	1	± 0.61
Magnesium	mg/L	8/14/1998	0001	167.000			#	-	-
	mg/L	1/25/1999	0001	146.000			#	-	-
Manganese	mg/L	8/14/1998	0001	2.260			#	-	-
	mg/L	1/25/1999	0001	1.950			#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0603
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Molybdenum	mg/L	8/14/1998	0001	0.0811			#	-	-
	mg/L	1/25/1999	0001	0.139			#	-	-
Nitrate	mg/L	8/14/1998	0001	361.000			#	-	-
	mg/L	1/25/1999	0001	380.000			#	-	-
pH	s.u.	8/14/1998	N001	7.01			#	-	-
	s.u.	1/25/1999	N001	7.04			#	-	-
Polonium-210	pCi/L	8/14/1998	0001	0.08	U		#	0.08	± 0.09
	pCi/L	1/25/1999	0001	0.10		U	#	0.07	± 0.10
Radium-226	pCi/L	8/14/1998	0001	0.14	U		#	0.14	± 0.08
	pCi/L	1/25/1999	0001	0.14	U		#	0.14	± 0.09
Radium-228	pCi/L	8/14/1998	0001	0.68	U		#	0.68	± 0.41
	pCi/L	1/25/1999	0001	0.74	U		#	0.74	± 0.44
Redox Potential	mV	8/14/1998	N001	170			#	-	-
	mV	1/25/1999	N001	115			#	-	-
Selenium	mg/L	8/14/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/25/1999	0001	0.00022	B		#	-	-
Sodium	mg/L	8/14/1998	0001	978.000			#	-	-
	mg/L	1/25/1999	0001	1010.000			#	-	-
Specific Conductance	umhos/cm	8/14/1998	N001	4430			#	-	-
	umhos/cm	1/25/1999	N001	6270			#	-	-
Sulfate	mg/L	8/14/1998	0001	2690.000			#	-	-
	mg/L	1/25/1999	0001	3010.000			#	-	-
Temperature	C	8/14/1998	N001	11.9			#	-	-
	C	1/25/1999	N001	10.9			#	-	-
Thorium-230	pCi/L	8/14/1998	0001	1.2	U		#	1.2	±
	pCi/L	1/25/1999	0001	0.80	U		#	0.8	±
Turbidity	NTU	8/14/1998	N001	0.60			#	-	-
	NTU	1/25/1999	N001	1.30			#	-	-
Uranium	mg/L	8/14/1998	0001	0.0994			#	-	-
	mg/L	1/25/1999	0001	0.121			#	-	-
Vanadium	mg/L	8/14/1998	0001	0.0020	U		#	0.002	-
	mg/L	1/25/1999	0001	0.0010	U		#	0.001	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0603
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE100 WHERE site_code='RFN01' AND quality_assurance = TRUE AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #5/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0609
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	8/14/1998	0001	493			#	-	-
	mg/L	8/14/1998	N001	474			#	-	-
	mg/L	1/25/1999	0001	492			#	-	-
	mg/L	1/25/1999	N001	495			#	-	-
Ammonia as NH4	mg/L	8/14/1998	0001	24.700			#	-	-
	mg/L	1/25/1999	0001	19.800			#	-	-
Antimony	mg/L	8/14/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/25/1999	0001	0.0010	U		#	0.001	-
Arsenic	mg/L	8/14/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/25/1999	0001	0.00010	B		#	-	-
Cadmium	mg/L	8/14/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/25/1999	0001	0.0010	U		#	0.001	-
Calcium	mg/L	8/14/1998	0001	153.000			#	-	-
	mg/L	1/25/1999	0001	138.000			#	-	-
Chloride	mg/L	8/14/1998	0001	56.700			#	-	-
	mg/L	1/25/1999	0001	51.500			#	-	-
Fluoride	mg/L	8/14/1998	0001	0.483			#	-	-
	mg/L	1/25/1999	0001	0.493			#	-	-
Gross Alpha	pCi/L	8/14/1998	0001	34.90			#	18.8	± 14.7
	pCi/L	1/25/1999	0001	37.48			#	12.78	± 11.5
Gross Beta	pCi/L	8/14/1998	0001	33.50			#	24.01	± 15.3
	pCi/L	1/25/1999	0001	20.78			#	11.8	± 7.79
Iron	mg/L	8/14/1998	0001	0.0140	B	U	#	-	-
	mg/L	1/25/1999	0001	0.0031	B	U	#	-	-
Lead	mg/L	8/14/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/25/1999	0001	0.0010	U		#	0.001	-
Lead-210	pCi/L	8/14/1998	0001	0.94	U		#	0.94	± 0.54
	pCi/L	1/25/1999	0001	1.24			#	1	± 0.61
Magnesium	mg/L	8/14/1998	0001	85.600			#	-	-
	mg/L	1/25/1999	0001	75.100			#	-	-
Manganese	mg/L	8/14/1998	0001	0.682			#	-	-
	mg/L	1/25/1999	0001	0.517			#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0609
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Molybdenum	mg/L	8/14/1998	0001	0.0626			#	-	-
	mg/L	1/25/1999	0001	0.0621			#	-	-
Nitrate	mg/L	8/14/1998	0001	61.500			#	-	-
	mg/L	1/25/1999	0001	52.600			#	-	-
pH	s.u.	8/14/1998	N001	6.86			#	-	-
	s.u.	1/25/1999	N001	6.77			#	-	-
Polonium-210	pCi/L	8/14/1998	0001	0.09	U		#	0.09	± 0.09
	pCi/L	1/25/1999	0001	0.09	U		#	0.09	± 0.11
Radium-226	pCi/L	8/14/1998	0001	0.15	U		#	0.15	± 0.08
	pCi/L	1/25/1999	0001	0.13	U		#	0.13	± 0.07
Radium-228	pCi/L	8/14/1998	0001	0.72	U		#	0.72	± 0.43
	pCi/L	1/25/1999	0001	0.76	U		#	0.76	± 0.44
Redox Potential	mV	8/14/1998	N001	-124			#	-	-
	mV	1/25/1999	N001	13			#	-	-
Selenium	mg/L	8/14/1998	0001	0.0223			#	-	-
	mg/L	1/25/1999	0001	0.0274			#	-	-
Sodium	mg/L	8/14/1998	0001	247.000			#	-	-
	mg/L	1/25/1999	0001	241.000			#	-	-
Specific Conductance	umhos/cm	8/14/1998	N001	1950			#	-	-
	umhos/cm	1/25/1999	N001	2040			#	-	-
Sulfate	mg/L	8/14/1998	0001	678.000			#	-	-
	mg/L	1/25/1999	0001	649.000			#	-	-
Temperature	C	8/14/1998	N001	13.6			#	-	-
	C	1/25/1999	N001	11.8			#	-	-
Thorium-230	pCi/L	8/14/1998	0001	1.2	U		#	1.2	±
	pCi/L	1/25/1999	0001	0.80	U		#	0.8	±
Turbidity	NTU	8/14/1998	N001	1.08			#	-	-
	NTU	1/25/1999	N001	1.13			#	-	-
Uranium	mg/L	8/14/1998	0001	0.0627			#	-	-
	mg/L	1/25/1999	0001	0.0613			#	-	-
Vanadium	mg/L	8/14/1998	0001	0.0020	U		#	0.002	-
	mg/L	1/25/1999	0001	0.0010	U		#	0.001	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0609
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE100 WHERE site_code='RFN01' AND quality_assurance = TRUE AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #5/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0617 Replacement well for 428
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	8/18/1998	0001	567			#	-	-
	mg/L	8/18/1998	N001	587			#	-	-
	mg/L	1/26/1999	0001	450			#	-	-
	mg/L	1/26/1999	N001	448			#	-	-
Ammonia as NH4	mg/L	8/18/1998	0001	0.257			#	-	-
	mg/L	1/26/1999	0001	0.150			#	-	-
	mg/L	1/26/1999	N001	0.109			#	-	-
Antimony	mg/L	8/18/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/26/1999	0001	0.0010	U		#	0.001	-
	mg/L	1/26/1999	N001	0.0012	B		#	-	-
Arsenic	mg/L	8/18/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/26/1999	0001	0.00010	U		#	0.0001	-
	mg/L	1/26/1999	N001	0.00011	U		#	0.00011	-
Cadmium	mg/L	8/18/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/26/1999	0001	0.0010	U		#	0.001	-
	mg/L	1/26/1999	N001	0.0011	U		#	0.0011	-
Calcium	mg/L	8/18/1998	0001	265.000			#	-	-
	mg/L	1/26/1999	0001	305.000			#	-	-
	mg/L	1/26/1999	N001	312.000			#	-	-
Chloride	mg/L	8/18/1998	0001	456.000			#	-	-
	mg/L	1/26/1999	0001	251.000			#	-	-
	mg/L	1/26/1999	N001	255.000			#	-	-
Fluoride	mg/L	8/18/1998	0001	0.336			#	-	-
	mg/L	1/26/1999	0001	0.142			#	-	-
	mg/L	1/26/1999	N001	0.171			#	-	-
Gross Alpha	pCi/L	8/18/1998	0001	44.16			#	37.92	± 26.4
	pCi/L	1/26/1999	0001	36.86			#	33.51	± 23.0
	pCi/L	1/26/1999	N001	37.66			#	34.07	± 23.4
Gross Beta	pCi/L	8/18/1998	0001	36.39	U		#	36.39	± 22.0
	pCi/L	1/26/1999	0001	34.60	U		#	34.6	± 20.6
	pCi/L	1/26/1999	N001	34.64	U		#	34.64	± 20.1
Iron	mg/L	8/18/1998	0001	0.0051	B	U	#	-	-
	mg/L	1/26/1999	0001	0.0097	B	U	#	-	-
	mg/L	1/26/1999	N001	0.658	*	J	#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0617 Replacement well for 428
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Lead	mg/L	8/18/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/26/1999	0001	0.0010	U		#	0.001	-
	mg/L	1/26/1999	N001	0.0027	B		#	-	-
Lead-210	pCi/L	8/18/1998	0001	0.93	U		#	0.93	± 0.54
	pCi/L	1/26/1999	0001	1.11			#	1.01	± 0.62
	pCi/L	1/26/1999	N001	1.01	U		#	1.01	± 0.61
Magnesium	mg/L	8/18/1998	0001	164.000			#	-	-
	mg/L	1/26/1999	0001	170.000			#	-	-
	mg/L	1/26/1999	N001	175.000			#	-	-
Manganese	mg/L	8/18/1998	0001	0.276			#	-	-
	mg/L	1/26/1999	0001	0.0343			#	-	-
	mg/L	1/26/1999	N001	0.0590	*		#	-	-
Molybdenum	mg/L	8/18/1998	0001	0.0076	B		#	-	-
	mg/L	1/26/1999	0001	0.0019	B		#	-	-
	mg/L	1/26/1999	N001	0.0033	B	UJ	#	-	-
Nitrate	mg/L	8/18/1998	0001	48.600			#	-	-
	mg/L	1/26/1999	0001	47.900			#	-	-
	mg/L	1/26/1999	N001	49.300			#	-	-
pH	s.u.	8/18/1998	N001	7.07			#	-	-
	s.u.	1/26/1999	N001	6.78			#	-	-
Polonium-210	pCi/L	8/18/1998	0001	0.06		U	#	0.04	± 0.07
	pCi/L	1/26/1999	0001	0.07		U	#	0.06	± 0.08
	pCi/L	1/26/1999	N001	0.09		U	#	0.05	± 0.09
Radium-226	pCi/L	8/18/1998	0001	0.14	U		#	0.14	± 0.08
	pCi/L	1/26/1999	0001	0.13	U		#	0.13	± 0.07
	pCi/L	1/26/1999	N001	0.13	U		#	0.13	± 0.08
Radium-228	pCi/L	8/18/1998	0001	0.65	U		#	0.65	± 0.39
	pCi/L	1/26/1999	0001	0.74	U		#	0.74	± 0.43
	pCi/L	1/26/1999	N001	0.73	U		#	0.73	± 0.43
Redox Potential	mV	8/18/1998	N001	242			#	-	-
	mV	1/26/1999	N001	248			#	-	-
Selenium	mg/L	8/18/1998	0001	0.0030	B		#	-	-
	mg/L	1/26/1999	0001	0.00010	U		#	0.0001	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0617 Replacement well for 428
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Selenium	mg/L	1/26/1999	N001	0.00014	B		#	-	-
Sodium	mg/L	8/18/1998	0001	881.000			#	-	-
	mg/L	1/26/1999	0001	755.000			#	-	-
	mg/L	1/26/1999	N001	741.000			#	-	-
Specific Conductance	umhos/cm	8/18/1998	N001	4970			#	-	-
	umhos/cm	1/26/1999	N001	4570			#	-	-
Sulfate	mg/L	8/18/1998	0001	1850.000			#	-	-
	mg/L	1/26/1999	0001	2280.000			#	-	-
	mg/L	1/26/1999	N001	2300.000			#	-	-
Temperature	C	8/18/1998	N001	21.5			#	-	-
	C	1/26/1999	N001	14.5			#	-	-
Thorium-230	pCi/L	8/18/1998	0001	1.2	U		#	1.2	±
	pCi/L	1/26/1999	0001	0.80	U		#	0.8	±
	pCi/L	1/26/1999	N001	0.80	U		#	0.8	±
Turbidity	NTU	8/18/1998	N001	5.09			#	-	-
	NTU	1/26/1999	N001	6.25			#	-	-
Uranium	mg/L	8/18/1998	0001	0.0523			#	-	-
	mg/L	1/26/1999	0001	0.0668			#	-	-
	mg/L	1/26/1999	N001	0.0685			#	-	-
Vanadium	mg/L	8/18/1998	0001	0.0020	U		#	0.002	-
	mg/L	1/26/1999	0001	0.0010	U		#	0.001	-
	mg/L	1/26/1999	N001	0.0011	U		#	0.0011	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0617 Replacement well for 428
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE100 WHERE site_code='RFN01' AND quality_assurance = TRUE AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #5/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0620 RESERVED FOR TMONKS
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	8/17/1998	0001	621			#	-	-
	mg/L	8/17/1998	N001	621			#	-	-
	mg/L	1/22/1999	0001	598			#	-	-
	mg/L	1/22/1999	N001	606			#	-	-
Ammonia as NH4	mg/L	8/17/1998	0001	0.0639	B		#	-	-
	mg/L	1/22/1999	0001	0.0476	B		#	-	-
	mg/L	1/22/1999	0002	0.0449	B		#	-	-
Antimony	mg/L	8/17/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/22/1999	0001	0.0010	U		#	0.001	-
	mg/L	1/22/1999	0002	0.0010	U		#	0.001	-
Arsenic	mg/L	8/17/1998	0001	0.0030	B		#	-	-
	mg/L	1/22/1999	0001	0.0020	B		#	-	-
	mg/L	1/22/1999	0002	0.0016	B		#	-	-
Cadmium	mg/L	8/17/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/22/1999	0001	0.0010	U		#	0.001	-
	mg/L	1/22/1999	0002	0.0010	U		#	0.001	-
Calcium	mg/L	8/17/1998	0001	313.000			#	-	-
	mg/L	1/22/1999	0001	329.000			#	-	-
	mg/L	1/22/1999	0002	331.000			#	-	-
Chloride	mg/L	8/17/1998	0001	565.000			#	-	-
	mg/L	1/22/1999	0001	667.000			#	-	-
	mg/L	1/22/1999	0002	666.000			#	-	-
Fluoride	mg/L	8/17/1998	0001	0.345	B		#	-	-
	mg/L	1/22/1999	0001	0.447			#	-	-
	mg/L	1/22/1999	0002	0.438			#	-	-
Gross Alpha	pCi/L	8/17/1998	0001	45.82	U		#	45.82	± 30.1
	pCi/L	1/22/1999	0001	54.22			#	38.87	± 28.2
	pCi/L	1/22/1999	0002	53.03			#	39.74	± 28.5
Gross Beta	pCi/L	8/17/1998	0001	48.28	U		#	48.28	± 28.9
	pCi/L	1/22/1999	0001	34.97	U		#	34.97	± 20.2
	pCi/L	1/22/1999	0002	34.99	U		#	34.99	± 21.3
Iron	mg/L	8/17/1998	0001	1.800			#	-	-
	mg/L	1/22/1999	0001	1.730			#	-	-
	mg/L	1/22/1999	0002	1.800			#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0620 RESERVED FOR TMONKS
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Lead	mg/L	8/17/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/22/1999	0001	0.0010	U		#	0.001	-
	mg/L	1/22/1999	0002	0.0010	U		#	0.001	-
Lead-210	pCi/L	8/17/1998	0001	0.96	U		#	0.96	± 0.56
	pCi/L	1/22/1999	0001	1.02	U		#	1.02	± 0.60
	pCi/L	1/22/1999	0002	1.04			#	1.01	± 0.62
Magnesium	mg/L	8/17/1998	0001	199.000			#	-	-
	mg/L	1/22/1999	0001	209.000			#	-	-
	mg/L	1/22/1999	0002	207.000			#	-	-
Manganese	mg/L	8/17/1998	0001	1.660			#	-	-
	mg/L	1/22/1999	0001	1.800			#	-	-
	mg/L	1/22/1999	0002	1.840			#	-	-
Molybdenum	mg/L	8/17/1998	0001	0.0193			#	-	-
	mg/L	1/22/1999	0001	0.0115			#	-	-
	mg/L	1/22/1999	0002	0.0116			#	-	-
Nitrate	mg/L	8/17/1998	0001	0.0263	B	U	#	-	-
	mg/L	1/22/1999	0001	0.124	B		#	-	-
	mg/L	1/22/1999	0002	0.172	B	U	#	-	-
pH	s.u.	8/17/1998	N001	7.08			#	-	-
	s.u.	1/22/1999	N001	7.04			#	-	-
Polonium-210	pCi/L	8/17/1998	0001	0.07		U	#	0.04	± 0.07
	pCi/L	1/22/1999	0001	0.09		U	#	0.06	± 0.09
	pCi/L	1/22/1999	0002	0.15		U	#	0.07	± 0.11
Radium-226	pCi/L	8/17/1998	0001	0.12	U		#	0.12	± 0.07
	pCi/L	1/22/1999	0001	0.17			#	0.12	± 0.08
	pCi/L	1/22/1999	0002	0.14			#	0.14	± 0.09
Radium-228	pCi/L	8/17/1998	0001	0.60	U		#	0.6	± 0.35
	pCi/L	1/22/1999	0001	0.68	U		#	0.68	± 0.40
	pCi/L	1/22/1999	0002	0.77	U		#	0.77	± 0.46
Redox Potential	mV	8/17/1998	N001	-69			#	-	-
	mV	1/22/1999	N001	16			#	-	-
Selenium	mg/L	8/17/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/22/1999	0001	0.00010	U		#	0.0001	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0620 RESERVED FOR TMONKS
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Selenium	mg/L	1/22/1999	0002	0.00010	U		#	0.0001	-
Sodium	mg/L	8/17/1998	0001	1060.000			#	-	-
	mg/L	1/22/1999	0001	1050.000			#	-	-
	mg/L	1/22/1999	0002	1050.000			#	-	-
Specific Conductance	umhos/cm	8/17/1998	N001	4790			#	-	-
	umhos/cm	1/22/1999	N001	6450			#	-	-
Sulfate	mg/L	8/17/1998	0001	2160.000			#	-	-
	mg/L	1/22/1999	0001	2600.000			#	-	-
	mg/L	1/22/1999	0002	2600.000			#	-	-
Temperature	C	8/17/1998	N001	17.0			#	-	-
	C	1/22/1999	N001	9.7			#	-	-
Thorium-230	pCi/L	8/17/1998	0001	1.2	U		#	1.2	±
	pCi/L	1/22/1999	0001	0.80	U		#	0.8	±
	pCi/L	1/22/1999	0002	0.93	B	U	#	-	±
Turbidity	NTU	8/17/1998	N001	3.62			#	-	-
	NTU	1/22/1999	N001	14.9			#	-	-
Uranium	mg/L	8/17/1998	0001	0.0496			#	-	-
	mg/L	1/22/1999	0001	0.0563			#	-	-
	mg/L	1/22/1999	0002	0.0553			#	-	-
Vanadium	mg/L	8/17/1998	0001	0.0020	U		#	0.002	-
	mg/L	1/22/1999	0001	0.0010	U		#	0.001	-
	mg/L	1/22/1999	0002	0.0010	U		#	0.001	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0620 RESERVED FOR TMONKS
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE100 WHERE site_code='RFN01' AND quality_assurance = TRUE AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #5/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = *Filtered sample (0.45 μm).* N00X = *Unfiltered sample.* X = *replicate number.*

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z *Laboratory defined (USEPA CLP organic) qualifier, see case narrative.*
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0622
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	8/11/1998	0001	195			#	-	-
	mg/L	8/11/1998	N001	205			#	-	-
	mg/L	1/28/1999	0001	176			#	-	-
	mg/L	1/28/1999	N001	171			#	-	-
Ammonia as NH4	mg/L	8/11/1998	0001	0.424			#	-	-
	mg/L	1/28/1999	0001	0.564			#	-	-
Antimony	mg/L	8/11/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/28/1999	0001	0.0010	U		#	0.001	-
Arsenic	mg/L	8/11/1998	0001	0.0115			#	-	-
	mg/L	1/28/1999	0001	0.0044	B		#	-	-
Cadmium	mg/L	8/11/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/28/1999	0001	0.0010	U		#	0.001	-
Calcium	mg/L	8/11/1998	0001	48.300			#	-	-
	mg/L	1/28/1999	0001	38.300			#	-	-
Chloride	mg/L	8/11/1998	0001	984.000			#	-	-
	mg/L	1/28/1999	0001	1090.000			#	-	-
Fluoride	mg/L	8/11/1998	0001	1.130			#	-	-
	mg/L	1/28/1999	0001	1.390			#	-	-
Gross Alpha	pCi/L	8/11/1998	0001	21.91	U		#	21.91	± 11.0
	pCi/L	1/28/1999	0001	22.91	U		#	22.91	± 11.2
Gross Beta	pCi/L	8/11/1998	0001	23.97	U		#	23.97	± 13.4
	pCi/L	1/28/1999	0001	22.94	U		#	22.94	± 12.7
Iron	mg/L	8/11/1998	0001	0.0930			#	-	-
	mg/L	1/28/1999	0001	0.0198	B		#	-	-
Lead	mg/L	8/11/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/28/1999	0001	0.0010	U		#	0.001	-
Lead-210	pCi/L	8/11/1998	0001	0.96	U		#	0.96	± 0.56
	pCi/L	1/28/1999	0001	0.99	U		#	0.99	± 0.58
Magnesium	mg/L	8/11/1998	0001	13.200			#	-	-
	mg/L	1/28/1999	0001	10.500			#	-	-
Manganese	mg/L	8/11/1998	0001	0.0325			#	-	-
	mg/L	1/28/1999	0001	0.0228			#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0622
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Molybdenum	mg/L	8/11/1998	0001	0.141	E		#	-	-
	mg/L	1/28/1999	0001	0.158			#	-	-
Nitrate	mg/L	8/11/1998	0001	0.0691	B		#	-	-
	mg/L	1/28/1999	0001	0.398	B		#	-	-
pH	s.u.	8/11/1998	N001	7.80			#	-	-
	s.u.	1/28/1999	N001	7.89			#	-	-
Polonium-210	pCi/L	8/11/1998	0001	0.10		U	#	0.05	± 0.08
	pCi/L	1/28/1999	0001	0.15			#	0.04	± 0.09
Radium-226	pCi/L	8/11/1998	0001	0.29			#	0.15	± 0.10
	pCi/L	1/28/1999	0001	0.51			#	0.14	± 0.12
Radium-228	pCi/L	8/11/1998	0001	0.94			#	0.65	± 0.40
	pCi/L	1/28/1999	0001	0.78	U		#	0.78	± 0.46
Redox Potential	mV	8/11/1998	N001	-69			#	-	-
	mV	1/28/1999	N001	-206			#	-	-
Selenium	mg/L	8/11/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/28/1999	0001	0.00010	U		#	0.0001	-
Sodium	mg/L	8/11/1998	0001	669.000			#	-	-
	mg/L	1/28/1999	0001	769.000			#	-	-
Specific Conductance	umhos/cm	8/11/1998	N001	2960			#	-	-
	umhos/cm	1/28/1999	N001	3750			#	-	-
Sulfate	mg/L	8/11/1998	0001	152.000	N	J	#	-	-
	mg/L	1/28/1999	0001	157.000			#	-	-
Temperature	C	8/11/1998	N001	18.6			#	-	-
	C	1/28/1999	N001	12.8			#	-	-
Thorium-230	pCi/L	8/11/1998	0001	1.2	U		#	1.2	±
	pCi/L	1/28/1999	0001	0.80	U		#	0.8	±
Turbidity	NTU	8/11/1998	N001	4.27			#	-	-
	NTU	1/28/1999	N001	106			#	-	-
Uranium	mg/L	8/11/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/28/1999	0001	0.0010	U		#	0.001	-
Vanadium	mg/L	8/11/1998	0001	0.0020	U		#	0.002	-
	mg/L	1/28/1999	0001	0.0010	U		#	0.001	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0622
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE100 WHERE site_code='RFN01' AND quality_assurance = TRUE AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #5/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0627
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	8/28/1998	0001	406			#	-	-
	mg/L	8/28/1998	N001	422			#	-	-
	mg/L	1/21/1999	0001	396		L	#	-	-
	mg/L	1/21/1999	N001	404		L	#	-	-
Ammonia as NH4	mg/L	8/28/1998	0001	110.000			#	-	-
	mg/L	1/21/1999	0001	101.000		L	#	-	-
Antimony	mg/L	8/28/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/21/1999	0001	0.0010	U	L	#	0.001	-
Arsenic	mg/L	8/28/1998	0001	0.0063			#	-	-
	mg/L	1/21/1999	0001	0.0060		L	#	-	-
Cadmium	mg/L	8/28/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/21/1999	0001	0.0010	U	L	#	0.001	-
Calcium	mg/L	8/28/1998	0001	294.000			#	-	-
	mg/L	1/21/1999	0001	298.000		L	#	-	-
Chloride	mg/L	8/28/1998	0001	741.000			#	-	-
	mg/L	1/21/1999	0001	712.000		L	#	-	-
Fluoride	mg/L	8/28/1998	0001	0.761	B		#	-	-
	mg/L	1/21/1999	0001	0.851		L	#	-	-
Gross Alpha	pCi/L	8/28/1998	0001	90.77	U		#	90.77	± 56.6
	pCi/L	1/21/1999	0001	76.81	U	L	#	76.81	± 43.5
Gross Beta	pCi/L	8/28/1998	0001	96.43	U		#	96.43	± 55.4
	pCi/L	1/21/1999	0001	69.47	U	L	#	69.47	± 41.6
Iron	mg/L	8/28/1998	0001	2.970			#	-	-
	mg/L	1/21/1999	0001	2.780		L	#	-	-
Lead	mg/L	8/28/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/21/1999	0001	0.0010	U	L	#	0.001	-
Lead-210	pCi/L	8/28/1998	0001	0.96	U		#	0.96	± 0.56
	pCi/L	1/21/1999	0001	0.96	U	L	#	0.96	± 0.57
Magnesium	mg/L	8/28/1998	0001	112.000			#	-	-
	mg/L	1/21/1999	0001	111.000		L	#	-	-
Manganese	mg/L	8/28/1998	0001	0.988			#	-	-
	mg/L	1/21/1999	0001	0.958		L	#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0627
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Molybdenum	mg/L	8/28/1998	0001	0.0383			#	-	-
	mg/L	1/21/1999	0001	0.0403		L	#	-	-
Nitrate	mg/L	8/28/1998	0001	0.0457	B	U	#	-	-
	mg/L	1/21/1999	0001	0.630	B	L	#	-	-
pH	s.u.	8/28/1998	N001	7.04			#	-	-
	s.u.	1/21/1999	N001	7.21		L	#	-	-
Polonium-210	pCi/L	8/28/1998	0001	0.10		U	#	0.09	± 0.12
	pCi/L	1/21/1999	0001	0.09		UL	#	0.06	± 0.09
Radium-226	pCi/L	8/28/1998	0001	0.14	U		#	0.14	± 0.08
	pCi/L	1/21/1999	0001	0.13	U	L	#	0.13	± 0.08
Radium-228	pCi/L	8/28/1998	0001	0.99			#	0.64	± 0.39
	pCi/L	1/21/1999	0001	1.04		L	#	0.68	± 0.42
Redox Potential	mV	8/28/1998	N001	-182			#	-	-
	mV	1/21/1999	N001	-214		L	#	-	-
Selenium	mg/L	8/28/1998	0001	0.0012	B		#	-	-
	mg/L	1/21/1999	0001	0.00080	B	L	#	-	-
Sodium	mg/L	8/28/1998	0001	2810.000			#	-	-
	mg/L	1/21/1999	0001	2800.000		L	#	-	-
Specific Conductance	umhos/cm	8/28/1998	N001	12220			#	-	-
	umhos/cm	1/21/1999	N001	12490		L	#	-	-
Sulfate	mg/L	8/28/1998	0001	6070.000			#	-	-
	mg/L	1/21/1999	0001	6540.000		L	#	-	-
Temperature	C	8/28/1998	N001	14.3			#	-	-
	C	1/21/1999	N001	12.2		L	#	-	-
Thorium-230	pCi/L	8/28/1998	0001	1.2	U		#	1.2	±
	pCi/L	1/21/1999	0001	0.80	U	L	#	0.8	±
Turbidity	NTU	8/28/1998	N001	1.27			#	-	-
	NTU	1/21/1999	N001	108		L	#	-	-
Uranium	mg/L	8/28/1998	0001	0.0040			#	-	-
	mg/L	1/21/1999	0001	0.0059		L	#	-	-
Vanadium	mg/L	8/28/1998	0001	0.0032	B		#	-	-
	mg/L	1/21/1999	0001	0.0031	B	L	#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0627
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE100 WHERE site_code='RFN01' AND quality_assurance = TRUE AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #5/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0628
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	8/31/1998	0001	201		L	#	-	-
	mg/L	1/22/1999	0001	185		L	#	-	-
	mg/L	1/22/1999	N001	202		L	#	-	-
Ammonia as NH4	mg/L	8/31/1998	0001	0.763		L	#	-	-
	mg/L	1/22/1999	0001	0.933		L	#	-	-
Antimony	mg/L	8/31/1998	0001	0.0010	U	L	#	0.001	-
	mg/L	1/22/1999	0001	0.0010	U	L	#	0.001	-
Arsenic	mg/L	8/31/1998	0001	0.0023	B	L	#	-	-
	mg/L	1/22/1999	0001	0.0017	B	L	#	-	-
Cadmium	mg/L	8/31/1998	0001	0.0010	U	L	#	0.001	-
	mg/L	1/22/1999	0001	0.0010	U	L	#	0.001	-
Calcium	mg/L	8/31/1998	0001	10.300		L	#	-	-
	mg/L	1/22/1999	0001	10.200		L	#	-	-
Chloride	mg/L	8/31/1998	0001	985.000		L	#	-	-
	mg/L	1/22/1999	0001	979.000		L	#	-	-
Fluoride	mg/L	8/31/1998	0001	2.000		L	#	-	-
	mg/L	1/22/1999	0001	2.020		L	#	-	-
Gross Alpha	pCi/L	8/31/1998	0001	23.80	U	L	#	23.8	± 12.8
	pCi/L	1/22/1999	0001	23.73	U	L	#	23.73	± 13.8
Gross Beta	pCi/L	8/31/1998	0001	24.11	U	L	#	24.11	± 13.4
	pCi/L	1/22/1999	0001	23.07	U	L	#	23.07	± 13.5
Iron	mg/L	8/31/1998	0001	0.0378		L	#	-	-
	mg/L	1/22/1999	0001	0.0477		L	#	-	-
Lead	mg/L	8/31/1998	0001	0.0010	U	L	#	0.001	-
	mg/L	1/22/1999	0001	0.0010	U	L	#	0.001	-
Lead-210	pCi/L	8/31/1998	0001	0.97	U	L	#	0.97	± 0.56
	pCi/L	1/22/1999	0001	0.97	U	L	#	0.97	± 0.57
Magnesium	mg/L	8/31/1998	0001	2.090		L	#	-	-
	mg/L	1/22/1999	0001	2.000		L	#	-	-
Manganese	mg/L	8/31/1998	0001	0.0084	B	L	#	-	-
	mg/L	1/22/1999	0001	0.0081	B	L	#	-	-
Molybdenum	mg/L	8/31/1998	0001	0.0253		L	#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0628
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Molybdenum	mg/L	1/22/1999	0001	0.0237		L	#	-	-
Nitrate	mg/L	8/31/1998	0001	0.127	B	L	#	-	-
	mg/L	1/22/1999	0001	0.426	B	L	#	-	-
pH	s.u.	8/31/1998	N001	8.72		L	#	-	-
	s.u.	1/22/1999	N001	8.81		L	#	-	-
Polonium-210	pCi/L	8/31/1998	0001	0.07	U	L	#	0.07	± 0.09
	pCi/L	1/22/1999	0001	0.11		UL	#	0.06	± 0.10
Radium-226	pCi/L	8/31/1998	0001	0.14	U	L	#	0.14	± 0.08
	pCi/L	1/22/1999	0001	0.14	U	L	#	0.14	± 0.08
Radium-228	pCi/L	8/31/1998	0001	0.64		L	#	0.64	± 0.39
	pCi/L	1/22/1999	0001	0.76	U	L	#	0.76	± 0.45
Redox Potential	mV	8/31/1998	N001	-39		L	#	-	-
	mV	1/22/1999	N001	122		L	#	-	-
Selenium	mg/L	8/31/1998	0001	0.0010	U	L	#	0.001	-
	mg/L	1/22/1999	0001	0.00010	U	L	#	0.0001	-
Sodium	mg/L	8/31/1998	0001	863.000		L	#	-	-
	mg/L	1/22/1999	0001	842.000		L	#	-	-
Specific Conductance	umhos/cm	8/31/1998	N001	4180		L	#	-	-
	umhos/cm	1/22/1999	N001	4170		L	#	-	-
Sulfate	mg/L	8/31/1998	0001	399.000		L	#	-	-
	mg/L	1/22/1999	0001	429.000		L	#	-	-
Temperature	C	8/31/1998	N001	13.8		L	#	-	-
	C	1/22/1999	N001	11.3		L	#	-	-
Thorium-230	pCi/L	8/31/1998	0001	1.2	U	L	#	1.2	±
	pCi/L	1/22/1999	0001	0.80	U	L	#	0.8	±
Turbidity	NTU	8/31/1998	N001	175		L	#	-	-
	NTU	1/22/1999	N001	182		L	#	-	-
Uranium	mg/L	8/31/1998	0001	0.0010	U	L	#	0.001	-
	mg/L	1/22/1999	0001	0.0010	U	L	#	0.001	-
Vanadium	mg/L	8/31/1998	0001	0.0020	U	L	#	0.002	-
	mg/L	1/22/1999	0001	0.0010	U	L	#	0.001	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0628
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE100 WHERE site_code='RFN01' AND quality_assurance = TRUE AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #5/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0629
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	8/31/1998	0001	476		L	#	-	-
	mg/L	8/31/1998	N001	491		L	#	-	-
	mg/L	1/21/1999	0001	383		L	#	-	-
	mg/L	1/21/1999	N001	440		L	#	-	-
Ammonia as NH4	mg/L	8/31/1998	0001	118.000		L	#	-	-
	mg/L	1/21/1999	0001	88.600		L	#	-	-
Antimony	mg/L	8/31/1998	0001	0.0010	U	L	#	0.001	-
	mg/L	1/21/1999	0001	0.0010	U	L	#	0.001	-
Arsenic	mg/L	8/31/1998	0001	0.0010	U	L	#	0.001	-
	mg/L	1/21/1999	0001	0.0024	B	L	#	-	-
Cadmium	mg/L	8/31/1998	0001	0.0010	U	L	#	0.001	-
	mg/L	1/21/1999	0001	0.0010	U	L	#	0.001	-
Calcium	mg/L	8/31/1998	0001	419.000		L	#	-	-
	mg/L	1/21/1999	0001	405.000		L	#	-	-
Chloride	mg/L	8/31/1998	0001	978.000		L	#	-	-
	mg/L	1/21/1999	0001	953.000		L	#	-	-
Fluoride	mg/L	8/31/1998	0001	0.601	B	L	#	-	-
	mg/L	1/21/1999	0001	0.313		L	#	-	-
Gross Alpha	pCi/L	8/31/1998	0001	96.61	U	L	#	96.61	± 52.0
	pCi/L	1/21/1999	0001	67.33	U	L	#	67.33	± 29.2
Gross Beta	pCi/L	8/31/1998	0001	96.51	U	L	#	96.51	± 54.3
	pCi/L	1/21/1999	0001	57.74	U	L	#	57.74	± 33.0
Iron	mg/L	8/31/1998	0001	0.806		L	#	-	-
	mg/L	1/21/1999	0001	1.690		L	#	-	-
Lead	mg/L	8/31/1998	0001	0.0010	U	L	#	0.001	-
	mg/L	1/21/1999	0001	0.0010	U	L	#	0.001	-
Lead-210	pCi/L	8/31/1998	0001	0.98	U	L	#	0.98	± 0.57
	pCi/L	1/21/1999	0001	0.92	U	L	#	0.92	± 0.55
Magnesium	mg/L	8/31/1998	0001	163.000		L	#	-	-
	mg/L	1/21/1999	0001	147.000		L	#	-	-
Manganese	mg/L	8/31/1998	0001	1.590		L	#	-	-
	mg/L	1/21/1999	0001	0.863		L	#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0629
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Molybdenum	mg/L	8/31/1998	0001	0.0559		L	#	-	-
	mg/L	1/21/1999	0001	0.0319		L	#	-	-
Nitrate	mg/L	8/31/1998	0001	0.0110	U	L	#	0.011	-
	mg/L	1/21/1999	0001	0.660	B	L	#	-	-
pH	s.u.	8/31/1998	N001	7.17		L	#	-	-
	s.u.	1/21/1999	N001	6.97		L	#	-	-
Polonium-210	pCi/L	8/31/1998	0001	0.13		UL	#	0.07	± 0.11
	pCi/L	1/21/1999	0001	0.11		UL	#	0.05	± 0.09
Radium-226	pCi/L	8/31/1998	0001	0.15	U	L	#	0.15	± 0.08
	pCi/L	1/21/1999	0001	0.15	U	L	#	0.15	± 0.08
Radium-228	pCi/L	8/31/1998	0001	1.59		L	#	0.64	± 0.41
	pCi/L	1/21/1999	0001	1.84		L	#	0.7	± 0.45
Redox Potential	mV	8/31/1998	N001	-90		L	#	-	-
	mV	1/21/1999	N001	136		L	#	-	-
Selenium	mg/L	8/31/1998	0001	0.0015	B	L	#	-	-
	mg/L	1/21/1999	0001	0.00057	B	L	#	-	-
Sodium	mg/L	8/31/1998	0001	2900.000		L	#	-	-
	mg/L	1/21/1999	0001	2140.000		L	#	-	-
Specific Conductance	umhos/cm	8/31/1998	N001	11740		L	#	-	-
	umhos/cm	1/21/1999	N001	10440		L	#	-	-
Sulfate	mg/L	8/31/1998	0001	6400.000		L	#	-	-
	mg/L	1/21/1999	0001	5730.000		L	#	-	-
Temperature	C	8/31/1998	N001	16.1		L	#	-	-
	C	1/21/1999	N001	10.5		L	#	-	-
Thorium-230	pCi/L	8/31/1998	0001	1.2	U	L	#	1.2	±
	pCi/L	1/21/1999	0001	0.80	U	L	#	0.8	±
Turbidity	NTU	8/31/1998	N001	32.6		L	#	-	-
	NTU	1/21/1999	N001	29.5		L	#	-	-
Uranium	mg/L	8/31/1998	0001	0.0160		L	#	-	-
	mg/L	1/21/1999	0001	0.0061		L	#	-	-
Vanadium	mg/L	8/31/1998	0001	0.0030	B	L	#	-	-
	mg/L	1/21/1999	0001	0.0014	B	L	#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0629
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE100 WHERE site_code='RFN01' AND quality_assurance = TRUE AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #5/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z *Laboratory defined (USEPA CLP organic) qualifier, see case narrative.*
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > *Result above upper detection limit.*

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0633
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	8/12/1998	0001	373		L	#	-	-
	mg/L	8/12/1998	N001	355		L	#	-	-
	mg/L	1/25/1999	0001	409		L	#	-	-
	mg/L	1/25/1999	N001	400		L	#	-	-
Ammonia as NH4	mg/L	8/12/1998	0001	0.232		L	#	-	-
	mg/L	1/25/1999	0001	0.186		L	#	-	-
Antimony	mg/L	8/12/1998	0001	0.0010	U	L	#	0.001	-
	mg/L	1/25/1999	0001	0.0010	U	L	#	0.001	-
Arsenic	mg/L	8/12/1998	0001	0.0060		L	#	-	-
	mg/L	1/25/1999	0001	0.0070		L	#	-	-
Cadmium	mg/L	8/12/1998	0001	0.0011		L	#	-	-
	mg/L	1/25/1999	0001	0.0010	U	L	#	0.001	-
Calcium	mg/L	8/12/1998	0001	6.950		L	#	-	-
	mg/L	1/25/1999	0001	6.740		L	#	-	-
Chloride	mg/L	8/12/1998	0001	539.000		L	#	-	-
	mg/L	1/25/1999	0001	575.000		L	#	-	-
Fluoride	mg/L	8/12/1998	0001	2.660		L	#	-	-
	mg/L	1/25/1999	0001	2.830		L	#	-	-
Gross Alpha	pCi/L	8/12/1998	0001	19.01		L	#	13.33	± 9.76
	pCi/L	1/25/1999	0001	18.79	U	L	#	18.79	± 11.5
Gross Beta	pCi/L	8/12/1998	0001	12.21	U	L	#	12.21	± 7.09
	pCi/L	1/25/1999	0001	22.82	U	L	#	22.82	± 13.1
Iron	mg/L	8/12/1998	0001	0.191		L	#	-	-
	mg/L	1/25/1999	0001	0.0060	B	UL	#	-	-
Lead	mg/L	8/12/1998	0001	0.0010	U	L	#	0.001	-
	mg/L	1/25/1999	0001	0.0010	U	L	#	0.001	-
Lead-210	pCi/L	8/12/1998	0001	0.95	U	L	#	0.95	± 0.55
	pCi/L	1/25/1999	0001	0.99	U	L	#	0.99	± 0.59
Magnesium	mg/L	8/12/1998	0001	1.760		L	#	-	-
	mg/L	1/25/1999	0001	1.640		L	#	-	-
Manganese	mg/L	8/12/1998	0001	0.0116		L	#	-	-
	mg/L	1/25/1999	0001	0.0092	B	L	#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0633
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Molybdenum	mg/L	8/12/1998	0001	0.592	E	L	#	-	-
	mg/L	1/25/1999	0001	0.666		L	#	-	-
Nitrate	mg/L	8/12/1998	0001	1.290		L	#	-	-
	mg/L	1/25/1999	0001	3.300		L	#	-	-
pH	s.u.	8/12/1998	N001	8.24		L	#	-	-
	s.u.	1/25/1999	N001	8.22		L	#	-	-
Polonium-210	pCi/L	8/12/1998	0001	0.08		UL	#	0.04	± 0.07
	pCi/L	1/25/1999	0001	0.14		UL	#	0.06	± 0.11
Radium-226	pCi/L	8/12/1998	0001	0.15	U	L	#	0.15	± 0.09
	pCi/L	1/25/1999	0001	0.13		L	#	0.11	± 0.07
Radium-228	pCi/L	8/12/1998	0001	0.68	U	L	#	0.68	± 0.41
	pCi/L	1/25/1999	0001	0.62	U	L	#	0.62	± 0.37
Redox Potential	mV	8/12/1998	N001	136		L	#	-	-
	mV	1/25/1999	N001	12		L	#	-	-
Selenium	mg/L	8/12/1998	0001	0.0013	B	L	#	-	-
	mg/L	1/25/1999	0001	0.00010	U	L	#	0.0001	-
Sodium	mg/L	8/12/1998	0001	524.000		L	#	-	-
	mg/L	1/25/1999	0001	567.000		L	#	-	-
Specific Conductance	umhos/cm	8/12/1998	N001	2360		L	#	-	-
	umhos/cm	1/25/1999	N001	2770		L	#	-	-
Sulfate	mg/L	8/12/1998	0001	124.000	N	JL	#	-	-
	mg/L	1/25/1999	0001	121.000		L	#	-	-
Temperature	C	8/12/1998	N001	17.9		L	#	-	-
	C	1/25/1999	N001	13.3		L	#	-	-
Thorium-230	pCi/L	8/12/1998	0001	1.2	U	L	#	1.2	±
	pCi/L	1/25/1999	0001	0.80	U	L	#	0.8	±
Turbidity	NTU	1/25/1999	N001	62.0		L	#	-	-
Uranium	mg/L	8/12/1998	0001	0.0065		L	#	-	-
	mg/L	1/25/1999	0001	0.0052		L	#	-	-
Vanadium	mg/L	8/12/1998	0001	0.0020	U	L	#	0.002	-
	mg/L	1/25/1999	0001	0.0010	U	L	#	0.001	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0633
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE100 WHERE site_code='RFN01' AND quality_assurance = TRUE AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #5/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0635 I-70, NEAR MILE MARKER 88
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	8/18/1998	0001	505			#	-	-
	mg/L	8/18/1998	N001	504			#	-	-
	mg/L	1/26/1999	0001	515			#	-	-
	mg/L	1/26/1999	N001	502			#	-	-
Ammonia as NH4	mg/L	8/18/1998	0001	502.000			#	-	-
	mg/L	1/26/1999	0001	550.000			#	-	-
Antimony	mg/L	8/18/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/26/1999	0001	0.0010	U		#	0.001	-
Arsenic	mg/L	8/18/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/26/1999	0001	0.00010	U		#	0.0001	-
Cadmium	mg/L	8/18/1998	0001	0.0028			#	-	-
	mg/L	1/26/1999	0001	0.0023			#	-	-
Calcium	mg/L	8/18/1998	0001	324.000			#	-	-
	mg/L	1/26/1999	0001	364.000			#	-	-
Chloride	mg/L	8/18/1998	0001	237.000		J	#	-	-
	mg/L	1/26/1999	0001	268.000			#	-	-
Fluoride	mg/L	8/18/1998	0001	3.020		J	#	-	-
	mg/L	1/26/1999	0001	5.910			#	-	-
Gross Alpha	pCi/L	8/18/1998	0001	61.85			#	44.58	± 32.2
	pCi/L	1/26/1999	0001	72.9			#	38.9	± 30.5
Gross Beta	pCi/L	8/18/1998	0001	113.2			#	48.3	± 33.1
	pCi/L	1/26/1999	0001	79.63			#	35.08	± 24.0
Iron	mg/L	8/18/1998	0001	0.0055	B	U	#	-	-
	mg/L	1/26/1999	0001	0.0030	U		#	0.003	-
Lead	mg/L	8/18/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/26/1999	0001	0.0010	U		#	0.001	-
Lead-210	pCi/L	8/18/1998	0001	0.94	U		#	0.94	± 0.56
	pCi/L	1/26/1999	0001	1.08	U		#	1.08	± 0.65
Magnesium	mg/L	8/18/1998	0001	58.000			#	-	-
	mg/L	1/26/1999	0001	61.200			#	-	-
Manganese	mg/L	8/18/1998	0001	5.770			#	-	-
	mg/L	1/26/1999	0001	6.200			#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0635 I-70, NEAR MILE MARKER 88
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Molybdenum	mg/L	8/18/1998	0001	0.891			#	-	-
	mg/L	1/26/1999	0001	0.765			#	-	-
Nitrate	mg/L	8/18/1998	0001	174.000		J	#	-	-
	mg/L	1/26/1999	0001	132.000			#	-	-
pH	s.u.	8/18/1998	N001	6.84			#	-	-
	s.u.	1/26/1999	N001	6.96			#	-	-
Polonium-210	pCi/L	8/18/1998	0001	0.07	U		#	0.07	± 0.09
	pCi/L	1/26/1999	0001	0.07		U	#	0.05	± 0.08
Radium-226	pCi/L	8/18/1998	0001	0.13	U		#	0.13	± 0.07
	pCi/L	1/26/1999	0001	0.13	U		#	0.13	± 0.07
Radium-228	pCi/L	8/18/1998	0001	0.78			#	0.63	± 0.38
	pCi/L	1/26/1999	0001	0.77			#	0.69	± 0.42
Redox Potential	mV	8/18/1998	N001	200			#	-	-
	mV	1/26/1999	N001	163			#	-	-
Selenium	mg/L	8/18/1998	0001	0.0181			#	-	-
	mg/L	1/26/1999	0001	0.0176			#	-	-
Sodium	mg/L	8/18/1998	0001	1310.000			#	-	-
	mg/L	1/26/1999	0001	1160.000			#	-	-
Specific Conductance	umhos/cm	8/18/1998	N001	7280			#	-	-
	umhos/cm	1/26/1999	N001	9350			#	-	-
Sulfate	mg/L	8/18/1998	0001	4270.000		J	#	-	-
	mg/L	1/26/1999	0001	4390.000			#	-	-
Temperature	C	8/18/1998	N001	14.1			#	-	-
	C	1/26/1999	N001	10.2			#	-	-
Thorium-230	pCi/L	8/18/1998	0001	1.2	U		#	1.2	±
	pCi/L	1/26/1999	0001	0.80	U		#	0.8	±
Turbidity	NTU	8/18/1998	N001	1.01			#	-	-
	NTU	1/26/1999	N001	5.46			#	-	-
Uranium	mg/L	8/18/1998	0001	0.114			#	-	-
	mg/L	1/26/1999	0001	0.120			#	-	-
Vanadium	mg/L	8/18/1998	0001	0.0020	U		#	0.002	-
	mg/L	1/26/1999	0001	0.0010	U		#	0.001	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0635 I-70, NEAR MILE MARKER 88
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE100 WHERE site_code='RFN01' AND quality_assurance = TRUE AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #5/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0636 I-70, NEAR MILE MARKER 88
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	8/17/1998	0001	472			#	-	-
	mg/L	8/17/1998	N001	453			#	-	-
	mg/L	1/26/1999	0001	483			#	-	-
	mg/L	1/26/1999	N001	496			#	-	-
Ammonia as NH4	mg/L	8/17/1998	0001	517.000			#	-	-
	mg/L	1/26/1999	0001	523.000			#	-	-
Antimony	mg/L	8/17/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/26/1999	0001	0.0010	U		#	0.001	-
Arsenic	mg/L	8/17/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/26/1999	0001	0.00010	U		#	0.0001	-
Cadmium	mg/L	8/17/1998	0001	0.0080			#	-	-
	mg/L	1/26/1999	0001	0.0068			#	-	-
Calcium	mg/L	8/17/1998	0001	373.000			#	-	-
	mg/L	1/26/1999	0001	369.000			#	-	-
Chloride	mg/L	8/17/1998	0001	275.000			#	-	-
	mg/L	1/26/1999	0001	261.000			#	-	-
Fluoride	mg/L	8/17/1998	0001	6.110			#	-	-
	mg/L	1/26/1999	0001	6.390			#	-	-
Gross Alpha	pCi/L	8/17/1998	0001	53.20	U		#	53.2	± 35.6
	pCi/L	1/26/1999	0001	61.1			#	37.4	± 28.3
Gross Beta	pCi/L	8/17/1998	0001	95.29			#	48.68	± 32.5
	pCi/L	1/26/1999	0001	83.75			#	34.94	± 24.1
Iron	mg/L	8/17/1998	0001	0.0423			#	-	-
	mg/L	1/26/1999	0001	0.0030	U		#	0.003	-
Lead	mg/L	8/17/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/26/1999	0001	0.0010	U		#	0.001	-
Lead-210	pCi/L	8/17/1998	0001	0.88	U		#	0.88	± 0.51
	pCi/L	1/26/1999	0001	1.08	U		#	1.08	± 0.65
Magnesium	mg/L	8/17/1998	0001	62.300			#	-	-
	mg/L	1/26/1999	0001	57.700			#	-	-
Manganese	mg/L	8/17/1998	0001	7.210			#	-	-
	mg/L	1/26/1999	0001	7.340			#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0636 I-70, NEAR MILE MARKER 88
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Molybdenum	mg/L	8/17/1998	0001	1.040			#	-	-
	mg/L	1/26/1999	0001	0.956			#	-	-
Nitrate	mg/L	8/17/1998	0001	201.000			#	-	-
	mg/L	1/26/1999	0001	151.000			#	-	-
pH	s.u.	8/17/1998	N001	6.75			#	-	-
	s.u.	1/26/1999	N001	6.93			#	-	-
Polonium-210	pCi/L	8/17/1998	0001	0.06		U	#	0.05	± 0.08
	pCi/L	1/26/1999	0001	0.12		U	#	0.05	± 0.10
Radium-226	pCi/L	8/17/1998	0001	0.15	U		#	0.15	± 0.08
	pCi/L	1/26/1999	0001	0.11	U		#	0.11	± 0.06
Radium-228	pCi/L	8/17/1998	0001	0.86			#	0.67	± 0.41
	pCi/L	1/26/1999	0001	0.63			#	0.62	± 0.37
Redox Potential	mV	8/17/1998	N001	147			#	-	-
	mV	1/26/1999	N001	-41			#	-	-
Selenium	mg/L	8/17/1998	0001	0.0180			#	-	-
	mg/L	1/26/1999	0001	0.0173			#	-	-
Sodium	mg/L	8/17/1998	0001	1210.000			#	-	-
	mg/L	1/26/1999	0001	1060.000			#	-	-
Specific Conductance	umhos/cm	8/17/1998	N001	8470			#	-	-
	umhos/cm	1/26/1999	N001	8870			#	-	-
Sulfate	mg/L	8/17/1998	0001	3990.000			#	-	-
	mg/L	1/26/1999	0001	4160.000			#	-	-
Temperature	C	8/17/1998	N001	14.8			#	-	-
	C	1/26/1999	N001	12.5			#	-	-
Thorium-230	pCi/L	8/17/1998	0001	1.2	U		#	1.2	±
	pCi/L	1/26/1999	0001	0.80	U		#	0.8	±
Turbidity	NTU	8/17/1998	N001	1.95			#	-	-
	NTU	1/26/1999	N001	6.54			#	-	-
Uranium	mg/L	8/17/1998	0001	0.119			#	-	-
	mg/L	1/26/1999	0001	0.125			#	-	-
Vanadium	mg/L	8/17/1998	0001	0.0020	U		#	0.002	-
	mg/L	1/26/1999	0001	0.0010	U		#	0.001	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0636 I-70, NEAR MILE MARKER 88
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE100 WHERE site_code='RFN01' AND quality_assurance = TRUE AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #5/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0640
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	8/10/1998	0001	241		L	#	-	-
	mg/L	8/10/1998	N001	255		L	#	-	-
Ammonia as NH4	mg/L	8/10/1998	0001	0.797		L	#	-	-
Antimony	mg/L	8/10/1998	0001	0.0010	U	L	#	0.001	-
Arsenic	mg/L	8/10/1998	0001	0.0025	B	L	#	-	-
Cadmium	mg/L	8/10/1998	0001	0.0010	U	L	#	0.001	-
Calcium	mg/L	8/10/1998	0001	60.700		L	#	-	-
Chloride	mg/L	8/10/1998	0001	2760.000		L	#	-	-
Fluoride	mg/L	8/10/1998	0001	1.150		L	#	-	-
Gross Alpha	pCi/L	8/10/1998	0001	49.34	U	L	#	49.34	± 31.9
Gross Beta	pCi/L	8/10/1998	0001	48.48	U	L	#	48.48	± 27.6
Iron	mg/L	8/10/1998	0001	0.0668		L	#	-	-
Lead	mg/L	8/10/1998	0001	0.0010	U	L	#	0.001	-
Lead-210	pCi/L	8/10/1998	0001	0.96	U	L	#	0.96	± 0.57
Magnesium	mg/L	8/10/1998	0001	18.100		L	#	-	-
Manganese	mg/L	8/10/1998	0001	0.0301		L	#	-	-
Molybdenum	mg/L	8/10/1998	0001	0.161	E	L	#	-	-
Nitrate	mg/L	8/10/1998	0001	0.526	B	L	#	-	-
pH	s.u.	8/10/1998	N001	7.94		L	#	-	-
Polonium-210	pCi/L	8/10/1998	0001	0.06	U	L	#	0.06	± 0.06
Radium-226	pCi/L	8/10/1998	0001	0.21		L	#	0.16	± 0.10
Radium-228	pCi/L	8/10/1998	0001	0.72	U	L	#	0.72	± 0.44
Redox Potential	mV	8/10/1998	N001	75		L	#	-	-
Selenium	mg/L	8/10/1998	0001	0.0010	U	L	#	0.001	-
Sodium	mg/L	8/10/1998	0001	1810.000		L	#	-	-
Specific Conductance	umhos/cm	8/10/1998	N001	6310		L	#	-	-
Sulfate	mg/L	8/10/1998	0001	304.000	N	JL	#	-	-
Temperature	C	8/10/1998	N001	17.0		L	#	-	-
Thorium-230	pCi/L	8/10/1998	0001	1.2	U	L	#	1.2	±

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0640
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Turbidity	NTU	8/10/1998	N001	54.3		L	#	-	-
Uranium	mg/L	8/10/1998	0001	0.0016		L	#	-	-
Vanadium	mg/L	8/10/1998	0001	0.0020	U	L	#	0.002	-

RECORDS: SELECTED FROM USEE100 WHERE site_code='RFN01' AND quality_assurance = TRUE AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #5/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0641
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	8/11/1998	0001	297		L	#	-	-
	mg/L	8/11/1998	N001	288		L	#	-	-
Ammonia as NH4	mg/L	8/11/1998	0001	0.492		L	#	-	-
Antimony	mg/L	8/11/1998	0001	0.0010	U	L	#	0.001	-
Arsenic	mg/L	8/11/1998	0001	0.0045	B	L	#	-	-
Cadmium	mg/L	8/11/1998	0001	0.0010	U	L	#	0.001	-
Calcium	mg/L	8/11/1998	0001	17.600		L	#	-	-
Chloride	mg/L	8/11/1998	0001	572.000		L	#	-	-
Fluoride	mg/L	8/11/1998	0001	2.280		L	#	-	-
Gross Alpha	pCi/L	8/11/1998	0001	25.27	U	L	#	25.27	± 15.2
Gross Beta	pCi/L	8/11/1998	0001	24.23	U	L	#	24.23	± 14.0
Iron	mg/L	8/11/1998	0001	0.0572		L	#	-	-
Lead	mg/L	8/11/1998	0001	0.0010	U	L	#	0.001	-
Lead-210	pCi/L	8/11/1998	0001	0.96	U	L	#	0.96	± 0.56
Magnesium	mg/L	8/11/1998	0001	5.360		L	#	-	-
Manganese	mg/L	8/11/1998	0001	0.0181		L	#	-	-
Molybdenum	mg/L	8/11/1998	0001	0.187	E	L	#	-	-
Nitrate	mg/L	8/11/1998	0001	0.0493	B	L	#	-	-
pH	s.u.	8/11/1998	N001	8.13		L	#	-	-
Polonium-210	pCi/L	8/11/1998	0001	0.16		L	#	0.06	± 0.10
Radium-226	pCi/L	8/11/1998	0001	0.16	U	L	#	0.16	± 0.10
Radium-228	pCi/L	8/11/1998	0001	0.75	U	L	#	0.75	± 0.45
Redox Potential	mV	8/11/1998	N001	123		L	#	-	-
Selenium	mg/L	8/11/1998	0001	0.0010	U	L	#	0.001	-
Sodium	mg/L	8/11/1998	0001	1010.000		L	#	-	-
Specific Conductance	umhos/cm	8/11/1998	N001	3250		L	#	-	-
Sulfate	mg/L	8/11/1998	0001	1150.000	N	JL	#	-	-
Temperature	C	8/11/1998	N001	19.3		L	#	-	-
Thorium-230	pCi/L	8/11/1998	0001	1.3	B	L	#	-	±

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0641
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Turbidity	NTU	8/11/1998	N001	192		L	#	-	-
Uranium	mg/L	8/11/1998	0001	0.0025		L	#	-	-
Vanadium	mg/L	8/11/1998	0001	0.0020	U	L	#	0.002	-

RECORDS: SELECTED FROM USEE100 WHERE site_code='RFN01' AND quality_assurance = TRUE AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #5/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0643
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	8/12/1998	0001	35		L	#	-	-
	mg/L	8/12/1998	N001	65		L	#	-	-
Ammonia as NH4	mg/L	8/12/1998	0001	1.150		L	#	-	-
	mg/L	1/29/1999	0001	1.580		L	#	-	-
Antimony	mg/L	8/12/1998	0001	0.0010	U	L	#	0.001	-
Arsenic	mg/L	8/12/1998	0001	0.0015	B	L	#	-	-
Cadmium	mg/L	8/12/1998	0001	0.0010	U	L	#	0.001	-
Calcium	mg/L	8/12/1998	0001	113.000		L	#	-	-
Chloride	mg/L	8/12/1998	0001	273.000		L	#	-	-
	mg/L	1/29/1999	0001	247.000		L	#	-	-
Fluoride	mg/L	8/12/1998	0001	0.504		L	#	-	-
	mg/L	1/29/1999	0001	0.322		L	#	-	-
Gross Alpha	pCi/L	8/12/1998	0001	38.04	U	L	#	38.04	± 21.7
Gross Beta	pCi/L	8/12/1998	0001	36.26	U	L	#	36.26	± 20.4
Iron	mg/L	8/12/1998	0001	0.0205	B	UL	#	-	-
Lead	mg/L	8/12/1998	0001	0.0010	U	L	#	0.001	-
Lead-210	pCi/L	8/12/1998	0001	0.99	U	L	#	0.99	± 0.57
Magnesium	mg/L	8/12/1998	0001	13.500		L	#	-	-
Manganese	mg/L	8/12/1998	0001	0.227		L	#	-	-
Molybdenum	mg/L	8/12/1998	0001	0.0206	E	L	#	-	-
Nitrate	mg/L	8/12/1998	0001	448.000		L	#	-	-
	mg/L	1/29/1999	0001	964.000		L	#	-	-
pH	s.u.	8/12/1998	N001	8.23		L	#	-	-
	s.u.	1/29/1999	N001	7.38		L	#	-	-
Polonium-210	pCi/L	8/12/1998	0001	0.06	U	L	#	0.06	± 0.07
Radium-226	pCi/L	8/12/1998	0001	0.17	U	L	#	0.17	± 0.10
Radium-228	pCi/L	8/12/1998	0001	1.51		L	#	0.71	± 0.45
Redox Potential	mV	8/12/1998	N001	167		L	#	-	-
	mV	1/29/1999	N001	203		L	#	-	-
Selenium	mg/L	8/12/1998	0001	0.0145		L	#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0643
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Sodium	mg/L	8/12/1998	0001	852.000		L	#	-	-
Specific Conductance	umhos/cm	8/12/1998	N001	3310		L	#	-	-
	umhos/cm	1/29/1999	N001	9770		L	#	-	-
Sulfate	mg/L	8/12/1998	0001	2250.000	N	JL	#	-	-
	mg/L	1/29/1999	0001	1850.000		L	#	-	-
Temperature	C	8/12/1998	N001	17.1		L	#	-	-
	C	1/29/1999	N001	8.9		L	#	-	-
Thorium-230	pCi/L	8/12/1998	0001	1.2	U	L	#	1.2	±
Turbidity	NTU	8/12/1998	N001	244		L	#	-	-
	NTU	1/29/1999	N001	225		L	#	-	-
Uranium	mg/L	8/12/1998	0001	0.0025		L	#	-	-
Vanadium	mg/L	8/12/1998	0001	0.0020	U	L	#	0.002	-

RECORDS: SELECTED FROM USEE100 WHERE site_code='RFN01' AND quality_assurance = TRUE AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #5/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0651
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	8/14/1998	0001	173			#	-	-
	mg/L	8/14/1998	N001	155			#	-	-
	mg/L	1/25/1999	0001	177			#	-	-
	mg/L	1/25/1999	N001	211			#	-	-
Ammonia as NH4	mg/L	8/14/1998	0001	1.190			#	-	-
	mg/L	1/25/1999	0001	1.460			#	-	-
Antimony	mg/L	8/14/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/25/1999	0001	0.0010	U		#	0.001	-
Arsenic	mg/L	8/14/1998	0001	0.0015	B		#	-	-
	mg/L	1/25/1999	0001	0.0012	B		#	-	-
Cadmium	mg/L	8/14/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/25/1999	0001	0.0010	U		#	0.001	-
Calcium	mg/L	8/14/1998	0001	137.000			#	-	-
	mg/L	1/25/1999	0001	155.000			#	-	-
Chloride	mg/L	8/14/1998	0001	422.000			#	-	-
	mg/L	1/25/1999	0001	388.000			#	-	-
Fluoride	mg/L	8/14/1998	0001	0.826			#	-	-
	mg/L	1/25/1999	0001	0.772			#	-	-
Gross Alpha	pCi/L	8/14/1998	0001	40.51	U	J	#	40.51	± 21.4
	pCi/L	1/25/1999	0001	32.53	U		#	32.53	± 15.6
Gross Beta	pCi/L	8/14/1998	0001	47.79	U		#	47.79	± 26.6
	pCi/L	1/25/1999	0001	34.22	U		#	34.22	± 19.8
Iron	mg/L	8/14/1998	0001	0.0044	B*	UJ	#	-	-
	mg/L	1/25/1999	0001	0.0030	U		#	0.003	-
Lead	mg/L	8/14/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/25/1999	0001	0.0010	U		#	0.001	-
Lead-210	pCi/L	8/14/1998	0001	0.99	U		#	0.99	± 0.57
	pCi/L	1/25/1999	0001	1.01	U		#	1.01	± 0.60
Magnesium	mg/L	8/14/1998	0001	33.200			#	-	-
	mg/L	1/25/1999	0001	37.300			#	-	-
Manganese	mg/L	8/14/1998	0001	0.112			#	-	-
	mg/L	1/25/1999	0001	0.131			#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0651
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Molybdenum	mg/L	8/14/1998	0001	0.0441	E		#	-	-
	mg/L	1/25/1999	0001	0.0474			#	-	-
Nitrate	mg/L	8/14/1998	0001	0.331	B		#	-	-
	mg/L	1/25/1999	0001	2.440			#	-	-
pH	s.u.	8/14/1998	N001	7.82			#	-	-
	s.u.	1/25/1999	N001	7.66			#	-	-
Polonium-210	pCi/L	8/14/1998	0001	0.08		U	#	0.05	± 0.08
	pCi/L	1/25/1999	0001	0.09	U		#	0.09	± 0.12
Radium-226	pCi/L	8/14/1998	0001	0.11	U		#	0.11	± 0.07
	pCi/L	1/25/1999	0001	0.20			#	0.12	± 0.08
Radium-228	pCi/L	8/14/1998	0001	0.85			#	0.5	± 0.31
	pCi/L	1/25/1999	0001	0.87			#	0.64	± 0.39
Redox Potential	mV	8/14/1998	N001	145			#	-	-
	mV	1/25/1999	N001	52			#	-	-
Selenium	mg/L	8/14/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/25/1999	0001	0.00010	U		#	0.0001	-
Sodium	mg/L	8/14/1998	0001	1120.000			#	-	-
	mg/L	1/25/1999	0001	1120.000			#	-	-
Specific Conductance	umhos/cm	8/14/1998	N001	3950			#	-	-
	umhos/cm	1/25/1999	N001	5600			#	-	-
Sulfate	mg/L	8/14/1998	0001	2100.000			#	-	-
	mg/L	1/25/1999	0001	2310.000			#	-	-
Temperature	C	8/14/1998	N001	12.3			#	-	-
	C	1/25/1999	N001	12.6			#	-	-
Thorium-230	pCi/L	8/14/1998	0001	1.3	B	U	#	-	±
	pCi/L	1/25/1999	0001	0.80	U		#	0.8	±
Turbidity	NTU	8/14/1998	N001	1.29			#	-	-
	NTU	1/25/1999	N001	1000	>		#	-	-
Uranium	mg/L	8/14/1998	0001	0.0027			#	-	-
	mg/L	1/25/1999	0001	0.0022			#	-	-
Vanadium	mg/L	8/14/1998	0001	0.0020	U		#	0.002	-
	mg/L	1/25/1999	0001	0.0010	U		#	0.001	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0651
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE100 WHERE site_code='RFN01' AND quality_assurance = TRUE AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #5/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0655
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	8/14/1998	0001	1427			#	-	-
	mg/L	8/14/1998	N001	1505			#	-	-
	mg/L	1/28/1999	0001	1424		L	#	-	-
	mg/L	1/28/1999	N001	1636		L	#	-	-
Ammonia as NH4	mg/L	8/14/1998	0001	61.400			#	-	-
	mg/L	1/28/1999	0001	32.100		L	#	-	-
Antimony	mg/L	8/14/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/28/1999	0001	0.0010	U	L	#	0.001	-
Arsenic	mg/L	8/14/1998	0001	0.0103			#	-	-
	mg/L	1/28/1999	0001	0.0216		L	#	-	-
Cadmium	mg/L	8/14/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/28/1999	0001	0.0010	U	L	#	0.001	-
Calcium	mg/L	8/14/1998	0001	113.000			#	-	-
	mg/L	1/28/1999	0001	87.500		L	#	-	-
Chloride	mg/L	8/14/1998	0001	177.000			#	-	-
	mg/L	1/28/1999	0001	133.000		L	#	-	-
Fluoride	mg/L	8/14/1998	0001	1.260			#	-	-
	mg/L	1/28/1999	0001	1.250		L	#	-	-
Gross Alpha	pCi/L	8/14/1998	0001	229.9			#	26.9	± 36.5
	pCi/L	1/28/1999	0001	179.04		JL	#	29.29	± 33.5
Gross Beta	pCi/L	8/14/1998	0001	141.3			#	25.3	± 20.7
	pCi/L	1/28/1999	0001	114.85		L	#	24.36	± 19.2
Iron	mg/L	8/14/1998	0001	14.300			#	-	-
	mg/L	1/28/1999	0001	6.230		L	#	-	-
Lead	mg/L	8/14/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/28/1999	0001	0.0010	U	L	#	0.001	-
Lead-210	pCi/L	8/14/1998	0001	0.95	U		#	0.95	± 0.56
	pCi/L	1/28/1999	0001	1.09	U	L	#	1.09	± 0.65
Magnesium	mg/L	8/14/1998	0001	108.000			#	-	-
	mg/L	1/28/1999	0001	77.700		L	#	-	-
Manganese	mg/L	8/14/1998	0001	1.100			#	-	-
	mg/L	1/28/1999	0001	0.505		L	#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0655
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Molybdenum	mg/L	8/14/1998	0001	0.121	E		#	-	-
	mg/L	1/28/1999	0001	0.0910		L	#	-	-
Nitrate	mg/L	8/14/1998	0001	0.0110	U		#	0.011	-
	mg/L	1/28/1999	0001	0.832	B	L	#	-	-
pH	s.u.	8/14/1998	N001	6.94			#	-	-
	s.u.	1/28/1999	N001	7.31		L	#	-	-
Polonium-210	pCi/L	8/14/1998	0001	0.04	U		#	0.04	± 0.04
	pCi/L	1/28/1999	0001	0.09		UL	#	0.04	± 0.07
Radium-226	pCi/L	8/14/1998	0001	0.13	U		#	0.13	± 0.07
	pCi/L	1/28/1999	0001	0.13	U	L	#	0.13	± 0.08
Radium-228	pCi/L	8/14/1998	0001	0.61	U		#	0.61	± 0.36
	pCi/L	1/28/1999	0001	0.72		L	#	0.71	± 0.43
Redox Potential	mV	8/14/1998	N001	-91			#	-	-
	mV	1/28/1999	N001	-86		L	#	-	-
Selenium	mg/L	8/14/1998	0001	0.0070			#	-	-
	mg/L	1/28/1999	0001	0.0059		L	#	-	-
Sodium	mg/L	8/14/1998	0001	648.000			#	-	-
	mg/L	1/28/1999	0001	536.000		L	#	-	-
Specific Conductance	umhos/cm	8/14/1998	N001	29			#	-	-
	umhos/cm	1/28/1999	N001	2310		L	#	-	-
Sulfate	mg/L	8/14/1998	0001	644.000	N	J	#	-	-
	mg/L	1/28/1999	0001	150.000		L	#	-	-
Temperature	C	8/14/1998	N001	19.2			#	-	-
	C	1/28/1999	N001	11.5		L	#	-	-
Thorium-230	pCi/L	8/14/1998	0001	1.2	U		#	1.2	±
	pCi/L	1/28/1999	0001	2.0	B	UL	#	-	±
Turbidity	NTU	8/14/1998	N001	11.3			#	-	-
	NTU	1/28/1999	N001	15.2		L	#	-	-
Uranium	mg/L	8/14/1998	0001	0.395			#	-	-
	mg/L	1/28/1999	0001	0.127		L	#	-	-
Vanadium	mg/L	8/14/1998	0001	0.0030	B		#	-	-
	mg/L	1/28/1999	0001	0.0083	B	L	#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0655
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE100 WHERE site_code='RFN01' AND quality_assurance = TRUE AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #5/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0657
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	8/13/1998	0001	655			#	-	-
	mg/L	8/13/1998	N001	622			#	-	-
	mg/L	1/28/1999	0001	558			#	-	-
	mg/L	1/28/1999	N001	570			#	-	-
Ammonia as NH4	mg/L	8/13/1998	0001	26.100			#	-	-
	mg/L	1/28/1999	0001	22.900			#	-	-
Antimony	mg/L	8/13/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/28/1999	0001	0.0010	U		#	0.001	-
Arsenic	mg/L	8/13/1998	0001	0.0028	B		#	-	-
	mg/L	1/28/1999	0001	0.0016	B		#	-	-
Cadmium	mg/L	8/13/1998	0001	0.0017			#	-	-
	mg/L	1/28/1999	0001	0.0010	U		#	0.001	-
Calcium	mg/L	8/13/1998	0001	156.000			#	-	-
	mg/L	1/28/1999	0001	146.000			#	-	-
Chloride	mg/L	8/13/1998	0001	63.800			#	-	-
	mg/L	1/28/1999	0001	27.100			#	-	-
Fluoride	mg/L	8/13/1998	0001	0.886			#	-	-
	mg/L	1/28/1999	0001	0.477			#	-	-
Gross Alpha	pCi/L	8/13/1998	0001	25.22			#	13.72	± 10.7
	pCi/L	1/28/1999	0001	25.44			#	18.48	± 13.3
Gross Beta	pCi/L	8/13/1998	0001	21.85			#	12.25	± 8.08
	pCi/L	1/28/1999	0001	23.33			#	22.93	± 14.3
Iron	mg/L	8/13/1998	0001	0.0040	U		#	0.004	-
	mg/L	1/28/1999	0001	0.0030	U		#	0.003	-
Lead	mg/L	8/13/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/28/1999	0001	0.0010	U		#	0.001	-
Lead-210	pCi/L	8/13/1998	0001	0.98	U		#	0.98	± 0.57
	pCi/L	1/28/1999	0001	0.99	U		#	0.99	± 0.58
Magnesium	mg/L	8/13/1998	0001	125.000			#	-	-
	mg/L	1/28/1999	0001	116.000			#	-	-
Manganese	mg/L	8/13/1998	0001	2.270			#	-	-
	mg/L	1/28/1999	0001	2.090			#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0657
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Molybdenum	mg/L	8/13/1998	0001	0.248	E		#	-	-
	mg/L	1/28/1999	0001	0.166			#	-	-
Nitrate	mg/L	8/13/1998	0001	15.400			#	-	-
	mg/L	1/28/1999	0001	14.000			#	-	-
pH	s.u.	8/13/1998	N001	7.06			#	-	-
	s.u.	1/28/1999	N001	7.28			#	-	-
Polonium-210	pCi/L	8/13/1998	0001	0.07	U		#	0.07	± 0.08
	pCi/L	1/28/1999	0001	0.11		U	#	0.06	± 0.10
Radium-226	pCi/L	8/13/1998	0001	0.13	U		#	0.13	± 0.07
	pCi/L	1/28/1999	0001	0.13	U		#	0.13	± 0.07
Radium-228	pCi/L	8/13/1998	0001	0.64	U		#	0.64	± 0.37
	pCi/L	1/28/1999	0001	0.78	U		#	0.78	± 0.45
Redox Potential	mV	8/13/1998	N001	137			#	-	-
	mV	1/28/1999	N001	86			#	-	-
Selenium	mg/L	8/13/1998	0001	0.209			#	-	-
	mg/L	1/28/1999	0001	0.174			#	-	-
Sodium	mg/L	8/13/1998	0001	267.000			#	-	-
	mg/L	1/28/1999	0001	252.000			#	-	-
Specific Conductance	umhos/cm	8/13/1998	N001	510			#	-	-
	umhos/cm	1/28/1999	N001	2550			#	-	-
Sulfate	mg/L	8/13/1998	0001	794.000	N	J	#	-	-
	mg/L	1/28/1999	0001	413.000			#	-	-
Temperature	C	8/13/1998	N001	17.6			#	-	-
	C	1/28/1999	N001	11.6			#	-	-
Thorium-230	pCi/L	8/13/1998	0001	1.2	U		#	1.2	±
	pCi/L	1/28/1999	0001	1.2	B	U	#	-	±
Turbidity	NTU	8/13/1998	N001	1.63			#	-	-
	NTU	1/28/1999	N001	3.49			#	-	-
Uranium	mg/L	8/13/1998	0001	0.0503			#	-	-
	mg/L	1/28/1999	0001	0.0482			#	-	-
Vanadium	mg/L	8/13/1998	0001	1.170			#	-	-
	mg/L	1/28/1999	0001	0.961			#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0657
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE100 WHERE site_code='RFN01' AND quality_assurance = TRUE AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #5/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0658
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	8/13/1998	0001	429			#	-	-
	mg/L	8/13/1998	N001	406			#	-	-
	mg/L	1/28/1999	0001	505			#	-	-
Ammonia as NH4	mg/L	8/13/1998	0001	283.000			#	-	-
	mg/L	1/28/1999	0001	367.000			#	-	-
Antimony	mg/L	8/13/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/28/1999	0001	0.0010	U		#	0.001	-
Arsenic	mg/L	8/13/1998	0001	0.304			#	-	-
	mg/L	1/28/1999	0001	0.0811			#	-	-
Cadmium	mg/L	8/13/1998	0001	0.0100			#	-	-
	mg/L	1/28/1999	0001	0.0075			#	-	-
Calcium	mg/L	8/13/1998	0001	486.000			#	-	-
	mg/L	1/28/1999	0001	469.000			#	-	-
Chloride	mg/L	8/13/1998	0001	141.000			#	-	-
	mg/L	1/28/1999	0001	128.000			#	-	-
Fluoride	mg/L	8/13/1998	0001	3.960			#	-	-
	mg/L	1/28/1999	0001	2.980			#	-	-
Gross Alpha	pCi/L	8/13/1998	0001	68.92			#	24.24	± 21.6
	pCi/L	1/28/1999	0001	156.47		J	#	34.61	± 35.3
Gross Beta	pCi/L	8/13/1998	0001	60.71			#	24.44	± 16.9
	pCi/L	1/28/1999	0001	103.15			#	30.01	± 22.0
Iron	mg/L	8/13/1998	0001	0.0040	U		#	0.004	-
	mg/L	1/28/1999	0001	0.597			#	-	-
Lead	mg/L	8/13/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/28/1999	0001	0.0010	U		#	0.001	-
Lead-210	pCi/L	8/13/1998	0001	1.07	U		#	1.07	± 0.63
	pCi/L	1/28/1999	0001	1.00	U		#	1	± 0.59
Magnesium	mg/L	8/13/1998	0001	46.900			#	-	-
	mg/L	1/28/1999	0001	72.100			#	-	-
Manganese	mg/L	8/13/1998	0001	2.550			#	-	-
	mg/L	1/28/1999	0001	3.000			#	-	-
Molybdenum	mg/L	8/13/1998	0001	4.340	E		#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0658
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Molybdenum	mg/L	1/28/1999	0001	6.840			#	-	-
Nitrate	mg/L	8/13/1998	0001	4.080			#	-	-
	mg/L	1/28/1999	0001	3.190			#	-	-
pH	s.u.	8/13/1998	N001	6.78			#	-	-
	s.u.	1/28/1999	N001	6.77			#	-	-
Polonium-210	pCi/L	8/13/1998	0001	1.50			#	0.04	± 0.34
	pCi/L	1/28/1999	0001	2.75			#	0.1	± 0.77
Radium-226	pCi/L	8/13/1998	0001	0.14	U		#	0.14	± 0.09
	pCi/L	1/28/1999	0001	0.15			#	0.12	± 0.08
Radium-228	pCi/L	8/13/1998	0001	0.67	U		#	0.67	± 0.40
	pCi/L	1/28/1999	0001	0.68	U		#	0.68	± 0.41
Redox Potential	mV	8/13/1998	N001	116			#	-	-
	mV	1/28/1999	N001	128			#	-	-
Selenium	mg/L	8/13/1998	0001	0.782			#	-	-
	mg/L	1/28/1999	0001	0.162			#	-	-
Sodium	mg/L	8/13/1998	0001	364.000			#	-	-
	mg/L	1/28/1999	0001	541.000			#	-	-
Specific Conductance	umhos/cm	8/13/1998	N001	3630			#	-	-
	umhos/cm	1/28/1999	N001	5980			#	-	-
Sulfate	mg/L	8/13/1998	0001	2220.000	N	J	#	-	-
	mg/L	1/28/1999	0001	2750.000			#	-	-
Temperature	C	8/13/1998	N001	18.7			#	-	-
	C	1/28/1999	N001	8.3			#	-	-
Thorium-230	pCi/L	8/13/1998	0001	1.2	U		#	1.2	±
	pCi/L	1/28/1999	0001	0.80	U		#	0.8	±
Turbidity	NTU	8/13/1998	N001	350			#	-	-
	NTU	1/28/1999	N001	1000	>		#	-	-
Uranium	mg/L	8/13/1998	0001	0.177			#	-	-
	mg/L	1/28/1999	0001	0.284			#	-	-
Vanadium	mg/L	8/13/1998	0001	25.300			#	-	-
	mg/L	1/28/1999	0001	12.900			#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0658
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE100 WHERE site_code='RFN01' AND quality_assurance = TRUE AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #5/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0659
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	8/13/1998	0001	210			#	-	-
	mg/L	8/13/1998	N001	202			#	-	-
	mg/L	1/28/1999	0001	171			#	-	-
	mg/L	1/28/1999	N001	175			#	-	-
Ammonia as NH4	mg/L	8/13/1998	0001	282.000			#	-	-
	mg/L	1/28/1999	0001	161.000			#	-	-
Antimony	mg/L	8/13/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/28/1999	0001	0.0010	U		#	0.001	-
Arsenic	mg/L	8/13/1998	0001	0.0580			#	-	-
	mg/L	1/28/1999	0001	0.0889			#	-	-
Cadmium	mg/L	8/13/1998	0001	0.0161			#	-	-
	mg/L	1/28/1999	0001	0.0113			#	-	-
Calcium	mg/L	8/13/1998	0001	578.000			#	-	-
	mg/L	1/28/1999	0001	69.400			#	-	-
Chloride	mg/L	8/13/1998	0001	152.000			#	-	-
	mg/L	1/28/1999	0001	123.000			#	-	-
Fluoride	mg/L	8/13/1998	0001	5.500			#	-	-
	mg/L	1/28/1999	0001	4.330			#	-	-
Gross Alpha	pCi/L	8/13/1998	0001	46.56			#	23.88	± 18.9
	pCi/L	1/28/1999	0001	79.40		J	#	31.78	± 26.6
Gross Beta	pCi/L	8/13/1998	0001	34.98			#	24.32	± 15.6
	pCi/L	1/28/1999	0001	31.85			#	29.44	± 18.4
Iron	mg/L	8/13/1998	0001	0.0053	B	U	#	-	-
	mg/L	1/28/1999	0001	0.0030	U		#	0.003	-
Lead	mg/L	8/13/1998	0001	0.0010	U		#	0.001	-
	mg/L	1/28/1999	0001	0.0010	U		#	0.001	-
Lead-210	pCi/L	8/13/1998	0001	1.03	U		#	1.03	± 0.59
	pCi/L	1/28/1999	0001	0.98	U		#	0.98	± 0.58
Magnesium	mg/L	8/13/1998	0001	50.100			#	-	-
	mg/L	1/28/1999	0001	54.100			#	-	-
Manganese	mg/L	8/13/1998	0001	4.480			#	-	-
	mg/L	1/28/1999	0001	4.550			#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0659
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Molybdenum	mg/L	8/13/1998	0001	6.410	E		#	-	-
	mg/L	1/28/1999	0001	5.430			#	-	-
Nitrate	mg/L	8/13/1998	0001	163.000			#	-	-
	mg/L	1/28/1999	0001	324.000			#	-	-
pH	s.u.	8/13/1998	N001	7.05			#	-	-
	s.u.	1/28/1999	N001	6.54			#	-	-
Polonium-210	pCi/L	8/13/1998	0001	0.09	U		#	0.09	± 0.09
	pCi/L	1/28/1999	0001	0.07	U		#	0.07	± 0.09
Radium-226	pCi/L	8/13/1998	0001	0.16	U		#	0.16	± 0.09
	pCi/L	1/28/1999	0001	0.16	U		#	0.16	± 0.09
Radium-228	pCi/L	8/13/1998	0001	0.72	U		#	0.72	± 0.43
	pCi/L	1/28/1999	0001	3.64			#	0.73	± 0.51
Redox Potential	mV	8/13/1998	N001	173			#	-	-
	mV	1/28/1999	N001	225			#	-	-
Selenium	mg/L	8/13/1998	0001	0.122			#	-	-
	mg/L	1/28/1999	0001	0.0918			#	-	-
Sodium	mg/L	8/13/1998	0001	343.000			#	-	-
	mg/L	1/28/1999	0001	336.000			#	-	-
Specific Conductance	umhos/cm	8/13/1998	N001	4280			#	-	-
	umhos/cm	1/28/1999	N001	4860			#	-	-
Sulfate	mg/L	8/13/1998	0001	2390.000	N	J	#	-	-
	mg/L	1/28/1999	0001	2050.000			#	-	-
Temperature	C	8/13/1998	N001	19.4			#	-	-
	C	1/28/1999	N001	5.9			#	-	-
Thorium-230	pCi/L	8/13/1998	0001	1.2	U		#	1.2	±
	pCi/L	1/28/1999	0001	0.80	U		#	0.8	±
Turbidity	NTU	8/13/1998	N001	1.49			#	-	-
	NTU	1/28/1999	N001	24.3			#	-	-
Uranium	mg/L	8/13/1998	0001	0.0955			#	-	-
	mg/L	1/28/1999	0001	0.126			#	-	-
Vanadium	mg/L	8/13/1998	0001	3.880			#	-	-
	mg/L	1/28/1999	0001	5.200			#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFN01, RIFLE (NEW)
LOCATION: 0659
REPORT DATE: 7/27/1999 4:06 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE100 WHERE site_code='RFN01' AND quality_assurance = TRUE AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #5/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = *Filtered sample (0.45 μm).* N00X = *Unfiltered sample.* X = *replicate number.*

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z *Laboratory defined (USEPA CLP organic) qualifier, see case narrative.*
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 0291
REPORT DATE: 7/27/1999 4:33 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	5/21/1998	N001	633			#	-	-
	mg/L	11/30/1998	0001	552			#	-	-
	mg/L	11/30/1998	N001	551			#	-	-
Ammonia as NH4	mg/L	5/21/1998	0001	0.0134	B	U	#	-	-
	mg/L	11/30/1998	0001	0.0138	B		#	-	-
Antimony	mg/L	5/21/1998	0001	0.0010	U		#	0.001	-
	mg/L	11/30/1998	0001	0.0010	U		#	0.001	-
Arsenic	mg/L	5/21/1998	0001	0.0010	U		#	0.001	-
	mg/L	11/30/1998	0001	0.0010	U		#	0.001	-
Cadmium	mg/L	5/21/1998	0001	0.0010	U		#	0.001	-
	mg/L	11/30/1998	0001	0.0010	U		#	0.001	-
Calcium	mg/L	5/21/1998	0001	108.000			#	-	-
	mg/L	11/30/1998	0001	95.100			#	-	-
Chloride	mg/L	5/21/1998	0001	262.000			#	-	-
	mg/L	11/30/1998	0001	218.000			#	-	-
Fluoride	mg/L	5/21/1998	0001	1.100			#	-	-
	mg/L	11/30/1998	0001	1.090			#	-	-
Gross Alpha	pCi/L	5/21/1998	0001	46.64			#	20	± 16.5
	pCi/L	11/30/1998	0001	37.71			#	27.06	± 19.6
Gross Beta	pCi/L	5/21/1998	0001	22.06	U		#	22.06	± 13.2
	pCi/L	11/30/1998	0001	25.66	U		#	25.66	± 15.6
Iron	mg/L	5/21/1998	0001	0.0034	B		#	-	-
	mg/L	11/30/1998	0001	0.0078	B	U	#	-	-
Lead	mg/L	5/21/1998	0001	0.0010	U		#	0.001	-
	mg/L	11/30/1998	0001	0.0010	U		#	0.001	-
Lead-210	pCi/L	5/21/1998	0001	0.98	U		#	0.98	± 0.59
	pCi/L	11/30/1998	0001	1.32	U		#	1.32	± 0.78
Magnesium	mg/L	5/21/1998	0001	107.000			#	-	-
	mg/L	11/30/1998	0001	95.400			#	-	-
Manganese	mg/L	5/21/1998	0001	0.554			#	-	-
	mg/L	11/30/1998	0001	0.511			#	-	-
Molybdenum	mg/L	5/21/1998	0001	0.0317			#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 0291
REPORT DATE: 7/27/1999 4:33 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Molybdenum	mg/L	11/30/1998	0001	0.0345			#	-	-
Nitrate	mg/L	5/21/1998	0001	2.620			#	-	-
	mg/L	11/30/1998	0001	1.580		J	#	-	-
pH	s.u.	5/21/1998	N001	6.97			#	-	-
	s.u.	11/30/1998	N001	7.31			#	-	-
Polonium-210	pCi/L	5/21/1998	0001	0.07	U		#	0.07	± 0.08
	pCi/L	11/30/1998	0001	0.07	U		#	0.07	± 0.09
Radium-226	pCi/L	5/21/1998	0001	0.11			#	0.02	± 0.05
	pCi/L	11/30/1998	0001	0.11	U		#	0.11	± 0.06
Radium-228	pCi/L	5/21/1998	0001	0.8	U		#	0.8	± 0.40
	pCi/L	11/30/1998	0001	0.69	U		#	0.69	± 0.41
Redox Potential	mV	5/21/1998	N001	86			#	-	-
	mV	11/30/1998	N001	105			#	-	-
Selenium	mg/L	5/21/1998	0001	0.0074			#	-	-
	mg/L	11/30/1998	0001	0.0057			#	-	-
Sodium	mg/L	5/21/1998	0001	550.000			#	-	-
	mg/L	11/30/1998	0001	499.000			#	-	-
Specific Conductance	umhos/cm	5/21/1998	N001	2770			#	-	-
	umhos/cm	11/30/1998	N001	3100			#	-	-
Sulfate	mg/L	5/21/1998	0001	992.000			#	-	-
	mg/L	11/30/1998	0001	852.000			#	-	-
Temperature	C	5/21/1998	N001	11.1			#	-	-
	C	11/30/1998	N001	12.2			#	-	-
Thorium-230	pCi/L	5/21/1998	0001	0.80	U		#	0.8	±
	pCi/L	11/30/1998	0001	1.6	U		#	1.6	±
Turbidity	NTU	5/21/1998	N001	10.0			#	-	-
	NTU	11/30/1998	N001	6.76			#	-	-
Uranium	mg/L	5/21/1998	0001	0.0500			#	-	-
	mg/L	11/30/1998	0001	0.0398			#	-	-
Vanadium	mg/L	5/21/1998	0001	0.0010	U		#	0.001	-
	mg/L	11/30/1998	0001	0.0013	B		#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 0291
REPORT DATE: 7/27/1999 4:33 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE100 WHERE site_code='RFO01' AND location_code in('0291','0292','0597','0598','0606','0620','0621','0622','0658','0659','0660') AND quality_assurance = TRUE AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #5/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 0292
REPORT DATE: 7/27/1999 4:33 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	5/21/1998	N001	608			#	-	-
	mg/L	11/30/1998	0001	532			#	-	-
	mg/L	11/30/1998	N001	528			#	-	-
Ammonia as NH4	mg/L	5/21/1998	0001	0.0328	B		#	-	-
	mg/L	11/30/1998	0001	0.0278	B		#	-	-
Antimony	mg/L	5/21/1998	0001	0.0010	U		#	0.001	-
	mg/L	11/30/1998	0001	0.0010	U		#	0.001	-
Arsenic	mg/L	5/21/1998	0001	0.0010	U		#	0.001	-
	mg/L	11/30/1998	0001	0.0010	U		#	0.001	-
Cadmium	mg/L	5/21/1998	0001	0.0010	U		#	0.001	-
	mg/L	11/30/1998	0001	0.0010	U		#	0.001	-
Calcium	mg/L	5/21/1998	0001	118.000			#	-	-
	mg/L	11/30/1998	0001	94.500			#	-	-
Chloride	mg/L	5/21/1998	0001	274.000			#	-	-
	mg/L	11/30/1998	0001	210.000			#	-	-
Fluoride	mg/L	5/21/1998	0001	0.930			#	-	-
	mg/L	11/30/1998	0001	1.060			#	-	-
Gross Alpha	pCi/L	5/21/1998	0001	31.84			#	20.69	± 15.2
	pCi/L	11/30/1998	0001	47.22			#	26.43	± 20.5
Gross Beta	pCi/L	5/21/1998	0001	22.02	U		#	22.02	± 12.9
	pCi/L	11/30/1998	0001	25.70	U		#	25.7	± 15.1
Iron	mg/L	5/21/1998	0001	0.0632			#	-	-
	mg/L	11/30/1998	0001	0.0183	B	U	#	-	-
Lead	mg/L	5/21/1998	0001	0.0010	U		#	0.001	-
	mg/L	11/30/1998	0001	0.0010	U		#	0.001	-
Lead-210	pCi/L	5/21/1998	0001	0.95	U		#	0.95	± 0.56
	pCi/L	11/30/1998	0001	1.31	U		#	1.31	± 0.78
Magnesium	mg/L	5/21/1998	0001	111.000			#	-	-
	mg/L	11/30/1998	0001	88.100			#	-	-
Manganese	mg/L	5/21/1998	0001	0.377			#	-	-
	mg/L	11/30/1998	0001	0.434			#	-	-
Molybdenum	mg/L	5/21/1998	0001	0.0312			#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 0292
REPORT DATE: 7/27/1999 4:33 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Molybdenum	mg/L	11/30/1998	0001	0.0314			#	-	-
Nitrate	mg/L	5/21/1998	0001	2.330			#	-	-
	mg/L	11/30/1998	0001	2.480		J	#	-	-
pH	s.u.	5/21/1998	N001	6.89			#	-	-
	s.u.	11/30/1998	N001	7.37			#	-	-
Polonium-210	pCi/L	5/21/1998	0001	0.06	U		#	0.06	± 0.08
	pCi/L	11/30/1998	0001	0.09		U	#	0.07	± 0.10
Radium-226	pCi/L	5/21/1998	0001	0.14			#	0.01	± 0.06
	pCi/L	11/30/1998	0001	0.11	U		#	0.11	± 0.07
Radium-228	pCi/L	5/21/1998	0001	0.4		U	#	0.4	± 0.30
	pCi/L	11/30/1998	0001	0.69	U		#	0.69	± 0.41
Redox Potential	mV	5/21/1998	N001	55			#	-	-
	mV	11/30/1998	N001	101			#	-	-
Selenium	mg/L	5/21/1998	0001	0.0128			#	-	-
	mg/L	11/30/1998	0001	0.0046	B		#	-	-
Sodium	mg/L	5/21/1998	0001	563.000			#	-	-
	mg/L	11/30/1998	0001	486.000			#	-	-
Specific Conductance	umhos/cm	5/21/1998	N001	3380			#	-	-
	umhos/cm	11/30/1998	N001	2990			#	-	-
Sulfate	mg/L	5/21/1998	0001	1040.000			#	-	-
	mg/L	11/30/1998	0001	823.000			#	-	-
Temperature	C	5/21/1998	N001	9.7			#	-	-
	C	11/30/1998	N001	12.2			#	-	-
Thorium-230	pCi/L	5/21/1998	0001	0.80	U		#	0.8	±
	pCi/L	11/30/1998	0001	1.6	U		#	1.6	±
Turbidity	NTU	5/21/1998	N001	9.67			#	-	-
	NTU	11/30/1998	N001	7.98			#	-	-
Uranium	mg/L	5/21/1998	0001	0.0524			#	-	-
	mg/L	11/30/1998	0001	0.0340			#	-	-
Vanadium	mg/L	5/21/1998	0001	0.0010	U		#	0.001	-
	mg/L	11/30/1998	0001	0.0016	B		#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 0292
REPORT DATE: 7/27/1999 4:33 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE100 WHERE site_code='RFO01' AND location_code in('0291','0292','0597','0598','0606','0620','0621','0622','0658','0659','0660') AND quality_assurance = TRUE AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #5/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 0597
REPORT DATE: 7/27/1999 4:33 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	5/21/1998	N001	557			#	-	-
	mg/L	11/24/1998	0001	482			#	-	-
	mg/L	11/24/1998	N001	481			#	-	-
Ammonia as NH4	mg/L	5/21/1998	0001	0.610			#	-	-
	mg/L	11/24/1998	0001	0.132			#	-	-
Antimony	mg/L	5/21/1998	0001	0.0010	U		#	0.001	-
	mg/L	11/24/1998	0001	0.0010	U		#	0.001	-
Arsenic	mg/L	5/21/1998	0001	0.0019	B		#	-	-
	mg/L	11/24/1998	0001	0.0019	B		#	-	-
Cadmium	mg/L	5/21/1998	0001	0.0010	U		#	0.001	-
	mg/L	11/24/1998	0001	0.0010	U		#	0.001	-
Calcium	mg/L	5/21/1998	0001	189.000			#	-	-
	mg/L	11/24/1998	0001	124.000			#	-	-
Chloride	mg/L	5/21/1998	0001	194.000			#	-	-
	mg/L	11/24/1998	0001	67.600			#	-	-
Fluoride	mg/L	5/21/1998	0001	0.422			#	-	-
	mg/L	11/24/1998	0001	0.545			#	-	-
Gross Alpha	pCi/L	5/21/1998	0001	44.00			#	21.87	± 17.2
	pCi/L	11/24/1998	0001	14.86	U		#	14.86	± 9.29
Gross Beta	pCi/L	5/21/1998	0001	27.34	U		#	27.34	± 16.6
	pCi/L	11/24/1998	0001	18.95			#	12.83	± 8.38
Iron	mg/L	5/21/1998	0001	3.030			#	-	-
	mg/L	11/24/1998	0001	1.480			#	-	-
Lead	mg/L	5/21/1998	0001	0.0010	U		#	0.001	-
	mg/L	11/24/1998	0001	0.0010	U		#	0.001	-
Lead-210	pCi/L	5/21/1998	0001	0.98	U		#	0.98	± 0.57
	pCi/L	11/24/1998	0001	1.28	U		#	1.28	± 0.75
Magnesium	mg/L	5/21/1998	0001	159.000			#	-	-
	mg/L	11/24/1998	0001	104.000			#	-	-
Manganese	mg/L	5/21/1998	0001	3.660			#	-	-
	mg/L	11/24/1998	0001	2.120			#	-	-
Molybdenum	mg/L	5/21/1998	0001	0.0101			#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 0597
REPORT DATE: 7/27/1999 4:33 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Molybdenum	mg/L	11/24/1998	0001	0.0109			#	-	-
Nitrate	mg/L	5/21/1998	0001	0.0677	B	U	#	-	-
	mg/L	11/24/1998	0001	0.665	B	J	#	-	-
pH	s.u.	5/21/1998	N001	6.82			#	-	-
	s.u.	11/24/1998	N001	7.04			#	-	-
Polonium-210	pCi/L	5/21/1998	0001	0.11		U	#	0.09	± 0.13
	pCi/L	11/24/1998	0001	0.10		U	#	0.06	± 0.10
Radium-226	pCi/L	5/21/1998	0001	0.17			#	0.02	± 0.07
	pCi/L	11/24/1998	0001	0.12			#	0.12	± 0.07
Radium-228	pCi/L	5/21/1998	0001	0.8	U		#	0.8	± 0.50
	pCi/L	11/24/1998	0001	0.74	U		#	0.74	± 0.44
Redox Potential	mV	5/21/1998	N001	-293			#	-	-
	mV	11/24/1998	N001	-253			#	-	-
Selenium	mg/L	5/21/1998	0001	0.0010	U		#	0.001	-
	mg/L	11/24/1998	0001	0.0010	U		#	0.001	-
Sodium	mg/L	5/21/1998	0001	378.000			#	-	-
	mg/L	11/24/1998	0001	164.000			#	-	-
Specific Conductance	umhos/cm	5/21/1998	N001	2840			#	-	-
	umhos/cm	11/24/1998	N001	1866			#	-	-
Sulfate	mg/L	5/21/1998	0001	1190.000			#	-	-
	mg/L	11/24/1998	0001	498.000			#	-	-
Temperature	C	5/21/1998	N001	9.7			#	-	-
	C	11/24/1998	N001	12.0			#	-	-
Thorium-230	pCi/L	5/21/1998	0001	0.80	U		#	0.8	±
	pCi/L	11/24/1998	0001	1.6	U		#	1.6	±
Turbidity	NTU	5/21/1998	N001	3.47			#	-	-
	NTU	11/24/1998	N001	1.64			#	-	-
Uranium	mg/L	5/21/1998	0001	0.0443			#	-	-
	mg/L	11/24/1998	0001	0.0203			#	-	-
Vanadium	mg/L	5/21/1998	0001	0.0010	U		#	0.001	-
	mg/L	11/24/1998	0001	0.0010	U		#	0.001	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 0597
REPORT DATE: 7/27/1999 4:33 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE100 WHERE site_code='RFO01' AND location_code in('0291','0292','0597','0598','0606','0620','0621','0622','0658','0659','0660') AND quality_assurance = TRUE AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #5/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 0598
REPORT DATE: 7/27/1999 4:33 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	5/21/1998	N001	391			#	-	-
	mg/L	11/24/1998	0001	471			#	-	-
	mg/L	11/24/1998	N001	480			#	-	-
Ammonia as NH4	mg/L	5/21/1998	0001	0.448			#	-	-
	mg/L	11/24/1998	0001	0.143			#	-	-
Antimony	mg/L	5/21/1998	0001	0.0010	U		#	0.001	-
	mg/L	11/24/1998	0001	0.0010	U		#	0.001	-
Arsenic	mg/L	5/21/1998	0001	0.0011	B		#	-	-
	mg/L	11/24/1998	0001	0.0018	B		#	-	-
Cadmium	mg/L	5/21/1998	0001	0.0010	U		#	0.001	-
	mg/L	11/24/1998	0001	0.0010	U		#	0.001	-
Calcium	mg/L	5/21/1998	0001	113.000			#	-	-
	mg/L	11/24/1998	0001	147.000			#	-	-
Chloride	mg/L	5/21/1998	0001	137.000			#	-	-
	mg/L	11/24/1998	0001	66.000			#	-	-
Fluoride	mg/L	5/21/1998	0001	0.571			#	-	-
	mg/L	11/24/1998	0001	0.513			#	-	-
Gross Alpha	pCi/L	5/21/1998	0001	30.46		J	#	11.59	± 9.87
	pCi/L	11/24/1998	0001	16.75			#	15.94	± 10.8
Gross Beta	pCi/L	5/21/1998	0001	28.61			#	11.12	± 7.65
	pCi/L	11/24/1998	0001	13.42			#	12.92	± 8.12
Iron	mg/L	5/21/1998	0001	0.704			#	-	-
	mg/L	11/24/1998	0001	0.980			#	-	-
Lead	mg/L	5/21/1998	0001	0.0010	U		#	0.001	-
	mg/L	11/24/1998	0001	0.0012	B		#	-	-
Lead-210	pCi/L	5/21/1998	0001	0.96	U		#	0.96	± 0.55
	pCi/L	11/24/1998	0001	1.25	U		#	1.25	± 0.73
Magnesium	mg/L	5/21/1998	0001	93.700			#	-	-
	mg/L	11/24/1998	0001	123.000			#	-	-
Manganese	mg/L	5/21/1998	0001	2.060			#	-	-
	mg/L	11/24/1998	0001	2.520			#	-	-
Molybdenum	mg/L	5/21/1998	0001	0.0100			#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 0598
REPORT DATE: 7/27/1999 4:33 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Molybdenum	mg/L	11/24/1998	0001	0.0099	B		#	-	-
Nitrate	mg/L	5/21/1998	0001	0.0654	B	U	#	-	-
	mg/L	11/24/1998	0001	0.0110	U	J	#	0.011	-
pH	s.u.	5/21/1998	N001	7.01			#	-	-
	s.u.	11/24/1998	N001	7.11			#	-	-
Polonium-210	pCi/L	5/21/1998	0001	0.18		U	#	0.08	± 0.15
	pCi/L	11/24/1998	0001	0.18			#	0.06	± 0.12
Radium-226	pCi/L	5/21/1998	0001	0.11	U		#	0.11	± 0.06
	pCi/L	11/24/1998	0001	0.11	U		#	0.11	± 0.06
Radium-228	pCi/L	5/21/1998	0001	0.65	U		#	0.65	± 0.38
	pCi/L	11/24/1998	0001	0.70	U		#	0.7	± 0.41
Redox Potential	mV	5/21/1998	N001	-231			#	-	-
	mV	11/24/1998	N001	-45			#	-	-
Selenium	mg/L	5/21/1998	0001	0.0010	U		#	0.001	-
	mg/L	11/24/1998	0001	0.0010	U		#	0.001	-
Sodium	mg/L	5/21/1998	0001	250.000			#	-	-
	mg/L	11/24/1998	0001	166.000			#	-	-
Specific Conductance	umhos/cm	5/21/1998	N001	2030			#	-	-
	umhos/cm	11/24/1998	N001	2060			#	-	-
Sulfate	mg/L	5/21/1998	0001	673.000			#	-	-
	mg/L	11/24/1998	0001	640.000			#	-	-
Temperature	C	5/21/1998	N001	9.2			#	-	-
	C	11/24/1998	N001	12.6			#	-	-
Thorium-230	pCi/L	5/21/1998	0001	0.80	U		#	0.8	±
	pCi/L	11/24/1998	0001	1.6	U		#	1.6	±
Turbidity	NTU	5/21/1998	N001	8.40			#	-	-
	NTU	11/24/1998	N001	2.97			#	-	-
Uranium	mg/L	5/21/1998	0001	0.0216			#	-	-
	mg/L	11/24/1998	0001	0.0208			#	-	-
Vanadium	mg/L	5/21/1998	0001	0.0010	U		#	0.001	-
	mg/L	11/24/1998	0001	0.0010	U		#	0.001	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 0598
REPORT DATE: 7/27/1999 4:33 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE100 WHERE site_code='RFO01' AND location_code in('0291','0292','0597','0598','0606','0620','0621','0622','0658','0659','0660') AND quality_assurance = TRUE AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #5/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 0606 RESERVED FOR TMONKS
REPORT DATE: 7/27/1999 4:33 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	5/21/1998	N001	645			#	-	-
Ammonia as NH4	mg/L	5/21/1998	0001	0.0109	B	U	#	-	-
Antimony	mg/L	5/21/1998	0001	0.0010	U		#	0.001	-
Arsenic	mg/L	5/21/1998	0001	0.0010	U		#	0.001	-
Cadmium	mg/L	5/21/1998	0001	0.0010	U		#	0.001	-
Calcium	mg/L	5/21/1998	0001	134.000			#	-	-
Chloride	mg/L	5/21/1998	0001	263.000			#	-	-
Fluoride	mg/L	5/21/1998	0001	0.934			#	-	-
Gross Alpha	pCi/L	5/21/1998	0001	39.39			#	19.88	± 15.6
Gross Beta	pCi/L	5/21/1998	0001	22.01	U		#	22.01	± 13.1
Iron	mg/L	5/21/1998	0001	0.131			#	-	-
Lead	mg/L	5/21/1998	0001	0.0010	U		#	0.001	-
Lead-210	pCi/L	5/21/1998	0001	1.03	U		#	1.03	± 0.61
Magnesium	mg/L	5/21/1998	0001	87.900			#	-	-
Manganese	mg/L	5/21/1998	0001	0.0492			#	-	-
Molybdenum	mg/L	5/21/1998	0001	0.0272			#	-	-
Nitrate	mg/L	5/21/1998	0001	2.250			#	-	-
pH	s.u.	5/21/1998	N001	6.93			#	-	-
Polonium-210	pCi/L	5/21/1998	0001	0.06	U		#	0.06	± 0.07
Radium-226	pCi/L	5/21/1998	0001	0.04		U	#	0.02	± 0.03
Radium-228	pCi/L	5/21/1998	0001	0.7	U		#	0.7	± 0.30
Redox Potential	mV	5/21/1998	N001	67			#	-	-
Selenium	mg/L	5/21/1998	0001	0.0086			#	-	-
Sodium	mg/L	5/21/1998	0001	536.000			#	-	-
Specific Conductance	umhos/cm	5/21/1998	N001	2840			#	-	-
Sulfate	mg/L	5/21/1998	0001	954.000			#	-	-
Temperature	C	5/21/1998	N001	9.8			#	-	-
Thorium-230	pCi/L	5/21/1998	0001	0.80	U		#	0.8	±
Turbidity	NTU	5/21/1998	N001	2.02			#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 0606 RESERVED FOR TMONKS
REPORT DATE: 7/27/1999 4:33 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Uranium	mg/L	5/21/1998	0001	0.0429			#	-	-
Vanadium	mg/L	5/21/1998	0001	0.0010	U		#	0.001	-

RECORDS: SELECTED FROM USEE100 WHERE site_code='RFO01' AND location_code in('0291','0292','0597','0598','0606','0620','0621','0622','0658','0659','0660') AND quality_assurance = TRUE AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #5/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 0620
REPORT DATE: 7/27/1999 4:33 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	5/26/1998	N001	298			#	-	-
	mg/L	11/24/1998	0001	293			#	-	-
	mg/L	11/24/1998	N001	283			#	-	-
Ammonia as NH4	mg/L	5/26/1998	0001	0.217	N		#	-	-
	mg/L	11/24/1998	0001	0.126			#	-	-
Antimony	mg/L	5/26/1998	0001	0.0010	U		#	0.001	-
	mg/L	11/24/1998	0001	0.0010	U		#	0.001	-
Arsenic	mg/L	5/26/1998	0001	0.0010	U		#	0.001	-
	mg/L	11/24/1998	0001	0.0010	U		#	0.001	-
Cadmium	mg/L	5/26/1998	0001	0.0010	U		#	0.001	-
	mg/L	11/24/1998	0001	0.0010	U		#	0.001	-
Calcium	mg/L	5/26/1998	0001	185.000			#	-	-
	mg/L	11/24/1998	0001	281.000			#	-	-
Chloride	mg/L	5/26/1998	0001	291.000			#	-	-
	mg/L	11/24/1998	0001	407.000			#	-	-
Fluoride	mg/L	5/26/1998	0001	0.272			#	-	-
	mg/L	11/24/1998	0001	0.237			#	-	-
Gross Alpha	pCi/L	5/26/1998	0001	27.49		J	#	19.3	± 13.9
	pCi/L	11/24/1998	0001	31.26	U		#	31.26	± 18.4
Gross Beta	pCi/L	5/26/1998	0001	21.93	U		#	21.93	± 12.4
	pCi/L	11/24/1998	0001	25.69	U		#	25.69	± 16.0
Iron	mg/L	5/26/1998	0001	0.186			#	-	-
	mg/L	11/24/1998	0001	0.0840			#	-	-
Lead	mg/L	5/26/1998	0001	0.0010	U		#	0.001	-
	mg/L	11/24/1998	0001	0.0010	U		#	0.001	-
Lead-210	pCi/L	5/26/1998	0001	0.93	U		#	0.93	± 0.55
	pCi/L	11/24/1998	0001	1.26	U		#	1.26	± 0.74
Magnesium	mg/L	5/26/1998	0001	78.700			#	-	-
	mg/L	11/24/1998	0001	117.000			#	-	-
Manganese	mg/L	5/26/1998	0001	0.653			#	-	-
	mg/L	11/24/1998	0001	1.040			#	-	-
Molybdenum	mg/L	5/26/1998	0001	0.0133			#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 0620
REPORT DATE: 7/27/1999 4:33 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Molybdenum	mg/L	11/24/1998	0001	0.0102			#	-	-
Nitrate	mg/L	5/26/1998	0001	0.103	B	U	#	-	-
	mg/L	11/24/1998	0001	0.0617	B	UJ	#	-	-
pH	s.u.	5/26/1998	N001	7.34			#	-	-
	s.u.	11/24/1998	N001	7.04			#	-	-
Polonium-210	pCi/L	5/26/1998	0001	0.07		U	#	0.06	± 0.09
	pCi/L	11/24/1998	0001	0.08		U	#	0.07	± 0.09
Radium-226	pCi/L	5/26/1998	0001	0.17			#	0.1	± 0.07
	pCi/L	11/24/1998	0001	0.14			#	0.12	± 0.08
Radium-228	pCi/L	5/26/1998	0001	0.69	U		#	0.69	± 0.40
	pCi/L	11/24/1998	0001	0.75	U		#	0.75	± 0.44
Redox Potential	mV	5/26/1998	N001	88			#	-	-
	mV	11/24/1998	N001	-21			#	-	-
Selenium	mg/L	5/26/1998	0001	0.0010	U		#	0.001	-
	mg/L	11/24/1998	0001	0.0010	U		#	0.001	-
Sodium	mg/L	5/26/1998	0001	469.000			#	-	-
	mg/L	11/24/1998	0001	487.000			#	-	-
Specific Conductance	umhos/cm	5/26/1998	N001	3420			#	-	-
	umhos/cm	11/24/1998	N001	3780			#	-	-
Sulfate	mg/L	5/26/1998	0001	1120.000			#	-	-
	mg/L	11/24/1998	0001	1350.000			#	-	-
Temperature	C	5/26/1998	N001	11.0			#	-	-
	C	11/24/1998	N001	11.6			#	-	-
Thorium-230	pCi/L	5/26/1998	0001	0.80	U		#	0.8	±
	pCi/L	11/24/1998	0001	1.6	U		#	1.6	±
Turbidity	NTU	5/26/1998	N001	8.29			#	-	-
Uranium	mg/L	5/26/1998	0001	0.0244			#	-	-
	mg/L	11/24/1998	0001	0.0222			#	-	-
Vanadium	mg/L	5/26/1998	0001	0.0014	B		#	-	-
	mg/L	11/24/1998	0001	0.0010	U		#	0.001	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 0620
REPORT DATE: 7/27/1999 4:33 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE100 WHERE site_code='RFO01' AND location_code in('0291','0292','0597','0598','0606','0620','0621','0622','0658','0659','0660') AND quality_assurance = TRUE AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #5/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 0621
REPORT DATE: 7/27/1999 4:33 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	5/20/1998	N001	343		L	#	-	-
	mg/L	11/24/1998	0001	342		L	#	-	-
	mg/L	11/24/1998	N001	373		L	#	-	-
Ammonia as NH4	mg/L	5/20/1998	0001	0.285	N	L	#	-	-
	mg/L	11/24/1998	0001	0.188		L	#	-	-
Antimony	mg/L	5/20/1998	0001	0.0010	U	L	#	0.001	-
	mg/L	11/24/1998	0001	0.0010	U	L	#	0.001	-
Arsenic	mg/L	5/20/1998	0001	0.0062		L	#	-	-
	mg/L	11/24/1998	0001	0.0050		L	#	-	-
Cadmium	mg/L	5/20/1998	0001	0.0010	U	L	#	0.001	-
	mg/L	11/24/1998	0001	0.0010	U	L	#	0.001	-
Calcium	mg/L	5/20/1998	0001	8.930		L	#	-	-
	mg/L	11/24/1998	0001	8.640		L	#	-	-
Chloride	mg/L	5/20/1998	0001	855.000		L	#	-	-
	mg/L	11/24/1998	0001	121.000		L	#	-	-
Fluoride	mg/L	5/20/1998	0001	2.840		L	#	-	-
	mg/L	11/24/1998	0001	3.110		L	#	-	-
Gross Alpha	pCi/L	5/20/1998	0001	20.29		JL	#	16.37	± 11.4
	pCi/L	11/24/1998	0001	25.91	U	L	#	25.91	± 16.8
Gross Beta	pCi/L	5/20/1998	0001	15.80	U	L	#	15.8	± 9.04
	pCi/L	11/24/1998	0001	25.51	U	L	#	25.51	± 15.1
Iron	mg/L	5/20/1998	0001	0.0560		L	#	-	-
	mg/L	11/24/1998	0001	0.0194	B	UL	#	-	-
Lead	mg/L	5/20/1998	0001	0.0010	U	L	#	0.001	-
	mg/L	11/24/1998	0001	0.0010	U	L	#	0.001	-
Lead-210	pCi/L	5/20/1998	0001	0.87	U	L	#	0.87	± 0.50
	pCi/L	11/24/1998	0001	1.30	U	L	#	1.3	± 0.77
Magnesium	mg/L	5/20/1998	0001	2.460		L	#	-	-
	mg/L	11/24/1998	0001	2.380		L	#	-	-
Manganese	mg/L	5/20/1998	0001	0.0044	B	L	#	-	-
	mg/L	11/24/1998	0001	0.0065	B	L	#	-	-
Molybdenum	mg/L	5/20/1998	0001	0.218		L	#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 0621
REPORT DATE: 7/27/1999 4:33 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Molybdenum	mg/L	11/24/1998	0001	0.219		L	#	-	-
Nitrate	mg/L	5/20/1998	0001	0.674	B	L	#	-	-
	mg/L	11/24/1998	0001	0.350	B	JL	#	-	-
pH	s.u.	5/20/1998	N001	8.52		L	#	-	-
	s.u.	11/24/1998	N001	8.50		L	#	-	-
Polonium-210	pCi/L	5/20/1998	0001	0.13	U	L	#	0.13	± -0.13
	pCi/L	11/24/1998	0001	0.16		L	#	0.03	± 0.08
Radium-226	pCi/L	5/20/1998	0001	0.35		L	#	0.1	± 0.08
	pCi/L	11/24/1998	0001	0.14		L	#	0.12	± 0.08
Radium-228	pCi/L	5/20/1998	0001	0.66	U	L	#	0.66	± 0.39
	pCi/L	11/24/1998	0001	0.75	U	L	#	0.75	± 0.45
Redox Potential	mV	5/20/1998	N001	1		L	#	-	-
	mV	11/24/1998	N001	-65		L	#	-	-
Selenium	mg/L	5/20/1998	0001	0.0010	U	L	#	0.001	-
	mg/L	11/24/1998	0001	0.0010	U	L	#	0.001	-
Sodium	mg/L	5/20/1998	0001	661.000		L	#	-	-
	mg/L	11/24/1998	0001	646.000		L	#	-	-
Specific Conductance	umhos/cm	5/20/1998	N001	3700		L	#	-	-
	umhos/cm	11/24/1998	N001	2890		L	#	-	-
Sulfate	mg/L	5/20/1998	0001	34.500		L	#	-	-
	mg/L	11/24/1998	0001	33.700		L	#	-	-
Temperature	C	5/20/1998	N001	13.1		L	#	-	-
	C	11/24/1998	N001	11.6		L	#	-	-
Thorium-230	pCi/L	5/20/1998	0001	0.80	U	L	#	0.8	±
	pCi/L	11/24/1998	0001	1.6	U	L	#	1.6	±
Turbidity	NTU	5/20/1998	N001	181		L	#	-	-
Uranium	mg/L	5/20/1998	0001	0.0026		L	#	-	-
	mg/L	11/24/1998	0001	0.0021		L	#	-	-
Vanadium	mg/L	5/20/1998	0001	0.0010	U	L	#	0.001	-
	mg/L	11/24/1998	0001	0.0010	U	L	#	0.001	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 0621
REPORT DATE: 7/27/1999 4:33 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE100 WHERE site_code='RFO01' AND location_code in('0291','0292','0597','0598','0606','0620','0621','0622','0658','0659','0660') AND quality_assurance = TRUE AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #5/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFO01, RIFLE (OLD)
.LOCATION: 0622
REPORT DATE: 7/27/1999 4:33 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	5/26/1998	N001	403			#	-	-
Ammonia as NH4	mg/L	5/26/1998	0001	0.300	N		#	-	-
Antimony	mg/L	5/26/1998	0001	0.0010	U		#	0.001	-
Arsenic	mg/L	5/26/1998	0001	0.0064			#	-	-
Cadmium	mg/L	5/26/1998	0001	0.0010	U		#	0.001	-
Calcium	mg/L	5/26/1998	0001	3.530			#	-	-
Chloride	mg/L	5/26/1998	0001	396.000			#	-	-
Fluoride	mg/L	5/26/1998	0001	4.010			#	-	-
Gross Alpha	pCi/L	5/26/1998	0001	10.74	U	J	#	10.74	± 6.04
Gross Beta	pCi/L	5/26/1998	0001	10.97	U		#	10.97	± 6.27
Iron	mg/L	5/26/1998	0001	0.0030	U		#	0.003	-
Lead	mg/L	5/26/1998	0001	0.0010	U		#	0.001	-
Lead-210	pCi/L	5/26/1998	0001	1.02	U		#	1.02	± 0.60
Magnesium	mg/L	5/26/1998	0001	0.873			#	-	-
Manganese	mg/L	5/26/1998	0001	0.0043	B		#	-	-
Molybdenum	mg/L	5/26/1998	0001	0.234			#	-	-
Nitrate	mg/L	5/26/1998	0001	0.180	B	U	#	-	-
pH	s.u.	5/26/1998	N001	8.54			#	-	-
Polonium-210	pCi/L	5/26/1998	0001	0.10	U		#	0.1	± 0.14
Radium-226	pCi/L	5/26/1998	0001	0.10	U		#	0.1	± 0.06
Radium-228	pCi/L	5/26/1998	0001	0.67	U		#	0.67	± 0.39
Redox Potential	mV	5/26/1998	N001	64			#	-	-
Selenium	mg/L	5/26/1998	0001	0.0010	U		#	0.001	-
Sodium	mg/L	5/26/1998	0001	443.000			#	-	-
Specific Conductance	umhos/cm	5/26/1998	N001	2170			#	-	-
Sulfate	mg/L	5/26/1998	0001	47.000			#	-	-
Temperature	C	5/26/1998	N001	11.2			#	-	-
Thorium-230	pCi/L	5/26/1998	0001	0.80	U		#	0.8	±
Turbidity	NTU	5/26/1998	N001	3.78			#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 0622
REPORT DATE: 7/27/1999 4:33 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Uranium	mg/L	5/26/1998	0001	0.0013			#	-	-
Vanadium	mg/L	5/26/1998	0001	0.0010	U		#	0.001	-

RECORDS: SELECTED FROM USEE100 WHERE site_code='RFO01' AND location_code in('0291','0292','0597','0598','0606','0620','0621','0622','0658','0659','0660') AND quality_assurance = TRUE AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #5/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 0658
REPORT DATE: 7/27/1999 4:33 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	5/21/1998	N001	483			#	-	-
	mg/L	11/24/1998	0001	517			#	-	-
	mg/L	11/24/1998	N001	500			#	-	-
Ammonia as NH4	mg/L	5/21/1998	0001	0.351			#	-	-
	mg/L	11/24/1998	0001	0.0642	B		#	-	-
Antimony	mg/L	5/21/1998	0001	0.0010	U		#	0.001	-
	mg/L	11/24/1998	0001	0.0010	U		#	0.001	-
Arsenic	mg/L	5/21/1998	0001	0.0010	U		#	0.001	-
	mg/L	11/24/1998	0001	0.0010	U		#	0.001	-
Cadmium	mg/L	5/21/1998	0001	0.0010	U		#	0.001	-
	mg/L	11/24/1998	0001	0.0010	U		#	0.001	-
Calcium	mg/L	5/21/1998	0001	273.000			#	-	-
	mg/L	11/24/1998	0001	289.000			#	-	-
Chloride	mg/L	5/21/1998	0001	146.000			#	-	-
	mg/L	11/24/1998	0001	122.000			#	-	-
Fluoride	mg/L	5/21/1998	0001	1.080			#	-	-
	mg/L	11/24/1998	0001	1.170			#	-	-
Gross Alpha	pCi/L	5/21/1998	0001	63.61		J	#	24.12	± 20.6
	pCi/L	11/24/1998	0001	46.70			#	37.76	± 26.6
Gross Beta	pCi/L	5/21/1998	0001	34.96			#	22.31	± 14.3
	pCi/L	11/24/1998	0001	42.69			#	32.23	± 20.7
Iron	mg/L	5/21/1998	0001	0.202			#	-	-
	mg/L	11/24/1998	0001	0.525			#	-	-
Lead	mg/L	5/21/1998	0001	0.0010	U		#	0.001	-
	mg/L	11/24/1998	0001	0.0010	U		#	0.001	-
Lead-210	pCi/L	5/21/1998	0001	0.93	U		#	0.93	± 0.54
	pCi/L	11/24/1998	0001	1.33	U		#	1.33	± 0.79
Magnesium	mg/L	5/21/1998	0001	163.000			#	-	-
	mg/L	11/24/1998	0001	174.000			#	-	-
Manganese	mg/L	5/21/1998	0001	0.673			#	-	-
	mg/L	11/24/1998	0001	0.734			#	-	-
Molybdenum	mg/L	5/21/1998	0001	0.0161			#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 0658
REPORT DATE: 7/27/1999 4:33 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Molybdenum	mg/L	11/24/1998	0001	0.0165			#	-	-
Nitrate	mg/L	5/21/1998	0001	2.400			#	-	-
	mg/L	11/24/1998	0001	2.130	B	J	#	-	-
pH	s.u.	5/21/1998	N001	6.80			#	-	-
	s.u.	11/24/1998	N001	7.11			#	-	-
Polonium-210	pCi/L	5/21/1998	0001	0.08		U	#	0.07	± 0.10
	pCi/L	11/24/1998	0001	0.09	U		#	0.09	± 0.10
Radium-226	pCi/L	5/21/1998	0001	0.10	U		#	0.1	± 0.06
	pCi/L	11/24/1998	0001	0.14			#	0.12	± 0.08
Radium-228	pCi/L	5/21/1998	0001	0.61	U		#	0.61	± 0.36
	pCi/L	11/24/1998	0001	0.74	U		#	0.74	± 0.44
Redox Potential	mV	5/21/1998	N001	-114			#	-	-
	mV	11/24/1998	N001	3			#	-	-
Selenium	mg/L	5/21/1998	0001	0.0247			#	-	-
	mg/L	11/24/1998	0001	0.0194			#	-	-
Sodium	mg/L	5/21/1998	0001	596.000			#	-	-
	mg/L	11/24/1998	0001	655.000			#	-	-
Specific Conductance	umhos/cm	5/21/1998	N001	3830			#	-	-
	umhos/cm	11/24/1998	N001	4470			#	-	-
Sulfate	mg/L	5/21/1998	0001	2040.000			#	-	-
	mg/L	11/24/1998	0001	2130.000			#	-	-
Temperature	C	5/21/1998	N001	10.6			#	-	-
	C	11/24/1998	N001	11.7			#	-	-
Thorium-230	pCi/L	5/21/1998	0001	0.80	U		#	0.8	±
	pCi/L	11/24/1998	0001	1.6	U		#	1.6	±
Turbidity	NTU	5/21/1998	N001	2.36			#	-	-
	NTU	11/24/1998	N001	1.88			#	-	-
Uranium	mg/L	5/21/1998	0001	0.0594			#	-	-
	mg/L	11/24/1998	0001	0.0513			#	-	-
Vanadium	mg/L	5/21/1998	0001	0.0010	U		#	0.001	-
	mg/L	11/24/1998	0001	0.0010	U		#	0.001	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 0658
REPORT DATE: 7/27/1999 4:33 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE100 WHERE site_code='RFO01' AND location_code in('0291','0292','0597','0598','0606','0620','0621','0622','0658','0659','0660') AND quality_assurance = TRUE AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #5/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 0659
REPORT DATE: 7/27/1999 4:33 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	5/21/1998	N001	457			#	-	-
	mg/L	11/24/1998	0001	435			#	-	-
	mg/L	11/24/1998	N001	435			#	-	-
Ammonia as NH4	mg/L	5/21/1998	0001	0.140			#	-	-
	mg/L	11/24/1998	0001	0.0010	U		#	0.001	-
Antimony	mg/L	5/21/1998	0001	0.0010	U		#	0.001	-
	mg/L	11/24/1998	0001	0.0010	U		#	0.001	-
Arsenic	mg/L	5/21/1998	0001	0.0010	U		#	0.001	-
	mg/L	11/24/1998	0001	0.0010	U		#	0.001	-
Cadmium	mg/L	5/21/1998	0001	0.0010	U		#	0.001	-
	mg/L	11/24/1998	0001	0.0010	U		#	0.001	-
Calcium	mg/L	5/21/1998	0001	269.000			#	-	-
	mg/L	11/24/1998	0001	295.000			#	-	-
Chloride	mg/L	5/21/1998	0001	136.000			#	-	-
	mg/L	11/24/1998	0001	122.000			#	-	-
Fluoride	mg/L	5/21/1998	0001	1.050			#	-	-
	mg/L	11/24/1998	0001	1.450			#	-	-
Gross Alpha	pCi/L	5/21/1998	0001	73.62		J	#	24.02	± 21.5
	pCi/L	11/24/1998	0001	47.09			#	37.97	± 26.8
Gross Beta	pCi/L	5/21/1998	0001	40.03			#	22.35	± 14.6
	pCi/L	11/24/1998	0001	37.40			#	32.24	± 20.4
Iron	mg/L	5/21/1998	0001	0.0030	U		#	0.003	-
	mg/L	11/24/1998	0001	0.0059	B	U	#	-	-
Lead	mg/L	5/21/1998	0001	0.0010	U		#	0.001	-
	mg/L	11/24/1998	0001	0.0010	U		#	0.001	-
Lead-210	pCi/L	5/21/1998	0001	0.98	U		#	0.98	± 0.57
	pCi/L	11/24/1998	0001	1.32	U		#	1.32	± 0.77
Magnesium	mg/L	5/21/1998	0001	162.000			#	-	-
	mg/L	11/24/1998	0001	174.000			#	-	-
Manganese	mg/L	5/21/1998	0001	0.613			#	-	-
	mg/L	11/24/1998	0001	0.756			#	-	-
Molybdenum	mg/L	5/21/1998	0001	0.0171			#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 0659
REPORT DATE: 7/27/1999 4:33 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Molybdenum	mg/L	11/24/1998	0001	0.0173			#	-	-
Nitrate	mg/L	5/21/1998	0001	2.810			#	-	-
	mg/L	11/24/1998	0001	2.740	B	J	#	-	-
pH	s.u.	5/21/1998	N001	6.84			#	-	-
	s.u.	11/24/1998	N001	6.89			#	-	-
Polonium-210	pCi/L	5/21/1998	0001	0.08	U		#	0.08	± 0.10
	pCi/L	11/24/1998	0001	0.09	U		#	0.09	± 0.11
Radium-226	pCi/L	5/21/1998	0001	0.10	U		#	0.1	± 0.06
	pCi/L	11/24/1998	0001	0.12	U		#	0.12	± 0.07
Radium-228	pCi/L	5/21/1998	0001	0.59	U		#	0.59	± 0.34
	pCi/L	11/24/1998	0001	0.73	U		#	0.73	± 0.43
Redox Potential	mV	5/21/1998	N001	-46			#	-	-
	mV	11/24/1998	N001	31			#	-	-
Selenium	mg/L	5/21/1998	0001	0.0243			#	-	-
	mg/L	11/24/1998	0001	0.0298			#	-	-
Sodium	mg/L	5/21/1998	0001	591.000			#	-	-
	mg/L	11/24/1998	0001	649.000			#	-	-
Specific Conductance	umhos/cm	5/21/1998	N001	3850			#	-	-
	umhos/cm	11/24/1998	N001	4490			#	-	-
Sulfate	mg/L	5/21/1998	0001	2070.000			#	-	-
	mg/L	11/24/1998	0001	2240.000			#	-	-
Temperature	C	5/21/1998	N001	10.8			#	-	-
	C	11/24/1998	N001	17.5			#	-	-
Thorium-230	pCi/L	5/21/1998	0001	0.80	U		#	0.8	±
	pCi/L	11/24/1998	0001	1.6	U		#	1.6	±
Turbidity	NTU	5/21/1998	N001	0.18			#	-	-
	NTU	11/24/1998	N001	1.03			#	-	-
Uranium	mg/L	5/21/1998	0001	0.0587			#	-	-
	mg/L	11/24/1998	0001	0.0515			#	-	-
Vanadium	mg/L	5/21/1998	0001	0.0011	B		#	-	-
	mg/L	11/24/1998	0001	0.0010	U		#	0.001	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 0659
REPORT DATE: 7/27/1999 4:33 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE100 WHERE site_code='RFO01' AND location_code in('0291','0292','0597','0598','0606','0620','0621','0622','0658','0659','0660') AND quality_assurance = TRUE AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #5/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 0660
REPORT DATE: 7/27/1999 4:33 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity as CaCO3	mg/L	5/22/1998	N001	338			#	-	-
	mg/L	11/30/1998	0001	330			#	-	-
	mg/L	11/30/1998	N001	336			#	-	-
Ammonia as NH4	mg/L	5/22/1998	0001	0.290			#	-	-
	mg/L	11/30/1998	0001	0.283			#	-	-
Antimony	mg/L	5/22/1998	0001	0.0010	U		#	0.001	-
	mg/L	11/30/1998	0001	0.0010	U		#	0.001	-
Arsenic	mg/L	5/22/1998	0001	0.0034	B		#	-	-
	mg/L	11/30/1998	0001	0.0020	B		#	-	-
Cadmium	mg/L	5/22/1998	0001	0.0010	U		#	0.001	-
	mg/L	11/30/1998	0001	0.0010	U		#	0.001	-
Calcium	mg/L	5/22/1998	0001	44.100			#	-	-
	mg/L	11/30/1998	0001	47.100			#	-	-
Chloride	mg/L	5/22/1998	0001	157.000			#	-	-
	mg/L	11/30/1998	0001	183.000			#	-	-
Fluoride	mg/L	5/22/1998	0001	0.598			#	-	-
	mg/L	11/30/1998	0001	0.615			#	-	-
Gross Alpha	pCi/L	5/22/1998	0001	28.58		J	#	10.52	± 9.05
	pCi/L	11/30/1998	0001	15.52	U		#	15.52	± 8.93
Gross Beta	pCi/L	5/22/1998	0001	28.12			#	11.07	± 7.60
	pCi/L	11/30/1998	0001	12.84	U		#	12.84	± 7.74
Iron	mg/L	5/22/1998	0001	0.198			#	-	-
	mg/L	11/30/1998	0001	0.0885			#	-	-
Lead	mg/L	5/22/1998	0001	0.0010	U		#	0.001	-
	mg/L	11/30/1998	0001	0.0010	U		#	0.001	-
Lead-210	pCi/L	5/22/1998	0001	0.95	U		#	0.95	± 0.55
	pCi/L	11/30/1998	0001	1.27	U		#	1.27	± 0.74
Magnesium	mg/L	5/22/1998	0001	50.600			#	-	-
	mg/L	11/30/1998	0001	60.400			#	-	-
Manganese	mg/L	5/22/1998	0001	0.877			#	-	-
	mg/L	11/30/1998	0001	0.594			#	-	-
Molybdenum	mg/L	5/22/1998	0001	0.0034	B		#	-	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 0660
REPORT DATE: 7/27/1999 4:33 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Molybdenum	mg/L	11/30/1998	0001	0.0051	B		#	-	-
Nitrate	mg/L	5/22/1998	0001	0.0644	B	U	#	-	-
	mg/L	11/30/1998	0001	0.603	B	J	#	-	-
pH	s.u.	5/22/1998	N001	7.46			#	-	-
	s.u.	11/30/1998	N001	8.50			#	-	-
Polonium-210	pCi/L	5/22/1998	0001	0.05		U	#	0.05	± 0.07
	pCi/L	11/30/1998	0001	0.08		U	#	0.06	± 0.08
Radium-226	pCi/L	5/22/1998	0001	0.12			#	0.1	± 0.06
	pCi/L	11/30/1998	0001	0.12			#	0.11	± 0.07
Radium-228	pCi/L	5/22/1998	0001	0.59	U		#	0.59	± 0.34
	pCi/L	11/30/1998	0001	0.73	U		#	0.73	± 0.44
Redox Potential	mV	5/22/1998	N001	-292			#	-	-
	mV	11/30/1998	N001	-272			#	-	-
Selenium	mg/L	5/22/1998	0001	0.0010	U		#	0.001	-
	mg/L	11/30/1998	0001	0.0010	U		#	0.001	-
Sodium	mg/L	5/22/1998	0001	300.000			#	-	-
	mg/L	11/30/1998	0001	334.000			#	-	-
Specific Conductance	umhos/cm	5/22/1998	N001	1879			#	-	-
	umhos/cm	11/30/1998	N001	2100			#	-	-
Sulfate	mg/L	5/22/1998	0001	482.000			#	-	-
	mg/L	11/30/1998	0001	516.000			#	-	-
Temperature	C	5/22/1998	N001	13.0			#	-	-
	C	11/30/1998	N001	12.9			#	-	-
Thorium-230	pCi/L	5/22/1998	0001	0.80	U		#	0.8	±
	pCi/L	11/30/1998	0001	1.6	U		#	1.6	±
Turbidity	NTU	5/22/1998	N001	1.90			#	-	-
	NTU	11/30/1998	N001	9.78			#	-	-
Uranium	mg/L	5/22/1998	0001	0.0055			#	-	-
	mg/L	11/30/1998	0001	0.0078			#	-	-
Vanadium	mg/L	5/22/1998	0001	0.0010	U		#	0.001	-
	mg/L	11/30/1998	0001	0.0010	U		#	0.001	-

GROUND WATER QUALITY DATA BY LOCATION (USEE100) FOR SITE RFO01, RIFLE (OLD)
LOCATION: 0660
REPORT DATE: 7/27/1999 4:33 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE100 WHERE site_code='RFO01' AND location_code in('0291','0292','0597','0598','0606','0620','0621','0622','0658','0659','0660') AND quality_assurance = TRUE AND (NOT (data_validation_qualifiers LIKE '*R*' OR data_validation_qualifiers LIKE '*X*') OR IsNull(data_validation_qualifiers)) AND DATE_SAMPLED between #5/1/1998# and #2/15/1999#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- G Possible grout contamination, pH > 9.
- R Unusable result.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- L Less than 3 bore volumes purged prior to sampling.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

Appendix D

Flow and Contaminant Transport Model

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1.0 Introduction

1.1 General Setting

The New Rifle site is the location of a former vanadium and uranium mill located approximately 2.3 miles west of the city of Rifle in Garfield County, in western Colorado (Figure 1). The site covers approximately 142 acres, between U.S. Highway 6 to the north and Interstate 70 and the Colorado River to the south. The mill was constructed in 1958 by the Union Carbide Corporation (Union Carbide) and operated until 1972. The west central portion of the mill site contained 33 acres of tailings and a mill area north and east of the pile. Ponds that had held processing wastes were east of the piles. These former source areas contaminated ground water beneath the New Rifle site. The tailings, ponds, and associated process buildings and structures were removed in 1996.

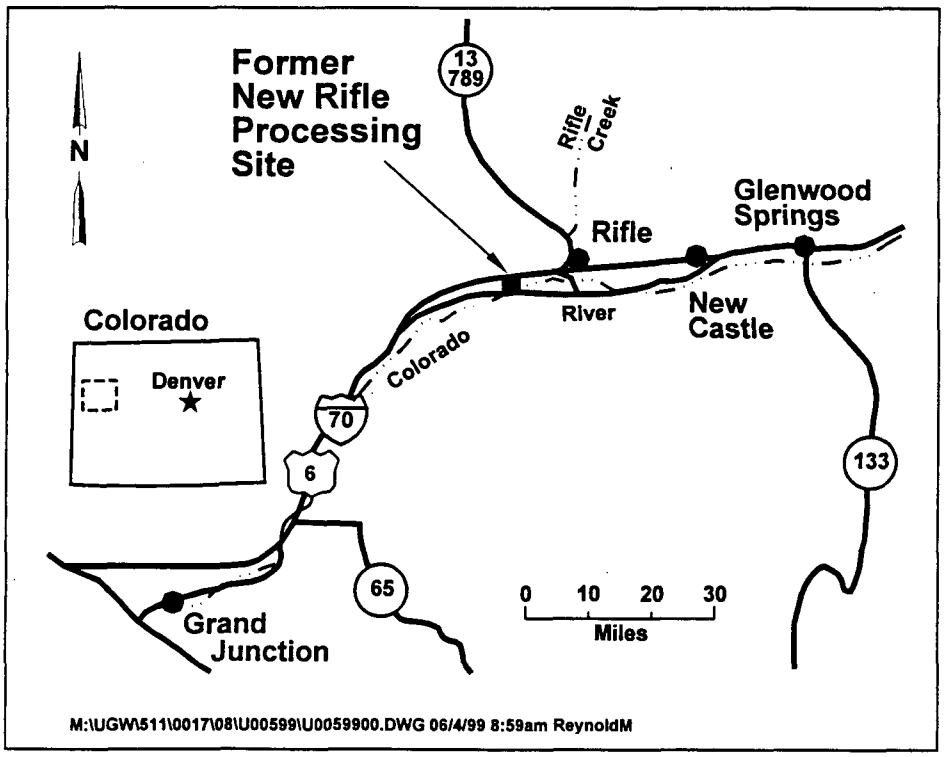


Figure 1. Location of the New Rifle Site

1.2 Study Objective

As part of the final compliance strategy for the cleanup of contaminated ground water at the New Rifle UMTRA site, it is necessary to develop a computer ground water flow model and a subsequent contaminant transport model to assist in forecasting whether natural flushing of the major contaminants of concern (COCs) (uranium, vanadium, selenium, arsenic, and molybdenum) is a viable remediation alternative. This document presents the development and calibration of the hydrologic flow model and the results of the contaminant transport model to predict the concentration of the COCs in the future. The various flow and transport parameters that affect the hydraulic head and contamination distribution are described.

The steps used for obtaining a calibrated flow and transport model for the site follow the ASTM Standard Guides D5447-93 and D5718-95. The specific steps are to: (1) evaluate the hydrogeologic setting and develop a conceptual model, (2) select the code to be used in the analysis, (3) establish the relationship between the conceptual and numerical models, and (4) perform flow model calibration and sensitivity analysis on transport parameters.

Finally, stochastic simulations were performed varying both flow and transport parameters, to evaluate the uncertainty in the predicted concentrations. These stochastic simulations were used to calculate mean concentrations and the probability of contamination remaining above acceptable levels across the site at specific times for each COC.

2.0 Conceptual Model

2.1 Aquifer System Framework

The alluvial aquifer consists of Quaternary age Colorado River floodplain alluvium that forms a complex intermixture of fine- and coarse-grain materials, including river deposited sand and gravel and overbank deposits of silt and sand. The alluvium averages about 25 feet (ft) in thickness in the vicinity of the former mill site (Figure 2). West of the site the thickness of the Quaternary material increases up to100 ft where it fills local valleys created by tributaries draining the upland mesas to the north. An isopach map of the alluvium is presented in Figure 2.

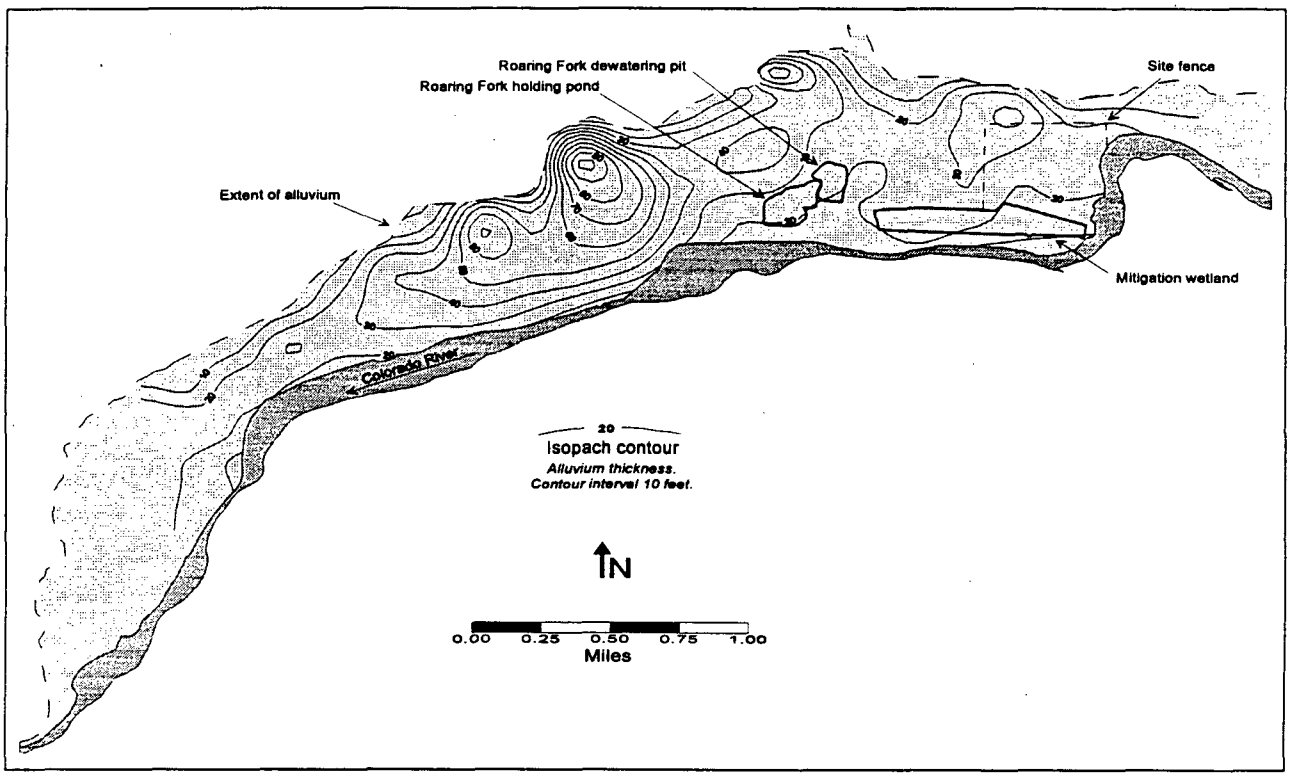


Figure 2. Isopach Map for the Alluvium at New Rifle Site

The alluvium was deposited in a broad floodplain on the eroded bedrock surface of Tertiary age sedimentary rocks of the Wasatch Formation. The Wasatch Formation consists mostly of variegated claystone, siltstone, and sandstone. In general, the erosional surface of the Wasatch Formation beneath the site reflects a fairly flat topographic surface that gently slopes to the west-southwest. The topographic surface beneath the floodplain is shaped mostly by erosion as the Colorado River changed course over time. The Wasatch Formation steepens where it crops out north of the site and south of the Colorado River. The more irregular surface of the upland mesas is the result of erosion from tributary channels. A bedrock contour map of the Wasatch topographic surface is presented in Figure 3.

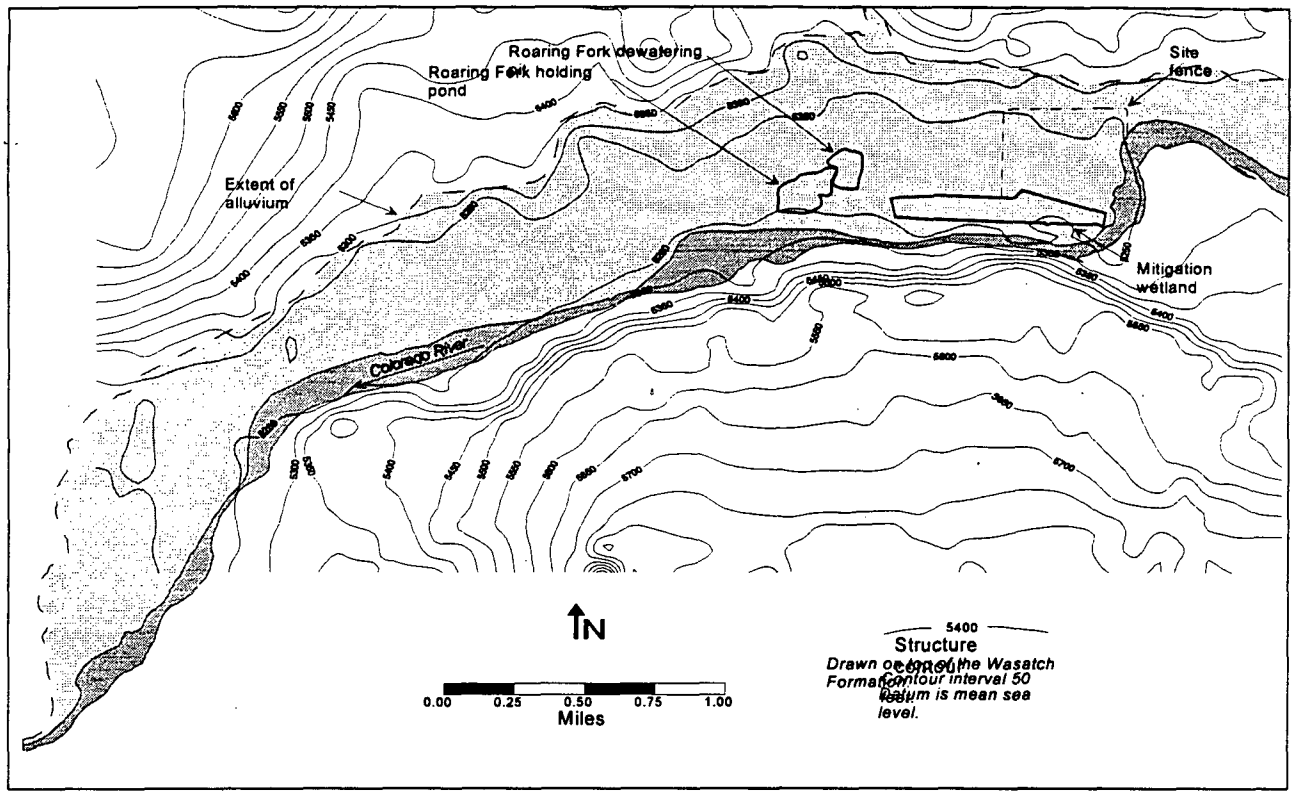


Figure 3. Bedrock Contour Map for the Wasatch Formation at New Rifle

2.2 Ground Water Flow System

The surficial and bedrock aquifers are the primary flow systems that are present at the site. The surfical aquifer is comprised mostly of the sand and cobble gravels and the upper portion of the Wasatch Formation that is in direct hydrologic contact with the overlying alluvium. The bedrock system consists of confined and semiconfined Wasatch Formation sandstones and shales, below a prominent low-permeability aquitard. The uppermost aquifer at the New Rifle site will be defined as the alluvial aquifer (i.e., the unconsolidated floodplain deposits and the upper portion of the Wasatch Formation that is hydraulically connected to the alluvial aquifer immediately underlying the alluvium). The alluvial aquifer is the flow system that is modeled.

Ground water at the site generally flows in a west-southwest direction, with water entering from seepage from Pioneer ditch north of Highway 6, seepage from several tributary channels entering from the north, from sections along the Colorado River which recharge the alluvial aquifer as baseflow, and possibly from irrigation recharge from Prefontaine Mesa. Ground water elevations measured at the site in July 1998 are presented in Figure 4.

A sand and gravel operation (Roaring Fork Resources) is currently operating approximately 0.5 mile west of the site. This operation has dramatically altered the natural ground water flow direction where dewatering occurs from one pit to another. In the vicinity of the Roaring Fork Resources sand and gravel operation the ground water flows toward the dewatering pond and away from the holding pond. West of the Roaring Fork Resources operation and south of Interstate 70, ground water flows in a southwest direction, almost parallel to the river.

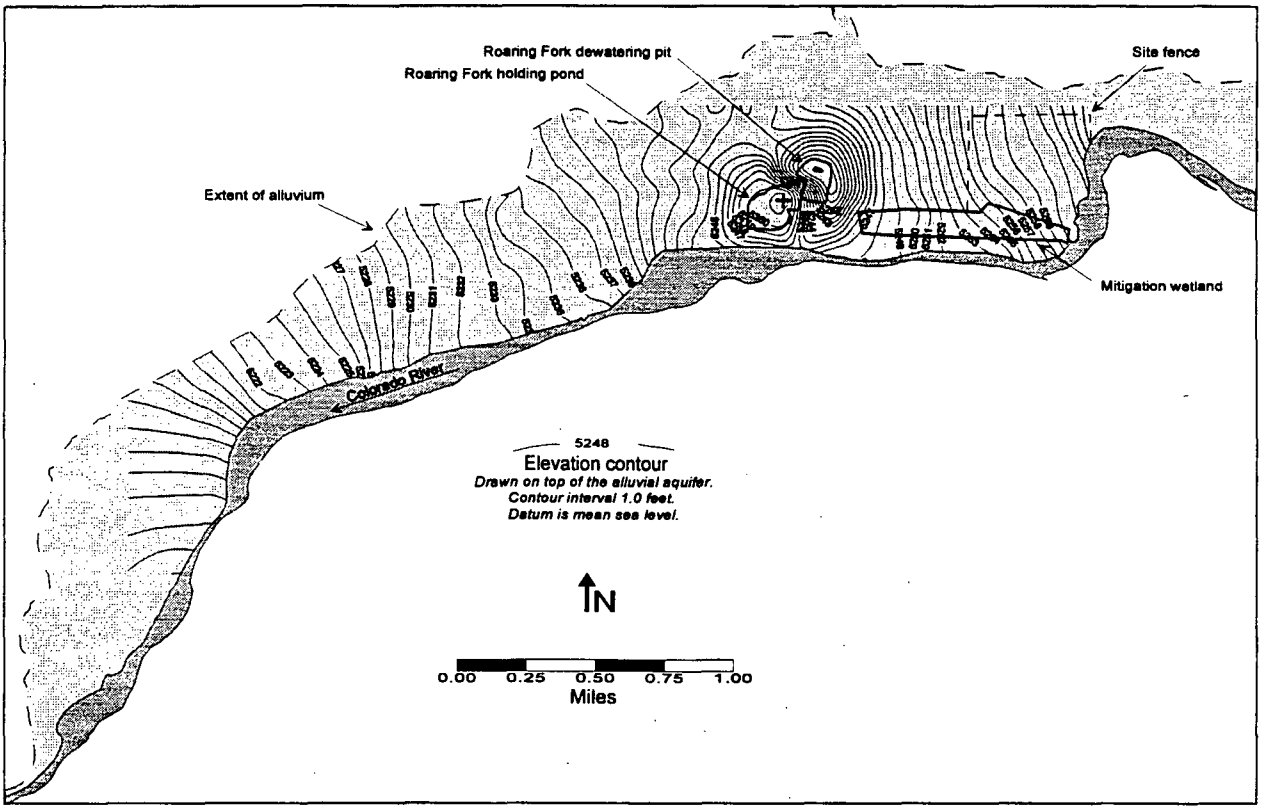


Figure 4. Alluvial Ground Water Elevations at New Rifle Site

2.3 Hydrological Boundaries

The Colorado River bounds the site on the east and south. The alluvial aquifer discharges water to the river along some reaches of the river while other reaches recharge the alluvial aquifer. Some reaches neither recharge the alluvial aquifer or discharge to the river as evidenced by the water level contour lines being perpendicular at the river. The north-south oriented section of the river directly east of the site is a primary section of recharge from the river to the alluvial aquifer. The boundary of the site model along the river is represented as a constant head boundary. The northern boundary is defined where the alluvium pinches out and meets the Wasatch Formation and is represented as a noflow model boundary. Pioneer ditch infiltration is represented by using a recharge zone to account for water entering the site from this source as are the tributary channels entering from the north and crossing the model domain.

2.4 Hydraulic Properties

The flow model hydraulic properties of interest that apply stresses to the aquifer system are the hydraulic conductivity of the alluvial aquifer, the areal recharge due to precipitation, infiltration due to Pioneer ditch and the tributary channels to the north, possible irrigation recharge from Prefontaine Mesa, evapotranspiration (ET), and recharge from and discharge to the Colorado River.

The contaminant transport properties of interest are the initial concentration distribution of the COC, the effective porosity, the aquifer bulk density, the distribution coefficient (K_d),

dispersivity, and the natural background concentration entering the site from infiltration, recharge, Colorado River inflow, etc.

2.5 Sources and Sinks

Pioneer ditch, the tributary channels, and the Colorado River are sources of water and background contamination to the aquifer. Diffuse recharge over the area is a source of water to the site. The Colorado River on the east and south side of the site is both a sink and a source, i.e., the aquifer discharges water to the river along some reaches and the river recharges the alluvial aquifer along other reaches. As noted above, the north-south oriented section of the river east of the site is a primary section of recharge to the alluvial aquifer, particularly during high river flows.

2.6 Water Budget

A water balance for the alluvial aquifer at the New Rifle site was developed to identify the flow components that are important in understanding how water enters, moves, and exits the ground water system. This interpretation is used for comparison to, and development of, the conceptual model used to construct the computer ground water flow model. The scope of the water balance is limited to the alluvial aquifer located between the Colorado River to the south and the Wasatch outcrop to the north (Figure 2). The total area of the alluvial aquifer considered in the conceptual water balance encompasses approximately 60,700,000 square feet (ft^2). This corresponds to the extent of the area in the computer model.

A summary of the inflow and outflow components identified in the water balance is presented in Table 1. There is less than a 1-percent difference between the 232,378 cubic feet per day (ft^3/day) estimated for the total inflow and the 231,228 ft^3/day estimated for the total outflow. The relative low percent difference suggests the major flow components for the alluvial aquifer have been adequately identified. Each inflow and outflow component identified in Table 1 is described in the following sections.

Table 1. Water Balance Summary for the New Rifle Site

Component	Total Inflow (ft^3/day)	Total Outflow (ft^3/day)
Site precipitation	151,750	0
Upper Pioneer Ditch	17,821	0
Tributary 1	2,343	0
Tributary 2	3,096	0
Tributary 3	1,590	0
Tributary 4	335	0
Lower Pioneer Ditch	2,176	0
Colorado River	53,267	45,034
Evapotranspiration		
Cottonwood/Tamarisk	0	57,398
Greasewood	0	108,828
Upland	0	9,142
McCauley Pit	0	4,297
Gravel Pits	0	6,529
Total	232,378	231,228

2.6.1 Inflow Sources

Eight sources of recharge to the alluvial aquifer have been identified. These include recharge from precipitation onto the site, recharge from Pioneer Ditch, recharge from the tributary channels, and recharge from the Colorado River.

2.6.1.1 Site Precipitation

Based on site-specific meteorological data there is approximately 11.01 inches of annual precipitation (0.0025 ft/day) in the Rifle area (Calculation Set U0044700). Multiplying the estimated 0.0025 ft/day of precipitation by the 60,700,000 ft^2 area for the site, results in a total 151,750 ft^3/day of precipitation that is available for recharge.

2.6.1.2 Surface Water

Surface flow in Pioneer Ditch was measured at three points. The field measurements indicate a net loss of 28.3 gallons per minute (gpm) between the first two measuring points that are 2,200 ft apart and a net loss of 40.8 gpm between the last two measuring points that are 3,100 ft apart. A weighted average along the total length of Pioneer Ditch (7,100 ft) results in a net loss of 92.568 gpm, or 17,821 ft^3/day. This net loss represents the amount of recharge into the alluvial aquifer from Pioneer Ditch.

Field observations form the basis for the following assumptions used to estimate the amount of surface water available for recharge from the tributary channels across the model domain.

- Flow in the tributary channels at the confluence with Pioneer Ditch is approximately one-third of the flow measured in Pioneer Ditch. This results in an estimate net loss of 0.0043459 gpm (0.8366462 ft^3/day) per ft. When multiplied by the length of each tributary channel across the model domain, the net amount available for recharge is obtained for each channel. This results in a net recharge for the four tributary channels of 7,364 ft^3/day.

- Flow in Lower Pioneer Ditch was calculated identical to the flow in the tributary channels. This results in an estimate of 2,176 ft^3/day available for recharge.

2.6.1.3 Baseflow Recharge from the Colorado River

Measured ground water levels for the New Rifle site indicate that some reaches or sections of the river recharge the alluvial aquifer (Figure 4). Four reaches were determined to provide recharge to the alluvial aquifer. The length of each reach was estimated from the ground water elevation contour map. The saturated thickness for each reach was estimated from monitor wells located adjacent to each section. The cross-sectional area of each reach is derived by multiplying the length by the saturated thickness.

The hydraulic gradient for each reach was estimated from the ground water elevation contour map. Multiplying the hydraulic gradient by and average hydraulic conductivity of 114 ft/day (Calculation Set U0042800) results in an estimated flux for each reach. The product of flux and the cross-sectional area results in an estimated baseflow recharge of 53,267 ft^3/day. Details for each reach are displayed in Table 2.

Table 2. Colorado River Baseflow Recharge to the Alluvial Aquifer

Section	Length (ft)	Saturated Thickness (ft)	X-Section Area (ft^2)	Hydraulic Grade (ft/ft)	Hydraulic Conductivity (ft/day)	Flux (ft/day)	Recharge (ft^3/day)
1	2,500	16.3	40,750	0.0034	114	0.3876	15,794.7
2	1,000	15.32	15,320	0.0092	114	1.0488	16,067.6
3	1,100	22.04	24,244	0.0042	114	0.4788	11,608
4	1,500	23.87	35,805	0.0024	114	0.2736	9,796.2
						Total	53,266.5

2.6.2 Outflow Sources

There are two components of ground water discharge from the alluvial aquifer. Plant transpiration and evaporation discharge of ground water from the alluvial aquifer. The other discharge component is due to ground water flow from the alluvial aquifer into the Colorado River.

2.6.2.1 Ground Water Discharge to the Colorado River

The ground water elevation contour map (Figure 4) of the measured water levels for the New Rifle site indicates that some reaches or sections of the river receive discharge from the alluvial aquifer. Four reaches were determined to provide discharge from the alluvial aquifer. The length, saturated thickness, and hydraulic gradient of each reach were estimated as described above for baseflow recharge. The average hydraulic conductivity is 114 ft/day. The estimated baseflow recharge total is 45,034 ft^3/day. Details for each reach are displayed in Table 3.

Table 3. Ground Water Discharge to the Colorado River

Section	Length (ft)	Saturated Thickness (ft)	X-Section Area (ft^2)	Hydraulic Gradient (ft/ft)	Hydraulic Conductivity (ft/day)	Flux (ft/day)	Discharge (ft^3/day)
1	2,050	16.87	34,583.5	0.0035	114	0.339	13,798.8
2	1,250	15.32	19,150.0	0.0096	114	1.0944	20,957.8
3	800	22.04	17,632.0	0.0028	114	0.3192	5,628.1
4	950	25.25	23,987.3	0.0017	114	0.1938	4,648.8
						Total	45,033.5

2.6.2.2 Evaporation and Transpiration

Five ET zones were mapped based on a field study of vegetation type, soil type, and historical and current use. The first three zones are based on vegetation and soil type; the other two on historical use and current use. These zones are referred to as Cottonwood/Tamarisk, Greasewood, Upland, McCauley Pit, and Gravel Pits, respectively.

Table 4 below outlines details of the estimated ET for each zone. The estimated evaporation rate for the Cottonwood/Tamarisk zones and Upland zones are expected to be at or near the minimum of the literature range shown in the table. The estimated evaporation rate for the Greasewood zones is expected to be between the minimum and the midpoint of the literature range. McCauley

Pit and the Gravel Pits are expected to act like open bodies of water with evaporation equal to the annual adjusted potential evaporation (Calculation Set U0044700).

Table 4. Estimated Evapotranspiration

Zone	Evaporation Range (cm/year)	Evaporation Rate (cm/year)	Evaporation Rate (in/year)	Evaporation Rate (ft/day)	Area (ft^2)	Evapotranspiration (ft^3/day)
1	130 to 260	130		0.01169	4,910,000	57,398
2	20 to 160	55		0.00494	22,030,000	108,828
3	3 to 35	3		0.00027	33,860,000	9,142
4			24.43	0.00058	770,000	4,297
5			24.43	0.00058	1,170,000	6,529
					Total	186,194

The surface area for each zone was estimated from the field ET map. Multiplying the evaporation rate (ft/day) by the area (ft^2) results in an ET volume for each zone with a total of 186,194 ft^3/day.

End of current text

3.0 Computer Code

3.1 Code Selection

MODFLOW (McDonald and Harbaugh 1988), a modular three-dimensional finite-difference ground water flow model published by the U.S. Geological Survey (USGS) was selected as the flow code for this project. MT3D (Zheng 1990), a modular three-dimensional transport model for simulation of advection, dispersion, and chemical reaction of contaminants in ground water systems was selected as the transport code for this project. Each of these codes is divided into a main program and a group of independent subroutines called *modules*. Each module is made up of *packages* that deal with a single aspect of the simulation. The user of either MODFLOW or MT3D need only use those modules that simulate the stresses placed upon the flow and transport systems. The original public domain version of MT3D contained numerous errors and is not up-to-date. Therefore, a new public domain version called MT3DMS, which fixes all the known errors, was used for this project. This version of MT3D contains a new transport solver that is very efficient and makes multiple long simulations runs feasible.

GWVistas (Environmental Simulations, Inc. 1997), a Windows-driven, graphical, pre- and post-processor for MODFLOW and MT3D is used in conjunction with the site model to facilitate data entry, data-file modification, program execution, and analysis of modeling results.

3.2 Code Description

These codes are fully described in the references cited. They have been verified, benchmarked, and approved for use by most government and regulatory agencies.

End of current text

4.0 Ground Water Flow Model Construction

4.1 Model Grid

The Colorado River on the south side of the site is the southern boundary of the model. Since the river flow direction and the ground water flow direction change considerable over the area covered by the model, the model grid was not rotated. The x-axis of the model is oriented parallel to the Colorado River directly south of the site, with the y-axis of the model parallel to the north-south section of the river just east of the site. A 100 ft by 100 ft orthogonal grid, consisting of 100 rows and 196 columns, was designed to encompass the site and an extensive area west of the site defined by the boundaries described above. The grid cells overlaying the north edge of the Colorado River were set to constant head cells. Grid cells south of this were set to noflow cells. Grid cells to the northwest and north of the Wasatch Formation outcrop were set to noflow cells. The model domain and some site features are shown in Figure 5.

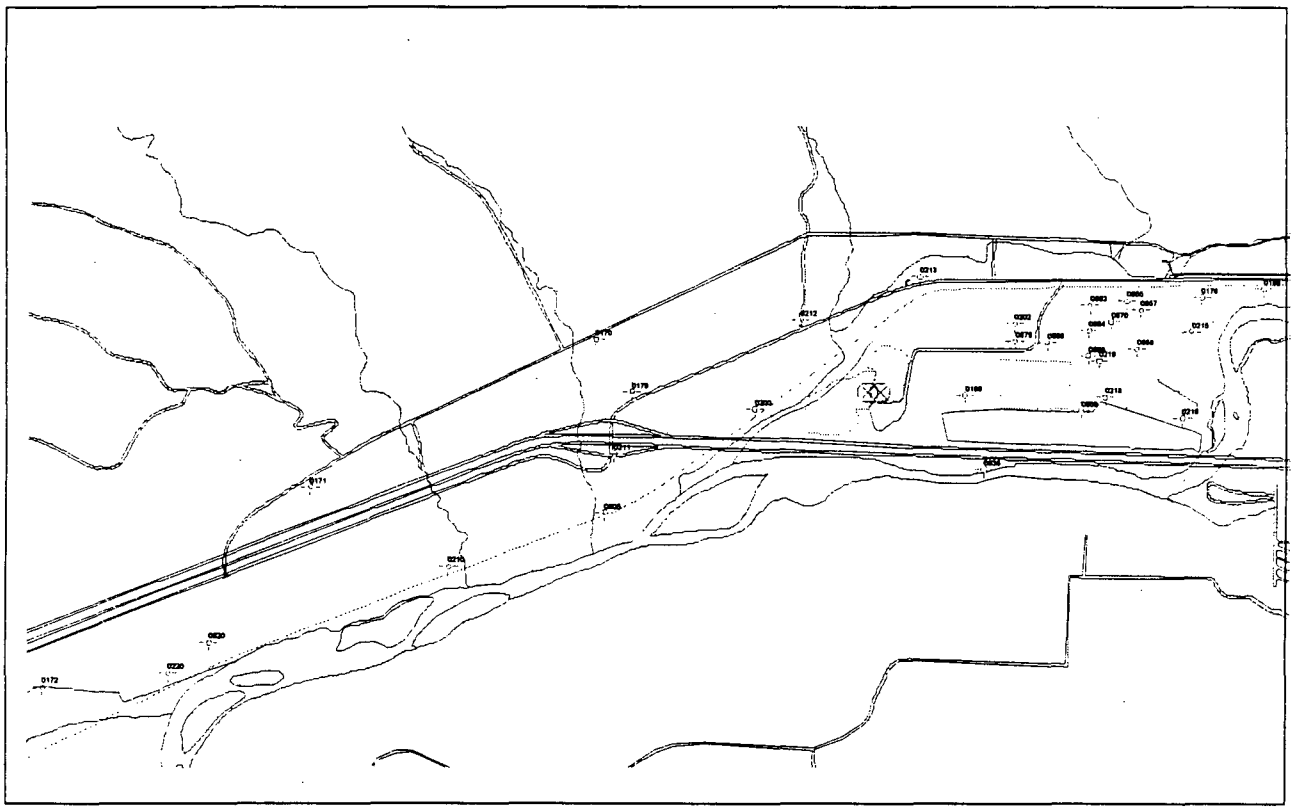


Figure 5. Model Domain and Site Features

4.2 Hydraulic Parameters

Hydraulic conductivity was determined from the analysis of aquifer test data conducted at three different locations (Calculation Set U0042800). The results of this analysis are presented in Table 5. A hydraulic conductivity value of 134 ft/day was used for the steady state calibrated flow model with transverse equal to longitudinal.

Table 5. Measured Hydraulic Conductivity

Parameter	Measured Hydraulic Conductivity (ft/day)			Geometric Mean
	Well Group			
	200	201	202	
Drawdown	98.03	197.43	133.61	137.26
Recovery	92.23	112.45	82.26	94.84
Drawdown and Recovery	95.09	143.13	104.83	112.58

Recharge to the ground water system consists of diffuse recharge over the area, from some sections of the Colorado River, from Pioneer Ditch, and from the tributary channels entering the site from the north.

The steady state recharge values assigned to the zones representing the stress to the alluvial aquifer system from diffuse recharge, Pioneer Ditch infiltration, and tributary infiltration are represented in Table 6. Areal recharge (zone 1) was set to the average annual precipitation of 11.01 inches per year. Recharge rates for the other zones are based on the assumptions used in the water balance analysis. Recharge zones are shown in Figure 6.

Table 6. Steady State Recharge Parameters

Zone No.	Description	Net Recharge				
		Cells	Area (ft^2)	(ft/day)	ft^3/day	gpm
1	Area	5885	58,850,000	0.0025	147,125	764.2
2	Pioneer Ditch	71	710,000	0.015	10,650	55.3
3	Tributary 1	28	280,000	0.0067	1,876	9.7
4	Tributary 2	37	370,000	0.0067	2,479	12.9
5	Tributary 3	19	190,000	0.0067	1,273	6.6
6	Tributary 4	4	40,000	0.0067	268	1.4
7	Lower Pioneer Ditch	26	260,000	0.0067	1,742	9.0
				Total Net Recharge (zones 1 - 7)	165,413	859.1

Discharge from the ground water system consists of evaporation and transpiration and from some sections of the Colorado River. The steady state discharge values assigned to the zones representing the stress to the alluvial aquifer system from ET are represented in Table 7. ET discharge for McCauley Pit and the Gravel Pits (zones 4 and 5) was set to the adjusted annual evaporation of 24.43 inches per year since these are open bodies of water. ET discharge rates for the other zones are based on the assumptions used in the water balance analysis. ET discharge zones are shown in Figure 7.

Table 7. Steady State Evapotranspiration Parameters

Zone No.	Description	Net Discharge				
		Cells	Area (ft^2)	(ft/day)	ft^3/day	gpm
1	Cottonwood/Tamarisk	491	4,910,000	0.0168	NA[a]	NA
2	Greasewood	2,203	22,030,000	0.009	NA	NA
3	Upland	3,386	33,860,000	0.00137	NA	NA
4	McCauley Pit	77	770,000	0.00558	NA	NA
5	Gravel Pits	117	1,170,000	0.00558	NA	NA
				[b]Total Net Discharge (zones 1 - 5)	191,995	997.3

[a] NA = not available; individual net discharge rates are not reported in the model's mass balance summary table for each zone
[b] Total net discharge rate reported in the model's mass balance summary table is adjusted for extinction depth

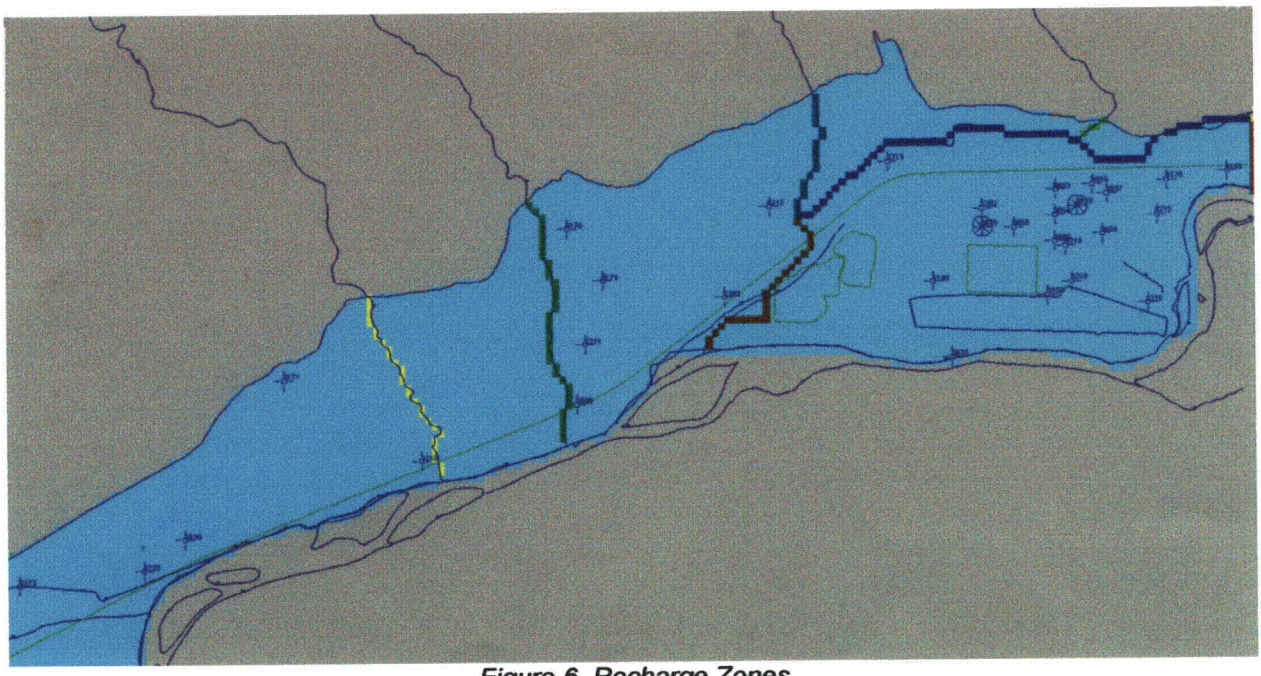


Figure 6. Recharge Zones

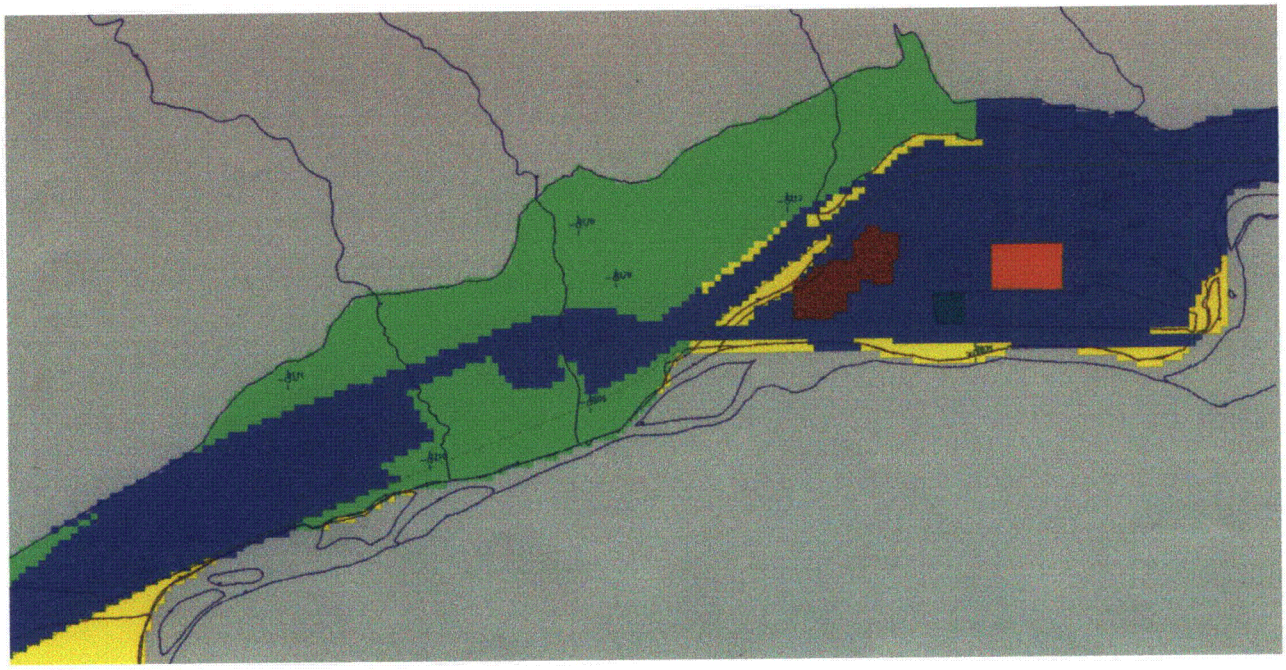


Figure 7. Evapotranspiration Zones

4.3 Boundary Conditions

The Colorado River to the east and south of the site is a natural boundary to the alluvial aquifer system and is represented in the model as a constant head boundary. River elevation measurements surveyed in July 1998 along the extent of the site and beyond to the east and west were used to establish the constant head elevation at the grid cells representing the southern boundary of the model. The northern boundary of the site is well defined by the Wasatch Formation outcrop. This boundary has been set to noflow cells in the model.

4.4 Selection of Calibration Targets

Prior to beginning model calibration it is important to decide upon the acceptance criteria for the calibration process. There are a number of acceptance criteria chosen for this project:

1) The model must be able to simulate the general flow directions observed at the site. Actual ground water elevations in July 1998 are presented in Figure 4. Simulated steady state ground water elevations presented in Figure 8, shows a striking similarity to the ground water flow pattern exhibited in Figure 4.

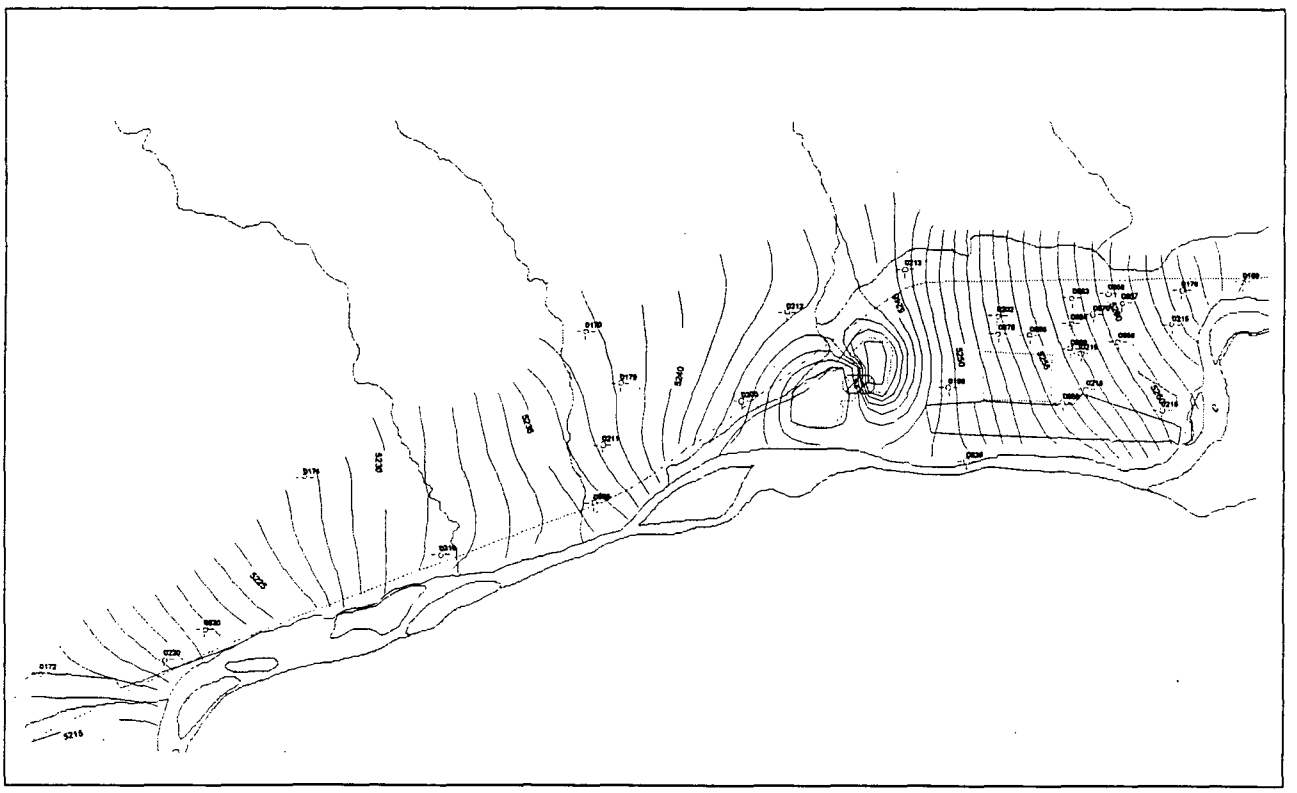


Figure 8. Simulated Steady State Ground Water Elevations

2) The numerical model should not have any inherent bias. In other words, since the model will either over or under predict the measured hydraulic heads, the arithmetic mean of the residuals should be as close to 0.0 as possible and fairly evenly distributed above and below 0.0. Figure 9 indicates that the residuals meet these criteria.

3) Thirty-one calibration targets were selected based on the July 1998 water level measurements. Several flow model calibration objectives were set prior to calibrating the model. These objectives and the calibrated model results are shown in Table 8.

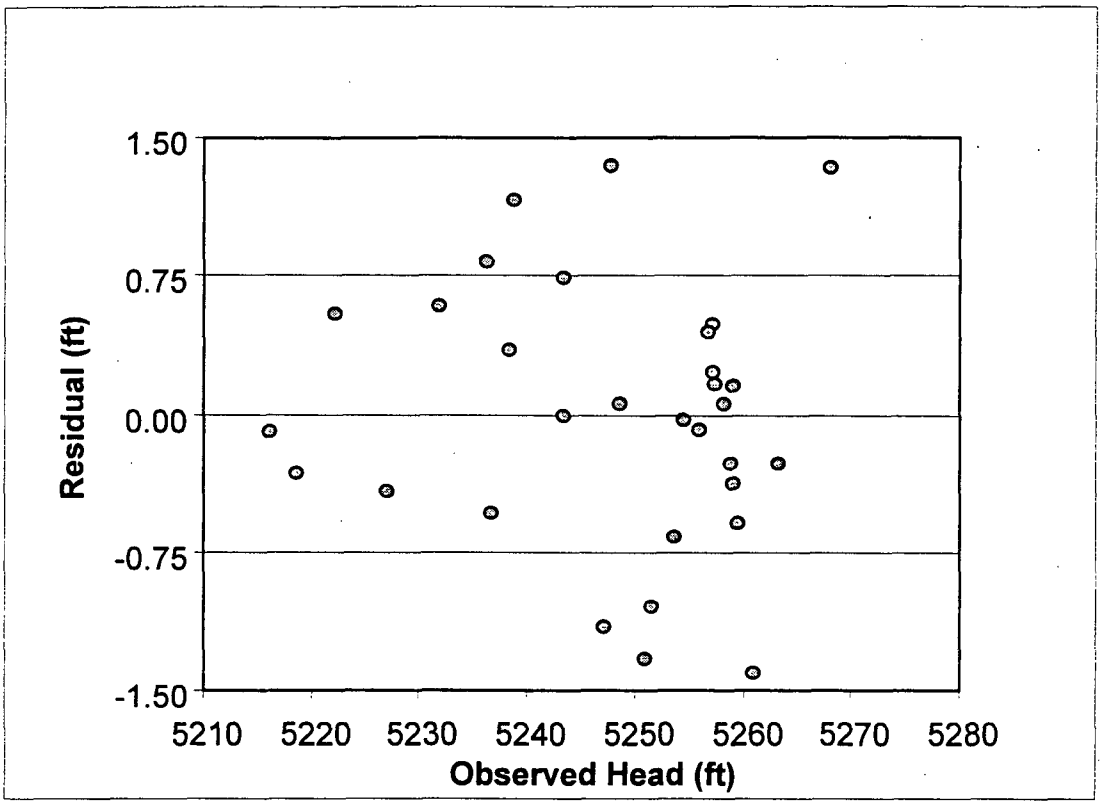


Figure 9. Comparison of Residual vs. Observed Head

Table 8. MODFLOW Calibration Objectives and Results

	Residual mean (ft)	Absolute residual mean (ft)	Sum of squares (ft^2)	Minimum residual (ft)	Maximum residual (ft)	SD/range (%)
Objective	0	< 1.	< 15.5	> -1.5	< 1.5	< 5.0
Actual	-0.012	0.55	15.348	-1.415	1.335	1.35

5.0 Calibration

5.1 MODFLOW Calibration and Residual Analysis

The calibrated model results and the residual at each target are shown in Table 9. The results satisfy the specified criteria. A plot of predicted (simulated) head vs. observed head, presented in Figure 10, demonstrates that the model accurately predicts field measurements.

Table 9. Calibration Target Residuals

Well ID	Observed Head (ft)	Predicted Head (ft)	Residual (observed - predicted)
169	5,268.33	5,267.00	1.33
170	5,238.92	5,237.76	1.16
171	5,227.20	5,227.63	-0.43
172	5,216.33	5,216.43	-0.10
176	5,263.54	5,263.82	-0.28
179	5,238.53	5,238.19	0.34
196	5,247.34	5,248.50	-1.16
200	5,243.50	5,243.51	-0.01
202	5,251.68	5,252.74	-1.06
210	5,232.00	5,231.42	0.58
211	5,236.73	5,237.27	-0.54
212	5,243.49	5,242.76	0.73
213	5,247.91	5,246.58	1.33
215	5,261.07	5,262.48	-1.41
216	5,259.05	5,259.32	-0.27
218	5,256.17	5,256.26	-0.09
219	5,257.44	5,256.96	0.48
220	5,218.88	5,219.21	-0.33
605	5,236.38	5,235.56	0.82
620	5,222.31	5,221.77	0.54
635	5,248.72	5,248.67	0.05
655	5,259.24	5,259.63	-0.39
657	5,259.66	5,260.26	-0.60
658	5,259.35	5,259.21	0.14
659	5,254.58	5,254.62	-0.04
663	5,257.65	5,257.50	0.15
664	5,257.27	5,257.05	0.22
668	5,253.73	5,254.40	-0.67
669	5,256.91	5,256.47	0.44
670	5,258.51	5,258.46	0.05
675	5,251.14	5,252.48	-1.34
n	31		
range	52.00		
mean			-0.012
absolute mean			0.55
sum of squares			15.34
standard deviation			0.70
minimum			-1.41
maximum			1.33

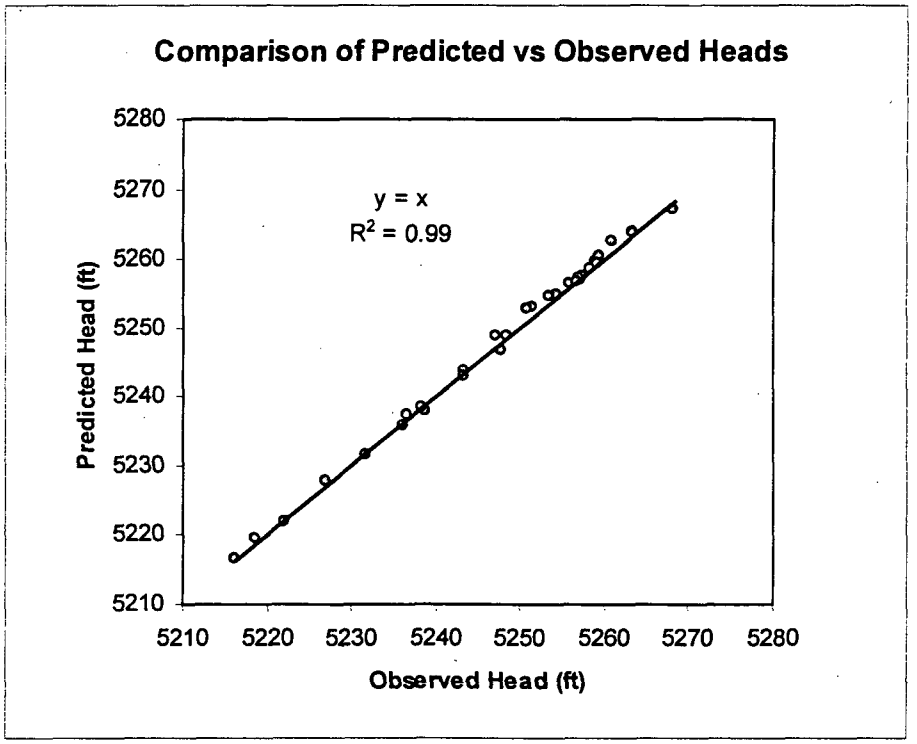


Figure 10. Comparison of Predicted vs. Observed Heads

5.2 MT3D Calibration

The literature on dispersivity as it relates to large-scale models is vague and often contradictory, with longitudinal values ranging from 2 percent to 30 percent of the length of the plume or maximum flow direction. Commonly, a value of 10 percent of the length of the plume is used for longitudinal dispersivity and 10 percent of longitudinal dispersivity is used for transverse dispersivity. In addition, dispersivity is almost impossible to measure in the field for large sites.

Although it is not possible to calibrate on concentration in GWVistas, as it is on hydraulic head, numerous simulation runs were made to calibrate the MT3D model on longitudinal and transverse dispersivity. The baseline values for the dispersivity sensitivity simulations are:

- bulk density — 95 lbs/ft^3
- effective porosity — 25 percent
- longitudinal dispersivity — 100 ft
- transverse dispersivity — 10 percent LD
- uranium distribution coefficient — 0.7 milliliters per gram (mL/g)

Uranium concentration measurements performed on water samples collected over a 7-year period from October 1991 through January 1999 at the Roaring Fork Gravel Pond were used for the calibration. This data is shown in Table 10. A plot of the data with a best fit non-linear regression line is shown in Figure 11. At an elapsed time of 7 years, the uranium concentration value of 0.1422 milligrams per liter (mg/L) is predicted by the best fit formula shown in Figure 11. An initial concentration map corresponding to the October 1991 time was produced and imported into the model. The model was then run for 7 years with various values of longitudinal dispersivity varying from 10 to 2,000 ft. Transverse dispersivity was held at

Table 10. MT3D Calibration—Longitudinal Dispersivity Regression

Roaring Fork Gravel Pond		
Uranium Concentration (mg/L)	Date	Elapsed Time (years)
0.435	2-Oct-91	0.00
0.362	27-Jun-92	0.74
0.421	12-Oct-92	1.03
0.214	16-Mar-93	1.45
0.365	5-Aug-93	1.84
0.311	11-Mar-94	2.44
0.3	28-Aug-94	2.90
0.269	14-Mar-95	3.45
0.273	8-Aug-95	3.85
0.157	8-Mar-96	4.43
0.185	15-Nov-96	5.12
0.168	24-Apr-97	5.56
0.17	15-Sep-97	5.95
0.152	22-Feb-98	6.39
0.144	18-Aug-98	6.88
0.1485	27-Jan-99	7.32

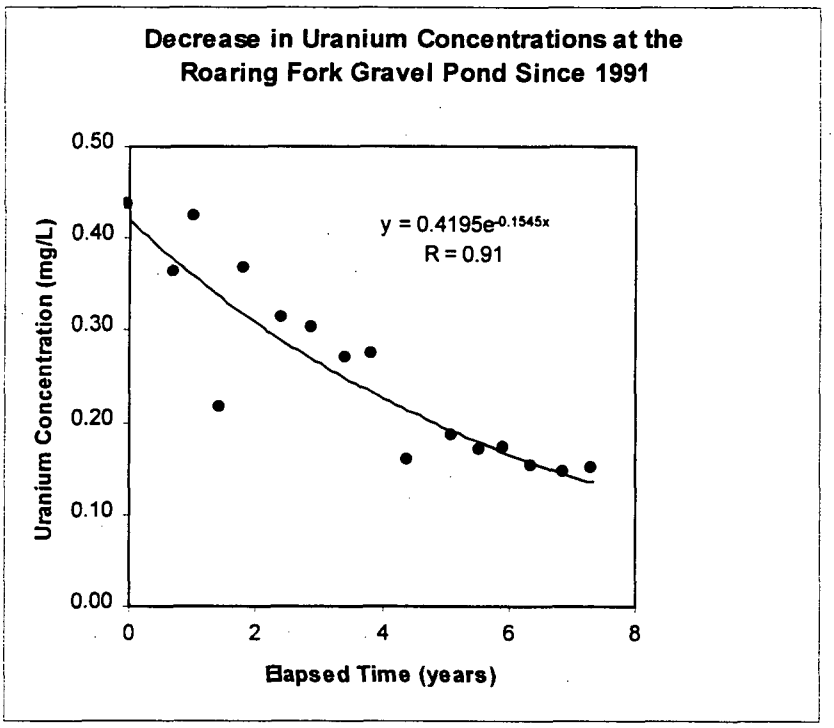


Figure 11. MT3D Calibration—Longitudinal Dispersivity Regression

10 percent of longitudinal dispersivity. Table 11, a summary of the results of these simulations, shows the observed concentration value vs. the predicted concentration value and the residual squares for each of these simulations. A plot of the longitudinal dispersivity vs. residual squares is shown in Figure 12. As is evident from the residual squares column of Table 11 and the curve shown in Figure 12, the minimum error between the observed concentration and predicted concentrations occurs at a longitudinal dispersivity of 100 ft.

Table 11. MT3D Calibration—Longitudinal Dispersivity Prediction

Run No.	Longitudinal Dispersivity (ft)	Uranium Concentration (mg/L) at Year 7		Residual Squares
		Observed	Predicted	
1	10	0.1422	0.14991	0.0000594
2	50	0.1422	0.14337	0.0000014
3	100	0.1422	0.14185	0.0000001
4	250	0.1422	0.13898	0.0000104
5	500	0.1422	0.13558	0.0000438
6	750	0.1422	0.13121	0.0001208
7	1,000	0.1422	0.12649	0.0002468
8	2,000	0.1422	0.11014	0.0010278

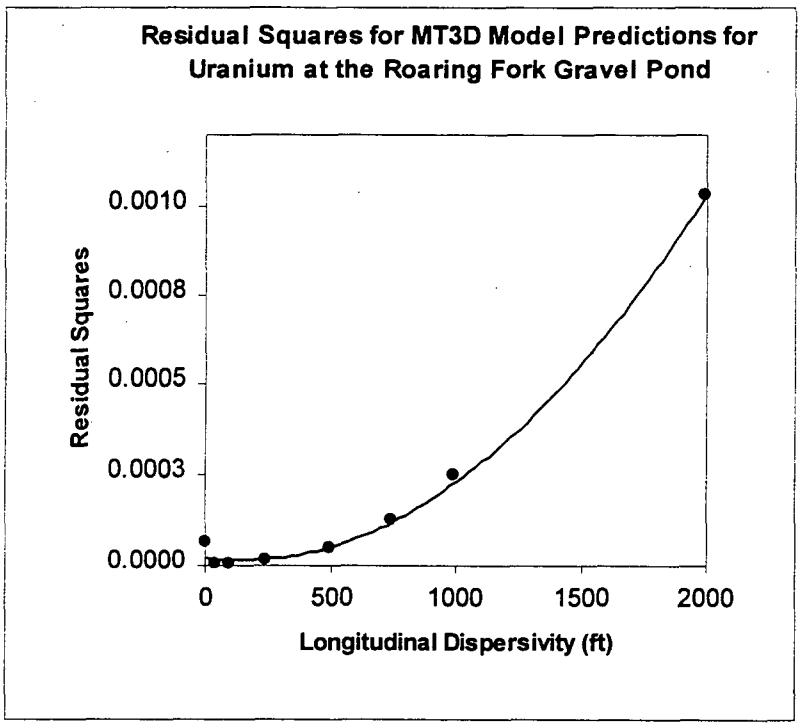


Figure 12. MT3D Calibration—Longitudinal Dispersivity Prediction

5.3 MT3D Verification

Verification of the model calibration was examined by comparison of predicted uranium concentrations at seven ground water monitor wells to the most recent concentrations observed in 1999. Concentrations measured in October 1991 were used as the initial concentration for the model. Other baseline values used in the simulations are:

- bulk density 95 lbs/ft^3
- effective porosity 25 percent
- longitudinal dispersivity 100 ft

- transverse dispersivity 10 percent LD
- uranium distribution coefficient 0.7 milliliters per gram (mL/g)

Observed and predicted uranium concentrations for January 1999 are summarized in Table 12. The predicted 1999 values versus the measured 1999 concentrations are plotted in Figure 13. The relatively high correlation coefficient of 0.92 indicates good agreement between the model predictions and the observed concentrations. The results also indicate the model predictions over estimate the observed values by an average of 6 percent.

Table 12. MT3D Calibration—Longitudinal Dispersivity Selected Wells Verification

Well	Uranium Concentration (mg/L) with Longitudinal Dispersivity at 100 ft		Residual Squares
	Observed	Predicted	
200	0.1435	0.17215	0.0008208
589	0.1210	0.12303	0.0000041
590	0.0790	0.09645	0.0003045
596	0.1575	0.18157	0.0005794
598	0.1520	0.1433	0.0000757
599	0.1550	0.14579	0.0000848
609	0.0620	0.06721	0.0000271

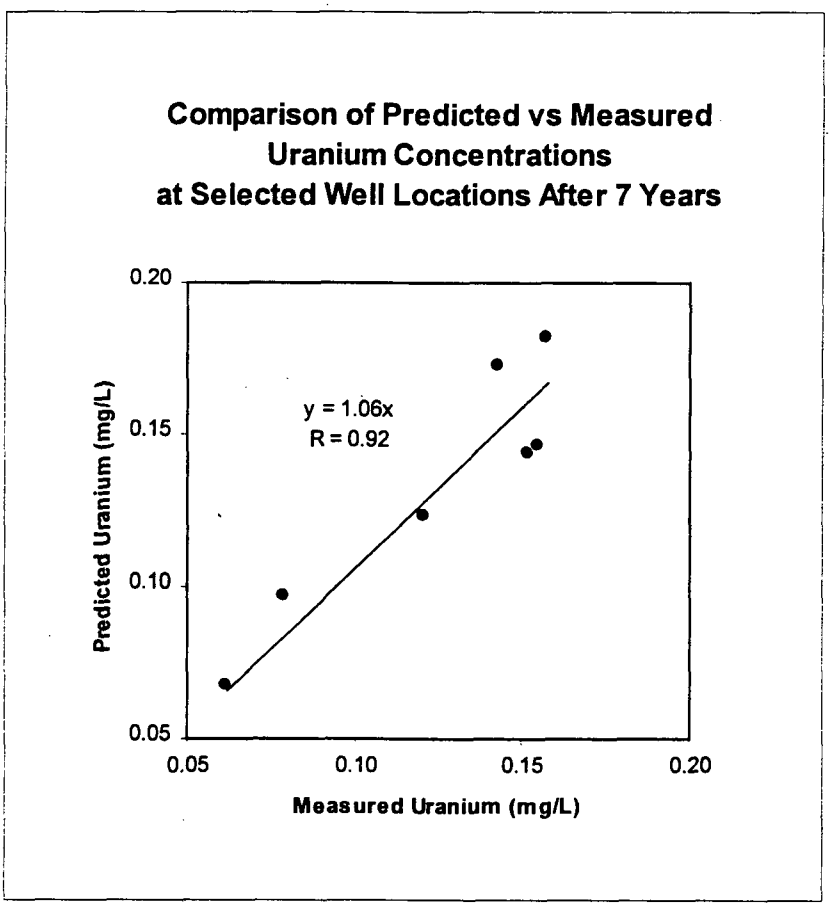


Figure 13. MT3D Calibration—Longitudinal Dispersivity Selected Wells Verification

5.4 Sensitivity Analysis

Sensitivity analysis is useful to evaluate the affects that variations in flow and transport parameters, including hydraulic conductivity, recharge, ET, river stage, dispersivity, distribution coefficient, porosity, and density have on the final predicted result. Highly sensitive parameters can then be treated as uncertain for stochastic simulations. For this sensitivity analysis, concentrations were predicted at monitor well RFN–670, which is located in the area of the former mill site, at specified time intervals into the future. Uranium and vanadium were selected for the transport contaminants. Uranium is considered a conservative constituent and vanadium is considered a retarded constituent. Parameters resulting in a coefficient of variation (CV) greater than 15 percent between the predicted concentrations at each time interval are treated as uncertain for stochastic simulations. The CV is defined as the standard deviation (σ) divided by the mean ($\bar{x}$).

Sensitivity analysis results of hydraulic conductivity for uranium and vanadium are depicted in Figure 14 and Figure 15, respectively. The largest range in concentration for uranium, for the K_x values tested, occurs at 5 years and decreases with time. At 5 years the coefficient of variation for the uranium concentration values using an unbiased estimate of the standard deviation (σ), adjusted for sample size (Dixon and Massey 1957), is 16.1 percent. For vanadium the largest range in concentration occurs at 50 years and decreases significantly at 100 years. At 50 years the coefficient of variation is 24.8 percent. This parameter was selected to be treated as uncertain for stochastic simulations since the coefficient of variation criteria of 15 percent is exceeded for both analytes.

Recharge sensitivity analysis for uranium and vanadium, with various combinations of recharge zones active, are shown in Figure 16 and Figure 17, respectively. Recharge is not sensitive to flow in the tributaries and lower Pioneer Ditch and since there is no evidence or reason to believe that they are or should be different they were all set to the minimum value (0.0067 ft/day—see Table 6). As with hydraulic conductivity, the largest range in concentration for uranium occurs at 5 years and decreases with time. At 5 years the coefficient of variation for the uranium concentration values using an unbiased estimate of σ is 10.2 percent. Vanadium shows a similar pattern with the largest range at 10 years and a decrease with time. At 10 years the coefficient of variation is 10.5 percent. The coefficient of variation values for both analytes is within the criteria of 15 percent, therefore this parameter was not treated as uncertain.

The Gravel Pits and McCauley Pit are not sensitive to ET rate and extinction depth, therefore the recharge rate for both zones was set to .00558 ft/day (24.43 inches per year—see Table 7) which is the adjusted potential evaporation. ET sensitivity analysis results for uranium and vanadium are depicted in Figure 18 and Figure 19, respectively. The largest range in concentration for uranium occurs at 5 years and decreases with time. At 5 years the coefficient of variation for the uranium concentration values using an unbiased estimate of σ is 11.1 percent. The largest range in concentration for vanadium occurs in the 10 to 25 year range and then decreases. At 25 years the coefficient of variation is 5.5 percent. This parameter was not treated as uncertain.

Run No.	K_x (ft/day)	Uranium Concentration (mg/L) at Year:				
		0	5	15	25	35
1	94	0.15835	0.14858	0.04064	0.01524	0.0092
2	114	0.15835	0.12894	0.03061	0.0119	0.00646
3	134	0.15835	0.11159	0.02435	0.00802	0.00361

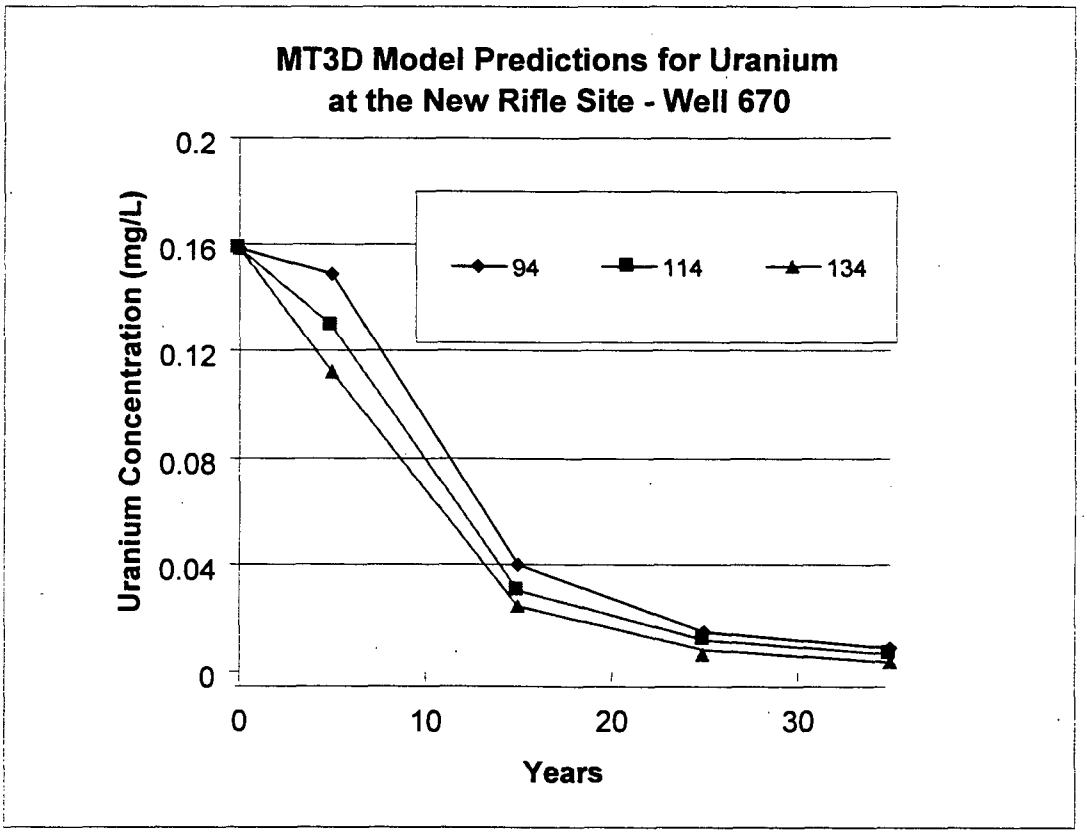


Figure 14. MT3D Sensitivity Analysis—Hydraulic Conductivity (K_x)

Run No.	K_x (ft/day)	Vanadium Concentration (mg/L) at Year:				
		0	10	25	50	100
1	94	5.6642	4.899	3.3885	1.5303	0.25719
2	114	5.6642	4.91	3.2009	1.2532	0.14148
3	134	5.6642	4.8997	2.9817	0.97843	0.07088

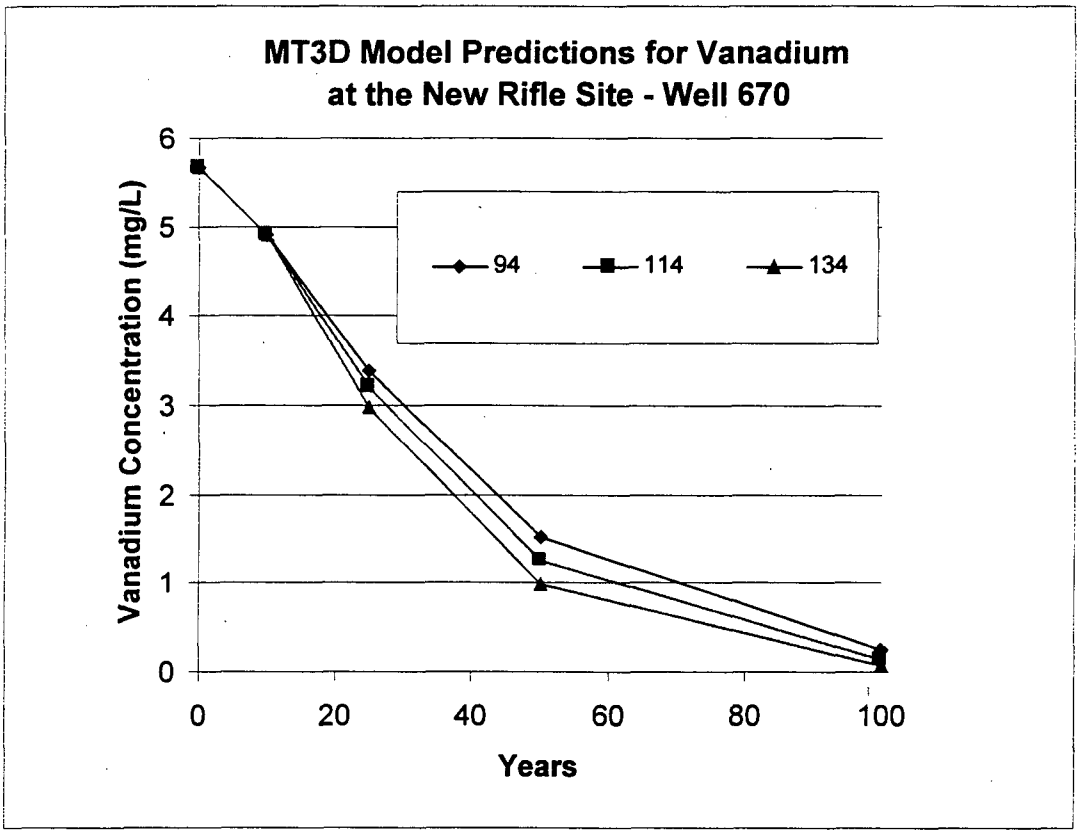


Figure 15. MT3D Sensitivity Analysis—Hydraulic Conductivity (K_x)

Recharge Parameter	Uranium Concentration (mg/L) at Year:					
	0	5	15	25	30	35
all recharge zones on	0.15835	0.11159	0.02435	0.00802	0.00506	0.00361
upper Pioneer Ditch off	0.15835	0.09324	0.01618	0.00349	0.00291	0.00278
tributaries and lower Pioneer ditch off	0.15835	0.10271	0.02138	0.00396	0.00216	0.00162
tributaries and Pioneer ditch off	0.15835	0.11037	0.02412	0.00768	0.00476	0.00336
Pioneer ditch off	0.15835	0.10146	0.02087	0.00378	0.00209	0.00161
areal precipitation off	0.15835	0.10251	0.02131	0.00394	0.00215	0.00162
all recharge zones off	0.15835	0.08301	0.00933	0.00282	0.00267	0.00265

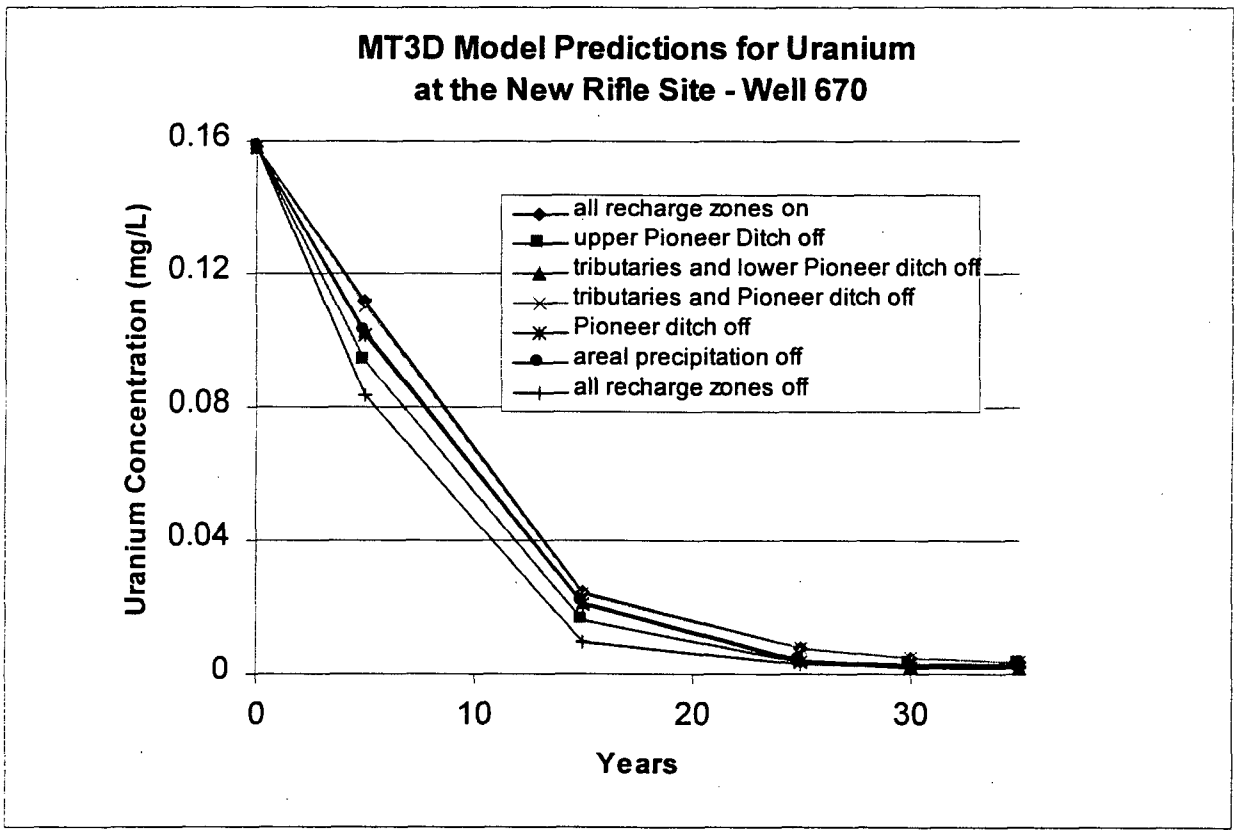


Figure 16. MT3D Sensitivity Analysis—Recharge

Recharge Parameter	Vanadium Concentration (mg/L) at Year:					
	0	5	10	25	50	100
all recharge zones on	5.6642	5.3526	4.8997	2.9817	0.97843	0.07088
upper Pioneer Ditch off	5.6642	5.9963	5.8754	3.7603	0.99369	0.03807
tributaries and lower Pioneer ditch off	5.6642	5.5782	5.3159	3.5649	1.2268	0.08434
tributaries and Pioneer ditch off	5.6642	5.375	4.9385	3.0298	0.9948	0.07099
Pioneer ditch off	5.6642	5.6027	5.3572	3.6116	1.2374	0.08334
areal precipitation off	5.6642	5.5807	5.3193	3.5665	1.2252	0.08385
all recharge zones off	5.6642	6.3385	6.4627	4.3297	1.0903	0.0351

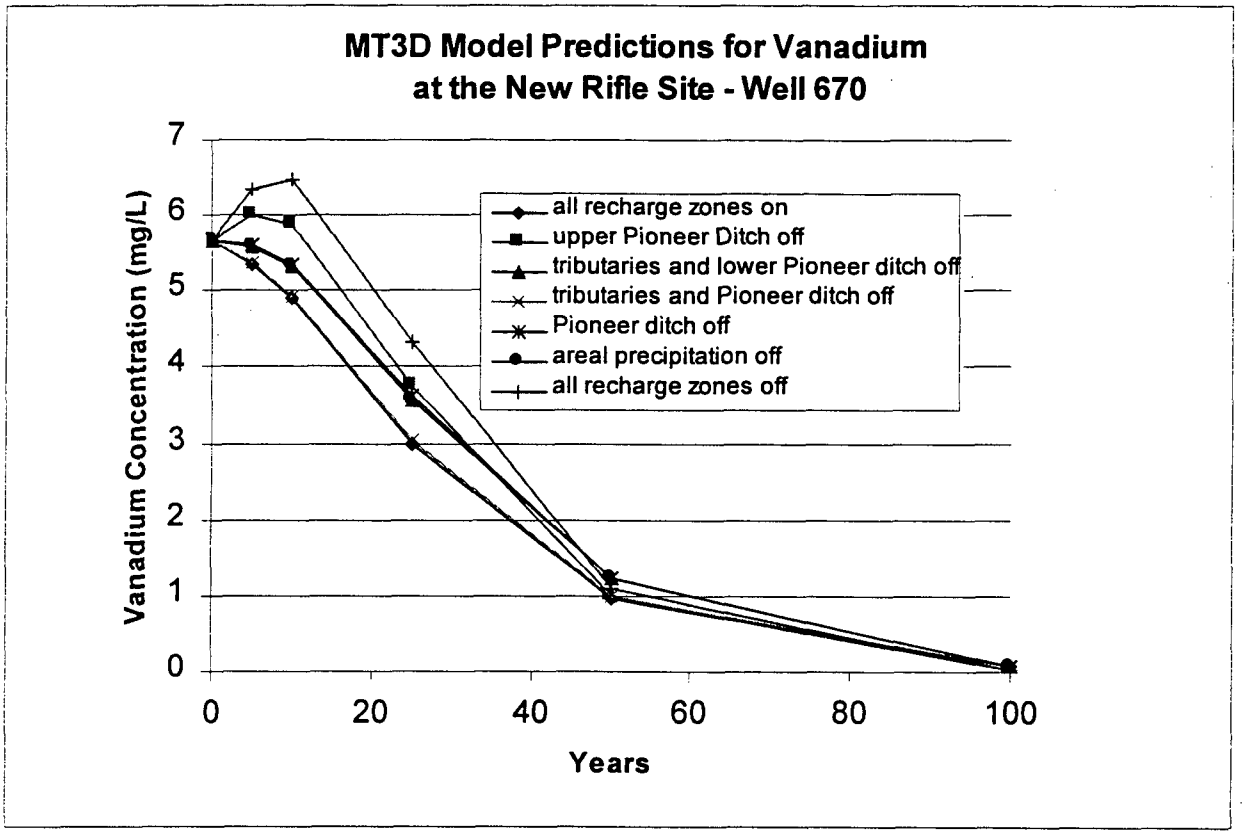


Figure 17. MT3D Sensitivity Analysis—Recharge

ET Parameter	Uranium Concentration (mg/L) at Year:					
	0	5	15	25	30	35
all ET zones on	0.15835	0.11159	0.02435	0.00802	0.00506	0.00361
Cottonwood/Tamarisk off	0.15835	0.11695	0.02565	0.00903	0.00592	0.00429
Greasewood off	0.15835	0.13014	0.02837	0.01109	0.00813	0.00645
Upland and McCauley off	0.15835	0.11424	0.02557	0.00869	0.00551	0.00388
Gravel Pit and Wetland area off	0.15835	0.1133	0.02473	0.00831	0.00531	0.0038
all ET zones off	0.15835	0.1443	0.03369	0.01324	0.01038	0.00886

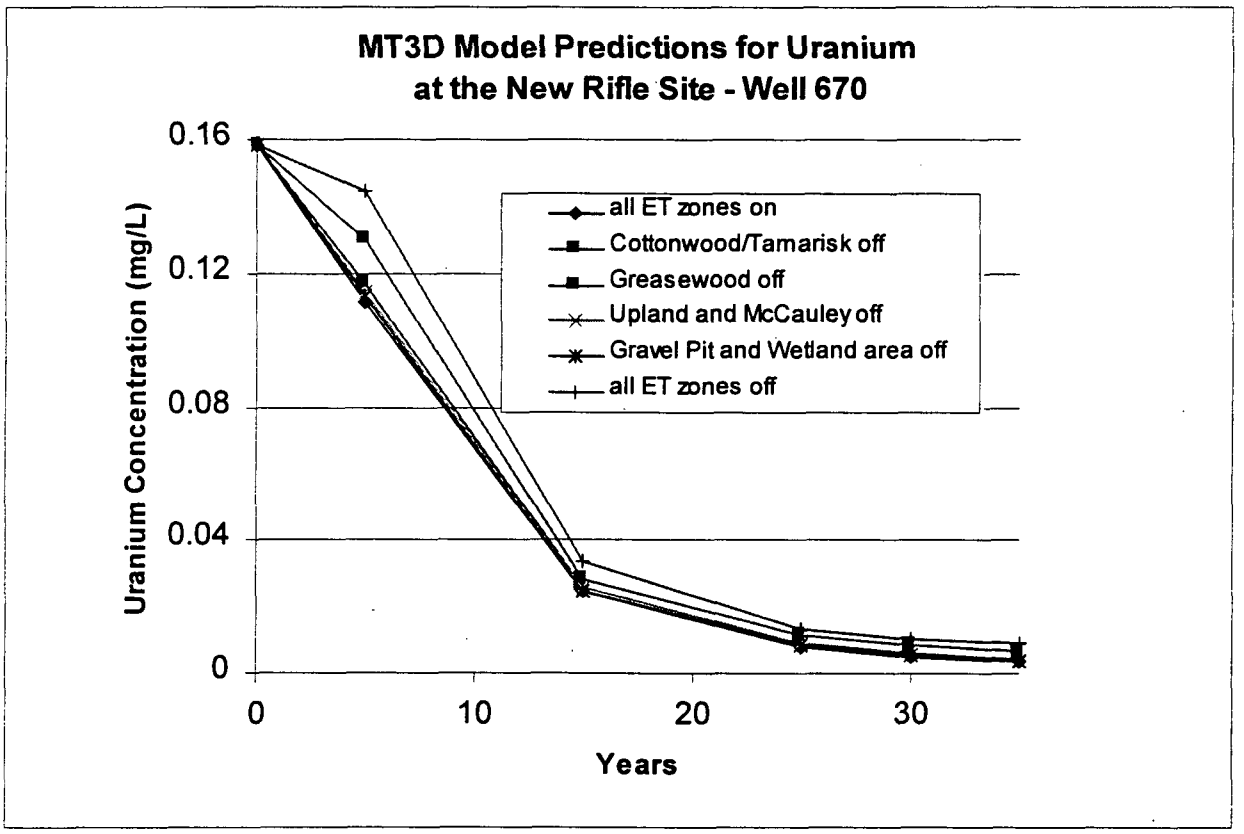


Figure 18. MT3D Sensitivity Analysis—ET

ET Parameter	Vanadium Concentration (mg/L) at Year:					
	0	5	10	25	50	100
all ET zones on	5.6642	5.3526	4.8997	2.9817	0.97843	0.07088
Cottonwood/Tamarisk off	5.6642	5.3043	4.8356	2.9452	0.99827	0.08009
Greasewood off	5.6642	5.1599	4.615	2.7193	0.93949	0.08831
Upland and McCauley off	5.6642	5.3784	4.9658	3.1188	1.0798	0.08712
Gravel Pit and Wetland area off	5.6642	5.3369	4.8789	2.9702	0.98471	0.07368
all ET zones off	5.6642	5.1099	4.5708	2.7497	1.1061	0.11962

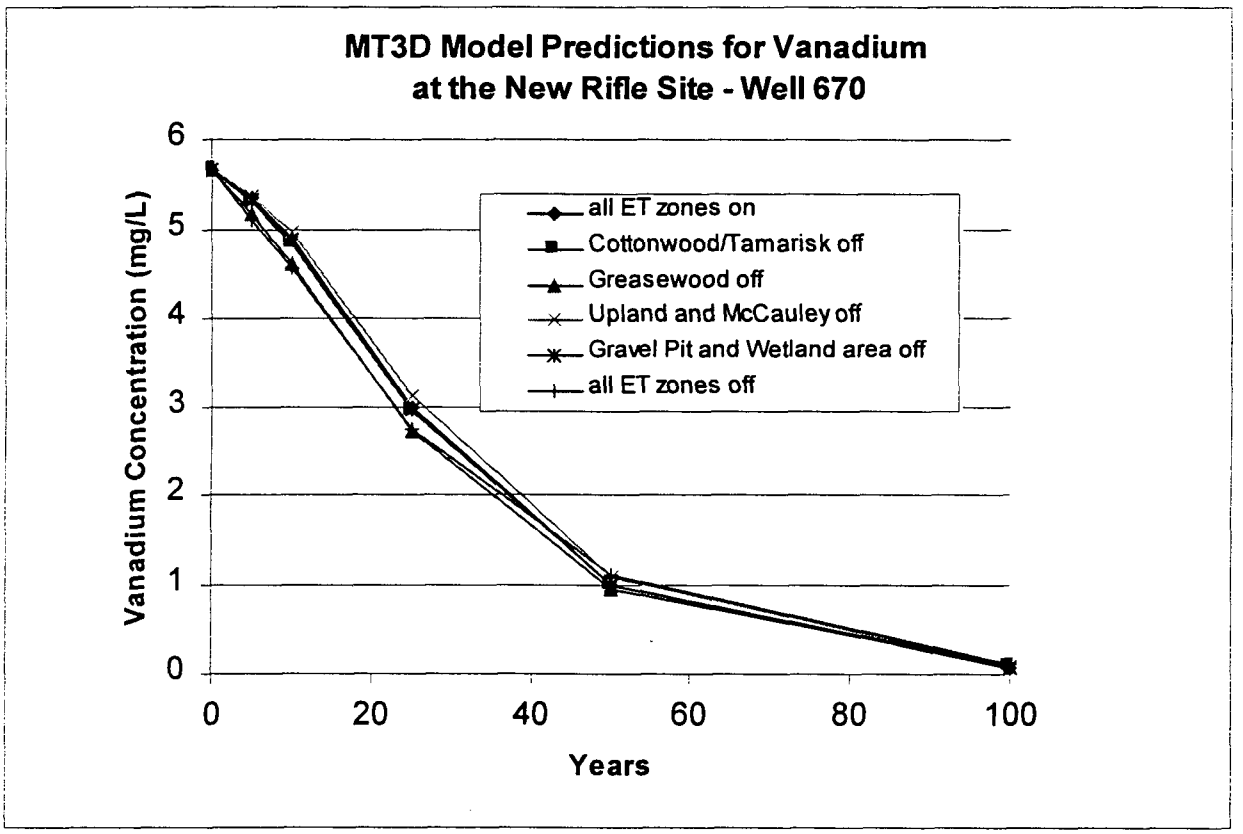


Figure 19. MT3D Sensitivity Analysis—ET

Figure 20 and Figure 21 for uranium and vanadium, respectively, show that the model is not sensitive to the river stage. A difference in constant head of 10 ft between low flow and high flow was used to simulate changes in river stage. The largest range in concentration for uranium occurs at 5 years. At 5 years the coefficient of variation for the uranium concentration values using an unbiased estimate of σ is 6.7 percent. The largest range in concentration for vanadium occurs in the 10 to 25 year range and then decreases. At 25 years the coefficient of variation is 9.0 percent. This parameter was not treated as uncertain.

Sensitivity analysis was performed on several contaminant transport parameters since it is not yet possible to calibrate on concentration within GWVistas. The transport parameters tested for sensitivity analysis are effective porosity, bulk density, distribution coefficient (K_d), transverse dispersivity, and longitudinal dispersivity. The baseline values for these sensitivity simulations are:

- effective porosity — 25 percent
- bulk density — 95 lbs/ft^3
- uranium distribution coefficient — 0.7 milliliters per gram (mL/g)
- vanadium distribution coefficient — 4.9 mL/g
- transverse dispersivity — 10 percent LD
- longitudinal dispersivity — 100 ft

Results of the sensitivity analysis for effective porosity in Figure 22 and Figure 23 for uranium and vanadium, respectively, indicate that the model is insensitive to this parameter. The largest range in concentration for uranium occurs at 5 years. At 5 years the coefficient of variation for the uranium concentration values using an unbiased estimate of σ is 5.9 percent. The largest range in concentration for vanadium occurs in the 25 to 50 year range and then decreases. At 25 years the coefficient of variation is 1.1 percent. This parameter was not treated as uncertain.

Results of bulk density sensitivity analysis are shown in Figure 24 and Figure 25 for uranium and vanadium, respectively. The largest range in concentration for uranium occurs at 5 years and decreases with time. At 5 years the coefficient of variation for the uranium concentration values using an unbiased estimate of σ is 8.9 percent. For vanadium the largest range in concentration occurs at 25 years, remains high at 50 years and then drops off considerable at 100 years. At 25 years the coefficient of variation is 11.4 percent. This parameter was not treated as uncertain.

Numerical models are sensitive to the distribution coefficient (K_d). Figure 26 and Figure 27 depict results of the sensitivity analysis for uranium and vanadium, respectively. Both analytes show a large range in concentration for the range of times simulated. The largest range in concentration for uranium occurs at 5 years and then decreases. At 5 years the coefficient of variation for the uranium concentration values using an unbiased estimate of σ is 82.7 percent. For vanadium the largest range in concentration occurs at 25 years and remains high through 100 years. At 25 years the coefficient of variation is 80.7 percent. The coefficient of variation is well above the criteria of 15 percent for both analytes, therefore this parameter was treated as uncertain for the stochastic simulation analysis.

Run No.	River Stage	Uranium Concentration (mg/L) at Year:				
		0	5	15	25	35
1	-5	0.15835	0.11936	0.02383	0.00969	0.00723
2	0	0.15835	0.11159	0.02435	0.00802	0.00361
3	5	0.15835	0.10616	0.02318	0.0055	0.00235

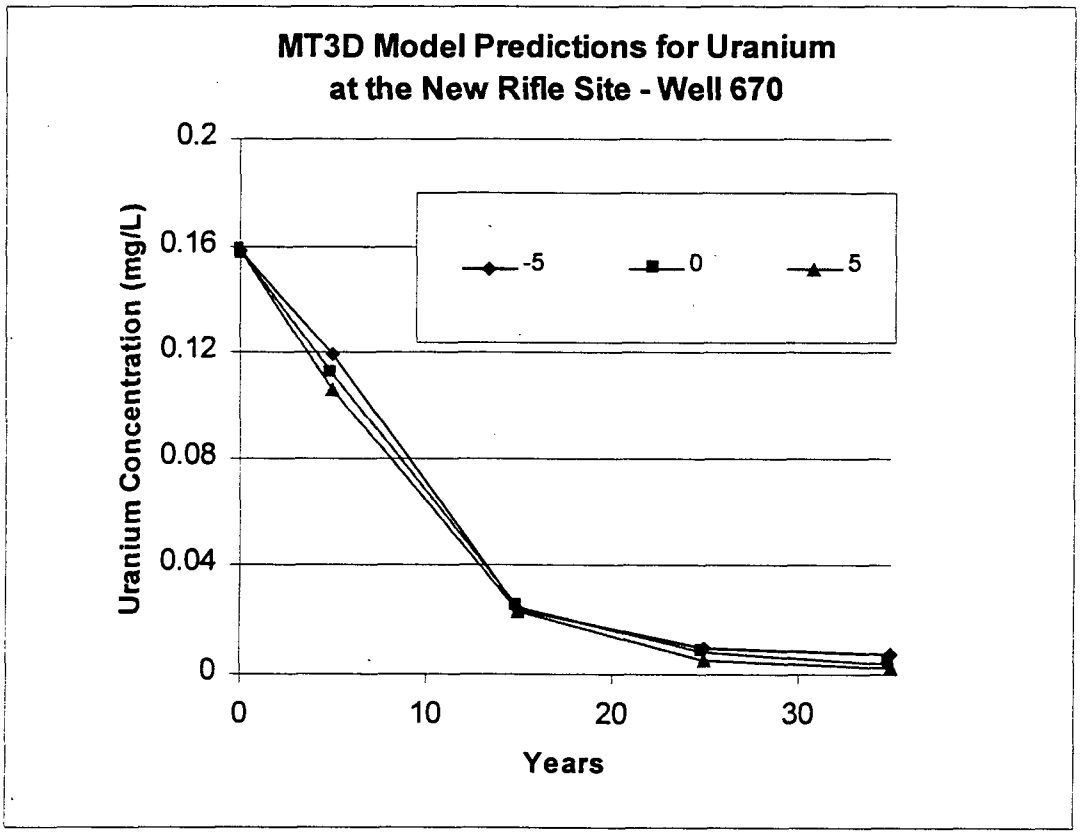


Figure 20. MT3D Sensitivity Analysis—River Stage

Run No.	River Stage	Vanadium Concentration (mg/L) at Year:				
		0	10	25	50	100
1	-5	5.6642	4.6456	2.7107	0.90191	0.07739
2	0	5.6642	4.8997	2.9817	0.97843	0.07088
3	+5	5.6642	5.1024	3.179	1.0072	0.06261

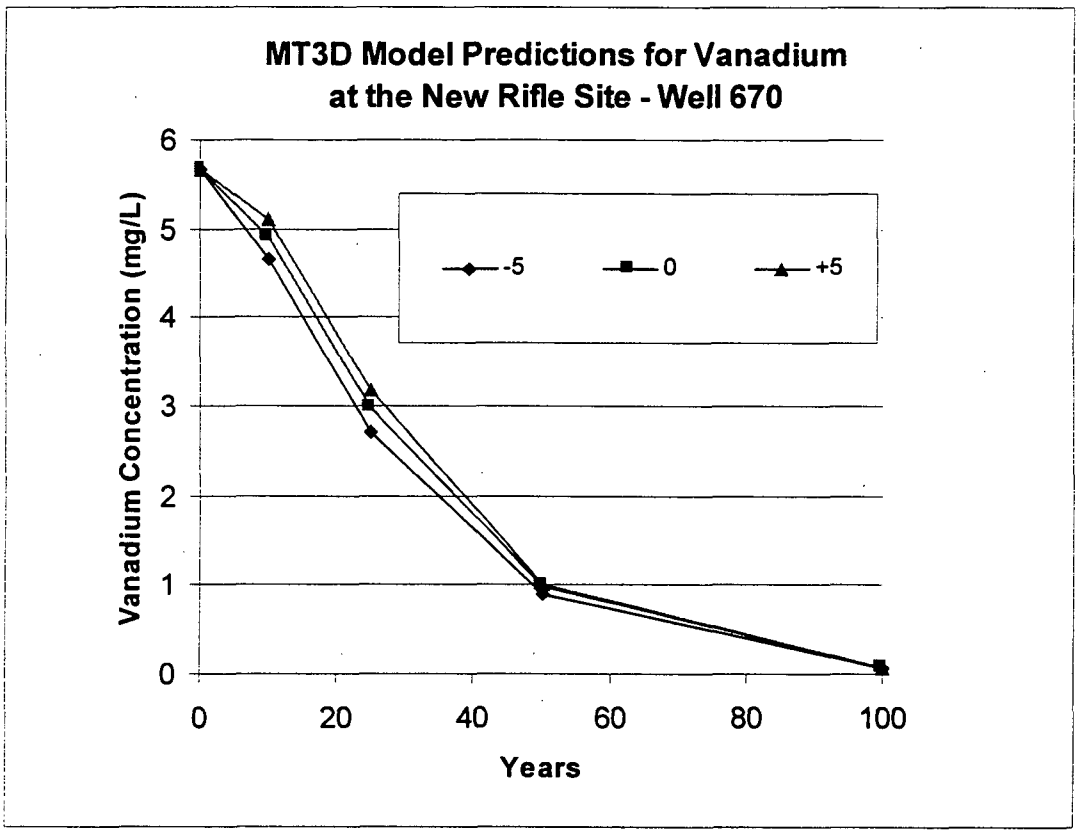
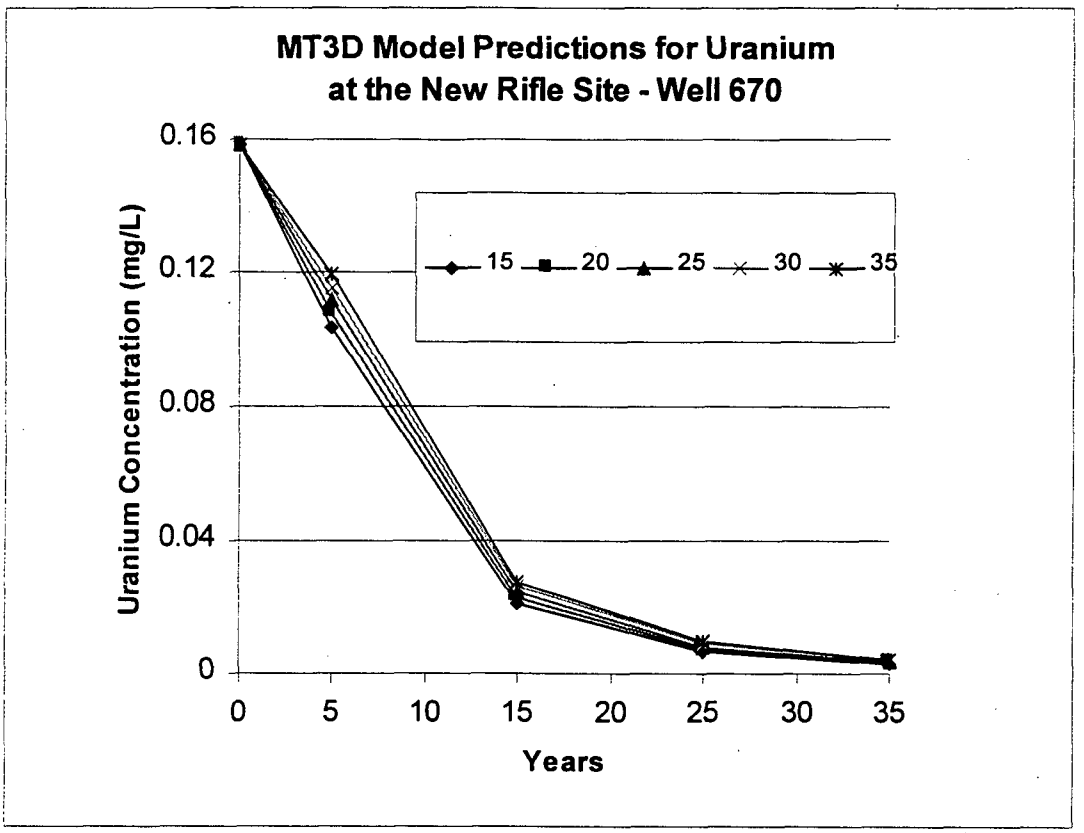


Figure 21. MT3D Sensitivity Analysis—River Stage

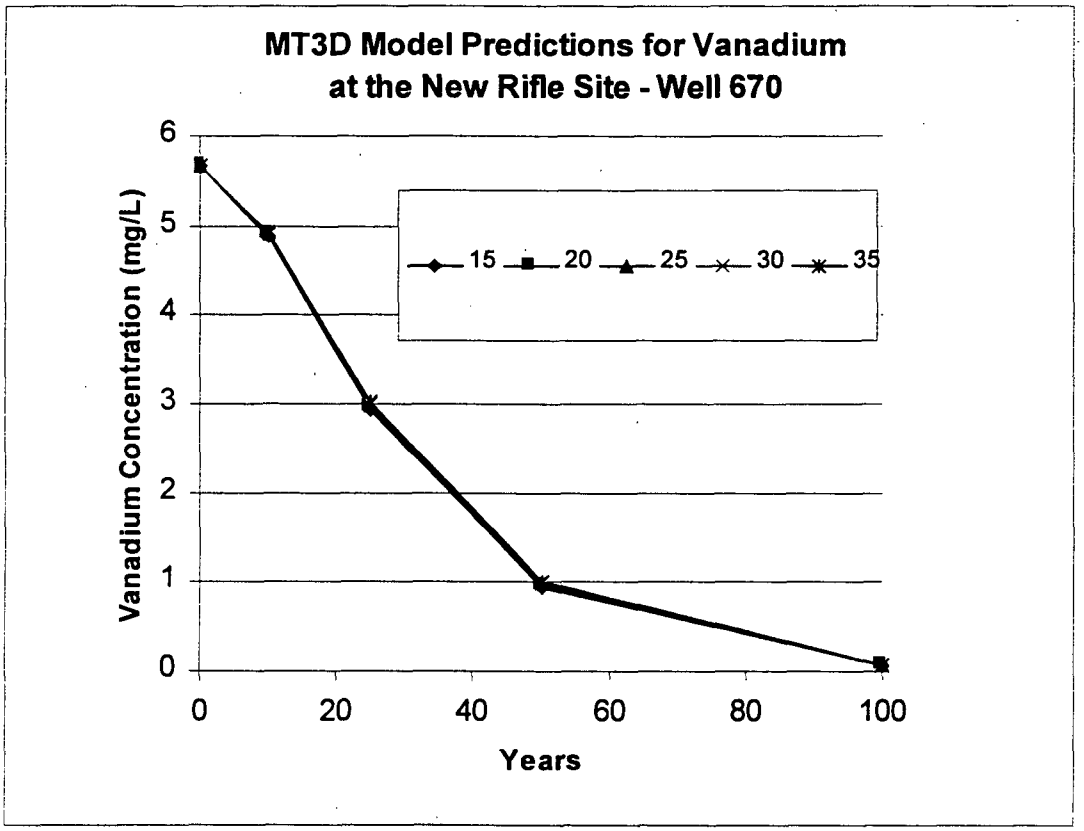
Run No.	Effective Porosity (%)	Uranium Concentration (mg/L) at Year:				
		0	5	15	25	35
1	15	0.15835	0.10343	0.02102	0.00656	0.00315
2	20	0.15835	0.10759	0.02268	0.00727	0.00337
3	25	0.15835	0.11159	0.02435	0.00802	0.00361
4	30	0.15835	0.11544	0.02604	0.00881	0.00389
5	35	0.15835	0.11912	0.02774	0.00963	0.0042



MT3D Model Parameter	Value	Unit
longitudinal dispersivity	100	ft
bulk density	95	lbs/ft^3
distribution coefficient	0.7	mL/g

Figure 22. MT3D Sensitivity Analysis—Effective Porosity

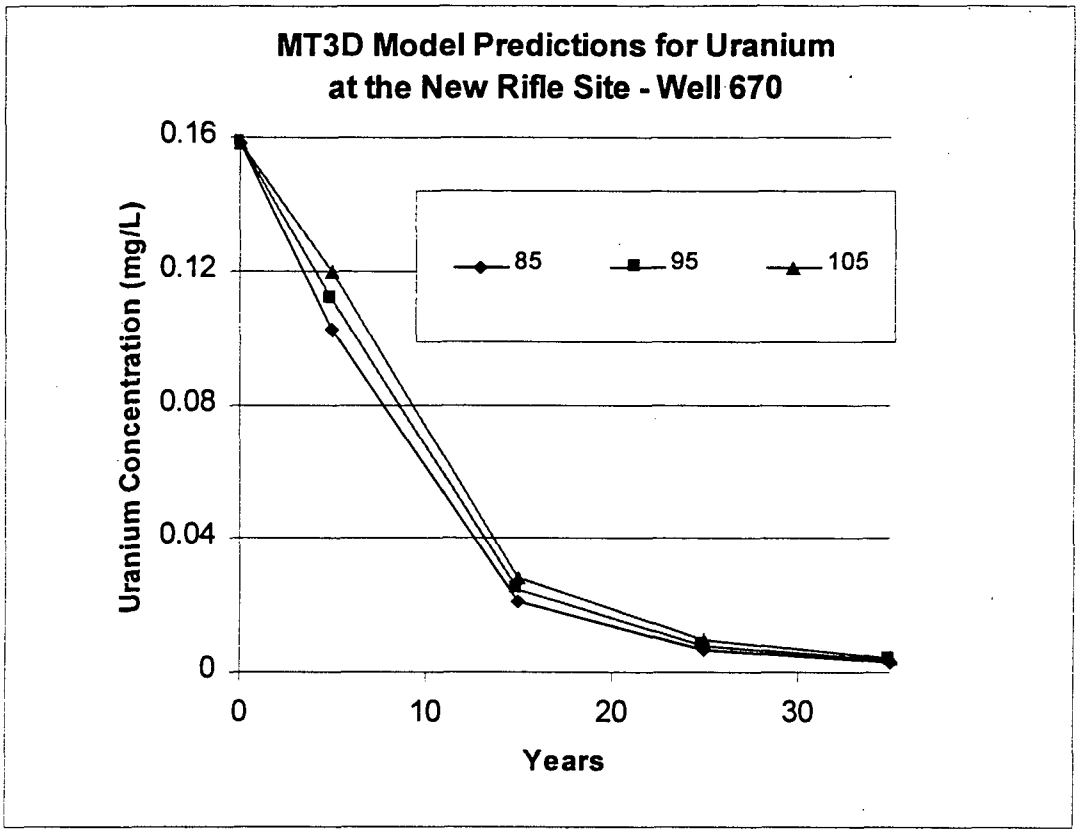
Run No.	Effective Porosity (%)	Vanadium Concentration (mg/L) at Year:				
		0	10	25	50	100
1	15	5.6642	4.8844	2.9436	0.94764	0.06596
2	20	5.6642	4.8921	2.9629	0.96303	0.06839
3	25	5.6642	4.8997	2.9817	0.97843	0.07088
4	30	5.6642	4.9071	3.0008	0.99386	0.07342
5	35	5.6642	4.9144	3.0195	1.0093	0.07601



MT3D Model Parameter	Value	Unit
longitudinal dispersivity	100	ft
bulk density	95	lbs/ft^3
distribution coefficient	4.9	mL/g

Figure 23. MT3D Sensitivity Analysis—Effective Porosity

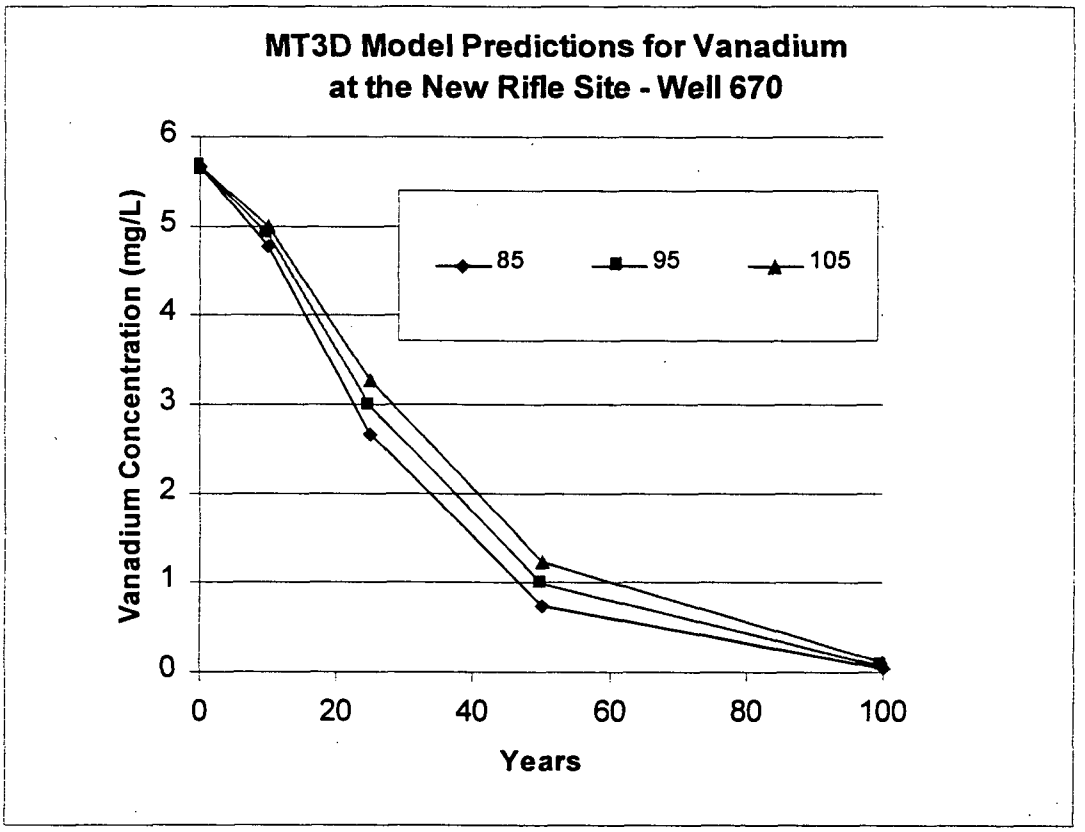
Run No.	Bulk Density (lbs/ft^3)	Uranium Concentration (mg/L) at Year:				
		0	5	15	25	35
1	85	0.15835	0.10241	0.02063	0.0064	0.0031
2	95	0.15835	0.11159	0.02435	0.00802	0.00361
3	105	0.15835	0.11998	0.02815	0.00983	0.00427



MT3D Model Parameter	Value	Unit
longitudinal dispersivity	100	ft
effective porosity	25	%
distribution coefficient	0.7	mL/g

Figure 24. MT3D Sensitivity Analysis—Bulk Density

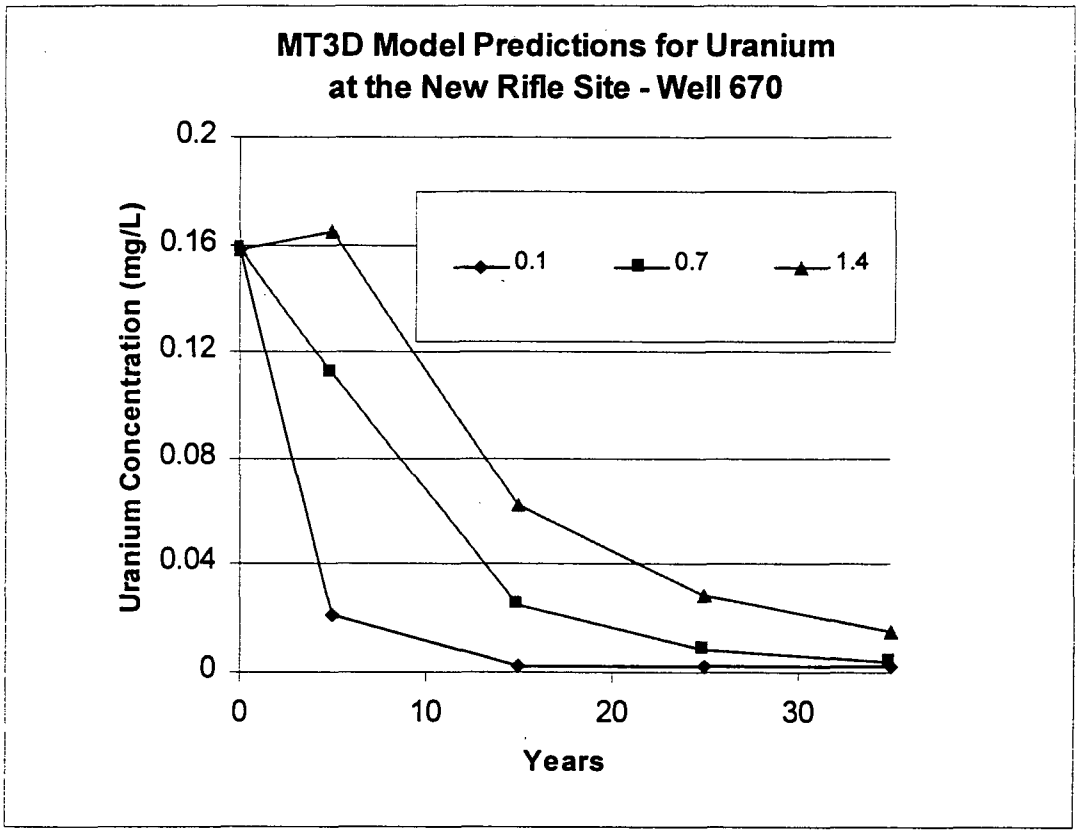
Run No.	Bulk Density (lbs/ft^3)	Vanadium Concentration (mg/L) at Year:				
		0	10	25	50	100
1	85	5.6642	4.7643	2.6622	0.74019	0.03807
2	95	5.6642	4.8997	2.9817	0.97843	0.07088
3	105	5.6642	5.0033	3.2598	1.2214	0.11723



MT3D Model Parameter	Value	Unit
longitudinal dispersivity	100	ft
effective porosity	25	%
distribution coefficient	4.9	mL/g

Figure 25. MT3D Sensitivity Analysis—Bulk Density

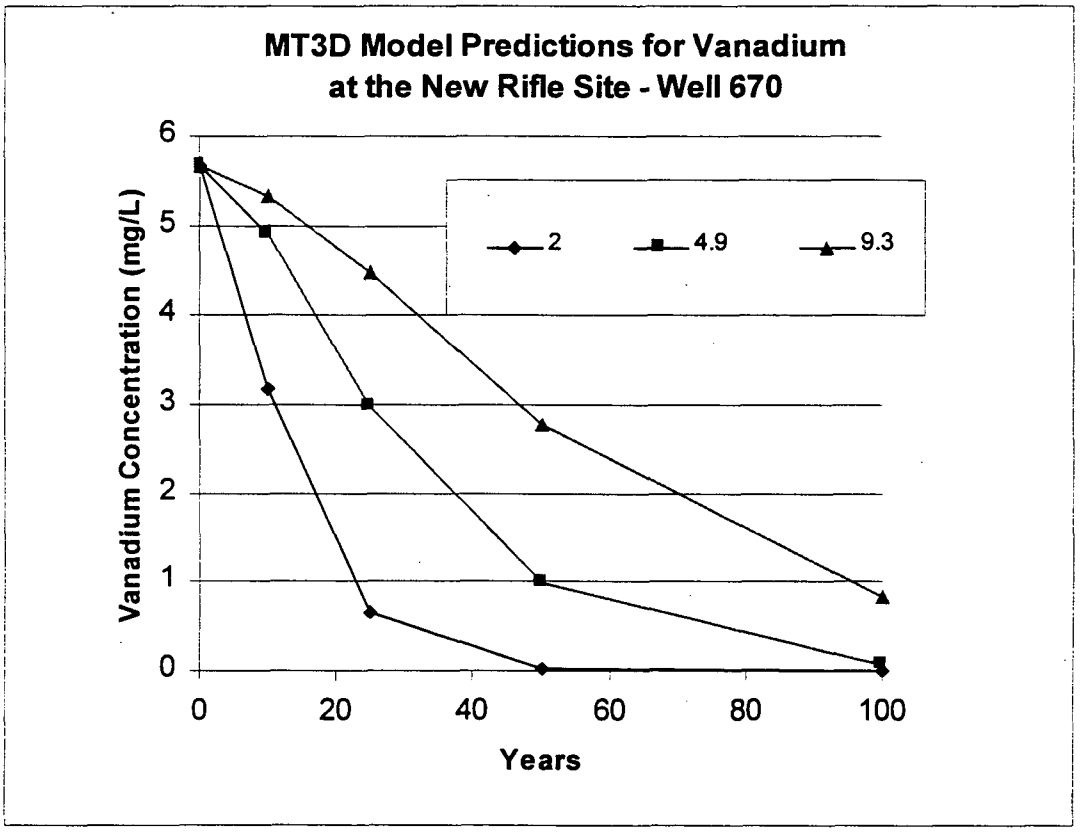
Run No.	K_d (mL/g)	Uranium Concentration (mg/L) at Year:				
		0	5	15	25	35
1	0.1	0.15835	0.02104	0.00245	0.00223	0.00222
2	0.7	0.15835	0.11159	0.02435	0.00802	0.00361
3	1.4	0.15835	0.16478	0.06206	0.02811	0.01469



MT3D Model Parameter	Value	Unit
longitudinal dispersivity	100	ft
effective porosity	25	%
bulk density	95	lbs/ft^3

Figure 26. MT3D Sensitivity Analysis—Distribution Coefficient (K_d)

Run No.	K_d (mL/g)	Vanadium Concentration (mg/L) at Year:				
		0	10	25	50	100
1	2	5.6642	3.1693	0.6433	0.02813	0.00055
2	4.9	5.6642	4.8997	2.9817	0.97843	0.07088
3	9.3	5.6642	5.3316	4.4802	2.781	0.82252



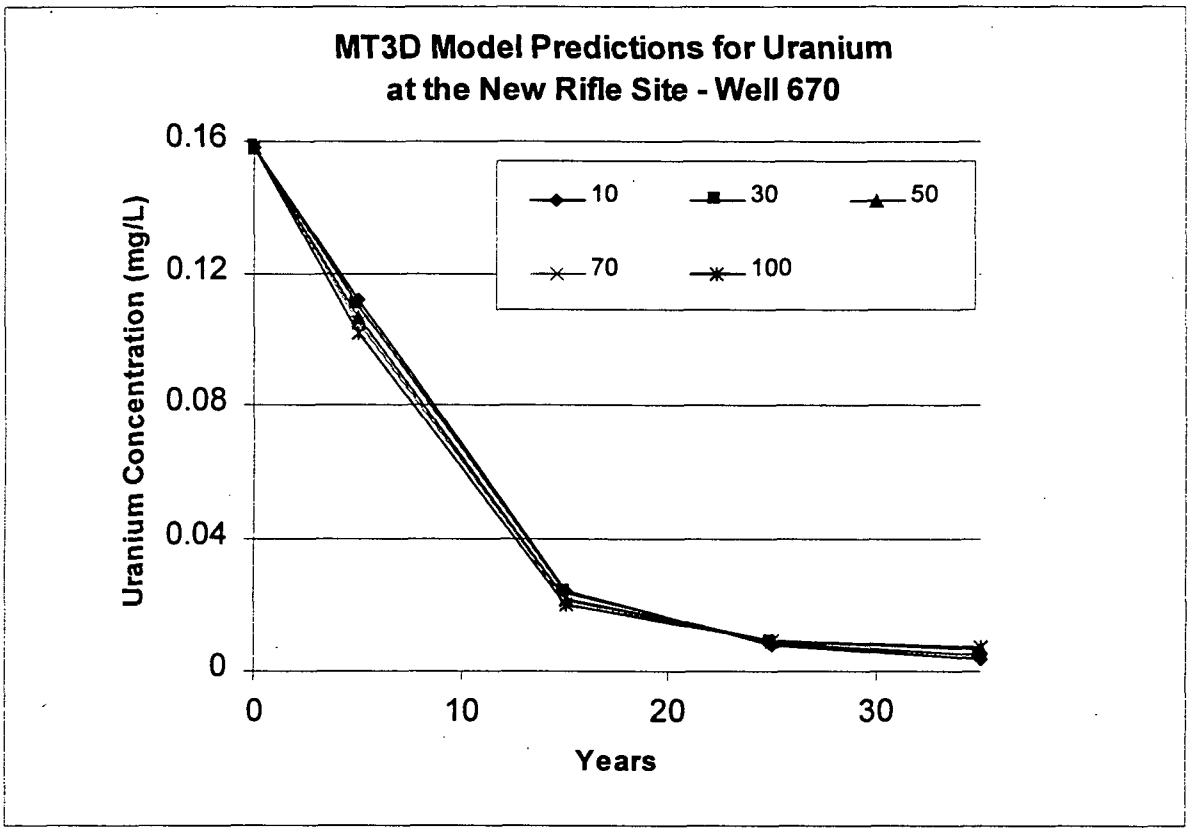
MT3D Model Parameter	Value	Unit
longitudinal dispersivity	100	ft
effective porosity	25	%
bulk density	95	lbs/ft^3

Figure 27. MT3D Sensitivity Analysis—Distribution Coefficient (K_d)

Sensitivity analysis for dispersivity consists of two parts, longitudinal and transverse. Transverse dispersivity analysis was varied between 10 percent and 100 percent of longitudinal dispersivity, which was held at 100 ft/day. Transverse dispersivity is depicted in Figure 28 and Figure 29 for uranium and vanadium, respectively. This parameter is insensitive for uranium. At 5 years the coefficient of variation is 4.0 percent. Vanadium displays a large range difference at 10 and 25 years but decreases significantly at 100 years. At 25 years the coefficient of variation is 6.4 percent. This parameter was not treated as uncertain. Transverse dispersivity is commonly set at 10 percent of longitudinal dispersivity. Since the model is not sensitive to transverse dispersivity this parameter was set at 10 percent of longitudinal dispersivity which is common practice.

Longitudinal dispersivity as depicted in Figure 30 and Figure 31 for uranium and vanadium, respectively, display considerable variability and behavior. Both analytes behave similar in that the highest longitudinal value of 800 ft/day has the lowest concentration in the early years and the highest concentration in the later years. The largest range in concentration for uranium occurs at 5 and 15 years and then decreases. At 15 years the coefficient of variation for the uranium concentration values using an unbiased estimate of σ is 22.0 percent. For vanadium the largest range in concentration occurs at 10 years and remains relatively high through 100 years. At 10 years the coefficient of variation is 17.7 percent. Because both analytes exceed the criteria of 15 percent, display erratic behavior, and have high sensitivity this parameter was treated as uncertain for the stochastic simulation analysis.

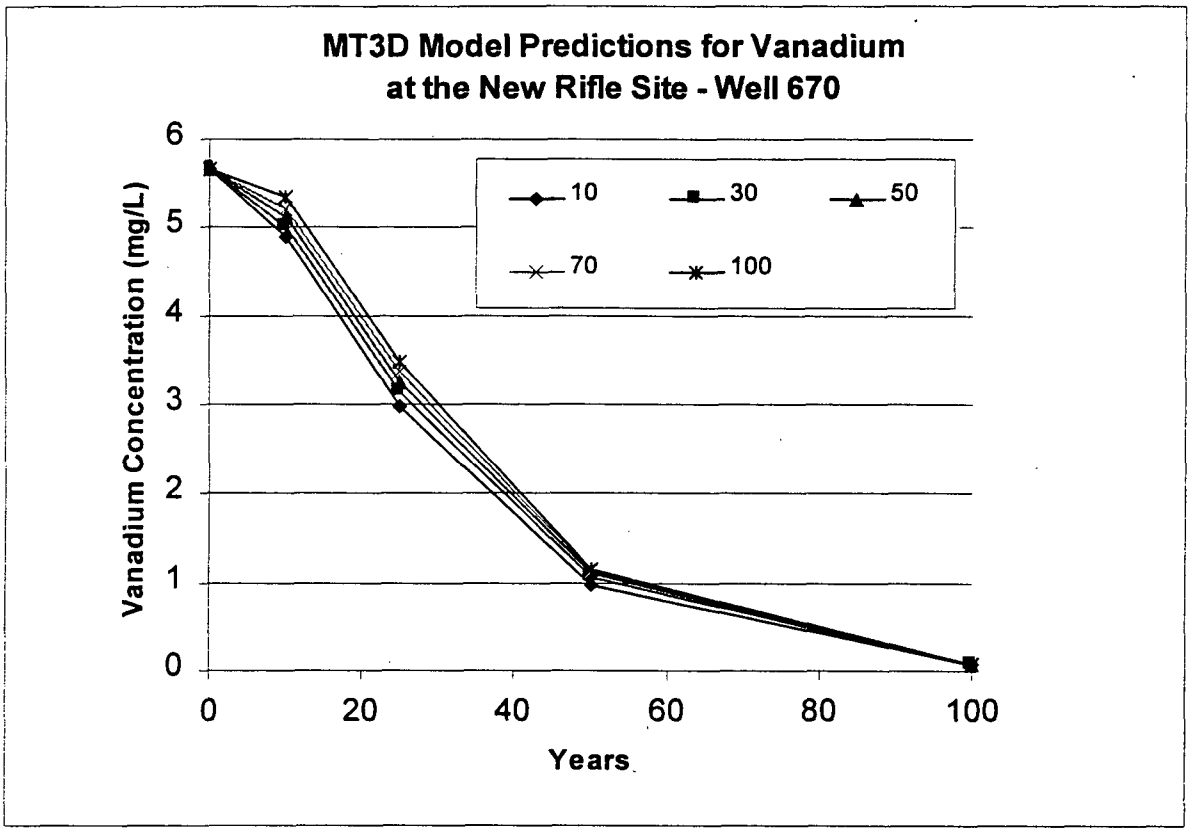
Run No.	Longitudinal Dispersivity (ft)	Transverse Dispersivity (ft)	Uranium Concentration (mg/L) at Year:				
			0	5	15	25	35
1	100	10	0.15835	0.11159	0.02435	0.00802	0.00361
2	100	30	0.15835	0.11027	0.02348	0.00813	0.00461
3	100	50	0.15835	0.10673	0.02167	0.00873	0.00645
4	100	70	0.15835	0.10463	0.02088	0.00898	0.00702
5	100	100	0.15835	0.10175	0.02003	0.00916	0.00744



MT3D Model Parameter	Value	Unit
bulk density	95	lbs/ft^3
effective porosity	25	%
uranium distribution coefficient	0.7	mL/g

Figure 28. MT3D Sensitivity Analysis—Transverse Dispersivity

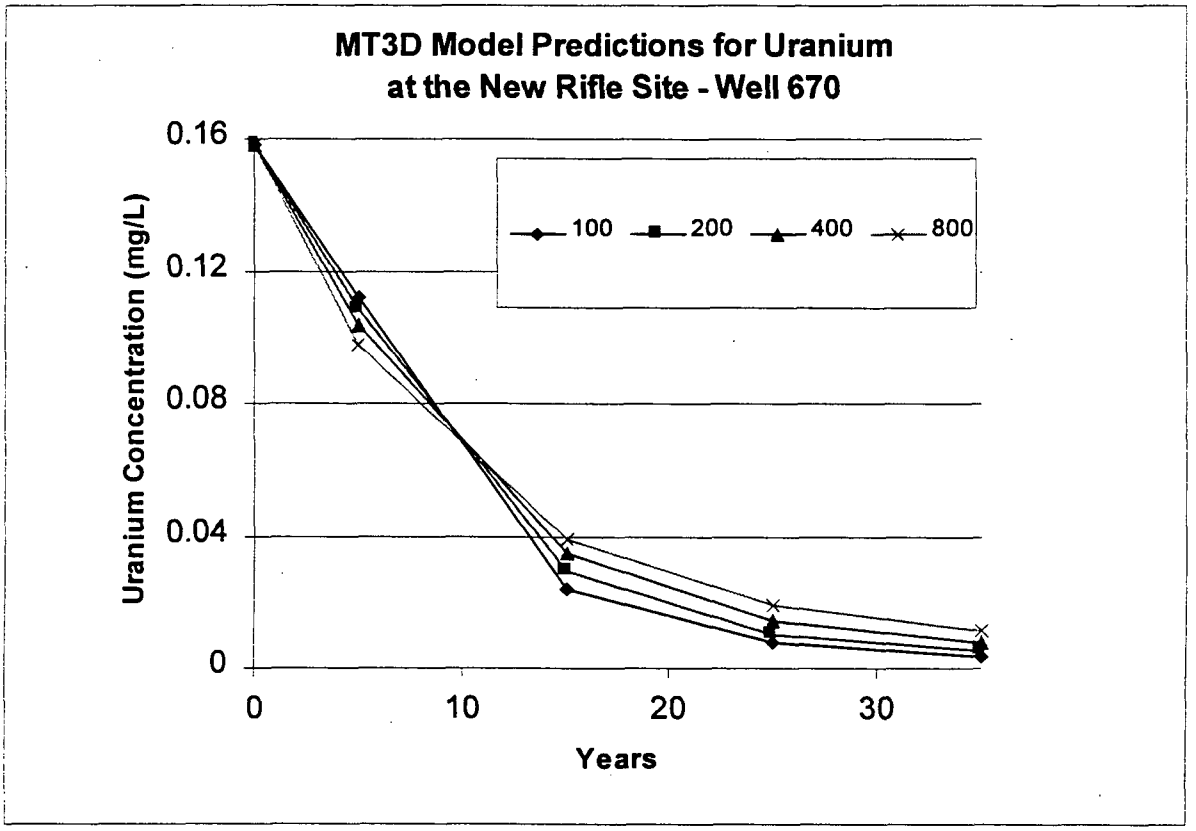
Run No.	Longitudinal Dispersivity (ft)	Transverse Dispersivity (ft)	Vanadium Concentration (mg/L) at Year:				
			0	10	25	50	100
1	100	10	5.6642	4.8997	2.9817	0.97843	0.07088
2	100	30	5.6642	5.0102	3.1261	1.0546	0.07501
3	100	50	5.6642	5.1127	3.2536	1.1053	0.07615
4	100	70	5.6642	5.2096	3.3599	1.1367	0.07596
5	100	100	5.6642	5.3445	3.4815	1.1612	0.07475



MT3D Model Parameter	Value	Unit
bulk density	95	lbs/ft^3
effective porosity	25	%
vanadium distribution coefficient	4.9	mL/g

Figure 29. MT3D Sensitivity Analysis—Transverse Dispersivity

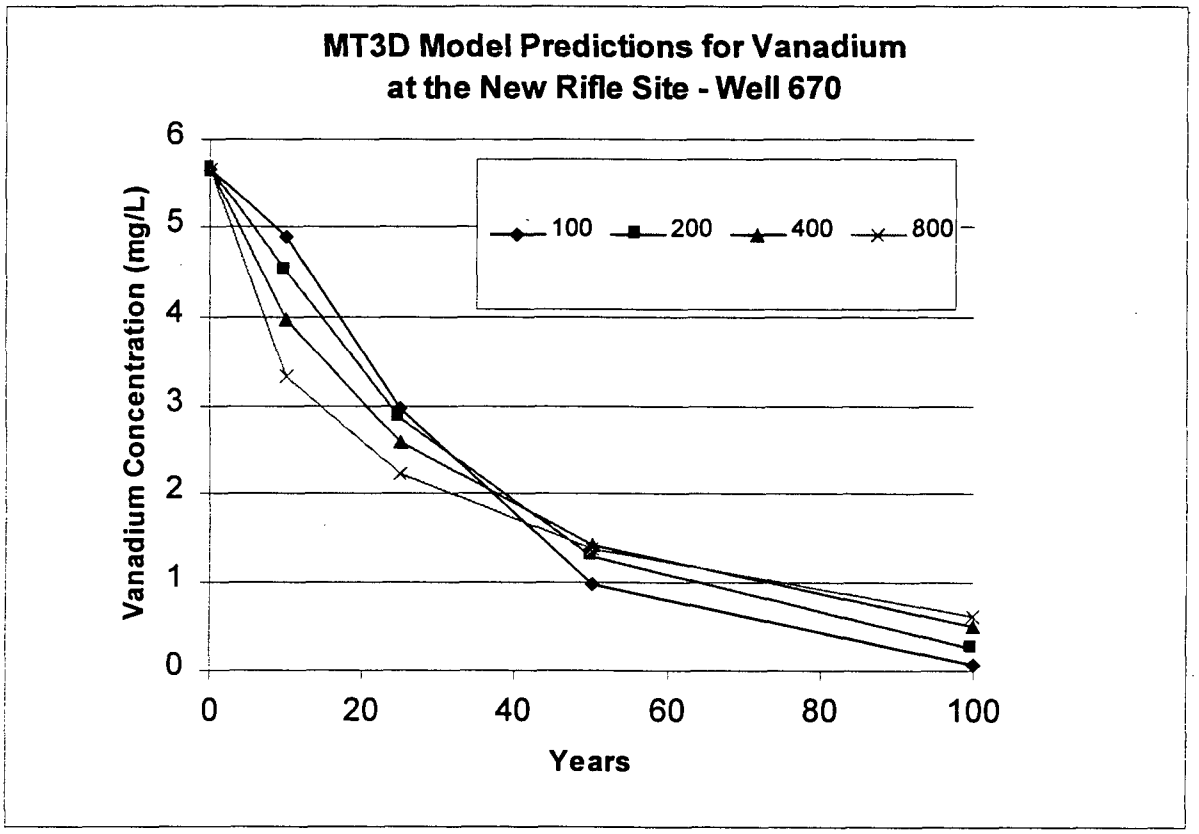
Run No.	Longitudinal Dispersivity (ft)	Transverse Dispersivity (ft)	Uranium Concentration (mg/L) at Year:				
			0	5	15	25	35
1	100	10	0.15835	0.11159	0.02435	0.00802	0.00361
2	200	20	0.15835	0.10801	0.02927	0.01014	0.00523
3	400	40	0.15835	0.10334	0.03513	0.0146	0.00809
4	800	80	0.15835	0.09716	0.03915	0.01952	0.01169



MT3D Model Parameter	Value	Unit
bulk density	95	lbs/ft^3
effective porosity	25	%
uranium distribution coefficient	0.7	mL/g

Figure 30. MT3D Sensitivity Analysis—Longitudinal Dispersivity

Run No.	Longitudinal Dispersivity (ft)	Transverse Dispersivity (ft)	Vanadium Concentration (mg/L) at Year:				
			0	10	25	50	100
1	100	10	5.6642	4.8997	2.9817	0.97843	0.07088
2	200	20	5.6642	4.5182	2.8558	1.277	0.25385
3	400	40	5.6642	3.97	2.5906	1.4305	0.49234
4	800	80	5.6642	3.3354	2.2265	1.3684	0.60225



MT3D Model Parameter	Value	Unit
bulk density	95	lbs/ft^3
effective porosity	25	%
vanadium distribution coefficient	4.9	mL/g

Figure 31. MT3D Sensitivity Analysis—Longitudinal Dispersivity

6.0 Predictive Simulations

Contaminant transport simulations for uranium, vanadium, arsenic, selenium, and molybdenum were performed for selected time periods up to 100 years into the future. In all cases, the initial concentrations used are based on the August 1998 ground water sampling results. It should be noted that the more recent sampling and analysis results obtained from the January 1999 sampling event are on average lower in concentration than for the 1998 water quality data. However, for ease and brevity in presentation, only the more conservative1998 data is presented in this appendix. Results described in the SOWP based on the1999 water quality data and for other contaminants not presented in this appendix, such as nitrate, follow the same technical approach described below.

6.1 Stochastic Model

Hydraulic conductivity was treated as an uncertain parameter for the flow model. As shown in Table 5, this parameter ranges from geometric mean low of 95 ft/day for the recovery data to a geometric mean high of 137 ft/day for the drawdown data. The geometric mean of drawdown and recovery data combined is 113 ft/day. Hydraulic conductivity data used in the stochastic modeling were from preliminary analysis, and range from a low of 94 ft/day to a high of 174 ft/day with an average of 134 ft/day. The distribution type and distribution parameters assigned to hydraulic conductivity are specified in Table 13.

Table 13. Stochastic Parameters

Parameter	Distribution			
	Type	Standard Deviation	Minimum	Maximum
Hydraulic Conductivity (ft/day)				
Longitudinal	Triangular	N/A	94	174
Transverse	Triangular	N/A	100% Longitudinal	
Dispersivity				
Longitudinal	Triangular	N/A	50	150
Transverse	Triangular	N/A	10% Longitudinal	
Distribution Coefficient (K_d)				
Uranium (ft^3/lb)	Triangular	N/A	0.0	0.0224
(mL/g)	Triangular	N/A	0.0	1.4
Vanadium (ft^3/lb)	Triangular	N/A	0.032	0.1249
(mL/g)	Triangular	N/A	2.0	7.8
Arsenic (ft^3/lb)	Triangular	N/A	0.352	0.1393
(mL/g)	Triangular	N/A	2.2	8.7
Selenium (ft^3/lb)	Triangular	N/A	0.0256	0.0473
(mL/g)	Triangular	N/A	1.6	2.95
Molybdenum (ft^3/lb)	Triangular	N/A	0.0	.004
(mL/g)	Triangular	N/A	0.0	0.25

Dispersivity and the distribution coefficient (K_d) were treated as uncertain parameters for the contaminant transport model. The specifications for these transport parameters are also shown in Table 13.

Non-stochastic transport parameters are shown in Table 14.

Table 14. Non-Stochastic Transport Parameters

Parameter	Uranium	Vanadium	Arsenic	Selenium	Molybdenum
Recharge Concentration (mg/L)					
Zone 1	0.0	0.0	0.0	0.0	0.0
2	0.037	0.0008	0.0009	0.011	0.019
3	0.037	0.0008	0.0009	0.011	0.019
4	0.037	0.0008	0.0009	0.011	0.019
5	0.037	0.0008	0.0009	0.011	0.019
6	0.037	0.0008	0.0009	0.011	0.019
7	0.037	0.0008	0.0009	0.011	0.019
Colorado River	0.00265	0.00129	0.0004	0.0005	0.007
Bulk Density (lb/ft^3)	95	95	95	95	95
(g/cm)	1.52	1.52	1.52	1.52	1.52
Effective Porosity (%)	25	25	25	25	25

Recharge parameters used for the steady state model are based on what could be expected on an annual basis. The recharge assumptions assume the annual area net recharge rate is 0.0025 ft/day (11.01 inches/year) based on site-specific meteorological data (Calculation Set 0044700). The constant head elevation values assigned to the river are based on survey measurements in July 1998.

The MT3D modeling was performed simulating the natural flow gradients (i.e. no dewatering activities at the Roaring Fork gravel operations). This assumption results in a more conservative estimate of predicted ground water concentrations.

6.2 Predictive Results for Uranium

Uranium concentration measurements on ground water samples collected during the July 1998 field-sampling event are shown in Figure 32. These results represent the initial uranium values used as input at each grid cell for the MT3D simulations. Predicted uranium concentrations above the UMTRA 0.044 mg/L ground water standard at 10, 20, 30, and 40 years into the future are presented in Figures 33, 34, 35, and 36, respectively. Each predicted concentration represents the arithmetic mean based on 100 simulations. Uranium values in the plume are predicted to decline significantly from the initial maximum concentration of 0.40 mg/L measured at monitor well RFN–655. For example, the maximum predicted concentration in the plume declines to 0.16 mg/L, 0.09 mg/L, and 0.05 mg/L at 10, 20, and 30 years into the future, respectively. After 40 years, all the site-related uranium is predicted to be flushed from the alluvial aquifer (Figure 36).

Hydraulic conductivity, dispersivity, and the distribution coefficient were previously identified as the most sensitive input parameters to the MODFLOW and MT3D simulations. By varying these sensitive input parameters during each of the 100 simulations, the variance associated with the mean predicted concentration was used to calculate the probability that the mean uranium concentration will exceed the 0.044 mg/L UMTRA standard. Probability contour maps showing areas beneath the New Rifle site that exceed the UMTRA 0.044 mg/L uranium ground water standard at 10, 20, 30, and 40 years into the future are illustrated in Figures 37, 38, 39, and 40, respectively. At 10 years into the future there is an extensive area extending west of the site beyond the west Rifle I-70 interchange and south to the Colorado River where the probability is

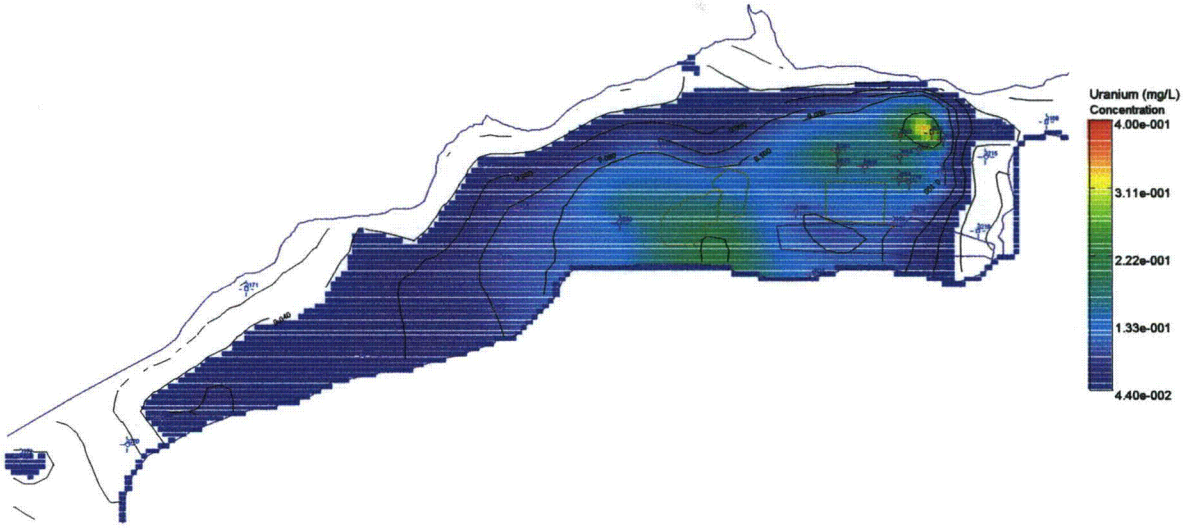


Figure 32. Initial Uranium Concentration in the Ground Water at the New Rifle Site Measured in July 1998

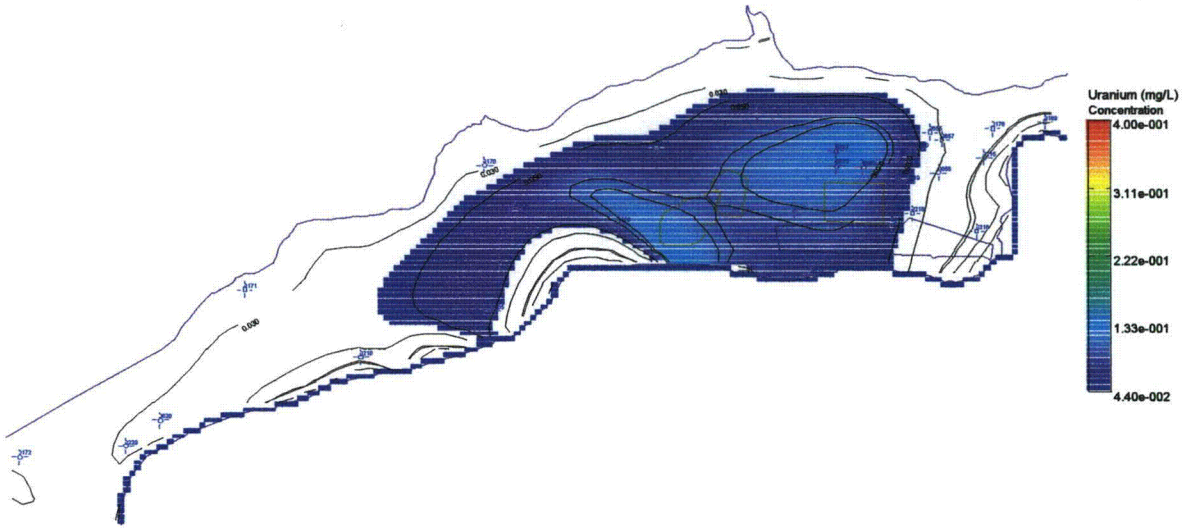


Figure 33. Predicted Uranium Concentrations in the Ground Water at the New Rifle Site at 10 Years — 100 Simulations

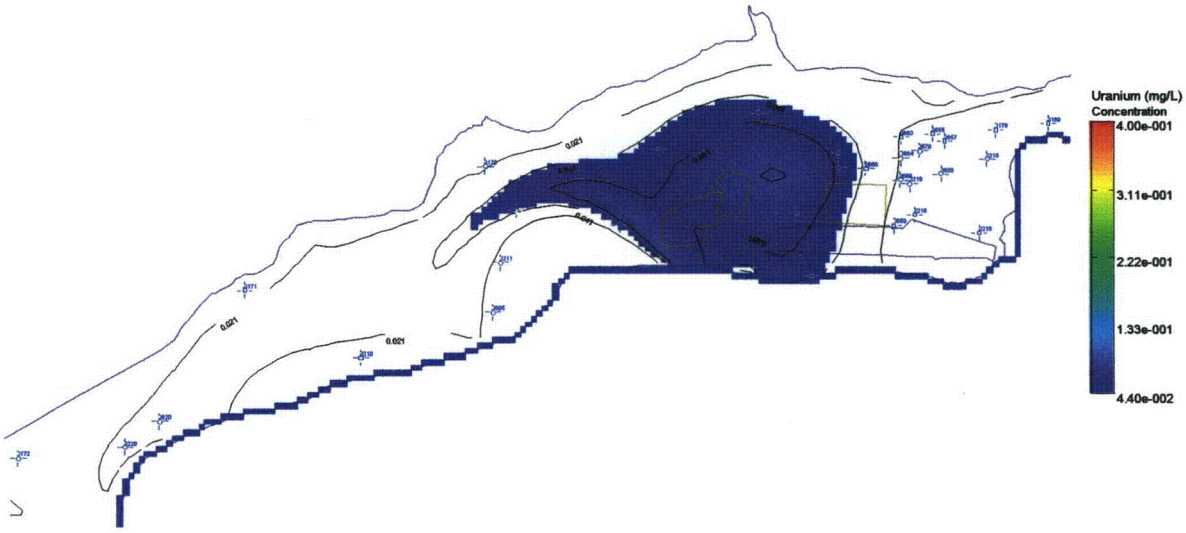


Figure 34. Predicted Uranium Concentrations in the Ground Water at the New Rifle Site at 20 Years — 100 Simulations

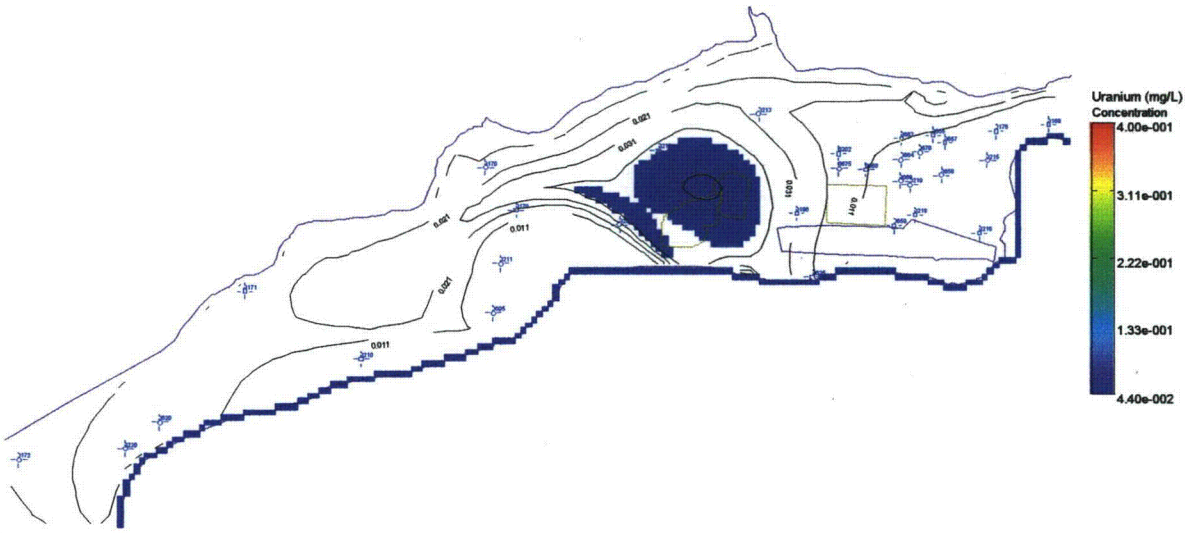


Figure 35. Predicted Uranium Concentrations in the Ground Water at the New Rifle Site at 30 Years —100 Simulations

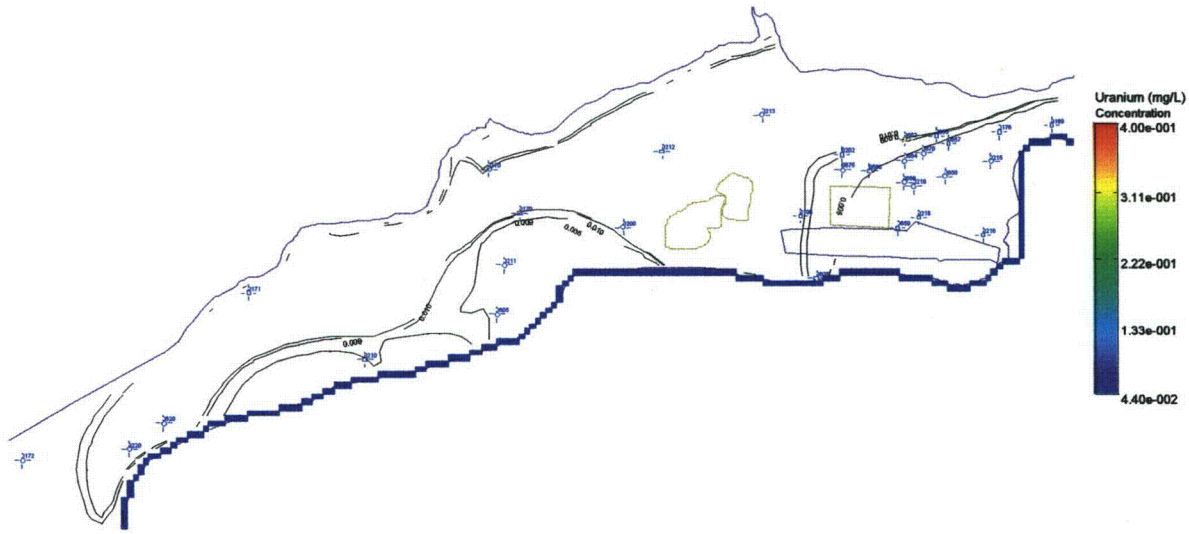


Figure 36. Predicted Uranium Concentrations in the Ground Water at the New Rifle Site at 40 Years —100 Simulations

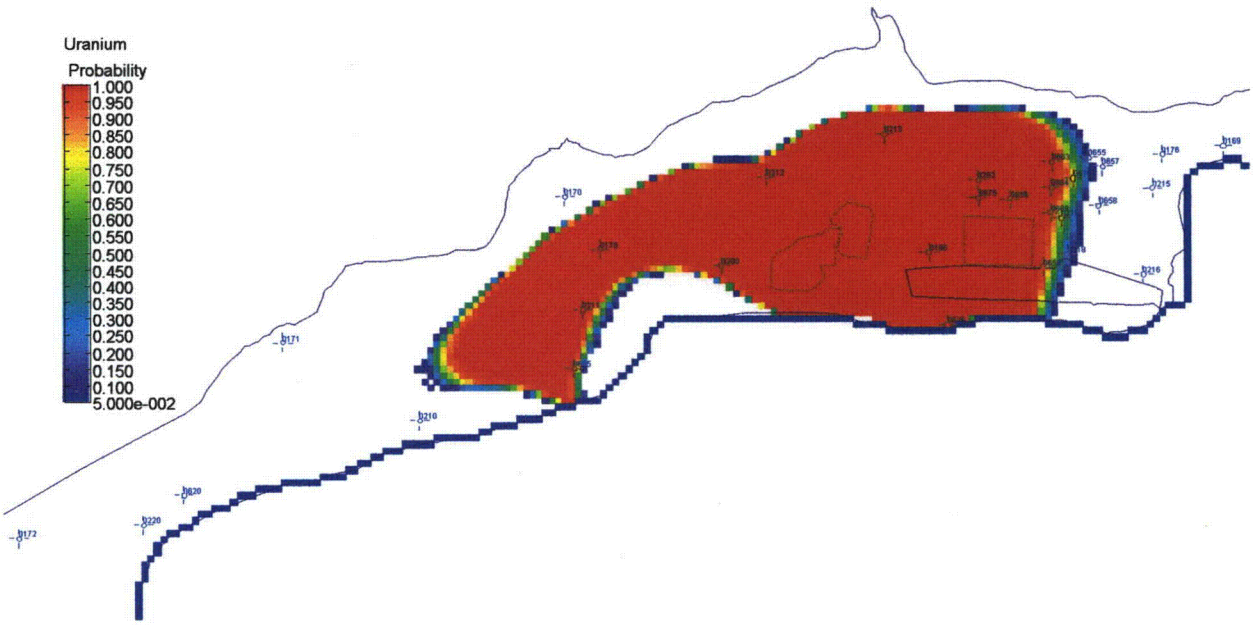


Figure 37. Probability of Uranium Concentrations Exceeding the 0.044 mg/L UMTRA Ground Water Standard at the New Rifle Site at 10 Years

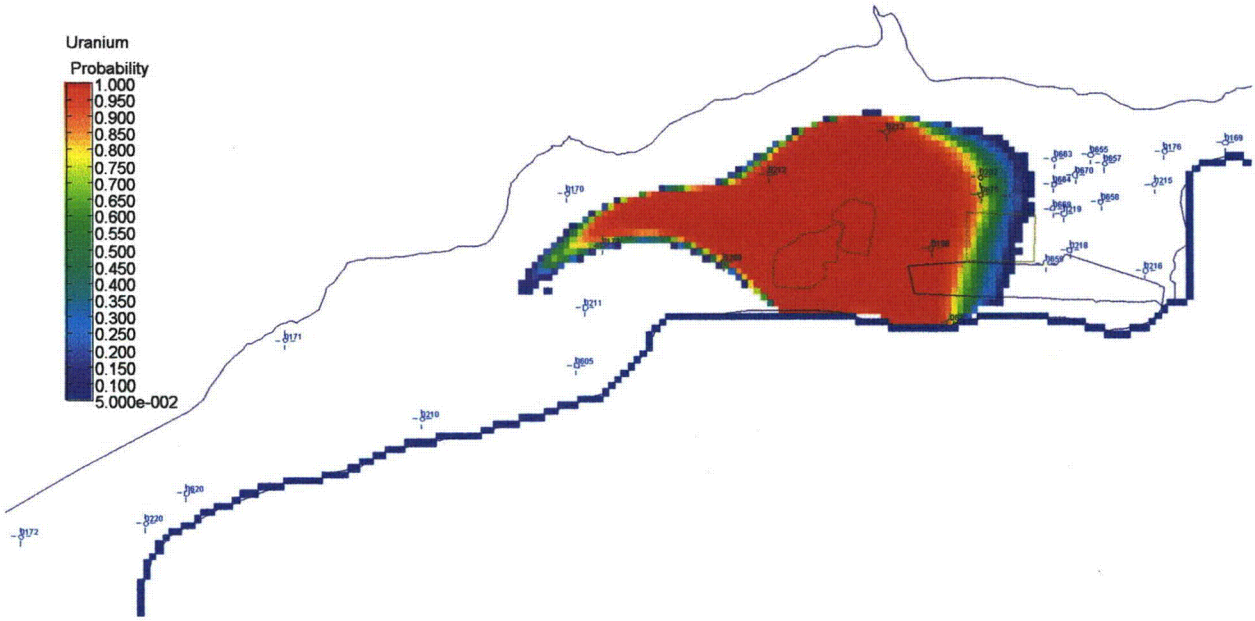


Figure 38. Probability of Uranium Concentrations Exceeding the 0.044 mg/L UMTRA Ground Water Standard at the New Rifle Site at 20 Years

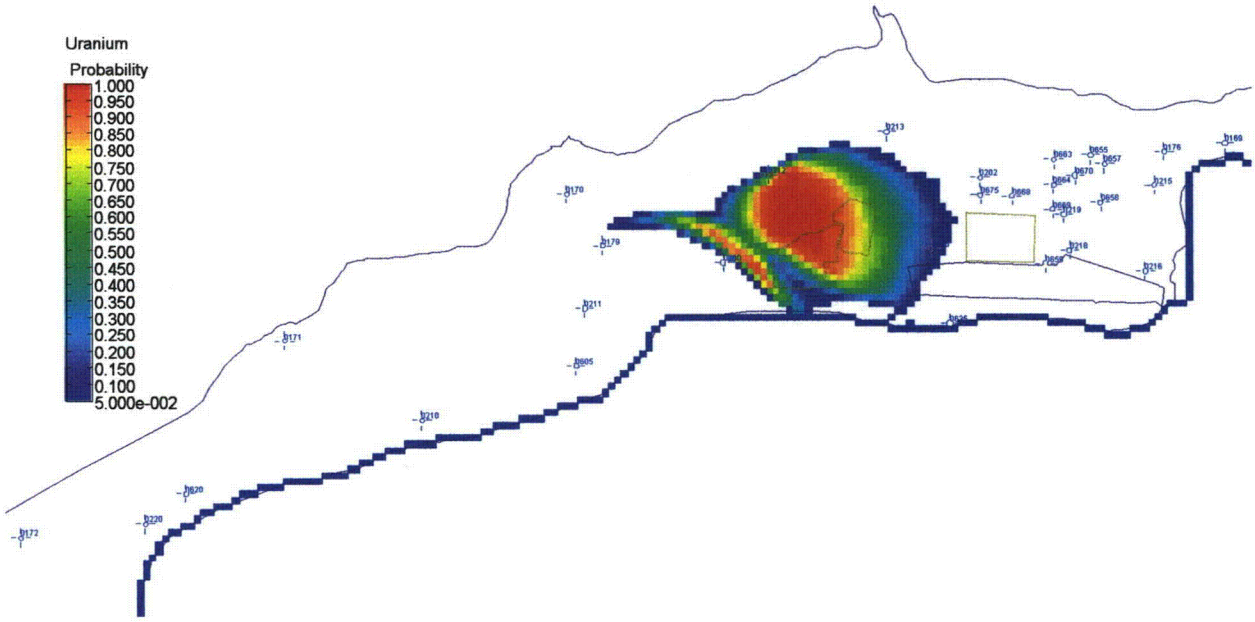


Figure 39. Probability of Uranium Concentrations Exceeding the 0.044 mg/L UMTRA Ground Water Standard at the New Rifle Site at 30 Years

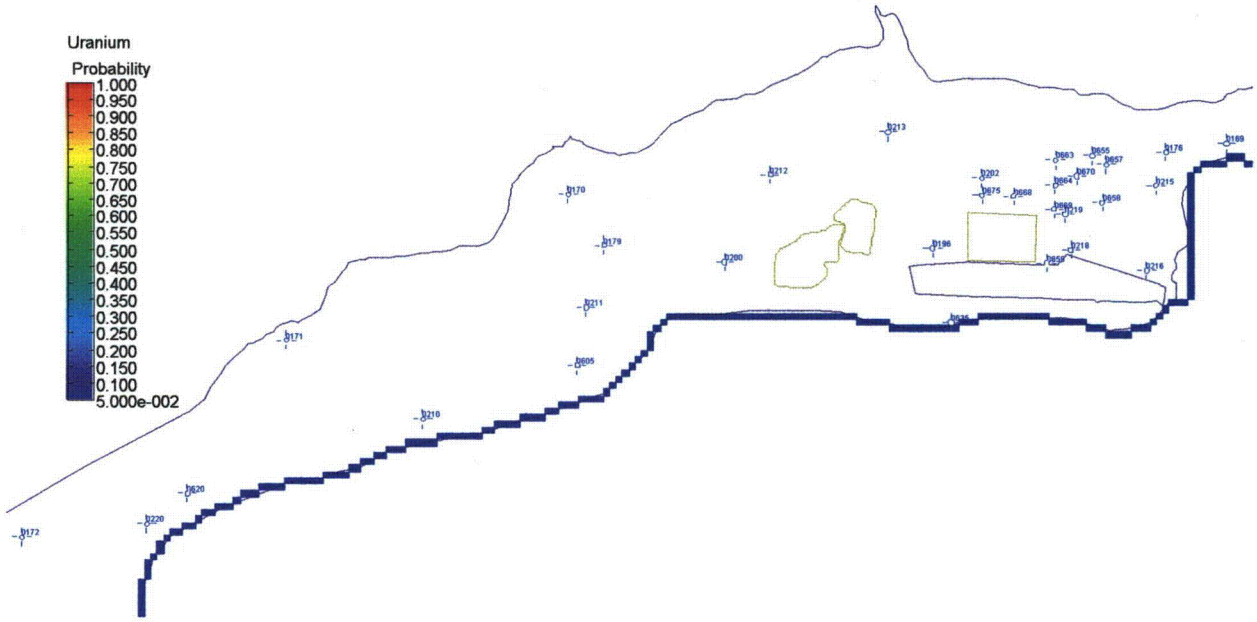


Figure 40. Probability of Uranium Concentrations Exceeding the 0.044 mg/L UMTRA Ground Water Standard at the New Rifle Site at 40 Years

100 percent that the 0.044 mg/L uranium standard will be exceeded. At 20 years into the future, the probability ranges between 5 percent and 100 percent that the uranium standard will be exceeded in ground water west of the site in the vicinity of the Roaring Fork gravel operation and beyond. At 30 years into the future, the probability still ranges between 5 percent and 100 percent that the 0.044 mg/L uranium standard will be exceeded in ground water, however the size of the area that exceeds the standard is considerable smaller and has moved further west. At 40 years into the future, the probability is less than 5 percent that the uranium concentrations in ground water beneath any area of the site will exceed the UMTRA 0.044 mg/L standard.

6.3 Predictive Results for Vanadium

Vanadium concentrations associated with the ground water plume at the New Rifle site in July 1998 are illustrated in the initial concentration map presented in Figure 41. Predicted ground water concentrations above the 0.33 mg/L vanadium cleanup goal at 25, 50, and 100 years into the future are presented in Figures 42, 43, and 44, respectively. The areal extent of the ground water plume has shifted to the southwest at 100 years into the future. The maximum predicted vanadium concentration is predicted to decrease to 4.37 mg/L at 100 years, however this value is still considerably above the proposed 0.33 mg/L cleanup goal (Figure 44).

Probability contour maps showing areas beneath the New Rifle site that exceed the 0.33 mg/L proposed vanadium ground water cleanup goal at 25, 50, and 100 years into the future are presented in Figures 45, 46, and 47, respectively. Most of the concentrations within the plume have a 100 percent probability that the 0.33 mg/L vanadium cleanup goal will be exceeded after 100 years into the future.

6.4 Predictive Results for Arsenic

Arsenic concentrations associated with the ground water plume beneath the site are illustrated in the July 1998 initial concentration map presented in Figure 48. Predicted ground water concentrations above the 0.05 mg/L arsenic standard at 25, 50, and 100 years into the future are presented in Figures 49, 50, and 51, respectively. The maximum arsenic concentration is predicted to decrease from 0.27 to 0.15 mg/L after 25 years of natural flushing (Figure 49). The maximum predicted concentration in the ground water after 50 years of natural flushing is 0.10 mg/L. After 100 years there is a small area south of McCauley pit near the Colorado River that is still above the standard with a maximum predicted concentration of 0.06 mg/L.

Probability contour maps delineating areas of ground water contamination beneath the New Rifle site that are expected to exceed the 0.05 mg/L standard at 25, 50, and 100 years into the future are presented in Figures 52, 53, and 54, respectively. At 25 and 50 years into the future, most of the concentrations within the plume have a probability of 100 percent of exceeding the 0.05 mg/L standard. After 100 years of natural flushing there is a small areal extent where arsenic concentrations in the ground water have a probability of 100 percent of exceeding the standard (Figure 54).

6.5 Predictive Results for Selenium

Selenium concentrations associated with the ground water plume beneath the site are illustrated in the initial concentration map presented in Figure 55. Predicted ground water concentrations

above the 0.05 mg/L selenium standard at 50, 75, and 100 years into the future are presented in Figures 56, 57, and 58, respectively. The maximum selenium concentration is predicted to decrease from 0.78 to 0.13 mg/L after 50 years of natural flushing. The maximum predicted concentration in the ground water after 75 years of natural flushing is predicted to decline to 0.08 mg/L. After 100 years of natural flushing the maximum selenium concentration is 0.042 mg/L, with no apparent concentrations above the 0.05 mg/L standard.

Probability contour maps delineating areas of ground water contamination beneath the New Rifle site that are expected to exceed the 0.05 mg/L Safe Drinking Water Act (SDWA) standard at 50, 75, and 100 years into the future are presented in Figures 59, 60, and 61, respectively. At 50 and 75 years into the future, concentrations within the plume have a probability ranging between 5 to 100 percent of exceeding the 0.05 mg/L SDWA standard. The relative small areal extent where selenium concentrations in the ground water after 100 years of natural flushing has a probability between 5 and 28 percent of exceeding the 0.05 mg/L standard is shown in Figure 61.

6.6 Predictive Results for Molybdenum

Molybdenum concentrations associated with the ground water plume beneath the site are presented in the July 1998 initial concentration map presented in Figure 62. Predicted ground water concentrations above the 0.1 mg/L molybdenum standard at 5, 10, 15, 20, and 25 years into the future are presented in Figures 63, 64, 65, 66, and 67, respectively. The maximum molybdenum concentration is predicted to decrease from 6.4 to 0.16 mg/L after 20 years of natural flushing (Figure 66). The maximum predicted concentration in the ground water after 25 years of natural flushing is 0.048 mg/L, therefore as evidenced in Figure 67, molybdenum is expected to flush within this time.

Probability contour maps delineating areas of ground water contamination beneath the New Rifle site that are expected to exceed the 0.1 mg/L standard at 5, 10, 15, 20, and 25 years into the future are presented in Figures 68, 69, 70, 71, and 72, respectively. At 5, 10, 15, and 20 years into the future, concentrations within the plume have a probability ranging between 5 to 100 percent of exceeding the 0.1 mg/L standard. The probability that concentrations within the ground water plume will exceed the standard at 25 years into the future is less than 5 percent.

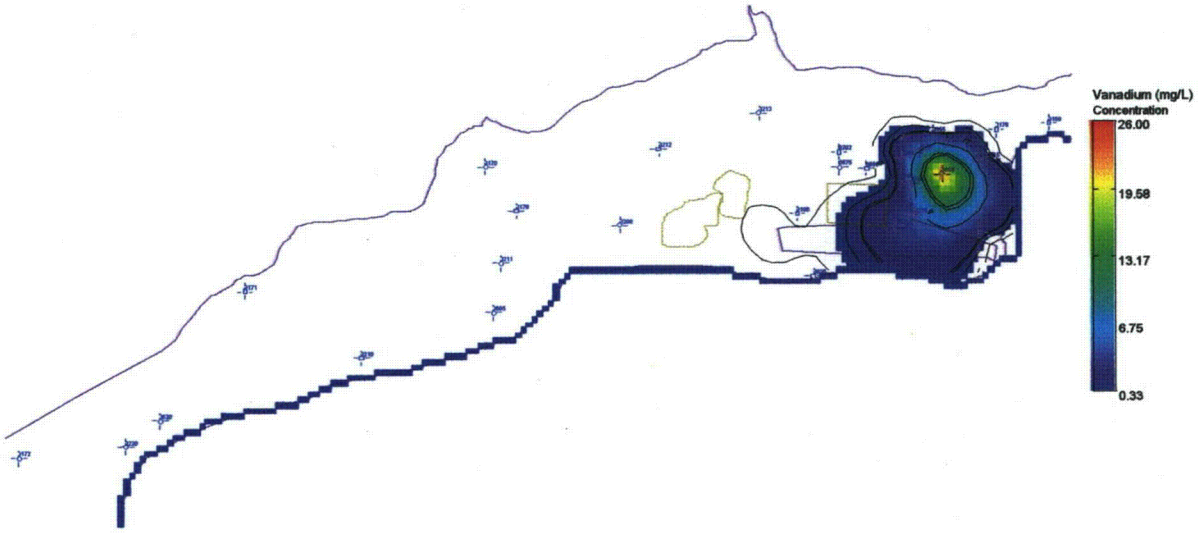


Figure 41. Initial Vanadium Concentrations in the Ground Water at the New Rifle Site Measured in July 1998

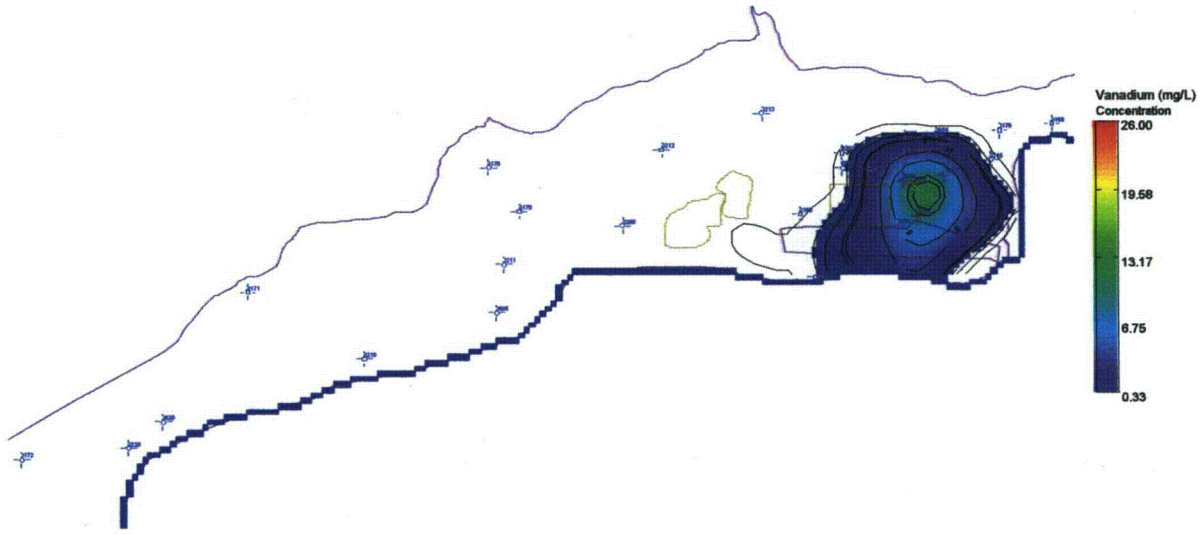


Figure 42. Predicted Vanadium Concentrations in the Ground Water at the New Rifle Site at 25 Years —100 Simulations

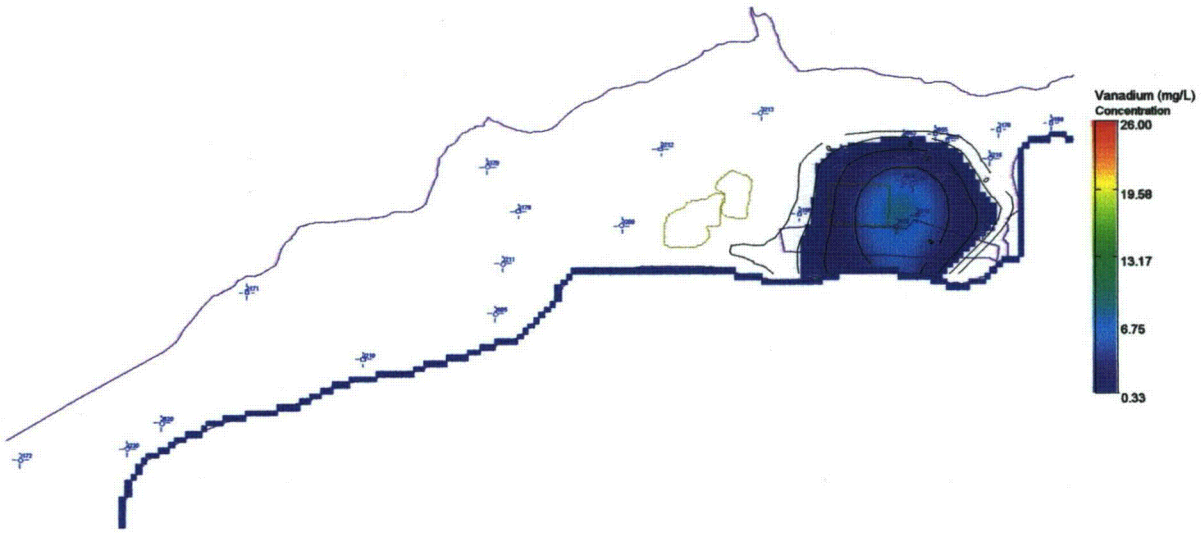


Figure 43. Predicted Vanadium Concentrations in the Ground Water at the New Rifle Site at 50 Years —100 Simulations

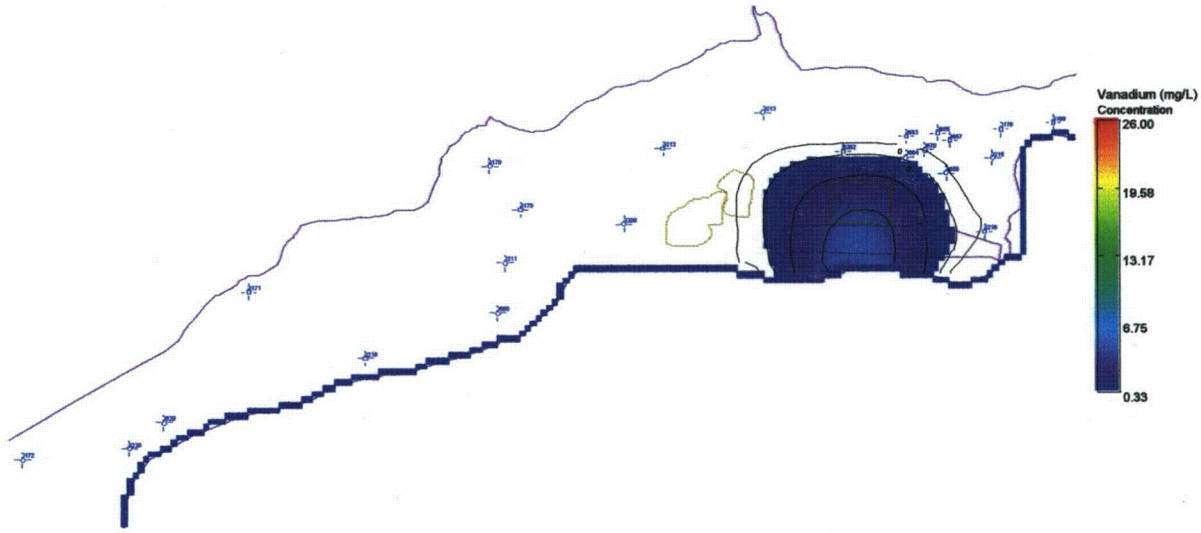


Figure 44. Predicted Vanadium Concentrations in the Ground Water at the New Rifle Site at 100 Years —100 Simulations

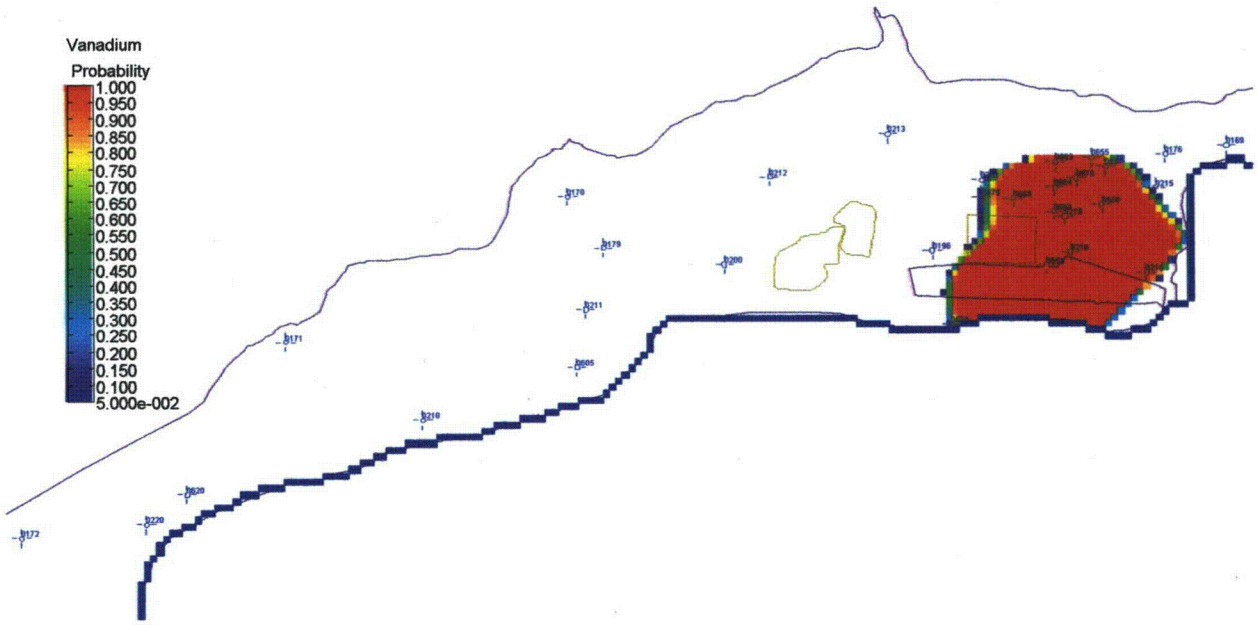


Figure 45. Probability of Vanadium Concentrations Exceeding the 0.33 mg/L Proposed Ground Water Cleanup Goal at the New Rifle Site at 25 Years

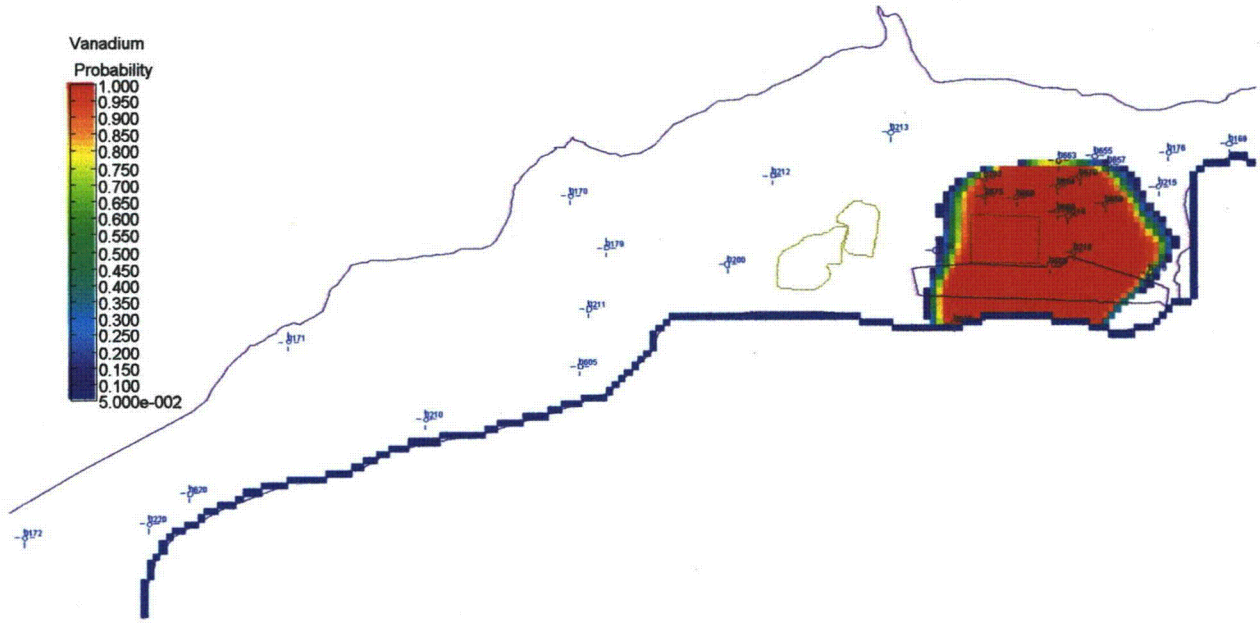


Figure 46. Probability of Vanadium Concentrations Exceeding the 0.33 mg/L Proposed Ground Water Cleanup Goal at the New Rifle Site at 50 Years

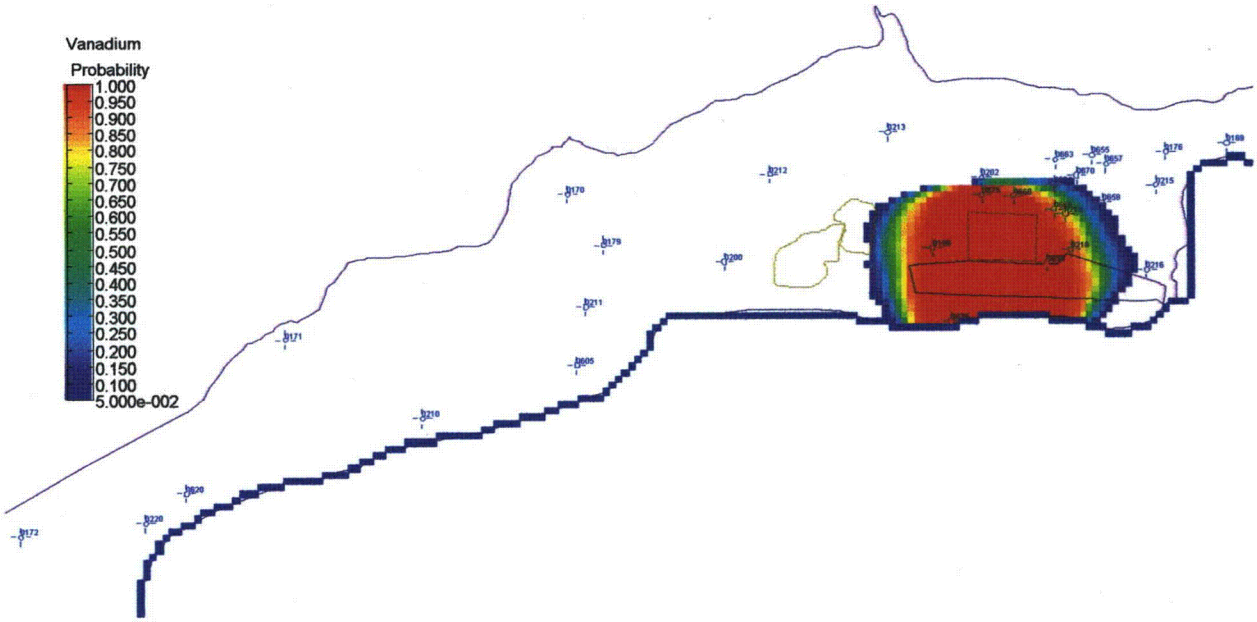


Figure 47. Probability of Vanadium Concentrations Exceeding the 0.33 mg/L Proposed Ground Water Cleanup Goal at the New Rifle Site at 100 Years

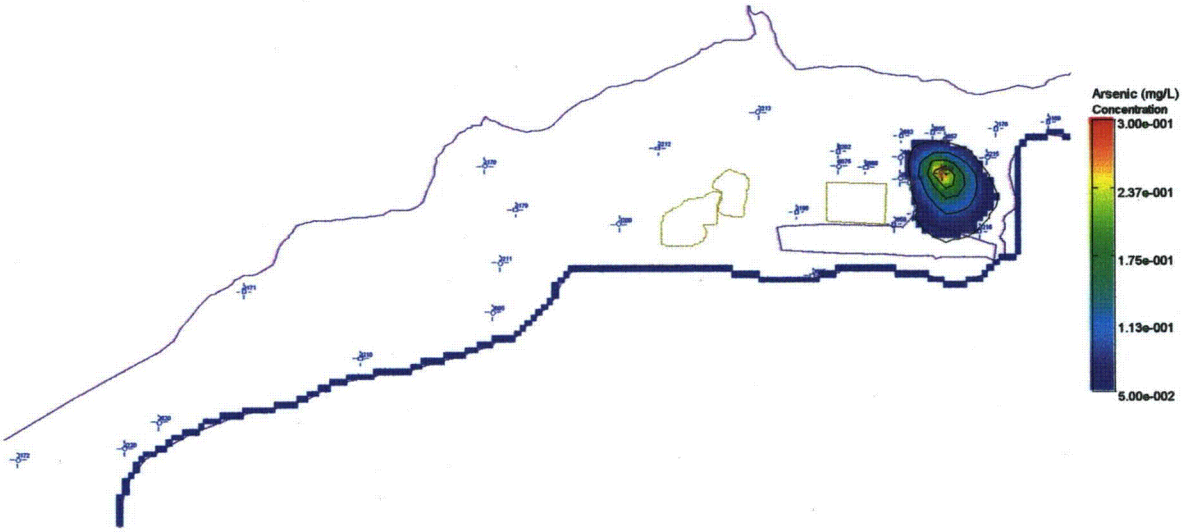


Figure 48. Initial Arsenic Concentrations in the Ground Water at the New Rifle Site Measured in July 1998

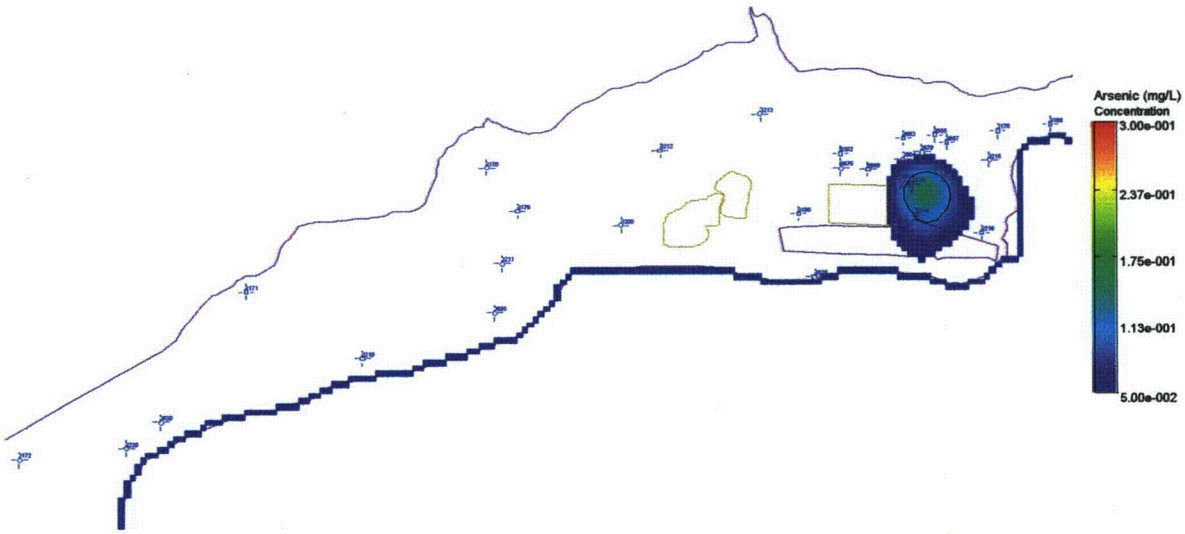


Figure 49. Predicted Arsenic Concentrations in the Ground Water at the New Rifle Site at 25 Years —100 Simulations

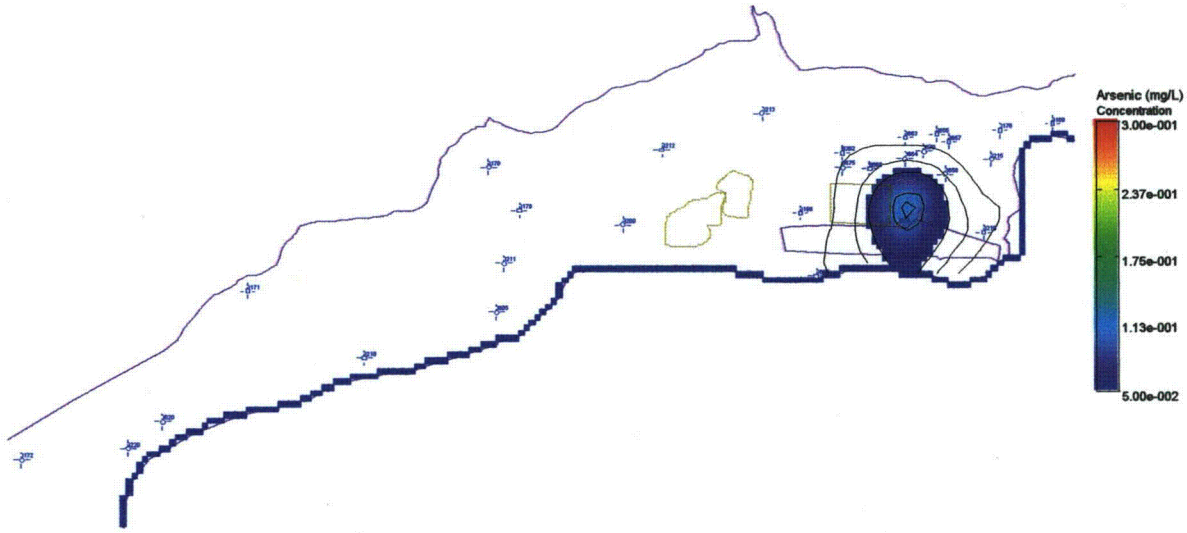


Figure 50. Predicted Arsenic Concentrations in the Ground Water at the New Rifle Site at 50 Years —100 Simulations

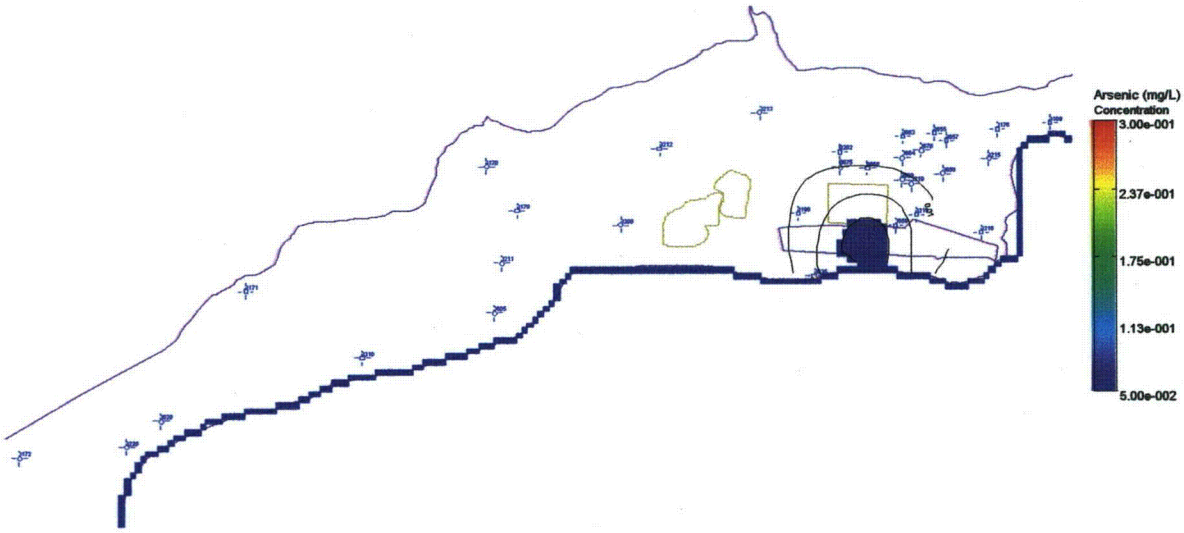


Figure 51. Predicted Arsenic Concentrations in the Ground Water at the New Rifle Site at 100 Years —100 Simulations

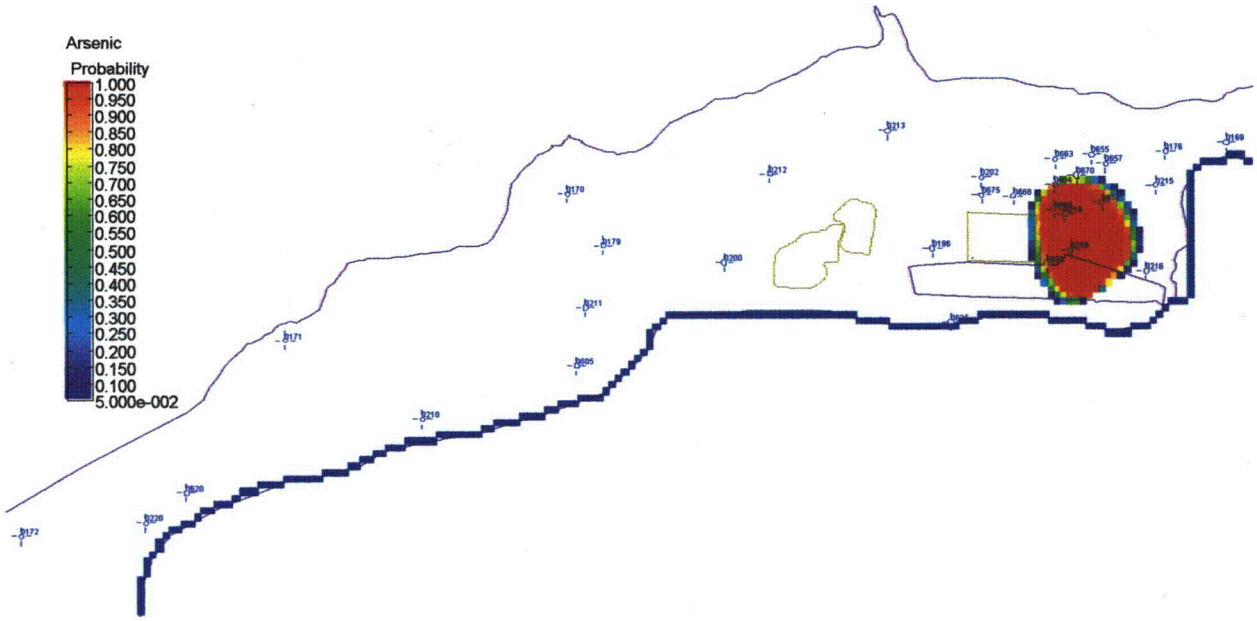


Figure 52. Probability of Arsenic Concentrations Exceeding the 0.05 mg/L UMTRA Ground Water Standard at the New Rifle Site at 25 Years

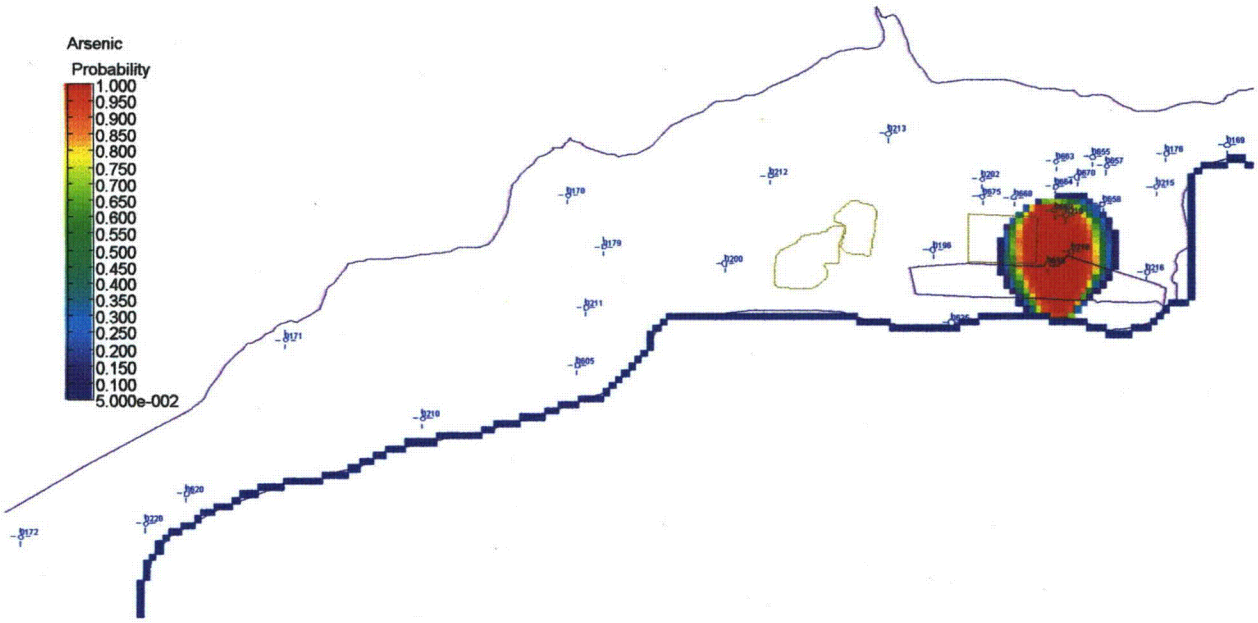


Figure 53. Probability of Arsenic Concentrations Exceeding the 0.05 mg/L UMTRA Ground Water Standard at the New Rifle Site at 50 Years

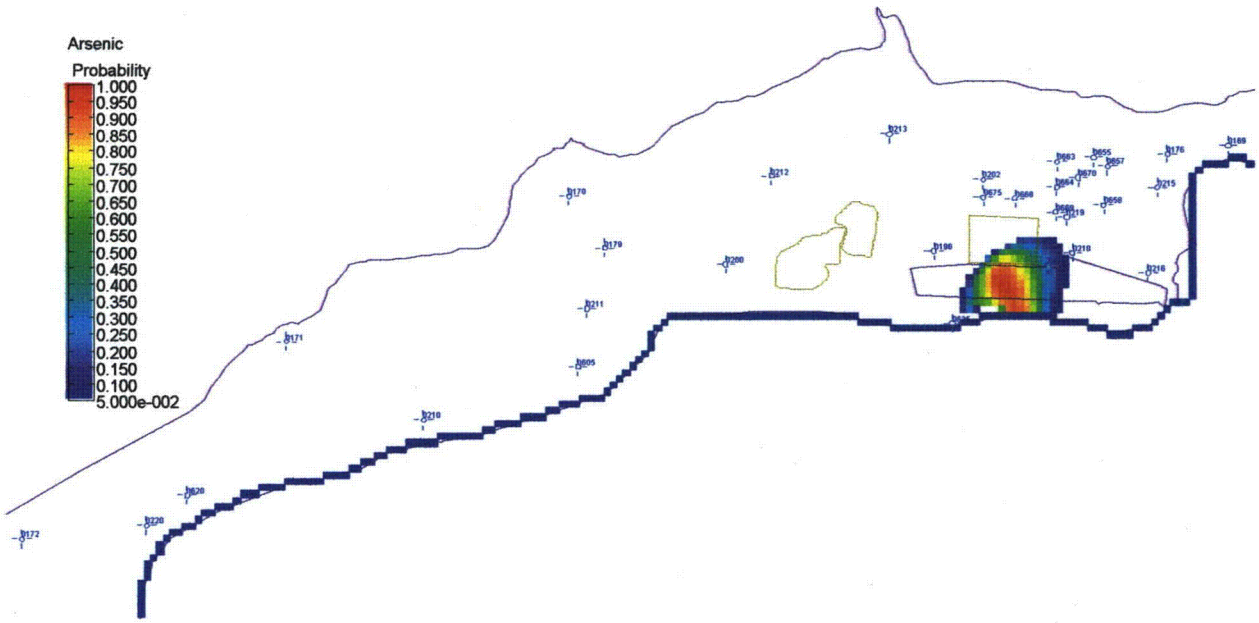


Figure 54. Probability of Arsenic Concentrations Exceeding the 0.05 mg/L UMTRA Ground Water Standard at the New Rifle Site at 100 Years

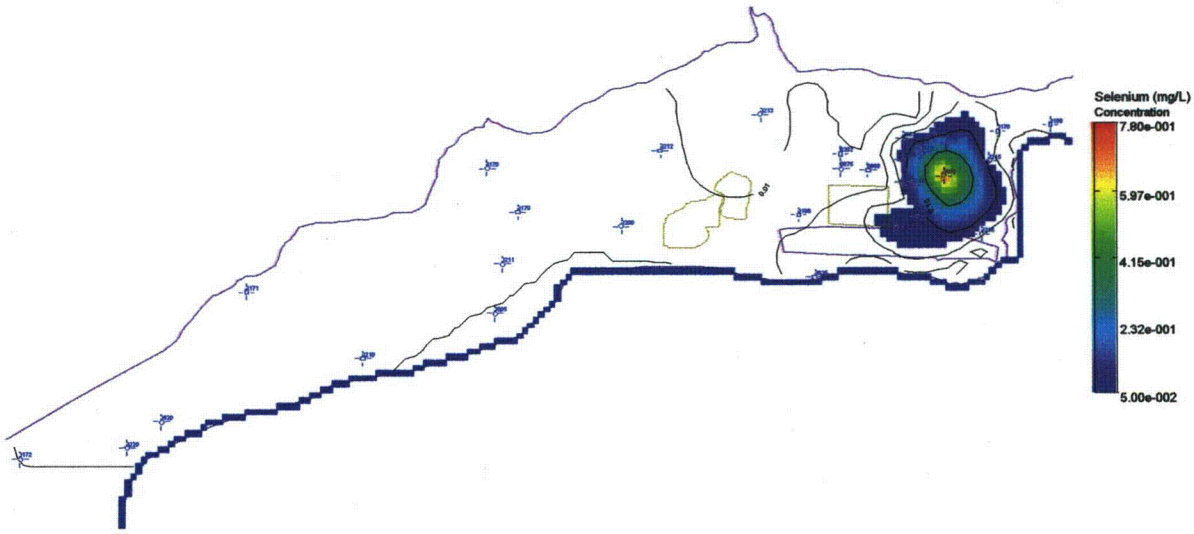


Figure 55. Initial Selenium Concentrations in the Ground Water at the New Rifle Site Measured in July 1998

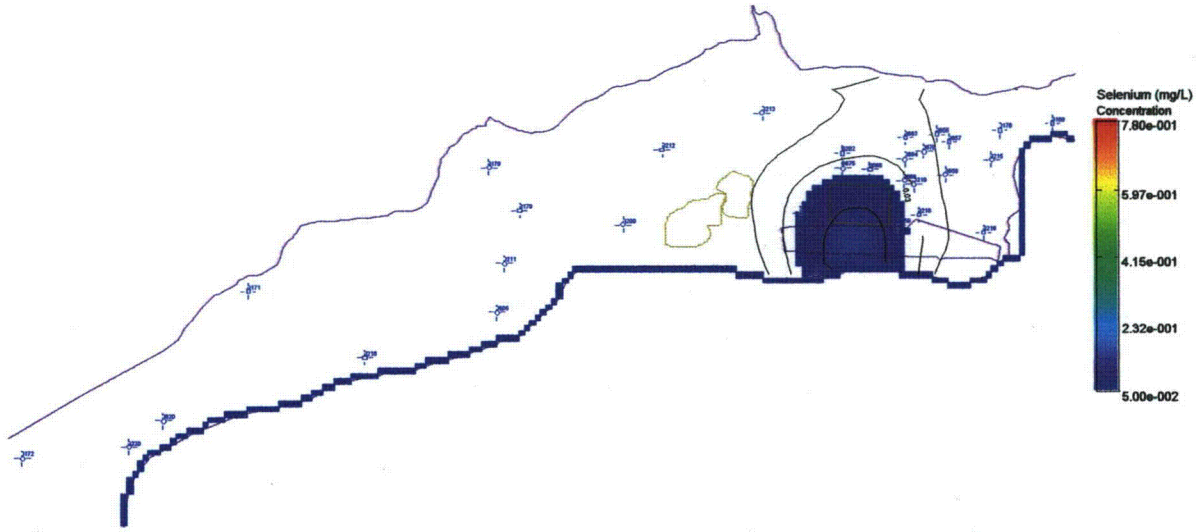


Figure 56. Predicted Selenium Concentrations in the Ground Water at the New Rifle Site at 50 Years —100 Simulations

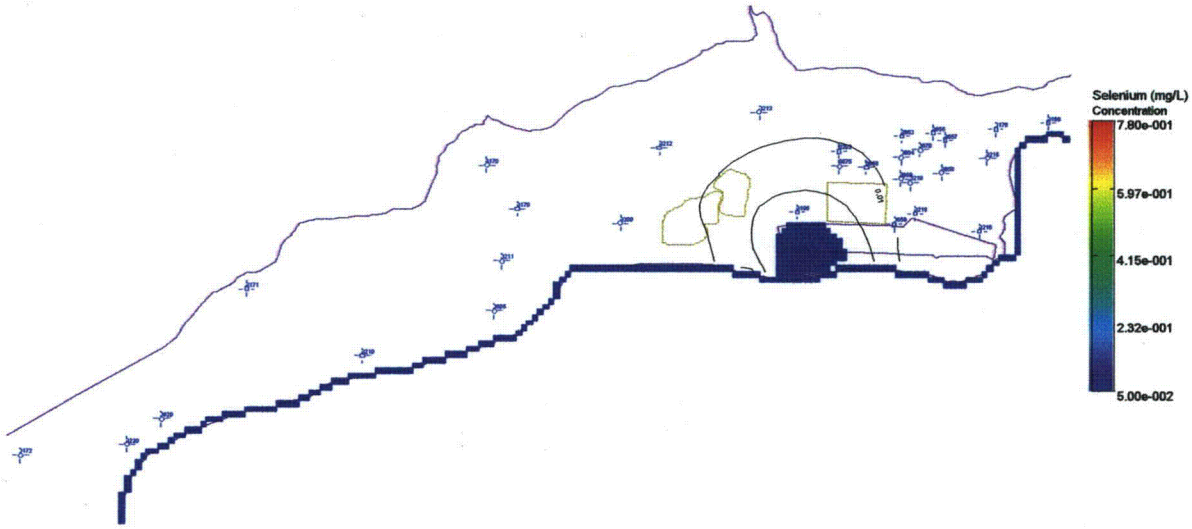


Figure 57. Predicted Selenium Concentrations in the Ground Water at the New Rifle Site at 75 Years —100 Simulations

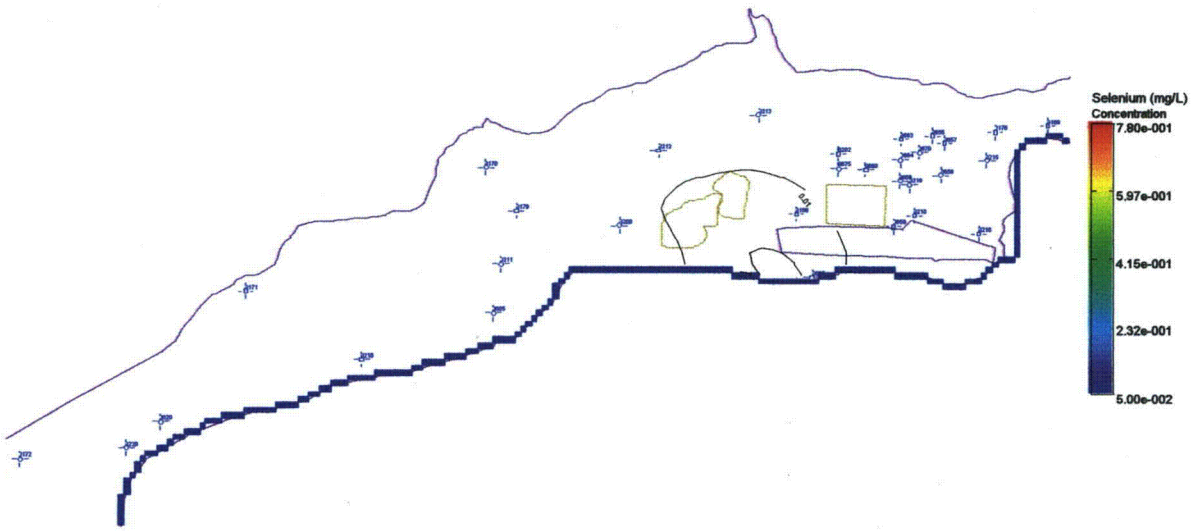


Figure 58. Predicted Selenium Concentrations in the Ground Water at the New Rifle Site at 100 Years —100 Simulations

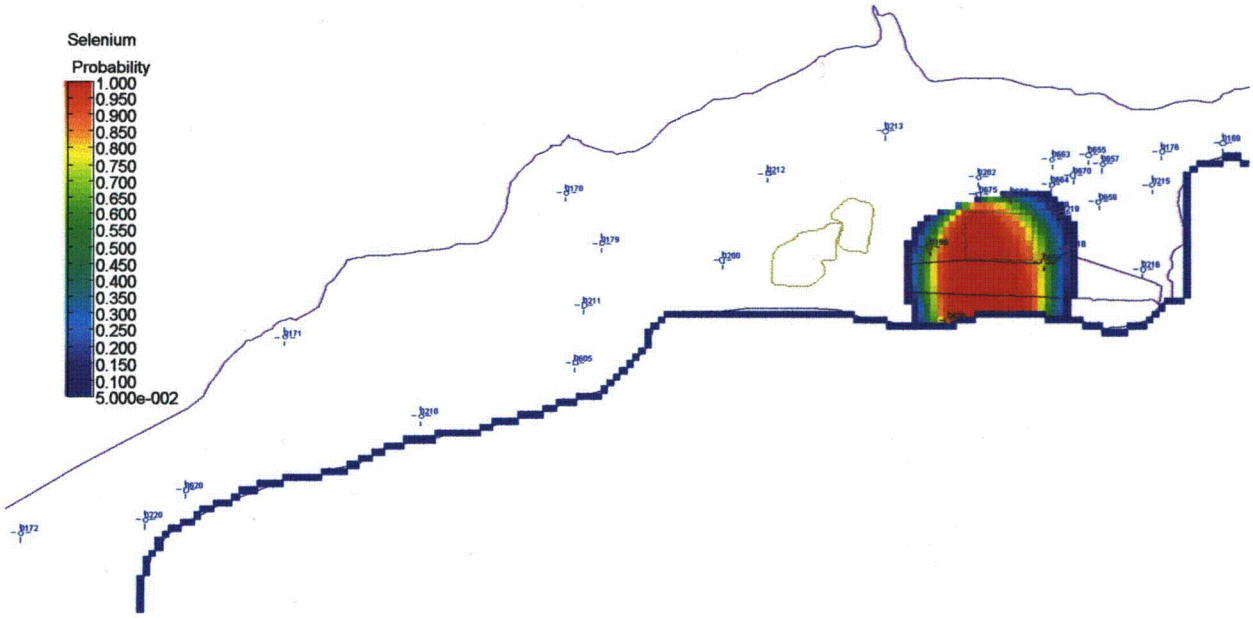


Figure 59. Probability of Selenium Concentrations Exceeding the 0.05 mg/L SDWA Ground Water Standard at the New Rifle Site at 50 Years

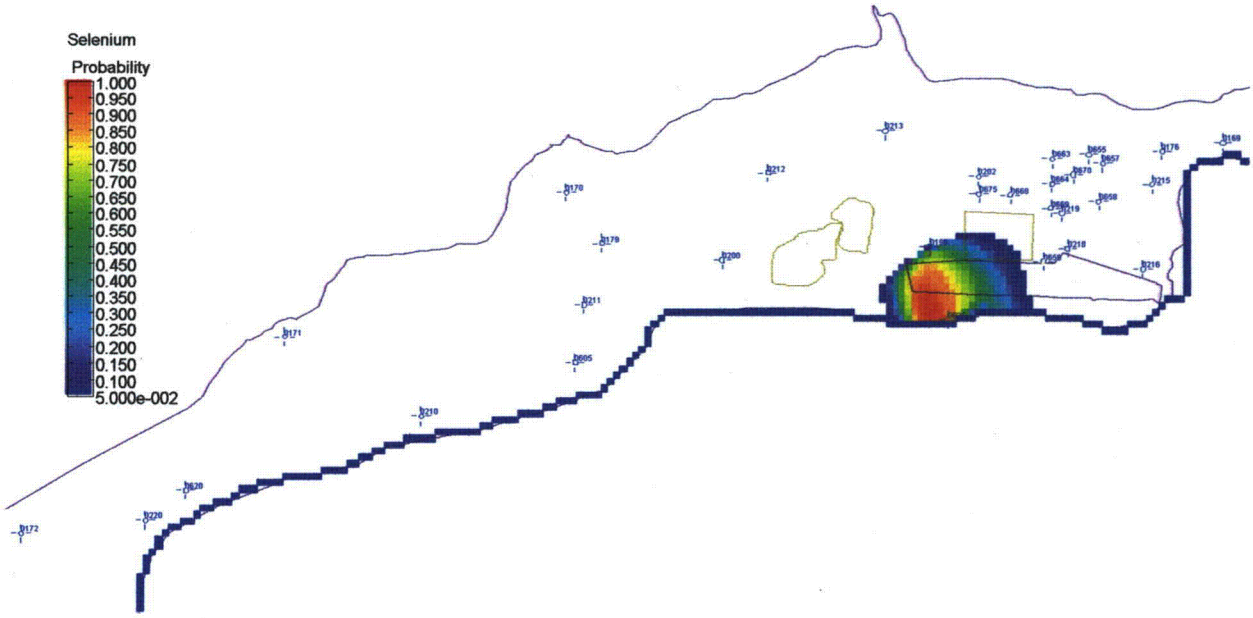


Figure 60. Probability of Selenium Concentrations Exceeding the 0.05 mg/L SDWA Ground Water Standard at the New Rifle Site at 75 Years

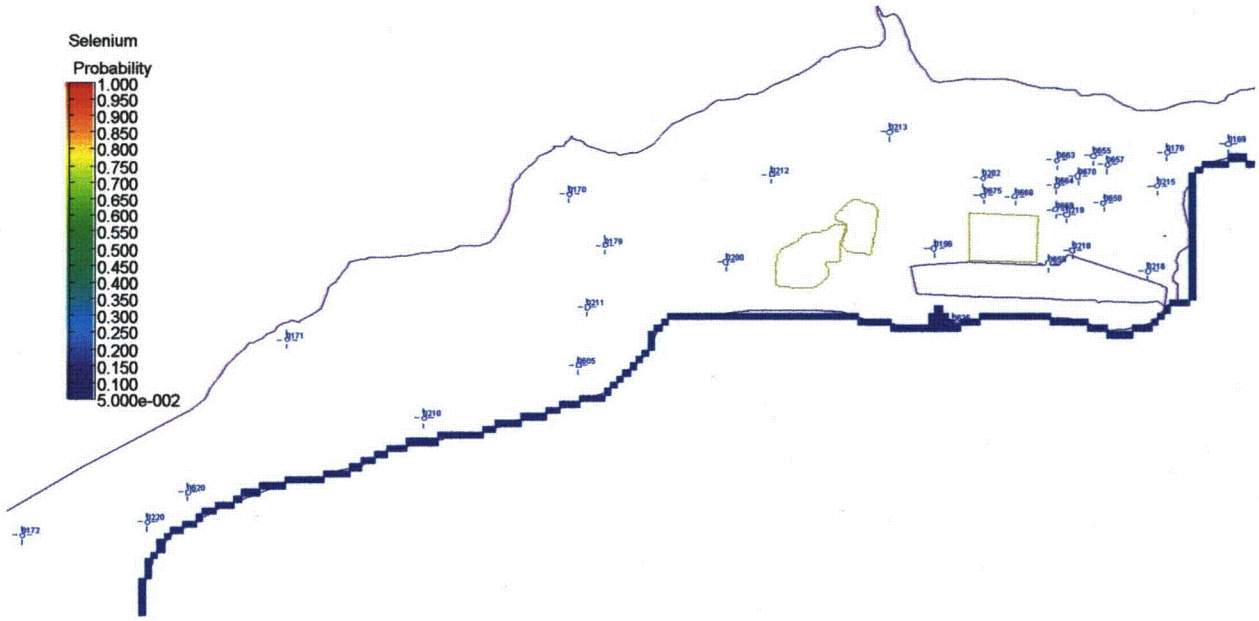


Figure 61. Probability of Selenium Concentrations Exceeding the 0.05 mg/L SDWA Ground Water Standard at the New Rifle Site at 100 Years

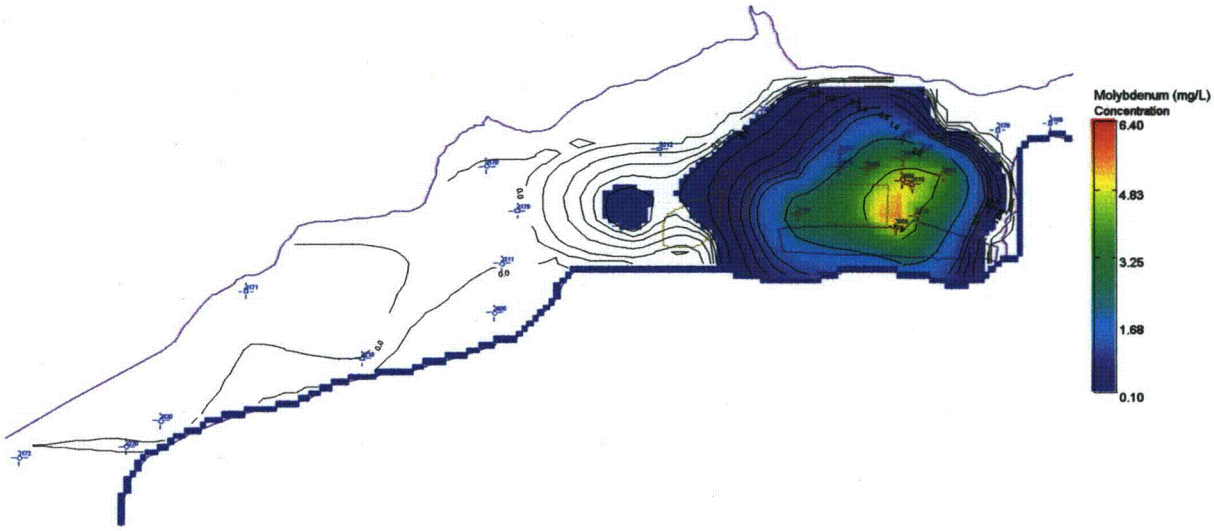


Figure 62. Initial Molybdenum Concentrations in the Ground Water at the New Rifle Site Measured in July 1998

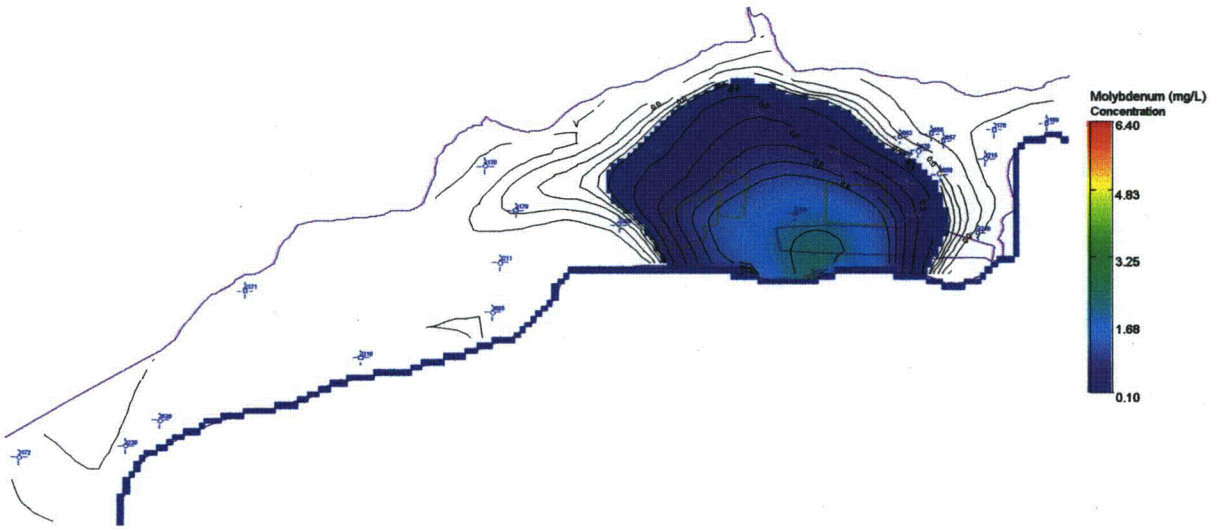


Figure 63. Predicted Molybdenum Concentrations in the Ground Water at the New Rifle Site at 5 Years—100 Simulations

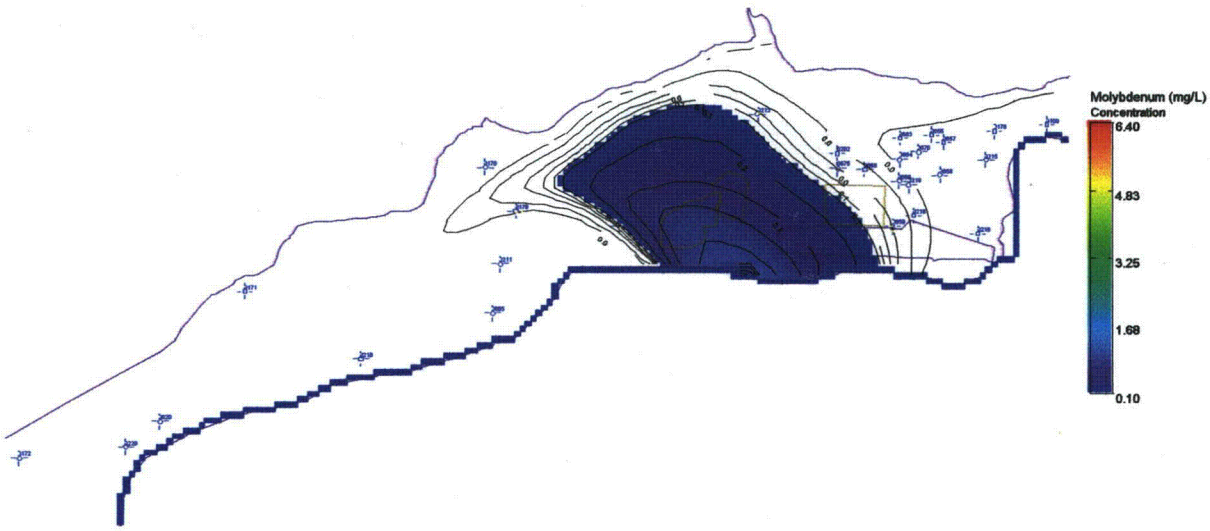


Figure 64. Predicted Molybdenum Concentrations in the Ground Water at the New Rifle Site at 10 Years—100 Simulations

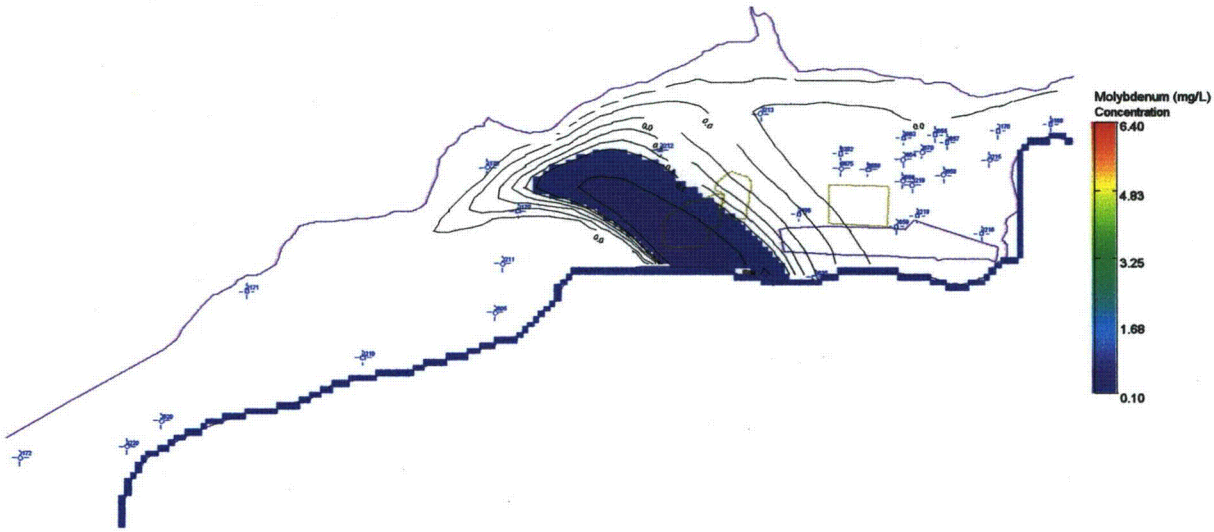


Figure 65. Predicted Molybdenum Concentrations in the Ground Water at the New Rifle Site at 15 Years—100 Simulations

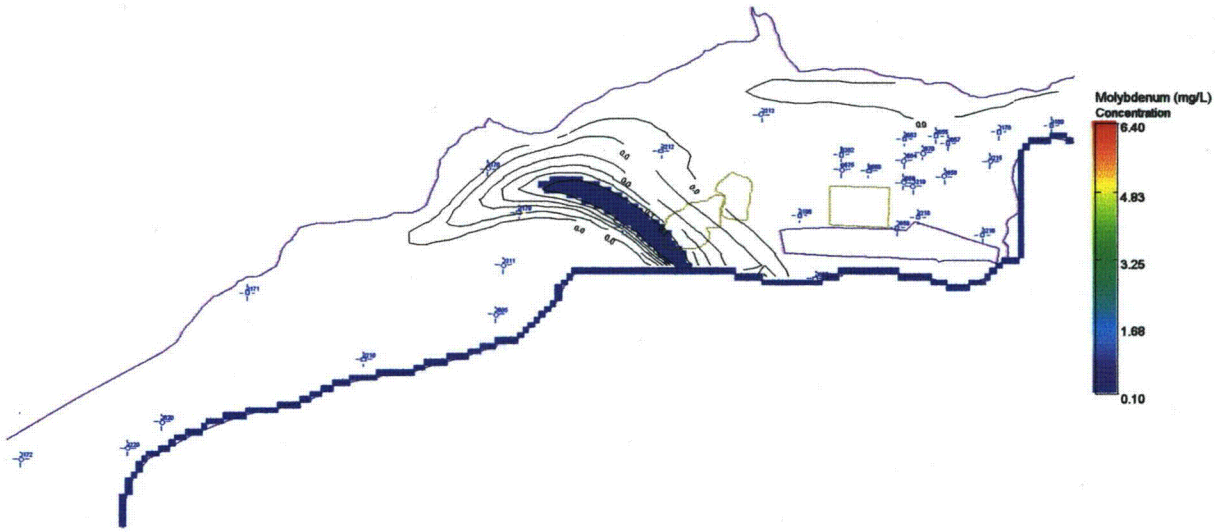


Figure 66. Predicted Molybdenum Concentrations in the Ground Water at the New Rifle Site at 20 Years—100 Simulations

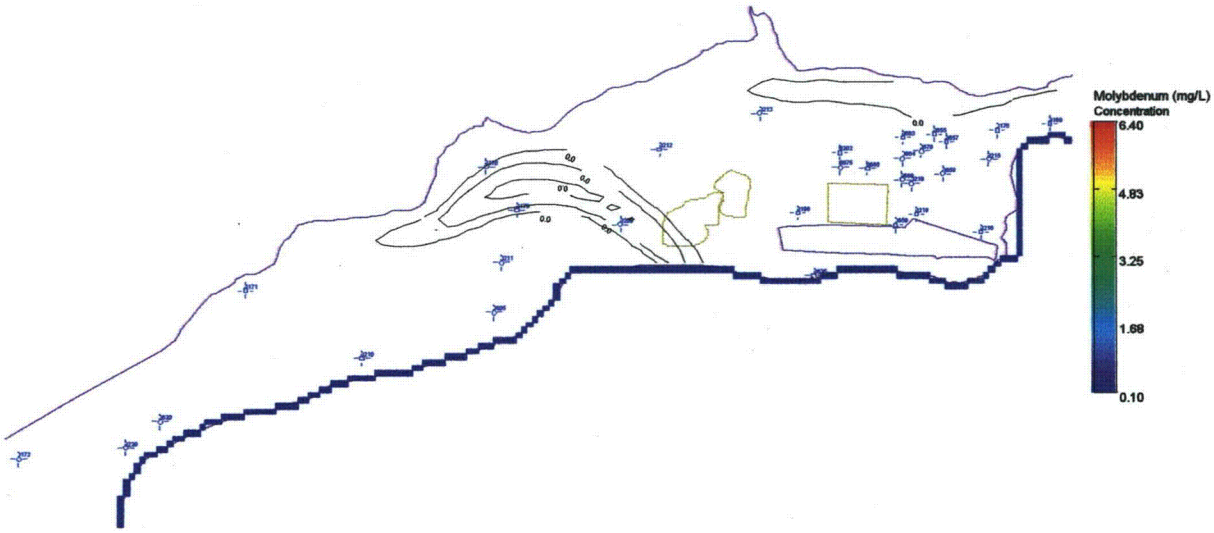


Figure 67. Predicted Molybdenum Concentrations in the Ground Water at the New Rifle Site at 25 Years—100 Simulations

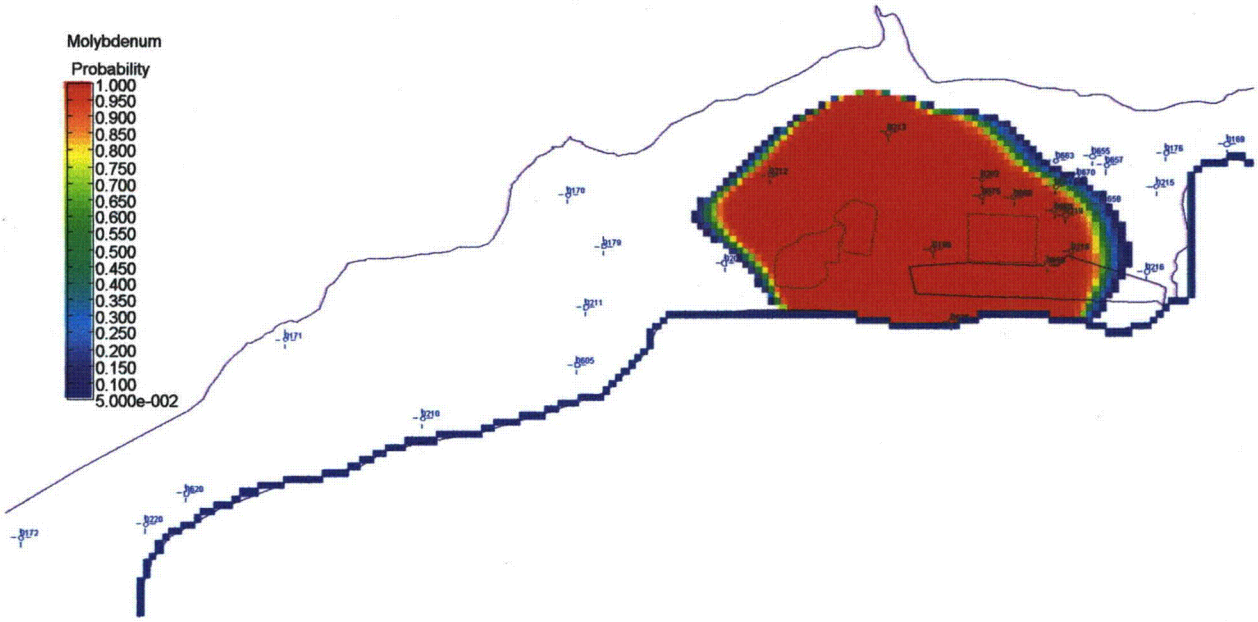


Figure 68. Probability of Molybdenum Concentrations Exceeding the 0.1 mg/L UMTRA Ground Water Standard at the New Rifle Site at 5 Years

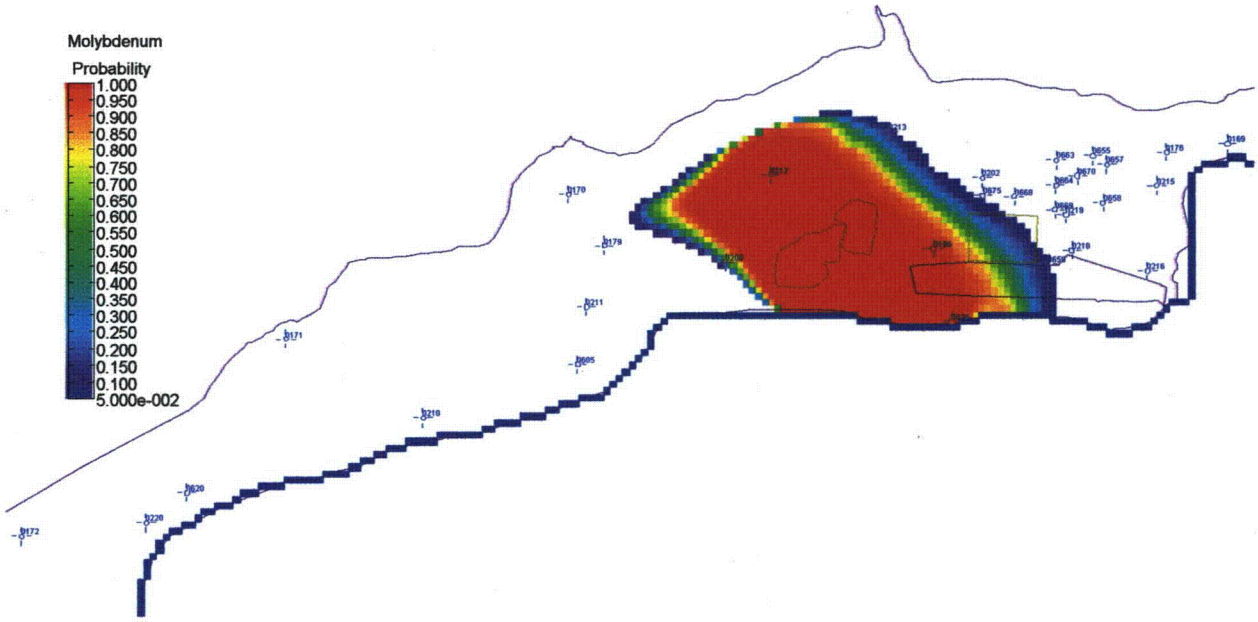


Figure 69. Probability of Molybdenum Concentrations Exceeding the 0.1 mg/L UMTRA Ground Water Standard at the New Rifle Site at 10 Years

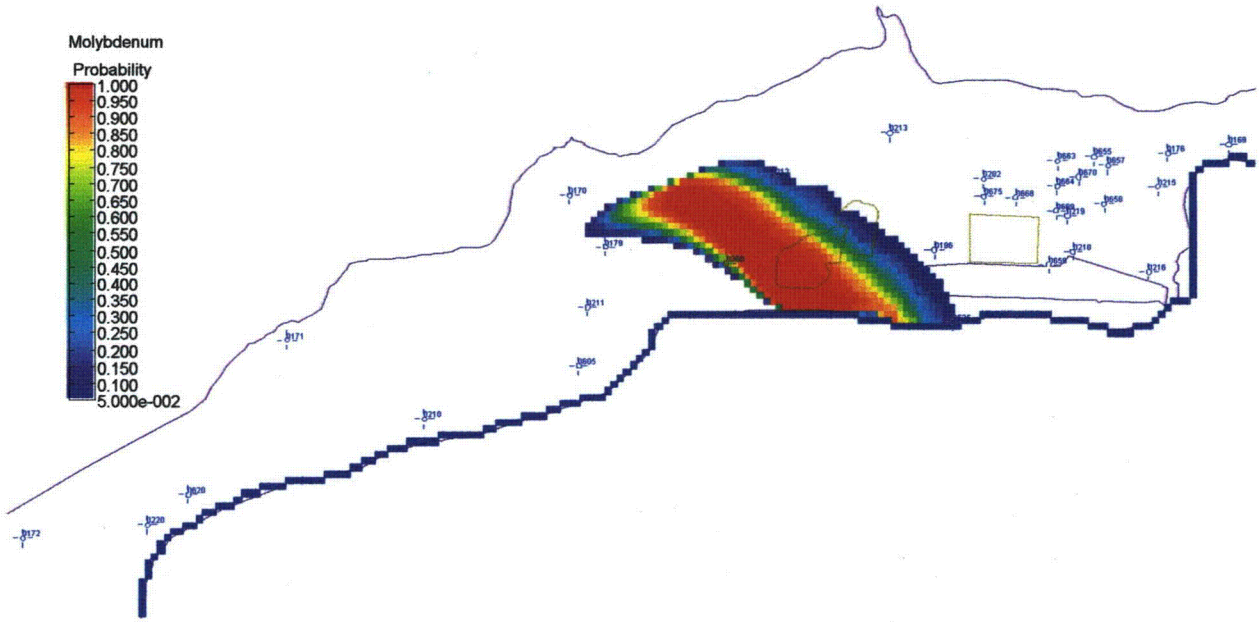


Figure 70. Probability of Molybdenum Concentrations Exceeding the 0.1 mg/L UMTRA Ground Water Standard at the New Rifle Site at 15 Years

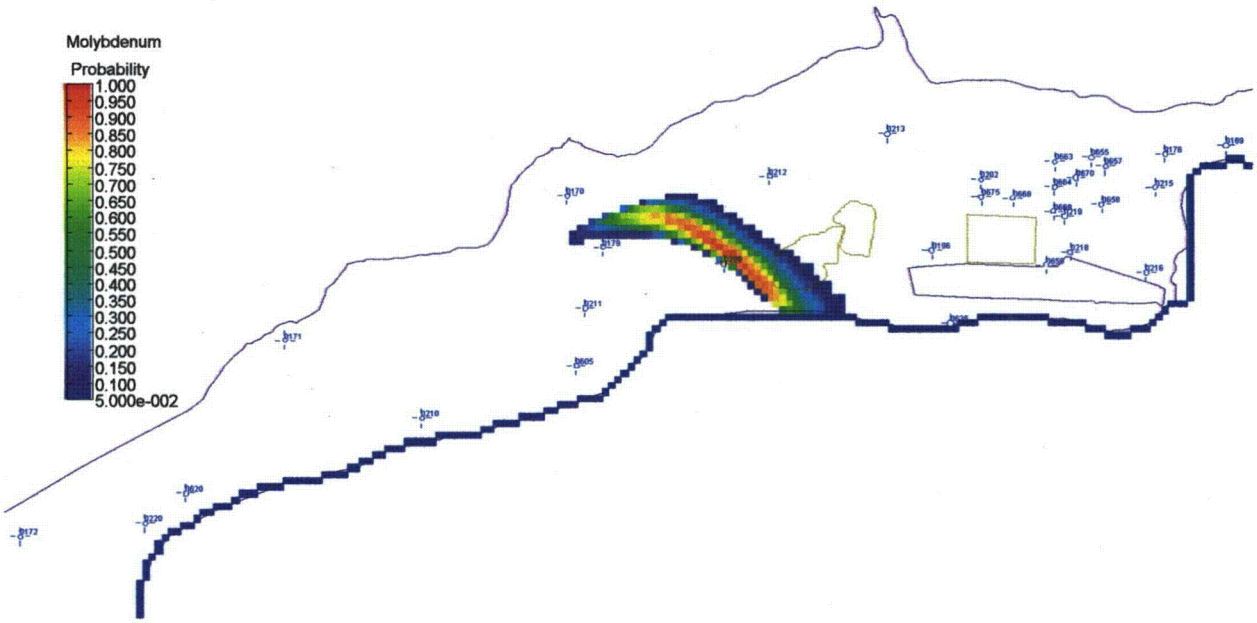


Figure 71. Probability of Molybdenum Concentrations Exceeding the 0.1 mg/L UMTRA Ground Water Standard at the New Rifle Site at 20 Years

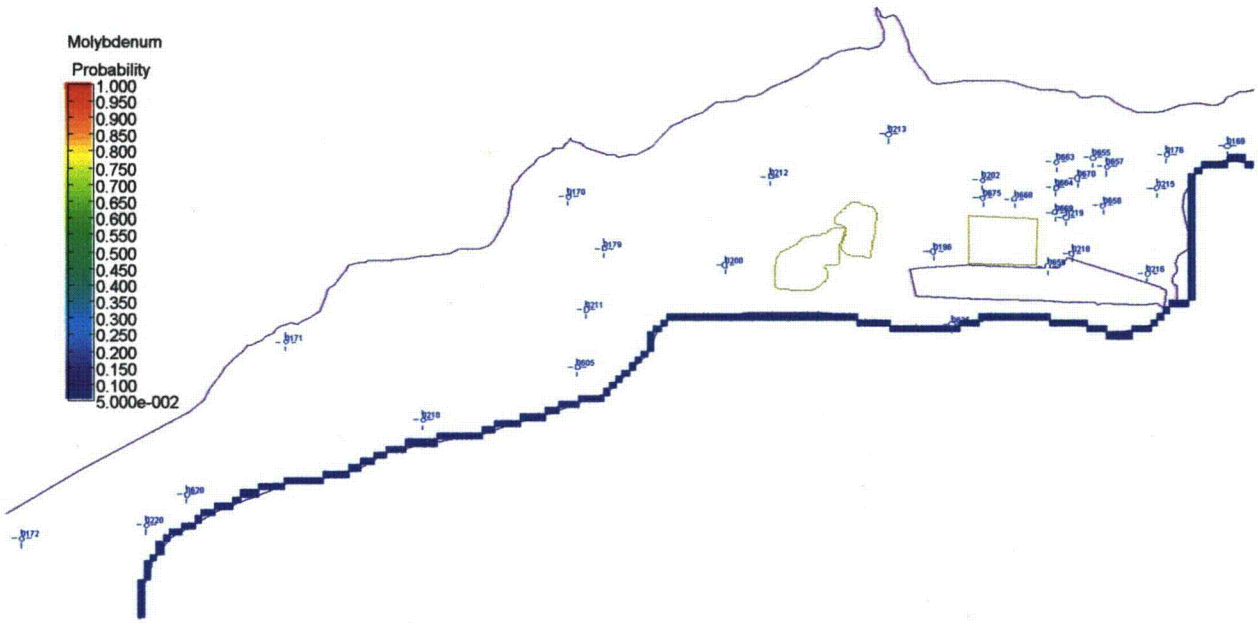


Figure 72. Probability of Molybdenum Concentrations Exceeding the 0.1 mg/L UMTRA Ground Water Standard at the New Rifle Site at 25 Years

7.0 Summary and Conclusions

7.1 Qualitative Analysis

A water budget was developed to better understand how water enters, moves, and exits the alluvial ground water system. Results of the analysis resulted in less than a 1 percent difference between the total amount of water estimated for all the inflow components and the total amount of water estimated for all the outflow components (Table 1). The relative low percent difference suggests that the major flow components important in the site conceptual flow model have been adequately accounted and identified.

Ground water flow patterns predicted by the MODFLOW computer code (Figure 8) closely resemble the ground water gradient measured in 1998 (Figure 4). This visual analysis suggests that the calibrated flow model adequately and accurately predict the observed water level elevations.

7.2 Quantitative Analysis

Data presented in Tables 8 and 9 indicate that the calibrated flow model meets the acceptance criteria and calibration objectives established before modeling. Calibration results presented in Figure 9 demonstrate that the flow model does not have an inherent bias, i.e., the residuals are evenly distributed above and below 0.0 ft. This is evidenced by a mean residual of –0.012 ft and an absolute mean residual of 0.55 ft. Results presented in Figure 10 demonstrate that the predicted hydraulic heads vs. the observed heads fall on a straight line with a very high correlation coefficient of 0.99.

Transport model calibrations resulted in a best-fit value for the longitudinal dispersivity of 100 ft which is approximately 4 percent of the maximum flow direction (Figure 11). The sensitivity analysis for transverse dispersivity (Section 5.3) indicates that the model is not sensitive to this parameter (Figure 28). These values are consistent with dispersivity reported for large-scale transport models (Gelhar and others 1992). Sensitivity analysis (Section 5.3) identified hydraulic conductivity, dispersivity, and the distribution coefficient as the most sensitive parameters to vary for the stochastic simulations.

Verification of the model calibration was examined by comparing changes in predicted concentrations from 1991 to 1999 to observed concentrations in 1999 at seven ground water monitoring wells. Predicted concentrations versus observed concentrations, presented in Figure 13, indicated excellent agreement as evidenced by the relatively high correlation coefficient of 0.92. On average, the model calibration tends to over estimate the observed concentrations by 6 percent.

7.3 Model Predictions

Results of the MT3D simulations indicate that on average the maximum uranium concentration in the ground water at the New Rifle site will decline below the UMTRA standard of 0.044 mg/L in less than 40 years (Figure 36). Stochastic simulations predict the uranium concentrations after 40 years of natural flushing have less than a 5 percent probability of exceeding the standard (Figure 40).

Predictive simulations for vanadium indicate that the proposed 0.33 mg/L cleanup goal will not be met in 100 years (Figure 44). The maximum predicted concentration at 100 years is 4.37 mg/L, a value significantly above the proposed goal. Furthermore, the stochastic simulations predict most of the vanadium concentrations in the remaining plume have a 100 percent probability of exceeding the proposed cleanup goal (Figure 47).

Predictive simulations for arsenic indicate that the maximum concentrations remaining after 100 years will be 0.059 mg/L, a value slightly above the 0.05 mg/L ground water standard (Figure 51). The stochastic simulations predict the potential occurrence of concentrations having a 100 percent probability of exceeding the standard is limited to a very small areal extent of ground water contamination (Figure 54), effectively meeting the standard. In addition, the more recent January 1999 sampling analysis results indicate much lower concentrations than the 1998 water quality results used for the initial concentrations. The predictions presented in this appendix, based only on the 1998 water quality results, are considered a conservative estimate.

The maximum predicted selenium concentration in the ground water after 100 years of natural flushing is 0.042 mg/L, indicating that on average, the 0.05 mg/L SDWA standard will be met before 100 years (Figure 58). Stochastic simulations indicate the there is a 5 to 28 percent probability that the standard will be exceeded beneath a very small area of the site, as the ground water plume naturally flushes for 100 years into the Colorado River (Figure 61).

Predictive simulations for molybdenum indicate that the proposed 0.1 mg/L proposed cleanup goal will be met within 25 years (Figure 67). The maximum predicted concentration at 25 years is 0.048 mg/L, a value well below the proposed goal. Furthermore, the stochastic simulations predict a 100 percent probability that the maximum concentration will be less than the proposed goal (Figure 72).

8.0 References

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Appendix E

Calculation of Exposure Intakes for Ecological Receptors—Methodology and Data

Calculation of Exposure Intakes for Ecological Receptors—Methodology and Data

To evaluate potential adverse effects of site contamination on an ecological receptor, it is necessary to determine how much exposure a receptor receives from each contaminant present. This involves calculating contaminant intakes for each medium (i.e., soil, water) to which a receptor is exposed. For receptors at New Rifle, potential pathways of exposure include ingestion of contaminated surface water, ingestion of contaminated sediment, and ingestion of contaminated dietary materials (e.g., plants).

For the New Rifle site, exposure intakes were calculated for 3 receptors—muskrat, mule deer, and great blue heron. Exposure parameters were obtained from the literature for those receptors and are provided in Table E–5. In the intake equations presented below, all area use factors (AUF) are assumed to be 1, meaning that each receptor spends 100 percent of its time in the contaminated area and that all of its food and water sources are contaminated at levels represented by their respective exposure point concentrations (EPCs; see Table E–3). To calculate individual intakes for each medium of exposure, the following general equations are used:

For surface water:

$$\text{Intake}_{\text{surface water(mg/kg bw/day)}} = \underset{\text{(Table E–5)}}{\text{WIR}_{\text{(L/kg bw/day)}}} * \underset{\text{(Table E–3)}}{\text{EPC}_{\text{(mg/L water)}}}$$

where WIR = water ingestion rate.

For sediment:

$$\text{Intake}_{\text{sediment(mg/kg bw/day)}} = \underset{\text{(Table E–5)}}{\text{DIR}_{\text{(kg/kg bw/d)}}} * \underset{\text{(Table E–5)}}{\text{Fraction Sediment in Diet}} * \underset{\text{(Table E–3)}}{\text{EPC (mg/kg sed)}} * \text{AUF}$$

where DIR = dietary ingestion rate

For dietary intakes:

$$\text{Intake}_{\text{(dietary, mg/kg bw/day)}} = \underset{\text{(Table E–5)}}{\text{DIR}_{\text{adj}}} * \underset{\text{(Table E–3)}}{\text{EPC}_{\text{(mg/kg)}}} * \text{AUF}$$

where DIR_{adj} = adjusted dietary ingestion rate, mg/kg bw/day

Exposure point concentrations of dietary materials can be measured (as they were for cattail stems and leaves at the NRW) or estimated using sediment and surface water concentrations and appropriate uptake factors.

For dietary materials such as plants, which are assumed to take up contaminants from sediment, EPCs are calculated using bioaccumulation factors (BAFs). BAFs represent the ratio of contaminant concentration in plants to the concentration in sediments. Therefore,

$$\text{EPC}_{\text{plant tissue}} = \underset{\text{Table E–3}}{\text{EPC}_{\text{sed}}} * \underset{\text{Table E–4}}{\text{BAF}}$$

For dietary materials such as frogs, which are assumed to take up contaminants from surface water, EPCs are calculated using bioconcentration factors (BCFs). BCFs represent the ratio of contaminant concentration in tissue (e.g., frog) to the concentration in surface water. Therefore,

$$EPC_{frog\ tissue} = \underset{\text{Table E–3}}{EPC_{surface\ water}} * \underset{\text{Table E–4}}{BCF}$$

Site-specific BAF were calculated from NRW sediment and plant data and are provided in Table E–4. These were used to calculate predicted EPCs for plant tissue in the RFP.

Literature BCFs provided in Table E–4 were used to calculate concentrations in dietary materials for the great blue heron. Few BCFs were available for these dietary materials, and, consequently, dietary intakes for many contaminants are underestimated.

To calculate specific dietary intakes for muskrat, mule deer and great blue heron, the above general equations were used along with EPCs from Table E–3, BAFs and BCFs in Table E–4, and exposure parameters in Table E–5. The equation for the muskrat dietary intakes at the New Rifle and reference wetlands is as follows:

$$Intake_{(mg/kg\ bw/day)} = DIR_{adj} *(0.5 * EPC_{cattail\ stems} + 0.5 *EPC_{cattail\ stems}) * F_{plnt} * AUF$$

where

F_{plnt} = fraction plant in diet (unitless)

The equation for the muskrat dietary intakes at the Roaring Fork pond and reference area for the Roaring Fork pond is as follows:

$$Intake_{(mg/kg\ bw/day)} = DIR_{adj} *(0.5 * BAF_{cattail\ stems} * EPC_{sed} + 0.5 *BAF_{cattail\ roots} * EPC_{sed}) * F_{plnt} * AUF$$

The dietary intake equation for the mule deer at the New Rifle and reference wetlands is as follows:

$$Intake_{(mg/kg\ bw/day)} = DIR_{adj} * EPC_{cattail\ stems} * F_{plnt} * AUF$$

The dietary intake equation for the mule deer at the Roaring Fork pond and reference area for the Roaring Fork pond is as follows:

$$Intake_{(mg/kg\ bw/day)} = DIR_{adj} * BAF_{cattail\ stems} *EPC_{sed} * F_{plnt} * AUF$$

The equation for the mule deer dietary intakes at the Roaring Fork pond and reference area for the Roaring Fork pond is as follows:

$$Intake_{(mg/kg\ bw/day)} = DIR_{adj} *(0.5 * EPC_{cattail\ stems} + 0.5 *EPC_{cattail\ stems}) * F_{plnt} * AUF$$

The dietary intake equation for the great blue heron at all locations is as follows:

$$Intake_{(mg/kg\ bw/day)} = ((BCF_f * EPC_{sw} * F_f * DIR_{adj}) + (BCF_{fr} * EPC_{sw} * F_{fr} * DIR_{adj}) + (BCF_{inv} * EPC_{sw} * F_{inv} * DIR_{adj}) * AUF)$$

where

F_{inv}	=	fraction invertebrates in diet (unitless)
F_{fr}	=	fraction frogs in diet (unitless)
F_f	=	fraction fish in diet (unitless)
EPC_{sw}	=	exposure point concentration for unfiltered surface water, mg/L
BCF_f	=	bioconcentration factor for fish (unitless)
BCF_{ft}	=	bioconcentration factor for frogs (unitless)
BCF_{inv}	=	bioconcentration factor for invertebrates (unitless)

Intakes calculated for each pathway—surface water ingestion, sediment ingestion, and dietary ingestion—are provided in Table E–6. These three pathways can be summed to provide total intakes of a given contaminant for each receptor (these are not provided).

Calculated intakes for a receptor for a given contaminant and pathway combination are compared with reference value intakes to provide an estimate of risk in the form of a hazard quotient (HQ). In this document, reference values used are referred to as toxicity reference values (TRVs). TRVs used for the New Rifle site are presented in Tables E–7 and E–8.

$HQ_{contaminant/\ pathway}$ = Calculated intake/TRV
Table E–6 Table E–7

Hazard indices (HIs) represent the summation of HQs for a given contaminant for two or more pathways. Table E–9 provides HQs and HIs calculated for the New Rifle sites. An HQ or HI of greater than 1 indicates that potentially unacceptable risks may exist for a given contaminant and pathway or combination of pathways. These potentially unacceptable risks are the risk drivers for future cleanup, monitoring, or characterization efforts. Table E–10 presents the risk drivers for the New Rifle site.

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Table E–1. Summary Statistics for Ecological Risk Assessment

Summary Statistics For the Reference Wetland - Inorganics in Sediment (Eco-1998)

Analyte	Number of Detects	Number of Samples	% Detects	Minimum	Maximum	Average	Std. Deviation	UCL95	Units
Ammonia as NH_4	5	5	100	0.56	6.80	2.80	2.57	5.25	mg/kg
Arsenic	5	5	100	5.30	7.20	6.34	0.80	7.10	mg/kg
Cadmium	3	5	60	0.07	0.17	0.12	0.05	0.16	mg/kg
Fluoride	5	5	100	8.80	10.45	9.55	0.67	10.19	mg/kg
Iron	5	5	100	12100	16,800	15,200	1,883	16,995	mg/kg
Manganese	5	5	100	250.0	329.0	296.4	28.64	323.7	mg/kg
Molybdenum	1	5	20	0.3	0.8	0.4	0.23	0.6	mg/kg
Nitrate	0	5	0	0.80	1.03	0.93	0	NA	mg/kg
Percent Solids	5	5	100	68.81	74.46	72.08	2.34	74.31	%
Selenium	0	5	0	0.14	0.15	0.14	0	NA	mg/kg
Strontium	5	5	100	96.5	145.0	122.5	18.05	139.7	mg/kg
Sulfate	5	5	100	424.0	2,110	1,042	669	1,680	mg/kg
Total Phosphorus as PO_4	0	5	0	0.29	0.31	0.30	0	NA	mg/kg
Uranium	5	5	100	4.50	5.65	4.93	0.49	5.40	mg/kg
Vanadium	5	5	100	19.80	32.00	27.30	5.01	32.08	mg/kg
Zinc	5	5	100	37.40	50.00	45.24	4.80	49.81	mg/kg

UCL95 - Upper 95% confidence limit.

mg/kg - milligrams per kilogram

NA- Not applicable.

EPC- Exposure point concentration, mg/kg

Summary Statistics For the Reference Wetland - Inorganics in Filtered Surface Water (Eco-1998)

Analyte	Number of Detects	Number of Samples	% Detects	Minimum	Maximum	Average	Std. Deviation	UCL95	Units
Ammonia as NH_4	5	5	100	0.04	0.11	0.07	0.03	0.1	mg/L
Arsenic	5	5	100	0.002	0.005	0.004	0.001	0.00	mg/L
Cadmium	0	5	0	0.001	0.001	0.001	0	NA	mg/L
Calcium Carbonate	5	5	100	155.0	189.0	175.1	12.76	187.3	mg/L
Fluoride	5	5	100	0.28	0.41	0.32	0.05	0.37	mg/L
Hardness	5	5	100	331.0	400.0	369.8	25.20	393.8	mg/L
Iron	5	5	100	0.04	0.11	0.08	0.03	0.11	mg/L
Manganese	5	5	100	0.18	0.70	0.39	0.233	0.61	mg/L
Molybdenum	4	5	80	0.001	0.003	0.002	0.001	0.0024	mg/L
Nitrate	0	5	0	0.04	0.06	0.05	0	NA	mg/L
Selenium	1	5	20	0.001	0.002	0.001	0.0005	0.002	mg/L
Strontium	5	5	100	1.02	1.26	1.12	0.09	1.21	mg/L
Sulfate	5	5	100	249.00	291.0	267.2	15.27	281.8	mg/L
Total Phosphorus as PO_4	1	5	20	0.02	0.45	0.11	0.19	0.29	mg/L
Uranium	5	5	100	0.005	0.008	0.006	0.002	0.008	mg/L
Vanadium	2	5	40	0.003	0.01	0.004	0.002	0.01	mg/L
Zinc	4	5	80	0.002	0.02	0.009	0.007	0.016	mg/L

UCL95 - Upper 95% confidence limit.

mg/L - milligrams per liter

NA- Not applicable.

EPC- Exposure point concentration, mg/kg

Summary Statistics For the Reference Wetland - Inorganics in Unfiltered Surface Water (Eco-1998)

Analyte	Number of Detects	Number of Samples	% Detects	Minimum	Maximum	Average	Std. Deviation	UCL95	Units
Ammonia as NH_4	5	5	100	0.030	0.12	0.057	0.037	0.092	mg/L
Arsenic	5	5	100	0.0028	0.006	0.0054	0.0015	0.007	mg/L
Cadmium	0	5	0	0.001	0.001	0.001	0	NA	mg/L
Calcium Carbonate	5	5	100	178.0	192.0	185.7	5.19	190.6	mg/L
Fluoride	5	5	100	0.284	0.362	0.32	0.03	0.35	mg/L
Hardness	5	5	100	382.0	413.0	398.7	11.44	407.6	mg/L
Iron	4	5	80	0.109	0.308	0.25	0.08	0.33	mg/L
Manganese	5	5	100	0.204	0.829	0.477	0.243	0.709	mg/L
Molybdenum	0	5	0	0.00	0.001	0.001	0	NA	mg/L
Nitrate	0	5	0	0.015	0.079	0.043	0	NA	mg/L
Selenium	0	5	0	0.0011	0.0011	0.0011	0	NA	mg/L
Strontium	5	5	100	1.04	1.22	1.13	0.07	1.19	mg/L
Sulfate	5	5	100	250.00	291.0	269.2	15.29	283.8	mg/L
Total Phosphorus as PO_4	3	5	60	0.022	0.442	0.181	0.203	0.375	mg/L
Uranium	5	5	100	0.0049	0.009	0.007	0.002	0.009	mg/L
Vanadium	0	5	0	0.0028	0.0028	0.0028	0	NA	mg/L
Zinc	1	5	20	0.002	0.010	0.0045	0.003	0.008	mg/L

UCL95 - Upper 95% confidence limit.

mg/L - milligrams per liter

NA - Not applicable.

EPC- Exposure point concentration, mg/kg

Table E–1. Summary Statistics for Ecological Risk Assessment

Summary Statistics For the Reference Wetland - Inorganics in Sediment (Eco-1998)

Analyte	Number of Detects	Number of Samples	% Detects	Minimum	Maximum	Average	Std. Deviation	UCL95	Units
Ammonia as NH_4	5	5	100	0.56	6.80	2.80	2.57	5.25	mg/kg
Arsenic	5	5	100	5.30	7.20	6.34	0.80	7.10	mg/kg
Cadmium	3	5	60	0.07	0.17	0.12	0.05	0.16	mg/kg
Fluoride	5	5	100	8.80	10.45	9.55	0.67	10.19	mg/kg
Iron	5	5	100	12100	16,800	15,200	1,883	16,995	mg/kg
Manganese	5	5	100	250.0	329.0	296.4	28.64	323.7	mg/kg
Molybdenum	1	5	20	0.3	0.8	0.4	0.23	0.6	mg/kg
Nitrate	0	5	0	0.80	1.03	0.93	0	NA	mg/kg
Percent Solids	5	5	100	68.61	74.46	72.08	2.34	74.31	%
Selenium	0	5	0	0.14	0.15	0.14	0	NA	mg/kg
Strontium	5	5	100	96.5	145.0	122.5	18.05	139.7	mg/kg
Sulfate	5	5	100	424.0	2,110	1,042	689	1,680	mg/kg
Total Phosphorus as PO_4	0	5	0	0.29	0.31	0.30	0	NA	mg/kg
Uranium	5	5	100	4.50	5.65	4.93	0.49	5.40	mg/kg
Vanadium	5	5	100	19.80	32.00	27.30	5.01	32.08	mg/kg
Zinc	5	5	100	37.40	50.00	45.24	4.60	49.81	mg/kg

UCL95 - Upper 95% confidence limit.

mg/kg - milligrams per kilogram

NA- Not applicable.

EPC- Exposure point concentration, mg/kg

Summary Statistics For the Reference Wetland - Inorganics in Filtered Surface Water (Eco-1998)

Analyte	Number of Detects	Number of Samples	% Detects	Minimum	Maximum	Average	Std. Deviation	UCL95	Units
Ammonia as NH_4	5	5	100	0.04	0.11	0.07	0.03	0.1	mg/L
Arsenic	5	5	100	0.002	0.005	0.004	0.001	0.00	mg/L
Cadmium	0	5	0	0.001	0.001	0.001	0	NA	mg/L
Calcium Carbonate	5	5	100	155.0	189.0	175.1	12.76	187.3	mg/L
Fluoride	5	5	100	0.28	0.41	0.32	0.05	0.37	mg/L
Hardness	5	5	100	331.0	400.0	369.8	25.20	393.8	mg/L
Iron	5	5	100	0.04	0.11	0.08	0.03	0.11	mg/L
Manganese	5	5	100	0.18	0.70	0.39	0.233	0.61	mg/L
Molybdenum	4	5	80	0.001	0.003	0.002	0.001	0.0024	mg/L
Nitrate	0	5	0	0.04	0.06	0.05	0	NA	mg/L
Selenium	1	5	20	0.001	0.002	0.001	0.0005	0.002	mg/L
Strontium	5	5	100	1.02	1.26	1.12	0.09	1.21	mg/L
Sulfate	5	5	100	249.00	291.0	267.2	15.27	281.8	mg/L
Total Phosphorus as PO_4	1	5	20	0.02	0.45	0.11	0.19	0.29	mg/L
Uranium	5	5	100	0.005	0.008	0.006	0.002	0.008	mg/L
Vanadium	2	5	40	0.003	0.01	0.004	0.002	0.01	mg/L
Zinc	4	5	80	0.002	0.02	0.009	0.007	0.016	mg/L

UCL95 - Upper 95% confidence limit.

mg/L - milligrams per liter

NA- Not applicable.

EPC- Exposure point concentration, mg/kg

Summary Statistics For the Reference Wetland - Inorganics in Unfiltered Surface Water (Eco-1998)

Analyte	Number of Detects	Number of Samples	% Detects	Minimum	Maximum	Average	Std. Deviation	UCL95	Units
Ammonia as NH_4	5	5	100	0.030	0.12	0.057	0.037	0.092	mg/L
Arsenic	5	5	100	0.0028	0.006	0.0054	0.0015	0.007	mg/L
Cadmium	0	5	0	0.001	0.001	0.001	0	NA	mg/L
Calcium Carbonate	5	5	100	178.0	192.0	185.7	5.19	190.6	mg/L
Fluoride	5	5	100	0.284	0.362	0.32	0.03	0.35	mg/L
Hardness	5	5	100	382.0	413.0	396.7	11.44	407.6	mg/L
Iron	4	5	80	0.109	0.308	0.25	0.08	0.33	mg/L
Manganese	5	5	100	0.204	0.829	0.477	0.243	0.709	mg/L
Molybdenum	0	5	0	0.00	0.001	0.001	0	NA	mg/L
Nitrate	0	5	0	0.015	0.079	0.043	0	NA	mg/L
Selenium	0	5	0	0.0011	0.0011	0.0011	0	NA	mg/L
Strontium	5	5	100	1.04	1.22	1.13	0.07	1.19	mg/L
Sulfate	5	5	100	250.00	291.0	269.2	15.29	283.8	mg/L
Total Phosphorus as PO_4	3	5	60	0.022	0.442	0.181	0.203	0.375	mg/L
Uranium	5	5	100	0.0049	0.009	0.007	0.002	0.009	mg/L
Vanadium	0	5	0	0.0028	0.0028	0.0028	0	NA	mg/L
Zinc	1	5	20	0.002	0.010	0.0045	0.003	0.008	mg/L

UCL95 - Upper 95% confidence limit.

mg/L - milligrams per liter

NA - Not applicable.

EPC- Exposure point concentration, mg/kg

Table E–1. Summary Statistics for Ecological Risk Assessment

Summary Statistics for the Reference Wetland - Metals in Cattail Roots (Eco-1998)

Analyte	Number of Detects	Number of Samples	% Detects	Minimum	Maximum	Average	Std. Deviation	UCL95	Units (wet-weight)
Arsenic	5	5	100	5.50	9.20	7.32	1.38	8.63	mg/kg
Cadmium	5	5	100	0.28	0.37	0.32	0.03	0.36	mg/kg
Iron	5	5	100	7,040	15,900	12,168	3,231	15,249	mg/kg
Manganese	5	5	100	249.0	377.0	292.3	49.32	339.3	mg/kg
Molybdenum	5	5	100	0.75	1.30	0.99	0.22	1.20	mg/kg
Selenium	0	5	0	0.10	0.10	0.10	0	NA	mg/kg
Strontium	5	5	100	119.0	144.0	129.5	10.40	139.4	mg/kg
Uranium	5	5	100	1.90	3.40	2.80	0.64	3.41	mg/kg
Vanadium	5	5	100	15.80	39.70	28.70	8.68	36.97	mg/kg
Zinc	5	5	100	48.20	64.30	53.60	6.61	59.90	mg/kg
Loss on Drying	5	5	100	82.30	93.20	89.64	4.40	93.8	%

UCL95 - Upper 95% confidence limit.

mg/kg - milligrams per kilogram

NA - Not applicable.

EPC- Exposure point concentration, mg/kg

Summary Statistics for the Reference Wetland - Metals in Cattail Stems (Eco-1998)

Analyte	Number of Detects	Number of Samples	% Detects	Minimum	Maximum	Average	Std. Deviation	UCL95	Units (wet-weight)
Arsenic	0	5	0	0.34	0.65	0.42	0	NA	mg/kg
Cadmium	4	5	80	0.05	0.54	0.25	0.2	0.42	mg/kg
Iron	5	5	100	370.0	2,710	984.8	992.8	1,931	mg/kg
Manganese	5	5	100	344.0	638.5	504.9	126.5	625.5	mg/kg
Molybdenum	5	5	100	0.6	1.1	0.8	0.2	1.0	mg/kg
Selenium	0	5	0	0.15	0.27	0.20	0	NA	mg/kg
Strontium	5	5	100	115.0	166.0	145.0	18.85	163.0	mg/kg
Uranium	5	5	100	0.11	0.46	0.26	0.18	0.43	mg/kg
Vanadium	5	5	100	0.73	4.10	1.77	1.35	3.05	mg/kg
Zinc	5	5	100	18.70	38.90	26.04	8.02	33.68	mg/kg
Loss on Drying	5	5	100	86.7	92.5	89.8	2.24	91.9	%

UCL95 - Upper 95% confidence limit.

mg/kg - milligrams per kilogram

NA - Not applicable.

EPC- Exposure point concentration, mg/kg

Summary Statistics For Roaring Fork Pond - Inorganics in Sediment (Eco-1998)

Analyte	Number of Detects	Number of Samples	% Detects	Minimum	Maximum	Average	Std. Deviation	UCL95	Units
Ammonia as NH_4	5	5	100	64.20	114.0	84.36	20.15	103.6	mg/kg
Arsenic	5	5	100	4.20	7.40	5.90	1.31	7.15	mg/kg
Cadmium	5	5	100	0.36	0.90	0.54	0.21	0.74	mg/kg
Fluoride	5	5	100	1.90	4.70	3.08	1.15	4.18	mg/kg
Iron	5	5	100	10,800	18,600	15,400	2,986	18,247	mg/kg
Manganese	5	5	100	230.0	458.0	332.1	92.66	420.4	mg/kg
Molybdenum	5	5	100	1.10	4.50	2.24	1.32	3.50	mg/kg
Nitrate	5	5	100	71.20	214.0	149.8	58.01	205.2	mg/kg
Percent Solids	5	5	100	65.61	79.53	72.20	6.27	78.17	%
Selenium	1	5	20	0.13	0.47	0.20	0.15	0.35	mg/kg
Strontium	5	5	100	52.8	89.5	63.9	15.98	79.2	mg/kg
Sulfate	5	5	100	939.5	2,880	1,908	871	2,739	mg/kg
Total Phosphorus as PO_4	5	5	100	0.98	3.70	2.56	1.06	3.56	mg/kg
Uranium	5	5	100	3.80	6.25	5.05	0.92	5.93	mg/kg
Vanadium	5	5	100	27.70	34.50	29.77	2.72	32.36	mg/kg
Zinc	5	5	100	58.10	103.0	71.64	17.94	88.74	mg/kg

UCL95 - Upper 95% confidence limit.

mg/kg - milligrams per kilogram

NA- Not applicable.

EPC- Exposure point concentration, mg/kg

Table E–1. Summary Statistics for Ecological Risk Assessment

Summary Statistics For Roaring Fork Pond - Inorganics in Filtered Surface Water (Eco-1998)

Analyte	Number of Detects	Number of Samples	% Detects	Minimum	Maximum	Average	Std. Deviation	UCL95	Units
Ammonia as NH_4	5	5	100	95.40	99.50	97.78	1.60	99.3	mg/L
Arsenic	5	5	100	0.0036	0.0058	0.0046	0.0011	0.0056	mg/L
Cadmium	0	5	0	0.0005	0.0005	0.0005	0	NA	mg/L
Calcium Carbonate	5	5	100	919.0	953.0	936.2	14.81	950.3	mg/L
Fluoride	5	5	100	0.44	0.48	0.45	0.02	0.47	mg/L
Hardness	5	5	100	1380	1440	1413	26.36	1438	mg/L
Iron	1	5	20	0.0055	0.013	0.0070	0.0034	0.010	mg/L
Manganese	5	5	100	0.16	0.17	0.16	0.004	0.17	mg/L
Molybdenum	5	5	100	0.49	0.51	0.50	0.01	0.51	mg/L
Nitrate	5	5	100	444.0	462.0	451.0	7.21	457.9	mg/L
Selenium	4	5	80	0.0010	0.0040	0.0022	0.0011	0.0033	mg/L
Strontium	5	5	100	3.28	3.45	3.38	0.08	3.46	mg/L
Sulfate	5	5	100	2,680	2,840	2,754	71.97	2,823	mg/L
Total Phosphorus as PO_4	0	5	0	0.022	0.022	0.022	0	NA	mg/L
Uranium	5	5	100	0.15	0.16	0.15	0.0036	0.16	mg/L
Vanadium	5	5	100	0.0064	0.0095	0.0078	0.0014	0.0092	mg/L
Zinc	4	5	80	0.0015	0.019	0.0083	0.0079	0.016	mg/L

UCL95 - Upper 95% confidence limit.

mg/L - milligrams per liter

NA- Not applicable.

EPC- Exposure point concentration, mg/kg

Summary Statistics For Roaring Fork Pond - Inorganics in Unfiltered Surface Water (Eco-1998)

Analyte	Number of Detects	Number of Samples	% Detects	Minimum	Maximum	Average	Std. Deviation	UCL95	Units
Ammonia as NH_4	5	5	100	96.40	97.90	97.05	0.60	97.62	mg/L
Arsenic	5	5	100	0.0032	0.0043	0.0039	0.00044	0.0043	mg/L
Cadmium	0	5	0	0.00055	0.00055	0.00055	0	NA	mg/L
Calcium Carbonate	5	5	100	960.0	975.0	968.3	6.76	974.7	mg/L
Fluoride	5	5	100	0.41	0.45	0.44	0.014	0.45	mg/L
Hardness	5	5	100	1,450	1,470	1,464	8.94	1,473	mg/L
Iron	1	5	20	0.045	0.27	0.12	0.09	0.20	mg/L
Manganese	5	5	100	0.211	0.25	0.23	0.014	0.24	mg/L
Molybdenum	5	5	100	0.50	0.52	0.51	0.0071	0.52	mg/L
Nitrate	5	5	100	443.0	450.0	447.0	2.74	449.6	mg/L
Selenium	0	5	0	0.0011	0.0011	0.0011	0.0	NA	mg/L
Strontium	5	5	100	3.30	3.35	3.32	0.020	3.34	mg/L
Sulfate	5	5	100	2,720	2,850	2,765	57.66	2,820	mg/L
Total Phosphorus as PO_4	0	5	0	0.022	0.0215	0.022	0	NA	mg/L
Uranium	5	5	100	0.16	0.16	0.157	0.0017	0.159	mg/L
Vanadium	0	5	0	0.0028	0.0028	0.0028	0	NA	mg/L
Zinc	0	5	0	0.0033	0.0089	0.0051	0.0023	0.0072	mg/L

UCL95 - Upper 95% confidence limit.

mg/L - milligrams per liter

NA- Not applicable.

EPC- Exposure point concentration, mg/kg

Summary Statistics For New Rifle Wetland - Inorganics in Sediment (Eco-1998)

Analyte	Number of Detects	Number of Samples	% Detects	Minimum	Maximum	Average	Std. Deviation	UCL95	Units
Ammonia as NH_4	5	5	100	0.69	5.40	2.06	1.93	3.90	mg/kg
Arsenic	5	5	100	7.80	10.80	9.21	1.18	10.33	mg/kg
Cadmium	5	5	100	0.45	0.82	0.61	0.14	0.74	mg/kg
Fluoride	5	5	100	4.50	7.20	6.09	1.21	7.25	mg/kg
Iron	5	5	100	10400	16,200	13,240	2,131	15,272	mg/kg
Manganese	5	5	100	251.0	356.0	309.6	39.90	347.6	mg/kg
Molybdenum	5	5	100	1.2	2.4	1.5	0.51	2.0	mg/kg
Nitrate	5	5	100	5.80	133.00	36.88	54.32	88.67	mg/kg
Percent Solids	5	5	100	78.16	79.94	79.13	0.74	79.84	%
Selenium	0	5	0	0.13	0.13	0.13	0	NA	mg/kg
Strontium	5	5	100	137.0	357.0	207.2	89.37	292.4	mg/kg
Sulfate	5	5	100	55.50	108.00	73.17	20.63	92.84	mg/kg
Total Phosphorus as PO_4	5	5	100	2.30	4.70	3.52	0.98	4.46	mg/kg
Uranium	5	5	100	3.20	5	4	0.48	4.27	mg/kg
Vanadium	5	5	100	24.20	36.90	28.15	5.26	33.17	mg/kg
Zinc	5	5	100	39.65	53.00	46.67	5.11	51.54	mg/kg

UCL95 - Upper 95% confidence limit.

mg/kg - milligrams per kilogram

NA- Not applicable.

EPC- Exposure point concentration, mg/kg

Table E–1. Summary Statistics for Ecological Risk Assessment

Summary Statistics For New Rifle Wetland - Inorganics in Filtered Surface Water (Eco-1998)

Analyte	Number of Detects	Number of Samples	% Detects	Minimum	Maximum	Average	Std. Deviation	UCL95	Units
Ammonia as NH_4	5	5	100	0.04	0.62	0.18	0.25	0.4	mg/L
Arsenic	3	5	60	0.003	0.009	0.006	0.003	0.01	mg/L
Cadmium	0	5	0	0.001	0.001	0.001	0	NA	mg/L
Calcium Carbonate	5	5	100	181.0	253.0	219.1	28.00	243.9	mg/L
Fluoride	5	5	100	0.42	0.67	0.56	0.10	0.65	mg/L
Hardness	5	5	100	347.0	419.0	384.7	27.63	411.0	mg/L
Iron	3	5	60	0.01	0.02	0.01	0.01	0.02	mg/L
Manganese	5	5	100	0.01	0.02	0.01	0.004	0.02	mg/L
Molybdenum	5	5	100	0.03	0.08	0.06	0.02	0.08	mg/L
Nitrate	2	5	40	0.05	2.57	0.62	1.10	1.668	mg/L
Selenium	1	5	20	0.001	0.002	0.001	0.0003	0.001	mg/L
Strontium	5	5	100	0.80	1.36	1.13	0.21	1.33	mg/L
Sulfate	5	5	100	91.70	158.0	130.8	24.61	154.3	mg/L
Total Phosphorus as PO_4	1	5	20	0.02	0.06	0.03	0.02	0.04	mg/L
Uranium	5	5	100	0.01	0.04	0.03	0.01	0.04	mg/L
Vanadium	3	5	60	0.003	0.01	0.01	0.003	0.01	mg/L
Zinc	4	5	80	0.002	0.01	0.004	0.002	0.006	mg/L

UCL95 - Upper 95% confidence limit.

mg/L - milligrams per liter

NA- Not applicable.

EPC- Exposure point concentration, mg/kg

Summary Statistics For New Rifle Wetland - Inorganics in Unfiltered Surface Water (Eco-1998)

Analyte	Number of Detects	Number of Samples	% Detects	Minimum	Maximum	Average	Std. Deviation	UCL95	Units
Ammonia as NH4	5	5	100	0.064	0.080	0.071	0.006	0.077	mg/L
Arsenic	5	5	100	0.0042	0.009	0.0063	0.0020	0.008	mg/L
Cadmium	0	5	0	0.001	0.001	0.001	0	NA	mg/L
Calcium Carbonate	5	5	100	222.0	276.0	239.2	22.35	260.5	mg/L
Fluoride	5	5	100	0.429	0.656	0.54	0.08	0.62	mg/L
Hardness	5	5	100	379.0	457.0	412.0	30.74	441.3	mg/L
Iron	4	5	80	0.104	1.49	0.61	0.58	1.17	mg/L
Manganese	1	5	20	0.008	0.11	0.032	0.044	0.074	mg/L
Molybdenum	5	5	100	0.03	0.072	0.058	0.016	0.074	mg/L
Nitrate	0	5	0	0.040	0.071	0.051	0	NA	mg/L
Selenium	0	5	0	0.0011	0.0011	0.0011	0	NA	mg/L
Strontium	5	5	100	0.81	1.38	1.15	0.21	1.35	mg/L
Sulfate	5	5	100	87.80	151.0	128.0	24.11	151.0	mg/L
Total Phosphorus as PO4	3	5	60	0.022	0.057	0.038	0.017	0.054	mg/L
Uranium	5	5	100	0.0094	0.037	0.028	0.011	0.038	mg/L
Vanadium	0	5	0	0.0028	0.0028	0.0028	0	NA	mg/L
Zinc	0	5	0	0.003	0.010	0.0053	0	NA	mg/L

UCL95 - Upper 95% confidence limit.

mg/L - milligrams per liter

NA- Not applicable.

EPC- Exposure point concentration, mg/kg

Summary Statistics for the New Rifle Wetland - Metals in Cattail Roots (Eco-1998)

Analyte	Number of Detects	Number of Samples	% Detects	Minimum	Maximum	Average	Std. Deviation	UCL95	Units (wet-weight)
Arsenic	4	5	80	0.65	4.90	2.59	1.53	4.05	mg/kg
Cadmium	5	5	100	0.23	0.51	0.34	0.12	0.45	mg/kg
Iron	5	5	100	1580	7500	3896	2180	5974	mg/kg
Manganese	5	5	100	105	220	165	45	208	mg/kg
Molybdenum	5	5	100	2.0	5.0	2.9	1.2	4.0	mg/kg
Selenium	0	5	0	0.10	0.25	0.14	0	NA	mg/kg
Strontium	5	5	100	85.50	143.0	111.3	28.69	138.7	mg/kg
Uranium	5	5	100	0.63	2.00	1.45	0.51	1.93	mg/kg
Vanadium	5	5	100	6.50	28.50	14.32	8.31	22.24	mg/kg
Zinc	5	5	100	15.80	34.30	27.80	7.73	35.17	mg/kg
Loss on Drying	5	5	100	85.50	90.70	87.70	2.17	89.8	%

UCL95 - Upper 95% confidence limit.

mg/kg - milligrams per kilogram

NA- Not applicable.

EPC- Exposure point concentration, mg/kg

Table E–1. Summary Statistics for Ecological Risk Assessment

Summary Statistics for the New Rifle Wetland - Metals in Cattail Stems (Eco-1998)

Analyte	Number of Detects	Number of Samples	% Detects	Minimum	Maximum	Average	Std. Deviation	UCL95	Units (wet-weight)
Arsenic	0	5	0	0.42	0.65	0.49	0	NA	mg/kg
Cadmium	5	5	100	0.08	0.75	0.26	0.3	0.52	mg/kg
Iron	5	5	100	261.00	779.00	516.60	211.15	717.92	mg/kg
Manganese	5	5	100	300.0	457.0	372.9	64.8	434.7	mg/kg
Molybdenum	5	5	100	2.7	8.4	5.1	2.1	7.1	mg/kg
Selenium	1	5	20	0.40	0.95	0.61	0.23	0.83	mg/kg
Strontium	5	5	100	141.00	230.00	186.50	37.22	221.98	mg/kg
Uranium	4	5	80	0.05	0.19	0.12	0.05	0.17	mg/kg
Vanadium	5	5	100	0.93	2.05	1.48	0.45	1.90	mg/kg
Zinc	5	5	100	24.50	33.50	28.99	3.30	32.14	mg/kg
Loss on Drying	5	5	100	86.6	89.0	87.3	1.00	88.3	%

UCL95 - Upper 95% confidence limit.

mg/kg - milligrams per kilogram

NA- Not applicable.

EPC- Exposure point concentration, mg/kg

Table E–2. Summary of Statistical Evaluation by Matrix

Summary of Analyte Data Evaluations By Matrix - 1998 New Rifle Ecological Sampling

Analyte	Site maximum concentration of concern	Matrix	Submatrix	Filtered / Unfiltered	Test	Test Result	N	Location	Comment
Ammonia as NH_4		Sediment	None	Not applicable	None	Not applicable	5 vs 5	Reference area vs NRW	NRW maximum < reference area maximum; eliminated as COPC
Arsenic	10.8	Sediment	None	Not applicable	KW	Means are different	5 vs 5	Reference area vs NRW	NRW > reference area; retained as COPC
Cadmium	0.82	Sediment	None	Not applicable	KW	Means are different	5 vs 5	Reference area vs NRW	100% DF at NRW; 3/5 detects at reference area; NRW > reference area; retained as COPC
Fluoride		Sediment	None	Not applicable	None	Not applicable	5 vs 5	Reference area vs NRW	NRW values all < reference area values; eliminated as COPC
Iron		Sediment	None	Not applicable	KW	Means are same	5 vs 5	Reference area vs NRW	revised test results based on rerun of NRW Location 1207; eliminated as COPC
Manganese		Sediment	None	Not applicable	KW	Means are same	5 vs 5	Reference area vs NRW	test results based on rerun of NRW Location 1207/ NRW mean > reference area; retained as COPC
Molybdenum	2.4	Sediment	None	Not applicable	None	Not applicable	5 vs 5	Reference area vs NRW	**Only 1 detect at reference area; 100% DF at NRW - visual inspection sufficient to discern differences; retained as COPC**
Nitrate	133	Sediment	None	Not applicable	None	Not applicable	5 vs 5	Reference area vs NRW	**No detects at reference area; all detects at NRW; visual inspection sufficient to discern differences; retained as COPC**
Phosphate	4.7	Sediment	None	Not applicable	None	Not applicable	5 vs 5	Reference area vs NRW	**No detects at reference area; all detects at NRW- visual inspection sufficient to discern differences; retained as COPC**
Selenium		Sediment	None	Not applicable	None	Not applicable	5 vs 5	Reference area vs NRW	**No detects at any location; eliminated as COPC**
Strontium	357	Sediment	None	Not applicable	KW	Means are different	5 vs 5	Reference area vs NRW	**Includes rerun value of NRW Loc. 1207; NRW mean > reference area; retained as COPC**
Sulfate		Sediment	None	Not applicable	None	Not applicable	5 vs 5	Reference area vs NRW	All NRW values << reference area; eliminated as COPC
Uranium		Sediment	None	Not applicable	None	Not applicable	5 vs 5	Reference area vs NRW	NRW maximum value < reference area maximum value; detects at all locations; eliminated as COPC
Vanadium		Sediment	None	Not applicable	KW	Means are same	5 vs 5	Reference area vs NRW	NRW area > reference area; retained as COPC
Zinc		Sediment	None	Not applicable	KW	Means are same	5 vs 5	Reference area vs NRW	NRW area > reference area; retained as COPC
Ammonia as NH4		Surface water	None	Filtered	KW	Means are same	5 vs 5	Reference area vs NRW	NRW area > reference area; retained as COPC
Arsenic		Surface water	None	Filtered	KW	Means are same	5 vs 5	Reference area vs NRW	3 of 5 detects at NRW; 100% DF at reference area; NRW area > reference area; retained as COPC
Cadmium		Surface water	None	Filtered	None	Not applicable	5 vs 5	Reference area vs NRW	**No detects at any location; eliminated as COPC**
Fluoride	0.674	Surface water	None	Filtered	KW	Means are different	5 vs 5	Reference area vs NRW	**NRW area > reference area; retained as COPC**
Iron		Surface water	None	Filtered	None	Not applicable	5 vs 5	Reference area vs NRW	All NRW detects (3) << all reference area detects (5 of 5); NRW unfiltered average > reference area; retained as COPC
Manganese		Surface water	None	Filtered	None	Not applicable	5 vs 5	Reference area vs NRW	All NRW values << reference area values; eliminated as COPC
Molybdenum	0.0775	Surface water	None	Filtered	KW	Means are different	5 vs 5	Reference area vs NRW	NRW area > reference area; retained as COPC
Nitrate	2.57	Surface water	None	Filtered	None	Not applicable	5 vs 5	Reference area vs NRW	**2 detects - NRW; no detects at reference area ; maximum value is 2.57 mg/L (location 1209); retained as COPC**
Phosphate		Surface water	None	Filtered	None	Not applicable	5 vs 5	Reference area vs NRW	Single NRW detect << single reference area detect; eliminated as COPC
Selenium		Surface water	None	Filtered	None	Not applicable	5 vs 5	Reference area vs NRW	Single NRW detect < single reference area detect; eliminated as COPC
Strontium		Surface water	None	Filtered	KW	Means are same	5 vs 5	Reference area vs NRW	**NRW average > reference area; retained as COPC**
Sulfate		Surface water	None	Filtered	None	Not applicable	5 vs 5	Reference area vs NRW	All NRW values << all reference area values; eliminated as COPC
Uranium	0.0395	Surface water	None	Filtered	KW	Means are different	5 vs 5	Reference area vs NRW	**NRW area > reference area; retained as COPC**
Vanadium	0.011	Surface water	None	Filtered	None	Not applicable	5 vs 5	Reference area vs NRW	**Only 2 detects at ref. area; 3 detects at NRW-look at differences between maxima; NRW average > ref. area retained as COPC**
Zinc		Surface water	None	Filtered	None	Not applicable	5 vs 5	Reference area vs NRW	Maximum NRW detect < maximum reference area detect; eliminated as COPC
Ammonia as NH4		Surface water	None	Unfiltered	None	Not applicable	5 vs 5	Reference area vs NRW	Maximum NRW detect < maximum reference area detect; filtered NRW average > referencd area; retained as COPC
Arsenic		Surface water	None	Unfiltered	KW	Means are same	5 vs 5	Reference area vs NRW	**NRW area > reference area; retained as COPC**
Cadmium		Surface water	None	Unfiltered	None	Not applicable	5 vs 5	Reference area vs NRW	**No detects at any location; eliminated as COPC**
Fluoride	0.656	Surface water	None	Unfiltered	KW	Means are different	5 vs 5	Reference area vs NRW	**NRW area > reference area; retained as COPC**
Iron		Surface water	None	Unfiltered	KW	Means are same	5 vs 5	Reference area vs NRW	No change in results - both reference area and NRW had one nondetect; NRW area > reference area; retained as COPC
Manganese		Surface water	None	Unfiltered	None	Not applicable	5 vs 5	Reference area vs NRW	Single NRW detect < all reference area values; eliminated as COPC
Molybdenum	0.0721	Surface water	None	Unfiltered	None	Not applicable	5 vs 5	Reference area vs NRW	**No detects at reference area; 100% DF at NRW; visible inspection sufficient to discern differences; retained as COPC**
Nitrate		Surface water	None	Unfiltered	None	Not applicable	5 vs 5	Reference area vs NRW	**No detects at any location; maximum filtered value > reference area; retained as COPC**
Phosphate		Surface water	None	Unfiltered	None	Not applicable	5 vs 5	Reference area vs NRW	Maximum NRW detect < maximum reference area detect; eliminated as COPC
Selenium		Surface water	None	Unfiltered	None	Not applicable	5 vs 5	Reference area vs NRW	**No detects at any location; eliminated as COPC**
Strontium		Surface water	None	Unfiltered	KW	Means are same	5 vs 5	Reference area vs NRW	**NRW average > reference area; retained as COPC**
Sulfate		Surface water	None	Unfiltered	None	Not applicable	5 vs 5	Reference area vs NRW	All NRW values < all reference area values; eliminated as COPD
Uranium	0.0371	Surface water	None	Unfiltered	KW	Means are different	5 vs 5	Reference area vs NRW	**NRW area > reference area; retained as COPC**
Vanadium		Surface water	None	Unfiltered	None	Not applicable	5 vs 5	Reference area vs NRW	**No detects at any location; NRW filtered average > reference area; retained as COPC**
Zinc		Surface water	None	Unfiltered	None	Not applicable	5 vs 5	Reference area vs NRW	Only 1 detect - reference area; eliminated as COPC
Arsenic		Cattail	Stems	Not applicable	None	Not applicable	5 vs 5	Reference area vs NRW	**No detects at any location; eliminated as COPC**
Cadmium		Cattail	Stems	Not applicable	KW	Means are same	5 vs 5	Reference area vs NRW	**4 detects out of 5 samples at reference area; 100% DF at NRW; retained as COPC**
Iron		Cattail	Stems	Not applicable	None	Not applicable	5 vs 5	Reference area vs NRW	NRW maximum value < reference area maximum value; eliminated as COPC
Manganese		Cattail	Stems	Not applicable	None	Not applicable	5 vs 5	Reference area vs NRW	NRW maximum value < reference area maximum value; eliminated as COPC
Molybdenum	8.4	Cattail	Stems	Not applicable	KW	Means are different	5 vs 5	Reference area vs NRW	**NRW area > reference area; retained as COPC**
Selenium	0.95	Cattail	Stems	Not applicable	None	Not applicable	5 vs 5	Reference area vs NRW	**Only 1 detect at any location (NRW 1210 - 0.95 mg/kg); retained as COPC**
Strontium		Cattail	Stems	Not applicable	KW	Means are same	5 vs 5	Reference area vs NRW	**NRW area > reference area; retained as COPC**
Uranium		Cattail	Stems	Not applicable	None	Not applicable	5 vs 5	Reference area vs NRW	NRW maximum value < reference area maximum value; 4 detects out of 5 samples (NRW); 100% DF at reference area; eliminated as COPC
Vanadium		Cattail	Stems	Not applicable	None	Not applicable	5 vs 5	Reference area vs NRW	NRW maximum value < reference area maximum value; eliminated as COPC
Zinc		Cattail	Stems	Not applicable	None	Not applicable	5 vs 5	Reference area vs NRW	NRW maximum value < reference area maximum value; eliminated as COPC
Arsenic		Cattail	*Roots*	Not applicable	None	Not applicable	5 vs 5	Reference area vs NRW	All 4 NRW detects < all reference area values; eliminated as COPC
Cadmium		Cattail	*Roots*	Not applicable	KW	Means are same	5 vs 5	Reference area vs NRW	**NRW area > reference area; retained as COPC**
Iron		Cattail	*Roots*	Not applicable	None	Not applicable	5 vs 5	Reference area vs NRW	Maximum NRW value < maximum reference area value; eliminated as COPC
Manganese		Cattail	*Roots*	Not applicable	None	Not applicable	5 vs 5	Reference area vs NRW	Maximum NRW value < maximum reference area value; eliminated as COPC
Molybdenum	5	Cattail	*Roots*	Not applicable	KW	Means are different	5 vs 5	Reference area vs NRW	**NRW area > reference area; retained as COPC**
Selenium		Cattail	*Roots*	Not applicable	None	Not applicable	5 vs 5	Reference area vs NRW	**No detects at any location; eliminated as COPC**
Strontium		Cattail	*Roots*	Not applicable	KW	Means are same	5 vs 5	Reference area vs NRW	**Reference area average > NRW; eliminated as COPC**
Uranium		Cattail	*Roots*	Not applicable	None	Not applicable	5 vs 5	Reference area vs NRW	Maximum NRW value < maximum reference area value; eliminated as COPC
Vanadium		Cattail	*Roots*	Not applicable	None	Not applicable	5 vs 5	Reference area vs NRW	Maximum NRW value < maximum reference area value; eliminated as COPC
Zinc		Cattail	*Roots*	Not applicable	None	Not applicable	5 vs 5	Reference area vs NRW	Maximum NRW value < maximum reference area value; eliminated as COPC
Ammonia as NH_4		Sediment	None	Not applicable	None	Not applicable	5 vs 5	Reference area vs RFP	**All RFP values >> all reference area values; visual inspection sufficient to discern differences; retained as COPC**
Arsenic		Sediment	None	Not applicable	None	Not applicable	5 vs 5	Reference area vs RFP	RFP maximum value (7.4 mg/kg) @ reference area maximum (7.2 mg/kg);RFP UCL95 > reference area; retained as COPC
Cadmium	0.9	Sediment	None	Not applicable	KW	Means are different	5 vs 5	Reference area vs RFP	**RFP detects (5/5) > reference area detects (3/5); RFP > reference area; retained as COPC**
Fluoride		Sediment	None	Not applicable	None	Not applicable	5 vs 5	Reference area vs RFP	All RFP values < all reference area values; visual inspection sufficient; eliminated as COPC
Iron		Sediment	None	Not applicable	KW	Means are same	5 vs 5	Reference area vs RFP	RFP average > reference area; retained as COPC
Manganese		Sediment	None	Not applicable	KW	Means are same	5 vs 5	Reference area vs RFP	**RFP average > reference area; retained as COPC**
Molybdenum	4.5	Sediment	None	Not applicable	None	Not applicable	5 vs 5	Reference area vs RFP	**All RFP values > single reference area detect; visual inspection sufficient to discern differences; retained as COPC**

Table E–2. Summary of Statistical Evaluation by Matrix

Summary of Analyte Data Evaluations By Matrix - 1998 New Rifle Ecological Sampling

Analyte	Site maximum concentration of concern	Matrix	Submatrix	Filtered / Unfiltered	Test	Test Result	N	Location	Comment
Nitrate	214	Sediment	None	Not applicable	None	Not applicable	5 vs 5	Reference area vs RFP	**No reference area detects; 100% DF at RFP; visual inspection sufficient to discern differences; retained as COPC**
Phosphate	3.7	Sediment	None	Not applicable	None	Not applicable	5 vs 5	Reference area vs RFP	**No reference area detects; 100% DF at RFP; visual inspection sufficient to discern differences; retained as COPC**
Selenium	0.47	Sediment	None	Not applicable	None	Not applicable	5 vs 5	Reference area vs RFP	**Only 1 detect at any location (RFP Location 1213 (0.47 mg/kg)); retained as COPC**
Strontium		Sediment	None	Not applicable	None	Not applicable	5 vs 5	Reference area vs RFP	All RFP values < all reference area values; visual inspection sufficient; eliminated as COPC
Sulfate		Sediment	None	Not applicable	KW	Means are same	5 vs 5	Reference area vs RFP	RFP average > reference area; retained as COPC
Uranium		Sediment	None	Not applicable	KW	Means are same	5 vs 5	Reference area vs RFP	RFP average > reference area; retained as COPC
Vanadium		Sediment	None	Not applicable	KW	Means are same	5 vs 5	Reference area vs RFP	RFP average > reference area; retained as COPC
Zinc	103	Sediment	None	Not applicable	KW	Means are different	5 vs 5	Reference area vs RFP	RFP > reference area; retained as COPC
Ammonia as NH4	99.5	Surface water	None	Filtered	None	Not applicable	5 vs 5	Reference area vs RFP	**All RFP values >> all reference area values; visual inspection sufficient; retained as COPC**
Arsenic		Surface water	None	Filtered	KW	Means are same	5 vs 5	Reference area vs RFP	**RFP average > reference area; retained as COPC**
Cadmium		Surface water	None	Filtered	None	Not applicable	5 vs 5	Reference area vs RFP	**No detects at any location; eliminated as COPC**
Fluoride	0.483	Surface water	None	Filtered	KW	Means are different	5 vs 5	Reference area vs RFP	**RFP > reference area; retained as COPC**
Iron		Surface water	None	Filtered	None	Not applicable	5 vs 5	Reference area vs RFP	Single RFP detect < all reference area values; eliminated as COPC
Manganese		Surface water	None	Filtered	None	Not applicable	5 vs 5	Reference area vs RFP	All RFP values < all reference area values; visual inspection sufficient; eliminated as COPC
Molybdenum	0.511	Surface water	None	Filtered	None	Not applicable	5 vs 5	Reference area vs RFP	**All RFP values >> all reference area values; visual inspection sufficient; retained as COPC**
Nitrate	462	Surface water	None	Filtered	None	Not applicable	5 vs 5	Reference area vs RFP	**All RFP values >> all reference area values; visual inspection sufficient; retained as COPC**
Phosphate		Surface water	None	Filtered	None	Not applicable	5 vs 5	Reference area vs RFP	No detects at RFP; only 1 detect at reference area; eliminated as COPC
Selenium	0.004	Surface water	None	Filtered	None	Not applicable	5 vs 5	Reference area vs RFP	**Only single reference area detect; 4 detects at RFP; maximum RFP detect approx. 2x reference area detect; retained as COPC**
Strontium	3.45	Surface water	None	Filtered	KW	Means are different	5 vs 5	Reference area vs RFP	**RFP > reference area; retained as COPC**
Sulfate	2840	Surface water	None	Filtered	None	Not applicable	5 vs 5	Reference area vs RFP	**All RFP values >> all reference area values; visual inspection sufficient; retained as COPC**
Uranium	0.158	Surface water	None	Filtered	None	Not applicable	5 vs 5	Reference area vs RFP	**All RFP values >> all reference area values; visual inspection sufficient; retained as COPC**
Vanadium	0.0095	Surface water	None	Filtered	None	Not applicable	5 vs 5	Reference area vs RFP	**RFP 100% DF; 2 detects at ref area; max RFP detect (0.0095 mg/L) > ref area max detect (0.0081 mg/L); retained as COPC**
Zinc		Surface water	None	Filtered	None	Not applicable	5 vs 5	Reference area vs RFP	Maximum RFP detect < maximum reference area detect; 80% DF at both areas; eliminated as COPC
Ammonia as NH4	97.9	Surface water	None	Unfiltered	None	Not applicable	5 vs 5	Reference area vs RFP	**All RFP values >> all reference area values; visual inspection sufficient; retained as COPC**
Arsenic		Surface water	None	Unfiltered	KW	Means are same	5 vs 5	Reference area vs RFP	**Filtered RFP average > reference area; retained as COPC**
Cadmium		Surface water	None	Unfiltered	None	Not applicable	5 vs 5	Reference area vs RFP	**No detects at any location, eliminated as COPC**
Fluoride	0.447	Surface water	None	Unfiltered	KW	Means are different	5 vs 5	Reference area vs RFP	**RFP > reference area; retained as COPC**
Iron		Surface water	None	Unfiltered	None	Not applicable	5 vs 5	Reference area vs RFP	Single RFP detect < reference area maximum value; eliminated as COPC
Manganese		Surface water	None	Unfiltered	None	Not applicable	5 vs 5	Reference area vs RFP	Maximum RFP value < reference area maximum value; eliminated as COPC
Molybdenum	0.519	Surface water	None	Unfiltered	None	Not applicable	5 vs 5	Reference area vs RFP	**100% DF at RFP; no detects at reference area; retained as COPC**
Nitrate	450	Surface water	None	Unfiltered	None	Not applicable	5 vs 5	Reference area vs RFP	**100% DF at RFP; no detects at reference area; retained as COPC**
Phosphate		Surface water	None	Unfiltered	None	Not applicable	5 vs 5	Reference area vs RFP	No detects at RFP; 3 detects at reference area; eliminated as COPC
Selenium		Surface water	None	Unfiltered	None	Not applicable	5 vs 5	Reference area vs RFP	**No detects at any location; filtered RFP > reference area; retained as COPC**
Strontium	3.35	Surface water	None	Unfiltered	KW	Means are different	5 vs 5	Reference area vs RFP	**RFP > reference area; retained as COPC**
Sulfate	2850	Surface water	None	Unfiltered	None	Not applicable	5 vs 5	Reference area vs RFP	**All RFP values >> all reference area values; visual inspection sufficient; retained as COPC**
Uranium	0.16	Surface water	None	Unfiltered	None	Not applicable	5 vs 5	Reference area vs RFP	**All RFP values >> all reference area values; visual inspection sufficient; retained as COPC**
Vanadium		Surface water	None	Unfiltered	None	Not applicable	5 vs 5	Reference area vs RFP	**No detects at any location; filtered RFP > reference area; retained as COPC**
Zinc		Surface water	None	Unfiltered	None	Not applicable	5 vs 5	Reference area vs RFP	Only 1 detect - reference area; eliminated as COPC

NRW – New Rifle wetland
RFP– Roaring Fork pond
KW– Kruskal-Wallis
DF – Detection frequency
Units– sediment and vegetation - mg/kg (milligrams/kilogram)
Units – surface water - mg/L (milligrams/liter)
mg/L - milligrams per liter
mg/kg - milligrams per kilogram

Table E–3. Exposure Point Concentrations

EPCs for the New Rifle Wetland	Measured EPCs in Abiotic Media			Measured EPCs in Biotic Media (mg/kg)		Estimated Concentrations in Biotic Media (mg/kg)		
Analyte Name	**Filtered Surface Water (µg/L)**	**Sediment (mg/kg)**	**Unfiltered Surface Water (mg/L)**	**Cattail Roots**	**Cattail Stems**	**Benthic Invertebrate (mg/kg)**	**Fish (mg/kg)**	**Frogs (mg/kg)**
Ammonia as Total N	*13.53*		*0.0025*			0.00E+00	0.00E+00	0.00E+00
Arsenic	8.60	10.33	0.01			1.65E-01	1.65E-01	1.65E-01
Cadmium		0.74		0.45	0.52	0.00E+00	0.00E+00	0.00E+00
Fluoride	648.9		0.62			0.00E+00	0.00E+00	0.00E+00
Iron	21.60		1.17			0.00E+00	0.00E+00	0.00E+00
Manganese		347.6				0.00E+00	0.00E+00	0.00E+00
Molybdenum	77.50	2.02	0.072	4.03	7.10	0.00E+00	0.00E+00	0.00E+00
Nitrate	1668	88.67	0.071			0.00E+00	0.00E+00	0.00E+00
Phosphate		4.46				0.00E+00	0.00E+00	0.00E+00
Selenium					0.83	0.00E+00	0.00E+00	0.00E+00
Strontium	1334	292.4	1.35		222.0	0.00E+00	0.00E+00	0.00E+00
Sulfate						0.00E+00	0.00E+00	0.00E+00
Uranium	39.32		0.037			0.00E+00	0.00E+00	0.00E+00
Vanadium	8.79	33.17	0.0028			0.00E+00	0.00E+00	0.00E+00
Zinc		51.54				0.00E+00	0.00E+00	0.00E+00

EPCs - exposure point concentrations

µg/L - micrograms per liter

mg/L - milligrams per liter

mg/kg - milligrams per kilogram

Italics - calculated for pH=8.1 and temperature of 17.5 deg. C

Note - Empty cell indicates analyte was removed as a COPC

Note - Empty cell for ammonium, fluoride, nitrate, phosphate and sulfate in vegetation - analyte was not determined.

GBH - Great blue heron

Note - Zeros for benthic invertebrates, fish, frogs indicate that no BCF was available to calculate a tissue concentration based on unfiltered surface water; also, if analyte was removed as a COPC from unfiltered surface water, then a zero entered for estimated tissue concentration; applies only to GBH.

Table E–3. Exposure Point Concentrations

EPCs for the Reference Wetland	Measured EPCs in Abiotic Media			Measured EPCs in Biotic Media (mg/kg)		Estimated Concentrations in Biotic Media (mg/kg)		
Analyte Name	**Filtered Surface Water (µg/L)**	**Sediment (mg/kg)**	**Unfiltered Surface Water (mg/L)**	**Cattail Roots**	**Cattail Stems**	**Benthic Invertebrate (mg/kg)**	**Fish (mg/kg)**	**Frogs (mg/kg)**
Ammonia as Total N	*0.7*		*0.0006*			0.00E+00	0.00E+00	0.00E+00
Arsenic	4.89	7.10	0.006			1.28E-01	1.28E-01	1.28E-01
Cadmium		0.16		0.36	0.42	0.00E+00	0.00E+00	0.00E+00
Fluoride	369.8		0.35			0.00E+00	0.00E+00	0.00E+00
Iron	110.8		0.31			0.00E+00	0.00E+00	0.00E+00
Manganese		323.7				0.00E+00	0.00E+00	0.00E+00
Molybdenum	2.37	0.60	0.0014	1.20	0.98	0.00E+00	0.00E+00	0.00E+00
Nitrate	55.00	1.025	0.079			0.00E+00	0.00E+00	0.00E+00
Phosphate		0.31				0.00E+00	0.00E+00	0.00E+00
Selenium					0.27	0.00E+00	0.00E+00	0.00E+00
Strontium	1207	139.7	1.19		162.98	0.00E+00	0.00E+00	0.00E+00
Sulfate						0.00E+00	0.00E+00	0.00E+00
Uranium	8.10		0.009			0.00E+00	0.00E+00	0.00E+00
Vanadium	6.41	32.00	0.0028			0.00E+00	0.00E+00	0.00E+00
Zinc		49.81				0.00E+00	0.00E+00	0.00E+00

EPCs - exposure point concentrations

µg/L - micrograms per liter

mg/L - milligrams per liter

mg/kg - milligrams per kilogram

Italics - calculated for pH=7.22 and temperature of 23.8 deg. C

Note - Empty cell indicates analyte was removed as a COPC

Note - Empty cell for ammonium, fluoride, nitrate, phosphate and sulfate in vegetation - analyte was not determined.

GBH - Great blue heron

Note - Zeros for benthic invertebrates, fish, frogs indicate that no BCF was available to calculate a tissue concentration based on unfiltered surface water; also, if analyte was removed as a COPC from unfiltered surface water, then a zero entered for estimated tissue concentration; applies only to GBH.

Table E–3. Exposure Point Concentrations

EPCs for the Roaring Fork Pond	Measured EPCs in Abiotic Media			Predicted EPCs in Biotic Media (mg/kg)		Estimated Concentrations in Biotic Media (mg/kg)		
Analyte Name	**Filtered Surface Water (µg/L)**	**Sediment (mg/kg)**	**Unfiltered Surface Water (mg/L)**	**Cattail Roots**	**Cattail Stems**	**Benthic Invertebrate (mg/kg)**	**Fish (mg/kg)**	**Frogs (mg/kg)**
Ammonia as Total N	*3200*	80.58	*3.15*	No BAF	No BAF	0.00E+00	0.00E+00	0.00E+00
Arsenic	5.60	7.15	0.0043	12.44	12.44	8.50E-02	8.50E-02	8.50E-02
Cadmium		0.74		4.21	3.30	0.00E+00	0.00E+00	0.00E+00
Fluoride	471.6		0.45	No BAF	No BAF	0.00E+00	0.00E+00	0.00E+00
Iron		18,247		27918	4014	0.00E+00	0.00E+00	0.00E+00
Manganese		420.4		634.9	1030	0.00E+00	0.00E+00	0.00E+00
Molybdenum	506.3	3.50	0.52	3.50	2.98	0.00E+00	0.00E+00	0.00E+00
Nitrate	457875	205.2	449.6	No BAF	No BAF	0.00E+00	0.00E+00	0.00E+00
Phosphate		3.56		No BAF	No BAF	0.00E+00	0.00E+00	0.00E+00
Selenium	3.27	0.35	0.0011	No BAF	No BAF	4.92E-02	8.58E-02	8.58E-02
Strontium	3450		3.34	0.00	0.00	0.00E+00	0.00E+00	0.00E+00
Sulfate	2822623	2,739	2820	No BAF	No BAF	0.00E+00	0.00E+00	0.00E+00
Uranium	158.0	5.93	0.159	6.11	0.71	0.00E+00	0.00E+00	0.00E+00
Vanadium	9.19	32.36	0.003	53.07	6.80	0.00E+00	0.00E+00	0.00E+00
Zinc		88.74		132.22	92.29	0.00E+00	0.00E+00	0.00E+00

EPCs - exposure point concentrations

µg/L - micrograms per liter

mg/L - milligrams per liter

mg/kg - milligrams per kilogram

Italics - calculated for pH=7.22 and temperature of 23.8 deg. C

Note - Empty cell indicates analyte was removed as a COPC

Note - No BAF for ammonium, fluoride, nitrate, phosphate and sulfate in vegetation - analyte was not determined.

Note - No BAF for selenium - due to low detection frequency, no BAF was calculated

Italics - Calculated for pH=8.1 and temperature of 17.5 deg. C

BAF - bioaccumulation factor.

Note - Zeros for strontium in vegetation - analyte removed as a COPC in sediment; therefore no tissue concentration

GBH - Great blue heron

Note - Zeros for benthic invertebrates, fish, frogs indicate that no BCF was available to calculate a tissue concentration based on unfiltered surface water; also, if analyte was removed as a COPC from unfiltered surface water, then a zero entered for estimated tissue concentration; applies only to GBH.

Table E–4. Bioaccumulation and Bioconcentrations Factors

Bioaccumulation and Bioconcentration Factors for Ecological Receptors

	BAFs from sediment	BCFs from water	
Analyte	**Aquatic Plant**	**Benthic Invertebrate**	**Fish or Frogs**
Ammonia as Total N			
Arsenic	0.68	20*	20 *
Cadmium	1.00	110.8	8
Fluoride			
Iron			
Manganese	0.47		
Molybdenum	0.88		
Nitrate	0.83		
Phosphate	0.93		
Selenium		44.7	78
Strontium	0.51		
Sulfate			
Uranium			
Vanadium	0.59		
Zinc	0.56	1899	282

*Bodek et al, 1988

Note - these values are for risk files ref_era.xls and nr_era.xls

BAFs - bioaccumulation factors

BCFs - bioconcentration factors

Bioaccumulation and Bioconcentration Factors for Ecological Receptors

	BAFs from sediment		BCFs from water	
Analyte	**AQPlant_root**	**AQPlant_stem**	**Benthic Invertebrate**	**Fish or Frogs**
Ammonia as Total N				
Arsenic	1.74	1.74	20	20
Cadmium	5.69	4.46	110.8	8
Fluoride				
Iron	1.53	0.22		
Manganese	1.51	2.45		
Molybdenum	1	0.85		
Nitrate				
Phosphate				
Selenium			44.7	78
Strontium	1.32	1.72		
Sulfate				
Uranium	1.03	0.12		
Vanadium	1.64	0.21		
Zinc	1.49	1.04	1899	282

Columns 2 and 3 - calculated BAFs from Reference or New Rifle wetlands (maxima used)

Note -. These values apply to risk assessment for Roaring Fork Pond and comparison risks for reference wetland

BAFs - bioaccumulation factors

BCFs - bioconcentration factors

Table E–5. Ecological Risk Assessment Exposure Parameters

Reasonable Maximum Exposure Scenario (RME) Exposure Parameters

			Ecological Receptors				
RME Parameter		**Units**	**Muskrat ***	**Mule Deer**	**Great Blue Heron**	**Benthic Invertebrate**	**Creek Chub**
Dietary Ingestion Rate	(DIR)	kg/kg-day	0.34	0.035	0.18	ND	ND
Water Ingestion Rate	(WIR)	kg/kg-day	0.98	0.02	0.047	ND	ND
Adjusted Dietary Ingestion Rate	(DIRadj)	kg/kg-day	0.335	0.0346	0.176	ND	ND
Sediment (or soil) Fraction in Diet	(SFD)	unitless	0.015	0.02	0.025	ND	ND
Invert Fraction in Diet	(IFD)	unitless	0	0	0.2	ND	ND
Fish Fraction in Diet	(FFD)	unitless	0	0	0.6	ND	ND
Amphibian Fraction	(AFD)	unitless	0	0	0.2	ND	ND
Mammal Fraction in Diet	(MFD)	unitless	0	0	0	ND	ND
Bird Fraction in Diet	(BFD)	unitless	0	0	0	ND	ND
Plant Fraction in Diet	(PFD)	unitless	1	1	0	ND	ND
Body Weight	(BW)	g	1550	25600	1990	ND	ND
Body Weight	(BW)	kg	1.55	25.6	1.99	ND	ND
Home Range/Territory Size	(HR)	hectares	0.05	1	0.60	ND	ND

Notes:

Body weights and home range are minima; all other parameters are 95th percentile values.

Body weights are minimas, which result in more conservative assumptions if allometric equations are used to obtain DIR

* - Values from Monticello OU3 ERA

NA: Not Applicable

ND: Not Determined

Central Tendency (CT) Exposure Scenario Exposure Parameters

			Ecological Receptors				
CT Parameter		**Units**	**Muskrat ***	**Mule Deer**	**Great Blue Heron**	**Benthic Invertebrate**	**Creek Chub**
Dietary Ingestion Rate	(DIR)	kg/kg-day	0.30	0.028	0.18	ND	ND
Water Ingestion Rate	(WIR)	kg/kg-day	0.98	0.019	0.045	ND	ND
Adjusted Dietary Ingestion Rate	(DIRadj)	kg/kg-day	0.296	0.028	0.1755	ND	ND
Sediment (or soil) Fraction in Diet	(SFD)	unitless	0.015	0.02	0.025	ND	ND
Invert Fraction in Diet	(IFD)	unitless	0	0	0.2	ND	ND
Fish Fraction in Diet	(FFD)	unitless	0	0	0.6	ND	ND
Amphibian Fraction	(AFD)	unitless	0	0	0.2	ND	ND
Mammal Fraction in Diet	(MFD)	unitless	0	0	0	ND	ND
Bird Fraction in Diet	(BFD)	unitless	0	0	0	ND	ND
Plant Fraction in Diet	(PFD)	unitless	1	1	0	ND	ND
Body Weight	(BW)	g	1140	80700	2268	ND	ND
Body Weight	(BW)	kg	1.14	80.7	2.268	ND	ND
Home Range/Territory Size	(HR)	hectares	0.11	1	4.50	ND	ND

Notes:

Except for muskrat, all values are means; muskrat data are median value of the reported range

NA: Not Applicable

ND: Not Determined

* - Values from Monticello OU3 ERA

Table E–6. Calculated Intakes for Ecological Receptors

Intakes for Ecological Receptors - New Rifle Wetland (RME and CT Exposure Scenarios)

NRW	Intakes Due to Sediment Ingestion - RME					Intakes Due to Dietary Ingestion - RME					Intakes Due to Surface Water Ingestion - RME				
Parameter	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub
Ammonia as Total N	No Data	No Data	No Data	NA	NA	No Data	No Data	0.00E+00	NA	NA	2.43E-03	5.81E-05	1.17E-04	NA	NA
Arsenic	5.27E-02	7.30E-03	4.65E-02	NA	NA	No Data	No Data	2.89E-02	NA	NA	8.07E-03	1.93E-04	3.87E-04	NA	NA
Cadmium	3.77E-03	5.22E-04	3.33E-03	NA	NA	1.64E-01	1.81E-02	No Data	NA	NA	No Data	No Data	No Data	NA	NA
Fluoride	No Data	No Data	No Data	NA	NA	No Data	No Data	0.00E+00	NA	NA	6.04E-01	1.44E-02	2.90E-02	NA	NA
Iron	No Data	No Data	No Data	NA	NA	No Data	No Data	0.00E+00	NA	NA	1.14E+00	2.73E-02	5.48E-02	NA	NA
Manganese	1.77E+00	2.46E-01	1.56E+00	NA	NA	No Data	No Data	No Data	NA	NA	No Data	No Data	No Data	NA	NA
Molybdenum	1.03E-02	1.43E-03	9.11E-03	NA	NA	1.86E+00	2.46E-01	0.00E+00	NA	NA	7.07E-02	1.69E-03	3.39E-03	NA	NA
Nitrate	4.52E-01	6.27E-02	3.99E-01	NA	NA	No Data	No Data	0.00E+00	NA	NA	6.91E-02	1.65E-03	3.31E-03	NA	NA
Phosphate	2.27E-02	3.15E-03	2.01E-02	NA	NA	No Data	No Data	No Data	NA	NA	No Data	No Data	No Data	NA	NA
Selenium	No Data	No Data	No Data	NA	NA	2.77E-01	2.86E-02	No Data	NA	NA	No Data	No Data	No Data	NA	NA
Strontium	1.49E+00	2.07E-01	1.32E+00	NA	NA	7.43E+01	7.69E+00	0.00E+00	NA	NA	1.33E+00	3.17E-02	6.36E-02	NA	NA
Sulfate	No Data	No Data	No Data	NA	NA	No Data	No Data	No Data	NA	NA	No Data	No Data	No Data	NA	NA
Uranium	No Data	No Data	No Data	NA	NA	No Data	No Data	0.00E+00	NA	NA	3.64E-02	8.69E-04	1.74E-03	NA	NA
Vanadium	1.69E-01	2.34E-02	1.49E-01	NA	NA	No Data	No Data	0.00E+00	NA	NA	2.74E-03	6.56E-05	1.32E-04	NA	NA
Zinc	2.63E-01	3.64E-02	2.32E-01	NA	NA	No Data	No Data	No Data	NA	NA	No Data	No Data	No Data	NA	NA

NRW	Intakes Due to Sediment Ingestion - CT					Intakes Due to Dietary Ingestion - CT					Intakes Due to Surface Water Ingestion - CT				
Parameter	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub
Ammonia as Total N	No Data	No Data	No Data	NA	NA	No Data	No Data	0.00E+00	NA	NA	2.43E-03	4.70E-05	1.12E-04	NA	NA
Arsenic	4.65E-02	5.86E-03	4.65E-02	NA	NA	No Data	No Data	2.89E-02	NA	NA	8.07E-03	1.56E-04	3.70E-04	NA	NA
Cadmium	3.33E-03	4.19E-04	3.33E-03	NA	NA	1.44E-01	1.45E-02	No Data	NA	NA	No Data	No Data	No Data	NA	NA
Fluoride	No Data	No Data	No Data	NA	NA	No Data	No Data	0.00E+00	NA	NA	6.04E-01	1.17E-02	2.77E-02	NA	NA
Iron	No Data	No Data	No Data	NA	NA	No Data	No Data	0.00E+00	NA	NA	1.14E+00	2.21E-02	5.24E-02	NA	NA
Manganese	1.56E+00	1.97E-01	1.56E+00	NA	NA	No Data	No Data	No Data	NA	NA	No Data	No Data	No Data	NA	NA
Molybdenum	9.11E-03	1.15E-03	9.11E-03	NA	NA	1.64E+00	1.97E-01	0.00E+00	NA	NA	7.07E-02	1.37E-03	3.24E-03	NA	NA
Nitrate	3.99E-01	5.03E-02	3.99E-01	NA	NA	No Data	No Data	0.00E+00	NA	NA	6.91E-02	1.34E-03	3.17E-03	NA	NA
Phosphate	2.01E-02	2.53E-03	2.01E-02	NA	NA	No Data	No Data	No Data	NA	NA	No Data	No Data	No Data	NA	NA
Selenium	No Data	No Data	No Data	NA	NA	2.44E-01	2.30E-02	No Data	NA	NA	No Data	No Data	No Data	NA	NA
Strontium	1.32E+00	1.66E-01	1.32E+00	NA	NA	6.56E+01	6.17E+00	0.00E+00	NA	NA	1.33E+00	2.56E-02	6.09E-02	NA	NA
Sulfate	No Data	No Data	No Data	NA	NA	No Data	No Data	No Data	NA	NA	No Data	No Data	No Data	NA	NA
Uranium	No Data	No Data	No Data	NA	NA	No Data	No Data	0.00E+00	NA	NA	3.64E-02	7.03E-04	1.67E-03	NA	NA
Vanadium	1.49E-01	1.88E-02	1.49E-01	NA	NA	No Data	No Data	0.00E+00	NA	NA	2.74E-03	5.30E-05	1.26E-04	NA	NA
Zinc	2.32E-01	2.92E-02	2.32E-01	NA	NA	No Data	No Data	No Data	NA	NA	No Data	No Data	No Data	NA	NA

NRW - New Rifle wetland

RME - Reasonable maximum exposure

CT - Central tendency

NA - Not applicable

No Data - Analyte was removed as a COPC in the particular medium or not analyzed

COPC - Contaminant of potential concern

Note - Zeros in the dietary pathway for GBH indicate that an intake could not be calculated due to the lack of a BCF based on unfiltered surface water.

Note - "No Data" in the dietary pathway for the GBH indicates that analyte was removed as a COPC for unfiltered surface water; therefore an intake was not calculated.

GBH - Great blue heron

Table E–6. Calculated Intakes for Ecological Receptors

Intakes for Ecological Receptors - Reference Wetland (RME and CT Exposure Scenarios)

REF	Intakes Due to Sediment Ingestion - RME					Intakes Due to Dietary Ingestion - RME					Intakes Due to Surface Water Ingestion - RME				
Parameter	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub
Ammonia as Total N	No Data	No Data	No Data	NA	NA	No Data	No Data	0.00E+00	NA	NA	6.09E-04	1.45E-05	2.92E-05	NA	NA
Arsenic	3.62E-02	5.02E-03	3.20E-02	NA	NA	No Data	No Data	2.25E-02	NA	NA	6.27E-03	1.50E-04	3.01E-04	NA	NA
Cadmium	8.24E-04	1.14E-04	7.27E-04	NA	NA	1.31E-01	1.47E-02	No Data	NA	NA	No Data	No Data	No Data	NA	NA
Fluoride	No Data	No Data	No Data	NA	NA	No Data	No Data	0.00E+00	NA	NA	3.39E-01	8.10E-03	1.62E-02	NA	NA
Iron	No Data	No Data	No Data	NA	NA	No Data	No Data	0.00E+00	NA	NA	3.02E-01	7.21E-03	1.45E-02	NA	NA
Manganese	1.65E+00	2.29E-01	1.46E+00	NA	NA	No Data	No Data	No Data	NA	NA	No Data	No Data	No Data	NA	NA
Molybdenum	3.06E-03	4.24E-04	2.70E-03	NA	NA	3.65E-01	3.40E-02	0.00E+00	NA	NA	1.37E-03	3.28E-05	6.58E-05	NA	NA
Nitrate	5.23E-03	7.25E-04	4.61E-03	NA	NA	No Data	No Data	0.00E+00	NA	NA	7.74E-02	1.85E-03	3.71E-03	NA	NA
Phosphate	1.59E-03	2.21E-04	1.41E-03	NA	NA	No Data	No Data	No Data	NA	NA	No Data	No Data	No Data	NA	NA
Selenium	No Data	No Data	No Data	NA	NA	8.87E-02	9.18E-03	No Data	NA	NA	No Data	No Data	No Data	NA	NA
Strontium	7.13E-01	9.88E-02	6.29E-01	NA	NA	5.46E+01	5.64E+00	0.00E+00	NA	NA	1.17E+00	2.79E-02	5.60E-02	NA	NA
Sulfate	No Data	No Data	No Data	NA	NA	No Data	No Data	No Data	NA	NA	No Data	No Data	No Data	NA	NA
Uranium	No Data	No Data	No Data	NA	NA	No Data	No Data	0.00E+00	NA	NA	8.41E-03	2.01E-04	4.03E-04	NA	NA
Vanadium	1.63E-01	2.26E-02	1.44E-01	NA	NA	No Data	No Data	0.00E+00	NA	NA	2.74E-03	6.56E-05	1.32E-04	NA	NA
Zinc	2.54E-01	3.52E-02	2.24E-01	NA	NA	No Data	No Data	No Data	NA	NA	No Data	No Data	No Data	NA	NA

REF	Intakes Due to Sediment Ingestion - CT					Intakes Due to Dietary Ingestion - CT					Intakes Due to Surface Water Ingestion - CT				
Parameter	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub
Ammonia as Total N	No Data	No Data	No Data	NA	NA	No Data	No Data	0.00E+00	NA	NA	6.09E-04	1.18E-05	2.80E-05	NA	NA
Arsenic	3.20E-02	4.03E-03	3.20E-02	NA	NA	No Data	No Data	2.25E-02	NA	NA	6.27E-03	1.21E-04	2.88E-04	NA	NA
Cadmium	7.27E-04	9.17E-05	7.27E-04	NA	NA	1.15E-01	1.18E-02	No Data	NA	NA	No Data	No Data	No Data	NA	NA
Fluoride	No Data	No Data	No Data	NA	NA	No Data	No Data	0.00E+00	NA	NA	3.39E-01	6.55E-03	1.56E-02	NA	NA
Iron	No Data	No Data	No Data	NA	NA	No Data	No Data	0.00E+00	NA	NA	3.02E-01	5.83E-03	1.39E-02	NA	NA
Manganese	1.46E+00	1.84E-01	1.46E+00	NA	NA	No Data	No Data	No Data	NA	NA	No Data	No Data	No Data	NA	NA
Molybdenum	2.70E-03	3.40E-04	2.70E-03	NA	NA	3.22E-01	2.73E-02	0.00E+00	NA	NA	1.37E-03	2.65E-05	6.30E-05	NA	NA
Nitrate	4.61E-03	5.81E-04	4.61E-03	NA	NA	No Data	No Data	0.00E+00	NA	NA	7.74E-02	1.50E-03	3.56E-03	NA	NA
Phosphate	1.41E-03	1.77E-04	1.41E-03	NA	NA	No Data	No Data	No Data	NA	NA	No Data	No Data	No Data	NA	NA
Selenium	No Data	No Data	No Data	NA	NA	7.83E-02	7.37E-03	No Data	NA	NA	No Data	No Data	No Data	NA	NA
Strontium	6.29E-01	7.92E-02	6.29E-01	NA	NA	4.82E+01	4.53E+00	0.00E+00	NA	NA	1.17E+00	2.26E-02	5.36E-02	NA	NA
Sulfate	No Data	No Data	No Data	NA	NA	No Data	No Data	No Data	NA	NA	No Data	No Data	No Data	NA	NA
Uranium	No Data	No Data	No Data	NA	NA	No Data	No Data	0.00E+00	NA	NA	8.41E-03	1.63E-04	3.86E-04	NA	NA
Vanadium	1.44E-01	1.82E-02	1.44E-01	NA	NA	No Data	No Data	0.00E+00	NA	NA	2.74E-03	5.30E-05	1.26E-04	NA	NA
Zinc	2.24E-01	2.83E-02	2.24E-01	NA	NA	No Data	No Data	No Data	NA	NA	No Data	No Data	No Data	NA	NA

REF - Reference wetland

RME - Reasonable maximum exposure

CT - Central tendency

NA - Not applicable

No Data - Analyte was removed as a COPC in the particular medium or not analyzed

COPC - Contaminant of potential concern

Note - Zeros in the dietary pathway for GBH indicate that an intake could not be calculated due to the lack of a BCF based on unfiltered surface water.

Note - "No Data" in the dietary pathway for the GBH indicates that analyte was removed as a COPC for unfiltered surface water; therefore an intake was not calculated.

GBH - Great blue heron

Table E–6. Calculated Intakes for Ecological Receptors

Intakes for Ecological Receptors - Roaring Fork Pond (RME and CT Exposure Scenarios)

RFP	Intakes Due to Sediment Ingestion - RME					Intakes Due to Dietary Ingestion - RME					Intakes Due to Surface Water Ingestion - RME				
Parameter	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub
Ammonia as Total N	4.11E-01	5.70E-02	3.63E-01	NA	NA	No BAF	No BAF	0.00E+00	NA	NA	3.08E+00	7.37E-02	1.48E-01	NA	NA
Arsenic	3.65E-02	5.05E-03	3.22E-02	NA	NA	4.17E+00	4.31E-01	1.49E-02	NA	NA	4.17E-03	9.95E-05	2.00E-04	NA	NA
Cadmium	3.78E-03	5.24E-04	3.33E-03	NA	NA	1.26E+00	1.14E-01	No Data	NA	NA	No Data	No Data	No Data	NA	NA
Fluoride	No Data	No Data	No Data	NA	NA	No Data	No Data	0.00E+00	NA	NA	4.38E-01	1.05E-02	2.10E-02	NA	NA
Iron	9.31E+01	1.29E+01	8.21E+01	NA	NA	5.35E+03	1.39E+02	No Data	NA	NA	No Data	No Data	No Data	NA	NA
Manganese	2.14E+00	2.97E-01	1.89E+00	NA	NA	2.79E+02	3.57E+01	No Data	NA	NA	No Data	No Data	No Data	NA	NA
Molybdenum	1.79E-02	2.48E-03	1.58E-02	NA	NA	1.08E+00	1.03E-01	0.00E+00	NA	NA	5.05E-01	1.21E-02	2.42E-02	NA	NA
Nitrate	1.05E+00	1.45E-01	9.23E-01	NA	NA	No BAF	No BAF	0.00E+00	NA	NA	4.41E+02	1.05E+01	2.11E+01	NA	NA
Phosphate	1.82E-02	2.52E-03	1.60E-02	NA	NA	No BAF	No BAF	No Data	NA	NA	No Data	No Data	No Data	NA	NA
Selenium	1.76E-03	2.44E-04	1.56E-03	NA	NA	No BAF	No BAF	1.38E-02	NA	NA	1.08E-03	2.58E-05	5.17E-05	NA	NA
Strontium	No Data	No Data	No Data	NA	NA	No Data	No Data	0.00E+00	NA	NA	3.27E+00	7.82E-02	1.57E-01	NA	NA
Sulfate	1.40E+01	1.94E+00	1.23E+01	NA	NA	No BAF	No BAF	0.00E+00	NA	NA	2.76E+03	6.60E+01	1.33E+02	NA	NA
Uranium	3.02E-02	4.19E-03	2.67E-02	NA	NA	1.14E+00	2.46E-02	0.00E+00	NA	NA	1.56E-01	3.72E-03	7.47E-03	NA	NA
Vanadium	1.65E-01	2.29E-02	1.46E-01	NA	NA	1.00E+01	2.35E-01	0.00E+00	NA	NA	2.74E-03	6.56E-05	1.32E-04	NA	NA
Zinc	4.53E-01	6.27E-02	3.99E-01	NA	NA	3.76E+01	3.20E+00	No Data	NA	NA	No Data	No Data	No Data	NA	NA

RFP	Intakes Due to Sediment Ingestion - CT					Intakes Due to Dietary Ingestion - CT					Intakes Due to Surface Water Ingestion - CT				
Parameter	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub
Ammonia as Total N	3.63E-01	4.57E-02	3.63E-01	NA	NA	No BAF	No BAF	0.00E+00	NA	NA	3.08E+00	5.96E-02	1.42E-01	NA	NA
Arsenic	3.22E-02	4.06E-03	3.22E-02	NA	NA	3.68E+00	3.46E-01	1.49E-02	NA	NA	4.17E-03	8.05E-05	1.91E-04	NA	NA
Cadmium	3.33E-03	4.20E-04	3.33E-03	NA	NA	1.11E+00	9.18E-02	No Data	NA	NA	No Data	No Data	No Data	NA	NA
Fluoride	No Data	No Data	No Data	NA	NA	No Data	No Data	0.00E+00	NA	NA	4.38E-01	8.47E-03	2.01E-02	NA	NA
Iron	8.21E+01	1.04E+01	8.21E+01	NA	NA	4.72E+03	1.12E+02	No Data	NA	NA	No Data	No Data	No Data	NA	NA
Manganese	1.89E+00	2.38E-01	1.89E+00	NA	NA	2.46E+02	2.86E+01	No Data	NA	NA	No Data	No Data	No Data	NA	NA
Molybdenum	1.58E-02	1.99E-03	1.58E-02	NA	NA	9.57E-01	8.27E-02	0.00E+00	NA	NA	5.05E-01	9.77E-03	2.32E-02	NA	NA
Nitrate	9.23E-01	1.16E-01	9.23E-01	NA	NA	No BAF	No BAF	0.00E+00	NA	NA	4.41E+02	8.52E+00	2.02E+01	NA	NA
Phosphate	1.60E-02	2.02E-03	1.60E-02	NA	NA	No BAF	No BAF	No Data	NA	NA	No Data	No Data	No Data	NA	NA
Selenium	1.56E-03	1.96E-04	1.56E-03	NA	NA	No BAF	No BAF	1.38E-02	NA	NA	1.08E-03	2.08E-05	4.95E-05	NA	NA
Strontium	No Data	No Data	No Data	NA	NA	No Data	No Data	0.00E+00	NA	NA	3.27E+00	6.33E-02	1.50E-01	NA	NA
Sulfate	1.23E+01	1.55E+00	1.23E+01	NA	NA	No BAF	No BAF	0.00E+00	NA	NA	2.76E+03	5.34E+01	1.27E+02	NA	NA
Uranium	2.67E-02	3.36E-03	2.67E-02	NA	NA	1.01E+00	1.98E-02	0.00E+00	NA	NA	1.56E-01	3.01E-03	7.15E-03	NA	NA
Vanadium	1.46E-01	1.84E-02	1.46E-01	NA	NA	8.84E+00	1.89E-01	0.00E+00	NA	NA	2.74E-03	5.30E-05	1.26E-04	NA	NA
Zinc	3.99E-01	5.03E-02	3.99E-01	NA	NA	3.32E+01	2.57E+00	No Data	NA	NA	No Data	No Data	No Data	NA	NA

No Data - Analyte was removed as a COPC in the particular medium or not analyzed

COPC - Contaminant of potential concern

Note - Zeros in the dietary pathway for GBH indicate that an intake could not be calculated due to the lack of a BCF based on unfiltered surface water.

GBH - Great blue heron

No Data - For muskrat and mule deer, analyte was removed as a COPC in sediment; therefore a dietary intake was not calculated

No Data - For muskrat and mule deer, for selenium in the dietary pathway, no BAF was calculated due to low detection frequency.

Note - "No Data" in the dietary pathway for the GBH indicates that analyte was removed as a COPC for unfiltered surface water; therefore an intake was not calculated.

No BAF - For muskrat and mule deer: ammonium, fluoride, nitrate, phosphate and sulfate were not analyzed in vegetation; therefore a BAF was not calculated.

RFP - Roaring Fork Pond

RME - Reasonable maximum exposure

CT - Central tendency

NA - Not applicable

Table E–6. Calculated Intakes for Ecological Receptors

Intakes for Ecological Receptors - Reference for Roaring Fork Pond (RME and CT Exposure Scenarios)

REF_RFP	Intakes Due to Sediment Ingestion - RME					Intakes Due to Dietary Ingestion - RME					Intakes Due to Surface Water Ingestion - RME				
Parameter	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub
Ammonia as Total N	2.08E-02	2.89E-03	1.84E-02	NA	NA	No BAF	No BAF	0.00E+00	NA	NA	6.08E-04	1.45E-05	2.91E-05	NA	NA
Arsenic	3.62E-02	5.02E-03	3.20E-02	NA	NA	4.14E+00	4.28E-01	2.25E-02	NA	NA	6.27E-03	1.50E-04	3.01E-04	NA	NA
Cadmium	8.24E-04	1.14E-04	7.27E-04	NA	NA	2.75E-01	2.50E-02	No Data	NA	NA	No Data	No Data	No Data	NA	NA
Fluoride	No Data	No Data	No Data	NA	NA	No Data	No Data	0.00E+00	NA	NA	3.39E-01	8.10E-03	1.62E-02	NA	NA
Iron	8.57E+01	1.19E+01	7.56E+01	NA	NA	4.92E+03	1.28E+02	No Data	NA	NA	No Data	No Data	No Data	NA	NA
Manganese	1.65E+00	2.29E-01	1.46E+00	NA	NA	2.15E+02	2.75E+01	No Data	NA	NA	No Data	No Data	No Data	NA	NA
Molybdenum	3.06E-03	4.24E-04	2.70E-03	NA	NA	1.86E-01	1.77E-02	0.00E+00	NA	NA	1.37E-03	3.28E-05	6.58E-05	NA	NA
Nitrate	5.23E-03	7.25E-04	4.61E-03	NA	NA	No BAF	No BAF	0.00E+00	NA	NA	7.74E-02	1.85E-03	3.71E-03	NA	NA
Phosphate	1.59E-03	2.21E-04	1.41E-03	NA	NA	No BAF	No BAF	No Data	NA	NA	No Data	No Data	No Data	NA	NA
Selenium	7.40E-04	1.02E-04	6.53E-04	NA	NA	No BAF	No BAF	1.38E-02	NA	NA	1.08E-03	2.58E-05	5.17E-05	NA	NA
Strontium	No Data	No Data	No Data	NA	NA	No Data	No Data	0.00E+00	NA	NA	1.17E+00	2.79E-02	5.60E-02	NA	NA
Sulfate	8.57E+00	1.19E+00	7.56E+00	NA	NA	No BAF	No BAF	0.00E+00	NA	NA	2.78E+02	6.65E+00	1.33E+01	NA	NA
Uranium	2.75E-02	3.82E-03	2.43E-02	NA	NA	1.04E+00	2.25E-02	0.00E+00	NA	NA	8.41E-03	2.01E-04	4.03E-04	NA	NA
Vanadium	1.63E-01	2.26E-02	1.44E-01	NA	NA	9.91E+00	2.33E-01	0.00E+00	NA	NA	2.74E-03	6.56E-05	1.32E-04	NA	NA
Zinc	2.54E-01	3.52E-02	2.24E-01	NA	NA	2.11E+01	1.79E+00	No Data	NA	NA	No Data	No Data	No Data	NA	NA

REF_RFP	Intakes Due to Sediment Ingestion - CT					Intakes Due to Dietary Ingestion - CT					Intakes Due to Surface Water Ingestion - CT				
Parameter	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub
Ammonia as Total N	1.84E-02	2.32E-03	1.84E-02	NA	NA	No BAF	No BAF	0.00E+00	NA	NA	6.08E-04	1.17E-05	2.79E-05	NA	NA
Arsenic	3.20E-02	4.03E-03	3.20E-02	NA	NA	3.65E+00	3.43E-01	2.25E-02	NA	NA	6.27E-03	1.21E-04	2.88E-04	NA	NA
Cadmium	7.27E-04	9.17E-05	7.27E-04	NA	NA	2.42E-01	2.00E-02	No Data	NA	NA	No Data	No Data	No Data	NA	NA
Fluoride	No Data	No Data	No Data	NA	NA	No Data	No Data	0.00E+00	NA	NA	3.39E-01	6.55E-03	1.56E-02	NA	NA
Iron	7.56E+01	9.53E+00	7.56E+01	NA	NA	4.34E+03	1.03E+02	No Data	NA	NA	No Data	No Data	No Data	NA	NA
Manganese	1.46E+00	1.84E-01	1.46E+00	NA	NA	1.89E+02	2.20E+01	No Data	NA	NA	No Data	No Data	No Data	NA	NA
Molybdenum	2.70E-03	3.40E-04	2.70E-03	NA	NA	1.64E-01	1.42E-02	0.00E+00	NA	NA	1.37E-03	2.65E-05	6.30E-05	NA	NA
Nitrate	4.61E-03	5.81E-04	4.61E-03	NA	NA	No BAF	No BAF	0.00E+00	NA	NA	7.74E-02	1.50E-03	3.56E-03	NA	NA
Phosphate	1.41E-03	1.77E-04	1.41E-03	NA	NA	No BAF	No BAF	No Data	NA	NA	No Data	No Data	No Data	NA	NA
Selenium	6.53E-04	8.23E-05	6.53E-04	NA	NA	No BAF	No BAF	1.38E-02	NA	NA	1.08E-03	2.08E-05	4.95E-05	NA	NA
Strontium	No Data	No Data	No Data	NA	NA	No Data	No Data	0.00E+00	NA	NA	1.17E+00	2.26E-02	5.36E-02	NA	NA
Sulfate	7.56E+00	9.53E-01	7.56E+00	NA	NA	No BAF	No BAF	0.00E+00	NA	NA	2.78E+02	5.38E+00	1.28E+01	NA	NA
Uranium	2.43E-02	3.06E-03	2.43E-02	NA	NA	9.18E-01	1.80E-02	0.00E+00	NA	NA	8.41E-03	1.63E-04	3.86E-04	NA	NA
Vanadium	1.44E-01	1.82E-02	1.44E-01	NA	NA	8.75E+00	1.87E-01	0.00E+00	NA	NA	2.74E-03	5.30E-05	1.26E-04	NA	NA
Zinc	2.24E-01	2.83E-02	2.24E-01	NA	NA	1.86E+01	1.44E+00	No Data	NA	NA	No Data	No Data	No Data	NA	NA

No Data - Analyte was removed as a COPC in the particular medium or not analyzed

COPC - Contaminant of potential concern

Note - Zeros in the dietary pathway for GBH indicate that an intake could not be calculated due to the lack of a BCF based on unfiltered surface water.

GBH - Great blue heron

No Data - For muskrat and mule deer, analyte was removed as a COPC in sediment; therefore a dietary intake was not calculated

No Data - For muskrat and mule deer, for selenium in the dietary pathway, no BAF was calculated due to low detection frequency.

Note - "No Data" in the dietary pathway for the GBH indicates that analyte was removed as a COPC for unfiltered surface water; therefore an intake was not calculated.

No BAF - For muskrat and mule deer: ammonium, fluoride, nitrate, phosphate and sulfate were not analyzed in vegetation; therefore a BAF was not calculated.

REF_RFP -Reference for Roaring Fork Pond

RME - Reasonable maximum exposure

CT - Central tendency

NA - Not applicable

Table E–7. Toxicity Reference Values for Mammals, Birds, and Plants

Final Toxicity Reference Values with Intertaxon Uncertainty Factors for Ecological Receptors

Parameter	Muskrat-NOAEL	Muskrat-LOAEL	Mule Deer-NOAEL	Mule Deer-LOAEL	Great-Blue Heron-NOAEL	Great-Blue Heron-LOAEL	Plant - NOAEL	Plant - LOAEL
Ammonia as Total N	197.6	395.3	329.4	658.8	NA	NA	NA	NA
Arsenic	1.27	7.5	0.76	4.5	2.80	8.40	25	NA
Cadmium	0.125	4.86	0.1	4.86	0.027	0.40	50	100
Fluoride	0.74	3.79	0.45	2.27	0.7	NA	NA	NA
Iron	3.92	83.3	3.92	83.3	78.00	156	NA	NA
Manganese	50.0	153.75	16.0	NA	82.00	164	500	NA
Molybdenum	0.1	0.5	0.13	0.625	3.9	5.8	NA	NA
Nitrate	6.0	132	6	165	1.58	55.44	65	185
Phosphate	40	NA	40	NA	37.84	NA	110	180
Selenium	0.42	0.555	0.25	0.333	0.13	0.264	1	NA
Strontium	31.7	31.7	31.7	31.7	NA	NA	NA	NA
Sulfate	1.9	5.7	1.9	5.7	200	NA	NA	NA
Uranium	3.33	8.333	2	5.0	2.38	119.02	NA	NA
Vanadium	0.14	0.7	0.08	0.42	0.01	0.097	2	NA
Zinc	56.67	113.3	0.187	0.4	5.40	37.8	379	NA

Note. Underlined values are from Monticello OU3 ERA; remainder are from JPG

NOAEL - No observed adverse effects level

LOAEL - Lowest observed adverse effects level

Units are in mg/kg bw/day for muskrat, mule deer, and great blue heron; units are mg/kg of sediment for plants.

Table E–8. Toxicity Reference Values for Aquatic Organisms in Freshwater and Sediment

Toxicity Reference Values for Protection of Aquatic Organisms in Freshwater and Sediment

	Freshwater (ug/L)			Sediments (mg/kg)						
Analyte	**Chronic AWQC, FCV, or Tier II Value**		**Acute AWQC**	**EPA Freshwater SQC**	**EPA SQB or NOAA ERL**		**EPA ARCS SEC**	**Ontario Lower Effect Level**	**EPA NEC**	**Min SQC †**
Ammonia as Total N	2782	5	28871	NA	NA	NA	NA	NA	NA	NA
Arsenic	190		360	NA	8.2	ERL	13.26	6	92.9	**6**
Cadmium	1.0	h	3.9	NA	1.2	ERL	2.15	0.6	8	**0.6**
Fluoride	2.7	i	43	NA	NA	NA	NA	NA	NA	NA
Iron	1000	i	NA	NA	NA	NA	84400	20000	289900	**20000**
Manganese	80	II	NA	NA	NA	NA	726.00	460	4460	**460**
Molybdenum	240	II	NA	NA	NA	NA	NA	NA	NA	NA
Nitrate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phosphate	60	2	100	NA	NA	NA	NA	NA	NA	NA
Selenium	5.0		20	NA	NA	NA	NA	NA	NA	NA
Strontium	*1500*	B	*15000*	NA	NA	NA	NA	NA	NA	NA
Sulfate	284.2	4	2842	NA	NA	NA	NA	NA	120.59 *	120.59
Uranium	*2.6*	B	*27*	NA	NA	NA	NA	NA	NA	NA
Vanadium	19	II	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	100	h	120	NA	150	ERL	124.64	120	1300	120

† Minimum sediment values used

Note-. Use chronic freshwater value as NOAEL, acute value as LOAEL.

Source: EPA, 1996 (ECO Update, Ecotox Thresholds, Intermittent Bulletin, Vol. 3, No. 2)

Metal criteria are for total dissolved concentrations.

f - Final Chronic Value (FCV)

h - hardness dependent ambient water quality criterion (100 mg/L CaCO3 used in table)

i - instantaneous maximum

pH - pH dependent ambient water quality criterion (7.8 pH used in table)

AWQC - Ambient Water Quality Criterion

II - Great Lakes Water Quality Initiative Tier II methodology

SQC - Sediment Quality Criteria

SQB -Sediment Quality Benchmarks by equilibrium partitioning assuming 1% organic carbon

ERL - Effects Range –Low (Long et al., 1995)

Source: EPA, 1996c (ARCS)

EPA ARCs NEC = Lowest NEC values for each analyte from EPA, 1996c. Dry weight basis.

Based on 14 d Chironomid or 28 d Hyalella total extraction data; normalized to TOC for organics

[1] Anonymous. 1989. Integrated Criteria Document Fluorides. Effects. National Institute for Public Health and Environmental protection. Netherlands. Appendix to Report No. 758474010. 98 p.

[2] Correll, D.L. 1998. The Role of Phosphorus in the Eutrophication of Receiving Waters: A Review. J. Environ. Qual. 27:261-166

[3] Salizzarto et al., 1998. ET&C. 17:655-661

[4] Hansen et al., 1993. Sulfur printout. Invert exposed to 240X more sulfur than selenium (Se); Se was 0.71mg/l; sulfur ameliorated selenium toxicity.

* Brower, H. and T. Murphy (1995); 205 ug/ml ÷ 1.7 g/ml = 120.59 ug/g

[5](CCC) Continuous chronic criterion and continuous maximum criterion (CMC) (no salmonids) for pH=7.22 (One Mile Pond); EPA 1998

[B]Bench (ORNL 1996)

RME-Based Risks Expressed as HQs and HIs for Ecological Receptors at the New Rifle Wetland

NRW	NOAEL-Based HQs Due to Sediment Ingestion or Direct Contact - RME						NOAEL-Based HQs Due to Dietary Ingestion - RME					NOAEL-Based HQs Due to Surface Water Ingestion or Direct Contact - RME					Total NOAEL-Based HQs Summed Across Pathways - RME					
Parameter	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Aquatic Plants	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Aquatic Plants
Ammonia as Total N	No Data	No Data	No Tox Value	No Tox Value	No Tox Value	No Tox Value	No Data	No Data	No Tox Value	NA	NA	1.23E-05	1.76E-07	No Tox Value	1.24E-02	1.24E-02	1.23E-05	1.76E-07	0.00E+00	1.24E-02	1.24E-02	No Tox Value
Arsenic	4.15E-02	9.61E-03	1.66E-02	1.72E+00	1.72E+00	4.13E-01	No Data	No Data	1.03E-02	NA	NA	6.35E-03	2.54E-04	1.38E-04	4.53E-02	4.53E-02	4.78E-02	9.86E-03	2.71E-02	1.77E+00	1.77E+00	4.13E-01
Cadmium	3.02E-02	5.22E-03	1.25E-01	1.23E+00	1.23E+00	1.48E-02	1.31E+00	1.81E-01	No Data	NA	NA	No Data	No Data	No Data	No Data	No Data	1.34E+00	1.86E-01	1.25E-01	1.23E+00	1.23E+00	1.48E-02
Fluoride	No Data	No Data	No Data	No Tox Value	No Tox Value	No Tox Value	No Data	No Data	0.00E+00	NA	NA	8.13E-01	3.24E-02	4.14E-02	2.40E+02	2.40E+02	8.13E-01	3.24E-02	4.14E-02	2.40E+02	2.40E+02	No Tox Value
Iron	No Data	No Data	No Data	No Data	No Data	No Tox Value	No Data	No Data	0.00E+00	NA	NA	2.91E-01	6.96E-03	7.02E-04	2.16E-02	2.16E-02	2.91E-01	6.96E-03	7.02E-04	2.16E-02	2.16E-02	No Tox Value
Manganese	3.55E-02	1.54E-02	1.91E-02	7.56E-01	7.56E-01	6.95E-01	No Data	No Data	No Data	NA	NA	No Data	No Data	No Data	No Data	No Data	3.55E-02	1.54E-02	1.91E-02	7.56E-01	7.56E-01	6.95E-01
Molybdenum	1.03E-01	1.10E-02	2.35E-03	No Tox Value	No Tox Value	No Tox Value	1.86E+01	1.89E+00	0.00E+00	NA	NA	7.07E-01	1.30E-02	8.73E-04	3.23E-01	3.23E-01	1.94E+01	1.91E+00	3.22E-03	3.23E-01	3.23E-01	No Tox Value
Nitrate	7.54E-02	1.04E-02	2.53E-01	No Tox Value	No Tox Value	No Tox Value	No Data	No Data	0.00E+00	NA	NA	1.15E-02	2.75E-04	2.10E-03	No Tox Value	No Tox Value	8.69E-02	1.07E-02	2.55E-01	0.00E+00	0.00E+00	No Tox Value
Phosphate	5.69E-04	7.88E-05	5.30E-04	No Tox Value	No Tox Value	No Tox Value	No Data	No Data	No Data	NA	NA	No Data	No Data	No Data	No Data	No Data	5.69E-04	7.88E-05	5.30E-04	0.00E+00	0.00E+00	No Tox Value
Selenium	No Data	No Data	No Data	No Tox Value	No Tox Value	No Data	6.65E-01	1.15E-01	No Data	NA	NA	No Data	No Data	No Data	No Data	No Data	6.65E-01	1.15E-01	0.00E+00	0.00E+00	0.00E+00	No Data
Strontium	4.70E-02	6.52E-03	No Tox Value	No Tox Value	No Tox Value	No Tox Value	2.35E+00	2.43E-01	No Tox Value	NA	NA	4.18E-02	1.00E-03	No Tox Value	8.90E-01	8.90E-01	2.43E+00	2.50E-01	0.00E+00	8.90E-01	8.90E-01	No Tox Value
Sulfate	No Data	No Data	No Data	No Data	No Data	No Tox Value	No Data	No Data	No Data	NA	NA	No Data	No Data	No Data	No Data	No Data	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	No Tox Value
Uranium	No Data	No Data	No Data	No Tox Value	No Tox Value	No Tox Value	No Data	No Data	0.00E+00	NA	NA	1.09E-02	4.34E-04	7.33E-04	1.51E+01	1.51E+01	1.09E-02	4.34E-04	7.33E-04	1.51E+01	1.51E+01	No Tox Value
Vanadium	1.21E+00	2.93E-01	2.31E+01	No Tox Value	No Tox Value	1.66E+01	No Data	No Data	0.00E+00	NA	NA	1.96E-02	8.20E-04	2.04E-02	4.63E-01	4.63E-01	1.23E+00	2.94E-01	2.31E+01	4.63E-01	4.63E-01	1.66E+01
Zinc	4.64E-03	1.95E-01	4.29E-02	4.29E-01	4.29E-01	1.36E-01	No Data	No Data	No Data	NA	NA	No Data	No Data	No Data	No Data	No Data	4.64E-03	1.95E-01	4.29E-02	4.29E-01	4.29E-01	1.36E-01
HI_NOAEL	**1.55**	**0.55**	**23.54**	**4.14**	**4.14**	**17.84**	**22.96**	**2.43**	**0.01**	**0.0**	**0.0**	**1.90**	**0.06**	**0.07**	**257.2**	**257.2**	**26.40**	**3.03**	**23.62**	**261.35**	**261.35**	**17.84**

NRW	LOAEL-Based HQs Due to Sediment Ingestion or Direct Contact - RME						LOAEL-Based HQs Due to Dietary Ingestion - RME					LOAEL-Based HQs Due to Surface Water Ingestion or Direct Contact - RME					Total LOAEL-Based HQs Summed Across Pathways - RME					
Parameter	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Aquatic Plants	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Aquatic Plants
Ammonia as Total N	No Data	No Data	No Tox Value	No Tox Value	No Tox Value	No Tox Value	No Data	No Data	No Tox Value	NA	NA	6.15E-06	8.82E-08	No Tox Value	1.95E-03	1.95E-03	6.15E-06	8.82E-08	0.00E+00	1.95E-03	1.95E-03	No Tox Value
Arsenic	7.03E-03	1.62E-03	5.53E-03	1.72E+00	1.72E+00	No Tox Value	No Data	No Data	3.44E-03	NA	NA	1.08E-03	4.28E-05	4.60E-05	2.39E-02	2.39E-02	8.10E-03	1.67E-03	9.02E-03	1.75E+00	1.75E+00	No Tox Value
Cadmium	7.76E-04	1.08E-04	8.32E-03	1.23E+00	1.23E+00	7.39E-03	3.37E-02	3.73E-03	No Data	NA	NA	No Data	No Data	No Data	No Data	No Data	3.45E-02	3.84E-03	8.32E-03	1.23E+00	1.23E+00	7.39E-03
Fluoride	No Data	No Data	No Tox Value	No Tox Value	No Tox Value	No Tox Value	No Data	No Data	No Tox Value	NA	NA	1.60E-01	6.35E-03	No Tox Value	1.51E+01	1.51E+01	1.60E-01	6.35E-03	0.00E+00	1.51E+01	1.51E+01	No Tox Value
Iron	No Data	No Data	No Data	No Data	No Data	No Tox Value	No Data	No Data	0.00E+00	NA	NA	1.37E-02	3.27E-04	3.51E-04	No Tox Value	No Tox Value	1.37E-02	3.27E-04	3.51E-04	0.00E+00	0.00E+00	No Tox Value
Manganese	1.15E-02	No Tox Value	9.54E-03	7.56E-01	7.56E-01	No Tox Value	No Data	No Tox Value	No Data	NA	NA	No Data	No Tox Value	No Data	No Tox Value	No Tox Value	1.15E-02	0.00E+00	9.54E-03	7.56E-01	7.56E-01	No Tox Value
Molybdenum	2.06E-02	2.29E-03	1.57E-03	No Tox Value	No Tox Value	No Tox Value	3.73E+00	3.93E-01	0.00E+00	NA	NA	1.41E-01	2.70E-03	5.82E-04	No Tox Value	No Tox Value	3.89E+00	3.98E-01	2.15E-03	0.00E+00	0.00E+00	No Tox Value
Nitrate	3.43E-03	3.80E-04	7.20E-03	No Tox Value	No Tox Value	No Tox Value	No Data	No Data	0.00E+00	NA	NA	5.23E-04	1.00E-05	5.98E-05	No Tox Value	No Tox Value	3.95E-03	3.90E-04	7.26E-03	0.00E+00	0.00E+00	No Tox Value
Phosphate	No Tox Value	No Tox Value	No Tox Value	No Tox Value	No Tox Value	No Tox Value	No Tox Value	No Tox Value	No Tox Value	NA	NA	No Tox Value	No Tox Value	No Tox Value	No Data	No Data	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	No Tox Value
Selenium	No Data	No Data	No Data	No Tox Value	No Tox Value	No Tox Value	4.99E-01	8.61E-02	No Data	NA	NA	No Data	No Data	No Data	No Data	No Data	4.99E-01	8.61E-02	0.00E+00	0.00E+00	0.00E+00	No Tox Value
Strontium	4.70E-02	6.52E-03	No Tox Value	No Tox Value	No Tox Value	No Tox Value	2.35E+00	2.43E-01	No Tox Value	NA	NA	4.18E-02	1.00E-03	No Tox Value	8.90E-02	8.90E-02	2.43E+00	2.50E-01	0.00E+00	8.90E-02	8.90E-02	No Tox Value
Sulfate	No Data	No Data	No Tox Value	No Data	No Data	No Tox Value	No Data	No Data	No Tox Value	NA	NA	No Data	No Data	No Tox Value	No Data	No Data	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	No Tox Value
Uranium	No Data	No Data	No Data	No Tox Value	No Tox Value	No Tox Value	No Data	No Data	0.00E+00	NA	NA	4.36E-03	1.74E-04	1.47E-05	1.46E+00	1.46E+00	4.36E-03	1.74E-04	1.47E-05	1.46E+00	1.46E+00	No Tox Value
Vanadium	2.42E-01	5.58E-02	1.54E+00	No Tox Value	No Tox Value	No Tox Value	No Data	No Data	0.00E+00	NA	NA	3.92E-03	1.56E-04	1.36E-03	No Tox Value	No Tox Value	2.46E-01	5.60E-02	1.54E+00	0.00E+00	0.00E+00	No Tox Value
Zinc	2.32E-03	1.01E-01	6.14E-03	4.29E-01	4.29E-01	No Tox Value	No Data	No Data	No Data	NA	NA	No Data	No Data	No Data	No Data	No Data	2.32E-03	1.01E-01	6.14E-03	4.29E-01	4.29E-01	No Tox Value
HI_LOAEL	**0.33**	**0.17**	**1.58**	**4.14**	**4.14**	**0.01**	**6.61**	**0.73**	**0.00**	**0**	**0**	**0.37**	**0.01**	**0.00**	**16.66**	**16.66**	**7.31**	**0.90**	**1.58**	**20.80**	**20.80**	**0.01**

NRW- New Rifle wetland
RME - Reasonable maximum exposure
NOAEL - No observed adverse effects level
HQ - Hazard quotient
HI - Hazard index
COPC - Contaminant of potential concern
GBH - Great blue heron

No Tox Value - No toxicity reference value (TRV)
No Data - Analyte was removed as a COPC in a particular medium or was not analyzed.
No BAF - No bioaccumulation factor
NA - Not applicable
LOAEL - Lowest observed adverse effects level
Note - Zeros in dietary pathway for GBH indicate that an intake could not be calculated due to lack of a BCF for that analyte for unfiltered surface water; therefore, no risk could be calculated.

CT-Based Risks Expressed as HQs and HIs for Ecological Receptors at the New Rifle Wetland

NRW	NOAEL-Based HQs Due to Sediment Ingestion or Direct Contact - CT					NOAEL-Based HQs Due to Dietary Ingestion - CT					NOAEL-Based HQs Due to Surface Water Ingestion or Direct Contact - CT					Total NOAEL-Based HQs Summed Across Pathways - CT				
Parameter	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub
Ammonia as Total N	No Data	No Data	No Tox Value	No Tox Value	No Tox Value	No Data	No Data	No Tox Value	NA	NA	1.23E-05	1.43E-07	No Tox Value	1.24E-02	1.24E-02	1.23E-05	1.43E-07	0.00E+00	1.24E-02	1.24E-02
Arsenic	3.66E-02	7.71E-03	1.66E-02	1.72E+00	1.72E+00	No Data	No Data	1.03E-02	NA	NA	6.35E-03	2.05E-04	1.32E-04	4.53E-02	4.53E-02	4.30E-02	7.92E-03	2.71E-02	1.77E+00	1.77E+00
Cadmium	2.66E-02	4.19E-03	1.25E-01	1.23E+00	1.23E+00	1.16E+00	1.45E-01	No Data	NA	NA	No Data	No Data	No Data	No Data	No Data	1.18E+00	1.50E-01	1.25E-01	1.23E+00	1.23E+00
Fluoride	No Data	No Data	No Data	No Tox Value	No Tox Value	No Data	No Data	0.00E+00	NA	NA	8.13E-01	2.62E-02	3.96E-02	2.40E+02	2.40E+02	8.13E-01	2.62E-02	3.96E-02	2.40E+02	2.40E+02
Iron	No Data	No Data	No Data	No Data	No Data	No Data	No Data	0.00E+00	NA	NA	2.91E-01	5.63E-03	6.72E-04	2.16E-02	2.16E-02	2.91E-01	5.63E-03	6.72E-04	2.16E-02	2.16E-02
Manganese	3.13E-02	1.23E-02	1.91E-02	7.56E-01	7.56E-01	No Data	No Data	No Data	NA	NA	No Data	No Data	No Data	No Data	No Data	3.13E-02	1.23E-02	1.91E-02	7.56E-01	7.56E-01
Molybdenum	9.11E-02	8.83E-03	2.35E-03	No Tox Value	No Tox Value	1.64E+01	1.52E+00	0.00E+00	NA	NA	7.07E-01	1.05E-02	8.36E-04	3.23E-01	3.23E-01	1.72E+01	1.54E+00	3.18E-03	3.23E-01	3.23E-01
Nitrate	6.65E-02	8.38E-03	2.53E-01	No Tox Value	No Tox Value	No Data	No Data	0.00E+00	NA	NA	1.15E-02	2.23E-04	2.01E-03	No Tox Value	No Tox Value	7.80E-02	8.61E-03	2.55E-01	0.00E+00	0.00E+00
Phosphate	5.02E-04	6.32E-05	5.30E-04	No Tox Value	No Tox Value	No Data	No Data	No Data	NA	NA	No Data	No Data	No Data	No Data	No Data	5.02E-04	6.32E-05	5.30E-04	0.00E+00	0.00E+00
Selenium	No Data	No Data	No Data	No Tox Value	No Tox Value	5.86E-01	9.19E-02	No Data	NA	NA	No Data	No Data	No Data	No Data	No Data	5.86E-01	9.19E-02	0.00E+00	0.00E+00	0.00E+00
Strontium	4.15E-02	5.23E-03	No Tox Value	No Tox Value	No Tox Value	2.07E+00	1.95E-01	No Tox Value	NA	NA	4.18E-02	8.09E-04	No Tox Value	8.90E-01	8.90E-01	2.15E+00	2.01E-01	0.00E+00	8.90E-01	8.90E-01
Sulfate	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	NA	NA	No Data	No Data	No Data	No Data	No Data	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Uranium	No Data	No Data	No Data	No Tox Value	No Tox Value	No Data	No Data	0.00E+00	NA	NA	1.09E-02	3.51E-04	7.01E-04	1.51E+01	1.51E+01	1.09E-02	3.51E-04	7.01E-04	1.51E+01	1.51E+01
Vanadium	1.07E+00	2.35E-01	2.31E+01	No Tox Value	No Tox Value	No Data	No Data	0.00E+00	NA	NA	1.96E-02	6.63E-04	1.95E-02	4.63E-01	4.63E-01	1.09E+00	2.36E-01	2.31E+01	4.63E-01	4.63E-01
Zinc	4.09E-03	1.56E-01	4.29E-02	4.29E-01	4.29E-01	No Data	No Data	No Data	NA	NA	No Data	No Data	No Data	No Data	No Data	4.09E-03	1.56E-01	4.29E-02	4.29E-01	4.29E-01
HI_NOAEL	**1.36**	**0.44**	**23.54**	**4.14**	**4.14**	**20.26**	**1.95**	**0.01**	**0**	**0**	**1.90**	**0.04**	**0.06**	**257.2**	**257.2**	**23.52**	**2.43**	**23.61**	**261.4**	**261.4**

NRW	LOAEL-Based HQs Due to Sediment Ingestion or Direct Contact - CT					LOAEL-Based HQs Due to Dietary Ingestion - CT					LOAEL-Based HQs Due to Surface Water Ingestion or Direct Contact - CT					Total LOAEL-Based HQs Summed Across Pathways - CT				
Parameter	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub
Ammonia as Total N	No Data	No Data	No Tox Value	No Tox Value	No Tox Value	No Data	No Data	No Tox Value	NA	NA	6.15E-06	7.13E-08	No Tox Value	1.95E-03	1.95E-03	6.15E-06	7.13E-08	0.00E+00	1.95E-03	1.95E-03
Arsenic	6.20E-03	1.30E-03	5.53E-03	1.72E+00	1.72E+00	No Data	No Data	3.44E-03	NA	NA	1.08E-03	3.46E-05	4.41E-05	2.39E-02	2.39E-02	7.27E-03	1.34E-03	9.02E-03	1.75E+00	1.75E+00
Cadmium	6.84E-04	8.63E-05	8.32E-03	1.23E+00	1.23E+00	2.97E-02	2.99E-03	No Data	NA	NA	No Data	No Data	No Data	No Data	No Data	3.04E-02	3.08E-03	3.32E-03	1.23E+00	1.23E+00
Fluoride	No Data	No Data	No Tox Value	No Tox Value	No Tox Value	No Data	No Data	No Tox Value	NA	NA	1.60E-01	5.14E-03	No Tox Value	1.51E+01	1.51E+01	1.60E-01	5.14E-03	0.00E+00	1.51E+01	1.51E+01
Iron	No Data	No Data	No Data	No Data	No Data	No Data	No Data	0.00E+00	NA	NA	1.37E-02	2.65E-04	3.36E-04	No Tox Value	No Tox Value	1.37E-02	2.65E-04	3.36E-04	0.00E+00	0.00E+00
Manganese	1.02E-02	No Tox Value	9.54E-03	7.56E-01	7.56E-01	No Data	No Tox Value	No Data	NA	NA	No Data	No Tox Value	No Data	No Tox Value	No Tox Value	1.02E-02	0.00E+00	9.54E-03	7.56E-01	7.56E-01
Molybdenum	1.82E-02	1.84E-03	1.57E-03	No Tox Value	No Tox Value	3.29E+00	3.16E-01	0.00E+00	NA	NA	1.41E-01	2.19E-03	5.57E-04	No Tox Value	No Tox Value	3.45E+00	3.20E-01	2.12E-03	0.00E+00	0.00E+00
Nitrate	3.02E-03	3.05E-04	7.20E-03	No Tox Value	No Tox Value	No Data	No Data	0.00E+00	NA	NA	5.23E-04	8.09E-06	5.72E-05	No Tox Value	No Tox Value	3.55E-03	3.13E-04	7.25E-03	0.00E+00	0.00E+00
Phosphate	No Tox Value	No Tox Value	No Tox Value	No Tox Value	No Tox Value	No Tox Value	No Tox Value	No Tox Value	NA	NA	No Tox Value	No Tox Value	No Tox Value	No Data	No Data	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Selenium	No Data	No Data	No Data	No Tox Value	No Tox Value	4.41E-01	6.91E-02	No Data	NA	NA	No Data	No Data	No Data	No Data	No Data	4.41E-01	6.91E-02	0.00E+00	0.00E+00	0.00E+00
Strontium	4.15E-02	5.23E-03	No Tox Value	No Tox Value	No Tox Value	2.07E+00	1.95E-01	No Tox Value	NA	NA	4.18E-02	8.09E-04	No Tox Value	8.90E-02	8.90E-02	2.15E+00	2.01E-01	0.00E+00	8.90E-02	8.90E-02
Sulfate	No Data	No Data	No Tox Value	No Data	No Data	No Data	No Data	No Tox Value	NA	NA	No Data	No Data	No Tox Value	No Data	No Data	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Uranium	No Data	No Data	No Data	No Tox Value	No Tox Value	No Data	No Data	0.00E+00	NA	NA	4.36E-03	1.41E-04	1.40E-05	1.46E+00	1.46E+00	4.36E-03	1.41E-04	1.40E-05	1.46E+00	1.46E+00
Vanadium	2.13E-01	4.48E-02	1.54E+00	No Tox Value	No Tox Value	No Data	No Data	0.00E+00	NA	NA	3.92E-03	1.26E-04	1.30E-03	No Tox Value	No Tox Value	2.17E-01	4.49E-02	1.54E+00	0.00E+00	0.00E+00
Zinc	2.05E-03	8.12E-02	6.14E-03	4.29E-01	4.29E-01	No Data	No Data	No Data	NA	NA	No Data	No Data	No Data	No Data	No Data	2.05E-03	8.12E-02	6.14E-03	4.29E-01	4.29E-01
HI_LOAEL	**0.30**	**0.13**	**1.58**	**4.14**	**4.14**	**5.83**	**0.58**	**0.00**	**0**	**0**	**0.37**	**0.01**	**0.00**	**16.66**	**16.66**	**6.49**	**0.73**	**1.58**	**20.80**	**20.80**

NRW- New Rifle wetland
CT - Central tendency
NOAEL - No observed adverse effects level
HQ - Hazard quotient
HI - Hazard index
COPC - Contaminant of potential concern
GBH - Great blue heron

No Tox Value - No toxicity reference value (TRV)
No Data - Analyte was removed as a COPC in a particular medium or was not analyzed.
No BAF - No bioaccumulation factor
NA - Not applicable
LOAEL - Lowest observed adverse effects level
Note - Zeros in dietary pathway for GBH indicate that an intake could not be calculated due to lack of a BCF for that analyte for unfiltered surface water; therefore, no risk could be calculated.

RME-Based Risks Expressed as HQs and HIs for Ecological Receptors at the New Rifle Reference Wetland

REF	NOAEL-Based HQs Due to Sediment Ingestion or Direct Contact - RME						NOAEL-Based HQs Due to Dietary Ingestion - RME					NOAEL-Based HQs Due to Surface Water Ingestion or Direct Contact - RME					Total NOAEL-Based HQs Summed Across Pathways - RME					
Parameter	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Aquatic Plants	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Aquatic Plants
Ammonia as Total N	No Data	No Data	No Tox Value	No Tox Value	No Tox Value	No Tox Value	No Data	No Data	No Tox Value	NA	NA	3.08E-06	4.42E-08	No Tox Value	2.36E-04	2.36E-04	3.08E-06	4.42E-08	0.00E+00	2.36E-04	2.36E-04	No Tox Value
Arsenic	2.85E-02	6.60E-03	1.14E-02	1.18E+00	1.18E+00	2.84E-01	No Data	No Data	8.02E-03	NA	NA	4.94E-03	1.97E-04	1.07E-04	2.57E-02	2.57E-02	3.35E-02	6.80E-03	1.95E-02	1.21E+00	1.21E+00	2.84E-01
Cadmium	6.59E-03	1.14E-03	2.73E-02	2.69E-01	2.69E-01	3.23E-03	1.04E+00	1.47E-01	No Data	NA	NA	No Data	No Data	No Data	No Data	No Data	1.05E+00	1.48E-01	2.73E-02	2.69E-01	2.69E-01	3.23E-03
Fluoride	No Data	No Data	No Data	No Tox Value	No Tox Value	No Tox Value	No Data	No Data	0.00E+00	NA	NA	4.56E-01	1.82E-02	2.32E-02	1.37E+02	1.37E+02	4.56E-01	1.82E-02	2.32E-02	1.37E+02	1.37E+02	No Tox Value
Iron	No Data	No Data	No Data	No Data	No Data	No Tox Value	No Data	No Data	0.00E+00	NA	NA	7.70E-02	1.84E-03	1.86E-04	1.11E-01	1.11E-01	7.70E-02	1.84E-03	1.86E-04	1.11E-01	1.11E-01	No Tox Value
Manganese	3.30E-02	1.43E-02	1.78E-02	7.04E-01	7.04E-01	6.47E-01	No Data	No Data	No Data	NA	NA	No Data	No Data	No Data	No Data	No Data	3.30E-02	1.43E-02	1.78E-02	7.04E-01	7.04E-01	6.47E-01
Molybdenum	3.06E-02	3.26E-03	6.95E-04	No Tox Value	No Tox Value	No Tox Value	3.65E+00	2.61E-01	0.00E+00	NA	NA	1.37E-02	2.52E-04	1.70E-05	9.85E-03	9.85E-03	3.70E+00	2.65E-01	7.12E-04	9.85E-03	9.85E-03	No Tox Value
Nitrate	8.71E-04	1.21E-04	2.92E-03	No Tox Value	No Tox Value	No Tox Value	No Data	No Data	0.00E+00	NA	NA	1.29E-02	3.08E-04	2.35E-03	No Tox Value	No Tox Value	1.38E-02	4.29E-04	5.27E-03	0.00E+00	0.00E+00	No Tox Value
Phosphate	3.98E-05	5.52E-06	3.72E-05	No Tox Value	No Tox Value	No Tox Value	No Data	No Data	No Data	NA	NA	No Data	No Data	No Data	No Data	No Data	3.98E-05	5.52E-06	3.72E-05	0.00E+00	0.00E+00	No Tox Value
Selenium	No Data	No Data	No Data	No Tox Value	No Tox Value	No Data	2.11E-01	3.67E-02	No Data	NA	NA	No Data	No Data	No Data	No Data	No Data	2.11E-01	3.67E-02	0.00E+00	0.00E+00	0.00E+00	No Data
Strontium	2.25E-02	3.12E-03	No Tox Value	No Tox Value	No Tox Value	No Tox Value	1.72E+00	1.78E-01	No Tox Value	NA	NA	3.68E-02	8.80E-04	No Tox Value	8.04E-01	8.04E-01	1.78E+00	1.82E-01	0.00E+00	8.04E-01	8.04E-01	No Tox Value
Sulfate	No Data	No Data	No Data	No Data	No Data	No Tox Value	No Data	No Data	No Data	NA	NA	No Data	No Data	No Data	No Data	No Data	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	No Tox Value
Uranium	No Data	No Data	No Data	No Tox Value	No Tox Value	No Tox Value	No Data	No Data	0.00E+00	NA	NA	2.52E-03	1.00E-04	1.69E-04	3.12E+00	3.12E+00	2.52E-03	1.00E-04	1.69E-04	3.12E+00	3.12E+00	No Tox Value
Vanadium	1.17E+00	2.83E-01	2.23E+01	No Tox Value	No Tox Value	1.60E+01	No Data	No Data	0.00E+00	NA	NA	1.96E-02	8.20E-04	2.04E-02	3.37E-01	3.37E-01	1.19E+00	2.84E-01	2.23E+01	3.37E-01	3.37E-01	1.60E+01
Zinc	4.48E-03	1.88E-01	4.15E-02	4.15E-01	4.15E-01	1.31E-01	No Data	No Data	No Data	NA	NA	No Data	No Data	No Data	No Data	No Data	4.48E-03	1.88E-01	4.15E-02	4.15E-01	4.15E-01	1.31E-01
HI_NOAEL	**1.29**	**0.50**	**22.37**	**2.57**	**2.57**	**17.07**	**6.63**	**0.62**	**0.01**	**0**	**0**	**0.62**	**0.02**	**0.05**	**141.4**	**141.4**	**8.54**	**1.14**	**22.42**	**143.9**	**143.9**	**17.07**

REF	LOAEL-Based HQs Due to Sediment Ingestion or Direct Contact - RME						LOAEL-Based HQs Due to Dietary Ingestion - RME					LOAEL-Based HQs Due to Surface Water Ingestion or Direct Contact - RME					Total LOAEL-Based HQs Summed Across Pathways - RME					
Parameter	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Aquatic Plants	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Aquatic Plants
Ammonia as Total N	No Data	No Data	No Tox Value	No Tox Value	No Tox Value	No Tox Value	No Data	No Data	No Tox Value	NA	NA	1.54E-06	2.21E-08	No Tox Value	2.15E-08	2.15E-08	1.54E-06	2.21E-08	0.00E+00	2.15E-08	2.15E-08	No Tox Value
Arsenic	4.83E-03	1.12E-03	3.80E-03	1.18E+00	1.18E+00	No Tox Value	No Data	No Data	2.67E-03	NA	NA	8.36E-04	3.33E-05	3.58E-05	1.78E-05	1.78E-05	5.67E-03	1.15E-03	6.51E-03	1.18E+00	1.18E+00	No Tox Value
Cadmium	1.70E-04	2.35E-05	1.82E-03	2.69E-01	2.69E-01	1.62E-03	2.69E-02	3.02E-03	No Data	NA	NA	No Data	No Data	No Data	No Data	No Data	2.70E-02	3.04E-03	1.82E-03	2.69E-01	2.69E-01	1.62E-03
Fluoride	No Data	No Data	No Tox Value	No Tox Value	No Tox Value	No Tox Value	No Data	No Data	No Tox Value	NA	NA	8.95E-02	3.56E-03	No Tox Value	8.04E-03	8.04E-03	8.95E-02	3.56E-03	0.00E+00	8.04E-03	8.04E-03	No Tox Value
Iron	No Data	No Data	No Data	No Data	No Data	No Tox Value	No Data	No Data	0.00E+00	NA	NA	3.62E-03	8.66E-05	9.28E-05	No Tox Value	No Tox Value	3.62E-03	8.66E-05	9.28E-05	0.00E+00	0.00E+00	No Tox Value
Manganese	1.07E-02	No Tox Value	8.88E-03	7.04E-01	7.04E-01	No Tox Value	No Data	No Tox Value	No Data	NA	NA	No Data	No Tox Value	No Data	No Tox Value	No Tox Value	1.07E-02	0.00E+00	8.88E-03	7.04E-01	7.04E-01	No Tox Value
Molybdenum	6.12E-03	6.78E-04	4.64E-04	No Tox Value	No Tox Value	No Tox Value	7.30E-01	5.43E-02	0.00E+00	NA	NA	2.74E-03	5.25E-05	1.13E-05	No Tox Value	No Tox Value	7.39E-01	5.51E-02	4.75E-04	0.00E+00	0.00E+00	No Tox Value
Nitrate	3.96E-05	4.39E-06	8.32E-05	No Tox Value	No Tox Value	No Tox Value	No Data	No Data	0.00E+00	NA	NA	5.87E-04	1.12E-05	6.70E-05	No Tox Value	No Tox Value	6.26E-04	1.56E-05	1.50E-04	0.00E+00	0.00E+00	No Tox Value
Phosphate	No Tox Value	No Tox Value	No Tox Value	No Tox Value	No Tox Value	No Tox Value	No Tox Value	No Tox Value	No Tox Value	NA	NA	No Tox Value	No Tox Value	No Tox Value	No Data	No Data	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	No Tox Value
Selenium	No Data	No Data	No Data	No Tox Value	No Tox Value	No Tox Value	1.60E-01	2.76E-02	No Data	NA	NA	No Data	No Data	No Data	No Data	No Data	1.60E-01	2.76E-02	0.00E+00	0.00E+00	0.00E+00	No Tox Value
Strontium	2.25E-02	3.12E-03	No Tox Value	No Tox Value	No Tox Value	No Tox Value	1.72E+00	1.78E-01	No Tox Value	NA	NA	3.68E-02	8.80E-04	No Tox Value	7.94E-05	7.94E-05	1.78E+00	1.82E-01	0.00E+00	7.94E-05	7.94E-05	No Tox Value
Sulfate	No Data	No Data	No Tox Value	No Data	No Data	No Tox Value	No Data	No Data	No Tox Value	NA	NA	No Data	No Data	No Tox Value	No Data	No Data	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	No Tox Value
Uranium	No Data	No Data	No Data	No Tox Value	No Tox Value	No Tox Value	No Data	No Data	0.00E+00	NA	NA	1.01E-03	4.02E-05	3.39E-06	3.18E-04	3.18E-04	1.01E-03	4.02E-05	3.39E-06	3.18E-04	3.18E-04	No Tox Value
Vanadium	2.33E-01	5.39E-02	1.48E+00	No Tox Value	No Tox Value	No Tox Value	No Data	No Data	0.00E+00	NA	NA	3.92E-03	1.56E-04	1.36E-03	No Tox Value	No Tox Value	2.37E-01	5.40E-02	1.49E+00	0.00E+00	0.00E+00	No Tox Value
Zinc	2.24E-03	9.78E-02	5.93E-03	4.15E-01	4.15E-01	No Tox Value	No Data	No Data	No Data	NA	NA	No Data	No Data	No Data	No Data	No Data	2.24E-03	9.78E-02	5.93E-03	4.15E-01	4.15E-01	No Tox Value
HI_LOAEL	**0.28**	**0.16**	**1.51**	**2.57**	**2.57**	**0.00**	**2.64**	**0.26**	**0.00**	**0**	**0**	**0.14**	**0.00**	**0.00**	**0.01**	**0.01**	**3.06**	**0.42**	**1.51**	**2.58**	**2.58**	**0.00**

REF- Reference wetland
RME - Reasonable maximum exposure
NOAEL - No observed adverse effects level
HQ - Hazard quotient
HI - Hazard index
COPC - Contaminant of potential concern
GBH - Great blue heron

No Tox Value - No toxicity reference value (TRV)
No Data - Analyte was removed as a COPC in a particular medium or was not analyzed.
No BAF - No bioaccumulation factor
NA - Not applicable
LOAEL - Lowest observed adverse effects level
Note - Zeros in dietary pathway for GBH indicate that an intake could not be calculated due to lack of a BCF for that analyte for unfiltered surface water; therefore, no risk could be calculated.

CT-Based Risks Expressed as HQs and HIs for Ecological Receptors at the New Rifle Reference Wetland

REF	NOAEL-Based HQs Due to Sediment Ingestion or Direct Contact - CT					NOAEL-Based HQs Due to Dietary Ingestion - CT					NOAEL-Based HQs Due to Surface Water Ingestion or Direct Contact - CT					Total NOAEL-Based HQs Summed Across Pathways - CT				
Parameter	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub
Ammonia as Total N	No Data	No Data	No Tox Value	No Tox Value	No Tox Value	No Data	No Data	No Tox Value	NA	NA	3.08E-06	3.57E-08	No Tox Value	2.36E-04	2.36E-04	3.08E-06	3.57E-08	0.00E+00	2.36E-04	2.36E-04
Arsenic	2.52E-02	5.30E-03	1.14E-02	1.18E+00	1.18E+00	No Data	No Data	8.02E-03	NA	NA	4.94E-03	1.60E-04	1.03E-04	2.57E-02	2.57E-02	3.01E-02	5.46E-03	1.95E-02	1.21E+00	1.21E+00
Cadmium	5.82E-03	9.17E-04	2.73E-02	2.69E-01	2.69E-01	9.22E-01	1.18E-01	No Data	NA	NA	No Data	No Data	No Data	No Data	No Data	9.27E-01	1.19E-01	2.73E-02	2.69E-01	2.69E-01
Fluoride	No Data	No Data	No Data	No Tox Value	No Tox Value	No Data	No Data	0.00E+00	NA	NA	4.56E-01	1.47E-02	2.22E-02	1.37E+02	1.37E+02	4.56E-01	1.47E-02	2.22E-02	1.37E+02	1.37E+02
Iron	No Data	No Data	No Data	No Data	No Data	No Data	No Data	0.00E+00	NA	NA	7.70E-02	1.49E-03	1.78E-04	1.11E-01	1.11E-01	7.70E-02	1.49E-03	1.78E-04	1.11E-01	1.11E-01
Manganese	2.91E-02	1.15E-02	1.78E-02	7.04E-01	7.04E-01	No Data	No Data	No Data	NA	NA	No Data	No Data	No Data	No Data	No Data	2.91E-02	1.15E-02	1.78E-02	7.04E-01	7.04E-01
Molybdenum	2.70E-02	2.62E-03	6.95E-04	No Tox Value	No Tox Value	3.22E+00	2.10E-01	0.00E+00	NA	NA	1.37E-02	2.04E-04	1.62E-05	9.85E-03	9.85E-03	3.26E+00	2.12E-01	7.12E-04	9.85E-03	9.85E-03
Nitrate	7.69E-04	9.69E-05	2.92E-03	No Tox Value	No Tox Value	No Data	No Data	0.00E+00	NA	NA	1.29E-02	2.49E-04	2.25E-03	No Tox Value	No Tox Value	1.37E-02	3.46E-04	5.17E-03	0.00E+00	0.00E+00
Phosphate	3.52E-05	4.43E-06	3.72E-05	No Tox Value	No Tox Value	No Data	No Data	No Data	NA	NA	No Data	No Data	No Data	No Data	No Data	3.52E-05	4.43E-06	3.72E-05	0.00E+00	0.00E+00
Selenium	No Data	No Data	No Data	No Tox Value	No Tox Value	1.86E-01	2.95E-02	No Data	NA	NA	No Data	No Data	No Data	No Data	No Data	1.86E-01	2.95E-02	0.00E+00	0.00E+00	0.00E+00
Strontium	1.98E-02	2.50E-03	No Tox Value	No Tox Value	No Tox Value	1.52E+00	1.43E-01	No Tox Value	NA	NA	3.68E-02	7.12E-04	No Tox Value	8.04E-01	8.04E-01	1.58E+00	1.46E-01	0.00E+00	8.04E-01	8.04E-01
Sulfate	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	NA	NA	No Data	No Data	No Data	No Data	No Data	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Uranium	No Data	No Data	No Data	No Tox Value	No Tox Value	No Data	No Data	0.00E+00	NA	NA	2.52E-03	8.13E-05	1.62E-04	3.12E+00	3.12E+00	2.52E-03	8.13E-05	1.62E-04	3.12E+00	3.12E+00
Vanadium	1.03E+00	2.27E-01	2.23E+01	No Tox Value	No Tox Value	No Data	No Data	0.00E+00	NA	NA	1.96E-02	6.63E-04	1.95E-02	3.37E-01	3.37E-01	1.05E+00	2.28E-01	2.23E+01	3.37E-01	3.37E-01
Zinc	3.96E-03	1.51E-01	4.15E-02	4.15E-01	4.15E-01	No Data	No Data	No Data	NA	NA	No Data	No Data	No Data	No Data	No Data	3.96E-03	1.51E-01	4.15E-02	4.15E-01	4.15E-01
HI_NOAEL	**1.14**	**0.40**	**22.37**	**2.57**	**2.57**	**5.85**	**0.50**	**0.01**	**0**	**0**	**0.62**	**0.02**	**0.04**	**141.36**	**141.4**	**7.61**	**0.92**	**22.42**	**143.9**	**143.9**

REF	LOAEL-Based HQs Due to Sediment Ingestion or Direct Contact - CT					LOAEL-Based HQs Due to Dietary Ingestion - CT					LOAEL-Based HQs Due to Surface Water Ingestion or Direct Contact - CT					Total LOAEL-Based HQs Summed Across Pathways - CT				
Parameter	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub
Ammonia as Total N	No Data	No Data	No Tox Value	No Tox Value	No Tox Value	No Data	No Data	No Tox Value	NA	NA	1.54E-06	1.79E-08	No Tox Value	2.15E-08	2.15E-08	1.54E-06	1.79E-08	0.00E+00	2.15E-08	2.15E-08
Arsenic	4.26E-03	8.95E-04	3.80E-03	1.18E+00	1.18E+00	No Data	No Data	2.67E-03	NA	NA	8.36E-04	2.69E-05	3.43E-05	1.78E-05	1.78E-05	5.10E-03	9.22E-04	6.51E-03	1.18E+00	1.18E+00
Cadmium	1.50E-04	1.89E-05	1.82E-03	2.69E-01	2.69E-01	2.37E-02	2.42E-03	No Data	NA	NA	No Data	No Data	No Data	No Data	No Data	2.39E-02	2.44E-03	1.82E-03	2.69E-01	2.69E-01
Fluoride	No Data	No Data	No Tox Value	No Tox Value	No Tox Value	No Data	No Data	No Tox Value	NA	NA	8.95E-02	2.88E-03	No Tox Value	8.04E-03	8.04E-03	8.95E-02	2.88E-03	0.00E+00	8.04E-03	8.04E-03
Iron	No Data	No Data	No Data	No Data	No Data	No Data	No Data	0.00E+00	NA	NA	3.62E-03	7.00E-05	8.88E-05	No Tox Value	No Tox Value	3.62E-03	7.00E-05	8.88E-05	0.00E+00	0.00E+00
Manganese	9.47E-03	No Tox Value	8.88E-03	7.04E-01	7.04E-01	No Data	No Tox Value	No Data	NA	NA	No Data	No Tox Value	No Data	No Tox Value	No Tox Value	9.47E-03	0.00E+00	8.88E-03	7.04E-01	7.04E-01
Molybdenum	5.40E-03	5.44E-04	4.64E-04	No Tox Value	No Tox Value	6.44E-01	4.36E-02	0.00E+00	NA	NA	2.74E-03	4.24E-05	1.08E-05	No Tox Value	No Tox Value	6.52E-01	4.42E-02	4.74E-04	0.00E+00	0.00E+00
Nitrate	3.49E-05	3.52E-06	8.32E-05	No Tox Value	No Tox Value	No Data	No Data	0.00E+00	NA	NA	5.87E-04	9.07E-06	6.41E-05	No Tox Value	No Tox Value	6.21E-04	1.26E-05	1.47E-04	0.00E+00	0.00E+00
Phosphate	No Tox Value	No Tox Value	No Tox Value	No Tox Value	No Tox Value	No Tox Value	No Tox Value	No Tox Value	NA	NA	No Tox Value	No Tox Value	No Tox Value	No Data	No Data	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Selenium	No Data	No Data	No Data	No Tox Value	No Tox Value	1.41E-01	2.21E-02	No Data	NA	NA	No Data	No Data	No Data	No Data	No Data	1.41E-01	2.21E-02	0.00E+00	0.00E+00	0.00E+00
Strontium	1.98E-02	2.50E-03	No Tox Value	No Tox Value	No Tox Value	1.52E+00	1.43E-01	No Tox Value	NA	NA	3.68E-02	7.12E-04	No Tox Value	7.94E-05	7.94E-05	1.58E+00	1.46E-01	0.00E+00	7.94E-05	7.94E-05
Sulfate	No Data	No Data	No Tox Value	No Data	No Data	No Data	No Data	No Tox Value	NA	NA	No Data	No Data	No Tox Value	No Data	No Data	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Uranium	No Data	No Data	No Data	No Tox Value	No Tox Value	No Data	No Data	0.00E+00	NA	NA	1.01E-03	3.25E-05	3.25E-06	3.18E-04	3.18E-04	1.01E-03	3.25E-05	3.25E-06	3.18E-04	3.18E-04
Vanadium	2.06E-01	4.32E-02	1.48E+00	No Tox Value	No Tox Value	No Data	No Data	0.00E+00	NA	NA	3.92E-03	1.26E-04	1.30E-03	No Tox Value	No Tox Value	2.10E-01	4.33E-02	1.49E+00	0.00E+00	0.00E+00
Zinc	1.98E-03	7.85E-02	5.93E-03	4.15E-01	4.15E-01	No Data	No Data	No Data	NA	NA	No Data	No Data	No Data	No Data	No Data	1.98E-03	7.85E-02	5.93E-03	4.15E-01	4.15E-01
HI_LOAEL	**0.25**	**0.13**	**1.51**	**2.57**	**2.57**	**2.33**	**0.21**	**0.00**	**0**	**0**	**0.14**	**0.00**	**0.00**	**0.01**	**0.01**	**2.71**	**0.34**	**1.51**	**2.58**	**2.58**

REF- Reference wetland
CT - Central tendency
NOAEL - No observed adverse effects level
HQ - Hazard quotient
HI - Hazard index
COPC - Contaminant of potential concern
GBH - Great blue heron

No Tox Value - No toxicity reference value (TRV)
No Data - Analyte was removed as a COPC in a particular medium or was not analyzed.
No BAF - No bioaccumulation factor
NA - Not applicable
LOAEL - Lowest observed adverse effects level
Note - Zeros in dietary pathway for GBH indicate that an intake could not be calculated due to lack of a BCF for that analyte for unfiltered surface water; therefore, no risk could be calculated.

RME-Based Risks Expressed as HQs and HIs for Ecological Receptors at Roaring Fork Pond

RFP	NOAEL-Based HQs Due to Sediment Ingestion or Direct Contact - RME						NOAEL-Based HQs Due to Dietary Ingestion - RME					NOAEL-Based HQs Due to Surface Water Ingestion or Direct Contact - RME					Total NOAEL-Based HQs Summed Across Pathways - RME					
Parameter	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Aquatic Plants	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Aquatic Plants
Ammonia as Total N	2.08E-03	1.73E-04	No Tox Value	No Tox Value	No Tox Value	No Tox Value	No BAF	No BAF	No Tox Value	NA	NA	1.56E-02	2.24E-04	No Tox Value	2.92E+00	2.92E+00	1.77E-02	3.97E-04	0.00E+00	2.92E+00	2.92E+00	No Tox Value
Arsenic	2.87E-02	6.65E-03	1.15E-02	1.19E+00	1.19E+00	2.86E-01	3.28E+00	5.67E-01	5.33E-03	NA	NA	3.28E-03	1.31E-04	7.13E-05	2.95E-02	2.95E-02	3.31E+00	5.74E-01	1.69E-02	1.22E+00	1.22E+00	2.86E-01
Cadmium	3.02E-02	5.24E-03	1.25E-01	1.23E+00	1.23E+00	1.48E-02	1.01E+01	1.14E+00	No Data	NA	NA	No Data	No Data	No Data	No Data	No Data	1.01E+01	1.15E+00	1.25E-01	1.23E+00	1.23E+00	1.48E-02
Fluoride	No Data	No Data	No Data	No Tox Value	No Tox Value	No Tox Value	No Data	No Data	0.00E+00	NA	NA	5.89E-01	2.35E-02	3.00E-02	1.75E+02	1.75E+02	5.89E-01	2.35E-02	3.00E-02	1.75E+02	1.75E+02	No Tox Value
Iron	2.37E+01	3.29E+00	1.05E+00	9.12E-01	9.12E-01	No Tox Value	1.36E+03	3.55E+01	No Data	NA	NA	No Data	No Data	No Data	No Data	No Data	1.39E+03	3.88E+01	1.05E+00	9.12E-01	9.12E-01	No Tox Value
Manganese	4.29E-02	1.86E-02	2.31E-02	9.14E-01	9.14E-01	8.41E-01	5.58E+00	2.23E+00	No Data	NA	NA	No Data	No Data	No Data	No Data	No Data	5.62E+00	2.25E+00	2.31E-02	9.14E-01	9.14E-01	8.41E-01
Molybdenum	1.79E-01	1.90E-02	4.06E-03	No Tox Value	No Tox Value	No Tox Value	1.08E+01	7.93E-01	0.00E+00	NA	NA	5.05E+00	9.29E-02	6.25E-03	2.11E+00	2.11E+00	1.61E+01	8.05E-01	1.03E-02	2.11E+00	2.11E+00	No Tox Value
Nitrate	1.74E-01	2.42E-02	5.84E-01	No Tox Value	No Tox Value	No Tox Value	No BAF	No BAF	0.00E+00	NA	NA	7.34E+01	1.75E+00	1.34E+01	No Tox Value	No Tox Value	7.36E+01	1.78E+00	1.40E+01	0.00E+00	0.00E+00	No Tox Value
Phosphate	4.54E-04	6.30E-05	4.24E-04	No Tox Value	No Tox Value	No Tox Value	No BAF	No BAF	No Data	NA	NA	No Data	No Data	No Data	No Data	No Data	4.54E-04	6.30E-05	4.24E-04	0.00E+00	0.00E+00	No Tox Value
Selenium	4.20E-03	9.77E-04	1.18E-02	No Tox Value	No Tox Value	3.46E-01	No BAF	No BAF	1.04E-01	NA	NA	2.57E-03	1.03E-04	3.92E-04	6.54E-01	6.54E-01	6.76E-03	1.08E-03	1.17E-01	6.54E-01	6.54E-01	3.46E-01
Strontium	No Data	No Data	No Tox Value	No Tox Value	No Tox Value	No Tox Value	No Data	No Data	No Tox Value	NA	NA	1.03E-01	2.47E-03	No Tox Value	2.30E+00	2.30E+00	1.03E-01	2.47E-03	0.00E+00	2.30E+00	2.30E+00	No Tox Value
Sulfate	7.35E+00	1.02E+00	6.16E-02	2.27E+01	2.27E+01	No Tox Value	No BAF	No BAF	0.00E+00	NA	NA	1.45E+03	3.48E+01	6.63E-01	9.93E+03	9.93E+03	1.46E+03	3.58E+01	7.24E-01	9.96E+03	9.96E+03	No Tox Value
Uranium	9.07E-03	2.10E-03	1.12E-02	No Tox Value	No Tox Value	No Tox Value	3.43E-01	1.23E-02	0.00E+00	NA	NA	4.67E-02	1.86E-03	3.14E-03	6.08E+01	6.08E+01	3.98E-01	1.63E-02	1.44E-02	6.08E+01	6.08E+01	No Tox Value
Vanadium	1.18E+00	2.86E-01	2.25E+01	No Tox Value	No Tox Value	1.62E+01	7.16E+01	2.94E+00	0.00E+00	NA	NA	1.96E-02	8.20E-04	2.04E-02	4.84E-01	4.84E-01	7.28E+01	3.23E+00	2.25E+01	4.84E-01	4.84E-01	1.62E+01
Zinc	7.99E-03	3.35E-01	7.40E-02	7.40E-01	7.40E-01	2.34E-01	6.63E-01	1.71E+01	No Data	NA	NA	No Data	No Data	No Data	No Data	No Data	6.71E-01	1.74E+01	7.40E-02	7.40E-01	7.40E-01	2.34E-01
HI_NOAEL	**32.75**	**5.01**	**24.48**	**27.70**	**27.70**	**17.90**	**1466**	**60.25**	**0.11**	**0.00**	**0.00**	**1534**	**36.63**	**14.10**	**10177**	**10177**	**3033**	**101.89**	**38.68**	**10205**	**10205**	**17.90**

RFP	LOAEL-Based HQs Due to Sediment Ingestion or Direct Contact - RME						LOAEL-Based HQs Due to Dietary Ingestion - RME					LOAEL-Based HQs Due to Surface Water Ingestion or Direct Contact - RME					Total LOAEL-Based HQs Summed Across Pathways - RME					
Parameter	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Aquatic Plants	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Aquatic Plants
Ammonia as Total N	1.04E-03	8.65E-05	No Tox Value	No Tox Value	No Tox Value	No Tox Value	No BAF	No BAF	No Tox Value	NA	NA	7.80E-03	1.12E-04	No Tox Value	4.60E-01	4.60E-01	8.84E-03	1.98E-04	0.00E+00	4.60E-01	4.60E-01	No Tox Value
Arsenic	4.86E-03	1.12E-03	3.83E-03	1.19E+00	1.19E+00	No Tox Value	5.56E-01	9.58E-02	1.78E-03	NA	NA	5.55E-04	2.21E-05	2.38E-05	1.56E-02	1.56E-02	5.61E-01	9.69E-02	5.63E-03	1.21E+00	1.21E+00	No Tox Value
Cadmium	7.77E-04	1.08E-04	8.33E-03	1.23E+00	1.23E+00	7.41E-03	2.59E-01	2.35E-02	No Data	NA	NA	No Data	No Data	No Data	No Data	No Data	2.60E-01	2.37E-02	8.33E-03	1.23E+00	1.23E+00	7.41E-03
Fluoride	No Data	No Data	No Tox Value	No Tox Value	No Tox Value	No Tox Value	No Data	No Data	No Tox Value	NA	NA	1.16E-01	4.61E-03	No Tox Value	1.10E+01	1.10E+01	1.16E-01	4.61E-03	0.00E+00	1.10E+01	1.10E+01	No Tox Value
Iron	1.12E+00	1.55E-01	5.26E-01	9.12E-01	9.12E-01	No Tox Value	6.42E+01	1.67E+00	No Data	NA	NA	No Data	No Data	No Data	No Tox Value	No Tox Value	6.53E+01	1.82E+00	5.26E-01	9.12E-01	9.12E-01	No Tox Value
Manganese	1.39E-02	No Tox Value	1.15E-02	9.14E-01	9.14E-01	No Tox Value	1.81E+00	No Tox Value	No Data	NA	NA	No Data	No Tox Value	No Data	No Tox Value	No Tox Value	1.83E+00	0.00E+00	1.15E-02	9.14E-01	9.14E-01	No Tox Value
Molybdenum	3.57E-02	3.96E-03	2.71E-03	No Tox Value	No Tox Value	No Tox Value	2.17E+00	1.65E-01	0.00E+00	NA	NA	1.01E+00	1.93E-02	4.16E-03	No Tox Value	No Tox Value	3.22E+00	1.88E-01	6.87E-03	0.00E+00	0.00E+00	No Tox Value
Nitrate	7.93E-03	8.79E-04	1.67E-02	No Tox Value	No Tox Value	No Tox Value	No BAF	No BAF	0.00E+00	NA	NA	3.34E+00	6.38E-02	3.81E-01	No Tox Value	No Tox Value	3.35E+00	6.47E-02	3.98E-01	0.00E+00	0.00E+00	No Tox Value
Phosphate	No Tox Value	No Tox Value	No Tox Value	No Tox Value	No Tox Value	No Tox Value	No Tox Value	No Tox Value	No Tox Value	NA	NA	No Tox Value	No Tox Value	No Tox Value	No Data	No Data	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	No Tox Value
Selenium	3.18E-03	7.34E-04	5.89E-03	No Tox Value	No Tox Value	No Tox Value	No BAF	No BAF	5.22E-02	NA	NA	1.94E-03	7.74E-05	1.96E-04	1.63E-01	1.63E-01	5.12E-03	8.11E-04	5.83E-02	1.63E-01	1.63E-01	No Tox Value
Strontium	No Data	No Data	No Tox Value	No Tox Value	No Tox Value	No Tox Value	No Data	No Data	No Tox Value	NA	NA	1.03E-01	2.47E-03	No Tox Value	2.30E-01	2.30E-01	1.03E-01	2.47E-03	0.00E+00	2.30E-01	2.30E-01	No Tox Value
Sulfate	2.44E+00	3.38E-01	No Tox Value	2.27E+01	2.27E+01	No Tox Value	No BAF	No BAF	No Tox Value	NA	NA	4.83E+02	1.15E+01	No Tox Value	9.93E+02	9.93E+02	4.86E+02	1.19E+01	0.00E+00	1.02E+03	1.02E+03	No Tox Value
Uranium	3.63E-03	8.38E-04	2.24E-04	No Tox Value	No Tox Value	No Tox Value	1.37E-01	4.93E-03	0.00E+00	NA	NA	1.87E-02	7.45E-04	6.28E-05	5.85E+00	5.85E+00	1.59E-01	6.51E-03	2.87E-04	5.85E+00	5.85E+00	No Tox Value
Vanadium	2.36E-01	5.45E-02	1.50E+00	No Tox Value	No Tox Value	No Tox Value	1.43E+01	5.60E-01	0.00E+00	NA	NA	3.92E-03	1.56E-04	1.36E-03	No Tox Value	No Tox Value	1.46E+01	6.15E-01	1.50E+00	0.00E+00	0.00E+00	No Tox Value
Zinc	3.99E-03	1.74E-01	1.06E-02	7.40E-01	7.40E-01	No Tox Value	3.32E-01	8.88E+00	No Data	NA	NA	No Data	No Data	No Data	No Data	No Data	3.36E-01	9.05E+00	1.06E-02	7.40E-01	7.40E-01	No Tox Value
HI_LOAEL	**3.87**	**0.73**	**2.09**	**27.70**	**27.70**	**0.01**	**83.75**	**11.40**	**0.05**	**0.00**	**0.00**	**487.7**	**11.64**	**0.39**	**1011**	**1011**	**575**	**23.76**	**2.53**	**1039**	**1039**	**0.01**

RFP - Roaring Fork Pond
RME - Reasonable maximum exposure
NOAEL - No observed adverse effects level
HQ - Hazard quotient
HI - Hazard index
COPC - Contaminant of potential concern
GBH - Great blue heron

No Tox Value - No toxicity reference value (TRV)
No Data - Analyte was removed as a COPC in a particular medium or was not analyzed.
No BAF - No bioaccumulation factor
NA - Not applicable
LOAEL - Lowest observed adverse effects level
Note - Zeros in dietary pathway for GBH indicate that an intake could not be calculated due to lack of a BCF for that analyte for unfiltered surface water; therefore, no risk could be calculated.

CT-Based Risks Expressed as HQs and HIs for Ecological Receptors at Roaring Fork Pond

RFP	NOAEL-Based HQs Due to Sediment Ingestion or Direct Contact - CT					NOAEL-Based HQs Due to Dietary Ingestion - CT					NOAEL-Based HQs Due to Surface Water Ingestion or Direct Contact - CT					Total NOAEL-Based HQs Summed Across Pathways - CT				
Parameter	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub
Ammonia as Total N	1.83E-03	1.39E-04	No Tox Value	No Tox Value	No Tox Value	No BAF	No BAF	No Tox Value	NA	NA	1.56E-02	1.81E-04	No Tox Value	2.92E+00	2.92E+00	1.74E-02	3.20E-04	0.00E+00	2.92E+00	2.92E+00
Arsenic	2.53E-02	5.34E-03	1.15E-02	1.19E+00	1.19E+00	2.89E+00	4.55E-01	5.33E-03	NA	NA	3.28E-03	1.06E-04	6.83E-05	2.95E-02	2.95E-02	2.92E+00	4.60E-01	1.69E-02	1.22E+00	1.22E+00
Cadmium	2.67E-02	4.20E-03	1.25E-01	1.23E+00	1.23E+00	8.89E+00	9.18E-01	No Data	NA	NA	No Data	No Data	No Data	No Data	No Data	8.91E+00	9.22E-01	1.25E-01	1.23E+00	1.23E+00
Fluoride	No Data	No Data	No Data	No Tox Value	No Tox Value	No Data	No Data	0.00E+00	NA	NA	5.89E-01	1.90E-02	2.87E-02	1.75E+02	1.75E+02	5.89E-01	1.90E-02	2.87E-02	1.75E+02	1.75E+02
Iron	2.09E+01	2.64E+00	1.05E+00	9.12E-01	9.12E-01	1.20E+03	2.85E+01	No Data	NA	NA	No Data	No Data	No Data	No Data	No Data	1.22E+03	3.11E+01	1.05E+00	9.12E-01	9.12E-01
Manganese	3.78E-02	1.49E-02	2.31E-02	9.14E-01	9.14E-01	4.92E+00	1.79E+00	No Data	NA	NA	No Data	No Data	No Data	No Data	No Data	4.96E+00	1.80E+00	2.31E-02	9.14E-01	9.14E-01
Molybdenum	1.58E-01	1.53E-02	4.06E-03	No Tox Value	No Tox Value	9.57E+00	6.37E-01	0.00E+00	NA	NA	5.05E+00	7.52E-02	5.98E-03	2.11E+00	2.11E+00	1.48E+01	7.27E-01	1.00E-02	2.11E+00	2.11E+00
Nitrate	1.54E-01	1.94E-02	5.84E-01	No Tox Value	No Tox Value	No BAF	No BAF	0.00E+00	NA	NA	7.34E+01	1.42E+00	1.28E+01	No Tox Value	No Tox Value	7.36E+01	1.44E+00	1.34E+01	0.00E+00	0.00E+00
Phosphate	4.01E-04	5.05E-05	4.24E-04	No Tox Value	No Tox Value	No BAF	No BAF	No Data	NA	NA	No Data	No Data	No Data	No Data	No Data	4.01E-04	5.05E-05	4.24E-04	0.00E+00	0.00E+00
Selenium	3.70E-03	7.84E-04	1.18E-02	No Tox Value	No Tox Value	No BAF	No BAF	1.04E-01	NA	NA	2.57E-03	8.34E-05	3.75E-04	6.54E-01	6.54E-01	6.27E-03	8.68E-04	1.16E-01	6.54E-01	6.54E-01
Strontium	No Data	No Data	No Tox Value	No Tox Value	No Tox Value	No Data	No Data	No Tox Value	NA	NA	1.03E-01	2.00E-03	No Tox Value	2.30E+00	2.30E+00	1.03E-01	2.00E-03	0.00E+00	2.30E+00	2.30E+00
Sulfate	6.49E+00	8.18E-01	6.16E-02	2.27E+01	2.27E+01	No BAF	No BAF	0.00E+00	NA	NA	1.45E+03	2.81E+01	6.34E-01	9.93E+03	9.93E+03	1.46E+03	2.89E+01	6.96E-01	9.96E+03	9.96E+03
Uranium	8.01E-03	1.68E-03	1.12E-02	No Tox Value	No Tox Value	3.02E-01	9.89E-03	0.00E+00	NA	NA	4.67E-02	1.51E-03	3.01E-03	6.08E+01	6.08E+01	3.57E-01	1.31E-02	1.42E-02	6.08E+01	6.08E+01
Vanadium	1.04E+00	2.29E-01	2.25E+01	No Tox Value	No Tox Value	6.32E+01	2.36E+00	0.00E+00	NA	NA	1.96E-02	6.63E-04	1.95E-02	4.84E-01	4.84E-01	6.42E+01	2.59E+00	2.25E+01	4.84E-01	4.84E-01
Zinc	7.05E-03	2.69E-01	7.40E-02	7.40E-01	7.40E-01	5.85E-01	1.37E+01	No Data	NA	NA	No Data	No Data	No Data	No Data	No Data	5.92E-01	1.40E+01	7.40E-02	7.40E-01	7.40E-01
HI_NOAEL	**28.90**	**4.02**	**24.48**	**27.70**	**27.70**	**1294**	**48.35**	**0.11**	**0.00**	**0.00**	**1534**	**29.63**	**13.50**	**10177**	**10177**	**2857**	**82.00**	**38.08**	**10205**	**10205**

RFP	LOAEL-Based HQs Due to Sediment Ingestion or Direct Contact - CT					LOAEL-Based HQs Due to Dietary Ingestion - CT					LOAEL-Based HQs Due to Surface Water Ingestion or Direct Contact - CT					Total LOAEL-Based HQs Summed Across Pathways - CT				
Parameter	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub
Ammonia as Total N	9.17E-04	6.94E-05	No Tox Value	No Tox Value	No Tox Value	No BAF	No BAF	No Tox Value	NA	NA	7.80E-03	9.05E-05	No Tox Value	4.60E-01	4.60E-01	8.72E-03	1.60E-04	0.00E+00	4.60E-01	4.60E-01
Arsenic	4.29E-03	9.01E-04	3.83E-03	1.19E+00	1.19E+00	4.90E-01	7.68E-02	1.78E-03	NA	NA	5.55E-04	1.79E-05	2.28E-05	1.56E-02	1.56E-02	4.95E-01	7.78E-02	5.63E-03	1.21E+00	1.21E+00
Cadmium	6.86E-04	8.65E-05	8.33E-03	1.23E+00	1.23E+00	2.29E-01	1.89E-02	No Data	NA	NA	No Data	No Data	No Data	No Data	No Data	2.29E-01	1.90E-02	8.33E-03	1.23E+00	1.23E+00
Fluoride	No Data	No Data	No Tox Value	No Tox Value	No Tox Value	No Data	No Data	No Tox Value	NA	NA	1.16E-01	3.73E-03	No Tox Value	1.10E+01	1.10E+01	1.16E-01	3.73E-03	0.00E+00	1.10E+01	1.10E+01
Iron	9.85E-01	1.24E-01	5.26E-01	9.12E-01	9.12E-01	5.66E+01	1.34E+00	No Data	NA	NA	No Data	No Data	No Data	No Tox Value	No Tox Value	5.76E+01	1.46E+00	5.26E-01	9.12E-01	9.12E-01
Manganese	1.23E-02	No Tox Value	1.15E-02	9.14E-01	9.14E-01	1.60E+00	No Tox Value	No Data	NA	NA	No Data	No Tox Value	No Data	No Tox Value	No Tox Value	1.61E+00	0.00E+00	1.15E-02	9.14E-01	9.14E-01
Molybdenum	3.15E-02	3.18E-03	2.71E-03	No Tox Value	No Tox Value	1.91E+00	1.32E-01	0.00E+00	NA	NA	1.01E+00	1.56E-02	3.99E-03	No Tox Value	No Tox Value	2.96E+00	1.51E-01	6.70E-03	0.00E+00	0.00E+00
Nitrate	6.99E-03	7.05E-04	1.67E-02	No Tox Value	No Tox Value	No BAF	No BAF	0.00E+00	NA	NA	3.34E+00	5.16E-02	3.65E-01	No Tox Value	No Tox Value	3.35E+00	5.23E-02	3.82E-01	0.00E+00	0.00E+00
Phosphate	No Tox Value	No Tox Value	No Tox Value	No Tox Value	No Tox Value	No Tox Value	No Tox Value	No Tox Value	NA	NA	No Tox Value	No Tox Value	No Tox Value	No Data	No Data	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Selenium	2.80E-03	5.89E-04	5.89E-03	No Tox Value	No Tox Value	No BAF	No BAF	5.22E-02	NA	NA	1.94E-03	6.26E-05	1.88E-04	1.63E-01	1.63E-01	4.75E-03	6.52E-04	5.82E-02	1.63E-01	1.63E-01
Strontium	No Data	No Data	No Tox Value	No Tox Value	No Tox Value	No Data	No Data	No Tox Value	NA	NA	1.03E-01	2.00E-03	No Tox Value	2.30E-01	2.30E-01	1.03E-01	2.00E-03	0.00E+00	2.30E-01	2.30E-01
Sulfate	2.15E+00	2.72E-01	No Tox Value	2.27E+01	2.27E+01	No BAF	No BAF	No Tox Value	NA	NA	4.83E+02	9.34E+00	No Tox Value	9.93E+02	9.93E+02	4.85E+02	9.61E+00	0.00E+00	1.02E+03	1.02E+03
Uranium	3.20E-03	6.73E-04	2.24E-04	No Tox Value	No Tox Value	1.21E-01	3.96E-03	0.00E+00	NA	NA	1.87E-02	6.02E-04	6.01E-05	5.85E+00	5.85E+00	1.43E-01	5.23E-03	2.84E-04	5.85E+00	5.85E+00
Vanadium	2.08E-01	4.37E-02	1.50E+00	No Tox Value	No Tox Value	1.26E+01	4.50E-01	0.00E+00	NA	NA	3.92E-03	1.26E-04	1.30E-03	No Tox Value	No Tox Value	1.28E+01	4.94E-01	1.50E+00	0.00E+00	0.00E+00
Zinc	3.52E-03	1.40E-01	1.06E-02	7.40E-01	7.40E-01	2.93E-01	7.13E+00	No Data	NA	NA	No Data	No Data	No Data	No Data	No Data	2.96E-01	7.27E+00	1.06E-02	7.40E-01	7.40E-01
HI_LOAEL	**3.41**	**0.59**	**2.09**	**27.70**	**27.70**	**73.90**	**9.15**	**0.05**	**0.00**	**0.00**	**487.7**	**9.41**	**0.37**	**1011**	**1011**	**565.1**	**19.14**	**2.51**	**1039**	**1039**

RFP - Roaring Fork Pond
CT - Central tendency
NOAEL - No observed adverse effects level
HQ - Hazard quotient
HI - Hazard index
COPC - Contaminant of potential concern
GBH - Great blue heron

No Tox Value - No toxicity reference value (TRV)
No Data - Analyte was removed as a COPC in a particular medium or was not analyzed.
No BAF - No bioaccumulation factor
NA - Not applicable
LOAEL - Lowest observed adverse effects level
Note - Zeros in dietary pathway for GBH indicate that an intake could not be calculated due to lack of a BCF for that analyte for unfiltered surface water; therefore, no risk could be calculated.

RME-Based Risks Expressed as HQs and HIs for Ecological Receptors at the Reference Wetland for Roaring Fork Pond

REF_RFP	NOAEL-Based HQs Due to Sediment Ingestion or Direct Contact - RME						NOAEL-Based HQs Due to Dietary Ingestion - RME					NOAEL-Based HQs Due to Surface Water Ingestion or Direct Contact - RME					Total NOAEL-Based HQs Summed Across Pathways - RME					
Parameter	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Aquatic Plants	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Aquatic Plants
Ammonia as Total N	1.05E-04	8.77E-06	No Tox Value	No Tox Value	No Tox Value	No Tox Value	No BAF	No BAF	No Tox Value	NA	NA	3.07E-06	4.41E-08	No Tox Value	2.37E-04	2.37E-04	1.09E-04	8.81E-06	0.00E+00	2.37E-04	2.37E-04	No Tox Value
Arsenic	2.85E-02	6.60E-03	1.14E-02	1.18E+00	1.18E+00	2.84E-01	3.26E+00	5.63E-01	8.02E-03	NA	NA	4.94E-03	1.97E-04	1.07E-04	2.57E-02	2.57E-02	3.29E+00	5.70E-01	1.95E-02	1.21E+00	1.21E+00	2.84E-01
Cadmium	6.59E-03	1.14E-03	2.73E-02	2.69E-01	2.69E-01	3.23E-03	2.20E+00	2.50E-01	No Data	NA	NA	No Data	No Data	No Data	No Data	No Data	2.20E+00	2.51E-01	2.73E-02	2.69E-01	2.69E-01	3.23E-03
Fluoride	No Data	No Data	No Data	No Tox Value	No Tox Value	No Tox Value	No Data	No Data	0.00E+00	NA	NA	4.56E-01	1.82E-02	2.32E-02	1.37E+02	1.37E+02	4.56E-01	1.82E-02	2.32E-02	1.37E+02	1.37E+02	No Tox Value
Iron	2.19E+01	3.03E+00	9.69E-01	8.40E-01	8.40E-01	No Tox Value	1.26E+03	3.27E+01	No Data	NA	NA	No Data	No Data	No Data	No Data	No Data	1.28E+03	3.57E+01	9.69E-01	8.40E-01	8.40E-01	No Tox Value
Manganese	3.30E-02	1.43E-02	1.78E-02	7.04E-01	7.04E-01	6.47E-01	4.29E+00	1.72E+00	No Data	NA	NA	No Data	No Data	No Data	No Data	No Data	4.33E+00	1.73E+00	1.78E-02	7.04E-01	7.04E-01	6.47E-01
Molybdenum	3.06E-02	3.26E-03	6.95E-04	No Tox Value	No Tox Value	No Tox Value	1.86E+00	1.36E-01	0.00E+00	NA	NA	1.37E-02	2.52E-04	1.70E-05	9.85E-03	9.85E-03	1.90E+00	1.39E-01	7.12E-04	9.85E-03	9.85E-03	No Tox Value
Nitrate	8.71E-04	1.21E-04	2.92E-03	No Tox Value	No Tox Value	No Tox Value	No BAF	No BAF	0.00E+00	NA	NA	1.29E-02	3.08E-04	2.35E-03	No Tox Value	No Tox Value	1.38E-02	4.29E-04	5.27E-03	0.00E+00	0.00E+00	No Tox Value
Phosphate	3.98E-05	5.52E-06	3.72E-05	No Tox Value	No Tox Value	No Tox Value	No BAF	No BAF	No Data	NA	NA	No Data	No Data	No Data	No Data	No Data	3.98E-05	5.52E-06	3.72E-05	0.00E+00	0.00E+00	No Tox Value
Selenium	1.76E-03	4.10E-04	4.94E-03	No Tox Value	No Tox Value	1.45E-01	No BAF	No BAF	1.04E-01	NA	NA	2.57E-03	1.03E-04	3.92E-04	3.38E-01	3.38E-01	4.33E-03	5.13E-04	1.10E-01	3.38E-01	3.38E-01	1.45E-01
Strontium	No Data	No Data	No Tox Value	No Tox Value	No Tox Value	No Tox Value	No Data	No Data	No Tox Value	NA	NA	3.68E-02	8.80E-04	No Tox Value	8.04E-01	8.04E-01	3.68E-02	8.80E-04	0.00E+00	8.04E-01	8.04E-01	No Tox Value
Sulfate	4.51E+00	6.25E-01	3.78E-02	1.39E+01	1.39E+01	No Tox Value	No BAF	No BAF	0.00E+00	NA	NA	1.46E+02	3.50E+00	6.67E-02	9.92E+02	9.92E+02	1.51E+02	4.12E+00	1.04E-01	1.01E+03	1.01E+03	No Tox Value
Uranium	8.26E-03	1.91E-03	1.02E-02	No Tox Value	No Tox Value	No Tox Value	3.12E-01	1.12E-02	0.00E+00	NA	NA	2.52E-03	1.00E-04	1.69E-04	3.12E+00	3.12E+00	3.23E-01	1.32E-02	1.04E-02	3.12E+00	3.12E+00	No Tox Value
Vanadium	1.17E+00	2.83E-01	2.23E+01	No Tox Value	No Tox Value	1.60E+01	7.08E+01	2.91E+00	0.00E+00	NA	NA	1.96E-02	8.20E-04	2.04E-02	3.37E-01	3.37E-01	7.20E+01	3.19E+00	2.23E+01	3.37E-01	3.37E-01	1.60E+01
Zinc	4.48E-03	1.88E-01	4.15E-02	4.15E-01	4.15E-01	1.31E-01	3.72E-01	9.60E+00	No Data	NA	NA	No Data	No Data	No Data	No Data	No Data	3.77E-01	9.78E+00	4.15E-02	4.15E-01	4.15E-01	1.31E-01
HI_NOAEL	**27.65**	**4.15**	**23.39**	**17.34**	**17.34**	**17.21**	**1339**	**47.84**	**0.11**	**0**	**0**	**146.9**	**3.52**	**0.113**	**1133**	**1133**	**1514**	**55.51**	**23.62**	**1150**	**1150**	**17.21**

REF_RFP	LOAEL-Based HQs Due to Sediment Ingestion or Direct Contact - RME						LOAEL-Based HQs Due to Dietary Ingestion - RME					LOAEL-Based HQs Due to Surface Water Ingestion or Direct Contact - RME					Total LOAEL-Based HQs Summed Across Pathways - RME					
Parameter	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Aquatic Plants	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Aquatic Plants
Ammonia as Total N	5.27E-05	4.38E-06	No Tox Value	No Tox Value	No Tox Value	No Tox Value	No BAF	No BAF	No Tox Value	NA	NA	1.54E-06	2.20E-08	No Tox Value	2.29E-05	2.29E-05	5.43E-05	4.41E-06	0.00E+00	2.29E-05	2.29E-05	No Tox Value
Arsenic	4.83E-03	1.12E-03	3.80E-03	1.18E+00	1.18E+00	No Tox Value	5.52E-01	9.51E-02	2.67E-03	NA	NA	8.36E-04	3.33E-05	3.58E-05	1.36E-02	1.36E-02	5.57E-01	5.63E-02	6.51E-03	1.20E+00	1.20E+00	No Tox Value
Cadmium	1.70E-04	2.35E-05	1.82E-03	2.69E-01	2.69E-01	1.62E-03	5.65E-02	5.14E-03	No Data	NA	NA	No Data	No Data	No Data	No Data	No Data	5.67E-02	5.16E-03	1.82E-03	2.69E-01	2.69E-01	1.62E-03
Fluoride	No Data	No Data	No Tox Value	No Tox Value	No Tox Value	No Tox Value	No Data	No Data	No Tox Value	NA	NA	8.95E-02	3.56E-03	No Tox Value	8.60E+00	8.60E+00	8.95E-02	3.56E-03	0.00E+00	8.60E+00	8.60E+00	No Tox Value
Iron	1.03E+00	1.43E-01	4.85E-01	8.40E-01	8.40E-01	No Tox Value	5.91E+01	1.54E+00	No Data	NA	NA	No Data	No Data	No Data	No Tox Value	No Tox Value	6.01E+01	1.68E+00	4.85E-01	8.40E-01	8.40E-01	No Tox Value
Manganese	1.07E-02	No Tox Value	8.88E-03	7.04E-01	7.04E-01	No Tox Value	1.40E+00	No Tox Value	No Data	NA	NA	No Data	No Tox Value	No Data	No Tox Value	No Tox Value	1.41E+00	0.00E+00	8.88E-03	7.04E-01	7.04E-01	No Tox Value
Molybdenum	6.12E-03	6.78E-04	4.64E-04	No Tox Value	No Tox Value	No Tox Value	3.72E-01	2.82E-02	0.00E+00	NA	NA	2.74E-03	5.25E-05	1.13E-05	No Tox Value	No Tox Value	3.80E-01	2.90E-02	4.75E-04	0.00E+00	0.00E+00	No Tox Value
Nitrate	3.96E-05	4.39E-06	8.32E-05	No Tox Value	No Tox Value	No Tox Value	No BAF	No BAF	0.00E+00	NA	NA	5.87E-04	1.12E-05	6.70E-05	No Tox Value	No Tox Value	6.26E-04	1.56E-05	1.50E-04	0.00E+00	0.00E+00	No Tox Value
Phosphate	No Tox Value	No Tox Value	No Tox Value	No Tox Value	No Tox Value	No Tox Value	No Tox Value	No Tox Value	No Tox Value	NA	NA	No Tox Value	No Tox Value	No Tox Value	No Data	No Data	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	No Tox Value
Selenium	1.33E-03	3.08E-04	2.47E-03	No Tox Value	No Tox Value	No Tox Value	No BAF	No BAF	5.22E-02	NA	NA	1.94E-03	7.74E-05	1.96E-04	8.45E-02	8.45E-02	3.28E-03	3.85E-04	5.48E-02	8.45E-02	8.45E-02	No Tox Value
Strontium	No Data	No Data	No Tox Value	No Tox Value	No Tox Value	No Tox Value	No Data	No Data	No Tox Value	NA	NA	3.68E-02	8.80E-04	No Tox Value	8.04E-02	8.04E-02	3.68E-02	8.80E-04	0.00E+00	8.04E-02	8.04E-02	No Tox Value
Sulfate	1.50E+00	2.08E-01	No Tox Value	1.39E+01	1.39E+01	No Tox Value	No BAF	No BAF	No Tox Value	NA	NA	4.86E+01	1.16E+00	No Tox Value	9.92E+01	9.92E+01	5.01E+01	1.37E+00	0.00E+00	1.13E+02	1.13E+02	No Tox Value
Uranium	3.31E-03	7.64E-04	2.04E-04	No Tox Value	No Tox Value	No Tox Value	1.25E-01	4.49E-03	0.00E+00	NA	NA	1.01E-03	4.02E-05	3.39E-06	3.00E-01	3.00E-01	1.29E-01	5.29E-03	2.08E-04	3.00E-01	3.00E-01	No Tox Value
Vanadium	2.33E-01	5.39E-02	1.48E+00	No Tox Value	No Tox Value	No Tox Value	1.42E+01	5.54E-01	0.00E+00	NA	NA	3.92E-03	1.56E-04	1.36E-03	No Tox Value	No Tox Value	1.44E+01	6.08E-01	1.49E+00	0.00E+00	0.00E+00	No Tox Value
Zinc	2.24E-03	9.78E-02	5.93E-03	4.15E-01	4.15E-01	No Tox Value	1.86E-01	4.98E+00	No Data	NA	NA	No Data	No Data	No Data	No Data	No Data	1.88E-01	5.08E+00	5.93E-03	4.15E-01	4.15E-01	No Tox Value
HI_LOAEL	**2.79**	**0.50**	**1.99**	**17.34**	**17.34**	**0.00**	**75.92**	**7.21**	**0.05**	**0**	**0**	**48.76**	**1.17**	**0.002**	**108.2**	**108.2**	**127.5**	**8.88**	**2.05**	**125.6**	**125.6**	**0**

REF_RFP - Reference wetland for Roaring Fork Pond
RME - Reasonable maximum exposure
NOAEL - No observed adverse effects level
HQ - Hazard quotient
HI - Hazard index
COPC - Contaminant of potential concern
GBH - Great blue heron

No Tox Value - No toxicity reference value (TRV)
No Data - Analyte was removed as a COPC in a particular medium or was not analyzed.
No BAF - No bioaccumulation factor
NA - Not applicable
LOAEL - Lowest observed adverse effects level
Note - Zeros in dietary pathway for GBH indicate that an intake could not be calculated due to lack of a BCF for that analyte for unfiltered surface water; therefore, no risk could be calculated.

CT-Based Risks Expressed as HQs and HIs for Ecological Receptors at the Reference Wetland for Roaring Fork Pond

REF_RFP	NOAEL-Based HQs Due to Sediment Ingestion or Direct Contact - CT					NOAEL-Based HQs Due to Dietary Ingestion - CT					NOAEL-Based HQs Due to Surface Water Ingestion or Direct Contact - CT					Total NOAEL-Based HQs Summed Across Pathways - CT				
Parameter	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub
Ammonia as Total N	9.30E-05	7.04E-06	No Tox Value	No Tox Value	No Tox Value	No BAF	No BAF	No Tox Value	NA	NA	3.07E-06	3.57E-08	No Tox Value	2.37E-04	2.37E-04	9.61E-05	7.07E-06	0.00E+00	2.37E-04	2.37E-04
Arsenic	2.52E-02	5.30E-03	1.14E-02	1.18E+00	1.18E+00	2.88E+00	4.52E-01	8.02E-03	NA	NA	4.94E-03	1.60E-04	1.03E-04	2.57E-02	2.57E-02	2.91E+00	4.57E-01	1.95E-02	1.21E+00	1.21E+00
Cadmium	5.82E-03	9.17E-04	2.73E-02	2.69E-01	2.69E-01	1.94E+00	2.00E-01	No Data	NA	NA	No Data	No Data	No Data	No Data	No Data	1.94E+00	2.01E-01	2.73E-02	2.69E-01	2.69E-01
Fluoride	No Data	No Data	No Data	No Tox Value	No Tox Value	No Data	No Data	0.00E+00	NA	NA	4.56E-01	1.47E-02	2.22E-02	1.37E+02	1.37E+02	4.56E-01	1.47E-02	2.22E-02	1.37E+02	1.37E+02
Iron	1.93E+01	2.43E+00	9.69E-01	8.40E-01	8.40E-01	1.11E+03	2.62E+01	No Data	NA	NA	No Data	No Data	No Data	No Data	No Data	1.13E+03	2.86E+01	9.69E-01	8.40E-01	8.40E-01
Manganese	2.91E-02	1.15E-02	1.78E-02	7.04E-01	7.04E-01	3.79E+00	1.38E+00	No Data	NA	NA	No Data	No Data	No Data	No Data	No Data	3.82E+00	1.39E+00	1.78E-02	7.04E-01	7.04E-01
Molybdenum	2.70E-02	2.62E-03	6.95E-04	No Tox Value	No Tox Value	1.64E+00	1.09E-01	0.00E+00	NA	NA	1.37E-02	2.04E-04	1.62E-05	9.85E-03	9.85E-03	1.68E+00	1.12E-01	7.12E-04	9.85E-03	9.85E-03
Nitrate	7.69E-04	9.69E-05	2.92E-03	No Tox Value	No Tox Value	No BAF	No BAF	0.00E+00	NA	NA	1.29E-02	2.49E-04	2.25E-03	No Tox Value	No Tox Value	1.37E-02	3.46E-04	5.17E-03	0.00E+00	0.00E+00
Phosphate	3.52E-05	4.43E-06	3.72E-05	No Tox Value	No Tox Value	No BAF	No BAF	No Data	NA	NA	No Data	No Data	No Data	No Data	No Data	3.52E-05	4.43E-06	3.72E-05	0.00E+00	0.00E+00
Selenium	1.55E-03	3.29E-04	4.94E-03	No Tox Value	No Tox Value	No BAF	No BAF	1.04E-01	NA	NA	2.57E-03	8.34E-05	3.75E-04	3.38E-01	3.38E-01	4.12E-03	4.12E-04	1.10E-01	3.38E-01	3.38E-01
Strontium	No Data	No Data	No Tox Value	No Tox Value	No Tox Value	No Data	No Data	No Tox Value	NA	NA	3.68E-02	7.12E-04	No Tox Value	8.04E-01	8.04E-01	3.68E-02	7.12E-04	0.00E+00	8.04E-01	8.04E-01
Sulfate	3.98E+00	5.01E-01	3.78E-02	1.39E+01	1.39E+01	No BAF	No BAF	0.00E+00	NA	NA	1.46E+02	2.83E+00	6.38E-02	9.92E+02	9.92E+02	1.50E+02	3.33E+00	1.02E-01	1.01E+03	1.01E+03
Uranium	7.29E-03	1.53E-03	1.02E-02	No Tox Value	No Tox Value	2.75E-01	9.01E-03	0.00E+00	NA	NA	2.52E-03	8.13E-05	1.62E-04	3.12E+00	3.12E+00	2.85E-01	1.06E-02	1.04E-02	3.12E+00	3.12E+00
Vanadium	1.03E+00	2.27E-01	2.23E+01	No Tox Value	No Tox Value	6.25E+01	2.33E+00	0.00E+00	NA	NA	1.96E-02	6.63E-04	1.95E-02	3.37E-01	3.37E-01	6.35E+01	2.56E+00	2.23E+01	3.37E-01	3.37E-01
Zinc	3.96E-03	1.51E-01	4.15E-02	4.15E-01	4.15E-01	3.29E-01	7.70E+00	No Data	NA	NA	No Data	No Data	No Data	No Data	No Data	3.33E-01	7.85E+00	4.15E-02	4.15E-01	4.15E-01
HI_NOAEL	**24.39**	**3.33**	**23.39**	**17.34**	**17.34**	**1181**	**38.39**	**0.11**	**0**	**0**	**146.9**	**2.85**	**0.11**	**1133**	**1133**	**1353**	**44.57**	**23.61**	**1150**	**1150**

REF_RFP	LOAEL-Based HQs Due to Sediment Ingestion or Direct Contact - CT					LOAEL-Based HQs Due to Dietary Ingestion - CT					LOAEL-Based HQs Due to Surface Water Ingestion or Direct Contact - CT					Total LOAEL-Based HQs Summed Across Pathways - CT				
Parameter	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub
Ammonia as Total N	4.65E-05	3.52E-06	No Tox Value	No Tox Value	No Tox Value	No BAF	No BAF	No Tox Value	NA	NA	1.54E-06	1.78E-08	No Tox Value	2.29E-05	2.29E-05	4.81E-05	3.54E-06	0.00E+00	2.29E-05	2.29E-05
Arsenic	4.26E-03	8.95E-04	3.80E-03	1.18E+00	1.18E+00	4.87E-01	7.63E-02	2.67E-03	NA	NA	8.36E-04	2.69E-05	3.43E-05	1.36E-02	1.36E-02	4.92E-01	7.72E-02	6.51E-03	1.20E+00	1.20E+00
Cadmium	1.50E-04	1.89E-05	1.82E-03	2.69E-01	2.69E-01	4.99E-02	4.12E-03	No Data	NA	NA	No Data	No Data	No Data	No Data	No Data	5.00E-02	4.14E-03	1.82E-03	2.69E-01	2.69E-01
Fluoride	No Data	No Data	No Tox Value	No Tox Value	No Tox Value	No Data	No Data	No Tox Value	NA	NA	8.95E-02	2.88E-03	No Tox Value	8.60E+00	8.60E+00	8.95E-02	2.88E-03	0.00E+00	8.60E+00	8.60E+00
Iron	9.07E-01	1.14E-01	4.85E-01	8.40E-01	8.40E-01	5.21E+01	1.23E+00	No Data	NA	NA	No Data	No Data	No Data	No Tox Value	No Tox Value	5.30E+01	1.35E+00	4.85E-01	8.40E-01	8.40E-01
Manganese	9.47E-03	No Tox Value	8.88E-03	7.04E-01	7.04E-01	1.23E+00	No Tox Value	No Data	NA	NA	No Data	No Tox Value	No Data	No Tox Value	No Tox Value	1.24E+00	0.00E+00	8.88E-03	7.04E-01	7.04E-01
Molybdenum	5.40E-03	5.44E-04	4.64E-04	No Tox Value	No Tox Value	3.28E-01	2.27E-02	0.00E+00	NA	NA	2.74E-03	4.24E-05	1.08E-05	No Tox Value	No Tox Value	3.36E-01	2.33E-02	4.74E-04	0.00E+00	0.00E+00
Nitrate	3.49E-05	3.52E-06	8.32E-05	No Tox Value	No Tox Value	No BAF	No BAF	0.00E+00	NA	NA	5.87E-04	9.07E-06	6.41E-05	No Tox Value	No Tox Value	6.21E-04	1.26E-05	1.47E-04	0.00E+00	0.00E+00
Phosphate	No Tox Value	No Tox Value	No Tox Value	No Tox Value	No Tox Value	No Tox Value	No Tox Value	No Tox Value	NA	NA	No Tox Value	No Tox Value	No Tox Value	No Data	No Data	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Selenium	1.18E-03	2.47E-04	2.47E-03	No Tox Value	No Tox Value	No BAF	No BAF	5.22E-02	NA	NA	1.94E-03	6.26E-05	1.88E-04	8.45E-02	8.45E-02	3.12E-03	3.10E-04	5.48E-02	8.45E-02	8.45E-02
Strontium	No Data	No Data	No Tox Value	No Tox Value	No Tox Value	No Data	No Data	No Tox Value	NA	NA	3.68E-02	7.12E-04	No Tox Value	8.04E-02	8.04E-02	3.68E-02	7.12E-04	0.00E+00	8.04E-02	8.04E-02
Sulfate	1.32E+00	1.67E-01	No Tox Value	1.39E+01	1.39E+01	No BAF	No BAF	No Tox Value	NA	NA	4.86E+01	9.40E-01	No Tox Value	9.92E+01	9.92E+01	4.99E+01	1.11E+00	0.00E+00	1.13E+02	1.13E+02
Uranium	2.92E-03	6.13E-04	2.04E-04	No Tox Value	No Tox Value	1.10E-01	3.60E-03	0.00E+00	NA	NA	1.01E-03	3.25E-05	3.25E-06	3.00E-01	3.00E-01	1.14E-01	4.25E-03	2.07E-04	3.00E-01	3.00E-01
Vanadium	2.06E-01	4.32E-02	1.48E+00	No Tox Value	No Tox Value	1.25E+01	4.45E-01	0.00E+00	NA	NA	3.92E-03	1.26E-04	1.30E-03	No Tox Value	No Tox Value	1.27E+01	4.88E-01	1.49E+00	0.00E+00	0.00E+00
Zinc	1.98E-03	7.85E-02	5.93E-03	4.15E-01	4.15E-01	1.64E-01	4.00E+00	No Data	NA	NA	No Data	No Data	No Data	No Data	No Data	1.66E-01	4.08E+00	5.93E-03	4.15E-01	4.15E-01
HI_LOAEL	**2.46**	**0.40**	**1.99**	**17.34**	**17.34**	**66.99**	**5.78**	**0.05**	**0**	**0**	**48.76**	**0.94**	**0.002**	**108.2**	**108.2**	**118.2**	**7.13**	**2.05**	**125.6**	**125.6**

REF_RFP - Reference wetland for Roaring Fork Pond
CT - Central tendency
NOAEL - No observed adverse effects level
HQ - Hazard quotient
HI - Hazard index
COPC - Contaminant of potential concern
GBH - Great blue heron

No Tox Value - No toxicity reference value (TRV)
No Data - Analyte was removed as a COPC in a particular medium or was not analyzed.
No BAF - No bioaccumulation factor
NA - Not applicable
LOAEL - Lowest observed adverse effects level
Note - Zeros in dietary pathway for GBH indicate that an intake could not be calculated due to lack of a BCF for that analyte for unfiltered surface water; therefore, no risk could be calculated.

Table E–10. Ecological Risk Drivers for New Rifle Wetland

Risk Driver Table for New Rifle Wetland RME NOAEL Risks

NRW	NOAEL-Based						NOAEL-Based HQs Due to Dietary Ingestion - RME					NOAEL-Based HQs Due to Surface Water Ingestion or Direct Contact - RME					Total NOAEL-Based HQs Summed Across Pathways - RME					
Parameter	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Aquatic Plants	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Aquatic Plants
Ammonia as Total N										NA	NA											
Arsenic				1.72	1.72					NA	NA									1.77	1.77	
Cadmium				1.23	1.23		1.31			NA	NA						1.34			1.23	1.23	
Fluoride										NA	NA				240.3	240.3				240.3	240.3	
Iron										NA	NA											
Manganese										NA	NA											
Molybdenum							18.64	1.89		NA	NA						19.45	1.91				
Nitrate										NA	NA											
Phosphate										NA	NA											
Selenium										NA	NA											
Strontium							2.35			NA	NA						2.43					
Sulfate										NA	NA											
Uranium										NA	NA				15.12	15.12				15.12	15.12	
Vanadium	1.21		23.08			16.58				NA	NA						1.23		23.10			16.58
Zinc										NA	NA											
HI_NOAEL	1.21	0	23.08	2.95	2.95	16.58	22.29	1.89	0	0	0	0	0	0	255.5	255.5	24.45	1.91	23.10	258.5	258.5	16.58

Risk Driver Table for New Rifle Wetland RME LOAEL Risks

NRW	LOAEL-Based HQs Due to Sediment Ingestion or Direct Contact - RME						LOAEL-Based HQs Due to Dietary Ingestion - RME					LOAEL-Based HQs Due to Surface Water Ingestion or Direct Contact - RME					Total LOAEL-Based HQs Summed Across Pathways - RME					
Parameter	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Aquatic Plants	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Aquatic Plants
Ammonia as Total N										NA	NA											
Arsenic				1.72	1.72					NA	NA									1.75	1.75	
Cadmium				1.23	1.23					NA	NA									1.23	1.23	
Fluoride										NA	NA				15.09	15.09				15.09	15.09	
Iron										NA	NA											
Manganese										NA	NA											
Molybdenum							3.73			NA	NA						3.89					
Nitrate										NA	NA											
Phosphate										NA	NA											
Selenium										NA	NA											
Strontium							2.35			NA	NA						2.43					
Sulfate										NA	NA											
Uranium										NA	NA				1.46	1.46				1.46	1.46	
Vanadium			1.54							NA	NA								1.54			
Zinc										NA	NA											
HI_LOAEL	0	0	1.54	2.95	2.95	0	6.07	0	0	0	0	0	0	0	16.55	16.55	6.32	0	1.54	19.53	19.53	0

NRW - New Rifle wetland
RME - Reasonable maximum exposure
NOAEL - No observed adverse effects level
HQ - Hazard quotient
HI - Hazard index
LOAEL - Lowest observed adverse effects level
NA - Not applicable
Note - Blank cell indicates HQ < 1 or could not be evaluated due to "No BAF, "No Data", or "No Tox Value".

Table E–10. Ecological Risk Drivers for New Rifle Wetland

Risk Driver Table for New Rifle Wetland CT NOAEL Risks

NRW	NOAEL-Based HQs Due to Sediment Ingestion or Direct Contact - CT					NOAEL-Based HQs Due to Dietary Ingestion - CT					NOAEL-Based HQs Due to Surface Water Ingestion or Direct Contact - CT					Total NOAEL-Based HQs Summed Across Pathways - CT				
Parameter	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub
Ammonia as Total N									NA	NA										
Arsenic				1.72	1.72				NA	NA									1.77	1.77
Cadmium				1.23	1.23	1.16			NA	NA						1.18			1.23	1.23
Fluoride									NA	NA				240.3	240.3				240.3	240.3
Iron									NA	NA										
Manganese									NA	NA										
Molybdenum						16.44	1.52		NA	NA						17.24	1.54			
Nitrate									NA	NA										
Phosphate									NA	NA										
Selenium									NA	NA										
Strontium						2.07			NA	NA						2.15				
Sulfate									NA	NA										
Uranium									NA	NA				15.12	15.12				15.12	15.12
Vanadium	1.07		23.08						NA	NA						1.09		23.10		
Zinc									NA	NA										
HI_NOAEL	1.07	0.00	23.08	2.95	2.95	19.67	1.52	0	0	0	0	0	0	255.5	255.5	21.66	1.54	23.10	258.5	258.5

Risk Driver Table for New Rifle Wetland CT LOAEL Risks

NRW	LOAEL-Based HQs Due to Sediment Ingestion or Direct Contact - CT					LOAEL-Based HQs Due to Dietary Ingestion - CT					LOAEL-Based HQs Due to Surface Water Ingestion or Direct Contact - CT					Total LOAEL-Based HQs Summed Across Pathways - CT				
Parameter	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub
Ammonia as Total N									NA	NA										
Arsenic				1.72	1.72				NA	NA									1.75	1.75
Cadmium				1.23	1.23				NA	NA									1.23	1.23
Fluoride									NA	NA				15.09	15.09				15.09	15.09
Iron									NA	NA										
Manganese									NA	NA										
Molybdenum						3.29			NA	NA						3.45				
Nitrate									NA	NA										
Phosphate									NA	NA										
Selenium									NA	NA										
Strontium						2.07			NA	NA						2.15				
Sulfate									NA	NA										
Uranium									NA	NA				1.46	1.46				1.46	1.46
Vanadium			1.54						NA	NA								1.54		
Zinc									NA	NA										
HI_LOAEL	0.00	0.00	1.54	2.95	2.95	5.36	0	0	0	0	0	0	0	16.55	16.55	5.60	0	1.54	19.53	19.53

NRW - New Rifle wetland
CT - Central tendency
NOAEL - No observed adverse effects level
HQ - Hazard quotient
HI - Hazard index
LOAEL - Lowest observed adverse effects level
NA - Not applicable
Note - Blank cell indicates HQ < 1 or could not be evaluated due to "No BAF, "No Data", or "No Tox Value".

Table E–10. Ecological Risk Drivers for New Rifle Wetland

Risk Driver Table for New Rifle Wetland Reference Area RME NOAEL Risks

REF	NOAEL-Based HQs Due to Sediment Ingestion or Direct Contact - RME						NOAEL-Based HQs Due to Dietary Ingestion - RME					NOAEL-Based HQs Due to Surface Water Ingestion or Direct Contact - RME					Total NOAEL-Based HQs Summed Across Pathways - RME					
Parameter	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Aquatic Plants	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Aquatic Plants
Ammonia as Total N										NA	NA											
Arsenic				1.18	1.18					NA	NA									1.21	1.21	
Cadmium							1.04			NA	NA						1.05					
Fluoride										NA	NA				137.0	137.0				137.0	137.0	
Iron										NA	NA											
Manganese										NA	NA											
Molybdenum							3.65			NA	NA						3.70					
Nitrate										NA	NA											
Phosphate										NA	NA											
Selenium										NA	NA											
Strontium							1.72			NA	NA						1.78					
Sulfate										NA	NA											
Uranium										NA	NA				3.12	3.12				3.12	3.12	
Vanadium	1.17		22.27			16.00				NA	NA						1.19		22.29			16.00
Zinc										NA	NA											
HI_NOAEL	1.17	0	22.27	1.18	1.18	16.00	6.42	0	0	0	0	0	0	0	140.1	140.1	7.71	0	22.29	141.3	141.3	16.00

Risk Driver Table for New Rifle Wetland Reference Area RME LOAEL Risks

REF	LOAEL-Based HQs Due to Sediment Ingestion or Direct Contact - RME						LOAEL-Based HQs Due to Dietary Ingestion - RME					LOAEL-Based HQs Due to Surface Water Ingestion or Direct Contact - RME					Total LOAEL-Based HQs Summed Across Pathways - RME					
Parameter	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Aquatic Plants	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Aquatic Plants
Ammonia as Total N										NA	NA											
Arsenic				1.18	1.18					NA	NA									1.18	1.18	
Cadmium										NA	NA											
Fluoride										NA	NA											
Iron										NA	NA											
Manganese										NA	NA											
Molybdenum										NA	NA											
Nitrate										NA	NA											
Phosphate										NA	NA											
Selenium										NA	NA											
Strontium							1.72			NA	NA						1.78					
Sulfate										NA	NA											
Uranium										NA	NA											
Vanadium			1.48							NA	NA								1.49			
Zinc										NA	NA											
HI_LOAEL	0.00	0.00	1.48	1.18	1.18	0	1.72	0	0	0	0	0	0	0	0	0	1.78	0	1.49	1.18	1.18	0

REF - Reference wetland
RME - Reasonable maximum exposure
NOAEL - No observed adverse effects level
HQ - Hazard quotient
HI - Hazard index
LOAEL - Lowest observed adverse effects level
NA - Not applicable
Note - Blank cell indicates HQ < 1 or could not be evaluated due to "No BAF, "No Data", or "No Tox Value".

Table E–10. Ecological Risk Drivers for New Rifle Wetland

Risk Driver Table for New Rifle Wetland Reference Area CT NOAEL Risks

REF	NOAEL-Based HQs Due to Sediment Ingestion or Direct Contact - CT					NOAEL-Based HQs Due to Dietary Ingestion - CT					NOAEL-Based HQs Due to Surface Water Ingestion or Direct Contact - CT					Total NOAEL-Based HQs Summed Across Pathways - CT				
Parameter	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub
Ammonia as Total N									NA	NA										
Arsenic				1.18	1.18				NA	NA									1.21	1.21
Cadmium									NA	NA										
Fluoride									NA	NA				137.0	137.0				137.0	137.0
Iron									NA	NA										
Manganese									NA	NA										
Molybdenum						3.22			NA	NA						3.26				
Nitrate									NA	NA										
Phosphate									NA	NA										
Selenium									NA	NA										
Strontium						1.52			NA	NA						1.58				
Sulfate									NA	NA										
Uranium									NA	NA				3.12	3.12				3.12	3.12
Vanadium	1.03		22.27						NA	NA						1.05		22.29		
Zinc									NA	NA										
HI_NOAEL	1.03	0	22.27	1.18	1.18	4.74	0	0	0	0	0	0	0	140.1	140.1	5.89	0	22.29	141.3	141.3

Risk Driver Table for New Rifle Wetland Reference Area CT LOAEL Risks

REF	LOAEL-Based HQs Due to Sediment Ingestion or Direct Contact - CT					LOAEL-Based HQs Due to Dietary Ingestion - CT					LOAEL-Based HQs Due to Surface Water Ingestion or Direct Contact - CT					Total LOAEL-Based HQs Summed Across Pathways - CT				
Parameter	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub
Ammonia as Total N									NA	NA										
Arsenic				1.18	1.18				NA	NA									1.18	1.18
Cadmium									NA	NA										
Fluoride									NA	NA										
Iron									NA	NA										
Manganese									NA	NA										
Molybdenum									NA	NA										
Nitrate									NA	NA										
Phosphate									NA	NA										
Selenium									NA	NA										
Strontium						1.52			NA	NA						1.58				
Sulfate									NA	NA										
Uranium									NA	NA										
Vanadium			1.48						NA	NA								1.49		
Zinc									NA	NA										
HI_LOAEL	0	0	1.48	1.18	1.18	1.52	0	0	0	0	0	0	0	0	0	1.58	0	1.49	1.18	1.18

REF - Reference wetland
CT - Central tendency
NOAEL - No observed adverse effects level
HQ - Hazard quotient
HI - Hazard index
LOAEL - Lowest observed adverse effects level
NA - Not applicable
Note - Blank cell indicates HQ < 1 or could not be evaluated due to "No BAF", "No Data", or "No Tox Value".

Table E–10. Ecological Risk Drivers for New Rifle Wetland

Risk Driver Table for Roaring Fork Pond RME NOAEL Risks

RFP	NOAEL-Based HQs Due to Sediment Ingestion or Direct Contact - RME						NOAEL-Based HQs Due to Dietary Ingestion - RME					NOAEL-Based HQs Due to Surface Water Ingestion or Direct Contact - RME					Total NOAEL-Based HQs Summed Across Pathways - RME					
Parameter	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Aquatic Plants	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Aquatic Plants
Ammonia as Total N										NA	NA				2.92	2.92				2.92	2.92	
Arsenic				1.19	1.19		3.28			NA	NA						3.31			1.22	1.22	
Cadmium				1.23	1.23		10.07	1.14		NA	NA						10.10	1.15		1.23	1.23	
Fluoride										NA	NA				174.7	174.7				174.7	174.7	
Iron	23.74	3.29	1.05				1364	35.47		NA	NA						1388	38.76	1.05			
Manganese							5.58	2.23		NA	NA						5.62	2.25				
Molybdenum							10.85			NA	NA	5.05			2.11	2.11	16.08			2.11	2.11	
Nitrate										NA	NA	73.44	1.75	13.37			73.61	1.78	13.96			
Phosphate										NA	NA											
Selenium										NA	NA											
Strontium										NA	NA				2.30	2.30				2.30	2.30	
Sulfate	7.35	1.02		22.71	22.71					NA	NA	1455	34.76		9933	9933	1462	35.78		9956	9956	
Uranium										NA	NA				60.77	60.77				60.77	60.77	
Vanadium	1.18		22.52			16.18	71.60	2.94		NA	NA						72.80	3.23	22.54			16.18
Zinc								17.09		NA	NA							17.43				
HI_NOAEL	32.27	4.31	23.57	25.14	25.14	16.18	1465	58.88	0.00	0.00	0.00	1533	36.51	13.37	10176	10176	3031	100.4	37.55	10201	10201	16.18

Risk Driver Table for Roaring Fork Pond RME LOAEL Risks

RFP	LOAEL-Based HQs Due to Sediment Ingestion or Direct Contact - RME						LOAEL-Based HQs Due to Dietary Ingestion - RME					LOAEL-Based HQs Due to Surface Water Ingestion or Direct Contact - RME					Total LOAEL-Based HQs Summed Across Pathways - RME					
Parameter	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Aquatic Plants	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Aquatic Plants
Ammonia as Total N										NA	NA											
Arsenic				1.19	1.19					NA	NA									1.21	1.21	
Cadmium				1.23	1.23					NA	NA									1.23	1.23	
Fluoride										NA	NA				10.97	10.97				10.97	10.97	
Iron	1.12						64.16	1.67		NA	NA						65.28	1.82				
Manganese							1.81			NA	NA						1.83					
Molybdenum							2.17			NA	NA	1.01					3.22					
Nitrate										NA	NA	3.34					3.35					
Phosphate										NA	NA											
Selenium										NA	NA											
Strontium										NA	NA											
Sulfate	2.44			22.71	22.71					NA	NA	483.1	11.54		993.3	993.3	485.6	11.88		1016	1016	
Uranium										NA	NA				5.85	5.85				5.85	5.85	
Vanadium			1.50				14.32			NA	NA						14.56		1.50			
Zinc								8.88		NA	NA							9.05				
HI_LOAEL	3.56	0.00	1.50	25.14	25.14	0	82.47	10.55	0	0	0	487.5	11.54	0	1010	1010	573.8	22.76	1.50	1035	1035	0

RFP - Roaring Fork Pond
RME - Reasonable maximum exposure
NOAEL - No observed adverse effects level
HQ - Hazard quotient
HI - Hazard index
LOAEL - Lowest observed adverse effects level
NA - Not applicable
Note - Blank cell indicates HQ < 1 or could not be evaluated due to "No BAF, "No Data", or "No Tox Value".

Table E–10. Ecological Risk Drivers for New Rifle Wetland

Risk Driver Table for Roaring Fork Pond CT NOAEL Risks

RFP	NOAEL-Based HQs Due to Sediment Ingestion or Direct Contact - CT					NOAEL-Based HQs Due to Dietary Ingestion - CT					NOAEL-Based HQs Due to Surface Water Ingestion or Direct Contact - CT					Total NOAEL-Based HQs Summed Across Pathways - CT				
Parameter	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub
Ammonia as Total N									NA	NA				2.92	2.92				2.92	2.92
Arsenic				1.19	1.19	2.89			NA	NA						2.92			1.22	1.22
Cadmium				1.23	1.23	8.89			NA	NA						8.91			1.23	1.23
Fluoride									NA	NA				174.7	174.7				174.7	174.7
Iron	20.95	2.64	1.05			1204	28.46		NA	NA						1225	31.10	1.05		
Manganese						4.92	1.79		NA	NA						4.96	1.80			
Molybdenum						9.57			NA	NA	5.05			2.11	2.11	14.79			2.11	2.11
Nitrate									NA	NA	73.44	1.42	12.81			73.59	1.44	13.39		
Phosphate									NA	NA										
Selenium									NA	NA										
Strontium									NA	NA				2.30	2.30				2.30	2.30
Sulfate	6.49			22.71	22.71				NA	NA	1455	28.12		9933	9933	1461	28.93		9956	9956
Uranium									NA	NA				60.77	60.77				60.77	60.77
Vanadium	1.04		22.52			63.18	2.36		NA	NA						64.24	2.59	22.54		
Zinc							13.72		NA	NA							13.99			
HI_NOAEL	28.47	2.64	23.57	25.14	25.14	1293	46.33	0	0	0	1533	29.54	12.81	10176	10176	2855	79.86	36.98	10201	10201

Risk Driver Table for Roaring Fork Pond CT LOAEL Risks

RFP	LOAEL-Based HQs Due to Sediment Ingestion or Direct Contact - CT					LOAEL-Based HQs Due to Dietary Ingestion - CT					LOAEL-Based HQs Due to Surface Water Ingestion or Direct Contact - CT					Total LOAEL-Based HQs Summed Across Pathways - CT				
Parameter	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub
Ammonia as Total N									NA	NA										
Arsenic				1.19	1.19				NA	NA									1.21	1.21
Cadmium				1.23	1.23				NA	NA									1.23	1.23
Fluoride									NA	NA				10.97	10.97				10.97	10.97
Iron						56.62	1.34		NA	NA						57.60	1.46			
Manganese						1.60			NA	NA						1.61				
Molybdenum						1.91			NA	NA	1.01					2.96				
Nitrate									NA	NA	3.34					3.35				
Phosphate									NA	NA										
Selenium									NA	NA										
Strontium									NA	NA										
Sulfate	2.15			22.71	22.71				NA	NA	483.1	9.34		993.3	993.3	485.3	9.61		1016	1016
Uranium									NA	NA				5.85	5.85				5.85	5.85
Vanadium			1.50			12.64			NA	NA						12.85		1.50		
Zinc							7.13		NA	NA							7.27			
HI_LOAEL	2.15	0.00	1.50	25.14	25.14	72.77	8.46	0.00	0.00	0.00	487.5	9.34	0.00	1010	1010	563.66	18.34	1.50	1035	1035

RFP - Roaring Fork Pond
CT - Central tendency
NOAEL - No observed adverse effects level
HQ - Hazard quotient
HI - Hazard index
LOAEL - Lowest observed adverse effects level
NA - Not applicable
Note - Blank cell indicates HQ < 1 or could not be evaluated due to "No BAF, "No Data", or "No Tox Value".

Table E–10. Ecological Risk Drivers for New Rifle Wetland

Risk Driver Table for Roaring Fork Pond Reference Area RME NOAEL Risks

REF_RFP	NOAEL-Based HQs Due to Sediment Ingestion or Direct Contact - RME						NOAEL-Based HQs Due to Dietary Ingestion - RME					NOAEL-Based HQs Due to Surface Water Ingestion or Direct Contact - RME					Total NOAEL-Based HQs Summed Across Pathways - RME					
Parameter	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Aquatic Plants	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Aquatic Plants
Ammonia as Total N										NA	NA											
Arsenic				1.18	1.18		3.26			NA	NA						3.29			1.21	1.21	
Cadmium							2.20			NA	NA						2.20					
Fluoride										NA	NA				137.0	137.0				137.0	137.0	
Iron	21.86	3.03					1256	32.66		NA	NA						1278	35.69				
Manganese							4.29	1.72		NA	NA						4.33	1.73				
Molybdenum							1.86			NA	NA						1.90					
Nitrate										NA	NA											
Phosphate										NA	NA											
Selenium										NA	NA											
Strontium										NA	NA											
Sulfate	4.51			13.93	13.93					NA	NA	146.4	3.50		991.6	991.6	150.9	4.12		1005	1005	
Uranium										NA	NA				3.12	3.12				3.12	3.12	
Vanadium	1.17		22.27			16.00	70.81	2.91		NA	NA						71.99	3.19	22.29			16.00
Zinc								9.60		NA	NA							9.73				
HI_NOAEL	27.53	3.03	22.27	15.11	15.11	16.00	1338	46.88	0	0	0	146.4	3.50	0	1132	1132	1512	54.52	22.29	1147	1147	16.00

Risk Driver Table for Roaring Fork Pond Reference Area RME LOAEL Risks

REF_RFP	LOAEL-Based HQs Due to Sediment Ingestion or Direct Contact - RME						LOAEL-Based HQs Due to Dietary Ingestion - RME					LOAEL-Based HQs Due to Surface Water Ingestion or Direct Contact - RME					Total LOAEL-Based HQs Summed Across Pathways - RME					
Parameter	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Aquatic Plants	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Aquatic Plants
Ammonia as Total N										NA	NA											
Arsenic				1.18	1.18					NA	NA									1.20	1.20	
Cadmium										NA	NA											
Fluoride										NA	NA				8.60	8.60				8.60	8.60	
Iron	1.03						59.08	1.54		NA	NA						60.10	1.63				
Manganese							1.40			NA	NA						1.41					
Molybdenum										NA	NA											
Nitrate										NA	NA											
Phosphate										NA	NA											
Selenium										NA	NA											
Strontium										NA	NA											
Sulfate	1.50			13.93	13.93					NA	NA	48.62	1.16		99.16	99.16	50.12	1.37		113.1	113.1	
Uranium										NA	NA											
Vanadium			1.48				14.16			NA	NA						14.40		1.49			
Zinc								4.98		NA	NA							5.08				
HI_LOAEL	2.53	0.00	1.48	15.11	15.11	0.00	74.63	6.52	0	0	0	48.62	1.16	0.00	107.8	107.8	126.0	8.13	1.49	122.9	122.9	0

REF_RFP - Reference for Roaring Fork Pond
RME - Reasonable maximum exposure
NOAEL - No observed adverse effects level
HQ - Hazard quotient
HI - Hazard index
LOAEL - Lowest observed adverse effects level
NA - Not applicable
Note - Blank cell indicates HQ < 1 or could not be evaluated due to "No BAF, "No Data", or "No Tox Value".

Table E–10. Ecological Risk Drivers for New Rifle Wetland

Risk Driver Table for Roaring Fork Pond Reference Area CT NOAEL Risks

REF_RFP	NOAEL-Based HQs Due to Sediment Ingestion or Direct Contact - CT					NOAEL-Based HQs Due to Dietary Ingestion - CT					NOAEL-Based HQs Due to Surface Water Ingestion or Direct Contact - CT					Total NOAEL-Based HQs Summed Across Pathways - CT				
Parameter	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub
Ammonia as Total N									NA	NA										
Arsenic				1.18	1.18	2.88			NA	NA						2.91			1.21	1.21
Cadmium						1.94			NA	NA						1.94				
Fluoride									NA	NA				137.0	137.0				137.0	137.0
Iron	19.29	2.43				1108	26.21		NA	NA						1127	28.64			
Manganese						3.79	1.38		NA	NA						3.82	1.39			
Molybdenum						1.64			NA	NA						1.68				
Nitrate									NA	NA										
Phosphate									NA	NA										
Selenium									NA	NA										
Strontium									NA	NA										
Sulfate	3.98			13.93	13.93				NA	NA	146.4	2.83		991.6	991.6	150.3	3.33		1005	1005
Uranium									NA	NA				3.12	3.12				3.12	3.12
Vanadium	1.03		22.27			62.48	2.33		NA	NA						63.53	2.56	22.29		
Zinc							7.70		NA	NA							7.85			
HI_NOAEL	24.29	2.43	22.27	15.11	15.11	1181	37.62	0	0	0	146.4	2.83	0	1132	1132	1352	43.77	22.29	1147	1147

Risk Driver Table for Roaring Fork Pond Reference Area CT LOAEL Risks

REF_RFP	LOAEL-Based HQs Due to Sediment Ingestion or Direct Contact - CT					LOAEL-Based HQs Due to Dietary Ingestion - CT					LOAEL-Based HQs Due to Surface Water Ingestion or Direct Contact - CT					Total LOAEL-Based HQs Summed Across Pathways - CT				
Parameter	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub	Muskrat	Mule Deer	Great Blue Heron	Benthic Invertebrate	Creek Chub
Ammonia as Total N									NA	NA										
Arsenic				1.18	1.18				NA	NA									1.20	1.20
Cadmium									NA	NA										
Fluoride									NA	NA				8.60	8.60				8.60	8.60
Iron						52.13	1.23		NA	NA						53.03	1.35			
Manganese						1.23			NA	NA						1.24				
Molybdenum									NA	NA										
Nitrate									NA	NA										
Phosphate									NA	NA										
Selenium									NA	NA										
Strontium									NA	NA										
Sulfate	1.32			13.93	13.93				NA	NA	48.52			99.16	99.16	49.94	1.11		113.1	113.1
Uranium									NA	NA										
Vanadium			1.48			12.50			NA	NA						12.71		1.49		
Zinc							4.00		NA	NA							4.08			
HI_LOAEL	1.32	0	1.48	15.11	15.11	65.85	5.23	0	0	0	48.52	0	0	107.8	107.8	116.9	6.53	1.49	122.9	122.9

REF_RFP - Reference for Roaring Fork Pond
CT - Central tendency
NOAEL - No observed adverse effects level
HQ - Hazard quotient
HI - Hazard index
LOAEL - Lowest observed adverse effects level
NA - Not applicable
Note - Blank cell indicates HQ < 1 or could not be evaluated due to "No BAF, "No Data", or "No Tox Value".

SEDIMENT CHEMISTRY DATA BY LOCATION FOR SITE RFN01, RIFLE (NEW)
LOCATION: 1206
REPORT DATE: 7/28/1999 2:49 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	ELEV. RANGE (FT NGVD)	DIGEST. CODE	SAMP DESC.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Ammonia as NH4	mg/kg	05/27/1998	00S1	5259 - 5258.0			2.0	*		#	-	-
Arsenic	mg/kg	05/27/1998	00S1	5259 - 5258.0			7.8	N	J	#	-	-
Cadmium	mg/kg	05/27/1998	00S1	5259 - 5258.0			0.45	B		#	-	-
Fluoride	mg/kg	05/27/1998	00S1	5259 - 5258.0			7.0			#	-	-
Iron	mg/kg	05/27/1998	00S1	5259 - 5258.0			14100			#	-	-
Manganese	mg/kg	05/27/1998	00S1	5259 - 5258.0			334			#	-	-
Molybdenum	mg/kg	05/27/1998	00S1	5259 - 5258.0			1.3	B		#	-	-
Nitrate	mg/kg	05/27/1998	00S1	5259 - 5258.0			133			#	-	-
Percent Solids	%	05/27/1998	00S1	5259 - 5258.0			78.16			#	-	-
Selenium	mg/kg	05/27/1998	00S1	5259 - 5258.0			0.26	U		#	0.26	-
Strontium	mg/kg	05/27/1998	00S1	5259 - 5258.0			157	N*	J	#	-	-
Sulfate	mg/kg	05/27/1998	00S1	5259 - 5258.0			108			#	-	-
Total Phosphorus as PO4	mg/kg	05/27/1998	00S1	5259 - 5258.0			4.2			#	-	-
Uranium	mg/kg	05/27/1998	00S1	5259 - 5258.0			3.9			#	-	-
Vanadium	mg/kg	05/27/1998	00S1	5259 - 5258.0			25.2			#	-	-
Zinc	mg/kg	05/27/1998	00S1	5259 - 5258.0			47.3			#	-	-

SEDIMENT CHEMISTRY DATA BY LOCATION FOR SITE RFN01, RIFLE (NEW)
LOCATION: 1207
REPORT DATE: 7/28/1999 2:49 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	ELEV. RANGE (FT NGVD)	DIGEST. CODE	SAMP DESC.	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Ammonia as NH4	mg/kg	05/27/1998	00S1	5258 - 5257.7			5.4	*		#	-	-
Arsenic	mg/kg	05/27/1998	00S1	5258 - 5257.7			8.9	N	J	#	-	-
Cadmium	mg/kg	05/27/1998	00S1	5258 - 5257.7			0.62	B		#	-	-
Calcium	mg/kg	05/27/1998	00S1	5258 - 5257.7			33100				-	-
Fluoride	mg/kg	05/27/1998	00S1	5258 - 5257.7			4.5			#	-	-
Iron	mg/kg	05/27/1998	00S1	5258 - 5257.7			10400	*			-	-
Magnesium	mg/kg	05/27/1998	00S1	5258 - 5257.7			7300				-	-
Manganese	mg/kg	05/27/1998	00S1	5258 - 5257.7			251				-	-
Molybdenum	mg/kg	05/27/1998	00S1	5258 - 5257.7			1.2	B		#	-	-
Nitrate	mg/kg	05/27/1998	00S1	5258 - 5257.7			26.4			#	-	-
Percent Solids	%	05/27/1998	00S1	5258 - 5257.7			79.15			#	-	-
Potassium	mg/kg	05/27/1998	00S1	5258 - 5257.7			1520	*			-	-
Selenium	mg/kg	05/27/1998	00S1	5258 - 5257.7			0.25	U		#	0.25	-
Strontium	mg/kg	05/27/1998	00S1	5258 - 5257.7			137	N			-	-
Sulfate	mg/kg	05/27/1998	00S1	5258 - 5257.7			55.5			#	-	-
Total Phosphorus as PO4	mg/kg	05/27/1998	00S1	5258 - 5257.7			2.3	B		#	-	-
Uranium	mg/kg	05/27/1998	00S1	5258 - 5257.7			3.6			#	-	-
Vanadium	mg/kg	05/27/1998	00S1	5258 - 5257.7			24.2			#	-	-
Zinc	mg/kg	05/27/1998	00S1	5258 - 5257.7			49.4			#	-	-

SEDIMENT CHEMISTRY DATA BY LOCATION FOR SITE RFN01, RIFLE (NEW)
LOCATION: 1208
REPORT DATE: 7/28/1999 2:49 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	ELEV. RANGE (FT NGVD)	DIGEST. CODE	SAMP DESC.	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Ammonia as NH4	mg/kg	05/27/1998	00S1	5258 - 5257.4			1.1	*		#	-	-
Arsenic	mg/kg	05/27/1998	00S1	5258 - 5257.4			8.6	N	J	#	-	-
Cadmium	mg/kg	05/27/1998	00S1	5258 - 5257.4			0.55	B		#	-	-
Fluoride	mg/kg	05/27/1998	00S1	5258 - 5257.4			5.1			#	-	-
Iron	mg/kg	05/27/1998	00S1	5258 - 5257.4			13000			#	-	-
Manganese	mg/kg	05/27/1998	00S1	5258 - 5257.4			296			#	-	-
Molybdenum	mg/kg	05/27/1998	00S1	5258 - 5257.4			1.2	B		#	-	-
Nitrate	mg/kg	05/27/1998	00S1	5258 - 5257.4			5.8			#	-	-
Percent Solids	%	05/27/1998	00S1	5258 - 5257.4			79.94			#	-	-
Selenium	mg/kg	05/27/1998	00S1	5258 - 5257.4			0.25	U		#	0.25	-
Strontium	mg/kg	05/27/1998	00S1	5258 - 5257.4			221	N*	J	#	-	-
Sulfate	mg/kg	05/27/1998	00S1	5258 - 5257.4			66.3			#	-	-
Total Phosphorus as PO4	mg/kg	05/27/1998	00S1	5258 - 5257.4			3.6			#	-	-
Uranium	mg/kg	05/27/1998	00S1	5258 - 5257.4			3.2			#	-	-
Vanadium	mg/kg	05/27/1998	00S1	5258 - 5257.4			25.2			#	-	-
Zinc	mg/kg	05/27/1998	00S1	5258 - 5257.4			44.0			#	-	-

SEDIMENT CHEMISTRY DATA BY LOCATION FOR SITE RFN01, RIFLE (NEW)
LOCATION: 1209
REPORT DATE: 7/28/1999 2:49 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	ELEV. RANGE (FT NGVD)	DIGEST. CODE	SAMP DESC.	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Ammonia as NH4	mg/kg	05/27/1998	00S1	5258 - 5257.5			0.69	*		#	-	-
Arsenic	mg/kg	05/27/1998	00S1	5258 - 5257.5			10.8	N	J	#	-	-
Cadmium	mg/kg	05/27/1998	00S1	5258 - 5257.5			0.82			#	-	-
Fluoride	mg/kg	05/27/1998	00S1	5258 - 5257.5			7.2			#	-	-
Iron	mg/kg	05/27/1998	00S1	5258 - 5257.5			16200			#	-	-
Manganese	mg/kg	05/27/1998	00S1	5258 - 5257.5			311			#	-	-
Molybdenum	mg/kg	05/27/1998	00S1	5258 - 5257.5			2.4	B		#	-	-
Nitrate	mg/kg	05/27/1998	00S1	5258 - 5257.5			9.7			#	-	-
Percent Solids	%	05/27/1998	00S1	5258 - 5257.5			78.64			#	-	-
Selenium	mg/kg	05/27/1998	00S1	5258 - 5257.5			0.25	U		#	0.25	-
Strontium	mg/kg	05/27/1998	00S1	5258 - 5257.5			164	N*	J	#	-	-
Sulfate	mg/kg	05/27/1998	00S1	5258 - 5257.5			74.2			#	-	-
Total Phosphorus as PO4	mg/kg	05/27/1998	00S1	5258 - 5257.5			2.8			#	-	-
Uranium	mg/kg	05/27/1998	00S1	5258 - 5257.5			4.5			#	-	-
Vanadium	mg/kg	05/27/1998	00S1	5258 - 5257.5			36.9			#	-	-
Zinc	mg/kg	05/27/1998	00S1	5258 - 5257.5			53.0			#	-	-

SEDIMENT CHEMISTRY DATA BY LOCATION FOR SITE RFN01, RIFLE (NEW)
LOCATION: 1210
REPORT DATE: 7/28/1999 2:49 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	ELEV. RANGE (FT NGVD)	DIGEST. CODE	SAMP DESC.	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Ammonia as NH4	mg/kg	05/27/1998	00S1	0 - -.5			1.2	*		#	-	-
	mg/kg	05/27/1998	00S2	0 - -.5			1.0	*		#	-	-
Arsenic	mg/kg	05/27/1998	00S1	0 - -.5			7.4	N	J	#	-	-
	mg/kg	05/27/1998	00S2	0 - -.5			12.5	N	J	#	-	-
Cadmium	mg/kg	05/27/1998	00S1	0 - -.5			0.68			#	-	-
	mg/kg	05/27/1998	00S2	0 - -.5			0.54	B		#	-	-
Fluoride	mg/kg	05/27/1998	00S1	0 - -.5			7.4			#	-	-
	mg/kg	05/27/1998	00S2	0 - -.5			5.9			#	-	-
Iron	mg/kg	05/27/1998	00S1	0 - -.5			12900			#	-	-
	mg/kg	05/27/1998	00S2	0 - -.5			12100			#	-	-
Manganese	mg/kg	05/27/1998	00S1	0 - -.5			332			#	-	-
	mg/kg	05/27/1998	00S2	0 - -.5			380			#	-	-
Molybdenum	mg/kg	05/27/1998	00S1	0 - -.5			1.6	B		#	-	-
	mg/kg	05/27/1998	00S2	0 - -.5			1.6	B		#	-	-
Nitrate	mg/kg	05/27/1998	00S1	0 - -.5			4.3			#	-	-
	mg/kg	05/27/1998	00S2	0 - -.5			14.7			#	-	-
Percent Solids	%	05/27/1998	00S1	0 - -.5			79.52			#	-	-
	%	05/27/1998	00S2	0 - -.5			79.97			#	-	-
Selenium	mg/kg	05/27/1998	00S1	0 - -.5			0.25	U		#	0.25	-
	mg/kg	05/27/1998	00S2	0 - -.5			0.25	U		#	0.25	-
Strontium	mg/kg	05/27/1998	00S1	0 - -.5			469	N*	J	#	-	-
	mg/kg	05/27/1998	00S2	0 - -.5			245	N*	J	#	-	-
Sulfate	mg/kg	05/27/1998	00S1	0 - -.5			67.4			#	-	-

SEDIMENT CHEMISTRY DATA BY LOCATION FOR SITE RFN01, RIFLE (NEW)
LOCATION: 1210
REPORT DATE: 7/28/1999 2:49 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	ELEV. RANGE (FT NGVD)	DIGEST. CODE	SAMP DESC.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE500

DIGESTION CODES:

SAMPLE DESCRIPTORS (UNIFIED SOIL CLASSIFICATION SYSTEM):

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- L Less than 3 bore volumes purged prior to sampling.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- R Unusable result.
- G Possible grout contamination, pH > 9.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

SEDIMENT CHEMISTRY DATA BY LOCATION FOR SITE RFN01, RIFLE (NEW)
LOCATION: 1211
REPORT DATE: 7/28/1999 2:49 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	ELEV. RANGE (FT NGVD)	DIGEST. CODE	SAMP DESC.	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE500

DIGESTION CODES:

SAMPLE DESCRIPTORS (UNIFIED SOIL CLASSIFICATION SYSTEM):

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- L Less than 3 bore volumes purged prior to sampling.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- R Unusable result.
- G Possible grout contamination, pH > 9.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

SEDIMENT CHEMISTRY DATA BY LOCATION FOR SITE RFN01, RIFLE (NEW)
LOCATION: 1212
REPORT DATE: 7/28/1999 2:49 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	ELEV. RANGE (FT NGVD)	DIGEST. CODE	SAMP DESC.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE500

DIGESTION CODES:

SAMPLE DESCRIPTORS (UNIFIED SOIL CLASSIFICATION SYSTEM):

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- L Less than 3 bore volumes purged prior to sampling.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- R Unusable result.
- G Possible grout contamination, pH > 9.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

SEDIMENT CHEMISTRY DATA BY LOCATION FOR SITE RFN01, RIFLE (NEW)
LOCATION: 1213
REPORT DATE: 7/28/1999 2:49 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	ELEV. RANGE (FT NGVD)	DIGEST. CODE	SAMP DESC.	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE500

DIGESTION CODES:

SAMPLE DESCRIPTORS (UNIFIED SOIL CLASSIFICATION SYSTEM):

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- L Less than 3 bore volumes purged prior to sampling.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- R Unusable result.
- G Possible grout contamination, pH > 9.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

SEDIMENT CHEMISTRY DATA BY LOCATION FOR SITE RFN01, RIFLE (NEW)
LOCATION: 1214
REPORT DATE: 7/28/1999 2:49 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	ELEV. RANGE (FT NGVD)	DIGEST. CODE	SAMP DESC.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE500

DIGESTION CODES:

SAMPLE DESCRIPTORS (UNIFIED SOIL CLASSIFICATION SYSTEM):

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- L Less than 3 bore volumes purged prior to sampling.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- R Unusable result.
- G Possible grout contamination, pH > 9.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

SEDIMENT CHEMISTRY DATA BY LOCATION FOR SITE RFN01, RIFLE (NEW)
LOCATION: 1215
REPORT DATE: 7/28/1999 2:49 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	ELEV. RANGE (FT NGVD)	DIGEST. CODE	SAMP DESC.	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Sulfate	mg/kg	05/28/1998	00S2	5249 - 5248.7			929			#	-	-
Total Phosphorus as PO4	mg/kg	05/28/1998	00S1	5249 - 5248.7			3.2			#	-	-
	mg/kg	05/28/1998	00S2	5249 - 5248.7			3.2			#	-	-
Uranium	mg/kg	05/28/1998	00S1	5249 - 5248.7			7.3			#	-	-
	mg/kg	05/28/1998	00S2	5249 - 5248.7			5.2			#	-	-
Vanadium	mg/kg	05/28/1998	00S1	5249 - 5248.7			27.0			#	-	-
	mg/kg	05/28/1998	00S2	5249 - 5248.7			29.7			#	-	-
Zinc	mg/kg	05/28/1998	00S1	5249 - 5248.7			56.7			#	-	-
	mg/kg	05/28/1998	00S2	5249 - 5248.7			59.5			#	-	-

SEDIMENT CHEMISTRY DATA BY LOCATION FOR SITE RFO01, RIFLE (OLD)
LOCATION: 1201 Risk Assessment Sample Site
REPORT DATE: 7/28/1999 2:49 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	ELEV. RANGE (FT NGVD)	DIGEST. CODE	SAMP DESC.	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Ammonia as NH4	mg/kg	05/29/1998	00S1	0 - -.5			2.0			#	-	-
Arsenic	mg/kg	05/29/1998	00S1	0 - -.5			5.3			#	-	-
Cadmium	mg/kg	05/29/1998	00S1	0 - -.5			0.13	U		#	0.13	-
Fluoride	mg/kg	05/29/1998	00S1	0 - -.5			9.4			#	-	-
Iron	mg/kg	05/29/1998	00S1	0 - -.5			12100			#	-	-
Manganese	mg/kg	05/29/1998	00S1	0 - -.5			250			#	-	-
Molybdenum	mg/kg	05/29/1998	00S1	0 - -.5			0.52	B	U	#	-	-
Nitrate	mg/kg	05/29/1998	00S1	0 - -.5			1.7	B	U	#	-	-
Percent Solids	%	05/29/1998	00S1	0 - -.5			74.46			#	-	-
Selenium	mg/kg	05/29/1998	00S1	0 - -.5			0.27	U		#	0.27	-
Strontium	mg/kg	05/29/1998	00S1	0 - -.5			96.5			#	-	-
Sulfate	mg/kg	05/29/1998	00S1	0 - -.5			933			#	-	-
Total Phosphorus as PO4	mg/kg	05/29/1998	00S1	0 - -.5			0.58	U		#	0.58	-
Uranium	mg/kg	05/29/1998	00S1	0 - -.5			5.2			#	-	-
Vanadium	mg/kg	05/29/1998	00S1	0 - -.5			19.8			#	-	-
Zinc	mg/kg	05/29/1998	00S1	0 - -.5			37.4			#	-	-

SEDIMENT CHEMISTRY DATA BY LOCATION FOR SITE RFO01, RIFLE (OLD)
LOCATION: 1202 Risk Assessment Sample Site
REPORT DATE: 7/28/1999 2:49 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	ELEV. RANGE (FT NGVD)	DIGEST. CODE	SAMP DESC.	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Ammonia as NH4	mg/kg	05/29/1998	00S1	0 - -.5			0.56			#	-	-
Arsenic	mg/kg	05/29/1998	00S1	0 - -.5			5.8			#	-	-
Cadmium	mg/kg	05/29/1998	00S1	0 - -.5			0.14	B		#	-	-
Fluoride	mg/kg	05/29/1998	00S1	0 - -.5			9.1			#	-	-
Iron	mg/kg	05/29/1998	00S1	0 - -.5			15100			#	-	-
Manganese	mg/kg	05/29/1998	00S1	0 - -.5			301			#	-	-
Molybdenum	mg/kg	05/29/1998	00S1	0 - -.5			0.60	B	U	#	-	-
Nitrate	mg/kg	05/29/1998	00S1	0 - -.5			1.6	B	U	#	-	-
Percent Solids	%	05/29/1998	00S1	0 - -.5			74.10			#	-	-
Selenium	mg/kg	05/29/1998	00S1	0 - -.5			0.27	U		#	0.27	-
Strontium	mg/kg	05/29/1998	00S1	0 - -.5			117			#	-	-
Sulfate	mg/kg	05/29/1998	00S1	0 - -.5			557			#	-	-
Total Phosphorus as PO4	mg/kg	05/29/1998	00S1	0 - -.5			0.58	U		#	0.58	-
Uranium	mg/kg	05/29/1998	00S1	0 - -.5			4.5			#	-	-
Vanadium	mg/kg	05/29/1998	00S1	0 - -.5			25.3			#	-	-
Zinc	mg/kg	05/29/1998	00S1	0 - -.5			44.5			#	-	-

SEDIMENT CHEMISTRY DATA BY LOCATION FOR SITE RFO01, RIFLE (OLD)
LOCATION: 1203 Risk Assessment Sample Site
REPORT DATE: 7/28/1999 2:49 pm

PARAMETER	UNITS	SAMPLE: DATE	ID	ELEV. RANGE (FT NGVD)	DIGEST. CODE	SAMP DESC.	RESULT	QUALIFIERS: LAB	DATA	QA	DETECTION LIMIT	UN-CERTAINTY
Ammonia as NH4	mg/kg	05/29/1998	00S1	0 - -.5			6.2			#	-	-
	mg/kg	05/29/1998	00S2	0 - -.5			7.4			#	-	-
Arsenic	mg/kg	05/29/1998	00S1	0 - -.5			6.5			#	-	-
	mg/kg	05/29/1998	00S2	0 - -.5			6.3			#	-	-
Cadmium	mg/kg	05/29/1998	00S1	0 - -.5			0.15	U		#	0.15	-
	mg/kg	05/29/1998	00S2	0 - -.5			0.14	U		#	0.14	-
Fluoride	mg/kg	05/29/1998	00S1	0 - -.5			10.5			#	-	-
	mg/kg	05/29/1998	00S2	0 - -.5			10.4			#	-	-
Iron	mg/kg	05/29/1998	00S1	0 - -.5			16400			#	-	-
	mg/kg	05/29/1998	00S2	0 - -.5			17200			#	-	-
Manganese	mg/kg	05/29/1998	00S1	0 - -.5			306			#	-	-
	mg/kg	05/29/1998	00S2	0 - -.5			298			#	-	-
Molybdenum	mg/kg	05/29/1998	00S1	0 - -.5			0.78	B		#	-	-
	mg/kg	05/29/1998	00S2	0 - -.5			0.79	B		#	-	-
Nitrate	mg/kg	05/29/1998	00S1	0 - -.5			2.0	B	U	#	-	-
	mg/kg	05/29/1998	00S2	0 - -.5			2.1	B	U	#	-	-
Percent Solids	%	05/29/1998	00S1	0 - -.5			67.91			#	-	-
	%	05/29/1998	00S2	0 - -.5			69.70			#	-	-
Selenium	mg/kg	05/29/1998	00S1	0 - -.5			0.29	U		#	0.29	-
	mg/kg	05/29/1998	00S2	0 - -.5			0.29	U		#	0.29	-
Strontium	mg/kg	05/29/1998	00S1	0 - -.5			123			#	-	-
	mg/kg	05/29/1998	00S2	0 - -.5			121			#	-	-
Sulfate	mg/kg	05/29/1998	00S1	0 - -.5			1620			#	-	-

SEDIMENT CHEMISTRY DATA BY LOCATION FOR SITE RFO01, RIFLE (OLD)
LOCATION: 1203 Risk Assessment Sample Site
REPORT DATE: 7/28/1999 2:49 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	ELEV. RANGE (FT NGVD)	DIGEST. CODE	SAMP DESC.	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE500

DIGESTION CODES:

SAMPLE DESCRIPTORS (UNIFIED SOIL CLASSIFICATION SYSTEM):

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- L Less than 3 bore volumes purged prior to sampling.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- R Unusable result.
- G Possible grout contamination, pH > 9.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

SEDIMENT CHEMISTRY DATA BY LOCATION FOR SITE RFO01, RIFLE (OLD)
LOCATION: 1204 Risk Assessment Sample Site
REPORT DATE: 7/28/1999 2:49 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	ELEV. RANGE (FT NGVD)	DIGEST. CODE	SAMP DESC.	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE500

DIGESTION CODES:

SAMPLE DESCRIPTORS (UNIFIED SOIL CLASSIFICATION SYSTEM):

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- L Less than 3 bore volumes purged prior to sampling.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- R Unusable result.
- G Possible grout contamination, pH > 9.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

SEDIMENT CHEMISTRY DATA BY LOCATION FOR SITE RFO01, RIFLE (OLD)
LOCATION: 1205 Risk Assessment Sample Site
REPORT DATE: 7/28/1999 2:49 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	ELEV. RANGE (FT NGVD)	DIGEST. CODE	SAMP DESC.	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM USEE500

DIGESTION CODES:

SAMPLE DESCRIPTORS (UNIFIED SOIL CLASSIFICATION SYSTEM):

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- L Less than 3 bore volumes purged prior to sampling.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- R Unusable result.
- G Possible grout contamination, pH > 9.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

VEGETATION CHEMISTRY DATA BY LOCATION FOR SITE RFN01, RIFLE (NEW)
LOCATION: 1206
REPORT DATE: 7/28/1999 4:20 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	MATRIX SUBTYPE	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Arsenic	mg/kg	05/27/1998	00V1	CATTAIL STEMS	1.3		U	#	-	-
	mg/kg	05/27/1998	00V2	CATTAIL ROOTS	2.1			#	-	-
Cadmium	mg/kg	05/27/1998	00V1	CATTAIL STEMS	0.75			#	-	-
	mg/kg	05/27/1998	00V2	CATTAIL ROOTS	0.29	B		#	-	-
Iron	mg/kg	05/27/1998	00V1	CATTAIL STEMS	779			#	-	-
	mg/kg	05/27/1998	00V2	CATTAIL ROOTS	3360			#	-	-
Loss on Drying	%	05/27/1998	00V1	CATTAIL STEMS	86.8			#	-	-
	%	05/27/1998	00V2	CATTAIL ROOTS	88.7			#	-	-
Manganese	mg/kg	05/27/1998	00V1	CATTAIL STEMS	300		J	#	-	-
	mg/kg	05/27/1998	00V2	CATTAIL ROOTS	135		J	#	-	-
Molybdenum	mg/kg	05/27/1998	00V1	CATTAIL STEMS	4.4	B		#	-	-
	mg/kg	05/27/1998	00V2	CATTAIL ROOTS	2.0	B		#	-	-
Selenium	mg/kg	05/27/1998	00V1	CATTAIL STEMS	0.79		U	#	-	-
	mg/kg	05/27/1998	00V2	CATTAIL ROOTS	0.20	U		#	0.2	-
Strontium	mg/kg	05/27/1998	00V1	CATTAIL STEMS	141			#	-	-
	mg/kg	05/27/1998	00V2	CATTAIL ROOTS	85.5			#	-	-
Uranium	mg/kg	05/27/1998	00V1	CATTAIL STEMS	0.19	B		#	-	-
	mg/kg	05/27/1998	00V2	CATTAIL ROOTS	1.7			#	-	-
Vanadium	mg/kg	05/27/1998	00V1	CATTAIL STEMS	1.3	B		#	-	-
	mg/kg	05/27/1998	00V2	CATTAIL ROOTS	11.8			#	-	-
Zinc	mg/kg	05/27/1998	00V1	CATTAIL STEMS	33.5			#	-	-
	mg/kg	05/27/1998	00V2	CATTAIL ROOTS	34.3			#	-	-

VEGETATION CHEMISTRY DATA BY LOCATION FOR SITE RFN01, RIFLE (NEW)
LOCATION: 1207
REPORT DATE: 7/28/1999 4:20 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	MATRIX SUBTYPE	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Arsenic	mg/kg	05/27/1998	00V1	CATTAIL STEMS	1.0		U	#	-	-
	mg/kg	05/27/1998	00V2	CATTAIL ROOTS	2.5			#	-	-
Cadmium	mg/kg	05/27/1998	00V1	CATTAIL STEMS	0.11	B		#	-	-
	mg/kg	05/27/1998	00V2	CATTAIL ROOTS	0.51			#	-	-
Iron	mg/kg	05/27/1998	00V1	CATTAIL STEMS	344			#	-	-
	mg/kg	05/27/1998	00V2	CATTAIL ROOTS	3320			#	-	-
Loss on Drying	%	05/27/1998	00V1	CATTAIL STEMS	86.7			#	-	-
	%	05/27/1998	00V2	CATTAIL ROOTS	90.7			#	-	-
Manganese	mg/kg	05/27/1998	00V1	CATTAIL STEMS	318		J	#	-	-
	mg/kg	05/27/1998	00V2	CATTAIL ROOTS	220		J	#	-	-
Molybdenum	mg/kg	05/27/1998	00V1	CATTAIL STEMS	5.5			#	-	-
	mg/kg	05/27/1998	00V2	CATTAIL ROOTS	2.5	B		#	-	-
Selenium	mg/kg	05/27/1998	00V1	CATTAIL STEMS	1.3		U	#	-	-
	mg/kg	05/27/1998	00V2	CATTAIL ROOTS	0.23	B	U	#	-	-
Strontium	mg/kg	05/27/1998	00V1	CATTAIL STEMS	230			#	-	-
	mg/kg	05/27/1998	00V2	CATTAIL ROOTS	142			#	-	-
Uranium	mg/kg	05/27/1998	00V1	CATTAIL STEMS	0.11	B		#	-	-
	mg/kg	05/27/1998	00V2	CATTAIL ROOTS	0.63			#	-	-
Vanadium	mg/kg	05/27/1998	00V1	CATTAIL STEMS	1.3	B		#	-	-
	mg/kg	05/27/1998	00V2	CATTAIL ROOTS	12.3			#	-	-
Zinc	mg/kg	05/27/1998	00V1	CATTAIL STEMS	24.5			#	-	-
	mg/kg	05/27/1998	00V2	CATTAIL ROOTS	30.6			#	-	-

VEGETATION CHEMISTRY DATA BY LOCATION FOR SITE RFN01, RIFLE (NEW)
LOCATION: 1208
REPORT DATE: 7/28/1999 4:20 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	MATRIX SUBTYPE	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Arsenic	mg/kg	05/27/1998	00V1	CATTAIL STEMS	0.89	B	U	#	-	-
	mg/kg	05/27/1998	00V2	CATTAIL ROOTS	4.9			#	-	-
Cadmium	mg/kg	05/27/1998	00V1	CATTAIL STEMS	0.18	B		#	-	-
	mg/kg	05/27/1998	00V2	CATTAIL ROOTS	0.42	B		#	-	-
Iron	mg/kg	05/27/1998	00V1	CATTAIL STEMS	261			#	-	-
	mg/kg	05/27/1998	00V2	CATTAIL ROOTS	7500			#	-	-
Loss on Drying	%	05/27/1998	00V1	CATTAIL STEMS	87.4			#	-	-
	%	05/27/1998	00V2	CATTAIL ROOTS	85.5			#	-	-
Manganese	mg/kg	05/27/1998	00V1	CATTAIL STEMS	457		J	#	-	-
	mg/kg	05/27/1998	00V2	CATTAIL ROOTS	188		J	#	-	-
Molybdenum	mg/kg	05/27/1998	00V1	CATTAIL STEMS	2.7	B		#	-	-
	mg/kg	05/27/1998	00V2	CATTAIL ROOTS	2.4	B		#	-	-
Selenium	mg/kg	05/27/1998	00V1	CATTAIL STEMS	0.82		U	#	-	-
	mg/kg	05/27/1998	00V2	CATTAIL ROOTS	0.20	U		#	0.2	-
Strontium	mg/kg	05/27/1998	00V1	CATTAIL STEMS	197			#	-	-
	mg/kg	05/27/1998	00V2	CATTAIL ROOTS	143			#	-	-
Uranium	mg/kg	05/27/1998	00V1	CATTAIL STEMS	0.10	U		#	0.1	-
	mg/kg	05/27/1998	00V2	CATTAIL ROOTS	1.5			#	-	-
Vanadium	mg/kg	05/27/1998	00V1	CATTAIL STEMS	0.93	B		#	-	-
	mg/kg	05/27/1998	00V2	CATTAIL ROOTS	28.5			#	-	-
Zinc	mg/kg	05/27/1998	00V1	CATTAIL STEMS	30.0			#	-	-
	mg/kg	05/27/1998	00V2	CATTAIL ROOTS	33.7			#	-	-

VEGETATION CHEMISTRY DATA BY LOCATION FOR SITE RFN01, RIFLE (NEW)
LOCATION: 1209
REPORT DATE: 7/28/1999 4:20 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	MATRIX SUBTYPE	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Arsenic	mg/kg	05/27/1998	00V1	CATTAIL STEMS	0.85	B	U	#	-	-
	mg/kg	05/27/1998	00V2	CATTAIL ROOTS	1.3		U	#	-	-
Cadmium	mg/kg	05/27/1998	00V1	CATTAIL STEMS	0.17	B		#	-	-
	mg/kg	05/27/1998	00V2	CATTAIL ROOTS	0.24	B		#	-	-
Iron	mg/kg	05/27/1998	00V1	CATTAIL STEMS	582			#	-	-
	mg/kg	05/27/1998	00V2	CATTAIL ROOTS	1580			#	-	-
Loss on Drying	%	05/27/1998	00V1	CATTAIL STEMS	86.6			#	-	-
	%	05/27/1998	00V2	CATTAIL ROOTS	85.7			#	-	-
Manganese	mg/kg	05/27/1998	00V1	CATTAIL STEMS	380		J	#	-	-
	mg/kg	05/27/1998	00V2	CATTAIL ROOTS	105		J	#	-	-
Molybdenum	mg/kg	05/27/1998	00V1	CATTAIL STEMS	8.4			#	-	-
	mg/kg	05/27/1998	00V2	CATTAIL ROOTS	5.0			#	-	-
Selenium	mg/kg	05/27/1998	00V1	CATTAIL STEMS	1.3		U	#	-	-
	mg/kg	05/27/1998	00V2	CATTAIL ROOTS	0.50	B	U	#	-	-
Strontium	mg/kg	05/27/1998	00V1	CATTAIL STEMS	209			#	-	-
	mg/kg	05/27/1998	00V2	CATTAIL ROOTS	90.8			#	-	-
Uranium	mg/kg	05/27/1998	00V1	CATTAIL STEMS	0.15	B		#	-	-
	mg/kg	05/27/1998	00V2	CATTAIL ROOTS	2.0			#	-	-
Vanadium	mg/kg	05/27/1998	00V1	CATTAIL STEMS	1.8	B		#	-	-
	mg/kg	05/27/1998	00V2	CATTAIL ROOTS	6.5			#	-	-
Zinc	mg/kg	05/27/1998	00V1	CATTAIL STEMS	27.6			#	-	-
	mg/kg	05/27/1998	00V2	CATTAIL ROOTS	15.8			#	-	-

VEGETATION CHEMISTRY DATA BY LOCATION FOR SITE RFN01, RIFLE (NEW)
LOCATION: 1210
REPORT DATE: 7/28/1999 4:20 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	MATRIX SUBTYPE	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Arsenic	mg/kg	05/27/1998	00V1	CATTAIL STEMS	0.76	B	U	#	-	-
	mg/kg	05/27/1998	00V2	CATTAIL ROOTS	2.6			#	-	-
	mg/kg	05/27/1998	00V3	CATTAIL STEMS	0.91	B	U	#	-	-
	mg/kg	05/27/1998	00V4	CATTAIL ROOTS	3.0			#	-	-
Cadmium	mg/kg	05/27/1998	00V1	CATTAIL STEMS	0.10	U		#	0.1	-
	mg/kg	05/27/1998	00V2	CATTAIL ROOTS	0.24	B		#	-	-
	mg/kg	05/27/1998	00V3	CATTAIL STEMS	0.11	B		#	-	-
	mg/kg	05/27/1998	00V4	CATTAIL ROOTS	0.22	B		#	-	-
Iron	mg/kg	05/27/1998	00V1	CATTAIL STEMS	626			#	-	-
	mg/kg	05/27/1998	00V2	CATTAIL ROOTS	3640			#	-	-
	mg/kg	05/27/1998	00V3	CATTAIL STEMS	608			#	-	-
	mg/kg	05/27/1998	00V4	CATTAIL ROOTS	3800			#	-	-
Loss on Drying	%	05/27/1998	00V1	CATTAIL STEMS	89.1			#	-	-
	%	05/27/1998	00V2	CATTAIL ROOTS	88.0			#	-	-
	%	05/27/1998	00V3	CATTAIL STEMS	88.9			#	-	-
	%	05/27/1998	00V4	CATTAIL ROOTS	87.8			#	-	-
Manganese	mg/kg	05/27/1998	00V1	CATTAIL STEMS	434		J	#	-	-
	mg/kg	05/27/1998	00V2	CATTAIL ROOTS	173	N	J	#	-	-
	mg/kg	05/27/1998	00V3	CATTAIL STEMS	385		J	#	-	-
	mg/kg	05/27/1998	00V4	CATTAIL ROOTS	176	N	J	#	-	-
Molybdenum	mg/kg	05/27/1998	00V1	CATTAIL STEMS	4.6	B		#	-	-
	mg/kg	05/27/1998	00V2	CATTAIL ROOTS	2.6	B		#	-	-
	mg/kg	05/27/1998	00V3	CATTAIL STEMS	4.3	B		#	-	-
	mg/kg	05/27/1998	00V4	CATTAIL ROOTS	2.5	B		#	-	-

VEGETATION CHEMISTRY DATA BY LOCATION FOR SITE RFN01, RIFLE (NEW)
LOCATION: 1210
REPORT DATE: 7/28/1999 4:20 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	MATRIX SUBTYPE	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM RESULT

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- L Less than 3 bore volumes purged prior to sampling.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- R Unusable result.
- G Possible grout contamination, pH > 9.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

VEGETATION CHEMISTRY DATA BY LOCATION FOR SITE RFO01, RIFLE (OLD)
LOCATION: 1201 Risk Assessment Sample Site
REPORT DATE: 7/28/1999 4:20 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	MATRIX SUBTYPE	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM RESULT

LAB QUALIFIERS:

- • Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- L Less than 3 bore volumes purged prior to sampling.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- R Unusable result.
- G Possible grout contamination, pH > 9.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

VEGETATION CHEMISTRY DATA BY LOCATION FOR SITE RFO01, RIFLE (OLD)
LOCATION: 1202 Risk Assessment Sample Site
REPORT DATE: 7/28/1999 4:20 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	MATRIX SUBTYPE	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY

RECORDS: SELECTED FROM RESULT

LAB QUALIFIERS:

- * Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- C Pesticide result confirmed by GC-MS.
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compund (TIC).
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- D Analyte determined in diluted sample.
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- > Result above upper detection limit.

DATA QUALIFIERS:

- J Estimated value.
- L Less than 3 bore volumes purged prior to sampling.
- U Parameter analyzed for but was not detected.
- F Low flow sampling method used.
- R Unusable result.
- G Possible grout contamination, pH > 9.
- X Location is undefined.

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

VEGETATION CHEMISTRY DATA BY LOCATION FOR SITE RFO01, RIFLE (OLD)
LOCATION: 1203 Risk Assessment Sample Site
REPORT DATE: 7/28/1999 4:20 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	MATRIX SUBTYPE	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Selenium	mg/kg	05/29/1998	00V1	CATTAIL STEMS	0.40	B	U	#	-	-
	mg/kg	05/29/1998	00V2	CATTAIL ROOTS	0.20	U		#	0.2	-
	mg/kg	05/29/1998	00V3	CATTAIL STEMS	0.46	B	U	#	-	-
	mg/kg	05/29/1998	00V4	CATTAIL ROOTS	0.20	U		#	0.2	-
Strontium	mg/kg	05/29/1998	00V1	CATTAIL STEMS	155			#	-	-
	mg/kg	05/29/1998	00V2	CATTAIL ROOTS	122			#	-	-
	mg/kg	05/29/1998	00V3	CATTAIL STEMS	135			#	-	-
	mg/kg	05/29/1998	00V4	CATTAIL ROOTS	121			#	-	-
Uranium	mg/kg	05/29/1998	00V1	CATTAIL STEMS	0.11	B		#	-	-
	mg/kg	05/29/1998	00V2	CATTAIL ROOTS	3.1			#	-	-
	mg/kg	05/29/1998	00V3	CATTAIL STEMS	0.11	B		#	-	-
	mg/kg	05/29/1998	00V4	CATTAIL ROOTS	3.5			#	-	-
Vanadium	mg/kg	05/29/1998	00V1	CATTAIL STEMS	1.1	B		#	-	-
	mg/kg	05/29/1998	00V2	CATTAIL ROOTS	31.1			#	-	-
	mg/kg	05/29/1998	00V3	CATTAIL STEMS	0.70	U		#	0.7	-
	mg/kg	05/29/1998	00V4	CATTAIL ROOTS	22.7			#	-	-
Zinc	mg/kg	05/29/1998	00V1	CATTAIL STEMS	24.1			#	-	-
	mg/kg	05/29/1998	00V2	CATTAIL ROOTS	57.3			#	-	-
	mg/kg	05/29/1998	00V3	CATTAIL STEMS	20.1			#	-	-
	mg/kg	05/29/1998	00V4	CATTAIL ROOTS	71.3			#	-	-

VEGETATION CHEMISTRY DATA BY LOCATION FOR SITE RFO01, RIFLE (OLD)
LOCATION: 1204 Risk Assessment Sample Site
REPORT DATE: 7/28/1999 4:20 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	MATRIX SUBTYPE	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Arsenic	mg/kg	05/29/1998	00V1	CATTAIL STEMS	0.69	B	U	#	-	-
	mg/kg	05/29/1998	00V2	CATTAIL ROOTS	6.7			#	-	-
Cadmium	mg/kg	05/29/1998	00V1	CATTAIL STEMS	0.54			#	-	-
	mg/kg	05/29/1998	00V2	CATTAIL ROOTS	0.28	B		#	-	-
Iron	mg/kg	05/29/1998	00V1	CATTAIL STEMS	406			#	-	-
	mg/kg	05/29/1998	00V2	CATTAIL ROOTS	7040			#	-	-
Loss on Drying	%	05/29/1998	00V1	CATTAIL STEMS	92.5			#	-	-
	%	05/29/1998	00V2	CATTAIL ROOTS	93.2			#	-	-
Manganese	mg/kg	05/29/1998	00V1	CATTAIL STEMS	516		J	#	-	-
	mg/kg	05/29/1998	00V2	CATTAIL ROOTS	249	N	J	#	-	-
Molybdenum	mg/kg	05/29/1998	00V1	CATTAIL STEMS	0.56	B		#	-	-
	mg/kg	05/29/1998	00V2	CATTAIL ROOTS	0.83	B		#	-	-
Selenium	mg/kg	05/29/1998	00V1	CATTAIL STEMS	0.29	B	U	#	-	-
	mg/kg	05/29/1998	00V2	CATTAIL ROOTS	0.20	U		#	0.2	-
Strontium	mg/kg	05/29/1998	00V1	CATTAIL STEMS	145			#	-	-
	mg/kg	05/29/1998	00V2	CATTAIL ROOTS	119			#	-	-
Uranium	mg/kg	05/29/1998	00V1	CATTAIL STEMS	0.13	B		#	-	-
	mg/kg	05/29/1998	00V2	CATTAIL ROOTS	1.9			#	-	-
Vanadium	mg/kg	05/29/1998	00V1	CATTAIL STEMS	1.2	B		#	-	-
	mg/kg	05/29/1998	00V2	CATTAIL ROOTS	15.8			#	-	-
Zinc	mg/kg	05/29/1998	00V1	CATTAIL STEMS	22.0			#	-	-
	mg/kg	05/29/1998	00V2	CATTAIL ROOTS	49.4			#	-	-

VEGETATION CHEMISTRY DATA BY LOCATION FOR SITE RFO01, RIFLE (OLD)
LOCATION: 1205 Risk Assessment Sample Site
REPORT DATE: 7/28/1999 4:20 pm

PARAMETER	UNITS	SAMPLE: DATE	SAMPLE: ID	MATRIX SUBTYPE	RESULT	QUALIFIERS: LAB	QUALIFIERS: DATA	QUALIFIERS: QA	DETECTION LIMIT	UN-CERTAINTY
Arsenic	mg/kg	05/29/1998	00V1	CATTAIL STEMS	0.67	B	U	#	-	-
	mg/kg	05/29/1998	00V2	CATTAIL ROOTS	7.3			#	-	-
Cadmium	mg/kg	05/29/1998	00V1	CATTAIL STEMS	0.10	U		#	0.1	-
	mg/kg	05/29/1998	00V2	CATTAIL ROOTS	0.34	B		#	-	-
Iron	mg/kg	05/29/1998	00V1	CATTAIL STEMS	956			#	-	-
	mg/kg	05/29/1998	00V2	CATTAIL ROOTS	12200			#	-	-
Loss on Drying	%	05/29/1998	00V1	CATTAIL STEMS	90.6			#	-	-
	%	05/29/1998	00V2	CATTAIL ROOTS	88.9			#	-	-
Manganese	mg/kg	05/29/1998	00V1	CATTAIL STEMS	413		J	#	-	-
	mg/kg	05/29/1998	00V2	CATTAIL ROOTS	270	N	J	#	-	-
Molybdenum	mg/kg	05/29/1998	00V1	CATTAIL STEMS	0.63	B		#	-	-
	mg/kg	05/29/1998	00V2	CATTAIL ROOTS	1.0	B		#	-	-
Selenium	mg/kg	05/29/1998	00V1	CATTAIL STEMS	0.29	B	U	#	-	-
	mg/kg	05/29/1998	00V2	CATTAIL ROOTS	0.20	U		#	0.2	-
Strontium	mg/kg	05/29/1998	00V1	CATTAIL STEMS	154			#	-	-
	mg/kg	05/29/1998	00V2	CATTAIL ROOTS	144			#	-	-
Uranium	mg/kg	05/29/1998	00V1	CATTAIL STEMS	0.14	B		#	-	-
	mg/kg	05/29/1998	00V2	CATTAIL ROOTS	3.0			#	-	-
Vanadium	mg/kg	05/29/1998	00V1	CATTAIL STEMS	1.7	B		#	-	-
	mg/kg	05/29/1998	00V2	CATTAIL ROOTS	31.9			#	-	-
Zinc	mg/kg	05/29/1998	00V1	CATTAIL STEMS	18.7			#	-	-
	mg/kg	05/29/1998	00V2	CATTAIL ROOTS	48.2			#	-	-