

APPENDIX G.
Well Purge Forms

WELL PURGE FORM

Project Name: RVAAP SCFMW 1st Quarter 2009 GWS

Well ID and Location: SCFMW-0001

Activity: Purge Development

SAMPLE ID: SCFMW-001-0015-GW

DATE/TIME: 04/24/09; 1000

Personnel: 04/21 Amanda Trenton + Paul Parish; SAIC

04/24 Amanda Trenton + Emily Cunningham; SAIC

Date and Time:

Start: 04/21/09, 1058 / 04/24/09, 0835 Complete: 04/21/09, 1129 / 04/24/09 - 0955

Purge Method(s): Bailer Bladder Pump Other:

Monitoring Method(s):

MULTIPLE PMS
AIR MONITOR

PID (1.3ppm) ^{CO} ~~FID~~ (11ppm) LEL (NA) ^{H2S} Rad (0ppm) Other:

ID: 095-517599 ID: 095-517599 ID: 095-517599 ID: 095-517599 ID: _____

Total Volume of Water Removed (Gallons):

0.75 (04/24/09)

Total (4/21+4/24) 1.0 gal

FIELD INSTRUMENT	SERIAL NUMBER	DATE OF LAST CALIBRATION
Water Quality: HORIBA U-22	801008	04/24/09
Water Level Tape: SOLINST 300' WATER LEVEL INDICATOR	52545	NA
Other: MP-15 Controller + CO ₂	11910	NA
Other: MP-10 Controller	14007	NA
Other: MP-40 AIR COMPRESSOR	10504	NA
Other: Sample Pro Bladder Pump	11854	NA
Other: _____	_____	_____

Recorded By:

Amanda Trenton 04/24/09

QA Checked By:

Emily Cunningham 05/06/09

WELL PURGE FORM

Project Name: RVAAP SCFMW 1st Quarter 2009 GWS

Well ID and Location: SCFMW-001

Depths (btoc): 203.52 Top of Screen 213.52 Bottom of Screen 200.52 Top of Filter Pack 88.18 Water Level BTOC

Well Construction: PVC SCH 80 Stainless Steel Other: _____ Casing I.D. (inches) 2

Well Volume: Vt = Vc + Vf Where Vt: Total well volume Vc: Riser casing volume Vf: Filter pack volume
 Vt (Total Well Volume) = $\frac{0.31}{(1.18 L)}$ gallons

Vc = (Height of water column) x (Volume of casing per foot)
 Vf = (((Saturated thickness of filter pack) x (Volume of borehole per foot)) x (0.3) - ((Saturated thickness of filter pack) x (Volume of casing per foot)))

$\pi r^2 h \times 7.42 =$ ~~total~~ ^{tubing} vol in gallons
 $\pi \left(\frac{1.25}{12}\right)^2 h \times 7.42 =$
 $.0025 \times h =$
 $.0025 \times 125.34 = 0.31 \text{ gal} = \boxed{1.18 L}$

Site Conditions: 04/21/09: 45 F; scattered rain; windy; overcast
 04/24/09; 70-80 F; sunny; clear

Field Observations: 04/24/09 - Purge rate of ~35ml/min; able to increase to ~60ml/min for a short time - headlift issues still problematic used both MP15 + MP40 to mitigate issues. 0.45um Filter used for metals sample only. Pump depth ~208.5' BTOC (mid-screen)

Deviations from Approved SAP: NONE
~~_____~~
~~_____~~

Recorded By: Amanda Senter 04/24/09 QA Checked By: Emily Cunningham 05/04/09

WELL PURGE LOG

Project Name: SCF MW GWS 1st Quarter 2009

Well ID and Location: SCFmw-001

Date	Time	TOTAL LITERS Gallons Removed	Temp (oC)	Specific Cond. (mS/cm)	pH (std. unit)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	eH (mV)	Total Gallons Removed	Total Liters/ Well Vols Removed	Comments
4/21/09	1058	0	13.18	0.395	8.64	109	8.94	12	<0.25	0	Initial
↓	1129	1.0	13.17	0.405	8.90	206	8.49	3	0.8	<1	STOP PURGING - HEADLIFT ISSUES
4/24/09	0835	0	10.66	0.402	4.74	121.0	12.03	+120	0	<1.0	initial on 4/24 ~ 88.18' BTOC
	0845	0.35	10.82	0.403	5.91	325	3.45	-39	0.35	<1.0	Purge rate ~ 35 mL/min
	0855	0.7	10.67	0.404	6.02	194	2.20	-51	0.7	<1.0	water is clear to a pale rusty orange
	0905	1.05	11.03	0.481	6.04	131	1.54	-55	1.05	<1.0	
	0910	1.225	11.14	0.481	6.04	287	2.09	-49	1.225	1.0	
	0915	1.4	11.31	0.478	5.95	199	2.82	-31	1.4	<2.0	WLC @ 88' 44'
	0920	1.575	11.82	0.473	6.82	383	3.13	-9	1.575	<2.0	
	0935	2.1	13.65	0.454	5.81	61.3	10.94	-8	2.1	<2.0	RESET FLOW CUP - WAS LEAKING → CHANGED DG LEVEL.
	0940	2.275	13.07	0.480	5.63	60.8	7.10	21	2.275	<2.0	water is clear
	0945	2.45	13.24	0.477	5.51	42.8	5.77	37	2.45	2	water level @ 88.22' BTOC
	0950	2.625	13.46	0.477	5.45	34.6	5.63	46	2.625	>2	
✓	0955	2.8	13.71	0.476	5.40	43.5	5.58	51	2.8	>2	Parameters stable - sample

Recorded By:

Amanda Trent 04/24/09

QA Checked By:

Emily Cunningham 04/24/09

WELL PURGE FORM

Project Name: RVAAP SCFMW 1st Quarter 2009 GWS

Well ID and Location: SCFMW-002

Activity: Purge Development

SAMPLE ID: SCFMW-002-0016-GW+SCFMW-002-0025-GW

DATE+TIME: 04/21/09; 1500

Personnel: Amanda Trenton + Paul Parrish (SATC)

Date and Time: Start: 04/21/09; 1349

Complete: 04/21/09; 2000

Purge Method(s): Bailer Bladder Pump Other: _____

Monitoring Method(s): PID (0.0 ppm) FID CO (0 ppm) LEL (NA) Red (0 ppm) Other: _____

MULTIRHE PLUS
AIR MONITOR

ID: 095-517599 ID: 095-517599 ID: NA ID: 095-517599 ID: _____

Total Volume of Water Removed (Gallons): 1.0 GAL

FIELD INSTRUMENT	SERIAL NUMBER	DATE OF LAST CALIBRATION
Water Quality: <u>HORIBA U-22</u>	<u>501020</u> <u>801008</u>	<u>04/21/09</u>
Water Level Tape: <u>SOLINST 300' WATER LEVEL INDICATOR</u>	<u>52345</u>	<u>NA</u>
Other: <u>MP-10 CONTROLLER</u>	<u>14007</u>	<u>NA</u>
Other: <u>MP-40 AIR COMPRESSOR</u>	<u>10504</u>	<u>NA</u>
Other: <u>SAMPLE PRO BLADDER PUMP</u>	<u>11854</u>	<u>NA</u>
Other: _____	<u>NA</u>	<u>04/21/09</u>
Other: _____	_____	_____

Recorded By: Amanda Trenton

QA Checked By: Emily Cunningham 05/04/09

WELL PURGE FORM

Project Name: RVAAP SCFMW 1st Quarter 2009 GWS

Well ID and Location: SCFMW-002

Depths (btoc): 139.18 Top of Screen 149.18 Bottom of Screen 136.18 Top of Filter Pack 17.97 Water Level

Well Construction: PVC SCH 40 Stainless Steel Other: _____ 2" Casing I.D. (inches)

Well Volume: Vt = Vc + Vf Where Vt: Total well volume Vc: Riser casing volume Vf: Filter pack volume
 Vt (Total ^{Tubing} Well Volume) = 0.33 gallons

Vc = (Height of water column) x (Volume of casing per foot)
 Vf = (((Saturated thickness of filter pack) x (Volume of borehole per foot)) x (0.3) - ((Saturated thickness of filter pack) x (Volume of casing per foot)))

$\pi r^2 h \times 7.42 = \text{total vol in gallons}$
 $\pi (\frac{1.25}{12})^2 h \times 7.42 =$
 $.0025 \times h =$
 $.0025 \times 131.21' = 0.328 \text{ gallons} = \boxed{1.25 L}$

Site Conditions: 55°F ; Sunny
04/21/09

Field Observations: Purge rate of ~90-100mL/min. Pump placement depth ~144FT BTOC (mid screen)
0.45 um Filter used for metals collection only; sampling briefly
paused to refuel air compressor.
Duplicate sample collected
04/21/09

Deviations from Approved SAP: NONE
04/21/09

Recorded By: Amanda Instra 04/21/09

QA Checked By: Emily Cunningham 05/06/09

WELL PURGE LOG

Project Name: RVAAP SCF MW GWS 1st Quarter 2009 Well ID and Location: SCFmw-002

Date	Time	Gallons Removed	Temp (oC)	Specific Cond. (mS/cm)	pH (std. unit)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	eH (mV)	Total Gallons Removed	Total Well Vols Removed	Comments
04/21/09	1410	<0.25	11.00	0.090	6.60	41.9	6.49	107	<0.25	0	Initial; 100 mL/min purge rate
	1425	1.5L	11.54	0.061	6.82	1.2	0.30	95	1.5L	1	clear
	1435	1.5L	11.77	0.061	6.89	Flashing 0.0	0.00	89	2.5L	2	
	1445	1L	12.04	0.058	6.95	Flashing 0.0	0.00	85	3.5L	<3	
✓	1450	0.5L	12.13	0.057	6.97	Flashing 0.0	0.00	83	4.0L	>3	parameters stable - sample
END 04/21/09											
CPM224/6; 100psi											

Recorded By: Amanda Sinton 04/21/09 QA Checked By: Emily Cunningham 05/10/09

WELL PURGE FORM

Project Name: RVAAP SCFMW 1st Quarter 2009 GWS

Well ID and Location: SCFmw-003
 SAMPLE ID: SCFmw-003-0017-GW
 DATE + Time: 04/23/09; 1725

Activity: Purge Development

Personnel: Amanda Trenton + Emily Cunningham (SAIC)

Date and Time: Start: 04/23/09; 1628

Complete: 04/23/09; 1830

Purge Method(s): Bailer Bladder Pump Other: _____

Monitoring Method(s): PID (0.3ppm) ~~FID~~^{CO} (0ppm) LEL (0%) ~~Rad~~^{H2S} (0ppm) Other: _____
 MULTIRAE PLUS
 AIR MONITOR
 ID: 095-517599 ID: 095-517599 ID: 095-517599 ID: 095-517599 ID: _____

Total Volume of Water Removed (Gallons): 2.0 GAL

FIELD INSTRUMENT	SERIAL NUMBER	DATE OF LAST CALIBRATION
Water Quality: HORIBA U-22	801008	04/23/09
Water Level Tape: SOLINST 300' water level meter	52545	NA
Other: MP-10 Controller	14007	NA
Other: MP-40 AIR COMPRESSOR	10504	NA
Other: SAMPLE PRO BLADDER PUMP	11854	NA
Other: _____	_____	_____
Other: _____	_____	_____

Recorded By: Amanda Trenton

QA Checked By: Emily Cunningham 05/06/09

WELL PURGE FORM

Project Name: RVAAP SCFMW 1st Quarter 2009 GWS

Well ID and Location: SCFMW-0003

Depths (btoc): 129.70 Top of Screen 139.70 Bottom of Screen
collected during well development 127.2 Top of Filter Pack 7.49 Water Level

Well Construction: PVC 2H40 Stainless Steel Other: _____ 2 Casing I.D. (inches)

Well Volume: $V_t = V_c + V_f$ Where V_t : Total well volume V_t (Total ^{Tubing} Well Volume) = 0.33 gallons
 V_c : Riser casing volume
 V_f : Filter pack volume

$V_c = (\text{Height of water column}) \times (\text{Volume of casing per foot})$
 $V_f = (((\text{Saturated thickness of filter pack}) \times (\text{Volume of borehole per foot})) \times (0.3)) - ((\text{Saturated thickness of filter pack}) \times (\text{Volume of casing per foot}))$

$\pi r^2 h \times 7.42 = \text{tubing volume in gallons}$
 $\pi (\frac{1.25}{12})^2 h \times 7.42 =$
 $.0025 \times h =$
 $.0025 \times 132.21 = 0.33 \text{ GAL} = 1.25 \text{ L}$

Site Conditions: 55°F, sunny
Amanda 04/23/09

Field Observations: Bladder pump placed midscreen (~134.7 FT BTDC); 0.45mm FILTER USED FOR COLLECTION OF METALS SAMPLE; PURGE RATE OF ~175m³/min NO DRAWDOWN EXHIBITED
Amanda 04/23/09

Deviations from Approved SAP: NONE
Amanda 04/23/09

Recorded By: Amanda Inerton 04/23/09

QA Checked By: Emily Cunningham 05/06/09

WELL PURGE LOG

Project Name: RUAPP SCF MW GWS 1st Quarter 2009 Well ID and Location: SCF_{mw} 002

Date	Time	Liters Gallons Removed	Temp (oC)	Specific Cond. (mS/cm)	pH (std. unit)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	eH (mV)	Total Gallons Liters Removed	Total Well Vols Removed	Comments
4/23/09	1631	1.25	13.14	0.562	7.41	35.6	8.72	+54	1.25	1	LOG STARTED initial cloudy
	1641	1.25	11.91	0.562	6.85	214.0	0.20	-31	2.5	2	5 mL/m
	1651	1.25	11.85	0.559	6.74	75.2	0.00	-35	3.75	3	
	1701	1.25	11.77	0.559	6.69	18.7	0.00	-36	5	4	water level 7.50' BTL
	1721	2.5	11.71	0.560	6.62	0.0	0.00	-39	7.5	6	PARAMETERS STABLE - SAMPLE
Stop 04/29/09											

Recorded By: Amanda Trenton

QA Checked By: Emily Cunningham 05/06/09

WELL PURGE FORM

Project Name: RVAAP SCFMW 1st Quarter 2009 GWS

Well ID and Location: SCFmw-004

Activity: Purge Development

SAMPLE ID: SCFmw-004-0018-GW + SCFmw-(004-0024)
 DATE + TIME: 04/22/09; 1240 (LAB SPLIT)

Personnel: AMANDA TRENTON + EMILY CUNNINGHAM; SAIC

Date and Time: Start: 04/22/09; 1135

Complete: 04/22/09; 1415

Purge Method(s): Bailer Bladder Pump Other: _____

Monitoring Method(s): PID (0.0ppm) ^{CO}FID (0ppm) LEL (0%) ^{H2S}Red (0ppm) Other: _____
 MOHIRAE PLUS AIR MONITOR ID: 095-517066 ID: 095-517066 ID: 095-517066 ID: 095-517066 ID: _____

Total Volume of Water Removed (Gallons): 1.65 GAL

FIELD INSTRUMENT	SERIAL NUMBER	DATE OF LAST CALIBRATION
Water Quality: HORIBA U-22	501026	04/22/09
Water Level Tape: SOLINST 300' WATER LEVEL METER	52545	NA
Other: MP-15 CONTROLLER + CO2	11910	NA
Other: MP-10 CONTROLLER	14007	NA
Other: MP-40 AIR COMPRESSOR	10504	NA
Other: SAMPLE PRO BLADDER PUMP	11854	NA
Other: _____	_____	_____

Recorded By: Amanda Trenton 04/22/09

QA Checked By: Emily Cunningham 05/16/09

WELL PURGE LOG

Project Name: RVAAP SCF MW GWS 1st Quarter 2009

Well ID and Location: SCF_{MW} - 004

Date	Time	Liters Gallons Removed	Temp (oC)	Specific Cond. (mS/cm)	pH (std. unit)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	eH (mV)	Total Gallons Removed	Total Well Vols. Removed	Comments
04/22/09	1145	0.25	9.82	1.46	11.45	0.0	2.18	—	0.25	0	initial; 150 gpm/min purge rate
	1155	1.50	10.24	1.43	12.47	*0.0	0.00	-121	1.75	1.75	clear * DO was FLASHING 0.0*
	1205	1.50	10.18	1.42	12.57	*0.0	0.00	-124	3.25	3.25	
	1215	1.50	10.17	1.42	12.60	0.0	0.00	-127	4.75	4.75	
	1225	1.50	9.78	1.42	12.64	0.0	0.00	-131	6.25	6.25	Parameters stable - Sample
<div style="position: absolute; top: 50%; left: 50%; transform: translate(-50%, -50%); opacity: 0.5;"> <p>Stop 04/22/09</p> </div>											

Recorded By: Amanda Trent

QA Checked By: Emily Cunningham 05/04/09

WELL PURGE FORM

Project Name: RVAAP SCFMW 1st Quarter 2009 GWS

Well ID and Location: SCFMW-005
 SAMPLE ID: SCFMW-005-0019-GW + SCFQC-004-0023ER
 DATE/TIME: 04/23/09; 0940 04/23/09; 0725

Activity: Purge Development

Personnel: AMANDA TRENTON + EMILY CUNNINGHAM; SAIC

Date and Time: Start: 04/23/09; 0845 Complete: 04/23/09; 1100

Purge Method(s): Bailer Bladder Pump Other: _____

Monitoring Method(s): PID (0.1 ppm) ^{CO}PID (0 ppm) LEL (NA) ^{H2S}Red (0 ppm) Other: _____
 MOHIRAE PLUS AIR MONITOR ID: 095-517599 ID: 095-517599 ID: 095-517599 ID: 095-517599 ID: _____

Total Volume of Water Removed (Gallons): 2.1 GAL

FIELD INSTRUMENT	SERIAL NUMBER	DATE OF LAST CALIBRATION
Water Quality: <u>HORIBA U-22</u>	<u>801008</u>	<u>04/23/09</u>
Water Level Tape: <u>SOLINST 300' WATER LEVEL METER</u>	<u>52545</u>	<u>NA</u>
Other: <u>MP-10 CONTROLLER</u>	<u>14007</u>	<u>NA</u>
Other: <u>MP-40 AIR COMPRESSOR</u>	<u>10504</u>	<u>NA</u>
Other: <u>SAMPLE PRO BLADDER PUMP</u>	<u>11854</u>	<u>NA</u>
Other: _____	AMT 04/23/09	
Other: _____		

Recorded By: Amanda Trenton

QA Checked By: Emily Cunningham 05/10/09

WELL PURGE FORM

Project Name: RVAAP SCFMW 1st Quarter 2009 GWS

Well ID and Location: SCFMW-005

Depths (btoc): 138.75 Top of Screen 153.75 Bottom of Screen 136 Top of Filter Pack 9.49' Water Level BTOC

Well Construction: PVC SCH 40 Stainless Steel Other: _____ 2 Casing I.D. (inches)

Well Volume: $V_t = V_c + V_f$ Where V_t : Total well volume V_c : Riser casing volume V_f : Filter pack volume

V_t (^{ONE TUBING} Total Well Volume) = 0.36 gallons

$V_c = (\text{Height of water column}) \times (\text{Volume of casing per foot})$
 $V_f = (((\text{Saturated thickness of filter pack}) \times (\text{Volume of borehole per foot})) \times (0.3) - ((\text{Saturated thickness of filter pack}) \times (\text{Volume of casing per foot})))$

$$\pi r^2 h \times 7.42 = \text{tubing volume in gallons}$$

$$\pi \left(\frac{1.25}{12}\right)^2 h \times 7.42 =$$

$$.0025 \times h =$$

$$.0025 \times 144.26 = 0.36 \text{ GAL} = 1.36 \text{ LITERS}$$

Site Conditions: 45-50°F; sunny

Field Observations: EQUIPMENT RINSEATE ASSOCIATED WITH SCFMW-005; BLADDER PUMP PLACED MID SCREEN (~140.25 FT BTOC); 0.45um FILTER USED W/ METALS SAMPLE ONLY. PURGE RATE OF ~150 mL/min - NO drawdown exhibited

Deviations from Approved SAP: FWSAP states purge rates >100mL/min can be used if no drawdown is exhibited - no deviations

Recorded By: Amanda Jentz

QA Checked By: Emily Cunningham 05/06/09

WELL PURGE LOG

Project Name: RUMAP SCF_{mw} GWS 1st Quarter 2009

Well ID and Location: SCFmw-005

Date	Time	LITERS Gallons Removed	Temp (oC)	Specific Cond. (mS/cm)	pH (std. unit)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	eH (mV)	Total Gallons Removed	Total Well Vols Removed	Comments
4/23/09	0900	2L	8.91	0.885	5.81	291.0	3.31	19	2L	0	Initial ~150mL/min purge rate
	0910	1.5	8.70	0.900	6.20	231.0	0.00	-23	3.5	2.5	brown/turbid
	0920	1.5	8.73	0.853	6.26	194.0	0.00	-29	5.0	3.7	
	0930	1.5	9.00	0.843	6.27	167.0	0.00	-30	6.5	4.75	
	0940	1.5	9.08	0.836	6.29	126.0	0.00	-28	8.0	5.9	PARAMETERS STABLE - SAMPLE 0945 Final H ₂ O level: 9.49 BTL
04/23/09											
CPM 3 14/6											

Recorded By: Amanda Trent

QA Checked By: Emily Cunningham 05/06/09

WELL PURGE FORM

Project Name: RVAAP SCFMW 1st Quarter 2009 GWS

Well ID and Location: SCFMW-006

Activity: Purge Development

SAMPLE ID: SCFMW-006-0020-GW + MS/MSD

DATE + TIME: 04/23/09; 1315

Personnel: Amanda Trenton + Emily Cunningham (SAIC)

Date and Time: Start: 04/23/09; 1229

Complete: 04/23/09; 1530

Purge Method(s): Bailer Bladder Pump Other: _____

Monitoring Method(s): PID (0.0ppm) ~~PID~~ ^{CO} (0ppm) LEL (0%vol) ~~MS~~ ^{MS} (0ppm) Other: _____

MULTIRAE PLUS

AIR MONITOR ID: 095-517599 ID: 095-517599 ID: 095-517599 ID: 095-517599 ID: _____

Total Volume of Water Removed (Gallons): 2.1 GAL

FIELD INSTRUMENT	SERIAL NUMBER	DATE OF LAST CALIBRATION
Water Quality: HORIBA U-22	801008	04/23/09
Water Level Tape: SOLINST 300' WATER LEVEL METER	52545	NA
Other: MP-10 CONTROLLER	14007	NA
Other: MP-40 AIR COMPRESSOR	10504	NA
Other: SAMPLE PRO BLADDER PUMP	11854	NA
Other: _____	AMT 04/23/09	_____
Other: _____	_____	_____

Recorded By: Amanda Trenton

QA Checked By: Emily Cunningham 05/06/09

WELL PURGE FORM

Project Name: RVAAP SCFMW 1st Quarter 2009 GWS

Well ID and Location: SCFMW-0060

Depths (btoc): 75.75 Top of Screen 85.75 Bottom of Screen 73 Top of Filter Pack 17.51 Water Level

* Collected during well development

Well Construction: PVC SCH40 Stainless Steel Other: 2 Casing I.D. (inches)

Well Volume: Vt = Vc + Vf Where Vt: Total well volume Vc: Riser casing volume Vf: Filter pack volume Vt (Total Tubing Volume) = 0.17 gallons

Vc = (Height of water column) x (Volume of casing per foot) Vf = (((Saturated thickness of filter pack) x (Volume of borehole per foot)) x (0.3) - ((Saturated thickness of filter pack) x (Volume of casing per foot)))

Handwritten calculations: πr^2h x 7.42 = tubing volume in gallons; π(.125/2)^2 h x 7.42 = .0025 x h = .0025 x 68.24 = 0.17 GAL = 0.65 L

Site Conditions: 55°F, sunny

Field Observations: MS/MSD COLLECTED AT SCFMW-0060; BLADDER PUMP PLACED MID-SCREEN (~80.75 FT BTOC); 0.45 μm FILTER USED ON METALS SAMPLE; PURGE RATE OF ~250 mL/min - NO drawdown exhibited

Deviations from Approved SAP: NONE

Recorded By: Amanda Jentz

QA Checked By: Emily Cunningham 05/06/09

WELL PURGE FORM

Project Name: RVAAP SCFmw 2nd Quarter 2009 GWS

Well ID: SCFmw - 001

Activity: Purge Development

Sample ID: SCFmw-001-0026-GW Date/Time: 07/14/09; 1445

Personnel: EMILY CUNNINGHAM; AMANDA TRENW; + PAUL PARRISH

-0026-GF
-0027-GF

Date and Time: Start: 07/14/09; 1140

Complete: 07/14/09; 1848

Purge Method(s): Bailer Bladder Pump Other: _____

Monitoring Method(s): PID LEL H2S CO Other: _____

ID: _____ ID: _____ ID: _____ ID: _____ ID: _____

Initial Reading _____

Total Volume of Water Removed (Gallons): ~4 GALLONS

FIELD INSTRUMENT	SERIAL NUMBER	DATE OF LAST CALIBRATION
Water Quality: HORIBA U-22	2012031	07/14/09
Water Level Tape: Solinst 101 300' WATER LEVEL	43850	NA
Other: Solinst Bladder Pump Controller	16213	NA
Other: BED 1.75" x 36" Bladder Pump	15130	NA
Other:		
Other:	amt 07/14/09	
Other:		

Recorded By: Amanda Trenton 07/14/09

QA Checked By: Emily Cunningham 07/21/09

WELL PURGE FORM

Project Name: RVAAP SCFmw 2nd Quarter 2009 GWS

Well ID: SCFmw-001

Depths (btoc): 203 Top of Screen 213 Bottom of Screen 200 Top of Filter Pack 89.55' Water Level 213.61 DEPTH TO BOTTOM

Well Construction: [x] PVC [] Stainless Steel [] Other: 2 Casing I.D. (inches) SCH 80 PVC

Well Volume: Vt = Vc + Vf Where Vt: Total well volume Vc: Riser casing volume Vf: Filter pack volume Vt (Total Well Volume) = NA gallons

Vc = (Height of water column) x (Volume of casing per foot) Vf = (((Saturated thickness of filter pack) x (Volume of borehole per foot)) x (0.3) - ((Saturated thickness of filter pack) x (Volume of casing per foot)))

Site Conditions: 72°F; sunny; insects; grass is growing in restored areas

Field Observations: Depth to Bottom - 213.61', solid. As pumping continued - it appears that the pump rate decreased over time from initial 250ml/min. After relieving air pressure rate tended to pick back up.

Deviations from Approved SAP: NONE - PARAMETERS STABLE PER FWSAP PRIOR TO SAMPLING

Recorded By: Amanda Srenton 07/14/09

QA Checked By: Emily Cuviglia 7/21/09

WELL PURGE LOG

Project Name: RVAAP SCFmw 2nd Quarter 2009 GWS

Well ID: SCFmw-001

Date	Time	Liters Removed	Temp (oC)	Specific Cond. (mS/cm)	pH (std. unit)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	eH (mV)	Total Liters Removed	Total Tubing Vol Removed	Comments
07/14/09	1149	1L	14.9	0.649	6.56	305	5.49	-11	1L	89.97	Initial Rusty/Turbid ~250mL/min
	1154	1.25	14.8	0.605	6.08	268	2.74	0	2.25	89.98	
	1159	1.25	14.0	0.603	6.07	280	2.35	-1	3.5	89.97	
	1204	1.25	13.9	0.607	6.06	269	1.94	-4	4.75	87.67	Fluctuates btwn 905' - 87.60' w/ pumping
	1209	1.25	15.0	0.626	6.09	294	1.13	-9	6.0	---	1213-AIR IN LINE-WAIT UNTIL IT HAS PASSED
	1340	1.25	14.4	0.578	7.03	539	5.53	-32	7.25	---	RESTRICT AFTER TROUBLESHOOTING PUMP
	1345	1.25	13.7	0.612	6.74	557	2.06	-27	8.5	---	
	1350	1.25	13.6	0.620	6.50	442	0.80	-25	9.75	---	difficulties w/ air pressure btwn 1350-1405
	1405	1.25	15.6	0.617	6.49	514	0.82	-27	11.0	89.97	
	1410	1.25	16.4	0.609	6.58	410	0.73	-33	12.25	---	
	1415	1.25	17.6	0.605	6.72	353	0.80	-39	13.5	---	pump is pumping @ rate <250mL/min
	1420	1.25	17.8	0.621	6.85	371	0.97	-46	14.75	---	
	1425	1.25	18.5	0.607	6.90	319	0.95	-49	16.0	---	tubing in sun
	1430	1.25	16.9	0.622	6.93	328	0.99	-53	17.25	---	
	1435	1.25	17.3	0.618	6.94	418	0.93	-55	18.5	---	pump is pumping <250mL/min
✓	1440	1.25	17.0	0.617	6.94	366	0.91	-55	19.75	89.96	PARAMETERS STABLE

Recorded By: Amanda Sinton 07/14/09

QA Checked By: Emily Cunningham 07/21/09

WELL PURGE FORM

Project Name: RVAAP SCFmw 2nd Quarter 2009 GWS

Well ID: SCFmw-002

Activity: Purge Development

Sample ID: SCFmw-002-0028-GW

Date/Time: 1950 / 07/17/09

Personnel: EMILY CUNNINGHAM / PAUL PARRISH

-0028-GF
-0029-GF

Date and Time: Start: 1933; 07/17/09

Complete: 2020; 07/17/09

Purge Method(s): Bailer Bladder Pump Other:

Monitoring Method(s): PID LEL H2S CO Other:

ID: _____ ID: _____ ID: _____ ID: _____ ID: _____

Initial Reading NA NA NA NA NA

Total Volume of Water Removed (Gallons): NIL

FIELD INSTRUMENT	SERIAL NUMBER	DATE OF LAST CALIBRATION
Water Quality: HX21BA U-22	0012031	07/17/09
Water Level Tape: SOLINIST 101-300'	43850	NA
Other: SOLINIST Bladder Pump Controller	16213	NA
Other: QED 1.75" x 36" Bladder Pump	15130	NA
Other:	7/17/09	
Other:		
Other:		

Recorded By: Emily Cunningham 07/16/09

QA Checked By: Amanda Greer 07/21/09

WELL PURGE FORM

Project Name: RVAAP SCFmw 2nd Quarter 2009 GWS

Well ID: SCFmw-602

Depths (btoc): 139 Top of Screen 149 Bottom of Screen 136 Top of Filter Pack 19.16' Water Level DTB 149.65'

Well Construction: [x] PVC [] Stainless Steel [] Other: 2 Casing I.D. (inches) SCH 40 PVC

Well Volume: Vt = Vc + Vf Where Vt: Total well volume Vc: Riser casing volume Vf: Filter pack volume Vt (Total Well Volume) = NA gallons

Vc = (Height of water column) x (Volume of casing per foot) Vf = (((Saturated thickness of filter pack) x (Volume of borehole per foot)) x (0.3) - ((Saturated thickness of filter pack) x (Volume of casing per foot)))

Site Conditions: 80°F, sunny

Field Observations: 8" grass around well is 1/2" tall and thick

Deviations from Approved SAP: NONE

Recorded By: Emily Cunningham 04/16/09 QA Checked By: Amanda Trent 07/21/09

WELL PURGE LOG

Project Name: RVAAP SCFmw 2nd Quarter 2009 GWS

Well ID: SCFmw-002

Date	Time	Liters Removed	Temp (oC)	Specific Cond. (mS/cm)	pH (std. unit)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	eH (mV)	Total Liters Removed	Total Tubing Vol Removed	Comments
7/16/09	1933	.25	12.9	0.699	6.99	145	0.09	-63	.25	—	Initial 19.87' clunky 250m flow rate
	1937	↓	12.7	0.679	6.77	85.2	0.00	-64	.50	—	
	1942	↓	12.7	0.669	6.67	47.6	0.00	-74	.75	—	
✓	1947	↓	12.5	0.659	6.66	56.8	0.00	-75	1.0	—	SAMPLE @ 1950. parameters stat
<div style="position: absolute; top: 50%; left: 50%; transform: translate(-50%, -50%); opacity: 0.5;"> <p>EC 07/17/09</p> </div>											

Recorded By: Emily Curighan 7/20/09

QA Checked By: Amanda Svento 07/21/09

WELL PURGE FORM

Project Name: RVAAP SCFmw 2nd Quarter 2009 GWS

Well ID: SCFmw-003

Activity: Purge Development

Sample ID: SCFmw-003^{EC}-0030-GW Date/Time: 1800 / 07.16.09

Personnel: EMILY CUNNINGHAM / PAUL PARRISH

- 0030-GF
- 0031-GF

Date and Time: Start: 07/16/09, 1735

Complete: 1823; 07/16/09

Purge Method(s): Bailer Bladder Pump

Other: _____

Monitoring Method(s): PID

LEL

H2S

CO

Other: _____

ID: _____

ID: _____

ID: _____

ID: _____

ID: _____

Initial Reading NA

NA

NA

NA

NA

Total Volume of Water Removed (Gallons): ~ 1.5

FIELD INSTRUMENT	SERIAL NUMBER	DATE OF LAST CALIBRATION
Water Quality: HORIBA V-22	2012031	07/16/09
Water Level Tape: SOLINIST 101-300'	43850	N/A
Other: SOLINIST ^{EC} Bladder Pump Controller	16213	NA
Other: SOLINIST ^{EC} 1.75" x 3/4" Bladder Pump	15130	NA
Other:		
Other:		
Other:		

Recorded By: Emily Cunningham 07/17/09

QA Checked By: Amande Trent 07/21/09

2/2

WELL PURGE FORM

Project Name: RVAAP SCFmw 2nd Quarter 2009 GWS

Well ID: SCFmw-003

Depths (btoc): 129 Top of Screen 139 Bottom of Screen 127 Top of Filter Pack 8.53 Water Level 139.65 Well TD

Well Construction: [x] PVC [] Stainless Steel [] Other: 2 Casing I.D. (inches)

Well Volume: Vt = Vc + Vf Where Vt: Total well volume Vc: Riser casing volume Vf: Filter pack volume Vt (Total Well Volume) = NA gallons

Vc = (Height of water column) x (Volume of casing per foot) Vf = (((Saturated thickness of filter pack) x (Volume of borehole per foot)) x (0.3) - ((Saturated thickness of filter pack) x (Volume of casing per foot)))

Site Conditions: sunny, grass has grown in seeded areas at EC; 80°F

Field Observations: TD OF WELL 139.65', Grass around well has grown at EC back. 80 07/16/09

Deviations from Approved SAP: NONE EC

Recorded By: Emily Cunningham 07/16/09

QA Checked By: Amanda Vent 07/21/09

WELL PURGE LOG

Project Name: RVAAP SCFmw 2nd Quarter 2009 GWS

Well ID: SCFmw-003

Date	Time	mL Liters Removed	Temp (oC)	Specific Cond. (mS/cm)	pH (std. unit)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	eH (mV)	Total Liters Removed	Total Tubing Vol Removed	Comments
07/16/09	1730				5.70						INITIAL
7/16/09	1735	200ml	13.1	0.635	7.88	296	3.40	-54	.20		Initial WL: 8.78'; clear
	1740	250ml	12.8	0.523	6.82	300	0.00	-43	.45		
	1745	250	13.3	0.516	6.56	455	0.00	-43	.70		
	1750	350	12.9	0.525	6.48	298	0.00	-53	1.05		350ml
	1755	350	12.8	0.523	6.41	309	0.00	-47	1.50		SAMPLE TIME 1800
EC 7/16/09											

Recorded By:

Emily Cunningham 7/16/09

QA Checked By:

Amanda Suter 07/21/09

WELL PURGE FORM

Project Name: RVAAP SCFmw 2nd Quarter 2009 GWS

Well ID: SCFmw-004

Activity: Purge Development

Sample ID: SCFmw-004-0032-GW Date/Time: 07/15/09 ; 1545

Personnel: EMILY CUNNINGHAM + AMANDA TRENTON SCFmw-004-0032-GF + MS/MSD
SCFmw-004-0033-GF

Date and Time: Start: 07/15/09; 1520

Complete: 07/15/09; 1708

Purge Method(s): Bailor Bladder Pump Other: _____

Monitoring Method(s): PID LEL H2S CO Other: _____

ID: _____ ID: _____ ID: _____ ID: _____ ID: _____

Initial Reading NA NA NA NA NA

Total Volume of Water Removed (Gallons): 2.4 GAL

FIELD INSTRUMENT	SERIAL NUMBER	DATE OF LAST CALIBRATION
Water Quality: <u>HORIBA U-22</u>	<u>2012031</u>	<u>07/15/09</u>
Water Level Tape: <u>SOLINIST 101 - 300'</u>	<u>43850</u>	<u>NA</u>
Other: <u>Solinist Bladder Pump Controller</u>	<u>16213</u>	<u>NA</u>
Other: <u>QED 1.75" x 36" Bladder Pump</u>	<u>15130</u>	<u>NA</u>
Other: _____	_____	_____
Other: _____	_____	_____
Other: _____	_____	_____

Recorded By: Amanda Trenton 07/15/09

QA Checked By: Emily Cunningham 07/21/09

WELL PURGE FORM

Project Name: RVAAP SCFmw 2nd Quarter 2009 GWS

Well ID: SCFmw-004

Depths (btoc): 102.4 Top of Screen 112.4 Bottom of Screen 97.4 Top of Filter Pack 0.21 Water Level 112.47 DEPTH TO BOTTOM

Well Construction: [x] PVC [] Stainless Steel [] Other: _____ Casing I.D. (inches)

Well Volume: Vt = Vc + Vf Where Vt: Total well volume Vc: Riser casing volume Vf: Filter pack volume Vt (Total Well Volume) = _____ gallons

Vc = (Height of water column) x (Volume of casing per foot)
Vf = (((Saturated thickness of filter pack) x (Volume of borehole per foot)) x (0.3) - ((Saturated thickness of filter pack) x (Volume of casing per foot))

Site Conditions: 80 F ; sunny

Field Observations: MS/MSD collected; area around SCFmw 004 + abandoned borehole exhibit good vegetative growth.

Deviations from Approved SAP: NONE

Recorded By: Amanda Jentm 07/15/09 QA Checked By: Emily Cunningham 07/21/09

WELL PURGE LOG

Project Name: RVAAP SCFmw 2nd Quarter 2009 GWS

Well ID: SCFmw-004

Date	Time	Liters Removed	Temp (oC)	Specific Cond. (mS/cm)	pH (std. unit)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	eH (mV)	Total Liters Removed	Flow rate	Comments
										Total Tubing Vol Removed	
07/15/09	1528	3L	14.3	1.19	6.85	186	0.45	-87	3	400 ml/min	initial; rotten egg sulfur odor
	1533	2L	14.2	1.15	6.59	82.3	0.00	-86	5	↓	no drawdown exhibited
	1538	2L	14.1	1.14	6.53	49.9	0.00	-89	7	↓	
✓	1543	2L	14.4	1.13	6.53	4.5	0.00	-91	9	✓	Parameters stable - collect sample
		MD		07/15/09 1.58	6.30	143					
07/15/09											

Recorded By:

Amanda Trent 07/15/09

QA Checked By:

Emily Cunningham 07/21/09

WELL PURGE FORM

Project Name: RVAAP SCFmw 2nd Quarter 2009 GWS

Well ID: SCFmw-005

Activity: Purge Development

Sample ID: SCFmw-005-003A-GW

Date/Time: 07/16/09 / 1255

Personnel:

EMILY CUNNINGHAM / PAUL DEVLISH - Amanda Venton / Mike Denallo

Date and Time:

Start: 07/16/09 ; 1150

Complete: 07/16/09 ; 1150

Purge Method(s):

Bailer

Bladder Pump

Other:

Monitoring Method(s):

PID

LEL

H2S

CO

Other:

ID:

ID:

ID:

ID:

ID:

Initial Reading

NA

NA

NA

NA

NA

Total Volume of Water Removed (Gallons):

1.0 GAL

FIELD INSTRUMENT	SERIAL NUMBER	DATE OF LAST CALIBRATION
Water Quality: HORIBA V-22	2012031	07/16/09
Water Level Tape: SOLINIST 101-300'	43850	NA
Other: Solinist Bladder Pump Controller	10213	NA
Other: QED 1.75" x 3.0" Bladder Pump	15130	NA
Other:		
Other:		
Other:		

Recorded By:

Emily Cunningham 7/16/09

QA Checked By:

Amanda Venton 07/20/09

WELL PURGE FORM

Project Name: RVAAP SCFmw 2nd Quarter 2009 GWS

Well ID: SCFmw-005

Depths (btoc): 141 Top of Screen 156 Bottom of Screen 138 Top of Filter Pack 11.72 Water Level 156.41 DEPTH TO BOTTOM

Well Construction: [x] PVC [] Stainless Steel [] Other: 2 Casing I.D. (inches)

Well Volume: Vt = Vc + Vf Where Vt: Total well volume Vc: Riser casing volume Vf: Filter pack volume Vt (Total Well Volume) = NA gallons

Vc = (Height of water column) x (Volume of casing per foot) Vf = (((Saturated thickness of filter pack) x (Volume of borehole per foot)) x (0.3) - ((Saturated thickness of filter pack) x (Volume of casing per foot)))

Site Conditions: 70°F; Heat of 83°F; sunny and partly cloudy; insects; grass is growing in restored areas.

Field Observations: Depth to Bottom 156.41'; Flow rate is reduced due to initial collapse of Teflon tubing line - line only partially reinflated - tubing will be replaced for 3rd quarter GWS

Deviations from Approved SAP: NONE - PARAMETERS STABLE PER FWSAP PRIOR TO SAMPLING

Recorded By: Amanda Ventra 07/16/09 QA Checked By: Emily Cunningham 07/21/09

WELL PURGE LOG

Project Name: RVAAP SCFmw 2nd Quarter 2009 GWS

Well ID: SCFmw-005

Date	Time	Liters Removed	Temp (oC)	Specific Cond. (mS/cm)	pH (std. unit)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	eH (mV)	Total Liters Removed	Total Tubing Vol Removed	Comments
07/16/09	1152	~1L	21.2	0.817	6.45	153	4.22	-62	~1L	11.73	Initial; sulfur odor
	1217	0.15	21.3	0.783	6.43	103	3.44	-43	~2L	11.72	~50ml min flow rate
	1227	0.5	21.1	0.781	6.16	113	1.66	-34	2.5	11.72	
	1232	0.25	20.2	0.782	6.22	128	1.57	-36	2.75	—	
	1237	0.25	22.7	0.743	6.31	142	1.40	-41	3.0	—	
	1242	0.25	24.1	0.758	6.43	161	1.56	-48	3.25	—	
	1247	0.25	24.8	0.761	6.55	169	1.63	-53	3.5	—	~50ml min flow rate
	1252	0.25	24.5	0.761	6.62	170	1.70	-57	3.75	11.73	START SAMPLING at 1255
07/16/09											

Recorded By: Emily Cunningham 7/16/09

QA Checked By: Amanda Trenton 07/20/09

WELL PURGE FORM

Project Name: RVAAP SCFmw 2nd Quarter 2009 GWS

Well ID: SCFmw-0006

Activity: Purge Development

Sample ID: SCFmw-0006-0036-GW Date/Time: 07/15/09 ; 1210

Personnel: Emily Cunningham + Amanda Trenton

SCFmw-0006-0036-GF (metals)
SCFmw-0006-0037-GF Perculate + duplicate + split (see pg 2)

Date and Time: Start: 07/15/09 ; 1058

Complete: 07/15/09 ; 1315

Purge Method(s): Bailor Bladder Pump Other: _____

Monitoring Method(s): PID LEL H2S CO Other: _____

ID: NA ID: NA ID: NA ID: NA ID: NA

Initial Reading _____

Total Volume of Water Removed (Gallons): 2.65 gal

FIELD INSTRUMENT	SERIAL NUMBER	DATE OF LAST CALIBRATION
Water Quality: <u>HORIBA U-22</u>	<u>2012031</u>	<u>07/15/09</u>
Water Level Tape: <u>Solinist 101-300'</u>	<u>43850</u>	<u>NA</u>
Other: <u>Solinist Bladder Pump Controller</u>	<u>16213</u>	<u>NA</u>
Other: <u>GED 1.75" x 30" Bladder Pump</u>	<u>15130</u>	<u>NA</u>
Other:		
Other:	shw 07/15/09	
Other:		

Recorded By: Amanda Trenton 07/15/09

QA Checked By: Emily Cunningham 07/21/09

WELL PURGE FORM

Project Name: RVAAP SCFmw 2nd Quarter 2009 GWS

Well ID: SCFmw-0006

Depths (btoc): 78' Top of Screen 88' Bottom of Screen 75' Top of Filter Pack 18.28 Water Level 88.32 Depth to Bottom

Well Construction: [X] PVC [] Stainless Steel [] Other: 2 Casing I.D. (inches) SCH 40 PVC

Well Volume: Vt = Vc + Vf Where Vt: Total well volume Vc: Riser casing volume Vf: Filter pack volume Vt (Total Well Volume) = NA gallons

Vc = (Height of water column) x (Volume of casing per foot) Vf = (((Saturated thickness of filter pack) x (Volume of borehole per foot)) x (0.3) - ((Saturated thickness of filter pack) x (Volume of casing per foot)))

Site Conditions: 72 F; Sunny

Field Observations: Duplicate sample SCFmw-0006-0040-GW; SCFmw-0006-0040-GF + SCFmw-0006-0041-GF + Split Sample SCFmw-0006-0042-GW collected @ 1240. AREA AROUND WELL HAS GOOD VEGETATION GROWTH

Deviations from Approved SAP: NONE

Recorded By: Amanda Sinton 07/15/09 QA Checked By: Emily Cunningham 07/21/09

WELL PURGE LOG

Project Name: RVAAP SCFmw 2nd Quarter 2009 GWS

Well ID: SCFmw-006

Date	Time	Liters Removed	Temp (oC)	Specific Cond. (mS/cm)	pH (std. unit)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	eH (mV)	Total Liters Removed	FLOW RATE		Comments
										Total Tubing Vol. Removed		
07/15/09	1128	<1L	16.7	0.463	6.45	216	2.05	14	<1L	260ml/min		Initial - AIR PRESSURE MUST BE MANUALLY MONITORED
	1138	<2L	14.3	0.445	6.37	91.2	0.30	-44	<3L	200ml/min		no drawdown exhibited WE=18.27
	1145	1.25L	14.2	0.434	6.40	63.5	0.02	-49	4L			
	1150	1.25L	14.1	0.441	6.45	47.1	0.00	-55	5L	↓		no drawdown exhibited WE=18.28
	1155	1L	12.7	0.440	6.50	43.6	0.00	-62	6L	~400ml/min		FIXED AIR PRESSURE DIFFICULTIES
	1200	2L	12.2	0.437	6.56	38.4	0.00	-69	8L	↓		no drawdown exhibited WE=18.27
	1205	2L	12.5	0.439	6.63	22.2	0.00	-73	10L	↓		PARAMETERS STABLE COLLECT SAMPLES
SWM 07/15/09												

Recorded By: Amanda Denton 07/15/09

QA Checked By: Emily Cunningham 07/21/09

WELL PURGE FORM

Project Name: RVAAP SCFmw 3rd Quarter 2009 GWS

Well ID: SCFmw-001

Activity: Purge Development

Sample ID: SCFmw-001-0040-GW Date/Time: 10/12/09; 1030
SCFmw-001-0040-GF

Personnel: AMANDA TRENTON + HEATHER MILLER

Date and Time: Start: 10/12/09; 1549

Complete: 10/12/09; 1920

Purge Method(s): Bailer Bladder Pump Other: _____

Monitoring Method(s): PID LEL H2S CO Other: _____

ID: NA ID: NA ID: NA ID: NA ID: NA

Initial Reading NA NA NA NA NA

Total Volume of Water Removed (Gallons): ~1.5 GAL

FIELD INSTRUMENT	SERIAL NUMBER	DATE OF LAST CALIBRATION
Water Quality: Horiba U-22	82121	10/12/09
Water Level Tape: Heron Dipper-T 300' Water Level Indicator	15480	NA
Other: Solinst 466 Pump Control Unit	16213	NA
Other: QED 1.75"x36" Bladder Pump	15130	NA
Other:		
Other:		
Other:		

Recorded By: Amanda Trenton

QA Checked By: Emily Luningher 12/21/09

WELL PURGE FORM

Project Name: RVAAP SCFmw 3rd Quarter 2009 GWS

Well ID: SCFmw-001

Depths (btoc): 203' Top of Screen 213' Bottom of Screen 200' Top of Filter Pack 93.70 Water Level

Well Construction: [x] PVC [] Stainless Steel [] Other: Casing I.D. (inches) 2

Well Volume: Vt = Vc + Vf Where Vt: Total well volume Vc: Riser casing volume Vf: Filter pack volume Vt (Total Well Volume) = gallons

Vc = (Height of water column) x (Volume of casing per foot) Vf = (((Saturated thickness of filter pack) x (Volume of borehole per foot)) x (0.3) - ((Saturated thickness of filter pack) x (Volume of casing per foot)))

Site Conditions: 45 F; mostly cloudy; good vegetative growth at SCFmw-001 - a few sparse areas

Field Observations: Reduced volume due to low flow (tank was losing a lot of pressure)

Deviations from Approved SAP: NONE

Recorded By: Amanda Henton 10/12/09

QA Checked By: Emily Lunnigher 12/21/09

WELL PURGE LOG

Project Name: RVAAP SCFmw 3rd Quarter 2009 GWS

Well ID: SCFmw-001

WATER LEVEL

Date	Time	Liters Removed	Temp (oC)	Specific Cond. (mS/cm)	pH (std. unit)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	eH (mV)	Total Liters Removed	Total Tubing Vol Removed	Comments
10/12/09	1555	1L	11.8	78.3	6.69	999	2.00	-65	1L	90.57	Initial ; 150-175mL/min
	1600	0.75	11.9	82.2	6.67	999	0.36	-85	1.75	—	
	1605	0.75	11.8	71.7	6.69	999	9.58	-76	2.5	90.57	Emptied flow cell @ 1602
	1610	0.75	12.0	84.5	6.70	999	1.58	-95	3.25	90.40	~45mL/min
	1615	0.75	12.2	84.9	6.70	999	0.91	-103	4.0	—	
	1620	0.75	12.2	85.6	6.71	999	0.27	-108	4.75	—	
	1625	0.75	12.3	86.3	6.72	999	0.00	-111	5.5	90.60	
V	1630	0.75									Collect sample; purge rate slowing

Recorded By: Almanda Trenton 10/12/09

QA Checked By: Emily Cunningham 12/21/09

WELL PURGE FORM

Project Name: RVAAP SCFmw 3rd Quarter 2009 GWS

Well ID: SCFmw-002

Activity: Purge Development

Sample ID: SCFmw-002-0047-GW **Date/Time:** 10/14/09; 1705

Personnel: AMANDA TRENTON AND HEATHER MILLER

Date and Time: **Start:** 10/14/09; 1627

Complete: 10/14/09; 1740

Purge Method(s): Bailer Bladder Pump Other: _____

Monitoring Method(s): PID LEL H2S CO Other: _____

ID: NA ID: NA ID: NA ID: NA ID: NA

Initial Reading NA NA NA NA NA

Total Volume of Water Removed (Gallons): ~4 GAL

FIELD INSTRUMENT	SERIAL NUMBER	DATE OF LAST CALIBRATION
Water Quality: Horiba U-22	82121	10/14/09
Water Level Tape: Heron Dipper-T 300' Water Level Indicator	15480	NA
Other: Solinst 466 Pump Control Unit	16213	NA
Other: QED 1.75"x36" Bladder Pump	15130	NA
Other:		
Other:		
Other:		

Recorded By: Amanda Trenton 10/14/09

QA Checked By: Emily Cunningham 10/14/09

WELL PURGE FORM

Project Name: RVAAP SCFmw 3rd Quarter 2009 GWS

Well ID: SCFmw-002

Depths (btoc): 139 Top of Screen 149 Bottom of Screen 136 Top of Filter Pack 21.18' Water Level

Well Construction: [X] PVC [] Stainless Steel [] Other: 2" Casing I.D. (inches)

Well Volume: Vt = Vc + Vf Where Vt: Total well volume Vc: Riser casing volume Vf: Filter pack volume Vt (Total Well Volume) = gallons

Vc = (Height of water column) x (Volume of casing per foot) Vf = (((Saturated thickness of filter pack) x (Volume of borehole per foot)) x (0.3) - ((Saturated thickness of filter pack) x (Volume of casing per foot)))

Site Conditions: 40°F; overcast

Field Observations: Good vegetative growth in area around SCFmw-002

Deviations from Approved SAP: NONE

Recorded By: Amanda Henton 10/14/09 QA Checked By: Emily Cunningham 10/14/09

WELL PURGE FORM

Project Name: RVAAP SCFmw 3rd Quarter 2009 GWS

Well ID: SCFmw-003

Activity: Purge Development

Sample ID: SCFmw-003-0048-GW **Date/Time:** 10/13/09; 1535

Personnel: AMANDA TRENTON AND RICH SPRINZL

Date and Time: **Start:** 10/13/09; 1800

Complete: 10/13/09; 1907

Purge Method(s): Bailer Bladder Pump Other: _____

Monitoring Method(s): PID LEL H2S CO Other: _____

ID: NA ID: NA ID: NA ID: NA ID: NA

Initial Reading NA NA NA NA NA

Total Volume of Water Removed (Gallons): ~ 3.3 GAL

FIELD INSTRUMENT	SERIAL NUMBER	DATE OF LAST CALIBRATION
Water Quality: Horiba U-22	82121	10/13/09
Water Level Tape: Heron Dipper-T 300' Water Level Indicator	15480	NA
Other: Solinst 466 Pump Control Unit	16213	NA
Other: QED 1.75"x36" Bladder Pump	15130	NA
Other:		
Other:		
Other:		

Recorded By: Amanda Trenton 10/13/09

QA Checked By: Emily Cunningham 12/21/09

WELL PURGE FORM

Project Name: RVAAP SCFmw 3rd Quarter 2009 GWS

Well ID: SCFmw-0003

Depths (btoc): 129' Top of Screen 139' Bottom of Screen 127' Top of Filter Pack 10.05' Water Level

Well Construction: [X] PVC [] Stainless Steel [] Other: 2" Casing I.D. (inches)

Well Volume: Vt = Vc + Vf Where Vt: Total well volume Vc: Riser casing volume Vf: Filter pack volume Vt (Total Well Volume) = gallons

Vc = (Height of water column) x (Volume of casing per foot) Vf = (((Saturated thickness of filter pack) x (Volume of borehole per foot)) x (0.3) - ((Saturated thickness of filter pack) x (Volume of casing per foot)))

Site Conditions: 50' F, overcast, good grass growth around SCFmw-0003 area

Field Observations: none

Deviations from Approved SAP: none

Recorded By: Amanda Trenton 10/13/09

QA Checked By: Emily Cunningham 12/21/09

WELL PURGE LOG

Project Name: RVAAP SCFmw 3rd Quarter 2009 GWS

Well ID: SCFmw-003

Date	Time	Liters Removed	Temp (oC)	Specific Cond. (mS/cm)	pH (std. unit)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	eH (mV)	Total Liters Removed	Water Level (ft btoc)	Comments
10/13/09	1800	0.75	11.6	62.1	6.45	79.2	5.15	27	0.75	10.05	375 mL/min Commence PURGING @ 1800
	1807	1.9	11.6	62.5	6.39	51.9	0.59	-7	2.75	10.06	
	1812	2.0	11.6	62.0	6.38	16.7	0.40	-22	4.75	10.06	400 mL/min
	1817	2.0	11.6	62.5	6.38	9.1	0.05	-30	6.75	10.07	
	1822	2.0	11.5	62.6	6.39	10.0*	0.00	-35	8.75	10.07	
	1827	2.0	11.6	62.6	6.39	10.0*	0.00	-39	10.75	10.07	
	1832	2.0	11.6	62.6	6.39	10.0*	0.00	-41	12.75	10.07	Parameters stable

Recorded By: Amanda Jentz 10/13/09

QA Checked By: Emily Cunningham 12/21/09

WELL PURGE FORM

Page: 1 of 3

Project Name: RVAAP SCFmw 3rd Quarter 2009 GWS

Well ID: SCFmw-004

Activity: Purge Development

Sample ID: SCFmw-004-0049-GW **Date/Time:** 10/14/09; 1025

Personnel: AMANDA TRENTON + HEATHER MILLER

Date and Time: **Start:** 10/14/09; 0950

Complete: 10/14/09; 1125

Purge Method(s): Bailer Bladder Pump Other: _____

Monitoring Method(s): PID LEL H2S CO Other: _____

ID: NA ID: NA ID: NA ID: NA ID: NA

Initial Reading NA NA NA NA NA

Total Volume of Water Removed (Gallons): ~ 2 GAL

FIELD INSTRUMENT	SERIAL NUMBER	DATE OF LAST CALIBRATION
Water Quality: Horiba U-22	82121	10/14/09
Water Level Tape: Heron Dipper-T 300' Water Level Indicator	15480	NA
Other: Solinst 466 Pump Control Unit	16213	NA
Other: QED 1.75"x36" Bladder Pump	15130	NA
Other:		
Other:		
Other:		

Recorded By: Amanda Trenton 10/14/09

QA Checked By: Emily Cunningham 12/21/09

WELL PURGE FORM

Project Name: RVAAP SCFmw 3rd Quarter 2009 GWS

Well ID: SCFmw-004

Depths (btoc): 102.4' Top of Screen 112.4' Bottom of Screen 97.4' Top of Filter Pack 1.70' Water Level (ft btoc)

Well Construction: [X] PVC [] Stainless Steel [] Other: 2" Casing I.D. (inches)

Well Volume: Vt = Vc + Vf Where Vt: Total well volume Vc: Riser casing volume Vf: Filter pack volume Vt (Total Well Volume) = gallons

Vc = (Height of water column) x (Volume of casing per foot) Vf = (((Saturated thickness of filter pack) x (Volume of borehole per foot)) x 0.3) - ((Saturated thickness of filter pack) x (Volume of casing per foot))

Site Conditions: 40°F; overcast; trace rain

Field Observations: none

Deviations from Approved SAP: none

Recorded By: Amanda Jentor 10/14/09

QA Checked By: Emily Cunningham 12/21/09

WELL PURGE FORM

Project Name: RVAAP SCFmw 3rd Quarter 2009 GWS

Well ID: SCFmw-005

Activity: Purge Development

Sample ID: SCFmw-005-0050-GW Date/Time: 10/13/09; 1420
SCFmw-005-0050-GF

Personnel: AMANDA TRENTON + HEATHER MILLER

Date and Time: Start: 10/13/09; 1149

Complete: 10/13/09; ~~1600~~ 1700

Purge Method(s): Bailer Bladder Pump Other: _____

Monitoring Method(s): PID LEL H2S CO Other: _____

ID: NA ID: NA ID: NA ID: NA ID: NA

Initial Reading NA NA NA NA NA

Total Volume of Water Removed (Gallons): ~3.5 GAL

FIELD INSTRUMENT	SERIAL NUMBER	DATE OF LAST CALIBRATION
Water Quality: Horiba U-22	82121	10/13/09
Water Level Tape: Heron Dipper-T 300' Water Level Indicator	15480	NA
Other: Solinst 466 Pump Control Unit	16213	NA
Other: QED 1.75"x36" Bladder Pump	15130	NA
Other:		
Other:		
Other:		

Recorded By: Amanda Trenton 10/13/09

QA Checked By: Emily Cunningham 12/21/09

WELL PURGE FORM

Project Name: RVAAP SCFmw 3rd Quarter 2009 GWS

Well ID: SCFmw-005

Depths (btoc): 141' Top of Screen 196' Bottom of Screen 138' Top of Filter Pack 13.25 Water Level (ft) 156.40 DEPTH TO BOTTOM

Well Construction: [X] PVC [] Stainless Steel [] Other: _____ 2 Casing I.D. (inches)

Well Volume: Vt = Vc + Vf Where Vt: Total well volume Vc: Riser casing volume Vf: Filter pack volume Vt (Total Well Volume) = _____ gallons

Vc = (Height of water column) x (Volume of casing per foot) Vf = (((Saturated thickness of filter pack) x (Volume of borehole per foot)) x (0.3) - ((Saturated thickness of filter pack) x (Volume of casing per foot)))

Site Conditions: 50'F; overcast

Field Observations: Associated w/ Equip Rinse SCFqc-011-0055-ER; Duplicate SAMPLES SCFmw-005-0052-GW / SCFmw-005-0052-GF + SPLIT SAMPLE SCFmw-005-0053-GW / SCFmw-005-0053-GF

Deviations from Approved SAP: NONE

Recorded By: Amanda Hunter 10/13/09

QA Checked By: Emily Cunningham 12/21/09

WELL PURGE LOG

Project Name: RVAAP SCFmw 3rd Quarter 2009 GWS

Well ID: SCFmw-005

Date	Time	Liters Removed	Temp (oC)	Specific Cond. (mS/cm)	pH (std. unit)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	eH (mV)	Total Liters Removed	Water Level (ft btoc)	Comments
10/13/09	1149	1L	12.2	92.8	5.70	158	2.50	61	1L	13.30	Initial 400 mL/min
	1159	4L	11.4	89.9	5.87	43.2	0.39	18	5L	—	
	1204	4L 2L	11.4	89.4	5.92	30.1	0.28	-5	7L 9L	13.30	
	1209	24L	11.5	88.8	5.95	14.2	0.29	-19	9L	—	
	1214	24L	11.76	88.6	5.98	9.8	0.31	-27	11L	13.30	
	1219	3L	11.7	88.6	6.00	7.3	0.32	-31	13L	13.30	400mL/min purge rate - tank out of nitrogen - go + obtain replacement prior to sampling.
<i>Ans</i>											

Recorded By:

Amanda Jentzen 10/13/09

QA Checked By:

Emily Cunningham 12/21/09

WELL PURGE FORM

Project Name: RVAAP SCFmw 3rd Quarter 2009 GWS

Well ID: SCFmw - 006

Activity: Purge Development

Sample ID: SCFmw-006-0051GW Date/Time: 10/12/09

Personnel: AMANDA BENTON + HEATHER MILLER

SCFmw - 006-0051-GF

Date and Time: Start: 10/12/09, 1148

Complete: 10/12/09, 1430

Purge Method(s): Bailer Bladder Pump Other: _____

Monitoring Method(s): PID LEL H2S CO Other: _____

ID: NA ID: NA ID: NA ID: NA ID: NA

Initial Reading NA NA NA NA NA

Total Volume of Water Removed (Gallons): ~3.5 GAL

FIELD INSTRUMENT	SERIAL NUMBER	DATE OF LAST CALIBRATION
Water Quality: Horiba U-22	82121	10/12/09
Water Level Tape: Heron Dipper-T 300' Water Level Indicator	15480	NA
Other: Solinst 466 Pump Control Unit	16213	NA
Other: QED 1.75"x36" Bladder Pump	15130	NA
Other:		
Other:		
Other:		

Recorded By: Amanda Benton 10/12/09

QA Checked By: Emily Cunningham 10/21/09

WELL PURGE FORM

Project Name: RVAAP SCFmw 3rd Quarter 2009 GWS

Well ID: SCFmw-006

Depths (btoc): 78' Top of Screen 88' Bottom of Screen 75' Top of Filter Pack 18.94 Water Level (ft BTOC)

Well Construction: [X] PVC [] Stainless Steel [] Other: 2" Casing I.D. (inches)

Well Volume: Vt = Vc + Vf Where Vt: Total well volume Vc: Riser casing volume Vf: Filter pack volume Vt (Total Well Volume) = NA gallons

Vc = (Height of water column) x (Volume of casing per foot) Vf = (((Saturated thickness of filter pack) x (Volume of borehole per foot)) x 0.3) - ((Saturated thickness of filter pack) x (Volume of casing per foot))

Site Conditions: 45°F; mostly cloudy; good vegetative growth around well

Field Observations: MS/MSD COLLECTED AT SCFmw-006; PUMP INTAKE DEPTH ~ 83' BTOC

Deviations from Approved SAP: NONE

Recorded By: Amanda Trenton 10/12/09

QA Checked By: Emily Cunningham 12/21/09

WELL PURGE LOG

Project Name: RVAAP SCFmw 3rd Quarter 2009 GWS

Well ID: SCFmw-006

Date	Time	Liters Removed	Temp (oC)	Specific Cond. (mS/cm)	pH (std. unit)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	eH (mV)	WATER WORK TOTAL LITERS		Comments
									Total Liters Removed	Total Tubing Vol Removed	
10/12/09	1152	1L	10.8	50.9	5.96	73.1	0.95	89	19.04	1L	INITIAL - 400 mL/min
	1202	1L	10.8	50.5	6.26	42.3	0.02	6	—	5L	
	1207	2L	10.8	50.4	6.45	25.7	0.00	-31	19.09	7L	
	1212	2L	10.8	50.4	6.52	21.1	0.00	-44	—	9L	
	1217	2L	10.8	50.6	6.59	15.6	0.00	-56	—	11L	
	1222	2L	10.8	50.8	6.64	10.4	0.00	-64	19.02	13L	Parameters Stable.

Recorded By:

Amanda Jenton 10/12/09

QA Checked By:

Emily Cunningham 12/2/10

WELL PURGE FORM

Project Name: RVAAP SCFmw 4th Quarter GWS

Well ID: SCFmw-001

Activity: Purge Development

Sample ID: SCFmw-001-0057-GW
SCFmw-001-0057-GF **Date/Time:** 01/18/10; 1335

Personnel: Amanda Trenton/Jackie Getson

Date and Time: **Start:** 01/18/10; 1255

Complete: 01/18/10, 1410

Purge Method(s): Bailer Bladder Pump Other: _____

Monitoring Method(s): PID LEL H2S CO Other: _____

ID: NA ID: NA ID: NA ID: NA ID: NA

Initial Reading NA NA NA NA NA

Total Volume of Water Removed (Gallons): ~2.5 GAL

FIELD INSTRUMENT	SERIAL NUMBER	DATE OF LAST CALIBRATION
Water Quality: Horiba U-22	706008	01/18/10
Water Level Tape: Solinst 300' Water Level Indicator	48721	NA
Other: Solinst 466 Pump Control Unit	16213	NA
Other: QED 1.75"x36" Bladder Pump	15130	NA
Other:		
Other:		
Other:		

Recorded By: Amanda Trenton 01/18/10

QA Checked By: Jackie Getson 1/20/10

WELL PURGE FORM

Project Name: RVAAP SCFmw 4th Quarter GWS

Well ID: SCFmw-001

Depths (btoc): 203' Top of Screen 213' Bottom of Screen 200' Top of Filter Pack 89.77 Water Level

Well Construction: [x] PVC [] Stainless Steel [] Other: _____ 2 Casing I.D. (inches)

Well Volume: Vt = Vc + Vf Where Vt: Total well volume Vt (Total Well Volume) = NA gallons
Vc: Riser casing volume
Vf: Filter pack volume

Vc = (Height of water column) x (Volume of casing per foot)
Vf = (((Saturated thickness of filter pack) x (Volume of borehole per foot)) x (0.3) - ((Saturated thickness of filter pack) x (Volume of casing per foot)))

Sample ID: SCFmw-001-0057-GW + SCFmw-001-0057-GF

Sample Date & Time: 01/18/10; 1335

Analysis: RVAAP Full Suite (VOC, SVOC, PCB, Pesticides, Explosives, Propellents, Nitrate/Nitrite, Cyanide, 0.45 micron filtered TAL Metals)

Site Conditions: 32 F; overcast; snow on ground

Field Observations: Associated w/ equipment rinsate SCFqc-013-0005-ER + Trip blank SCFqc-014-0006-TB. Tubing exterior has slight black carbon-like build up on it; slight sulfur odor to water Pump intake depth ~208 FT BToc

Deviations from Approved SAP: NONE

Recorded By: Amanda Senter 01/18/10

QA Checked By: [Signature] 01/20/10

WELL PURGE FORM

Project Name: RVAAP SCFmw 4th Quarter GWS

Well ID: SCFmw-002

Activity: Purge Development

Sample ID: SCFmw-002-0058-GW Date/Time: 01/19/10; 1430

Personnel: Amanda Trenton/Jackie Getson

Date and Time: Start: 01/19/10; 1330

Complete: 01/19/10; 1525

Purge Method(s): Bailer Bladder Pump Other: _____

Monitoring Method(s): PID LEL H2S CO Other: _____

ID: NA ID: NA ID: NA ID: NA ID: NA

Initial Reading NA NA NA NA NA

Total Volume of Water Removed (Gallons): ~2.5 GAL

FIELD INSTRUMENT	SERIAL NUMBER	DATE OF LAST CALIBRATION
Water Quality: Horiba U-22	706008	01/19/10
Water Level Tape: Solinst 300' Water Level Indicator	48721	NA
Other: Solinst 466 Pump Control Unit	16213	NA
Other: QED 1.75"x36" Bladder Pump	15130	NA
Other:		
Other:		
Other:		

Recorded By: Amanda Trenton 01/19/10

QA Checked By: Jackie Getson 1/20/10

WELL PURGE FORM

Project Name: RVAAP SCFmw 4th Quarter GWS

Well ID: SCFmw. 002

Depths (btoc): 139' Top of Screen 149' Bottom of Screen 136' Top of Filter Pack 20.39 Water Level

Well Construction: [x] PVC [] Stainless Steel [] Other: 2" Casing I.D. (inches)

Well Volume: Vt = Vc + Vf Where Vt: Total well volume Vt (Total Well Volume) = NA gallons

Vc: Riser casing volume Vc = (Height of water column) x (Volume of casing per foot) Vf: Filter pack volume Vf = (((Saturated thickness of filter pack) x (Volume of borehole per foot)) x (0.3) - ((Saturated thickness of filter pack) x (Volume of casing per foot)))

Sample ID: SCFmw-002-0058-GW + SCFmw-002-0058-GF

Sample Date & Time: 01/19/10 ; 1430

Analysis: RVAAP Full Suite (VOC, SVOC, PCB, Pesticides, Explosives, Propellents, Nitrate/Nitrite, Cyanide, 0.45 micron filtered TAL Metals)

Site Conditions: 30 F ; overcast ; light wind

Field Observations: Pump intake @ ~143 FT BTDC. PROBLEMS INITIALLY STABILIZING FLOW RATE

Deviations from Approved SAP: NONE

Recorded By: Amanda Swenton 01/19/10

QA Checked By: [Signature] 1/20/10

WELL PURGE FORM

Project Name: RVAAP SCFmw 4th Quarter GWS

Well ID: SCFmw-003

Activity: Purge Development

Sample ID: SCFmw-003-0059-GW **Date/Time:** 01/19/10; 0950
SCFmw-003-0059-GF

Personnel: Amanda Trenton/Jackie Getson

Date and Time: **Start:** 01/19/10; 0900

Complete: 01/19/10; 1115

Purge Method(s): Bailer Bladder Pump Other: _____

Monitoring Method(s): PID LEL H2S CO Other: _____

ID: NA ID: NA ID: NA ID: NA ID: NA

Initial Reading NA NA NA NA NA

Total Volume of Water Removed (Gallons): ~3.25 GAL

FIELD INSTRUMENT	SERIAL NUMBER	DATE OF LAST CALIBRATION
Water Quality: Horiba U-22	706008	01/19/10
Water Level Tape: Solinst 300' Water Level Indicator	48721	NA
Other: Solinst 466 Pump Control Unit	16213	NA
Other: QED 1.75"x36" Bladder Pump	15130	NA
Other:		
Other:		
Other:		

Recorded By: Amanda Trenton 01/19/10

QA Checked By: Jackie Getson 1/20/10

WELL PURGE FORM

Project Name: RVAAP SCFmw 4th Quarter GWS

Well ID: SCFmw-003

Depths (btoc): 129' Top of Screen 139' Bottom of Screen 127' Top of Filter Pack 9.49' Water Level

Well Construction: [x] PVC [] Stainless Steel [] Other: _____ 2 Casing I.D. (inches)

Well Volume: Vt = Vc + Vf Where Vt: Total well volume Vt (Total Well Volume) = NA gallons
Vc: Riser casing volume
Vf: Filter pack volume

Vc = (Height of water column) x (Volume of casing per foot)
Vf = (((Saturated thickness of filter pack) x (Volume of borehole per foot)) x (0.3) - ((Saturated thickness of filter pack) x (Volume of casing per foot)))

Sample ID: SCFmw-003-0059-GW + SCFmw-003-0059-GF

Sample Date & Time: 01/19/10; 0950

Analysis: RVAAP Full Suite (VOC, SVOC, PCB, Pesticides, Explosives, Propellents, Nitrate/Nitrite, Cyanide, 0.45 micron filtered TAL Metals)

Site Conditions: 30 F; overcast; scattered snow + sleet

Field Observations: MS/MSD collected @ SCFmw-003; pump intake depth ~134' BTX

Deviations from Approved SAP: NONE

Recorded By: Amanda Sientm 01/19/10

QA Checked By: [Signature] 01/20/10

WELL PURGE LOG

Project Name: RVAAP SCFmw 4th Quarter GWS

Well ID:

SCFmw-003

Date	Time	Liters Removed	Temp (oC)	Specific Cond. (mS/cm)	pH (std. unit)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	eH (mV)	Total Liters Removed	Flow Rate (mL/min)	Water Level (ft btoc)	Comments
01/19/09	0912	~2.0	9.5	.709	6.62	332	8.1	-94	2.0	325	9.71	initial
	0917	1.025	9.8	.691	6.81	143.0	6.6	-135	3.025	325	9.71	
	0922	1.025	9.9	.688	6.83	71.2	6.5	-141	5.25	325	9.70	
	0927	1.025	9.8	0.691	6.81	66.4	6.3	-141	6.875	325	9.68	
	0932	1.75	9.9	0.691	6.79	49.5	6.3	-137	8.625	350	9.68	
	0937	1.75	10.1	0.691	6.78	59.5	6.2	-134	10.735	350	9.68	
	0942	1.75	10.0	0.695	6.77	56.6	6.1	-129	12.125	350	9.70	Parameters stable

Recorded By: Amanda Trenton 01/19/10

QA Checked By: John Jett

WELL PURGE FORM

Project Name: RVAAP SCFmw 4th Quarter GWS

Well ID: SCFmw-004

Activity: Purge Development

Sample ID: see pg 2 Date/Time: 01/20/10 ; 0948

Personnel: Amanda Trenton/Jackie Getson

Date and Time: Start: 01/20/10 ; 0840

Complete: 01/20/10 ; 1357

Purge Method(s): Bailer Bladder Pump Other: _____

Monitoring Method(s): PID LEL H2S CO Other: _____

ID: NA ID: NA ID: NA ID: NA ID: NA

Initial Reading NA NA NA NA NA

Total Volume of Water Removed (Gallons): ~2.25 GAL

FIELD INSTRUMENT	SERIAL NUMBER	DATE OF LAST CALIBRATION
Water Quality: Horiba U-22	706008	01/20/10
Water Level Tape: Solinst 300' Water Level Indicator	48721	NA
Other: Solinst 466 Pump Control Unit	16213	NA
Other: QED 1.75"x36" Bladder Pump	15130	NA
Other:		
Other:		
Other:		

Recorded By: Amanda Trenton 01/20/10

QA Checked By: Jackie Getson

WELL PURGE FORM

Project Name: RVAAP SCFmw 4th Quarter GWS

Well ID: SCFmw-004

Depths (btoc): 102.4' Top of Screen 112.4' Bottom of Screen 97.4' Top of Filter Pack 0.70' Water Level

Well Construction: [X] PVC [] Stainless Steel [] Other: 2" Casing I.D. (inches)

Well Volume: Vt = Vc + Vf Where Vt: Total well volume Vc: Riser casing volume Vf: Filter pack volume Vt (Total Well Volume) = NA gallons

Vc = (Height of water column) x (Volume of casing per foot) Vf = (((Saturated thickness of filter pack) x (Volume of borehole per foot)) x (0.3) - ((Saturated thickness of filter pack) x (Volume of casing per foot)))

Sample ID: SCFmw-004-0000-GW; SCFmw-004-0000-GF; DUPLICATE SCFmw-004-0003-GF SPLIT SCFmw-004-0004-GF

Sample Date & Time: 01/20/10, 0948

Analysis: RVAAP Full Suite (VOC, SVOC, PCB, Pesticides, Explosives, Propellents, Nitrate/Nitrite, Cyanide, 0.45 micron filtered TAL Metals)

Site Conditions: 28°F; scattered snow; light wind

Field Observations: Pump intake depth at ~107 FT BTOC; DECREASED FLOW RATE DURING SAMPLING DUE TO DECREASED TANK PRESSURE; COLLECTED DUPLICATE + SPLIT SAMPLE

Deviations from Approved SAP: NONE

Recorded By: Amanda Chenton 01/20/10

QA Checked By: Jali

WELL PURGE LOG

Project Name: RVAAP SCFmw 4th Quarter GWS

Well ID: SCFmw-004

Date	Time	Liters Removed	Temp (oC)	Specific Cond. (mS/cm)	pH (std. unit)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	eH (mV)	Total Liters Removed	Flow Rate (mL/min)	Water Level (ft btoc)	Comments
11/20/10	0912	0.25	8.0	1.25	6.93	199.0	8.2	-183	0.25	300	0.85	initial
N	0917	1.5	8.0	1.27	7.06	186.0	6.8	-206	1.75	300	0.85	
	0922	1.5	7.9	1.27	7.05	232.0	6.7	-214	3.25	300	0.85	
	0927	1.5	8.1	1.26	7.05	202.0	6.5	-217	4.75	300	0.85	
	0932	1.5	8.2	1.24	7.05	214.0	6.5	-220	6.25	300	0.85	
	0937	1.0	8.3	1.24	7.06	160.0	6.3	-223	7.25	200	0.85	
✓	0942	1.0	8.6	1.23	7.05	145.0	6.2	-225	8.25	200	0.85	PARAMETERS STABLE
												start sample 0948

Recorded By: Jahr J 11/25/10

QA Checked By: Amanda Jentz 01/20/11

WELL PURGE FORM

Project Name: RVAAP SCFmw 4th Quarter GWS

Well ID: SCFmw-005

Activity: Purge Development

Sample ID: SCFmw-005-0001-GW **Date/Time:** 01/18/10; 1625
SCFmw-005-0001-GF

Personnel: Amanda Trenton/Jackie Getson

Date and Time: **Start:** 01/18/10; 1548

Complete: 01/18/10; 1707

Purge Method(s): Bailer Bladder Pump Other: _____

Monitoring Method(s): PID LEL H2S CO Other: _____

ID: NA ID: NA ID: NA ID: NA ID: NA

Initial Reading NA NA NA NA NA

Total Volume of Water Removed (Gallons): ~ 3.25 GAL

FIELD INSTRUMENT	SERIAL NUMBER	DATE OF LAST CALIBRATION
Water Quality: Horiba U-22	706008	01/18/10
Water Level Tape: Solinst 300' Water Level Indicator	48721	NA
Other: Solinst 466 Pump Control Unit	16213	NA
Other: QED 1.75"x36" Bladder Pump	15130	NA
Other:		
Other:		
Other:		

Recorded By: Amanda Trenton 01/18/10

QA Checked By: Jackie Getson 01/20/10

WELL PURGE FORM

Project Name: RVAAP SCFmw 4th Quarter GWS

Well ID: SCFmw-005

Depths (btoc): 141' Top of Screen 150' Bottom of Screen 138' Top of Filter Pack 12.95 Water Level @ 1521 01/18/10

Well Construction: [x] PVC [] Stainless Steel [] Other: _____ 2 Casing I.D. (inches)

Well Volume: Vt = Vc + Vf Where Vt: Total well volume Vt (Total Well Volume) = NA gallons
Vc: Riser casing volume
Vf: Filter pack volume

Vc = (Height of water column) x (Volume of casing per foot)

Vf = (((Saturated thickness of filter pack) x (Volume of borehole per foot)) x (0.3) - ((Saturated thickness of filter pack) x (Volume of casing per foot)))

Sample ID: SCFmw-005-0001-GW + SCFmw-005-0001-GF

Sample Date & Time: 01/18/10 ; 1625

Analysis: RVAAP Full Suite (VOC, SVOC, PCB, Pesticides, Explosives, Propellents, Nitrate/Nitrite, Cyanide, 0.45 micron filtered TAL Metals)

Site Conditions: 32°F; overcast; snow on ground - area very soft + wet

Field Observations: Associated w/ trip blank SCFqc-014-0000-TB
Pump intake depth ~151 FT BTOC

Deviations from Approved SAP: NONE

Recorded By: Amanda Sventm 01/18/10

QA Checked By: [Signature] 1/20/10

WELL PURGE FORM

Project Name: RVAAP SCFmw 4th Quarter GWS

Well ID: SCFmw-000

Activity: Purge Development

Sample ID: SCFmw-000-0002-GW **Date/Time:** 01/20/10; 1530
SCFmw-000-0002-GF

Personnel: Amanda Trenton/Jackie Getson

Date and Time: **Start:** 01/20/10; 1443

Complete: 01/20/10; 1405

Purge Method(s): Bailer Bladder Pump Other: _____

Monitoring Method(s): PID LEL H2S CO Other: _____

ID: NA ID: NA ID: NA ID: NA ID: NA

Initial Reading NA NA NA NA NA

Total Volume of Water Removed (Gallons): 3.25 GAL

FIELD INSTRUMENT	SERIAL NUMBER	DATE OF LAST CALIBRATION
Water Quality: Horiba U-22	706008	01/20/10
Water Level Tape: Solinst 300' Water Level Indicator	48721	NA
Other: Solinst 466 Pump Control Unit	16213	NA
Other: QED 1.75"x36" Bladder Pump	15130	NA
Other:		
Other:		
Other:		

Recorded By: Amanda Trenton 01/20/10

QA Checked By: Jackie Getson 1/29/10

WELL PURGE FORM

Project Name: RVAAP SCFmw 4th Quarter GWS

Well ID: SCFmw-006

Depths (btoc): 78' Top of Screen 88' Bottom of Screen 75' Top of Filter Pack 18.49 Water Level

Well Construction: [x] PVC [] Stainless Steel [] Other: 2" Casing I.D. (inches)

Well Volume: Vt = Vc + Vf Where Vt: Total well volume Vc: Riser casing volume Vf: Filter pack volume Vt (Total Well Volume) = NA gallons

Vc = (Height of water column) x (Volume of casing per foot) Vf = (((Saturated thickness of filter pack) x (Volume of borehole per foot)) x (0.3) - ((Saturated thickness of filter pack) x (Volume of casing per foot)))

Sample ID: SCFmw-006-0062-GW + SCFmw-006-0062-GF

Sample Date & Time: 01/20/10; 15:30

Analysis: RVAAP Full Suite (VOC, SVOC, PCB, Pesticides, Explosives, Propellents, Nitrate/Nitrite, Cyanide, 0.45 micron filtered TAL Metals)

Site Conditions: See below

Field Observations: 28 F; overcast; light wind. Pump intake depth of ~83 FT BTX

Deviations from Approved SAP: NONE

Recorded By: Amanda Jentor 01/20/10

QA Checked By: John [Signature] 1/29/10

WELL PURGE LOG

Project Name: RVAAP SCFmw 4th Quarter GWS

Well ID:

SCFmw - 000

Date	Time	Liters Removed	Temp (oC)	Specific Cond. (mS/cm)	pH (std. unit)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	eH (mV)	Total Liters Removed	Flow Rate (mL/min)	Water Level (ft btoc)	Comments
1/20/10	1458	2.25	11.1	637	7.10	2120	10.3	-96	0.25	400	18.56	initial
	1503	2.0	9.4	586	6.61	98.9	8.6	-100	2.25	400	18.56	
	1508	2.0	9.4	588	6.47	74.4	8.0	-98	4.25	400	18.56	
	1513	2.0	9.3	587	6.45	58.8	7.4	-102	6.25	400	18.56	
	1518	2.0	9.4	587	6.43	51.5	7.1	-113	8.25	400	18.56	
	1523	2.0	9.4	587	6.47	39.7	6.9	-126	10.25	400	18.56	
	1528	2.0	9.4	587	6.58	35.7	6.7	-136	12.25	400	18.56	PARAMETERS STABLE.
<i>Am</i>												

Recorded By: Jahr Jet 1/28/10

QA Checked By: Amanda Inertor 01/20/10