Department of Veterans Affairs Salt Lake City Health Care System

Final

700 South 1600 East PCE Plume AOU-1: East Side Springs Remedial Investigation Report

Appendices A through G

FEBRUARY 2019

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FINAL

Department of Veterans Affairs
Salt Lake City Health Care System

700 South 1600 East PCE Plume
AOU-1: East Side Springs
Remedial Investigation Report

Contract No: GS-10F-0228J
Order No: VA259-15-F-3886

Prepared for:
VA Salt Lake City Health Care System
500 Foothill Drive
Salt Lake City, Utah 84148

Prepared by:
EA Engineering, Science, and Technology, Inc., PBC
2363 N. Hill Field Road, Suite 104
Layton, Utah 84041

FEBRUARY 2019

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Appendix A
EPA Monitoring Well Logs

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URS Operating Services

SOIL BORING LOG / MONITORING WELL CONSTRUCTION DIAGRAM

Boring / Well Number: EPA-MW-01	TDD Name/Project Number: **Mount Olivet** **7580314.00**	Site Location: **Salt Lake City, Utah**
Boring Depth (ft) X Diameter (in): **404.0 x 10**		Drilling Method: **Air Rotary w/advance casing**
Well Contractor Name: **Layne Christenson**		Logged by: **John Noto, Bill LaRow**
Ground Surface Elevation (ASL): **4662.54**	Top of Casing Elevation (ASL): **4662.18**	Lat. N 40 45'15.188" Long. W 111 50'41.959" — Northing 3274.49 Easting 6776.38
Date Started: **6/16/98**	Date Completed: **6/30/98**	Additional Comments: **TOC Elevation deep well: 4662.20**

Lithologic Description	USCS	Graphic Log	Depth (feet b.g.s.)	Well Construction Details	Sample no.	Sample type *	Blow count	PID / FID (ppm)
Fill; silty w/gravel	ML		0	Bentonite chips, PVC casing				
Fill; sandy w/gravel	SW		5					
Gravelly sand; reddish brown, fg-vfg sand, angular pebbles, dry	SW		15					
Sandy gravel; tan-brown	GW		30					
Gravelly sand;	SW		35					
Clay silty gravel; red/brown, 20-50% silt. Clayey silt layer 1" thick, >2" diameter., angular igneous. pebbles, dry	GC		40				41/50(3")	1.0
Sandy gravel; reddish brown, fg sand, moist	GM		50					
Clay; red, <10% gravel, highly plastic, very soft, moist	CL							
Gravelly sand, red, fg,	SW		60					
Gravelly sandy clay; red, moist	CL							
Clay, red, high plasticity, very soft, dry	CL		65					
Gravelly sand; tan-brown, fg-mg sand, rounded <1" pebbles, some silt, dry	SW		70					
Sand; red-brown, vfg, well sorted dry	SP							
Sandy gravel; red, wet at 80' bgs	GW		80				50(3")	15
Sandy clay with gravel; red, wet @ 82' - 84'	CL							
Silty sandy gravel; red, 20 - 40% gravel, <1" diameter, rounded, nonspherical pebbles,	GM		85					

*SS (split spoon) HSA (hollow stem auger) MC (Geoprobe macrocore) CT (cuttings)

Observations	Date:	6/30/98	10/22/98 (S)	10/22/98 (D)		
Static Water Level (from TOC)	Level:	154.6" bgs (S)	▼ 153.9	▼ 182.2		
Static Water Level (ASL)	Level:		4508.28	4479.98		

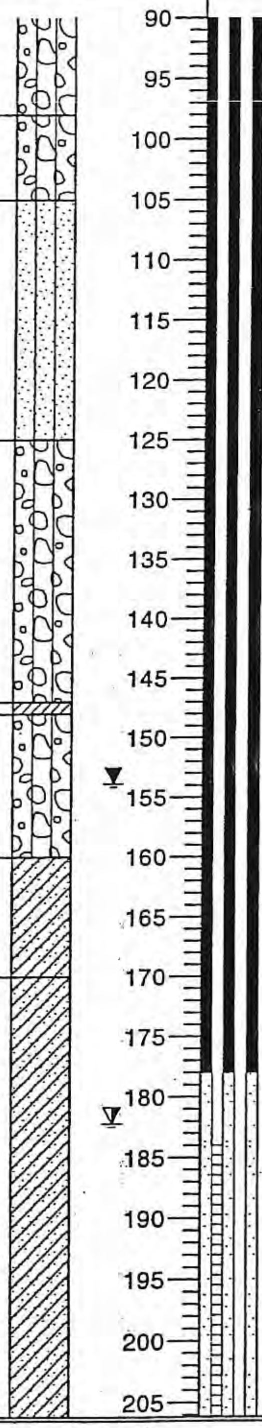
URS Operating Services

SOIL BORING LOG / MONITORING WELL CONSTRUCTION DIAGRAM

Boring / Well Number:	TDD Name/Project Number:	Site Location:
EPA-MW-01	Mount Olivet 7580314.00	Salt Lake City, Utah

Lithologic Description	USCS	Sample no.	Sample type *	Blow count	PID / FID (ppm)
wet @ 95' - 98'					
Silty sandy gravel; tan-brown, dry	GM				
Silty sand with gravel; red, vfg sand, <10% gravel, dry	SM				
Silty sandy gravel; red, 20 - 40% gravel, dry	GM				
Sandy clay; red, slightly plastic, moist	CL				
Silty sandy gravel; wet @ 154 - 156"bgs	GM				
Clayey sand; red moderately plastic, soft, moist	SC				
Sandy clay with gravel; moderately plastic, soft, dry	SC				7

Graphic Log / Depth (feet b.g.s.) / Well Construction Details



* SS (split spoon) HSA (hollow stem auger) MC (Geoprobe macrocore) CT (cuttings)

Observations	Date:	6/30/98	10/22/98 (S)	10/22/98 (D)		
Static Water Level (from TOC)	Level:	154.6" bgs (S)	153.9	182.2		
Static Water Level (ASL)	Level:		4508.28	4479.98		

URS Operating Services

SOIL BORING LOG / MONITORING WELL CONSTRUCTION DIAGRAM

Boring / Well Number:	TDD Name/Project Number:	Site Location:
EPA-MW-01	Mount Olivet 7580314.00	Salt Lake City, Utah

Lithologic Description	USCS	Graphic Log	Depth (feet b.g.s.)	Well Construction Details	Sample no.	Sample type *	Blow count	PID / FID (ppm)
Clayey silt; brown-red, trace gravel, low plasticity, moist - wet @ 210	ML		210					
silty sand; brown-red, trace gravel	SM							
Sandy clay, brown-red, moist	SC		215					
Silty clay with gravel, dry	GM		220, 225	Bentonite chips				
Silty - clayey sand; trace gravel, dry	SC		230, 235, 240, 245					
Silty gravel; dry	GM		250, 255					
ravel; well sorted, subangular to angular, wet	GP		260, 265, 270, 275, 280, 285, 290, 295, 300, 305, 310, 315, 320					

SS (split spoon) HSA (hollow stem auger) MC (Geoprobe macrocore) CT (cuttings)

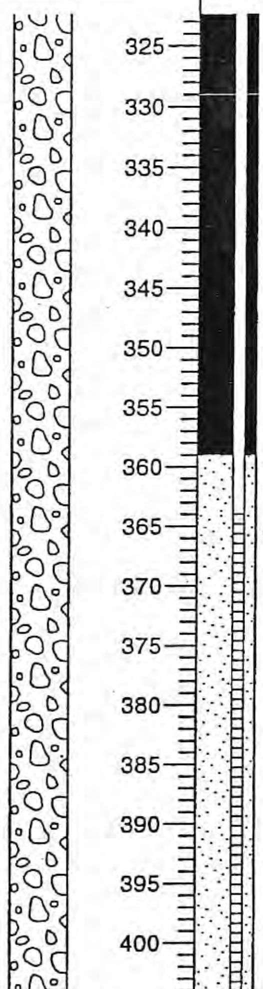
Observations	Date:	6/30/98	10/22/98 (S)	10/22/98 (D)		
Static Water Level (from TOC)	Level:	154.6" bgs (S)	153.9	182.2		
Static Water Level (ASL)	Level:		4508.28	4479.98		

URS Operating Services

SOIL BORING LOG / MONITORING WELL CONSTRUCTION DIAGRAM

Boring / Well Number:	TDD Name/Project Number:	Site Location:
EPA-MW-01	Mount Olivet 7580314.00	Salt Lake City, Utah

Lithologic Description	USCS	Graphic Log	Depth (feet b.g.s.)	Well Construction Details	Sample no.	Sample type *	Blow count	PID / FID (ppm)



* SS (split spoon) HSA (hollow stem auger) MC (Geoprobe macrocore) CT (cuttings)

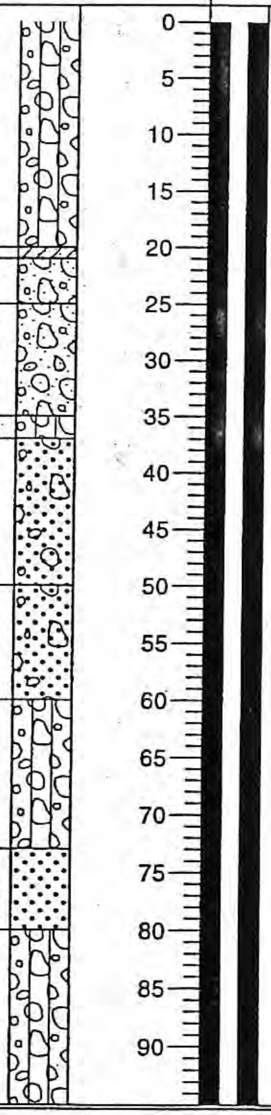
Observations	Date:	6/30/98	10/22/98 (S)	10/22/98 (D)		
Static Water Level (from TOC)	Level:	154.6" bgs (S)	▼ 153.9	▼ 182.2		
Static Water Level (ASL)	Level:		4508.28	4479.98		

URS Operating Services

SOIL BORING LOG / MONITORING WELL CONSTRUCTION DIAGRAM

Boring / Well Number: EPA-MW-02	TDD Name/Project Number: Mount Olivet 7580314.00	Site Location: Salt Lake City, Utah
Boring Depth (ft) X Diameter (in): 205.5 x 8		Drilling Method: Air Rotary w/advance casing
Well Contractor Name: Layne Christenson		Logged by: John Noto
Ground Surface Elevation (ASL): 4678.41	Top of Casing Elevation (ASL): 4680.41	Lat. N 4045'14.756" Long. W 111 50'35.282" / Northing 3228.73 Easting 7490.2
Date Started: 7/20/98	Date Completed: 7/22/98	Additional Comments:

Lithologic Description	USCS	Depth (feet b.g.s.)	Well Construction Details	Sample no.	Sample type *	Blow count	PID / FID (ppm)
Silty sand with gravel, grey angular to subrounded pebbles, dry	GM	0	Bentonite pellets				
Clayey Sand, reddish brown, low plasticity	SC	20					
Gravelly sand with silt; reddish brown, grey sandstone pebbles, angular-subrounded, nonspherical. dry	GM						
Gravelly sand with silt; reddish brown	GM	25					
Gravelly silt with sand, reddish brown, dry	GM	35					
Gravelly sand; reddish brown, fg sand, slightly cohesive when damp, dry	GM						
Gravelly sand; dark reddish brown, coarse grained, dry	SW	50					
Gravelly sand with silt; reddish brown, dry	GM	60					
Sand; reddish brown, medium grained, moderately sorted, slightly cohesive, with gravel, dry	SW	73					
Gravelly sand with silt; reddish brown, dry	GM	80					



* SS (split spoon) HSA (hollow stem auger) MC (Geoprobe macrocore) CT (cuttings)

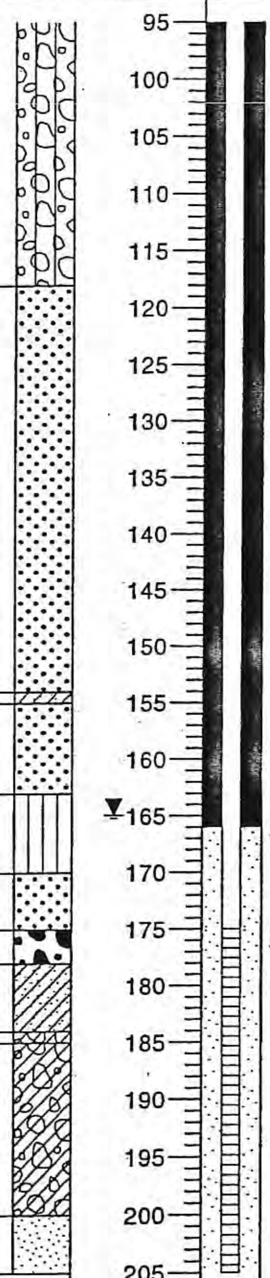
Observations	Date:	7/22/98	10/22/98			
Static Water Level (from TOC)	Level:	180 bgs	164.9			
Static Water Level (ASL)	Level:		4515.51			

URS Operating Services

SOIL BORING LOG / MONITORING WELL CONSTRUCTION DIAGRAM

Boring / Well Number:	TDD Name/Project Number:	Site Location:
EPA-MW-02	Mount Olivet 7580314.00	Salt Lake City, Utah

Lithologic Description	USCS	Sample no.	Sample type *	Blow count	PID / FID (ppm)
Sand; reddish brown, fg-mg sand, <10% gravel, dry	SW				
Clayey sand; red, low plasticity, slightly cohesive, dry	SC				
Gravelly sand with silt; reddish brown, 20-25% gravel, not cohesive, fg-mg sand, rounded nonspherical pebbles, dry	SW				
Silt; reddish brown, trace gravel, slightly plastic/cohesive, dry	ML				
Gravelly silty sand;	SW				
Gravelly sand; reddish brown >25% gravel, dry	GW				
Sandy clay; reddish brown, <5% gravel, soft, mod. plasticity, weak bedding, moist at 182' bgs	SC	1		11/12/21(12")	.5
Sandy gravelly clay, 4" layer, w/black "spotty" banding. Sand; 4" layer trace clay, soft, wet	GC				
Sandy clayey gravel; reddish brown, wet, mod. plasticity, 25-50% gravel, wet	GC				
Sand; wet	SP				



* SS (split spoon) HSA (hollow stem auger) MC (Geoprobe macrocore) CT (cuttings)

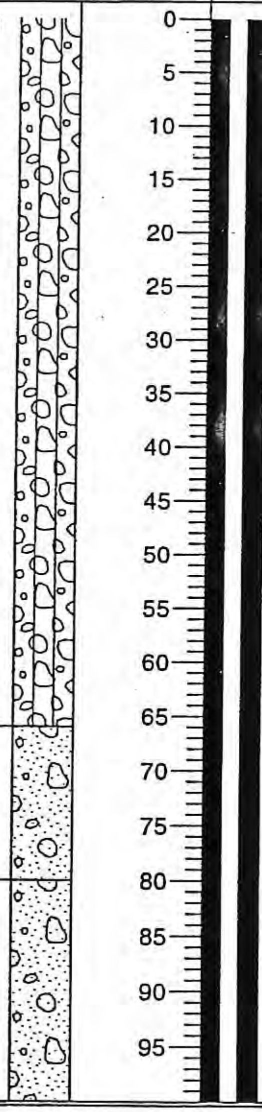
Observations	Date:	7/22/98	10/22/98			
Static Water Level (from TOC)	Level:	180 bgs	164.9			
Static Water Level (ASL)	Level:		4515.51			

URS Operating Services

SOIL BORING LOG / MONITORING WELL CONSTRUCTION DIAGRAM

Boring / Well Number: **EPA-MW-03**	TDD Name/Project Number: **Mount Olivet** **7580314.00**	Site Location: **Salt Lake City, Utah**
Boring Depth (ft) X Diameter (in): **210.0 x 8**		Drilling Method: **Air Rotary w/advance casing**
Well Contractor Name: **Layne Christenson**		Logged by: **Bill LaRow**
Ground Surface Elevation (ASL): **4695.54**	Top of Casing Elevation (ASL): **4697.98**	Lat. N 40 45'21.005" Long. W 111 50'35.913" / Northing 3861.5 Easting 7444.02
Date Started: **7/28/98**	Date Completed: **7/30/98**	Additional Comments:

Lithologic Description	USCS	Graphic Log	Depth (feet b.g.s.)	Well Construction Details	Sample no.	Sample type *	Blow count	PID / FID (ppm)
Silty sand with gravel, brown, subrounded gravel, dry	GM		0	bentonite granuals, 4" PVC pipe				
Silty sand with gravel, same as above, reddish brown, coarser sand, less gravel, dry	GM		66					
Silty sand with gravel, as above, sand better sorted, dry	GM		80					



* SS (split spoon) HSA (hollow stem auger) MC (Geoprobe macrocore) CT (cuttings)

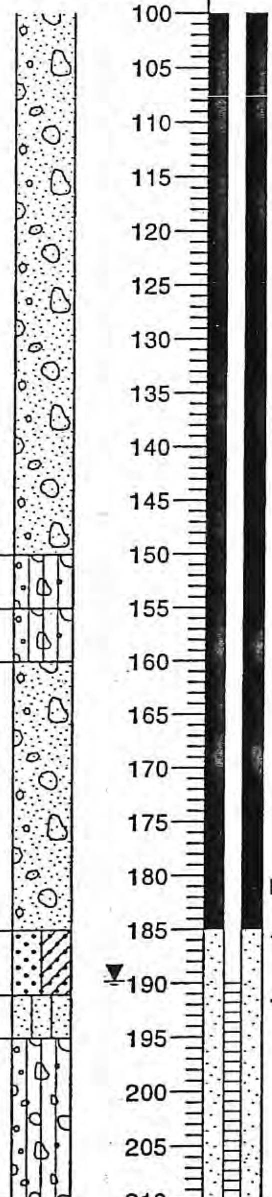
Observations	Date:	7/29/98	10/22/98			
Static Water Level (from TOC)	Level:	190.5 bgs	189.75			
Static Water Level (ASL)	Level:		4508.23			

URS Operating Services

SOIL BORING LOG / MONITORING WELL CONSTRUCTION DIAGRAM

Boring / Well Number:	TDD Name/Project Number:	Site Location:
EPA-MW-03	**Mount Olivet** **7580314.00**	**Salt Lake City, Utah**

Lithologic Description	USCS	Graphic Log	Depth (feet b.g.s.)	Well Construction Details	Sample no.	Sample type *	Blow count	PID / FID (ppm)
			100					
			105					
			110					
			115					
			120					
			125					
			130					
			135					
			140					
			145					
Silty sand with gravel, as above, more silty, less gravel, dry	SM		150					
as above, slightly moist at 155	SM		155					
Silty sand with gravel, as above, dry	GM		160					
			165					
			170					
			175					
			180	bentone seal				
Silty to clayey sand, reddish brown, low plasticity, less gravel, slightly moist	SC		185	10-20 mesh sand filter pack				
			190	.010 PVC screen in filter pack				
Silty sand, moist at 191 feet bgs	SM							
Silty sand with gravel, reddish brown, moist	SM		195					
			200					
			205					
			210					



* SS (split spoon) HSA (hollow stem auger) MC (Geoprobe macrocore) CT (cuttings)

Observations	Date:	7/29/98	10/22/98			
Static Water Level (from TOC)	Level:	190.5 bgs	189.75			
Static Water Level (ASL)	Level:		4508.23			

URS Operating Services

SOIL BORING LOG / MONITORING WELL CONSTRUCTION DIAGRAM

Boring / Well Number: **EPA-MW-04**	TDD Name/Project Number: **Mount Olivet** **7580314.00**	Site Location: **Salt Lake City, Utah**
Boring Depth (ft) X Diameter (in): **173.0 x 8**		Drilling Method: **Air Rotary w/advance casing**
Well Contractor Name: **Layne Christenson**		Logged by: **Bill LaRow**
Ground Surface Elevation (ASL): **4654.15**	Top of Casing Elevation (ASL): **4654.35**	Lat. N 40 45'07.680 / Long. W 111 50'37.460" — Northing 2513.17 / Easting 7319.76
Date Started: **7/30/98**	Date Completed: **8/1/98**	Additional Comments: **Sunnyside park**

Lithologic Description	USCS	Graphic Log	Depth (feet b.g.s.)	Well Construction Details	Sample no.	Sample type *	Blow count	PID / FID (ppm)
Silty sand with gravel; brown, dry	SM		0	Bentonite chips, 4" PVC casing				
Clayey sand/sandy clay with gravel; moderate plasticity, moist	SC		15					
Sandy clay with gravel; brown, low plasticity, dry	CL		25					
Silty sand with gravel; slightly moist	SM		85					

Depth scale: 0, 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85

*SS (split spoon) HSA (hollow stem auger) MC (Geoprobe macrocore) CT (cuttings)

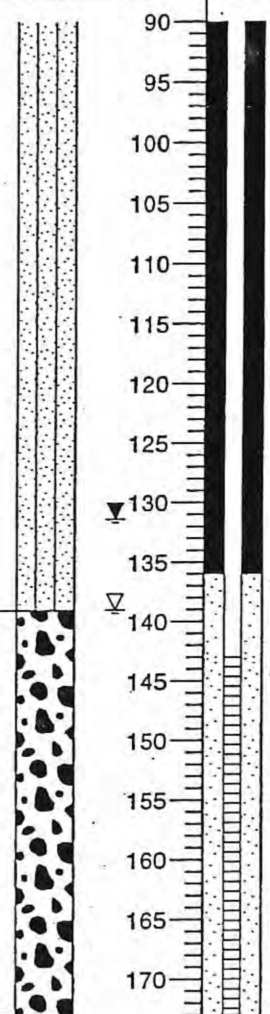
Observations	Date:	7/30/98	10/22/98			
Static Water Level (from TOC)	Level:	▽ 139	▼ 131.35			
Static Water Level (ASL)	Level:	4515.35	4523.00			

URS Operating Services

SOIL BORING LOG / MONITORING WELL CONSTRUCTION DIAGRAM

Boring / Well Number:	TDD Name/Project Number:	Site Location:
EPA-MW-04	**Mount Olivet** **7580314.00**	**Salt Lake City, Utah**

Lithologic Description	USCS	Graphic Log	Depth (feet b.g.s.)	Well Construction Details	Sample no.	Sample type *	Blow count	PID / FID (ppm)
Gravel with clay; wet	GW							



* SS (split spoon) HSA (hollow stem auger) MC (Geoprobe macrocore) CT (cuttings)

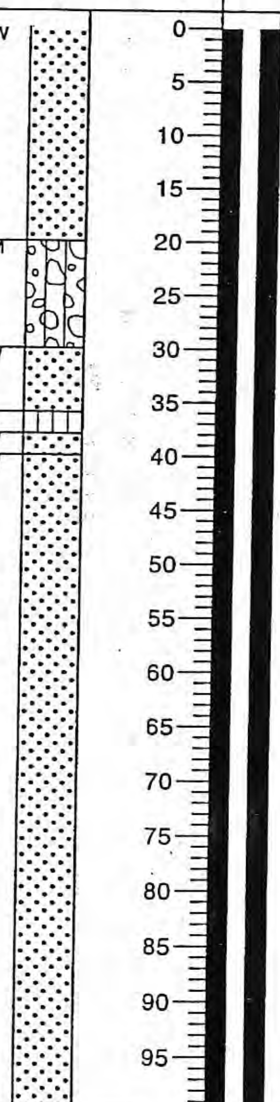
Observations	Date:	7/30/98	10/22/98			
Static Water Level (from TOC)	Level:	▽ 139	▼ 131.35			
Static Water Level (ASL)	Level:	4515.35	4523.00			

URS Operating Services

SOIL BORING LOG / MONITORING WELL CONSTRUCTION DIAGRAM

Boring / Well Number: **EPA-MW-05**	TDD Name/Project Number: **Mount Olivet 7580314.00**	Site Location: **Salt Lake City, Utah**
Boring Depth (ft) X Diameter (in): **221.0 x 6**		Drilling Method: **Air Rotary w/advance casing**
Well Contractor Name: **Layne Christenson**		Logged by: **John Noto**
Ground Surface Elevation (ASL): **4732.45**	Top of Casing Elevation (ASL): **4732.09**	Lat. N 40 45'19.987 / Long. W 111 50'20.128" — Northing 3753.76 / Easting 8658.65
Date Started: **8/28/98**	Date Completed: **8/31/98**	Additional Comments: **VA Hospital, bldg. 4 lot**

Lithologic Description	USCS	Graphic Log / Depth (feet b.g.s.)	Well Construction Details	Sample no.	Sample type*	Blow count	PID / FID (ppm)
Gravelly sand; brown, fill, dry	SW	0	Bentonite chips, 2" PVC casing				
Gravelly sand; reddish brown, silty, dry	GM	20					
Sand,; reddish brown, fg-mg, slightly cohesive, some gravel, dry	SW	30					
Silt	ML						
Sand; same as above	SW						
Gravelly sand; reddish brown, subrounded to rounded nonspherical SS/quartzite pebbles, silty-sandy matrix, dry	SW						



SS (split spoon) HSA (hollow stem auger) MC (Geoprobe macrocore) CT (cuttings)

Observations	Date:		10/22/98			
Static Water Level (from TOC)	Level:		▼ 205.5			
Static Water Level (ASL)	Level:		4526.59			

URS Operating Services

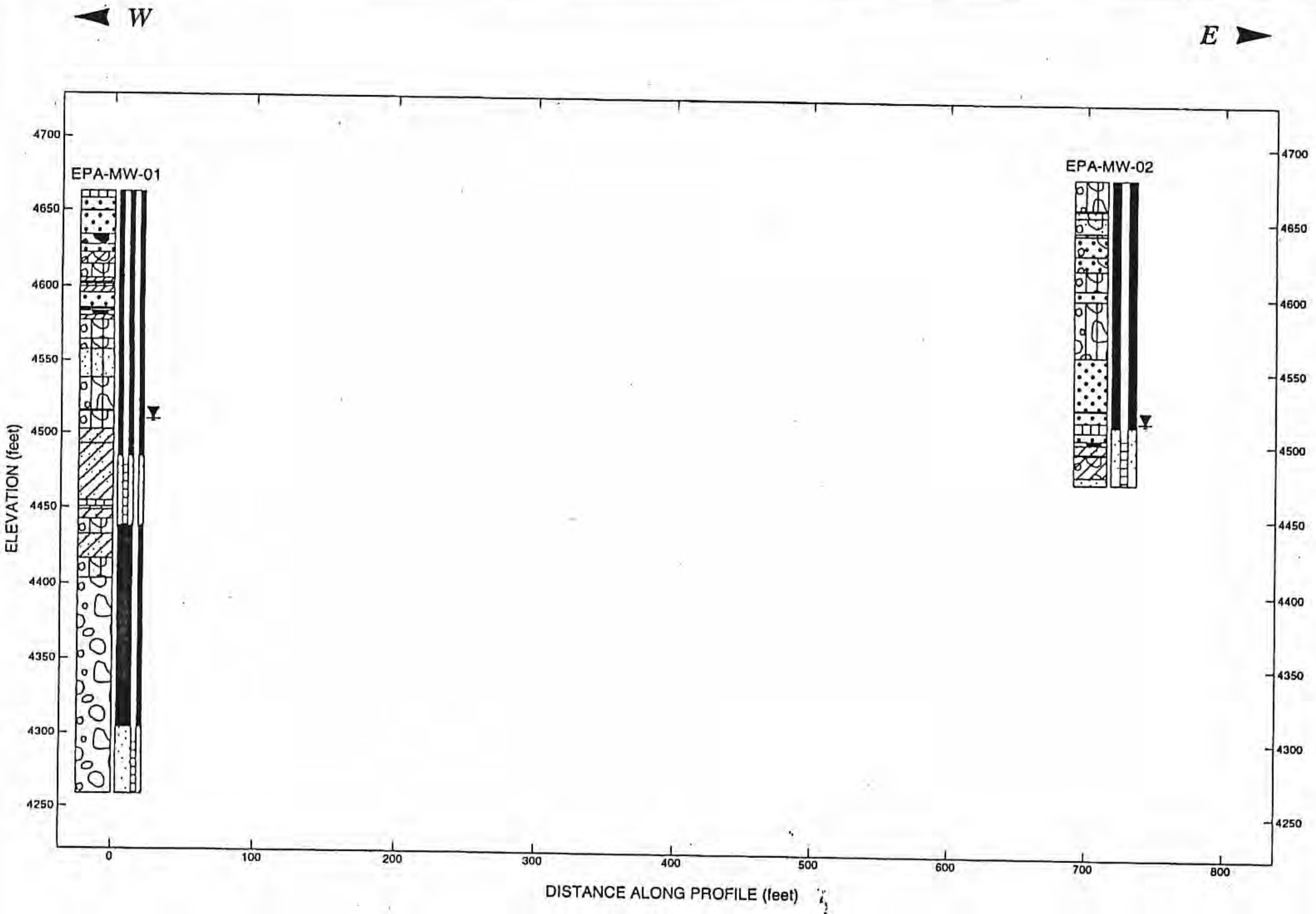
SOIL BORING LOG / MONITORING WELL CONSTRUCTION DIAGRAM

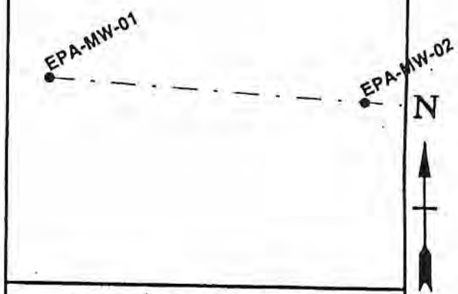
Boring / Well Number:	TDD Name/Project Number:	Site Location:
EPA-MW-05	**Mount Olivet** **7580314.00**	**Salt Lake City, Utah**

Lithologic Description	USCS	Graphic Log	Depth (feet b.g.s.)	Well Construction Details	Sample no.	Sample type *	Blow count	PID / FID (ppm)
Silty gravelly sand; reddish brown, >20% gravel, dry	GM		100					
Silt; light brown, <10% gravel	ML		105					
Gravelly sand; reddish brown, f.g.-silty, thin silt layer @ 117', dry	SW		110, 115					
Gravelly sand/sandy gravel; tan-brown, thin silt layer @127', dry	GW		120, 125, 130, 135					
Silty gravelly sand; red-brown, vfg-fg sand, <10% gravel, dry	SW							
same as above, higher % gravel, silty @ 146-148', dry	SW		140, 145, 150, 155, 160					
Clayey silt; brown, no sand, cohesive, moderate plasticity, gravelly @ 172' dry	CL		165, 170, 175					
Silty sandy gravel, reddish brown, 10-50% gravel, vfg-fg sand, trace clay, low plasticity when wetted, dry	GW		180	10-20 mesh sand				
same as above with < .5' layers of silt/clay (indicated by drilling speed)	GW		185	.010 screen 2" PVC				
Sandy gravel; > 50% gravel, dry	GP		190, 195					
Clay/silt; dry	ML		200					
Gravelly sand with clay/silt layers , very resistant @ 122.5-113.5', dry drilling, rig idled 5 minutes @ 113.5' water in hole,	SW SC		▼205, 210, 215					
Gravelly sand, dry	SW		220					

* SS (split spoon) HSA (hollow stem auger) MC (Geoprobe macrocore) CT (cuttings)

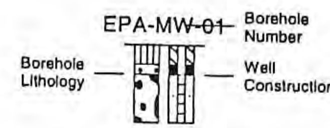
Observations	Date:		10/22/98			
Static Water Level (from TOC)	Level:		▼ 205.5			
Static Water Level (ASL)	Level:		4526.59			





Site Map Scale 1 inch equals 450 feet

Explanation



Water Level Reading at time of drilling.

Water Level Reading after drilling.

Vertical Exaggeration: 1x

Lithology Graphics

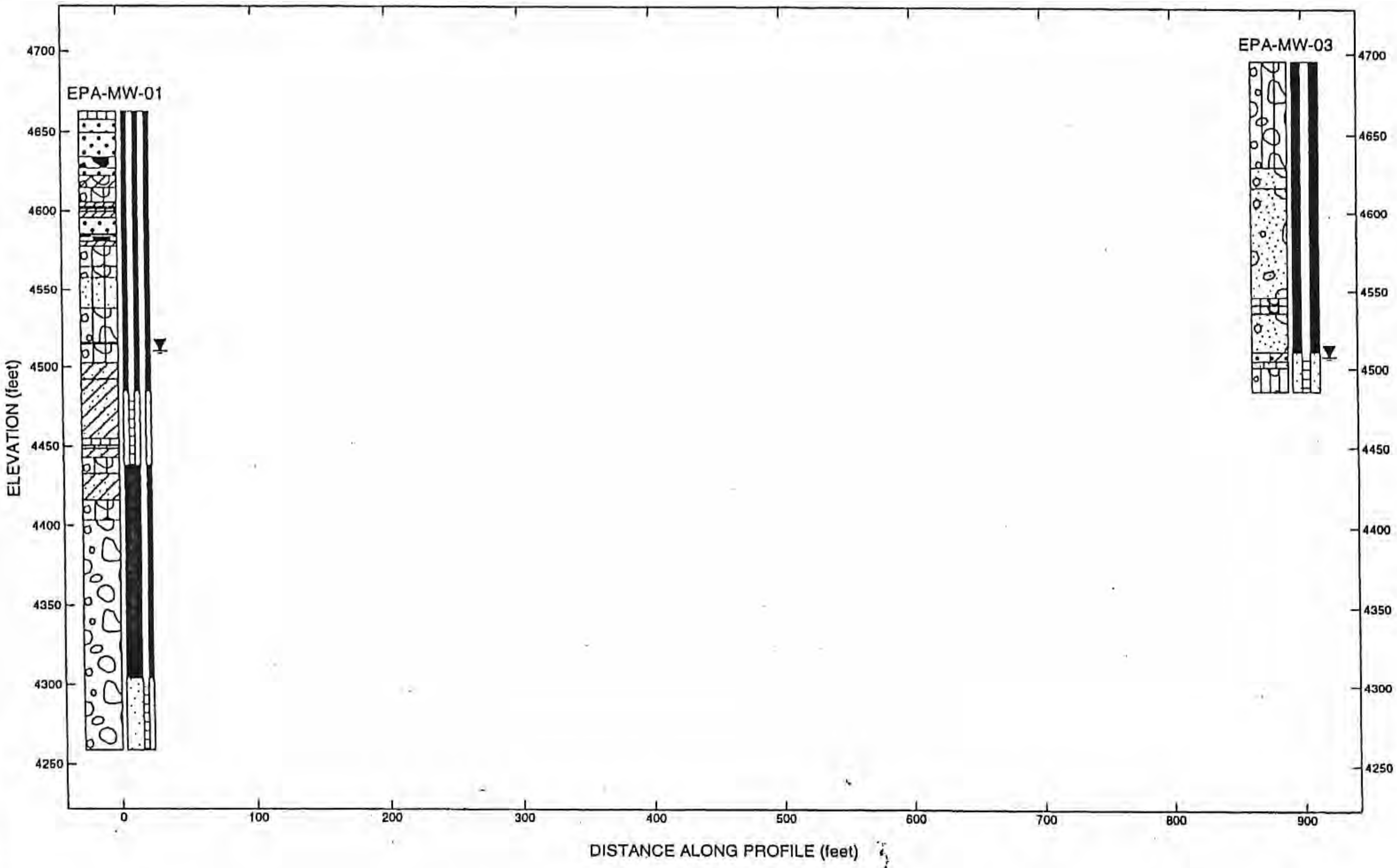
- USCS Silt
- USCS Silty Gravel
- USCS Clayey Sand
- USCS Well-graded Sand
- USCS Low Plasticity Clay
- USCS Poorly-graded Gravel
- USCS Well-graded Gravel
- USCS Poorly-graded Sand
- USCS Poorly-graded Sandy Gravel
- USCS Clayey Gravel
- USCS Silty Sand
- USCS Well-graded Gravelly Sand

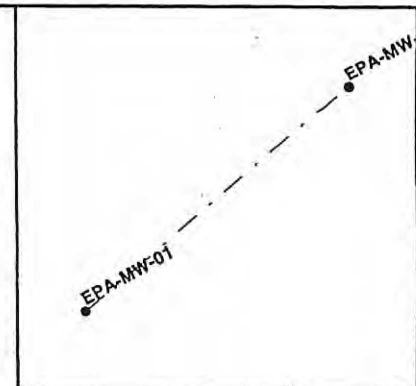
Well Graphics

- Cement grout
- Bentonite Seal
- Filter Pack
- Well Screen

URS OPERATING SERVICES
1099 18TH STREET, SUITE 710
DENVER, COLORADO 80202

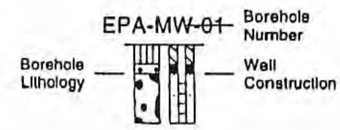
Mt. Olivet Cemetery Site
Lithologic Columns and Well Construction





Site Map Scale 1 inch equals 510 feet

Explanation



Water Level Reading at time of drilling.

Water Level Reading after drilling.

Horizontal Scale (feet)

Vertical Exaggeration: 1x

Lithology Graphics

- USCS Silt
- USCS Silty Gravel
- USCS Clayey Sand
- USCS Well-graded Sand
- USCS Low Plasticity Clay
- USCS Poorly-graded Gravel
- USCS Well-graded Gravel
- USCS Poorly-graded Sand
- USCS Poorly-graded Gravelly Sand
- USCS Clayey Gravel
- USCS Silty Sand
- USCS Gravelly Silt

Well Graphics

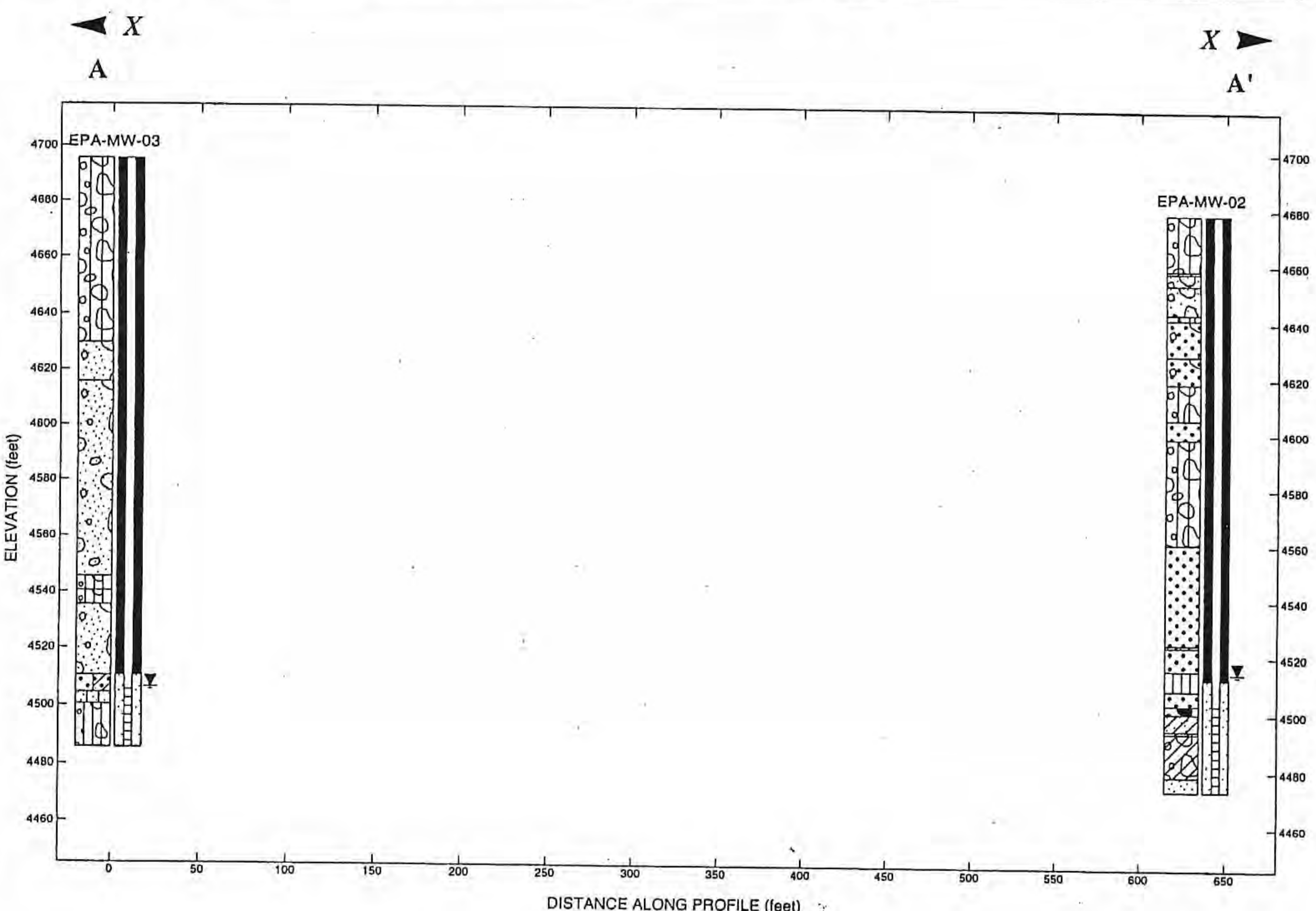
- Cement grout
- Bentonite Seal
- Filter Pack
- Well Screen
- Cement Backfill

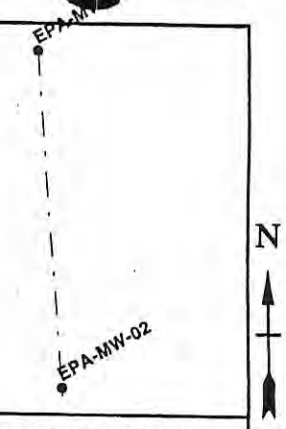
URS OPERATING SERVICES
1099 18TH STREET, SUITE 710
DENVER, COLORADO 80202

Mt. Olivet Cemetery Site Lithologic Columns and Well Construction

START

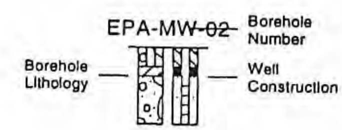
VET01 MTOLIVET.GPJ FANWNL01.GDT 3/8/99





Site Map Scale 1 inch equals 365 feet

Explanation



▽ Water Level Reading at time of drilling.

▼ Water Level Reading after drilling.

0 100

Horizontal Scale (feet)

Vertical Exaggeration: 1.5x

Lithology Graphics

- USCS Silty Gravel
- USCS Well-graded Sand
- USCS Poorly-graded Sand
- USCS Clayey Sand
- USCS Silt
- USCS Poorly-graded Gravelly Sand
- USCS Poorly-graded Sandy Gravel
- USCS Well-graded Gravel
- USCS Gravelly Silt
- USCS Well-graded Gravelly Sand
- USCS Clayey Gravel
- USCS Well-graded Sand with Clay

Well Graphics

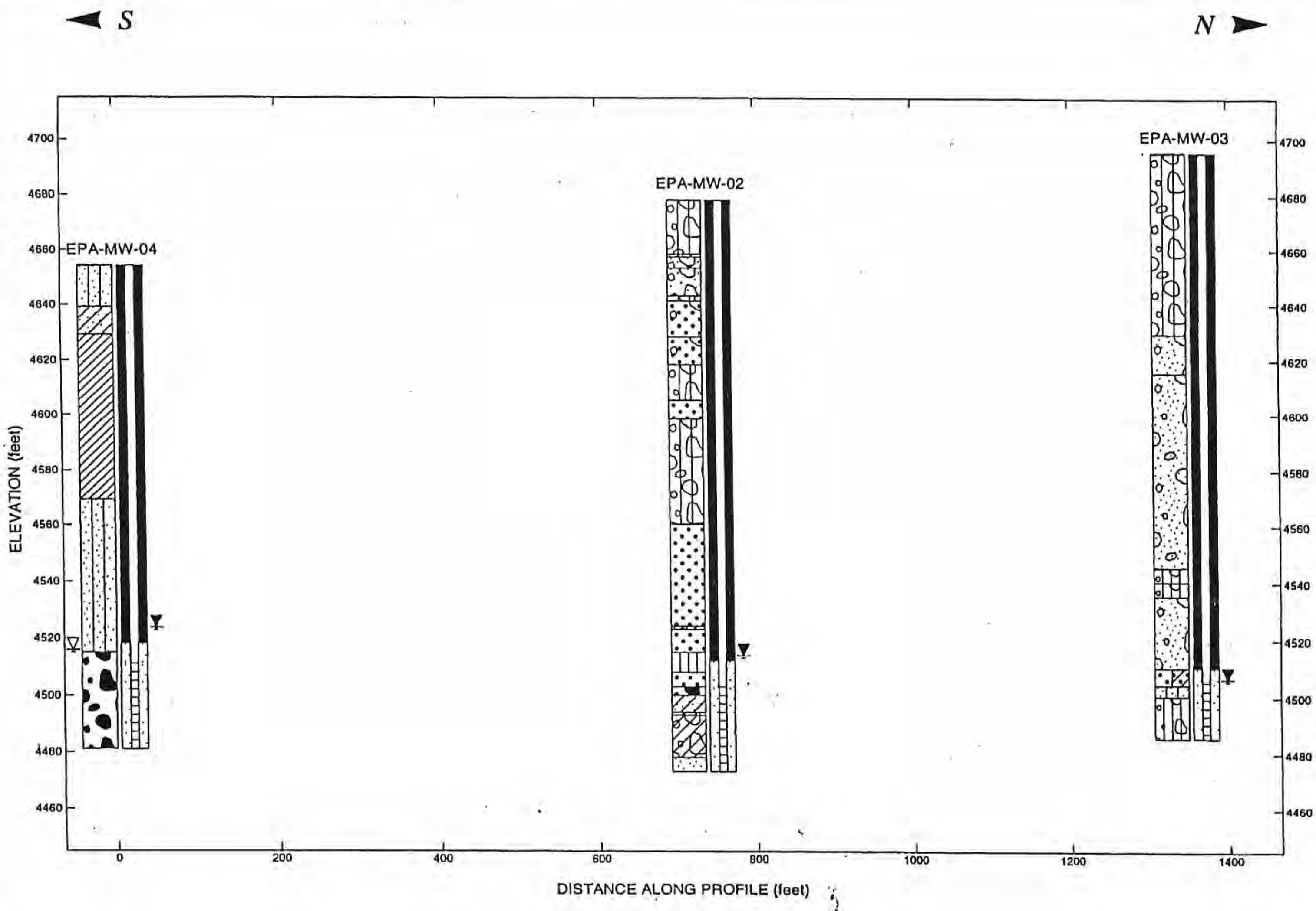
- Cement grout
- Bentonite Seal
- Filter Pack
- Well Screen

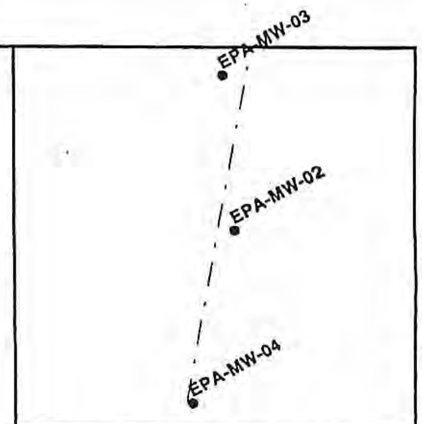
URS OPERATING SERVICES
1099 18TH STREET, SUITE 710
DENVER, COLORADO 80202

Mt. Olivet Cemetery Site A-A' Lithologic Columns and Well Construction

START

MTOLIVET.GPJ FANWNL01.GDT 3/8/99





Site Map Scale 1 inch equals 790 feet

Explanation

EPA-MW-02 Borehole Number

Borehole Lithology — Well Construction

Water Level Reading at time of drilling.

Water Level Reading after drilling.

0 215

Horizontal Scale (feet)

Vertical Exaggeration: 3.5x

Lithology Graphics

- USCS Silty Gravel
- USCS Well-graded Sand
- USCS Poorly-graded Sand
- USCS Clayey Sand
- USCS Silt
- USCS Poorly-graded Gravelly Sand
- USCS Poorly-graded Sandy Gravel
- USCS Well-graded Gravel
- USCS Gravelly Silt
- USCS Well-graded Gravelly Sand
- USCS Clayey Gravel
- USCS Well-graded Sand with Clay

Well Graphics

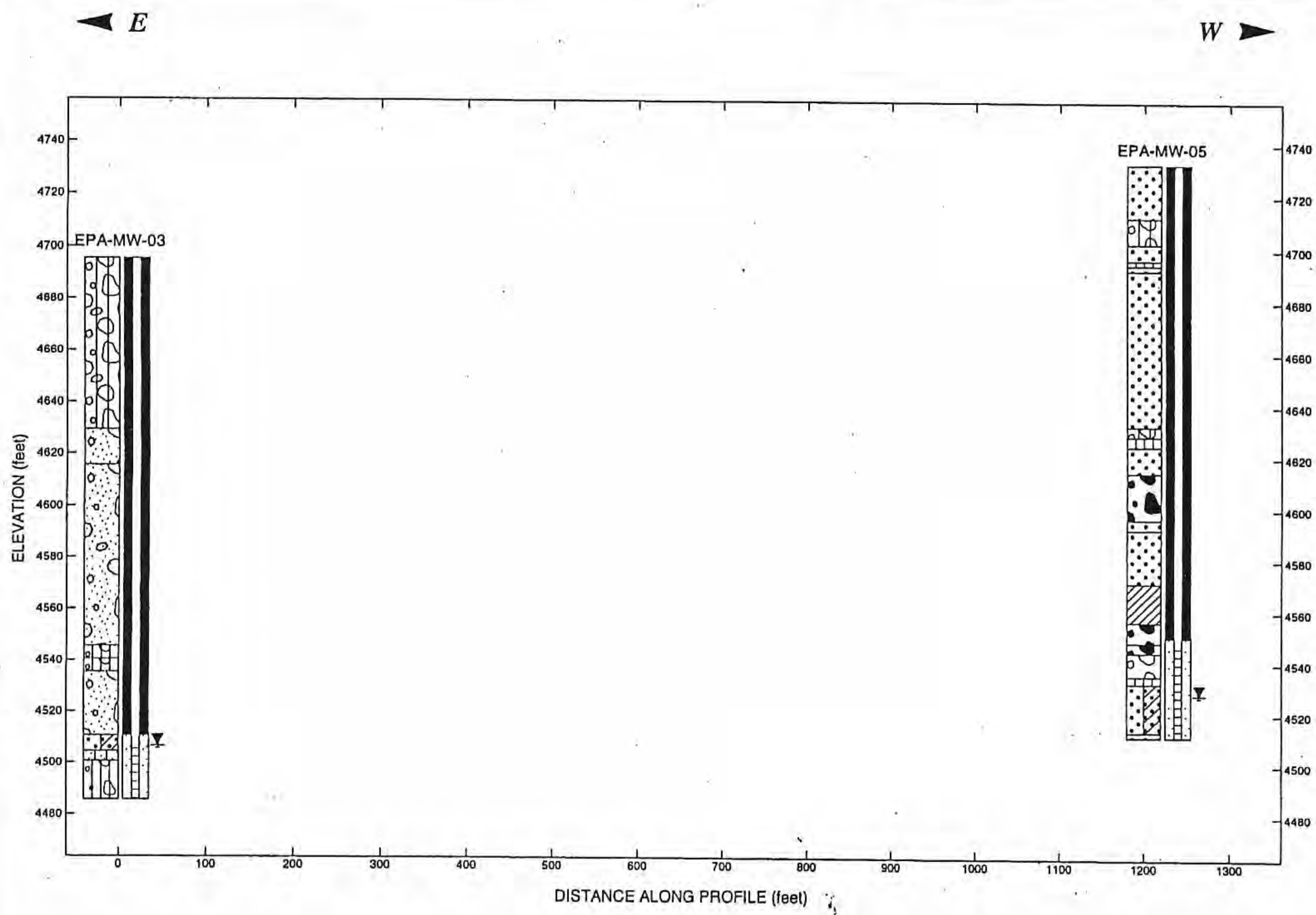
- Cement grout
- Bentonite Seal
- Filter Pack
- Well Screen

URS OPERATING SERVICES
1099 18TH STREET, SUITE 710
DENVER, COLORADO 80202

Mt. Olivet Cemetery Site Lithologic Columns and Well Construction

START

ET01 MTOLIVET.GPJ FANWNL01.GDT 3/8/99

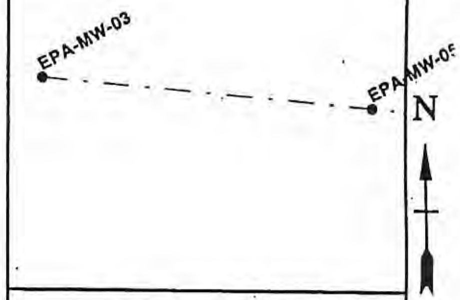


Lithology Graphics

- USCS Silty Gravel
- USCS Silty Sand
- USCS Low Plasticity Clay
- USCS Poorly-graded Gravelly Sand
- USCS Well-graded Sand
- USCS Poorly-graded Gravel
- USCS Gravelly Silt
- USCS Silt
- USCS Well-graded Sand with Clay
- USCS Well-graded Gravel

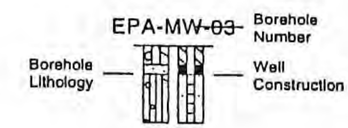
Well Graphics

- Cement grout
- Bentonite Seal
- Filter Pack
- Well Screen



Site Map Scale 1 inch equals 735 feet

Explanation



- Water Level Reading at time of drilling.
- Water Level Reading after drilling.

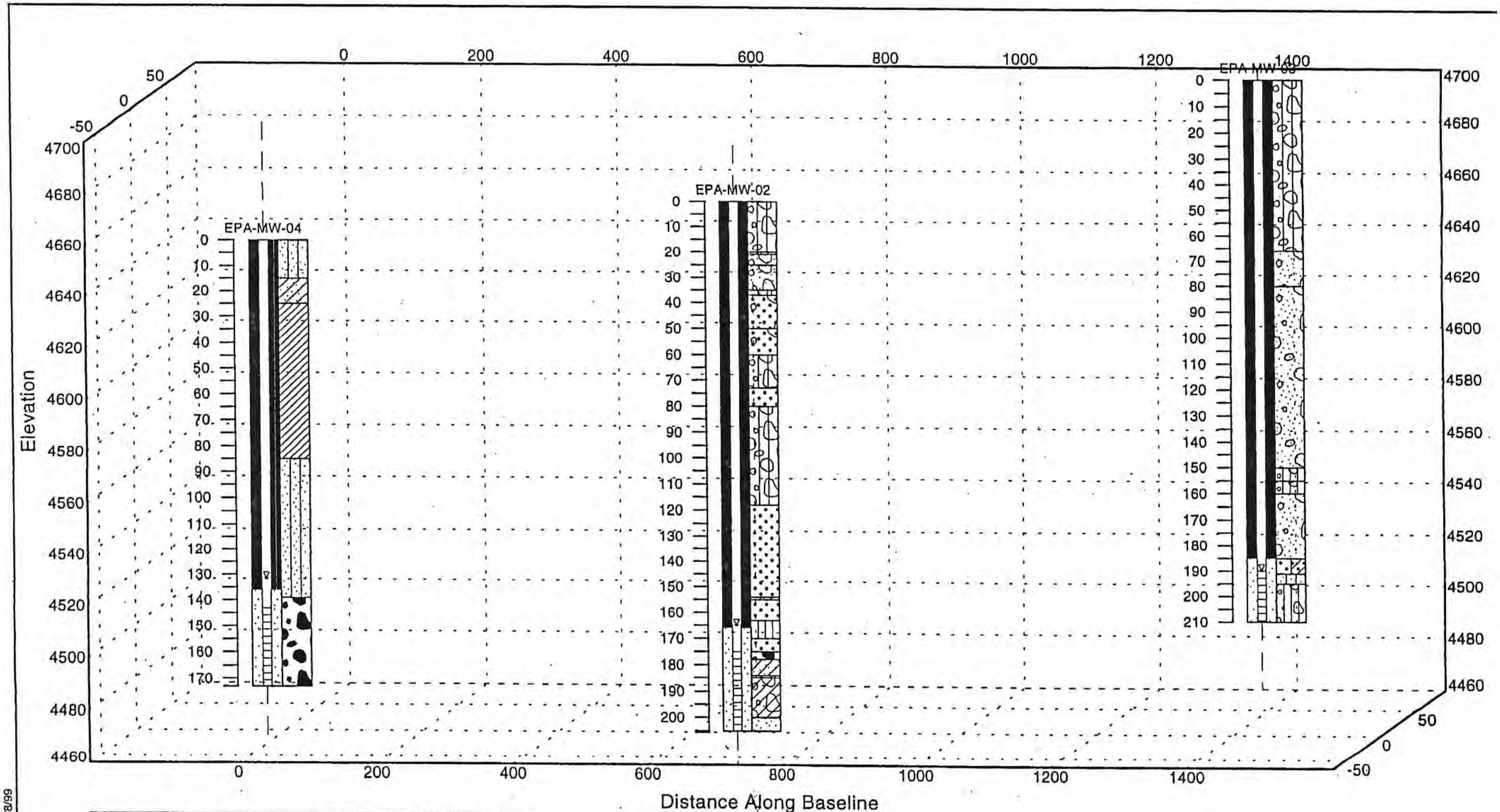
Horizontal Scale (feet)

Vertical Exaggeration: 3x

URS OPERATING SERVICES
1099 18TH STREET, SUITE 710
DENVER, COLORADO 80202

Mt. Olivet Cemetery Site Lithologic Columns and Well Construction

101 MTOLIVE1.GPJ FANWNL01.GDT 3/8/99



Borehole	North	East	Elev.	Depth
EPA-MW-02	3229	7490	4678.4	205.5
EPA-MW-03	3862	7444	4695.5	210.0
EPA-MW-04	2513	7320	4654.2	173.0

DISTANCES:
Beginning 0
Ending 1400
VIEWING ANGLES (degrees):
Horizontal 45.0
Vertical 30.0

Position	North	East
Left, Front	2506	7361
Right, Front	3884	7608

SUBSURFACE FENCE DIAGRAM Mt. Olivet Cemetery

PROJECT #	DATE	PLATE

ET02 MTOLIVET.GPJ FAGWGN01.GDT 3/8/99

WESTON SOLUTIONS SM

1435 Garrison Street, Suite 100
Lakewood, Colorado 80215

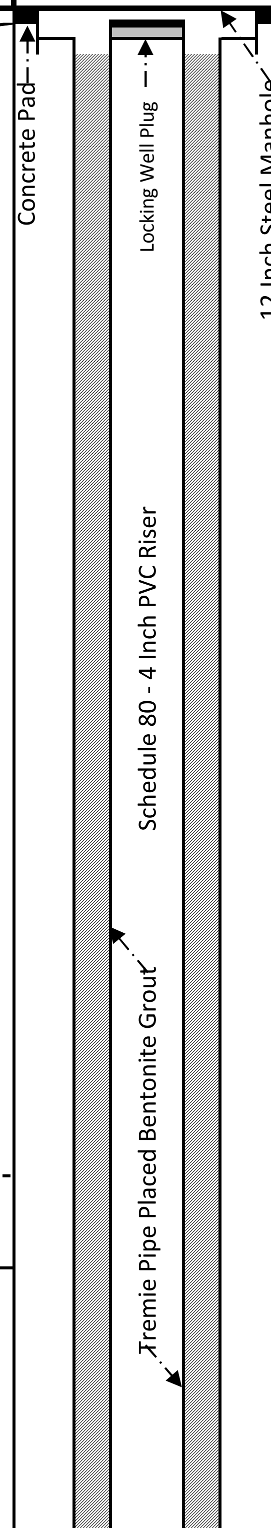
United States Environmental Protection Agency
TDD: 0008/1410-07 EPA- MW-05 Replacement
700 South 1600 East PCE Plume WO#: 20408.012.008.0189.00
500 Foothills Dr. Building 16 Salt Lake City, Utah

Boring ID:	**EPA-MW-05R**
Start Date:	September 23, 2016
End Date:	September 25, 2016
Latitude:	40.755969°*
Longitude:	-111.83918°*
Elevation:	4744

Geologist:	Roy Weindorf	Groundwater Depth (feet bgs):	215	Groundwater Elevation:	4529
Drilling Contractor:	Cascade Drilling	Total Depth (feet bgs):	230	Total Depth Elevation:	4514
Drilling Method:	Sonic	Borehole Diameter (inches):	8	Borehole Completion:	Well Installed

Depth (feet)	Organic Vapor Levels (ppm)	Sample ID (Blow Counts)	Sample Type	Graphic Log	USCS	Lithologic Description	Elevation (feet)
						Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors **Rock Description:** modifier, color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.	
0–5	Hand dug to avoid near surface utilities.				CL	**0.0'-0.3' Asphalt** **0.3'-38.0' Clay:** sandy, gravelly, brown, slightly moist (becomes dry with depth), soft to medium stiff, low plasticity, moderately cohesive, >30% coarse content, contains cobbles (round to sub-round, metamorphic and igneous in origin).	
5	<1	Core: 01 Core: 02	Photo: 1398				4739
10	<1	Core: 03	Photo: 1398				4734
15	<1	Core: 04 Core: 05	Photo: 1399			**18.0'** Cored through cobble.	4729
20	<1	Core: 06 Core: 07	Photo: 1399				4724
25	<1	Core: 08 Core: 09	Photo: 1400				4719
30	<1	Core: 10	Photo: 1400				4714
35	<1	Core: 11 Core: 12	Photo: 1401			**38.0'-41.0' Clay:** brown, slightly moist, medium stiff, low plasticity, moderately cohesive.	4709
40	<1	Core: 13	Photo: 1401		SP	**41.0'-53.0' Sand:** cobbly, light brown, dry, loose, coarse grained, sub-round to sub-angular, poorly sorted, >30% fine content.	4704
45	<1	Core: 14	Photo: 1402			**47.0'-53.0'** Significant cobbles. No core samples.	4699
50							4694

Well Design



WESTON SOLUTIONS SM

1435 Garrison Street, Suite 100
Lakewood, Colorado 80215

United States Environmental Protection Agency
TDD: 0008/1410-07 EPA- MW-05 Replacement
700 South 1600 East PCE Plume WO#: 20408.012.008.0189.00
500 Foothills Dr. Building 16 Salt Lake City, Utah

Boring ID:	**EPA-MW-05R**
Start Date:	September 23, 2016
End Date:	September 25, 2016
Latitude:	40.755969°*
Longitude:	-111.83918°*
Elevation:	4744

Geologist:	Roy Weindorf	Groundwater Depth (feet bgs):	215	Groundwater Elevation:	4529
Drilling Contractor:	Cascade Drilling	Total Depth (feet bgs):	230	Total Depth Elevation:	4514
Drilling Method:	Sonic	Borehole Diameter (inches):	8	Borehole Completion:	Well Installed

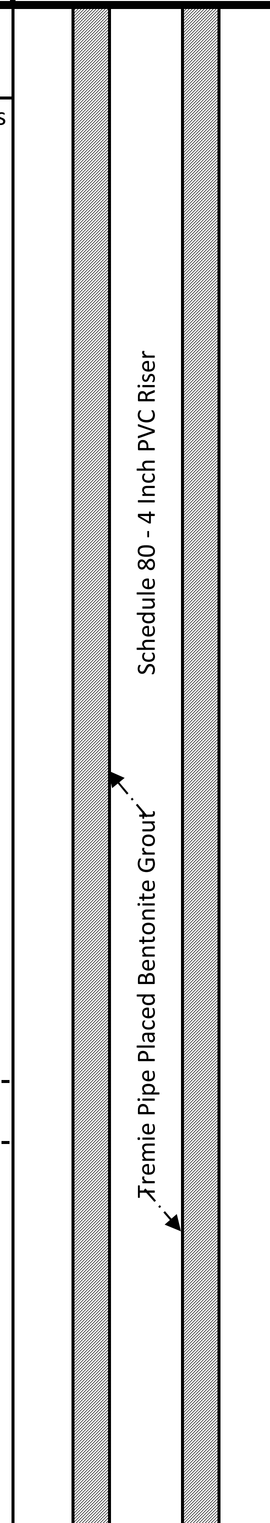
Lithologic Description

Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors

Rock Description: modifier, color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.

Depth (feet)	Organic Vapor Levels (ppm)	Sample ID (Blow Counts)	Sample Type	USCS	Lithologic Description	Elevation (feet)
50–53	<1		Photo: 1402	SP	<Sand Continued>	
53–55		Core: 15		CL	**53.0'-195.0' Clay:** sandy, gravelly, brown, slightly moist (becomes dry with depth), soft to medium stiff, low plasticity, moderately cohesive, >30% coarse content, contains cobbles (round to sub-round, metamorphic and igneous in origin).	
55	<1	Core: 16	Photo: 1403			4689
60	<1	Core: 17; Core: 18				4684
65	<1	Core: 19; Core: 20	Photo: 1404	CL		4679
70	<1	Core: 21				4674
75	<1	Core: 22; Core: 23	Photo: 1405			4669
80	<1	Core: 24				4664
85					**85.0'-87.0'** No cuttings returned.	4659
87	<1	Core: 25	Photo: 1406		<Clay Continued>	
90	<1	Core: 26; Core: 27		CL	**91.0'** Becomes dry and firm.	4654
95	<1	Core: 28	Photo: 1407			4649
100		Core: 29				4644

Well Design



Notes: *=pending survey; elevations are feet above mean sea level; bgs = below ground surface; USCS=Unified Soil Classification System; PVC=polyvinyl chloride

WESTON SOLUTIONS SM 1435 Garrison Street, Suite 100 Lakewood, Colorado 80215	**United States Environmental Protection Agency** **TDD: 0008/1410-07 EPA- MW-05 Replacement** **700 South 1600 East PCE Plume WO#: 20408.012.008.0189.00** **500 Foothills Dr. Building 16 Salt Lake City, Utah**	Boring ID: Start Date: End Date: Latitude: Longitude: Elevation:	**EPA-MW-05R** September 23, 2016 September 25, 2016 40.755969°* -111.83918°* 4744

Geologist:	Roy Weindorf	Groundwater Depth (feet bgs):	215	Groundwater Elevation:	4529
Drilling Contractor:	Cascade Drilling	Total Depth (feet bgs):	230	Total Depth Elevation:	4514
Drilling Method:	Sonic	Borehole Diameter (inches):	8	Borehole Completion:	Well Installed

Depth (feet)	Organic Vapor Levels (ppm)	Sample ID (Blow Counts)		Sample Type	Graphic Log	USCS	**Lithologic Description** **Soil Group Name**: modifier, color, moisture, density/consistency, grain size, other descriptors **Rock Description:** modifier, color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.	**Well Design**	**Elevation (feet)**
	<1	Core: 28	Photo: 1407				<Clay Continued>		
105		Core: 30							4639
	<1	Core: 31	Photo: 1408				**105.0'-117.0'** Minimal Cobbles <5%.		
110		Core: 32							4634
	<1	Core: 33						Schedule 80 - 4 Inch PVC Riser	
115		Core: 34							4629
	<1	Core: 35	Photo: 1409				**117.0'** Increased cobble content >20%. Clasts are sedimentary (photo: 1410), igneous, and metamorphic in origin.		
120		Core: 36							4624
	<1	Core: 37							
125						CL			4619
	<1	Core: 38	Photo: 1411					Tremie Pipe Placed Bentonite Grout	
130		Core: 39							4614
	<1	Core: 40							
135									4609
	<1	Core: 41	Photo: 1412						
140		Core: 42							4604
	<1	Core: 43							
145		Core: 46	Photo: 1413						4599
	<1	Core: 47							
150									4594

Notes: *=pending survey; elevations are feet above mean sea level; bgs = below ground surface; USCS=Unified Soil Classification System; PVC=polyvinyl chloride

WESTON SOLUTIONS	United States Environmental Protection Agency	Boring ID:	EPA-MW-05R
1435 Garrison Street, Suite 100	TDD: 0008/1410-07 EPA- MW-05 Replacement	Start Date:	September 23, 2016
Lakewood, Colorado 80215	700 South 1600 East PCE Plume WO#: 20408.012.008.0189.00	End Date:	September 25, 2016
	500 Foothills Dr. Building 16 Salt Lake City, Utah	Latitude:	40.755969°*
		Longitude:	-111.83918°*
		Elevation:	4744

Geologist:	Roy Weindorf	Groundwater Depth (feet bgs):	215	Groundwater Elevation:	4529
Drilling Contractor:	Cascade Drilling	Total Depth (feet bgs):	230	Total Depth Elevation:	4514
Drilling Method:	Sonic	Borehole Diameter (inches):	8	Borehole Completion:	Well Installed

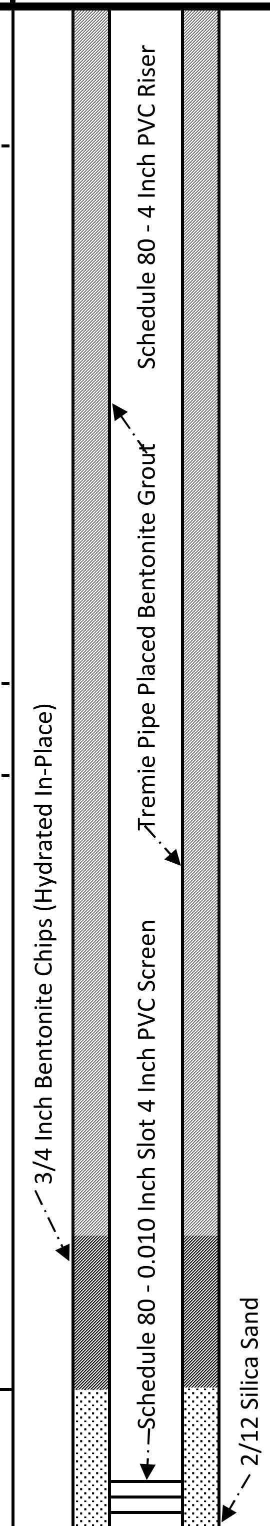
Lithologic Description

Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors

Rock Description: modifier, color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.

Depth (feet)	Organic Vapor Levels (ppm)	Sample ID (Blow Counts)	Sample Type	USCS	Lithologic Description	Elevation (feet)
		Core: 47	Photo: 1413	CL	<Clay Continued>	
	<1	Core: 48	Photo: 1413	CL		
155	<1	Core: 49	Photo: 1414	CL	**154.5'-195.0'** Minimal Cobbles <5%.	4589
		Core: 50	Photo: 1414	CL		
160	<1	Core: 51	Photo: 1414	CL		4584
		Core: 52		CL		
165	<1	Core: 53	Photo: 1415	CL		4579
		Core: 54	Photo: 1415	CL		
170	<1					4574
					172.0'-175.0' Rock stuck in bit. No cuttings returned.	
175		Core: 55				4569
	<1	Core: 56	Photo: 1416	CL	<Clay Continued. Minimal Cobbles.>	
180	<1	Core: 57	Photo: 1416	CL		4564
		Core: 58	Photo: 1416	CL		
185	<1	Core: 59	Photo: 1417	CL		4559
		Core: 60	Photo: 1417	CL		
190	<1	Core: 61	Photo: 1417	CL		4554
195	<1	Core: 62	Photo: 1418		**195.0'-216.8' Clay:** brown, dry, medium stiff, low plasticity, moderately cohesive, <10% coarse content (sand, gravel, and cobble).	4549
		Core: 63	Photo: 1418			
200						4544

Well Design



WESTON SOLUTIONS SM 1435 Garrison Street, Suite 100 Lakewood, Colorado 80215	**United States Environmental Protection Agency** **TDD: 0008/1410-07 EPA- MW-05 Replacement** **700 South 1600 East PCE Plume WO#: 20408.012.008.0189.00** **500 Foothills Dr. Building 16 Salt Lake City, Utah**	Boring ID: Start Date: End Date: Latitude: Longitude: Elevation:	**EPA-MW-05R** September 23, 2016 September 25, 2016 40.755969°* -111.83918°* 4744

Geologist:	Roy Weindorf	Groundwater Depth (feet bgs):	215	Groundwater Elevation:	4529
Drilling Contractor:	Cascade Drilling	Total Depth (feet bgs):	230	Total Depth Elevation:	4514
Drilling Method:	Sonic	Borehole Diameter (inches):	8	Borehole Completion:	Well Installed

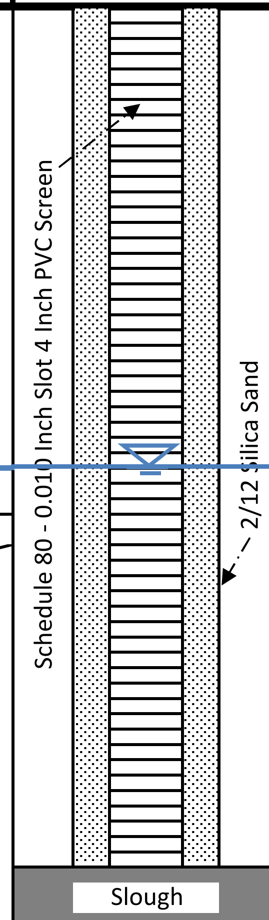
Lithologic Description

Soil Group Name: modifier, color, moisture, density/consistency, grain size, other descriptors

Rock Description: modifier, color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.

Depth (feet)	Organic Vapor Levels (ppm)	Sample ID (Blow Counts)	Sample Type	Graphic Log	USCS	Lithologic Description	Elevation (feet)
	<1	Core: 64	Photo: 1419			<Clay Continued>	
205		Core: 65					4539
	<1	Core: 66	Photo: 1420				
210	<1	Core: 67					4534
		Core: 68			CL		
215	<1	Core: 69				**215.0'** Becomes wet.	4529
						216.8'-217.6' Sand: brown, wet, loose, coarse grained, moderately well sorted, sub angular (photo: 1421).	
						217.6'-230.0' Clay: brown, wet, medium stiff, low plasticity, moderately cohesive, <10% coarse content (sand, gravel, and cobble).	
220	<1						4524
225	<1		Photo: 1422				4519
230						END OF BORING	4514
235							4509
240							4504
245							4499
250							4494

Well Design



Materials Used: Slotted PVC (10 foot): 3; PVC Riser (10 foot): 20; Sand (50 pound bag): 19; Bentonite Chips (50 pound bag): 3; Grout (50 pound

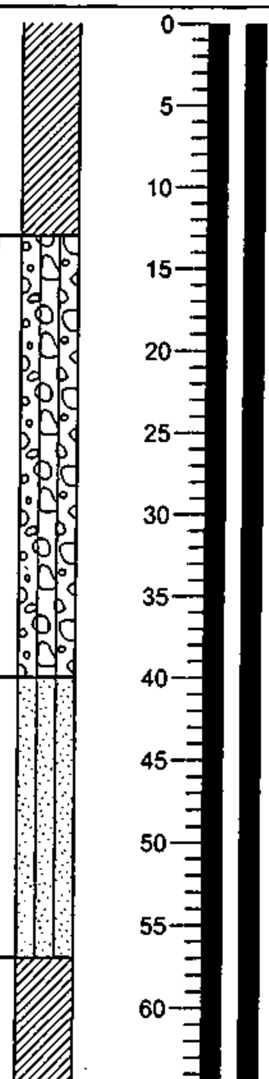
Notes: *=pending survey; elevations are feet above mean sea level; bgs = below ground surface; USCS=Unified Soil Classification System; PVC=polyvinyl chloride

URS Operating Services

SOIL BORING LOG / MONITORING WELL CONSTRUCTION DIAGRAM

Boring / Well Number: **EPA-MW-06**	TDD Name/Project Number: **Mount Olivet 7580314.00**	Site Location: **Salt Lake City, Utah**
Boring Depth (ft) X Diameter (in): **134.0 x 8**		Drilling Method: **Hammer Rig w/advance casing**
Well Contractor Name: **Layne Christenson**		Logged by: **Mike Carmien**
Ground Surface Elevation (ASL):	Top of Casing Elevation (ASL):	Lat. / Long. SE Corner of Sunnyside Park Ave — Northing / Easting
Date Started: **9/22/99**	Date Completed: **9/23/99**	Additional Comments: **Sunnyside Park north of tennis court**

Lithologic Description	USCS	Graphic Log	Depth (feet b.g.s.)	Well Construction Details	Sample Type*	Sample Recovery	Blow count	PID / FID (ppm)
Silty clay; tan-brown, plastic, 10% cobbles	CL		0	4" Sch. 40 PVC blank, bentonite pellet seal				
Silty gravel; Red, low plasticity, no clay, dry, PID=background	GM							
Gravelly sand; reddish, silty, medium grained sand, 10% gravel	SM							
Silty clay; reddish-pink, plastic, moist	CL							



* SS (split spoon) HSA (hollow stem auger) MC (Geoprobe macrocore) CT (cuttings)

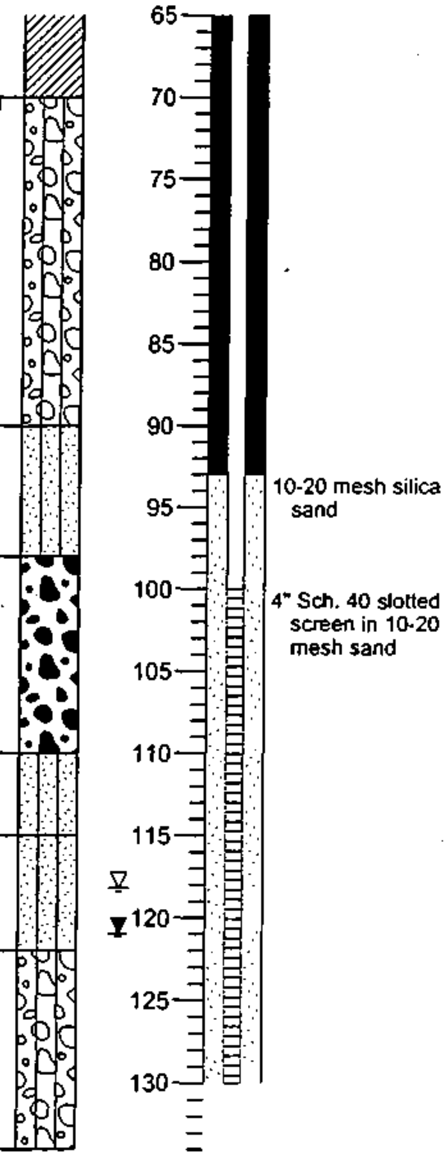
Observations	Date:	9/23/99	1/6/00			
Static Water Level (from TOC)	Level:	∇ 118.21	▼ 121			
Static Water Level (ASL)	Level:					

URS Operating Services

SOIL BORING LOG / MONITORING WELL CONSTRUCTION DIAGRAM

Boring / Well Number:	TDD Name/Project Number:	Site Location:
EPA-MW-06	**Mount Olivet** **7580314.00**	**Salt Lake City, Utah**

Lithologic Description	USCS	Graphic Log	Depth (feet b.g.s.)	Well Construction Details	Sample Type *	Sample Recovery	Blow count	PID / FID (ppm)
Gravelly silt; red, 30% gravel, dry	GM							
Silty sand; red	SM							
Sandy gravel; red, dry	GW							
Silty sand; red, dry	SM							
Silty sand; red, wet (water table @ 115 bgs)	SM							
Gravel/silt/clay; very resistant, slow drilling, well cemented, qtz, rhyolite, amphiboles, and feldspars	GM							



* SS (split spoon) HSA (hollow stem auger) MC (Geoprobe macrocore) CT (cuttings)

Observations	Date:	9/23/99	1/6/00			
Static Water Level (from TOC)	Level:	118.21	121			
Static Water Level (ASL)	Level:					

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Appendix B
Boring and Piezometer Logs

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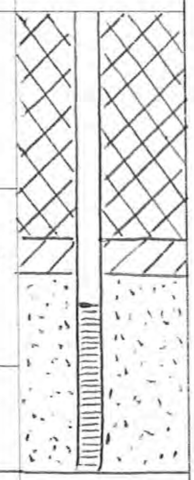
BORING/WELL CONSTRUCTION LOG

Project: AOU-1: East side Springs	Project Number: 6202899
Drilling Company: Cascade Drilling	Start Time/Date: 1230 3/2/16
Drilling Rig/Bit: Hand Auger	Completion Time/Date: 1334 3/2/16
Driller: O. Waters	Final Depth: 13'
Boring/Well ID: GW-01	Logged By: K. Lazzen

Page 1 of 1

Sample Type	Blow Counts/6"	~~Sample Interval~~ Recovery	PID Reading	USCS Soil Type	Depth, ft bgs	Soil Description (Order: soil type, color, density/consistency, plasticity, moisture, grain size, angularity/minerology, other)	Boring and/or Well Details
HAND AUGER	NA	NA	NA	ML	1–7	0-7' silt, 7.5YR 2.5/1 (black), medium stiff, nonplastic, moist, 15% sand (fine to medium grained sand)	
				CL	7–13 (▼ 11)	7'-13' clay, 7.5YR 2.5/1 (black), medium stiff, plastic, moist, 20% fine grained sand, trace subrounded gravel	
						3/4" diameter Sch 40 PVC PVC 0.010" slot screen: 8-13'	
						Backfill: 0-6' Bentonite: 6-7' Sand: 7-13'	

SS = Split Spoon, ST = Shelby Tube, CUT = Drill Cuttings, or Core

BORING/WELL CONSTRUCTION LOG

Project: AOU-1: East Side Springs	Project Number: 6202899
Drilling Company: Cascade Drilling	Start Time/Date: 1427 2/24/16
Drilling Rig/Bit: Geoprobe 6620DT 2"	Completion Time/Date: 1549 2/24/16
Driller: O. Waters	Final Depth: 40'
Boring/Well ID: GW-02	Logged By: K. Lazzeri

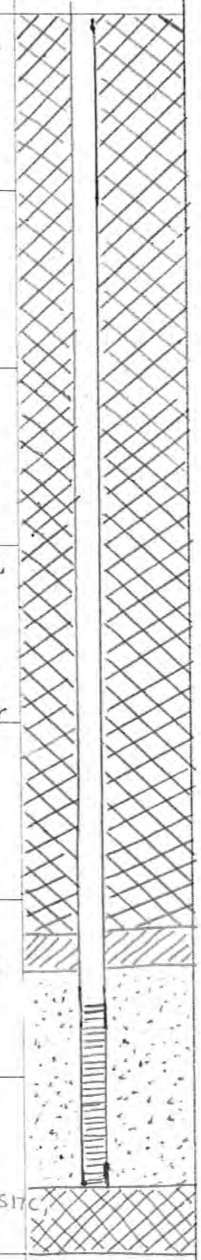
Sample Type	Blow Counts/6"	Sample Interval	PID Reading	USCS Soil Type	Depth, ft bgs	Soil Description (Order: soil type, color, density/consistency, plasticity, moisture, grain size, angularity/minerology, other)	Boring and/or Well Details
ACETATE SLEEVE	NA	31/60	NA	SM, CL, SP	1–5	0-.5' topsoil, some wood fragments .5'-1' silty sand, 7.5YR 5/6 (strong brown), medium dense, dry, fine grained sand 1'-2' clay, 10YR 5/6 (yellowish brown), medium stiff, slightly plastic, dry, trace fine grained sand 2'-5' poorly graded sand, 7.5YR 5/4 (brown), loose, dry, very fine to fine grained sand (qtz)	
		48/60		CL, SP	6–10	5'-5.5' sandy clay, 10YR 5/6 (yellowish brown), medium dense, slightly plastic, dry, fine grained sand 5.5'-10' poorly graded sand, 7.5YR 5/6 (strong brown), loose, dry, fine grained sand (qtz)	
		55/60		SC, SP	11–15	10'-11' clayey sand, 10YR 5/6 (yellowish brown), medium dense, dry, very fine grained sand 11'-16' poorly graded sand, 7.5YR 5/6 (~~yellowish~~ strong KL brown), loose, dry, fine grained quartz sand, some lithics, <5% fines, silt lenses (1" thick) at 14' and 15.1'. Fining downwards at 15' to very fine grained sand	
		60/60		SM, GC	16–20	16'-16.5' silty sand 16.5'-20' clayey gravel, 7.5YR 4/6 (strong brown), medium dense, dry, fine to coarse grained sand (20%), gravel angular-subrounded (lithics, S.S. up to 3"), 15% clay (7.5YR 4/6 strong brown)	
		57/60		SC, GC	21–25	20'-20.5' ~~sandy~~ KL clayey sand, 7.5YR 4/6 (strong brown), medium dense, dry, fine grained sand, few gravel (subangular, lithics, up to 0.25"), wood fibers 20.5'-40' clayey gravel, 7.5YR 4/4 (brown), loose, dry, angular to subrounded gravel (lithics, S.S, qtz, up to 2.5"), fine to coarse grained sand, 20% clay	
		58/60			26–30		
		51/60			31–35		
		53/60			36–40	~~34~~ KL Refusal at 40' - No well set	

SS = Split Spoon, ST = Shelby Tube, CUT = Drill Cuttings, or Core

BORING/WELL CONSTRUCTION LOG

Project: A0U1 - East Side Springs	Project Number: 6202899
Drilling Company: Cascade Drilling	Start Time/Date: 1618 2/24/16
Drilling Rig/Bit: 6620 DT - Geoprobe 2"	Completion Time/Date: 1745 2/24/16
Driller: O. Waters	Final Depth: 35'
Boring/Well ID: GW-03	Logged By: K. Lazzen

Sample Type	Blow Counts/6"	~~Sample Interval~~ Recovery	PID Reading	USCS Soil Type	Depth, ft bgs	Soil Description (Order: soil type, color, density/consistency, plasticity, moisture, grain size, angularity/minerology, other)
ACETATE SLEEVE	NA	31/60	NA	SP	1–5	0-3" topsoil 3"-11' poorly graded sand, 7.5YR 5/6 (strong brown), loose, moist, fine grained sand, 5% silt, trace gravel (lithics, subangular, up to .25"), tree roots
		45/60			6–10	7': lamination of clay (7.5YR 7/4 pink)
		52/60		SP SW SP	11–15	11'-12' poorly graded sand, 7.5YR 5/6 (strong brown), medium dense, wet, very fine grained sand, 10% silt, qtz grains 12'-13' well graded sand, 10YR 4/6 (dark yellowish brown), loose, dry, fine to coarse grained, qtz and lithics, <5% silt 13'-15' poorly graded sand, 7.5YR 6/6 (reddish yellow), loose, dry, fine grained sand, quartz
		50/60		SP SW SP GC	16–20	15'-16.5' poorly graded sand, 7.5YR 5/6 (strong brown), medium dense, moist, very fine grained sand, 16.5'-17' well graded sand, 7.5YR 4/4 (brown), loose, moist, fine to coarse grained, lithics and quartz 17'-17.5' same as 15'-16.5' 17.5'-~~20'~~ 27' clayey gravel: 7.5YR 4/6 (strong brown), medium dense, dry, 20% fine to coarse grained sand, 15% clay (10YR 6/4, light brown), angular to subrounded gravel (s.s., quartz, lithics)
		49/60			21–25	moist at 24 feet
		54/60		GC	26–30 (▽ 29)	27'-~~35'~~ 33' KL same as above, color change to 7.5YR 5/6 (strong brown)
		50/60		ML	31–35	wet at 30' 33'-35' sandy silt, 5YR 4/6 (yellowish red), medium stiff, slightly plastic, wet, fine grained sand



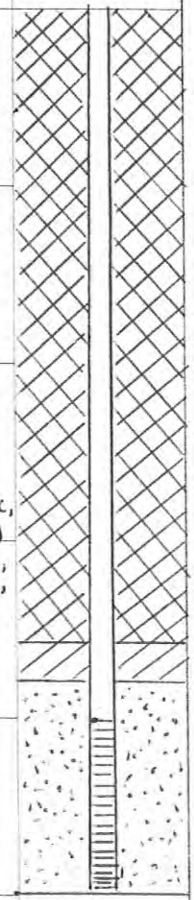
3/4" PVC Sch. 40
PVC .010" well screen: 28-33
Backfill: 0-26', ~~27~~ KL 33-35'
Bentonite: 26-27'
Sand: 27-33'

SS = Split Spoon, ST = Shelby Tube, CUT = Drill Cuttings, or Core

BORING/WELL CONSTRUCTION LOG

Project: AOU-1: East Side Springs	Project Number: 6202899
Drilling Company: Cascade Drilling	Start Time/Date: 1014 2/26/16
Drilling Rig/Bit: Geoprobe 6620 DT 2"	Completion Time/Date: 1143 2/26/16
Driller: O. Waters	Final Depth: 25'
Boring/Well ID: GW-04	Logged By: K. Lazzeri

Sample Type	Blow Counts/6"	~~Sample Interval~~ Recovery	PID Reading	USCS Soil Type	Depth, ft bgs	Soil Description (Order: soil type, color, density/consistency, plasticity, moisture, grain size, angularity/minerology, other)	Boring and/or Well Details
ACETATE SLEEVE	NA	24/60	NA	ML	1–5	0-6" topsoil 6"-6' silt, 7.5YR 2.5/1 (black), stiff, slightly plastic, moist, few fine grained sand	
		36/60		ML	6–10	6'-11' clayey silt, 7.5 YR 4/1 (dark gray), stiff, slightly plastic, moist, few fine-medium grained sand	
		49/60		CL	11–14	11'-14' sandy clay, 10YR 5/4 (yellowish brown), soft, slightly plastic, moist, 15% fine to medium grained sand	
				CL	14–15	14'-15' sandy clay, 7.5 YR 4/6 (strong brown), medium stiff, nonplastic, moist, fine to medium grained sand, trace gravel (subrounded, lithics)	
		58/60		GC	15–20 (▽ 18)	15 - ~~17~~ 20' clayey gravel, 7.5YR 4/6 (strong brown), medium dense, dry, fine to coarse grained sand, gravel angular-subangular (lithics, s.s., limestone) up to 2.5", 15% clay	
		59/60		SC	21–25	20-25' clayey sand, 2.5Y 6/4 (light yellowish brown), dense, wet, fine to medium grained sand	



3/4" Sch. 40 PVC
PVC 0.010" slot screen: 20-25'

Backfill: 0-18'
Bentonite: 18-19'
Sand: 19-25'

SS = Split Spoon, ST = Shelby Tube, CUT = Drill Cuttings, or Core

BORING/WELL CONSTRUCTION LOG

Project: AOU-1: East Side Springs	Project Number: 6202899
Drilling Company: Cascade Drilling	Start Time/Date: 0921 2/25/16
Drilling Rig/Bit: Geoprobe 6620 - DT 2"	Completion Time/Date: 1000 2/25/16
Driller: O. Waters	Final Depth: 15'
Boring/Well ID: GW-05	Logged By: K. Lazzeri 2/25/16

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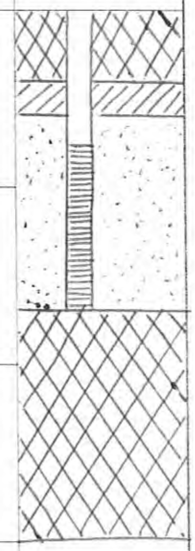
Sample Type	Blow Counts/6"	~~Sample Interval~~ Recovery	PID Reading	USCS Soil Type	Depth, ft bgs	Soil Description (Order: soil type, color, density/consistency, plasticity, moisture, grain size, angularity/minerology, other)	Boring and/or Well Details
ACETATE SLEEVE		31/60		SC	1–5 (▽ 3)	0-6" topsoil 6"-6' ~~silty~~ KL clayey sand, 10YR 6/2 (light brownish gray) ~~5/4 (yellowish brown)~~ KL, medium dense, moist, fine grained sand wet @ 3.5' 4' color change to 10YR 5/4 (yellowish brown)	
~~NA~~ KL	NA	46/60	NA	~~/////~~ KL SC	6–10	6'-15' clayey sand, 7.5YR 5/6 (strong brown), medium dense, moist, fine to medium grained sand	
		50/60			11–15		

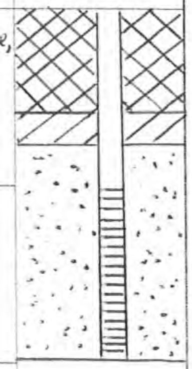
3/4" dia. Sch. 40 PVC
3/4" PVC screen 0.010" slot: 3.5-8.5'

Backfill: 0-1.5', 8.5-15'
Bentonite: 1.5-2.5'
Sand: 2.5-8.5'

SS = Split Spoon, ST = Shelby Tube, CUT = Drill Cuttings, or Core

BORING/WELL CONSTRUCTION LOG

Project: AOU-1: East Side Springs	Project Number: 6202899
Drilling Company: Cascade Drilling	Start Time/Date: 2/25/16 1050
Drilling Rig/Bit: Geoprobe 6620DT 2"	Completion Time/Date: 1130 2/25/16
Driller: O. Waters	Final Depth: 10'
Boring/Well ID: GW-06	Logged By: K. Lazzen

Sample Type	Blow Counts/6"	~~Sample Interval~~ Recovery	PID Reading	USCS Soil Type	Depth, ft bgs	Soil Description (Order: soil type, color, density/consistency, plasticity, moisture, grain size, angularity/minerology, other)	Boring and/or Well Details
ACETATE SLEEVE	NA	31/60	NA	SC	1	0-5" topsoil 5"-6' clayey sand, 10YR 6/2 (light brownish gray), medium dense, moist, fine grained sand	
					2		
					3		
					4	3.5' - color change to 10YR 5/4 (yellowish brown)	
					▽ 5		
		49/60		SC	6		
					7	6'-10' clayey sand, 7.5YR 5/6 (strong brown), medium dense, wet, fine to medium grained	
					8		
					9		
					10		

3/4" dia. Sch. 40 PVC
PVC 0.010" slot screen: 5-10'

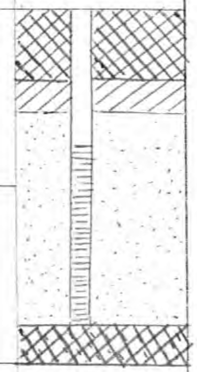
Backfill: 0-3'
Bentonite: 3-4'
Sand: 4-10'

SS = Split Spoon, ST = Shelby Tube, CUT = Drill Cuttings, or Core

BORING/WELL CONSTRUCTION LOG

Project: AOU-1: East Side Springs
Drilling Company: Cascade Drilling
Drilling Rig/Bit: Geoprobe 6620-DT 2"
Driller: O. Waters
Boring/Well ID: GW-07

Project Number: 6202899
Start Time/Date: 1329 2/25/16
Completion Time/Date: 1407 2/25/16
Final Depth: 10'
Logged By: K. Lazzen

Sample Type	Blow Counts/6"	~~Sample Interval~~ Recovery	PID Reading	USCS Soil Type	Depth, ft bgs	Soil Description (Order: soil type, color, density/consistency, plasticity, moisture, grain size, angularity/minerology, other)	Boring and/or Well Details
SLEEVE	NA	41/60	NA		1	0-6" topsoil	
				SP	1–3	6"-3.5' poorly graded sand, 10YR 6/3 (pale brown), dense, moist, fine grained sand.	
				SC	4–6	3.5'-6.5' clayey sand, 2.5Y 6/4 (light yellowish brown), dense, wet, fine grained sand, 15% clay	
~~NA~~ KL ACETATE		52/60		CL	7	6.5'-7' clay, 2.5Y 6/4 (light yellowish brown), soft, plastic, wet, trace fine grained sand	
				CL	8–10 (▽ 9)	7'-10' sandy clay, 7.5YR 5/6 (strong brown), medium stiff, slightly plastic, wet, fine grained sand	

~~11~~ ~~12~~ ~~13~~ ~~14~~ ~~15~~ KL

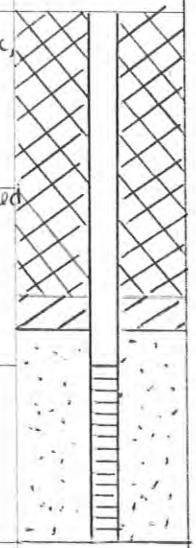
3/4-inch diameter Schedule 40 PVC
3/4-inch PVC screen 0.010" slot: 4'-9'

Backfill: 0-2', 9-10'
Bentonite: 2-3'
Sand: 3-9'

SS = Split Spoon, ST = Shelby Tube, CUT = Drill Cuttings, or Core

BORING/WELL CONSTRUCTION LOG

Project: AOU-1: East Side Springs	Project Number: 6202899
Drilling Company: Cascade Drilling	Start Time/Date: 1231 2/27/16
Drilling Rig/Bit: Geoprobe 6620 DT 2"	Completion Time/Date: 1305 2/27/16
Driller: O. Waters	Final Depth: 15'
Boring/Well ID: GW-08	Logged By: K. Lazzeri

Sample Type	Blow Counts/6"	~~Sample Interval~~ Recovery	PID Reading	USCS Soil Type	Depth, ft bgs	Soil Description (Order: soil type, color, density/consistency, plasticity, moisture, grain size, angularity/minerology, other)	Boring and/or Well Details
ACETATE SLEEVE	NA	21/60	NA	ML	1–5	0-4" topsoil 4"-5' sandy silt, 10YR 3/3 (dark brown), medium stiff, nonplastic, dry, fine grained sand	
		41/60		SC	6–10 (▽ 7)	5'-11' clayey sand, 7.5 YR 5/4 (brown), medium dense, moist, fine grained sand	
		60/60		SP	11–15	11'-15' poorly graded sand, 7.5 YR 5/2 (brown), medium dense, wet, fine grained sand, 10% fines	

3/4" dia. Sch. 40 PVC
PVC 0.010" slot screen: 10-15'

Backfill: 0-8'
Bentonite: 8-9'
Sand: 9-15'

SS = Split Spoon, ST = Shelby Tube, CUT = Drill Cuttings, or Core

BORING/WELL CONSTRUCTION LOG

Project: AOU-1: East Side Springs	Project Number: 6202899
Drilling Company: Cascade Drilling	Start Time/Date: 0855 2/26/16
Drilling Rig/Bit: Geoprobe 6620-DT 2"	Completion Time/Date: 0925 2/26/16
Driller: ~~Cascade~~ KL O. Waters	Final Depth: 10'
Boring/Well ID: GW-09	Logged By: K. Lizzell

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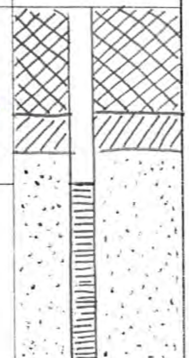
Sample Type	Blow Counts/6"	~~Sample Interval~~ Recovery	PID Reading	USCS Soil Type	Depth, ft bgs	Soil Description (Order: soil type, color, density/consistency, plasticity, moisture, grain size, angularity/minerology, other)	Boring and/or Well Details
ACETATE SLEEVE	NA	40/60	NA	ML	1–4	0-5" topsoil 5"-4' silt, 7.5 YR 2.5/1 (black), stiff, slightly plastic, moist, trace fine grained sand	
				CL	4–6.5 ▽ 5	4'-6.5' sandy clay, GLEY 1 6/10Y (greenish gray), mottled & 5Y 6/3 (pale olive), medium stiff, plastic, moist, fine grained sand	
		51/60		SC	6.5–8	6.5'-8' clayey sand, GLEY 1 6/10Y (greenish gray), ~~...~~ medium dense	
				CL	8–10	8'-10' clay, 2.5Y 6/4 (light ~~gray~~ KL yellowish brown), soft, plastic, wet, trace fine grained sand	

3/4" dia. Sch.40 PVC
3/4" PVC screen: 0.010" slot: 5-10'

Backfill: 0-3'
Bentonite: 3-4'
Sand: 4-10'

SS = Split Spoon, ST = Shelby Tube, CUT = Drill Cuttings, or Core

BORING/WELL CONSTRUCTION LOG

Project: AOU - I: East Side Springs	Project Number: 6202899
Drilling Company: Cascade Drilling	Start Time/Date: 1354 ~~2/26/~~ KL 2/26/16
Drilling Rig/Bit: Geoprobe 6620DT 2"	Completion Time/Date: 1458 2/26/16
Driller: O. Waters	Final Depth: 20'
Boring/Well ID: GW-10	Logged By: K. Lazzen

Sample Type	Blow Counts/6"	~~Sample Interval~~ Recovery	PID Reading	USCS Soil Type	Depth, ft bgs	Soil Description (Order: soil type, color, density/consistency, plasticity, moisture, grain size, angularity/minerology, other)	Boring and/or Well Details
ACETATE SLEEVE	NA	26/60	NA	ML	1–2	0-6" ~~silt~~ KL topsoil 6"-1.5' silt, 10YR 3/3 (dark brown), medium stiff, nonplastic, dry, few fine grained sand	
				CH	3–5	1.5'-6' clay, 2.5Y 7/2 (light gray) with 10YR 6/6 (brownish yellow) mottling, medium stiff, plastic, moist	
		41/60		CL	6–10	6'-11' sandy clay, 2.5Y 7/2 (light gray) with 10YR 6/6 (brownish yellow) mottling, medium stiff, moist, very fine grained sand, trace gravel (subangular to subrounded, up to 0.25"), slightly plastic	
		53/60		CL	11–12	11'-13' ~~clayey sand~~ sandy clay KL, 10YR 6/6 (brownish yellow), medium ~~dense~~ stiff, slightly plastic, very fine grained sand	
				SC	13–15 (∇ 13)	13'-16' clayey sand, 7.5YR 6/6 (reddish yellow), medium dense, moist, fine grained sand	
		56/60		SW	16–18	16'-18' well graded sand, 7.5YR 6/6 (reddish yellow), loose, wet, fine to coarse grained sand	
				CL	19	18'-~~20'~~ 19' KL clay, 2.5Y 6/4 (light yellowish brown), ~~soft~~ stiff KL, plastic, slightly plastic, moist	
				GC	20	19'-20' clayey gravel, 7.5YR 4/6 (strong brown), medium dense, dry, fine to coarse grained sand, gravel to angular-subangular (lithics, S.S), up to 3", 15% clay	

3/4" Sch. 40 PVC
PVC 0.010" slot screen: 13-18'

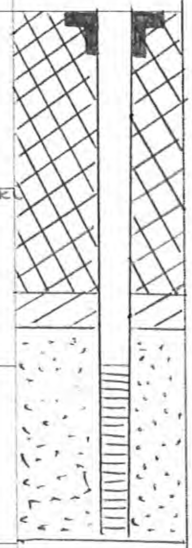
Backfill: 0-11', 18-20'
Bentonite: 11-12'
Sand: 12-18'

Well completed with monitoring well manhole and concrete apron

SS = Split Spoon, ST = Shelby Tube, CUT = Drill Cuttings, or Core

BORING/WELL CONSTRUCTION LOG

Project: AOU-1: East Side Springs	Project Number: 6202899
Drilling Company: Cascade Drilling	Start Time/Date: 1450 2/25/16
Drilling Rig/Bit: Geoprobe 6620 DT 2"	Completion Time/Date: 1552 2/25/16
Driller: O. Waters	Final Depth: 15'
Boring/Well ID: GW-11	Logged By: K. Lazzen

Sample Type	Blow Counts/6"	~~Sample Interval~~ Recovery	PID Reading	USCS Soil Type	Depth, ft bgs	Soil Description (Order: soil type, color, density/consistency, plasticity, moisture, grain size, angularity/minerology, other)	Boring and/or Well Details
ACETATE SLEEVE	NA	0/60	NA		1	0-6" topsoil ~~6"- Sandy clay, GLEY1 5/10Y (greenish gray), medium stiff,~~ 6"-5' No Recovery	
					2		
					▽ 3		
					4		
					5		
		41/60		SC	6	5'-10' clayey sand KL ~~sandy clay~~, GLEY 1 5/10Y (greenish gray), medium dense ~~stiff~~, KL ~~slightly plastic~~ KL, moist, fine grained sand, root fibers	
					7		
					8		
					9		
					10	10-15' KL	
		53/60		CL	11	~~10'-12'~~ sandy clay, 2.5Y 5/2 (grayish brown), medium stiff, slightly plastic, wet, fine to medium grained sand.	
				KL	12		
					13		
					14		
					15		

3/4" Sch. 40 PVC

PVC 0.010" slot screen: 10-15'

BackFill: 0-8'

Bentonite: 8-9'

Sand: 9-15'

well completed with monitoring well manhole and concrete apron

SS = Split Spoon, ST = Shelby Tube, CUT = Drill Cuttings, or Core

BORING/WELL CONSTRUCTION LOG

Project: AOU-1: East Side Springs	Project Number: 6202899
Drilling Company: Cascade Drilling	Start Time/Date: 1028 3/1/16
Drilling Rig/Bit: Geoprobe 6620DT 2"	Completion Time/Date: 1054 3/1/16
Driller: O. Waters	Final Depth: 15'
Boring/Well ID: GW-12	Logged By: K. Lazzen

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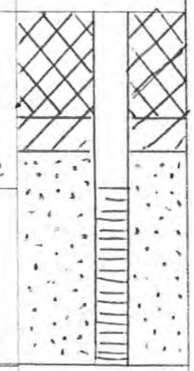
Sample Type	Blow Counts/6"	~~Sample Interval~~ Recovery	PID Reading	USCS Soil Type	Depth, ft bgs	Soil Description (Order: soil type, color, density/consistency, plasticity, moisture, grain size, angularity/minerology, other)	Boring and/or Well Details
ACETATE SLEEVE	NA	31/60	NA		1	0-6" topsoil, roots, glass fragments 6"-4' clay 10YR 6/3 (pale brown), medium stiff, moist, plastic	
				CL	2		
					3		
					4		
					5	4'-9' sandy clay, mottled GLEY 1 6/10Y (greenish gray) and 5Y 6/3 (pale olive), medium stiff, plastic, moist, fine grained sand	
		43/60		CL	6		
					7		
					8		
					9		
				CL	10	9'-10' sandy clay, 10YR 6/4 (light yellowish brown), medium stiff, slightly plastic, wet, fine to medium grained sand	

3/4" dia. Sch. 40 PVC
PVC 0.010" slot screen: 5-10'

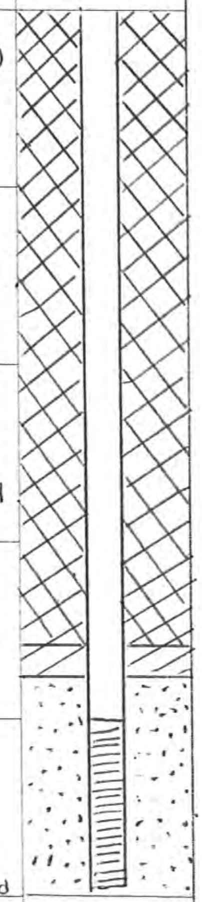
Backfill: 0-3'
Bentonite: 3-4'
Sand: 4-10'

SS = Split Spoon, ST = Shelby Tube, CUT = Drill Cuttings, or Core

BORING/WELL CONSTRUCTION LOG

Project: AOU-1: East side Springs	Project Number: 6202899
Drilling Company: Cascade Drilling	Start Time/Date: 0801 3/4/16
Drilling Rig/Bit: Geoprobe 6620 DT 2"	Completion Time/Date: 0856 3/4/16
Driller: O. Waters	Final Depth: 25'
Boring/Well ID: GW-13	Logged By: K. Lazzen

Sample Type	Blow Counts/6"	~~Sample Interval~~ Recovery	PID Reading	USCS Soil Type	Depth, ft bgs	Soil Description (Order: soil type, color, density/consistency, plasticity, moisture, grain size, angularity/minerology, other)	Boring and/or Well Details
ACETATE SLEEVE	NA	21/60	NA	ML	1–5	0-4" topsoil 4"-6' sandy silt, 7.5YR 4/2 (brown), stiff, nonplastic, dry, 30% sand (fine to medium grained), 10% gravel (subanguar- subrounded, lithics, up to 0.5")	
		30/60		CH	6–10	6'-13.5' clay, mottled 7.5YR 3/2 (dark brown) and 7.5YR 7/4 (pink), medium stiff, plastic, moist	
		43/60			11–15	13.5'-20' clayey sand, 7.5YR 5/4 (brown), dense, moist, fine grained sand	
		51/60		SC	16–20		
		54/60		SP	21–24 (water level ▽ at 22)	20'-24' poorly graded sand, 7.5YR 6/6 (reddish yellow), loose, wet, fine grained sand	
				SW	25	24'-25' well graded sand, 7.5YR 4/4 (brown), loose, wet, fine to coarse grained, subangular to rounded gravel (20%, lithics, up to 0.5"), qtz and lithic grains	



3/4" PVC Sch. 40
PVC 0.010" slot screen: 20-25'

Backfill: 0-18'
Bentonite: 18-19'
Sand: 19-25'

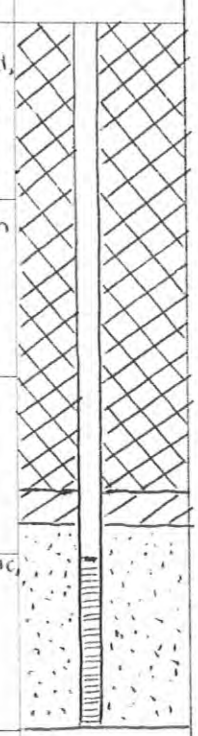
SS = Split Spoon, ST = Shelby Tube, CUT = Drill Cuttings, or Core

BORING/WELL CONSTRUCTION LOG

Project: AOU-1: East Side Springs
Drilling Company: Cascade Drilling
Drilling Rig/Bit: Geoprobe 6620DT 2"
Driller: O. Waters
Boring/Well ID: GW-14

Project Number: 6202899
Start Time/Date: 0800 3/2/16
Completion Time/Date: 0830 3/2/16
Final Depth: 20'
Logged By: K. Lazzen

Sample Type	Blow Counts/6"	~~Sample Interval~~ Recovery	PID Reading	USCS Soil Type	Depth, ft bgs	Soil Description (Order: soil type, color, density/consistency, plasticity, moisture, grain size, angularity/minerology, other)	Boring and/or Well Details
ACETATE SLEEVE ~~NAKL~~	NA	45/60	NA	ML	1–3	0-3" topsoil 3"-3' sandy silt, 7.5 YR 3/2 (dark brown), medium stiff, nonplastic, dry, fine to coarse grained sand, 15% gravel (angular to subrounded, lithics & qtz, up to 1")	
				CL	3–5	3'-6' clay, 2.5 Y 7/2 (light gray), stiff, plastic, dry, trace rounded gravel up to 0.5"	
		48/60		CH	6–10 ▽	6'-15.5' ~~sand~~ clay, mottled 10YR 7/2 (light gray) and 10YR 5/6 (yellowish brown), medium dense, nonplastic, wet	
		60/60			11–15		
		60/60		SC	16–20	15.5'-20' clayey sand, 7.5 YR 5/6 (strong brown), soft, slightly plastic, wet, fine grained sand	



3/4" PVC (Sch. 40)
PVC 0.010" slot screen: 15-20'

BackFill: 0-13'
Bentonite: 13-14'
Sand: 14-20'

SS = Split Spoon, ST = Shelby Tube, CUT = Drill Cuttings, or Core

BORING/WELL CONSTRUCTION LOG

Project: AOU-1: East Side Springs	Project Number: 6202899
Drilling Company: Cascade Drilling	Start Time/Date: 1411 2/27/16
Drilling Rig/Bit: ~~Geoprobe 6620 DT~~ KL Hand Augered 2"	Completion Time/Date: 1440 2/27/16
Driller: O. Waters	Final Depth: 5'
Boring/Well ID: GW-15	Logged By: K. Lazzen

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Sample Type	Blow Counts/6"	Sample Interval	PID Reading	USCS Soil Type	Depth, ft bgs	Soil Description (Order: soil type, color, density/consistency, plasticity, moisture, grain size, angularity/minerology, other)	Boring and/or Well Details
HAND AUGER	NA	NA	NA	ML	∇ 1	0-3" topsoil 3"-4' sandy silt, ~~7~~.5 YR 2.5/1 (black), medium stiff, nonplastic, wet,	
					2	fine to medium grained	
					3		
					4		
				SC	5	4'-5' clayey sand, ~~5YR 4~~ KL 10YR 5/2 (grayish brown), medium dense, wet, fine grained sand, 15% fines	

3/4" PVC Sch. 40

PVC 0.010" slotted screen: 0-5'

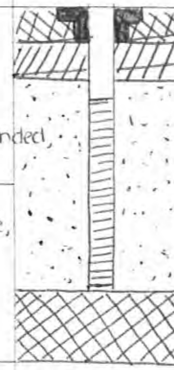
Backfill: 0-0.5' *
Bentonite: 0.5'-1*
Sand: 1-5'

*Bentonite and backfill in part of screen in order to prevent spring from popping up

SS = Split Spoon, ST = Shelby Tube, CUT = Drill Cuttings, or Core

BORING/WELL CONSTRUCTION LOG

Project: Acu-1 : East side Springs	Project Number: 6202899
Drilling Company: Cascade Drilling	Start Time/Date: 1528 2/27/16
Drilling Rig/Bit: Geoprobe 6620DT 2"	Completion Time/Date: 1610 2/27/16
Driller: O. Waters	Final Depth: 10'
Boring/Well ID: GW-16	Logged By: K. Lazzen

Sample Type	Blow Counts/6"	Sample Interval	PID Reading	USCS Soil Type	Depth, ft bgs	Soil Description (Order: soil type, color, density/consistency, plasticity, moisture, grain size, angularity/minerology, other)	Boring and/or Well Details
HAND AUGER	NA	20/60	NA	ML	▽ 1–2	0-4 topsoil 4"- 2' sandy silt, 10YR 3/3 (dark brown), soft, nonplastic, moist, fine to coarse grained sand. Few gravel (subangular, up to 0.25")	
				GC	3–5	2'-6' clayey gravel, 10YR 5/4 (yellowish brown), loose, wet, fine to coarse grained sand (25%), 20% fines, gravel angular to subrounded, up to 0.5"	
		5/60		SC	6–9	~~etc~~ KL 6'-9' clayey sand, 10YR 5/2 (~~bro~~ KL grayish brown), medium dense, wet, fine to medium grained sand, 25% fines	
				SC	10	9'-10' clayey sand, 5YR 4/6 (yellowish red), medium dense, wet, fine grained sand, 15% fines	

3/4" PVC Sch. 40

PVC 0.010" slot well screen: 3-8'

Backfill: 0-1'; 8-10'

Bentonite: 1-2'

Sand: 2-8'

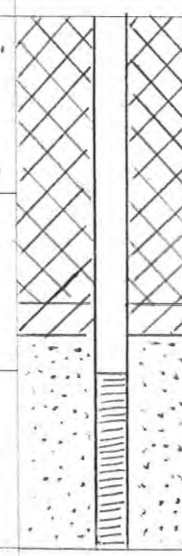
Well completed with monitoring well manhole and concrete apron

SS = Split Spoon, ST = Shelby Tube, CUT = Drill Cuttings, or Core

BORING/WELL CONSTRUCTION LOG

Project: AOU - 1: East Side Springs
Drilling Company: Cascade Drilling
Drilling Rig/Bit: Geoprobe 6620DT 2"
Driller: O. Waters
Boring/Well ID: GW - 17

Project Number: 6202899
Start Time/Date: 0925 3/1/16
Completion Time/Date: 0956 3/1/16
Final Depth: 15'
Logged By: K. Lazzen

Sample Type	Blow Counts/6"	~~Sample Interval~~ Recovery	PID Reading	USCS Soil Type	Depth, ft bgs	Soil Description (Order: soil type, color, density/consistency, plasticity, moisture, grain size, angularity/minerology, other)	Boring and/or Well Details
ACETATE SLEEVE	NA	31/60	NA	SC	1–4	0'-4" topsoil 4"- 4' clayey sand, 7.5 YR 6/4 (light brown), medium stiff, moist, slightly plastic	
		45/60		SP	5–12	4'-12' poorly graded sand, 5YR 5/4 (reddish brown), medium dense, moist, fine grained sand	
		54/60		CL	13–15 ▽ (14)	12'-15' sandy clay, 5 YR 5/4 (reddish brown), medium stiff, slightly plastic, wet, fine to medium grained sand	

3/4" PVC Sch. 40
PVC 0.010" slot screen: 10-15'

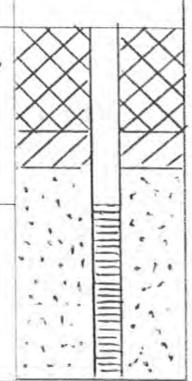
Backfill : 0-8'
Bentonite : 8-9'
Sand : 9-15'

SS = Split Spoon, ST = Shelby Tube, CUT = Drill Cuttings, or Core

BORING/WELL CONSTRUCTION LOG

Project: Act-1: East Side Springs
Drilling Company: Cascade Drilling
Drilling Rig/Bit: Geoprobe 6620DT 2"
Driller: C Waters
Boring/Well ID: GW-18

Project Number: 6202899
Start Time/Date: 0834 3/1/16
Completion Time/Date: 0901 3/1/16
Final Depth: 10'
Logged By: K. Lazzen

Sample Type	Blow Counts/6"	~~Sample Interval~~ Recovery	PID Reading	USCS Soil Type	Depth, ft bgs	Soil Description (Order: soil type, color, density/consistency, plasticity, moisture, grain size, angularity/minerology, other)	Boring and/or Well Details
ACETATE SLEEVE	NA	30/60	NA	CL	1	0-4" topsoil 4"- 7' sandy clay, 10YR 6/4 (light yellowish brown), medium stiff, moist, slightly plastic, fine grained sand	
					2		
					3		
					4		
					5		
		41/60			6		
					7		
				GC	▽ 8	7'-10' clayey gravel, 7.5 YR 4/6 (strong brown), medium dense, ~~stic~~ wet, fine to coarse grained sand, gravel angular - subangular, up to 2.5", 10% clay	
					9		
					10		

3/4" PVC Sch. 40
PVC 0.010" slot screen: 5-10'

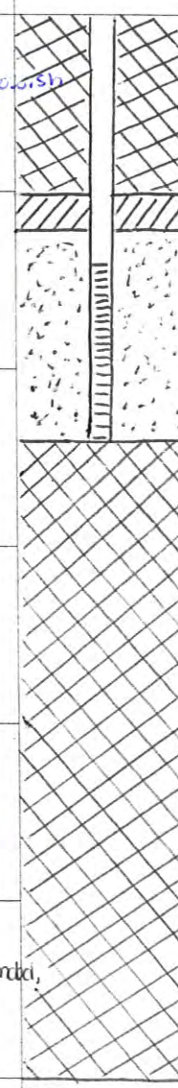
Backfill: 0-3'
Bentonite: 3-4'
Sand: 4-10'

SS = Split Spoon, ST = Shelby Tube, CUT = Drill Cuttings, or Core

BORING/WELL CONSTRUCTION LOG

Project: ACU-1 : East Side Springs	Project Number: 62028994
Drilling Company: Cascade Drilling	Start Time/Date: 1522 2/29/16
Drilling Rig/Bit: Geoprobe 6620DT 2"	Completion Time/Date: 1631 2/29/16
Driller: C. Walters	Final Depth: 30'
Boring/Well ID: GW-19	Logged By: K. Lazzen

Sample Type	Blow Counts/6"	Sample Interval	PID Reading	USCS Soil Type	Depth, ft bgs	Soil Description (Order: soil type, color, density/consistency, plasticity, moisture, grain size, angularity/minerology, other)	Boring and/or Well Details
ACETATE SLEEVE	NA	45/60	NA	ML	1–2	0-6" topsoil 6"-2' silt, 7.5 YR 4/2 (brown), medium stiff, nonplastic, dry, 15% sand (fine to medium grained)	
				CL	3–5	2'-7' sandy clay, mottled 10 YR 7/2 (light gray) and 10 YR 5/6 (yellowish brown), medium stiff, slightly plastic, moist, fine grained sand	
		54/60		SC	6–9	7'-9' clayey sand, mottled 10 YR 7/2 (light gray) and 10 YR 5/6 (yellowish brown), medium dense, moist, fine grained sand	
				SW	10	9'-10' well graded sand, 7.5 YR 4/6 (strong brown), loose, moist, fine to coarse grained	
		59/60		SP	11–12 (▽)	10'-12' poorly graded sand, 5YR 4/4 (reddish brown), medium dense, moist, fine grained sand	
				CL	13–15	12'-23' sandy clay, 7.5 YR 5/6 (strong brown), medium stiff, slightly plastic, moist	
		50/60			16–20		
		59/60		SC	21–25	23'-27' clayey sand, 5YR 4/4 (reddish brown), medium dense, dry, fine grained sand	
		52/60		GC	26–30	27'-30' clayey gravel, 7.5 YR 4/4 (brown), loose, dry, angular to subrounded, gravel (lithics up to 2"), fine to coarse grained sand, 20% clay	



3/4" PVC Sch. 40
PVC 0.010" slot screen: 7-12'

Backfill: 0-5'; 12-30'

Bentonite: 5-6'
Sand: 6-12'

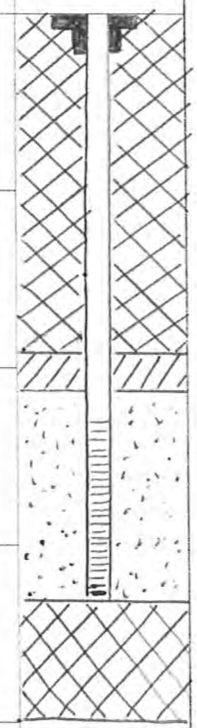
SS = Split Spoon, ST = Shelby Tube, CUT = Drill Cuttings, or Core

BORING/WELL CONSTRUCTION LOG

Project: AOU-1: East Side Springs	Project Number: 6202899
Drilling Company: Cascade Drilling	Start Time/Date: 1351 2/29/16
Drilling Rig/Bit: Geoprobe 6620DT 2"	Completion Time/Date: 1430 2/29/16
Driller: O. Waters	Final Depth: 20'
Boring/Well ID: GW-20	Logged By: K. Lazzen

Sample Type	Blow Counts/6"	Sample Interval	PID Reading	USCS Soil Type	Depth, ft bgs	Soil Description (Order: soil type, color, density/consistency, plasticity, moisture, grain size, angularity/minerology, other)
ACETATE SLEEVE	NA	25/60	NA	ML	1–5	0-3" topsoil 3"-6' sandy silt, 10YR 3/3 (dark brown), medium stiff, slightly plastic, moist, few gravel (subrounded to rounded, quartz and lithics, up to 0.3"), fine to medium grained sand.
		30/60		CL	6–7	6'-6.5' clay, 5Y 7/2 (light gray), stiff, plastic, dry, trace fine grained sand
				CL	8–10	6.5'-9' sandy clay, 7.5YR 4/6 (strong brown), lamination of clay above, stiff, ~~plastic~~ KL slightly plastic, 10% fine to medium grained sand, 5% subangular-subrounded gravel (lithics, up to 0.25")
		22/60		CL	11–12 ∇	9'-12' sandy clay, 7.5YR 2.5/1 (black), stiff, slightly KL plastic, moist, trace angular to subrounded gravel (lithics, up to 0.25")
				GC	13–15	12'-17' clayey gravel, 5YR 5/4 (reddish brown), loose, wet, fine to coarse grained sand, angular to subangular gravel (lithics, up to 2")
		60/60		CL	16–20	17'-20' clay 5Y 8/1 (white) mottled with 5Y 7/6 (yellow), stiff, plastic, moist

Boring and/or Well Details



3/4" PVC Sch. 40
PVC 0.010" slot screen: 11.5-16.5'

Backfill: 0-9.5'; 16.5-20'
Bentonite: 9.5-10.5'
Sand: 10.5-16.5'

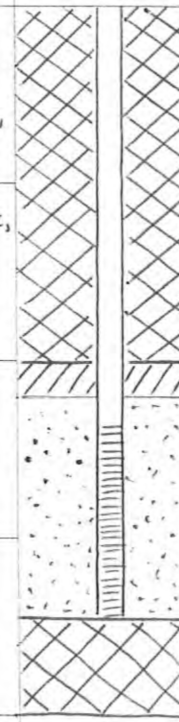
well completed with monitoring well manhole and concrete apron

SS = Split Spoon, ST = Shelby Tube, CUT = Drill Cuttings, or Core

BORING/WELL CONSTRUCTION LOG

Project: AOU-1: East Side Springs	Project Number: 62028?4
Drilling Company: Cascade Drilling	Start Time/Date: 0835 2/29/16
Drilling Rig/Bit: Geoprobe 6620DT 2"	Completion Time/Date: 0940 2/29/16
Driller: O. Waters	Final Depth: 20'
Boring/Well ID: GW-21	Logged By: K. Lazzen

Sample Type	Blow Counts/6"	Sample Interval	PID Reading	USCS Soil Type	Depth, ft bgs	Soil Description (Order: soil type, color, density/consistency, plasticity, moisture, grain size, angularity/minerology, other)	Boring and/or Well Details
Acetate Sleeve	NA	50/60	NA	GW CL	1 2 3 4 5	0-6" topsoil 6"-1" sandy gravel, 10YR 6/4 (light yellowish brown), loose, dry, gravel subangular to rounded (lithics, up to 2"), Fine to coarse grained sand, 10% clay 1'-6' sandy clay, 7.5YR 4/6 (strong brown), dry, stiff, slightly plastic, Fine to coarse grained sand (25%), trace gravel up to 0.1" (rounded)	
		58/60		CL	6 7 8 9 ▽ 10	very tough drilling starting around 4' 6'-13' sandy clay, 5YR 4/6 (yellowish red), medium stiff, slightly plastic, dry, Fine grained sand (35%) moist at 12'	
		59/60			11 12 13 14 15	13'-20' clayey sand, 5YR 4/6 (yellowish red), medium dense, wet, fine grained sand	
		60/60		SC	16 17 18 19 20	18'- trace gravel (subangular, lithics, up to 0.5")	



3/4" PVC Sch. 40
PVC 0.010" slot screen: 12-17'

Backfill: 0-10'; 17-20'
Bentonite: 10-11'
Sand: 11-17'

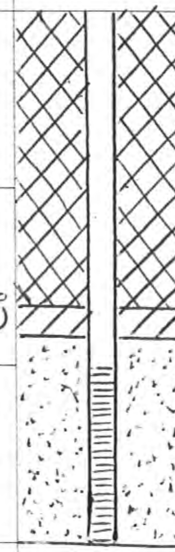
SS = Split Spoon, ST = Shelby Tube, CUT = Drill Cuttings, or Core

BORING/WELL CONSTRUCTION LOG

Project: AOU-1: East Side Springs
Drilling Company: Cascade Drilling
Drilling Rig/Bit: Geoprobe 6620DT 2"
Driller: O. Waters
Boring/Well ID: GW-22

Project Number: 6202899
Start Time/Date: 1025 2/29/16
Completion Time/Date: 1101 2/29/16
Final Depth: 15'
Logged By: K. Lazzen

Sample Type	Blow Counts/6"	Sample Interval	PID Reading	USCS Soil Type	Depth, ft bgs	Soil Description (Order: soil type, color, density/consistency, plasticity, moisture, grain size, angularity/minerology, other)	Boring and/or Well Details
ACETATE SLEEVE	NA	0/60	NA		1–5	0-6" topsoil 6"-5' ~~SC~~ no recovery - too rocky	
		30/60		~~SC~~ KL CL	6–8	5'-8' ~~clayey sand~~ KL sandy clay, 5YR 4/6 (yellowish red), medium stiff, slightly plastic, moist, fine grained sand	
				GC	8–10	8'-13' clayey gravel, 5YR 5/4 (reddish brown), loose, moist, fine to coarse grained sand, angular to subangular gravel (lithics, up to 3")	
		54/60		SC	11–15	13'-15' clayey sand, 5YR 4/6 (yellowish red), medium dense, wet, fine grained sand	



3/4" PVC Sch. 40
PVC 0.010" slot screen: 10-15'

Back Fill: 0-8'
Bentonite: 8-9'
Sand: 9-15'

SS = Split Spoon, ST = Shelby Tube, CUT = Drill Cuttings, or Core

BORING/WELL CONSTRUCTION LOG

Project: AOU-1 : East Side Springs	Project Number: 62028**9
Drilling Company: Cascade Drilling	Start Time/Date: 1101 2/22/16
Drilling Rig/Bit: Geoprobe 6620 DT	Completion Time/Date: 1320 2/22/16
Driller: O. Waters	Final Depth: 20'
Boring/Well ID: GW-23	Logged By: K. Lazzen

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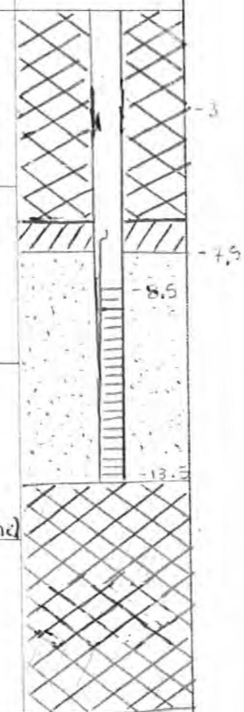
Sample Type	Blow Counts/6"	~~Sample Interval~~ Recovery	PID Reading	USCS Soil Type	Depth, ft bgs	Soil Description (Order: soil type, color, density/consistency, plasticity, moisture, grain size, angularity/minerology, other)	Boring and/or Well Details
ACETATE SLEEVE	NA	HAND AUGERED	NA	ML	1, 2	0-4" topsoil clayey silt, 7.5 YR 3/1 (very dark gray), medium stiff, plastic, moist, fines, some very fine grained sand lens (10YR 6/4 - light yellowish brown) 4"-3'	
				CL	3, 4, 5	3-6.5': clay, 7.5 YR 4/6 (very strong brown), medium stiff, plastic, moist, fines, trace subangular gravel up to 2".	
		30/30		SC	6, 7, 8, 9, 10	6.5'-10': clayey sand, 10YR 6/2 (light brownish gray), stiff, slightly plastic, dry, very fine grained sand water at 9.5'	
		50/60		CL	11, 12	10'-12': clay, 10 YR 5/6 (yellowish brown), stiff, slightly plastic, ~~dry~~ KL moist	
				CL	13, 14	12'-~~13'~~ 14': clay, 7.5 YR 5/6 (strong brown), medium stiff, plastic, moist, fines, trace gravel up to 1" (subrounded sandstone)	
		40/60		SM	15, 16, 17, 18, 19, 20	14'-20' silty sand ~~gr~~ KL with gravel: 7.5 YR 4/6 (strong brown), loose, moist (wet at 15'), 40% gravel (subangular - subrounded, lithics and sandstone) fine grained - medium grained sand	



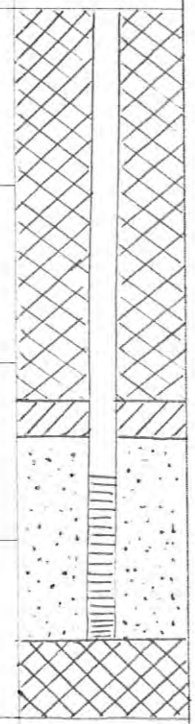
3/4" PVC Sch. 40
PVC .010" slot screen: 8.5'-13.5'

Backfill: 0-6.5; 13.5-20'
Bentonite: 6.5'-7.5'
Sand: 7.5-13.5'

SS = Split Spoon, ST = Shelby Tube, CUT = Drill Cuttings, or Core

BORING/WELL CONSTRUCTION LOG

Project: Aou-1 : East Side Springs	Project Number: 6202899
Drilling Company: Cascade Drilling	Start Time/Date: 1111 2/23/16
Drilling Rig/Bit: Geoprobe - 6620 DT 2"	Completion Time/Date: 1223 2/23/16
Driller: O. Waters	Final Depth: 20'
Boring/Well ID: GW-24	Logged By: K. Lazzen

Sample Type	Blow Counts/6"	~~Sample Interval~~ KL Recovery	PID Reading	USCS Soil Type	Depth, ft bgs	Soil Description (Order: soil type, color, density/consistency, plasticity, moisture, grain size, angularity/minerology, other)	Boring and/or Well Details
ACETATE SLEEVE	NA		NA	CL	1	0-4" topsoil 4"-7' silty clay: 10 YR 3/3 (dark brown), medium stiff, slightly plastic, moist, fines, trace subangular gravel up to 1inch (S.S)	
					2		
		31/60			3		
					4		
					5		
					6		
					7		
		49/60		ML	8	7'-11' sandy silt: 10 YR 7/3 (very pale brown), soft, slighty plastic, moist, very fine grained sand, Few gravel up to 1 inch (subrounded, lithics).	
					9		
					10		
					11		
		54/60		CL	12	11'-13' clay, GLEY 1 5/10Y (greenish gray), stiff, plastic, moist, trace gravel up to 1" (subangular, S.S.)	
					13		
				CL	14	13'-20' clay, 10 YR 3/3 (dark brown), stiff, plastic, moist W24 at 13.5'	
					15		
					16		
		45/60			∇ 17		
					18	Few ~~thick~~ KL very coarse grained sand	
					19		
					20		

3/4" PVC Sch. 40

PVC .010" Slot screen: 13-18

backfill: 0-11', 18-20'
bentonite: 11'-12'
Sand: 12-18'

SS = Split Spoon, ST = Shelby Tube, CUT = Drill Cuttings, or Core

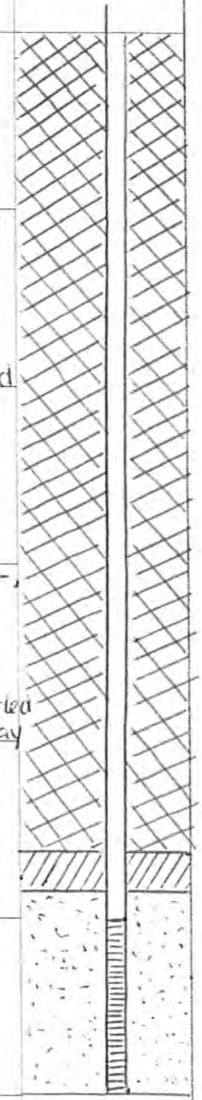
BORING/WELL CONSTRUCTION LOG

Project: AOU-1: East Side Springs	Project Number: 6202699
Drilling Company: Cascade Drilling	Start Time/Date: 1115 2/29/16
Drilling Rig/Bit: Geoprobe 6620DT 2"	Completion Time/Date: 1230 2/29/16
Driller: O. Waters	Final Depth: 30'
Boring/Well ID: GW-25	Logged By: K. Lazzen

Sample Type: ACETATE SLEEVE — Blow Counts/6": NA — PID Reading: NA

Depth, ft bgs	~~Sample Interval~~ Recovery	USCS Soil Type	Soil Description (Order: soil type, color, density/consistency, plasticity, moisture, grain size, angularity/minerology, other)
0–5	25/60	ML	0-5" topsoil 5"-5' silt, 7.5YR 2.5/3 (very dark brown), soft, nonplastic, dry, 15% fine grained sand
5–9	43/60 (5–10)	CL	5'-9' sandy clay, 7.5YR 4/6 (strong brown), medium stiff, slightly plastic, dry, fine to medium grained sand 8' moist
9–15	51/60 (10–15)	GC	9'-15' clayey gravel, 7.5YR 4/4 (brown), loose, dry, angular to subangular gravel (lithics, SS., up to 2"), fine to coarse grained sand, 15% clay (2.5Y 7/2 light gray)
15–19	50/60 (15–20)	CH	15'-19' sandy clay, 7.5YR 4/6 (strong brown), soft, plastic, moist, fine to medium grained sand
19–21	56/60 (20–25)	GC	19'-21' clayey gravel, 7.5YR 4/4 (brown), loose, dry, angular to subrounded gravel (lithics, S.S. up to 3"), fine to medium grained sand, 25% clay
21–30 (▽ ~23.5)	60/60 (25–30)	CH	21'-30' sandy clay, 5YR 4/6 (yellowish red), soft, plastic, wet, fine grained sand, lenses of clay sand (5" thick)

Boring and/or Well Details



3/4" dia. Sch 40 PVC
3/4" PVC screen 0.010" slot: 25-30'

Backfill: 0-23'
Bentonite: 23-24'
Sand: 24-30'

SS = Split Spoon, ST = Shelby Tube, CUT = Drill Cuttings, or Core

BORING/WELL CONSTRUCTION LOG

Project: AOU-1: East Side Springs	Project Number: 6202899
Drilling Company: Cascade Drilling	Start Time/Date: 1533 2/26/16
Drilling Rig/Bit: Geoprobe 6620DT 2"	Completion Time/Date: 1621 2/26/16
Driller: O. Waters	Final Depth: 20'
Boring/Well ID: GW-26	Logged By: K. Lazzen

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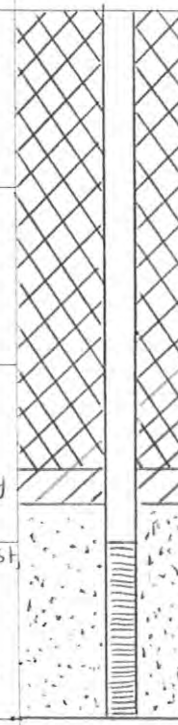
Sample Type	Blow Counts/6"	Sample Interval	PID Reading	USCS Soil Type	Depth, ft bgs	Soil Description (Order: soil type, color, density/consistency, plasticity, moisture, grain size, angularity/minerology, other)	Boring and/or Well Details
ACETATE SLEEVE	NA	25/60	NA	GC	1–5	0-4" topsoil 4"-4.5' clayey gravel, clay 10YR 7/3 (very pale brown), loose, moist, 25% sand (fine - coarse grained), 15% fines, 60% gravel (angular to subrounded, lithics, up to 1.5")	
		36/60		CL	5–13	4.5'-13' clay, 2.5Y 7/2 (light gray) with 10YR 6/6 (brownish yellow) mottling, medium stiff, moist, plastic	
		41/60		SP	13–15	13'-15' poorly graded sand, 7.5YR 5/6 (strong brown), lamination of clay (7.5YR 5/4 brown), medium dense, moist, fine grained	
		58/60		SW	15–17 ∇	15'-17' well graded sand, 7.5YR 5/6 (strong brown), medium dense, moist, fine grained sand to coarse grained	
				CL	17–18	17-18' clay, 7.5YR 6/4 (light brown), medium stiff, plastic, moist	
				SC	18–18.5	18-18.5' clayey sand, 7.5YR 6/4 (light brown), medium dense, moist, fine grained sand	
				GC	18.5–20	18.5-20' clayey gravel, 7.5YR 4/4 (brown), loose, dry, angular to subrounded gravel (lithics, S.S up to 3"), fine to medium grained sand, 25% clay	
				SEKL			

3/4" PVC Sch. 40
PVC 0.010" slot screen: 15-20'

Backfill: 0-13'
Bentonite: 13-14'
Sand: 14-20'

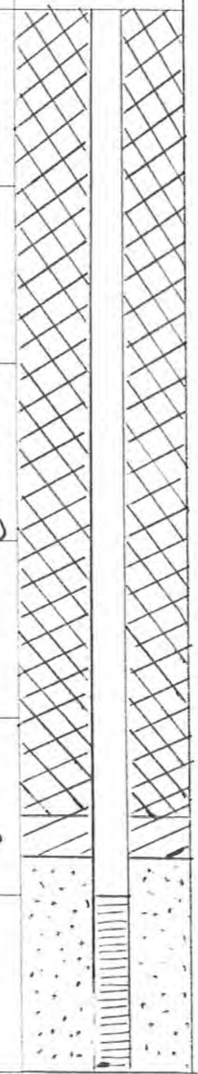
SS = Split Spoon, ST = Shelby Tube, CUT = Drill Cuttings, or Core

BORING/WELL CONSTRUCTION LOG

Project: AOU-1: East Side Springs	Project Number: 6202899
Drilling Company: Cascade Drilling	Start Time/Date: 0919 3/4/16
Drilling Rig/Bit: Geoprobe 6620DT 2"	Completion Time/Date: 1022 3/4/16
Driller: O. Waters	Final Depth: 30'
Boring/Well ID: GW-27	Logged By: K. Lazzen

Sample Type	Blow Counts/6"	Sample Interval	PID Reading	USCS Soil Type	Depth, ft bgs	Soil Description (Order: soil type, color, density/consistency, plasticity, moisture, grain size, angularity/minerology, other)
ACETATE SLEEVE	NA	21/60	NA	ML	1–5	0-4" topsoil 4"-5' sandy silt, 7.5YR 4/2 (brown), stiff, nonplastic, dry, 30% sand (fine-medium grained), 15% gravel (subrounded, lithics, up to 0.5")
		57/60		SP	6–10	5'-12' poorly graded sand, 10YR 5/8 (yellowish brown), medium dense, dry, fine grained, qtz grains
		48/60		CL	11–13	12'-13.5' sandy clay, 10YR 5/8 (yellowish brown), medium stiff, slightly plastic, moist, fine grained sand
				~~GC~~ KL GC	14–16	13.5-17' clayey gravel, 7.5YR 4/6 (strong brown), medium dense, dry, fine to coarse grained, gravel angular to subrounded (lithics, up to 3")
		58/60		CH	17–18	17'-18' clay, 7.5YR 4/6 (strong brown), medium stiff, plastic, moist, trace sand (fine to medium grained)
				CL	19–20 (▽ at ~20)	18'-23' sandy clay, 5YR 6/4 (light reddish brown), medium stiff, nonplastic, moist, 15% sand (fine to medium grained sand)
		49/60			21–22	
		50/60		GC	23–30	23'-30' clayey gravel, 7.5YR 4/6 (strong brown), medium dense, wet, fine to medium grained, angular to subangular gravel (lithics, 2.5")

Boring and/or Well Details:



3/4" PVC Sch. 40
PVC 0.010" slot screen: ~~30-35~~ KL 25-30'

Backfill: 0 - 23'
Bentonite: 23-24'
Sand: 24-30'

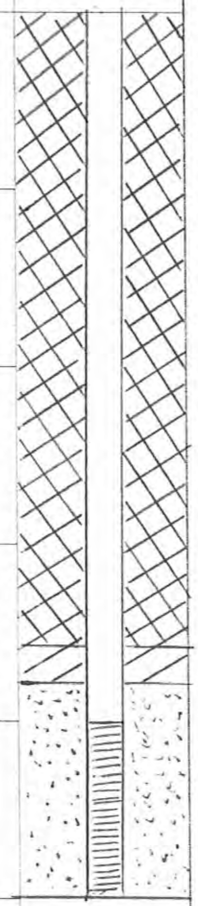
SS = Split Spoon, ST = Shelby Tube, CUT = Drill Cuttings, or Core

BORING/WELL CONSTRUCTION LOG

Project: AOU-1: East Side Springs	Project Number: 6202899
Drilling Company: Cascade Drilling	Start Time/Date: 1101 3/4/16
Drilling Rig/Bit: Geoprobe 6620 DT 2"	Completion Time/Date: 1145 3/4/16
Driller: O. Waters	Final Depth: 25'
Boring/Well ID: GW-28	Logged By: K. Lazzen

Sample Type	Blow Counts/6"	Sample Interval	PID Reading	USCS Soil Type	Depth, ft bgs	Soil Description (Order: soil type, color, density/consistency, plasticity, moisture, grain size, angularity/minerology, other)
					1 KL	No lithology logged
					2 KL	
					3 KL	
					4 KL	3/4" PVC Sch. 40
					5	PVC 0.010" slot screen: 20-25'
					6	
					7	Backfill: ~~0-13'~~ KL 0-18'
					8	Bentonite: ~~13-14'~~ KL 18-19'
						Sand: ~~14-20'~~ KL 19-25'
					9	
					10	
					11	
					12	
					13	
					14	
					15	
					16	
					17	
					18	
					∇ 19	
					20	
					21	
					22	
					23	
					24	
					25	

Boring and/or Well Details



SS = Split Spoon, ST = Shelby Tube, CUT = Drill Cuttings, or Core

BORING/WELL CONSTRUCTION LOG

Project: AOI-1 : East side Springs	Project Number: 6202899
Drilling Company: Cascade Drilling	Start Time/Date: 0917 2/27/16
Drilling Rig/Bit: Geoprobe 6620 DT 2"	Completion Time/Date: 1130 2/27/16
Driller: O. Waters	Final Depth: 35'
Boring/Well ID: GW-31	Logged By: K. Lazzen

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Sample Type	Blow Counts/6"	Sample ~~Interval~~ Recovery	PID Reading	USCS Soil Type	Depth, ft bgs	Soil Description (Order: soil type, color, density/consistency, plasticity, moisture, grain size, angularity/minerology, other)	Boring and/or Well Details
ACETATE SLEEVE	NA	20/60	NA	ML	1–3	0-5" topsoil 5"-4' sandy silt, 7.5 YR 4/2 (brown), medium stiff, slightly plastic, moist, fine to medium grained sand, trace gravel up to 0.5" (subangular - subrounded)	
				CL	4–5	4'-7.5' sandy clay, 7.5 YR 5/4 (brown), soft, plastic, moist, 20% sand, fine grained sand	
		49/60			6–10	7.5'-15' clay, 7.5 YR 7/4 (pink) mottled with 7.5 YR 7/8 (reddish yellow), very stiff, plastic, dry	
				CL			
		58/60			11–15	~~30'~~ 25'	
		59/60		CH	16–20	15-~~17.5'~~ sandy clay, mottled 2.5 Y 7/4 (pale yellow) and 7.5 YR 6/8 (reddish yellow), stiff, dry, plastic, very fine grained sand 17.5' same as above, medium stiff, moist	
		60/60			21–25		
		60/60		CH	26–29	25'-29' clay, GLEY 1 5/10Y (greenish gray), medium stiff, plastic, moist.	
				SC	30	29'-29.5' clayey sand ~~sandy clay~~ CL, mottled 10 YR 7/3 (very pale brown) and 10 YR 5/6 (yellowish brown), medium dense, moist, fine grained sand	
				SW		29.5'-30' well graded sand, 10 YR 4/4 (dark yellowish brown), loose, moist, fine to coarse grained, few gravel (subangular - subrounded, up to 0.5", lithics), 15% silt	
		56/60		SC	31–33 ▽ (32)	30'-33' clayey sand, 7.5 YR 5/6 (strong brown), loose, wet, fine to coarse grained sand, trace gravel up to 0.25"	
				CL	34–35	33'-35' sandy clay, 5 YR 5/4 (reddish brown), medium stiff, wet, slightly plastic, fine grained sand	

3/4" PVC Sch. 40
PVC 0.010" slot well screen: 30-35'

Backfill: 0-28'
Bentonite: 28-29'
Sand: 29-35'

SS = Split Spoon, ST = Shelby Tube, CUT = Drill Cuttings, or Core

BORING/WELL CONSTRUCTION LOG

Project: AOU-1: East side Springs	Project Number: 6202899
Drilling Company: Casca	Start Time/Date: 0839 2/23/16
Drilling Rig/Bit: Geoprobe 6620DT 2"	Completion Time/Date: 1010 2/23/16
Driller: O. Waters	Final Depth: 40'
Boring/Well ID: GW-33	Logged By: K. Lazzen

Sample Type	Blow Counts/6"	Sample Interval	PID Reading	USCS Soil Type	Depth, ft bgs	Soil Description (Order: soil type, color, density/consistency, plasticity, moisture, grain size, angularity/minerology, other)	Boring and/or Well Details
					1	Lithology not logged	
					2	Hit refusal at 40' - no well set	
					3		
					4		
					5		
					6		
					7		
					8		
					9		
					10		
					11		
					12		
					13		
					14		
					15		
					16		
					17		
					18		
					19		
					20		
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					28		
					29		
					30		
					31		
					32		
					33		
					34		
					35		
					36		
					37		
					38		
					39		
					40		

SS = Split Spoon, ST = Shelby Tube, CUT = Drill Cuttings, or Core

BORING/WELL CONSTRUCTION LOG

Project: AOU-1: East Side Springs	Project Number: 6202899
Drilling Company: Cascade Drilling	Start Time/Date: 1402 2/23/16
Drilling Rig/Bit: Geoprobe 6620DT 2"	Completion Time/Date: 1547 2/23/16
Driller: O. Waters	Final Depth: 45'
Boring/Well ID: GW-35	Logged By: K. Lazzen

Sample Type	Blow Counts/6"	Sample Interval	PID Reading	USCS Soil Type	Depth, ft bgs	Soil Description (Order: soil type, color, density/consistency, plasticity, moisture, grain size, angularity/minerology, other)	Boring and/or Well Details
ACETATE SLEEVE	NA	21/60	NA	SM	1–5	0-3" Topsoil 3"-7.5' silty sand, 7.5YR 3/4 (dark brown), loose, ~~compact~~ dry, KL Fine to coarse grained sand, few subangular - subrounded gravel (SS. and lithics)	
		35/60		ML	6–10	7.5'-10.5' silt, 10YR 5/6 (yellowish brown), soft, plastic, moist, few subangular gravel (0.25-1")	
		54/60		SW	11	10.5-11' well graded sand, 7.5YR 4/6 (strong brown), loose, dry, fine to coarse grained sand, 10% fines, few gravel 0.25"-0.5" (subrounded, lithic)	
				CL	12–13	11'-13' sandy clay, 10YR 5/6 (yellowish brown), soft, plastic, wet, very fine grained sand	
				CL	14–15	13'-16' same as above, moist, medium stiff	
		56/60		SW	16–17	16-16.5' well graded sand, 5YR 4/6 (yellowish red), loose, dry, fine to coarse grained sand, 10% fines, trace subangular gravel up to 0.5" (lithics)	
				SP	18–19	16.5'-19.5' poorly graded sand, 5YR 4/6 (yellowish red), ~~loose~~ dense KL, dry, fine grained sand	
					20	19'-22' sandy clay, 10YR 5/6 (yellowish brown), soft, plastic, moist, very fine grained sand	
		60/60		CL	21–22	mottled 10YR 6/6 (brownish yellow)	
				CL	23–24	22'-24' clay, 10YR 5/6 (yellowish brown), stiff, plastic, dry, 10% very fine grained sand	
				CL	25	24'-26' silty clay, 10YR 5/4 (yellowish brown), soft, plastic, moist, 5% very fine grained sand	
		51/60		GC	26–30	26'-37' clayey gravel ~~gravel with sand and clay~~ KL, 7.5YR 4/6 (strong brown), medium dense, dry, fine to coarse grained sand, 20% clay (10YR 6/6 - brownish yellow), >20% angular - subrounded gravel (0.25-2", lithics)	
		58/60			31–35		
		47/60		CL	36–40	37'-45' sandy clay, 5YR 5/4 (reddish brown), medium stiff, moist, 10% very fine grained sand	

SS = Split Spoon. ST = Shelby Tube. CUT = Drill Cuttings. or Core

BORING/WELL CONSTRUCTION LOG

Project: AOU - 1: East side springs
Drilling Company: Cascade Drilling
Drilling Rig/Bit: Geoprobe 6620DT 2"
Driller: O. Waters
Boring/Well ID: GW-35

Project Number: 6202899
Start Time/Date: 1402 2/23/16
Completion Time/Date: 1547 2/23/16
Final Depth: 45'
Logged By: K. Lazzen

Sample Type	Blow Counts/6"	Sample Interval	PID Reading	USCS Soil Type	Depth, ft bgs	Soil Description (Order: soil type, color, density/consistency, plasticity, moisture, grain size, angularity/minerology, other)	Boring and/or Well Details
ACETATE SLEEVE	NA	58/60	NA		41 42 43 44 45		
						Refusal @ 45' - No well set	

SS = Split Spoon, ST = Shelby Tube, CUT = Drill Cuttings, or Core

BORING/WELL CONSTRUCTION LOG

Project: AOU-1 : East Side Springs	Project Number: 6202879
Drilling Company: Cascade Drilling	Start Time/Date: 1420 2/22/16
Drilling Rig/Bit: 6620 DT - Geoprobe 2"	Completion Time/Date: 1538 2/22/16
Driller: O. Waters	Final Depth: 25'
Boring/Well ID: GW-39	Logged By: K. Lazzeri

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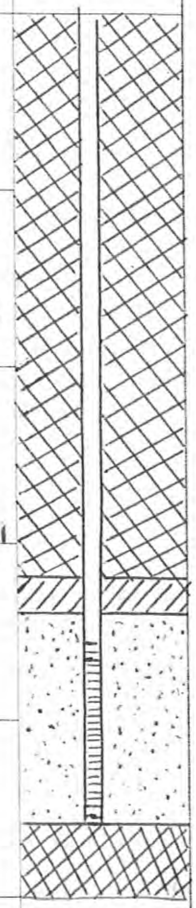
Sample Type	Blow Counts/6"	~~Sample Interval~~ KL Recovery	PID Reading	USCS Soil Type	Depth, ft bgs	Soil Description (Order: soil type, color, density/consistency, plasticity, moisture, grain size, angularity/minerology, other)	Boring and/or Well Details
HAND AUGER	NA	HAND AUGERED	NA	CL	1–7	0-4" topsoil 4"-8' clay, 7.5YR 5/4 (brown), stiff, plastic, moist, fines, occasional iron staining, very fine sand layer at 7.5'	
ACETATE SLEEVE		29/36		CL	8–10	8'-14' sandy clay, 7.5YR 5/3 (brown), medium soft, slightly plastic, moist, fines, very fine grained sand, trace subrounded gravel up to 0.25" (lithics), orange mottling	
		50/60			11–15	14'-25' sandy silt, 7.5YR 4/6 (brown), medium stiff, slightly plastic, moist, fine grained sand, trace subangular - subrounded gravel (up to 0.25", lithics)	
		46/60		ML	16–20	▽ 19: wet at 18.5'	
		51/60			21–25		

3/4" PVC

PVC 010 slot screen: 17.7 - 22.7

Backfill: 0 - 15.5', 22.7 - 25'

Bentonite: 15.5 - 16.5'

Sand: 16.5 - 22.7'

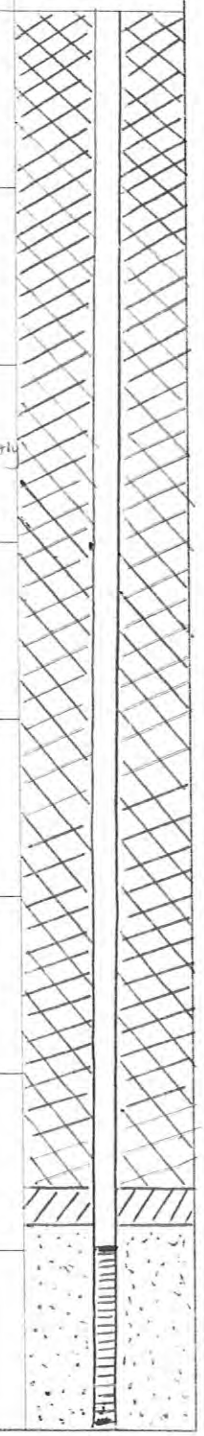
SS = Split Spoon, ST = Shelby Tube, CUT = Drill Cuttings, or Core

BORING/WELL CONSTRUCTION LOG

Project: AOU-1: East Side Springs	Project Number: 6202899
Drilling Company: Cascade Drilling	Start Time/Date: 1227 3/1/16
Drilling Rig/Bit: Geoprobe 6620-DT 2"	Completion Time/Date: 1359 3/1/16
Driller: D. Waters	Final Depth: 40'
Boring/Well ID: GW-40	Logged By: K. Lazzen

Sample Type	Blow Counts/6"	~~Sample Interval~~ Recovery	PID Reading	USCS Soil Type	Depth, ft bgs	Soil Description (Order: soil type, color, density/consistency, plasticity, moisture, grain size, angularity/minerology, other)
ACETATE SLEEVE	NA	52/60	NA	CL	1–5	0 - 3" topsoil 3"- 9' clay, 7.5YR 5/3 (brown), very stiff, plastic, dry
		69/60			6–9	
				SP	10	9'- 10' poorly graded sand, 10YR 6/6 (brownish yellow), loose, dry, quartz grains, fine grained
		59/60		CL	11	10'- 11' clay, 10YR 4/4 (yellowish dark brown), stiff, plastic, dry
				SP ~~CH~~ KL	12	11'-12' poorly graded sand, 10YR 6/6 (brownish yellow), loose, dry, fine grained
				CL	13–14	12'-14' sandy clay, 7.5YR 5/6 (strong brown), medium stiff, slightly plastic, moist, fine grained sand.
				SC	15	14'- 15' clayey sand, 7.5YR 4/6 (strong brown), medium dense, moist, fine grained sand
		56/60		CH	16–17	15'- 17' clay 7.5YR 5/4 (brown), soft, plastic, moist grading to clayey sand
				SP	18–20	17'-20' poorly graded sand, 7.5YR 4/6 (strong brown), medium dense, mottled w/ 7.5YR 6/8 (reddish yellow
		59/60		CH	21–25	20'- 25' clay 7.5YR 5/6 (strong brown), medium stiff, plastic, moist
		60/60		SP/CL	26–29	25'-29' interbedded poorly graded sand and sandy clay, 7.5YR 5/6 (strong brown), layers 4-6" thick, sand (medium dense, moist, fine grained sand), sandy clay (medium stiff, slightly plastic, moist)
		57/60		SP/CL/SC	30–35	29'- 40' interbedded poorly graded sand, sandy clay, and clay, 7.5YR 4/6 (strong brown)
		58/60			36–40	3/4" PVC Sch. 40 PVC 0.010" slot screen: 35-40' Back Fill: 0 - 33' Bentonite: 33-34' Sand: 34-40'

Boring and/or Well Details



SS = Split Spoon, ST = Shelby Tube, CUT = Drill Cuttings, or Core

BORING/WELL CONSTRUCTION LOG

Project: AOU-1:East side	Project Number: 6202899
Drilling Company: Cascade Drilling	Start Time/Date: 1425 3/1/16
Drilling Rig/Bit: Geoprobe 6620DT 2"	Completion Time/Date: 1549 3/1/16
Driller: O. Waters	Final Depth: 40'
Boring/Well ID: GW-42	Logged By: K. Lazzen

Sample Type	Blow Counts/6"	Sample Interval	PID Reading	USCS Soil Type	Depth, ft bgs	Soil Description (Order: soil type, color, density/consistency, plasticity, moisture, grain size, angularity/minerology, other)	Boring and/or Well Details
ACETATE SLEEVE	NA	48/60	NA	ML	1–5	0-4" topsoil 4"-7' silt, 7.5 YR 4/6 (brown), stiff, nonplastic, dry, 15% sand (fine to medium grained), 20% gravel (up to 0.5", subangular to rounded, lithics)	
		50/60		CL	6–10	7'-13' clay, mottled 10YR 7/2 (light gray) and 10YR 5/6 (yellowish brown), medium dense, moist, plastic	
		60/60		SC	11–15	13'-18' clayey sand, 7.5YR 4/6 strong brown (~~brown~~), medium stiff, moist, fine grained sand	
		59/60		GC	16–20	18' - 23' clayey gravel, 7.5YR 4/4 (brown), loose, dry, angular to subrounded gravel (lithics up to 2"), fine to coarse grained sand, 20% clay	
		58/60		SC	21–25	23'-~~40~~ 25' clayey sand, 7.5YR 4/6 (strong brown), medium stiff, moist, fine to coarse grained sand, few gravel (subangular- rounded, lithics, up to 0.5")	
		54/60		GC	26–30	25-40' clayey gravel, 7.5YR 4/4 (brown), loose, dry, angular to subangular gravel (lithics, S.S. up to 2.5"), fine to coarse grained sand	
		56/60			31–35		
		55/60			36–40	Refusal @ 40' - No well set	

SS = Split Spoon, ST = Shelby Tube, CUT = Drill Cuttings, or Core

BORING/WELL CONSTRUCTION LOG

Project: AOU-1: East Side Springs	Project Number: 6202899
Drilling Company: Cascade Drilling	Start Time/Date: 0824 3/3/16
Drilling Rig/Bit: Geoprobe 6620DT 2"	Completion Time/Date: 0917 3/3/16
Driller: C. Waters	Final Depth: 35'
Boring/Well ID: GW-43	Logged By: K. Lazzen

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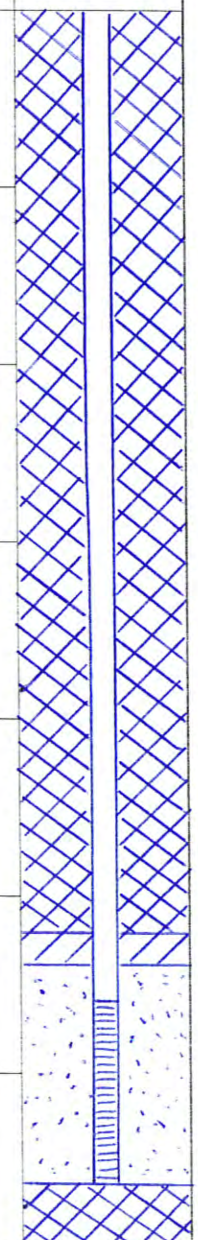
Sample Type	Blow Counts/6"	Sample Interval	PID Reading	USCS Soil Type	Depth, ft bgs	Soil Description (Order: soil type, color, density/consistency, plasticity, moisture, grain size, angularity/minerology, other)
ACETATE SLEEVE	NA	51/60	NA	ML	1–4	0-4' sandy silt, 7.5YR 3/3 (dark brown), medium stiff, nonplastic, dry, fine grained sand, 15% gravel (angular to subrounded, lithics, up to .")
		50/60		SP	4–10	4'-10' poorly graded sand, 7.5YR 5/6 (strong brown), medium dense, dry, fine grained sand, no gravel, primarily qtz grains
		51/60		SP	10–16	10'-16' poorly graded sand, 7.5YR 4/6 (strong brown), medium dense, dry, fine to medium grained sand, qtz and lithic grains, few gravel at 15' (lithics, rounded, up to 0.25")
		56/60; 52/60; 54/60		SP/SC	16–28	16'-28' interbedded poorly graded sand and clayey sand, 7.5YR 4/6 (strong brown), medium dense, moist, fine to medium grained sand ~24 ~27'
		56/60		CL	28–35 (▽ 31)	28'-35 clay, 2.5Y 8/2 (pale yellow), medium stiff, plastic, wet

Boring and/or Well Details



3/4" PVC Sch. 40
PVC 0.010" slot screen: 28-33'

Backfill: 0-26'; 33-35'
Bentonite: 26-27'
Sand: 27-33'

SS = Split Spoon, ST = Shelby Tube, CUT = Drill Cuttings, or Core

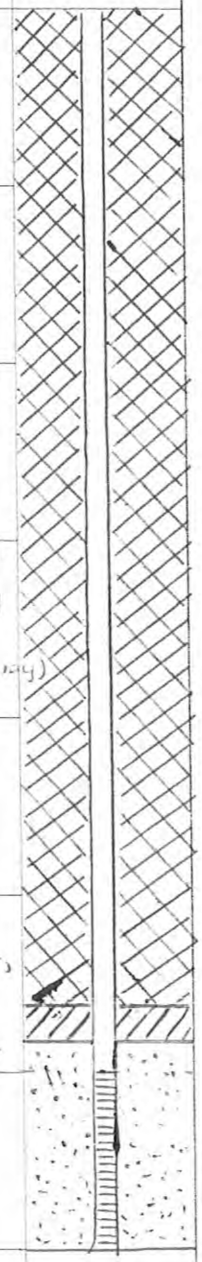
BORING/WELL CONSTRUCTION LOG

Project: A04-1 : East Side Springs
Drilling Company: Cascade Drilling
Drilling Rig/Bit: Geoprobe 6620 DT 2"
Driller: D. Waters
Boring/Well ID: GW-46

Project Number: 6202899
Start Time/Date: 0900 2/24/16
Completion Time/Date: 1040 2/24/16
Final Depth: 35'
Logged By: K. Lazzen

Sample Type	Blow Counts/6"	Sample Interval	PID Reading	USCS Soil Type	Depth, ft bgs	Soil Description (Order: soil type, color, density/consistency, plasticity, moisture, grain size, angularity/minerology, other)
ACETATE SLEEVE	NA	31/60	NA	SC	1–5	0-4" Topsoil 4"-8' clayey sand ~~sandy clay~~ KL: 7.5YR 4/6 (strong brown), medium dense ~~stiff~~ KL, moist, fine to medium grained sand
		43/60		SC / SW	6–10	8'-10' well graded sand: 7.5YR 4/6 (strong brown), loose, dry, fine to very coarse grained (qtz, lithics), trace subrounded gravel up to 0.25" No gravel or very coarse grained sand at 9'.
		52/60		SM / SP	11–15	10'-11' silty sand, 7.5YR 4/3 (brown), medium dense, wet, fine grained sand 11'-15' poorly graded sand, 7.5YR 6/8 (strong brown), laminated with clay (7.5YR 7/1 light gray), dense, moist, fine grained sand (qtz)
		59/60		SM / SP	16–20	15-16' silty sand, 7.5YR 4/3 (brown), medium dense, moist, fine grained sand 16'-~~23~~ 25' poorly graded sand, 7.5YR 6/8 (strong brown), laminated with clay (7.5YR 7/1 light gray), dense, moist, very fine to fine grained sand (qtz) ~~silty~~ SKL clayey sand lenses at 23' and 24' (1" thick) 7.5YR 7/2 pinkish gray)
		60/60		SP	21–25	color change to 7.5YR 6/6 (reddish yellow)
		52/60		SM / SP	26–30	25-26' silty sand, 7.5YR 5/6 (strong brown), medium dense, moist, fine grained sand 26'-35' poorly graded sand, 7.5YR 6/6 (reddish yellow), dense, moist, fine grained sand ▽ wet at 29'
		49/60		SP	31–35	

Boring and/or Well Details



3/4" PVC Sch. 40
PVC 0.010" Slot screen: 30-35'

Backfill: 0-28'
Bentonite: 28-29'
Sand: 29-35'

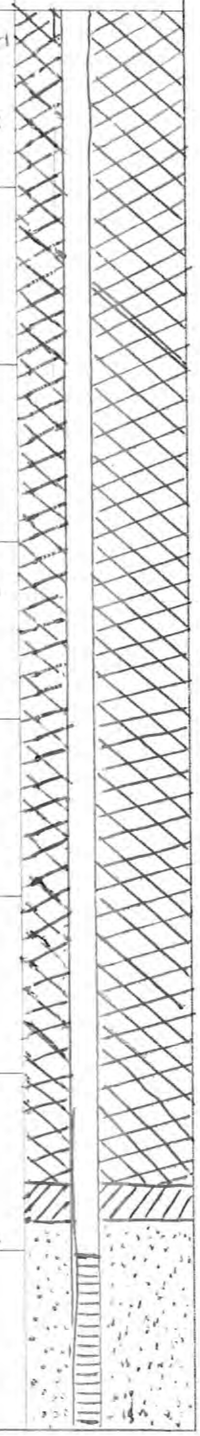
SS = Split Spoon, ST = Shelby Tube, CUT = Drill Cuttings, or Core

BORING/WELL CONSTRUCTION LOG

Project: AOU-1: East Side Springs	Project Number: 6202899
Drilling Company: Cascade Drilling	Start Time/Date: 1103 2/24/16
Drilling Rig/Bit: Geoprobe 6620DT 2"	Completion Time/Date: 1350 2/24/16
Driller: O. Waters	Final Depth: 40'
Boring/Well ID: GW-48	Logged By: K. Lazzen

Sample Type	Blow Counts/6"	~~Sample Interval~~ Recovery	PID Reading	USCS Soil Type	Depth, ft bgs	Soil Description (Order: soil type, color, density/consistency, plasticity, moisture, grain size, angularity/minerology, other)
ACETATE SLEEVE	NA	16/60	NA	SM	0–1	0-4" Topsoil 4"-1' silty sand, 7.5YR 2.5/1 (black), medium dense, moist, fine grained sand
		16/60, 31/60, 45/60		SP	1–15.5	1'-15.5' ~~silty sand~~ poorly graded sand, 7.5YR 5/8 (strong brown), medium dense, moist, very fine grained sand, 10% fines, quartz grains, 2" silty sand lenses at 10', 12', and 13' (7.5YR 5/8, strong brown, moist, fine grained sand, 15% silt)
		51/60		SP SW	15.5–16	15.5'-16' sand with gravel, 7.5YR 5/6 (strong brown), dry, loose, fine to coarse grained sand, 20% gravel (angular - subangular, qtz, lithics, up to 2")
		51/60		CL	16–20	16'-20' ~~sandy~~ KL clay, 7.5YR 8/4 (pink), medium stiff, plastic, dry, fine grained quartz sand (10%)
		55/60		CH	20–24	20'-~~28~~ 24' ~~same as above,~~ sandy ~~clay~~ ~~silt~~ clay KL, 7.5YR 6/4 (light brown), moist, soft, slightly plastic, 20% quartz sand (fine grained), few gravel (subangular - subrounded, lithics, up to 2")
		55/60, 59/60		SM	24–26	24'-26 silty sand, 7.5YR 5/6 (strong brown), medium dense, dry, very fine grained sand, 15% silt
		59/60		GC	26–30	26'-31' ~~silty sand~~ KL clayey gravel, 7.5YR 4/6 (strong brown), medium dense, dry, fine to coarse grained sand, 15% clay (7.5YR 6/4 light brown) 20%
		60/60		ML	30–32	30'-32' ~~silt~~ KL sandy silt grading to silty sand, medium stiff/medium dense, dry, fine grained sand
		60/60		GM	32–34.5	32'-34.5' silty gravel, 7.5YR 5/6 (strong brown), ~~loose~~ KL medium dense, dry, fine to coarse grained sand (25%), gravel subangular to subrounded (lithics, up to 2.5"), 20% silt
		54/60		CL	34.5–37 (▽ 37)	34.5'-37' sandy clay, 7.5YR 5/6 (strong brown), medium ~~dense~~ stiff KL, wet, fine grained sand
		54/60		SC	37–40	37'-40' clayey sand, 7.5YR 5/6 (strong brown), medium dense, wet, fine grained sand 3/4" PVC Sch. 40 PVC 0.010" slot screen: 35-40' Backfill: 0-33' sand: 34-40' bentonite: 33-34'

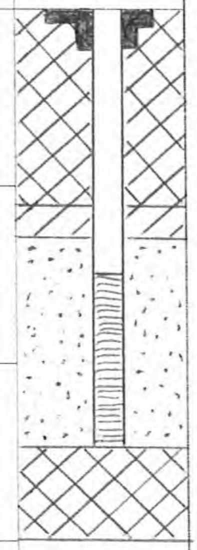
Boring and/or Well Details



SS = Split Spoon, ST = Shelby Tube, CUT = Drill Cuttings, or Core

BORING/WELL CONSTRUCTION LOG

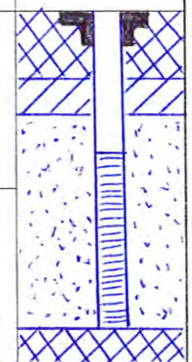
Project: AOU-1: East Side Springs	Project Number: 6202899
Drilling Company: Cascade Drilling	Start Time/Date: 0813 2/25/16
Drilling Rig/Bit: Geoprobe 6620DT 2"	Completion Time/Date: 0851 2/25/16
Driller: O. Waters	Final Depth: 15'
Boring/Well ID: GW-49	Logged By: K. Lazzen

Sample Type	Blow Counts/6"	Sample Interval	PID Reading	USCS Soil Type	Depth, ft bgs	Soil Description (Order: soil type, color, density/consistency, plasticity, moisture, grain size, angularity/minerology, other)	Boring and/or Well Details
					1	No lithology logged	
					2		
					3	3/4"PVC Sch. 40	
					4	PVC 0.010" slot screen: 7.5'-12.5'	
					5		
					6	BackFill: 0-5', 12.5-15'	
					7	Bentonite: 5'-6'	
					▽ 8	Sand: 6-12.5'	
					9		
					10	Well completed with monitoring well manhole and concrete apron	
					11		
					12		
					13		
					14		
					15		

SS = Split Spoon, ST = Shelby Tube, CUT = Drill Cuttings, or Core

BORING/WELL CONSTRUCTION LOG

Project: AOU-1: East Side Springs	Project Number: 6202899
Drilling Company: Cascade Drilling	Start Time/Date: 1155 2/26/16
Drilling Rig/Bit: Geoprobe 6620DT 2"	Completion Time/Date: 1226 2/26/16
Driller: D. Waters	Final Depth: 10'
Boring/Well ID: GW-50	Logged By: K. Lazzeri Page 1 of 1

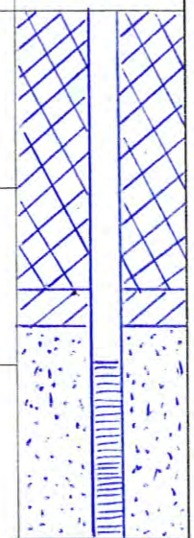
Sample Type	Blow Counts/6"	Sample Interval	PID Reading	USCS Soil Type	Depth, ft bgs	Soil Description (Order: soil type, color, density/consistency, plasticity, moisture, grain size, angularity/minerology, other)	Boring and/or Well Details
					1	No lithology logged	
					2		
					▽ 3	3/4" PVC Sch. 40 PVC 0.010" slot screen: 4-9'	
					4		
					5	Backfill: 0-2'; 9-10'	
					6	Bentonite: 2'-3' Sand: 3-9'	
					7		
					8		
					9	Well completed with monitoring well manhole and concrete apron	
					10		

SS = Split Spoon, ST = Shelby Tube, CUT = Drill Cuttings, or Core

BORING/WELL CONSTRUCTION LOG

Project: AOU-1: East Side Springs
Drilling Company: Cascade Drilling
Drilling Rig/Bit: Geoprobe 6620DT 2"
Driller: O. Waters
Boring/Well ID: GW-S1

Project Number: 6202899
Start Time/Date: 1311 3/4/16
Completion Time/Date: 1400 3/4/16
Final Depth: 15'
Logged By: K. Lazzeri

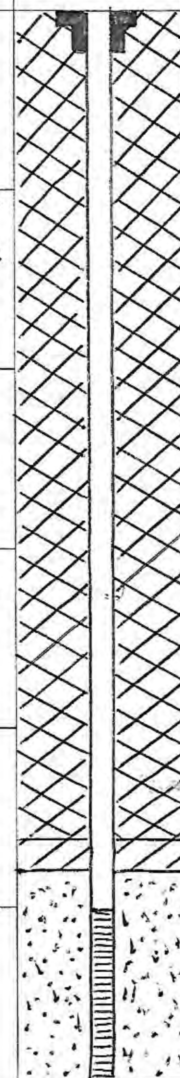
Sample Type	Blow Counts/6"	Sample Interval	PID Reading	USCS Soil Type	Depth, ft bgs	Soil Description (Order: soil type, color, density/consistency, plasticity, moisture, grain size, angularity/minerology, other)	Boring and/or Well Details
					1	No lithology logged	
					2		
					3		
					4		
					5		
					6	3/4" PVC Sch. 40	
					7	PVC 0.010" slot screen: 10-15'	
					8		
					9	Backfill: 0-8'	
					10	Bentonite: 8-9'	
					11	Sand: 9-15'	
					12		
					∇ 13		
					14		
					15		

SS = Split Spoon, ST = Shelby Tube, CUT = Drill Cuttings, or Core

BORING/WELL CONSTRUCTION LOG

Project: AOU-1: East Side Springs
Drilling Company: Cascade Drilling
Drilling Rig/Bit: Geoprobe 6620DT 2"
Driller: O. Waters
Boring/Well ID: GW-52

Project Number: 6202899
Start Time/Date: 1021 3/2/16
Completion Time/Date: 1100 3/2/16
Final Depth: 30'
Logged By: K. Lazzen

Sample Type	Blow Counts/6"	~~Sample Interval~~ Recovery	PID Reading	USCS Soil Type	Depth, ft bgs	Soil Description (Order: soil type, color, density/consistency, plasticity, moisture, grain size, angularity/minerology, other)	Boring and/or Well Details
ACETATE SLEEVE	NA	0/60	NA		1–5	0-4" topsoil 4"-5' No Recovery	
		58/60		CL (6) SP	6–10	5'-6' clay, 2.5Y 7/2 (light gray), medium stiff, slightly plastic, dry, 15% fine grained sand 6'-16' poorly graded sand with interbedded, sandy clay layers, 7.5 YR 6/6 (reddish yellow), dense, moist, fine grained sand, sandy clay layers ~1" thick.	
		54/60		SP	11–15		
		48/60		SW (17) CL	16–20	16'-17' well graded sand, 10YR 4/6 (dark yellowish brown), loose, dry, fine to coarse grained, qtz and lithic grains 17'-25' Sandy clay, 5YR 4/6 (yellowish red), medium stiff, slightly plastic, moist, fine ~~grained sand~~ to medium grained sand, trace gravel up to 0.25" (subrounded to rounded)	
		58/60			21–25 (▽ 23)		
		59/60		SC	26–30	25'-30' clayey sand, 5YR 4/6 (yellowish red), medium dense, wet, fine grained sand	

3/4" PVC Sch. 40
PVC 0.010" slot screen: 25-30'

Backfill: 0-23'
Bentonite: 23-24'
Sand: 24-30'

Well completed with monitoring well manhole and concrete apron

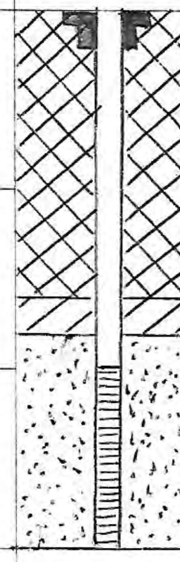
SS = Split Spoon, ST = Shelby Tube, CUT = Drill Cuttings, or Core

BORING/WELL CONSTRUCTION LOG

Project: AOU-1: East Side Springs
Drilling Company: Cascade Drilling
Drilling Rig/Bit: Geoprobe 6620 DT 2"
Driller: O. Waters
Boring/Well ID: GW-~~53~~ KL 53

Project Number: 6202899
Start Time/Date: 0947 3/2/16
Completion Time/Date: 1013 3/2/16
Final Depth: 15'
Logged By: K. Lazzen

Page 1 of 1

Sample Type	Blow Counts/6"	~~Sample Interval~~ Recovery	PID Reading	USCS Soil Type	Depth, ft bgs	Soil Description (Order: soil type, color, density/consistency, plasticity, moisture, grain size, angularity/minerology, other)	Boring and/or Well Details
					1	Lithology not logged	
					2		
					3		
					4		
					5		
					6	3/4" PVC Sch. 40	
					7	PVC 0.010" slot screen: 10-15'	
ACETATE SLEEVE	NA	NA	NA	NA	8		
					9	Backfill: 0-8'	
					10	Bentonite: 8-9' Sand: 9-15'	
					▽ 11		
					12		
					13		
					14		
					15	Well completed with monitoring well manhole and concrete apron	

SS = Split Spoon, ST = Shelby Tube, CUT = Drill Cuttings, or Core

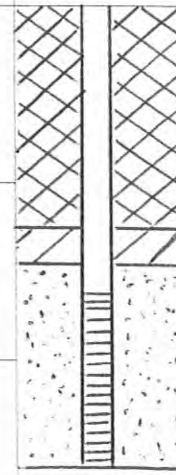
BORING/WELL CONSTRUCTION LOG

Project: AOU - 1 : East Side Springs
Drilling Company: Cascade Drilling
Drilling Rig/Bit: Geoprobe 6620DT 2"
Driller: ~~Cascade Drilling~~ KL O. Waters
Boring/Well ID: GW-54

Project Number: 6202899
Start Time/Date: 1335 3/3/16
Completion Time/Date: 1443 3/3/16
Final Depth: 13.3'
Logged By: K. Lazzen

Sample Type	Blow Counts/6"	~~Sample Interval~~ Recovery	PID Reading	USCS Soil Type	Depth, ft bgs	Soil Description (Order: soil type, color, density/consistency, plasticity, moisture, grain size, angularity/minerology, other)
ACETATE SLEEVE	NA	0/60	NA		1–5	0-4" topsoil 4"-5' No recovery
		56/60		CH	6–10	5'-12.5' clay, 10YR 6/3 (pale brown), soft, plastic, moist, trace fine grained sand, mottled 10YR 5/8 (yellowish brown)
		34/36			11–13	
				SC ~~SC~~	13	12.5 - 13.3' clayey sand, 7.5YR 5/6 (strong brown), medium dense, wet, fine grained sand

Boring and/or Well Details



3/4" PVC - Sch. 40
PVC 0.010" slot screen: ~~8-3~~ KL 8.3-13.3'

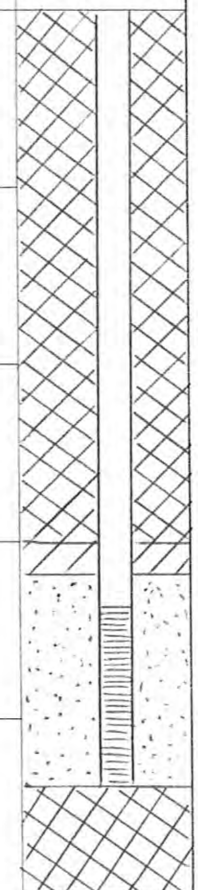
Backfill: 0-6'
Bentonite: 6-7'
Sand: 7-13.3'

SS = Split Spoon, ST = Shelby Tube, CUT = Drill Cuttings, or Core

BORING/WELL CONSTRUCTION LOG

Project: AOU-1: East side Springs	Project Number: 6202879
Drilling Company: Cascade Drilling	Start Time/Date: 1056 3/3/16
Drilling Rig/Bit: Geoprobe 6620DT 2"	Completion Time/Date: 1152 3/3/16
Driller: O. Waters	Final Depth: 25'
Boring/Well ID: GW-55	Logged By: K. Lazzeri

Sample Type	Blow Counts/6"	Sample Interval	PID Reading	USCS Soil Type	Depth, ft bgs	Soil Description (Order: soil type, color, density/consistency, plasticity, moisture, grain size, angularity/minerology, other)	Boring and/or Well Details
					1	No lithology logged	
					2		
					3		
					4		
					5		
					6	3/4" PVC Sch. 40.	
					7	PVC 0.010" slot screen: 17-22'	
					8	Backfill: 0-15'; 22-25'	
					9	Bentonite: 15-16'	
					10	Sand: 16-22'	
					11		
					12		
					13		
					14		
					15		
					16		
					17		
					18		
					19		
					20		
					21		
					22		
					23		
					24		
					25		



SS = Split Spoon, ST = Shelby Tube, CUT = Drill Cuttings, or Core

BORING/WELL CONSTRUCTION LOG

Project: AOU-1: East Side Springs	Project Number: 6202899
Drilling Company: Cascade Drilling	Start Time/Date: 0910 3/5/16
Drilling Rig/Bit: Geoprobe 6620DT 2"	Completion Time/Date: 1015 3/5/16
Driller: O. Waters	Final Depth: 33'
Boring/Well ID: GW-57	Logged By: K. Lazzeri

Sample Type	Blow Counts/6"	Sample Interval	PID Reading	USCS Soil Type	Depth, ft bgs	Soil Description (Order: soil type, color, density/consistency, plasticity, moisture, grain size, angularity/minerology, other)	Boring and/or Well Details
					1	No lithology logged	
					2		
					3	Hit refusal at 33' - no well set	
					4		
					5		
					6		
					7		
					8		
					9		
					10		
					11		
					12		
					13		
					14		
					15		
					16		
					17		
					18		
					19		
					20		
					21		
					22		
					23		
					24		
					25		
					26		
					27		
					28		
					29		
					30		
					31		
					32		
					33		

SS = Split Spoon, ST = Shelby Tube, CUT = Drill Cuttings, or Core

BORING/WELL CONSTRUCTION LOG

Project: AOU-1: East Side Springs
Drilling Company: Cascade Drilling
Drilling Rig/Bit: Geoprobe 6620DT 2"
Driller: O. Waters
Boring/Well ID: GW-58

Project Number: 6202894
Start Time/Date: 1037 3/5/16
Completion Time/Date: 1140 3/5/16
Final Depth: 40'
Logged By: K. Lazzen

Sample Type	Blow Counts/6"	~~Sample Interval~~ Recovery	PID Reading	USCS Soil Type	Depth, ft bgs	Soil Description (Order: soil type, color, density/consistency, plasticity, moisture, grain size, angularity/minerology, other)	Boring and/or Well Details
		33/60		CL	1–5	0-5" topsoil 5"-10' clay, stiff, slightly plastic, dry, 2.5Y 7/1 (light gray), some mottling 10YR 5/8 (yellowish brown)	
		46/60			6–10		
		47/60		CH	11–14	10'-14' clay, mottled 2.5Y 6/3 (light yellowish brown) and 10YR 6/6 (brownish yellow), medium stiff, plastic, moist	
				CL	15	14'-15' sandy clay, 10YR 6/4 (light yellowish brown), medium stiff, slightly plastic, moist, fine grained sand	
		56/60		CH	16–17	15'-17.5' clay, 2.5Y 5/3 (light olive brown), medium stiff, plastic, moist	
				SC	18–20	17.5'-20' clayey sand, dense, moist, 7.5YR 5/6 (strong brown), fine grained sand	
		54/60		CL	21	20'-21' clay, 2.5Y 6/2 (light brownish gray), stiff, plastic, moist	
				GC	22–25	21'-40' clayey gravel, 7.5YR 4/6 (strong brown), medium dense, dry, fine to coarse grained sand (20%), gravel angular to subangular (lithics, limestone, up to 2.5")	
		48/60		GC ~~CGrvl~~	26–30		
		51/60			31–35		
		49/60			36–40	Refusal at 40' - no well set	

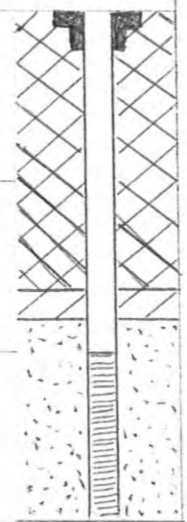
SS = Split Spoon, ST = Shelby Tube, CUT = Drill Cuttings, or Core

BORING/WELL CONSTRUCTION LOG

Project: AOU-1: East Side Springs
Drilling Company: Cascade Drilling
Drilling Rig Bit: Geoprobe 6620DT 2"
Driller: O. Waters
Boring Well ID: GW-59

Project Number: 6202899
Start Time Date: 1436 3/4/16
Completion Time Date: 1503 3/4/16
Final Depth: 15'
Logged By: K. Lazzeri

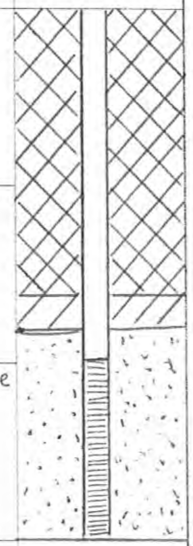
Sample Type	Blow Counts/6"	Sample Interval	PID Reading	USCS Soil Type	Depth, ft bgs	Soil Description (Order: soil type, color, density consistency, plasticity, moisture, grain size, angularity minerology, other)	Boring and/or Well Details
					1	No lithology logged	
					2		
					3	3/4" PVC Sch. 40	
					4	PVC 0.010" slot screen: 10-15'	
					5		
					6	Backfill: 0-8'	
					7	Bentonite: 8-9'	
					8	Sand: 9-15'	
				▽	9		
					10	Well completed with monitoring well manhole and concrete apron	
					11		
					12		
					13		
					14		
					15		



SS = Split Spoon, ST = Shelby Tube, CUT = Drill Cuttings (or Core)

BORING/WELL CONSTRUCTION LOG

Project: AOU-1: East Side Springs	Project Number: 6202899
Drilling Company: Cascade Drilling	Start Time/Date: 1108 3/8/16
Drilling Rig/Bit: Geoprobe 6620 DT	Completion Time/Date: 1236 3/8/16
Driller: O. Waters	Final Depth: 15'
Boring/Well ID: GW-60	Logged By: K. Lazzen

Sample Type	Blow Counts/6"	~~Sample Interval~~ Recovery	PID Reading	USCS Soil Type	Depth, ft bgs	Soil Description (Order: soil type, color, density/consistency, plasticity, moisture, grain size, angularity/minerology, other)	Boring and/or Well Details
ACETATE SLEEVE	NA	31/60	NA	ML	1, 2, 3, 4, 5	0-4" topsoil 4"-5' sandy silt, 10YR 3/3 (dark brown), medium stiff, nonplastic, dry, fine grained sand	
		47/60		SC	6, 7, 8, 9, ▽ 10	5'-12' clayey sand, 10YR 7/3 (very pale brown), medium dense, moist, fine grained sand	
		58/60		SC	11, 12, 13, 14, 15	10'-15' ~~poorly graded sand~~ clayey sand KL, 7.5YR 5/2 (brown), medium ~~dense~~ dense KL, wet, fine grained sand, 25% fines	

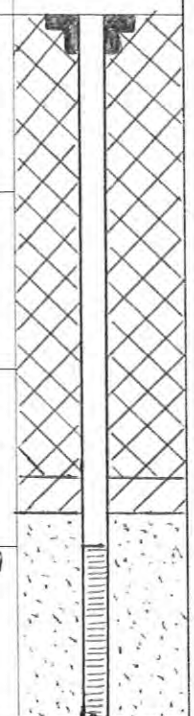
3/4" PVC Sch. 40
PVC 0.010" slot screen: 10-15'

Backfill: 0-8'
Bentonite: 8-9'
Sand: 9-15'

SS = Split Spoon, ST = Shelby Tube, CUT = Drill Cuttings, or Core

BORING/WELL CONSTRUCTION LOG

Project: AOU-1: East side springs	Project Number: 6202899
Drilling Company: Cascade Drilling	Start Time/Date: 1319 3/5/16
Drilling Rig/Bit: Geoprobe 6620DT 2"	Completion Time/Date: 1348 3/5/16
Driller: O. Waters	Final Depth: 20'
Boring/Well ID: GW-61	Logged By: K. Lazzeri

Sample Type	Blow Counts/6"	~~Sample Interval~~ Recovery	PID Reading	USCS Soil Type	Depth, ft bgs	Soil Description (Order: soil type, color, density/consistency, plasticity, moisture, grain size, angularity/minerology, other)	Boring and/or Well Details
ACETATE SLEEVE	NA	45/60	NA	ML, SC	1, 2, 3, 4, 5	0-5" topsoil 5"-1.5' silt, 10YR 2/2 (very dark brown), soft, plastic, moist, 15% fine - medium grained sand 1.5'-5' clayey sand, 10YR 7/3 (very pale brown), medium dense, moist, fine grained sand	
		58/60		CH	6, 7, 8, 9, 10	5'-15' clay, 2.5Y 6/4 (light yellowish brown), stiff, plastic, moist, trace rounded gravel	
		59/60			11, ∇ 12, 13, 14, 15		
		60/60		SC	16, 17, 18, 19	15-19 clayey sand, 10YR 6/3 (pale brown), medium dense, wet, fine grained sand	
				SC	20	19-20' clayey sand, 10YR 5/2 (grayish brown), medium dense, wet, fine grained sand	

3/4" PVC Sch. 40
PVC 0.010" slot screen: 15-20'

Backfill: 0-13'
Bentonite: 13-14'
Sand: 14-20'

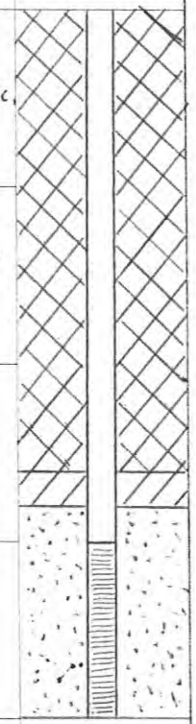
Well completed with monitoring well manhole and concrete apron

SS = Split Spoon, ST = Shelby Tube, CUT = Drill Cuttings, or Core

BORING/WELL CONSTRUCTION LOG

Project: Adu-1: East Side Springs	Project Number: 6202899
Drilling Company: Cascade Drilling	Start Time/Date: 1301 3/8/16
Drilling Rig/Bit: Geoprobe 6620 DT	Completion Time/Date: 1345 3/8/16
Driller: O. Waters	Final Depth: 20
Boring/Well ID: GW-62	Logged By: K. Lazzen

Page 1 of 1

Sample Type	Blow Counts/6"	~~Sample Interval~~ Recovery	PID Reading	USCS Soil Type	Depth, ft bgs	Soil Description (Order: soil type, color, density/consistency, plasticity, moisture, grain size, angularity/minerology, other)	Boring and/or Well Details
ACETATE SLEEVE	NA	31/60	NA	ML	1–2	0-5" topsoil 5"-2' silt, 7.5YR 4/2 (brown), medium stiff, nonplastic, dry, 20% sand (fine-medium grained)	
				CL	3–7	2'-7' ~~etkt~~ sandy clay, 7.5YR 4/6 (strong brown), medium stiff, plastic, dry, fine to medium grained sand	
		49/60		GC	8–10	7'-10' clayey gravel, 7.5YR 4/6 (strong brown), medium dense, dry, fine to coarse grained sand, angular to subangular gravel (lithics, up to 2")	
				CL	11	10'-11' sandy clay, 7.5YR 4/6 (strong brown), medium stiff, plastic, moist, fine grained sand	
		54/60 55/60		GC	12–20 (▽ 13)	11'-20' clayey gravel, 7.5YR 4/6 (strong brown), medium dense, wet, fine to medium grained sand, angular to subangular gravel (lithics, limestone, 2.5")	

3/4" PVC Sch. 40
PVC 0.010" slot screen: 15-20'

Backfill: 0-13'
Bentonite: 13-14'
Sand: 14-20'

SS = Split Spoon, ST = Shelby Tube, CUT = Drill Cuttings, or Core

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Appendix C
Groundwater Sampling Forms

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C-1

Groundwater Sampling Forms

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GROUNDWATER/SURFACE WATER SAMPLING FORM

Project: 700 S. 1600 E. PCE plume Project Number: 6202899 Location ID: A-GW-001
Date: 3-4-16 Field Team: A.B.

Purge Method

- ☐ Dedicated Submersible ☐ Portable Bladder ☒ Peristaltic
- ☐ Portable Submersible ☐ Dedicated Bailer ☐ Grab
- ☐ Dedicated Bladder ☐ Disposable Bailer ☐ Other: ____

Sample Analyses

Sample ID: A-GW-001 Sample Time: 13:10

☒ Blind Duplicate: A-GW-001-D ☐ MS/MSD

- ☑ VOCs ☐ Sulfate/Nitrite/Nitrate
- ☐ SVOCs ☐ TOC
- ☐ Cations ☐ Sulfide
- ☐ Trace Metals ☐ ____
- ☐ Anions/Alkalinity/TDS ☐ ____

Well/Purge

Well Casing: Stick-up / ~~Flush Mount~~ KL

Well Depth: 15 Screen Length: 5'

Casing Diam: 0.75" Borehole Diam.: 1.75"

Depth to Water: 11.93' / 11.94

Measuring Point: TOC

Calculated Purge Volume: 6700

Pump Start: 12:35 Pump Stop: 13:15

☐ **Well Pumped Dry**

Pumped Dry (date/time): ____ Pump restarted (date/time): ____

Initial Purge (gal): ____ Recovered Water Level: ____

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (~~gal~~) mL	Flow Rate (~~gal~~ mL/min)	Comments
12:48	6.84	1309	—	5.00	10.91	134.4	-	2500	200	
12:51	6.60	1305	223	4.86	10.92	133.3	-	3100	200	
12:54	6.40	1305	152	4.71	11.07	129.6	-	3700	200	
12:57	6.35	1304	587	4.69	11.12	131.5	-	4300	200	
13:00	6.36	1304	808	4.59	10.90	133.9	-	4900	200	
13:03	6.36	1303	—	4.57	10.95	134.0	-	5500	200	
13:06	6.38	1303	620	4.54	10.99	134.6	-	6100	200	
								6700		

Headspace ~~0.0~~ 0.2

AMB 3-4-16

GROUNDWATER/SURFACE WATER SAMPLING FORM

Project: 7co S. 1600 E. PCE Plume Project Number: 6202899 Location ID: GW-003
Date: 2-26-16 Field Team: A. Bugler

Purpose Method

☐ Dedicated Submersible ☐ Portable Bladder ☒ Peristaltic 400mL
☐ Portable Submersible ☐ Dedicated Bailer took sample ☐ Grab
☐ Dedicated Bladder ☒ Disposable Bailer 800mL ☐ Other:

Sample Analyses
Sample ID: A-GW-003 Sample Time: 10:16
☐ Blind Duplicate: ☐ MS/MSD
☒ VOCs ☐ Sulfate/Nitrite/Nitrate
☐ SVOCs ☐ TOC
☐ Cations ☐ Sulfide
☐ Trace Metals ☐
☐ Anions/Alkalinity/TDS ☐

Well/Purge
Well Casing: Stick-up | Flush Mount
Well Depth: 33 Screen Length: 33-28=5
Casing Diam: 0.75 Borehole Diam.: ~~0~~ 1.75
Depth to Water: 28.40'
Measuring Point: TOC
Calculated Purge Volume: 400mL + 800mL 1200mL
Pump Start: 08:36 Pump Stop: 8:40

☐ **Well Pumped Dry**
Pumped Dry (date/time): Pump restarted (date/time):
Initial Purge (gal): Recovered Water Level:

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. ~~(gal)~~ mL	Flow Rate (gal/min)	Comments
• Took one reading on back - TRANSCRIBED BELOW K.LAZZARA										
• pump could not reach that depth										
0956	6.98	1520	–	9.90	10.67	211.9	–	1200	– K.L.	

2-26-16 AMB

GROUNDWATER/SURFACE WATER SAMPLING FORM

Project: 7005. 1600 E PCE Plume Project Number: 6202899 Location ID: A-GW-004
Date: 2-26-16 Field Team: A. Bugler

Purpose Method

- ☐ Dedicated Submersible
- ☐ Portable Bladder
- ☒ Peristaltic
- ☐ Portable Submersible
- ☐ Dedicated Bailer
- ☐ Grab
- ☐ Dedicated Bladder
- ☐ Disposable Bailer
- ☐ Other:

Sample Analyses

Sample ID: A-GW-004 Sample Time: 15:00

- ☐ Blind Duplicate:
- ☐ MS/MSD
- ☒ VOCs
- ☐ Sulfate/Nitrite/Nitrate
- ☐ SVOCs
- ☐ TOC
- ☐ Cations
- ☐ Sulfide
- ☐ Trace Metals
- ☐
- ☐ Anions/Alkalinity/TDS
- ☐

Well/Purge

Well Casing: Stick-up / Flush Mount
Well Depth: 25.1' Screen Length: 5'
Casing Diam: 0.75" Borehole Diam.: 1.75"
Depth to Water: 17.26 / 19.85
Measuring Point: TOC
Calculated Purge Volume: ~~3250 mL~~ 2050 mL
Pump Start: 13:55 Pump Stop: 14:55

☐ **Well Pumped Dry**

Pumped Dry (date/time): Pump restarted (date/time):
Initial Purge (gal): Recovered Water Level:

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal) mL	Flow Rate (~~gal~~ mL/min)	Comments
14:40	7.20	1,569	—	10.83	12.55	94.0	—	1000mL	200	
14:43	7.08	1562	—	10.22	12.92	86.7	—	1600	150	
14:46	7.11	1555	—	10.38	12.87	86.3	—	2050	150	
14:49	7.12	1563	—	10.23	13.02	86.1	—	2500	125	
14:52	7.06	1567	—	10.10	12.90	86.4	—	2875	125	
								3250		

2-26-16 AMB

GROUNDWATER/SURFACE WATER SAMPLING FORM

Project: Fort S. 1600 EPCE Plum Project Number: 6202899 Location ID: A-GW-05
Date: 26 FEB 2016 Field Team: S. S A.B

Purpose Method

☐ Dedicated Submersible ☐ Portable Bladder ☑ Peristaltic
☐ Portable Submersible ☐ Dedicated Bailer ☐ Grab
☐ Dedicated Bladder ☐ Disposable Bailer ☐ Other: ____

Sample Analyses
Sample ID: A-GW-005 Sample Time: 11:20
☐ Blind Duplicate: ____ ☐ MS/MSD
☑ VOCs ☐ Sulfate/Nitrite/Nitrate
☐ SVOCs ☐ TOC
☐ Cations ☐ Sulfide
☐ Trace Metals ☐ ____
☐ Anions/Alkalinity/TDS ☐ ____

Well/Purge
Well Casing: Stick-up | Flush Mount
Well Depth: 8.50 S.Hty Screen Length: 5 ft
Casing Diam: 0.75 in Borehole Diam.: 1.75 in
Depth to Water: 2.46
Measuring Point: Top of Casing
Calculated Purge Volume: ~~2850 mL~~ 3450 1581 mL + ~4000 mL
Pump Start: 1050 Pump Stop: 11:25

☐ **Well Pumped Dry**
Pumped Dry (date/time): ____ Pump restarted (date/time): ____
Initial Purge (gal): ____ Recovered Water Level: ____

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. ~~(gal)~~ mL	Flow Rate ~~(gal~~ mL/min)	Comments
11:01	6.95	1566	—	5.51	12.37	115.0	–	0	150	
11:04	6.95	1567	–	5.45	12.31	88.7	–	450	200	
11:07	6.94	1566	–	5.45	12.32	70.9	–	1050	200	
11:10	6.94	1566	—	5.45	12.34	62.0	–	1650	200	
11:13	6.93	1566	–	5.44	12.32	56.1	–	2250	200	
11:16	6.93	1566	—	5.45	12.35	52.9	–	2850	200	
								3450		

Headspace = 0.2

2-26-16 AmB

GROUNDWATER/SURFACE WATER SAMPLING FORM

Project: 700 S 1600 E PCE Plume Project Number: 6202899 Location ID: A-GW-06

Date: 26 FEB 2016 Field Team: A Byler

Purge Method

☐ Dedicated Submersible ☐ Portable Bladder ☒ Peristaltic

☐ Portable Submersible ☐ Dedicated Bailer ☐ Grab

☐ Dedicated Bladder ☐ Disposable Bailer ☐ Other:

Sample Analyses

Sample ID: A-GW-06 Sample Time: 12:05

☐ Blind Duplicate: ☐ MS/MSD

☒ VOCs ☐ Sulfate/Nitrite/Nitrate

☐ SVOCs ☐ TOC

☐ Cations ☐ Sulfide

☐ Trace Metals ☐

☐ Anions/Alkalinity/TDS ☐

Well/Purge

Well Casing: Stick-up | Flush Mount

Well Depth: 10.1 Screen Length: 5 ft

Casing Diam: 0.75 in Borehole Diam.: 1.75 in

Depth to Water: 4.66 ft

Measuring Point: TOC

Calculated Purge Volume: ~~≈ 1200 mL~~ 1424 KL

Pump Start: 11:28 Pump Stop: 12:15

☒ **Well Pumped Dry** 02-26-16 /

Pumped Dry (date/time): 11:28-11:33 / 11:44-11:46

Initial Purge (~~gal~~ mL): 1/3 gal / 400 mL

Pump restarted (date/time):

Recovered Water Level:

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (~~gal~~ mL)	Flow Rate (gal/min)	Comments
• Slow recharge										
• Single reading on back - TRANSCRIBED BELOW - K LAZZERI										
1205	7.35	1448	395	10.81	10.18	63.4	— KL	1900		

Headspace 0.2

2-26-16 AMB

GROUNDWATER/SURFACE WATER SAMPLING FORM

Project: 700 S. 1600 E. PCE Plume Project Number: 6202899 Location ID: A-GW-007
Date: 2/26/16 Field Team: A. Bugher, S. S

Purge Method

- ☐ Dedicated Submersible
- ☐ Portable Bladder
- ☐ Peristaltic
- ☐ Portable Submersible
- ☐ Dedicated Bailer
- ☐ Grab
- ☐ Dedicated Bladder
- ☒ Disposable Bailer
- ☐ Other:

Sample Analyses

Sample ID: A-GW-007 Sample Time: 09:00 2/28/16

- ☐ Blind Duplicate:
- ☐ MS/MSD
- ☐ VOCs
- ☐ Sulfate/Nitrite/Nitrate
- ☐ SVOCs
- ☐ TOC
- ☐ Cations
- ☐ Sulfide
- ☐ Trace Metals
- ☐
- ☐ Anions/Alkalinity/TDS
- ☐

Well/Purge

Well Casing: Stick-up / ~~Flush Mount~~
Well Depth: 8.98 Screen Length: 5'
Casing Diam: 0.75" Borehole Diam.: 1.75"
Depth to Water: 8.63
Measuring Point: TOC
Calculated Purge Volume: 91.7 mL
Pump Start: NA Pump Stop: NA

☑ **Well ~~Pumped~~ BAILED Dry**
Pumped Dry (date/time): 12:37 / 12:47
Initial Purge (~~gal~~ mL): 50. / 10
Pump restarted (date/time):
Recovered Water Level:

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (~~gal~~) mL	Flow Rate (gal/min)	Comments
0931	6.98	966	393	8.45	11.15	140.0	–	200		

*First collected on 2/28
*Second voa 2/29
*Third voa 3/01

Sample not collected for screening level

Headspace: 0.2 ppmV

2-26-16 AmB

GROUNDWATER/SURFACE WATER SAMPLING FORM

Project: 700 S. 1600 E PCE Plume Project Number: 6202899 Location ID: A-GW-008
Date: 2-27-16 Field Team: A. Bugler, S. Staigerwald

Purpose Method

Purge Method

☐ Dedicated Submersible ☐ Portable Bladder ☒ Peristaltic

☐ Portable Submersible ☐ Dedicated Bailer ☐ Grab

☐ Dedicated Bladder ☐ Disposable Bailer ☐ Other: ______

Sample Analyses

Sample ID: A-GW-008 Sample Time: 16:00

☐ Blind Duplicate: ______ ☐ MS/MSD

☒ VOCs ☐ Sulfate/Nitrite/Nitrate

☐ SVOCs ☐ TOC

☐ Cations ☐ Sulfide

☐ Trace Metals ☐ ______

☐ Anions/Alkalinity/TDS ☐ ______

Well/Purge

Well Casing: Stick-up | Flush Mount

Well Depth: 11.04 Screen Length: 5'

Casing Diam: 0.75" Borehole Diam.: 1.75"

Depth to Water: 6.96 / 9.62

Measuring Point: TOC

Calculated Purge Volume: ~~1500mL~~ KL 372 mL

Pump Start: 15:07 Pump Stop: 16:30

☐ **Well Pumped Dry**

Pumped Dry (date/time): ______ Pump restarted (date/time): ______

Initial Purge (gal): ______ Recovered Water Level: ______

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (~~gal~~) mL	Flow Rate (gal/min)	Comments
15:50	7.36	1639	—	4.92	15.67	111.2	—	1400	≈125	
• Recharge ≈ 280 mL/10 min										

Headspace = 0.0

2-27-16
AMB

GROUNDWATER/SURFACE WATER SAMPLING FORM

Project: 700 S. 1600 E. PCE Plume Project Number: 6202899 Location ID: A-GW-009
Date: 2-26-16 Field Team: A. Bigler

Purge Method

☐ Dedicated Submersible ☐ Portable Bladder ☒ Peristaltic
☐ Portable Submersible ☐ Dedicated Bailer ☐ Grab
☐ Dedicated Bladder ☐ Disposable Bailer ☐ Other: ____________

Sample Analyses
Sample ID: A-GW-009 Sample Time: 16:20
☐ Blind Duplicate: ________ ☐ MS/MSD
☒ VOCs ☐ Sulfate/Nitrite/Nitrate
☐ SVOCs ☐ TOC
☐ Cations ☐ Sulfide
☐ Trace Metals ☐ ________
☐ Anions/Alkalinity/TDS ☐ ________

Well/Purge
Well Casing: Stick-up / Flush Mount
Well Depth: 10.10 Screen Length: 5
Casing Diam: 0.75" Borehole Diam.: 1.75"
Depth to Water: 4.91
Measuring Point: TOC
Calculated Purge Volume: ~~600 + 500 + 500~~ 1360mL
Pump Start: ~~13:34~~ 15:35 AMB Pump Stop: 16:35

☑ **Well Pumped Dry**
Pumped Dry (date/time): 13:43
Initial Purge (~~gal~~ mL): ≈ 600
Pump restarted (date/time): ____________
Recovered Water Level: ____________

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (~~gal~~ mL)	Flow Rate (gal/min)	Comments
16:10	7.46	1281	213	7.80	15.57	56.6	-	1600		

- Slow to recharge
- pumped 5min at a time

Head space < 0.4 ppm

1 of 21

2-26-16 AMB

GROUNDWATER/SURFACE WATER SAMPLING FORM

Project: 700 S. 1600 E. PCE plume   Project Number: 6202849   Location ID: A-GW-010

Date: 2-27-16   Field Team: A. Bugher S. Staigerwald

Purpose Method

☐ Dedicated Submersible   ☐ Portable Bladder   ☒ Peristaltic

☐ Portable Submersible   ☐ Dedicated Bailer   ☐ Grab

☐ Dedicated Bladder   ☐ Disposable Bailer   ☐ Other:

Sample Analyses

Sample ID: A-GW-010   Sample Time: 11:10

☒ Blind Duplicate: A-GW-010-D   ☐ MS/MSD

☒ VOCs   ☐ Sulfate/Nitrite/Nitrate

☐ SVOCs   ☐ TOC

☐ Cations   ☐ Sulfide

☐ Trace Metals   ☐

☐ Anions/Alkalinity/TDS   ☐

Well/Purge

Well Casing: Stick-up | Flush Mount

Well Depth: 17.85   Screen Length: 5'

Casing Diam: 0.75"   Borehole Diam.: 1.75"

Depth to Water: 12.22

Measuring Point: TOC

Calculated Purge Volume: ~~3400 mL~~ 1475 mL

Pump Start: 10:37   Pump Stop: 11:20

☐ **Well Pumped Dry**

Pumped Dry (date/time):   Pump restarted (date/time):

Initial Purge (gal):   Recovered Water Level:

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (~~gal~~ mL)	Flow Rate (~~gal~~ mL/min)	Comments
1050	6.97	2520	535	2.85	13.51	154.8	-	300	200	
1053	6.90	2517	163	2.02	13.52	143.7	-	~~2000~~ 900	200	
1056	6.88	2523	30	1.65	13.53	135.1	-	1500	150	
1059	6.86	2524	10.8	1.74	13.53	130.0	-	1950	150	
1102	6.87	2522	4.32	1.84	13.70	125.6	-	2400	150	
1105	6.85	2526	4.19	2.10	13.60	121.5	-	2950	150	
								3400		

headspace 0.0

2-27-16 AMB

GROUNDWATER/SURFACE WATER SAMPLING FORM

Project: 700 S. CLOVE. PIPELINE   Project Number: 6202849   Location ID: A-GW-011

Date: 2-27-16   Field Team: A. Bugher S. Staigerwald

Purpose Method

☐ Dedicated Submersible ☐ Portable Bladder ☒ Peristaltic

☐ Portable Submersible ☐ Dedicated Bailer ☐ Grab

☐ Dedicated Bladder ☐ Disposable Bailer ☐ Other:

Sample Analyses

Sample ID: A-GW-011   Sample Time: 12:20

☐ Blind Duplicate: ☐ MS/MSD

☒ VOCs ☐ Sulfate/Nitrite/Nitrate

☐ SVOCs ☐ TOC

☐ Cations ☐ Sulfide

☐ Trace Metals ☐

☐ Anions/Alkalinity/TDS ☐

Well/Purge

Well Casing: Stick-up | Flush Mount

Well Depth: 14.45   Screen Length: 5'

Casing Diam: 0.75"   Borehole Diam.: 1.75"

Depth to Water: 2.56 / 7.08

Measuring Point: TOC

Calculated Purge Volume: ~~5100~~ KL 1930 mL

Pump Start: 11:50   Pump Stop: 12:35

☐ **Well Pumped Dry**

Pumped Dry (date/time):   Pump restarted (date/time):

Initial Purge (gal):   Recovered Water Level:

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. mL ~~(gal)~~	Flow Rate mL ~~(gal~~/min)	Comments
11:55	7.05	1448	—	2.58	12.18	109.7	-	500	300	
11:58	6.99	1451	—	2.27	12.26	101.0	-	1400	200	
12:01	6.93	1450	—	2.03	12.52	97.8	-	2000	200	
12:04	6.91	1444	—	3.25	12.95	95.7	-	2600	200	
12.07	6.88	1446	—	2.39	12.48	86.8	-	3200	150	
12.10	6.88	1446	—	2.73	12.50	86.8	-	3650	150	
12.13	6.88	1445	—	3.01	12.28	86.5	-	4200	150	
12.16	6.86	1444	—	3.11	12.26	864	-	4650	150	
								5100		

Head Space 0.9 ppm

2-27-16 AMB

GROUNDWATER/STORMWATER/SURFACE WATER SAMPLING FORM

Project: AOU-1: East Side Springs   Project Number: 6202899   Location ID: ~~500~~KL GW-11

Date: 5/3/16   Field Team: K. Lazzen, N. Lundvall

Purpose Method

☐ Dedicated Submersible   ☐ Portable Bladder   ☒ Peristaltic

☐ Portable Submersible   ☐ Dedicated Bailer   ☐ Grab

☐ Dedicated Bladder   ☐ Disposable Bailer   ☐ Other:

Sample Analyses

Sample ID: A-GW-11   Sample Time: 1800

☐ Blind Duplicate: ☐ MS/MSD

☐ VOCs   ☐ Sulfate/Nitrite/Nitrate

☐ SVOCs   ☐ TOC

☐ Cations   ☐ Sulfide

☐ Trace Metals   ☒ Isotope (O, H)

☐ Anions/Alkalinity/TDS   ☐

Well/Purge

Well Casing: Stick-up | Flush Mount

Well Depth: 15'   Screen Length: 5'

Casing Diam: 0.75"   Borehole Diam.: 2.5"

Depth to Water: 2.51"

Measuring Point: TOC

Calculated Purge Volume: ~~5.11~~KL 5.1 L

Pump Start: 1745   Pump Stop: 1801

☐ **Well Pumped Dry**

Pumped Dry (date/time): —   Pump restarted (date/time): —

Initial Purge (gal): —   Recovered Water Level: —

Time	pH	SC (μS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (L)	Flow Rate (L/min)	Comments
1750	7.68	1011	>1000	7.11	13.9	219.4	—	2.0 ~~0.5~~ KL	0.4	—
1755	7.44	1198	>1000	6.85	13.8	216.1	—	4.0 ~~1.0~~ KL	0.4	—
1800	7.30	1234	>1000	6.01	13.8	214.9	—	6.0 ~~1.5~~ KL	0.4	—
								~~2.0~~ KL		
								~~2.5~~ KL		
								~~3.0~~ KL		

KR

KR 5/3/16

GROUNDWATER/SURFACE WATER SAMPLING FORM (*CONTINUED*)

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments

KR

Final Parameters

Time	pH	SC	Turb.	DO	Temp	ORP	DTW	Vol Evac.	Flow Rate
1800	7.30	1234	>1000	6.01	13.8	214.9	–	6.0	0.4
Stable:	☐	☐	☐	☐	☐	☐	☐	☐	☐
	± 0.1	**± 3%**	**± 10%**	**± 0.3 mg/L**	**± 3%**	**± 10 mV**	**Δ <0.3 ft**		

Sampling Comments: Purged 3 well volumes, parameters not stabilized

Well Specific Observations/Access Issues:

Krista Rizzi 5/3/16

GROUNDWATER/SURFACE WATER SAMPLING FORM

Project: 7005-1600 E PCE Plume Project Number: 6202899 Location ID: A-GW-012
Date: 3-1-16 Field Team: AB SS.

Purge Method

☐ Dedicated Submersible ☐ Portable Bladder ☒ Peristaltic 3-1-16 1420mL
☐ Portable Submersible ☐ Dedicated Bailer ☐ Grab
☐ Dedicated Bladder ☒ Disposable Bailer sample 250mL 3-2-16 ☐ Other:

Sample Analyses
Sample ID: A-GW-012 Sample Time: 10:00 3-2-16
☐ Blind Duplicate: ☐ MS/MSD
☒ VOCs ☐ Sulfate/Nitrite/Nitrate
☐ SVOCs ☐ TOC
☐ Cations ☐ Sulfide
☐ Trace Metals ☐
☐ Anions/Alkalinity/TDS ☐

Well/Purge
Well Casing: Stick-up | Flush Mount
Well Depth: 9.67' Screen Length: 5'
Casing Diam: 0.75" Borehole Diam.: 1.75"
Depth to Water: 4.35'
Measuring Point: TOC
Calculated Purge Volume: ~~1420+250 mL~~ 1394mL KL
Pump Start: 12:12 Pump Stop: 1223

☑ **Well Pumped Dry**
Pumped Dry (date/time): 12:23 / 1228 OSS / Bail
Initial Purge (~~gal~~ mL): 1400 / ≈20mL / 250mL
Pump restarted (date/time): Bail 09:30 3-2-16
Recovered Water Level: 7.69'

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (~~gal~~ mL)	Flow Rate (~~gal~~ mL/min)	Comments
15:37	7.50	2302	—	7.56	13.70	55.0	–	1400		

Head space 0.8

3-1-16 AMB

GROUNDWATER/SURFACE WATER SAMPLING FORM

Project: 700S. 1600E. PCE Plume Project Number: 620289 Location ID: A-GW-013
Date: 3-4-16 Field Team: A.B.

Purge Method

☐ Dedicated Submersible ☐ Portable Bladder ☒ Peristaltic
☐ Portable Submersible ☐ Dedicated Bailer ☐ Grab
☐ Dedicated Bladder ☐ Disposable Bailer ☐ Other:

Sample Analyses
Sample ID: A-GW-013 Sample Time: 15:45
☐ Blind Duplicate: ☐ MS/MSD
☒ VOCs ☐ Sulfate/Nitrite/Nitrate
☐ SVOCs ☐ TOC
☐ Cations ☐ Sulfide
☐ Trace Metals ☐
☐ Anions/Alkalinity/TDS ☐

Well/Purge
Well Casing: Stick-up | Flush Mount
Well Depth: 25.04 Screen Length:
Casing Diam: 0.75' Borehole Diam.: 1.75'
Depth to Water: 21.44 / 22.50
Measuring Point: TOC
Calculated Purge Volume: 1500mL + 250mL + 2000mL
Head/Turb/YSI second set
Pump Start: 14:40 Pump Stop: 15:15

☐ **Well Pumped Dry**
Pumped Dry (date/time): 3-4-16 1515 / 3-4-16 1530
Initial Purge (gal): 1500mL / 2000
Pump restarted (date/time):
Recovered Water Level:

Time	pH	SC (μS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. ~~(gal)~~ mL	Flow Rate (~~gal~~ mL/min)	Comments
AMB ~~14:15~~							-			
3-4-16 15:16	7.12	1459	196	5.70	17.17	51.0	-	1500		
15:30	7.00	1456	149	4.35	16.42	30.0	-	3500		
								3750		

Headspace collected 3-4-16 14:15
= 0.0

AMB 3-4-16

GROUNDWATER/SURFACE WATER SAMPLING FORM

Project: 7005. 160 E PCE Plume Project Number: 6202899 Location ID: A-GW-014
Date: 3-2-16 Field Team: AO

Purge Method

☐ Dedicated Submersible ☐ Portable Bladder ☒ Peristaltic
☐ Portable Submersible ☐ Dedicated Bailer ☐ Grab
☐ Dedicated Bladder ☐ Disposable Bailer ☐ Other:

Sample Analyses
Sample ID: A-GW-014 Sample Time: 13:45
☐ Blind Duplicate: ☐ MS/MSD
☒ VOCs ☐ Sulfate/Nitrite/Nitrate
☒ SVOCs ☐ TOC
☐ Cations ☐ Sulfide
☒ Trace Metals ☒ pH
☒ Anions/Alkalinity/TDS ☐

Well/Purge
Well Casing: Stick-up / Flush Mount (circled) 20'
Well Depth: ~~18.51~~ Screen Length: 5'
Casing Diam: 0.75' Borehole Diam.: 01.75'
Depth to Water: 10.00 / 12.03
Measuring Point: TOC
Calculated Purge Volume: ~~7050 mL~~ KL 2619mL
Pump Start: ~~12:45~~ AO 12:54 Pump Stop: 14:32

☐ **Well Pumped Dry**
Pumped Dry (date/time):
Initial Purge (gal):
Pump restarted (date/time):
Recovered Water Level:

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. ~~(gal)~~ mL	Flow Rate (~~gal~~ mL/min)	Comments
13:22	7.07	1968	524	1.10	13.98	12.4	-	3000	150	
13:25	6.94	1948	601	0.43	13.69	-27.9	-	3450	200	
13:28	6.90	1955	738	0.42	13.71	-48.3	-	4050	200	
13:31	6.86	1962	592	0.54	13.71	-59.4	-	4650	200	
13:34	6.82	1965	500	0.52	13.78	-66.4	-	5280	200	
13:37	6.81	1963	412	0.46	13.80	-70.3	-	5850	200	
13:40	6.81	1968	369	0.43	13.86	-74.6	-	6450	200	
								7050		

Headspace = 0.3

3-2-16
AMB

GROUNDWATER/SURFACE WATER SAMPLING FORM

Project: 700 S. 1600 E PCE Plume Project Number: 6202899 Location ID: A-GW-01S

Date: 2-29-16 Field Team: A. Bugler, S. Steigerwald

Purpose Method

- ☐ Dedicated Submersible
- ☐ Portable Bladder
- ☒ Peristaltic
- ☐ Portable Submersible
- ☐ Dedicated Bailer
- ☐ Grab
- ☐ Dedicated Bladder
- ☐ Disposable Bailer
- ☐ Other: ____________

Sample Analyses

Sample ID: A-GW-01S Sample Time: 10:00

- ☒ Blind Duplicate: A-GW-01SD
- ☒ MS/MSD
- ☒ VOCs
- ☐ Sulfate/Nitrite/Nitrate
- ☒ SVOCs
- ☐ TOC
- ☐ Cations
- ☐ Sulfide
- ☒ Trace Metals
- ☒ pH (collected at 12:00)
- ☒ Anions/Alkalinity/TDS
- ☐ ____________

Well/Purge

Well Casing: ~~Stick-up~~ | Flush Mount

Well Depth: ~~70.5'~~ 5.0 Screen Length: 5'

Casing Diam: 0.75" Borehole Diam.: 01.75'

Depth to Water: 70.5'

Measuring Point: TOC

Calculated Purge Volume: ≈5200 1179mL

Pump Start: 09:15 Pump Stop: 12:02

☐ **Well Pumped Dry**

Pumped Dry (date/time): ____________ Pump restarted (date/time): ____________

Initial Purge (gal): ____________ Recovered Water Level: ____________

Time	pH	SC (μS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. ~~(gal)~~ mL	Flow Rate mL ~~(gal~~/min)	Comments
09:41	7.17	1483	367	6.00	11.60	135.5	-	800mL	350	
09:44	6.70	1425	344	1.38	10.74	112.8	-	2150	300	
09:47	6.47	1422	17.3	1.36	10.64	105.1	-	3050	200	
09:51	6.48	1422	14.8	1.34	10.66	100.4	-	3650	125	
09:54	6.47	1422	10.5	1.34	10.70	99.7	-	4025	125	
09:57	6.45	1422	9.28	1.36	10.66	99.7	-	4400	125	
10:00	6.45	1422	6.77	1.35	10.63	99.8	-	4775	125	
								5150		

Headspace 1.0ppm

2-29-16 AMB

GROUNDWATER/SURFACE WATER SAMPLING FORM

Project: 700 S. 1600 E PCE Plume Project Number: 6202899 Location ID: A-GW-016

Date: 2-28-16 (28 AMB) Field Team: AB KL SS

Purge Method

☐ Dedicated Submersible ☐ Portable Bladder ☒ Peristaltic

☐ Portable Submersible ☐ Dedicated Bailer ☐ Grab

☐ Dedicated Bladder ☐ Disposable Bailer ☐ Other: ____

Sample Analyses

Sample ID: A-GW-016 Sample Time: 11:31

☐ Blind Duplicate: ____ ☐ MS/MSD

☒ VOCs ☐ Sulfate/Nitrite/Nitrate

☐ SVOCs ☐ TOC

☐ Cations ☐ Sulfide

☐ Trace Metals ☐ ____

☐ Anions/Alkalinity/TDS ☐ ____

Well/Purge

Well Casing: Stick-up / Flush Mount

Well Depth: 8' ~~Screen Length~~: 5ft

Casing Diam: 0.75" Borehole Diam.: 1.75"

Depth to Water: 2.00

Measuring Point: TOC

Calculated Purge Volume: ~~3825~~ KL 1572 mL

Pump Start: 11:00 Pump Stop: 11:50

☐ **Well Pumped Dry**

Pumped Dry (date/time): ____ Pump restarted (date/time): ____

Initial Purge (gal): ____ Recovered Water Level: ____

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. ~~(gal)~~ mL	Flow Rate ~~(gal/min)~~ mL	Comments
11:13	7.04	1501	—	10.00	10.67	118.4	-	1200	175	
11:16	6.94	1508	—	8.89	10.93	113.7	-	1725	175	
11:19	6.90	1512	—	8.85	11.00	105.6	-	2250	175	
11:21	6.88	1513	—	8.80	11.02	103.3	-	2775	175	
11:24	6.86	1513	—	8.80	11.01	100.7	-	3300	175	
								3825		

Headspace: 0.1 ppmV

2-28-16 AMB

GROUNDWATER/SURFACE WATER SAMPLING FORM

Project: 7c-S. 16 ve E - PCE plume Project Number: 6202899 Location ID: A-GW-17
Date: 3-1-16 Field Team: AB SS

Purge Method

☐ Dedicated Submersible ☐ Portable Bladder ☐ Peristaltic
☐ Portable Submersible ☐ Dedicated Bailer ☐ Grab
☐ Dedicated Bladder ☒ Disposable Bailer ☐ Other: ______

Sample Analyses
Sample ID: A-GW-17 Sample Time: 12:00 3-2-16
☐ Blind Duplicate: ______ ☐ MS/MSD
☒ VOCs ☐ Sulfate/Nitrite/Nitrate
☐ SVOCs ☐ TOC
☐ Cations ☐ Sulfide
☐ Trace Metals ☐ ______
☐ Anions/Alkalinity/TDS ☐ ______

Well/Purge
Well Casing: Stick-up / Flush Mount
Well Depth: 15.10' Screen Length: 5'
Casing Diam: 0.75" Borehole Diam.: 1.75"
Depth to Water: 14.40'
Measuring Point: TOC
Calculated Purge Volume: ~~175 mL~~ KL 183 mL
Pump Start: NA Pump Stop: NA

☐ **Well Pumped Dry**
Pumped Dry (date/time): 3-1-16
Initial Purge (~~gal~~ mL): 175 mL

Bailer ~~Pump restarted~~ (date/time): 3-2-16 11:25
Recovered Water Level: 14.32

Time	pH	SC (μS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments
water quality measurements not taken due to low groundwater recharge										
• Bailed 3 well volumes at 13:30 3/1/16										
• Not collected for screening samples										

• Collected 2 VOA vials, ~~Bailer stuck~~ KL
• No water quality
Headspace oil

3-1-16 AMB

GROUNDWATER/SURFACE WATER SAMPLING FORM

Project: 700 S. 1600 E. PCE Plume Project Number: 6202899 Location ID: A-GW-018
Date: 3-1-16 Field Team: AB, SS

Purpose Method

3-1-16

☐ Dedicated Submersible ☐ Portable Bladder 3-2-16 200 mL sample ☒ Peristaltic (400 mL)

☐ Portable Submersible ☐ Dedicated Bailer ☐ Grab

☐ Dedicated Bladder ☒ Disposable Bailer ☐ Other:

Sample Analyses

Sample ID: A-GW-018 Sample Time: 11:30 3-2-16

☐ Blind Duplicate: ☐ MS/MSD

☒ VOCs ☐ Sulfate/Nitrite/Nitrate

☐ SVOCs ☐ TOC

☐ Cations ☐ Sulfide

☐ Trace Metals ☐

☐ Anions/Alkalinity/TDS ☐

Well/Purge

Well Casing: Stick-up | Flush Mount

Well Depth: 10.10 Screen Length: 5'

Casing Diam: 0.75" Borehole Diam.: 1.75"

Depth to Water: 8.15'

Measuring Point: TOC

Calculated Purge Volume: 3-1-16 400 mL 3-2-16 +200 510mL

Pump Start: 14:08 Pump Stop: 14:10

☑ **Well Pumped Dry**

Pumped Dry (date/time): 14:08 to 14:10 (400mL) Pump restarted (date/time):

Initial Purge (gal): 400 mL Recovered Water Level:

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. ~~(gal)~~ mL	Flow Rate (gal/min)	Comments
1130	7.50	1728 ~~1.728~~ KL	–	10.42	11.85	135.8	8.27	640 ~~0.085~~ KL	–	

Headspace collected 3-1-16 = 0.3ppm

3-1-16 AMB

GROUNDWATER/SURFACE WATER SAMPLING FORM

Project: 700 S. 1600 E PCE Plume Project Number: 6202899 Location ID: A-GW-019

Date: 3-1-16 Field Team: A.B. S.S.

Purpose Method 3-1-16

- ☐ Dedicated Submersible
- ☐ Portable Bladder
- ☒ Peristaltic 350ml
- ☐ Portable Submersible
- ☐ Dedicated Bailer
- ☐ Grab
- ☐ Dedicated Bladder
- ☒ Disposable Bailer (Sample 3-3-16 250mL)
- ☐ Other:

Sample Analyses

Sample ID: A-GW-019 Sample Time:

- ☐ Blind Duplicate:
- ☐ MS/MSD 3-3-16
- ☒ ~~VOCs~~ KL
- ☐ Sulfate/Nitrite/Nitrate
- ☐ SVOCs
- ☐ TOC
- ☐ Cations
- ☐ Sulfide
- ☐ Trace Metals
- ☐
- ☐ Anions/Alkalinity/TDS
- ☐

Well/Purge

Well Casing: Stick-up | ~~Flush Mount~~

Well Depth: 12.53' Screen Length: 5'

Casing Diam: 0.75" Borehole Diam.: 1.45"

Depth to Water: 11.17'

Measuring Point: TOC

Calculated Purge Volume: 600ml

Pump Start: 09:56 Pump Stop:

☐ Well Pumped Dry

Pumped Dry (date/time): 09:59 / 10:09 10:09:30

Initial Purge (~~gal~~ mL): 300 / 750mL

Pump restarted (date/time):

Recovered Water Level:

Time	pH	SC (μS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments
water did not recharge in well, KL not sampled										

WL=12.48' @ 9:00 3-3-16

WL=12.53' @ 16:45 3-5-16

GW-001 3-1-16 AMB

GROUNDWATER/SURFACE WATER SAMPLING FORM

Project: 700 S 1600 E PCE Plume
Project Number: B202899
Location ID: A-GW-020
Date: 3-1-16
Field Team: AB SS

Purge Method

- ☐ Dedicated Submersible
- ☐ Portable Bladder
- ☒ Peristaltic
- ☐ Portable Submersible
- ☐ Dedicated Bailer
- ☐ Grab
- ☐ Dedicated Bladder
- ☐ Disposable Bailer
- ☐ Other:

Sample Analyses

Sample ID: A-GW-020
Sample Time: 11:10

- ☐ Blind Duplicate:
- ☐ MS/MSD
- ☒ VOCs
- ☐ Sulfate/Nitrite/Nitrate
- ☒ SVOCs
- ☐ TOC
- ☐ Cations
- ☐ Sulfide
- ☒ Trace Metals
- ☒ pH
- ☒ Anions/Alkalinity/TDS
- ☐

Well/Purge

Well Casing: Stick-up | Flush Mount
Well Depth: 16.60'
Screen Length: 5'
Casing Diam: 0.75"
Borehole Diam.: 1.75"
Depth to Water: 11.47' / 11.53
Measuring Point: TOC
Calculated Purge Volume: ~~3700~~ 1327 mL
Pump Start: 10:35
Pump Stop: 11:45

☐ **Well Pumped Dry**

Pumped Dry (date/time):
Pump restarted (date/time):
Initial Purge (gal):
Recovered Water Level:

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. ~~(gal)~~ mL	Flow Rate (~~gal~~ mL/min)	Comments
10:46	6.84	1520	127	1.83	12.57	85.9	-	1000	200	
10:49	6.84	1518	140	1.70	12.64	75.8	-	1600	200	
10:52	6.83	1516	226	1.63	12.76	67.9	-	2200	200	
10:55	6.82	1514	501	1.66	12.86	60.5	-	2800	150	
10:58	6.81	1516	276	1.71	12.87	60.2	-	3250	150	
								3700		

Headspace 0.1

3-1-16 AMB

GROUNDWATER/STORMWATER/SURFACE WATER SAMPLING FORM

Project: AOU-1: East Side Springs   Project Number: 6202899   Location ID: GW-20

Date: 5/4/16   Field Team: K. Lazzen / N. Lundvall

Purpose Method

☐ Dedicated Submersible   ☐ Portable Bladder   ☒ Peristaltic

☐ Portable Submersible   ☐ Dedicated Bailer   ☐ Grab

☐ Dedicated Bladder   ☐ Disposable Bailer   ☐ Other:

Sample Analyses

Sample ID: A-GW-20   Sample Time: 1520

☐ Blind Duplicate: ☐ MS/MSD

☐ VOCs   ☐ Sulfate/Nitrite/Nitrate

☐ SVOCs   ☐ TOC

☐ Cations   ☐ Sulfide

☐ Trace Metals   ☒ Isotope (O, H)

☐ Anions/Alkalinity/TDS   ☐

Well/Purge

Well Casing: Stick-up | Flush Mount

Well Depth: 16.5'   Screen Length: 5'

Casing Diam: 0.75"   Borehole Diam.: 2.5"

Depth to Water: 11.25'

Measuring Point: TOC

Calculated Purge Volume: ~~37 KL~~ 3.7 L

Pump Start: 1510   Pump Stop: 1522

☐ Well Pumped Dry

Pumped Dry (date/time): –   Pump restarted (date/time): –

Initial Purge (gal): –   Recovered Water Level: –

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (L)	Flow Rate (L/min)	Comments
1515	7.16	1336	>1000	4.07	17.1	187.6	–	2.0	0.4	–
1520	7.16	1340	>1000	4.60	16.2	173.3	–	4.0	0.4	–

KR

KR 5/4/16

GROUNDWATER/SURFACE WATER SAMPLING FORM (*CONTINUED*)

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments
										KR

Final Parameters

Time	pH	SC	Turb.	DO	Temp	ORP	DTW	Vol Evac.	Flow Rate
	7.16	1340	>1000	4.60	16.2	173.3	—	4.0	0.4
Stable:	☐	☐	☐	☐	☐	☐	☐	☐	☐
	± 0.1	± 3%	± 10%	± 0.3 mg/L	± 3%	± 10 mV	Δ <0.3 ft		

Sampling Comments: Purged 3 well volumes, parameters not stabilized

Well Specific Observations/Access Issues:

Knoto Pepper 5/4/16

GROUNDWATER/SURFACE WATER SAMPLING FORM

Project: 700 S. 1600 E. PCE Plume Project Number: 6207899 Location ID: A-GW-021
Date: 3-1-16 Field Team: AB SS

Purge Method

☐ Dedicated Submersible ☐ Portable Bladder ☒ Peristaltic
☐ Portable Submersible ☐ Dedicated Bailer ☐ Grab
☐ Dedicated Bladder ☐ Disposable Bailer ☐ Other: ____

Sample Analyses
Sample ID: A-GW-021 Sample Time: 15:25
☐ Blind Duplicate: ____ ☐ MS/MSD
☒ VOCs ☐ Sulfate/Nitrite/Nitrate
☐ SVOCs ☐ TOC
☐ Cations ☐ Sulfide
☐ Trace Metals ☐ ____
☐ Anions/Alkalinity/TDS ☐ ____

Well/Purge
Well Casing: Stick-up | Flush Mount
Well Depth: 16.45 Screen Length: 5'
Casing Diam: 0.75" Borehole Diam.: 1.75"
Depth to Water: 9.97' / 14.40
Measuring Point: TOC
Calculated Purge Volume: ~~4250 mL~~ KL 1698 mL
Pump Start: 14:43 Pump Stop: 15:53

☐ **Well Pumped Dry**
Pumped Dry (date/time): ____ Pump restarted (date/time): ____
Initial Purge (gal): ____ Recovered Water Level: ____

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. ~~(gal)~~ mL	Flow Rate (gal/min)	Comments
15:05	7.26	1537	432	6.18	13.68	10.0	–	2000	200	
							–	2600	150	
15:12	6.99	1564	250	3.73	12.32	-71.9	–	3050	100	
15:15	6.91	1554	180	4.34	12.28	-74.6	–	3350	100	
15:18	6.93	1553	113	4.76	12.26	-71.8	–	3650	100	
15:21	6.96	1557	102	4.52	12.30	-81.4	–	3950	100	
								4250		

Headspace 3

3-1-16 AB

GROUNDWATER/SURFACE WATER SAMPLING FORM

Project: 700 S. 1600 E. PCE Plume Project Number: 6202899 Location ID: A-GW-22
Date: 3-01-16 Field Team: A. Bugher

Purge Method

☐ Dedicated Submersible ☐ Portable Bladder ☒ Peristaltic
☐ Portable Submersible ☐ Dedicated Bailer ☐ Grab
☐ Dedicated Bladder ☐ Disposable Bailer ☐ Other:

Sample Analyses
Sample ID: A-GW-22 Sample Time: 09:30
☐ Blind Duplicate: ☐ MS/MSD
☒ VOCs ☐ Sulfate/Nitrite/Nitrate
☐ SVOCs ☐ TOC
☐ Cations ☐ Sulfide
☐ Trace Metals ☐
☐ Anions/Alkalinity/TDS ☐

Well/Purge
Well Casing: Stick-up | Flush Mount
Well Depth: 15.22' Screen Length: 5'
Casing Diam: 0.75" Borehole Diam.: 1.75"
Depth to Water: 5.33' / 5.96
Measuring Point: TOC
Calculated Purge Volume: ~~4860 mL~~ 2590 mL
Pump Start: 08:36 Pump Stop: 09:32

☐ **Well Pumped Dry**
Pumped Dry (date/time): Pump restarted (date/time):
Initial Purge (gal): Recovered Water Level:

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (~~gal~~ mL)	Flow Rate (~~gal~~ mL/min)	Comments
09:08	6.90	1202	791	5.45	9.73	87.9	-	2000 mL	200	
09:11	6.97	1215	—	5.16	9.69	70.4	-	2600 mL	150	
09:14	7.01	1193	—	5.58	9.72	66.4	-	3050	150	
09:17	7.02	1189	—	5.51	9.72	62.6	-	3500	150	
09:20	7.03	1189	—	5.46	9.75	60.6	-	3950	150	
09:23	7.04	1186	—	5.50	9.73	57.6	-	4400	150	
								4850		

Headspace 0.2 ppm

3-1-16 AMB

GROUNDWATER/SURFACE WATER SAMPLING FORM

Project: 700 S. 1600 E. PCE Plume Project Number: 6202899 Location ID: A-GW-023
Date: 02/22/16 Field Team: A. Bygher, K. Lazzeri, S. Staigerwald

Purpose Method

☐ Dedicated Submersible ☐ Portable Bladder ☒ Peristaltic
☐ Portable Submersible ☐ Dedicated Bailer ☐ Grab
☐ Dedicated Bladder ☐ Disposable Bailer ☐ Other:

Sample Analyses
Sample ID: A-GW-023 Sample Time: 14:25
☐ Blind Duplicate: ☒ MS/MSD
☒ VOCs ☐ Sulfate/Nitrite/Nitrate
☐ SVOCs ☐ TOC
☐ Cations ☐ Sulfide
☐ Trace Metals ☐
☐ Anions/Alkalinity/TDS ☐

Well/Purge
Well Casing: Stick-up | Flush Mount
Well Depth: 13.5 Screen Length: 5.0
Casing Diam: .75" Borehole Diam.: 1.75"
Depth to Water: 8.90 / Set 11.2
Measuring Point: TOC
Calculated Purge Volume: ~~2 gal~~ KL ~~0.32 gal~~ KL 1204 mL
Pump Start: 13:55 Pump Stop: 14:31

☐ **Well Pumped Dry**
Pumped Dry (date/time): Pump restarted (date/time):
Initial Purge (gal): Recovered Water Level:

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. ~~(gal)~~ mL	Flow Rate ~~(gal~~ mL/min)	Comments
13:58	~~6.6~~ AB 12	1.374	BRR	5.36	10.76	111.5	-	600	200	
14:02	BRR	1.484		2.89	10.87	64.5	-	~~500~~ KL 1100	125	
14:05	BRR	1.558		2.78	11.06	47.9	-	~~600~~ KL 1700	200	
14:09	11.68	1.627		3.87	11.43	33.9	-	~~1000~~ KL 2700	250	
14:12	BRR	1.644		2.44	11.52	20.7	-	~~750~~ KL 3450	250	
14:15	BRR	1.647		2.42	11.41	12.5	-	~~450~~ KL 3900	150	
14:18	BRR	1.646		2.50	11.30	8.0	-	~~450~~ KL 4350	150	
14:21	—	1.648		2.43	11.33	3.3	—	~~450~~ KL 4800	150	
	• YSI not working (pH)							~~4600~~ KL	~~4800~~ KL ~~1475~~ KL	
	• Turbidity out of range									

2-22-16 AMB Headspace: 0.0 ppmV

GROUNDWATER/SURFACE WATER SAMPLING FORM

Project: 700 S. 1600 E. PCE Plume Project Number: 6202899 Location ID: A-GW-024
Date: 2-23-16 Field Team: A. Bugher

Purpose Method

☐ Dedicated Submersible ☐ Portable Bladder ☒ Peristaltic Purge
☐ Portable Submersible ☐ Dedicated Bailer ☐ Grab
☐ Dedicated Bladder ☒ Disposable Bailer Sample ☐ Other:

Sample Analyses
Sample ID: A-GW-024 Sample Time: 09:20 2-~~23~~24-16 (AMB)
☐ Blind Duplicate: ☐ MS/MSD
☒ VOCs ☐ Sulfate/Nitrite/Nitrate
☐ SVOCs ☐ TOC
☐ Cations ☐ Sulfide
☐ Trace Metals ☐
☐ Anions/Alkalinity/TDS ☐

Well/Purge
Well Casing: Stick-up | Flush Mount
Well Depth: 18.5' Screen Length: 18'-13' = 5'
Casing Diam: 0.75" Borehole Diam.: 1.75"
Depth to Water: 16.9 / 17.1 / Pumpset / End / 2-28 10.71 -12.39
Measuring Point: TOC
Calculated Purge Volume: ~~1000 mL~~ KL 419 mL
Pump Start: 13:50 08:50 Pump Stop: 14:00 08:56

☑ **Well Pumped Dry**
Pumped Dry (date/time): 2-23-16 14:00 / 2-24-16 08:50 Pump restarted (date/time):
Initial Purge (~~gal~~ mL): 300 / ~~700 mL AMB~~ 700 mL Recovered Water Level:

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (~~gal~~ mL)	Flow Rate (gal/min)	Comments
~~• Single Reading on Bailer~~ SEE BELOW K.LAZZERI										
• Recharge rate too slow										
0915	7.40	1191	9.24	7.21	11.16	181.2	–	700 (2-24-16)		
:										
:										
:										
:										
:										
:										

AMB 2-23-16

GROUNDWATER/SURFACE WATER SAMPLING FORM

Project: 7005 1600E PCE PLUME Project Number: 6202897 Location ID: A-GW-025
Date: 29 FEB 2016 Field Team: AB SS

Purpose Method

Purge Method

☐ Dedicated Submersible ☐ Portable Bladder ☐ Peristaltic
☐ Portable Submersible ☑ ~~Dedicated Bailer~~ ☐ Grab
☐ Dedicated Bladder ☒ Disposable Bailer ☐ Other:______

Sample Analyses
Sample ID: A-GW-025 Sample Time: 15:05
☐ Blind Duplicate:______ ☐ MS/MSD
☒ VOCs ☐ Sulfate/Nitrite/Nitrate
☐ SVOCs ☐ TOC
☐ Cations ☐ Sulfide
☐ Trace Metals ☐ ______
☐ Anions/Alkalinity/TDS ☐ ______

Well/Purge
Well Casing: Stick-up | Flush Mount
Well Depth: 30.10 Screen Length: 5 ft
Casing Diam: 0.75 in Borehole Diam.: 9.75 in
Depth to Water: 23.10 / 24.22
Measuring Point: Top of Casing
Calculated Purge Volume: 1800 mL
Pump Start:______ Pump Stop:______

☐ **Well Pumped Dry**
Pumped Dry (date/time):______ Pump restarted (date/time):______
Initial Purge (gal):______ Recovered Water Level:______

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (~~gal~~) mL	Flow Rate (gal/min)	Comments
14:58	7.02	1352	—	5.71	15.94	99	—	1800	—	

Headspace: 0.0ppmV

2-29-16
AMB

GROUNDWATER/SURFACE WATER SAMPLING FORM

Project: 700S. 1600E PCE Plume Project Number: 6202899 Location ID: A-GW-026
Date: 2-27-16 Field Team: A. Bugher, S. Stalzgerbald

Purge Method

- ☐ Dedicated Submersible
- ☐ Portable Bladder
- ☒ Peristaltic 9:54
- ☐ Portable Submersible
- ☐ Dedicated Bailer
- ☐ Grab
- ☐ Dedicated Bladder
- ☒ Disposable Bailer 14:00 and to sample
- ☐ Other:

Sample Analyses

Sample ID: A-GW-026 Sample Time: 10:45 2-28-16

- ☐ Blind Duplicate:
- ☐ MS/MSD
- ☒ VOCs
- ☐ Sulfate/Nitrite/Nitrate
- ☐ SVOCs
- ☐ TOC
- ☐ Cations
- ☐ Sulfide
- ☐ Trace Metals
- ☐
- ☐ Anions/Alkalinity/TDS
- ☐

Well/Purge

Well Casing: Stick-up | ~~Flush Mount~~
Well Depth: 17.65 Screen Length: 5 ft
Casing Diam: 0.75" Borehole Diam.: 1.75"
Depth to Water: 16.48 1403 17.64 1013 17.51
Measuring Point: TOC
Calculated Purge Volume: 307 mL
Pump Start: 9:54 Pump Stop: 9:57

☑ **Well Pumped Dry**

Pumped Dry (date/time): 9:57
Initial Purge (mL): >200mL
Pump restarted (date/time):
Recovered Water Level:

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (mL)	Flow Rate (gal/min)	Comments
1400	7.15	2091	>1000	7.22	15.08	96.1	—	~~200~~ 440		~~WQ at~~ Sample ~~Collection~~ SMS

- Collected 4/5 VOA 2/27
  2 at 13:50, 1 at 17:00
- C/P at 10:45 2-28-16
- ~~pump Comp~~
- Slow to recharge

Headspace: 0.0 ppmV

2-27-16 AB

GROUNDWATER/SURFACE WATER SAMPLING FORM

Project: 7005-1600 BPCE Plume Project Number: 6202899 Location ID: A-6W-027
Date: 3-5-6 Field Team:

Purge Method

- ☐ Dedicated Submersible ☐ Portable Bladder ☒ Peristaltic
- ☐ Portable Submersible ☐ Dedicated Bailer ☐ Grab
- ☐ Dedicated Bladder ☐ Disposable Bailer ☐ Other:

Sample Analyses
Sample ID: A-6W-027 Sample Time: 11:15

- ☐ Blind Duplicate: ☒ MS/MSD
- ☒ VOCs ☐ Sulfate/Nitrite/Nitrate
- ☐ SVOCs ☐ TOC
- ☐ Cations ☐ Sulfide
- ☐ Trace Metals ☐
- ☐ Anions/Alkalinity/TDS ☐

Well/Purge
Well Casing: Stick-up | Flush Mount
Well Depth: 30.17 Screen Length: 5'
Casing Diam: 0.75' Borehole Diam.: 1.75"
Depth to Water: 20.23 / 21.24
Measuring Point: TOC
Calculated Purge Volume: 5200
Pump Start: 10:30 Pump Stop: 11:30

☐ **Well Pumped Dry**
Pumped Dry (date/time): Pump restarted (date/time):
Initial Purge (gal): Recovered Water Level:

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. ~~(gal)~~ mL	Flow Rate ~~(gal~~ mL/min)	Comments
10:56	6.74	1640	137	4.66	13.03	112.7	-	2500	150	
10:59	6.75	1600	85.4	4.90	13.41	90.7	-	2950	150	
11:02	6.78	1596	116	5.05	13.50	83.8	-	3400	150	
11:05	6.79	1588	60.6	5.20	13.59	80.6	-	3850	150	
11:06	6.80	1584	86.1	5.36	13.62	79.4	-	4300	150	
11:11	6.81	1580	72.4	5.36	13.62	79.9	-	4750	150	
								5200		
	1%	3%	10%	.3mg	3%	10mV				

Headspace 0.7

AMB 3-5-16

GROUNDWATER/SURFACE WATER SAMPLING FORM

Project: 700 S. 1600 E. PCE Plume Project Number: 6202899 Location ID: A-GW-028
Date: 3-5-16 Field Team: AB

Purge Method

- ☐ Dedicated Submersible
- ☐ Portable Bladder
- ☒ Peristaltic
- ☐ Portable Submersible
- ☐ Dedicated Bailer
- ☐ Grab
- ☐ Dedicated Bladder
- ☐ Disposable Bailer
- ☐ Other: ______

Sample Analyses

Sample ID: A-GW-028 Sample Time: 13:10

- ☐ Blind Duplicate: ______
- ☐ MS/MSD
- ☐ VOCs
- ☐ Sulfate/Nitrite/Nitrate
- ☐ SVOCs
- ☐ TOC
- ☐ Cations
- ☐ Sulfide
- ☐ Trace Metals
- ☐ ______
- ☐ Anions/Alkalinity/TDS
- ☐ ______

Well/Purge

Well Casing: Stick-up | Flush Mount
Well Depth: 24.20' Screen Length: ______
Casing Diam: 0.75" Borehole Diam.: 1.75"
Depth to Water: 18.45' / 22.50'
Measuring Point: TOC
Calculated Purge Volume: 6500
Pump Start: 12:17 Pump Stop: 13:20

☐ **Well Pumped Dry**

Pumped Dry (date/time): ______ Pump restarted (date/time): ______
Initial Purge (gal): ______ Recovered Water Level: ______

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (~~gal~~ mL)	Flow Rate (~~gal~~ mL/min)	Comments
12:44	7.07	1654	—	5.17	14.88	70.8	-	3500	150	
12:47	6.93	1633	—	5.27	15.15	56.9	-	3950	150	
12:50	6.92	1619	—	5.20	15.22	40.6	-	4400	150	
12:53	6.95	1626	—	5.29	14.86	40.6	-	4850	150	
12:56	6.92	1109	—	5.54	15.17	20.8	-	5300	100	
12:59	6.93	1629	—	5.22	14.83	20.6	-	5600	100	
13:02	6.93	1629	—	5.27	15.20	7.9	-	5900	100	
13:05	6.96	1639	—	5.00	14.80	-26.0	-	6200	100	
								6500		

Empty YSI →
Running out of water →

Headspace = 1.0

AMB 3-5-16

GROUNDWATER/SURFACE WATER SAMPLING FORM

Project: 700 S 1600E PCE PLUME | Project Number: 626899 | Location ID: A-GW-31
Date: 28 FEB 2016 | Field Team: A. BUGHER

Purpose Method

- ☐ Dedicated Submersible
- ☐ Portable Bladder
- ☐ Peristaltic
- ☐ Portable Submersible
- ☐ Dedicated Bailer
- ☐ Grab
- ☐ Dedicated Bladder
- ☒ Disposable Bailer
- ☐ Other: ____

Sample Analyses

Sample ID: A-GW-31 Sample Time: 1010

- ☐ Blind Duplicate: ____ ☐ MS/MSD
- ☒ VOCs ☐ Sulfate/Nitrite/Nitrate
- ☐ SVOCs ☐ TOC
- ☐ Cations ☐ Sulfide
- ☐ Trace Metals ☐ ____
- ☐ Anions/Alkalinity/TDS ☐ ____

Well/Purge

Well Casing: Stick-up | Flush Mount

Well Depth: 35 Screen Length: 5 ft

Casing Diam: 0.75 in Borehole Diam.: 0.75"

Depth to Water: 31.87 / 31.86

Measuring Point: TOP OF CASING

Calculated Purge Volume: ____

Pump Start: NA Pump Stop: NA

CASING VOL = 0.2719 L x 3 casing vol = 816 mL

☐ **Well Pumped Dry**

Pumped Dry (date/time): ____ Pump restarted (date/time): ____

Initial Purge (gal): ____ Recovered Water Level: ____

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (~~gal~~ mL)	Flow Rate (gal/min)	Comments
1008	6.67	~~2.057~~ 2057 KL	838	5.91	15.62	19.1	–	1200		

Headspace 0.0 ppm

2-28-16 AMB

EA

GROUNDWATER/SURFACE WATER SAMPLING FORM

Project: 700 S. 1600 PCE Plume   Project Number: 6202899   Location ID: A-GW-039
Date: 2/23/16   Field Team: A. Boghos

Purpose Method

☐ Dedicated Submersible   ☐ Portable Bladder   ☒ Peristaltic
☐ Portable Submersible   ☐ Dedicated Bailer   ☐ Grab
☐ Dedicated Bladder   ☐ Disposable Bailer   ☐ Other:

Sample Analyses
Sample ID: A-GW-039   Sample Time: 11:15
AMB ~~☒ Blind Duplicate: A-GW-039D~~   ☐ MS/MSD
☒ VOCs   ☐ Sulfate/Nitrite/Nitrate
☐ SVOCs   ☐ TOC
☐ Cations   ☐ Sulfide
☐ Trace Metals   ☐
☐ Anions/Alkalinity/TDS   ☐

Well/Purge
Well Casing: Stick-up | Flush Mount
Well Depth: 22.7'   Screen Length: 22.7-17.7 = 5'
Casing Diam: 0.75"   Borehole Diam.: 1.75"
Depth to Water: 16.48'   pump set 19.50
Measuring Point: TOC
Calculated Purge Volume: ~~~3 gal~~ KL 1629 mL   Final 1860
Pump Start: 10:20   Pump Stop: 11:28

☐ **Well Pumped Dry**
Pumped Dry (date/time):   Pump restarted (date/time):
Initial Purge (gal):   Recovered Water Level:

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min) KL (mL/min)	Comments
10:44	~~6.94~~ AMB	2.038	—	6.35	14.67	166.3	—	2975 ~~3425~~ ~~450~~ KL	150	
10:47	~~7.05~~ AMB	2.040	—	6.52	14.71	165.9	—	3875	150	—
10:50	↓	2.043	469	6.61	14.70	165.4	—	4325	150	
10:53		2.043	225	6.66	14.76	165.1	—	4775	150	
10:56		2.044	155	6.74	14.73	164.9	—	5225	150	
10:59		2.044	72.9	6.84	14.66	164.7	—	5675	150	
11:02		2.044	56.0	6.85	14.74	164.4	—	6125	150	
11:05		2.043	38.9	6.75	14.80	164.0	—	6575	150	
11:08		2.044	51.7	6.73	14.75	163.8	—	7025	150	
11:11	↓	2.044	48.1	6.63	14.69	163.6	—	7475	150	
	• YSI	Not	working	(pH only)				~~7475~~ ~~6129~~ KL		

2975 mL ~~collected~~ purged KL the day before

~~Head space = 0.0 ppm AMB~~

* Ran out of water, did not collect Dup, did not collect headspace

2-23-16 AMB

GROUNDWATER/SURFACE WATER SAMPLING FORM

Project: 7005.1600 PCE Plume   Project Number: 6202959   Location ID: A-GW-040
Date: 3-3-16   Field Team: AB

Purge Method

- ☐ Dedicated Submersible
- ☐ Portable Bladder
- ☐ Peristaltic
- ☐ Portable Submersible
- ☐ Dedicated Bailer
- ☐ Grab
- ☐ Dedicated Bladder
- ☒ Disposable Bailer
- ☐ Other:

Sample Analyses

Sample ID: A-GW-040   Sample Time: 12:20

- ☐ Blind Duplicate:
- ☐ MS/MSD
- ☒ VOCs
- ☐ Sulfate/Nitrite/Nitrate
- ☐ SVOCs
- ☐ TOC
- ☐ Cations
- ☐ Sulfide
- ☐ Trace Metals
- ☐
- ☐ Anions/Alkalinity/TDS
- ☐

Well/Purge

Well Casing: Stick-up | Flush Mount
Well Depth: 38.90   Screen Length: 5
Casing Diam: 0.75'   Borehole Diam.: 1.75
Depth to Water: 34.53
Measuring Point: TOC
Calculated Purge Volume: 1200 mL
Pump Start: Pump Stop:

☐ **Well Pumped Dry**

Pumped Dry (date/time):   Pump restarted (date/time):
Initial Purge (gal):   Recovered Water Level:

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. ~~(gal)~~ mL	Flow Rate (gal/min)	Comments
12:09	7.15	1480	—	6.71	16.95	46.1	-	1200		

purge 1125 mL   Headspace 0.1

AMB 3-3-16

GROUNDWATER/SURFACE WATER SAMPLING FORM

Project: 700 S. 1600 E PCE Plume Project Number: 6202899 Location ID: A-GW-043
Date: ~~3-3~~ 3-3-16 Field Team: A.B.

Purge Method

- ☐ Dedicated Submersible
- ☐ Portable Submersible
- ☐ Dedicated Bladder
- ☐ Portable Bladder
- ☐ Dedicated Bailer
- ☒ Disposable Bailer
- ☐ Peristaltic
- ☐ Grab
- ☐ Other: ______

~~Purged on 3-3~~ KL
~~Sampled 3-4~~

Sample Analyses

Sample ID: A-GW-043 Sample Time: 16:30

- ☐ Blind Duplicate: ______
- ☐ MS/MSD
- ☒ VOCs
- ☐ Sulfate/Nitrite/Nitrate
- ☐ SVOCs
- ☐ TOC
- ☐ Cations
- ☐ Sulfide
- ☐ Trace Metals
- ☐ ______
- ☐ Anions/Alkalinity/TDS
- ☐ ______

Well/Purge

Well Casing: Stick-up | Flush Mount
Well Depth: 35' Screen Length: 5'
Casing Diam: 0.75" Borehole Diam.: 1.75"
Depth to Water: 30.5'
Measuring Point: TOC
Calculated Purge Volume: 650 + 250 = 900 mL
Pump Start: NA Pump Stop: NA

☐ **Well Pumped Dry**

Pumped Dry (date/time): ______ Pump restarted (date/time): ______
Initial Purge (gal): ______ Recovered Water Level: ______

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. ~~(gal)~~ mL	Flow Rate (gal/min)	Comments
3-4-16 → 0930 ~~09:30~~ KL	6.51	1458	170	5.27	12.34	138.8	-	250	-	

Sampled 3/3 and water quality measured on 3/4
water quality parameters taken the following day due to low recharge

Headspace = 0.7

AMB 3-3-16

GROUNDWATER/SURFACE WATER SAMPLING FORM

Project: 700 S. 1600E. PCE Plume Project Number: 6202899 Location ID: A-GW-046
Date: 02-24-16 Field Team: A. Bogher

Purge Method

- ☐ Dedicated Submersible
- ☐ Portable Bladder
- ☐ Peristaltic
- ☐ Portable Submersible
- ☐ Dedicated Bailer
- ☐ Grab
- ☐ Dedicated Bladder
- ☒ Disposable Bailer
- ☐ Other: ____

Sample Analyses

Sample ID: A-GW-046 Sample Time: 1520

- ☐ Blind Duplicate: ____
- ☐ MS/MSD
- ☒ VOCs
- ☐ Sulfate/Nitrite/Nitrate
- ☐ SVOCs
- ☐ TOC
- ☐ Cations
- ☐ Sulfide
- ☐ Trace Metals
- ☐ ____
- ☐ Anions/Alkalinity/TDS
- ☐ ____

Well/Purge

Well Casing: Stick-up | Flush Mount

Well Depth: 35' Screen Length: 30-35'

Casing Diam: 0.75' Borehole Diam.: 1.75"

Depth to Water: 29.58' / final 29.8'

Measuring Point: TOC

Calculated Purge Volume: ~~1500mL~~ KL 1420mL

Pump Start: NA Pump Stop: NA

☐ **Well Pumped Dry**

Pumped Dry (date/time): ____ Pump restarted (date/time): ____

Initial Purge (gal): ____ Recovered Water Level: ____

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments
• Recharge rate too slow, single reading ~~on Back~~ SEE BELOW K. LAZZERI										
• Lost Bailer twice, fished it out										
1110	7.08	1.638	>1000	5.78	17.69	55.3	29.81	1500mL	-	

2-24-16 AMB

GROUNDWATER/SURFACE WATER SAMPLING FORM

Project: 700 S. 1600 E. PCE Plume Project Number: 6202899 Location ID: A-GW-048
Date: 2-25-16 Field Team: A. Bugbee

Purge Method

☐ Dedicated Submersible ☐ Portable Bladder ☐ Peristaltic
☐ Portable Submersible ☐ Dedicated Bailer ☐ Grab
☐ Dedicated Bladder ☒ Disposable Bailer ☐ Other:

Sample Analyses
Sample ID: A-GW-048 Sample Time: 12:10
☐ Blind Duplicate: ☐ MS/MSD
☒ VOCs ☐ Sulfate/Nitrite/Nitrate
☐ SVOCs ☐ TOC
☐ Cations ☐ Sulfide
☐ Trace Metals ☐
☐ Anions/Alkalinity/TDS ☐

Well/Purge
Well Casing: Stick-up | Flush Mount
Well Depth: 40.10' Screen Length: 40-35=5'
Casing Diam: 0.75" Borehole Diam.: 1.75"
Depth to Water: 36.34'
Measuring Point: TOC
Calculated Purge Volume: ~~1000mL~~ 984mL KL
Pump Start: NA Pump Stop: NA

☐ **Well Pumped Dry**
Pumped Dry (date/time): Pump restarted (date/time):
Initial Purge (gal): Recovered Water Level:

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments
1205	7.24	1529	>1000	11.0	12.10	43.2	–	1000mL		

*CLP never sampled, bailer stuck in well ~30'

ATTEMPTED MULTIPLE TIMES OVER COURSE OF THREE DAYS TO DISLODGE BAILER COULD NOT DISLODGE. ABANDONED AND REPUSHED WELL POINT (NEW).

2-25-16 AmB

GROUNDWATER/SURFACE WATER SAMPLING FORM

Project: 700 S. 1600 E. PCE Plume Project Number: 6202899 Location ID: Redfill A-6U-048
Date: 3-3-16 Field Team: AO

Purpose Method

☐ Dedicated Submersible ☐ Portable Bladder ☐ Peristaltic
☐ Portable Submersible ☐ Dedicated Bailer ☐ Grab
☐ Dedicated Bladder ☒ Disposable Bailer ☐ Other:______

Sample Analyses
Sample ID: A-6U-048 Sample Time: 10:15
☐ Blind Duplicate:______ ☐ MS/MSD 3-3-16
☒ VOCs ☐ Sulfate/Nitrite/Nitrate
☐ SVOCs ☐ TOC
☐ Cations ☐ Sulfide
☐ Trace Metals ☐ ______
☐ Anions/Alkalinity/TDS ☐ ______

Well/Purge
Well Casing: Stick-up | Flush Mount
Well Depth: 37.06' Screen Length: 5'
Casing Diam: 0.75" Borehole Diam.: 1.75'
Depth to Water: ~~36.79~~ 35.79'
Measuring Point: TOC
Calculated Purge Volume: 325mL
Pump Start:______ Pump Stop:______

☐ **Well Pumped Dry**
Pumped Dry (date/time):______ Pump restarted (date/time):______
Initial Purge (gal):______ Recovered Water Level:______

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments
10:05	6.93	0.753	–	8.00	14.97	131.2				

• Collected water quality, headspace, 1 CLP VOA

• Kristin collected 1VOA ≈ 12:00

• AB collected Final VOA 15:15

water ~~colum~~ 0.27'
3 well volumes = ~~20mL~~ 325 Headspace = 0.2

AMB 3-3-16

GROUNDWATER/SURFACE WATER SAMPLING FORM

Project: 700 S. 1600 E. PCE Plume　　Project Number: 6202899　　Location ID: A-GW-49

Date: 25 FEB 2016　　Field Team: A. Bynar, S Staigerwald

Purpose Method

☐ Dedicated Submersible　☐ Portable Bladder　☑ Peristaltic

☐ Portable Submersible　☐ Dedicated Bailer　☐ Grab

☐ Dedicated Bladder　☐ Disposable Bailer　☐ Other: ____

Sample Analyses

Sample ID: A-GW-49　　Sample Time: 13:25

☒ ~~Blind Duplicate: A-GW-49-D~~ ☒ MS/MSD

☑ VOCs　☑ Sulfate/Nitrite/Nitrate

☑ SVOCs　☐ TOC

☐ Cations　☐ Sulfide

☑ Trace Metals　☒ pH

☑ Anions/Alkalinity/TDS　☐ ____

Well/Purge

Well Casing: Stick-up | Flush Mount

Well Depth: 12.75　　Screen Length: 5 ft

Casing Diam: 0.75 in　　Borehole Diam.: 1.75"

Depth to Water: 7.57　7.48

Measuring Point: Top of casing

Calculated Purge Volume: ~~≈4300~~ KL 1380 mL

Pump Start: ~~13:10~~ 13:10 AMS　　Pump Stop: 14:00

☐ **Well Pumped Dry**

Pumped Dry (date/time): ____　　Pump restarted (date/time): ____

Initial Purge (gal): ____　　Recovered Water Level: ____

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. mL ~~(gal)~~	Flow Rate mL ~~(gal~~/min)	Comments
13:11	6.92	1775	3	6.20	9.63	81.6	-	∅	325	
13:14	6.90	1766	36.8	5.26	9.77	80.8	-	975	300	
13:17	6.87	1761	12.9	4.97	9.78	81.6	-	1875	300	
13:20	6.85	1762	7.33	4.89	9.68	81.7	-	2775	275	
13:23	6.85	1764	4.64	4.77	9.69	81.9	-	3600	225	
								4275		

• Did not take Dup, needed volume for alkalinity.

Head space = 0.3 ppm

2-25-16 AMB

GROUNDWATER/SURFACE WATER SAMPLING FORM

Project: 700 S. 1600 E. PCE Plume
Date: 2-29-16

Project Number: 6702899
Location ID: A-GW-050
Field Team: A. Bigler, S. Stazzernat

Purge Method

☐ Dedicated Submersible ☐ Portable Bladder ☒ Peristaltic

☐ Portable Submersible ☐ Dedicated Bailer ☐ Grab

☐ Dedicated Bladder ☐ Disposable Bailer ☐ Other:

Sample Analyses

Sample ID: A-GW-050 Sample Time: 13:20

☐ Blind Duplicate: ☐ MS/MSD

☒ VOCs ☐ Sulfate/Nitrite/Nitrate

☒ SVOCs ☐ TOC

☐ Cations ☐ Sulfide

☒ Trace Metals ☒ pH

☒ Anions/Alkalinity/TDS ☐

Well/Purge

Well Casing: Stick-up | ~~Flush Mount~~

Well Depth: 9.09' Screen Length: 5'

Casing Diam: 0.75" Borehole Diam.: 1.75"

Depth to Water: 2.69 ; 3.28

Measuring Point: TOC

Calculated Purge Volume: ~~5000 mL~~ 1522 mL

Pump Start: 12:46 Pump Stop: 13:35

☐ **Well Pumped Dry**

Pumped Dry (date/time):

Pump restarted (date/time):

Initial Purge (gal):

Recovered Water Level:

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (~~gal~~ mL)	Flow Rate (~~gal~~ mL/min)	Comments
12:57	6.79	1591	—	1.10	8.52	53.2	-	2000 mL	350	
13:00	6.73	1619	290	0.92	8.49	47.1	-	2950	150	
13:03	6.70	1648	263	0.77	8.45	38.1	-	3300	150	
13:06	6.65	1674	243	0.67	8.46	28.8	-	3750	150	
13:09	6.62	1697	201	0.56	8.39	25.1	-	4100	150	
13:12	6.61	1699	165	0.52	8.28	22.3	-	4550	150	
								5000		

Head space = 0.1 ppm

2-29-16 AMB

GROUNDWATER/SURFACE WATER SAMPLING FORM

Project: 7005.1608E PCE Plume
Date: 3-4-16
Project Number: 6202899
Field Team: A.B.
Location ID: A-GW-051

Purge Method

☐ Dedicated Submersible ☐ Portable Bladder ☒ Peristaltic
☐ Portable Submersible ☐ Dedicated Bailer ☐ Grab
☐ Dedicated Bladder ☐ Disposable Bailer ☐ Other:

Sample Analyses

Sample ID: A-GW-051 Sample Time: 18:40

☐ Blind Duplicate: ☐ MS/MSD

☒ VOCs ☐ Sulfate/Nitrite/Nitrate
☐ SVOCs ☐ TOC
☐ Cations ☐ Sulfide
☐ Trace Metals ☐
☐ Anions/Alkalinity/TDS ☐

Well/Purge

Well Casing: Stick-up | Flush Mount
Well Depth: 15.10' Screen Length: 5'
Casing Diam: 0.75" Borehole Diam.: 1.75"
Depth to Water: 12.47' / 12.62'
Measuring Point: TOC
Calculated Purge Volume: 4650
Pump Start: 18:10 Pump Stop: 18:50

☐ **Well Pumped Dry**

Pumped Dry (date/time):
Pump restarted (date/time):
Initial Purge (gal):
Recovered Water Level:

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. mL ~~(gal)~~	Flow Rate mL ~~(gal~~/min)	Comments
18:20	6.86	1492	631	4.67	12.20	14.5	-	1500	150	
18:23	6.83	1493	60.6	3.85	12.12	0.5	-	1950	150	
18:26	6.84	1493	27.8	3.63	12.23	-16.5	-	2400	150	
18:29	6.87	1493	18.7	3.67	12.26	-19.3	-	2850	150	
18:32	6.80	1494	15.2	3.60	12.26	-15.0	-	3300	150	
18:35	6.78	1493	7.90	3.55	12.27	-17.5	-	3750	150	
18:38	6.80	1495	6.12	3.59	12.25	-13.9	-	4200	150	
								4650		

Headspace 0.6

AMB 3-4-16

EA

GROUNDWATER/SURFACE WATER SAMPLING FORM

Project: 7005, 1600E, PCE Plume
Date: 3-3-16
Project Number: 6202895
Field Team: AD
Location ID: A-GW-052

Purpose Method

☐ Dedicated Submersible ☐ Portable Bladder ☒ Peristaltic
☐ Portable Submersible ☐ Dedicated Bailer ☐ Grab
☐ Dedicated Bladder ☐ Disposable Bailer ☐ Other:

Sample Analyses
Sample ID: A-GW-052 Sample Time: 13:50
☒ Blind Duplicate: A-GW-052-B ☒ MS/MSD
☒ VOCs ☐ Sulfate/Nitrite/Nitrate
☐ SVOCs ☐ TOC
☐ Cations ☐ Sulfide
☐ Trace Metals ☐
☐ Anions/Alkalinity/TDS ☐

Well/Purge
Well Casing: Stick-up | Flush Mount
Well Depth: 30.09 Screen Length: 5'
Casing Diam: 0.75" Borehole Diam.: 1.75"
Depth to Water: 22.84 / 22.84
Measuring Point: TOC
Calculated Purge Volume: ~~6000 mL~~ KL 1900 mL
Pump Start: 13:20 Pump Stop: 14:08

☐ **Well Pumped Dry**
Pumped Dry (date/time):
Initial Purge (gal):
Pump restarted (date/time):
Recovered Water Level:

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (~~gal~~) mL	Flow Rate (~~gal~~/min) mL/min	Comments
13:33	7.04	1600	275	6.20	16.53	99.7	-	3000	150	
13:36	7.02	1598	165	6.21	16.27	88.7	-	3450	200	
13:39	6.97	1598	107	6.29	16.24	86.0	-	4050	200	
13:42	6.95	1597	71.5	6.15	16.24	84.4	-	4650	150	
13:45	6.91	1594	63.5	6.16	16.08	84.2	-	5100	150	
13:48	6.62	1593	55.4	6.20	16.26	83.5	-	5550	150	
								6000		

± 0.1 ± 3% ± 10% ± 0.3 ± 3% ± 10

Headspace ≥1.1

AMP 3-3-16

GROUNDWATER/SURFACE WATER SAMPLING FORM

Project: 700S. 1600E. PCE Plume Project Number: 6202899 Location ID: A-GW-053

Date: 3-3-16 Field Team: AB

Purge Method

☐ Dedicated Submersible ☐ Portable Bladder ☒ Peristaltic

☐ Portable Submersible ☐ Dedicated Bailer ☐ Grab

☐ Dedicated Bladder ☐ Disposable Bailer ☐ Other: ____

Sample Analyses

Sample ID: A-GW-053 Sample Time: 16:05

☐ Blind Duplicate: ____ ☐ MS/MSD

☒ VOCs ☐ Sulfate/Nitrite/Nitrate

☐ SVOCs ☐ TOC

☐ Cations ☐ Sulfide

☐ Trace Metals ☐ ____

☐ Anions/Alkalinity/TDS ☐ ____

Well/Purge

Well Casing: Stick-up | Flush Mount

Well Depth: 14.94' Screen Length: 5'

Casing Diam: 0.75" Borehole Diam.: 1.75"

Depth to Water: 10.76' / 10.90

Measuring Point: TOC

Calculated Purge Volume: ~~7100 mL~~ 1095mL KL

Pump Start: 15:27 Pump Stop: 16:10

☐ **Well Pumped Dry**

Pumped Dry (date/time): ____ Pump restarted (date/time): ____

Initial Purge (gal): ____ Recovered Water Level: ____

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (~~gal~~ mL)	Flow Rate (~~gal~~ mL/min)	Comments
15:46	6.58	1538	—	2.19	11.94	35.1	-	3500	200	
15:49	6.53	1517	—	2.08	11.81	30.6	-	4100	200	
15:51	6.54	1511	—	2.05	11.78	28.7	-	4700	200	
15:54	6.55	1508	996	2.04	11.73	27.1	-	5300	200	
15:57	6.53	1507	674	2.02	11.67	27.1	-	5900	200	
16:00	6.56	1507	428	2.00	11.68	26.8	-	6500	200	
								7100		

±0.1 ±3% ±10% ±0.3 ±3% ±10

Head space = 1.3

AMB

GROUNDWATER/SURFACE WATER SAMPLING FORM

Project: 700S, 1600 E PCE Plume Project Number: 6202879 Location ID: A-GW-054
Date: 3-4-16 Field Team: A.B.

Purpose Method

☐ Dedicated Submersible ☐ Portable Bladder ☐ Peristaltic
☐ Portable Submersible ☐ Dedicated Bailer ☐ Grab
☐ Dedicated Bladder ☒ Disposable Bailer ☐ Other:

Sample Analyses AMB No Sample
Sample ID: ~~A-GW-054~~ Sample Time:
☐ Blind Duplicate: ☐ MS/MSD
☐ VOCs ☐ Sulfate/Nitrite/Nitrate
☐ SVOCs ☐ TOC
☐ Cations ☐ Sulfide
☐ Trace Metals ☐
☐ Anions/Alkalinity/TDS ☐

Well/Purge
Well Casing: Stick-up Flush Mount
Well Depth: 13.74' Screen Length: 5'
Casing Diam: 0.75" Borehole Diam.: 1.75"
Depth to Water: No water
Measuring Point: TOC
Calculated Purge Volume:
Pump Start: Pump Stop:

☐ **Well Pumped Dry**
Pumped Dry (date/time): Pump restarted (date/time):
Initial Purge (gal): Recovered Water Level:

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments
No water in well, not sampled KL										

AMB 3-4-16

GROUNDWATER/SURFACE WATER SAMPLING FORM

Project: 7005. 1600 E. PCE Plume   Project Number: 6202899   Location ID: AGW ~~005~~ 055 AB

Date: 3-4-16   Field Team: A.B.

Purpose Method

☐ Dedicated Submersible   ☐ Portable Bladder   ~~☒ Peristaltic~~

☐ Portable Submersible   ☐ Dedicated Bailer   ☐ Grab

☐ Dedicated Bladder   ☒ Disposable Bailer   ☐ Other: ______

Sample Analyses

Sample ID: A-GW-055   Sample Time: 15:30

☐ Blind Duplicate: ______   ☐ MS/MSD

☒ VOCs   ☐ Sulfate/Nitrite/Nitrate   ALS

☐ SVOCs   ☐ TOC   08:00 3-5-16 CUP

☐ Cations   ☐ Sulfide

☐ Trace Metals   ☐ ______

☐ Anions/Alkalinity/TDS   ☐ ______

Well/Purge

Well Casing: Stick-up | Flush Mount

Well Depth: 22.90   Screen Length: 5'

Casing Diam: 0.75"   Borehole Diam.: 1.75"

Depth to Water: 21.97

Measuring Point: TOC

Calculated Purge Volume: 250 mL

Pump Start: NA   Pump Stop: NA

☑ **Well ~~Pumped~~ BAILED Dry** 3-4-16

Pumped Dry (date/time): 11:00

Initial Purge (gal): 250 mL

Pump restarted (date/time): ______

Recovered Water Level: ______

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. ~~(gal)~~ mL	Flow Rate (gal/min)	Comments
~~3-5-16~~ ~~11:02~~ KL 1545 KL	6.94	1645	~	7.50	15.50	85.5	-	200		

Headspace = 0.0 .
collected ~~14:00 3-5-16~~ KL

Need 240mL purge

AMB 3-4-16

EA

GROUNDWATER/SURFACE WATER SAMPLING FORM

Project: 7005.1600 E PCE Plume Project Number: 6202899 Location ID: A-GW-059
Date: 3-5-16 Field Team: AB KL

Purge Method

☐ Dedicated Submersible ☐ Portable Bladder ☒ Peristaltic
☐ Portable Submersible ☐ Dedicated Bailer ☐ Grab
☐ Dedicated Bladder ☐ Disposable Bailer ☐ Other:

Sample Analyses
Sample ID: A-GW-059 Sample Time: 16:20
☐ Blind Duplicate: ☐ MS/MSD
☒ VOCs ☐ Sulfate/Nitrite/Nitrate
☐ SVOCs ☐ TOC
☐ Cations ☐ Sulfide
☐ Trace Metals ☐
☐ Anions/Alkalinity/TDS ☐

Well/Purge
Well Casing: Stick-up | Flush Mount
Well Depth: 15' Screen Length: 5'
Casing Diam: 0.75" Borehole Diam.: 1.75"
Depth to Water: 8.58'/ 11.22'
Measuring Point: TOC
Calculated Purge Volume: 4150
Pump Start: 15:48 Pump Stop: 16:25

☐ **Well Pumped Dry**
Pumped Dry (date/time): Pump restarted (date/time):
Initial Purge (gal): Recovered Water Level:

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. ~~(gal)~~ mL	Flow Rate ~~(gal~~ mL/min)	Comments
15:57	6.90	1607	—	0.76	13.10	26.5	—	500	150	
16:00	6.80	1595	—	0.56	13.09	21.2	—	950		
16:03	6.83	1556	—	0.39	13.24	11.4	—	1400		
16:06	6.83	1597	78.2	0.40	13.03	6.7	—	1850		
16:09	6.85	1588	24	0.28	13.17	1.4	—	2300		
16:12	6.86	1591	27.5	0.26	13.22	-2.6	—	2750		
16:15	6.87	1591	28.3	0.25	13.22	-2.9	—	3250		
16:18	6.86	1590	25.5	0.25	13.17	-3.3	—	3700		
								4150		

Headspace: 0.3 ppmV

AMB 3-5-16

GROUNDWATER/SURFACE WATER SAMPLING FORM

Project: 700 S. 1600 E. PCE Plume Project Number: 6202899 Location ID: A-GW-060

Date: 3-8-16 Field Team: AB KL

Purge Method

- ☐ Dedicated Submersible
- ☐ Portable Bladder
- ☒ Peristaltic
- ☐ Portable Submersible
- ☐ Dedicated Bailer
- ☐ Grab
- ☐ Dedicated Bladder
- ☐ Disposable Bailer
- ☐ Other: ______

Sample Analyses

Sample ID: A-GW-060 Sample Time: 13:30

- ☐ Blind Duplicate: ______
- ☐ MS/MSD
- ☒ VOCs
- ☐ Sulfate/Nitrite/Nitrate
- ☐ SVOCs
- ☐ TOC
- ☐ Cations
- ☐ Sulfide
- ☐ Trace Metals
- ☐ ______
- ☐ Anions/Alkalinity/TDS
- ☐ ______

Well/Purge

Well Casing: Stick-up | Flush Mount

Well Depth: 15' Screen Length: 5'

Casing Diam: 0.75" Borehole Diam.: 1.75"

Depth to Water: 9.70' / 9.96'

Measuring Point: TOC

Calculated Purge Volume: 6000 mL

Pump Start: 12:58 Pump Stop: ______

☐ **Well Pumped Dry**

Pumped Dry (date/time): ______ Pump restarted (date/time): ______

Initial Purge (gal): ______ Recovered Water Level: ______

YSI hooked up 13:10

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. ~~(gal)~~ mL	Flow Rate mL ~~(gal~~/min)	Comments
13:13	6.94	1874	–	8.83	15.72	184.0	–	3000	200	
13:16	6.79	1794	–	4.01	14.10	135.5	–	3600	200	
13:19	6.76	1786	–	3.87	13.77	131.1	–	4200	200	
13:22	6.72	1779	960	3.90	13.69	130.4	–	4800	200	
13:25	6.70	1778	441	3.99	13.73	130.4	–	5400	200	
								6000		
	0.1	3%	10%	0.3	3%	10mV				

☆ Field Blank 003 @ 13:00 Headspace = 0.1

AMB 3-8-16

GROUNDWATER/SURFACE WATER SAMPLING FORM

Project: 7005. 1600 E. PCE Plume Project Number: 6202899 Location ID: A-GW-061
Date: 3-5-16 Field Team: AB, KL

Purge Method

☐ Dedicated Submersible ☐ Portable Bladder ☒ Peristaltic
☐ Portable Submersible ☐ Dedicated Bailer ☐ Grab
☐ Dedicated Bladder ☐ Disposable Bailer ☐ Other:

Sample Analyses
Sample ID: A-GW-061 Sample Time: 15:05
☐ Blind Duplicate: ☐ MS/MSD
☒ VOCs ☐ Sulfate/Nitrite/Nitrate
☐ SVOCs ☐ TOC
☐ Cations ☐ Sulfide
☐ Trace Metals ☐
☐ Anions/Alkalinity/TDS ☐

Well/Purge
Well Casing: Stick-up | Flush Mount
Well Depth: 20' Screen Length: 5'
Casing Diam: 0.75" Borehole Diam.: 1.75"
Depth to Water: 11.71' / 11.77'
Measuring Point: TOC
Calculated Purge Volume: 6450
Pump Start: 14:30 Pump Stop: 15:15

☐ **Well Pumped Dry**
Pumped Dry (date/time): Pump restarted (date/time):
Initial Purge (gal): Recovered Water Level:

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. ~~(gal)~~ ml	Flow Rate ~~(gal~~/min)	Comments
14:47	6.51	1665	666	4.43	13.73	80.4	–	3000 → 3450	150	
14:50	6.49	1665	340	4.10	13.57	87.9	–	4050	200	
14:53	6.50	1665	201	4.07	13.49	89.5	–	4650	200	
14:56	6.53	1665	95.7	3.98	13.40	92.6	–	5250	200	
14:59	6.53	1663	62.4	3.92	13.30	94.3	–	5850	200	
15:02	6.51	1664	44.1	3.85	13.14	96.4	–	6450	200	
~~15:05~~ AMB										

AMB 3-5-16

GROUNDWATER/SURFACE WATER SAMPLING FORM

Project: 700S. 600E. PCE Plume Project Number: 6202899 Location ID: A-GW-062
Date: 3-8-16 Field Team: AB. KL

Purge Method

- ☐ Dedicated Submersible ☐ Portable Bladder ☒ Peristaltic
- ☐ Portable Submersible ☐ Dedicated Bailer ☐ Grab
- ☐ Dedicated Bladder ☐ Disposable Bailer ☐ Other:

Sample Analyses
Sample ID: A-GW-062 Sample Time: 14:25
- ☐ Blind Duplicate: ☐ MS/MSD
- ☒ VOCs ☐ Sulfate/Nitrite/Nitrate
- ☐ SVOCs ☐ TOC
- ☐ Cations ☐ Sulfide
- ☐ Trace Metals ☐
- ☐ Anions/Alkalinity/TDS ☐

Well/Purge
Well Casing: Stick-up | Flush Mount
Well Depth: 20.05 Screen Length: 5'
Casing Diam: 0.75" Borehole Diam.: 1.95"
Depth to Water: 12.82' / 12.83'
Measuring Point: TOC
Calculated Purge Volume: KL
Pump Start: 13:50 Pump Stop: 14:30

☐ **Well Pumped Dry**
Pumped Dry (date/time): Pump restarted (date/time):
Initial Purge (gal): Recovered Water Level:

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. ~~(gal)~~ mL	Flow Rate (gal/min)	Comments
14:08	6.89	1439	504	5.07	14.03	127.1	-	2500	200	
14:11	6.86	1437	187	4.99	13.93	126.0	-	3100	200	
14:14	6.86	1434	115	5.05	13.76	124.1	-	3700	200	
14:17	6.86	1431	57.0	5.11	13.63	122.5	-	4300	200	
14:20	6.87	1429	42.6	5.10	13.57	121.6	-	4900	200	
								5500		
	0.1	3%	10%	0.3	3%	10mv				

Head Space = 0.1

AMB 3-8-16

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C-2

Driller Start Cards

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GARY R. HERBERT
Governor
SPENCER J. COX
Lieutenant Governor

State of Utah
DEPARTMENT OF NATURAL RESOURCES
Division of Water Rights

MICHAEL R. STYLER
Executive Director

KENT L. JONES
State Engineer/Division Director

February 10, 2016

DEPT OF VETERANS AFFAIRS
C/O LYNNE WELSH
500 FOOTHILL DRIVE
SALT LAKE CITY, UT 84102

Dear Applicant:

RE: MONITOR WELL#: 1657001M00

Regarding your request to drill **50 MONITOR WELL(S),** the anticipated drilling depths will exceed the minimum regulated and reporting depth of 30 feet, thereby requiring permission from the Division of Water Rights to proceed with this project.

The specifications outlined in your non-production well project application meet the State Engineer's requirements and permission is **HEREBY GRANTED.** Therefore, this letter is your authorization to proceed with the construction of the well(s) in accordance with those specifications and with respect to the following provisions:

1) Small diameter casing is to be used in the construction of the well(s) and no more water is to be diverted than is necessary to determine the quality of the groundwater by obtaining representative samples as required by the project.

2) The well(s) must be drilled by a currently licensed Utah driller and must be drilled in a manner consistent with the construction standards cited in the Utah State Administrative Rules for Well Drillers (R655-4 UAC).

3) The enclosed Driller (START) Card form must be given to the licensed driller for his submittal prior to commencing well construction. The other enclosed form is the 'Applicant Card.' It is **YOUR RESPONSIBILITY** to sign and return this Applicant Card form to our office upon well completion.

4) At such time as the well(s) are no longer utilized to monitor ground water or the intent of the project is terminated, the well(s) must be permanently abandoned in a manner consistent with the Administrative Rules (R655-4 UAC).

5) **THIS PERMIT MAY NOT BE THE ONLY AUTHORIZATION NEEDED TO DRILL A WELL.** The applicant is responsible for obtaining other permits/authorizations from federal agencies, other state agencies, and/or local jurisdictions as applicable. Moreover, if the applicant is not the landowner, it is the applicant's responsibility to ensure that approvals/permissions have been obtained to trespass and drill a well(s) on the property. **THIS PERMIT DOES NOT GIVE AUTHORIZATION TO TRESPASS ON PRIVATE PROPERTY.**

NOTE: Please be aware that your permission to proceed with the drilling under this authorization expires June 10, 2016.

Sincerely,

Jim Goddard

Jim V. Goddard, P.G.
Well Drilling Program

1594 West North Temple, Suite 220, PO Box 146300, Salt Lake City, UT 84114-6300
telephone (801) 538-7240 • facsimile (801) 538-7467 • *www.waterrights.utah.gov*

APPLICANT CARD for MONITOR WELL#: 1657001M00

IMPORTANT: THIS CARD MUST BE COMPLETED, SIGNED AND RETURNED BY THE WELL OWNER/APPLICANT AS SOON AS THE WELL IS DRILLED BY A LICENSED UTAH WATER WELL DRILLER.

OWNER/APPLICANT NAME: DEPT OF VETERANS AFFAIRS
MAILING ADDRESS: C/O LYNNE WELSH, 500 FOOTHILL DRIVE, SALT LAKE CITY, UT
PHONE NUMBER: 801-582-1565
WELL LOCATION: You are authorized to drill 50 MONITOR WELLs. SEE BELOW.
WELL UTM COORDINATES:
WELL ACTIVITY: NEW (X) REPAIR ( ) REPLACE ( ) ABANDON ( )
CLEAN ( ) DEEPEN ( )

WELL COMPLETION DATE: April 6, 2016

NAME OF DRILLING COMPANY/LICENSEE: Tim Stine/Cascade Drilling

Owner/Applicant Signature   Date

***COMPLETE, SIGN AND RETURN THIS PORTION UPON FINAL WELL COMPLETION - DO NOT GIVE THIS CARD TO LICENSED WELL DRILLER - YOU MUST RETURN IT.
STATE OF UTAH DIVISION OF WATER RIGHTS Phone No. 801-538-7416 Fax No. 801-538-7467

COMMENTS:

MONITOR WELL LOCATIONS:

(1)	N	353	W	380--S4 cor	S05	T	1S	R	1E	SL	**(2)**	S	1940	E	670--N4	cor	S08	T	1S	R	1E	SL
(3)	S	229	W	779--E4 cor	S08	T	1S	R	1E	SL	**(4)**	S	698	W	302--E4	cor	S08	T	1S	R	1E	SL
(5)	S	680	W	1888--E4 cor	S08	T	1S	R	1E	SL	**(6)**	S	524	W	1067--E4	cor	S08	T	1S	R	1E	SL
(7)	N	664	E	1858--W4 cor	S08	T	1S	R	1E	SL	**(8)**	S	1011	E	990--NW	cor	S08	T	1S	R	1E	SL
(9)	N	39	E	2273--W4 cor	S08	T	1S	R	1E	SL	**(10)**	S	756	W	7--N4	cor	S08	T	1S	R	1E	SL
(11)	S	1339	E	462--N4 cor	S08	T	1S	R	1E	SL	**(12)**	S	118	W	43--E4	cor	S08	T	1S	R	1E	SL
(13)	N	423	W	402--E4 cor	S08	T	1S	R	1E	SL	**(14)**	N	214	W	792--E4	cor	S08	T	1S	R	1E	SL
(15)	N	241	W	181--E4 cor	S08	T	1S	R	1E	SL	**(16)**	N	131	W	574--E4	cor	S08	T	1S	R	1E	SL
(17)	N	222	W	1167--E4 cor	S08	T	1S	R	1E	SL	**(18)**	N	484	W	446--E4	cor	S08	T	1S	R	1E	SL
(19)	N	381	W	613--E4 cor	S08	T	1S	R	1E	SL	**(20)**	N	437	W	860--E4	cor	S08	T	1S	R	1E	SL
(21)	N	825	W	1019--E4 cor	S08	T	1S	R	1E	SL	**(22)**	N	575	W	1202--E4	cor	S08	T	1S	R	1E	SL
(23)	N	700	W	1646--E4 cor	S08	T	1S	R	1E	SL	**(24)**	N	964	W	1248--E4	cor	S08	T	1S	R	1E	SL
(25)	S	1712	E	886--N4 cor	S08	T	1S	R	1E	SL	**(26)**	N	1108	W	952--E4	cor	S08	T	1S	R	1E	SL
(27)	S	1548	E	905--N4 cor	S08	T	1S	R	1E	SL	**(28)**	N	1177	W	1335--E4	cor	S08	T	1S	R	1E	SL
(29)	S	1394	E	1142--N4 cor	S08	T	1S	R	1E	SL	**(30)**	S	1313	E	903--N4	cor	S08	T	1S	R	1E	SL
(31)	S	1180	E	1071--N4 cor	S08	T	1S	R	1E	SL	**(32)**	S	858	W	1224--NE	cor	S08	T	1S	R	1E	SL
(33)	S	843	E	891--N4 cor	S08	T	1S	R	1E	SL	**(34)**	S	361	E	1036--N4	cor	S08	T	1S	R	1E	SL
(35)	S	486	E	540--N4 cor	S08	T	1S	R	1E	SL	**(36)**	S	29	E	1258--N4	cor	S08	T	1S	R	1E	SL
(37)	S	263	E	337--N4 cor	S08	T	1S	R	1E	SL	**(38)**	S	1035	E	398--N4	cor	S08	T	1S	R	1E	SL
(39)	N	14	W	1644--E4 cor	S08	T	1S	R	1E	SL	**(40)**	S	1192	W	712--NE	cor	S08	T	1S	R	1E	SL
(41)	N	800	W	691--E4 cor	S08	T	1S	R	1E	SL	**(42)**	S	338	W	820--N4	cor	S08	T	1S	R	1E	SL

(43) S 1189 W 322--N4 cor S08 T 1S R 1E SL **(44)** S 1938 E 114--N4 cor S08 T 1S R 1E SL
(45) N 1764 W 646--S4 cor S08 T 1S R 1E SL **(46)** N 125 W 2168--E4 cor S08 T 1S R 1E SL
(47) S 1086 W 1121--E4 cor S08 T 1S R 1E SL **(48)** S 336 W 1719--E4 cor S08 T 1S R 1E SL
(49) S 355 E 583--W4 cor S09 T 1S R 1E SL **(50)** N 460 E 287--W4 cor S09 T 1S R 1E SL

START/APPLICANT CARD INSTRUCTIONS: First, for each well, you must give a Driller (Start) Card to the licensed driller with whom you contract to construct the well. Second, it is your responsibility to sign and return this Applicant Card to this office immediately after completion of the well. **CAUTION: There may be local health requirements for the actual siting of your well. Please check with the proper local authority before construction begins. See the enclosed sheet addressing construction information.**

DRILLER (START) CARD for MONITOR WELL#: 1657001M00

|IMPORTANT: THIS CARD MUST BE RECEIVED BY THE DIVISION OF WATER RIGHTS PRIOR TO THE BEGINNING OF WELL CONSTRUCTION -- REQUIRED ONLY FOR WELLS DEEPER THAN 30 FT.|

OWNER/APPLICANT NAME: DEPT OF VETERANS AFFAIRS
MAILING ADDRESS: C/O LYNNE WELSH, 500 FOOTHILL DRIVE, SALT LAKE CITY, UT
PHONE NUMBER: 801-582-1565
WELL LOCATION: You are authorized to drill 50 MONITOR WELLs. SEE BELOW.
WELL UTM COORDINATES:
WELL ACTIVITY: NEW (X) REPAIR ( ) REPLACE ( ) ABANDON ( )
CLEAN ( ) DEEPEN ( )

For surface seals in unconsolidated formations (clay, silt, sand, and gravel), will you be using a temporary conductor casing or other formation stabilizer (e.g., drilling mud) in the surface seal interval to maintain the required annular space?

YES or NO (Circle one).

Answering 'NO' suggests that you will be placing the surface seal in an open and unstabilized annular space, which may require onsite inspection of seal placement by the State Engineer's Office.

PROPOSED START DATE: 02-22-16

PROJECTED COMPLETION DATE: 03-22-16

LICENSE #: 626 LICENSEE/COMPANY: Tim Stine / Cascade Drilling

02-16-16

Licensee Signature Date

|NOTICE TO APPLICANT: THIS CARD IS TO BE GIVEN TO A UTAH LICENSED WATER WELL DRILLER FOR SUBMITTAL TO THE DIVISION OF WATER RIGHTS PRIOR TO WELL CONSTRUCTION.|
|STATE OF UTAH DIVISION OF WATER RIGHTS Phone No. 801-538-7416
Fax No. 801-538-7467|

MONITOR WELL LOCATIONS:

(1) N 353 W 380--S4 cor S05 T 1S R 1E SL **(2)** S 1940 E 670--N4 cor S08 T 1S R 1E SL
(3) S 229 W 779--E4 cor S08 T 1S R 1E SL **(4)** S 698 W 302--E4 cor S08 T 1S R 1E SL
(5) S 680 W 1888--E4 cor S08 T 1S R 1E SL **(6)** S 524 W 1067--E4 cor S08 T 1S R 1E SL
(7) N 664 E 1858--W4 cor S08 T 1S R 1E SL **(8)** S 1011 E 990--NW cor S08 T 1S R 1E SL
(9) N 39 E 2273--W4 cor S08 T 1S R 1E SL **(10)** S 756 W 7--N4 cor S08 T 1S R 1E SL
(11) S 1339 E 462--N4 cor S08 T 1S R 1E SL **(12)** S 118 W 43--E4 cor S08 T 1S R 1E SL
(13) N 423 W 402--E4 cor S08 T 1S R 1E SL **(14)** N 214 W 792--E4 cor S08 T 1S R 1E SL
(15) N 241 W 181--E4 cor S08 T 1S R 1E SL **(16)** N 131 W 574--E4 cor S08 T 1S R 1E SL
(17) N 222 W 1167--E4 cor S08 T 1S R 1E SL **(18)** N 484 W 446--E4 cor S08 T 1S R 1E SL
(19) N 381 W 613--E4 cor S08 T 1S R 1E SL **(20)** N 437 W 860--E4 cor S08 T 1S R 1E SL
(21) N 825 W 1019--E4 cor S08 T 1S R 1E SL **(22)** N 575 W 1202--E4 cor S08 T 1S R 1E SL
(23) N 700 W 1646--E4 cor S08 T 1S R 1E SL **(24)** N 964 W 1248--E4 cor S08 T 1S R 1E SL
(25) S 1712 E 886--N4 cor S08 T 1S R 1E SL **(26)** N 1108 W 952--E4 cor S08 T 1S R 1E SL
(27) S 1548 E 905--N4 cor S08 T 1S R 1E SL **(28)** N 1177 W 1335--E4 cor S08 T 1S R 1E SL
(29) S 1394 E 1142--N4 cor S08 T 1S R 1E SL **(30)** S 1313 E 903--N4 cor S08 T 1S R 1E SL
(31) S 1180 E 1071--N4 cor S08 T 1S R 1E SL **(32)** S 858 W 1224--NE cor S08 T 1S R 1E SL
(33) S 843 E 891--N4 cor S08 T 1S R 1E SL **(34)** S 361 E 1036--N4 cor S08 T 1S R 1E SL
(35) S 486 E 540--N4 cor S08 T 1S R 1E SL **(36)** S 29 E 1258--N4 cor S08 T 1S R 1E SL

(37) S 263 E 337--N4 cor S08 T 1S R 1E SL **(38)** S 1035 E 398--N4 cor S08 T 1S R 1E SL
(39) N 14 W 1644--E4 cor S08 T 1S R 1E SL **(40)** S 1192 W 712--NE cor S08 T 1S R 1E SL
(41) N 800 W 691--E4 cor S08 T 1S R 1E SL **(42)** S 338 W 820--N4 cor S08 T 1S R 1E SL
(43) S 1189 W 322--N4 cor S08 T 1S R 1E SL **(44)** S 1938 E 114--N4 cor S08 T 1S R 1E SL
(45) N 1764 W 646--S4 cor S08 T 1S R 1E SL **(46)** N 125 W 2168--E4 cor S08 T 1S R 1E SL
(47) S 1086 W 1121--E4 cor S08 T 1S R 1E SL **(48)** S 336 W 1719--E4 cor S08 T 1S R 1E SL
(49) S 355 E 583--W4 cor S09 T 1S R 1E SL **(50)** N 460 E 287--W4 cor S09 T 1S R 1E SL

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Well Driller’s Reports

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WELL DRILLER'S REPORT
State of Utah
Division of Water Rights

For additional space, use "Additional Well Data Form" and attach

Well Identification

Non-Production Well: 1657001M00 WIN: 439334

Owner *Note any changes*

DEPT OF VETERANS AFFAIRS
C/O LYNNE WELSH
500 FOOTHILL DRIVE
SALT LAKE CITY, UT 84102

NO Drill

Contact Person/Engineer: ______

Well Location *Note any changes*

N 131 W 574 from the E4 corner of section 08, Township 1S, Range 1E, SL B&M

Location Description: (address, proximity to buildings, landmarks, ground elevation,local well #)

Drillers Activity Start Date: ______ Completion Date: ______

Check all that apply: [X] New [ ] Repair [ ] Deepen [ ] Clean [ ] Replace [ ] Public Nature of Use: ______

If a replacement well, provide location of new well. ______ feet north/south and ______ feet east/west of the existing well.

DEPTH (feet) FROM	TO	BOREHOLE DIAMETER (in)	DRILLING METHOD	DRILLING FLUID

Well Log

DEPTH (feet) FROM	TO	WATER	PERMEABLE High	PERMEABLE Low	UNCONSOLIDATED CLAY	SILT	SAND	GRAVEL	COBBLES	BOULDER	OTHER	CONSOLIDATED ROCK TYPE	COLOR	DESCRIPTION AND REMARKS (e.g., relative %, grain size, sorting, angularity, bedding, grain composition density, plasticity, shape, cementation, consistancy, water bearing, odor, fracturing, minerology, texture,degree of weathering, hardness, water quality, etc.)

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SALT LAKE

Static Water Level

Date______ Water Level______ feet Flowing? [ ] Yes [ ] No
Method of Water Level Measurement______ If Flowing, Capped Pressure______ PSI
Point to Which Water Level Measurement was Referenced______ Elevation______
Height of Water Level reference point above ground surface______ feet Temperature______ degrees [ ] C [ ] F

Construction Information

DEPTH (feet)		CASING			DEPTH (feet)		☐SCREEN ☐PERFORATIONS ☐OPEN BOTTOM		
FROM	TO	CASING TYPE AND MATERIAL/GRADE	WALL THICK (in)	NOMINAL DIAM. (in)	FROM	TO	SCREEN SLOT SIZE OR PERF SIZE (in)	SCREEN DIAM. OR PERF LENGTH (in)	SCREEN TYPE OR NUMBER PERF (per round/interval)

Well Head Configuration:______ Access Port Provided? ☐ Yes ☐ No

Casing Joint Type:______ Perforator Used:______

Was a Surface Seal Installed? ☐ Yes ☐ No Depth of Surface Seal:______ feet Drive Shoe? ☐ Yes ☐ No

Surface Seal Material Placement Method:______

Was a temporary surface casing used? ☐ Yes ☐ No If yes, depth of casing:______ feet diameter:______ inches

DEPTH (feet)		SURFACE SEAL / INTERVAL SEAL / FILTER PACK / PACKER INFORMATION		
FROM	TO	SEAL MATERIAL, FILTER PACK and PACKER TYPE and DESCRIPTION	**Quantity** of Material Used (if applicable)	GROUT DENSITY (lbs./gal., # bag mix, gal./sack etc.)

Well Development and Well Yield Test Information

DATE	METHOD	YIELD	Units Check One		DRAWDOWN (ft)	TIME PUMPED (hrs & min)
			GPM	CFS		

Pump (Permanent)

Pump Description:______ Horsepower:______ Pump Intake Depth:______ feet

Approximate Maximum Pumping Rate:______ Well Disinfected upon Completion? ☐ Yes ☐ No

Comments

Description of construction activity, additional materials used, problems encountered, extraordinary Circumstances, abandonment procedures. *Use additional well data form for more space.*

______

______

______

______

Well Driller Statement

This well was drilled and constructed under my supervision, according to applicable rules and regulations, and this report is complete and correct to the best of my knowledge and belief.

Name CASCADE DRILLING, L.P. **License No.** 626

(Person, Firm, or Corporation - Print or Type)

Signature______ **Date**______

(Licensed Well Driller)

WELL DRILLER'S REPORT
State of Utah
Division of Water Rights

For additional space, use "Additional Well Data Form" and attach

Well Identification

Non-Production Well: 1657001M00 WIN: 439333

Owner *Note any changes*

DEPT OF VETERANS AFFAIRS
C/O LYNNE WELSH
500 FOOTHILL DRIVE
SALT LAKE CITY, UT 84102

No Drill

Contact Person/Engineer: ______

Well Location *Note any changes*

N 241 W 181 from the E4 corner of section 08, Township 1S, Range 1E, SL B&M

Location Description: (address, proximity to buildings, landmarks, ground elevation,local well #)

Drillers Activity Start Date:______ Completion Date:______

Check all that apply: [X] New [ ] Repair [ ] Deepen [ ] Clean [ ] Replace [ ] Public Nature of Use:______

If a replacement well, provide location of new well. ______ feet north/south and ______ feet east/west of the existing well.

DEPTH (feet) FROM	TO	BOREHOLE DIAMETER (in)	DRILLING METHOD	DRILLING FLUID

Well Log

DEPTH (feet) FROM	TO	WATER	PERMEABLE High	PERMEABLE Low	UNCONSOLIDATED CLAY	SILT	SAND	GRAVEL	COBBLES	BOULDER	OTHER	CONSOLIDATED ROCK TYPE	COLOR	DESCRIPTION AND REMARKS (e.g., relative %, grain size, sorting, angularity, bedding, grain composition density, plasticity, shape, cementation, consistancy, water bearing, odor, fracturing, minerology, texture,degree of weathering, hardness, water quality, etc.)

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SALT LAKE

Static Water Level

Date______ Water Level______ feet Flowing? [ ] Yes [ ] No

Method of Water Level Measurement______ If Flowing, Capped Pressure______ PSI

Point to Which Water Level Measurement was Referenced______ Elevation______

Height of Water Level reference point above ground surface______ feet Temperature______ degrees [ ] C [ ] F

Construction Information

DEPTH (feet)		CASING			DEPTH (feet)		☐SCREEN ☐PERFORATIONS ☐OPEN BOTTOM		
FROM	TO	CASING TYPE AND MATERIAL/GRADE	WALL THICK (in)	NOMINAL DIAM. (in)	FROM	TO	SCREEN SLOT SIZE OR PERF SIZE (in)	SCREEN DIAM. OR PERF LENGTH (in)	SCREEN TYPE OR NUMBER PERF (per round/interval)

Well Head Configuration:________________ Access Port Provided? ☐ Yes ☐ No

Casing Joint Type:________________ Perforator Used:________________

Was a Surface Seal Installed? ☐ Yes ☐ No Depth of Surface Seal:________ feet Drive Shoe? ☐ Yes ☐ No

Surface Seal Material Placement Method:________________

Was a temporary surface casing used? ☐ Yes ☐ No If yes, depth of casing:________ feet diameter:________ inches

DEPTH (feet)		SURFACE SEAL / INTERVAL SEAL / FILTER PACK / PACKER INFORMATION		
FROM	TO	SEAL MATERIAL, FILTER PACK and PACKER TYPE and DESCRIPTION	**Quantity** of Material Used (if applicable)	GROUT DENSITY (lbs./gal., # bag mix, gal./sack etc.)

Well Development and Well Yield Test Information

DATE	METHOD	YIELD	Units Check One		DRAWDOWN (ft)	TIME PUMPED (hrs & min)
			GPM	CFS		

Pump (Permanent)

Pump Description:________________ Horsepower:________ Pump Intake Depth:______ feet

Approximate Maximum Pumping Rate:________________ Well Disinfected upon Completion? ☐ Yes ☐ No

Comments

Description of construction activity, additional materials used, problems encountered, extraordinary Circumstances, abandonment procedures. *Use additional well data form for more space.*

Well Driller Statement

This well was drilled and constructed under my supervision, according to applicable rules and regulations, and this report is complete and correct to the best of my knowledge and belief.

Name CASCADE DRILLING, L.P. **License No.** 626

(Person, Firm, or Corporation - Print or Type)

Signature________________ **Date**________________

(Licensed Well Driller)

WELL DRILLER'S REPORT
State of Utah
Division of Water Rights

For additional space, use "Additional Well Data Form" and attach

Well Identification

Non-Production Well: 1657001M00 WIN: 439317

Owner *Note any changes*

DEPT OF VETERANS AFFAIRS
C/O LYNNE WELSH
500 FOOTHILL DRIVE
SALT LAKE CITY, UT 84102

Drilling, Sampling, abandoned.

Contact Person/Engineer: ____________________

Well Location *Note any changes*

N 460 E 287 from the W4 corner of section 09, Township 1S, Range 1E, SL B&M

Location Description: (address, proximity to buildings, landmarks, ground elevation,local well #)

Drillers Activity Start Date:____________ Completion Date:____________

Check all that apply: ☒ New ☐ Repair ☐ Deepen ☐ Clean ☐ Replace ☐ Public Nature of Use:____________

If a replacement well, provide location of new well. __________ feet north/south and __________ feet east/west of the existing well.

DEPTH (feet) FROM	TO	BOREHOLE DIAMETER (in)	DRILLING METHOD	DRILLING FLUID

Well Log

DEPTH (feet) FROM	TO	WATER	PERMEABLE High	PERMEABLE Low	UNCONSOLIDATED CLAY	SILT	SAND	GRAVEL	COBBLES	BOULDER	OTHER	CONSOLIDATED ROCK TYPE	COLOR	DESCRIPTION AND REMARKS (e.g., relative %, grain size, sorting, angularity, bedding, grain composition density, plasticity, shape, cementation, consistancy, water bearing, odor, fracturing, minerology, texture,degree of weathering, hardness, water quality, etc.)

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Static Water Level

Date____________ Water Level__________ feet Flowing? ☐ Yes ☐ No

Method of Water Level Measurement____________ If Flowing, Capped Pressure__________ PSI

Point to Which Water Level Measurement was Referenced____________ Elevation__________

Height of Water Level reference point above ground surface________ feet Temperature________ degrees ☐C ☐F

Construction Information

DEPTH (feet) FROM	TO	CASING: CASING TYPE AND MATERIAL/GRADE	WALL THICK (in)	NOMINAL DIAM. (in)	DEPTH (feet) FROM	TO	☐SCREEN ☐PERFORATIONS ☐OPEN BOTTOM: SCREEN SLOT SIZE OR PERF SIZE (in)	SCREEN DIAM. OR PERF LENGTH (in)	SCREEN TYPE OR NUMBER PERF (per round/interval)

Well Head Configuration:__________ Access Port Provided? ☐Yes ☐No

Casing Joint Type:__________ Perforator Used:__________

Was a Surface Seal Installed? ☐Yes ☐No Depth of Surface Seal:______ feet Drive Shoe? ☐Yes ☐No

Surface Seal Material Placement Method:__________

Was a temporary surface casing used? ☐Yes ☐No If yes, depth of casing:______ feet diameter:______ inches

DEPTH (feet) FROM	TO	SURFACE SEAL / INTERVAL SEAL / FILTER PACK / PACKER INFORMATION: SEAL MATERIAL, FILTER PACK and PACKER TYPE and DESCRIPTION	**Quantity** of Material Used (if applicable)	GROUT DENSITY (lbs./gal., # bag mix, gal./sack etc.)

Well Development and Well Yield Test Information

DATE	METHOD	YIELD	Units Check One: GPM	CFS	DRAWDOWN (ft)	TIME PUMPED (hrs & min)

Pump (Permanent)

Pump Description:__________ Horsepower:______ Pump Intake Depth:____ feet

Approximate Maximum Pumping Rate:__________ Well Disinfected upon Completion? ☐Yes ☐No

Comments

Description of construction activity, additional materials used, problems encountered, extraordinary Circumstances, abandonment procedures. *Use additional well data form for more space.*

Well Driller Statement

This well was drilled and constructed under my supervision, according to applicable rules and regulations, and this report is complete and correct to the best of my knowledge and belief.

Name CASCADE DRILLING, L.P. **License No.** 626

(Person, Firm, or Corporation - Print or Type)

Signature__________ **Date**__________

(Licensed Well Driller)

WELL DRILLER'S REPORT
State of Utah
Division of Water Rights

For additional space, use "Additional Well Data Form" and attach

Well Identification

Non-Production Well: 1657001M00 WIN: 439335

Owner *Note any changes*

DEPT OF VETERANS AFFAIRS
C/O LYNNE WELSH
500 FOOTHILL DRIVE
SALT LAKE CITY, UT 84102

No Drill

Contact Person/Engineer: ____________________

Well Location *Note any changes*

N 222 W 1167 from the E4 corner of section 08, Township 1S, Range 1E, SL B&M

Location Description: (address, proximity to buildings, landmarks, ground elevation,local well #)

Drillers Activity Start Date:____________ Completion Date:____________

Check all that apply: [X] New [ ] Repair [ ] Deepen [ ] Clean [ ] Replace [ ] Public Nature of Use:____________

If a replacement well, provide location of new well. ____________ feet north/south and ____________ feet east/west of the existing well.

DEPTH (feet) FROM	TO	BOREHOLE DIAMETER (in)	DRILLING METHOD	DRILLING FLUID

Well Log

DEPTH (feet) FROM	TO	WATER	PERMEABLE High	PERMEABLE Low	UNCONSOLIDATED CLAY	SILT	SAND	GRAVEL	COBBLES	BOULDER	OTHER	CONSOLIDATED ROCK TYPE	COLOR	DESCRIPTION AND REMARKS (e.g., relative %, grain size, sorting, angularity, bedding, grain composition density, plasticity, shape, cementation, consistancy, water bearing, odor, fracturing, minerology, texture,degree of weathering, hardness, water quality, etc.)

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SALT LAKE

Static Water Level

Date____________ Water Level____________ feet Flowing? [ ] Yes [ ] No

Method of Water Level Measurement____________ If Flowing, Capped Pressure____________ PSI

Point to Which Water Level Measurement was Referenced____________ Elevation____________

Height of Water Level reference point above ground surface________ feet Temperature________ degrees [ ] C [ ] F

Construction Information

DEPTH (feet)		CASING			DEPTH (feet)		☐SCREEN ☐PERFORATIONS ☐OPEN BOTTOM		
FROM	TO	CASING TYPE AND MATERIAL/GRADE	WALL THICK (in)	NOMINAL DIAM. (in)	FROM	TO	SCREEN SLOT SIZE OR PERF SIZE (in)	SCREEN DIAM. OR PERF LENGTH (in)	SCREEN TYPE OR NUMBER PERF (per round/interval)

Well Head Configuration:______________________ Access Port Provided? ☐Yes ☐No

Casing Joint Type:______________________ Perforator Used:______________________

Was a Surface Seal Installed? ☐Yes ☐No Depth of Surface Seal:__________ feet Drive Shoe? ☐Yes ☐No

Surface Seal Material Placement Method:______________________

Was a temporary surface casing used? ☐Yes ☐No If yes, depth of casing:__________ feet diameter:__________ inches

DEPTH (feet)		SURFACE SEAL / INTERVAL SEAL / FILTER PACK / PACKER INFORMATION		
FROM	TO	SEAL MATERIAL, FILTER PACK and PACKER TYPE and DESCRIPTION	**Quantity** of Material Used (if applicable)	GROUT DENSITY (lbs./gal., # bag mix, gal./sack etc.)

Well Development and Well Yield Test Information

DATE	METHOD	YIELD	Units Check One		DRAWDOWN (ft)	TIME PUMPED (hrs & min)
			GPM	CFS		

Pump (Permanent)

Pump Description:______________________ Horsepower:__________ Pump Intake Depth:______ feet

Approximate Maximum Pumping Rate:______________________ Well Disinfected upon Completion? ☐Yes ☐No

Comments

Description of construction activity, additional materials used, problems encountered, extraordinary Circumstances, abandonment procedures. *Use additional well data form for more space.*

Well Driller Statement

This well was drilled and constructed under my supervision, according to applicable rules and regulations, and this report is complete and correct to the best of my knowledge and belief.

Name CASCADE DRILLING, L.P. **License No.** 626

(Person, Firm, or Corporation - Print or Type)

Signature______________________ **Date**______________________

(Licensed Well Driller)

WELL DRILLER'S REPORT
State of Utah
Division of Water Rights

For additional space, use "Additional Well Data Form" and attach

Well Identification

Non-Production Well: 1657001M00 WIN: 439336

Owner *Note any changes*

DEPT OF VETERANS AFFAIRS
C/O LYNNE WELSH
500 FOOTHILL DRIVE
SALT LAKE CITY, UT 84102

No Drill

Contact Person/Engineer: ______

Well Location *Note any changes*

N 484 W 446 from the E4 corner of section 08, Township 1S, Range 1E, SL B&M

Location Description: (address, proximity to buildings, landmarks, ground elevation,local well #)

Drillers Activity Start Date: ______ Completion Date: ______

Check all that apply: ☒ New ☐ Repair ☐ Deepen ☐ Clean ☐ Replace ☐ Public Nature of Use: ______

If a replacement well, provide location of new well. ______ feet north/south and ______ feet east/west of the existing well.

DEPTH (feet) FROM	TO	BOREHOLE DIAMETER (in)	DRILLING METHOD	DRILLING FLUID

Well Log

DEPTH (feet) FROM	TO	WATER	PERMEABLE High	PERMEABLE Low	UNCONSOLIDATED CLAY	SILT	SAND	GRAVEL	COBBLES	BOULDER	OTHER	CONSOLIDATED ROCK TYPE	COLOR	DESCRIPTION AND REMARKS (e.g., relative %, grain size, sorting, angularity, bedding, grain composition density, plasticity, shape, cementation, consistancy, water bearing, odor, fracturing, minerology, texture,degree of weathering, hardness, water quality, etc.)
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														APR 26 2016
														WATER RIGHTS SALT LAKE

Static Water Level

Date______ Water Level______ feet Flowing? ☐ Yes ☐ No

Method of Water Level Measurement______ If Flowing, Capped Pressure______ PSI

Point to Which Water Level Measurement was Referenced______ Elevation______

Height of Water Level reference point above ground surface______ feet Temperature______ degrees ☐C ☐F

Construction Information

DEPTH (feet)		CASING			DEPTH (feet)		☐SCREEN ☐PERFORATIONS ☐OPEN BOTTOM		
FROM	TO	CASING TYPE AND MATERIAL/GRADE	WALL THICK (in)	NOMINAL DIAM. (in)	FROM	TO	SCREEN SLOT SIZE OR PERF SIZE (in)	SCREEN DIAM. OR PERF LENGTH (in)	SCREEN TYPE OR NUMBER PERF (per round/interval)

Well Head Configuration:______ Access Port Provided? ☐ Yes ☐ No

Casing Joint Type:______ Perforator Used:______

Was a Surface Seal Installed? ☐ Yes ☐ No Depth of Surface Seal:______ feet Drive Shoe? ☐ Yes ☐ No

Surface Seal Material Placement Method:______

Was a temporary surface casing used? ☐ Yes ☐ No If yes, depth of casing:______ feet diameter:______ inches

DEPTH (feet)		SURFACE SEAL / INTERVAL SEAL / FILTER PACK / PACKER INFORMATION		
FROM	TO	SEAL MATERIAL, FILTER PACK and PACKER TYPE and DESCRIPTION	**Quantity** of Material Used (if applicable)	GROUT DENSITY (lbs./gal., # bag mix, gal./sack etc.)

Well Development and Well Yield Test Information

DATE	METHOD	YIELD	Units Check One		DRAWDOWN (ft)	TIME PUMPED (hrs & min)
			GPM	CFS		

Pump (Permanent)

Pump Description:______ Horsepower:______ Pump Intake Depth:______ feet

Approximate Maximum Pumping Rate:______ Well Disinfected upon Completion? ☐ Yes ☐ No

Comments

Description of construction activity, additional materials used, problems encountered, extraordinary Circumstances, abandonment procedures. *Use additional well data form for more space.*

______

______

______

______

Well Driller Statement

This well was drilled and constructed under my supervision, according to applicable rules and regulations, and this report is complete and correct to the best of my knowledge and belief.

Name CASCADE DRILLING, L.P. License No. 626

(Person, Firm, or Corporation - Print or Type)

Signature______ Date______

(Licensed Well Driller)

WELL DRILLER'S REPORT
State of Utah
Division of Water Rights

For additional space, use "Additional Well Data Form" and attach

Well Identification

Non-Production Well: 1657001M00 WIN: 439337

Owner *Note any changes*

DEPT OF VETERANS AFFAIRS
C/O LYNNE WELSH
500 FOOTHILL DRIVE
SALT LAKE CITY, UT 84102

No Drill

Contact Person/Engineer: ____________________

Well Location *Note any changes*

N 381 W 613 from the E4 corner of section 08, Township 1S, Range 1E, SL B&M

Location Description: (address, proximity to buildings, landmarks, ground elevation,local well #)

Drillers Activity Start Date:____________ Completion Date:____________

Check all that apply: [X] New [ ] Repair [ ] Deepen [ ] Clean [ ] Replace [ ] Public Nature of Use:____________

If a replacement well, provide location of new well. __________ feet north/south and __________ feet east/west of the existing well.

DEPTH (feet) FROM	TO	BOREHOLE DIAMETER (in)	DRILLING METHOD	DRILLING FLUID

Well Log

DEPTH (feet) FROM	TO	WATER	PERMEABLE High	PERMEABLE Low	UNCONSOLIDATED CLAY	SILT	SAND	GRAVEL	COBBLES	BOULDER	OTHER	CONSOLIDATED ROCK TYPE	COLOR	DESCRIPTION AND REMARKS (e.g., relative %, grain size, sorting, angularity, bedding, grain composition density, plasticity, shape, cementation, consistancy, water bearing, odor, fracturing, minerology, texture,degree of weathering, hardness, water quality, etc.)

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SALT LAKE

Static Water Level

Date____________ Water Level__________ feet Flowing? [ ] Yes [ ] No

Method of Water Level Measurement____________ If Flowing, Capped Pressure__________ PSI

Point to Which Water Level Measurement was Referenced____________ Elevation__________

Height of Water Level reference point above ground surface________ feet Temperature________ degrees [ ] C [ ] F

Construction Information

DEPTH (feet)		CASING			DEPTH (feet)		☐SCREEN ☐PERFORATIONS ☐OPEN BOTTOM		
FROM	TO	CASING TYPE AND MATERIAL/GRADE	WALL THICK (in)	NOMINAL DIAM. (in)	FROM	TO	SCREEN SLOT SIZE OR PERF SIZE (in)	SCREEN DIAM. OR PERF LENGTH (in)	SCREEN TYPE OR NUMBER PERF (per round/interval)

Well Head Configuration:______ Access Port Provided? ☐Yes ☐No

Casing Joint Type:______ Perforator Used:______

Was a Surface Seal Installed? ☐Yes ☐No Depth of Surface Seal:______ feet Drive Shoe? ☐Yes ☐No

Surface Seal Material Placement Method:______

Was a temporary surface casing used? ☐Yes ☐No If yes, depth of casing:______ feet diameter:______ inches

DEPTH (feet)		SURFACE SEAL / INTERVAL SEAL / FILTER PACK / PACKER INFORMATION		
FROM	TO	SEAL MATERIAL, FILTER PACK and PACKER TYPE and DESCRIPTION	**Quantity** of Material Used (if applicable)	GROUT DENSITY (lbs./gal., # bag mix, gal./sack etc.)

Well Development and Well Yield Test Information

DATE	METHOD	YIELD	Units Check One		DRAWDOWN (ft)	TIME PUMPED (hrs & min)
			GPM	CFS		

Pump (Permanent)

Pump Description:______ Horsepower:______ Pump Intake Depth:______ feet

Approximate Maximum Pumping Rate:______ Well Disinfected upon Completion? ☐Yes ☐No

Comments

Description of construction activity, additional materials used, problems encountered, extraordinary Circumstances, abandonment procedures. *Use additional well data form for more space.*

Well Driller Statement

This well was drilled and constructed under my supervision, according to applicable rules and regulations, and this report is complete and correct to the best of my knowledge and belief.

Name CASCADE DRILLING, L.P. **License No.** 626

(Person, Firm, or Corporation - Print or Type)

Signature______ **Date**______

(Licensed Well Driller)

WELL DRILLER'S REPORT
State of Utah
Division of Water Rights

For additional space, use "Additional Well Data Form" and attach

Well Identification

Non-Production Well: 1657001M00 WIN: 439338

Owner *Note any changes*

DEPT OF VETERANS AFFAIRS
C/O LYNNE WELSH
500 FOOTHILL DRIVE
SALT LAKE CITY, UT 84102

No Drill

Contact Person/Engineer: __________

Well Location *Note any changes*

N 437 W 860 from the E4 corner of section 08, Township 1S, Range 1E, SL B&M

Location Description: (address, proximity to buildings, landmarks, ground elevation,local well #)

Drillers Activity Start Date: __________ Completion Date: __________

Check all that apply: ☒ New ☐ Repair ☐ Deepen ☐ Clean ☐ Replace ☐ Public Nature of Use: __________

If a replacement well, provide location of new well. __________ feet north/south and __________ feet east/west of the existing well.

DEPTH (feet) FROM	TO	BOREHOLE DIAMETER (in)	DRILLING METHOD	DRILLING FLUID

Well Log

DEPTH (feet) FROM	TO	WATER	PERMEABLE High	PERMEABLE Low	UNCONSOLIDATED CLAY	SILT	SAND	GRAVEL	COBBLES	BOULDER	OTHER	CONSOLIDATED ROCK TYPE	COLOR	DESCRIPTION AND REMARKS (e.g., relative %, grain size, sorting, angularity, bedding, grain composition density, plasticity, shape, cementation, consistancy, water bearing, odor, fracturing, minerology, texture,degree of weathering, hardness, water quality, etc.)

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SALT LAKE

Static Water Level

Date __________ Water Level __________ feet Flowing? ☐ Yes ☐ No

Method of Water Level Measurement __________ If Flowing, Capped Pressure __________ PSI

Point to Which Water Level Measurement was Referenced __________ Elevation __________

Height of Water Level reference point above ground surface __________ feet Temperature __________ degrees ☐ C ☐ F

Construction Information

DEPTH (feet)		CASING			DEPTH (feet)		☐SCREEN	☐PERFORATIONS	☐OPEN BOTTOM
FROM	TO	CASING TYPE AND MATERIAL/GRADE	WALL THICK (in)	NOMINAL DIAM. (in)	FROM	TO	SCREEN SLOT SIZE OR PERF SIZE (in)	SCREEN DIAM. OR PERF LENGTH (in)	SCREEN TYPE OR NUMBER PERF (per round/interval)

Well Head Configuration:______ Access Port Provided? ☐ Yes ☐No

Casing Joint Type:______ Perforator Used:______

Was a Surface Seal Installed? ☐ Yes ☐No Depth of Surface Seal:______ feet Drive Shoe? ☐ Yes ☐No

Surface Seal Material Placement Method:______

Was a temporary surface casing used? ☐ Yes ☐No If yes, depth of casing:______ feet diameter:______ inches

DEPTH (feet)		SURFACE SEAL / INTERVAL SEAL / FILTER PACK / PACKER INFORMATION		
FROM	TO	SEAL MATERIAL, FILTER PACK and PACKER TYPE and DESCRIPTION	**Quantity** of Material Used (if applicable)	GROUT DENSITY (lbs./gal., # bag mix, gal./sack etc.)

Well Development and Well Yield Test Information

DATE	METHOD	YIELD	Units Check One		DRAWDOWN (ft)	TIME PUMPED (hrs & min)
			GPM	CFS		

Pump (Permanent)

Pump Description:______ Horsepower:______ Pump Intake Depth:______ feet

Approximate Maximum Pumping Rate:______ Well Disinfected upon Completion? ☐Yes ☐No

Comments

Description of construction activity, additional materials used, problems encountered, extraordinary Circumstances, abandonment procedures. *Use additional well data form for more space.*

Well Driller Statement

This well was drilled and constructed under my supervision, according to applicable rules and regulations, and this report is complete and correct to the best of my knowledge and belief.

Name CASCADE DRILLING, L.P. **License No.** 626

(Person, Firm, or Corporation - Print or Type)

Signature______ **Date**______

(Licensed Well Driller)

WELL DRILLER'S REPORT
State of Utah
Division of Water Rights

For additional space, use "Additional Well Data Form" and attach

Well Identification

Non-Production Well: 1657001M00 WIN: 439339

Owner *Note any changes*

DEPT OF VETERANS AFFAIRS
C/O LYNNE WELSH
500 FOOTHILL DRIVE
SALT LAKE CITY, UT 84102

No Drill

Contact Person/Engineer: ____________________

Well Location *Note any changes*

N 825 W 1019 from the E4 corner of section 08, Township 1S, Range 1E, SL B&M

Location Description: (address, proximity to buildings, landmarks, ground elevation,local well #)

Drillers Activity Start Date:____________ Completion Date:____________

Check all that apply: ☒ New ☐ Repair ☐ Deepen ☐ Clean ☐ Replace ☐ Public Nature of Use:____________

If a replacement well, provide location of new well. ____________ feet north/south and ____________ feet east/west of the existing well.

DEPTH (feet) FROM	TO	BOREHOLE DIAMETER (in)	DRILLING METHOD	DRILLING FLUID

Well Log

DEPTH (feet) FROM	TO	WATER	PERMEABLE High	PERMEABLE Low	UNCONSOLIDATED CLAY	SILT	SAND	GRAVEL	COBBLES	BOULDER	OTHER	CONSOLIDATED ROCK TYPE	COLOR	DESCRIPTION AND REMARKS (e.g., relative %, grain size, sorting, angularity, bedding, grain composition density, plasticity, shape, cementation, consistancy, water bearing, odor, fracturing, minerology, texture,degree of weathering, hardness, water quality, etc.)

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Static Water Level

Date____________ Water Level__________ feet Flowing? ☐ Yes ☐ No

Method of Water Level Measurement____________ If Flowing, Capped Pressure__________ PSI

Point to Which Water Level Measurement was Referenced____________ Elevation__________

Height of Water Level reference point above ground surface________ feet Temperature________ degrees ☐ C ☐ F

Construction Information

DEPTH (feet)		CASING			DEPTH (feet)		☐SCREEN ☐PERFORATIONS ☐OPEN BOTTOM		
FROM	TO	CASING TYPE AND MATERIAL/GRADE	WALL THICK (in)	NOMINAL DIAM. (in)	FROM	TO	SCREEN SLOT SIZE OR PERF SIZE (in)	SCREEN DIAM. OR PERF LENGTH (in)	SCREEN TYPE OR NUMBER PERF (per round/interval)

Well Head Configuration:______ Access Port Provided? ☐ Yes ☐ No

Casing Joint Type:______ Perforator Used:______

Was a Surface Seal Installed? ☐ Yes ☐ No Depth of Surface Seal:______ feet Drive Shoe? ☐ Yes ☐ No

Surface Seal Material Placement Method:______

Was a temporary surface casing used? ☐ Yes ☐ No If yes, depth of casing:______ feet diameter:______ inches

DEPTH (feet)		SURFACE SEAL / INTERVAL SEAL / FILTER PACK / PACKER INFORMATION		
FROM	TO	SEAL MATERIAL, FILTER PACK and PACKER TYPE and DESCRIPTION	**Quantity** of Material Used (if applicable)	GROUT DENSITY (lbs./gal., # bag mix, gal./sack etc.)

Well Development and Well Yield Test Information

DATE	METHOD	YIELD	Units Check One		DRAWDOWN (ft)	TIME PUMPED (hrs & min)
			GPM	CFS		

Pump (Permanent)

Pump Description:______ Horsepower:______ Pump Intake Depth:______ feet

Approximate Maximum Pumping Rate:______ Well Disinfected upon Completion? ☐ Yes ☐ No

Comments

Description of construction activity, additional materials used, problems encountered, extraordinary Circumstances, abandonment procedures. *Use additional well data form for more space.*

______

______

______

______

Well Driller Statement

This well was drilled and constructed under my supervision, according to applicable rules and regulations, and this report is complete and correct to the best of my knowledge and belief.

Name CASCADE DRILLING, L.P. **License No.** 626

(Person, Firm, or Corporation - Print or Type)

Signature______ **Date**______

(Licensed Well Driller)

WELL DRILLER'S REPORT
State of Utah
Division of Water Rights

For additional space, use "Additional Well Data Form" and attach

Well Identification

Non-Production Well: 1657001M00 WIN: 439340

Owner *Note any changes*

DEPT OF VETERANS AFFAIRS
C/O LYNNE WELSH
500 FOOTHILL DRIVE
SALT LAKE CITY, UT 84102

No Drill

Contact Person/Engineer: ______

Well Location *Note any changes*

N 575 W 1202 from the E4 corner of section 08, Township 1S, Range 1E, SL B&M

Location Description: (address, proximity to buildings, landmarks, ground elevation,local well #)

Drillers Activity Start Date:______ Completion Date:______

Check all that apply: [X] New [ ] Repair [ ] Deepen [ ] Clean [ ] Replace [ ] Public Nature of Use:______

If a replacement well, provide location of new well. ______ feet north/south and ______ feet east/west of the existing well.

DEPTH (feet) FROM	TO	BOREHOLE DIAMETER (in)	DRILLING METHOD	DRILLING FLUID

Well Log

DEPTH (feet) FROM	TO	WATER	PERMEABLE High	PERMEABLE Low	UNCONSOLIDATED CLAY	SILT	SAND	GRAVEL	COBBLES	BOULDER	OTHER	CONSOLIDATED ROCK TYPE	COLOR	DESCRIPTION AND REMARKS (e.g., relative %, grain size, sorting, angularity, bedding, grain composition density, plasticity, shape, cementation, consistancy, water bearing, odor, fracturing, minerology, texture,degree of weathering, hardness, water quality, etc.)

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Static Water Level

Date______ Water Level______ feet Flowing? [ ] Yes [ ] No

Method of Water Level Measurement______ If Flowing, Capped Pressure______ PSI

Point to Which Water Level Measurement was Referenced______ Elevation______

Height of Water Level reference point above ground surface______ feet Temperature______ degrees [ ] C [ ] F

Construction Information

DEPTH (feet)		CASING			DEPTH (feet)		☐SCREEN ☐PERFORATIONS ☐OPEN BOTTOM		
FROM	TO	CASING TYPE AND MATERIAL/GRADE	WALL THICK (in)	NOMINAL DIAM. (in)	FROM	TO	SCREEN SLOT SIZE OR PERF SIZE (in)	SCREEN DIAM. OR PERF LENGTH (in)	SCREEN TYPE OR NUMBER PERF (per round/interval)

Well Head Configuration:__________ Access Port Provided? ☐Yes ☐No

Casing Joint Type:__________ Perforator Used:__________

Was a Surface Seal Installed? ☐Yes ☐No Depth of Surface Seal:______ feet Drive Shoe? ☐Yes ☐No

Surface Seal Material Placement Method:__________

Was a temporary surface casing used? ☐Yes ☐No If yes, depth of casing:______ feet diameter:______ inches

DEPTH (feet)		SURFACE SEAL / INTERVAL SEAL / FILTER PACK / PACKER INFORMATION		
FROM	TO	SEAL MATERIAL, FILTER PACK and PACKER TYPE and DESCRIPTION	**Quantity** of Material Used (if applicable)	GROUT DENSITY (lbs./gal., # bag mix, gal./sack etc.)

Well Development and Well Yield Test Information

DATE	METHOD	YIELD	Units Check One		DRAWDOWN (ft)	TIME PUMPED (hrs & min)
			GPM	CFS		

Pump (Permanent)

Pump Description:__________ Horsepower:______ Pump Intake Depth:______ feet

Approximate Maximum Pumping Rate:__________ Well Disinfected upon Completion? ☐Yes ☐No

Comments

Description of construction activity, additional materials used, problems encountered, extraordinary Circumstances, abandonment procedures. *Use additional well data form for more space.*

Well Driller Statement

This well was drilled and constructed under my supervision, according to applicable rules and regulations, and this report is complete and correct to the best of my knowledge and belief.

Name CASCADE DRILLING, L.P. **License No.** 626

(Person, Firm, or Corporation - Print or Type)

Signature__________ **Date**__________

(Licensed Well Driller)

WELL DRILLER'S REPORT
State of Utah
Division of Water Rights

For additional space, use "Additional Well Data Form" and attach

Well Identification

Non-Production Well: 1657001M00 WIN: 439341

Owner *Note any changes*

DEPT OF VETERANS AFFAIRS
C/O LYNNE WELSH
500 FOOTHILL DRIVE
SALT LAKE CITY, UT 84102

No Drill

Contact Person/Engineer: ____________

Well Location *Note any changes*

N 700 W 1646 from the E4 corner of section 08, Township 1S, Range 1E, SL B&M

Location Description: (address, proximity to buildings, landmarks, ground elevation,local well #)

Drillers Activity Start Date: ____________ Completion Date: ____________

Check all that apply: ☒ New ☐ Repair ☐ Deepen ☐ Clean ☐ Replace ☐ Public Nature of Use: ____________

If a replacement well, provide location of new well. ____________ feet north/south and ____________ feet east/west of the existing well.

DEPTH (feet) FROM	TO	BOREHOLE DIAMETER (in)	DRILLING METHOD	DRILLING FLUID

Well Log

DEPTH (feet) FROM	TO	WATER	PERMEABLE High	PERMEABLE Low	UNCONSOLIDATED CLAY	SILT	SAND	GRAVEL	COBBLES	BOULDER	OTHER	CONSOLIDATED ROCK TYPE	COLOR	DESCRIPTION AND REMARKS (e.g., relative %, grain size, sorting, angularity, bedding, grain composition density, plasticity, shape, cementation, consistancy, water bearing, odor, fracturing, minerology, texture,degree of weathering, hardness, water quality, etc.)

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Static Water Level

Date ____________ Water Level ____________ feet Flowing? ☐ Yes ☐ No

Method of Water Level Measurement ____________ If Flowing, Capped Pressure ____________ PSI

Point to Which Water Level Measurement was Referenced ____________ Elevation ____________

Height of Water Level reference point above ground surface ____________ feet Temperature ____________ degrees ☐ C ☐ F

Construction Information

DEPTH (feet) FROM	DEPTH (feet) TO	CASING: CASING TYPE AND MATERIAL/GRADE	WALL THICK (in)	NOMINAL DIAM. (in)	DEPTH (feet) FROM	DEPTH (feet) TO	☐SCREEN ☐PERFORATIONS ☐OPEN BOTTOM: SCREEN SLOT SIZE OR PERF SIZE (in)	SCREEN DIAM. OR PERF LENGTH (in)	SCREEN TYPE OR NUMBER PERF (per round/interval)

Well Head Configuration:________________ Access Port Provided? ☐ Yes ☐ No

Casing Joint Type:________________ Perforator Used:________________

Was a Surface Seal Installed? ☐ Yes ☐ No Depth of Surface Seal:________ feet Drive Shoe? ☐ Yes ☐ No

Surface Seal Material Placement Method:________________

Was a temporary surface casing used? ☐ Yes ☐ No If yes, depth of casing:________ feet diameter:________ inches

DEPTH (feet) FROM	DEPTH (feet) TO	SURFACE SEAL / INTERVAL SEAL / FILTER PACK / PACKER INFORMATION: SEAL MATERIAL, FILTER PACK and PACKER TYPE and DESCRIPTION	**Quantity** of Material Used (if applicable)	GROUT DENSITY (lbs./gal., # bag mix, gal./sack etc.)

Well Development and Well Yield Test Information

DATE	METHOD	YIELD	Units Check One: GPM	CFS	DRAWDOWN (ft)	TIME PUMPED (hrs & min)

Pump (Permanent)

Pump Description:________________ Horsepower:________ Pump Intake Depth:______ feet

Approximate Maximum Pumping Rate:________________ Well Disinfected upon Completion? ☐ Yes ☐ No

Comments

Description of construction activity, additional materials used, problems encountered, extraordinary Circumstances, abandonment procedures. *Use additional well data form for more space.*

____

____

____

____

Well Driller Statement

This well was drilled and constructed under my supervision, according to applicable rules and regulations, and this report is complete and correct to the best of my knowledge and belief.

Name CASCADE DRILLING, L.P. **License No.** 626

(Person, Firm, or Corporation - Print or Type)

Signature________________ **Date**________________

(Licensed Well Driller)

WELL DRILLER'S REPORT
State of Utah
Division of Water Rights

For additional space, use "Additional Well Data Form" and attach

Well Identification

Non-Production Well: 1657001M00 WIN: 439342

Owner *Note any changes*

DEPT OF VETERANS AFFAIRS
C/O LYNNE WELSH
500 FOOTHILL DRIVE
SALT LAKE CITY, UT 84102

No Drill

Contact Person/Engineer: ____________________

Well Location *Note any changes*

N 964 W 1248 from the E4 corner of section 08, Township 1S, Range 1E, SL B&M

Location Description: (address, proximity to buildings, landmarks, ground elevation,local well #)

Drillers Activity Start Date: ____________ Completion Date: ____________

Check all that apply: ☒ New ☐ Repair ☐ Deepen ☐ Clean ☐ Replace ☐ Public Nature of Use: ____________

If a replacement well, provide location of new well. ________ feet north/south and ________ feet east/west of the existing well.

DEPTH (feet) FROM	TO	BOREHOLE DIAMETER (in)	DRILLING METHOD	DRILLING FLUID

Well Log

DEPTH (feet) FROM	TO	WATER	PERMEABLE High	PERMEABLE Low	UNCONSOLIDATED CLAY	SILT	SAND	GRAVEL	COBBLES	BOULDER	OTHER	CONSOLIDATED ROCK TYPE	COLOR	DESCRIPTION AND REMARKS (e.g., relative %, grain size, sorting, angularity, bedding, grain composition density, plasticity, shape, cementation, consistancy, water bearing, odor, fracturing, minerology, texture,degree of weathering, hardness, water quality, etc.)

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SALT LAKE

Static Water Level

Date ____________ Water Level ________ feet Flowing? ☐ Yes ☐ No

Method of Water Level Measurement ____________ If Flowing, Capped Pressure ________ PSI

Point to Which Water Level Measurement was Referenced ____________ Elevation ________

Height of Water Level reference point above ground surface ________ feet Temperature ________ degrees ☐ C ☐ F

Construction Information

DEPTH (feet)		CASING			DEPTH (feet)		☐SCREEN ☐PERFORATIONS ☐OPEN BOTTOM		
FROM	TO	CASING TYPE AND MATERIAL/GRADE	WALL THICK (in)	NOMINAL DIAM. (in)	FROM	TO	SCREEN SLOT SIZE OR PERF SIZE (in)	SCREEN DIAM. OR PERF LENGTH (in)	SCREEN TYPE OR NUMBER PERF (per round/interval)

Well Head Configuration:__________ Access Port Provided? ☐ Yes ☐ No

Casing Joint Type:__________ Perforator Used:__________

Was a Surface Seal Installed? ☐ Yes ☐ No Depth of Surface Seal:______ feet Drive Shoe? ☐ Yes ☐ No

Surface Seal Material Placement Method:__________

Was a temporary surface casing used? ☐ Yes ☐ No If yes, depth of casing:______ feet diameter:______ inches

DEPTH (feet)		SURFACE SEAL / INTERVAL SEAL / FILTER PACK / PACKER INFORMATION		
FROM	TO	SEAL MATERIAL, FILTER PACK and PACKER TYPE and DESCRIPTION	**Quantity** of Material Used (if applicable)	GROUT DENSITY (lbs./gal., # bag mix, gal./sack etc.)

Well Development and Well Yield Test Information

DATE	METHOD	YIELD	Units Check One		DRAWDOWN (ft)	TIME PUMPED (hrs & min)
			GPM	CFS		

Pump (Permanent)

Pump Description:__________ Horsepower:______ Pump Intake Depth:_____ feet

Approximate Maximum Pumping Rate:__________ Well Disinfected upon Completion? ☐ Yes ☐ No

Comments

Description of construction activity, additional materials used, problems encountered, extraordinary Circumstances, abandonment procedures. *Use additional well data form for more space.*

Well Driller Statement

This well was drilled and constructed under my supervision, according to applicable rules and regulations, and this report is complete and correct to the best of my knowledge and belief.

Name CASCADE DRILLING, L.P. **License No.** 626

(Person, Firm, or Corporation - Print or Type)

Signature__________ **Date**__________

(Licensed Well Driller)

WELL DRILLER'S REPORT
State of Utah
Division of Water Rights

For additional space, use "Additional Well Data Form" and attach

Well Identification

Non-Production Well: 1657001M00 WIN: 439343

Owner *Note any changes*

DEPT OF VETERANS AFFAIRS
C/O LYNNE WELSH
500 FOOTHILL DRIVE
SALT LAKE CITY, UT 84102

No Drill

Contact Person/Engineer: ______

Well Location *Note any changes*

S 1712 E 886 from the N4 corner of section 08, Township 1S, Range 1E, SL B&M

Location Description: (address, proximity to buildings, landmarks, ground elevation,local well #)

Drillers Activity Start Date: ______ Completion Date: ______

Check all that apply: ☒ New ☐ Repair ☐ Deepen ☐ Clean ☐ Replace ☐ Public Nature of Use: ______

If a replacement well, provide location of new well. ______ feet north/south and ______ feet east/west of the existing well.

DEPTH (feet) FROM	TO	BOREHOLE DIAMETER (in)	DRILLING METHOD	DRILLING FLUID

Well Log

DEPTH (feet) FROM	TO	WATER	PERMEABLE High	PERMEABLE Low	UNCONSOLIDATED CLAY	SILT	SAND	GRAVEL	COBBLES	BOULDER	OTHER	CONSOLIDATED ROCK TYPE	COLOR	DESCRIPTION AND REMARKS (e.g., relative %, grain size, sorting, angularity, bedding, grain composition density, plasticity, shape, cementation, consistancy, water bearing, odor, fracturing, minerology, texture,degree of weathering, hardness, water quality, etc.)

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SALT LAKE

Static Water Level

Date ______ Water Level ______ feet Flowing? ☐ Yes ☐ No

Method of Water Level Measurement ______ If Flowing, Capped Pressure ______ PSI

Point to Which Water Level Measurement was Referenced ______ Elevation ______

Height of Water Level reference point above ground surface ______ feet Temperature ______ degrees ☐ C ☐ F

Construction Information

DEPTH (feet) FROM	TO	CASING: CASING TYPE AND MATERIAL/GRADE	WALL THICK (in)	NOMINAL DIAM. (in)	DEPTH (feet) FROM	TO	☐SCREEN ☐PERFORATIONS ☐OPEN BOTTOM: SCREEN SLOT SIZE OR PERF SIZE (in)	SCREEN DIAM. OR PERF LENGTH (in)	SCREEN TYPE OR NUMBER PERF (per round/interval)

Well Head Configuration:______ Access Port Provided? ☐ Yes ☐ No

Casing Joint Type:______ Perforator Used:______

Was a Surface Seal Installed? ☐ Yes ☐ No Depth of Surface Seal:______ feet Drive Shoe? ☐ Yes ☐ No

Surface Seal Material Placement Method:______

Was a temporary surface casing used? ☐ Yes ☐ No If yes, depth of casing:______ feet diameter:______ inches

DEPTH (feet) FROM	TO	SURFACE SEAL / INTERVAL SEAL / FILTER PACK / PACKER INFORMATION: SEAL MATERIAL, FILTER PACK and PACKER TYPE and DESCRIPTION	**Quantity** of Material Used (if applicable)	GROUT DENSITY (lbs./gal., # bag mix, gal./sack etc.)

Well Development and Well Yield Test Information

DATE	METHOD	YIELD	Units Check One: GPM	CFS	DRAWDOWN (ft)	TIME PUMPED (hrs & min)

Pump (Permanent)

Pump Description:______ Horsepower:______ Pump Intake Depth:______ feet

Approximate Maximum Pumping Rate:______ Well Disinfected upon Completion? ☐ Yes ☐ No

Comments

Description of construction activity, additional materials used, problems encountered, extraordinary Circumstances, abandonment procedures. *Use additional well data form for more space.*

Well Driller Statement

This well was drilled and constructed under my supervision, according to applicable rules and regulations, and this report is complete and correct to the best of my knowledge and belief.

Name CASCADE DRILLING, L.P. **License No.** 626

(Person, Firm, or Corporation - Print or Type)

Signature______ **Date**______

(Licensed Well Driller)

WELL DRILLER'S REPORT
State of Utah
Division of Water Rights

For additional space, use "Additional Well Data Form" and attach

Well Identification

Non-Production Well: 1657001M00 WIN: 439344

Owner *Note any changes*

DEPT OF VETERANS AFFAIRS
C/O LYNNE WELSH
500 FOOTHILL DRIVE
SALT LAKE CITY, UT 84102

NO Drill

Contact Person/Engineer: ______

Well Location *Note any changes*

N 1108 W 952 from the E4 corner of section 08, Township 1S, Range 1E, SL B&M

Location Description: (address, proximity to buildings, landmarks, ground elevation,local well #)

Drillers Activity Start Date: ______ Completion Date: ______

Check all that apply: ☒ New ☐ Repair ☐ Deepen ☐ Clean ☐ Replace ☐ Public Nature of Use: ______

If a replacement well, provide location of new well. ______ feet north/south and ______ feet east/west of the existing well.

DEPTH (feet) FROM	TO	BOREHOLE DIAMETER (in)	DRILLING METHOD	DRILLING FLUID

Well Log

DEPTH (feet) FROM	TO	WATER	PERMEABLE High	PERMEABLE Low	UNCONSOLIDATED CLAY	SILT	SAND	GRAVEL	COBBLES	BOULDER	OTHER	CONSOLIDATED ROCK TYPE	COLOR	DESCRIPTION AND REMARKS (e.g., relative %, grain size, sorting, angularity, bedding, grain composition density, plasticity, shape, cementation, consistancy, water bearing, odor, fracturing, minerology, texture,degree of weathering, hardness, water quality, etc.)

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SALT LAKE

Static Water Level

Date ______ Water Level ______ feet Flowing? ☐ Yes ☐ No

Method of Water Level Measurement ______ If Flowing, Capped Pressure ______ PSI

Point to Which Water Level Measurement was Referenced ______ Elevation ______

Height of Water Level reference point above ground surface ______ feet Temperature ______ degrees ☐ C ☐ F

Construction Information

DEPTH (feet)		CASING			DEPTH (feet)		☐SCREEN ☐PERFORATIONS ☐OPEN BOTTOM		
FROM	TO	CASING TYPE AND MATERIAL/GRADE	WALL THICK (in)	NOMINAL DIAM. (in)	FROM	TO	SCREEN SLOT SIZE OR PERF SIZE (in)	SCREEN DIAM. OR PERF LENGTH (in)	SCREEN TYPE OR NUMBER PERF (per round/interval)

Well Head Configuration:______________________ Access Port Provided? ☐ Yes ☐ No

Casing Joint Type:______________________ Perforator Used:______________________

Was a Surface Seal Installed? ☐ Yes ☐ No Depth of Surface Seal:__________ feet Drive Shoe? ☐ Yes ☐ No

Surface Seal Material Placement Method:______________________

Was a temporary surface casing used? ☐ Yes ☐ No If yes, depth of casing:__________ feet diameter:__________ inches

DEPTH (feet)		SURFACE SEAL / INTERVAL SEAL / FILTER PACK / PACKER INFORMATION		
FROM	TO	SEAL MATERIAL, FILTER PACK and PACKER TYPE and DESCRIPTION	**Quantity** of Material Used (if applicable)	GROUT DENSITY (lbs./gal., # bag mix, gal./sack etc.)

Well Development and Well Yield Test Information

DATE	METHOD	YIELD	Units Check One		DRAWDOWN (ft)	TIME PUMPED (hrs & min)
			GPM	CFS		

Pump (Permanent)

Pump Description:______________________ Horsepower:__________ Pump Intake Depth:_______ feet

Approximate Maximum Pumping Rate:______________________ Well Disinfected upon Completion? ☐ Yes ☐ No

Comments

Description of construction activity, additional materials used, problems encountered, extraordinary Circumstances, abandonment procedures. *Use additional well data form for more space.*

____

____

____

____

Well Driller Statement

This well was drilled and constructed under my supervision, according to applicable rules and regulations, and this report is complete and correct to the best of my knowledge and belief.

Name CASCADE DRILLING, L.P. **License No.** 626

(Person, Firm, or Corporation - Print or Type)

Signature______________________ **Date**______________________

(Licensed Well Driller)

WELL DRILLER'S REPORT
State of Utah
Division of Water Rights

For additional space, use "Additional Well Data Form" and attach

Well Identification

Non-Production Well: 1657001M00 WIN: 439345

Owner *Note any changes*

DEPT OF VETERANS AFFAIRS
C/O LYNNE WELSH
500 FOOTHILL DRIVE
SALT LAKE CITY, UT 84102

No Drill

Contact Person/Engineer: ______

Well Location *Note any changes*

S 1548 E 905 from the N4 corner of section 08, Township 1S, Range 1E, SL B&M

Location Description: (address, proximity to buildings, landmarks, ground elevation,local well #)

Drillers Activity Start Date: ______ Completion Date: ______

Check all that apply: ☒ New ☐ Repair ☐ Deepen ☐ Clean ☐ Replace ☐ Public Nature of Use: ______

If a replacement well, provide location of new well. ______ feet north/south and ______ feet east/west of the existing well.

DEPTH (feet) FROM	TO	BOREHOLE DIAMETER (in)	DRILLING METHOD	DRILLING FLUID

Well Log

DEPTH (feet) FROM	TO	WATER	PERMEABLE High	PERMEABLE Low	UNCONSOLIDATED CLAY	SILT	SAND	GRAVEL	COBBLES	BOULDERS	OTHER	CONSOLIDATED ROCK TYPE	COLOR	DESCRIPTION AND REMARKS (e.g., relative %, grain size, sorting, angularity, bedding, grain composition density, plasticity, shape, cementation, consistancy, water bearing, odor, fracturing, minerology, texture,degree of weathering, hardness, water quality, etc.)

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SALT LAKE

Static Water Level

Date______ Water Level______ feet Flowing? ☐ Yes ☐ No

Method of Water Level Measurement______ If Flowing, Capped Pressure______ PSI

Point to Which Water Level Measurement was Referenced______ Elevation______

Height of Water Level reference point above ground surface______ feet Temperature______ degrees ☐ C ☐ F

Construction Information

DEPTH (feet)		CASING			DEPTH (feet)		☐SCREEN ☐PERFORATIONS ☐OPEN BOTTOM		
FROM	TO	CASING TYPE AND MATERIAL/GRADE	WALL THICK (in)	NOMINAL DIAM. (in)	FROM	TO	SCREEN SLOT SIZE OR PERF SIZE (in)	SCREEN DIAM. OR PERF LENGTH (in)	SCREEN TYPE OR NUMBER PERF (per round/interval)

Well Head Configuration:______ Access Port Provided? ☐ Yes ☐ No

Casing Joint Type:______ Perforator Used:______

Was a Surface Seal Installed? ☐ Yes ☐ No Depth of Surface Seal:______ feet Drive Shoe? ☐ Yes ☐ No

Surface Seal Material Placement Method:______

Was a temporary surface casing used? ☐ Yes ☐ No If yes, depth of casing:______ feet diameter:______ inches

DEPTH (feet)		SURFACE SEAL / INTERVAL SEAL / FILTER PACK / PACKER INFORMATION		
FROM	TO	SEAL MATERIAL, FILTER PACK and PACKER TYPE and DESCRIPTION	**Quantity** of Material Used (if applicable)	GROUT DENSITY (lbs./gal., # bag mix, gal./sack etc.)

Well Development and Well Yield Test Information

DATE	METHOD	YIELD	Units Check One		DRAWDOWN (ft)	TIME PUMPED (hrs & min)
			GPM	CFS		

Pump (Permanent)

Pump Description:______ Horsepower:______ Pump Intake Depth:______ feet

Approximate Maximum Pumping Rate:______ Well Disinfected upon Completion? ☐ Yes ☐ No

Comments

Description of construction activity, additional materials used, problems encountered, extraordinary Circumstances, abandonment procedures. *Use additional well data form for more space.*

Well Driller Statement

This well was drilled and constructed under my supervision, according to applicable rules and regulations, and this report is complete and correct to the best of my knowledge and belief.

Name CASCADE DRILLING, L.P. **License No.** 626

(Person, Firm, or Corporation - Print or Type)

Signature______ **Date**______

(Licensed Well Driller)

WELL DRILLER'S REPORT
State of Utah
Division of Water Rights

For additional space, use "Additional Well Data Form" and attach

Well Identification

Non-Production Well: 1657001M00 WIN: 439346

Owner *Note any changes*

DEPT OF VETERANS AFFAIRS
C/O LYNNE WELSH
500 FOOTHILL DRIVE
SALT LAKE CITY, UT 84102

No Drill

Contact Person/Engineer: ______

Well Location *Note any changes*

N 1177 W 1335 from the E4 corner of section 08, Township 1S, Range 1E, SL B&M

Location Description: (address, proximity to buildings, landmarks, ground elevation,local well #)

Drillers Activity Start Date: ______ Completion Date: ______

Check all that apply: ☒ New ☐ Repair ☐ Deepen ☐ Clean ☐ Replace ☐ Public Nature of Use: ______

If a replacement well, provide location of new well. ______ feet north/south and ______ feet east/west of the existing well.

DEPTH (feet) FROM	TO	BOREHOLE DIAMETER (in)	DRILLING METHOD	DRILLING FLUID

Well Log

DEPTH (feet) FROM	TO	WATER	PERMEABLE High	PERMEABLE Low	UNCONSOLIDATED CLAY	SILT	SAND	GRAVEL	COBBLES	BOULDER	OTHER	CONSOLIDATED ROCK TYPE	COLOR	DESCRIPTION AND REMARKS (e.g., relative %, grain size, sorting, angularity, bedding, grain composition density, plasticity, shape, cementation, consistancy, water bearing, odor, fracturing, minerology, texture,degree of weathering, hardness, water quality, etc.)

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SALT LAKE

Static Water Level

Date ______ Water Level ______ feet Flowing? ☐ Yes ☐ No

Method of Water Level Measurement ______ If Flowing, Capped Pressure ______ PSI

Point to Which Water Level Measurement was Referenced ______ Elevation ______

Height of Water Level reference point above ground surface ______ feet Temperature ______ degrees ☐ C ☐ F

Construction Information

DEPTH (feet)		CASING			DEPTH (feet)		☐SCREEN ☐PERFORATIONS ☐OPEN BOTTOM		
FROM	TO	CASING TYPE AND MATERIAL/GRADE	WALL THICK (in)	NOMINAL DIAM. (in)	FROM	TO	SCREEN SLOT SIZE OR PERF SIZE (in)	SCREEN DIAM. OR PERF LENGTH (in)	SCREEN TYPE OR NUMBER PERF (per round/interval)

Well Head Configuration:________________ Access Port Provided? ☐ Yes ☐ No

Casing Joint Type:________________ Perforator Used:________________

Was a Surface Seal Installed? ☐ Yes ☐ No Depth of Surface Seal:________ feet Drive Shoe? ☐ Yes ☐ No

Surface Seal Material Placement Method:________________

Was a temporary surface casing used? ☐ Yes ☐ No If yes, depth of casing:________ feet diameter:________ inches

DEPTH (feet)		SURFACE SEAL / INTERVAL SEAL / FILTER PACK / PACKER INFORMATION		
FROM	TO	SEAL MATERIAL, FILTER PACK and PACKER TYPE and DESCRIPTION	**Quantity** of Material Used (if applicable)	GROUT DENSITY (lbs./gal., # bag mix, gal./sack etc.)

Well Development and Well Yield Test Information

DATE	METHOD	YIELD	Units Check One		DRAWDOWN (ft)	TIME PUMPED (hrs & min)
			GPM	CFS		

Pump (Permanent)

Pump Description:________________ Horsepower:________ Pump Intake Depth:______ feet

Approximate Maximum Pumping Rate:________________ Well Disinfected upon Completion? ☐ Yes ☐ No

Comments

Description of construction activity, additional materials used, problems encountered, extraordinary Circumstances, abandonment procedures. *Use additional well data form for more space.*

Well Driller Statement

This well was drilled and constructed under my supervision, according to applicable rules and regulations, and this report is complete and correct to the best of my knowledge and belief.

Name CASCADE DRILLING, L.P. **License No.** 626

(Person, Firm, or Corporation - Print or Type)

Signature________________ **Date**________________

(Licensed Well Driller)

WELL DRILLER'S REPORT
State of Utah
Division of Water Rights

For additional space, use "Additional Well Data Form" and attach

Well Identification

Non-Production Well: 1657001M00 WIN: 439347

Owner *Note any changes*

DEPT OF VETERANS AFFAIRS
C/O LYNNE WELSH
500 FOOTHILL DRIVE
SALT LAKE CITY, UT 84102

No Drill

Contact Person/Engineer: ______

Well Location *Note any changes*

S 1394 E 1142 from the N4 corner of section 08, Township 1S, Range 1E, SL B&M

Location Description: (address, proximity to buildings, landmarks, ground elevation,local well #)

Drillers Activity Start Date: ______ Completion Date: ______

Check all that apply: [X] New [ ] Repair [ ] Deepen [ ] Clean [ ] Replace [ ] Public Nature of Use: ______

If a replacement well, provide location of new well. ______ feet north/south and ______ feet east/west of the existing well.

DEPTH (feet) FROM	TO	BOREHOLE DIAMETER (in)	DRILLING METHOD	DRILLING FLUID

Well Log

DEPTH (feet) FROM	TO	WATER	PERMEABLE High	PERMEABLE Low	UNCONSOLIDATED CLAY	SILT	SAND	GRAVEL	COBBLES	BOULDER	OTHER	CONSOLIDATED ROCK TYPE	COLOR	DESCRIPTION AND REMARKS (e.g., relative %, grain size, sorting, angularity, bedding, grain composition density, plasticity, shape, cementation, consistancy, water bearing, odor, fracturing, minerology, texture,degree of weathering, hardness, water quality, etc.)

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Static Water Level

Date______ Water Level______ feet Flowing? [ ] Yes [ ] No
Method of Water Level Measurement______ If Flowing, Capped Pressure______ PSI
Point to Which Water Level Measurement was Referenced______ Elevation______
Height of Water Level reference point above ground surface______ feet Temperature______ degrees [ ] C [ ] F

Construction Information

DEPTH (feet)		CASING			DEPTH (feet)		☐SCREEN ☐PERFORATIONS ☐OPEN BOTTOM		
FROM	TO	CASING TYPE AND MATERIAL/GRADE	WALL THICK (in)	NOMINAL DIAM. (in)	FROM	TO	SCREEN SLOT SIZE OR PERF SIZE (in)	SCREEN DIAM. OR PERF LENGTH (in)	SCREEN TYPE OR NUMBER PERF (per round/interval)

Well Head Configuration:________________ Access Port Provided? ☐ Yes ☐ No

Casing Joint Type:________________ Perforator Used:________________

Was a Surface Seal Installed? ☐ Yes ☐ No Depth of Surface Seal:__________ feet Drive Shoe? ☐ Yes ☐ No

Surface Seal Material Placement Method:________________

Was a temporary surface casing used? ☐ Yes ☐ No If yes, depth of casing:__________ feet diameter:__________ inches

DEPTH (feet)		SURFACE SEAL / INTERVAL SEAL / FILTER PACK / PACKER INFORMATION		
FROM	TO	SEAL MATERIAL, FILTER PACK and PACKER TYPE and DESCRIPTION	**Quantity** of Material Used (if applicable)	GROUT DENSITY (lbs./gal., # bag mix, gal./sack etc.)

Well Development and Well Yield Test Information

DATE	METHOD	YIELD	Units Check One		DRAWDOWN (ft)	TIME PUMPED (hrs & min)
			GPM	CFS		

Pump (Permanent)

Pump Description:________________ Horsepower:__________ Pump Intake Depth:______ feet

Approximate Maximum Pumping Rate:________________ Well Disinfected upon Completion? ☐ Yes ☐ No

Comments

Description of construction activity, additional materials used, problems encountered, extraordinary Circumstances, abandonment procedures. *Use additional well data form for more space.*

Well Driller Statement

This well was drilled and constructed under my supervision, according to applicable rules and regulations, and this report is complete and correct to the best of my knowledge and belief.

Name CASCADE DRILLING, L.P. **License No.** 626

(Person, Firm, or Corporation - Print or Type)

Signature________________ **Date**________________

(Licensed Well Driller)

WELL DRILLER'S REPORT
State of Utah
Division of Water Rights

For additional space, use "Additional Well Data Form" and attach

Well Identification

Non-Production Well: 1657001M00 WIN: 439348

Owner *Note any changes*

DEPT OF VETERANS AFFAIRS
C/O LYNNE WELSH
500 FOOTHILL DRIVE
SALT LAKE CITY, UT 84102

No Drill

Contact Person/Engineer: ____________________

Well Location *Note any changes*

S 1313 E 903 from the N4 corner of section 08, Township 1S, Range 1E, SL B&M

Location Description: (address, proximity to buildings, landmarks, ground elevation,local well #)

Drillers Activity Start Date:____________ Completion Date:____________

Check all that apply: ☒ New ☐ Repair ☐ Deepen ☐ Clean ☐ Replace ☐ Public Nature of Use:____________

If a replacement well, provide location of new well. ____________ feet north/south and ____________ feet east/west of the existing well.

DEPTH (feet) FROM	TO	BOREHOLE DIAMETER (in)	DRILLING METHOD	DRILLING FLUID

Well Log

DEPTH (feet) FROM	TO	WATER	PERMEABLE High	PERMEABLE Low	UNCONSOLIDATED CLAY	SILT	SAND	GRAVEL	COBBLES	BOULDER	OTHER	CONSOLIDATED ROCK TYPE	COLOR	DESCRIPTION AND REMARKS (e.g., relative %, grain size, sorting, angularity, bedding, grain composition density, plasticity, shape, cementation, consistancy, water bearing, odor, fracturing, minerology, texture,degree of weathering, hardness, water quality, etc.)

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SALT LAKE

Static Water Level

Date____________ Water Level________ feet Flowing? ☐ Yes ☐ No

Method of Water Level Measurement____________ If Flowing, Capped Pressure________ PSI

Point to Which Water Level Measurement was Referenced____________ Elevation________

Height of Water Level reference point above ground surface________ feet Temperature________ degrees ☐C ☐F

Construction Information

DEPTH (feet)		CASING			DEPTH (feet)		☐SCREEN ☐PERFORATIONS ☐OPEN BOTTOM		
FROM	TO	CASING TYPE AND MATERIAL/GRADE	WALL THICK (in)	NOMINAL DIAM. (in)	FROM	TO	SCREEN SLOT SIZE OR PERF SIZE (in)	SCREEN DIAM. OR PERF LENGTH (in)	SCREEN TYPE OR NUMBER PERF (per round/interval)

Well Head Configuration:__________ Access Port Provided? ☐ Yes ☐ No

Casing Joint Type:__________ Perforator Used:__________

Was a Surface Seal Installed? ☐ Yes ☐ No Depth of Surface Seal:______ feet Drive Shoe? ☐ Yes ☐ No

Surface Seal Material Placement Method:__________

Was a temporary surface casing used? ☐ Yes ☐ No If yes, depth of casing:______ feet diameter:______ inches

DEPTH (feet)		SURFACE SEAL / INTERVAL SEAL / FILTER PACK / PACKER INFORMATION		
FROM	TO	SEAL MATERIAL, FILTER PACK and PACKER TYPE and DESCRIPTION	**Quantity** of Material Used (if applicable)	GROUT DENSITY (lbs./gal., # bag mix, gal./sack etc.)

Well Development and Well Yield Test Information

DATE	METHOD	YIELD	Units Check One		DRAWDOWN (ft)	TIME PUMPED (hrs & min)
			GPM	CFS		

Pump (Permanent)

Pump Description:__________ Horsepower:______ Pump Intake Depth:______ feet

Approximate Maximum Pumping Rate:__________ Well Disinfected upon Completion? ☐ Yes ☐ No

Comments

Description of construction activity, additional materials used, problems encountered, extraordinary Circumstances, abandonment procedures. *Use additional well data form for more space.*

Well Driller Statement

This well was drilled and constructed under my supervision, according to applicable rules and regulations, and this report is complete and correct to the best of my knowledge and belief.

Name CASCADE DRILLING, L.P. License No. 626

(Person, Firm, or Corporation - Print or Type)

Signature__________ Date__________

(Licensed Well Driller)

WELL DRILLER'S REPORT
State of Utah
Division of Water Rights

For additional space, use "Additional Well Data Form" and attach

Well Identification

Non-Production Well: 1657001M00 WIN: 439349

Owner *Note any changes*

DEPT OF VETERANS AFFAIRS
C/O LYNNE WELSH
500 FOOTHILL DRIVE
SALT LAKE CITY, UT 84102

No Drill

Contact Person/Engineer: ____________

Well Location *Note any changes*

S 1180 E 1071 from the N4 corner of section 08, Township 1S, Range 1E, SL B&M

Location Description: (address, proximity to buildings, landmarks, ground elevation,local well #)

Drillers Activity Start Date:____________ Completion Date:____________

Check all that apply: [X] New [ ] Repair [ ] Deepen [ ] Clean [ ] Replace [ ] Public Nature of Use:____________

If a replacement well, provide location of new well. ____________ feet north/south and ____________ feet east/west of the existing well.

DEPTH (feet) FROM	TO	BOREHOLE DIAMETER (in)	DRILLING METHOD	DRILLING FLUID

Well Log

DEPTH (feet) FROM	TO	WATER	PERMEABLE High	PERMEABLE Low	UNCONSOLIDATED CLAY	SILT	SAND	GRAVEL	COBBLES	BOULDER	OTHER	CONSOLIDATED ROCK TYPE	COLOR	DESCRIPTION AND REMARKS (e.g., relative %, grain size, sorting, angularity, bedding, grain composition density, plasticity, shape, cementation, consistancy, water bearing, odor, fracturing, minerology, texture,degree of weathering, hardness, water quality, etc.)

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SALT LAKE

Static Water Level

Date____________ Water Level____________ feet Flowing? [ ] Yes [ ] No

Method of Water Level Measurement____________ If Flowing, Capped Pressure____________ PSI

Point to Which Water Level Measurement was Referenced____________ Elevation____________

Height of Water Level reference point above ground surface____________ feet Temperature____________ degrees [ ] C [ ] F

Construction Information

DEPTH (feet)		CASING			DEPTH (feet)		☐SCREEN ☐PERFORATIONS ☐OPEN BOTTOM		
FROM	TO	CASING TYPE AND MATERIAL/GRADE	WALL THICK (in)	NOMINAL DIAM. (in)	FROM	TO	SCREEN SLOT SIZE OR PERF SIZE (in)	SCREEN DIAM. OR PERF LENGTH (in)	SCREEN TYPE OR NUMBER PERF (per round/interval)

Well Head Configuration:________ Access Port Provided? ☐ Yes ☐ No

Casing Joint Type:________ Perforator Used:________

Was a Surface Seal Installed? ☐ Yes ☐ No Depth of Surface Seal:______ feet Drive Shoe? ☐ Yes ☐ No

Surface Seal Material Placement Method:________

Was a temporary surface casing used? ☐ Yes ☐ No If yes, depth of casing:______ feet diameter:______ inches

DEPTH (feet)		SURFACE SEAL / INTERVAL SEAL / FILTER PACK / PACKER INFORMATION		
FROM	TO	SEAL MATERIAL, FILTER PACK and PACKER TYPE and DESCRIPTION	**Quantity** of Material Used (if applicable)	GROUT DENSITY (lbs./gal., # bag mix, gal./sack etc.)

Well Development and Well Yield Test Information

DATE	METHOD	YIELD	Units Check One		DRAWDOWN (ft)	TIME PUMPED (hrs & min)
			GPM	CFS		

Pump (Permanent)

Pump Description:________ Horsepower:______ Pump Intake Depth:______ feet

Approximate Maximum Pumping Rate:________ Well Disinfected upon Completion? ☐ Yes ☐ No

Comments

Description of construction activity, additional materials used, problems encountered, extraordinary Circumstances, abandonment procedures. *Use additional well data form for more space.*

Well Driller Statement

This well was drilled and constructed under my supervision, according to applicable rules and regulations, and this report is complete and correct to the best of my knowledge and belief.

Name CASCADE DRILLING, L.P. **License No.** 626

(Person, Firm, or Corporation - Print or Type)

Signature________ **Date**________

(Licensed Well Driller)

WELL DRILLER'S REPORT
State of Utah
Division of Water Rights

For additional space, use "Additional Well Data Form" and attach

Well Identification

Non-Production Well: 1657001M00 WIN: 439350

Owner *Note any changes*

DEPT OF VETERANS AFFAIRS
C/O LYNNE WELSH
500 FOOTHILL DRIVE
SALT LAKE CITY, UT 84102

No Drill

Contact Person/Engineer: ______

Well Location *Note any changes*

S 858 W 1224 from the NE corner of section 08, Township 1S, Range 1E, SL B&M

Location Description: (address, proximity to buildings, landmarks, ground elevation,local well #)

Drillers Activity Start Date:______ Completion Date:______

Check all that apply: ☒ New ☐ Repair ☐ Deepen ☐ Clean ☐ Replace ☐ Public Nature of Use:______

If a replacement well, provide location of new well. ______ feet north/south and ______ feet east/west of the existing well.

DEPTH (feet) FROM	TO	BOREHOLE DIAMETER (in)	DRILLING METHOD	DRILLING FLUID

Well Log

DEPTH (feet) FROM	TO	WATER	PERMEABLE High	PERMEABLE Low	UNCONSOLIDATED CLAY	SILT	SAND	GRAVEL	COBBLES	BOULDER	OTHER	CONSOLIDATED ROCK TYPE	COLOR	DESCRIPTION AND REMARKS (e.g., relative %, grain size, sorting, angularity, bedding, grain composition density, plasticity, shape, cementation, consistancy, water bearing, odor, fracturing, minerology, texture,degree of weathering, hardness, water quality, etc.)

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SALT LAKE

Static Water Level

Date______ Water Level______ feet Flowing? ☐ Yes ☐ No

Method of Water Level Measurement______ If Flowing, Capped Pressure______ PSI

Point to Which Water Level Measurement was Referenced______ Elevation______

Height of Water Level reference point above ground surface______ feet Temperature______ degrees ☐ C ☐ F

Construction Information

DEPTH (feet)		CASING			DEPTH (feet)		☐SCREEN ☐PERFORATIONS ☐OPEN BOTTOM		
FROM	TO	CASING TYPE AND MATERIAL/GRADE	WALL THICK (in)	NOMINAL DIAM. (in)	FROM	TO	SCREEN SLOT SIZE OR PERF SIZE (in)	SCREEN DIAM. OR PERF LENGTH (in)	SCREEN TYPE OR NUMBER PERF (per round/interval)

Well Head Configuration:______ Access Port Provided? ☐ Yes ☐ No

Casing Joint Type:______ Perforator Used:______

Was a Surface Seal Installed? ☐ Yes ☐ No Depth of Surface Seal:______ feet Drive Shoe? ☐ Yes ☐ No

Surface Seal Material Placement Method:______

Was a temporary surface casing used? ☐ Yes ☐ No If yes, depth of casing:______ feet diameter:______ inches

DEPTH (feet)		SURFACE SEAL / INTERVAL SEAL / FILTER PACK / PACKER INFORMATION		
FROM	TO	SEAL MATERIAL, FILTER PACK and PACKER TYPE and DESCRIPTION	**Quantity** of Material Used (if applicable)	GROUT DENSITY (lbs./gal., # bag mix, gal./sack etc.)

Well Development and Well Yield Test Information

DATE	METHOD	YIELD	Units Check One		DRAWDOWN (ft)	TIME PUMPED (hrs & min)
			GPM	CFS		

Pump (Permanent)

Pump Description:______ Horsepower:______ Pump Intake Depth:______ feet

Approximate Maximum Pumping Rate:______ Well Disinfected upon Completion? ☐ Yes ☐ No

Comments

Description of construction activity, additional materials used, problems encountered, extraordinary Circumstances, abandonment procedures. *Use additional well data form for more space.*

Well Driller Statement

This well was drilled and constructed under my supervision, according to applicable rules and regulations, and this report is complete and correct to the best of my knowledge and belief.

Name CASCADE DRILLING, L.P. **License No.** 626

(Person, Firm, or Corporation - Print or Type)

Signature______ **Date**______

(Licensed Well Driller)

WELL DRILLER'S REPORT
State of Utah
Division of Water Rights

For additional space, use "Additional Well Data Form" and attach

Well Identification

Non-Production Well: 1657001M00 WIN: 439351

Owner *Note any changes*

DEPT OF VETERANS AFFAIRS
C/O LYNNE WELSH
500 FOOTHILL DRIVE
SALT LAKE CITY, UT 84102

No Drill

Contact Person/Engineer: ____

Well Location *Note any changes*

S 843 E 891 from the N4 corner of section 08, Township 1S, Range 1E, SL B&M

Location Description: (address, proximity to buildings, landmarks, ground elevation,local well #)

Drillers Activity Start Date: ____ Completion Date: ____

Check all that apply: ☒ New ☐ Repair ☐ Deepen ☐ Clean ☐ Replace ☐ Public Nature of Use: ____

If a replacement well, provide location of new well. ____ feet north/south and ____ feet east/west of the existing well.

DEPTH (feet) FROM	TO	BOREHOLE DIAMETER (in)	DRILLING METHOD	DRILLING FLUID

Well Log

DEPTH (feet) FROM	TO	WATER	PERMEABLE High	PERMEABLE Low	UNCONSOLIDATED CLAY	SILT	SAND	GRAVEL	COBBLES	BOULDER	OTHER	CONSOLIDATED ROCK TYPE	COLOR	DESCRIPTION AND REMARKS (e.g., relative %, grain size, sorting, angularity, bedding, grain composition density, plasticity, shape, cementation, consistancy, water bearing, odor, fracturing, minerology, texture,degree of weathering, hardness, water quality, etc.)

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SALT LAKE

Static Water Level

Date ____ Water Level ____ feet Flowing? ☐ Yes ☐ No

Method of Water Level Measurement ____ If Flowing, Capped Pressure ____ PSI

Point to Which Water Level Measurement was Referenced ____ Elevation ____

Height of Water Level reference point above ground surface ____ feet Temperature ____ degrees ☐ C ☐ F

Construction Information

DEPTH (feet)		CASING			DEPTH (feet)		☐ SCREEN ☐ PERFORATIONS ☐ OPEN BOTTOM		
FROM	TO	CASING TYPE AND MATERIAL/GRADE	WALL THICK (in)	NOMINAL DIAM. (in)	FROM	TO	SCREEN SLOT SIZE OR PERF SIZE (in)	SCREEN DIAM. OR PERF LENGTH (in)	SCREEN TYPE OR NUMBER PERF (per round/interval)

Well Head Configuration:________________ Access Port Provided? ☐ Yes ☐ No

Casing Joint Type:________________ Perforator Used:________________

Was a Surface Seal Installed? ☐ Yes ☐ No Depth of Surface Seal:________ feet Drive Shoe? ☐ Yes ☐ No

Surface Seal Material Placement Method:________________

Was a temporary surface casing used? ☐ Yes ☐ No If yes, depth of casing:________ feet diameter:________ inches

DEPTH (feet)		SURFACE SEAL / INTERVAL SEAL / FILTER PACK / PACKER INFORMATION		
FROM	TO	SEAL MATERIAL, FILTER PACK and PACKER TYPE and DESCRIPTION	**Quantity** of Material Used (if applicable)	GROUT DENSITY (lbs./gal., # bag mix, gal./sack etc.)

Well Development and Well Yield Test Information

DATE	METHOD	YIELD	Units Check One		DRAWDOWN (ft)	TIME PUMPED (hrs & min)
			GPM	CFS		

Pump (Permanent)

Pump Description:________________ Horsepower:________ Pump Intake Depth:______ feet

Approximate Maximum Pumping Rate:________________ Well Disinfected upon Completion? ☐ Yes ☐ No

Comments

Description of construction activity, additional materials used, problems encountered, extraordinary Circumstances, abandonment procedures. *Use additional well data form for more space.*

____

____

____

____

Well Driller Statement

This well was drilled and constructed under my supervision, according to applicable rules and regulations, and this report is complete and correct to the best of my knowledge and belief.

Name CASCADE DRILLING, L.P. **License No.** 626

(Person, Firm, or Corporation - Print or Type)

Signature________________ **Date**________________

(Licensed Well Driller)

WELL DRILLER'S REPORT
State of Utah
Division of Water Rights

For additional space, use "Additional Well Data Form" and attach

Well Identification

Non-Production Well: 1657001M00 WIN: 439352

Owner *Note any changes*

DEPT OF VETERANS AFFAIRS
C/O LYNNE WELSH
500 FOOTHILL DRIVE
SALT LAKE CITY, UT 84102

No Drill

Contact Person/Engineer: ______

Well Location *Note any changes*

S 361 E 1036 from the N4 corner of section 08, Township 1S, Range 1E, SL B&M

Location Description: (address, proximity to buildings, landmarks, ground elevation,local well #)

Drillers Activity Start Date:______ Completion Date:______

Check all that apply: ☒ New ☐ Repair ☐ Deepen ☐ Clean ☐ Replace ☐ Public Nature of Use:______

If a replacement well, provide location of new well. ______ feet north/south and ______ feet east/west of the existing well.

DEPTH (feet) FROM	TO	BOREHOLE DIAMETER (in)	DRILLING METHOD	DRILLING FLUID

Well Log

DEPTH (feet) FROM	TO	WATER	PERMEABLE High	PERMEABLE Low	UNCONSOLIDATED CLAY	SILT	SAND	GRAVEL	COBBLES	BOULDER	OTHER	CONSOLIDATED ROCK TYPE	COLOR	DESCRIPTION AND REMARKS (e.g., relative %, grain size, sorting, angularity, bedding, grain composition density, plasticity, shape, cementation, consistancy, water bearing, odor, fracturing, minerology, texture,degree of weathering, hardness, water quality, etc.)

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SALT LAKE

Static Water Level

Date______ Water Level______ feet Flowing? ☐ Yes ☐ No

Method of Water Level Measurement______ If Flowing, Capped Pressure______ PSI

Point to Which Water Level Measurement was Referenced______ Elevation______

Height of Water Level reference point above ground surface______ feet Temperature______ degrees ☐ C ☐ F

Construction Information

DEPTH (feet)		CASING			DEPTH (feet)		☐SCREEN ☐PERFORATIONS ☐OPEN BOTTOM		
FROM	TO	CASING TYPE AND MATERIAL/GRADE	WALL THICK (in)	NOMINAL DIAM. (in)	FROM	TO	SCREEN SLOT SIZE OR PERF SIZE (in)	SCREEN DIAM. OR PERF LENGTH (in)	SCREEN TYPE OR NUMBER PERF (per round/interval)

Well Head Configuration:____________________ Access Port Provided? ☐Yes ☐No

Casing Joint Type:____________________ Perforator Used:____________________

Was a Surface Seal Installed? ☐Yes ☐No Depth of Surface Seal:__________ feet Drive Shoe? ☐Yes ☐No

Surface Seal Material Placement Method:____________________

Was a temporary surface casing used? ☐Yes ☐No If yes, depth of casing:__________ feet diameter:__________ inches

DEPTH (feet)		SURFACE SEAL / INTERVAL SEAL / FILTER PACK / PACKER INFORMATION		
FROM	TO	SEAL MATERIAL, FILTER PACK and PACKER TYPE and DESCRIPTION	**Quantity** of Material Used (if applicable)	GROUT DENSITY (lbs./gal., # bag mix, gal./sack etc.)

Well Development and Well Yield Test Information

DATE	METHOD	YIELD	Units Check One		DRAWDOWN (ft)	TIME PUMPED (hrs & min)
			GPM	CFS		

Pump (Permanent)

Pump Description:____________________ Horsepower:__________ Pump Intake Depth:______ feet

Approximate Maximum Pumping Rate:____________________ Well Disinfected upon Completion? ☐Yes ☐No

Comments

Description of construction activity, additional materials used, problems encountered, extraordinary Circumstances, abandonment procedures. *Use additional well data form for more space.*

Well Driller Statement

This well was drilled and constructed under my supervision, according to applicable rules and regulations, and this report is complete and correct to the best of my knowledge and belief.

Name CASCADE DRILLING, L.P. **License No.** 626

(Person, Firm, or Corporation - Print or Type)

Signature____________________ **Date**____________________

(Licensed Well Driller)

WELL DRILLER'S REPORT
State of Utah
Division of Water Rights

For additional space, use "Additional Well Data Form" and attach

Well Identification

Non-Production Well: 1657001M00 WIN: 439353

Owner *Note any changes*

DEPT OF VETERANS AFFAIRS
C/O LYNNE WELSH
500 FOOTHILL DRIVE
SALT LAKE CITY, UT 84102

No Drill

Contact Person/Engineer: ______

Well Location *Note any changes*

S 486 E 540 from the N4 corner of section 08, Township 1S, Range 1E, SL B&M

Location Description: (address, proximity to buildings, landmarks, ground elevation,local well #)

Drillers Activity Start Date: ______ Completion Date: ______

Check all that apply: ☒ New ☐ Repair ☐ Deepen ☐ Clean ☐ Replace ☐ Public Nature of Use: ______

If a replacement well, provide location of new well. ______ feet north/south and ______ feet east/west of the existing well.

DEPTH (feet) FROM	TO	BOREHOLE DIAMETER (in)	DRILLING METHOD	DRILLING FLUID

Well Log

DEPTH (feet) FROM	TO	WATER	PERMEABLE High	PERMEABLE Low	UNCONSOLIDATED CLAY	SILT	SAND	GRAVEL	COBBLES	BOULDER	OTHER	CONSOLIDATED ROCK TYPE	COLOR	DESCRIPTION AND REMARKS (e.g., relative %, grain size, sorting, angularity, bedding, grain composition density, plasticity, shape, cementation, consistancy, water bearing, odor, fracturing, minerology, texture,degree of weathering, hardness, water quality, etc.)

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SALT LAKE
KH

Static Water Level

Date ______ Water Level ______ feet Flowing? ☐ Yes ☐ No

Method of Water Level Measurement ______ If Flowing, Capped Pressure ______ PSI

Point to Which Water Level Measurement was Referenced ______ Elevation ______

Height of Water Level reference point above ground surface ______ feet Temperature ______ degrees ☐C ☐F

Construction Information

DEPTH (feet)		CASING			DEPTH (feet)		☐SCREEN ☐PERFORATIONS ☐OPEN BOTTOM		
FROM	TO	CASING TYPE AND MATERIAL/GRADE	WALL THICK (in)	NOMINAL DIAM. (in)	FROM	TO	SCREEN SLOT SIZE OR PERF SIZE (in)	SCREEN DIAM. OR PERF LENGTH (in)	SCREEN TYPE OR NUMBER PERF (per round/interval)

Well Head Configuration:__________ Access Port Provided? ☐Yes ☐No

Casing Joint Type:__________ Perforator Used:__________

Was a Surface Seal Installed? ☐Yes ☐No Depth of Surface Seal:______ feet Drive Shoe? ☐Yes ☐No

Surface Seal Material Placement Method:__________

Was a temporary surface casing used? ☐Yes ☐No If yes, depth of casing:______ feet diameter:______ inches

DEPTH (feet)		SURFACE SEAL / INTERVAL SEAL / FILTER PACK / PACKER INFORMATION		
FROM	TO	SEAL MATERIAL, FILTER PACK and PACKER TYPE and DESCRIPTION	**Quantity** of Material Used (if applicable)	GROUT DENSITY (lbs./gal., # bag mix, gal./sack etc.)

Well Development and Well Yield Test Information

DATE	METHOD	YIELD	Units Check One		DRAWDOWN (ft)	TIME PUMPED (hrs & min)
			GPM	CFS		

Pump (Permanent)

Pump Description:__________ Horsepower:______ Pump Intake Depth:______ feet

Approximate Maximum Pumping Rate:__________ Well Disinfected upon Completion? ☐Yes ☐No

Comments

Description of construction activity, additional materials used, problems encountered, extraordinary Circumstances, abandonment procedures. *Use additional well data form for more space.*

Well Driller Statement

This well was drilled and constructed under my supervision, according to applicable rules and regulations, and this report is complete and correct to the best of my knowledge and belief.

Name CASCADE DRILLING, L.P. **License No.** 626

(Person, Firm, or Corporation - Print or Type)

Signature__________ **Date**__________

(Licensed Well Driller)

WELL DRILLER'S REPORT
State of Utah
Division of Water Rights

For additional space, use "Additional Well Data Form" and attach

Well Identification

Non-Production Well: 1657001M00 WIN: 439354

Owner *Note any changes*

DEPT OF VETERANS AFFAIRS
C/O LYNNE WELSH
500 FOOTHILL DRIVE
SALT LAKE CITY, UT 84102

No Drill

Contact Person/Engineer: ______

Well Location *Note any changes*

S 29 E 1258 from the N4 corner of section 08, Township 1S, Range 1E, SL B&M

Location Description: (address, proximity to buildings, landmarks, ground elevation,local well #)

Drillers Activity Start Date: ______ Completion Date: ______

Check all that apply: ☒ New ☐ Repair ☐ Deepen ☐ Clean ☐ Replace ☐ Public Nature of Use: ______

If a replacement well, provide location of new well. ______ feet north/south and ______ feet east/west of the existing well.

DEPTH (feet) FROM	TO	BOREHOLE DIAMETER (in)	DRILLING METHOD	DRILLING FLUID

Well Log

DEPTH (feet) FROM	TO	WATER	PERMEABLE High	PERMEABLE Low	UNCONSOLIDATED CLAY	SILT	SAND	GRAVEL	COBBLES	BOULDER	OTHER	CONSOLIDATED ROCK TYPE	COLOR	DESCRIPTION AND REMARKS (e.g., relative %, grain size, sorting, angularity, bedding, grain composition density, plasticity, shape, cementation, consistancy, water bearing, odor, fracturing, minerology, texture,degree of weathering, hardness, water quality, etc.)

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SALT LAKE

Static Water Level

Date ______ Water Level ______ feet Flowing? ☐ Yes ☐ No

Method of Water Level Measurement ______ If Flowing, Capped Pressure ______ PSI

Point to Which Water Level Measurement was Referenced ______ Elevation ______

Height of Water Level reference point above ground surface ______ feet Temperature ______ degrees ☐ C ☐ F

Construction Information

DEPTH (feet)		CASING			DEPTH (feet)		☐SCREEN ☐PERFORATIONS ☐OPEN BOTTOM		
FROM	TO	CASING TYPE AND MATERIAL/GRADE	WALL THICK (in)	NOMINAL DIAM. (in)	FROM	TO	SCREEN SLOT SIZE OR PERF SIZE (in)	SCREEN DIAM. OR PERF LENGTH (in)	SCREEN TYPE OR NUMBER PERF (per round/interval)

Well Head Configuration:__________ Access Port Provided? ☐ Yes ☐ No

Casing Joint Type:__________ Perforator Used:__________

Was a Surface Seal Installed? ☐ Yes ☐ No Depth of Surface Seal:______ feet Drive Shoe? ☐ Yes ☐ No

Surface Seal Material Placement Method:__________

Was a temporary surface casing used? ☐ Yes ☐ No If yes, depth of casing:______ feet diameter:______ inches

DEPTH (feet)		SURFACE SEAL / INTERVAL SEAL / FILTER PACK / PACKER INFORMATION		
FROM	TO	SEAL MATERIAL, FILTER PACK and PACKER TYPE and DESCRIPTION	**Quantity** of Material Used (if applicable)	GROUT DENSITY (lbs./gal., # bag mix, gal./sack etc.)

Well Development and Well Yield Test Information

DATE	METHOD	YIELD	Units Check One		DRAWDOWN (ft)	TIME PUMPED (hrs & min)
			GPM	CFS		

Pump (Permanent)

Pump Description:__________ Horsepower:______ Pump Intake Depth:_____ feet

Approximate Maximum Pumping Rate:__________ Well Disinfected upon Completion? ☐ Yes ☐ No

Comments

Description of construction activity, additional materials used, problems encountered, extraordinary Circumstances, abandonment procedures. *Use additional well data form for more space.*

Well Driller Statement

This well was drilled and constructed under my supervision, according to applicable rules and regulations, and this report is complete and correct to the best of my knowledge and belief.

Name CASCADE DRILLING, L.P. **License No.** 626

(Person, Firm, or Corporation - Print or Type)

Signature__________ **Date**__________

(Licensed Well Driller)

WELL DRILLER'S REPORT
State of Utah
Division of Water Rights

For additional space, use "Additional Well Data Form" and attach

Well Identification

Non-Production Well: 1657001M00 WIN: 439355

Owner *Note any changes*

DEPT OF VETERANS AFFAIRS
C/O LYNNE WELSH
500 FOOTHILL DRIVE
SALT LAKE CITY, UT 84102

No Drill

Contact Person/Engineer:

Well Location *Note any changes*

S 263 E 337 from the N4 corner of section 08, Township 1S, Range 1E, SL B&M

Location Description: (address, proximity to buildings, landmarks, ground elevation,local well #)

Drillers Activity Start Date: Completion Date:

Check all that apply: [X] New [ ] Repair [ ] Deepen [ ] Clean [ ] Replace [ ] Public Nature of Use:

If a replacement well, provide location of new well. ______ feet north/south and ______ feet east/west of the existing well.

DEPTH (feet) FROM	TO	BOREHOLE DIAMETER (in)	DRILLING METHOD	DRILLING FLUID

Well Log

DEPTH (feet) FROM	TO	WATER	PERMEABLE High	PERMEABLE Low	UNCONSOLIDATED CLAY	SILT	SAND	GRAVEL	COBBLES	BOULDER	OTHER	CONSOLIDATED ROCK TYPE	COLOR	DESCRIPTION AND REMARKS (e.g., relative %, grain size, sorting, angularity, bedding, grain composition density, plasticity, shape, cementation, consistancy, water bearing, odor, fracturing, minerology, texture,degree of weathering, hardness, water quality, etc.)

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SALT LAKE

Static Water Level

Date ______ Water Level ______ feet Flowing? [ ] Yes [ ] No

Method of Water Level Measurement ______ If Flowing, Capped Pressure ______ PSI

Point to Which Water Level Measurement was Referenced ______ Elevation ______

Height of Water Level reference point above ground surface ______ feet Temperature ______ degrees [ ] C [ ] F

Construction Information

DEPTH (feet) FROM	TO	CASING: CASING TYPE AND MATERIAL/GRADE	WALL THICK (in)	NOMINAL DIAM. (in)	DEPTH (feet) FROM	TO	SCREEN SLOT SIZE OR PERF SIZE (in)	SCREEN DIAM. OR PERF LENGTH (in)	SCREEN TYPE OR NUMBER PERF (per round/interval)

☐SCREEN ☐PERFORATIONS ☐OPEN BOTTOM

Well Head Configuration:______________________ Access Port Provided? ☐ Yes ☐No

Casing Joint Type:______________________ Perforator Used:______________________

Was a Surface Seal Installed? ☐ Yes ☐No Depth of Surface Seal:__________ feet Drive Shoe? ☐ Yes ☐No

Surface Seal Material Placement Method:______________________

Was a temporary surface casing used? ☐ Yes ☐No If yes, depth of casing:__________ feet diameter:__________ inches

DEPTH (feet) FROM	TO	SURFACE SEAL / INTERVAL SEAL / FILTER PACK / PACKER INFORMATION: SEAL MATERIAL, FILTER PACK and PACKER TYPE and DESCRIPTION	**Quantity** of Material Used (if applicable)	GROUT DENSITY (lbs./gal., # bag mix, gal./sack etc.)

Well Development and Well Yield Test Information

DATE	METHOD	YIELD	Units Check One: GPM	CFS	DRAWDOWN (ft)	TIME PUMPED (hrs & min)

Pump (Permanent)

Pump Description:______________________ Horsepower:__________ Pump Intake Depth:_______ feet

Approximate Maximum Pumping Rate:______________________ Well Disinfected upon Completion? ☐Yes ☐No

Comments

Description of construction activity, additional materials used, problems encountered, extraordinary Circumstances, abandonment procedures. *Use additional well data form for more space.*

____

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____

Well Driller Statement

This well was drilled and constructed under my supervision, according to applicable rules and regulations, and this report is complete and correct to the best of my knowledge and belief.

Name CASCADE DRILLING, L.P. **License No.** 626

(Person, Firm, or Corporation - Print or Type)

Signature______________________ **Date**______________________

(Licensed Well Driller)

WELL DRILLER'S REPORT
State of Utah
Division of Water Rights

For additional space, use "Additional Well Data Form" and attach

Well Identification

Non-Production Well: 1657001M00 WIN: 439321

Owner *Note any changes*

DEPT OF VETERANS AFFAIRS
C/O LYNNE WELSH
500 FOOTHILL DRIVE
SALT LAKE CITY, UT 84102

Drill, Sample, Abandon

Contact Person/Engineer: ____________________

Well Location *Note any changes*

S 756 W 7 from the N4 corner of section 08, Township 1S, Range 1E, SL B&M

Location Description: (address, proximity to buildings, landmarks, ground elevation,local well #)

Drillers Activity Start Date:____________________ Completion Date:____________________

Check all that apply: ☒ New ☐ Repair ☐ Deepen ☐ Clean ☐ Replace ☐ Public Nature of Use:____________________

If a replacement well, provide location of new well. ____________ feet north/south and ____________ feet east/west of the existing well.

DEPTH (feet) FROM	TO	BOREHOLE DIAMETER (in)	DRILLING METHOD	DRILLING FLUID

Well Log

DEPTH (feet) FROM	TO	WATER	PERMEABLE High	PERMEABLE Low	UNCONSOLIDATED CLAY	SILT	SAND	GRAVEL	COBBLES	BOULDER	OTHER	CONSOLIDATED ROCK TYPE	COLOR	DESCRIPTION AND REMARKS (e.g., relative %, grain size, sorting, angularity, bedding, grain composition density, plasticity, shape, cementation, consistancy, water bearing, odor, fracturing, minerology, texture,degree of weathering, hardness, water quality, etc.)

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SALT LAKE

Static Water Level

Date____________________ Water Level____________ feet Flowing? ☐ Yes ☐ No

Method of Water Level Measurement____________________ If Flowing, Capped Pressure____________ PSI

Point to Which Water Level Measurement was Referenced____________________ Elevation____________

Height of Water Level reference point above ground surface__________ feet Temperature________ degrees ☐ C ☐ F

Construction Information

DEPTH (feet)		CASING			DEPTH (feet)		☐SCREEN ☐PERFORATIONS ☐OPEN BOTTOM		
FROM	TO	CASING TYPE AND MATERIAL/GRADE	WALL THICK (in)	NOMINAL DIAM. (in)	FROM	TO	SCREEN SLOT SIZE OR PERF SIZE (in)	SCREEN DIAM. OR PERF LENGTH (in)	SCREEN TYPE OR NUMBER PERF (per round/interval)

Well Head Configuration:__________ Access Port Provided? ☐ Yes ☐ No

Casing Joint Type:__________ Perforator Used:__________

Was a Surface Seal Installed? ☐ Yes ☐ No Depth of Surface Seal:______ feet Drive Shoe? ☐ Yes ☐ No

Surface Seal Material Placement Method:__________

Was a temporary surface casing used? ☐ Yes ☐ No If yes, depth of casing:______ feet diameter:______ inches

DEPTH (feet)		SURFACE SEAL / INTERVAL SEAL / FILTER PACK / PACKER INFORMATION		
FROM	TO	SEAL MATERIAL, FILTER PACK and PACKER TYPE and DESCRIPTION	**Quantity** of Material Used (if applicable)	GROUT DENSITY (lbs./gal., # bag mix, gal./sack etc.)

Well Development and Well Yield Test Information

DATE	METHOD	YIELD	Units Check One		DRAWDOWN (ft)	TIME PUMPED (hrs & min)
			GPM	CFS		

Pump (Permanent)

Pump Description:__________ Horsepower:______ Pump Intake Depth:______ feet

Approximate Maximum Pumping Rate:__________ Well Disinfected upon Completion? ☐ Yes ☐ No

Comments

Description of construction activity, additional materials used, problems encountered, extraordinary Circumstances, abandonment procedures. *Use additional well data form for more space.*

Well Driller Statement

This well was drilled and constructed under my supervision, according to applicable rules and regulations, and this report is complete and correct to the best of my knowledge and belief.

Name CASCADE DRILLING, L.P. **License No.** 626

(Person, Firm, or Corporation - Print or Type)

Signature__________ **Date**__________

(Licensed Well Driller)

WELL DRILLER'S REPORT
State of Utah
Division of Water Rights

For additional space, use "Additional Well Data Form" and attach

Well Identification

Non-Production Well: 1657001M00 WIN: 439357

Owner *Note any changes*

DEPT OF VETERANS AFFAIRS
C/O LYNNE WELSH
500 FOOTHILL DRIVE
SALT LAKE CITY, UT 84102

NO Drill

Contact Person/Engineer: ____________________

Well Location *Note any changes*

N 14 W 1644 from the E4 corner of section 08, Township 1S, Range 1E, SL B&M

Location Description: (address, proximity to buildings, landmarks, ground elevation,local well #)

Drillers Activity Start Date:____________ Completion Date:____________

Check all that apply: [X] New [ ] Repair [ ] Deepen [ ] Clean [ ] Replace [ ] Public Nature of Use:____________

If a replacement well, provide location of new well. ____________ feet north/south and ____________ feet east/west of the existing well.

DEPTH (feet) FROM	TO	BOREHOLE DIAMETER (in)	DRILLING METHOD	DRILLING FLUID

Well Log

DEPTH (feet) FROM	TO	WATER	PERMEABLE High	PERMEABLE Low	UNCONSOLIDATED CLAY	SILT	SAND	GRAVEL	COBBLES	BOULDER	OTHER	CONSOLIDATED ROCK TYPE	COLOR	DESCRIPTION AND REMARKS (e.g., relative %, grain size, sorting, angularity, bedding, grain composition density, plasticity, shape, cementation, consistancy, water bearing, odor, fracturing, minerology, texture,degree of weathering, hardness, water quality, etc.)

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SALT LAKE
KH

Static Water Level

Date____________ Water Level________ feet Flowing? [ ] Yes [ ] No

Method of Water Level Measurement____________ If Flowing, Capped Pressure________ PSI

Point to Which Water Level Measurement was Referenced____________ Elevation________

Height of Water Level reference point above ground surface________ feet Temperature________ degrees [ ] C [ ] F

Construction Information

DEPTH (feet) FROM	TO	CASING: CASING TYPE AND MATERIAL/GRADE	WALL THICK (in)	NOMINAL DIAM. (in)

DEPTH (feet) FROM	TO	☐SCREEN ☐PERFORATIONS ☐OPEN BOTTOM: SCREEN SLOT SIZE OR PERF SIZE (in)	SCREEN DIAM. OR PERF LENGTH (in)	SCREEN TYPE OR NUMBER PERF (per round/interval)

Well Head Configuration:________ Access Port Provided? ☐ Yes ☐ No

Casing Joint Type:________ Perforator Used:________

Was a Surface Seal Installed? ☐ Yes ☐ No Depth of Surface Seal:________ feet Drive Shoe? ☐ Yes ☐ No

Surface Seal Material Placement Method:________

Was a temporary surface casing used? ☐ Yes ☐ No If yes, depth of casing:________ feet diameter:________ inches

DEPTH (feet) FROM	TO	SURFACE SEAL / INTERVAL SEAL / FILTER PACK / PACKER INFORMATION: SEAL MATERIAL, FILTER PACK and PACKER TYPE and DESCRIPTION	**Quantity** of Material Used (if applicable)	GROUT DENSITY (lbs./gal., # bag mix, gal./sack etc.)

Well Development and Well Yield Test Information

DATE	METHOD	YIELD	Units Check One: GPM	CFS	DRAWDOWN (ft)	TIME PUMPED (hrs & min)

Pump (Permanent)

Pump Description:________ Horsepower:________ Pump Intake Depth:________ feet

Approximate Maximum Pumping Rate:________ Well Disinfected upon Completion? ☐ Yes ☐ No

Comments

Description of construction activity, additional materials used, problems encountered, extraordinary Circumstances, abandonment procedures. *Use additional well data form for more space.*

____

Well Driller Statement

This well was drilled and constructed under my supervision, according to applicable rules and regulations, and this report is complete and correct to the best of my knowledge and belief.

Name CASCADE DRILLING, L.P. **License No.** 626

(Person, Firm, or Corporation - Print or Type)

Signature________ **Date**________

(Licensed Well Driller)

WELL DRILLER'S REPORT
State of Utah
Division of Water Rights

For additional space, use "Additional Well Data Form" and attach

Well Identification

Non-Production Well: 1657001M00 WIN: 439324

Owner *Note any changes*

DEPT OF VETERANS AFFAIRS
C/O LYNNE WELSH
500 FOOTHILL DRIVE
SALT LAKE CITY, UT 84102

Drill, Sample, Abandon

Contact Person/Engineer: ____________________

Well Location *Note any changes*

S 1940 E 670 from the N4 corner of section 08, Township 1S, Range 1E, SL B&M

Location Description: (address, proximity to buildings, landmarks, ground elevation,local well #)

Drillers Activity Start Date:____________________ Completion Date:____________________

Check all that apply: [X] New [ ] Repair [ ] Deepen [ ] Clean [ ] Replace [ ] Public Nature of Use:____________________

If a replacement well, provide location of new well. ____________ feet north/south and ____________ feet east/west of the existing well.

DEPTH (feet) FROM	TO	BOREHOLE DIAMETER (in)	DRILLING METHOD	DRILLING FLUID

Well Log

DEPTH (feet) FROM	TO	WATER	PERMEABLE High	PERMEABLE Low	UNCONSOLIDATED CLAY	SILT	SAND	GRAVEL	COBBLES	BOULDER	OTHER	CONSOLIDATED ROCK TYPE	COLOR	DESCRIPTION AND REMARKS (e.g., relative %, grain size, sorting, angularity, bedding, grain composition density, plasticity, shape, cementation, consistancy, water bearing, odor, fracturing, minerology, texture,degree of weathering, hardness, water quality, etc.)

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WATER RIGHTS
SALT LAKE

Static Water Level

Date____________ Water Level________ feet Flowing? [ ] Yes [ ] No

Method of Water Level Measurement____________ If Flowing, Capped Pressure________ PSI

Point to Which Water Level Measurement was Referenced____________ Elevation________

Height of Water Level reference point above ground surface________ feet Temperature________ degrees [ ] C [ ] F

Construction Information

DEPTH (feet)		CASING			DEPTH (feet)		☐SCREEN ☐PERFORATIONS ☐OPEN BOTTOM		
FROM	TO	CASING TYPE AND MATERIAL/GRADE	WALL THICK (in)	NOMINAL DIAM. (in)	FROM	TO	SCREEN SLOT SIZE OR PERF SIZE (in)	SCREEN DIAM. OR PERF LENGTH (in)	SCREEN TYPE OR NUMBER PERF (per round/interval)

Well Head Configuration:__________ Access Port Provided? ☐Yes ☐No

Casing Joint Type:__________ Perforator Used:__________

Was a Surface Seal Installed? ☐Yes ☐No Depth of Surface Seal:______ feet Drive Shoe? ☐Yes ☐No

Surface Seal Material Placement Method:__________

Was a temporary surface casing used? ☐Yes ☐No If yes, depth of casing:______ feet diameter:______ inches

DEPTH (feet)		SURFACE SEAL / INTERVAL SEAL / FILTER PACK / PACKER INFORMATION		
FROM	TO	SEAL MATERIAL, FILTER PACK and PACKER TYPE and DESCRIPTION	**Quantity** of Material Used (if applicable)	GROUT DENSITY (lbs./gal., # bag mix, gal./sack etc.)

Well Development and Well Yield Test Information

DATE	METHOD	YIELD	Units Check One		DRAWDOWN (ft)	TIME PUMPED (hrs & min)
			GPM	CFS		

Pump (Permanent)

Pump Description:__________ Horsepower:______ Pump Intake Depth:______ feet

Approximate Maximum Pumping Rate:__________ Well Disinfected upon Completion? ☐Yes ☐No

Comments

Description of construction activity, additional materials used, problems encountered, extraordinary Circumstances, abandonment procedures. *Use additional well data form for more space.*

Well Driller Statement

This well was drilled and constructed under my supervision, according to applicable rules and regulations, and this report is complete and correct to the best of my knowledge and belief.

Name CASCADE DRILLING, L.P. **License No.** 626

(Person, Firm, or Corporation - Print or Type)

Signature__________ **Date**__________

(Licensed Well Driller)

WELL DRILLER'S REPORT
State of Utah
Division of Water Rights

For additional space, use "Additional Well Data Form" and attach

Well Identification

Non-Production Well: 1657001M00 WIN: 439362

Owner *Note any changes*

DEPT OF VETERANS AFFAIRS
C/O LYNNE WELSH
500 FOOTHILL DRIVE
SALT LAKE CITY, UT 84102

No Drill

Contact Person/Engineer: ______

Well Location *Note any changes*

S 1938 E 114 from the N4 corner of section 08, Township 1S, Range 1E, SL B&M

Location Description: (address, proximity to buildings, landmarks, ground elevation,local well #)

Drillers Activity Start Date: ______ Completion Date: ______

Check all that apply: [X] New [ ] Repair [ ] Deepen [ ] Clean [ ] Replace [ ] Public Nature of Use: ______

If a replacement well, provide location of new well. ______ feet north/south and ______ feet east/west of the existing well.

DEPTH (feet) FROM	TO	BOREHOLE DIAMETER (in)	DRILLING METHOD	DRILLING FLUID

Well Log

DEPTH (feet) FROM	TO	WATER	PERMEABLE High	PERMEABLE Low	UNCONSOLIDATED CLAY	SILT	SAND	GRAVEL	COBBLES	BOULDER	OTHER	CONSOLIDATED ROCK TYPE	COLOR	DESCRIPTION AND REMARKS (e.g., relative %, grain size, sorting, angularity, bedding, grain composition density, plasticity, shape, cementation, consistancy, water bearing, odor, fracturing, minerology, texture,degree of weathering, hardness, water quality, etc.)

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KH

Static Water Level

Date ______ Water Level ______ feet Flowing? [ ] Yes [ ] No

Method of Water Level Measurement ______ If Flowing, Capped Pressure ______ PSI

Point to Which Water Level Measurement was Referenced ______ Elevation ______

Height of Water Level reference point above ground surface ______ feet Temperature ______ degrees [ ] C [ ] F

Construction Information

DEPTH (feet)		CASING			DEPTH (feet)		☐SCREEN ☐PERFORATIONS ☐OPEN BOTTOM		
FROM	TO	CASING TYPE AND MATERIAL/GRADE	WALL THICK (in)	NOMINAL DIAM. (in)	FROM	TO	SCREEN SLOT SIZE OR PERF SIZE (in)	SCREEN DIAM. OR PERF LENGTH (in)	SCREEN TYPE OR NUMBER PERF (per round/interval)

Well Head Configuration:______ Access Port Provided? ☐ Yes ☐ No

Casing Joint Type:______ Perforator Used:______

Was a Surface Seal Installed? ☐ Yes ☐ No Depth of Surface Seal:______ feet Drive Shoe? ☐ Yes ☐ No

Surface Seal Material Placement Method:______

Was a temporary surface casing used? ☐ Yes ☐ No If yes, depth of casing:______ feet diameter:______ inches

DEPTH (feet)		SURFACE SEAL / INTERVAL SEAL / FILTER PACK / PACKER INFORMATION		
FROM	TO	SEAL MATERIAL, FILTER PACK and PACKER TYPE and DESCRIPTION	**Quantity** of Material Used (if applicable)	GROUT DENSITY (lbs./gal., # bag mix, gal./sack etc.)

Well Development and Well Yield Test Information

DATE	METHOD	YIELD	Units Check One		DRAWDOWN (ft)	TIME PUMPED (hrs & min)
			GPM	CFS		

Pump (Permanent)

Pump Description:______ Horsepower:______ Pump Intake Depth:______ feet

Approximate Maximum Pumping Rate:______ Well Disinfected upon Completion? ☐ Yes ☐ No

Comments

Description of construction activity, additional materials used, problems encountered, extraordinary Circumstances, abandonment procedures. *Use additional well data form for more space.*

______

______

______

______

Well Driller Statement

This well was drilled and constructed under my supervision, according to applicable rules and regulations, and this report is complete and correct to the best of my knowledge and belief.

Name CASCADE DRILLING, L.P. **License No.** 626

(Person, Firm, or Corporation - Print or Type)

Signature______ **Date**______

(Licensed Well Driller)

WELL DRILLER'S REPORT
State of Utah
Division of Water Rights

For additional space, use "Additional Well Data Form" and attach

Well Identification

Non-Production Well: 1657001M00 WIN: 439318

Owner *Note any changes*

DEPT OF VETERANS AFFAIRS
C/O LYNNE WELSH
500 FOOTHILL DRIVE
SALT LAKE CITY, UT 84102

Drill, Sample, abandon

Contact Person/Engineer: ______________________

Well Location *Note any changes*

N 664 E 1858 from the W4 corner of section 08, Township 1S, Range 1E, SL B&M

Location Description: (address, proximity to buildings, landmarks, ground elevation,local well #)

Drillers Activity Start Date:______________ Completion Date:______________

Check all that apply: ☒ New ☐ Repair ☐ Deepen ☐ Clean ☐ Replace ☐ Public Nature of Use:______________

If a replacement well, provide location of new well. __________ feet north/south and __________ feet east/west of the existing well.

DEPTH (feet) FROM	TO	BOREHOLE DIAMETER (in)	DRILLING METHOD	DRILLING FLUID

Well Log

DEPTH (feet) FROM	TO	WATER	PERMEABLE High	PERMEABLE Low	CLAY	SILT	SAND	GRAVEL	COBBLES	BOULDER	OTHER	ROCK TYPE	COLOR	DESCRIPTION AND REMARKS (e.g., relative %, grain size, sorting, angularity, bedding, grain composition density, plasticity, shape, cementation, consistancy, water bearing, odor, fracturing, minerology, texture,degree of weathering, hardness, water quality, etc.)

(UNCONSOLIDATED: CLAY, SILT, SAND, GRAVEL, COBBLES, BOULDER, OTHER; CONSOLIDATED: ROCK TYPE)

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Static Water Level

Date______________ Water Level__________ feet Flowing? ☐ Yes ☐ No

Method of Water Level Measurement______________ If Flowing, Capped Pressure__________ PSI

Point to Which Water Level Measurement was Referenced______________ Elevation__________

Height of Water Level reference point above ground surface__________ feet Temperature__________ degrees ☐ C ☐ F

Construction Information

DEPTH (feet)		CASING			DEPTH (feet)		☐SCREEN ☐PERFORATIONS ☐OPEN BOTTOM		
FROM	TO	CASING TYPE AND MATERIAL/GRADE	WALL THICK (in)	NOMINAL DIAM. (in)	FROM	TO	SCREEN SLOT SIZE OR PERF SIZE (in)	SCREEN DIAM. OR PERF LENGTH (in)	SCREEN TYPE OR NUMBER PERF (per round/interval)

Well Head Configuration:______ Access Port Provided? ☐Yes ☐No

Casing Joint Type:______ Perforator Used:______

Was a Surface Seal Installed? ☐Yes ☐No Depth of Surface Seal:______ feet Drive Shoe? ☐Yes ☐No

Surface Seal Material Placement Method:______

Was a temporary surface casing used? ☐Yes ☐No If yes, depth of casing:______ feet diameter:______ inches

DEPTH (feet)		SURFACE SEAL / INTERVAL SEAL / FILTER PACK / PACKER INFORMATION		
FROM	TO	SEAL MATERIAL, FILTER PACK and PACKER TYPE and DESCRIPTION	**Quantity** of Material Used (if applicable)	GROUT DENSITY (lbs./gal., # bag mix, gal./sack etc.)

Well Development and Well Yield Test Information

DATE	METHOD	YIELD	Units Check One		DRAWDOWN (ft)	TIME PUMPED (hrs & min)
			GPM	CFS		

Pump (Permanent)

Pump Description:______ Horsepower:______ Pump Intake Depth:______ feet

Approximate Maximum Pumping Rate:______ Well Disinfected upon Completion? ☐Yes ☐No

Comments

Description of construction activity, additional materials used, problems encountered, extraordinary Circumstances, abandonment procedures. *Use additional well data form for more space.*

Well Driller Statement

This well was drilled and constructed under my supervision, according to applicable rules and regulations, and this report is complete and correct to the best of my knowledge and belief.

Name CASCADE DRILLING, L.P. **License No.** 626

(Person, Firm, or Corporation - Print or Type)

Signature______ **Date**______

(Licensed Well Driller)

WELL DRILLER'S REPORT
State of Utah
Division of Water Rights

For additional space, use "Additional Well Data Form" and attach

Well Identification

Non-Production Well: 1657001M00 WIN: 439364

Owner *Note any changes*

DEPT OF VETERANS AFFAIRS
C/O LYNNE WELSH
500 FOOTHILL DRIVE
SALT LAKE CITY, UT 84102

No Drill

Contact Person/Engineer: ____________

Well Location *Note any changes*

N 125 W 2168 from the E4 corner of section 08, Township 1S, Range 1E, SL B&M

Location Description: (address, proximity to buildings, landmarks, ground elevation,local well #)

Drillers Activity Start Date: ____________ Completion Date: ____________

Check all that apply: [X] New [ ] Repair [ ] Deepen [ ] Clean [ ] Replace [ ] Public Nature of Use: ____________

If a replacement well, provide location of new well. ____________ feet north/south and ____________ feet east/west of the existing well.

DEPTH (feet) FROM	TO	BOREHOLE DIAMETER (in)	DRILLING METHOD	DRILLING FLUID

Well Log

DEPTH (feet) FROM	TO	WATER	PERMEABLE High	PERMEABLE Low	UNCONSOLIDATED CLAY	SILT	SAND	GRAVEL	COBBLES	BOULDER	OTHER	CONSOLIDATED ROCK TYPE	COLOR	DESCRIPTION AND REMARKS (e.g., relative %, grain size, sorting, angularity, bedding, grain composition density, plasticity, shape, cementation, consistancy, water bearing, odor, fracturing, minerology, texture,degree of weathering, hardness, water quality, etc.)

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Static Water Level

Date ____________ Water Level ____________ feet Flowing? [ ] Yes [ ] No

Method of Water Level Measurement ____________ If Flowing, Capped Pressure ____________ PSI

Point to Which Water Level Measurement was Referenced ____________ Elevation ____________

Height of Water Level reference point above ground surface ____________ feet Temperature ____________ degrees [ ] C [ ] F

Construction Information

DEPTH (feet)		CASING			DEPTH (feet)		☐SCREEN ☐PERFORATIONS ☐OPEN BOTTOM		
FROM	TO	CASING TYPE AND MATERIAL/GRADE	WALL THICK (in)	NOMINAL DIAM. (in)	FROM	TO	SCREEN SLOT SIZE OR PERF SIZE (in)	SCREEN DIAM. OR PERF LENGTH (in)	SCREEN TYPE OR NUMBER PERF (per round/interval)

Well Head Configuration:______________________ Access Port Provided? ☐ Yes ☐ No

Casing Joint Type:______________________ Perforator Used:______________________

Was a Surface Seal Installed? ☐ Yes ☐ No Depth of Surface Seal:__________ feet Drive Shoe? ☐ Yes ☐ No

Surface Seal Material Placement Method:______________________

Was a temporary surface casing used? ☐ Yes ☐ No If yes, depth of casing:__________ feet diameter:__________ inches

DEPTH (feet)		SURFACE SEAL / INTERVAL SEAL / FILTER PACK / PACKER INFORMATION		
FROM	TO	SEAL MATERIAL, FILTER PACK and PACKER TYPE and DESCRIPTION	**Quantity** of Material Used (if applicable)	GROUT DENSITY (lbs./gal., # bag mix, gal./sack etc.)

Well Development and Well Yield Test Information

DATE	METHOD	YIELD	Units Check One		DRAWDOWN (ft)	TIME PUMPED (hrs & min)
			GPM	CFS		

Pump (Permanent)

Pump Description:______________________ Horsepower:__________ Pump Intake Depth:______ feet

Approximate Maximum Pumping Rate:______________________ Well Disinfected upon Completion? ☐ Yes ☐ No

Comments

Description of construction activity, additional materials used, problems encountered, extraordinary Circumstances, abandonment procedures. *Use additional well data form for more space.*

____

____

____

____

Well Driller Statement

This well was drilled and constructed under my supervision, according to applicable rules and regulations, and this report is complete and correct to the best of my knowledge and belief.

Name CASCADE DRILLING, L.P. **License No.** 626

(Person, Firm, or Corporation - Print or Type)

Signature______________________ **Date**______________________

(Licensed Well Driller)

WELL DRILLER'S REPORT
State of Utah
Division of Water Rights

For additional space, use "Additional Well Data Form" and attach

Well Identification

Non-Production Well: 1657001M00 WIN: 439366

Owner *Note any changes*

DEPT OF VETERANS AFFAIRS
C/O LYNNE WELSH
500 FOOTHILL DRIVE
SALT LAKE CITY, UT 84102

No Drill

Contact Person/Engineer: ______

Well Location *Note any changes*

S 336 W 1719 from the E4 corner of section 08, Township 1S, Range 1E, SL B&M

Location Description: (address, proximity to buildings, landmarks, ground elevation,local well #)

Drillers Activity Start Date: ______ Completion Date: ______

Check all that apply: ☒ New ☐ Repair ☐ Deepen ☐ Clean ☐ Replace ☐ Public Nature of Use: ______

If a replacement well, provide location of new well. ______ feet north/south and ______ feet east/west of the existing well.

DEPTH (feet) FROM	TO	BOREHOLE DIAMETER (in)	DRILLING METHOD	DRILLING FLUID

Well Log

DEPTH (feet) FROM	TO	WATER	PERMEABLE High	PERMEABLE Low	UNCONSOLIDATED CLAY	SILT	SAND	GRAVEL	COBBLES	BOULDER	OTHER	CONSOLIDATED ROCK TYPE	COLOR	DESCRIPTION AND REMARKS (e.g., relative %, grain size, sorting, angularity, bedding, grain composition density, plasticity, shape, cementation, consistancy, water bearing, odor, fracturing, minerology, texture,degree of weathering, hardness, water quality, etc.)
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Static Water Level

Date ______ Water Level ______ feet Flowing? ☐ Yes ☐ No

Method of Water Level Measurement ______ If Flowing, Capped Pressure ______ PSI

Point to Which Water Level Measurement was Referenced ______ Elevation ______

Height of Water Level reference point above ground surface ______ feet Temperature ______ degrees ☐C ☐F

Construction Information

DEPTH (feet)		CASING			DEPTH (feet)		☐SCREEN ☐PERFORATIONS ☐OPEN BOTTOM		
FROM	TO	CASING TYPE AND MATERIAL/GRADE	WALL THICK (in)	NOMINAL DIAM. (in)	FROM	TO	SCREEN SLOT SIZE OR PERF SIZE (in)	SCREEN DIAM. OR PERF LENGTH (in)	SCREEN TYPE OR NUMBER PERF (per round/interval)

Well Head Configuration:________ Access Port Provided? ☐ Yes ☐ No

Casing Joint Type:________ Perforator Used:________

Was a Surface Seal Installed? ☐ Yes ☐ No Depth of Surface Seal:________ feet Drive Shoe? ☐ Yes ☐ No

Surface Seal Material Placement Method:________

Was a temporary surface casing used? ☐ Yes ☐ No If yes, depth of casing:________ feet diameter:________ inches

DEPTH (feet)		SURFACE SEAL / INTERVAL SEAL / FILTER PACK / PACKER INFORMATION		
FROM	TO	SEAL MATERIAL, FILTER PACK and PACKER TYPE and DESCRIPTION	**Quantity** of Material Used (if applicable)	GROUT DENSITY (lbs./gal., # bag mix, gal./sack etc.)

Well Development and Well Yield Test Information

DATE	METHOD	YIELD	Units Check One		DRAWDOWN (ft)	TIME PUMPED (hrs & min)
			GPM	CFS		

Pump (Permanent)

Pump Description:________ Horsepower:________ Pump Intake Depth:________ feet

Approximate Maximum Pumping Rate:________ Well Disinfected upon Completion? ☐ Yes ☐ No

Comments

Description of construction activity, additional materials used, problems encountered, extraordinary Circumstances, abandonment procedures. *Use additional well data form for more space.*

Well Driller Statement

This well was drilled and constructed under my supervision, according to applicable rules and regulations, and this report is complete and correct to the best of my knowledge and belief.

Name CASCADE DRILLING, L.P. **License No.** 626

(Person, Firm, or Corporation - Print or Type)

Signature________ **Date**________

(Licensed Well Driller)

WELL DRILLER'S REPORT
State of Utah
Division of Water Rights

For additional space, use "Additional Well Data Form" and attach

Well Identification

Non-Production Well: 1657001M00 WIN: 439356

Owner *Note any changes*

DEPT OF VETERANS AFFAIRS
C/O LYNNE WELSH
500 FOOTHILL DRIVE
SALT LAKE CITY, UT 84102

No Drill

Contact Person/Engineer: ____________________

Well Location *Note any changes*

S 1035 E 398 from the N4 corner of section 08, Township 1S, Range 1E, SL B&M

Location Description: (address, proximity to buildings, landmarks, ground elevation,local well #)

Drillers Activity Start Date:__________ Completion Date:__________

Check all that apply: [X] New [ ] Repair [ ] Deepen [ ] Clean [ ] Replace [ ] Public Nature of Use:__________

If a replacement well, provide location of new well. __________ feet north/south and __________ feet east/west of the existing well.

DEPTH (feet) FROM	TO	BOREHOLE DIAMETER (in)	DRILLING METHOD	DRILLING FLUID

Well Log

DEPTH (feet) FROM	TO	WATER	PERMEABLE High	PERMEABLE Low	UNCONSOLIDATED CLAY	SILT	SAND	GRAVEL	COBBLES	BOULDER	OTHER	CONSOLIDATED ROCK TYPE	COLOR	DESCRIPTION AND REMARKS (e.g., relative %, grain size, sorting, angularity, bedding, grain composition density, plasticity, shape, cementation, consistancy, water bearing, odor, fracturing, minerology, texture,degree of weathering, hardness, water quality, etc.)

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Static Water Level

Date__________ Water Level__________ feet Flowing? [ ] Yes [ ] No

Method of Water Level Measurement__________ If Flowing, Capped Pressure__________ PSI

Point to Which Water Level Measurement was Referenced__________ Elevation__________

Height of Water Level reference point above ground surface__________ feet Temperature__________ degrees [ ] C [ ] F

Construction Information

DEPTH (feet)		CASING			DEPTH (feet)		☐SCREEN ☐PERFORATIONS ☐OPEN BOTTOM		
FROM	TO	CASING TYPE AND MATERIAL/GRADE	WALL THICK (in)	NOMINAL DIAM. (in)	FROM	TO	SCREEN SLOT SIZE OR PERF SIZE (in)	SCREEN DIAM. OR PERF LENGTH (in)	SCREEN TYPE OR NUMBER PERF (per round/interval)

Well Head Configuration:______ Access Port Provided? ☐ Yes ☐ No

Casing Joint Type:______ Perforator Used:______

Was a Surface Seal Installed? ☐ Yes ☐ No Depth of Surface Seal:______ feet Drive Shoe? ☐ Yes ☐ No

Surface Seal Material Placement Method:______

Was a temporary surface casing used? ☐ Yes ☐ No If yes, depth of casing:______ feet diameter:______ inches

DEPTH (feet)		SURFACE SEAL / INTERVAL SEAL / FILTER PACK / PACKER INFORMATION		
FROM	TO	SEAL MATERIAL, FILTER PACK and PACKER TYPE and DESCRIPTION	**Quantity** of Material Used (if applicable)	GROUT DENSITY (lbs./gal., # bag mix, gal./sack etc.)

Well Development and Well Yield Test Information

DATE	METHOD	YIELD	Units Check One		DRAWDOWN (ft)	TIME PUMPED (hrs & min)
			GPM	CFS		

Pump (Permanent)

Pump Description:______ Horsepower:______ Pump Intake Depth:______ feet

Approximate Maximum Pumping Rate:______ Well Disinfected upon Completion? ☐ Yes ☐ No

Comments

Description of construction activity, additional materials used, problems encountered, extraordinary Circumstances, abandonment procedures. *Use additional well data form for more space.*

Well Driller Statement

This well was drilled and constructed under my supervision, according to applicable rules and regulations, and this report is complete and correct to the best of my knowledge and belief.

Name CASCADE DRILLING, L.P. **License No.** 626

(Person, Firm, or Corporation - Print or Type)

Signature______ **Date**______

(Licensed Well Driller)

WELL DRILLER'S REPORT
State of Utah
Division of Water Rights

For additional space, use "Additional Well Data Form" and attach

Well Identification

Non-Production Well: 1657001M00 WIN: 439322

Owner *Note any changes*

DEPT OF VETERANS AFFAIRS
C/O LYNNE WELSH
500 FOOTHILL DRIVE
SALT LAKE CITY, UT 84102

Drill, Sample, Abandon

Contact Person/Engineer: ______________________

Well Location *Note any changes*

S 1339 E 462 from the N4 corner of section 08, Township 1S, Range 1E, SL B&M

Location Description: (address, proximity to buildings, landmarks, ground elevation,local well #)

Drillers Activity Start Date:______________ Completion Date:______________

Check all that apply: [X] New [ ] Repair [ ] Deepen [ ] Clean [ ] Replace [ ] Public Nature of Use:______________

If a replacement well, provide location of new well. __________ feet north/south and __________ feet east/west of the existing well.

DEPTH (feet) FROM	TO	BOREHOLE DIAMETER (in)	DRILLING METHOD	DRILLING FLUID

Well Log

DEPTH (feet) FROM	TO	WATER	PERMEABLE High	PERMEABLE Low	UNCONSOLIDATED CLAY	SILT	SAND	GRAVEL	COBBLES	BOULDER	OTHER	CONSOLIDATED ROCK TYPE	COLOR	DESCRIPTION AND REMARKS (e.g., relative %, grain size, sorting, angularity, bedding, grain composition density, plasticity, shape, cementation, consistancy, water bearing, odor, fracturing, minerology, texture,degree of weathering, hardness, water quality, etc.)

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Static Water Level

Date______________ Water Level__________ feet Flowing? [ ] Yes [ ] No

Method of Water Level Measurement______________ If Flowing, Capped Pressure__________ PSI

Point to Which Water Level Measurement was Referenced______________ Elevation__________

Height of Water Level reference point above ground surface________ feet Temperature________ degrees [ ] C [ ] F

Construction Information

DEPTH (feet)		CASING			DEPTH (feet)		☐SCREEN ☐PERFORATIONS ☐OPEN BOTTOM		
FROM	TO	CASING TYPE AND MATERIAL/GRADE	WALL THICK (in)	NOMINAL DIAM. (in)	FROM	TO	SCREEN SLOT SIZE OR PERF SIZE (in)	SCREEN DIAM. OR PERF LENGTH (in)	SCREEN TYPE OR NUMBER PERF (per round/interval)

Well Head Configuration:______ Access Port Provided? ☐ Yes ☐ No

Casing Joint Type:______ Perforator Used:______

Was a Surface Seal Installed? ☐ Yes ☐ No Depth of Surface Seal:______ feet Drive Shoe? ☐ Yes ☐ No

Surface Seal Material Placement Method:______

Was a temporary surface casing used? ☐ Yes ☐ No If yes, depth of casing:______ feet diameter:______ inches

DEPTH (feet)		SURFACE SEAL / INTERVAL SEAL / FILTER PACK / PACKER INFORMATION		
FROM	TO	SEAL MATERIAL, FILTER PACK and PACKER TYPE and DESCRIPTION	**Quantity** of Material Used (if applicable)	GROUT DENSITY (lbs./gal., # bag mix, gal./sack etc.)

Well Development and Well Yield Test Information

DATE	METHOD	YIELD	Units Check One		DRAWDOWN (ft)	TIME PUMPED (hrs & min)
			GPM	CFS		

Pump (Permanent)

Pump Description:______ Horsepower:______ Pump Intake Depth:______ feet

Approximate Maximum Pumping Rate:______ Well Disinfected upon Completion? ☐ Yes ☐ No

Comments

Description of construction activity, additional materials used, problems encountered, extraordinary Circumstances, abandonment procedures. *Use additional well data form for more space.*

______

______

______

______

Well Driller Statement

This well was drilled and constructed under my supervision, according to applicable rules and regulations, and this report is complete and correct to the best of my knowledge and belief.

Name CASCADE DRILLING, L.P. **License No.** 626

(Person, Firm, or Corporation - Print or Type)

Signature______ **Date**______

(Licensed Well Driller)

WELL DRILLER'S REPORT
State of Utah
Division of Water Rights

For additional space, use "Additional Well Data Form" and attach

Well Identification

Non-Production Well: 1657001M00 WIN: 439358

Owner *Note any changes*

DEPT OF VETERANS AFFAIRS
C/O LYNNE WELSH
500 FOOTHILL DRIVE
SALT LAKE CITY, UT 84102

No Drill

Contact Person/Engineer: ____

Well Location *Note any changes*

S 1192 W 712 from the NE corner of section 08, Township 1S, Range 1E, SL B&M

Location Description: (address, proximity to buildings, landmarks, ground elevation,local well #)

Drillers Activity Start Date: ____ Completion Date: ____

Check all that apply: [X] New [ ] Repair [ ] Deepen [ ] Clean [ ] Replace [ ] Public Nature of Use: ____

If a replacement well, provide location of new well. ____ feet north/south and ____ feet east/west of the existing well.

DEPTH (feet) FROM	TO	BOREHOLE DIAMETER (in)	DRILLING METHOD	DRILLING FLUID

Well Log

DEPTH (feet) FROM	TO	WATER	PERMEABLE High	PERMEABLE Low	UNCONSOLIDATED CLAY	SILT	SAND	GRAVEL	COBBLES	BOULDER	OTHER	CONSOLIDATED ROCK TYPE	COLOR	DESCRIPTION AND REMARKS (e.g., relative %, grain size, sorting, angularity, bedding, grain composition density, plasticity, shape, cementation, consistancy, water bearing, odor, fracturing, minerology, texture,degree of weathering, hardness, water quality, etc.)
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														WATER RIGHTS SALT LAKE

Static Water Level

Date ____ Water Level ____ feet Flowing? [ ] Yes [ ] No

Method of Water Level Measurement ____ If Flowing, Capped Pressure ____ PSI

Point to Which Water Level Measurement was Referenced ____ Elevation ____

Height of Water Level reference point above ground surface ____ feet Temperature ____ degrees [ ] C [ ] F

Construction Information

DEPTH (feet)		CASING			DEPTH (feet)		☐SCREEN ☐PERFORATIONS ☐OPEN BOTTOM		
FROM	TO	CASING TYPE AND MATERIAL/GRADE	WALL THICK (in)	NOMINAL DIAM. (in)	FROM	TO	SCREEN SLOT SIZE OR PERF SIZE (in)	SCREEN DIAM. OR PERF LENGTH (in)	SCREEN TYPE OR NUMBER PERF (per round/interval)

Well Head Configuration:______ Access Port Provided? ☐ Yes ☐ No

Casing Joint Type:______ Perforator Used:______

Was a Surface Seal Installed? ☐ Yes ☐ No Depth of Surface Seal:______ feet Drive Shoe? ☐ Yes ☐ No

Surface Seal Material Placement Method:______

Was a temporary surface casing used? ☐ Yes ☐ No If yes, depth of casing:______ feet diameter:______ inches

DEPTH (feet)		SURFACE SEAL / INTERVAL SEAL / FILTER PACK / PACKER INFORMATION		
FROM	TO	SEAL MATERIAL, FILTER PACK and PACKER TYPE and DESCRIPTION	**Quantity** of Material Used (if applicable)	GROUT DENSITY (lbs./gal., # bag mix, gal./sack etc.)

Well Development and Well Yield Test Information

DATE	METHOD	YIELD	Units Check One		DRAWDOWN (ft)	TIME PUMPED (hrs & min)
			GPM	CFS		

Pump (Permanent)

Pump Description:______ Horsepower:______ Pump Intake Depth:______ feet

Approximate Maximum Pumping Rate:______ Well Disinfected upon Completion? ☐ Yes ☐ No

Comments

Description of construction activity, additional materials used, problems encountered, extraordinary Circumstances, abandonment procedures. *Use additional well data form for more space.*

Well Driller Statement

This well was drilled and constructed under my supervision, according to applicable rules and regulations, and this report is complete and correct to the best of my knowledge and belief.

Name CASCADE DRILLING, L.P. **License No.** 626

(Person, Firm, or Corporation - Print or Type)

Signature______ **Date**______

(Licensed Well Driller)

WELL DRILLER'S REPORT
State of Utah
Division of Water Rights

For additional space, use "Additional Well Data Form" and attach

Well Identification

Non-Production Well: 1657001M00 WIN: 439325

Owner *Note any changes*

DEPT OF VETERANS AFFAIRS
C/O LYNNE WELSH
500 FOOTHILL DRIVE
SALT LAKE CITY, UT 84102

Drill, Sample, Abandon

Contact Person/Engineer: ____________________

Well Location *Note any changes*

S 229 W 779 from the E4 corner of section 08, Township 1S, Range 1E, SL B&M

Location Description: (address, proximity to buildings, landmarks, ground elevation,local well #)

Drillers Activity Start Date:____________ Completion Date:____________

Check all that apply: ☒ New ☐ Repair ☐ Deepen ☐ Clean ☐ Replace ☐ Public Nature of Use:____________

If a replacement well, provide location of new well. ________ feet north/south and ________ feet east/west of the existing well.

DEPTH (feet) FROM	TO	BOREHOLE DIAMETER (in)	DRILLING METHOD	DRILLING FLUID

Well Log

DEPTH (feet) FROM	TO	WATER	PERMEABLE High	PERMEABLE Low	UNCONSOLIDATED CLAY	SILT	SAND	GRAVEL	COBBLES	BOULDER	OTHER	CONSOLIDATED ROCK TYPE	COLOR	DESCRIPTION AND REMARKS (e.g., relative %, grain size, sorting, angularity, bedding, grain composition density, plasticity, shape, cementation, consistancy, water bearing, odor, fracturing, minerology, texture,degree of weathering, hardness, water quality, etc.)

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Static Water Level

Date____________ Water Level________ feet Flowing? ☐ Yes ☐ No

Method of Water Level Measurement____________ If Flowing, Capped Pressure________ PSI

Point to Which Water Level Measurement was Referenced____________ Elevation________

Height of Water Level reference point above ground surface________ feet Temperature________ degrees ☐ C ☐ F

Construction Information

DEPTH (feet)		CASING			DEPTH (feet)		☐SCREEN ☐PERFORATIONS ☐OPEN BOTTOM		
FROM	TO	CASING TYPE AND MATERIAL/GRADE	WALL THICK (in)	NOMINAL DIAM. (in)	FROM	TO	SCREEN SLOT SIZE OR PERF SIZE (in)	SCREEN DIAM. OR PERF LENGTH (in)	SCREEN TYPE OR NUMBER PERF (per round/interval)

Well Head Configuration:______ Access Port Provided? ☐ Yes ☐ No

Casing Joint Type:______ Perforator Used:______

Was a Surface Seal Installed? ☐ Yes ☐ No Depth of Surface Seal:______ feet Drive Shoe? ☐ Yes ☐ No

Surface Seal Material Placement Method:______

Was a temporary surface casing used? ☐ Yes ☐ No If yes, depth of casing:______ feet diameter:______ inches

DEPTH (feet)		SURFACE SEAL / INTERVAL SEAL / FILTER PACK / PACKER INFORMATION		
FROM	TO	SEAL MATERIAL, FILTER PACK and PACKER TYPE and DESCRIPTION	**Quantity** of Material Used (if applicable)	GROUT DENSITY (lbs./gal., # bag mix, gal./sack etc.)

Well Development and Well Yield Test Information

DATE	METHOD	YIELD	Units Check One		DRAWDOWN (ft)	TIME PUMPED (hrs & min)
			GPM	CFS		

Pump (Permanent)

Pump Description:______ Horsepower:______ Pump Intake Depth:______ feet

Approximate Maximum Pumping Rate:______ Well Disinfected upon Completion? ☐ Yes ☐ No

Comments

Description of construction activity, additional materials used, problems encountered, extraordinary Circumstances, abandonment procedures. *Use additional well data form for more space.*

Well Driller Statement

This well was drilled and constructed under my supervision, according to applicable rules and regulations, and this report is complete and correct to the best of my knowledge and belief.

Name CASCADE DRILLING, L.P. **License No.** 626

(Person, Firm, or Corporation - Print or Type)

Signature______ **Date**______

(Licensed Well Driller)

WELL DRILLER'S REPORT
State of Utah
Division of Water Rights

For additional space, use "Additional Well Data Form" and attach

Well Identification

Non-Production Well: 1657001M00 WIN: 439328

Owner *Note any changes*

DEPT OF VETERANS AFFAIRS
C/O LYNNE WELSH
500 FOOTHILL DRIVE
SALT LAKE CITY, UT 84102

Drill, Sample, Abandon

Contact Person/Engineer: ____________________

Well Location *Note any changes*

S 524 W 1067 from the E4 corner of section 08, Township 1S, Range 1E, SL B&M

Location Description: (address, proximity to buildings, landmarks, ground elevation,local well #)

Drillers Activity Start Date:____________________ Completion Date:____________________

Check all that apply: ☒ New ☐ Repair ☐ Deepen ☐ Clean ☐ Replace ☐ Public Nature of Use:____________________

If a replacement well, provide location of new well. __________ feet north/south and __________ feet east/west of the existing well.

DEPTH (feet) FROM	TO	BOREHOLE DIAMETER (in)	DRILLING METHOD	DRILLING FLUID

Well Log

DEPTH (feet) FROM	TO	WATER	PERMEABLE High	PERMEABLE Low	UNCONSOLIDATED CLAY	SILT	SAND	GRAVEL	COBBLES	BOULDER	OTHER	CONSOLIDATED ROCK TYPE	COLOR	DESCRIPTION AND REMARKS (e.g., relative %, grain size, sorting, angularity, bedding, grain composition density, plasticity, shape, cementation, consistancy, water bearing, odor, fracturing, minerology, texture,degree of weathering, hardness, water quality, etc.)

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Static Water Level

Date____________________ Water Level__________ feet Flowing? ☐ Yes ☐ No

Method of Water Level Measurement____________________ If Flowing, Capped Pressure__________ PSI

Point to Which Water Level Measurement was Referenced____________________ Elevation__________

Height of Water Level reference point above ground surface__________ feet Temperature__________ degrees ☐C ☐F

Construction Information

DEPTH (feet)		CASING			DEPTH (feet)		☐SCREEN ☐PERFORATIONS ☐OPEN BOTTOM		
FROM	TO	CASING TYPE AND MATERIAL/GRADE	WALL THICK (in)	NOMINAL DIAM. (in)	FROM	TO	SCREEN SLOT SIZE OR PERF SIZE (in)	SCREEN DIAM. OR PERF LENGTH (in)	SCREEN TYPE OR NUMBER PERF (per round/interval)

Well Head Configuration:__________ Access Port Provided? ☐ Yes ☐ No

Casing Joint Type:__________ Perforator Used:__________

Was a Surface Seal Installed? ☐ Yes ☐ No Depth of Surface Seal:______ feet Drive Shoe? ☐ Yes ☐ No

Surface Seal Material Placement Method:__________

Was a temporary surface casing used? ☐ Yes ☐ No If yes, depth of casing:______ feet diameter:______ inches

DEPTH (feet)		SURFACE SEAL / INTERVAL SEAL / FILTER PACK / PACKER INFORMATION		
FROM	TO	SEAL MATERIAL, FILTER PACK and PACKER TYPE and DESCRIPTION	**Quantity** of Material Used (if applicable)	GROUT DENSITY (lbs./gal., # bag mix, gal./sack etc.)

Well Development and Well Yield Test Information

DATE	METHOD	YIELD	Units Check One		DRAWDOWN (ft)	TIME PUMPED (hrs & min)
			GPM	CFS		

Pump (Permanent)

Pump Description:__________ Horsepower:______ Pump Intake Depth:____ feet

Approximate Maximum Pumping Rate:__________ Well Disinfected upon Completion? ☐ Yes ☐ No

Comments

Description of construction activity, additional materials used, problems encountered, extraordinary Circumstances, abandonment procedures. *Use additional well data form for more space.*

Well Driller Statement

This well was drilled and constructed under my supervision, according to applicable rules and regulations, and this report is complete and correct to the best of my knowledge and belief.

Name CASCADE DRILLING, L.P. **License No.** 626

(Person, Firm, or Corporation - Print or Type)

Signature__________ **Date**__________

(Licensed Well Driller)

WELL DRILLER'S REPORT
State of Utah
Division of Water Rights

For additional space, use "Additional Well Data Form" and attach

Well Identification

Non-Production Well: 1657001M00 WIN: 439319

Owner *Note any changes*

DEPT OF VETERANS AFFAIRS
C/O LYNNE WELSH
500 FOOTHILL DRIVE
SALT LAKE CITY, UT 84102

Drill, Sample, Abandon

Contact Person/Engineer: ______

Well Location *Note any changes*

S 1011 E 990 from the NW corner of section 08, Township 1S, Range 1E, SL B&M

Location Description: (address, proximity to buildings, landmarks, ground elevation,local well #)

Drillers Activity Start Date: ______ Completion Date: ______

Check all that apply: [X] New [ ] Repair [ ] Deepen [ ] Clean [ ] Replace [ ] Public Nature of Use: ______

If a replacement well, provide location of new well. ______ feet north/south and ______ feet east/west of the existing well.

DEPTH (feet) FROM	TO	BOREHOLE DIAMETER (in)	DRILLING METHOD	DRILLING FLUID

Well Log

DEPTH (feet) FROM	TO	WATER	PERMEABLE High	PERMEABLE Low	UNCONSOLIDATED CLAY	SILT	SAND	GRAVEL	COBBLES	BOULDER	OTHER	CONSOLIDATED ROCK TYPE	COLOR	DESCRIPTION AND REMARKS (e.g., relative %, grain size, sorting, angularity, bedding, grain composition density, plasticity, shape, cementation, consistancy, water bearing, odor, fracturing, minerology, texture,degree of weathering, hardness, water quality, etc.)

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Static Water Level

Date ______ Water Level ______ feet Flowing? [ ] Yes [ ] No

Method of Water Level Measurement ______ If Flowing, Capped Pressure ______ PSI

Point to Which Water Level Measurement was Referenced ______ Elevation ______

Height of Water Level reference point above ground surface ______ feet Temperature ______ degrees [ ] C [ ] F

Construction Information

DEPTH (feet) FROM	TO	CASING: CASING TYPE AND MATERIAL/GRADE	WALL THICK (in)	NOMINAL DIAM. (in)	DEPTH (feet) FROM	TO	☐SCREEN ☐PERFORATIONS ☐OPEN BOTTOM: SCREEN SLOT SIZE OR PERF SIZE (in)	SCREEN DIAM. OR PERF LENGTH (in)	SCREEN TYPE OR NUMBER PERF (per round/interval)

Well Head Configuration:______ Access Port Provided? ☐ Yes ☐ No

Casing Joint Type:______ Perforator Used:______

Was a Surface Seal Installed? ☐ Yes ☐ No Depth of Surface Seal:______ feet Drive Shoe? ☐ Yes ☐ No

Surface Seal Material Placement Method:______

Was a temporary surface casing used? ☐ Yes ☐ No If yes, depth of casing:______ feet diameter:______ inches

DEPTH (feet) FROM	TO	SURFACE SEAL / INTERVAL SEAL / FILTER PACK / PACKER INFORMATION: SEAL MATERIAL, FILTER PACK and PACKER TYPE and DESCRIPTION	**Quantity** of Material Used (if applicable)	GROUT DENSITY (lbs./gal., # bag mix, gal./sack etc.)

Well Development and Well Yield Test Information

DATE	METHOD	YIELD	Units Check One: GPM	CFS	DRAWDOWN (ft)	TIME PUMPED (hrs & min)

Pump (Permanent)

Pump Description:______ Horsepower:______ Pump Intake Depth:______ feet

Approximate Maximum Pumping Rate:______ Well Disinfected upon Completion? ☐ Yes ☐ No

Comments

Description of construction activity, additional materials used, problems encountered, extraordinary Circumstances, abandonment procedures. *Use additional well data form for more space.*

Well Driller Statement

This well was drilled and constructed under my supervision, according to applicable rules and regulations, and this report is complete and correct to the best of my knowledge and belief.

Name CASCADE DRILLING, L.P. **License No.** 626

(Person, Firm, or Corporation - Print or Type)

Signature______ **Date**______

(Licensed Well Driller)

WELL DRILLER'S REPORT
State of Utah
Division of Water Rights

For additional space, use "Additional Well Data Form" and attach

Well Identification

Non-Production Well: 1657001M00 WIN: 439331

Owner *Note any changes*

DEPT OF VETERANS AFFAIRS
C/O LYNNE WELSH
500 FOOTHILL DRIVE
SALT LAKE CITY, UT 84102

No Drill

Contact Person/Engineer: ______

Well Location *Note any changes*

N 423 W 402 from the E4 corner of section 08, Township 1S, Range 1E, SL B&M

Location Description: (address, proximity to buildings, landmarks, ground elevation,local well #)

Drillers Activity Start Date: ______ Completion Date: ______

Check all that apply: ☒ New ☐ Repair ☐ Deepen ☐ Clean ☐ Replace ☐ Public Nature of Use: ______

If a replacement well, provide location of new well. ______ feet north/south and ______ feet east/west of the existing well.

DEPTH (feet) FROM	TO	BOREHOLE DIAMETER (in)	DRILLING METHOD	DRILLING FLUID

Well Log

DEPTH (feet) FROM	TO	WATER	PERMEABLE High	PERMEABLE Low	UNCONSOLIDATED CLAY	SILT	SAND	GRAVEL	COBBLES	BOULDER	OTHER	CONSOLIDATED ROCK TYPE	COLOR	DESCRIPTION AND REMARKS (e.g., relative %, grain size, sorting, angularity, bedding, grain composition density, plasticity, shape, cementation, consistancy, water bearing, odor, fracturing, minerology, texture,degree of weathering, hardness, water quality, etc.)

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Static Water Level

Date ______ Water Level ______ feet Flowing? ☐ Yes ☐ No
Method of Water Level Measurement ______ If Flowing, Capped Pressure ______ PSI
Point to Which Water Level Measurement was Referenced ______ Elevation ______
Height of Water Level reference point above ground surface ______ feet Temperature ______ degrees ☐C ☐F

Construction Information

DEPTH (feet)		CASING			DEPTH (feet)		☐SCREEN ☐PERFORATIONS ☐OPEN BOTTOM		
FROM	TO	CASING TYPE AND MATERIAL/GRADE	WALL THICK (in)	NOMINAL DIAM. (in)	FROM	TO	SCREEN SLOT SIZE OR PERF SIZE (in)	SCREEN DIAM. OR PERF LENGTH (in)	SCREEN TYPE OR NUMBER PERF (per round/interval)

Well Head Configuration:______ Access Port Provided? ☐ Yes ☐ No

Casing Joint Type:______ Perforator Used:______

Was a Surface Seal Installed? ☐ Yes ☐ No Depth of Surface Seal:______ feet Drive Shoe? ☐ Yes ☐ No

Surface Seal Material Placement Method:______

Was a temporary surface casing used? ☐ Yes ☐ No If yes, depth of casing:______ feet diameter:______ inches

DEPTH (feet)		SURFACE SEAL / INTERVAL SEAL / FILTER PACK / PACKER INFORMATION		
FROM	TO	SEAL MATERIAL, FILTER PACK and PACKER TYPE and DESCRIPTION	**Quantity** of Material Used (if applicable)	GROUT DENSITY (lbs./gal., # bag mix, gal./sack etc.)

Well Development and Well Yield Test Information

DATE	METHOD	YIELD	Units Check One		DRAWDOWN (ft)	TIME PUMPED (hrs & min)
			GPM	CFS		

Pump (Permanent)

Pump Description:______ Horsepower:______ Pump Intake Depth:______ feet

Approximate Maximum Pumping Rate:______ Well Disinfected upon Completion? ☐ Yes ☐ No

Comments

Description of construction activity, additional materials used, problems encountered, extraordinary Circumstances, abandonment procedures. *Use additional well data form for more space.*

Well Driller Statement

This well was drilled and constructed under my supervision, according to applicable rules and regulations, and this report is complete and correct to the best of my knowledge and belief.

Name CASCADE DRILLING, L.P. **License No.** 626

(Person, Firm, or Corporation - Print or Type)

Signature______ **Date**______

(Licensed Well Driller)

WELL DRILLER'S REPORT
State of Utah
Division of Water Rights

For additional space, use "Additional Well Data Form" and attach

Well Identification

Non-Production Well: 1657001M00 WIN: 439332

Owner *Note any changes*

DEPT OF VETERANS AFFAIRS
C/O LYNNE WELSH
500 FOOTHILL DRIVE
SALT LAKE CITY, UT 84102

No Drill

Contact Person/Engineer: ____

Well Location *Note any changes*

N 214 W 792 from the E4 corner of section 08, Township 1S, Range 1E, SL B&M

Location Description: (address, proximity to buildings, landmarks, ground elevation,local well #)

Drillers Activity Start Date: ____ Completion Date: ____

Check all that apply: [X] New [ ] Repair [ ] Deepen [ ] Clean [ ] Replace [ ] Public Nature of Use: ____

If a replacement well, provide location of new well. ____ feet north/south and ____ feet east/west of the existing well.

DEPTH (feet) FROM	TO	BOREHOLE DIAMETER (in)	DRILLING METHOD	DRILLING FLUID

Well Log

DEPTH (feet) FROM	TO	WATER	PERMEABLE High	PERMEABLE Low	UNCONSOLIDATED CLAY	SILT	SAND	GRAVEL	COBBLES	BOULDER	OTHER	CONSOLIDATED ROCK TYPE	COLOR	DESCRIPTION AND REMARKS (e.g., relative %, grain size, sorting, angularity, bedding, grain composition density, plasticity, shape, cementation, consistancy, water bearing, odor, fracturing, minerology, texture,degree of weathering, hardness, water quality, etc.)

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Static Water Level

Date____ Water Level____ feet Flowing? [ ] Yes [ ] No
Method of Water Level Measurement____ If Flowing, Capped Pressure____ PSI
Point to Which Water Level Measurement was Referenced____ Elevation____
Height of Water Level reference point above ground surface____ feet Temperature____ degrees [ ] C [ ] F

Construction Information

DEPTH (feet)		CASING			DEPTH (feet)		☐SCREEN ☐PERFORATIONS ☐OPEN BOTTOM		
FROM	TO	CASING TYPE AND MATERIAL/GRADE	WALL THICK (in)	NOMINAL DIAM. (in)	FROM	TO	SCREEN SLOT SIZE OR PERF SIZE (in)	SCREEN DIAM. OR PERF LENGTH (in)	SCREEN TYPE OR NUMBER PERF (per round/interval)

Well Head Configuration:__________ Access Port Provided? ☐ Yes ☐ No

Casing Joint Type:__________ Perforator Used:__________

Was a Surface Seal Installed? ☐ Yes ☐ No Depth of Surface Seal:______ feet Drive Shoe? ☐ Yes ☐ No

Surface Seal Material Placement Method:__________

Was a temporary surface casing used? ☐ Yes ☐ No If yes, depth of casing:______ feet diameter:______ inches

DEPTH (feet)		SURFACE SEAL / INTERVAL SEAL / FILTER PACK / PACKER INFORMATION		
FROM	TO	SEAL MATERIAL, FILTER PACK and PACKER TYPE and DESCRIPTION	**Quantity** of Material Used (if applicable)	GROUT DENSITY (lbs./gal., # bag mix, gal./sack etc.)

Well Development and Well Yield Test Information

DATE	METHOD	YIELD	Units Check One		DRAWDOWN (ft)	TIME PUMPED (hrs & min)
			GPM	CFS		

Pump (Permanent)

Pump Description:__________ Horsepower:______ Pump Intake Depth:______ feet

Approximate Maximum Pumping Rate:__________ Well Disinfected upon Completion? ☐ Yes ☐ No

Comments

Description of construction activity, additional materials used, problems encountered, extraordinary Circumstances, abandonment procedures. *Use additional well data form for more space.*

Well Driller Statement

This well was drilled and constructed under my supervision, according to applicable rules and regulations, and this report is complete and correct to the best of my knowledge and belief.

Name CASCADE DRILLING, L.P. **License No.** 626

(Person, Firm, or Corporation - Print or Type)

Signature__________ **Date**__________

(Licensed Well Driller)

WELL DRILLER'S REPORT
State of Utah
Division of Water Rights

For additional space, use "Additional Well Data Form" and attach

Well Identification

Non-Production Well: 1657001M00 WIN: 439362

Owner *Note any changes*

DEPT OF VETERANS AFFAIRS
C/O LYNNE WELSH
500 FOOTHILL DRIVE
SALT LAKE CITY, UT 84102

No Drill

Contact Person/Engineer: ______

Well Location *Note any changes*

S 1938 E 114 from the N4 corner of section 08, Township 1S, Range 1E, SL B&M

Location Description: (address, proximity to buildings, landmarks, ground elevation,local well #)

Drillers Activity Start Date: ______ Completion Date: ______

Check all that apply: ☒ New ☐ Repair ☐ Deepen ☐ Clean ☐ Replace ☐ Public Nature of Use: ______

If a replacement well, provide location of new well. ______ feet north/south and ______ feet east/west of the existing well.

DEPTH (feet) FROM	TO	BOREHOLE DIAMETER (in)	DRILLING METHOD	DRILLING FLUID

Well Log

DEPTH (feet) FROM	TO	WATER	PERMEABLE High	PERMEABLE Low	UNCONSOLIDATED CLAY	SILT	SAND	GRAVEL	COBBLES	BOULDER	OTHER	CONSOLIDATED ROCK TYPE	COLOR	DESCRIPTION AND REMARKS (e.g., relative %, grain size, sorting, angularity, bedding, grain composition density, plasticity, shape, cementation, consistancy, water bearing, odor, fracturing, minerology, texture,degree of weathering, hardness, water quality, etc.)

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Static Water Level

Date ______ Water Level ______ feet Flowing? ☐ Yes ☐ No

Method of Water Level Measurement ______ If Flowing, Capped Pressure ______ PSI

Point to Which Water Level Measurement was Referenced ______ Elevation ______

Height of Water Level reference point above ground surface ______ feet Temperature ______ degrees ☐C ☐F

Construction Information

DEPTH (feet)		CASING			DEPTH (feet)		☐SCREEN ☐PERFORATIONS ☐OPEN BOTTOM		
FROM	TO	CASING TYPE AND MATERIAL/GRADE	WALL THICK (in)	NOMINAL DIAM. (in)	FROM	TO	SCREEN SLOT SIZE OR PERF SIZE (in)	SCREEN DIAM. OR PERF LENGTH (in)	SCREEN TYPE OR NUMBER PERF (per round/interval)

Well Head Configuration:______ Access Port Provided? ☐ Yes ☐No

Casing Joint Type:______ Perforator Used:______

Was a Surface Seal Installed? ☐ Yes ☐No Depth of Surface Seal:______ feet Drive Shoe? ☐ Yes ☐No

Surface Seal Material Placement Method:______

Was a temporary surface casing used? ☐ Yes ☐No If yes, depth of casing:______ feet diameter:______ inches

DEPTH (feet)		SURFACE SEAL / INTERVAL SEAL / FILTER PACK / PACKER INFORMATION		
FROM	TO	SEAL MATERIAL, FILTER PACK and PACKER TYPE and DESCRIPTION	**Quantity** of Material Used (if applicable)	GROUT DENSITY (lbs./gal., # bag mix, gal./sack etc.)

Well Development and Well Yield Test Information

DATE	METHOD	YIELD	Units Check One		DRAWDOWN (ft)	TIME PUMPED (hrs & min)
			GPM	CFS		

Pump (Permanent)

Pump Description:______ Horsepower:______ Pump Intake Depth:______ feet

Approximate Maximum Pumping Rate:______ Well Disinfected upon Completion? ☐Yes ☐No

Comments

Description of construction activity, additional materials used, problems encountered, extraordinary Circumstances, abandonment procedures. *Use additional well data form for more space.*

Well Driller Statement

This well was drilled and constructed under my supervision, according to applicable rules and regulations, and this report is complete and correct to the best of my knowledge and belief.

Name CASCADE DRILLING, L.P. **License No.** 626

(Person, Firm, or Corporation - Print or Type)

Signature______ **Date**______

(Licensed Well Driller)

WELL DRILLER'S REPORT
State of Utah
Division of Water Rights

For additional space, use "Additional Well Data Form" and attach

Well Identification

Non-Production Well: 1657001M00 WIN: 439359

Owner *Note any changes*

DEPT OF VETERANS AFFAIRS
C/O LYNNE WELSH
500 FOOTHILL DRIVE
SALT LAKE CITY, UT 84102

Contact Person/Engineer: Kristin Lazzeri / EA Engineering

Well Location *Note any changes*

N 800 W 691 from the E4 corner of section 08, Township 1S, Range 1E, SL B&M

Location Description: (address, proximity to buildings, landmarks, ground elevation,local well #) GW-52

Drillers Activity Start Date: 02-22-16 Completion Date: 04-06-16

Check all that apply: ☒ New ☐ Repair ☐ Deepen ☐ Clean ☐ Replace ☐ Public Nature of Use: monitor well

If a replacement well, provide location of new well. ____ feet north/south and ____ feet east/west of the existing well.

DEPTH (feet) FROM	TO	BOREHOLE DIAMETER (in)	DRILLING METHOD	DRILLING FLUID
0	30	2"	DPT	N/A

Well Log

DEPTH (feet) FROM	TO	WATER	PERMEABLE High	PERMEABLE Low	UNCONSOLIDATED CLAY	SILT	SAND	GRAVEL	COBBLES	BOULDER	OTHER	CONSOLIDATED ROCK TYPE	COLOR	DESCRIPTION AND REMARKS (e.g., relative %, grain size, sorting, angularity, bedding, grain composition density, plasticity, shape, cementation, consistancy, water bearing, odor, fracturing, minerology, texture,degree of weathering, hardness, water quality, etc.)
0	26			✓	✓	X	X						Brown	
26	30	X	X		✓	X	X						"	

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Static Water Level

Date 03-02-16 Water Level 26 feet Flowing? ☐ Yes ☒ No

Method of Water Level Measurement WLI If Flowing, Capped Pressure N/A PSI

Point to Which Water Level Measurement was Referenced ground level Elevation N/A

Height of Water Level reference point above ground surface N/A feet Temperature N/A degrees ☐ C ☐ F

Construction Information

DEPTH (feet) FROM	TO	CASING TYPE AND MATERIAL/GRADE	WALL THICK (in)	NOMINAL DIAM. (in)	DEPTH (feet) FROM	TO	☒SCREEN ☐PERFORATIONS ☐OPEN BOTTOM SCREEN SLOT SIZE OR PERF SIZE (in)	SCREEN DIAM. OR PERF LENGTH (in)	SCREEN TYPE OR NUMBER PERF (per round/interval)
0	25	3/4" Sch 40 pvc	40	3/4"	25	30	.010	3/4"	Factory Slot

Well Head Configuration: Flush mount Access Port Provided? ☒Yes ☐No

Casing Joint Type: Flush Thread Perforator Used: N/A

Was a Surface Seal Installed? ☒Yes ☐No Depth of Surface Seal: 24 feet Drive Shoe? ☒Yes ☐No

Surface Seal Material Placement Method: Tremie Bentonite chips

Was a temporary surface casing used? ☒Yes ☐No If yes, depth of casing: 30 feet diameter: 2 inches

DEPTH (feet) FROM	TO	SURFACE SEAL / INTERVAL SEAL / FILTER PACK / PACKER INFORMATION: SEAL MATERIAL, FILTER PACK and PACKER TYPE and DESCRIPTION	**Quantity** of Material Used (if applicable)	GROUT DENSITY (lbs./gal., # bag mix, gal./sack etc.)
0	23	Bentonite	4 bags	50lbs each
23	24	Bentonite Chips	1 Bag	" "
24	30	10-20 Sand	2 bags	" "

Well Development and Well Yield Test Information

DATE	METHOD	YIELD	Units Check One GPM	CFS	DRAWDOWN (ft)	TIME PUMPED (hrs & min)
	N/A					

Pump (Permanent)

Pump Description: N/A Horsepower: Pump Intake Depth: feet

Approximate Maximum Pumping Rate: Well Disinfected upon Completion? ☐Yes ☐No

Comments

Description of construction activity, additional materials used, problems encountered, extraordinary Circumstances, abandonment procedures. *Use additional well data form for more space.*

N/A

Well Driller Statement

This well was drilled and constructed under my supervision, according to applicable rules and regulations, and this report is complete and correct to the best of my knowledge and belief.

Name CASCADE DRILLING, L.P. License No. 626

(Person, Firm, or Corporation - Print or Type)

Signature Date 04-26-16

(Licensed Well Driller)

WELL DRILLER'S REPORT
State of Utah
Division of Water Rights

For additional space, use "Additional Well Data Form" and attach

Well Identification

Non-Production Well: 1657001M00 WIN: 439361

Owner *Note any changes*

DEPT OF VETERANS AFFAIRS
C/O LYNNE WELSH
500 FOOTHILL DRIVE
SALT LAKE CITY, UT 84102

No Drill

Contact Person/Engineer: ____

Well Location *Note any changes*

S 1189 W 322 from the N4 corner of section 08, Township 1S, Range 1E, SL B&M

Location Description: (address, proximity to buildings, landmarks, ground elevation,local well #)

Drillers Activity Start Date: ____ Completion Date: ____

Check all that apply: ☒ New ☐ Repair ☐ Deepen ☐ Clean ☐ Replace ☐ Public Nature of Use: ____

If a replacement well, provide location of new well. ____ feet north/south and ____ feet east/west of the existing well.

DEPTH (feet) FROM	TO	BOREHOLE DIAMETER (in)	DRILLING METHOD	DRILLING FLUID

Well Log

DEPTH (feet) FROM	TO	WATER	PERMEABLE High	PERMEABLE Low	UNCONSOLIDATED CLAY	SILT	SAND	GRAVEL	COBBLES	BOULDER	OTHER	CONSOLIDATED ROCK TYPE	COLOR	DESCRIPTION AND REMARKS (e.g., relative %, grain size, sorting, angularity, bedding, grain composition density, plasticity, shape, cementation, consistancy, water bearing, odor, fracturing, minerology, texture,degree of weathering, hardness, water quality, etc.)

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Static Water Level

Date ____ Water Level ____ feet Flowing? ☐ Yes ☐ No

Method of Water Level Measurement ____ If Flowing, Capped Pressure ____ PSI

Point to Which Water Level Measurement was Referenced ____ Elevation ____

Height of Water Level reference point above ground surface ____ feet Temperature ____ degrees ☐C ☐F

Construction Information

DEPTH (feet) FROM	TO	CASING: CASING TYPE AND MATERIAL/GRADE	WALL THICK (in)	NOMINAL DIAM. (in)	DEPTH (feet) FROM	TO	☐SCREEN ☐PERFORATIONS ☐OPEN BOTTOM: SCREEN SLOT SIZE OR PERF SIZE (in)	SCREEN DIAM. OR PERF LENGTH (in)	SCREEN TYPE OR NUMBER PERF (per round/interval)

Well Head Configuration:______ Access Port Provided? ☐ Yes ☐ No

Casing Joint Type:______ Perforator Used:______

Was a Surface Seal Installed? ☐ Yes ☐ No Depth of Surface Seal:______ feet Drive Shoe? ☐ Yes ☐ No

Surface Seal Material Placement Method:______

Was a temporary surface casing used? ☐ Yes ☐ No If yes, depth of casing:______ feet diameter:______ inches

DEPTH (feet) FROM	TO	SURFACE SEAL / INTERVAL SEAL / FILTER PACK / PACKER INFORMATION: SEAL MATERIAL, FILTER PACK and PACKER TYPE and DESCRIPTION	**Quantity** of Material Used (if applicable)	GROUT DENSITY (lbs./gal., # bag mix, gal./sack etc.)

Well Development and Well Yield Test Information

DATE	METHOD	YIELD	Units Check One: GPM	CFS	DRAWDOWN (ft)	TIME PUMPED (hrs & min)

Pump (Permanent)

Pump Description:______ Horsepower:______ Pump Intake Depth:______ feet

Approximate Maximum Pumping Rate:______ Well Disinfected upon Completion? ☐ Yes ☐ No

Comments

Description of construction activity, additional materials used, problems encountered, extraordinary Circumstances, abandonment procedures. *Use additional well data form for more space.*

Well Driller Statement

This well was drilled and constructed under my supervision, according to applicable rules and regulations, and this report is complete and correct to the best of my knowledge and belief.

Name CASCADE DRILLING, L.P. **License No.** 626

(Person, Firm, or Corporation - Print or Type)

Signature______ **Date**______

(Licensed Well Driller)

WELL DRILLER'S REPORT
State of Utah
Division of Water Rights

For additional space, use "Additional Well Data Form" and attach

Well Identification

Non-Production Well: 1657001M00 WIN: 439363

Owner *Note any changes*

DEPT OF VETERANS AFFAIRS
C/O LYNNE WELSH
500 FOOTHILL DRIVE
SALT LAKE CITY, UT 84102

No Drill

Contact Person/Engineer: ______

Well Location *Note any changes*

N 1764 W 646 from the S4 corner of section 08, Township 1S, Range 1E, SL B&M

Location Description: (address, proximity to buildings, landmarks, ground elevation,local well #)

Drillers Activity Start Date: ______ Completion Date: ______

Check all that apply: [X] New [ ] Repair [ ] Deepen [ ] Clean [ ] Replace [ ] Public Nature of Use: ______

If a replacement well, provide location of new well. ______ feet north/south and ______ feet east/west of the existing well.

DEPTH (feet) FROM	TO	BOREHOLE DIAMETER (in)	DRILLING METHOD	DRILLING FLUID

Well Log

DEPTH (feet) FROM	TO	WATER	PERMEABLE High	PERMEABLE Low	UNCONSOLIDATED CLAY	SILT	SAND	GRAVEL	COBBLES	BOULDER	OTHER	CONSOLIDATED ROCK TYPE	COLOR	DESCRIPTION AND REMARKS (e.g., relative %, grain size, sorting, angularity, bedding, grain composition density, plasticity, shape, cementation, consistancy, water bearing, odor, fracturing, minerology, texture,degree of weathering, hardness, water quality, etc.)

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Static Water Level

Date ______ Water Level ______ feet Flowing? [ ] Yes [ ] No

Method of Water Level Measurement ______ If Flowing, Capped Pressure ______ PSI

Point to Which Water Level Measurement was Referenced ______ Elevation ______

Height of Water Level reference point above ground surface ______ feet Temperature ______ degrees [ ] C [ ] F

Construction Information

DEPTH (feet)		CASING			DEPTH (feet)		☐SCREEN ☐PERFORATIONS ☐OPEN BOTTOM		
FROM	TO	CASING TYPE AND MATERIAL/GRADE	WALL THICK (in)	NOMINAL DIAM. (in)	FROM	TO	SCREEN SLOT SIZE OR PERF SIZE (in)	SCREEN DIAM. OR PERF LENGTH (in)	SCREEN TYPE OR NUMBER PERF (per round/interval)

Well Head Configuration:______ Access Port Provided? ☐ Yes ☐ No

Casing Joint Type:______ Perforator Used:______

Was a Surface Seal Installed? ☐ Yes ☐ No Depth of Surface Seal:______ feet Drive Shoe? ☐ Yes ☐ No

Surface Seal Material Placement Method:______

Was a temporary surface casing used? ☐ Yes ☐ No If yes, depth of casing:______ feet diameter:______ inches

DEPTH (feet)		SURFACE SEAL / INTERVAL SEAL / FILTER PACK / PACKER INFORMATION		
FROM	TO	SEAL MATERIAL, FILTER PACK and PACKER TYPE and DESCRIPTION	**Quantity** of Material Used (if applicable)	GROUT DENSITY (lbs./gal., # bag mix, gal./sack etc.)

Well Development and Well Yield Test Information

DATE	METHOD	YIELD	Units Check One		DRAWDOWN (ft)	TIME PUMPED (hrs & min)
			GPM	CFS		

Pump (Permanent)

Pump Description:______ Horsepower:______ Pump Intake Depth:______ feet

Approximate Maximum Pumping Rate:______ Well Disinfected upon Completion? ☐ Yes ☐ No

Comments

Description of construction activity, additional materials used, problems encountered, extraordinary Circumstances, abandonment procedures. *Use additional well data form for more space.*

Well Driller Statement

This well was drilled and constructed under my supervision, according to applicable rules and regulations, and this report is complete and correct to the best of my knowledge and belief.

Name CASCADE DRILLING, L.P. **License No.** 626

(Person, Firm, or Corporation - Print or Type)

Signature______ **Date**______

(Licensed Well Driller)

WELL DRILLER'S REPORT
State of Utah
Division of Water Rights

For additional space, use "Additional Well Data Form" and attach

Well Identification

Non-Production Well: 1657001M00 WIN: 439365

Owner *Note any changes*

DEPT OF VETERANS AFFAIRS
C/O LYNNE WELSH
500 FOOTHILL DRIVE
SALT LAKE CITY, UT 84102

No Drill

Contact Person/Engineer: ____________

Well Location *Note any changes*

S 1086 W 1121 from the E4 corner of section 08, Township 1S, Range 1E, SL B&M

Location Description: (address, proximity to buildings, landmarks, ground elevation,local well #)

Drillers Activity Start Date: ____________ Completion Date: ____________

Check all that apply: ☒ New ☐ Repair ☐ Deepen ☐ Clean ☐ Replace ☐ Public Nature of Use: ____________

If a replacement well, provide location of new well. ____________ feet north/south and ____________ feet east/west of the existing well.

DEPTH (feet) FROM	TO	BOREHOLE DIAMETER (in)	DRILLING METHOD	DRILLING FLUID

Well Log

DEPTH (feet) FROM	TO	WATER	PERMEABLE High	PERMEABLE Low	UNCONSOLIDATED CLAY	SILT	SAND	GRAVEL	COBBLES	BOULDER	OTHER	CONSOLIDATED ROCK TYPE	COLOR	DESCRIPTION AND REMARKS (e.g., relative %, grain size, sorting, angularity, bedding, grain composition density, plasticity, shape, cementation, consistancy, water bearing, odor, fracturing, minerology, texture,degree of weathering, hardness, water quality, etc.)
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Static Water Level

Date ____________ Water Level ____________ feet Flowing? ☐ Yes ☐ No

Method of Water Level Measurement ____________ If Flowing, Capped Pressure ____________ PSI

Point to Which Water Level Measurement was Referenced ____________ Elevation ____________

Height of Water Level reference point above ground surface ____________ feet Temperature ____________ degrees ☐ C ☐ F

Construction Information

DEPTH (feet)		CASING			DEPTH (feet)		☐SCREEN ☐PERFORATIONS ☐OPEN BOTTOM		
FROM	TO	CASING TYPE AND MATERIAL/GRADE	WALL THICK (in)	NOMINAL DIAM. (in)	FROM	TO	SCREEN SLOT SIZE OR PERF SIZE (in)	SCREEN DIAM. OR PERF LENGTH (in)	SCREEN TYPE OR NUMBER PERF (per round/interval)

Well Head Configuration:______ Access Port Provided? ☐Yes ☐No

Casing Joint Type:______ Perforator Used:______

Was a Surface Seal Installed? ☐Yes ☐No Depth of Surface Seal:______ feet Drive Shoe? ☐Yes ☐No

Surface Seal Material Placement Method:______

Was a temporary surface casing used? ☐Yes ☐No If yes, depth of casing:______ feet diameter:______ inches

DEPTH (feet)		SURFACE SEAL / INTERVAL SEAL / FILTER PACK / PACKER INFORMATION		
FROM	TO	SEAL MATERIAL, FILTER PACK and PACKER TYPE and DESCRIPTION	**Quantity** of Material Used (if applicable)	GROUT DENSITY (lbs./gal., # bag mix, gal./sack etc.)

Well Development and Well Yield Test Information

DATE	METHOD	YIELD	Units Check One		DRAWDOWN (ft)	TIME PUMPED (hrs & min)
			GPM	CFS		

Pump (Permanent)

Pump Description:______ Horsepower:______ Pump Intake Depth:______ feet

Approximate Maximum Pumping Rate:______ Well Disinfected upon Completion? ☐Yes ☐No

Comments

Description of construction activity, additional materials used, problems encountered, extraordinary Circumstances, abandonment procedures. *Use additional well data form for more space.*

Well Driller Statement

This well was drilled and constructed under my supervision, according to applicable rules and regulations, and this report is complete and correct to the best of my knowledge and belief.

Name CASCADE DRILLING, L.P. **License No.** 626

(Person, Firm, or Corporation - Print or Type)

Signature______ **Date**______

(Licensed Well Driller)

WELL DRILLER'S REPORT
State of Utah
Division of Water Rights

For additional space, use "Additional Well Data Form" and attach

Well Identification

Non-Production Well: 1657001M00 WIN: 439329

Owner *Note any changes*

DEPT OF VETERANS AFFAIRS
C/O LYNNE WELSH
500 FOOTHILL DRIVE
SALT LAKE CITY, UT 84102

No drill

Contact Person/Engineer: ______

Well Location *Note any changes*

S 355 E 583 from the W4 corner of section 09, Township 1S, Range 1E, SL B&M

Location Description: (address, proximity to buildings, landmarks, ground elevation,local well #)

Drillers Activity Start Date: ______ Completion Date: ______

Check all that apply: ☒ New ☐ Repair ☐ Deepen ☐ Clean ☐ Replace ☐ Public Nature of Use: ______

If a replacement well, provide location of new well. ______ feet north/south and ______ feet east/west of the existing well.

DEPTH (feet) FROM	TO	BOREHOLE DIAMETER (in)	DRILLING METHOD	DRILLING FLUID

Well Log

DEPTH (feet) FROM	TO	WATER	PERMEABLE High	PERMEABLE Low	UNCONSOLIDATED CLAY	SILT	SAND	GRAVEL	COBBLES	BOULDER	OTHER	CONSOLIDATED ROCK TYPE	COLOR	DESCRIPTION AND REMARKS (e.g., relative %, grain size, sorting, angularity, bedding, grain composition density, plasticity, shape, cementation, consistancy, water bearing, odor, fracturing, minerology, texture,degree of weathering, hardness, water quality, etc.)

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Static Water Level

Date______ Water Level______ feet Flowing? ☐ Yes ☐ No

Method of Water Level Measurement______ If Flowing, Capped Pressure______ PSI

Point to Which Water Level Measurement was Referenced______ Elevation______

Height of Water Level reference point above ground surface______ feet Temperature______ degrees ☐ C ☐ F

Construction Information

DEPTH (feet)		CASING			DEPTH (feet)		☐SCREEN ☐PERFORATIONS ☐OPEN BOTTOM		
FROM	TO	CASING TYPE AND MATERIAL/GRADE	WALL THICK (in)	NOMINAL DIAM. (in)	FROM	TO	SCREEN SLOT SIZE OR PERF SIZE (in)	SCREEN DIAM. OR PERF LENGTH (in)	SCREEN TYPE OR NUMBER PERF (per round/interval)

Well Head Configuration:______ Access Port Provided? ☐Yes ☐No

Casing Joint Type:______ Perforator Used:______

Was a Surface Seal Installed? ☐Yes ☐No Depth of Surface Seal:______ feet Drive Shoe? ☐Yes ☐No

Surface Seal Material Placement Method:______

Was a temporary surface casing used? ☐Yes ☐No If yes, depth of casing:______ feet diameter:______ inches

DEPTH (feet)		SURFACE SEAL / INTERVAL SEAL / FILTER PACK / PACKER INFORMATION		
FROM	TO	SEAL MATERIAL, FILTER PACK and PACKER TYPE and DESCRIPTION	**Quantity** of Material Used (if applicable)	GROUT DENSITY (lbs./gal., # bag mix, gal./sack etc.)

Well Development and Well Yield Test Information

DATE	METHOD	YIELD	Units Check One		DRAWDOWN (ft)	TIME PUMPED (hrs & min)
			GPM	CFS		

Pump (Permanent)

Pump Description:______ Horsepower:______ Pump Intake Depth:______ feet

Approximate Maximum Pumping Rate:______ Well Disinfected upon Completion? ☐Yes ☐No

Comments

Description of construction activity, additional materials used, problems encountered, extraordinary Circumstances, abandonment procedures. *Use additional well data form for more space.*

______

______

______

______

Well Driller Statement

This well was drilled and constructed under my supervision, according to applicable rules and regulations, and this report is complete and correct to the best of my knowledge and belief.

Name CASCADE DRILLING, L.P. **License No.** 626

(Person, Firm, or Corporation - Print or Type)

Signature______ **Date**______

(Licensed Well Driller)

WELL DRILLER'S REPORT
State of Utah
Division of Water Rights

For additional space, use "Additional Well Data Form" and attach

Well Identification

Non-Production Well: 1657001M00 WIN: 439354

Owner *Note any changes*

DEPT OF VETERANS AFFAIRS
C/O LYNNE WELSH
500 FOOTHILL DRIVE
SALT LAKE CITY, UT 84102

No Drill

Contact Person/Engineer:

Well Location *Note any changes*

S 29 E 1258 from the N4 corner of section 08, Township 1S, Range 1E, SL B&M

Location Description: (address, proximity to buildings, landmarks, ground elevation,local well #)

Drillers Activity Start Date: Completion Date:

Check all that apply: ☒ New ☐ Repair ☐ Deepen ☐ Clean ☐ Replace ☐ Public Nature of Use:

If a replacement well, provide location of new well. ______ feet north/south and ______ feet east/west of the existing well.

DEPTH (feet) FROM	TO	BOREHOLE DIAMETER (in)	DRILLING METHOD	DRILLING FLUID

Well Log

DEPTH (feet) FROM	TO	WATER	PERMEABLE High	PERMEABLE Low	UNCONSOLIDATED CLAY	SILT	SAND	GRAVEL	COBBLES	BOULDER	OTHER	CONSOLIDATED ROCK TYPE	COLOR	DESCRIPTION AND REMARKS (e.g., relative %, grain size, sorting, angularity, bedding, grain composition density, plasticity, shape, cementation, consistancy, water bearing, odor, fracturing, minerology, texture,degree of weathering, hardness, water quality, etc.)
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Static Water Level

Date ______ Water Level ______ feet Flowing? ☐ Yes ☐ No

Method of Water Level Measurement ______ If Flowing, Capped Pressure ______ PSI

Point to Which Water Level Measurement was Referenced ______ Elevation ______

Height of Water Level reference point above ground surface ______ feet Temperature ______ degrees ☐ C ☐ F

Construction Information

DEPTH (feet)		CASING			DEPTH (feet)		☐SCREEN ☐PERFORATIONS ☐OPEN BOTTOM		
FROM	TO	CASING TYPE AND MATERIAL/GRADE	WALL THICK (in)	NOMINAL DIAM. (in)	FROM	TO	SCREEN SLOT SIZE OR PERF SIZE (in)	SCREEN DIAM. OR PERF LENGTH (in)	SCREEN TYPE OR NUMBER PERF (per round/interval)

Well Head Configuration:______ Access Port Provided? ☐ Yes ☐ No

Casing Joint Type:______ Perforator Used:______

Was a Surface Seal Installed? ☐ Yes ☐ No Depth of Surface Seal:______ feet Drive Shoe? ☐ Yes ☐ No

Surface Seal Material Placement Method:______

Was a temporary surface casing used? ☐ Yes ☐ No If yes, depth of casing:______ feet diameter:______ inches

DEPTH (feet)		SURFACE SEAL / INTERVAL SEAL / FILTER PACK / PACKER INFORMATION		
FROM	TO	SEAL MATERIAL, FILTER PACK and PACKER TYPE and DESCRIPTION	**Quantity** of Material Used (if applicable)	GROUT DENSITY (lbs./gal., # bag mix, gal./sack etc.)

Well Development and Well Yield Test Information

DATE	METHOD	YIELD	Units Check One		DRAWDOWN (ft)	TIME PUMPED (hrs & min)
			GPM	CFS		

Pump (Permanent)

Pump Description:______ Horsepower:______ Pump Intake Depth:______ feet

Approximate Maximum Pumping Rate:______ Well Disinfected upon Completion? ☐ Yes ☐ No

Comments

Description of construction activity, additional materials used, problems encountered, extraordinary Circumstances, abandonment procedures. *Use additional well data form for more space.*

______

______

______

______

Well Driller Statement

This well was drilled and constructed under my supervision, according to applicable rules and regulations, and this report is complete and correct to the best of my knowledge and belief.

Name CASCADE DRILLING, L.P. **License No.** 626

(Person, Firm, or Corporation - Print or Type)

Signature______ **Date**______

(Licensed Well Driller)

WELL DRILLER'S REPORT
State of Utah
Division of Water Rights

For additional space, use "Additional Well Data Form" and attach

Well Identification

Non-Production Well: 1657001M00 WIN: 439320

Owner *Note any changes*

DEPT OF VETERANS AFFAIRS
C/O LYNNE WELSH
500 FOOTHILL DRIVE
SALT LAKE CITY, UT 84102

Drill, Sample, abandon

Contact Person/Engineer: ____________________

Well Location *Note any changes*

N 39 E 2273 from the W4 corner of section 08, Township 1S, Range 1E, SL B&M

Location Description: (address, proximity to buildings, landmarks, ground elevation,local well #)

Drillers Activity Start Date:____________________ Completion Date:____________________

Check all that apply: [X] New [ ] Repair [ ] Deepen [ ] Clean [ ] Replace [ ] Public Nature of Use:____________________

If a replacement well, provide location of new well. ____________ feet north/south and ____________ feet east/west of the existing well.

DEPTH (feet) FROM	TO	BOREHOLE DIAMETER (in)	DRILLING METHOD	DRILLING FLUID

Well Log

DEPTH (feet) FROM	TO	WATER	PERMEABLE High	PERMEABLE Low	UNCONSOLIDATED CLAY	SILT	SAND	GRAVEL	COBBLES	BOULDER	OTHER	CONSOLIDATED ROCK TYPE	COLOR	DESCRIPTION AND REMARKS (e.g., relative %, grain size, sorting, angularity, bedding, grain composition density, plasticity, shape, cementation, consistancy, water bearing, odor, fracturing, minerology, texture,degree of weathering, hardness, water quality, etc.)

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Static Water Level

Date____________________ Water Level____________ feet Flowing? [ ] Yes [ ] No

Method of Water Level Measurement____________________ If Flowing, Capped Pressure____________ PSI

Point to Which Water Level Measurement was Referenced____________________ Elevation____________

Height of Water Level reference point above ground surface__________ feet Temperature__________ degrees [ ] C [ ] F

Construction Information

DEPTH (feet)		CASING			DEPTH (feet)		☐SCREEN ☐PERFORATIONS ☐OPEN BOTTOM		
FROM	TO	CASING TYPE AND MATERIAL/GRADE	WALL THICK (in)	NOMINAL DIAM. (in)	FROM	TO	SCREEN SLOT SIZE OR PERF SIZE (in)	SCREEN DIAM. OR PERF LENGTH (in)	SCREEN TYPE OR NUMBER PERF (per round/interval)

Well Head Configuration:__________ Access Port Provided? ☐ Yes ☐ No

Casing Joint Type:__________ Perforator Used:__________

Was a Surface Seal Installed? ☐ Yes ☐ No Depth of Surface Seal:______ feet Drive Shoe? ☐ Yes ☐ No

Surface Seal Material Placement Method:__________

Was a temporary surface casing used? ☐ Yes ☐ No If yes, depth of casing:______ feet diameter:______ inches

DEPTH (feet)		SURFACE SEAL / INTERVAL SEAL / FILTER PACK / PACKER INFORMATION		
FROM	TO	SEAL MATERIAL, FILTER PACK and PACKER TYPE and DESCRIPTION	**Quantity** of Material Used (if applicable)	GROUT DENSITY (lbs./gal., # bag mix, gal./sack etc.)

Well Development and Well Yield Test Information

DATE	METHOD	YIELD	Units Check One		DRAWDOWN (ft)	TIME PUMPED (hrs & min)
			GPM	CFS		

Pump (Permanent)

Pump Description:__________ Horsepower:______ Pump Intake Depth:______ feet

Approximate Maximum Pumping Rate:__________ Well Disinfected upon Completion? ☐ Yes ☐ No

Comments

Description of construction activity, additional materials used, problems encountered, extraordinary Circumstances, abandonment procedures. *Use additional well data form for more space.*

Well Driller Statement

This well was drilled and constructed under my supervision, according to applicable rules and regulations, and this report is complete and correct to the best of my knowledge and belief.

Name CASCADE DRILLING, L.P. **License No.** 626

(Person, Firm, or Corporation - Print or Type)

Signature__________ **Date**__________

(Licensed Well Driller)

WELL DRILLER'S REPORT
State of Utah
Division of Water Rights

For additional space, use "Additional Well Data Form" and attach

Well Identification

Non-Production Well: 1657001M00 WIN: 439323

Owner *Note any changes*

DEPT OF VETERANS AFFAIRS
C/O LYNNE WELSH
500 FOOTHILL DRIVE
SALT LAKE CITY, UT 84102

Drill, Sample, Abandon

Contact Person/Engineer: ______________________

Well Location *Note any changes*

N 353 W 380 from the S4 corner of section 05, Township 1S, Range 1E, SL B&M

Location Description: (address, proximity to buildings, landmarks, ground elevation,local well #)

Drillers Activity Start Date:______________ Completion Date:______________

Check all that apply: [X] New [ ] Repair [ ] Deepen [ ] Clean [ ] Replace [ ] Public Nature of Use:______________

If a replacement well, provide location of new well. __________ feet north/south and __________ feet east/west of the existing well.

DEPTH (feet) FROM	TO	BOREHOLE DIAMETER (in)	DRILLING METHOD	DRILLING FLUID

Well Log

DEPTH (feet) FROM	TO	WATER	PERMEABLE High	PERMEABLE Low	UNCONSOLIDATED CLAY	SILT	SAND	GRAVEL	COBBLES	BOULDER	OTHER	CONSOLIDATED ROCK TYPE	COLOR	DESCRIPTION AND REMARKS (e.g., relative %, grain size, sorting, angularity, bedding, grain composition density, plasticity, shape, cementation, consistancy, water bearing, odor, fracturing, minerology, texture,degree of weathering, hardness, water quality, etc.)

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Static Water Level

Date______________ Water Level__________ feet Flowing? [ ] Yes [ ] No

Method of Water Level Measurement______________ If Flowing, Capped Pressure__________ PSI

Point to Which Water Level Measurement was Referenced______________ Elevation__________

Height of Water Level reference point above ground surface__________ feet Temperature__________ degrees [ ] C [ ] F

Construction Information

DEPTH (feet)		CASING			DEPTH (feet)		☐SCREEN ☐PERFORATIONS ☐OPEN BOTTOM		
FROM	TO	CASING TYPE AND MATERIAL/GRADE	WALL THICK (in)	NOMINAL DIAM. (in)	FROM	TO	SCREEN SLOT SIZE OR PERF SIZE (in)	SCREEN DIAM. OR PERF LENGTH (in)	SCREEN TYPE OR NUMBER PERF (per round/interval)

Well Head Configuration:______ Access Port Provided? ☐ Yes ☐ No

Casing Joint Type:______ Perforator Used:______

Was a Surface Seal Installed? ☐ Yes ☐ No Depth of Surface Seal:______ feet Drive Shoe? ☐ Yes ☐ No

Surface Seal Material Placement Method:______

Was a temporary surface casing used? ☐ Yes ☐ No If yes, depth of casing:______ feet diameter:______ inches

DEPTH (feet)		SURFACE SEAL / INTERVAL SEAL / FILTER PACK / PACKER INFORMATION		
FROM	TO	SEAL MATERIAL, FILTER PACK and PACKER TYPE and DESCRIPTION	**Quantity** of Material Used (if applicable)	GROUT DENSITY (lbs./gal., # bag mix, gal./sack etc.)

Well Development and Well Yield Test Information

DATE	METHOD	YIELD	Units Check One		DRAWDOWN (ft)	TIME PUMPED (hrs & min)
			GPM	CFS		

Pump (Permanent)

Pump Description:______ Horsepower:______ Pump Intake Depth:______ feet

Approximate Maximum Pumping Rate:______ Well Disinfected upon Completion? ☐ Yes ☐ No

Comments

Description of construction activity, additional materials used, problems encountered, extraordinary Circumstances, abandonment procedures. *Use additional well data form for more space.*

Well Driller Statement

This well was drilled and constructed under my supervision, according to applicable rules and regulations, and this report is complete and correct to the best of my knowledge and belief.

Name CASCADE DRILLING, L.P. **License No.** 626

(Person, Firm, or Corporation - Print or Type)

Signature______ **Date**______

(Licensed Well Driller)

WELL DRILLER'S REPORT
State of Utah
Division of Water Rights

For additional space, use "Additional Well Data Form" and attach

Well Identification

Non-Production Well: 1657001M00 WIN: 439326

Owner *Note any changes*

DEPT OF VETERANS AFFAIRS
C/O LYNNE WELSH
500 FOOTHILL DRIVE
SALT LAKE CITY, UT 84102

Drill, Sample, Abandon

Contact Person/Engineer: ____________

Well Location *Note any changes*

S 698 W 302 from the E4 corner of section 08, Township 1S, Range 1E, SL B&M

Location Description: (address, proximity to buildings, landmarks, ground elevation,local well #)

Drillers Activity Start Date: ____________ Completion Date: ____________

Check all that apply: ☒ New ☐ Repair ☐ Deepen ☐ Clean ☐ Replace ☐ Public Nature of Use: ____________

If a replacement well, provide location of new well. ____________ feet north/south and ____________ feet east/west of the existing well.

DEPTH (feet) FROM	TO	BOREHOLE DIAMETER (in)	DRILLING METHOD	DRILLING FLUID

Well Log

DEPTH (feet) FROM	TO	WATER	PERMEABLE High	PERMEABLE Low	UNCONSOLIDATED CLAY	SILT	SAND	GRAVEL	COBBLES	BOULDER	OTHER	CONSOLIDATED ROCK TYPE	COLOR	DESCRIPTION AND REMARKS (e.g., relative %, grain size, sorting, angularity, bedding, grain composition density, plasticity, shape, cementation, consistancy, water bearing, odor, fracturing, minerology, texture,degree of weathering, hardness, water quality, etc.)

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Static Water Level

Date ____________ Water Level ____________ feet Flowing? ☐ Yes ☐ No

Method of Water Level Measurement ____________ If Flowing, Capped Pressure ____________ PSI

Point to Which Water Level Measurement was Referenced ____________ Elevation ____________

Height of Water Level reference point above ground surface ____________ feet Temperature ____________ degrees ☐ C ☐ F

Construction Information

DEPTH (feet)		CASING			DEPTH (feet)		☐SCREEN ☐PERFORATIONS ☐OPEN BOTTOM		
FROM	TO	CASING TYPE AND MATERIAL/GRADE	WALL THICK (in)	NOMINAL DIAM. (in)	FROM	TO	SCREEN SLOT SIZE OR PERF SIZE (in)	SCREEN DIAM. OR PERF LENGTH (in)	SCREEN TYPE OR NUMBER PERF (per round/interval)

Well Head Configuration:______ Access Port Provided? ☐ Yes ☐ No

Casing Joint Type:______ Perforator Used:______

Was a Surface Seal Installed? ☐ Yes ☐ No Depth of Surface Seal:______ feet Drive Shoe? ☐ Yes ☐ No

Surface Seal Material Placement Method:______

Was a temporary surface casing used? ☐ Yes ☐ No If yes, depth of casing:______ feet diameter:______ inches

DEPTH (feet)		SURFACE SEAL / INTERVAL SEAL / FILTER PACK / PACKER INFORMATION		
FROM	TO	SEAL MATERIAL, FILTER PACK and PACKER TYPE and DESCRIPTION	**Quantity** of Material Used (if applicable)	GROUT DENSITY (lbs./gal., # bag mix, gal./sack etc.)

Well Development and Well Yield Test Information

DATE	METHOD	YIELD	Units Check One		DRAWDOWN (ft)	TIME PUMPED (hrs & min)
			GPM	CFS		

Pump (Permanent)

Pump Description:______ Horsepower:______ Pump Intake Depth:______ feet

Approximate Maximum Pumping Rate:______ Well Disinfected upon Completion? ☐ Yes ☐ No

Comments

Description of construction activity, additional materials used, problems encountered, extraordinary Circumstances, abandonment procedures. *Use additional well data form for more space.*

______

______

______

______

Well Driller Statement

This well was drilled and constructed under my supervision, according to applicable rules and regulations, and this report is complete and correct to the best of my knowledge and belief.

Name CASCADE DRILLING, L.P. **License No.** 626

(Person, Firm, or Corporation - Print or Type)

Signature______ **Date**______

(Licensed Well Driller)

WELL DRILLER'S REPORT
State of Utah
Division of Water Rights

For additional space, use "Additional Well Data Form" and attach

Well Identification

Non-Production Well: 1657001M00 WIN: 439327

Owner *Note any changes*

DEPT OF VETERANS AFFAIRS
C/O LYNNE WELSH
500 FOOTHILL DRIVE
SALT LAKE CITY, UT 84102

Drill, Sample, Abandon

Contact Person/Engineer: ______

Well Location *Note any changes*

S 680 W 1888 from the E4 corner of section 08, Township 1S, Range 1E, SL B&M

Location Description: (address, proximity to buildings, landmarks, ground elevation,local well #)

Drillers Activity Start Date: ______ Completion Date: ______

Check all that apply: ☒ New ☐ Repair ☐ Deepen ☐ Clean ☐ Replace ☐ Public Nature of Use: ______

If a replacement well, provide location of new well. ______ feet north/south and ______ feet east/west of the existing well.

DEPTH (feet) FROM	TO	BOREHOLE DIAMETER (in)	DRILLING METHOD	DRILLING FLUID

Well Log

DEPTH (feet) FROM	TO	WATER	PERMEABLE High	PERMEABLE Low	UNCONSOLIDATED CLAY	SILT	SAND	GRAVEL	COBBLES	BOULDER	OTHER	CONSOLIDATED ROCK TYPE	COLOR	DESCRIPTION AND REMARKS (e.g., relative %, grain size, sorting, angularity, bedding, grain composition density, plasticity, shape, cementation, consistancy, water bearing, odor, fracturing, minerology, texture,degree of weathering, hardness, water quality, etc.)

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SALT LAKE

Static Water Level

Date______ Water Level______ feet Flowing? ☐ Yes ☐ No

Method of Water Level Measurement______ If Flowing, Capped Pressure______ PSI

Point to Which Water Level Measurement was Referenced______ Elevation______

Height of Water Level reference point above ground surface______ feet Temperature______ degrees ☐C ☐F

Construction Information

DEPTH (feet)		CASING			DEPTH (feet)		☐SCREEN ☐PERFORATIONS ☐OPEN BOTTOM		
FROM	TO	CASING TYPE AND MATERIAL/GRADE	WALL THICK (in)	NOMINAL DIAM. (in)	FROM	TO	SCREEN SLOT SIZE OR PERF SIZE (in)	SCREEN DIAM. OR PERF LENGTH (in)	SCREEN TYPE OR NUMBER PERF (per round/interval)

Well Head Configuration:______ Access Port Provided? ☐Yes ☐No

Casing Joint Type:______ Perforator Used:______

Was a Surface Seal Installed? ☐Yes ☐No Depth of Surface Seal:______ feet Drive Shoe? ☐Yes ☐No

Surface Seal Material Placement Method:______

Was a temporary surface casing used? ☐Yes ☐No If yes, depth of casing:______ feet diameter:______ inches

DEPTH (feet)		SURFACE SEAL / INTERVAL SEAL / FILTER PACK / PACKER INFORMATION		
FROM	TO	SEAL MATERIAL, FILTER PACK and PACKER TYPE and DESCRIPTION	**Quantity** of Material Used (if applicable)	GROUT DENSITY (lbs./gal., # bag mix, gal./sack etc.)

Well Development and Well Yield Test Information

DATE	METHOD	YIELD	Units Check One		DRAWDOWN (ft)	TIME PUMPED (hrs & min)
			GPM	CFS		

Pump (Permanent)

Pump Description:______ Horsepower:______ Pump Intake Depth:______ feet

Approximate Maximum Pumping Rate:______ Well Disinfected upon Completion? ☐Yes ☐No

Comments

Description of construction activity, additional materials used, problems encountered, extraordinary Circumstances, abandonment procedures. *Use additional well data form for more space.*

Well Driller Statement

This well was drilled and constructed under my supervision, according to applicable rules and regulations, and this report is complete and correct to the best of my knowledge and belief.

Name CASCADE DRILLING, L.P. **License No.** 626

(Person, Firm, or Corporation - Print or Type)

Signature______ **Date**______

(Licensed Well Driller)

Appendix D
Surface Water and Stormwater Sampling Forms

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GROUNDWATER/STORMWATER/SURFACE WATER SAMPLING FORM

Project: AOU-1 : East Side Springs   Project Number: 6202899   Location ID: SW-01

Date: 5/4/16   Field Team: K. Lazzeri, N. Lundvall

Purpose Method

☐ Dedicated Submersible   ☐ Portable Bladder   ☒ Peristaltic

☐ Portable Submersible   ☐ Dedicated Bailer   ☐ Grab

☐ Dedicated Bladder   ☐ Disposable Bailer   ☐ Other:

Sample Analyses

Sample ID: A-SW-001   Sample Time: 1400

☒ Blind Duplicate: A-SW-001-D   ☐ MS/MSD

☒ VOCs   ☐ Sulfate/Nitrite/Nitrate

☐ SVOCs   ☐ TOC

☐ Cations   ☐ Sulfide

☐ Trace Metals   ☒ Isotopes (O, H)

☐ Anions/Alkalinity/TDS   ☐

Well/Purge

Well Casing: Stick-up | Flush Mount

Well Depth: —   Screen Length: —

Casing Diam: —   Borehole Diam.: —

Depth to Water: —

Measuring Point: —

Calculated Purge Volume: —

Pump Start: 1400   Pump Stop: 1403

☐ **Well Pumped Dry**

Pumped Dry (date/time): —   Pump restarted (date/time): —

Initial Purge (gal): —   Recovered Water Level: —

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (L)	Flow Rate (L/min)	Comments
1400	7.24	1779	0.91	5.78	16.9	236.2	—	~~0.16~~ 0.28 KL	0.20	—

KR

GROUNDWATER/SURFACE WATER SAMPLING FORM (*CONTINUED*)

Time	pH	SC (μS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments
									KR	

Final Parameters

Time	pH	SC	Turb.	DO	Temp	ORP	DTW	Vol Evac.	Flow Rate
1400	7.24	1779	0.91	5.78	16.9	236.2	–	0.16	0.20
Stable:	☐	☐	☐	☐	☐	☐	☐	☐	☐
	± 0.1	± 3%	± 10%	± 0.3 mg/L	± 3%	± 10 mV	Δ <0.3 ft		

Sampling Comments: sample collected from seep coming out of driveway/retaining wall of residence

Well Specific Observations/Access Issues: No access to property needed

Kristin Rippen 5/4/16

GROUNDWATER/STORMWATER/SURFACE WATER SAMPLING FORM

Project: AOU-1: East Side Springs Project Number: 60202899 Location ID: SW-02

Date: 5/11/16 Field Team: K. Lazzen

Purpose Method

☐ Dedicated Submersible ☐ Portable Bladder ☐ Peristaltic

☐ Portable Submersible ☐ Dedicated Bailer ☒ Grab

☐ Dedicated Bladder ☐ Disposable Bailer ☐ Other: ______

Sample Analyses

Sample ID: A-SW-002 Sample Time: 0910

☐ Blind Duplicate: ______ ☐ MS/MSD

☒ VOCs ☐ Sulfate/Nitrite/Nitrate

☐ SVOCs ☐ TOC

☐ Cations ☐ Sulfide

☐ Trace Metals ☒ Isotope (O,H)

☐ Anions/Alkalinity/TDS ☐ ______

Well/Purge

Well Casing: Stick-up | Flush Mount

Well Depth: — Screen Length: —

Casing Diam: — Borehole Diam.: —

Depth to Water: —

Measuring Point: —

Calculated Purge Volume: —

Pump Start: — Pump Stop: —

☐ **Well Pumped Dry**

Pumped Dry (date/time): — Pump restarted (date/time): —

Initial Purge (gal): — Recovered Water Level: —

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (L)	Flow Rate (L/min)	Comments
0910	8.49	564	59.8	8.00	15.3	219.3	—	0.16	—	—
										KR

GROUNDWATER/SURFACE WATER SAMPLING FORM (*CONTINUED*)

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments
									KR	

Final Parameters

Time	pH	SC	Turb.	DO	Temp	ORP	DTW	Vol Evac.	Flow Rate
0910	8.49	564	59.8	8.00	15.3	219.3	—	0.16	—
Stable:	☐	☐	☐	☐	☐	☐	☐	☐	☐
	± 0.1	± 3%	± 10%	± 0.3 mg/L	± 3%	± 10 mV	Δ <0.3 ft		

Sampling Comments: Sample collected from storm drain

Well Specific Observations/Access Issues: Access needed from Salt lake City

Kristi Rygen 5/11/16

GROUNDWATER/STORMWATER/SURFACE WATER SAMPLING FORM

Project: AOU-1: East Side Springs Project Number: 6202899 Location ID: SW-03
Date: 5/11/16 Field Team: K. Lazzeri

Purpose Method

☐ Dedicated Submersible ☐ Portable Bladder ☐ Peristaltic
☐ Portable Submersible ☐ Dedicated Bailer ☒ Grab
☐ Dedicated Bladder ☐ Disposable Bailer ☐ Other:

Sample Analyses

Sample ID: A-SW-003 Sample Time: 0920
☐ Blind Duplicate: ☐ MS/MSD
☒ VOCs ☐ Sulfate/Nitrite/Nitrate
☐ SVOCs ☐ TOC
☐ Cations ☐ Sulfide
☐ Trace Metals ☒ Isotope (O, H)
☐ Anions/Alkalinity/TDS ☐

Well/Purge

Well Casing: Stick-up | Flush Mount
Well Depth: — Screen Length: —
Casing Diam: — Borehole Diam.: —
Depth to Water: —
Measuring Point: —
Calculated Purge Volume: —
Pump Start: — Pump Stop: —

☐ **Well Pumped Dry**

Pumped Dry (date/time): — Pump restarted (date/time): —
Initial Purge (gal): — Recovered Water Level: —

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (L)	Flow Rate (L/min)	Comments
0920	8.52	630	48.2	6.50	17.2	219.2	—	0.16	—	—

KR

GROUNDWATER/SURFACE WATER SAMPLING FORM (*CONTINUED*)

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments

KR

Final Parameters

Time	pH	SC	Turb.	DO	Temp	ORP	DTW	Vol Evac.	Flow Rate
0920	8.52	630	48.2	6.50	17.2	219.2	—	0.16	—
Stable: ☐ ± 0.1	☐ ± 3%	☐ ± 10%	☐ ± 0.3 mg/L	☐ ± 3%	☐ ± 10 mV	☐ Δ <0.3 ft	☐	☐	

Sampling Comments: sample collected from storm line man hole

Well Specific Observations/Access Issues: Access needed from Salt Lake City

Krista Ragper 5/11/16

GROUNDWATER/STORMWATER/SURFACE WATER SAMPLING FORM

Project: AOU-1: East Side Springs   Project Number: 6202899   Location ID: SW-04

Date: 5/2/16   Field Team: K. Lazzen / N. Lundvall

Purge Method

- ☐ Dedicated Submersible
- ☐ Portable Bladder
- ☒ Peristaltic
- ☐ Portable Submersible
- ☐ Dedicated Bailer
- ☐ Grab
- ☐ Dedicated Bladder
- ☐ Disposable Bailer
- ☐ Other: ____

Sample Analyses

Sample ID: A-SW-004   Sample Time: 1340

- ☐ Blind Duplicate: ____
- ☐ MS/MSD
- ☒ VOCs
- ☐ Sulfate/Nitrite/Nitrate
- ☐ SVOCs
- ☐ TOC
- ☐ Cations
- ☐ Sulfide
- ☐ Trace Metals
- ☒ Isotopes (O, H)
- ☐ Anions/Alkalinity/TDS
- ☐ ____

Well/Purge

Well Casing: Stick-up | Flush Mount

Well Depth: –   Screen Length: –

Casing Diam: –   Borehole Diam.: –

Depth to Water: –

Measuring Point: –

Calculated Purge Volume: –

Pump Start: 1340   Pump Stop: 1343

☐ **Well Pumped Dry**

Pumped Dry (date/time): –   Pump restarted (date/time): –

Initial Purge (gal): –   Recovered Water Level: –

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (L)	Flow Rate (L/min)	Comments
1340	7.37	654	3.38	8.38	19.6	258.1	–	0.16	0.20	–

KR

GROUNDWATER/SURFACE WATER SAMPLING FORM (*CONTINUED*)

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments
										KR

Final Parameters

Time	pH	SC	Turb.	DO	Temp	ORP	DTW	Vol Evac.	Flow Rate
1340	7.37	654	3.38	8.38	19.6	258.1	—	0.16	0.20
Stable: ☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
	± 0.1	± 3%	± 10%	± 0.3 mg/L	± 3%	± 10 mV	Δ <0.3 ft		

Sampling Comments: Sample collected from ponds in front yard of residence. Some algae and plant matter in water

Well Specific Observations/Access Issues: Access from home owner needed

Kristi Roper 5/2/16

GROUNDWATER/SURFACE WATER SAMPLING FORM

STORMWATER

Project: AOU-1: East Side Springs Project Number: 6202899 Location ID: SW-05

Date: 5/11/16 Field Team: K. Lazzeri

Purpose Method

☐ Dedicated Submersible ☐ Portable Bladder ☒ Peristaltic

☐ Portable Submersible ☐ Dedicated Bailer ☐ Grab

☐ Dedicated Bladder ☐ Disposable Bailer ☐ Other:

Sample Analyses

Sample ID: A-SW-005 Sample Time: 0757

☐ Blind Duplicate: ☐ MS/MSD

☒ VOCs ☐ Sulfate/Nitrite/Nitrate

☐ SVOCs ☐ TOC

☐ Cations ☐ Sulfide

☐ Trace Metals ☒ Isotope (O,H)

☐ Anions/Alkalinity/TDS ☐

Well/Purge

Well Casing: Stick-up | Flush Mount

Well Depth: — Screen Length: —

Casing Diam: — Borehole Diam.: —

Depth to Water: —

Measuring Point: —

Calculated Purge Volume: —

Pump Start: 0757 Pump Stop: 0759

☐ **Well Pumped Dry**

Pumped Dry (date/time): — Pump restarted (date/time): —

Initial Purge (gal): — Recovered Water Level: —

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments
0757	8.01	1026	32.4	8.94	15.3	245.8	—	0.16	—	—

KR

GROUNDWATER/SURFACE WATER SAMPLING FORM (*CONTINUED*)

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments
									KR	

Final Parameters

Time	pH	SC	Turb.	DO	Temp	ORP	DTW	Vol Evac.	Flow Rate
0757	8.01	1026	32.4	8.94	15.3	245.8	—	0.16	—
Stable:	☐	☐	☐	☐	☐	☐	☐	☐	☐
	± 0.1	± 3%	± 10%	± 0.3 mg/L	± 3%	± 10 mV	Δ <0.3 ft		

Sampling Comments: sample collected from storm line man hole

Well Specific Observations/Access Issues: Access needed from Salt Lake City

Kristi Roper 5/11/16

GROUNDWATER/STORMWATER/SURFACE WATER SAMPLING FORM

Project: AOU-1: East Side Springs　Project Number: 6202899　Location ID: SW-06

Date: 5/4/16　Field Team: K. Lazzeri, N. Lundvall

Purge Method

- ☐ Dedicated Submersible
- ☐ Portable Bladder
- ☐ Peristaltic
- ☐ Portable Submersible
- ☐ Dedicated Bailer
- ☒ Grab
- ☐ Dedicated Bladder
- ☐ Disposable Bailer
- ☐ Other: ______

Sample Analyses

Sample ID: A-SW-006　Sample Time: 1700

☒ Blind Duplicate: A-SW-006-D　☐ MS/MSD

- ☒ VOCs
- ☐ Sulfate/Nitrite/Nitrate
- ☐ SVOCs
- ☐ TOC
- ☐ Cations
- ☐ Sulfide
- ☐ Trace Metals
- ☒ Isotopes (O, H)
- ☐ Anions/Alkalinity/TDS
- ☐ ______

Well/Purge

Well Casing: Stick-up | Flush Mount

Well Depth: –　Screen Length: –

Casing Diam: ______　Borehole Diam.: –

Depth to Water: –

Measuring Point: –

Calculated Purge Volume: –

Pump Start: – –　Pump Stop: –

☐ **Well Pumped Dry**

Pumped Dry (date/time): –　Pump restarted (date/time): –

Initial Purge (gal): –　Recovered Water Level: –

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (L)	Flow Rate (L/min)	Comments
1700	7.36	1262	1.43	9.84	17.7	218.0	–	1.0	–	–

KR

GROUNDWATER/SURFACE WATER SAMPLING FORM (*CONTINUED*)

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments
										KR

Final Parameters

Time	pH	SC	Turb.	DO	Temp	ORP	DTW	Vol Evac.	Flow Rate
1700	7.36	1262	1.43	9.84	17.7	218.0	—	1	—
Stable:	☐	☐	☐	☐	☐	☐	☐	☐	☐
	± 0.1	± 3%	± 10%	± 0.3 mg/L	± 3%	± 10 mV	Δ <0.3 ft		

Sampling Comments: sample collected from "well" on property - water collected from spring water collected by lowering glass bottle into "well" - too deep for peristaltic pump

Well Specific Observations/Access Issues: Access from home owner needed

Kristi Rapp 5/14/16

GROUNDWATER/STORMWATER/SURFACE WATER SAMPLING FORM

Project: AOU-1: East Side Springs Project Number: 6202899 Location ID: SW-07
Date: 5/4/16 Field Team: K. Lazzeri, N. Lundvall

Purpose Method

Purge Method

- ☐ Dedicated Submersible
- ☐ Portable Bladder
- ☐ Peristaltic
- ☐ Portable Submersible
- ☐ Dedicated Bailer
- ☒ Grab
- ☐ Dedicated Bladder
- ☐ Disposable Bailer
- ☐ Other:

Sample Analyses

Sample ID: A-SW-007 Sample Time: 1100

- ☒ Blind Duplicate: A-SW-007-D
- ☐ MS/MSD
- ☒ VOCs
- ☐ Sulfate/Nitrite/Nitrate
- ☒ SVOCs
- ☐ TOC
- ☐ Cations
- ☐ Sulfide
- ☒ Trace Metals (total)
- ☒ Isotope (O, H)
- ☒ Anions/Alkalinity/TDS
- ☐

Well/Purge

Well Casing: Stick-up | Flush Mount
Well Depth: – Screen Length: –
Casing Diam: – Borehole Diam.: –
Depth to Water: –
Measuring Point: –
Calculated Purge Volume: –
Pump Start: – Pump Stop: –

☐ **Well Pumped Dry**

Pumped Dry (date/time): –
Pump restarted (date/time): –
Initial Purge (gal): –
Recovered Water Level: –

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (L)	Flow Rate (L/min)	Comments
1100	7.59	1216	3.98	~~9.~~ KL 5.61	15.2	269.1	–	7.8	–	–

KR

GROUNDWATER/SURFACE WATER SAMPLING FORM (*CONTINUED*)

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments
									KR	

Final Parameters

Time	pH	SC	Turb.	DO	Temp	ORP	DTW	Vol Evac.	Flow Rate
1100	7.59	1216	3.98	5.61	15.2	269.1	—	7.8	—
Stable:	☐	☐	☐	☐	☐	☐	☐	☐	☐
	± 0.1	± 3%	± 10%	± 0.3 mg/L	± 3%	± 10 mV	Δ <0.3 ft		

Sampling Comments: Sample collected From spring box on property

Well Specific Observations/Access Issues: Access From home owner needed

Kristi Ruggeri 5/4/16

GROUNDWATER/STORMWATER/SURFACE WATER SAMPLING FORM

Project: AOU-1 : East Side Springs Project Number: 6202899 Location ID: ~~SW-48~~ SW-08

Date: 5/4/16 Field Team: K. Lazzen / N. Lundvall

Purge Method

☐ Dedicated Submersible ☐ Portable Bladder ☒ Peristaltic

☐ Portable Submersible ☐ Dedicated Bailer ☐ Grab

☐ Dedicated Bladder ☐ Disposable Bailer ☐ Other: ______

Sample Analyses

Sample ID: A-SW-008 Sample Time: ~~0945~~ 1010 KL

☒ Blind Duplicate: A-SW-008-D ~~☒~~ KL ☐ MS/MSD

☒ VOCs ☐ Sulfate/Nitrite/Nitrate

☐ SVOCs ☐ TOC

☐ Cations ☐ Sulfide

☐ Trace Metals ☒ Isotopes (O, H)

☐ Anions/Alkalinity/TDS ☐ ______

Well/Purge

Well Casing: Stick-up | Flush Mount

Well Depth: — Screen Length: —

Casing Diam: — Borehole Diam.: —

Depth to Water: —

Measuring Point: —

Calculated Purge Volume: —

Pump Start: 1010 Pump Stop: 1016

☐ **Well Pumped Dry**

Pumped Dry (date/time): — Pump restarted (date/time): —

Initial Purge (gal): — Recovered Water Level: —

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (L)	Flow Rate (L/min)	Comments
1010	7.45	898	5.42	10.00	12.6	260.5	—	0.28	0.20	—

KR

GROUNDWATER/SURFACE WATER SAMPLING FORM (*CONTINUED*)

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments

KR

Final Parameters

	Time	pH	SC	Turb.	DO	Temp	ORP	DTW	Vol Evac.	Flow Rate
	1010	7.45	898	5.42	10.00	12.6	260.5	—	0.28	0.20
Stable:		☐	☐	☐	☐	☐	☐	☐	☐	☐
		± 0.1	± 3%	± 10%	± 0.3 mg/L	± 3%	± 10 mV	Δ <0.3 ft		

Sampling Comments: sample collected from seep in NW corner of yard

Well Specific Observations/Access Issues: Access from home owner needed

Kristi Ruppen 5/4/16

GROUNDWATER/STORMWATER/SURFACE WATER SAMPLING FORM

Project: AOU-1: East Side Springs   Project Number: 6202899   Location ID: SW-09

Date: 5/3/16   Field Team: K. Lazzeri, N. Lundvall

Purge Method

☐ Dedicated Submersible   ☐ Portable Bladder   ☒ Peristaltic

☐ Portable Submersible   ☐ Dedicated Bailer   ☐ Grab

☐ Dedicated Bladder   ☐ Disposable Bailer   ☐ Other:

Sample Analyses

Sample ID: A-SW-009   Sample Time: 0855

☐ Blind Duplicate: ☐ MS/MSD

☒ VOCs   ☐ Sulfate/Nitrite/Nitrate

☐ SVOCs   ☐ TOC

☐ Cations   ☐ Sulfide

☐ Trace Metals   ☒ Isotope (O, H)

☐ Anions/Alkalinity/TDS   ☐

Well/Purge

Well Casing: Stick-up | Flush Mount

Well Depth: —   Screen Length: —

Casing Diam: —   Borehole Diam.: —

Depth to Water: —

Measuring Point: —

Calculated Purge Volume: —

Pump Start: 0855   Pump Stop: 0858

☐ **Well Pumped Dry**

Pumped Dry (date/time): —   Pump restarted (date/time): —

Initial Purge (gal): —   Recovered Water Level: —

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (L)	Flow Rate (L/min)	Comments
0855	7.75	1552	79.4	8.72	11.4	254.0	—	0.16	0.20	—

KR

GROUNDWATER/SURFACE WATER SAMPLING FORM (*CONTINUED*)

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments

KA

Final Parameters

Time	pH	SC	Turb.	DO	Temp	ORP	DTW	Vol Evac.	Flow Rate
0855	7.75	1552	79.4	8.72	11.4	254.0	—	0.16	0.20
Stable: ☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
	± 0.1	± 3%	± 10%	± 0.3 mg/L	± 3%	± 10 mV	Δ <0.3 ft		

Sampling Comments: sample collected from seep in back yard

Well Specific Observations/Access Issues: Access needed from home owner

Kristi Angier 5/31/16

GROUNDWATER/SURFACE WATER SAMPLING FORM

Project: AOU-1: East Side Springs   Project Number: 6202899   Location ID: SW-10

Date: 5/11/16   Field Team: K. Lazzen

Purge Method

☐ Dedicated Submersible   ☐ Portable Bladder   ☐ Peristaltic

☐ Portable Submersible   ☐ Dedicated Bailer   ☒ Grab

☐ Dedicated Bladder   ☐ Disposable Bailer   ☐ Other: ____

Sample Analyses

Sample ID: A-SW-010   Sample Time: 0840

☐ Blind Duplicate: ____   ☐ MS/MSD

☒ VOCs   ☐ Sulfate/Nitrite/Nitrate

☐ SVOCs   ☐ TOC

☐ Cations   ☐ Sulfide

☐ Trace Metals   ☒ Isotope (O, H)

☐ Anions/Alkalinity/TDS   ☐ ____

Well/Purge

Well Casing: Stick-up | Flush Mount

Well Depth: —   Screen Length: —

Casing Diam: —   Borehole Diam.: —

Depth to Water: —

Measuring Point: —

Calculated Purge Volume: —

Pump Start: —   Pump Stop: —

☐ **Well Pumped Dry**

Pumped Dry (date/time): —   Pump restarted (date/time): —

Initial Purge (gal): —   Recovered Water Level: —

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments
0840	8.55	523	38.4	8.17	18.2	219.7	—	0.16	—	—

KR

GROUNDWATER/SURFACE WATER SAMPLING FORM (*CONTINUED*)

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments

KH

Final Parameters

	Time	pH	SC	Turb.	DO	Temp	ORP	DTW	Vol Evac.	Flow Rate
	0840	8.55	523	38.4	8.17	18.2	219.7	—	0.16	--
Stable:		☐	☐	☐	☐	☐	☐	☐	☐	☐
		± 0.1	± 3%	± 10%	± 0.3 mg/L	± 3%	± 10 mV	Δ <0.3 ft		

Sampling Comments: sample collected from stormdrain man hole

Well Specific Observations/Access Issues: Access needed from Salt Lake City

Kristi Ruggeri 5/11/16

GROUNDWATER/STORMWATER/SURFACE WATER SAMPLING FORM

Project: AOU-1: East Side Springs Project Number: 6202899 Location ID: SW-11

Date: 5/3/16 Field Team: K. Lazzeri, N. Lundvall

Purpose Method

☐ Dedicated Submersible ☐ Portable Bladder ☒ Peristaltic

☐ Portable Submersible ☐ Dedicated Bailer ☐ Grab

☐ Dedicated Bladder ☐ Disposable Bailer ☐ Other: ____

Sample Analyses

Sample ID: A-SW-011 Sample Time: 1230

☐ Blind Duplicate: ____ ☐ MS/MSD

☒ VOCs ☐ Sulfate/Nitrite/Nitrate

☐ SVOCs ☐ TOC

☐ Cations ☐ Sulfide

☐ Trace Metals ☒ Isotopes (O, H)

☐ Anions/Alkalinity/TDS ☐ ____

Well/Purge

Well Casing: Stick-up | Flush Mount

Well Depth: — Screen Length: —

Casing Diam: — Borehole Diam.: —

Depth to Water: —

Measuring Point: —

Calculated Purge Volume: —

Pump Start: 1230 Pump Stop: 1233

☐ **Well Pumped Dry**

Pumped Dry (date/time): — Pump restarted (date/time): —

Initial Purge (gal): — Recovered Water Level: —

Time	pH	SC (μS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (L)	Flow Rate (L/min)	Comments
1230	7.59	1235	93.4	~~12~~ 9.14 KL	19.7	251.3	—	0.16	0.20	—

KR

GROUNDWATER/SURFACE WATER SAMPLING FORM (*CONTINUED*)

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments
									KR	

Final Parameters

Time	**pH**	**SC**	**Turb.**	**DO**	**Temp**	**ORP**	**DTW**	**Vol Evac.**	**Flow Rate**
1230	7.59	1235	93.4	9.14	19.7	251.3	—	0.16	0.20
Stable: ☐	☐ ± 0.1	☐ ± 3%	☐ ± 10%	☐ ± 0.3 mg/L	☐ ± 3%	☐ ± 10 mV	☐ Δ <0.3 ft	☐	☐

Sampling Comments: Sample collected From seep in front yard that runs onto sidewalk

Well Specific Observations/Access Issues: No access issues

Kirsta Rogers 5/3/16

GROUNDWATER/STORMWATER/SURFACE WATER SAMPLING FORM

Project: AOU-1: East Side Springs Project Number: 6202899 Location ID: SW-12

Date: 5/3/16 Field Team: K. Lazzeri, N. Lundvall

Purpose Method

☐ Dedicated Submersible ☐ Portable Bladder ☒ Peristaltic

☐ Portable Submersible ☐ Dedicated Bailer ☐ Grab

☐ Dedicated Bladder ☐ Disposable Bailer ☐ Other:

Sample Analyses

Sample ID: A-SW-012 Sample Time: 1030

☐ Blind Duplicate: ☐ MS/MSD

☒ VOCs ☐ Sulfate/Nitrite/Nitrate

☒ SVOCs ☐ TOC

☐ Cations ☐ Sulfide

☒ Trace Metals ☒ Isotope (O, H)

☒ Anions/Alkalinity/TDS ☐

Well/Purge

Well Casing: Stick-up | Flush Mount

Well Depth: — Screen Length: —

Casing Diam: — Borehole Diam.: —

Depth to Water: —

Measuring Point: —

Calculated Purge Volume: —

Pump Start: 1030 Pump Stop: 1045

☐ **Well Pumped Dry**

Pumped Dry (date/time): — Pump restarted (date/time): —

Initial Purge (gal): — Recovered Water Level: —

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (L)	Flow Rate (L/min)	Comments
1030	7.57	1278	0.41	11.92	14.4	254.9	—	4.0	0.20	—

KR

GROUNDWATER/SURFACE WATER SAMPLING FORM (*CONTINUED*)

Time	pH	SC (μS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments

KR

Final Parameters

Time	pH	SC	Turb.	DO	Temp	ORP	DTW	Vol Evac.	Flow Rate
1030	7.57	1278	0.41	11.92	14.4	254.9	–	4.0	0.20
Stable:	☐	☐	☐	☐	☐	☐	☐	☐	☐
	± 0.1	± 3%	± 10%	± 0.3 mg/L	± 3%	± 10 mV	Δ <0.3 ft		

Sampling Comments: sample collected from spring in backyard

Well Specific Observations/Access Issues: Access needed from homeowner

Kristi Rogers 5/3/16

GROUNDWATER/STORMWATER/SURFACE WATER SAMPLING FORM

Project: AOU-1: East Side Springs　Project Number: 6202899　Location ID: SW-13
Date: 5/3/16　Field Team: K. Lazzen, N. Lundvall

Purge Method

☐ Dedicated Submersible　☐ Portable Bladder　☒ Peristaltic
☐ Portable Submersible　☐ Dedicated Bailer　☐ Grab
☐ Dedicated Bladder　☐ Disposable Bailer　☐ Other:

Sample Analyses

Sample ID: A-SW-013　Sample Time: 1430
☐ Blind Duplicate:　☐ MS/MSD
☒ VOCs　☐ Sulfate/Nitrite/Nitrate
☐ SVOCs　☐ TOC
☐ Cations　☐ Sulfide
☐ Trace Metals　☒ Isotopes (O,H)
☐ Anions/Alkalinity/TDS　☐

Well/Purge

Well Casing: Stick-up | Flush Mount
Well Depth: —　Screen Length: —
Casing Diam: —　Borehole Diam.: —
Depth to Water: —
Measuring Point: —
Calculated Purge Volume: —
Pump Start: 1430　Pump Stop: 1435

☐ **Well Pumped Dry**

Pumped Dry (date/time): —　Pump restarted (date/time): —
Initial Purge (gal): —　Recovered Water Level: —

Time	pH	SC (μS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (L)	Flow Rate (L/min)	Comments
1430	7.95	1217	727	5.41	21.2	90.7	—	0.16	0.20	—
										KR

GROUNDWATER/SURFACE WATER SAMPLING FORM (*CONTINUED*)

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments
									KR	

Final Parameters

Time	pH	SC	Turb.	DO	Temp	ORP	DTW	Vol Evac.	Flow Rate
1430	7.95	1217	727	5.41	21.2	90.7	—	0.16	0.20
Stable: ☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
	± 0.1	± 3%	± 10%	± 0.3 mg/L	± 3%	± 10 mV	Δ <0.3 ft		

Sampling Comments: sample collected from seep in backyard

Well Specific Observations/Access Issues: Access needed from home owner

Kristen Rogers 5/3/16

GROUNDWATER/STORMWATER/SURFACE WATER SAMPLING FORM

Project: AOU-1: East Side Springs Project Number: 6202899 Location ID: SW-14

Date: ~~5/3/16~~ KL 5/4/16 Field Team: K. Lazzen, N. Lundvall

Purpose Method

☐ Dedicated Submersible ☐ Portable Bladder ☒ Peristaltic

☐ Portable Submersible ☐ Dedicated Bailer ☐ Grab

☐ Dedicated Bladder ☐ Disposable Bailer ☐ Other:

Sample Analyses

Sample ID: A-SW-014 Sample Time: 0900

☐ Blind Duplicate: ☐ MS/MSD

☒ VOCs ☐ Sulfate/Nitrite/Nitrate

☐ SVOCs ☐ TOC

☐ Cations ☐ Sulfide

☐ Trace Metals ☒ isotopes (O, H)

☐ Anions/Alkalinity/TDS ☐

Well/Purge

Well Casing: Stick-up | Flush Mount

Well Depth: — Screen Length: —

Casing Diam: — Borehole Diam.: —

Depth to Water: —

Measuring Point: —

Calculated Purge Volume: —

Pump Start: 0900 Pump Stop: 0903

☐ **Well Pumped Dry**

Pumped Dry (date/time): — Pump restarted (date/time): —

Initial Purge (gal): — Recovered Water Level: —

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (L)	Flow Rate (L/min)	Comments
0900	7.42	1113	0.94	11.75	12.6	262.7	—	0.16	0.20	—
										KR

GROUNDWATER/SURFACE WATER SAMPLING FORM (*CONTINUED*)

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments

KR

Final Parameters

Time	pH	SC	Turb.	DO	Temp	ORP	DTW	Vol Evac.	Flow Rate
0900	7.42	1113	0.94	11.75	12.6	262.7	—	0.16	0.20
Stable:	☐	☐	☐	☐	☐	☐	☐	☐	☐
	± 0.1	± 3%	± 10%	± 0.3 mg/L	± 3%	± 10 mV	Δ <0.3 ft		

Sampling Comments: sample collected from sump on east side of property

Well Specific Observations/Access Issues: Access needed from homeowner

Kristi Ripper 5/4/16

GROUNDWATER/STORMWATER/SURFACE WATER SAMPLING FORM

Project: AOU-1: East Side Springs   Project Number: 60202899   Location ID: SW-15

Date: 5/4/16   Field Team: K. Lazzen, N. Lundvall

Purge Method

☐ Dedicated Submersible   ☐ Portable Bladder   ☒ Peristaltic

☐ Portable Submersible   ☐ Dedicated Bailer   ☐ Grab

☐ Dedicated Bladder   ☐ Disposable Bailer   ☐ Other:

Sample Analyses

Sample ID: SW-015   Sample Time: 1130

☐ Blind Duplicate: ☐ MS/MSD

☒ VOCs   ☐ Sulfate/Nitrite/Nitrate

☒ SVOCs   ☐ TOC

☐ Cations   ☐ Sulfide

☒ Trace Metals   ☒ Isotope (O, H)

☒ Anions/Alkalinity/TDS   ☐

Well/Purge

Well Casing: Stick-up | Flush Mount

Well Depth: —   Screen Length: —

Casing Diam: —   Borehole Diam.: —

Depth to Water: —

Measuring Point: —

Calculated Purge Volume: —

Pump Start: 1130   Pump Stop: 1210

☐ **Well Pumped Dry**

Pumped Dry (date/time): —   Pump restarted (date/time): —

Initial Purge (gal): —   Recovered Water Level: —

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (L)	Flow Rate (L/min)	Comments
1130	7.63	1224	512	6.19	16.4	265.4	—	4.0	0.20	—

KR

GROUNDWATER/SURFACE WATER SAMPLING FORM (*CONTINUED*)

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments
										KR

Final Parameters

Time	pH	SC	Turb.	DO	Temp	ORP	DTW	Vol Evac.	Flow Rate
1130	7.63	1224	512	6.19	16.4	265.4	-	4.0	0.20
Stable:	☐	☐	☐	☐	☐	☐	☐	☐	☐
	± 0.1	± 3%	± 10%	± 0.3 mg/L	± 3%	± 10 mV	Δ <0.3 ft		

Sampling Comments: Sample collected from seep in backyard

Well Specific Observations/Access Issues: Access from home owner needed

Kristen Ruggeri 5/4/16

GROUNDWATER/STORMWATER/SURFACE WATER SAMPLING FORM

Project: AOU-1: East Side Springs Project Number: 6202899 Location ID: SW-16

Date: 5/4/16 Field Team: K. Lazzeri, N. Lundvall

Purge Method

☐ Dedicated Submersible ☐ Portable Bladder ☒ Peristaltic

☐ Portable Submersible ☐ Dedicated Bailer ☐ Grab

☐ Dedicated Bladder ☐ Disposable Bailer ☐ Other:

Sample Analyses

Sample ID: A-SW-016 Sample Time: 1320

☐ Blind Duplicate: ☐ MS/MSD

☒ VOCs ☐ Sulfate/Nitrite/Nitrate

☒ SVOCs ☐ TOC

☐ Cations ☐ Sulfide

☒ Trace Metals ☒ Isotopes (O,H)

☒ Anions/Alkalinity/TDS ☐

Well/Purge

Well Casing: Stick-up | Flush Mount

Well Depth: — Screen Length: —

Casing Diam: — Borehole Diam.: —

Depth to Water: —

Measuring Point: —

Calculated Purge Volume: —

Pump Start: 1320 Pump Stop: 1330

☐ **Well Pumped Dry**

Pumped Dry (date/time): — Pump restarted (date/time): —

Initial Purge (gal): — Recovered Water Level: —

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (L)	Flow Rate (L/min)	Comments
1320	7.58	1147	1.24	9.19	19.8	259.8	—	4.0	0.2	—

KR

GROUNDWATER/SURFACE WATER SAMPLING FORM (*CONTINUED*)

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments
										KR

Final Parameters

Time	pH	SC	Turb.	DO	Temp	ORP	DTW	Vol Evac.	Flow Rate
1320	7.58	1147	1.24	9.19	19.8	259.8	—	4.0	0.20
Stable:	☐	☐	☐	☐	☐	☐	☐	☐	☐
	± 0.1	± 3%	± 10%	± 0.3 mg/L	± 3%	± 10 mV	Δ <0.3 ft		

Sampling Comments: sample taken From spring on school property

Well Specific Observations/Access Issues: Access needed from school

Kristi Rapper 5/4/16

GROUNDWATER/SURFACE WATER SAMPLING FORM
(STORMWATER)

Project: AOU-1: East Side Springs Project Number: 6202899 Location ID: SW-17
Date: 5/11/16 Field Team: K. Lazzen

Purge Method

- ☐ Dedicated Submersible
- ☐ Portable Bladder
- ☒ Peristaltic
- ☐ Portable Submersible
- ☐ Dedicated Bailer
- ☐ Grab
- ☐ Dedicated Bladder
- ☐ Disposable Bailer
- ☐ Other: ____

Sample Analyses

Sample ID: A-SW-017 Sample Time: 1018

- ☐ Blind Duplicate: ____
- ☒ MS/MSD
- ☒ VOCs
- ☐ Sulfate/Nitrite/Nitrate
- ☐ SVOCs
- ☐ TOC
- ☐ Cations
- ☐ Sulfide
- ☐ Trace Metals
- ☒ Isotope (O, H)
- ☐ Anions/Alkalinity/TDS
- ☐ ____

Well/Purge

Well Casing: Stick-up | Flush Mount
Well Depth: — Screen Length: —
Casing Diam: — Borehole Diam.: —
Depth to Water: —
Measuring Point: —
Calculated Purge Volume: —
Pump Start: 1018 Pump Stop: 1025

☐ **Well Pumped Dry**

Pumped Dry (date/time): — Pump restarted (date/time): —
Initial Purge (gal): — Recovered Water Level: —

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments
1018	8.08	1092	5.63	7.65	14.6	233.7	—	0.4	—	—

KR

GROUNDWATER/SURFACE WATER SAMPLING FORM (*CONTINUED*)

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments
										KR

Final Parameters

Time	pH	SC	Turb.	DO	Temp	ORP	DTW	Vol Evac.	Flow Rate
1018	8.08	1092	5.63	7.65	14.6	233.7	—	0.40	—
Stable:	☐	☐	☐	☐	☐	☐	☐	☐	☐
	± 0.1	± 3%	± 10%	± 0.3 mg/L	± 3%	± 10 mV	Δ <0.3 ft		

Sampling Comments: sample collected from Jordan and Salt Lake Canal

Well Specific Observations/Access Issues:

Kristen Rogers 5/11/16

GROUNDWATER/STORMWATER/SURFACE WATER SAMPLING FORM

Project: AOU-1. East Side Springs Project Number: 6202899 Location ID: SW-18

Date: 5/5/16 Field Team: K. Larzen, N. Lundvall

Purpose Method

☐ Dedicated Submersible ☐ Portable Bladder ☒ Peristaltic

☐ Portable Submersible ☐ Dedicated Bailer ☐ Grab

☐ Dedicated Bladder ☐ Disposable Bailer ☐ Other:

Sample Analyses

Sample ID: A-SW-018 Sample Time: 0910

☒ Blind Duplicate: A-SW-018-D ☐ MS/MSD

☒ VOCs ☐ Sulfate/Nitrite/Nitrate

☐ SVOCs ☐ TOC

☐ Cations ☐ Sulfide

☐ Trace Metals ☒ Isotope (O, H)

☐ Anions/Alkalinity/TDS ☐

Well/Purge

Well Casing: Stick-up | Flush Mount

Well Depth: — Screen Length: —

Casing Diam: — Borehole Diam.: —

Depth to Water: —

Measuring Point: —

Calculated Purge Volume: —

Pump Start: 0910 Pump Stop: 0913

☐ **Well Pumped Dry**

Pumped Dry (date/time): — Pump restarted (date/time): —

Initial Purge (gal): — Recovered Water Level: —

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (L)	Flow Rate (L/min)	Comments
0910	7.78	1328	179	8.36	14.4	242.8	—	0.28	0.20	—
										KB

GROUNDWATER/SURFACE WATER SAMPLING FORM (*CONTINUED*)

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments
									KR	

Final Parameters

Time	pH	SC	Turb.	DO	Temp	ORP	DTW	Vol Evac.	Flow Rate
0910	7.78	1328	179	8.36	14.4	242.8	—	0.28	0.20
Stable:	☐	☐	☐	☐	☐	☐	☐	☐	☐
	± 0.1	± 3%	± 10%	± 0.3 mg/L	± 3%	± 10 mV	Δ <0.3 ft		

Sampling Comments: Sample collected from manhole

Well Specific Observations/Access Issues:

Kristen Ruppel 5/5/16

GROUNDWATER/STORMWATER/SURFACE WATER SAMPLING FORM

Project: AOU-1: East Side Springs Project Number: 6202899 Location ID: SW-19
Date: 5/4/16 Field Team: K. Lazzen, N. Lundvall

Purge Method

☐ Dedicated Submersible ☐ Portable Bladder ☒ Peristaltic
☐ Portable Submersible ☐ Dedicated Bailer ☐ Grab
☐ Dedicated Bladder ☐ Disposable Bailer ☐ Other:

Sample Analyses
Sample ID: A-SW-019 Sample Time: 0820
☐ Blind Duplicate: ☐ MS/MSD
☒ VOCs ☐ Sulfate/Nitrite/Nitrate
☐ SVOCs ☐ TOC
☐ Cations ☐ Sulfide
☐ Trace Metals ☒ Isotope (O, H)
☐ Anions/Alkalinity/TDS ☐

Well/Purge
Well Casing: Stick-up | Flush Mount
Well Depth: — Screen Length: —
Casing Diam: — Borehole Diam.: —
Depth to Water: —
Measuring Point: —
Calculated Purge Volume: —
Pump Start: 0820 Pump Stop: 0823

☐ **Well Pumped Dry**
Pumped Dry (date/time): — Pump restarted (date/time): —
Initial Purge (gal): — Recovered Water Level: —

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (L)	Flow Rate (L/min)	Comments
0820	7.39	1403	46.7	7.82	13.1	249.2	—	0.16	0.20	—

KR

GROUNDWATER/SURFACE WATER SAMPLING FORM (*CONTINUED*)

Time	pH	SC (μS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments
										KR

Final Parameters

Time	pH	SC	Turb.	DO	Temp	ORP	DTW	Vol Evac.	Flow Rate
0820	7.39	1403	46.7	7.82	13.1	249.2	—	0.16	0.20
Stable:	☐	☐	☐	☐	☐	☐	☐	☐	☐
	± 0.1	± 3%	± 10%	± 0.3 mg/L	± 3%	± 10 mV	Δ <0.3 ft		

Sampling Comments: sample collected from Bowen spring

Well Specific Observations/Access Issues: Access needed from home owner

Kristi Ruppert 5/4/16

GROUNDWATER/STORMWATER/SURFACE WATER SAMPLING FORM

Project: AOU-1: East Side Springs Project Number: 6202899 Location ID: SW-20
Date: 5/5/16 Field Team: K. Lazzeri / N. Lundvall

Purpose Method

☐ Dedicated Submersible ☐ Portable Bladder ☒ Peristaltic
☐ Portable Submersible ☐ Dedicated Bailer ☐ Grab
☐ Dedicated Bladder ☐ Disposable Bailer ☐ Other:

Sample Analyses
Sample ID: A-SW-020 Sample Time: 1030
☐ Blind Duplicate: ☐ MS/MSD
☒ VOCs ☐ Sulfate/Nitrite/Nitrate
☐ SVOCs ☐ TOC
☐ Cations ☐ Sulfide
☐ Trace Metals ☒ Isotope (O, H)
☐ Anions/Alkalinity/TDS ☐

Well/Purge
Well Casing: Stick-up | Flush Mount
Well Depth: — Screen Length: —
Casing Diam: — Borehole Diam.: —
Depth to Water: —
Measuring Point: —
Calculated Purge Volume: —
Pump Start: 1030 Pump Stop: 1033

☐ **Well Pumped Dry**
Pumped Dry (date/time): — Pump restarted (date/time): —
Initial Purge (gal): — Recovered Water Level: —

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (L)	Flow Rate (L/min)	Comments
1030	8.39	1144	0.44	8.79	16.9	256.7	—	0.16	0.20	—

KR

GROUNDWATER/SURFACE WATER SAMPLING FORM (*CONTINUED*)

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments
										KR

Final Parameters

Time	pH	SC	Turb.	DO	Temp	ORP	DTW	Vol Evac.	Flow Rate
1030	8.39	1144	0.44	8.79	16.9	256.7	—	0.16	0.20
Stable:	☐	☐	☐	☐	☐	☐	☐	☐	☐
	± 0.1	± 3%	± 10%	± 0.3 mg/L	± 3%	± 10 mV	Δ <0.3 ft		

Sampling Comments: sample collected from man hole - sample from inlet

Well Specific Observations/Access Issues:

Kristi Rupper 5/5/16

GROUNDWATER/STORMWATER/SURFACE WATER SAMPLING FORM

Project: AOU-1: East Side Springs Project Number: 6202899 Location ID: SW-21

Date: 5/3/16 Field Team: K. Lozzen, N. Lundvall

Purpose Method

☐ Dedicated Submersible ☐ Portable Bladder ☒ Peristaltic

☐ Portable Submersible ☐ Dedicated Bailer ☐ Grab

☐ Dedicated Bladder ☐ Disposable Bailer ☐ Other:

Sample Analyses

Sample ID: A-SW-021 Sample Time: 1320

☐ Blind Duplicate: ☐ MS/MSD

☒ VOCs ☐ Sulfate/Nitrite/Nitrate

☒ SVOCs ☐ TOC

☐ Cations ☐ Sulfide

☒ Trace Metals ☒ Isotope (O, H)

☒ Anions/Alkalinity/TDS ☐

Well/Purge

Well Casing: Stick-up | Flush Mount

Well Depth: — Screen Length: —

Casing Diam: — Borehole Diam.: —

Depth to Water: —

Measuring Point: —

Calculated Purge Volume: —

Pump Start: 1320 Pump Stop: 1323

☐ **Well Pumped Dry**

Pumped Dry (date/time): — Pump restarted (date/time): —

Initial Purge (gal): — Recovered Water Level: —

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (L)	Flow Rate (L/min)	Comments
1320	8.04	979	0.23	11.41	17.2	218.3	—	0.16	0.20	—

KR

GROUNDWATER/SURFACE WATER SAMPLING FORM (*CONTINUED*)

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments
									KR	

Final Parameters

	Time	pH	SC	Turb.	DO	Temp	ORP	DTW	Vol Evac.	Flow Rate
	1320	8.04	979	0.23	11.41	17.2	218.3	—	0.16	0.20
Stable:		☐	☐	☐	☐	☐	☐	☐	☐	☐
		± 0.1	± 3%	± 10%	± 0.3 mg/L	± 3%	± 10 mV	Δ <0.3 ft		

Sampling Comments: Sample collected from cistern in backyard

Well Specific Observations/Access Issues: Access from homeowner needed

Kristin Ragger 5/3/16

GROUNDWATER/STORMWATER/SURFACE WATER SAMPLING FORM

Project: AOU-1: East Side Springs Project Number: 6202899 Location ID: SW-22

Date: 5/3/16 Field Team: K. Lazzen, N. Lundvall

Purge Method

☐ Dedicated Submersible ☐ Portable Bladder ☒ Peristaltic

☐ Portable Submersible ☐ Dedicated Bailer ☐ Grab

☐ Dedicated Bladder ☐ Disposable Bailer ☐ Other:

Sample Analyses

Sample ID: A-SW-022 Sample Time: 1550

☐ Blind Duplicate: ☐ MS/MSD

☒ VOCs ☐ Sulfate/Nitrite/Nitrate

☐ SVOCs ☐ TOC

☐ Cations ☐ Sulfide

☐ Trace Metals ☒ Isotope (O, H)

☐ Anions/Alkalinity/TDS ☐

Well/Purge

Well Casing: Stick-up | Flush Mount

Well Depth: — Screen Length: —

Casing Diam: — Borehole Diam.: —

Depth to Water: —

Measuring Point: —

Calculated Purge Volume: —

Pump Start: 1550 Pump Stop: 1553

☐ **Well Pumped Dry**

Pumped Dry (date/time): — Pump restarted (date/time): —

Initial Purge (gal): — Recovered Water Level: —

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (L)	Flow Rate (L/min)	Comments
1550	7.69	1031	0.65	8.72	17.5	113.3	—	0.16	0.20	—

KR

GROUNDWATER/SURFACE WATER SAMPLING FORM (*CONTINUED*)

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments
									KR	

Final Parameters

Time	pH	SC	Turb.	DO	Temp	ORP	DTW	Vol Evac.	Flow Rate
1550	7.69	1031	0.65	8.72	17.5	113.3	–	0.16	0.20
Stable: ☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
	± 0.1	± 3%	± 10%	± 0.3 mg/L	± 3%	± 10 mV	Δ <0.3 ft		

Sampling Comments: sample collected from sump in backyard

Well Specific Observations/Access Issues: Access needed from home owner

Kristin Roper 5/3/16

GROUNDWATER/STORMWATER/SURFACE WATER SAMPLING FORM

Project: AOU-1. East Side Springs Project Number: 6202899 Location ID: SW-23
Date: 5/3/16 Field Team: K. Lazzeri, N. Lundvall

Purge Method

☐ Dedicated Submersible ☐ Portable Bladder ☒ Peristaltic
☐ Portable Submersible ☐ Dedicated Bailer ☐ Grab
☐ Dedicated Bladder ☐ Disposable Bailer ☐ Other:

Sample Analyses
Sample ID: A-SW-023 Sample Time: 0930
☐ Blind Duplicate: ☒ MS/MSD
☒ VOCs ☐ Sulfate/Nitrite/Nitrate
☒ SVOCs ☐ TOC
☐ Cations ☐ Sulfide
☒ Trace Metals ☒ Isotopes (O, H)
☒ Anions/Alkalinity/TDS ☐

Well/Purge
Well Casing: Stick-up | Flush Mount
Well Depth: — Screen Length: —
Casing Diam: — Borehole Diam.: —
Depth to Water: —
Measuring Point: —
Calculated Purge Volume: —
Pump Start: 0930 Pump Stop: 1000

☐ **Well Pumped Dry**
Pumped Dry (date/time): — Pump restarted (date/time): —
Initial Purge (gal): — Recovered Water Level: —

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (L)	Flow Rate (L/min)	Comments
0930	7.26	1354	4.50	4.71	12.4	256.5	—	~~4.5~~ 12 KL	~~0.20~~ 0.4 KL	—

KL

GROUNDWATER/SURFACE WATER SAMPLING FORM (*CONTINUED*)

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments
									KR	

Final Parameters

Time	pH	SC	Turb.	DO	Temp	ORP	DTW	Vol Evac.	Flow Rate
0930	7.26	1354	4.50	4.71	12.4	256.5	—	~~4~~ 12 KL	0.4
Stable:	☐	☐	☐	☐	☐	☐	☐	☐	☐
	± 0.1	**± 3%**	**± 10%**	**± 0.3 mg/L**	**± 3%**	**± 10 mV**	**Δ <0.3 ft**		

Sampling Comments: sample collected from sump in backyard

Well Specific Observations/Access Issues: Access needed from home owner

Kristi Rogers 5/3/16

GROUNDWATER/~~SURFACE~~ WATER SAMPLING FORM
(STORMWATER)

Project: AOU-1: East Side Springs   Project Number: 6202899   Location ID: SW-24

Date: 5/11/16   Field Team: K. Lazzen

Purpose Method

☐ Dedicated Submersible   ☐ Portable Bladder   ☒ Peristaltic

☐ Portable Submersible   ☐ Dedicated Bailer   ☐ Grab

☐ Dedicated Bladder   ☐ Disposable Bailer   ☐ Other: ______

Sample Analyses

Sample ID: A-SW-024   Sample Time: 0925

☐ Blind Duplicate: ______   ☐ MS/MSD

☒ VOCs   ☐ Sulfate/Nitrite/Nitrate

☐ SVOCs   ☐ TOC

☐ Cations   ☐ Sulfide

☐ Trace Metals   ☒ Isotope (O, H)

☐ Anions/Alkalinity/TDS   ☐ ______

Well/Purge

Well Casing: Stick-up | Flush Mount

Well Depth: —   Screen Length: —

Casing Diam: —   Borehole Diam.: —

Depth to Water: —

Measuring Point: —

Calculated Purge Volume: —

Pump Start: 0925   Pump Stop: 0930

☐ **Well Pumped Dry**

Pumped Dry (date/time): —   Pump restarted (date/time): —

Initial Purge (gal): —   Recovered Water Level: —

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments
0925	8.36	559	542	5.74	17.1	207.4	—	0.16	—	-

KR

GROUNDWATER/SURFACE WATER SAMPLING FORM (*CONTINUED*)

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments

KR

Final Parameters

Time	**pH**	**SC**	**Turb.**	**DO**	**Temp**	**ORP**	**DTW**	**Vol Evac.**	**Flow Rate**
0925	8.36	559	542	5.74	17.1	207.4	—	0.16	—
Stable:	☐	☐	☐	☐	☐	☐	☐	☐	☐
	± 0.1	± 3%	± 10%	± 0.3 mg/L	± 3%	± 10 mV	Δ <0.3 ft		

Sampling Comments: sample collected from storm drain manhole

Well Specific Observations/Access Issues: Access needed from Salt Lake City

Kristi Rizzi 5/11/16

GROUNDWATER/SURFACE WATER SAMPLING FORM

Project: AOU-1: East Side Springs Project Number: 6202899 Location ID: SW-25
Date: 5/5/16 Field Team: K. Lazzen / N. Lundvall

Purpose Method

- ☐ Dedicated Submersible
- ☐ Portable Bladder
- ☒ Peristaltic
- ☐ Portable Submersible
- ☐ Dedicated Bailer
- ☐ Grab
- ☐ Dedicated Bladder
- ☐ Disposable Bailer
- ☐ Other:

Sample Analyses

Sample ID: A-SW-025 Sample Time: 1800

- ☐ Blind Duplicate:
- ☐ MS/MSD
- ☒ VOCs
- ☐ Sulfate/Nitrite/Nitrate
- ☐ SVOCs
- ☐ TOC
- ☐ Cations
- ☐ Sulfide
- ☐ Trace Metals
- ☒ Isotope (O, H)
- ☐ Anions/Alkalinity/TDS
- ☐

Well/Purge

Well Casing: Stick-up | Flush Mount
Well Depth: — Screen Length: —
Casing Diam: — Borehole Diam.: —
Depth to Water: —
Measuring Point: —
Calculated Purge Volume: —
Pump Start: 1800 Pump Stop: 1803

☐ **Well Pumped Dry**

Pumped Dry (date/time): — Pump restarted (date/time): —
Initial Purge (gal): — Recovered Water Level: —

Time	pH	SC (μS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments
1800	7.28	1394	1.14	7.05	15.2	255.8	—	0.16	0.20	—

KR

GROUNDWATER/SURFACE WATER SAMPLING FORM (*CONTINUED*)

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments
									KR	

Final Parameters

Time	pH	SC	Turb.	DO	Temp	ORP	DTW	Vol Evac.	Flow Rate
1800	7.28	1394	1.14	7.05	15.2	255.8	–	0.16	0.20
Stable:	☐	☐	☐	☐	☐	☐	☐	☐	☐
	± 0.1	± 3%	± 10%	± 0.3 mg/L	± 3%	± 10 mV	Δ <0.3 ft		

Sampling Comments: sample collected from storm drain. spring water mitigated from front yard and directed to drain

Well Specific Observations/Access Issues:

Kurt Ruggeri 5/5/16

GROUNDWATER/STORMWATER/SURFACE WATER SAMPLING FORM

Project: AOU-1: East Side Springs   Project Number: 6202899   Location ID: SW-26

Date: 5/3/16   Field Team: K. Lazzen / N. Lundvall

Purpose Method

- ☐ Dedicated Submersible
- ☐ Portable Bladder
- ☒ Peristaltic
- ☐ Portable Submersible
- ☐ Dedicated Bailer
- ☐ Grab
- ☐ Dedicated Bladder
- ☐ Disposable Bailer
- ☐ Other:

Sample Analyses

Sample ID: A-SW-026   Sample Time: 1345

- ☐ Blind Duplicate:
- ☐ MS/MSD
- ☒ VOCs
- ☐ Sulfate/Nitrite/Nitrate
- ☒ SVOCs
- ☐ TOC
- ☐ Cations
- ☐ Sulfide
- ☒ Trace Metals
- ☒ Isotope (O, H)
- ☒ Anions/Alkalinity/TDS
- ☐

Well/Purge

Well Casing: Stick-up | Flush Mount

Well Depth: –   Screen Length: –

Casing Diam: –   Borehole Diam.: –

Depth to Water: –

Measuring Point: –

Calculated Purge Volume: –

Pump Start: 1345   Pump Stop: 1405

☐ **Well Pumped Dry**

Pumped Dry (date/time): –   Pump restarted (date/time): –

Initial Purge (gal): –   Recovered Water Level: –

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (L)	Flow Rate (L/min)	Comments
1345	7.43	1405	0.39	6.62	16.4	236.8	–	~~3.9~~ 4 KL	0.2	–

KL

GROUNDWATER/SURFACE WATER SAMPLING FORM (*CONTINUED*)

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments
										KR

Final Parameters

Time	pH	SC	Turb.	DO	Temp	ORP	DTW	Vol Evac.	Flow Rate
1345	7.43	1405	0.39	6.62	16.4	236.8	–	4	0.20
Stable:	☐	☐	☐	☐	☐	☐	☐	☐	☐
	± 0.1	**± 3%**	**± 10%**	**± 0.3 mg/L**	**± 3%**	**± 10 mV**	**Δ <0.3 ft**		

Sampling Comments: collect sample from seep in backyard

Well Specific Observations/Access Issues: Access needed from homeowner

Kristi Rapper 5/3/16

GROUNDWATER/STORMWATER/SURFACE WATER SAMPLING FORM

Project: AOU-1 - East Side Springs   Project Number: 6202899   Location ID: SW-27

Date: 5/3/16   Field Team: K. Lazzeri / N. Lundvall

Purpose Method

- ☐ Dedicated Submersible
- ☐ Portable Bladder
- ☒ Peristaltic
- ☐ Portable Submersible
- ☐ Dedicated Bailer
- ☐ Grab
- ☐ Dedicated Bladder
- ☐ Disposable Bailer
- ☐ Other:

Sample Analyses

Sample ID: A-SW-027   Sample Time: 1120

- ☐ Blind Duplicate:
- ☐ MS/MSD
- ☒ VOCs
- ☐ Sulfate/Nitrite/Nitrate
- ☒ SVOCs
- ☐ TOC
- ☐ Cations
- ☐ Sulfide
- ☒ Trace Metals
- ☒ Isotope (O, H)
- ☒ Anions/Alkalinity/TDS
- ☐

Well/Purge

Well Casing: Stick-up | Flush Mount

Well Depth: —   Screen Length: —

Casing Diam: —   Borehole Diam.: —

Depth to Water: —

Measuring Point: —

Calculated Purge Volume: —

Pump Start: 1120   Pump Stop: 1135

☐ **Well Pumped Dry**

Pumped Dry (date/time): —   Pump restarted (date/time): —

Initial Purge (gal): —   Recovered Water Level: —

Time	pH	SC (μS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (L)	Flow Rate (L/min)	Comments
1120	7.39	1323	0.69	7.54	15.4	263.5	—	~~6~~ 4 KL	0.20	—

KR

GROUNDWATER/SURFACE WATER SAMPLING FORM (*CONTINUED*)

Time	pH	SC (μS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments
								KR		

Final Parameters

Time	pH	SC	Turb.	DO	Temp	ORP	DTW	Vol Evac.	Flow Rate
1120	7.39	1323	0.69	7.54	15.4	263.5	—	4	0.2
Stable: ☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
	± 0.1	± 3%	± 10%	± 0.3 mg/L	± 3%	± 10 mV	Δ <0.3 ft		

Sampling Comments: sample collected from seep coming out of retaining well

Well Specific Observations/Access Issues:

Kristy Rapp 5/3/16

GROUNDWATER/STORMWATER/SURFACE WATER SAMPLING FORM

Project: AOU-1: East Side Springs   Project Number: 6202899   Location ID: ~~Z~~ SW-28

Date: 5/3/16   Field Team: K. Lazzeri / N. Lundvall

Purpose Method

Purge Method

☐ Dedicated Submersible   ☐ Portable Bladder   ☒ Peristaltic

☐ Portable Submersible   ☐ Dedicated Bailer   ☐ Grab

☐ Dedicated Bladder   ☐ Disposable Bailer   ☐ Other:

Sample Analyses

Sample ID: A-SW-028   Sample Time: 1200

☐ Blind Duplicate: ☐ MS/MSD

☒ VOCs   ☐ Sulfate/Nitrite/Nitrate

☒ SVOCs   ☐ TOC

☐ Cations   ☐ Sulfide

☒ Trace Metals   ☒ isotope (O, H)

☒ Anions/Alkalinity/TDS   ☐

Well/Purge

Well Casing: Stick-up | Flush Mount

Well Depth: –   Screen Length: –

Casing Diam: –   Borehole Diam.: –

Depth to Water: –

Measuring Point: –

Calculated Purge Volume: –

Pump Start: 1200   Pump Stop: 1225

☐ **Well Pumped Dry**

Pumped Dry (date/time): –   Pump restarted (date/time): –

Initial Purge (gal): –   Recovered Water Level: –

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (L)	Flow Rate (L/min)	Comments
1200	7.60	1279	0.44	9.69	21.8	233.0	–	4	0.20	–

KR

GROUNDWATER/SURFACE WATER SAMPLING FORM (*CONTINUED*)

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments
										KR

Final Parameters

Time	pH	SC	Turb.	DO	Temp	ORP	DTW	Vol Evac.	Flow Rate
1200	7.60	1279	0.44	9.69	21.8	233.0	—	4	0.20
Stable:	☐	☐	☐	☐	☐	☐	☐	☐	☐
	± 0.1	± 3%	± 10%	± 0.3 mg/L	± 3%	± 10 mV	Δ <0.3 ft		

Sampling Comments: Sample collected from storm drain - water mitigated from spring water in backyard

Well Specific Observations/Access Issues:

Kristen Rogge 5/3/16

GROUNDWATER/STORMWATER/SURFACE WATER SAMPLING FORM

Project: AOI-1: East Springs Project Number: 6202899 Location ID: SW-29
Date: 5/11/16 Field Team: K. Lazzen

Purge Method

☐ Dedicated Submersible ☐ Portable Bladder ☐ Peristaltic
☐ Portable Submersible ☐ Dedicated Bailer ☒ Grab
☐ Dedicated Bladder ☐ Disposable Bailer ☐ Other: ____

Sample Analyses

Sample ID: A-SW-029 Sample Time: 0935
☐ Blind Duplicate: ____ ☐ MS/MSD
☒ VOCs ☐ Sulfate/Nitrite/Nitrate
☐ SVOCs ☐ TOC
☐ Cations ☐ Sulfide
☐ Trace Metals ☒ Isotope (O, H)
☐ Anions/Alkalinity/TDS ☐ ____

Well/Purge

Well Casing: Stick-up | Flush Mount
Well Depth: — Screen Length: —
Casing Diam: — Borehole Diam.: —
Depth to Water: —
Measuring Point: —
Calculated Purge Volume: —
Pump Start: — Pump Stop: —

☐ **Well Pumped Dry**
Pumped Dry (date/time): — Pump restarted (date/time): —
Initial Purge (gal): — Recovered Water Level: —

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (L)	Flow Rate (L/min)	Comments
0935	7.43	1311	1.53	8.43	12.6	240.6	—	0.16	—	—
										KR

GROUNDWATER/SURFACE WATER SAMPLING FORM (*CONTINUED*)

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments
									KR	

Final Parameters

Time	pH	SC	Turb.	DO	Temp	ORP	DTW	Vol Evac.	Flow Rate
0935	7.43	1311	1.53	8.43	12.6	240.6	–	–	–
Stable:	☐ ± 0.1	☐ ± 3%	☐ ± 10%	☐ ± 0.3 mg/L	☐ ± 3%	☐ ± 10 mV	☐ Δ <0.3 ft	☐	☐

Sampling Comments: sample collected from backyard of property

Well Specific Observations/Access Issues: Access needed from homeowner

[illegible] 5/11/16

GROUNDWATER/STORMWATER/SURFACE WATER SAMPLING FORM

Project: AOU-1: East Side Springs Project Number: 6202899 Location ID: ~~SW-30~~ ~~SW-39~~ KL ~~SW-016~~ KL SW-30

Date: 5/3/16 Field Team: K. Lazzen / N. Lundvall

Purpose Method

☐ Dedicated Submersible ☐ Portable Bladder ☒ Peristaltic

☐ Portable Submersible ☐ Dedicated Bailer ☐ Grab

☐ Dedicated Bladder ☐ Disposable Bailer ☐ Other:

Sample Analyses

Sample ID: A-SW-030 Sample Time: 1630

☐ Blind Duplicate: ☐ MS/MSD

☒ VOCs ☐ Sulfate/Nitrite/Nitrate

☐ SVOCs ☐ TOC

☐ Cations ☐ Sulfide

☐ Trace Metals ☒ Isotope (O, H)

☐ Anions/Alkalinity/TDS ☐

Well/Purge

Well Casing: Stick-up | Flush Mount

Well Depth: – Screen Length: –

Casing Diam: – Borehole Diam.: –

Depth to Water: –

Measuring Point: –

Calculated Purge Volume: –

Pump Start: 1630 Pump Stop: 1633

☐ **Well Pumped Dry**

Pumped Dry (date/time): – Pump restarted (date/time): –

Initial Purge (gal): – Recovered Water Level: –

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (L)	Flow Rate (L/min)	Comments
1630	8.35	1320	1.15	8.03	23.5	191.7	–	0.16	0.20	–

KR

GROUNDWATER/SURFACE WATER SAMPLING FORM (*CONTINUED*)

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments
									KR	

Final Parameters

Time	pH	SC	Turb.	DO	Temp	ORP	DTW	Vol Evac.	Flow Rate
1630	8.35	1320	1.15	8.03	23.5	191.7	-	0.16	0.20
Stable:	☐	☐	☐	☐	☐	☐	☐	☐	☐
	± 0.1	± 3%	± 10%	± 0.3 mg/L	± 3%	± 10 mV	Δ <0.3 ft		

Sampling Comments: sample collected from Smith spring in backyard

Well Specific Observations/Access Issues: Access needed from home owner

Kristi Ripper 5/3/16

GROUNDWATER/STORMWATER/SURFACE WATER SAMPLING FORM

Project: AOU-1: East side Springs Project Number: 6202899 Location ID: ~~GH~~ KL SW-31

Date: 5/2/16 Field Team: K. Lazzen / N. Lundvall

Purpose Method

☐ Dedicated Submersible ☐ Portable Bladder ☒ Peristaltic

☐ Portable Submersible ☐ Dedicated Bailer ☐ Grab

☐ Dedicated Bladder ☐ Disposable Bailer ☐ Other:

Sample Analyses

Sample ID: A-SW-031 Sample Time: 1510

☐ Blind Duplicate: ☐ MS/MSD

☒ VOCs ☐ Sulfate/Nitrite/Nitrate

☐ SVOCs ☐ TOC

☐ Cations ☐ Sulfide

☐ Trace Metals ☒ Isotope (O, H)

☐ Anions/Alkalinity/TDS ☐

Well/Purge

Well Casing: Stick-up | Flush Mount

Well Depth: – Screen Length: –

Casing Diam: – Borehole Diam.: –

Depth to Water: –

Measuring Point: –

Calculated Purge Volume: –

Pump Start: 1510 Pump Stop: 1513

☐ **Well Pumped Dry**

Pumped Dry (date/time): – Pump restarted (date/time): –

Initial Purge (gal): – Recovered Water Level: –

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (L)	Flow Rate (L/min)	Comments
1510	7.92	1283	91.2	10.00	15.5	257.1	–	0.16	0.20	–

KR

GROUNDWATER/SURFACE WATER SAMPLING FORM (*CONTINUED*)

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments

KR

Final Parameters

	Time	pH	SC	Turb.	DO	Temp	ORP	DTW	Vol Evac.	Flow Rate
	1510	7.92	1283	91.2	10.00	15.5	257.1	–	0.16	0.20
Stable:		☐	☐	☐	☐	☐	☐	☐	☐	☐
		± 0.1	± 3%	± 10%	± 0.3 mg/L	± 3%	± 10 mV	Δ <0.3 ft		

Sampling Comments: sample collected from ~~standing water~~ seep KL in backyard

Well Specific Observations/Access Issues:

Kurt Peppei 5/2/16

GROUNDWATER/SURFACE WATER SAMPLING FORM

Project: AOU-1: East Side Springs   Project Number: 6202899   Location ID: SW-32

Date: 5/5/16   Field Team: K. Lazzen / N. Lundvall

Purpose Method

☐ Dedicated Submersible	☐ Portable Bladder	☒ Peristaltic
☐ Portable Submersible	☐ Dedicated Bailer	☐ Grab
☐ Dedicated Bladder	☐ Disposable Bailer	☐ Other:

Sample Analyses

Sample ID: A-SW-032   Sample Time: 1120

☐ Blind Duplicate: ☐ MS/MSD

☒ VOCs   ☐ Sulfate/Nitrite/Nitrate

☐ SVOCs   ☐ TOC

☐ Cations   ☐ Sulfide

☐ Trace Metals   ☒ Isotope (O, H)

☐ Anions/Alkalinity/TDS   ☐

Well/Purge

Well Casing: Stick-up | Flush Mount

Well Depth: —   Screen Length: —

Casing Diam: —   Borehole Diam.: —

Depth to Water: —

Measuring Point: —

Calculated Purge Volume: —

Pump Start: 1120   Pump Stop: 1123

☐ **Well Pumped Dry**

Pumped Dry (date/time): —   Pump restarted (date/time): —

Initial Purge (gal): —   Recovered Water Level: —

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments
1120	7.80	1154	0.91	9.47	16.0	242.2	—	0.16	0.20	—

KR

GROUNDWATER/SURFACE WATER SAMPLING FORM (*CONTINUED*)

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments
									KR	

Final Parameters

Time	pH	SC	Turb.	DO	Temp	ORP	DTW	Vol Evac.	Flow Rate
1120	7.80	1154	0.91	9.47	16.0	242.2	–	0.16	0.20
Stable:	☐ ± 0.1	☐ ± 3%	☐ ± 10%	☐ ± 0.3 mg/L	☐ ± 3%	☐ ± 10 mV	☐ Δ <0.3 ft	☐	☐

Sampling Comments: sample collected from storm drain

Well Specific Observations/Access Issues:

Kristi Rogger 5/5/16

GROUNDWATER/STORMWATER/SURFACE WATER SAMPLING FORM

Project: AOU-1. East Sidesprings
Project Number: 6202899
Location ID: SW-33
Date: 5/2/16
Field Team: K. Lazzen / N. Lundvall

Purpose Method

Purge Method

☐ Dedicated Submersible ☐ Portable Bladder ☒ Peristaltic

☐ Portable Submersible ☐ Dedicated Bailer ☐ Grab

☐ Dedicated Bladder ☐ Disposable Bailer ☐ Other:

Sample Analyses

Sample ID: A-SW-033 Sample Time: 1400

☐ Blind Duplicate: ☐ MS/MSD

☒ VOCs ☐ Sulfate/Nitrite/Nitrate

☐ SVOCs ☐ TOC

☐ Cations ☐ Sulfide

☐ Trace Metals ☒ Isotope (O, H)

☐ Anions/Alkalinity/TDS ☐

Well/Purge

Well Casing: Stick-up | Flush Mount

Well Depth: — Screen Length: —

Casing Diam: — Borehole Diam.: —

Depth to Water: —

Measuring Point: —

Calculated Purge Volume: —

Pump Start: 1400 Pump Stop: 1403

☐ **Well Pumped Dry**

Pumped Dry (date/time): —

Initial Purge (gal): —

Pump restarted (date/time): —

Recovered Water Level: —

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (L)	Flow Rate (L/min)	Comments
1400	7.35	1372	1.44	9.21	16.9	256.1	—	0.16	0.20	—

KR

GROUNDWATER/SURFACE WATER SAMPLING FORM (*CONTINUED*)

Time	pH	SC (μS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments

KR

Final Parameters

Time	pH	SC	Turb.	DO	Temp	ORP	DTW	Vol Evac.	Flow Rate
1400	7.35	1372	1.44	9.21	16.9	256.1	—	0.16	0.20
Stable:	☐	☐	☐	☐	☐	☐	☐	☐	☐
	± 0.1	± 3%	± 10%	± 0.3 mg/L	± 3%	± 10 mV	Δ <0.3 ft		

Sampling Comments: seep coming out of curb onto street

Well Specific Observations/Access Issues:

Kristi Ruggeri 5/2/16

EA

GROUNDWATER/STORMWATER/SURFACE WATER SAMPLING FORM

Project: AOU-1: East Side Springs Project Number: 6202899 Location ID: SW-34
Date: 5/2/16 Field Team: K. Lazzeri / N. Lundvall

Purpose Method

☐ Dedicated Submersible ☐ Portable Bladder ☐ Peristaltic
☐ Portable Submersible ☐ Dedicated Bailer ☒ Grab
☐ Dedicated Bladder ☐ Disposable Bailer ☐ Other:____

Sample Analyses
Sample ID: A-SW-034 Sample Time: 1430
☐ Blind Duplicate:____ ☐ MS/MSD
☒ VOCs ☐ Sulfate/Nitrite/Nitrate
☐ SVOCs ☐ TOC
☐ Cations ☐ Sulfide
☐ Trace Metals ☒ Isotope (O,H)
☐ Anions/Alkalinity/TDS ☐ ____

Well/Purge
Well Casing: Stick-up | Flush Mount
Well Depth: — Screen Length: —
Casing Diam: — Borehole Diam.: —
Depth to Water: —
Measuring Point: —
Calculated Purge Volume: —
Pump Start: — Pump Stop: —

☐ **Well Pumped Dry**
Pumped Dry (date/time): — Pump restarted (date/time): —
Initial Purge (gal): — Recovered Water Level: —

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (L)	Flow Rate (L/min)	Comments
1430	7.36	1214	0.64	7.90	14.3	250.7	—	0.16	~~0.20~~ — KL	—

KL

GROUNDWATER/SURFACE WATER SAMPLING FORM (*CONTINUED*)

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments
										KR

Final Parameters

Time	pH	SC	Turb.	DO	Temp	ORP	DTW	Vol Evac.	Flow Rate
1430	7.36	1214	0.64	7.90	14.3	250.7	—	0.16	~~0.20~~ KL
Stable:	☐	☐	☐	☐	☐	☐	☐	☐	☐
	± 0.1	± 3%	± 10%	± 0.3 mg/L	± 3%	± 10 mV	Δ <0.3 ft		

Sampling Comments: sample collected from one of the springs in front yard

Well Specific Observations/Access Issues: Access from home owner needed

Kurt Ruzzi 5/2/16

GROUNDWATER/STORMWATER/SURFACE WATER SAMPLING FORM

Project: AOU-1: East Side Springs Project Number: 6202899 Location ID: SW-35

Date: 5/4/16 Field Team: K. Lazzen / N. Lundvall

Purge Method

☐ Dedicated Submersible ☐ Portable Bladder ☒ Peristaltic

☐ Portable Submersible ☐ Dedicated Bailer ☐ Grab

☐ Dedicated Bladder ☐ Disposable Bailer ☐ Other:

Sample Analyses

Sample ID: A-SW-035 Sample Time: 0930

☐ Blind Duplicate: ☐ MS/MSD

☒ VOCs ☐ Sulfate/Nitrite/Nitrate

☐ SVOCs ☐ TOC

☐ Cations ☐ Sulfide

☐ Trace Metals ☒ isotopes (O, H)

☐ Anions/Alkalinity/TDS ☐

Well/Purge

Well Casing: Stick-up | Flush Mount

Well Depth: — Screen Length: —

Casing Diam: — Borehole Diam.: —

Depth to Water: —

Measuring Point: —

Calculated Purge Volume: —

Pump Start: 0930 Pump Stop: 0933

☐ **Well Pumped Dry**

Pumped Dry (date/time): — Pump restarted (date/time): —

Initial Purge (gal): — Recovered Water Level: —

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (L)	Flow Rate (L/min)	Comments
0930	7.44	1106	542	8.16	12.9	260.4	—	0.16	0.20	—

KR

GROUNDWATER/SURFACE WATER SAMPLING FORM (*CONTINUED*)

Time	pH	SC (μS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments
									KR	

Final Parameters

Time	pH	SC	Turb.	DO	Temp	ORP	DTW	Vol Evac.	Flow Rate
0930	7.44	1106	542	8.16	12.9	260.4	—	0.16	0.20
Stable:	☐	☐	☐	☐	☐	☐	☐	☐	☐
	± 0.1	± 3%	± 10%	± 0.3 mg/L	± 3%	± 10 mV	Δ <0.3 ft		

Sampling Comments: sample collected from seep in backyard

Well Specific Observations/Access Issues: Access needed from homeowner

Kurt Rigger 5/14/16

GROUNDWATER/STORMWATER/SURFACE WATER SAMPLING FORM

Project: AOU-1: East Side Springs Project Number: 6202899 Location ID: SW-36
Date: 5/3/16 Field Team: K. Lazzen / N. Lundvall

Purpose Method

☐ Dedicated Submersible ☐ Portable Bladder ☒ Peristaltic
☐ Portable Submersible ☐ Dedicated Bailer ☐ Grab
☐ Dedicated Bladder ☐ Disposable Bailer ☐ Other:

Sample Analyses
Sample ID: A-SW-036 Sample Time: 1730
☐ Blind Duplicate: ☐ MS/MSD
☒ VOCs ☐ Sulfate/Nitrite/Nitrate
☐ SVOCs ☐ TOC
☐ Cations ☐ Sulfide
☐ Trace Metals ☒ Isotope (O, H)
☐ Anions/Alkalinity/TDS ☐

Well/Purge
Well Casing: Stick-up | Flush Mount
Well Depth: — Screen Length: —
Casing Diam: — Borehole Diam.: —
Depth to Water: —
Measuring Point: —
Calculated Purge Volume: —
Pump Start: 1730 Pump Stop:

☐ **Well Pumped Dry**
Pumped Dry (date/time): — Pump restarted (date/time): —
Initial Purge (gal): — Recovered Water Level: —

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (L)	Flow Rate (L/min)	Comments
1730	8.20	1128	1.43	20.5	20.1	214.5	—	0.16	0.20	—

KR

GROUNDWATER/SURFACE WATER SAMPLING FORM (*CONTINUED*)

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments
									KR	

Final Parameters

Time	pH	SC	Turb.	DO	Temp	ORP	DTW	Vol Evac.	Flow Rate
1730	8.20	1128	1.43	20.5	20.1	214.5	—	0.16	0.20
Stable: ☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
	± 0.1	± 3%	± 10%	± 0.3 mg/L	± 3%	± 10 mV	Δ <0.3 ft		

Sampling Comments: sample collected from seep in backyard

Well Specific Observations/Access Issues: Access needed from homeowner

Kristi Reggi 5/3/16

GROUNDWATER/SURFACE WATER SAMPLING FORM

Project: AOU-1 : East side Springs Project Number: 6202899 Location ID: SW-37

Date: 5/5/16 Field Team: K. Lazzen / N. Lundvall

Purpose Method

- ☐ Dedicated Submersible
- ☐ Portable Bladder
- ☒ Peristaltic
- ☐ Portable Submersible
- ☐ Dedicated Bailer
- ☐ Grab
- ☐ Dedicated Bladder
- ☐ Disposable Bailer
- ☐ Other:

Sample Analyses

Sample ID: A-SW-~~036~~ 037 KL Sample Time: 1815

- ☐ Blind Duplicate:
- ☐ MS/MSD
- ☒ VOCs
- ☐ Sulfate/Nitrite/Nitrate
- ☐ SVOCs
- ☐ TOC
- ☐ Cations
- ☐ Sulfide
- ☐ Trace Metals
- ☒ Isotope (O, H)
- ☐ Anions/Alkalinity/TDS
- ☐

Well/Purge

Well Casing: Stick-up | Flush Mount

Well Depth: — Screen Length: —

Casing Diam: — Borehole Diam.: —

Depth to Water: —

Measuring Point: —

Calculated Purge Volume: —

Pump Start: 1815 Pump Stop: 1818

☐ **Well Pumped Dry**

Pumped Dry (date/time): — Pump restarted (date/time): —

Initial Purge (gal): — Recovered Water Level: —

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments
1815	7.81	1206	2.75	9.76	15.2	256.6	—	0.16	0.20	—

KR

GROUNDWATER/SURFACE WATER SAMPLING FORM (*CONTINUED*)

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments
										KR

Final Parameters

Time	pH	SC	Turb.	DO	Temp	ORP	DTW	Vol Evac.	Flow Rate
1815	7.81	1206	2.75	9.76	15.2	256.6	—	0.16	0.20
Stable:	☐	☐	☐	☐	☐	☐	☐	☐	☐
	± 0.1	± 3%	± 10%	± 0.3 mg/L	± 3%	± 10 mV	Δ <0.3 ft		

Sampling Comments: Sample collected from storm drain. Location is the confluence of 3 spring mitigation lines

Well Specific Observations/Access Issues:

Kristi Pezzi 5/5/16

GROUNDWATER/SURFACE WATER SAMPLING FORM

Project: AOU-1 East Side Springs Project Number: 6202899 Location ID: SW-38

Date: 5/11/16 Field Team: K. Lazzen

Purge Method

- ☐ Dedicated Submersible
- ☐ Portable Bladder
- ☒ Peristaltic
- ☐ Portable Submersible
- ☐ Dedicated Bailer
- ☐ Grab
- ☐ Dedicated Bladder
- ☐ Disposable Bailer
- ☐ Other: ____

Sample Analyses

Sample ID: SW-038 Sample Time: 0810

- ☐ Blind Duplicate: ____
- ☐ MS/MSD
- ☒ VOCs
- ☐ Sulfate/Nitrite/Nitrate
- ☐ SVOCs
- ☐ TOC
- ☐ Cations
- ☐ Sulfide
- ☐ Trace Metals
- ☒ Isotope (O,H)
- ☐ Anions/Alkalinity/TDS
- ☐ ____

Well/Purge

Well Casing: Stick-up | Flush Mount

Well Depth: — Screen Length: ____

Casing Diam: — Borehole Diam.: ____

Depth to Water: —

Measuring Point: —

Calculated Purge Volume: —

Pump Start: 0810 Pump Stop: 0812

☐ **Well Pumped Dry**

Pumped Dry (date/time): — Pump restarted (date/time): —

Initial Purge (gal): — Recovered Water Level: —

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments
0810	8.11	1154	17.6	8.71	17.5	247.2	—	0.16	0.20	—
										KR

GROUNDWATER/SURFACE WATER SAMPLING FORM (*CONTINUED*)

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments
										KR

Final Parameters

Time	pH	SC	Turb.	DO	Temp	ORP	DTW	Vol Evac.	Flow Rate
0810	8.11	1154	17.6	8.71	17.5	247.2	—	0.16	0.20
Stable:	☐	☐	☐	☐	☐	☐	☐	☐	☐
	± 0.1	± 3%	± 10%	± 0.3 mg/L	± 3%	± 10 mV	Δ <0.3 ft		

Sampling Comments: sample collected from storm drain

Well Specific Observations/Access Issues: Access from Salt Lake City needed

Kristy Rogger 5/11/16

GROUNDWATER/STORMWATER/SURFACE WATER SAMPLING FORM

Project: AOU-1: East side Springs   Project Number: 6202899   Location ID: SW-39

Date: 5/3/16   Field Team: K. Lazzen / N. Lundvall

Purpose Method

☐ Dedicated Submersible   ☐ Portable Bladder   ☒ Peristaltic

☐ Portable Submersible   ☐ Dedicated Bailer   ☐ Grab

☐ Dedicated Bladder   ☐ Disposable Bailer   ☐ Other:

Sample Analyses

Sample ID: A-SW-039   Sample Time: 1700

☐ Blind Duplicate: ☐ MS/MSD

☒ VOCs   ☐ Sulfate/Nitrite/Nitrate

☐ SVOCs   ☐ TOC

☐ Cations   ☐ Sulfide

☐ Trace Metals   ☒ Isotope (O, H)

☐ Anions/Alkalinity/TDS   ☐

Well/Purge

Well Casing: Stick-up | Flush Mount

Well Depth: —   Screen Length: —

Casing Diam: —   Borehole Diam.: —

Depth to Water: —

Measuring Point: —

Calculated Purge Volume: —

Pump Start: 1700   Pump Stop: 1703

☐ **Well Pumped Dry**

Pumped Dry (date/time): —   Pump restarted (date/time): —

Initial Purge (gal): —   Recovered Water Level: —

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (L)	Flow Rate (L/min)	Comments
1700	7.65	1275	1.34	10.15	15.8	207.4	—	0.16	0.20	—
										KR

GROUNDWATER/SURFACE WATER SAMPLING FORM (*CONTINUED*)

Time	pH	SC (μS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments
									KR	

Final Parameters

Time	pH	SC	Turb.	DO	Temp	ORP	DTW	Vol Evac.	Flow Rate
1700	7.65	1275	1.34	10.15	15.8	207.4	–	0.16	0.20
Stable:	☐	☐	☐	☐	☐	☐	☐	☐	☐
	± 0.1	± 3%	± 10%	± 0.3 mg/L	± 3%	± 10 mV	Δ <0.3 ft		

Sampling Comments: sample collected from storm drain that mitigates storm water from back yard

Well Specific Observations/Access Issues:

Kristi Ruggeri 5/3/16

GROUNDWATER/SURFACE WATER SAMPLING FORM

Project: AOU-1 : East Side Springs Project Number: 6202899 Location ID: SW ~~GW~~ KL -40

Date: 5/5/16 Field Team: K. Lazzeri / N. Lundvall

Purpose Method

☐ Dedicated Submersible ☐ Portable Bladder ☐ Peristaltic

☐ Portable Submersible ☐ Dedicated Bailer ☒ Grab

☐ Dedicated Bladder ☐ Disposable Bailer ☐ Other:

Sample Analyses

Sample ID: ~~GW~~ KL A-SW-040 Sample Time: 1745

☐ Blind Duplicate: ☐ MS/MSD

☒ VOCs ☐ Sulfate/Nitrite/Nitrate

☐ SVOCs ☐ TOC

☐ Cations ☐ Sulfide

☐ Trace Metals ☒ Isotope (O, H)

☐ Anions/Alkalinity/TDS ☐

Well/Purge

Well Casing: Stick-up | Flush Mount

Well Depth: — Screen Length: —

Casing Diam: — Borehole Diam.: —

Depth to Water: —

Measuring Point: —

Calculated Purge Volume: —

Pump Start: ~~1745~~ KL — Pump Stop: —

☐ **Well Pumped Dry**

Pumped Dry (date/time): — Pump restarted (date/time): —

Initial Purge (gal): — Recovered Water Level: —

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments
1745	7.31	1266	844	8.61	15.5	240.4	—	0.16	~~0.20~~ KL —	—

KR

GROUNDWATER/SURFACE WATER SAMPLING FORM (*CONTINUED*)

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments

Final Parameters

Time	pH	SC	Turb.	DO	Temp	ORP	DTW	Vol Evac.	Flow Rate KR
1745	7.31	1266	844	8.61	15.5	240.4	–	0.16	~~0.20~~ KL
Stable:	☐	☐	☐	☐	☐	☐	☐	☐	☐
	± 0.1	± 3%	± 10%	± 0.3 mg/L	± 3%	± 10 mV	Δ <0.3 ft		

Sampling Comments: Sample collected from pump that pulls water from under basement

Well Specific Observations/Access Issues: Access needed from home owner

[illegible] 5/5/16

GROUNDWATER/SURFACE WATER SAMPLING FORM

Project: AOU-1: East Side Springs Project Number: 6202899 Location ID: ~~GW~~ SWKL-41

Date: 5/5/16 Field Team: K. Lazzen / N. Lundvall

Purpose Method

☐ Dedicated Submersible ☐ Portable Bladder ☒ Peristaltic

☐ Portable Submersible ☐ Dedicated Bailer ☐ Grab

☐ Dedicated Bladder ☐ Disposable Bailer ☐ Other:

Sample Analyses

Sample ID: A-SW-041 Sample Time: 1100

☐ Blind Duplicate: ☐ MS/MSD

☒ VOCs ☐ Sulfate/Nitrite/Nitrate

☐ SVOCs ☐ TOC

☐ Cations ☐ Sulfide

☐ Trace Metals ☒ Isotope (O, H)

☐ Anions/Alkalinity/TDS ☐

Well/Purge

Well Casing: Stick-up | Flush Mount

Well Depth: — Screen Length: —

Casing Diam: — Borehole Diam.: —

Depth to Water: —

Measuring Point: —

Calculated Purge Volume: —

Pump Start: 1100 Pump Stop: 1103

☐ **Well Pumped Dry**

Pumped Dry (date/time): — Pump restarted (date/time): —

Initial Purge (gal): — Recovered Water Level: —

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments
1100	7.61	1290	2.15	8.22	16.1	240.3	—	0.16	0.20	—
										KR

GROUNDWATER/SURFACE WATER SAMPLING FORM (*CONTINUED*)

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments
									KR	

Final Parameters

Time	pH	SC	Turb.	DO	Temp	ORP	DTW	Vol Evac.	Flow Rate
1100	7.61	1290	2.15	8.22	16.1	240.3	—	0.16	0.20
Stable:	☐	☐	☐	☐	☐	☐	☐	☐	☐
	± 0.1	± 3%	± 10%	± 0.3 mg/L	± 3%	± 10 mV	Δ <0.3 ft		

Sampling Comments: sample from storm drain in Beatrice Evans Park

Well Specific Observations/Access Issues:

Kristi Pipi 5/5/16

GROUNDWATER/STORMWATER/SURFACE WATER SAMPLING FORM

Project: AOU-1: East Side Springs Project Number: 6202899 Location ID: SW-42

Date: 5/2/16 Field Team: K. Larzen/N. Lundvall

Purpose Method

☐ Dedicated Submersible ☐ Portable Bladder ☒ Peristaltic

☐ Portable Submersible ☐ Dedicated Bailer ☐ Grab

☐ Dedicated Bladder ☐ Disposable Bailer ☐ Other: ____

Sample Analyses

Sample ID: A-SW-042 Sample Time: 1420

☐ Blind Duplicate: ____ ☐ MS/MSD

☒ VOCs ☐ Sulfate/Nitrite/Nitrate

☐ SVOCs ☐ TOC

☐ Cations ☐ Sulfide

☐ Trace Metals ☒ Isotope (O, H)

☐ Anions/Alkalinity/TDS ☐ ____

Well/Purge

Well Casing: Stick-up | Flush Mount

Well Depth: — Screen Length: —

Casing Diam: — Borehole Diam.: —

Depth to Water: —

Measuring Point: —

Calculated Purge Volume: —

Pump Start: 1420 Pump Stop: 1423

☐ **Well Pumped Dry**

Pumped Dry (date/time): —

Initial Purge (gal): —

Pump restarted (date/time): —

Recovered Water Level: —

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (L)	Flow Rate (L/min)	Comments
1420	7.33	1259	6.37	10.34	15.1	252.7	—	0.16	0.20	—

KR

GROUNDWATER/SURFACE WATER SAMPLING FORM (*CONTINUED*)

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments
										KR

Final Parameters

Time	pH	SC	Turb.	DO	Temp	ORP	DTW	Vol Evac.	Flow Rate
1420	7.83	1259	6.37	10.34	15.1	252.7	–	0.16	0.20
Stable:	☐	☐	☐	☐	☐	☐	☐	☐	☐
	± 0.1	± 3%	± 10%	± 0.3 mg/L	± 3%	± 10 mV	Δ <0.3 ft		

Sampling Comments: sample collected from spring in backyard

Well Specific Observations/Access Issues: access needed from home owner

Kristi Rogger 5/2/16

GROUNDWATER/STORMWATER/SURFACE WATER SAMPLING FORM

Project: AOU-1: East Side Springs   Project Number: 6202899   Location ID: SW-43
Date: 5/2/16   Field Team: K. Lazzen, N. Lundvall

Purpose Method

- ☐ Dedicated Submersible
- ☐ Portable Bladder
- ☒ Peristaltic
- ☐ Portable Submersible
- ☐ Dedicated Bailer
- ☐ Grab
- ☐ Dedicated Bladder
- ☐ Disposable Bailer
- ☐ Other:

Sample Analyses

Sample ID: A-SW-043   Sample Time: 1315

- ☐ Blind Duplicate:
- ☐ MS/MSD
- ☒ VOCs
- ☐ Sulfate/Nitrite/Nitrate
- ☐ SVOCs
- ☐ TOC
- ☐ Cations
- ☐ Sulfide
- ☐ Trace Metals
- ☒ Isotopes
- ☐ Anions/Alkalinity/TDS
- ☐

Well/Purge

Well Casing: Stick-up | Flush Mount
Well Depth: –   Screen Length: –
Casing Diam: –   Borehole Diam.: –
Depth to Water: –
Measuring Point: –
Calculated Purge Volume: –
Pump Start: 1315   Pump Stop: 1318

☐ **Well Pumped Dry**

Pumped Dry (date/time): –   Pump restarted (date/time): –
Initial Purge (gal): –   Recovered Water Level: –

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (L)	Flow Rate (L/min)	Comments
1315	7.98	1225	3.21	9.83	17.3	267.1	–	.160	0.20	–

KR

GROUNDWATER/SURFACE WATER SAMPLING FORM (*CONTINUED*)

Time	pH	SC (μS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments
										KR

Final Parameters

Time	pH	SC	Turb.	DO	Temp	ORP	DTW	Vol Evac.	Flow Rate
1315	7.98	1225	3.21	9.83	17.3	267.1	—	.160	0.20
Stable:	☐	☐	☐	☐	☐	☐	☐	☐	☐
	± 0.1	± 3%	± 10%	± 0.3 mg/L	± 3%	± 10 mV	Δ <0.3 ft		

Sampling Comments: Sample collected From backyard - spring forms a small water feature
Some algae growing in water

Well Specific Observations/Access Issues: Need access through yard

Kristi Rapez 5/2/16

GROUNDWATER/STORMWATER/SURFACE WATER SAMPLING FORM

Project: AOU-1: East springs Project Number: 6202899 Location ID: SW-44

Date: 5/4/16 Field Team: K. Lazzen/N. Lundvall

Purpose Method

☐ Dedicated Submersible ☐ Portable Bladder ☒ Peristaltic

☐ Portable Submersible ☐ Dedicated Bailer ☐ Grab

☐ Dedicated Bladder ☐ Disposable Bailer ☐ Other:

Sample Analyses

Sample ID: A-SW-044 Sample Time: 1430

☐ Blind Duplicate: ☒ MS/MSD

☒ VOCs ☐ Sulfate/Nitrite/Nitrate

☐ SVOCs ☐ TOC

☐ Cations ☐ Sulfide

☐ Trace Metals ☒ Isotope (O, H)

☐ Anions/Alkalinity/TDS ☐

Well/Purge

Well Casing: Stick-up | Flush Mount

Well Depth: — Screen Length: —

Casing Diam: — Borehole Diam.: —

Depth to Water: —

Measuring Point: —

Calculated Purge Volume: —

Pump Start: 1430 Pump Stop: 1439

☐ **Well Pumped Dry**

Pumped Dry (date/time): — Pump restarted (date/time): —

Initial Purge (gal): — Recovered Water Level: —

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (L)	Flow Rate (L/min)	Comments
1430	8.18	1235	36.1	10.41	18.2	197.6	—	0.40	0.20	—

KR

GROUNDWATER/SURFACE WATER SAMPLING FORM (*CONTINUED*)

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments
									KR	

Final Parameters

Time	pH	SC	Turb.	DO	Temp	ORP	DTW	Vol Evac.	Flow Rate
1430	8.18	1235	36.1	10.41	18.2	197.6	—	0.40	0.20
Stable: ☐ ± 0.1	☐ ± 3%	☐ ± 10%	☐ ± 0.3 mg/L	☐ ± 3%	☐ ± 10 mV	☐ Δ <0.3 ft	☐	☐	

Sampling Comments: sample collected from spring in backyard

Well Specific Observations/Access Issues: Access needed from homeowner

Kristi Rizzi 5/14/16

GROUNDWATER/STORMWATER/SURFACE WATER SAMPLING FORM

Project: AOU-1: East Side Springs Project Number: 6202899 Location ID: SW-45
Date: 5/5/16 Field Team: K. Lazzeri / N. Lundvall

Purge Method

☐ Dedicated Submersible ☐ Portable Bladder ☒ Peristaltic
☐ Portable Submersible ☐ Dedicated Bailer ☐ Grab
☐ Dedicated Bladder ☐ Disposable Bailer ☐ Other: ______

Sample Analyses
Sample ID: A-SW-045 Sample Time: 1000
☐ Blind Duplicate: ______ ☐ MS/MSD
☒ VOCs ☐ Sulfate/Nitrite/Nitrate
☐ SVOCs ☐ TOC
☐ Cations ☐ Sulfide
☐ Trace Metals ☒ Isotope (O, H)
☐ Anions/Alkalinity/TDS ☐ ______

Well/Purge
Well Casing: Stick-up | Flush Mount
Well Depth: — Screen Length: —
Casing Diam: — Borehole Diam.: —
Depth to Water: —
Measuring Point: —
Calculated Purge Volume: —
Pump Start: 1000 Pump Stop: 1003

☐ **Well Pumped Dry**
Pumped Dry (date/time): — Pump restarted (date/time): —
Initial Purge (gal): — Recovered Water Level: —

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (L)	Flow Rate (L/min)	Comments
1000	8.27	1260	5.39	8.92	15.9	255.4	—	0.16	0.20	—

KR

GROUNDWATER/SURFACE WATER SAMPLING FORM (*CONTINUED*)

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments

KR

Final Parameters

Time	pH	SC	Turb.	DO	Temp	ORP	DTW	Vol Evac.	Flow Rate
1000	8.27	1260	5.39	8.92	15.9	255.4	—	0.16	0.20
Stable:	☐	☐	☐	☐	☐	☐	☐	☐	☐
	± 0.1	± 3%	± 10%	± 0.3 mg/L	± 3%	± 10 mV	Δ <0.3 ft		

Sampling Comments: sample collected from Jordan and Salt Lake canal

Well Specific Observations/Access Issues:

Kristen Rapper 5/5/16

GROUNDWATER/SURFACE WATER SAMPLING FORM

Project: AOU-1: East Side Springs Project Number: 6202899 Location ID: SN-46

Date: 5/5/16 Field Team: K. Lazzen / N. Lundvall

Purpose Method

- ☐ Dedicated Submersible
- ☐ Portable Bladder
- ☒ Peristaltic
- ☐ Portable Submersible
- ☐ Dedicated Bailer
- ☐ Grab
- ☐ Dedicated Bladder
- ☐ Disposable Bailer
- ☐ Other: ______

Sample Analyses

Sample ID: A-SW-046 Sample Time: 1730

- ☐ Blind Duplicate: ______
- ☐ MS/MSD
- ☒ VOCs
- ☐ Sulfate/Nitrite/Nitrate
- ☐ SVOCs
- ☐ TOC
- ☐ Cations
- ☐ Sulfide
- ☐ Trace Metals
- ☒ Isotope (O, H)
- ☐ Anions/Alkalinity/TDS
- ☐ ______

Well/Purge

Well Casing: Stick-up | Flush Mount

Well Depth: — Screen Length: —

Casing Diam: — Borehole Diam.: —

Depth to Water: —

Measuring Point: —

Calculated Purge Volume: —

Pump Start: 1730 Pump Stop: 1733

☐ **Well Pumped Dry**

Pumped Dry (date/time): — Pump restarted (date/time): —

Initial Purge (gal): — Recovered Water Level: —

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments
1730	8.13	1211	0.96	9.90	18.6	239.8	—	0.16	0.20	—

KR

GROUNDWATER/SURFACE WATER SAMPLING FORM (*CONTINUED*)

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments
									KR	

Final Parameters

Time	pH	SC	Turb.	DO	Temp	ORP	DTW	Vol Evac.	Flow Rate
1730	8.13	1211	0.96	9.9	18.6	239.8	—	0.16	0.20
Stable:	☐	☐	☐	☐	☐	☐	☐	☐	☐
	± 0.1	± 3%	± 10%	± 0.3 mg/L	± 3%	± 10 mV	Δ <0.3 ft		

Sampling Comments: sample collected from spring running through backyard

Well Specific Observations/Access Issues: Access needed from homeowner

Kristi Rogger 5/3/16

GROUNDWATER/STORMWATER/SURFACE WATER SAMPLING FORM

Project: AOU-1: East Side Springs Project Number: 6202899 Location ID: SW-47

Date: 5/4/16 Field Team: K. Lazzen / N. Lundvall

Purpose Method

☐ Dedicated Submersible ☐ Portable Bladder ☐ Peristaltic

☐ Portable Submersible ☐ Dedicated Bailer ☒ Grab

☐ Dedicated Bladder ☐ Disposable Bailer ☐ Other:

Sample Analyses

Sample ID: ~~5/4/16~~ KL A-SW-047 Sample Time: 0840

☐ Blind Duplicate: ☐ MS/MSD

☒ VOCs ☐ Sulfate/Nitrite/Nitrate

☒ SVOCs ☐ TOC

☐ Cations ☐ Sulfide

☒ Trace Metals ☒ Isotope (O, H)

☒ Anions/Alkalinity/TDS ☐

Well/Purge

Well Casing: Stick-up | Flush Mount

Well Depth: — Screen Length: —

Casing Diam: — Borehole Diam.: —

Depth to Water: —

Measuring Point: —

Calculated Purge Volume: —

Pump Start: — Pump Stop: —

☐ **Well Pumped Dry**

Pumped Dry (date/time): — Pump restarted (date/time): —

Initial Purge (gal): — Recovered Water Level: —

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (L)	Flow Rate (L/min)	Comments
0840	8.41	435.2	~~8.7~~ 16.1 KL	10.11	10.7	242.0	—	4.0	~~0.20~~ — KL	—

KR

GROUNDWATER/SURFACE WATER SAMPLING FORM (*CONTINUED*)

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments
									KR	

Final Parameters

	Time	pH	SC	Turb.	DO	Temp	ORP	DTW	Vol Evac.	Flow Rate
	0840	8.41	435.2	16.1	10.11	10.7	242	–	4.0	–
Stable:		☐	☐	☐	☐	☐	☐	☐	☐	☐
		± 0.1	± 3%	± 10%	± 0.3 mg/L	± 3%	± 10 mV	Δ <0.3 ft		

Sampling Comments: sample collected from Red Butte Creek

Well Specific Observations/Access Issues: Access needed from home owner

KristiRyye 5/4/16

GROUNDWATER/STORMWATER/SURFACE WATER SAMPLING FORM

Project: AOU-1 : East Side Springs Project Number: 6202899 Location ID: SW-~~008~~ 048 KL

Date: 5/4/16 Field Team: K. Lazzeri / N. Lundvall

Purpose Method

☐ Dedicated Submersible ☐ Portable Bladder ☒ Peristaltic

☐ Portable Submersible ☐ Dedicated Bailer ☐ Grab

☐ Dedicated Bladder ☐ Disposable Bailer ☐ Other:

Sample Analyses

Sample ID: A-SW-~~008~~ 048 KL Sample Time: ~~1010~~ 0950 KL

~~☒~~ KL Blind Duplicate: ~~A-SW-008-D~~ 048 ☒ MS/MSD

☒ VOCs ☐ Sulfate/Nitrite/Nitrate

☐ SVOCs ☐ TOC

☐ Cations ☐ Sulfide

☐ Trace Metals ☒ Isotopes (O,H)

☐ Anions/Alkalinity/TDS ☐

Well/Purge

Well Casing: Stick-up | Flush Mount

Well Depth: — Screen Length: —

Casing Diam: — Borehole Diam.: —

Depth to Water: —

Measuring Point: —

Calculated Purge Volume: —

Pump Start: ~~1010~~ 0950 KL Pump Stop: ~~1010~~ 1001 KL

☐ **Well Pumped Dry**

Pumped Dry (date/time): — Pump restarted (date/time): —

Initial Purge (gal): — Recovered Water Level: —

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (L)	Flow Rate (L/min)	Comments
~~1010~~ 0950	7.64	1191	2.61	8.48	13.3	274.3	—	~~0.28~~ 0.40 KL	0.20	—

KR

GROUNDWATER/SURFACE WATER SAMPLING FORM (*CONTINUED*)

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments
										KR

Final Parameters

Time	pH	SC	Turb.	DO	Temp	ORP	DTW	Vol Evac.	Flow Rate
~~1010~~ KL 0950	7.64	1191	2.61	8.48	13.3	274.3	–	~~0.28~~ KL 0.40	0.20
Stable:	☐	☐	☐	☐	☐	☐	☐	☐	☐
	± 0.1	± 3%	± 10%	± 0.3 mg/L	± 3%	± 10 mV	Δ <0.3 ft		

Sampling Comments: Sample collected from Benson Spring

Well Specific Observations/Access Issues: Access from home owner needed

Kristy Ropper 5/4/16

GROUNDWATER/STORMWATER/SURFACE WATER SAMPLING FORM

Project: AOU-1: East Side Springs　Project Number: 6202899　Location ID: SW-49

Date: 5/5/16　Field Team: K. Lazzeri / N. Lundvall

Purpose Method

- ☐ Dedicated Submersible
- ☐ Portable Bladder
- ☒ Peristaltic
- ☐ Portable Submersible
- ☐ Dedicated Bailer
- ☐ Grab
- ☐ Dedicated Bladder
- ☐ Disposable Bailer
- ☐ Other: ______

Sample Analyses

Sample ID: A-SW-049　Sample Time: 1040

- ☐ Blind Duplicate: ______
- ☐ MS/MSD
- ☒ VOCs
- ☐ Sulfate/Nitrite/Nitrate
- ☐ SVOCs
- ☐ TOC
- ☐ Cations
- ☐ Sulfide
- ☐ Trace Metals
- ☒ Isotope (O, H)
- ☐ Anions/Alkalinity/TDS
- ☐ ______

Well/Purge

Well Casing: Stick-up | Flush Mount

Well Depth: —　Screen Length: —

Casing Diam: —　Borehole Diam.: —

Depth to Water: —

Measuring Point: —

Calculated Purge Volume: —

Pump Start: 1040　Pump Stop: 1043

☐ **Well Pumped Dry**

Pumped Dry (date/time): —　Pump restarted (date/time): —

Initial Purge (gal): —　Recovered Water Level: —

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (L)	Flow Rate (L/min)	Comments
1040	8.02	1165	0.92	4.80	16.9	219.0	—	0.16	0.20	—

KR

GROUNDWATER/SURFACE WATER SAMPLING FORM (*CONTINUED*)

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments
									KR	

Final Parameters

Time	pH	SC	Turb.	DO	Temp	ORP	DTW	Vol Evac.	Flow Rate
1040	8.02	1165	0.92	4.80	16.9	219.0	–	0.16	0.20
Stable:	☐	☐	☐	☐	☐	☐	☐	☐	☐
	± 0.1	± 3%	± 10%	± 0.3 mg/L	± 3%	± 10 mV	Δ <0.3 ft		

Sampling Comments: sample collected from Jordan | Salt Lake canal

Well Specific Observations/Access Issues:

Kristi Rupper 5/3/16

GROUNDWATER/SURFACE WATER SAMPLING FORM

Project: AOU-1: East Side Springs
Project Number: 6202899
Location ID: SW-50
Date: 2/26/16
Field Team: A. Bugher

Purge Method

☐ Dedicated Submersible ☐ Portable Bladder ☒ Peristaltic
☐ Portable Submersible ☐ Dedicated Bailer ☐ Grab
☐ Dedicated Bladder ☐ Disposable Bailer ☐ Other:

Sample Analyses

Sample ID: A-SW-001 *change to A-GW-050
Sample Time: 1515
☐ Blind Duplicate: ☐ MS/MSD

☒ VOCs ☐ Sulfate/Nitrite/Nitrate
☐ SVOCs ☐ TOC
☐ Cations ☐ Sulfide
☐ Trace Metals ☐
☐ Anions/Alkalinity/TDS ☐

Well/Purge

Well Casing: Stick-up | Flush Mount
Well Depth: — Screen Length: —
Casing Diam: — Borehole Diam.: —
Depth to Water: —
Measuring Point: —
Calculated Purge Volume: —
Pump Start: 1515 Pump Stop: 1517

☐ **Well Pumped Dry**

Pumped Dry (date/time): —
Pump restarted (date/time): —
Initial Purge (gal): —
Recovered Water Level: —

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments
1515	7.40	1220	0.61	8.01	10.2	248.6	—	0.12	0.20	—

GROUNDWATER/SURFACE WATER SAMPLING FORM (*CONTINUED*)

Time	pH	SC (µS/c)	Turb. (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	DTW (ft)	Vol Evac. (gal)	Flow Rate (gal/min)	Comments

Final Parameters

Time	pH	SC	Turb.	DO	Temp	ORP	DTW	Vol Evac.	Flow Rate
1515	7.40	~~1515~~ 1220 AB	0.61	8.01	10.2	248.6	—	0.12	0.20
Stable:	☐	☐	☐	☐	☐	☐	☐	☐	☐
	± 0.1	± 3%	± 10%	± 0.3 mg/L	± 3%	± 10 mV	Δ <0.3 ft		

Sampling Comments: sample collected from spring in front yard
Sample designation changed because sample was added on to surface water sampling effort

Well Specific Observations/Access Issues: Access needed from home owner

Kristin Rossi 2/26/16

Appendix E
Indoor Air, Outdoor Air, and Soil Gas Sampling Forms

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2015 sampling forms are contained on the following pages.

2016 sampling forms can be found in the *Final 700 South 1600 East PCE Plume AOU 1: East Side Springs 2016 Vapor Intrusion Investigation Field Data Report* (EA 2018b).

2017 sampling forms can be found in the *2017 VI Investigation Field Data Report Accelerated Operable Unit 1 700 South 1600 East PCE Plume* (Appendix H).

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Weekly Field Status Report
Remedial Investigation Activities
AOU:1 East Side Springs
700 South 1600 East PCE Plume Superfund Site
Salt Lake City, Utah

PREPARED FOR: D. Lynne Welsh/VA Salt Lake City Health Care System

PREPARED BY: Devin DeMarco and Ed Reid, First Environment,Inc.

COPIES: David Waite, CH2M Hill; Rolf Lange, Avalon BES; Scott Beckman, First Environment, Inc.; Art Clarke, First Environment, Inc.; Mike Novak, CH2M Hill; Jill Atwood, VA

DATE: February 3, 2015

Reporting Period: January 18-24, 2015

1.0 Summary-of-Work Activities

The First Environment Team (Team) continued the AOU-1 investigation activities the week of January 18th by conducting initial vapor intrusion (VI) assessment activities in accordance with the December 2014 Protocol for Performing Indoor Air and Near-Slab Soil Gas Assessments (Protocol). Site locations included in the second week of VI investigation included:

Site/Location Identification	Address	Scheduled Start Date	Actual Start Date	Comment
0003-H	1190 Gilmer Dr	1/19/15	1/19/15	Investigation Complete.
0011-H	1169 East 900 So.	1/21/15	1/21/15	Rescheduled to 21st after cancellation of previous week. However, homeowner cancelled due to illness. Rescheduled for 1/29.
0016-H	355 S. 1300 East	1/22/15	1/22/15	Investigation Complete
0018-H	1123 Alpine	1/21/15	1/23/15	Originally scheduled for 1/21 but postponed to 1/23 due to instrument issues. Started testing on 1/23/15 and Hapsite pump failed mid-morning. Tentatively rescheduled for 2/6

Specific field activities conducted at site locations included real-time quantitative sampling, survey of vapor intrusion entry points, real-time soil gas sampling and analysis, and SUMMA® canister sampling. Field activities conducted at the locations were preceded by public and private utility mark outs, health and safety coordination amongst Team members, and coordination with Department of Veterans Affairs (VA) representatives who provided on-site presence at testing locations. EPA Region 8 representative Mark Aguilar was on-site and observed the testing at 0016-H. The Team mobilized to each location at approximately 8:30 am with necessary field equipment, supplies, and community outreach publications and handouts associated with VA's approved Project Communications Plan.

2.0 Summary of Preliminary Findings

Following preliminary evaluation of the HAPSITE results for sites 0003-H and 0016-H, there appears to be no indoor air impacted by PCE, TCE, and VC above the related indoor screening levels (SLs) for the field investigation at these sites. Detected concentrations of the target compounds were very low, close to or below the detection limits of the HAPSITE. Soil gas samples from these locations also contained concentrations close to or below the detection limits for the target compounds.

Site 0011-H was initially tested as planned on 1/15 but was re-scheduled for assessment on 1/21 due to unfavorable results with the HAPSITE's continuous calibration verification (CCV). The homeowner then cancelled the testing on the morning of 1/21 due to an illness in the house and 0011-H was rescheduled for 1/29.

Site 0018-H was rescheduled from 1/21 to 1/23 to facilitate the retesting of 0011-H. The testing at 0018-H was started on 1/23, with two Hill AFB VI HAPSITE operators observing. However, the HAPSITE failed after three sample runs. Although there is no way to verify the three initial results due to the inability to conduct a post-test CCV run, the three samples suggest that VI may be occurring at 0018-H. This conclusion was based on the location of the structure within groundwater plume, an unverified PCE concentration just above screening levels at a basement bedroom location, and the house being under a strong ambient negative pressure at the time of testing. Although the home has been tentatively rescheduled for testing on 2/6, it was determined after consulting with VA to place a 24-hr SUMMA® canister in the basement of the home. The placement of the canister was scheduled with the homeowner for 1/27. The canister will be submitted to ALS laboratories of Salt Lake City for TO-15 SIM analysis.

Attachment 1 presents preliminary results from HAPSITE field measurement runs collected during the week of 1/18 for site locations 0003-H and 0016-H.

3.0 QAPP/SAP Non-Conformance Summary

No non-conformances were identified for the two homes tested. The CCV results indicate the HAPSITE performed properly and was in calibration on the day of the testing. HAPSITE reliability on a daily basis continued to be an issue and impacted the schedule significantly, but these issues were identified prior to attempting testing, so no data had to be completely discarded. After the failure of the instrument on 1/23, the equipment vendor was to ship two replacement instruments for the week of 1/25. Sites cancelled for the week of 1/18 have been rescheduled for future weeks.

4.0 Revisions to Field Schedule

Site 0011-H, originally scheduled for assessment on 1/15, was rescheduled to 1/21 due to HAPSITE mechanical and calibration issues, but was cancelled at the last minute by the homeowner, and was rescheduled for 1/29. Site 0018-H, originally scheduled for 1/21 was pushed to 1/23 to accommodate the retesting of 0011-H; however, a critical part in the HAPSITE failed during testing at 0018-H on 1/23 and the locations has tentatively been rescheduled for 2/6.

(23) 003-H
AOU-1 VI 1/19/15

Met at Sunnyside Park - 0810 - H+S Mtg 0815
Weather - Mostly Cloudy, 40's, Calm
Met homeowner at 0830 - Gilmor Street

*House built into steep hillside. Front is two story w/ drive under garage ~~[illegible]~~ and front daylight basement
Back - 2nd story is on grade

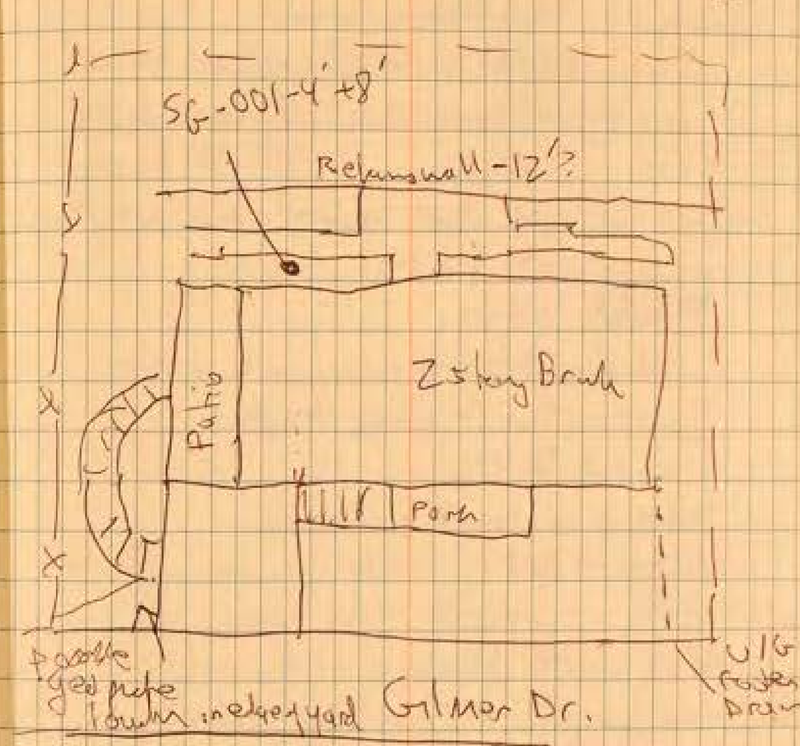
- Footer French drain reportedly wrap around back and side of house, discharges to underground vault & then to storm sewer in street. NO visible components - No apparent drainage

- Placed Soil Gas port 0003-H-SG-001 4' + 8' behind house

4' - applied 10" Hg vacuum - held for 60 seconds, slowly bleed off - Could not pull vacuum sample - tight, dark clay soil (plastic)
Drove probe to 8' - hit pebbly rocky material at 7' - Probe did not hold vacuum - collected sample SG-001-8' at - 1100

EMR

(24)



← SG Elevation is ≈ 12' higher than street

Center of Residence = Lat - 40.44.5369
Long - 111.51.2143
Elevation at Street - 4447 ft MSL
SG-001 - Lat - 40.44.5364
Long - 111.51.2121
Elevation - 4459.0

EMR

147 Summa Canf. Ed Reid
0003-H 4/8/15

ESR onsite ~0900 to meet homeowner & Checked indoor location for Summas then labelled cans for 24hr sample | Walley Lt Rain 30's

A-0003H-040915-TO-001-LIV
in living room/dining room on main level
~~Start time~~ - 4/8/15 - 0945 Hg 26"
Canister ID 0162 Reg ID - #0433
End - 4/9/15 - 0930 End Hg - 2"

A-0003H-040915-TO-002-BAS
in basement open living/dining/kitchen room
Start time - 4/8/15 - 0950 Start Hg - 28"
Canister ID - #0221 Reg ID # 467
End - 4/9/15 - 0945 End Hg - 10?"

A-0003H-040915-TO-003-BBS
Blind duplicate of TO002-BAS
~~Start~~ time - 4/8/15 - ~~0945~~ 1000 Start Hg - 24"
Canister ID - 01~~22~~ Regulator ID - ~~0544~~ 570
End - 4/9/15 - 0940 End Hg 0.5

Re-installed Soil Gas Probe SG-001 - behind house in backfill - Collected Soil Gas ~~sample in Tedlar Bag @ 1150~~ No EPR -Vacuum = 8"
See page 23 for sketch of location EPR

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1400 - DED - retrieved Summas From 0026-H - See Page 141-144

Set Soil Gas Summa - 24hr at
A-0003H-040915-SG-001-4'
Start time - 1200 Start Hg - 26"
Can ID # 0144 Reg ID # 0519
End - 4/9/15 - 1145 End Hg - 1.0"

Offsite - 1200

Edward J Reid

Weekly Field Status Report
Remedial Investigation Activities
AOU:1 East Side Springs
700 South 1600 East PCE Plume Superfund Site
Salt Lake City, Utah

PREPARED FOR: D. Lynne Welsh/VA Salt Lake City Health Care System

PREPARED BY: Devin DeMarco and Ed Reid, First Environment,Inc.

COPIES: David Waite, CH2M Hill; Rolf Lange, Avalon BES; Scott Beckman, First Environment, Inc.; Art Clarke, First Environment, Inc.; Mike Novak, CH2M Hill; Jill Atwood, VA

DATE: February 13, 2015

Reporting Period: February 1 - 6, 2015

1.0 Summary-of-Work Activities

The First Environment Team (Team) continued the AOU-1 investigation activities the week of February 1st by conducting initial vapor intrusion (VI) assessment activities in accordance with the December 2014 Protocol for Performing Indoor Air and Near-Slab Soil Gas Assessments (Protocol). Site locations included in the fourth week of VI investigation included:

Site/Location Identification	Address	Scheduled Start Date	Actual Start Date	Comment
0008-H	1146 E. Sunnyside Ave	02/02/15	02/05/15	Investigation Complete.
0026-H	761 S. 1100 East	02/03/15	---	Cancelled, will be rescheduled.
0023-H	1211 Gilmer Drive	02/04/15	---	Cancelled, will be rescheduled.
0019-B	736 S. 1300 East	1/29/15	02/02/15	Investigation Complete. Originally started on 1/29 but postponed to 2/2 due to instrument issues.
0005-H	613 S. 1200 East	1/15/15	---	Cancelled, will be rescheduled.

Specific field activities conducted at site locations included real-time quantitative sampling, survey of vapor intrusion entry points, real-time soil gas sampling and analysis, and SUMMA® canister sampling. Field activities conducted at the locations were preceded by public and private utility mark outs, health and safety coordination amongst Team members, and coordination with Department of Veterans Affairs (VA) representatives who provided on-site presence at testing locations. The Team mobilized to each location at approximately 8:30 am with necessary field equipment, supplies, and community outreach publications and handouts associated with VA's approved Project Communications Plan.

2.0 Summary of Preliminary Findings

Following preliminary evaluation of the HAPSITE results for sites 0008-H and 0019-B, there appears to be no indoor air impacted by PCE, TCE, and cis-1,2-DCE above the related indoor screening levels (SLs) for the field investigation at these sites. Detected concentrations of the target compounds were very low, close to or below the detection limits of the HAPSITE. Soil gas samples from these locations also contained concentrations at or just above the detection limits for the target compounds.

Sites 0005-H, 0008-H, 0023-H, and 0026-H were scheduled for the week of 2/1, but after both HAPSITEs had mechanical and calibration stability issues on 1/29, and following discussions with VA on 1/30, all four sites scheduled for the week of 2/1 were cancelled. Site 0008-H was subsequently rescheduled for 2/5 and successfully completed on that date. Sites 0005-H, 0023-H, and 0026-H will be rescheduled.

The team returned one HAPSITE to service on Monday 2/2 and used it to successfully complete Site 0019-B that was originally scheduled to start on 1/29.

Attachment 1 presents preliminary results from HAPSITE field measurement runs collected during the week of 2/1 for site locations 0008-H and 0019-B.

3.0 QAPP/SAP Non-Conformance Summary

No non-conformances were identified for the two sites tested. The CCV results indicate the HAPSITE performed properly and was in calibration on the day of the testing. HAPSITE reliability on a daily basis continues to be an issue and has impacted the schedule significantly, but HAPSITE issues were identified prior to attempting testing, so no data had to be completely discarded. Although one of the two HAPSITEs completely failed on 1/27, the vendor did not have any replacement instruments available for delivery to the team. The second instrument ran into calibration issues on 1/29, but lengthy troubleshooting and multiple re-calibration attempts returned this instrument to service on 2/2. The vendor was able to return a repaired and operable second H to the team on 2/6.

4.0 Revisions to Field Schedule

Currently, six sites are waiting to be rescheduled for VI testing:

- 0011-H, originally scheduled for assessment on 1/15, was rescheduled to 1/29; however, failure of the HAPSITE once again resulted in cancellation, and Site 0011-H has not been formally rescheduled to date.
- Site 0018-H, originally scheduled for 1/21 and was rescheduled to 1/23; however, a critical part in the HAPSITE failed during testing at 0018-H and the location is tentatively rescheduled for the week of 2/26.

- Site 0014-H, originally scheduled for 1/20, but cancelled at the homeowners request has tentatively been rescheduled for 3/4.
- Sites 0005-H, 0023-H, and 0026-H were scheduled for the week of 2/1, and have not been rescheduled.

57

DOV-1 VA VI

0008-H (Sunnyside) 2/5/15

Left office ~ 0745 Weather: Warm 60's

Mostly Cloudy, Lt Breeze

Onsite - 0830

Lat - 40.45.0194

Long - 111.50.5853

Elev - 4606'

DED placed 2 summas at 0018H @ 0745-0800

ERR/DED started in basement of house

Ran two samples + Hapsite failed

due to GC/MS communication loss

at 1000

troubleshooting indicated Circuit board

reset needed, demobbed + returned

to field office to reset

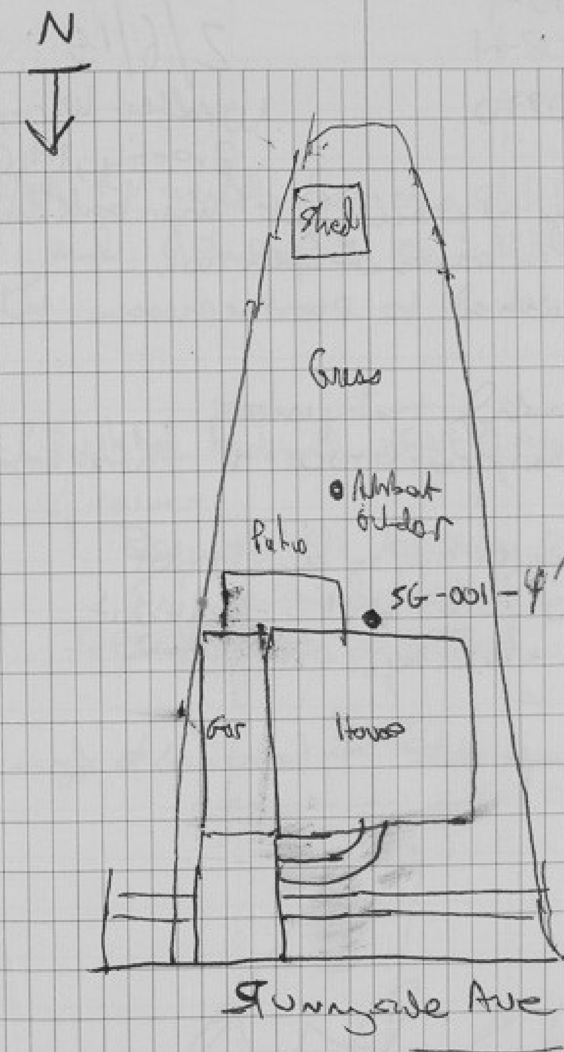
1400 - Returned to site + completed

ambient indoor survey, will return on

2/6/15 to conduct Positive/neg pressure

1700 - Drove for day

58



0008H - SG-001 - 4'

Lat - 40.45.0176

Long - 111.50.5844

Elev - 4610

151

Summa Sampling
0003-H, 0008-H

4/9/15

0900 - EJD retrieved Indoor Summa at 0003-H - See page -

1140 - DED retrieved Soil gas Summa at 0003-H - See page

Then Donald purged per SOP

1300 - 0008-H - Sunnyside Ave
Placed 1 indoor Summa
1 Soil gas
1 - Soil gas dupe

A-0008H-041015-TO-001-BAS
Start time - 4/9/15 - 1300 Start Hg - 28"
End time - 4/10/15 - 1310 End Hg - 2"
Located in basement BR
Can # 0384 Reg # 0392

A-0008H-041015-SG-001A-4'
Start time 4/9/15 - 1320 Start Hg - 27"
End time - 4/10/15 - 1300 End Hg - 1"
Soil Gas Probe - south of house at foundation
Can ID# 0271 Reg ID# 0149

A-0008H-041015-SG-001B-4'
Start - 4/9/15 - 1320" Start Hg - 27"
End - 4/10/15 - 1400 End Hg - 1"
Can ID# 0533 Reg ID# 0014
Offsite - 1400

152

← Set in "volcano" bedroom -
Homeowner notes this room is storage for boyfriend - works as mechanic at airport - does use degreasers / solvents at work - Room is full of loose clothing.

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Weekly Field Status Report
Remedial Investigation Activities
AOU:1 East Side Springs
700 South 1600 East PCE Plume Superfund Site
Salt Lake City, Utah

PREPARED FOR: D. Lynne Welsh/VA Salt Lake City Health Care System

PREPARED BY: Devin DeMarco and Ed Reid, First Environment,Inc.

COPIES: Rolf Lange, Avalon BES; Brian Speer, Avalon BES; Scott Beckman, First Environment, Inc.; Art Clarke, First Environment, Inc.; Tom Bambrick, First Environment, Inc.; Ellen Reid, First Environment, Inc.; Mike Novak, CH2M Hill; David Waite, CH2M Hill; Jill Atwood, VA

DATE: March 12, 2015

Reporting Period: March 1 - 7, 2015

1.0 Summary-of-Work Activities

The First Environment Team (Team) continued the AOU-1 investigation activities the week of March 1st by conducting initial vapor intrusion (VI) assessment activities in accordance with the December 2014 Protocol for Performing Indoor Air and Near-Slab Soil Gas Assessments (Protocol). Site locations included in the eighth week of VI investigation included:

Site/Location Identification	Address	Scheduled Start Date	Actual Start Date	Comment
0014-H	1636 E. 900 South	01/20/15	03/02/15	Investigation Complete.
0005-H	613 S. 1200 East	01/15/15	Cancelled	Homeowner cancelled, will be rescheduled for April date.
0026-H	761 S. 1100 East	02/03/15	03/03-04/15	Investigation Complete.
0006-H	1234 E. Fenway	02/18/15	03/06/15	Investigation Complete.

Specific field activities conducted at site locations included real-time quantitative sampling, survey of vapor intrusion entry points, real-time soil gas sampling and analysis, and SUMMA® canister sampling. Field activities conducted at the locations were preceded by public and private utility mark outs, health and safety coordination amongst Team members, and coordination with Department of Veterans Affairs (VA) representatives who provided on-site presence at testing locations. The Team mobilized to each location at approximately 8:30 am with necessary field equipment, supplies, and community outreach publications and handouts associated with VA's approved Project Communications Plan.

2.0 Summary of Preliminary Findings

Following preliminary evaluation of the HAPSITE results for site 0026-H, there appears to be a very minor impact to indoor air as a result of vapor intrusion. Low levels of PCE were detected in two basement rooms, with a maximum concentration of 0.25 ppb in the basement pantry, well below the 1.62 ppb indoor screening levels (SLs). **TCE and cis-1,2-DCE concentrations were very low, either close to or below the detection limits of the HAPSITE**. A soil gas sample collected from the southeast corner of the house, just outside of the pantry contained a PCE concentration of 22.8 ppb and a TCE concentration of 0.48 ppb. This property also contains an unused, permitted, spring collection sump (dating to 1937) and multiple seeps on the hillside behind the house. A large spring, referred to by the USGS emanates from a property east of the Site and flows through the Site as a small stream.

Preliminary evaluation of the HAPSITE results for Sites 0014-H and 0006-H suggest that no vapor intrusion occurs at these sites. Nearly all indoor samples and the soil gas samples were below the quantification limit for the HAPSITE, with many samples showing concentrations similar to the outdoor ambient air sample.

Site 0011-H, tested on 2/27, had preliminary results indicating indoor air PCE concentrations up to 2.7 ppb in habitable basement areas (currently not occupied), above the 1.62 ppb initial RSL. Concentrations of PCE were also present in first floor living areas, but at levels less than the RSL. The indoor concentrations could not be attributed to indoor sources, and a three-ion survey of the cracked crawl space wall under the southern portion of the home showed a significant spike, including detections of PCE ions. The soil gas sample, adjacent to the front porch, just south of the house was sampled at 4-ft, and contained a PCE concentration of 53 ppb. After discussion with the VA, the field team placed two 24-hr SUMMA® canisters in the home on 3/2, with one in the basement bathroom and one in a main floor bedroom to obtain longer interval confirmation samples for TO-15 analyses. In addition, a SUMMA® canister for outdoor ambient air was placed in the front yard. The samples were retrieved on 3/3 and delivered to the lab, with results expected the week of 3/8.

Attachment 1 to be provided under separate cover presents preliminary results from HAPSITE field measurement runs collected during the week of 3/1/15 for site locations 0006-H, 0014-H, and 0026-H.

3.0 QAPP/SAP Non-Conformance Summary

No non-conformances were identified for the three sites tested. The CCV results indicate the HAPSITE performed properly and was in calibration on the day of the testing. HAPSITE reliability this week was not an issue and the schedule was not impacted by HAPSITE operation.

4.0 Revisions to Field Schedule

Currently, all Sites cancelled previously, except for 0005-H that cancelled this week, have been rescheduled for VI testing:

- Site 0022-S, originally scheduled for 2/16-17, has been rescheduled for 4/6-7.

- Site 0023-H originally scheduled for the week of 2/1 has been rescheduled to 3/9 and 3/10.

141

T61 ~~5~~ T100E
0026-H

Ed Rep
4/7/15

Arrived at site - 1300

weather - 60°, Cloudy, Breezy

Soil Gas summary Soil Gas, SVOC, Outdoor ambient, indoor Summa confirmation

EOR 4/7/15
Re-installed SG-001 at ~~[illegible]~~ SE corner of house. See page 95 for Lat/Long
Violated SG-001-4' - 1330 - 4" Hg
SG-001-4' (dupe) 1335 6" Hg
Both required multiple attempts due to rock

Installed SG-002 on hill East of house Near woodline.
Sampled SG-002-4' - 1350 - 4" Hg
Lat - 40.722515 Elevation - 4441' msl
Long - 111.858890
Refusal on rock - 4.5'

Set soil gas - Summa cans
A-0026H-040815-SG-001-4'
Start - 4/7/15 - ~~1420~~ 1430 Start Hg 26"
EOR 4/7/15
Can ID# 0137 Reg ID# 497
End - 4/8/15 - 1~~3~~405 End Hg - 0"
EOR 4/7/15

EOR

142

A-0026H-040815-SG-002-4'
Start - 4/7/15 - 1450 Start Hg - 26"
Can ID #0097 Reg ID# 0018
End - 1410 4/8/15 End Hg - 0.5

A-0026H-040815-SG-003-4' (Dupe of 001)
Start - 4/7/15 - ~~1500~~ 1430 EOR 4/7/15 Start Hg - 25
Can ID# 0255 Reg ID# 0520
End - 4/8/15 - 1410 End Hg = 5

EOR

143

0026-H (Continued) 4/7/15

Set Ambient Air Summa - on back retaining wall -
A-00264-040815-TO-003-OUT
Start - 4/7/15 - 1500 Start Hg - 27
Can ID# 0143 Reg ID# 0432
End - 4/8/15 - 1445 End Hg - 4"

Set indoor ambient in pantry/laundry room corner -
A-00264-040815-TO-~~[illegible]~~ 001-PAN ER 4/7/15
Start - 4/7/15 - 1545 Start Hg - 28"
Can ID #0262 Reg ID# 0451
End - 4/8/15 - 1540 End Hg - 1

Collected SVOC Sorbent tube samples ER 4/7/15
2 - at Soil Gas probes SG-001-4' (one blind dupe)
1 - Outdoor ambient on back patio
2 - Indoor ambient w/ Summa Can - in pantry/laundry area, included a blind dupe

SVOC ID's
A-00264-040715-SG-001A-4' - 1540 time
A-00264-040715-SG-001A-4' - 1545 time
A-00264-040715-TO-003-OUT 1710 time
A-00264-040715-TO-001-PAN - 1800
A-00264-040715-TO-004 - ER - 1730 TO-001 (Dupe of PAN) ER 4/7/15

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See Page 93 for Sample Locations

Sample tally 00264 (4/7-8/2015)
ER 4/8/15 5 SVOC (2 SG, 1 Amb, 1 indoor)
3 - Soil Summa (incl. dupe)
ER 4/7/15 1 - Outdoor Amb. Summa
1 - Indoor Summa

Left site 1715

ER

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Weekly Field Status Report
Remedial Investigation Activities
AOU:1 East Side Springs
700 South 1600 East PCE Plume Superfund Site
Salt Lake City, Utah

PREPARED FOR: D. Lynne Welsh/VA Salt Lake City Health Care System

PREPARED BY: Devin DeMarco and Ed Reid, First Environment,Inc.

COPIES: Rolf Lange, Avalon BES; Brian Speer, Avalon BES; Scott Beckman, First Environment, Inc.; Art Clarke, First Environment, Inc.; Tom Bambrick, First Environment, Inc.; Ellen Reid, First Environment, Inc.; Mike Novak, CH2M Hill; David Waite, CH2M Hill; Jill Atwood, VA

DATE: April 1, 2015

Reporting Period: March 15 - 21, 2015

1.0 Summary-of-Work Activities

The First Environment Team (Team) continued the AOU-1 investigation activities the week of March 15th by conducting initial vapor intrusion (VI) assessment activities in accordance with the December 2014 Protocol for Performing Indoor Air and Near-Slab Soil Gas Assessments (Protocol). Site locations included in the tenth week of VI investigation included:

Site/Location Identification	Address	Scheduled Start Date	Actual Start Date	Comment
0030-H	673 E. 1300 South	03/18/15	03/18/15	Investigation Complete.
0031-S	720 Guardsman Way	03/16/15	03/16/15	Soil Gas Only - Investigation Complete.

Specific field activities conducted at site locations included real-time quantitative sampling, survey of vapor intrusion entry points, real-time soil gas sampling and analysis, and SUMMA® canister sampling. Field activities conducted at the locations were preceded by public and private utility mark outs, health and safety coordination amongst Team members, and coordination with Department of Veterans Affairs (VA) representatives who provided on-site presence at testing locations. The Team mobilized to each location at approximately 8:30 am with necessary field equipment, supplies, and community outreach publications and handouts associated with VA's approved Project Communications Plan.

2.0 Summary of Preliminary Findings

Following preliminary evaluation of the HAPSITE results for site 0030-H, there does not appear to be an impact to indoor air at this structure due to vapor intrusion. This location is believed to be north of the PCE plume, and in a location where groundwater is at least 40 feet below the ground surface. PCE concentrations are present indoors at concentrations ranging from 0.39 to 0.51 ppbv in the first floor living areas, and from 0.74 to 1.2 ppbv in the basement laundry and storage areas. Although a total of seven indoor three-ion surveys were completed in the basement and an additional ambient sample collected from a box of oily rags exhibiting an unidentified odor, no points of vapor intrusion or specific source material was identified in the home. The lowest basement PCE concentrations were observed in the soil-floored crawl space (most likely vapor entry point) accessed via doors in the basement laundry. In addition, negative pressure testing, with the air door located in the first floor front doorway and the HAPSite located in the basement laundry room showed a steady decrease in basement PCE concentrations over the duration of the test, further suggesting an indoor source material is responsible for the PCE concentrations. Although none of the PCE concentrations exceeded the 1.62 ppbv initial screening level and TCE was not detected above the reliable instrument detection level of 0.1 ppbv in any sample, SUMMA® canisters for 24 hr TO-15 confirmation samples will be placed in the basement to confirm the results and to confirm that no vinyl chloride concentrations are present, in accordance with QAPP amendment 1. The soil gas samples contained PCE concentrations of 0.14 and 0.15 ppbv, which also suggest soil vapor intrusion does not occur at the Site.

Only soil gas samples were collected at site 0031-S since the site had previously conducted indoor air sampling using SUMMA® canisters independently of the VA and did not want to participate in additional indoor air testing. A total of ten sample points were attempted, and eight soil gas sample probes were installed and sampled at the Site. Although the sampling plan was for 12 probes to depths of 8 to 12 feet (up to three depth samples per probe – 4, 8, and 12'), the extremely rocky soil (disturbed, regraded native material or possibly some imported fill) prevented installation deeper than 4 ft at any location. Each probe location required multiple attempts (up to 20) even to achieve a 3 to 4 ft depth. Furthermore, the site was criss-crossed with pavement, sidewalks, underground utilities of every kind, and planted with many trees, making suitable locations for probes very limited. Concentrations of PCE in the 8 soil gas samples ranged from below the practical quantification level at four sample locations to 0.23 ppbv at SG-003-3.5', located near the NW corner of the site, downgradient of the former Utah Army National Guard Vehicle Repair Shop, opposite of the current U of Utah catch basin. The team plans to conduct soil gas confirmation sampling at a selected sample point using 24-hr SUMMA® Canisters, as well as collecting sorbent tube SVOC samples for lab analysis.

Sites 0007-H and 0027-H, both located in areas where the depth to groundwater likely exceeds 30 feet and the PCE plume may be present, were selected as locations for additional TO-15 SUMMA® sample collection and analyses. The samples were collected 3/18-3/19. An outdoor ambient sample and an indoor air sample from the basement finished room were collected from 0027-H using 24-hr SUMMA® canisters. An indoor air sample from the basement family room was collected at 0007-H using a 24-hr SUMMA® canister. The samples were submitted to ALS labs in Taylorsville, Utah for TO-15 analyses.

Attachment 1 to be provided under separate cover presents preliminary results from HAPSITE field measurement runs collected during the week of 3/15/15 for site locations 0030-H and 0031-S.

3.0 QAPP/SAP Non-Conformance Summary

No non-conformances were identified for the two sites tested. The CCV results indicate the HAPSITE performed properly and was in calibration on the day of the testing. HAPSITE reliability this week was not an issue and the schedule was not impacted by HAPSITE operation.

4.0 Revisions to Field Schedule

Currently, all Sites cancelled previously, except for 0005-H (homeowner has not returned VA calls), have been rescheduled for VI testing:

- Site 0022-S, originally scheduled for 2/16-17, has been rescheduled for 4/6-7.
- Site 0033-H, originally scheduled for 3/13, has been rescheduled for 4/8.

155

Summa set — Sierra

0030-H-673 1000 — 4/10/15

1000 - at 0030 -

DED reinstalled SG-001

EJR set Summa in Basement laundry room

Transect Ambient Summa + duplicate

and then connected soil gas probe

A-0030H-041115-TO-001-LAU

Start - 4/10/15 - 1032 Start Hg - 25

End - 4/11/15 - 1015 End Hg - 0.5

Can ID # ~~0407~~ 493 Reg ID 0407

A-0030H-041115-TO-002-OUT (outdoor)

Start - 4/10/15 - 1028 Start Hg - 26

End - 4/11/15 - 1010 End Hg - 4

Can ID - 0284 Reg ID - 0464

A-0030H-041115-TO-003-AAA (duplicate)

Start - 4/10/15 - 1035 Start Hg - 27"

End - 4/11/15 - 1015 End Hg -

Can ID 0146 Reg ID 0572

A-0030H-041115-SG-001A-6' (Soil gas)

Start - 4/10/15 - 1030 Start Hg - 27"

End - 4/11/15 - 1000 End Hg - 2

Can ID # 0364 Reg ID # 0229

Done - 1030

Ed Reed

156

0008-H - 1300 - 4/10/15

DEP Retrieved Summa

For Soil Gas + Indoor

See Page - 151

4/11/15

DED Retrieved 0030H Summa

at 1000

See Page 155

A-0030H-041115-TO-004-BLK

Start 4/10/15 - 1040 - Start Hg - 25

End - 4/11/15 - 1030 - End Hg 1

Can ID # 0297 Reg ID # 0017

EJR

157 Summa/SVOCs Ed Reed
0011-4/ 4/13/15
Met at Summa/de Park – 0815 weather cool
H&S Mtg – 0820 sunny, lt breeze
At 0011H – 0835 –
Re-installed SG-001 to 8' by front porch
Sampled grab Tedlar bag
A-0011H-041315-SG-001-8' -0900
- vacuum - 8" Hg
Setup SVOC sampler - purged 4 L/min for 60 mins
A-0011H-041315-SG-001-8'
Finished sample time 1009

Setup SVOC sampler in basement bathroom
purged 4 L/min for 60 min
A-0011-H-041315-TO-001-BAS
finished / sample time = 1029

Set Soil Gas Summa –
A-0011H-041415-SG-001-8'
Start 4/13/15-1020 start Hg - 25
End - 4/14/15 - 1019 End Hg - 0.5
Can ID - 0445 Reg ~~0017~~

4/13/15

CURVE TABLES

HOW TO USE CURVE TABLES

Table I. contains Tangents and Externals to a 1° curve. Tan. and Ext. to any other radius may be found nearly enough, by dividing the Tan. or Ext. opposite the given Central Angle by the given degree of curve.

To find Deg. of Curve, having the Central Angle and Tangent: Divide Tan. opposite the given Central Angle by the given Tangent.

To find Deg. of Curve, having the Central Angle and External: Divide Ext. opposite the given Central Angle by the given External.

To find Nat. Tan. and Nat. Ex. Sec. for any angle by Table I.: Tan. or Ext. of twice the given angle divided by the radius of a 1° curve will be the Nat. Tan. or Nat. Ex. Sec.

EXAMPLE

Wanted a Curve with an Ext. of about 12 ft. Angle of Intersection or I. P. = 23° 20′ to the R. at Station 542 + 72.

Ext. in Tab. I opposite 23° 20′ = 120.87
120.87 ÷ 12 = 10.07. Say a 10° Curve.

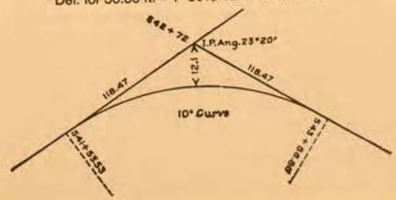
Tan. in Tab. I opp. 23° 20′ = 1183.1
1183.1 ÷ 10 = 118.31.

Correction for A. 23° 20′ for a 10° Cur. = 0.16
118.31 + 0.16 = 118.47 = corrected Tangent.

(If corrected Ext. is required find in same way)
Ang. 23° 20′ = 23.33° ÷ 10 = 2.3333 = L. C.

2° 19½′ = def. for sta.	542	I. P. = sta.	542 + 72
4° 49½′ = " " "	+50	Tan. =	1 .18.47
7° 19½′ = " " "	543	B. C. = sta.	541 + 53.53
9° 49½′ = " " "	+50	L. C. =	2 .33.33
11° 40′ = " " "	543 + 86.86	E. C. = Sta.	543 + 86.86

100 − 53.53 = 46.47 × 3′(def. for 1 ft. of 10° Cur.) = 139.41′ =
2° 19½′ = def. for sta. 542.
Def. for 50 ft. = 2° 30′ for a 10° Curve.
Def. for 36.86 ft. = 1° 50½′ for a 10° Curve.



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Weekly Field Status Report
Remedial Investigation Activities
AOU:1 East Side Springs
700 South 1600 East PCE Plume Superfund Site
Salt Lake City, Utah

PREPARED FOR: D. Lynne Welsh/VA Salt Lake City Health Care System

PREPARED BY: Devin DeMarco and Ed Reid, First Environment,Inc.

COPIES: Rolf Lange, Avalon BES; Brian Speer, Avalon BES; Scott Beckman, First Environment, Inc.; Art Clarke, First Environment, Inc.; Tom Bambrick, First Environment, Inc.; Ellen Reid, First Environment, Inc.; Mike Novak, CH2M Hill; David Waite, CH2M Hill; Jill Atwood, VA

DATE: April 7, 2015

Reporting Period: March 29 – April 4, 2015

1.0 Summary-of-Work Activities

The First Environment Team (Team) continued the AOU-1 investigation activities the week of March 29th by conducting initial vapor intrusion (VI) assessment activities in accordance with the December 2014 Protocol for Performing Indoor Air and Near-Slab Soil Gas Assessments (Protocol). Site locations included in the 12th week of VI investigation included:

Site/Location Identification	Address	Scheduled Start Date	Actual Start Date	Comment
0015-H	1348 S. 1100 East	03/02/15	03/30/15	Investigation Complete.
0028-S	780 Guardsman Way	03/31/15	03/31/15	Investigation Complete.
0037-H	1121 E. Alpine Place	04/02/15	04/02/15	Investigation Complete.
0036-H	1123 E. Sunnyside Ave	04/03/15	04/03/15	Investigation Complete.

Specific field activities conducted at site locations included real-time quantitative sampling, survey of vapor intrusion entry points, real-time soil gas sampling and analysis, and SUMMA® canister sampling. Field activities conducted at the locations were preceded by field mark outs, health and safety coordination amongst Team members, and coordination with Department of Veterans Affairs (VA) representatives who provided on-site presence at testing locations. The Team mobilized to each location at approximately 8:30 am with necessary field equipment, supplies, and community outreach publications and handouts associated with VA's approved Project Communications Plan.

2.0 Summary of Preliminary Findings

Following preliminary evaluation of the HAPSITE results for site 0015-H, there does not appear to be an impact to indoor air at this structure due to vapor intrusion. This location is believed to be southwest of the PCE plume, although in a location where groundwater is likely less than 20 feet below the ground surface. All indoor ambient and pressure testing samples were below the 0.1 ppbv reliable quantification level of the HAPSITE for PCE and TCE. The soil gas sample contained a PCE concentration of 0.21 ppbv at a depth of four feet.

Preliminary evaluation of the HAPSITE results for Site 0028-S shows that no indoor air impacts as a result of vapor intrusion occur at the site. The site is over the PCE plume, but groundwater levels in an existing monitoring well across Guardsman Way, east of the site, are approximately 100 feet below the ground surface. Neither PCE nor TCE were detected at any indoor sample location above the practical quantification level of 0.1 ppbv. The soil gas sample contained a PCE concentration of 0.34 ppbv at a depth of eight feet. The soil gas sample at four feet did not contain PCE above quantification limits. Since the site was located over the PCE plume, but did not exhibit indoor concentrations of target compounds, a 24-hr SUMMA® canister was placed in a centrally located first floor maintenance storage room that contained a large pipe chase extending through the slab and an ambient air sample collected on 4/3 for TO-15 analysis.

Sites 0036-H and 0037-H are located in areas where groundwater and springs are known to contain PCE. Preliminary evaluation of HAPSITE results indicate the homes experience low levels of VI in habitable or potentially habitable indoor spaces, but no habitable space has ambient PCE or TCE concentrations above the initial screening level.

Both sites employ French drain systems on the upgradient sides of the homes to intercept water and convey it to storm sewers. The French drain at 0036-H drains via gravity flow, whereas the drain at 0037-H is collected in an outside sump and conveyed to the street by a sump pump. Both homes had dry basements at the time of testing, but static sump levels indicate groundwater is within a few feet of the basement floor in both homes.

Results for Site 0036-H did not indicate vapor intrusion at levels above the 1.62 ppbv initial screening level in habitable spaces; however, low levels of VI do occur at the Site. PCE concentrations are present indoors at concentrations ranging from 0.12 to 0.15 ppbv in the first floor living areas, and from 0.23 to 0.44 ppbv in the unfinished basement laundry, storage areas, and open soil floored crawl space. TCE was not detected above the reliable instrument quantification level of 0.1 ppbv indoors. Entry point surveys of small floor cracks and the soil floored shelf crawl space had very slight total ion count (TIC) responses, but no detections of PCE ions. Indoor source material surveys did not have any TIC responses. **PCE concentrations in the basement during negative pressure testing remained stable**, showing no significant change from ambient. PCE concentrations during positive pressure testing showed an immediate decrease. A 24-hr SUMMA® canister was placed in the basement storage room and an ambient indoor air confirmation sample was collected on 4/4 for TO-15A analysis. The sample was submitted to ALS labs in Taylorsville, Utah for TO-15 analyses.

The soil gas sample located at the northeast corner of the home, adjacent to the basement foundation, contained PCE concentrations of 0.25 ppbv at 4-ft and 0.22 ppbv at 8-ft. TCE, although not detected indoors, was detected at concentrations of 0.39 and 0.37 ppbv, at depths of 4 and 8 feet, respectively. However, soil conditions were very tight (a black organic-rich clay) that required a vacuum of 8 to 10-inches of Hg to pull a sample. The very tight soil precluded the collection of a soil gas SUMMA® sample (vacuum above acceptable pressure of 5-inches Hg) at the site.

Although the PCE concentrations were well below the 1.62 ppbv initial screening level and TCE was not detected above the reliable instrument detection level of 0.1 ppbv in any indoor sample, the presence of PCE and TCE in the soil gas sample adjacent to the home, combined with the stable concentrations during negative pressure testing, suggest this site does experience some VI.

Results for Site 0037-H did not show ambient PCE concentrations above the 1.62 ppbv initial screening level in habitable spaces; however, **negative pressure testing induced PCE concentrations up to 2.2 ppbv in the finished basement laundry room**. Ambient PCE concentrations are present indoors at concentrations ranging from 0.10 to 0.17 ppbv in the first floor living areas, from 0.33 to 0.96 ppbv in the second floor bedrooms and bathrooms, and from 0.28 to 0.95 in the finished basement laundry, playroom, guest bedroom, and mechanical/storage areas. **Entry point analysis of a large floor crack in the basement furniture room showed a PCE concentration of 13 ppbv**. A smaller floor/wall crack in the same room showed a PCE concentration of 0.2 ppbv. Indoor source material surveys did not have any significant TIC responses. PCE concentrations in the basement laundry room during negative pressure testing initially rose from 0.3 ppbv to 2.0 ppbv, then remained stable for the duration of the test. PCE concentrations during positive pressure testing showed a steady decrease from 0.3 to 0.11 ppbv. TCE was not detected above the reliable instrument quantification level of 0.1 ppbv at any indoor location.

Based on the negative pressure testing results inducing a PCE concentration above the initial screening level and the suspected basement floor crack entry points identified during testing, 24-hr SUMMA® canisters were placed in the basement laundry room and in the second floor front bedroom (child's room) on 4/6 and ambient indoor air confirmation samples collected for TO-15A analysis. In addition, a duplicate SUMMA® canister sample collected in the basement laundry room.

The soil gas sample located at the southwest corner of the home, adjacent to the basement foundation, contained PCE concentrations of 0.33 ppbv at 4-ft. Due to the presence of the French drain system along the east side of the house, rock-paved patios along the north side of the house, and extensive utilities and irrigation lines on the south side of the home, the SW corner of the house was the only accessible soil gas location and the results may not be reflective of soil gas conditions at closer to groundwater at the east end of the home. A 24-hr SUMMA® canister was placed on SG-001-4' to confirm the screening results on 4/2.

The SUMMA® samples were submitted to ALS labs in Taylorsville, Utah for TO-15 analyses.

Attachment 1 to be provided under separate cover presents preliminary results from HAPSITE field measurement runs collected during the week of 3/29/15.

3.0 QAPP/SAP Non-Conformance Summary

No non-conformances were identified for the two sites tested. The CCV results indicate the HAPSITE performed properly and was in calibration on the day of the testing. HAPSITE reliability this week was not an issue and the schedule was not impacted by HAPSITE operation.

4.0 Revisions to Field Schedule

Currently, all Sites cancelled previously, except for 0005-H (homeowner has not returned VA calls), have been rescheduled for VI testing:

- Site 0022-S, originally scheduled for 2/16-17, has been rescheduled for 4/6-7.
- Site 0033-H, originally scheduled for 3/13, has been rescheduled for 4/8.

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Sunnyside 0036-4 Ed Rup 4/3/15

0800 - Met at Sunnyside Park

0810 - H&S Briefing - NOPPE required

-Weather-
Sunny, Lt Breeze, Warm 50°

0830 - Proceeded to property w/ UofA Rep - Rolf Lange

ERR + JL set up Cityprobe Summa photo # H-860 to conduct indoor ambient

EJR/DEP checked for sumps/seeps in yard, installed soil gas probe near NE corner of house

0036-4 SG-001 - 4'	~~1010~~	0950
8'	~~1020~~	1005

ERR 12/8/16

Very tight black silt/clay soil - probes held 8-10" Hg, only able to collected 200 +/- ml in Tedlar bag

Soil too tight to collect w/ the Summa canister sample.

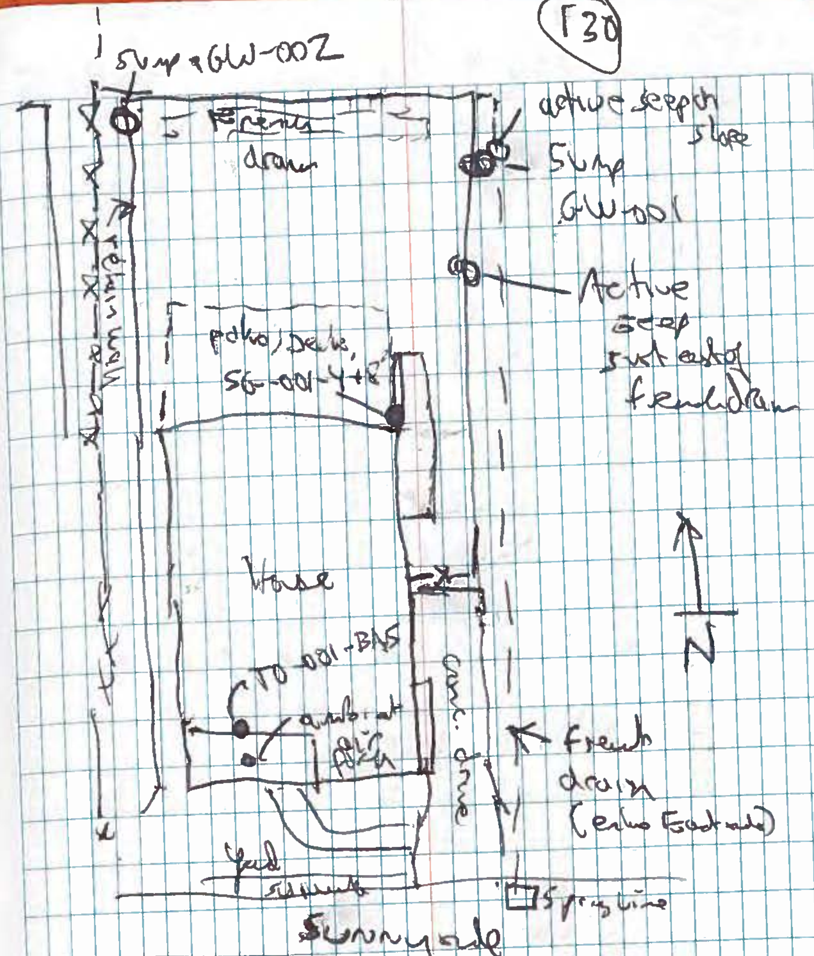
Collected GW-001 from sump for the east-side french drain line - sump at NE corner of property - Flow thru ~ 0.5 - 0.75 gpm

Searched sump for the north boundary drain line west NW corner of property - Sump is barely flowing - less than 1/4" of water -

Two active seeps along east property, Just upslope of East drain line

EJR

130



Center of House - Lat 40.751067 Long 111.858721
Elev - 4423' msl

Soil Gas Probe - SG-001 - 4' + 8'
Lat - 40.751143 Long - 111.858659
Elev - 4424' msl

EJR

131 0036-H (Continued) 4-3-15

Spring line at end of driveway in street, receives the French drain discharges
- outfall flow = ≈ 3 gpm

GW-001 - Field Water Quality parameters

pH - 6.66
SC - 1310
ORP - 244
DO - 5.11
Temp - 13.92
Turb - ~~5.1~~ ERR 4/3/15 - 77.0

Horiba U-53 calibrated at 1015 using auto cal solution (provided by manufacturer)

1100 - ERR / SC / DSD conducted negative/positive pressure tests

Finished - 1300

Ran COVs - passed

Home has unfinished, partial basement - w/ opening to surrounding shelf w/ soil floor. Basement appears to have been wet in the past. ER 4/3/15

Will set summa in basement open room

[signature]

132

Sample totals - est. ER 4-3-15

Indoor Ambient - ~~8~~ 6
Soil Gas - 2
Outdoor Ambient - 1
Indoor pressure tests - 14
TOTAL 23

[signature]

133 0036-H (Continued) Ed Red 4/3/15

Summa 24-hr Sample collection

A-0036-H-04 04 15-TO-001-BAS

Start date/time - 4/3/15 - 1315

Start Hg - 25

End date/time = 4/4/15 - 1300

End Hg = ~~[illegible]~~ 1

Can ID# 0537 Reg# 0017

Placed in Breathing Zone in basement - Storage room at front of house.

Left site - 1330

Edward Red

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EDR

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Appendix F
Human Health Risk Assessment

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F.0 Human Health Risk Assessment

F.1 Introduction

This report describes the methods and results of a focused Human Health Risk Assessment (HHRA) of tetrachloroethene (PCE) groundwater contamination at Accelerated Operable Unit 1 (AOU-1) at 700 South 1600 East, Salt Lake City, Utah (Figure 1-1 of the Remedial Investigation [RI] report). An accelerated operable unit pertains to a remedial action where prompt action is necessary and can be performed prior to completion of the final Record of Decision for that remedial action. The scope of this HHRA is to evaluate potential exposures within the East Side Springs (ESS) area (i.e., the southwestern, downgradient portion of the 700 South 1600 East Street PCE Plume [Site] [Figure 1-2 of the RI Report]). The scope of this HHRA is primarily to evaluate the vapor intrusion (VI) pathway from the ESS area. Other exposure pathways discussed include incidental exposure to surface water located in residential backyards and exposure to soil or homegrown produce impacted by contaminated surface water or groundwater. The evaluation of direct contact with groundwater for the entire Site will be addressed under a separate HHRA. The HHRA will support the RI and the need for Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) removal or remedial action pertaining to the PCE-contaminated groundwater of AOU-1. This report also addresses other contaminants, including PCE biodegradation daughter products (specifically trichloroethene [TCE], cis-1,2- dichloroethene [DCE] and vinyl chloride [VC]) and 1,4-dioxane. The U.S. Department of Veterans Affairs (VA), working collaboratively with Utah Department of Environmental Quality (UDEQ), U.S. Environmental Protection Agency (EPA), Salt Lake City, and the Salt Lake County Health Department, will use the results of the HHRA described in this report as an aid in making decisions regarding actions necessary to manage risk related to PCE at the ESS area.

Documents pertaining to the site history, previous investigations, and analytical data and modeling for the Site were reviewed and are listed in Table 3-1 of the RI Report.

A summary of the AOU-1 RI field work is provided in Section 5 of the RI Report, including the media sampled (shallow groundwater, surface water, stormwater, soil, soil gas, indoor air and outdoor air), and number of samples collected. Sample locations are shown on Figures 5-1 and 5-2 of the RI Report.

The HHRA is multiple-step process required by CERCLA and directed under guidance developed by EPA. First, the HHRA process determines the contaminants of concern. In this case, PCE and its degradation products were identified as the preliminary contaminants of potential concern (PCOPCs) based on previously collected data (First Environment [FE] 2015; EA Engineering, Science, and Technology, Inc., PBC [EA] 2015; EA 2016a,b; EA 2017a). Contaminants of potential concern (COPCs) were identified based on screening the PCOPC concentration data in the HHRA dataset against risk-based screening levels (RBSLs). The next step is the exposure assessment, which was conducted to evaluate the likelihood and potential magnitude of PCE (and degradation products) exposure for a variety of human receptors at the sites, such as current and future residents and workers (i.e., commercial workers and school workers). Following the exposure assessment, a toxicity assessment and risk estimation were conducted to estimate the health risk to humans potentially exposed to COPCs at the site. Finally, the HHRA concludes with an uncertainty analysis that considers uncertainties associated with each step of the process that was used to estimate the human health risk due to exposure to COPCs.

F.1.1 Background

AOU-1 is located within the southwestern and western boundary of the Site. The Site, including AOU-1, was listed on the EPA National Priorities List in 2013. Source areas for the PCE contamination and the extent of the plume were not clearly identified. However, a sewer line originating from a former dry-cleaning facility at the George E. Wahlen Veterans Affairs Medical Center (VAMC) was identified as a potential source (URS Operating Services, Inc. 1999; UDEQ 2012).

Seeps and springs in the area are located on residential, public, and private properties containing numerous predominantly single family residential properties with several schools, churches, and small businesses located along the major streets. East High School and its grounds form a significant portion of the eastern extent of AOU-1. The McGillis School and Our Lady of Lourdes/Judge Memorial Catholic School lie within, or in close proximity to, AOU-1. The few commercial operations in AOU-1 include an auto repair shop, convenience store/gasoline station, and coffee shop located near the intersections of 800 South and 900 South with 1300 East (UDEQ 2012). During the investigation, although constituents of crude oil were not identified, PCE was detected in springs and in a storm drain manhole (UDEQ 2012). PCE was also detected in shallow groundwater samples collected within AOU-1 (UDEQ 2012). PCE concentrations reported by UDEQ in surface water and shallow groundwater ranged from non-detect (less than 5 micrograms per liter [µg/L]) to 20 µg/L. Section F.2.1 summarizes the recent, validated analytical results for surface water and groundwater that were generated during the RI.

F.1.2 Purpose and Scope

F.1.2.1 Purpose

The purpose of this report is to describe the methods and results for the HHRA pertaining to PCE-contaminated groundwater, surface water (including stormwater), soil vapor, and indoor air within AOU-1. This report also includes a screening level ecological risk assessment. The site characterization data and assessment generated as part of the AOU-1 RI are presented in companion volume to this HHRA.

F.1.2.2 Scope

Although the scope of this HHRA is primarily to assess the VI pathway within AOU-1 to address chronic (i.e., long term) exposure to potential receptors, other exposure pathways were also assessed, including incidental exposure to surface water located in residential backyards and exposure to soil and homegrown produce impacted by contaminated surface water. The sampling approaches and decision making related to the assessment of the need for time-critical removal actions (TCRAs) (e.g., interim mitigation) to address VI were addressed as part of the RI activities (FE 2015). The collection and analysis of indoor air samples from structures within AOU-1 to address the need for TCRAs is addressed in other documents (FE 2015; EA 2015; EA 2016a,b; EA 2017a). The indoor air sampling results and other information were evaluated to determine if VI was occurring and concentrations of PCE and its degradation products related to VI were greater than the established action levels and whether an interim removal action was required. As a result of these investigations, interim actions are being conducted at one location - 0040-H. Because of the need for these actions, the assessment of VI at 0040-H is being addressed separately, as described in the Action Memorandum for Residence 0040-H (VA 2016).

VA is conducting removal actions at 0040-H in accordance with CERCLA guidance, the Federal Facility Agreement Section XVIII Removal and Emergency Actions, and Executive Order 12580 in coordination with EPA and UDEQ. Removal actions will be evaluated as part of OU-2 Feasibility Study, and closeout will be documented in a Removal Action Completion Report. VA, working collaboratively with UDEQ, EPA, Salt Lake City, and the Salt Lake County Health Department, will use the results of the HHRA described in this report as an aid in making decisions regarding actions necessary to manage risk related to PCE at the ESS area.

This HHRA followed a process that conforms to EPA risk assessment guidance documents (Section F.1.4). This process includes the following elements:

- Identification of contaminated media, available sampling data (Section F.2)
- Identification of COPCs (Section F.2.6)
- Identification of current and reasonable anticipated future human receptors (Section F.3)
- Identification of possible exposure pathways between the contaminated media and the human receptors (Section F.3.2)
- An evaluation of the completeness or incompleteness of the exposure pathways (Section F.3.2)
- An evaluation of the contaminants' toxicity (F.4)
- A quantitative estimate of potential human health risks (Section F.5)
- A discussion of the inherent uncertainties in quantifying potential risks and how these will be addressed during the HHRA (Section F.6).

F.1.3 Scientific Management Decision Points

Following are a selection of the scientific management decision points completed or anticipated in relation to the HHRA:

- The scope of the HHRA was discussed during a risk-assessment scoping conference call held on October 9, 2014. Representatives from EPA, UDEQ, the Agency for Toxic Substance and Disease Registry (ATSDR), VA, FE, and CH2M HILL attended the call. This report was prepared consistent with the discussion during the scoping call.
- Completion and Approval of the Risk Assessment Work Plan, Appendix E of the *Final Remedial Investigation Work Plan, AOU 1: East Side Springs, 700 South 1600 East PCE Plume, Salt Lake City, Utah* (FE 2015).
- Preliminary evaluation of indoor air sample data collected at Residence 0040-H in AOU-1 in support of this RI indicated PCE detections above the Tier 1 indoor air removal action level (RAL) of 41 $\mu g/m^3$ (VA 2016). TCE was also detected above the Tier 1 RAL of 2.1 $\mu g/m^3$ (VA 2016). VA installed a temporary vapor filtration system and initiated a filter replacement regime and periodic indoor air monitoring prior to commencing a TCRA. The TCRA was initiated in 2016 in accordance with an EPA and UDEQ-approved Action Memorandum dated 20 October 2016 (VA 2016) and the Work Plan, AOU-1 Time Critical Removal Action and Mitigation System Installation for the 700 South 1600 East PCE Plume Superfund Site (CTI and Associates, Inc. 2016). A VI mitigation system was installed at Residence 0040-H, replacing the temporary vapor filtration system, to reduce indoor air concentrations of PCE and TCE to below action

levels. The system included a carbon canister filtration unit connected to the house air flow unit. Air sampling was conducted prior to installation, during system startup and is conducted quarterly to evaluate the effectiveness of the system (VA 2016).

- Through submittal of this report and related discussions, the risk assessors will communicate the HHRA results to the UDEQ and EPA risk managers who will need to determine whether the information supports remedial action decision making.

F.1.4 Guidance Documents

This HHRA Report was prepared in accordance with EPA Office of Solid Waste and Emergency Response (OSWER) policy as defined by the Risk Assessment Guidance for Superfund (RAGS) guidance documents, including the following:

- Part A: Human Health Evaluation Manual (RAGS Part A) (EPA 1989)
- Part B: Development of Risk-based Preliminary Remediation Goals (RAGS Part B) (EPA 1991a)
- Part E: Supplemental Guidance for Dermal Risk Assessment (RAGS Part E) (EPA 2004)
- Part F: Supplemental Guidance for Inhalation Risk Assessment (RAGS Part F) (EPA 2009).

Other primary guidance and reference documents used in development of this report include the following:

- Office *of Solid Waste and Emergency Response Technical Guide for Assessing and Mitigating the Vapor Intrusion Pathway from Subsurface Sources to Indoor Air* (EPA 2015);

- *EPA Regional Screening Levels (RSL) Table: User's Guide* (EPA 2017a,b; EPA 2018a).

F.2 Data Evaluation

Multiple phases of investigations associated with the Site have produced information regarding the physical system and the nature, extent, fate, and transport of contamination between 1990 and 2014. A chronological list of historical investigations and the associated documentation is provided in Table 3-1 of the RI Report. These investigations informed the development of the RI Work Plan. Subsequent implementation of the RI has resulted in an extensive dataset related to the nature and extent of volatile organic compounds (VOCs) in AOU-1 groundwater, surface water, soil gas and indoor air along with information on site physical characteristics.

VI investigations for the AOU-1 RI were conducted for buildings within the ESS area and the pre-RI estimate of AOU-1 from 2015 to 2017 (EA 2016b; Appendix H-4 of the RI Report). Additional discussion of the sampling approach, sampling and analysis methods, and the data collected are discussed in the associated field data reports (EA 2016b; Appendix H-4 of the RI Report).

The purposes of this section are to 1) describe the process for determining which of the available data and information was useful and appropriate for use in the HHRA; and 2) describe the methods for distilling the HHRA inputs to the most relevant and useful information.

This section also presents the methods that will be used to define contaminant concentration terms consistent with the exposure scenarios and assumptions discussed in Section F.3.2. The overarching goal of this data evaluation is to select data that best represent current groundwater, surface water/stormwater, soil gas, indoor air contamination conditions, thereby increasing confidence in the HHRA results.

F.2.1 Data Selection

Not all data collected during the RI was directly useful for the HHRA. For example, some samples were collected for characterization of groundwater geochemistry and are not directly pertinent to assessing potential contaminant exposures. The following paragraphs describe the data selection process for AOU-1 analytical data helped form the basis for the exposure assessment (Section F.3.2).

F.2.1.1 Matrices

The data used in this risk assessment includes results from RI sampling of surface water from numerous springs, seeps, and a small spring-fed small pond, stormwater from mitigated spring water storm drains (diverted spring water), Salt Lake City stormwater lines, and the Jordan and Salt Lake City Canal, as well as sampling of shallow groundwater along and near the portion of the Wasatch Fault Scarp within the AOU-1 area. Indoor air sampling of residences and occupied structures was used to assess potential VI pathways and human exposures. Analytical results from groundwater and soil gas (near-slab) sampling were generated during the RI and were used to refine the CSM and assess the need for further investigation. However, these data were not used to directly assess current human exposures because indoor air data were available for that purpose.

F.2.1.2 Analytes and Methods

The RI analytical dataset for the AOU-1 consists predominantly of laboratory analytical results for VOCs. Validated analytical data from indoor-air samples analyzed using EPA Method TO-15 at an accredited laboratory were the primary HHRA inputs. Validated surface water/stormwater, groundwater, and soil data were also applied in validating the analysis of surface water and soil exposures provided in the Risk Assessment Work Plan (Appendix E of FE 2015).

Field screening data such as the indoor air and soil gas measurements made with the HAPSITE® portable gas chromatograph/mass spectrometer (GC/MS) were used for qualitative screening purposes only. In addition, other laboratory analyses, such as general water quality parameters, were excluded from the HHRA data set because they are not directly applicable to assessing exposures and risks.

F.2.1.3 Location and Date

Analytical data for groundwater, surface water/stormwater, soil, soil gas, and indoor air samples collected from within AOU-1 during the RI (Figures 6-1 through 6-5 of the RI Report) were included in the data evaluation.

F.2.1.4 Site Relatedness

The data included in the HHRA should represent impacts associated with PCE in groundwater. Reasons that VOCs may be present for other reasons include the following:

- PCE (and its daughter product TCE) have been commonly used for decades in a wide variety of consumer and commercial products, and they are among the most common groundwater contaminants in the U.S. Releases from other sites upgradient of AOU-1 and unrelated to VA operations could contribute to AOU-1 contamination.

- In addition, due to their widespread use, PCE and its daughter product TCE are commonly detected in indoor air (EPA 2012).

- Although not directly associated with PCE release, 1,4-dioxane was included at the request of EPA because of its use historically as a stabilizer for chlorinated solvents, notably 1,1,1-trichloroethane (TCA).

- The few commercial operations in AOU-1 including some that use fuels (auto repair shop, convenience store/gasoline station near the intersections of 800 South and 900 South with 1300 East (UDEQ 2012). During the investigation, fuel-related constituents were not identified.

Multiple lines of evidence were considered in assessing site-relatedness of indoor-air VOC concentrations, including: the results of real-time VOC analysis with and without building depressurization, analysis of VOC concentration ratios in subsurface media and indoor air, and the results of chemical product inventories. Analytical results found to be present at AOU-1 for reasons unrelated to the presence of PCE were excluded from the HHRA. The majority of RI indoor air analytical results were non-detect or were detections below screening levels and action levels. Evaluation of background VOCs is laborious, and it was more efficient to assess site relatedness only for those analytical results that exceeded screening levels. Therefore, the details of the site-relatedness evaluation are presented in Section F.2.6, Identification of Contaminants of Potential Concern.

The potential for VOCs in surface water, soil, homegrown produce, soil gas and groundwater to be site-related are further discussed and evaluated in Sections F.2.6 and F.3.2.

F.2.2 Data Quality Assessment

The RI groundwater, surface water, stormwater, soil, soil gas, indoor and outdoor air samples evaluated during the HHRA were collected, analyzed, and validated during the RI according to the RI Work Plan (FE 2015) and Quality Assurance Project Plan Update Revision 1 (QAPP) (EA 2016c). These documents specified procedures for each step of the data generation process, including planning, sampling, sample handling, laboratory and field analyses, recordkeeping, reporting, data validation, and data management. Adherence to the RI Work Plan and QAPP resulted in a quality analytical dataset. Data rejected during the validation process for any reason were excluded from the HHRA dataset.

Analytical data were reviewed to evaluate precision, accuracy, representativeness, comparability, completeness, and sensitivity. Acceptance criteria for evaluation of precision and accuracy are compared with the acceptance criteria defined in QAPP Update Revision 1 and EPA validation guidelines. The completeness and representativeness of the data are important components of assessing their usability for risk assessment. This involved evaluating the overall conceptual model and assessing whether the sufficient numbers of samples were collected at enough locations to adequately characterize the nature and extent of VOC concentrations and support estimates of reasonable maximum exposure (RME).

The most important observation from the sample location figures (Figure 5-1 and 5-2 of the RI Report) is the extent of indoor air sampling in areas with PCE and other COPCs detected in groundwater, surface water/stormwater, and soil gas. There is an even higher density of sampling in the areas southwest of East High School. This is because second and third phases of indoor air sampling were implemented in this area after evaluation of the earlier RI data showed this area to have higher PCE in groundwater, soil gas and indoor air than other parts of AOU-1 (EA 2016b; Appendix H-4 of the RI Report). There is ample spatial coverage to support evaluation of site risks across AOU-1, as shown in Figures 6-1 through 6-5 of the RI Report.

The information summarized above supports the conclusion that the indoor-air dataset is sufficiently complete and representative to support the risk assessment.

F.2.3 Reporting Limit Evaluation

Risk assessments for contaminated environmental media require numerical contaminant concentration data for the media of interest (e.g., soil, water, and/or air). These concentration data were used as inputs for calculations that estimate exposures and risks. For each analytical method used to generate these data, a concentration exists below which the analytes cannot be reliably detected or quantified. For this HHRA, this concentration is termed the reporting limit (RL), defined as the laboratory's reported method detection limit (MDL) corrected for sample dilution and other sample-specific adjustments (EPA 1992).

Tables F2-2, F2-3, and F2-4 in Attachment 2 provide a comparison of the RLs to EPA's RSLs and identify cases where non-detect results exceed conservative screening levels. A certain number of such cases is normal and expected, most commonly due to elevated concentrations of one analyte, resulting in the need for dilutions and elevated reporting limits for other analytes in a given sample. The uncertainties associated with such cases will be addressed in the uncertainty evaluation (Section F.6).

F.2.4 Data Reduction

Following the data selection (Section F.2.1) and data quality assessment (Section F.2.2) procedures described, further data reduction was to resolve instances where multiple valid analytical results exist for a single analyte from a single sample. This complication results from several situations, including when 1) analytical results exist for both a parent sample and a field duplicate sample; 2) multiple analytical results exist if serial dilutions were performed when an analyte was out of the analytical instrument's calibration range; 3) an analyte was measured by more than one analytical method; or 4) samples have been reanalyzed to address analytical quality issues.

When multiple analytical results exist, the data were reduced using the following procedures:

- For duplicate samples, when each sample has concentrations reported above the sample quantitation limit (SQL), the higher of the two concentrations was used.
- For duplicates and dilutions for which neither sample has concentrations measured above the SQL, the lower of the two SQLs was used.
- For duplicates and dilutions in which one sample contains a result measured above the SQL and another has a result reported as below the SQL, the result measured above the SQL was used.
- For dilutions, the result for the lowest dilution that was within the instrument's calibration range for the specific analyte was used.

Table F2-1 of Appendix F2 provides a tabular summary of the validated and reduced datasets for groundwater, surface water, soil gas and indoor air. In accordance with the RIWP, three soil samples were collected within AOU-1: one sample at location SW-01 (sample identified as SS-01) in an area where PCE was not detected in the associated shallow groundwater sample; and two samples near springs at locations SW-09 and SW-26 (samples identified as SS-09 and SS-26) where shallow groundwater samples exhibited elevated PCE concentrations. The soil sample SS-01 collected at location SW-01 was not used in identification of COPCs step (Section F.2.6) but is provided for informational purposes. No PCOPCs were detected in the SS-01 soil sample.

F.2.5 Environmental Modeling

Based on the evaluation described in the Exposure Assessment (Section F.3), VI was the primary pathway evaluated quantitatively during the HHRA. Since measured indoor air VOC concentrations serve as the exposure point concentration (EPC) for this pathway, no modeling of contaminant partitioning between media was necessary to assess VI.

However, some of the analysis and recommendations presented in this report incorporated modeling of cross-media partitioning, including the following:

- Partitioning from irrigation water to homegrown produce using the Briggs and Travis & Arms models (Section F.3.4.2);
- Partitioning from surface water to soil using linear adsorption (Kd) model (Section F.3.4.2)
- Partitioning from soil air using the particulate emission factor and volatilization factor models intrinsic to the residential soil RSLs (Section F.3.4.2).

While soil gas and groundwater data were not used quantitatively to assess VI risks in the HHRA, they were used to refine the overall AOU-1 CSM and, thus factored into the HHRA data quality and uncertainty analyses. VI screening levels for soil gas and groundwater were calculated in the Vapor Intrusion Screening Levels and Removal Action Levels Technical Memorandum (Appendix F of FE 2015). These screenings incorporated attenuation factors (AFs) that address the partitioning from soil gas and groundwater to indoor air.

In each of the cases described previously, well-established models recommended in current EPA guidance were selected. The guidance supports assessment that these models result in realistic to conservative estimates of inter-media contaminant transfer.

F.2.6 Identification of Contaminants of Potential Concern

PCE, TCE, and their principal degradation products in water (cis-1,2- DCE, VC) were selected as the PCOPCs (FE 2015; EA 2015; EA 2016a,b,c; EA 2017a). Trans-1,2-DCE was not selected as a PCOPC due to the lack of detections in groundwater samples collected in 2016. In addition, 1,4-dioxane was included as a PCOPC at the request of EPA because of its use historically as a stabilizer for chlorinated solvents, notably 1,1,1-TCA. However, 1) there is no knowledge of 1,1,1-TCA use associated with historical VA operations; and 2) 1,4-dioxane was not commonly used in association with PCE. Other analytes included in the site analytical dataset will be deemed not attributable to the site based solely on the fact that they are not PCE daughter products.

The concentration data from the groundwater, soil gas, indoor air, outdoor air, surface water and soil samples collected in the AOU-1 were compared against RBSLs (listed in Tables 3-6 and 3-7 of the RI Report) to identify COPCs for inclusion in the quantitative risk characterization. PCOPCs were identified as COPCs if the maximum detected concentration in one or more media was greater than a RBSL. The following RBSLs were used in the comparison process:

- Indoor air: residential and industrial indoor air RSL (EPA 2017a)

- Surface water: direct-contact RSLs calculated using the EPA online calculator (EPA 2018a) modified using site-specific information and RBSLs calculated based on consumption of homegrown produce (see Section F.3.4.2)

- Soil: residential soil and industrial RSL (EPA 2017a)

- Soil gas: residential and industrial VI screening levels (VISLs) (EPA 2017c)

- Groundwater: residential and industrial VISLs (EPA 2017c).

Tables F-2 to F-4 summarize the sample results of the groundwater, soil gas, indoor air, outdoor air, surface water and soil samples included in the HHRA data set along with screening level comparisons to risk-based screening levels.

Based on the comparison of maximum detected concentrations to RBSLs, the following chemicals were identified as COPCs: PCE, TCE, 1,4-dioxane, and VC. Cis-1,2-DCE was the only PCOPC that was not identified as a COPC for inclusion in the quantitative risk characterization. The maximum detected groundwater concentrations of PCE and TCE exceeded the residential and commercial/school worker screening levels. PCE and TCE in soil gas exceeded the residential screening levels, while 1,4-dioxane, PCE, TCE, and VC exceeded the residential indoor air RSLs. TCE in indoor air and PCE in soil gas exceeded the commercial/school workers screening levels. Evaluation of the exceedance of the VI-related screening levels (groundwater, soil gas, and indoor air) are discussed further in Section F.5, Risk Characterization. None of the PCOPCs in surface water and soil exceeded the screening levels. Calculation of the screening levels related to exposure to surface water and soil are presented in Section F.3.4.2. The following chemicals were not detected: VC in groundwater; 1,4-dioxane in soil gas; cis-1,2-DCE in indoor air; 1,4-dioxane and VC in surface water; and 1,4-dioxane, cis-1,2-DCE, TCE and VC in soil.

F.3 Exposure Assessment

Exposure assessment is a multistep process that allows for the development of estimates for human exposure to a COPC—in this case, PCE and potentially its daughter products in groundwater, surface water, soil vapor, and indoor air. The exposure assessment was based on site-specific conditions, called “exposure settings” that affect the degree of a receptor’s exposure to the media containing COPCs. The specific routes (or exposure pathways) by which environmental media are contaminated, how humans can make contact contaminated media are then described. The specific exposure routes addressed in this HHRA are summarized in graphic form in Figure F-1, Conceptual Site Exposure Model. Following that, the potential concentration of PCE and degradation products to which a human could be exposed by each pathway was developed. The relationships among setting, pathways, and concentration are described in a series of equations that estimate the human exposure to media containing COPCs at AOU-1 through applicable intake routes (e.g., inhalation).

There must be a complete exposure pathway between the contaminated media and the human receptor for a potential human health risk to exist due to the presence of a chemical in the environment. If complete pathways are shown to exist, it is necessary to estimate the amount of contaminant a representative receptor could be exposed to during its lifetime to estimate the degree of risk associated with the contaminated media. The HHRA incorporates the exposure assessment methods and assumption described in this section, which includes the following elements: 1) a description of the exposure setting and identification of appropriate human receptors; 2) identification of potentially complete exposure pathways and assessing their significance; 3) a description of appropriate contaminant concentration terms that account for each type of contaminated media and the significant exposure pathways; and 4) showing the methods for quantifying lifetime exposures.

The exposure estimates will be based on a RME, which is defined by EPA as "the highest exposure that is reasonably expected to occur at a site." The RME is not meant to be an upper-bound exposure estimate wherein each of the underlying factors is selected to result in the highest possible exposure. EPA rejected the upper-bound approach in favor of the RME approach because the upper-bound approach can result in exposure estimates that may be above the range of possibility (EPA 1989).

The RME approach provides estimates covering the general population as well as sensitive subpopulations, such as those who may spend more time in an exposure setting or have greater-than-typical contact with contaminated media. The RME reasonably bounds exposures for potential sensitive subpopulations.

F.3.1 Contamination Source

The primary source of chlorinated solvent contamination at AOU-1 is groundwater containing PCE, TCE, and lower levels of DCE. A sewer line originating from a former dry-cleaning facility in the VAMC was identified as a potential source contaminating groundwater moving into AOU-1 (UDEQ 2000, UDEQ 2012). This contaminated groundwater moves into the East Side Springs area from the northeast and flows to the southwest. Groundwater flow may redistribute contaminants within the shallow groundwater environment or transfer them to deeper aquifers. Possible sources of up gradient groundwater chlorinated solvent contamination is being investigated under OU-2 as part of the site-wide groundwater investigation.

The presence of TCE in the ESS area may be a break down product of PCE, or it may have been introduced to the site as a secondary plume. Following the 2010 release of crude oil from a pipeline, Salt Lake City identified 25 springs along the Wasatch Fault line in the area between 800 South and Michigan Avenue (approximately 1300 South) and between 1100 East and 1300 East (UDEQ 2012). During the investigation, although constituents of crude oil were not identified, PCE was detected in springs and in a storm drain manhole (UDEQ 2012).

F.3.2 Fate and Transport

Contaminants in groundwater can migrate by advection and dispersion, volatilize to soil gas and ultimately disperse or diffuse into the atmosphere, or become adsorbed to aquifer soils introducing secondary and tertiary sources of contamination.

The Wasatch Fault appears to have some influence on the hydraulic properties and flow for the ESS area. Generally, groundwater flow is perpendicular to the fault; however, neither the fault nor the spur are barriers to groundwater flow, which would cause smoothing or flattening of the potentiometric surface map have been observed in ESS area. In addition, the presence of PCE in springs and seeps downgradient of the fault further suggests that the East Bench Fault Spur is not a flow barrier.

The elevated concentrations of PCE and the distribution of PCE concentrations appear to correspond to the steeper hydraulic gradients between the East Bench Fault and the East Bench Fault Spur. Advective or physical flow are primary methods for contaminant transport as indicated by increased migration in the areas of faster flow.

PCE-impacted groundwater daylights in several springs and seeps in the ESS area, potentially leading to PCE-impacted surface water (e.g., drains, ponds, and sumps) and flow along the surface. PCE-impacted surface water poses a risk to human receptors that may come into contact or ingest the surface water.

The secondary sources of chlorinated solvent contamination are soil and vapor as soil gas. Not only can soil gas migrate in the vapor phase, it partitions into pore water and into the sorbed-phase on soil matrix. The contaminated pore water in turn can leach to the water table where it contaminates groundwater. Pore water can leach back into groundwater, depending on recharge rates and water level fluctuations. While these that have been observed at the VAMC, they have not been explored in detail as transport mechanisms from soil to groundwater at AOU-1. The amount of sorbed-phase contamination on soil matrix is a function of the fraction of organic carbon (f_{oc}). While f_{oc} analysis was not conducted of the soil in the AOU-1 area, it is expected that the fraction of organic carbon is relatively low based on soil mapping conducted by the NRCS. The NRCS on-line soil report shows the Bingham loam is present in the AOU-1 area with f_{oc} values ranging from 0.02 to 0.008 (NRCS 2018). A conservative f_{oc} value of 0.002 – compared to the f_{oc} for the Bingham loam – was used in the derivation of the risk-based screening levels used in the HHRA (Table F1-2).

The vapor phase acts as both a secondary and tertiary source. Chlorinated solvents can enter the vapor phase directly from groundwater and surface water becoming soil gas, water and soil gas can adsorb onto the soil matrix and continue to volatilize once groundwater has retreated. As contaminants partition into the vapor phase, migration occurs primarily via diffusion and advection. Advection processes in the vadose zone may result from barometric pumping, which induces subsurface pressure gradients in soil. Barometric pumping can be caused by the natural variations like seasons and weather. PCE, TCE, and cis-1,2 DCE will form a soil gas denser than air, which will in turn migrate to depth via negative buoyancy. This flux can be enhanced with barometric pumping, with negative buoyancy and advection working in tandem. VI rates into structures can also influenced by barometric pumping; however, instead of being driven directly by the seasons or weather, it can fluctuate with in-home climate control such as heaters and air-conditioners/swamp coolers.

AOU-1 is located in a predominantly residential area along the Wasatch Fault Scarp where PCE has been detected in surface water associated with seeps and springs along the fault. The location of the seeps and springs near residences and other occupied structures and the shallow depth-to-groundwater has raised concerns regarding potential VI into homes and businesses. VOC-impacted groundwater is the primary contaminated media from which subsequent impacted media are derived. VOCs present at the water table in groundwater may volatilize into soil gas where it may enter occupied structures through VI pathways.

F.3.3 Exposure Setting

The following paragraphs describe a qualitative site evaluation in including 1) the location of contamination; 2) physical characteristics; 3) current and reasonable future land uses; and 4) potentially exposed populations. The purpose of this evaluation will be to identify a representative range of human receptors to include in the HHRA.

The AOU-1 portion of the Site is currently developed, with well-established residential neighborhoods (predominantly single family residential properties) with several schools, churches, and small businesses located along the major streets. The public land area within AOU-1 is accessible to residents and visitors due to the location in an urban setting. The residential areas where the East Side seeps discharge PCE- and TCE- containing water are also readily accessible to residents and visitors. Salt Lake City's Master Plan (Salt Lake City 2005) shows that expected future land use at AOU-1 is consistent with current land use.

F.3.4 Exposure Pathways

For exposure to occur, a complete pathway must exist by which contamination moves from the contaminated media and is ingested, inhaled, or dermally absorbed by a receptor. An exposure pathway will be considered potentially complete in the following situations:

- Surface water, soil, groundwater, soil vapor, or indoor air is contaminated with PCE, TCE, cis-1,2-DCE, VC, or 1,4-dioxane.
- A mechanism exists to retain the contamination at its current location where exposure could occur, or a transport mechanism exists that can move the contaminants to another location where exposure could occur—when transport occurs, the primary contaminated medium and the exposure medium may be different, as in the case of airborne volatiles derived from contaminated groundwater.
- A point of potential human contact with a contaminated medium exists.
- A route for chemical intake by a receptor (e.g., ingestion, inhalation, and dermal contact) exists at the exposure point.

If one of these factors is missing, the exposure pathway is incomplete and does not pose a health hazard. In addition, cases may exist in which a pathway is hypothetically complete but is not likely to result in significant exposure. The term "significant" in this case means that estimated lifetime exposures could result in estimated excess lifetime cancer risks (ELCRs) in excess of 1×10^{-6} or a non-cancer hazard quotient (HQ) above 1. These are the risk management criteria established in the NCP (40 CFR Section 300).

Figure F-1 is a conceptual site exposure model (CSEM) showing the plausible potential exposure pathways for AOU-1. The CSEM identifies those pathways that are potentially complete and were quantitatively evaluated in the HHRA. Consistent with the concept of an accelerated operable unit, the CSEM focuses on potential current, plausible exposure pathways between known contaminated media and actual receptors. As such, hypothetically complete, future exposure pathways, such as ingestion of groundwater through tap water, uses were not addressed as part of AOU-1 but will be addressed as part of the baseline risk assessment for the Site.

F.3.4.1 Vapor Intrusion

The CSEM identifies AOU-1 shallow, VOC-impacted groundwater as the primary contaminated media from which subsequent impacted media are derived. VOCs present at the water table in groundwater may volatilize into soil gas where it may enter occupied structures through VI pathways. Data generated and analyzed during the RI shows residences with indoor air PCE concentrations above screening levels in areas where shallow groundwater and soil gas also contain PCE. Based on the analysis presented in Section 6 of the RI Report, VI is potentially complete in AOU-1 and further evaluation is warranted.

VI investigations were conducted for 38 structures from 2015 to 2017 (EA 2016b; Appendix H-4 of the RI Report). Additional discussion of the sampling approach, sampling and analysis methods, and the discussions related to the completeness and significance of the VI exposure pathway are discussed in the associated field data reports (EA 2016b; Appendix H-4 of the RI Report).

F.3.4.2 Potentially Complete but Insignificant Exposure Pathways

Field observations show the presence of seeps and springs along the AOU-1 hillside (Figure 1-2 of the RI Report), and RI samples collected from these surface water features prior to and during the RI had detectable concentrations of PCE (see Tables F-2 and F-3). It is plausible that people could be exposed directly to this surface water, to surface soil that has adsorbed VOCs from the surface water, or to outdoor air impacted by volatilization or emission of particulates from contaminated soil. In addition, homegrown produce could be irrigated with VOC-impacted water and uptake VOCs. Each of these potentially complete exposure pathways is discussed in more detail in the following paragraphs. As shown on the CSEM, analysis of these pathways shows that they are unlikely to contribute significantly to human health risks.

Surface Water. People could be exposed directly to contaminated surface water while doing yard work, for example. In this case, VOCs could be absorbed through the skin of the hands or feet (dermal contact) or ingested through incidental contact between the hand and mouth. Inhalation exposures could occur from outdoor air receiving VOCs through volatilization from surface water.

Surface water RBSLs were calculated for this scenario based on EPA's RSL level online calculator tool (EPA 2017b). Only dermal exposures were considered for the surface water scenario. This is because the oral and inhalation pathways for exposure to VOCs daylighting in seeps and springs are accounted for with the soil exposure pathways. In other words, the VOCs in water are assumed to adsorb to soil to which residents could be exposed through incidental soil ingestion or volatilization and particulate emissions to air.

The exposure factors for surface water exposures (duration, frequency, etc.) were set at values intended to represent conservative estimates for a resident contacting spring or seep water with their hands and feet while doing yard work or gardening. It was assumed that someone could be in contact with the water 12 times per month (roughly 3 times per week) for the 8 non-winter months of the year with each event lasting one-half hour. This is likely greater than a reasonable maximum exposure because it is unlikely a resident would spend that much time in direct contact with PCE-impacted surface water. Attachment 2 summarizes the assumptions, methods, and screening levels for this scenario. The known VOC surface water concentration at AOU-1 are far below the site-specific screening levels (Table F-3) and thus, the surface-water direct-contact pathway is considered *potentially complete but insignificant* on the CSEM.

Soil. VOCs in seeps and springs could partition to organic matter in soil, which residents could contact while doing yard work, gardening, or other outdoor activities. This pathway was assessed by two methods:

1. The PCOPC concentrations measured in soil samples from two seep or spring locations were compared to residential soil RSLs (Table F-4). The measured concentrations were a factor of 1,500 or greater below the screening levels.

2. Calculating the soil concentrations corresponding to AOU-1 surface water concentrations measured during the RI (see Attachment 3 of the Risk Assessment Work Plan [Appendix E of FE 2015]) using a linear soil-water portioning coefficient (Kd). The Kd values were derived from the EPA RSL tables. These estimated soil concentrations were then compared to the residential soil RSLs (EPA 2017a) and shown to be orders of magnitude less than the RSLs. Thus, the surface-water direct-contact pathway is considered *potentially complete but insignificant* on the CSEM.

Homegrown vegetables. It is possible that garden plants irrigated with water from the seeps and springs could uptake VOCs, which could then make up a portion of a resident's diet. Two lines of evidence were considered in assessing the potential significance of this exposure pathway, namely, 1) scientific literature on VOC plant uptake and 2) modeling of potential plant uptake and dietary exposure.

Researchers at Utah State University conducted multi-year field and laboratory studies to assess the uptake of TCE into edible and non-edible plant portions (Doucette et al. 2007). Samples were collected from residential plots with shallow groundwater with TCE concentrations up to 300 µg/L. While TCE was found in tree trunks, showing that plant uptake was occurring, TCE was not detected above 0.1 µg/kg (fresh weight) in edible fruits and vegetables, including apples, peaches, tomatoes, and carrots. A concurrent laboratory study using fruit trees irrigated with radiolabeled TCE (500 µg/L) likewise did not detect TCE in the edible fruits. These findings are relevant to PCE due to the PCE's and TCE's similar chemical structure and physical properties and they suggest that detectable fruit and vegetable uptake of PCE and its chlorinated-ethane daughter products is unlikely at AOU-1.

To explore the question of uptake into homegrown produce further, two empirical models recommended by EPA (EPA 2005) were used in conjunction with estimates of both aboveground and belowground vegetable consumption to calculated conservative screening levels for irrigation water. The Travis & Arms model and the Briggs model were used as described in Attachment 4. Estimates of the potential homegrown produce ingestion rates were based on values in EPA's Exposure Factors Handbook (EFH) (EPA 2011). The residential lots in AOU-1 are typically in the range of 0.1 to 0.2 acre, most of which is consumed by structures, driveways, and non-garden landscaping. Therefore, it is unlikely that the national statistics in the EFH overestimate consumption rates for an urbanized environment such as AOU-1, which also has a shorter growing season than many of the regions included in the EFH due to the latitude and elevation of AOU-1.

Attachment 4 of the Risk Assessment Work Plan (Appendix E of FE 2015) summarizes the equations, assumptions and results of the homegrown produce screening level calculations. The lowest PCE screening level value of 300 µg/L is 4 times higher than concentrations than the maximum detected in surface water (82 µg/L) and shallow groundwater (61µg/L) at AOU-1 (Table F-3). As noted previously, the partitioning models and exposure assumptions likely result in overestimation of potential exposures. In addition, the screening levels do not account for VOC mass losses associated with 1) water agitation and increased volatilization during the irrigation process; 2) plant transpiration and metabolism of VOCs; and 3) food preparation (e.g., peeling, cooking, and canning). Based on 1) the two lines of evidence presented; 2) the multiple levels of conservatism incorporated into this assessment; and 3) current site knowledge, the homegrown produce pathway is considered *potentially complete but insignificant* on the CSEM.

F.3.5 Exposure Point Concentrations

The EPCs are the contaminant concentration in the exposure medium a receptor may contact over the exposure period. For AOU-1, validated VOC analytical results from indoor air samples collected during the RI were the basis of the EPCs. The concentrations from each sample are considered the EPCs for this HHRA. This was done in order to determine cumulative estimate risks on a sample-by-sample basis. There is insufficient data for any given VOC and building to calculate central tendency concentrations such as the mean or upper confidence limit on the mean. Tables F3-1 to F3-3 summarize the sample-by-sample EPCs used in the risk calculations.

F.3.6 Quantification of Exposure

RME estimates were calculated using methods described in EPA's RAGS series of guidance—in particular, RAGS Part A (General) [EPA 1989] and Part F (Inhalation) [EPA 2009]. Exposure factors were selected such that the combination of the factors resulted in an exposure estimate that reflects a reasonable maximum case. By design, the estimated RME intakes are higher than those expected to be experienced by most of the exposed population.

For the VI inhalation pathway, a lifetime averaged exposure concentration will be estimated from exposure models that combine various exposure factors related to behavior, such as exposure time, frequency, and an exposure averaging time.

Residential exposures will be age weighted (assuming 6 years as a child and 20 years as an adult) for a total exposure duration of 26 years (EPA 2014). Separate exposure equations are provided in the following paragraph for the adult (commercial/school worker) and age-weighted (residential) scenarios.

The variables common to most of the exposure quantification calculations include the following (Table F-5):

- **Exposure Duration** (years): The number of years that a receptor is potentially exposed to contamination.

- **Exposure Frequency** (days per year): The number of days per year a receptor spends in the exposure location.

- **Exposure Time** (hours per day): The amount of time a receptor spends in an exposure setting on a daily basis (e.g., inside a building).

- **Averaging Time** (days): For cancer effects, the dose (oral) or concentration (inhalation) averaged over an assumed lifetime of 70 years (25,500 days); non-cancer doses averaged over the period of exposure.

These common variables may be receptor or age specific. The value assigned to each variable for these specificities is presented in and are consistent with EPA's most recent guidance (EPA 2014). Equations 3-1 and 3-2 of the Risk Assessment Work Plan (Appendix E of FE 2015) summarize the general approach to incorporating the exposure to estimate the lifetime average exposure concentration for use in estimating cancer and non-cancer risks. Certain calculations for TCE and VC are different than the general approach shown below due to the underlying toxicity evaluation approach (presented in Attachment 5 of the Risk Assessment Work Plan [Appendix E of FE 2015]).

F.4 Toxicity Assessment

The toxicity assessment allows for estimation of potential human health effects due exposure to the COPCs. The toxicity factors inherent to each COPC, combined with the results of the exposure assessment based on site-specific conditions, allow for an overall estimate of non-carcinogenic hazards and carcinogenic health risks associated with exposure COPCs at AOU-1.

The relationship between the magnitude of exposure to a chemical from environmental media and the likelihood of adverse health effects to potentially exposed populations was incorporated into the toxicity assessment step. The toxicity assessment will provide, where possible, a numerical estimate of the increased likelihood of adverse effects associated with chemical exposure (EPA 1989) as discussed in the following subsections.

F.4.1 Hazard Characterization

Hazard characterization identifies the types of toxic effects a chemical can exert. For the human health toxicity assessment, toxicity effects were divided into two broad categories—non-carcinogenic effects and carcinogenic effects. This classification is selected because health risks were calculated in a different manner for carcinogenic and non-carcinogenic effects.

Carcinogens are those chemicals known or reasonably suspected to cause cancer following exposure. Non-carcinogenic effects cover a wide variety of systemic effects, such as liver toxicity or developmental effects. Some chemicals (such as PCE) are capable of eliciting both carcinogenic and non-carcinogenic responses and were evaluated for both. Information considered in assessing carcinogenicity includes human studies of the association between cancer incidence and exposure, as well as long-term animal studies under controlled laboratory conditions. Other supporting evidence considered includes short-term tests for genotoxicity, metabolic and pharmacokinetics properties, toxicological effects other than cancer, structure-activity relationships, and physical and chemical properties of the chemical.

For non-cancer effects, toxicity values were derived based on the critical toxic endpoint (i.e., the most sensitive adverse effect following exposure). These potential non-cancer effects were assessed based on data from human exposures or from controlled laboratory studies.

F.4.2 Toxicity Values

Inhalation reference concentrations (RfCs) were used to evaluate potential adverse non-cancer health effects (i.e., hazards). Inhalation unit risk (IUR) factors were used to evaluate potential cancer risks. A hierarchy of sources for toxicity values is presented in the User's Guide for the RSL Table (EPA 2017b). The following hierarchy will be used for the HHRA and includes the following tiers (in order of preference):

- **Tier 1: EPA's Integrated Risk Information System (IRIS).** IRIS is an online database that contains EPA-approved reference doses (RfDs), RfCs, IURs, and slope factors. It also contains health risk and EPA regulatory information on specific chemicals. The IRIS database is available online (EPA 2018b) through the EPA National Center for Environmental Assessment in Cincinnati, Ohio. RfDs and slope factors have undergone extensive review over many years and are recognized as high-quality, agency-wide consensus information.

- **Tier 2: EPA's Provisional Peer-reviewed Toxicity Values. T**he Office of Research and Development/National Center for Environmental Assessment/Superfund Health Risk Assessment Technical Support Center develops provisional peer-reviewed toxicity values on a chemical-specific basis when requested by EPA's Superfund Program.

- **Tier 3: Other Peer-reviewed Toxicity Values. T**ier 3 includes additional EPA and non-EPA sources of toxicity information. EPA recommends using Tier 3 sources that have a clear and transparent basis for toxicity values and are publicly available. Examples of Tier 3 sources include the following:

  - ATSDR minimal risk levels

- California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, *Toxicity Criteria Database* (California Environmental Protection Agency 2017).

- EPA's Health Effects Assessment Summary Tables (HEAST) (EPA 1997)—Provided by EPA OSWER, HEAST is a compilation of toxicity values published in various health effects documents issued by EPA. HEAST provides a listing of provisional RfDs and slope factors that have undergone agency review but have not achieved agency-wide consensus.

F.4.2.1 Non-cancer Effects

Non-cancer inhalation toxicity was quantified through use of inhalation RfCs. The RfC has units of milligrams per cubic meter. As defined in RAGS Part F, the RfC is "an estimate (with uncertainty spanning perhaps an order of magnitude) of a continuous inhalation exposure to the human population (including sensitive subgroups) that is likely to be without appreciable risk of deleterious effects during a lifetime." The RfC is derived after a review of the health effects database for a chemical and after identification of the most sensitive and relevant endpoint along with the principal study or studies demonstrating that endpoint. EPA chemical managers use uncertainty factors to account for recognized uncertainties in the extrapolations from the experimental data conditions to an estimate appropriate to the assumed human scenario (EPA 2009). RfCs that were applied in the HHRA are summarized in Table F-6**.**

F.4.2.2 Cancer Effects

Inhalation-related carcinogenicity is quantified through use of the IUR factor. The IUR has units of cubic meter per microgram $(\mu g/m^3)^{-1}$, or the inverse units of air concentration. The IUR is defined in RAGS Part F as "the upper-bound excess lifetime cancer risk estimated to result from continuous exposure to an agent at a concentration of 1 $\mu g/m^3$ in air" (EPA 2009). Similar to the oral slope factor, the IUR is calculated by a linear extrapolation from exposures observed in the animal or human occupational study. The cancer slope factors and unit risk factors that were applied in the HHRA are summarized in Table F-5.

F.5 Risk Characterization

This section summarizes the approach used to develop the human health risk estimates for the AOU-1 VI pathways and presents a quantitative risk characterization for groundwater, soil gas and indoor air samples as part of the VI exposure pathway. As noted in Section F.3, surface water and soil and homegrown produce potentially impacted by surface water were previously assessed and quantitative risk characterization is not required.

In this risk characterization step, quantification of risk is accomplished by combining the results of the exposure assessment (estimated chemical intakes) with the results of the dose-response assessment (toxicity values established in the toxicity assessment) to provide numerical estimates of potential health effects. The quantification approach differs for potential cancer (carcinogenic) effects and non-cancer (non-carcinogenic) effects, as described in the following subsections. The risk characterization results for each type of effect, receptor and exposed media are included in this section.

F.5.1 Cancer Risk Estimation

For carcinogens, the ELCR represents the incremental probability that a representative receptor will develop cancer over a lifetime because of exposure to a particular carcinogen or a set of carcinogens

(EPA 1989). Site-related ELCRs were calculated using Equation 3-4 of the Risk Assessment Work Plan (Appendix E of FE 2015). The potential cumulative cancer effects from exposure to multiple chemicals was addressed by calculating a cumulative ELCR, which is the sum of the ELCR values for individual chemicals. Uncertainties introduced by this simple summation approach were addressed during the uncertainty evaluation.

F.5.2 Non-cancer Hazard Estimation

The potential for individuals to experience effects other than cancer were evaluated by comparing a lifetime averaged inhalation exposure concentration over a specific exposure period with an RfC developed for a similar exposure period. This comparison takes the form of a ratio termed the HQ, which was calculated by dividing the lifetime average concentration by the RfC as shown in Equation 3-3 in the Risk Assessment Work Plan (Appendix E of FE 2015). The HQ is not a mathematical prediction of the incidence or severity of effects (i.e., probability) but is instead a numerical index (i.e., a ratio) that can be used to assess whether the estimated exposure may present a potential health threat. When the daily intake or estimated lifetime exposure concentration of a chemical exceeds the RfD or RfC (i.e., HQ greater than 1), a potential exists for non-cancer health effects.

The potential cumulative non-cancer effects from exposure to multiple chemicals were addressed by calculation of a hazard index (HI), which is the sum of the HQ values. This approach assumes that the non-cancer hazard associated with exposure to more than one chemical is additive; therefore, synergistic or antagonistic interactions between chemicals are not accounted for. The HI may exceed 1 even if all the individual HQs are less than 1. In this case, the chemicals may be segregated by similar mechanisms of toxicity and toxicological effects or target organs. Separate target-organ-specific HIs may then be derived according to mechanism and effect.

F.5.3 Risk Management Criteria

The NCP (40 CFR Section 300) establishes acceptable risk criteria for carcinogens and for “systemic toxicants” (i.e., chemical exhibiting non-cancer effects). The calculated risk results are presented in the context of the acceptable levels described in the NCP (40 CFR Section 300):

- For chemicals with cancer-causing properties, ELCR estimates are compared with the risk-management range of 1×10^{-6} to 1×10^{-4} (1 excess cancer case over a lifetime per a population of 1 million to 1 per 10,000), as opposed to a single value. ELCR values less than this range indicate no further action is required while values greater than this range usually indicate the need for further action. ELCR values within this range could warrant a risk management decision that includes evaluating site-specific characteristics and exposure scenario factors to assess whether further action (e.g., remediation or mitigation) is warranted (EPA 1991b).

- For non-cancer effects estimated using the exposure and toxicity evaluation methods described previously, the acceptable exposure level would result in an HI less than one. HI values greater than one 1 indicate that there is some potential for adverse non-cancer health effects associated with exposure to the contaminants of concern (EPA 1991b) and generally the need for remedial action. The HI estimates evaluated are for the chemicals that target the same system or organ in the human body (i.e., systemic effects).

EPA uses the 1×10^{-6} to 1×10^{-4} risk range as a “target range” within which the Agency strives to manage risks as part of a Superfund cleanup (EPA 1991b). In practice, if cumulative ELCRs are between 1×10^{-6} to 1×10^{-4}, risk managers will weigh site-specific information in determining the need for future action, including exposure-related factors (such as exposure pathways and exposure to sensitive persons), technical factors (such as detection limits and background levels), and uncertainty factors (e.g., representativeness and reliability of sampling data, weight of scientific evidence regarding chronic health effects).

Although this HHRA produces numerical estimates of risk, these numbers might not predict actual health outcomes because they are derived primarily from hypothetical assumptions. Their purpose is to provide a frame of reference for risk management decision-making. Any actual risks are likely to be lower than these estimates and could even be zero. Interpretation of the risk estimates provided should consider the nature and weight of evidence supporting these estimates and the magnitude of uncertainty surrounding them.

F.5.4 Residential Exposure Scenario

A summary of the risk estimates by exposure scenario for each exposure medium – groundwater, soil gas, and indoor - is presented in Tables F-7 to F-11 and discussed below. Risk estimate tables are provided in Appendix F3.

F.5.4.1 Indoor Air HAPSITE® Results

The indoor sampling results collected in 2016 and 2017 using the HAPSITE® were used to evaluate the need for future sampling to assess potential VI risk for current residential receptors (FE 2015). Only a limited number of indoor air HAPSITE® results were greater than the indoor air RBSL (i.e., the EPA [2017a] residential indoor air RSL based on a target cancer risk of 1×10^{-6} or a non-cancer HQ of 1, whichever is lower): samples from locations 0053-H and 0054-H (Table F-7). EPA Method TO-15 indoor air samples were not collected at location 0054-H as the HAPSITE® and pressure control data suggested that indoor air TCE concentrations resulted from an interior background source(s) or residual TCE from historical activities in the shop (Appendix H-4 of the RI Report). A canister (TO-15) sample was collected from location 0053-H, because the HAPSITE® samples exceeded the residential indoor air RBSL.

The indoor sampling results collected in 2016 and 2017 using the HAPSITE® were used to evaluate the need for future sampling to assess potential VI risk for current residential receptors (FE 2015). Only a limited number of indoor air HAPSITE® results were greater than the RBSL samples from 0045S, 0053-H and 0054-H. Samples from 0045S, a location involving non-residential land use scenario, exceeded the residential RBSLs but not the commercial/school worker scenario RBSLs. EPA Method TO-15 indoor air samples were not collected at 0045S and 0054-H as the HAPSITE® and pressure control data suggested that indoor air TCE concentrations resulted from an interior background source(s) or residual TCE from historical activities in the shop (Appendix H-4 of the RI Report) (Table F-11). A canister (TO-15) sample was collected from 0053-H, because the HAPSITE® samples exceeded the residential indoor air RBSL.

A TO-15 sample was collected at 0053-H and is evaluated in Section F.5.4.2.

F.5.4.2 Indoor Air TO-15 Canister Results

The indoor sampling results collected in 2016 and 2017 using the HAPSITE® were used to evaluate the need for future sampling to assess potential VI risk for current residential receptors (FE 2015). Only a limited number of indoor air HAPSITE® results were greater than the RBSL (i.e., the EPA [2017a] residential indoor air RSL based on a target cancer risk of 1×10^{-6} or a non-cancer HQ of 1, whichever is

lower): samples from locations 0053-H and 0054-H. Either PCE or TCE exceeded their respective RBSL in indoor air HAPSITE® results collected at 0053-H and 0054-H. EPA Method TO-15 indoor air samples were not collected at location 0054-H as the HAPSITE® and pressure control data suggested that indoor air TCE concentrations resulted from an interior background source(s) or residual TCE from historical activities in the shop (EA 2016b). A canister (TO-15) sample was collected from location 0053-H, because the HAPSITE® samples exceeded the residential indoor air RBSL (EA 2016b).
The EPA Method TO-15 indoor air sampling results (EA 2016b; Appendix H-4 of the RI Report) were used to assess the potential VI risk for current residential receptors. None of the indoor air ELCR estimates exceeded the upper end of the risk management range (1×10^{-4}). And the HI estimates range from 0.002 to 0.4 based on the TO-15 analytical results. Indoor air ELCR estimates ranged from 1×10^{-7} to 4×10^{-6} based on the TO-15 analytical results. The cumulative ELCR estimates at locations 0003-H, 0017-H, 0018-H and 0025-H slightly exceeded 1×10^{-6}.

Although no RBSLs were exceeded in samples collected at location 0017-H (based TO-15 sample results), the cumulative ECLR estimate (2×10^{-6}) is just above the lower end of the risk management range. Both PCE and TCE slightly exceeded the RBSLs samples collected at location 0018-H (TO-15 samples) resulting in a cumulative ECLR estimate of 3×10^{-6}.

At locations 0003-H and 0025-H, there are lines of evidence available that indicate background sources, not a subsurface (i.e., VI) source, has impacted COPC concentrations in indoor (Table F-11). For indoor air, the characterization potential VI risk was taken one step further as the analytical results and risk estimates for individual structures were further evaluated. In cases where the weight of evidence supports the conclusion that a background source was present those risk assessment results for those locations were qualified. The range of ELCR estimates, with the locations with potential background sources noted above excluded, range from 1×10^{-7} to 3×10^{-6}, and the HI estimates range 0.002 to 0.4.

F.5.5 Commercial/School Worker Exposure Scenario

Currently workers are found only in one location (0045S, East High School). HAPSITE® sampling results and pressure control testing were used to assess the need for further sampling at location 0045S. Risks were estimated for potential future commercial/school workers using groundwater and soil gas sampling results.

The indoor air HAPSITE® sampling results were used to assess the potential VI risk for current commercial/industrial receptors. Indoor air samples were collected using the HAPSITE® in the only building with a current occupational (commercial/school worker) exposure scenario - East High School (0045S). Potential indoor sources of PCE and TCE were noted, however, no exceedances of the commercial/industrial RBSLs (i.e., the EPA [2017a] industrial air RSL based on a target cancer risk of 1×10^{-6} or a non-cancer HQ of 1, whichever is lower) occurred in the indoor air samples collected from East High School [Table F-7]. EPA Method TO-15 indoor air samples were not collected at location 0054-H as the HAPSITE® and pressure control data suggested that indoor air TCE concentrations resulted from an interior background source(s) or residual TCE from historical activities in the shop (Appendix H-4 of the RI Report).

F.5.6 Future Vapor Intrusion Exposure Scenarios

Risks for potential exposures via the VI exposure pathway (i.e., migration of vapor from groundwater or soil gas to indoor air) were estimated for future residents and commercial/school workers.

F.5.6.1 Groundwater-to-Indoor-Air

The groundwater sampling results were used to assess the potential VI (groundwater-to-indoor-air) risk for future residential receptors. The groundwater-to-indoor-air risk estimates are calculated based on a generic (i.e., conservative) groundwater-to-attenuation factor. The AF is used assess the potential migration of VOCs in groundwater into indoor air. The AF of 0.001 used is based empirical data compiled and analyzed by EPA and is considered a "reasonably conservative generic attenuation" (EPA 2012; EPA 2015). Based on the lack of significant indoor air concentrations measured in the buildings within AOU-1 the generic AF is likely results in an overestimation of cancer risk or non-cancer hazard. However, the use of the generic AF may underestimate risks in situations where the groundwater is in contact with the foundation.

None of the samples collected from the AOU-1 monitoring wells exceed an ELCR of 1 x 10^{-4} or a target-organ-specific HI of 1. Several locations have results that exceed an ECLR of 1 x 10^{-6} (Table F-9), including 2 x 10^{-6} in GW-007, GW-009, GW-013, GW-027, GW-051 due to PCE and in GW-014 and W-018 due to TCE. PCE in GW-053, GW-011, GW-028, GW-052, and GW-053 results in a cumulative ELCR of 3 x 10^{-6}. TCE is the primary risk driver in GW-050 (5 x 10^{-6}) and GW-059 (6 x 10^{-6}). The groundwater concentrations in these wells represent a potential for VI concerns for future receptors; however, the concentrations do not likely represent a concern for future receptors based on the available indoor air concentrations, which, as discussed below, result in risk estimates below the risk management threshold.

F.5.6.2 Soil-Gas-to-Indoor-Air

The soil-gas-to-indoor-air risk estimates are calculated based on a generic (i.e., conservative) groundwater-to-attenuation factor. The AF is used assess the potential migration of VOCs in groundwater into indoor air. The AF of 0.03 used is based empirical data compiled and analyzed by EPA and is considered a "reasonably conservative generic attenuation" (EPA 2012; EPA 2015). Based on the lack of significant indoor air concentrations measure in the buildings within AOU-1 the generic AF is likely results in an overestimation of cancer risk.

The soil gas sampling results were used to assess the potential VI (groundwater-to-indoor-air) risk for future residential receptors. None of the samples collected from the AOU-1 monitoring wells exceed an ELCR of 1 x 10^{-4}; ECLR estimates ranged from 4 x 10^{-9} to 2 x 10^{-6} based on the HAPSITE® measurements and 8 x 10^{-9} to 7 x 10^{-6} based on the TO-15 analytical results. *O*nly location 0053-H results that exceed an ECLR of 1 x 10^{-6} (Table F-10). None of the indoor air concentrations at 0053-H result in risks greater than 1 x 10^{-6} or HI > 1. None of the samples collected from the AOU-1 monitoring wells exceed a target-organ-specific HI of 1.

F.5.7 Commercial/School Workers

F.5.7.1 Groundwater-to-Indoor-Air

The groundwater sampling results were used to assess the potential VI (groundwater-to-indoor-air) risk for future commercial/industrial receptors. No groundwater samples had concentrations that resulted in groundwater-to-indoor-air risks for a future commercial/school worker scenario greater than the risk management thresholds (i.e., ELCR estimates were not greater than 1 x 10^{-6} and no target-organ-specific HI were greater than 1) (Table F-9).

F.5.7.2 Soil-Gas-to-Indoor-Air

The soil gas sampling results were used to assess the potential VI (soil-gas-to-indoor-air) risk for future commercial/industrial receptors. No soil gas samples had concentrations that resulted in soil-gas-to-indoor-air risks for a future commercial/school worker scenario greater than the risk management thresholds (i.e., ELCR estimates were not greater than 1 x 10^{-6} and no target-organ-specific HI were greater than 1) (Table F-10).

F.6 Uncertainty Discussion

The uncertainty discussion will present the assumptions and procedures that introduce the greatest amount of uncertainty in the HHRA, as well as their effect on the estimates of potential risk. The discussion of uncertainties will mostly be qualitative because there is usually not enough information to quantify their magnitude. The analysis will address uncertainties related to the major steps of the HHRA, including the following:

- Data evaluation,
- Exposure assessment,
- Toxicity assessment,
- Risk characterization.

Each of the HHRA components has been completed based on information provided in available documents related to past environmental investigation activities performed by both the report authors and other parties. Any new information related to one of the HHRA components may require an additional evaluation to determine if that information results in any changes to the conclusions in this report. The discussion of uncertainty will summarize the sources and magnitude of HHRA uncertainties and provide guidance to risk managers and other on how the uncertainties might affect site-management decisions.

F.6.1 Uncertainties Associated with Sampling, Analysis, and Chemicals of Potential Concern Selection

This risk assessment is based on the sampling results obtained from recent and historical investigations at AOU-1. General sources of uncertainty associated with the sampling and analysis activities include the inherent variability (standard error) in the analysis, representativeness of the samples, sampling errors, and heterogeneity of the sample matrix. Sources of uncertainty specific to the investigations at AOU-1 are discussed here.

PCE, TCE, and their principal degradation products in water (cis-DCE and VC) were selected as the contaminants of potential concern (FE, 2015) (EA 2017a). Trans-1,2-DCE, another principal PCE degradation product, was not selected as a COPC due to the lack of detections in groundwater samples collected in 2016. In addition, 1,4-dioxane was included at the request of EPA because of its use historically as a stabilizer for chlorinated solvents, notably 1,1,1-TCA. However, 1) there is no knowledge of 1,1,1-TCA use associated with historical VA operations; and 2) 1,4-dioxane was not commonly used in association with PCE. Additional chemical contaminants included in the analytical data received from the laboratory, including VOCs, may be present in groundwater, and thus impact soil gas, surface water, soil, or indoor air, and result in higher risk estimates. However, other analytes

included in the site analytical dataset were deemed not attributable to the site based on the fact that they are not PCE daughter products.
The presence of TCE may, in part, due to the presence of another source (i.e., not related to the PCE release). The presence of TCE and its degradation products (cis-1,2-DCE and VC), therefore, may overestimate risk estimates specific to the PCE-groundwater plume.

The sampling design (number and location of soil and groundwater samples) is based on historical knowledge of the AOU-1 and evidence collected during the past investigations described in Section 3 of the RI Report. The analytical data used in the HHRA were obtained during sampling efforts completed in 2015, 2016, and 2017. These data were considered to be high quality in that the analytical laboratory data quality objectives were achieved, and the field sampling design was well planned (Appendices H-1, H-2, H-3 and H-5 of the RI Report). The sample locations were specifically selected based on available information related to the nature and extent of contamination from past investigations and information gather during the completion of the RI (i.e., the sampling design was conducted to maximize the potential for detecting site-related COPCs). The sampling approach combined both biased and unbiased sampling within and across AOU-1, which served to minimize the uncertainties associated with delineating the vertical extent of COPCs in groundwater.

Uncertainties can exist related to the completeness and representativeness of the indoor air, soil gas, and groundwater data used in the HHRA. The RI included methods specifically developed to reduce uncertainties, including the following:

- Sampling of shallow groundwater and soil gas across AOU-1 to identify areas where the subsurface vapor source is sufficient to warrant targeted sampling of overlying structures.

- Sampling indoor air under 1) spring high water table conditions and 2) during the heating season to assess indoor air quality under conditions that may increase VI.

- Use of real-time, sensitive chemical analysis using the HAPSITE® instrument and conducting building depressurization to increase confidence regarding the occurrence of VI and to identify structures impacted by background indoor VOC sources (EA 2016b; Appendix H-4 of the RI Report).

- Additional information related to the sampling and analysis methods are presented in Section 5.5 of the RI Report, Vapor Intrusion Sampling.

The uncertainty and variability of indoor air chemical concentration data were addressed by using maximum detected concentrations and sample-by-sample EPCs in the HHRA. For risk assessment purposes, the EPC is intended to represent an upper-bound estimate of the concentration (i.e., average plus uncertainty) that a receptor could be exposed to over the entire evaluation area, rather than just at one sample location. Using maximum detected concentrations and sample-by-sample EPCs may overestimate the risk estimates provided in this HHRA.

During the pressure cycling (induced negative pressure to -10 Pascals) the HAPSITE® sampling result for PCE was 1071.2 E $\mu g/m^3$ taken 1 inch above the floor drain in the basement laundry room at 0059-H (Appendix H-4 of the RI Report). The floor drain sample concentration was flagged as estimated (qualifier flag = 'E') because the concentration was above the upper calibration limit. All HAPSITE® samples collected within the breathing zone in the basement at 0059-H during pressure cycling were below the indoor air RBSLs. The HAPSITE® samples collected in the 0059-H during baseline conditions were all non-detect. Per the VI decision framework, because the none of the breathing zone samples were greater than the indoor air RBSLs, no indoor air samples were collected for EPA Method TO-15 analysis, in accordance with the approved VI sampling protocol. However, the presence of the PCE vapor in the floor drain could represent a future VI risk if the building condition and building use change significantly. Tables F2-2, F2-3, and F2-4 in Attachment 2 provide a comparison of the RLs to EPA's RSLs and identify cases where non-detect results exceed conservative screening levels. A certain number of such cases is normal and expected, most commonly due to elevated concentrations of one analyte, resulting in the need for dilutions and elevated reporting limits for other analytes in a given sample. None of the RLs for the non-detected VC results from the groundwater samples were below the RBSL (i.e., the EPA [2017a] RSL based on a target cancer risk of 1×10^{-6} or a non-cancer HQ of 1, whichever is lower); the VC RL of 0.5 µg/L is greater than the residential RBSL of 0.15 µg/L. However, the elevated RLs may result in an underestimation of risk. None of the RLs for the non-detected TCE results from the HAPSITE® measurements were below the RBSL; however, the RLs (0.5 $\mu g/m^3$) were just slightly above the residential RBSL of 0.48 $\mu g/m^3$. The impact on the use of the HAPSITE® results for TCE in the HHRA is considered minimal. Seven of the 20 TCE non-detected results from the TO-15 canister samples were greater than the residential RBSL; all 7 samples were collected in 2015 and had RLs of 2.7 $\mu g/m^3$ and MDLs of 0.81 $\mu g/m^3$. While this MDL is greater than the RBSL, it only exceeds the RBSL by a factor of less than two. One of these locations, 0026-H, was resampled in 2017; TCE was non-detect. Soil gas at 003-H was non-detect. Therefore, for 008-H, 0030-H, and 0036-H, because only detections were included in the quantitative risk characterization calculations, the elevated RLs may result in an underestimation of risk. However, given the MDL, the impact on the risk assessment conclusions is likely minimal. For the collected surface water and soil samples, none of the RLs were greater than the RBSLs.

F.6.2 Uncertainties Associated with Exposure Assessment

Future groundwater, soil gas and indoor air concentrations were assumed to be equal to existing concentrations. This assumption does not account for fate and transport processes likely to occur in the future. Therefore, the EPCs may overestimate actual risk for future exposure scenarios.

The estimation of exposure requires many assumptions to describe potential exposure situations. There are uncertainties regarding the likelihood of exposure, frequency of contact with contaminated media, the concentration of contaminants at exposure points, and the period of exposure. These tend to simplify and approximate actual site conditions. In general, these assumptions are upper-bound assumptions intended to be conservative and yield an overestimate of the estimate of risk or hazard.

VOCs were detected in groundwater. Uncertainty is associated with the use of groundwater and soil gas to assess VI for future receptors as part of a screening-level assessment. Indoor air sampling results provide a more direct assessment of the VI pathway under current land use conditions.

Indoor air risk estimates were based on samples collected using passivated stainless-steel canisters (analyzed using EPA Method TO-15) but also measurements using the HAPSITE® portable GC/MS instrument. Indoor air ELCR estimates ranged from 6×10^{-8} to 2×10^{-5} based on the HAPSITE® measurements compared with 1×10^{-7} to 4×10^{-6} based on the TO-15 analytical results. And the HI estimates range from 0.02 to 4 based on the HAPSITE® measurements and 0.002 to 0.4 based on the TO-15 analytical results (Table F-10). The risk estimates using HAPSITE® measurements are considered uncertain and may result in an over- or underestimation of risk. The use of the HAPSITE® samples, which reflect only a short duration during the day, may under- or over-estimate risks. HAPSITE® measurements are considered grab samples (usually collected in 5 or 10 minutes) while canister samples are time-integrated samples that address the average exposure over a 24-hour sampling period. The intent

of the use of the HAPSITE® measurements as a screening-level comparison is consistent with the VI assessment approach (FE 2015). The provided risk estimates using the HAPSITE® results are for risk screening purposes completed within the framework of the VI investigation approach outlined in the RI Work Plan (FE 2015).
Samples in some locations were collected in the presence of identified background sources (e.g., 0045S, 0003-H, 00025-H and 0054-H as noted in Table F-11). VI may still be occurring in a limited fashion in these locations; however, the background sources are currently contributing more significantly to the estimated risks. Locations where background sources may be present but were not identified would result in an overestimation of risks.

Future groundwater and soil gas concentrations were assumed to be equal to existing concentrations. This assumption does not account for fate and transport processes likely to occur in the future (See Section 7 of the RI Report). Therefore, the exposure point concentrations may overestimate actual risk for future exposure scenarios. The estimation of exposure requires many assumptions to describe potential exposure situations. There are uncertainties regarding the likelihood of exposure, frequency of contact with contaminated media, the concentration of contaminants at exposure points, and the period of exposure. These tend to simplify and approximate actual site conditions. In general, these assumptions are upper-bound assumptions intended to be conservative and yield an overestimate of the estimate of risk or hazard.

F.6.3 Uncertainties Associated with Toxicity Assessment

The toxicological database was also a source of uncertainty. EPA has outlined some of the sources of uncertainty in the *Risk Assessment Guidance for Superfund, Volume I: Human Health Evaluation Manual, Part A (Interim Final)* (EPA 1989). These sources might include or result from the extrapolation of toxicities from high to low doses and from animals to humans; the species, gender, age, and strain differences in a toxin’s uptake; metabolism, organ distribution, and target site susceptibility; and the human population’s variability with respect to diet, environment, activity patterns, and cultural factors.

F.6.4 Uncertainties Associated with Risk Characterization

The screening approach used in this HHRA does not account for the possibility that constituents act synergistically or antagonistically. Therefore, there is uncertainty associated with the risk calculations and potential risks may be overestimated or underestimated.

The groundwater-to-indoor-air risk estimates are calculated based on a generic (i.e., conservative) groundwater-to-attenuation factor. The AF is used assess the potential migration of VOCs in groundwater into indoor air. The AF of 0.001 used is based empirical data compiled and analyzed by EPA and is considered a “reasonably conservative generic attenuation” (EPA 2012; EPA 2015). The soil-gas-to-indoor-air risk estimates are calculated based on a generic (i.e., conservative) groundwater-to-attenuation factor. The AF is used assess the potential migration of VOCs in groundwater into indoor air. The AF of 0.03 used is based empirical data compiled and analyzed by EPA and is considered a “reasonably conservative generic attenuation” (EPA 2012; EPA 2015). Based on the lack of significant indoor air concentrations measure in the buildings within AOU-1 the generic AF to assess future exposure scenarios using groundwater and soil gas is likely results in an overestimation of cancer risk. However, the use of the generic AF may underestimate risks in situations where the groundwater is in contact with the foundation.

F.7 Summary

An HHRA was prepared to assess potential exposures to COPCs in groundwater, soil gas, indoor air, soil, and surface water under various land use scenarios within AOU-1. A sewer line originating from a former dry-cleaning facility in the VAMC was identified as a potential source of contamination from PCOPCs, which included PCE and its breakdown products (TCE, cis-1,2-DCE, trans-1,2-DCE and VC) and 1,4-dioxane (FE 2015). 1,4-dioxane was added as an additional PCOPC as requested by the EPA. Trans-1,2-DCE was subsequently removed as a PCOPC (EA 2016b). Based on data and evaluations conducted during the RI, the extent of PCE-contaminated shallow groundwater, seeps and springs covers approximately 300 acres. Based on at least one RBSL exceedance in groundwater, soil gas, or indoor air sampling data collected within this area, the following COPCs were identified for quantitative evaluation in the HHRA: PCE, TCE, and VC.

The following potentially complete exposure pathways were evaluated for current and future residential and commercial/school worker receptors:

- Indoor inhalation of site-related COPCs indoor air for current residential receptors and workers
- VI from groundwater to indoor air future residential receptors and workers
- VI from soil gas to indoor air for future residential receptors and workers

The COPCs in surface water, soil, and homegrown produce were also assessed and considered insignificant (i.e., no RBSL exceedances); therefore, exposure to these media are not included in the quantitative risk characterization (i.e., risk estimates were not calculated).

A summary of the ELCR estimates and HI estimates for the potentially complete exposure pathways, which were derived based on the assessment of the available sampling data and current site understanding, is presented in Table 9-1 of the RI Report and discussed below.

Based on the evaluation of available data and information, VI is likely not a pathway of concern for the current residential scenario. As noted previously, location 0040-H is being addressed separately through a removal action. The indoor air HAPSITE® sampling results collected in 2016 and 2017 were used to evaluate the need for further sampling to assess potential VI risk for current residential receptors (FE 2015). Only a limited number of indoor air HAPSITE® results were greater than the RBSL: samples from locations 0045S, 0053-H and 0054-H. EPA Method TO-15 indoor air samples were not collected at 0045S and 0054-H as the HAPSITE® and pressure control data suggested that indoor air TCE concentrations resulted from an interior background source(s) or residual TCE from historical activities in the shop (Appendix H-4 of the RI Report). A canister (TO-15) sample was collected from 0053-H, because the HAPSITE® samples exceeded the residential indoor air RBSL. Risk estimates calculated for samples collected from location 0053-H are included as part of the discussion of the EPA Method TO-15 sampling results below.

The EPA Method TO-15 indoor air sampling results were used to assess the potential VI risk for current residential receptors. None of the indoor air ELCR estimates exceeded the upper end of the risk management range (1×10^{-4}). Indoor air ELCR estimates ranged from 1×10^{-7} to 4×10^{-6} based on the TO-15 analytical results. The cumulative ELCR estimates at locations 0003-H, 0017-H, 0018-H and 0025-H slightly exceeded 1×10^{-6} and the HI estimates range from 0.002 to 0.4. At locations 0003-H and 0025-H, there are lines of evidence available that indicate background sources, not a subsurface source, has impacted COPC concentrations in indoor air. Although no RBSLs were exceeded in samples collected at location 0017-H (based TO-15 sample results), the cumulative ECLR estimate (2×10^{-6}) is just above the lower end of the risk management range. Both PCE and TCE slightly exceeded the RBSLs samples collected at 0018-H (TO-15 samples) resulting in a cumulative ECLR estimate of 3×10^{-6}.

Based on the evaluation of available groundwater and soil gas data, there is a potential for VI for future residential exposure scenarios. However, none of the groundwater-to-indoor-air or soil-gas-to-indoor-air ELCR estimates exceeded the upper end of the risk management range (1 x 10^{-4}) and none of the maximum target-organ-specific non-cancer HI estimates exceed 1, indicating the lack of a strong VI source. PCE is the primary risk driver in several other locations; however, the cumulative groundwater-to-indoor-air ELCR estimates are only slightly greater than 1 x 10^{-6} (ranging from 2 x 10^{-6} to 6 x 10^{-6}). TCE is the primary risk driver in several locations; however, the cumulative ELCR estimates are only slightly greater than 1 x 10^{-6} (ranging from 2 x 10^{-6} to 4 x 10^{-6}).

Based on the evaluation of available data and information, VI is not a pathway of concern for the current and future commercial/school worker scenario. The indoor sampling HAPSITE® results and pressure control data were used to assess the potential VI risk for current commercial/school workers. Indoor air samples were collected in one building with a current commercial worker exposure scenario - East High School (0045S). PCE and TCE were detected in samples collected at 0045S though at levels less than the commercial RBSLs. Pressure control testing data indicated the presence of background sources. No groundwater samples had concentrations that resulted in groundwater-to-indoor-air risks for a future commercial/school worker scenario greater than the risk management thresholds (i.e., ELCR estimates were not greater than the low end of the risk management range [1 x 10^{-6}] and no target-organ-specific HI were greater than 1). No soil gas samples had concentrations that resulted in soil-gas-to-indoor-air risks for a future commercial/school worker scenario greater than 1 x 10^{-6} and no target-organ-specific HI were greater than 1.

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Tables

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TABLE F-1
HHRA Dataset Sample List
Human Health Risk Assessment
700 South 1600 East PCE Plume AOU-1: East Side Springs
Department of Veterans Affairs Salt Lake City Health Care System

Data Group	Medium	Sampling Method	Location ID	Associated Yes Source?	Sample Name	Sample Type	Parent Sample Name	Sample Date
AI_All	Indoor Air	Canister	0001H-TO-BAS	No	A-0001H-032317-TO-001-BAS	N		23-Mar-17
AI_All	Indoor Air	Canister	0001H-TO-BAS	No	A-0001H-032317-TO-002-BAS	FD	A-0001H-032317-TO-001-BAS	23-Mar-17
AI_All	Indoor Air	Canister	0002H-TO-BAS	No	A-0002H-032317-TO-001-BAS	N		23-Mar-17
AI_All	Indoor Air	Canister	0003H-IA-BAS	No	A-0003H-030316-IA-BAS	N		03-Mar-16
AI_All	Indoor Air	Canister	0003H-TO-BAS	No	A-0003H-040915-TO-002-BAS	N		09-Apr-15
AI_All	Indoor Air	Canister	0003H-TO-BBB	No	A-0003H-040915-TO-003-BBB	N		09-Apr-15
AI_All	Indoor Air	Canister	0003H-TO-LIV	No	A-0003H-040915-TO-001-LIV	N		09-Apr-15
AI_All	Indoor Air	Canister	0004H-TO-BAS	No	A-0004H-031417-TO-001-BAS	N		14-Mar-17
AI_All	Indoor Air	Canister	0008H-TO-BAS	No	A-0008H-041015-TO-001-BAS	N		10-Apr-15
AI_All	Indoor Air	Canister	0011H-IA-LLL	No	A-0011H-030116-IA-012A-LLL	N		01-Mar-16
AI_All	Indoor Air	Canister	0012H-TO-BAS	No	A-0012H-031417-TO-001-BAS	N		14-Mar-17
AI_All	Indoor Air	Canister	0013H-TO-BAS	No	A-0013H-031017-TO-001-BAS	N		10-Mar-17
AI_All	Indoor Air	Canister	0017H-IA-BAS	No	A-0017H-031616-IA-BAS	N		16-Mar-16
AI_All	Indoor Air	Canister	0018H-IA-BAS	No	A-0018H-031616-IA-BAS	N		16-Mar-16
AI_All	Indoor Air	Canister	0023-IA-BA1	No	A-0023-031616-IA-BA1	N		16-Mar-16
AI_All	Indoor Air	Canister	0025H-TO-BAS	No	A-0025H-031417-TO-001-BAS	N		14-Mar-17
AI_All	Indoor Air	Canister	0026H-TO-LIV	No	A-0026H-031617-TO-001-LIV	N		16-Mar-17
AI_All	Indoor Air	Canister	0026H-TO-PAN	No	A-0026H-040815-TO-001-PAN	N		08-Apr-15
AI_All	Indoor Air	Canister	0027H-TO-BAS	No	A-0027H-031017-TO-001-BAS	N		10-Mar-17
AI_All	Indoor Air	Canister	0029H-TO-BAS	No	A-0029H-033117-TO-001-BAS	N		31-Mar-17
AI_All	Indoor Air	Canister	0030H-TO-BAS	No	A-0030H-041115-TO-001-BAS	N		11-Apr-15
AI_All	Indoor Air	Canister	0036H-TO-BAS	No	A-0036H-040415-TO-001-BAS	N		02-Apr-15
AI_All	Indoor Air	Canister	0038H-TO-BAS	No	A-0038H-041117-TO-001-BAS	N		11-Apr-17
AI_All	Indoor Air	Canister	0064H-TO-LIV	No	A-0064H-041417-TO-001-LIV	N		14-Apr-17
AI_All	Indoor Air	HAPSITE	0001H-IA-BAS1	No	A-0001H-031517-IA-005-BAS1	N		15-Mar-17
AI_All	Indoor Air	HAPSITE	0001H-IA-BAS1	No	A-0001H-031517-IA-012-BAS1	N		22-Mar-17
AI_All	Indoor Air	HAPSITE	0001H-IA-BAT1	No	A-0001H-031517-IA-010-BAT1	N		15-Mar-17
AI_All	Indoor Air	HAPSITE	0001H-IA-BED1	No	A-0001H-031517-IA-007-BED1	N		15-Mar-17
AI_All	Indoor Air	HAPSITE	0001H-IA-LIV1	No	A-0001H-031517-IA-004-LIV1	N		15-Mar-17
AI_All	Indoor Air	HAPSITE	0001H-IA-LIV1	No	A-0001H-031517-IA-010-LIV1	N		22-Mar-17
AI_All	Indoor Air	HAPSITE	0001H-IA-MBED1	No	A-0001H-031517-IA-009-MBED1	N		15-Mar-17
AI_All	Indoor Air	HAPSITE	0001H-IA-SUM1	No	A-0001H-031517-IA-006-SUM1	N		15-Mar-17
AI_All	Indoor Air	HAPSITE	0001H-IA-WBED1	No	A-0001H-031517-IA-008-WBED1	N		15-Mar-17
AI_All	Indoor Air	HAPSITE	0002H-IA-BAS1	No	A-0002H-032217-IA-015-BAS1	N		22-Mar-17
AI_All	Indoor Air	HAPSITE	0002H-IA-FLD1	No	A-0002H-032217-IA-019-FLD1	N		22-Mar-17
AI_All	Indoor Air	HAPSITE	0002H-IA-KIT1	No	A-0002H-032217-IA-018-KIT1	N		22-Mar-17
AI_All	Indoor Air	HAPSITE	0002H-IA-LIV1	No	A-0002H-032217-IA-013-LIV1	N		22-Mar-17
AI_All	Indoor Air	HAPSITE	0002H-IA-STO1	No	A-0002H-032217-IA-016-STO1	N		22-Mar-17
AI_All	Indoor Air	HAPSITE	0004H-IA-BAS1	No	A-0004H-031317-IA-008-BAS1	N		13-Mar-17
AI_All	Indoor Air	HAPSITE	0004H-IA-LIV1	No	A-0004H-031317-IA-007-LIV1	N		13-Mar-17
AI_All	Indoor Air	HAPSITE	0012H-IA-BAS1	No	A-0012H-031317-IA-016-BAS1	N		13-Mar-17
AI_All	Indoor Air	HAPSITE	0012H-IA-BAT1	No	A-0012H-031317-IA-018-BAT1	N		13-Mar-17
AI_All	Indoor Air	HAPSITE	0012H-IA-FDR1	No	A-0012H-031317-IA-020-FDR1	N		13-Mar-17
AI_All	Indoor Air	HAPSITE	0012H-IA-LAU1	No	A-0012H-031317-IA-019-LAU1	N		13-Mar-17
AI_All	Indoor Air	HAPSITE	0012H-IA-LIV1	No	A-0012H-031317-IA-014-LIV1	N		13-Mar-17
AI_All	Indoor Air	HAPSITE	0012H-IA-OFF1	No	A-0012H-031317-IA-017-OFF1	N		13-Mar-17
AI_All	Indoor Air	HAPSITE	0013H-IA-BAS1	No	A-0013H-030917-IA-020-BAS1	N		09-Mar-17
AI_All	Indoor Air	HAPSITE	0013H-IA-HAL1	No	A-0013H-030917-IA-018-HAL1	N		09-Mar-17
AI_All	Indoor Air	HAPSITE	0013H-IA-LAN1	No	A-0013H-030917-IA-019-LAN1	N		09-Mar-17
AI_All	Indoor Air	HAPSITE	0025H-IA-BAS1	No	A-0025H-031317-IA-005-BAS1	N		13-Mar-17
AI_All	Indoor Air	HAPSITE	0025H-IA-LIV1	No	A-0025H-031317-IA-004-LIV1	N		13-Mar-17
AI_All	Indoor Air	HAPSITE	0026H-IA-BAS1	No	A-0026H-030917-IA-007-BAS1	N		09-Mar-17
AI_All	Indoor Air	HAPSITE	0026H-IA-HAL1	No	A-0026H-030917-IA-010-HAL1	N		09-Mar-17
AI_All	Indoor Air	HAPSITE	0026H-IA-LAN1	No	A-0026H-030917-IA-011-LAN1	N		09-Mar-17
AI_All	Indoor Air	HAPSITE	0026H-IA-LAU1	No	A-0026H-030917-IA-008-LAU1	N		09-Mar-17
AI_All	Indoor Air	HAPSITE	0026H-IA-LIV1	No	A-0026H-030917-IA-009-LIV1	N		09-Mar-17
AI_All	Indoor Air	HAPSITE	0026H-IA-UTI1	No	A-0026H-030917-IA-012-UTI1	N		09-Mar-17
AI_All	Indoor Air	HAPSITE	0027H-IA-BAS1	No	A-0027H-030917-IA-015-BAS1	N		09-Mar-17
AI_All	Indoor Air	HAPSITE	0027H-IA-LIV1	No	A-0027H-030917-IA-014-LIV1	N		09-Mar-17
AI_All	Indoor Air	HAPSITE	0027H-IA-MEC1	No	A-0027H-030917-IA-016-MEC1	N		09-Mar-17
AI_All	Indoor Air	HAPSITE	0029H-IA-BAS1	No	A-0029H-033017-IA-004-BAS1	N		30-Mar-17
AI_All	Indoor Air	HAPSITE	0029H-IA-LAN1	No	A-0029H-033017-IA-005-LAN1	N		30-Mar-17
AI_All	Indoor Air	HAPSITE	0029H-IA-LIV1	No	A-0029H-033017-IA-002-LIV1	N		30-Mar-17

TABLE F-1
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Human Health Risk Assessment
700 South 1600 East PCE Plume AOU-1: East Side Springs
Department of Veterans Affairs Salt Lake City Health Care System

Data Group	Medium	Sampling Method	Location ID	Associated Yes Source?	Sample Name	Sample Type	Parent Sample Name	Sample Date
AI_All	Indoor Air	HAPSITE	0038H-IA-BAS1	No	A-0038H-041017-IA-003-BAS1	N		10-Apr-17
AI_All	Indoor Air	HAPSITE	0038H-IA-LIV1	No	A-0038H-041017-IA-002-LIV1	N		10-Apr-17
AI_All	Indoor Air	HAPSITE	0041H-IA-BAS	No	0041H-IA-BAS-20160308-BL-004	N		08-Mar-16
AI_All	Indoor Air	HAPSITE	0041H-IA-HAL	No	0041H-IA-HAL-20160308-BL-003	N		08-Mar-16
AI_All	Indoor Air	HAPSITE	0041H-IA-KBED	No	0041H-IA-KBED-20160308-BL-007	N		08-Mar-16
AI_All	Indoor Air	HAPSITE	0041H-IA-KIT	No	0041H-IA-KIT-20160308-BL-008	N		08-Mar-16
AI_All	Indoor Air	HAPSITE	0041H-IA-LIV	No	0041H-IA-LIV-20160308-BL-002	N		08-Mar-16
AI_All	Indoor Air	HAPSITE	0041H-IA-OA1	No	0041H-IA-OA1-20160308-BL-001	N		08-Mar-16
AI_All	Indoor Air	HAPSITE	0041H-IA-UBED	No	0041H-IA-UBED-20160308-BL-005	N		08-Mar-16
AI_All	Indoor Air	HAPSITE	0045S-IA-A204-A	No	0045S-IA-A204-A-20160304-BL-009	N		04-Mar-16
AI_All	Indoor Air	HAPSITE	0045S-IA-A215	No	0045S-IA-A215-20160321-028	N		21-Mar-16
AI_All	Indoor Air	HAPSITE	0045S-IA-A219-A	No	0045S-IA-A219-A-20160304-BL-010	N		04-Mar-16
AI_All	Indoor Air	HAPSITE	0045S-IA-A312-A	No	0045S-IA-A312-A-20160304-BL-008	N		04-Mar-16
AI_All	Indoor Air	HAPSITE	0045S-IA-A315-A	No	0045S-IA-A315-A-20160304-BL-006	N		04-Mar-16
AI_All	Indoor Air	HAPSITE	0045S-IA-A322-A	No	0045S-IA-A322-A-20160304-BL-007	N		04-Mar-16
AI_All	Indoor Air	HAPSITE	0045S-IA-A404-A	No	0045S-IA-A404-A-20160304-BL-005	N		04-Mar-16
AI_All	Indoor Air	HAPSITE	0045S-IA-AUDI-B	No	0045S-IA-AUDI-B-20160304-BL-017	N		04-Mar-16
AI_All	Indoor Air	HAPSITE	0045S-IA-AUTO-A	No	0045S-IA-AUTO-A-20160304-BL-013	N		04-Mar-16
AI_All	Indoor Air	HAPSITE	0045S-IA-AUTO-A	No	0045S-IA-AUTO-A-20160304-BL-046	N		04-Mar-16
AI_All	Indoor Air	HAPSITE	0045S-IA-B208-B	Yes	0045S-IA-B208-B-20160304-BL-030	N		04-Mar-16
AI_All	Indoor Air	HAPSITE	0045S-IA-B215-B	Yes	0045S-IA-B215-B-20160304-BL-029	N		04-Mar-16
AI_All	Indoor Air	HAPSITE	0045S-IA-B325-B	Yes	0045S-IA-B325-B-20160304-BL-034	N		04-Mar-16
AI_All	Indoor Air	HAPSITE	0045S-IA-C107-C	Yes	0045S-IA-C107-C-20160304-BL-050	N		04-Mar-16
AI_All	Indoor Air	HAPSITE	0045S-IA-C213-C	Yes	0045S-IA-C213-C-20160304-BL-049	N		04-Mar-16
AI_All	Indoor Air	HAPSITE	0045S-IA-C216-C	Yes	0045S-IA-C216-C-20160304-BL-048	N		04-Mar-16
AI_All	Indoor Air	HAPSITE	0045S-IA-C305-C	Yes	0045S-IA-C305-C-20160304-BL-042	N		04-Mar-16
AI_All	Indoor Air	HAPSITE	0045S-IA-C317-C	Yes	0045S-IA-C317-C-20160304-BL-041	N		04-Mar-16
AI_All	Indoor Air	HAPSITE	0045S-IA-C406-C	Yes	0045S-IA-C406-C-20160304-BL-040	N		04-Mar-16
AI_All	Indoor Air	HAPSITE	0045S-IA-CA203	Yes	0045S-IA-CA203-20160321-BL-003	N		21-Mar-16
AI_All	Indoor Air	HAPSITE	0045S-IA-CA213	Yes	0045S-IA-CA213-20160321-BL-029	N		21-Mar-16
AI_All	Indoor Air	HAPSITE	0045S-IA-CA215	Yes	0045S-IA-CA215-20160322-BL-004	N		22-Mar-16
AI_All	Indoor Air	HAPSITE	0045S-IA-CA219	Yes	0045S-IA-CA219-20160322-BL-005	N		22-Mar-16
AI_All	Indoor Air	HAPSITE	0045S-IA-CAF-A	Yes	0045S-IA-CAF-A-20160304-BL-004	N		04-Mar-16
AI_All	Indoor Air	HAPSITE	0045S-IA-CHEM-A	No	0045S-IA-CHEM-A-20160304-BL-014	N		04-Mar-16
AI_All	Indoor Air	HAPSITE	0045S-IA-D202-D	Yes	0045S-IA-D202-D-20160304-BL-037	N		04-Mar-16
AI_All	Indoor Air	HAPSITE	0045S-IA-D210-D	Yes	0045S-IA-D210-D-20160304-BL-036	N		04-Mar-16
AI_All	Indoor Air	HAPSITE	0045S-IA-D305-D	Yes	0045S-IA-D305-D-20160304-BL-038	N		04-Mar-16
AI_All	Indoor Air	HAPSITE	0045S-IA-D311-D	Yes	0045S-IA-D311-D-20160304-BL-039	N		04-Mar-16
AI_All	Indoor Air	HAPSITE	0045S-IA-FLOB	Yes	0045S-IA-FLOB-20160321-BL-005	N		21-Mar-16
AI_All	Indoor Air	HAPSITE	0045S-IA-HA215	Yes	0045S-IA-HA215-20160321-BL-030	N		21-Mar-16
AI_All	Indoor Air	HAPSITE	0045S-IA-HAL	Yes	0045S-IA-HAL-20160322-BL-006	N		22-Mar-16
AI_All	Indoor Air	HAPSITE	0045S-IA-HEXIT	No	0045S-IA-HEXIT-20160322-BL-039	N		22-Mar-16
AI_All	Indoor Air	HAPSITE	0045S-IA-HTHE-A	Yes	0045S-IA-HTHE-A-20160304-BL-011	N		04-Mar-16
AI_All	Indoor Air	HAPSITE	0045S-IA-LGYM-B	Yes	0045S-IA-LGYM-B-20160304-BL-035	N		04-Mar-16
AI_All	Indoor Air	HAPSITE	0045S-IA-MENT-B	Yes	0045S-IA-MENT-B-20160304-BL-033	N		04-Mar-16
AI_All	Indoor Air	HAPSITE	0045S-IA-MLOB	Yes	0045S-IA-MLOB-20160322-BL-003	N		22-Mar-16
AI_All	Indoor Air	HAPSITE	0045S-IA-RB211	Yes	0045S-IA-RB211-20160322- BL-041	N		22-Mar-16
AI_All	Indoor Air	HAPSITE	0045S-IA-SHAL	Yes	0045S-IA-SHAL-20160321-BL-006	N		21-Mar-16
AI_All	Indoor Air	HAPSITE	0045S-IA-THEA-A	Yes	0045S-IA-THEA-A-20160304-BL-012	N		04-Mar-16
AI_All	Indoor Air	HAPSITE	0045S-IA-TSTOR	Yes	0045S-IA-TSTOR-20160322-BL-040	N		22-Mar-16
AI_All	Indoor Air	HAPSITE	0047H-IA-BOFF	No	0047H-IA-BOFF-20160225-BL-008	N		25-Feb-16
AI_All	Indoor Air	HAPSITE	0047H-IA-LAU	No	0047H-IA-LAU-20160225-BL-003	N		25-Feb-16
AI_All	Indoor Air	HAPSITE	0047H-IA-LIV	No	0047H-IA-LIV-20160225-BL-002	N		25-Feb-16
AI_All	Indoor Air	HAPSITE	0047H-IA-MEC	No	0047H-IA-MEC-20160225-BL-010	N		25-Feb-16
AI_All	Indoor Air	HAPSITE	0047H-IA-MECC	No	0047H-IA-MEC-20160225-BL-011	N		25-Feb-16
AI_All	Indoor Air	HAPSITE	0047H-IA-MECS	No	0047H-IA-MEC-20160225-BL-012	N		25-Feb-16
AI_All	Indoor Air	HAPSITE	0047H-IA-REST	No	0047H-IA-REST-20160225-BL-005	N		25-Feb-16
AI_All	Indoor Air	HAPSITE	0047H-IA-UBED	No	0047H-IA-UBED-20160225-BL-006	N		25-Feb-16
AI_All	Indoor Air	HAPSITE	0047H-IA-UOFF	No	0047H-IA-UOFF-20160225-BL-004	N		25-Feb-16
AI_All	Indoor Air	HAPSITE	0050H-IA-BAS	No	0050H-IA-BAS-20160323-BL-003	N		23-Mar-16
AI_All	Indoor Air	HAPSITE	0051H-IA-BLIV	No	0051H-IA-BLIV-20160226-BL-004	N		26-Feb-16
AI_All	Indoor Air	HAPSITE	0051H-IA-MEC	No	0051H-IA-MEC-20160226-BL-006	N		26-Feb-16
AI_All	Indoor Air	HAPSITE	0051H-IA-MULIV	No	0051H-IA-ULIV-20160226-BL-003	N		26-Feb-16
AI_All	Indoor Air	HAPSITE	0051H-IA-UBED	No	0051H-IA-UBED-20160226-BL-005	N		26-Feb-16
AI_All	Indoor Air	HAPSITE	0050H-IA-ULIV	No	0050H-IA-ULIV-20160323-BL-002	N		23-Mar-16
AI_All	Indoor Air	HAPSITE	0052H-IA-BAT	No	0052H-IA-BAT-20160311-BL-013	N		11-Mar-16
AI_All	Indoor Air	HAPSITE	0052H-IA-BLIV	No	0052H-IA-BLIV-20160311-BL-007	N		11-Mar-16

TABLE F-1
HHRA Dataset Sample List
Human Health Risk Assessment
700 South 1600 East PCE Plume AOU-1: East Side Springs
Department of Veterans Affairs Salt Lake City Health Care System

Data Group	Medium	Sampling Method	Location ID	Associated Yes Source?	Sample Name	Sample Type	Parent Sample Name	Sample Date
AI_All	Indoor Air	HAPSITE	0052H-IA-ENT	No	0052H-IA-ENT-20160311-BL-004	N		11-Mar-16
AI_All	Indoor Air	HAPSITE	0052H-IA-LAU	No	0052H-IA-LAU-20160311-BL-011	N		11-Mar-16
AI_All	Indoor Air	HAPSITE	0052H-IA-OFF	No	0052H-IA-OFF-20160311-BL-012	N		11-Mar-16
AI_All	Indoor Air	HAPSITE	0052H-IA-UBEDN	No	0052H-IA-UBEDN-20160311-BL-008	N		11-Mar-16
AI_All	Indoor Air	HAPSITE	0052H-IA-UBEDS	No	0052H-IA-UBEDS-20160311-BL-010	N		11-Mar-16
AI_All	Indoor Air	HAPSITE	0052H-IA-UDIN	No	0052H-IA-UDIN-20160311-BL-009	N		11-Mar-16
AI_All	Indoor Air	HAPSITE	0052H-IA-UHAL	No	0052H-IA-UHAL-20160311-BL-005	N		11-Mar-16
AI_All	Indoor Air	HAPSITE	0053H-IA-CRWL	No	0053H-IA-CRWL-20160502-BL-023	N		02-May-16
AI_All	Indoor Air	HAPSITE	0053H-IA-KIT	No	0053H-IA-KIT-20160502-BL-019	N		02-May-16
AI_All	Indoor Air	HAPSITE	0053H-IA-LIV	No	0053H-IA-LIV-20160502-BL-020	N		02-May-16
AI_All	Indoor Air	HAPSITE	0053H-IA-LIV	No	0053H-IA-LIV-20160502-BL-022	N		02-May-16
AI_All	Indoor Air	HAPSITE	0054H-IA-BAT	No	0054H-IA-BAT-20160509-BL-015	N		09-May-16
AI_All	Indoor Air	HAPSITE	0054H-IA-CONT	No	0054H-IA-CONT-20160603-BL-044	N		03-Jun-16
AI_All	Indoor Air	HAPSITE	0054H-IA-GAR	No	0054H-IA-GAR-20160509-BL-012	N		09-May-16
AI_All	Indoor Air	HAPSITE	0054H-IA-GAR	No	0054H-IA-GAR-20160603-BL-009	N		03-Jun-16
AI_All	Indoor Air	HAPSITE	0054H-IA-LAU	No	0054H-IA-LAU-20160509-BL-010	N		09-May-16
AI_All	Indoor Air	HAPSITE	0054H-IA-LAU	No	0054H-IA-LAU-20160509-BL-017	N		09-May-16
AI_All	Indoor Air	HAPSITE	0054H-IA-LAU	No	0054H-IA-LAU-20160603-BL-003	N		03-Jun-16
AI_All	Indoor Air	HAPSITE	0054H-IA-LAU	No	0054H-IA-LAU-20160603-BL-008	N		03-Jun-16
AI_All	Indoor Air	HAPSITE	0054H-IA-LIV	No	0054H-IA-LIV-20160509-BL-009	N		09-May-16
AI_All	Indoor Air	HAPSITE	0054H-IA-LIV	No	0054H-IA-LIV-20160603-BL-002	N		03-Jun-16
AI_All	Indoor Air	HAPSITE	0054H-IA-LIV	No	0054H-IA-LIV-20160603-BL-011	N		03-Jun-16
AI_All	Indoor Air	HAPSITE	0054H-IA-SBED	No	0054H-IA-SBED-20160509-BL-020	N		09-May-16
AI_All	Indoor Air	HAPSITE	0054H-IA-SHOP	No	0054H-IA-SHOP-20160509-BL-014	N		09-May-16
AI_All	Indoor Air	HAPSITE	0054H-IA-SHOP	No	0054H-IA-SHOP-20160509-BL-019	N		09-May-16
AI_All	Indoor Air	HAPSITE	0054H-IA-SHOP	No	0054H-IA-SHOP-20160603-BL-004	N		03-Jun-16
AI_All	Indoor Air	HAPSITE	0054H-IA-SHOP	No	0054H-IA-SHOP-20160603-BL-006	N		03-Jun-16
AI_All	Indoor Air	HAPSITE	0054H-IA-SUM	No	0054H-IA-SUM-20160603-BL-007	N		03-Jun-16
AI_All	Indoor Air	HAPSITE	0054H-IA-TVR	Yes	0054H-IA-TVR-20160509-BL-016	N		09-May-16
AI_All	Indoor Air	HAPSITE	0054H-IA-TVR	Yes	0054H-IA-TVR-20160603-BL-010	N		03-Jun-16
AI_All	Indoor Air	HAPSITE	0055H-IA-BBHAL	No	0055H-IA-BHAL-20160513-BL-016	N		13-May-16
AI_All	Indoor Air	HAPSITE	0055H-IA-KIT	No	0055H-IA-KIT-20160513-BL-014	N		13-May-16
AI_All	Indoor Air	HAPSITE	0055H-IA-LAU	No	0055H-IA-LAU-20160513-BL-017	N		13-May-16
AI_All	Indoor Air	HAPSITE	0055H-IA-UHAL	No	0055H-IA-UHAL-20160513-BL-015	N		13-May-16
AI_All	Indoor Air	HAPSITE	0056H-IA-BAS	No	0056H-IA-BAS-20160503-NA-004	N		03-May-16
AI_All	Indoor Air	HAPSITE	0056H-IA-BBED	No	0056H-IA-BBED-20160503-NA-006	N		03-May-16
AI_All	Indoor Air	HAPSITE	0056H-IA-CRWL	No	0056H-IA-CRWL-20160503-NA-005	N		03-May-16
AI_All	Indoor Air	HAPSITE	0056H-IA-FRM	No	0056H-IA-FRM-20160503-NA-003	N		03-May-16
AI_All	Indoor Air	HAPSITE	0057H-IA-HAL1	No	A-0057H-04052017-IA-003-HAL1	N		05-Apr-17
AI_All	Indoor Air	HAPSITE	0057H-IA-LHAL1	No	A-0057H-04052017-IA-005-LHAL1	N		05-Apr-17
AI_All	Indoor Air	HAPSITE	0057H-IA-LIV1	No	A-0057H-04052017-IA-002-LIV1	N		05-Apr-17
AI_All	Indoor Air	HAPSITE	0057H-IA-LLIV1	No	A-0057H-04052017-IA-004-LLIV1	N		05-Apr-17
AI_All	Indoor Air	HAPSITE	0057H-IA-STO1	No	A-0057H-04052017-IA-006-STO1	N		05-Apr-17
AI_All	Indoor Air	HAPSITE	0058H-IA-BAS1	No	A-0058H-030617-IA-006-BAS1	N		06-Mar-17
AI_All	Indoor Air	HAPSITE	0058H-IA-LIV1	No	A-0058H-030617-IA-005-LIV1	N		06-Mar-17
AI_All	Indoor Air	HAPSITE	0059H-IA-BAS1	No	A-0059H-031717-IA-018-BAS1	N		17-Mar-17
AI_All	Indoor Air	HAPSITE	0059H-IA-HAL1	No	A-0059H-031717-IA-016-HAL1	N		17-Mar-17
AI_All	Indoor Air	HAPSITE	0059H-IA-LAN1	No	A-0059H-031717-IA-017-LAN1	N		17-Mar-17
AI_All	Indoor Air	HAPSITE	0059H-IA-STO1	No	A-0059H-031717-IA-019-STO1	N		17-Mar-17
AI_All	Indoor Air	HAPSITE	0060H-IA-BAS1	No	A-0060H-030717-IA-008-BAS1	N		07-Mar-17
AI_All	Indoor Air	HAPSITE	0060H-IA-ENT1	No	A-0060H-030717-IA-006-ENT1	N		07-Mar-17
AI_All	Indoor Air	HAPSITE	0060H-IA-STA1	No	A-0060H-030717-IA-007-STA1	N		07-Mar-17
AI_All	Indoor Air	HAPSITE	0060H-IA-STO1	No	A-0060H-030717-IA-009-STO1	N		07-Mar-17
AI_All	Indoor Air	HAPSITE	0060H-IA-STO2	No	A-0060H-030717-IA-010-STO2	N		07-Mar-17
AI_All	Indoor Air	HAPSITE	0061H-IA-BAS1	No	A-0061H-030817-IA-004-BAS1	N		08-Mar-17
AI_All	Indoor Air	HAPSITE	0061H-IA-BED1	No	A-0061H-030817-IA-006-BED1	N		08-Mar-17
AI_All	Indoor Air	HAPSITE	0061H-IA-KIT1	No	A-0061H-030817-IA-007-KIT1	N		08-Mar-17
AI_All	Indoor Air	HAPSITE	0061H-IA-LIV1	No	A-0061H-030817-IA-003-LIV1	N		08-Mar-17
AI_All	Indoor Air	HAPSITE	0062H-IA-BAS1	No	A-0062H-032917-IA-006-BAS1	N		29-Mar-17
AI_All	Indoor Air	HAPSITE	0062H-IA-GAR1	No	A-0062H-032917-IA-010-GAR1	N		29-Mar-17
AI_All	Indoor Air	HAPSITE	0062H-IA-KIT1	No	A-0062H-032917-IA-005-KIT1	N		29-Mar-17
AI_All	Indoor Air	HAPSITE	0062H-IA-LAN1	No	A-0062H-032917-IA-009-LAN1	N		29-Mar-17
AI_All	Indoor Air	HAPSITE	0063H-IA-BAS1	No	A-0063H-032117-IA-013-BAS1	N		21-Mar-17
AI_All	Indoor Air	HAPSITE	0063H-IA-BAT1	No	A-0063H-032117-IA-014-BAT1	N		21-Mar-17
AI_All	Indoor Air	HAPSITE	0064H-IA-LIV1	No	A-0064H-041317-IA-002-LIV1	N		13-Apr-17
OA_All	Outdoor Air	Canister	0026H-TO-OUT	NA	A-0026H-040815-TO-003-OUT	N		08-Apr-15
OA_All	Outdoor Air	Canister	0030H-TO-OUT	NA	A-0030H-041115-TO-002-OUT	N		11-Apr-15

TABLE F-1
HHRA Dataset Sample List
Human Health Risk Assessment
700 South 1600 East PCE Plume AOU-1: East Side Springs
Department of Veterans Affairs Salt Lake City Health Care System

Data Group	Medium	Sampling Method	Location ID	Associated Yes Source?	Sample Name	Sample Type	Parent Sample Name	Sample Date
AI_All	Outdoor Air	HAPSITE	0056H-OA-OA1	NA	0056H-OA-OA1-20160503-NA-002	N		03-May-16
OA_All	Outdoor Air	HAPSITE	0001H-OA-OUT1	NA	A-0001H-031517-OA-003-OUT1	N		15-Mar-17
OA_All	Outdoor Air	HAPSITE	0001H-OA-OUT1	NA	A-0001H-031517-OA-011-OUT1	N		22-Mar-17
OA_All	Outdoor Air	HAPSITE	0002H-OA-OUT1	NA	A-0002H-032217-OA-014-OUT1	N		22-Mar-17
OA_All	Outdoor Air	HAPSITE	0004H-OA-OUT1	NA	A-0004H-031317-OA-006-OUT1	N		13-Mar-17
OA_All	Outdoor Air	HAPSITE	0012H-OA-OUT1	NA	A-0012H-031317-OA-015-OUT1	N		13-Mar-17
OA_All	Outdoor Air	HAPSITE	0013H-OA-OUT1	NA	A-0013H-030917-OA-017-OUT1	N		09-Mar-17
OA_All	Outdoor Air	HAPSITE	0025H-OA-OUT1	NA	A-0025H-031317-OA-003-OUT1	N		13-Mar-17
OA_All	Outdoor Air	HAPSITE	0026H-OA-OUT1	NA	A-0026H-030917-OA-006-OUT1	N		09-Mar-17
OA_All	Outdoor Air	HAPSITE	0027H-OA-OUT1	NA	A-0027H-030917-OA-013-OUT1	N		09-Mar-17
OA_All	Outdoor Air	HAPSITE	0029H-OA-OUT1	NA	A-0029H-033017-OA-003-OUT1	N		30-Mar-17
OA_All	Outdoor Air	HAPSITE	0041H-OA-OA1	NA	0041H-OA-OA1-20160308-BL-037	N		08-Mar-16
OA_All	Outdoor Air	HAPSITE	0045S-OA-OA1	NA	0045S-OA-OA1-20160304-BL-003	N		04-Mar-16
OA_All	Outdoor Air	HAPSITE	0045S-OA-OA1	NA	0045S-OA-OA1-20160321-BL-004	N		21-Mar-16
OA_All	Outdoor Air	HAPSITE	0045S-OA-OA1	NA	0045S-OA-OA1-20160322-NA-002	N		22-Mar-16
OA_All	Outdoor Air	HAPSITE	0045S-OA-OA2	NA	0045S-OA-OA2-20160304-BL-045	N		04-Mar-16
OA_All	Outdoor Air	HAPSITE	0047H-OA-OA1	NA	0047H-OA-OA1-20160225-BL-001	N		25-Feb-16
OA_All	Outdoor Air	HAPSITE	0051H-OA-OA1	NA	0051H-OA-OA1-20160226-BL-002	N		26-Feb-16
OA_All	Outdoor Air	HAPSITE	0050H-OA-OA1	NA	0050H-OA-OA1-20160323-BL-001	N		23-Mar-16
OA_All	Outdoor Air	HAPSITE	0051H-OA-SPR	NA	0051H-OA-SPR-20160226-027	N		26-Feb-16
OA_All	Outdoor Air	HAPSITE	0052H-OA-OA1	NA	0052H-OA-OA1-20160311-NA-003	N		11-Mar-16
OA_All	Outdoor Air	HAPSITE	0053H-OA-OA1	NA	0053H-OA-OA1-20160502-BL-018	N		02-May-16
OA_All	Outdoor Air	HAPSITE	0054H-OA-FOA1	NA	0054H-OA-OA1-20160603-BL-001	N		03-Jun-16
OA_All	Outdoor Air	HAPSITE	0054H-OA-OA1	NA	0054H-OA-OA1-20160509-NA-008	N		09-May-16
OA_All	Outdoor Air	HAPSITE	0055H-OA-OA1	NA	0055H-OA-OA1-20160513-BL-013	N		13-May-16
OA_All	Outdoor Air	HAPSITE	0058H-OA-OUT1	NA	A-0058H-030617-OA-004-OUT1	N		06-Mar-17
OA_All	Outdoor Air	HAPSITE	0059H-OA-OUT1	NA	A-0059H-031717-OA-015-OUT1	N		17-Mar-17
OA_All	Outdoor Air	HAPSITE	0060H-OA-OUT1	NA	A-0060H-030717-OA-005-OUT1	N		07-Mar-17
OA_All	Outdoor Air	HAPSITE	0061H-OA-OUT1	NA	A-0061H-030817-OA-002-OUT1	N		08-Mar-17
OA_All	Outdoor Air	HAPSITE	0062H-OA-OUT1	NA	A-0062H-032917-OA-004-OUT1	N		29-Mar-17
OA_All	Outdoor Air	HAPSITE	0063H-OA-OUT1	NA	A-0063H-032117-OA-010-OUT1	N		21-Mar-17
GS_All	Soil Gas	Canister	0003H-SG	NA	A-0003H-040915-SG-001-4	N		09-Apr-15
GS_All	Soil Gas	Canister	0008H-SG	NA	A-0008H-041015-SG-001A-4	N		10-Apr-15
GS_All	Soil Gas	Canister	0008H-SG	NA	A-0008H-041015-SG-001B-4	N		10-Apr-15
GS_All	Soil Gas	Canister	0026H-SG	NA	A-0026H-040815-SG-003-4	N		08-Apr-15
GS_All	Soil Gas	Canister	0030H-SG	NA	A-0030H-041115-SG-001A-6	N		11-Apr-15
GS_All	Soil Gas	Canister	0053H-SG-0037	NA	A-0053H-052316-SG-001-6'(0037)	N		23-May-16
GS_All	Soil Gas	Canister	0053H-SG-0050	NA	A-0053H-052316-SG-001-6'(0050)	N		23-May-16
GS_All	Soil Gas	HAPSITE	0041H-SG-SG1	NA	0041H-SG-SG1-20160308-038-7'	N		08-Mar-16
GS_All	Soil Gas	HAPSITE	0045S-SG-SG1	NA	0045S-SG-SG1-20160322-042-4'	N		22-Mar-16
GS_All	Soil Gas	HAPSITE	0045S-SG-SG1	NA	0045S-SG-SG1-20160322-043-4'	N		22-Mar-16
GS_All	Soil Gas	HAPSITE	0047H-SG-SG1	NA	0047H-SG-SG1-20160226-028-4.5'	N		26-Feb-16
GS_All	Soil Gas	HAPSITE	0051H-SG-SG1-45	NA	0051H-SG-SG1-20160226-028-4.5'	N		26-Feb-16
GS_All	Soil Gas	HAPSITE	0050H-SG-SG1-50	NA	0050H-SG-SG1-20160323-016-5'	N		23-Mar-16
GS_All	Soil Gas	HAPSITE	0051H-SG-SG1-75	NA	0051H-SG-SG1-20160226-029-7.5'	N		26-Feb-16
GS_All	Soil Gas	HAPSITE	0051H-SG-SG1-75	NA	0051H-SG-SG1-20160226-030-7.5'	N		26-Feb-16
GS_All	Soil Gas	HAPSITE	0051H-SG-SG2-75	NA	0051H-SG-SG2-20160226-032-7.5'	N		26-Feb-16
GS_All	Soil Gas	HAPSITE	0051H-SG-SG2-85	NA	0051H-SG-SG2-20160226-031-8.5'	N		26-Feb-16
GS_All	Soil Gas	HAPSITE	0052H-SG-SG1	NA	0052H-SG-SG1-20160311-032-4.5'	N		11-Mar-16
GS_All	Soil Gas	HAPSITE	0053H-SG-SG1	NA	0053H-SG-SG1-20160502-056-6.5'	N		02-May-16
GS_All	Soil Gas	HAPSITE	0054H-SG-SG1	NA	0054H-SG-SG1-20160603-042-7'	N		03-Jun-16
GS_All	Soil Gas	HAPSITE	0054H-SG-SG1	NA	0054H-SG-SG1-20160603-043-7'	N		03-Jun-16
GS_All	Soil Gas	HAPSITE	0055H-SG-SG1	NA	0055H-SG-SG1-20160513--038	N		13-May-16
GS_All	Soil Gas	HAPSITE	0055H-SG-SG1	NA	0055H-SG-SG1-20160513--039	N		13-May-16
GS_All	Soil Gas	HAPSITE	0056H-SG-SG1	NA	0056H-SG-SG1-20160503-031-5.5'	N		03-May-16
GS_All	Soil Gas	HAPSITE	0056H-SG-SG1	NA	0056H-SG-SG1-20160503-032-5.5'	N		03-May-16
GS_All	Soil Gas	HAPSITE	0057H-SG-2FT	NA	A-0057H-04052017-SG-022-2'	N		05-Apr-17
GS_All	Soil Gas	HAPSITE	0058H-SG-4FT	NA	A-0058H-030617-SG-025-4'	N		06-Mar-17
GS_All	Soil Gas	HAPSITE	0058H-SG-6FT	NA	A-0058H-030617-SG-027-6'	N		06-Mar-17
GS_All	Soil Gas	HAPSITE	0059H-SG-1.8FT	NA	A-0059H-031717-SG-039-1.8'	N		17-Mar-17
GS_All	Soil Gas	HAPSITE	0059H-SG-5FT	NA	A-0059H-031717-SG-040-5'	N		17-Mar-17
GS_All	Soil Gas	HAPSITE	0060H-SG-4.8FT	NA	A-0060H-030717-SG-037-4.8'	N		07-Mar-17
GS_All	Soil Gas	HAPSITE	0060H-SG-4.8FT	NA	A-0060H-030717-SG-038-4.8'	N		07-Mar-17
GS_All	Soil Gas	HAPSITE	0061H-SG-4.7FT	NA	A-0061H-030817-SG-029-4.7'	N		08-Mar-17
GS_All	Soil Gas	HAPSITE	0061H-SG-6.1FT	NA	A-0061H-030817-SG-031-6.1'	N		08-Mar-17
GS_All	Soil Gas	HAPSITE	0062H-SG-6.5FT	NA	A-0062H-032917-SG-025-6.5'	N		29-Mar-17
GS_All	Soil Gas	HAPSITE	0063H-SG-SG1	NA	A-0063H-032117-6'-SG-041-SG1	N		21-Mar-17

TABLE F-1
HHRA Dataset Sample List
Human Health Risk Assessment
700 South 1600 East PCE Plume AOU-1: East Side Springs
Department of Veterans Affairs Salt Lake City Health Care System

Data Group	Medium	Sampling Method	Location ID	Associated Yes Source?	Sample Name	Sample Type	Parent Sample Name	Sample Date
SO_All	Soil	Soil	SW-09	NA	A-SS-09_05032016	N		03-May-16
SO_All	Soil	Soil	SW-26	NA	A-SS-26_05032016	N		03-May-16
WG_All	Groundwater	Groundwater	GW-001	NA	A-GW-001_03042016	N		04-Mar-16
WG_All	Groundwater	Groundwater	GW-003	NA	A-GW-003_02262016	N		26-Feb-16
WG_All	Groundwater	Groundwater	GW-004	NA	A-GW-004_02262016	N		26-Feb-16
WG_All	Groundwater	Groundwater	GW-005	NA	A-GW-005_02262016	N		26-Feb-16
WG_All	Groundwater	Groundwater	GW-006	NA	A-GW-006_02262016	N		26-Feb-16
WG_All	Groundwater	Groundwater	GW-007	NA	A-GW-007_02282016	N		28-Feb-16
WG_All	Groundwater	Groundwater	GW-008	NA	A-GW-008_02272016	N		27-Feb-16
WG_All	Groundwater	Groundwater	GW-009	NA	A-GW-009_02262016	N		26-Feb-16
WG_All	Groundwater	Groundwater	GW-010	NA	A-GW-010_02272016	N		27-Feb-16
WG_All	Groundwater	Groundwater	GW-010	NA	A-GW-10_07122016	N		12-Jul-16
WG_All	Groundwater	Groundwater	GW-010	NA	A-GW-10_09202016	N		20-Sep-16
WG_All	Groundwater	Groundwater	GW-010	NA	A-GW-010-D_02272016	FD	A-GW-010_02272016	27-Feb-16
WG_All	Groundwater	Groundwater	GW-011	NA	A-GW-011_02272016	N		27-Feb-16
WG_All	Groundwater	Groundwater	GW-011	NA	A-GW-11_07112016	N		11-Jul-16
WG_All	Groundwater	Groundwater	GW-011	NA	A-GW-11_09192016	N		19-Sep-16
WG_All	Groundwater	Groundwater	GW-012	NA	A-GW-012_03022016	N		02-Mar-16
WG_All	Groundwater	Groundwater	GW-013	NA	A-GW-013_03042016	N		04-Mar-16
WG_All	Groundwater	Groundwater	GW-014	NA	A-GW-014_03022016	N		02-Mar-16
WG_All	Groundwater	Groundwater	GW-015	NA	A-GW-015_02292016	N		29-Feb-16
WG_All	Groundwater	Groundwater	GW-015	NA	A-GW-015-D_02292016	FD	A-GW-015_02292016	29-Feb-16
WG_All	Groundwater	Groundwater	GW-016	NA	A-GW-016_02282016	N		28-Feb-16
WG_All	Groundwater	Groundwater	GW-016	NA	A-GW-16_07112016	N		11-Jul-16
WG_All	Groundwater	Groundwater	GW-016	NA	A-GW-16_09192016	N		19-Sep-16
WG_All	Groundwater	Groundwater	GW-017	NA	A-GW-017_03022016	N		02-Mar-16
WG_All	Groundwater	Groundwater	GW-018	NA	A-GW-018_03022016	N		02-Mar-16
WG_All	Groundwater	Groundwater	GW-020	NA	A-GW-020_03012016	N		01-Mar-16
WG_All	Groundwater	Groundwater	GW-020	NA	A-GW-20_07112016	N		11-Jul-16
WG_All	Groundwater	Groundwater	GW-020	NA	A-GW-20_09192016	N		19-Sep-16
WG_All	Groundwater	Groundwater	GW-021	NA	A-GW-021_03012016	N		01-Mar-16
WG_All	Groundwater	Groundwater	GW-022	NA	A-GW-022_03012016	N		01-Mar-16
WG_All	Groundwater	Groundwater	GW-023	NA	A-GW-023_02222016	N		22-Feb-16
WG_All	Groundwater	Groundwater	GW-024	NA	A-GW-024_02252016	N		25-Feb-16
WG_All	Groundwater	Groundwater	GW-025	NA	A-GW-025_02292016	N		29-Feb-16
WG_All	Groundwater	Groundwater	GW-026	NA	A-GW-026_02282016	N		28-Feb-16
WG_All	Groundwater	Groundwater	GW-027	NA	A-GW-027_03052016	N		05-Mar-16
WG_All	Groundwater	Groundwater	GW-028	NA	A-GW-028_03052016	N		05-Mar-16
WG_All	Groundwater	Groundwater	GW-031	NA	A-GW-031_02282016	N		28-Feb-16
WG_All	Groundwater	Groundwater	GW-039	NA	A-GW-039_02232016	N		23-Feb-16
WG_All	Groundwater	Groundwater	GW-040	NA	A-GW-040_03032016	N		03-Mar-16
WG_All	Groundwater	Groundwater	GW-043	NA	A-GW-043_03032016	N		03-Mar-16
WG_All	Groundwater	Groundwater	GW-046	NA	A-GW-046_02242016	N		24-Feb-16
WG_All	Groundwater	Groundwater	GW-048	NA	A-GW-048_03032016	N		03-Mar-16
WG_All	Groundwater	Groundwater	GW-049	NA	A-GW-049_02252016	N		25-Feb-16
WG_All	Groundwater	Groundwater	GW-049	NA	A-GW-49_07122016	N		12-Jul-16
WG_All	Groundwater	Groundwater	GW-049	NA	A-GW-49_09202016	N		20-Sep-16
WG_All	Groundwater	Groundwater	GW-050	NA	A-GW-050_02292016	N		29-Feb-16
WG_All	Groundwater	Groundwater	GW-050	NA	A-GW-50_07122016	N		12-Jul-16
WG_All	Groundwater	Groundwater	GW-050	NA	A-GW-50_09202016	N		20-Sep-16
WG_All	Groundwater	Groundwater	GW-051	NA	A-GW-051_03042016	N		04-Mar-16
WG_All	Groundwater	Groundwater	GW-052	NA	A-GW-052_03032016	N		03-Mar-16
WG_All	Groundwater	Groundwater	GW-052	NA	A-GW-52_07122016	N		12-Jul-16
WG_All	Groundwater	Groundwater	GW-052	NA	A-GW-52_09202016	N		20-Sep-16
WG_All	Groundwater	Groundwater	GW-052	NA	A-GW-052-D_03032016	FD	A-GW-052_03/03/2016	03-Mar-16
WG_All	Groundwater	Groundwater	GW-053	NA	A-GW-053_03032016	N		03-Mar-16
WG_All	Groundwater	Groundwater	GW-053	NA	A-GW-53_07112016	N		11-Jul-16
WG_All	Groundwater	Groundwater	GW-053	NA	A-GW-53_09192016	N		19-Sep-16
WG_All	Groundwater	Groundwater	GW-055	NA	A-GW-055_03052016	N		05-Mar-16
WG_All	Groundwater	Groundwater	GW-059	NA	A-GW-059_03052016	N		05-Mar-16
WG_All	Groundwater	Groundwater	GW-059	NA	A-GW-59_07112016	N		11-Jul-16
WG_All	Groundwater	Groundwater	GW-059	NA	A-GW-59_09192016	N		19-Sep-16
WG_All	Groundwater	Groundwater	GW-060	NA	A-GW-060_03082016	N		08-Mar-16
WG_All	Groundwater	Groundwater	GW-061	NA	A-GW-061_03052016	N		05-Mar-16
WG_All	Groundwater	Groundwater	GW-061	NA	A-GW-61_07122016	N		12-Jul-16
WG_All	Groundwater	Groundwater	GW-061	NA	A-GW-61_09202016	N		20-Sep-16
WG_All	Groundwater	Groundwater	GW-062	NA	A-GW-062_03082016	N		08-Mar-16

TABLE F-1
HHRA Dataset Sample List
Human Health Risk Assessment
700 South 1600 East PCE Plume AOU-1: East Side Springs
Department of Veterans Affairs Salt Lake City Health Care System

Data Group	Medium	Sampling Method	Location ID	Associated Yes Source?	Sample Name	Sample Type	Parent Sample Name	Sample Date
WS_All	Surface Water	Surface Water	SW-01	NA	A-SW-01_05042016	N		04-May-16
WS_All	Surface Water	Surface Water	SW-02	NA	A-SW-02_05112016	N		11-May-16
WS_All	Surface Water	Surface Water	SW-03	NA	A-SW-03_05112016	N		11-May-16
WS_All	Surface Water	Surface Water	SW-04	NA	A-SW-04_05022016	N		02-May-16
WS_All	Surface Water	Surface Water	SW-05	NA	A-SW-05_05112016	N		11-May-16
WS_All	Surface Water	Surface Water	SW-06	NA	A-SW-06_05042016	N		04-May-16
WS_All	Surface Water	Surface Water	SW-06	NA	A-SW-06-D_05042016	FD	A-SW-06_05042016	04-May-16
WS_All	Surface Water	Surface Water	SW-07	NA	A-SW-07_05042016	N		04-May-16
WS_All	Surface Water	Surface Water	SW-08	NA	A-SW-08_05042016	N		04-May-16
WS_All	Surface Water	Surface Water	SW-09	NA	A-SW-09_05032016	N		03-May-16
WS_All	Surface Water	Surface Water	SW-10	NA	A-SW-10_05112016	N		11-May-16
WS_All	Surface Water	Surface Water	SW-11	NA	A-SW-11_05032016	N		03-May-16
WS_All	Surface Water	Surface Water	SW-12	NA	A-SW-12_05032016	N		03-May-16
WS_All	Surface Water	Surface Water	SW-13	NA	A-SW-13_05032016	N		03-May-16
WS_All	Surface Water	Surface Water	SW-14	NA	A-SW-14_05042016	N		04-May-16
WS_All	Surface Water	Surface Water	SW-15	NA	A-SW-15_05042016	N		04-May-16
WS_All	Surface Water	Surface Water	SW-16	NA	A-SW-16_05042016	N		04-May-16
WS_All	Surface Water	Surface Water	SW-17	NA	A-SW-17_05112016	N		11-May-16
WS_All	Surface Water	Surface Water	SW-18	NA	A-SW-18_05052016	N		05-May-16
WS_All	Surface Water	Surface Water	SW-19	NA	A-SW-19_05042016	N		04-May-16
WS_All	Surface Water	Surface Water	SW-20	NA	A-SW-20_05052016	N		05-May-16
WS_All	Surface Water	Surface Water	SW-21	NA	A-SW-21_05032016	N		03-May-16
WS_All	Surface Water	Surface Water	SW-22	NA	A-SW-22_05032016	N		03-May-16
WS_All	Surface Water	Surface Water	SW-23	NA	A-SW-23_05032016	N		03-May-16
WS_All	Surface Water	Surface Water	SW-24	NA	A-SW-24_05112016	N		11-May-16
WS_All	Surface Water	Surface Water	SW-25	NA	A-SW-25_05052016	N		05-May-16
WS_All	Surface Water	Surface Water	SW-26	NA	A-SW-26_05032016	N		03-May-16
WS_All	Surface Water	Surface Water	SW-27	NA	A-SW-27_05032016	N		03-May-16
WS_All	Surface Water	Surface Water	SW-28	NA	A-SW-28_05032016	N		03-May-16
WS_All	Surface Water	Surface Water	SW-29	NA	A-SW-29_05112016	N		11-May-16
WS_All	Surface Water	Surface Water	SW-30	NA	A-SW-30_05032016	N		03-May-16
WS_All	Surface Water	Surface Water	SW-31	NA	A-SW-31_05022016	N		02-May-16
WS_All	Surface Water	Surface Water	SW-32	NA	A-SW-32_05052016	N		05-May-16
WS_All	Surface Water	Surface Water	SW-33	NA	A-SW-33_05022016	N		02-May-16
WS_All	Surface Water	Surface Water	SW-34	NA	A-SW-34_05022016	N		02-May-16
WS_All	Surface Water	Surface Water	SW-35	NA	A-SW-35_05042016	N		04-May-16
WS_All	Surface Water	Surface Water	SW-36	NA	A-SW-36_05032016	N		03-May-16
WS_All	Surface Water	Surface Water	SW-37	NA	A-SW-37_05052016	N		05-May-16
WS_All	Surface Water	Surface Water	SW-38	NA	A-SW-38_05112016	N		11-May-16
WS_All	Surface Water	Surface Water	SW-39	NA	A-SW-39_05032016	N		03-May-16
WS_All	Surface Water	Surface Water	SW-40	NA	A-SW-40_05052016	N		05-May-16
WS_All	Surface Water	Surface Water	SW-41	NA	A-SW-41_05052016	N		05-May-16
WS_All	Surface Water	Surface Water	SW-42	NA	A-SW-42_05022016	N		02-May-16
WS_All	Surface Water	Surface Water	SW-43	NA	A-SW-43_05022016	N		02-May-16
WS_All	Surface Water	Surface Water	SW-44	NA	A-SW-44_05042016	N		04-May-16
WS_All	Surface Water	Surface Water	SW-45	NA	A-SW-45_05052016	N		05-May-16
WS_All	Surface Water	Surface Water	SW-46	NA	A-SW-46_05052016	N		05-May-16
WS_All	Surface Water	Surface Water	SW-47	NA	A-SW-47_05042016	N		04-May-16
WS_All	Surface Water	Surface Water	SW-48	NA	A-SW-48_05042016	N		04-May-16
WS_All	Surface Water	Surface Water	SW-49	NA	A-SW-49_05052016	N		05-May-16
WS_All	Surface Water	Surface Water	SW-50	NA	A-SW-001_02262016	N		26-Feb-16

NOTES:

N = Normal.

NA = Not applicable.

FD = Field duplicate.

Indoor air and soil gas samples collected during baseline differential pressure conditions (i.e., building was not pressurized or depressurized during the time the sample was collected).

TABLE F-2

Comparison of COPC Concentrations in Indoor Air, Outdoor Air, Soil Gas, and Groundwater to Applicable Risk-Based Vapor Intrusion Screening Levels

700 South 1600 East PCE Plume AOU-1: East Side Springs

Department of Veterans Affairs Salt Lake City Health Care System

Medium/ Data Group	Analysis Method	Preliminary COPC	CASRN	Unit	Number of Samples	Number of Detections	Minimum Detected Result	Maximum Detected Result	Residential RBSL [(a)]	Commercial/School Worker RBSL [(b)]	Maximum Detection Exceeds Residential RBSL? (Yes/No)	Number of Detected Concentrations Exceeding Residential RBSL	Maximum Detection Exceeds Commercial/ School Worker RBSL? (Yes/No)	Number of Detected Concentrations Exceeding Commercial/ School Worker RBSL	COPC? [(c)] (Yes/No)
Indoor Air															
AI_All	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	μg/m^3	162	28	0.36	3.05	NSL	NSL	N	--	N	--	N
AI_All	HAPSITE VOCS	Tetrachloroethene	127-18-4	μg/m^3	155	63	0.7	40	11	47	Y	2	N	--	Y
AI_All	HAPSITE VOCS	Trichlorethene	79-01-6	μg/m^3	161	12	0.7	9.3	0.48	3	Y	12	Y	7	Y
AI_All	TO15	1,4-Dioxane	123-91-1	μg/m^3	16	1	2.3	2.3	0.56	2.5	Y	1	N	--	Y
AI_All	TO15	cis-1,2-Dichloroethene	156-59-2	μg/m^3	23	0	n/d	n/d	NSL	NSL	--	--	--	--	N
AI_All	TO15	Tetrachloroethene	127-18-4	μg/m^3	23	19	0.37	17	11	47	Y	3	N	--	Y
AI_All	TO15	Trichlorethene	79-01-6	μg/m^3	23	3	0.29	0.83	0.48	3	Y	1	N	--	Y
AI_All	TO15	Vinyl Chloride	75-01-4	μg/m^3	23	1	0.19	0.19	0.17	2.8	Y	1	N	--	Y
Outdoor Air															
OA_All	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	μg/m^3	30	0	n/d	n/d	--	--	--	--	--	--	--
OA_All	HAPSITE VOCS	Tetrachloroethene	127-18-4	μg/m^3	30	1	75.9	75.9	--	--	--	--	--	--	--
OA_All	HAPSITE VOCS	Trichlorethene	79-01-6	μg/m^3	30	0	n/d	n/d	--	--	--	--	--	--	--
OA_All	TO15	cis-1,2-Dichloroethene	156-59-2	μg/m^3	2	0	n/d	n/d	--	--	--	--	--	--	--
OA_All	TO15	Tetrachloroethene	127-18-4	μg/m^3	2	0	n/d	n/d	--	--	--	--	--	--	--
OA_All	TO15	Trichlorethene	79-01-6	μg/m^3	2	0	n/d	n/d	--	--	--	--	--	--	--
OA_All	TO15	Vinyl Chloride	75-01-4	μg/m^3	2	0	n/d	n/d	--	--	--	--	--	--	--
Soil Gas															
GS_All	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	μg/m^3	23	3	0.48	0.59	NSL	NSL	N	--	N	--	N
GS_All	HAPSITE VOCS	Tetrachloroethene	127-18-4	μg/m^3	23	13	2.1	627.7	370	1600	Y	1	N	--	Y
GS_All	HAPSITE VOCS	Trichlorethene	79-01-6	μg/m^3	23	2	3.6	4.5	16	100	N	--	N	--	Y
GS_All	TO15	1,4-Dioxane	123-91-1	μg/m^3	2	0	n/d	n/d	19	83	--	--	--	--	Y
GS_All	TO15	cis-1,2-Dichloroethene	156-59-2	μg/m^3	6	1	2.8	2.8	NSL	NSL	N	--	N	--	N
GS_All	TO15	Tetrachloroethene	127-18-4	μg/m^3	6	4	1.5	2000	370	1600	Y	2	Y	1	Y
GS_All	TO15	Trichlorethene	79-01-6	μg/m^3	6	3	17	21	16	100	Y	3	N	--	Y
GS_All	TO15	Vinyl Chloride	75-01-4	μg/m^3	6	0	n/d	n/d	5.7	93	--	--	--	--	Y
Groundwater															
WG_All	SOM02.3	1,4-Dioxane	123-91-1	μg/m^3	21	1	2.7	2.7	2900	13000	N	--	N	--	Y
WG_All	SOM02.3	cis-1,2-Dichloroethene	156-59-2	μg/m^3	62	27	0.11	3.9	NSL	NSL	N	--	N	--	N
WG_All	SOM02.3	Tetrachloroethene	127-18-4	μg/m^3	62	54	0.13	61	15	65	Y	18	N	--	Y
WG_All	SOM02.3	Trichlorethene	79-01-6	μg/m^3	62	40	0.11	7.7	1.2	7.5	Y	10	Y	1	Y
WG_All	SOM02.3	Vinyl Chloride	75-01-4	μg/m^3	62	0	n/d	n/d	0.15	2.5	--	--	--	--	Y

NOTES:

a. The Indoor Air SLs are from Appendix F of the Remedial Investigation Work Plan (FE 2015) and are equivalent to the indoor air RSLs from the EPA RSL table (EPA 2017a).

The Soil Gas RBSLs are the soil gas VISLs (i.e., the indoor air RSLs multiplied by a generic soil-gas-to-indoor air attenuation factor of 0.03) [EPA 2017c]).

The Groundwater SLs are based on the indoor air RSLs from the EPA RSL table (EPA 2017a) and the generic groundwater-to-indoor air attenuation factor of 0.001, assuming an average groundwater temperature of 25 degrees Celsius (EPA 2017b). See Table F1-1.

b. The SLs are based on either a target cancer risk of 1 x 10^{-6} and a noncancer hazard quotient of 1, whichever results in the lower SL.

c. Preliminary COPCs detected at concentrations exceeding their respective residential SLs in any medium (Indoor Air, Soil Gas, or Groundwater) were identified as COPCs.

TABLE F-2

Comparison of COPC Concentrations in Indoor Air, Outdoor Air, Soil Gas, and Groundwater to Applicable Risk-Based Vapor Intrusion Screening Levels

700 South 1600 East PCE Plume AOU-1: East Side Springs

Department of Veterans Affairs Salt Lake City Health Care System

--	= None or not applicable.
µg/L	= Micrograms per liter.
$\mu g/m^3$	= Micrograms per cubic meter.
CASRN	= Chemical Abstracts Service Registry Number.
COPC	= Contaminant of potential concern.
EPA	= U.S. Environmental Protection Agency.
n/d	= Not detected.
NSL	= No screening level.
RBSL	= Risk-based screening level.
RSL	= Regional screening level.
SL	= Screening level.
VISL	= Vapor Intrusion Screening Level.
VOCS	= Volatile organic compounds.

TABLE F-3

Comparison of COPC Concentrations in Surface Water to Applicable Risk-Based Screening Levels

700 South 1600 East PCE Plume AOU-1: East Side Springs

Department of Veterans Affairs Salt Lake City Health Care System

Preliminary COPC	CASRN	Number of Samples	Number of Detections	Minimum Detected Result	Maximum Detected Result	Residential RBSL [(a)(b)] (µg/L)	Commercial/ School Worker RBSL [(a)(b)] (µg/L)	SW $RBSL_{Direct}$ (Direct Contact Ing/Derm) [(b)(c)] (µg/L)	SW $RBSL_{plant}$ (Ingestion) [(b)(d)] (µg/L)	Maximum Detection Exceeds Residential RBSL? (Yes/No)	Maximum Detection Exceeds Commercial/ School Worker RBSL? (Yes/No)	Maximum Detection Exceeds SW $RBSL_{Direct}$ (Direct Contact Ing/Derm)? (Yes/No)	Maximum Detection Exceeds SW $RBSL_{Plant}$ (Ingestion)? (Yes/No)	Maximum Detection Exceeds Commercial/ School Worker $RBSL_{water-to-soil}$? (Yes/No)	COPC? [(e)] (Yes/No)
1,4-Dioxane	123-91-1	10	0	n/d	n/d	1000000	4600000	160	77	--	--	--	--	--	Y
cis-1,2-Dichloroethene	156-59-2	50	20	0.11	0.69	2000000	29000000	3000	1204	N	N	N	N	N	N
Tetrachloroethene	127-18-4	50	42	0.13	82	130000	530000	1500	247	N	N	N	N	N	Y
Trichlorethene	79-01-6	50	31	0.09	2.3	7700	49000	110	63	N	N	N	N	N	Y
Vinyl Chloride	75-01-4	50	0	n/d	n/d	1400	39000	0.61	7.4	--	--	--	--	--	Y

Notes:

a. SW RBSL Protection of Soil. See Table F1-1.

b. The RBSLs are based on a target cancer risk of 1 x 10^{-6} and a noncancer hazard quotient of 1, whichever is the lower RBSL.

c. SW $RBSL_{Direct}$ is from the Remedial Investigation Work Plan (FE 2015) and was calculated using the EPA RSL calculator (EPA 2017b). See Table F1-2.

d. SW $RBSL_{Plant}$ was calculated in Attachment 4 of the Risk Assessment Work Plan (Appendix E of FE 2015). See Table F1-3.

e. Preliminary COPCs detected at concentrations exceeding their respective residential SLs in any medium (Indoor Air, Soil Gas, or Groundwater) were identified as COPCs.

-- = Not applicable.

µg/L = Micrograms per liter.

CASRN = Chemical Abstracts Service Registry Number.

COPC = Contaminant of potential concern.

Direct Contact Ing/Derm = Direct contact through incidental ingestion and dermal contact

EPA = U.S. Environmental Protection Agency.

n/d = Not detected.

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TABLE F-4

Comparison of COPC Concentrations in Soil to Applicable Risk-Based Screening Levels

700 South 1600 East PCE Plume AOU-1: East Side Springs

Department of Veterans Affairs Salt Lake City Health Care System

Preliminary COPC	CASRN	Number of Samples	Number of Detections	Minimum Detected Result (mg/kg)	Maximum Detected Result (mg/kg)	Residential RBSL [(a)(b)] (mg/kg)	Commercial/ School Worker RBSL [(a)(b)] (mg/kg)	Maximum Detection Exceeds Residential RBSL? (Yes/No)	Maximum Detection Exceeds Commercial/ School Worker RBSL? (Yes/No)	COPC? [(c)] (Yes/No)
1,4-Dioxane	123-91-1	2	0	n/d	n/d	5.3	24	--	--	N
cis-1,2-Dichloroethene	156-59-2	2	0	n/d	n/d	160	2300	--	--	N
Tetrachloroethene	127-18-4	2	1	0.022	0.022	24	100	N	N	N
Trichlorethene	79-01-6	2	0	n/d	n/d	0.94	6	--	--	N
Vinyl Chloride	75-01-4	2	0	n/d	n/d	0.059	1.7	--	--	N

NOTES:

a. Soil SLs were obtained from EPA RSL table (EPA 2017a). See Table F1-2.

b. The SLs are based on a target cancer risk of 1 x 10^{-6} and a noncancer hazard quotient of 1, whichever results in the lower SL.

c. Preliminary COPCs detected at concentrations exceeding their respective residential SLs in any medium (Indoor Air, Soil Gas, or Groundwater) were identified as COPCs.

-- = Not applicable.

CASRN = Chemical Abstracts Service Registry Number.

COPC = Contaminant of potential concern.

EPA = U.S. Environmental Protection Agency.

mg/kg = Milligrams per kilogram.

n/d = Not detected

RBSL = Risk-based screening level.

RSL = Regional screening level.

SL = Screening level.

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TABLE F-5
Exposure Factors
700 South 1600 East PCE Plume AOU-1: East Side Springs
Department of Veterans Affairs Salt Lake City Health Care System

Exposure Parameter	Abbreviation	Units	Resident	Source	Commercial/ School Worker	Source
Exposure Frequency (Adult)	EF	day/year	350	EPA 2014	250	EPA 2014
Exposure Frequency (Child)	EF	day/year	350	EPA 2014	-	EPA 2014
Exposure Time (Adult)	ET	hour/day	24	EPA 2014	8	EPA 2014
Exposure Time (Child)	ET	hour/day	24	EPA 2014	-	EPA 2014
Exposure Duration (Adult)	ED	year	20	EPA 2014	25	EPA 2014
Exposure Duration (Child)	ED	year	6	EPA 2014	-	EPA 2014
Averaging Time for carcinogens	ATc	years	70	EPA 2014	70	EPA 2014
Averaging Time for noncarcinogens	ATnc	years	26	EPA 2014	25	EPA 2014

NOTES:
EPA = U.S. Environmental Protection Agency.

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TABLE F-6
Toxicity Factors
700 South 1600 East PCE Plume AOU-1: East Side Springs
Department of Veterans Affairs Salt Lake City Health Care System

Preliminary COPC	CASRN	Henry's Law Constant	Inhalation Unit Risk $(\mu g/m^3)^{-1}$	Reference	Inhalation Reference Concentration (mg/m^3)	Target Organ/Critical Effect System	Reference
1,4-Dioxane	123-91-1	2.0E-04	5.0E-06	IRIS (EPA 2018b)	3.0E-02	Nervous, Respiratory	IRIS (EPA 2018b)
cis-1,2-Dichloroethene	156-59-2	1.7E-01	n/a		n/a		
Tetrachloroethene	127-18-4	7.2E-01	2.6E-07	IRIS (EPA 2018b)	4.0E-02	Nervous, Ocular	IRIS (EPA 2018b)
Trichloroethene	79-01-6	4.0E-01	4.1E-06	IRIS (EPA 2018b)	2.0E-03	Developmental, Immune	IRIS (EPA 2018b)
Vinyl chloride	75-01-4	1.1E+00	4.4E-06	IRIS (EPA 2018b)	1.0E-01	Hepatic	IRIS (EPA 2018b)

NOTES:

$\mu g/m^3$ = Micrograms per cubic meter.

CASRN = Chemical Abstracts Service Registry Number.

EPA = U.S. Environmental Protection Agency.

IRIS = Integrated Risk Information System (http://www.epa.gov/iris/).

mg/m^3 = Milligrams per cubic meter.

n/a = Toxicity factors not available for cis-1,2-Dichloroethene.

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TABLE F-7

Indoor Air Risk Screening Summary – Baseline Conditions – HAPSITE Detections Only [a]

700 South 1600 East PCE Plume AOU-1: East Side Springs

Department of Veterans Affairs Salt Lake City Health Care System

Location ID	Sample ID	Sample Date	Associated Yes Source? [b]	Residential	Commercial/School Worker	Comment
				No. of COPCs Greater than Residential Risk-based Screening Level Exceedance?	No. of COPCs Greater than Worker Risk-based Screening Level Exceedance?	
0001H-IA-BAS1	A-0001H-031517-IA-005-BAS1	3/15/2017	No	0	0	TO-15 sample was collected as confirmation. See Table F-8.
0001H-IA-BAS1	A-0001H-031517-IA-012-BAS1	3/22/2017	No	0	0	TO-15 sample was collected as confirmation. See Table F-8.
0001H-IA-BAT1	A-0001H-031517-IA-010-BAT1	3/15/2017	No	0	0	TO-15 sample was collected as confirmation. See Table F-8.
0001H-IA-BED1	A-0001H-031517-IA-007-BED1	3/15/2017	No	0	0	TO-15 sample was collected as confirmation. See Table F-8.
0001H-IA-LIV1	A-0001H-031517-IA-004-LIV1	3/15/2017	No	0	0	TO-15 sample was collected as confirmation. See Table F-8.
0001H-IA-LIV1	A-0001H-031517-IA-010-LIV1	3/22/2017	No	0	0	TO-15 sample was collected as confirmation. See Table F-8.
0001H-IA-MBED1	A-0001H-031517-IA-009-MBED1	3/15/2017	No	0	0	TO-15 sample was collected as confirmation. See Table F-8.
0001H-IA-SUM1	A-0001H-031517-IA-006-SUM1	3/15/2017	No	0	0	TO-15 sample was collected as confirmation. See Table F-8.
0001H-IA-WBED1	A-0001H-031517-IA-008-WBED1	3/15/2017	No	0	0	TO-15 sample was collected as confirmation. See Table F-8.
0002H-IA-FLD1	A-0002H-032217-IA-019-FLD1	3/22/2017	No	0	0	TO-15 sample was collected as confirmation. See Table F-8.
0002H-IA-KIT1	A-0002H-032217-IA-018-KIT1	3/22/2017	No	0	0	TO-15 sample was collected as confirmation. See Table F-8.
0012H-IA-BAS1	A-0012H-031317-IA-016-BAS1	3/13/2017	No	0	0	TO-15 sample was collected as confirmation. See Table F-8.
0012H-IA-BAT1	A-0012H-031317-IA-018-BAT1	3/13/2017	No	0	0	TO-15 sample was collected as confirmation. See Table F-8.
0012H-IA-FDR1	A-0012H-031317-IA-020-FDR1	3/13/2017	No	0	0	TO-15 sample was collected as confirmation. See Table F-8.
0012H-IA-LAU1	A-0012H-031317-IA-019-LAU1	3/13/2017	No	0	0	TO-15 sample was collected as confirmation. See Table F-8.
0012H-IA-LIV1	A-0012H-031317-IA-014-LIV1	3/13/2017	No	0	0	TO-15 sample was collected as confirmation. See Table F-8.
0012H-IA-OFF1	A-0012H-031317-IA-017-OFF1	3/13/2017	No	0	0	TO-15 sample was collected as confirmation. See Table F-8.
0026H-IA-BAS1	A-0026H-030917-IA-007-BAS1	3/9/2017	No	0	0	TO-15 sample was collected as confirmation. See Table F-8.
0026H-IA-HAL1	A-0026H-030917-IA-010-HAL1	3/9/2017	No	0	0	TO-15 sample was collected as confirmation. See Table F-8.
0026H-IA-LAN1	A-0026H-030917-IA-011-LAN1	3/9/2017	No	0	0	TO-15 sample was collected as confirmation. See Table F-8.
0026H-IA-LAU1	A-0026H-030917-IA-008-LAU1	3/9/2017	No	0	0	TO-15 sample was collected as confirmation. See Table F-8.
0026H-IA-LIV1	A-0026H-030917-IA-009-LIV1	3/9/2017	No	0	0	TO-15 sample was collected as confirmation. See Table F-8.
0026H-IA-UTI1	A-0026H-030917-IA-012-UTI1	3/9/2017	No	0	0	TO-15 sample was collected as confirmation. See Table F-8.
0029H-IA-BAS1	A-0029H-033017-IA-004-BAS1	3/30/2017	No	0	0	TO-15 sample was collected as confirmation. See Table F-8.
0029H-IA-LAN1	A-0029H-033017-IA-005-LAN1	3/30/2017	No	0	0	TO-15 sample was collected as confirmation. See Table F-8.
0029H-IA-LIV1	A-0029H-033017-IA-002-LIV1	3/30/2017	No	0	0	TO-15 sample was collected as confirmation. See Table F-8.
0045S-IA-AUTO-A	0045S-IA-AUTO-A-20160304-BL-046	3/4/2016	Yes	0	0	No further evaluation.

TABLE F-7

Indoor Air Risk Screening Summary – Baseline Conditions – HAPSITE Detections Only [a]

700 South 1600 East PCE Plume AOU-1: East Side Springs

Department of Veterans Affairs Salt Lake City Health Care System

Location ID	Sample ID	Sample Date	Associated Yes Source? [b]	Residential: No. of COPCs Greater than Residential Risk-based Screening Level Exceedance?	Commercial/School Worker: No. of COPCs Greater than Worker Risk-based Screening Level Exceedance?	Comment
0045S-IA-CHEM-A	0045S-IA-CHEM-A-20160304-BL-014	3/4/2016	Yes	1	0	Comparison to Residential RBSL not applicable. Worker RBSL is not exceeded; no further evaluation.
0045S-IA-HEXIT	0045S-IA-HEXIT-20160322-BL-039	3/22/2016	Yes	1	0	
0047H-IA-BOFF	0047H-IA-BOFF-20160225-BL-008	2/25/2016	No	0	0	No further evaluation.
0047H-IA-LAU	0047H-IA-LAU-20160225-BL-003	2/25/2016	No	0	0	No further evaluation.
0047H-IA-LIV	0047H-IA-LIV-20160225-BL-002	2/25/2016	No	0	0	No further evaluation.
0047H-IA-MEC	0047H-IA-MEC-20160225-BL-010	2/25/2016	No	0	0	No further evaluation.
0047H-IA-MECS	0047H-IA-MEC-20160225-BL-012	2/25/2016	No	0	0	No further evaluation.
0047H-IA-REST	0047H-IA-REST-20160225-BL-005	2/25/2016	No	0	0	No further evaluation.
0047H-IA-UBED	0047H-IA-UBED-20160225-BL-006	2/25/2016	No	0	0	No further evaluation.
0047H-IA-UOFF	0047H-IA-UOFF-20160225-BL-004	2/25/2016	No	0	0	No further evaluation.
0051H-IA-BLIV	0051H-IA-BLIV-20160226-BL-004	2/26/2016	No	0	0	TO-15 sample was collected. See Table F-8.
0051H-IA-MULIV	0051H-IA-ULIV-20160226-BL-003	2/26/2016	No	0	0	TO-15 sample was collected. See Table F-8.
0051H-IA-UBED	0051H-IA-UBED-20160226-BL-005	2/26/2016	No	0	0	TO-15 sample was collected. See Table F-8.
0052H-IA-BAT	0052H-IA-BAT-20160311-BL-013	3/11/2016	No	0	0	No further evaluation.
0052H-IA-OFF	0052H-IA-OFF-20160311-BL-012	3/11/2016	No	0	0	No further evaluation.
0052H-IA-UBEDN	0052H-IA-UBEDN-20160311-BL-008	3/11/2016	No	0	0	No further evaluation.
0052H-IA-UBEDS	0052H-IA-UBEDS-20160311-BL-010	3/11/2016	No	0	0	No further evaluation.
0052H-IA-UHAL	0052H-IA-UHAL-20160311-BL-005	3/11/2016	No	0	0	No further evaluation.
0053H-IA-CRWL	0053H-IA-CRWL-20160502-BL-023	5/2/2016	No	1	0	TO-15 Sample Collected. See Table F-8.
0053H-IA-KIT	0053H-IA-KIT-20160502-BL-019	5/2/2016	No	0	0	TO-15 Sample Collected. See Table F-8.
0054H-IA-BAT	0054H-IA-BAT-20160509-BL-015	5/9/2016	Yes	1	1	No further evaluation. See Table F-11.
0054H-IA-CONT	0054H-IA-CONT-20160603-BL-044	6/3/2016	Yes	1	1	No further evaluation. See Table F-11.
0054H-IA-GAR	0054H-IA-GAR-20160509-BL-012	5/9/2016	Yes	1	0	No further evaluation. See Table F-11.
0054H-IA-LAU	0054H-IA-LAU-20160509-BL-017	5/9/2016	Yes	1	1	No further evaluation. See Table F-11.
0054H-IA-LAU	0054H-IA-LAU-20160603-BL-008	6/3/2016	Yes	1	0	No further evaluation. See Table F-11.
0054H-IA-LIV	0054H-IA-LIV-20160509-BL-009	5/9/2016	Yes	1	1	No further evaluation. See Table F-11.
0054H-IA-LIV	0054H-IA-LIV-20160603-BL-011	6/3/2016	Yes	1	0	No further evaluation. See Table F-11.
0054H-IA-SBED	0054H-IA-SBED-20160509-BL-020	5/9/2016	Yes	1	1	No further evaluation. See Table F-11.

TABLE F-7

Indoor Air Risk Screening Summary – Baseline Conditions – HAPSITE Detections Only [a]

700 South 1600 East PCE Plume AOU-1: East Side Springs

Department of Veterans Affairs Salt Lake City Health Care System

Location ID	Sample ID	Sample Date	Associated Yes Source? [b]	Residential: No. of COPCs Greater than Residential Risk-based Screening Level Exceedance?	Commercial/School Worker: No. of COPCs Greater than Worker Risk-based Screening Level Exceedance?	Comment
0054H-IA-SHOP	0054H-IA-SHOP-20160509-BL-019	5/9/2016	Yes	1	1	No further evaluation. See Table F-11.
0054H-IA-SHOP	0054H-IA-SHOP-20160603-BL-006	6/3/2016	Yes	1	0	No further evaluation. See Table F-11.
0054H-IA-SUM	0054H-IA-SUM-20160603-BL-007	6/3/2016	Yes	1	1	No further evaluation. See Table F-11.
0055H-IA-BBHAL	0055H-IA-BHAL-20160513-BL-016	5/13/2016	No	0	0	No further evaluation.
0055H-IA-LAU	0055H-IA-LAU-20160513-BL-017	5/13/2016	No	0	0	No further evaluation.
0055H-IA-UHAL	0055H-IA-UHAL-20160513-BL-015	5/13/2016	No	0	0	No further evaluation.
0056H-IA-BAS	0056H-IA-BAS-20160503-NA-004	5/3/2016	No	0	0	No further evaluation.
0056H-IA-BBED	0056H-IA-BBED-20160503-NA-006	5/3/2016	No	0	0	No further evaluation.
0056H-IA-FRM	0056H-IA-FRM-20160503-NA-003	5/3/2016	No	0	0	No further evaluation.
0063H-IA-BAS1	A-0063H-032117-IA-013-BAS1	3/21/2017	No	0	0	No further evaluation.
0063H-IA-BAT1	A-0063H-032117-IA-014-BAT1	3/21/2017	No	0	0	No further evaluation.
0064H-IA-LIV1	A-0064H-041317-IA-002-LIV1	4/13/2017	No	0	0	TO-15 sample was collected as confirmation. See Table F-8.

NOTES:

a. See Table F2-2 for reporting limit evaluation (non-detects).

b. See Table F-11, EA 2016b, and Appendix H-4 of the Remedial Investigation Report.

COPC = Contaminant of potential concern.

RBSL = Risk-based screening level.

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TABLE F-8

Risk Estimate Summary – Indoor Air – TO-15 Detections Only [a]

700 South 1600 East PCE Plume AOU-1: East Side Springs

Department of Veterans Affairs Salt Lake City Health Care System

				Residential		
Location ID	**Sample ID**	**Sample Date**	**Associated Yes Source? (b)**	**ELCR (c)**	**HI (d)**	**Maximum HQ (e)**
0001H-TO-BAS	A-0001H-032317-TO-001-BAS	3/23/2017	No	1.E-07	0.03	0.03
0001H-TO-BAS	A-0001H-032317-TO-002-BAS	3/23/2017	No	1.E-06	0.002	0.002
0002H-TO-BAS	A-0002H-032317-TO-001-BAS	3/23/2017	No	7.E-07	0.2	0.1
0003H-IA-BAS	A-0003H-030316-IA-BAS	3/3/2016	Yes	1.E-07	0.03	0.03
0003H-TO-BAS	A-0003H-040915-TO-002-BAS	4/9/2015	Yes	1.E-07	0.04	0.04
0003H-TO-BBB	A-0003H-040915-TO-003-BBB	4/9/2015	Yes	2.E-07	0.04	0.04
0003H-TO-LIV	A-0003H-040915-TO-001-LIV	4/9/2015	Yes	2.E-06	0.4	0.4
0008H-TO-BAS	A-0008H-041015-TO-001-BAS	4/10/2015	Yes	3.E-07	0.07	0.07
0011H-IA-LLL	A-0011H-030116-IA-012A-LLL	3/1/2016	No	1.E-06	0.3	0.3
0012H-TO-BAS	A-0012H-031417-TO-001-BAS	3/14/2017	No	2.E-07	0.06	0.06
0017H-IA-BAS	A-0017H-031616-IA-BAS	3/16/2016	**No**	**2.E-06**	0.4	0.2
0018H-IA-BAS	A-0018H-031616-IA-BAS	3/16/2016	**No**	**3.E-06**	0.7	0.4
0023-IA-BA1	A-0023-031616-IA-BA1	3/16/2016	No	1.E-07	0.03	0.03
0025H-TO-BAS	A-0025H-031417-TO-001-BAS	3/14/2017	Yes	**4.E-06**	0.08	0.07
0026H-TO-LIV	A-0026H-031617-TO-001-LIV	3/16/2017	No	2.E-07	0.05	0.05
0026H-TO-PAN	A-0026H-040815-TO-001-PAN	4/8/2015	No	2.E-07	0.05	0.05
0029H-TO-BAS	A-0029H-033117-TO-001-BAS	3/31/2017	No	2.E-07	0.05	0.05
0030H-TO-BAS	A-0030H-041115-TO-001-BAS	4/11/2015	No	5.E-07	0.1	0.1
0036H-TO-BAS	A-0036H-040415-TO-001-BAS	4/2/2015	No	3.E-07	0.09	0.09
0037H-TO-LAU	A-0037H-030816-IA-LAU	3/8/2016	No	7.E-07	0.1	0.1
0051H-IA-BAS	A-0051-031616-IA-BAS	3/16/2016	No	2.E-07	0.05	0.05
0053H-TO-BAS	A-0053H-052416-IA-BAS	3/16/2016	No	1.E-06	0.3	0.3
0064H-TO-LIV	A-0064H-041417-TO-001-LIV	4/14/2017	No	2.E-07	0.05	0.05
			Minimum:	1.E-07		0.002
			Maximum:	**4.E-06**		0.4
			Minimum (f):	1.E-07		0.002
			Maximum (f):	**3.E-06**		0.4

NOTES:

a. See Table F2-2 for reporting limit evaluation (non-detects).

b. See Table F-11,EA 2016b, and Appendix H-4 of the Remedial Investigation Report.

c. Sample-specific cumulative ELCR

d. Sample-specific HI

e. Maximum HQ presents the highest COPC-specific HQ.

f. Range of risk estimates for locations with background sources identified. Background sources identified for 0045-S, 0003-H, 0025-H, and 0054-H. See Table F-10.

COPC = Cotaminant of potential concern.

ELCR = Excess lifetime cancer risk.

HI = Hazard Index

HQ = Hazard Quotient

BOLDED values represent ELCR or HI estimates greater than 1E-06 or 1, respectively.

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TABLE F-9

Risk Estimate Summary – Groundwater to Indoor Air - Detections Only [a]

700 South 1600 East PCE Plume AOU-1: East Side Springs

Department of Veterans Affairs Salt Lake City Health Care System

Sample Name	Residential			Future Commercial/School Worker		
	ELCR [b]	HI [c]	Maximum HQ [d]	ELCR [b]	HI [c]	Maximum HQ [d]
A-GW-001_03042016	5.E-08	0.01	0.01	1.E-08	0.003	0.003
A-GW-007_02282016	**3.E-06**	0.7	0.6	6.E-07	0.2	0.1
A-GW-008_02272016	**2.E-06**	0.5	0.3	4.E-07	0.1	0.1
A-GW-010-D_02272016	**2.E-07**	0.05	0.02	4.E-08	0.01	0.01
A-GW-011_02272016	**4.E-06**	0.9	0.8	8.E-07	0.2	0.2
A-GW-013_03042016	**2.E-06**	0.4	0.4	4.E-07	0.1	0.1
A-GW-015_02292016	**2.E-06**	0.5	0.5	5.E-07	0.1	0.1
A-GW-015-D_02292016	5.E-07	0.1	0.1	8.E-08	0.03	0.03
A-GW-016_02282016	2.E-06	0.5	0.3	4.E-07	0.1	0.1
A-GW-020_03012016	1.E-06	0.2	0.2	2.E-07	0.06	0.05
A-GW-026_02282016	2.E-08	0.005	0.005	4.E-09	0.001	0.001
A-GW-027_03052016	**2.E-06**	0.4	0.4	4.E-07	0.1	0.1
A-GW-028_03052016	**3.E-06**	0.8	0.7	7.E-07	0.2	0.2
A-GW-043_03032016	2.E-08	0.006	0.006	5.E-09	0.001	0.001
A-GW-050_02292016	**2.E-06**	0.4	0.3	3.E-07	0.09	0.08
A-GW-051_03042016	**2.E-06**	0.4	0.4	4.E-07	0.1	0.1
A-GW-055_03052016	1.E-08	0.003	0.003	3.E-09	0.0008	0.0008
A-GW-059_03052016	**6.E-06**	1	1	1.E-06	0.4	0.4
A-GW-061_03052016	2.E-07	0.04	0.04	4.E-08	0.01	0.01
A-GW-10_09202016	2.E-07	0.06	0.04	4.E-08	0.01	0.01
A-GW-11_09192016	**3.E-06**	0.7	0.6	6.E-07	0.2	0.1
A-GW-16_09192016	**2.E-06**	0.5	0.3	4.E-07	0.1	0.1
A-GW-20_09192016	8.E-07	0.2	0.1	2.E-07	0.05	0.04
A-GW-49_09202016	7.E-08	0.02	0.02	2.E-08	0.005	0.005
A-GW-50_09202016	**6.E-06**	1	1	9.E-07	0.3	0.3
A-GW-52_09202016	**3.E-06**	0.8	0.7	7.E-07	0.2	0.2
A-GW-53_09192016	**3.E-06**	0.9	0.8	8.E-07	0.2	0.2
A-GW-59_09192016	**6.E-06**	1	1	1.E-06	0.3	0.3
A-GW-61_09202016	3.E-07	0.08	0.05	7.E-08	0.02	0.01
A-GW-003_02262016	3.E-08	0.008	0.008	7.E-09	0.002	0.002
A-GW-004_02262016	1.E-06	0.3	0.2	2.E-07	0.07	0.05
A-GW-005_02262016	9.E-08	0.02	0.02	2.E-08	0.006	0.006
A-GW-009_02262016	2.E-06	0.5	0.5	3.E-07	0.1	0.1
A-GW-10_07122016	7.E-08	0.02	0.02	2.E-08	0.005	0.005
A-GW-11_07112016	**3.E-06**	0.9	0.8	8.E-07	0.2	0.2
A-GW-014_03022016	**2.E-06**	0.4	0.4	3.E-07	0.1	0.1
A-GW-16_07112016	1.E-06	0.3	0.2	3.E-07	0.08	0.05
A-GW-017_03022016	5.E-07	0.1	0.1	9.E-08	0.03	0.03
A-GW-018_03022016	**2.E-06**	0.6	0.4	4.E-07	0.1	0.1

TABLE F-9

Risk Estimate Summary – Groundwater to Indoor Air - Detections Only [a]

700 South 1600 East PCE Plume AOU-1: East Side Springs

Department of Veterans Affairs Salt Lake City Health Care System

Sample Name	Residential			Future Commercial/School Worker		
	ELCR [b]	**HI [c]**	**Maximum HQ [d]**	**ELCR [b]**	**HI [c]**	**Maximum HQ [d]**
A-GW-20_07112016	9.E-07	0.2	0.1	2.E-07	0.05	0.03
A-GW-040_03032016	9.E-09	0.002	0.002	2.E-09	0.0005	0.0005
A-GW-046_02242016	1.E-08	0.003	0.003	3.E-09	0.0008	0.0008
A-GW-049_02252016	8.E-08	0.02	0.02	2.E-08	0.005	0.005
A-GW-49_07122016	7.E-08	0.02	0.02	2.E-08	0.005	0.005
A-GW-50_07122016	**5.E-06**	1	1	9.E-07	0.3	0.3
A-GW-052-D_03032016	**5.E-06**	1	1	1.E-06	0.3	0.3
A-GW-52_07122016	**4.E-06**	1	1	9.E-07	0.2	0.2
A-GW-053_03032016	**3.E-06**	0.8	0.6	7.E-07	0.2	0.2
A-GW-53_07112016	**3.E-06**	0.9	0.7	7.E-07	0.2	0.2
A-GW-59_07112016	**5.E-06**	1	1	8.E-07	0.3	0.3
A-GW-060_03082016	**2.E-06**	0.4	0.2	3.E-07	0.09	0.05
A-GW-61_07122016	2.E-07	0.05	0.05	4.E-08	0.01	0.01
A-GW-062_03082016	**2.E-06**	0.4	0.3	3.E-07	0.09	0.08
A-GW-012_03092016	5.E-07	0.1	0.1	1.E-07	0.03	0.02

NOTES:

a. See Table F2-2 for reporting limit evaluation (non-detects).

b. Sample-specific cumulative ELCR.

c. Sample-specific HI.

d. Maximum HQ presents the highest COPC-specific HQ.

COPC = Contaminant of potential concern.

ELCR = Excess lifetime cancer risk.

HI = Hazard Index.

HQ = Hazard Quotient.

BOLDED values represent ELCR or HI estimates greater than 1E-06 or 1, respectively.

TABLE F-10

Risk Estimate Summary – Soil Gas to Indoor Air - Detections Only [a]

700 South 1600 East PCE Plume AOU-1: East Side Springs

Department of Veterans Affairs Salt Lake City Health Care System

Analysis Method	Sample Name	Residential			Commercial/School Worker		
		ELCR [b]	**HI [c]**	**Maximum HQ [d]**	**ELCR [b]**	**HI [c]**	**Maximum HQ [d]**
TO15	A-0008H-041015-SG-001B-4	8.E-09	0.002	0.00	2.E-09	0.0005	0.0005
	A-0030H-041115-SG-001A-6	1.E-06	0.2	0.2	2.E-07	0.06	0.06
	A-0053H-052316-SG-001-6'(0037)	**7.E-06**	**2**	1	1.E-06	0.4	0.3
	A-0053H-052316-SG-001-6'(0050)	**5.E-06**	1	1	1.E-06	0.3	0.3

NOTES:

a. See Table F2-2 for reporting limit evaluation (non-detects).

b. Sample-specific cumulative ELCR

c. Sample-specific HI

d. Maximum HQ presents the highest COPC-specific HQ.

COPC = Contaminant of potential concern.

ELCR = Excess lifetime cancer risk.

HI = Hazard Index.

HQ = Hazard Quotient.

BOLDED values represent ELCR or HI estimates greater than 1E-06 or 1, respectively.

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TABLE F-11
Lines of Evidence for Locations with Non-Site-Related Indoor Air Concentrations
700 South 1600 East PCE Plume AOU-1: East Side Springs
Department of Veterans Affairs Salt Lake City Health Care System

Location	Risk Characterization Results	Vapor Intrusion Lines of Evidence[a]	Conclusion
0045-S	PCE (CHEM-A sample) and TCE (HEXIT sample) detected in indoor air HAPSITE samples greater than RBSLs.	Samples from areas with potential chemicals sources (chemical storage area and auto shop). Low strength source in groundwater near building: PCE detected in groundwater samples slighlty above the RBSL and TCE was not detected in groundwaters sample greater than the RBSL. Lack of subsurface source near building: PCE detected in soil gas sample below the RBSL and TCE was not detected in soil gas sample. TCE and PCE were not detected during the pressure control testing (when the building was drepssurization) indicating VI was not occurring.	Indoor air concentrations associated with indoor sources and are not related to vapor intrusion.
0003-H	PCE (17 µg/m^3) was detected above the RBSL (11 µg/m^3) in one TO-15 indoor air sample collected from 0003H. The cumulative risk is 2E-06.	Lack of soil gas source near building: PCE (and other COPCs) not detected in soil gas sample. Low levels of PCE, more than two orders of magnitude less than the RBSLs, detected in groundwater near bulding (GW-03, GW-55 and GW-43). However, PCE is higher in GW-50, another well in proximity to 0003H, but does not exceed the RBSL.	Lack of subsurface source, indicates indoor air concentrations not related to vapor intrusion.
0025-H	1,4-Dioxane (2.3 µg/m^3) was detected above the RBSL (0.58 µg/m^3) in one TO-15 sample collected from 0025H. The cumulative risk is 4E-06.	1,4-Dioxane not detected in groundwater monitoring wells in proximity to 0025H. In fact, 1,4-dioxane was detected only once in groundwater, at a concentration in GW-052 that is more than three orders of magnitude below the groundwater-to-indoor air RBSL. GW-052 is located sidegradient of 0025H.	Lack of subsurface source, indicates indoor air concentrations not related to vapor intrusion.

TABLE F-11
Lines of Evidence for Locations with Non-Site-Related Indoor Air Concentrations
700 South 1600 East PCE Plume AOU-1: East Side Springs
Department of Veterans Affairs Salt Lake City Health Care System

Location	Risk Characterization Results	Vapor Intrusion Lines of Evidence[a]	Conclusion
0054-H	TCE detected in indoor air at concentrations greater than the RBSL. The cumulative risk is 9E-06.	PCE detected in indoor air at levels less than the RBSL. Initial sampling event indicated presence of background sources, decrease in concentrations were noted after the majority of items were removed. TCE concentration decreased by factor of ~3 during follow-on sampling event. Pressure control testing was conduced. Indoor air TCE concentrations in the shop decreased during depressurization and remained steady during pressurization. The indoor air PCE concentration in the shop slightly increased during depressurization and was nondetect by the end of pressurization. TCE was not detected in near-slab soil gas, and PCE was detected at a concentrations below the residential soil gas RBSL in the near-slab soil gas. No 24-hour indoor air EPA Method TO-15 samples were collected at this structure as the data suggested that indoor air TCE concentrations resulted from an interior background source(s) or residual TCE from historical activities in the shop.	Indoor air concentrations associated with indoor sources and are not related to vapor intrusion.

NOTES:
(a) See EA 2016b and Appendix H-4 of the Remedial Investigation Report.

TABLE F-12

Summary of Risks and Chemicals of Concern

700 South 1600 East PCE Plume AOU-1: East Side Springs

Department of Veterans Affairs Salt Lake City Health Care System

					Residential						Commercial/School Worker					
					ELCR [a]			Maximum Target-Organ-Specific HI [b]			ELCR [a]			Maximum Target-Organ-Specific HI [b]		
Exposure Timeframe	**Medium**	**Analytical Method**	**Number of Samples**	**Number of Samples with a COPC Detection**	**Min**	**Max**	**Number of Samples with ELCR > 1E-4**	**Min**	**Max**	**Number of Samples with Max HI > 1**	**Min**	**Max**	**Number of Samples with ELCR > 1E-4**	**Min**	**Max**	**Number of Samples with Max HI > 1**
Current	Indoor Air	TO15	24	20	1.E-07	**4.E-06**	0	0.002	0.4	0	--	--	--	--	--	--
		No Background Impact [d]	NA	NA	1.E-07	**3.E-06**	0	0.002	0.4	0	2.E-08	5.E-07	0	0.0004	0.09	0
					COC [d]: PCE and TCE (0017-H & 0018-H)			COC [d]: none			COC [d]: none			COC [d]: none		
Future	Soil Gas	TO15	7	4	8.E-09	**7.E-06**	0	0.002	1	0	2.E-09	1.E-06	0	0.0005	0.3	0
					COC [d]: PCE and TCE (based on TO15)			COC [d]: none			COC [d]: none			COC [d]: none		
	Groundwater	SOM02.3	65	55	9.E-09	**6.E-06**	0	0.002	1	0	2.E-09	1.E-06	0	0.0005	0.4	0
					COC [d]: TCE, PCE			COC [d]: none			COC [d]: none			COC [d]: none		

NOTES:

a. Sample-specific cumulative ELCR.

b. Maximum HI presents the highest target-organ-specific HQ. Target organs identifed in Table F-6.

c. Range of risk estimates for locations without background sources identified. Risk estimates not included for the following location with background sources identified: 0045-S, 0003-H, 0025-H, and 0054-H. See Table F-10.

d. COCs were identified based on exceedance of an ELCR of 1 x 10^{-6} or a HQ of 1. Chemical contributing highest ELCR or HQ is listed first.

-- = No samples collected based on HAPSITE sampling results.

COC = Contaminant of concern.

ELCR = Excess lifetime cancer risk.

HI = Hazard Index.

HQ = Hazard Quotient.

PCE = Tetrachloroethene.

TCE = Trichloroethene.

Bolded values: ELCR > 1E-06 or Maxium HI > 1

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Figure

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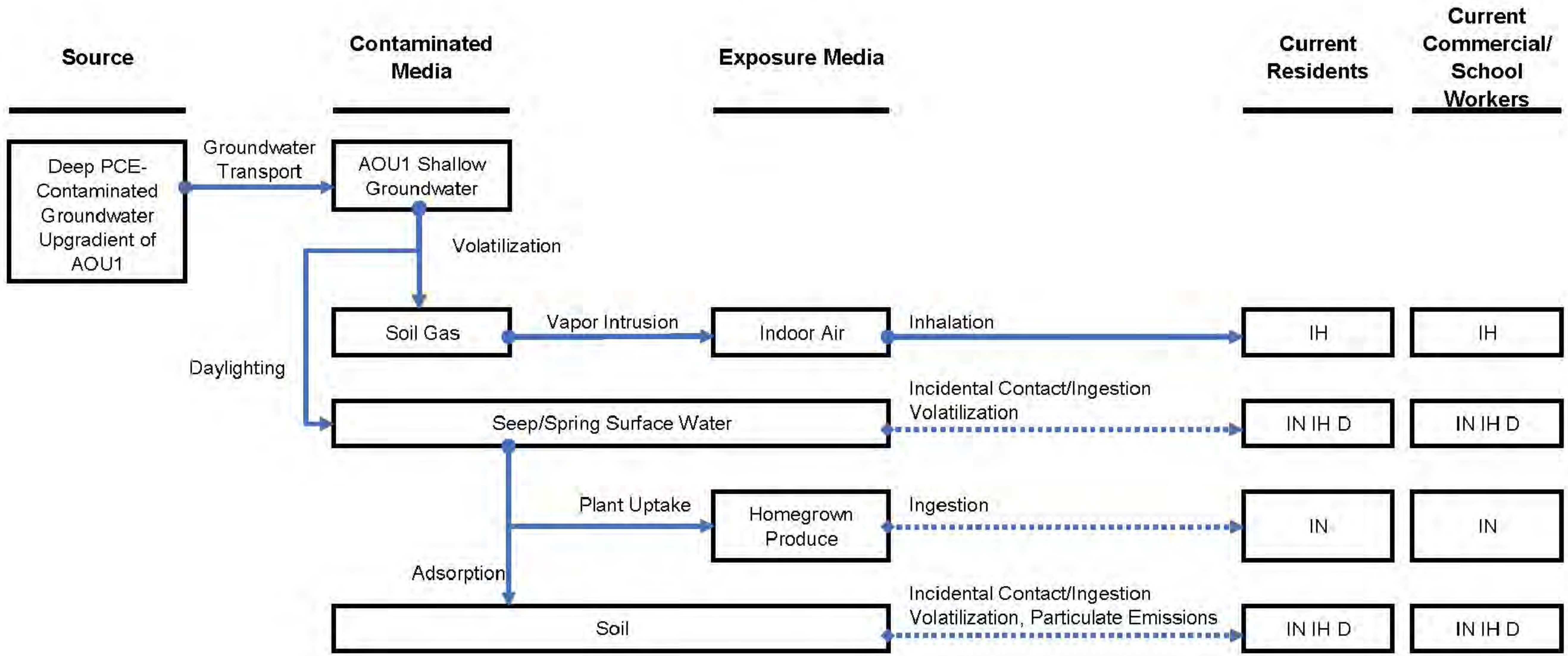

LEGEND

Complete or Potentially Complete Pathway

Potentially Complete but Insignificant Pathway

IN - Ingestion; IH - Inhalation; D - Dermal Contact

FIGURE F-1 CONCEPTUAL SITE EXPOSURE MODEL
700 South 1600 East PCE Plume, AOU-1: East Side Springs
Remedial Investigation Report
Salt Lake City, Utah

US Department of Veterans Affairs

DATE 5-09-18
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APPRVD.
SHEET 1 of 1

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Attachment 1
Risk-Based Screening Levels

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TABLE F1-1
Risk-based Screening Levels in Indoor Air, Outdoor Air, Soil Gas, and Groundwater
700 South 1600 East PCE Plume AOU-1: East Side Springs
Department of Veterans Affairs Salt Lake City Health Care System

CASRN	Preliminary COPC	Residential									Commercial/School Worker								
		Indoor Air (a)			Soil Gas (b)			Groundwater (c)			Indoor Air (a)			Soil Gas (b)			Groundwater (c)		
		Final SL (d) (μg/m^3)	Carc. SL (e) (μg/m^3)	Non-Carc. SL (f) (μg/m^3)	Final SL (d) (μg/m^3)	Carc. SL (e) (μg/m^3)	Non-Carc. SL (f) (μg/m^3)	Final SL (d) (μg/L)	Carc. SL (e) (μg/L)	Non-Carc. SL (f) (μg/L)	Final SL (d) (μg/m^3)	Carc. SL (e) (μg/m^3)	Non-Carc. SL (f) (μg/m^3)	Final SL (d) (μg/m^3)	Carc. SL (e) (μg/m^3)	Non-Carc. SL (f) (μg/m^3)	Final SL (d) (μg/L)	Carc. SL (e) (μg/L)	Non-Carc. SL (f) (μg/L)
123-91-1	1,4-Dioxane	0.56	0.56	31	19	19	1,000	2,900	2,900	160,000	2.5	2.5	130	83	83	4,300	13,000	13,000	670,000
156-59-2	cis-1,2-Dichloroethene	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL
127-18-4	Tetrachloroethene	11	11	41	370	370	1,400	15	15	58	47	47	180	1,600	1,600	6,000	65	65	240
79-01-6	Trichloroethene	0.48	0.48	2.1	16	16	70	1.2	1.2	5	3	3	8.8	100	100	290	7.5	7.5	22
75-01-4	Vinyl chloride (chloroethene)	0.17	0.17	100	5.7	5.7	3,300	0.15	0.15	92	2.8	2.8	440	93	93	15,000	2.5	2.5	390

NOTES:

a. The Indoor Air SLs are the indoor air RSLs from the EPA RSL table (EPA 2017a).

b. The Soil Gas SLs are the indoor air RSLs divided by a generic soil-gas-to-indoor air attenuation factor of 0.03 (EPA 2017b).

c. The Groundwater SLs are based on the indoor air RSLs from the EPA RSL table (EPA 2017a) and the generic groundwater-to-indoor air attenuation factor of 0.001, assuming an average groundwater temperature of 25 degrees Celsius (EPA 2017b).

d. The Final SLs are based on either a target cancer risk of 1 x 10^{-6} and a noncancer hazard quotient of 1, whichever results in the lower SL.

e. The Carc. SLs are based on a target cancer risk of 1 x 10^{-6}.

f. The Non-Carc. SLs are based on a noncancer hazard quotient of 1.

μg/L = Micrograms per liter.
μg/m^3 = Micrograms per cubic meter.
Carc. = Carcinogenic
CASRN = Chemical Abstracts Service Registry Number.
COPC = Contaminant of potential concern.
EPA = U.S. Environmental Protection Agency.
Non-Carc. = Non-carcinogenic
NSL = No screening level.
RSL = Regional screening level.
SL = Screening level.

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TABLE F1-2

Risk-based Screening Levels in Soil and Surface Water

700 South 1600 East PCE Plume AOU-1: East Side Springs

Department of Veterans Affairs Salt Lake City Health Care System

CASRN	Preliminary COPC	Soil RSL [(a)(f)]		Partition Coefficient		SW SL Protection of Soil [(d)]		SW SL (Resident Recreator) [(e)(f)]
		Residential Soil SL (mg/kg)	Commercial/ School Worker Soil SL (mg/kg)	Koc (L/kg) [(b)]	Kd (L/kg) [(c)]	Residential SW_{SOIL} SL (µg/L)	Commercial/ School Worker SW_{SOIL} SL (µg/L)	$SW\ SL_{Direct}$ (Direct Contact Ing/Derm) (µg/L)
123-91-1	1,4-Dioxane	5.3	24	2.633	0.0053	1,000,000	4,600,000	160
156-59-2	cis-1,2-Dichloroethene	160	2,300	39.6	0.079	2,000,000	29,000,000	3,000
127-18-4	Tetrachloroethene	24	100	94.94	0.19	130,000	530,000	1,500
79-01-6	Trichloroethene	0.94	6.0	60.7	0.12	7,700	49,000	110
75-01-4	Vinyl chloride (chloroether	0.059	1.7	21.73	0.043	1,400	39,000	0.61

NOTES:

a. Soil SLs were obtained from EPA RSL table (EPA 2017a).

b. Koc values were obtained from EPA RSL table (EPA 2017a).

c. Kd = Koc x foc, where foc is EPA's default value and foc = 0.002

d. SW_{SOIL} SL = Soil RSL x 1000 (µg/mg) x (1/Kd).

e. SW_{Direct} SL was calculated using the EPA RSL calculator (EPA 2017b).

f. The Soil SLs are based on either a target cancer risk of 1×10^{-6} and a noncancer hazard quotient of 1, whichever results in the lower SL.

µg/L = Micrograms per liter.

µg/mg = Micrograms per milligram.

CASRN = Chemical Abstracts Service Registry Number.

COPC = Contaminant of potential concern.

EPA = U.S. Environmental Protection Agency.

foc = Organic carbon content in soil.

Ing/Derm = Incidental ingestion/dermal contact.

Kd = Soil-water partition coefficient.

Koc = Organic carbon partition coefficient.

L/kg = Liters per kilogram.

mg/kg = Milligrams per kilogram.

RSL = Regional screening level.

SL = Screening level.

SW = Surface water.

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TABLE F1-3

Risk-based Screening Levels in Surface Water for Protection of Home-grown plants

700 South 1600 East PCE Plume AOU-1: East Side Springs

Department of Veterans Affairs Salt Lake City Health Care System

CASRN	Preliminary COPC	Partition Coefficient (a)			Bioconcentration Factor (c)		Age-Adjusted Ingestion Rate		SW SL (Plant Consumer) (d)(e)
		Log Kow (unitless)	Koc (L/kg)	Kd (L/kg) (b)	Root BCF_r (mg chemical/kg produce per mg chemical/L water)	Aboveground plants BCF_a (mg chemical/kg vegetable per mg chemical/L water)	IF_adj_can L/kg-day	IF_adj_nc L/kg-day	SW SL_{Plant} (Ingestion) µg/L
123-91-1	1,4-Dioxane	-0.27	2.63	0.0053	0.84	0.0066	3.33	0.00083	77
156-59-2	cis-1,2-Dichloroethene	1.86	39.6	0.079	1.64	0.039	6.65	0.0017	1,204
127-18-4	Tetrachloroethene	3.4	94.9	0.19	12.5	0.012	49.2	0.012	247
79-01-6	Trichloroethene	2.42	60.7	0.12	2.20	0.028	8.81	0.0022	63
75-01-4	Vinyl chloride (chloroethene)	1.38	21.7	0.043	1.17	0.040	4.82	0.0012	7.4

NOTES:

a. Partition coefficient (Log Kow, Koc) values were obtained from EPA RSL table (EPA 2017a).

b. Kd = Koc x foc, where foc is EPA's default value and foc = 0.002.

c. Bioaccumulation factors (wet weight) calculated as follows (modified equations from EPA 2005):

$BCF\_r = 10^{0.77 * LogKow-1.52} + 0.82$ (Log Kow <2)

$BCF\_r = 10^{0.77 * LogKow-1.52}$ (Log Kow ≥2)

$BCF\_a = 10^{1.588 - 0.578 * Log Kow} \times (1-0.85) \times Kd$

Root BCF (BCF_r) model valid for LowKows -0.057 to 4.6.

Above ground BCF (BCF_a) model provides a dry weight estimate based on uptake from soil. Conversion to wet weight assumes 85% moisture. Kd used to convert to aqueous system. Model valid for LogKows 1.15 to 9.35, LogKow for 1,4-dioxane (-0.27) is outside the range so BCF_a is recalculated assuming LogKow 1.15 per HHRAP guidance.

d. Additional information regarding the input parameters and the equations used to calculate the SW SwPlant values are presented in Attachment 4 of the Risk Assessment Work Plan (Appendix E of FE 2015).

e. The SLs are based on either a target cancer risk of 1 x 10^{-6} and a noncancer hazard quotient of 1, whichever results in the lower SL.

µg/L = Micrograms per liter.
BCF = Bioconcentration factor
CASRN = Chemical Abstracts Service Registry Number.
COPC = Contaminant of potential concern.
EPA = U.S. Environmental Protection Agency.
foc = Organic carbon content in soil.
HHRAP = Human Health Risk Assessment Protocol for Hazardous Waste Combustion Facilities.
IF_adj_can = Age-adjusted ingestion rate (cancer).
IF_adj_nc = Age-adjusted ingestion rate (noncancer).
Kd = Soil-water partition coefficient.
kg = Kilogram(s).
Koc = Organic carbon partition coefficient.
L = Liter(s).
L/kg = Liters per kilogram.
L/kg-day = Liters per kilogram per day.
Log Kow = Octanol-Water Partition Coefficient.
mg = Milligram(s).
SL = Screening level.
SW = Surface water.

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Attachment 2
Human Health Risk Assessment and Reporting Limit Evaluation

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TABLE F2-1
Human Health Risk Assessment Dataset
700 South 1600 East PCE Plume AOU-1: East Side Springs
Department of Veterans Affairs Salt Lake City Health Care System

Data Group	Medium	Location ID	Sample Name	Sample Date	Analysis Method	Preliminary COPC	CASRN	Final Result	Method Detection Limit	Reporting Limit	Unit	Detect Flag	Qualifier
AI_All	Indoor Air	0001H-IA-BAS1	A-0001H-031517-IA-005-BAS1	15-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0001H-IA-BAS1	A-0001H-031517-IA-005-BAS1	15-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	2.24	0.7	0.7	µg/m^3	Y	
AI_All	Indoor Air	0001H-IA-BAS1	A-0001H-031517-IA-005-BAS1	15-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0001H-IA-BAS1	A-0001H-031517-IA-012-BAS1	22-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0001H-IA-BAS1	A-0001H-031517-IA-012-BAS1	22-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	1.36	0.7	0.7	µg/m^3	Y	
AI_All	Indoor Air	0001H-IA-BAS1	A-0001H-031517-IA-012-BAS1	22-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0001H-IA-BAT1	A-0001H-031517-IA-010-BAT1	15-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0001H-IA-BAT1	A-0001H-031517-IA-010-BAT1	15-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	4.81	0.7	0.7	µg/m^3	Y	
AI_All	Indoor Air	0001H-IA-BAT1	A-0001H-031517-IA-010-BAT1	15-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0001H-IA-BED1	A-0001H-031517-IA-007-BED1	15-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0001H-IA-BED1	A-0001H-031517-IA-007-BED1	15-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	1.69	0.7	0.7	µg/m^3	Y	
AI_All	Indoor Air	0001H-IA-BED1	A-0001H-031517-IA-007-BED1	15-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0001H-IA-LIV1	A-0001H-031517-IA-004-LIV1	15-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0001H-IA-LIV1	A-0001H-031517-IA-004-LIV1	15-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	4.95	0.7	0.7	µg/m^3	Y	
AI_All	Indoor Air	0001H-IA-LIV1	A-0001H-031517-IA-004-LIV1	15-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0001H-IA-LIV1	A-0001H-031517-IA-010-LIV1	22-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0001H-IA-LIV1	A-0001H-031517-IA-010-LIV1	22-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	1.94	0.7	0.7	µg/m^3	Y	
AI_All	Indoor Air	0001H-IA-LIV1	A-0001H-031517-IA-010-LIV1	22-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0001H-IA-MBED1	A-0001H-031517-IA-009-MBED1	15-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0001H-IA-MBED1	A-0001H-031517-IA-009-MBED1	15-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	5.15	0.7	0.7	µg/m^3	Y	
AI_All	Indoor Air	0001H-IA-MBED1	A-0001H-031517-IA-009-MBED1	15-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0001H-IA-SUM1	A-0001H-031517-IA-006-SUM1	15-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0001H-IA-SUM1	A-0001H-031517-IA-006-SUM1	15-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	2.31	0.7	0.7	µg/m^3	Y	
AI_All	Indoor Air	0001H-IA-SUM1	A-0001H-031517-IA-006-SUM1	15-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0001H-IA-WBED1	A-0001H-031517-IA-008-WBED1	15-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0001H-IA-WBED1	A-0001H-031517-IA-008-WBED1	15-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	2.44	0.7	0.7	µg/m^3	Y	
AI_All	Indoor Air	0001H-IA-WBED1	A-0001H-031517-IA-008-WBED1	15-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0001H-TO-BAS	A-0001H-032317-TO-001-BAS	23-Mar-17	TO15SIM-UGM3	1,4-Dioxane	123-91-1	0.18		0.18	µg/m^3	N	U
AI_All	Indoor Air	0001H-TO-BAS	A-0001H-032317-TO-001-BAS	23-Mar-17	TO15SIM-UGM3	cis-1,2-Dichloroethene	156-59-2	0.2		0.2	µg/m^3	N	U
AI_All	Indoor Air	0001H-TO-BAS	A-0001H-032317-TO-001-BAS	23-Mar-17	TO15SIM-UGM3	Tetrachloroethene	127-18-4	1.1		0.34	µg/m^3	Y	
AI_All	Indoor Air	0001H-TO-BAS	A-0001H-032317-TO-001-BAS	23-Mar-17	TO15SIM-UGM3	Trichlorethene	79-01-6	0.27		0.27	µg/m^3	N	U
AI_All	Indoor Air	0001H-TO-BAS	A-0001H-032317-TO-002-BAS	23-Mar-17	TO15SIM-UGM3	Vinyl Chloride	75-01-4	0.19		0.13	µg/m^3	Y	
AI_All	Indoor Air	0002H-IA-BAS1	A-0002H-032217-IA-015-BAS1	22-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0002H-IA-BAS1	A-0002H-032217-IA-015-BAS1	22-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0002H-IA-BAS1	A-0002H-032217-IA-015-BAS1	22-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0002H-IA-FLD1	A-0002H-032217-IA-019-FLD1	22-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0002H-IA-FLD1	A-0002H-032217-IA-019-FLD1	22-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	1.02	0.7	0.7	µg/m^3	Y	
AI_All	Indoor Air	0002H-IA-FLD1	A-0002H-032217-IA-019-FLD1	22-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0002H-IA-KIT1	A-0002H-032217-IA-018-KIT1	22-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0002H-IA-KIT1	A-0002H-032217-IA-018-KIT1	22-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.88	0.7	0.7	µg/m^3	Y	
AI_All	Indoor Air	0002H-IA-KIT1	A-0002H-032217-IA-018-KIT1	22-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0002H-IA-LIV1	A-0002H-032217-IA-013-LIV1	22-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0002H-IA-LIV1	A-0002H-032217-IA-013-LIV1	22-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0002H-IA-LIV1	A-0002H-032217-IA-013-LIV1	22-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0002H-IA-STO1	A-0002H-032217-IA-016-STO1	22-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U

TABLE F2-1
Human Health Risk Assessment Dataset
700 South 1600 East PCE Plume AOU-1: East Side Springs
Department of Veterans Affairs Salt Lake City Health Care System

Data Group	Medium	Location ID	Sample Name	Sample Date	Analysis Method	Preliminary COPC	CASRN	Final Result	Method Detection Limit	Reporting Limit	Unit	Detect Flag	Qualifier
AI_All	Indoor Air	0002H-IA-STO1	A-0002H-032217-IA-016-STO1	22-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0002H-IA-STO1	A-0002H-032217-IA-016-STO1	22-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0002H-TO-BAS	A-0002H-032317-TO-001-BAS	23-Mar-17	TO15SIM-UGM3	1,4-Dioxane	123-91-1	0.18		0.18	µg/m^3	N	U
AI_All	Indoor Air	0002H-TO-BAS	A-0002H-032317-TO-001-BAS	23-Mar-17	TO15SIM-UGM3	cis-1,2-Dichloroethene	156-59-2	0.2		0.2	µg/m^3	N	U
AI_All	Indoor Air	0002H-TO-BAS	A-0002H-032317-TO-001-BAS	23-Mar-17	TO15SIM-UGM3	Tetrachloroethene	127-18-4	1.4		0.34	µg/m^3	Y	
AI_All	Indoor Air	0002H-TO-BAS	A-0002H-032317-TO-001-BAS	23-Mar-17	TO15SIM-UGM3	Trichlorethene	79-01-6	0.29		0.27	µg/m^3	Y	
AI_All	Indoor Air	0002H-TO-BAS	A-0002H-032317-TO-001-BAS	23-Mar-17	TO15SIM-UGM3	Vinyl Chloride	75-01-4	0.13		0.13	µg/m^3	N	U
AI_All	Indoor Air	0003H-IA-BAS	A-0003H-030316-IA-BAS	03-Mar-16	TO15SIM-UGM3	1,4-Dioxane	123-91-1	0.18		0.18	µg/m^3	N	U
AI_All	Indoor Air	0003H-IA-BAS	A-0003H-030316-IA-BAS	03-Mar-16	TO15SIM-UGM3	cis-1,2-Dichloroethene	156-59-2	0.2		0.2	µg/m^3	N	U
AI_All	Indoor Air	0003H-IA-BAS	A-0003H-030316-IA-BAS	03-Mar-16	TO15SIM-UGM3	Tetrachloroethene	127-18-4	1.3		0.34	µg/m^3	Y	
AI_All	Indoor Air	0003H-IA-BAS	A-0003H-030316-IA-BAS	03-Mar-16	TO15SIM-UGM3	Trichlorethene	79-01-6	0.27		0.27	µg/m^3	N	U
AI_All	Indoor Air	0003H-IA-BAS	A-0003H-030316-IA-BAS	03-Mar-16	TO15SIM-UGM3	Vinyl Chloride	75-01-4	0.13		0.13	µg/m^3	N	U
AI_All	Indoor Air	0003H-TO-BAS	A-0003H-040915-TO-002-BAS	09-Apr-15	TO15-UGM3	cis-1,2-Dichloroethene	156-59-2	2	0.59	2	µg/m^3	N	U
AI_All	Indoor Air	0003H-TO-BAS	A-0003H-040915-TO-002-BAS	09-Apr-15	TO15-UGM3	Tetrachloroethene	127-18-4	1.5	1		µg/m^3	Y	J
AI_All	Indoor Air	0003H-TO-BAS	A-0003H-040915-TO-002-BAS	09-Apr-15	TO15-UGM3	Trichlorethene	79-01-6	2.7	0.81	2.7	µg/m^3	N	U
AI_All	Indoor Air	0003H-TO-BAS	A-0003H-040915-TO-002-BAS	09-Apr-15	TO15-UGM3	Vinyl Chloride	75-01-4	1.3	0.38	1.3	µg/m^3	N	U
AI_All	Indoor Air	0003H-TO-BBB	A-0003H-040915-TO-003-BBB	09-Apr-15	TO15-UGM3	cis-1,2-Dichloroethene	156-59-2	2	0.59	2	µg/m^3	N	U
AI_All	Indoor Air	0003H-TO-BBB	A-0003H-040915-TO-003-BBB	09-Apr-15	TO15-UGM3	Tetrachloroethene	127-18-4	1.7	1		µg/m^3	Y	J
AI_All	Indoor Air	0003H-TO-BBB	A-0003H-040915-TO-003-BBB	09-Apr-15	TO15-UGM3	Trichlorethene	79-01-6	2.7	0.81	2.7	µg/m^3	N	U
AI_All	Indoor Air	0003H-TO-BBB	A-0003H-040915-TO-003-BBB	09-Apr-15	TO15-UGM3	Vinyl Chloride	75-01-4	1.3	0.38	1.3	µg/m^3	N	U
AI_All	Indoor Air	0003H-TO-LIV	A-0003H-040915-TO-001-LIV	09-Apr-15	TO15-UGM3	cis-1,2-Dichloroethene	156-59-2	2	0.59	2	µg/m^3	N	U
AI_All	Indoor Air	0003H-TO-LIV	A-0003H-040915-TO-001-LIV	09-Apr-15	TO15-UGM3	Tetrachloroethene	127-18-4	17	1		µg/m^3	Y	
AI_All	Indoor Air	0003H-TO-LIV	A-0003H-040915-TO-001-LIV	09-Apr-15	TO15-UGM3	Trichlorethene	79-01-6	2.7	0.81	2.7	µg/m^3	N	U
AI_All	Indoor Air	0003H-TO-LIV	A-0003H-040915-TO-001-LIV	09-Apr-15	TO15-UGM3	Vinyl Chloride	75-01-4	1.3	0.38	1.3	µg/m^3	N	U
AI_All	Indoor Air	0004H-IA-BAS1	A-0004H-031317-IA-008-BAS1	13-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0004H-IA-BAS1	A-0004H-031317-IA-008-BAS1	13-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0004H-IA-BAS1	A-0004H-031317-IA-008-BAS1	13-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0004H-IA-LIV1	A-0004H-031317-IA-007-LIV1	13-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0004H-IA-LIV1	A-0004H-031317-IA-007-LIV1	13-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0004H-IA-LIV1	A-0004H-031317-IA-007-LIV1	13-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0004H-TO-BAS	A-0004H-031417-TO-001-BAS	14-Mar-17	TO15SIM-UGM3	1,4-Dioxane	123-91-1	0.18		0.18	µg/m^3	N	U
AI_All	Indoor Air	0004H-TO-BAS	A-0004H-031417-TO-001-BAS	14-Mar-17	TO15SIM-UGM3	cis-1,2-Dichloroethene	156-59-2	0.2		0.2	µg/m^3	N	U
AI_All	Indoor Air	0004H-TO-BAS	A-0004H-031417-TO-001-BAS	14-Mar-17	TO15SIM-UGM3	Tetrachloroethene	127-18-4	0.34		0.34	µg/m^3	N	U
AI_All	Indoor Air	0004H-TO-BAS	A-0004H-031417-TO-001-BAS	14-Mar-17	TO15SIM-UGM3	Trichlorethene	79-01-6	0.27		0.27	µg/m^3	N	U
AI_All	Indoor Air	0004H-TO-BAS	A-0004H-031417-TO-001-BAS	14-Mar-17	TO15SIM-UGM3	Vinyl Chloride	75-01-4	0.13		0.13	µg/m^3	N	U
AI_All	Indoor Air	0008H-TO-BAS	A-0008H-041015-TO-001-BAS	10-Apr-15	TO15-UGM3	cis-1,2-Dichloroethene	156-59-2	2	0.59	2	µg/m^3	N	U
AI_All	Indoor Air	0008H-TO-BAS	A-0008H-041015-TO-001-BAS	10-Apr-15	TO15-UGM3	Tetrachloroethene	127-18-4	2.9	1		µg/m^3	Y	J
AI_All	Indoor Air	0008H-TO-BAS	A-0008H-041015-TO-001-BAS	10-Apr-15	TO15-UGM3	Trichlorethene	79-01-6	2.7	0.81	2.7	µg/m^3	N	U
AI_All	Indoor Air	0008H-TO-BAS	A-0008H-041015-TO-001-BAS	10-Apr-15	TO15-UGM3	Vinyl Chloride	75-01-4	1.3	0.38	1.3	µg/m^3	N	U
AI_All	Indoor Air	0011H-IA-LLL	A-0011H-030116-IA-012A-LLL	01-Mar-16	TO15SIM-UGM3	1,4-Dioxane	123-91-1	0.18		0.18	µg/m^3	N	U
AI_All	Indoor Air	0011H-IA-LLL	A-0011H-030116-IA-012A-LLL	01-Mar-16	TO15SIM-UGM3	cis-1,2-Dichloroethene	156-59-2	0.2		0.2	µg/m^3	N	U
AI_All	Indoor Air	0011H-IA-LLL	A-0011H-030116-IA-012A-LLL	01-Mar-16	TO15SIM-UGM3	Tetrachloroethene	127-18-4	12		0.34	µg/m^3	Y	J
AI_All	Indoor Air	0011H-IA-LLL	A-0011H-030116-IA-012A-LLL	01-Mar-16	TO15SIM-UGM3	Trichlorethene	79-01-6	0.27		0.27	µg/m^3	N	U
AI_All	Indoor Air	0011H-IA-LLL	A-0011H-030116-IA-012A-LLL	01-Mar-16	TO15SIM-UGM3	Vinyl Chloride	75-01-4	0.13		0.13	µg/m^3	N	U
AI_All	Indoor Air	0012H-IA-BAS1	A-0012H-031317-IA-016-BAS1	13-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U

TABLE F2-1
Human Health Risk Assessment Dataset
700 South 1600 East PCE Plume AOU-1: East Side Springs
Department of Veterans Affairs Salt Lake City Health Care System

Data Group	Medium	Location ID	Sample Name	Sample Date	Analysis Method	Preliminary COPC	CASRN	Final Result	Method Detection Limit	Reporting Limit	Unit	Detect Flag	Qualifier
AI_All	Indoor Air	0012H-IA-BAS1	A-0012H-031317-IA-016-BAS1	13-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	1.9	0.7	0.7	µg/m^3	Y	
AI_All	Indoor Air	0012H-IA-BAS1	A-0012H-031317-IA-016-BAS1	13-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0012H-IA-BAT1	A-0012H-031317-IA-018-BAT1	13-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0012H-IA-BAT1	A-0012H-031317-IA-018-BAT1	13-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	2.03	0.7	0.7	µg/m^3	Y	
AI_All	Indoor Air	0012H-IA-BAT1	A-0012H-031317-IA-018-BAT1	13-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0012H-IA-FDR1	A-0012H-031317-IA-020-FDR1	13-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0012H-IA-FDR1	A-0012H-031317-IA-020-FDR1	13-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	2.24	0.7	0.7	µg/m^3	Y	
AI_All	Indoor Air	0012H-IA-FDR1	A-0012H-031317-IA-020-FDR1	13-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0012H-IA-LAU1	A-0012H-031317-IA-019-LAU1	13-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0012H-IA-LAU1	A-0012H-031317-IA-019-LAU1	13-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	2.03	0.7	0.7	µg/m^3	Y	
AI_All	Indoor Air	0012H-IA-LAU1	A-0012H-031317-IA-019-LAU1	13-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0012H-IA-LIV1	A-0012H-031317-IA-014-LIV1	13-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0012H-IA-LIV1	A-0012H-031317-IA-014-LIV1	13-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	1.22	0.7	0.7	µg/m^3	Y	
AI_All	Indoor Air	0012H-IA-LIV1	A-0012H-031317-IA-014-LIV1	13-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0012H-IA-OFF1	A-0012H-031317-IA-017-OFF1	13-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0012H-IA-OFF1	A-0012H-031317-IA-017-OFF1	13-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	2.58	0.7	0.7	µg/m^3	Y	
AI_All	Indoor Air	0012H-IA-OFF1	A-0012H-031317-IA-017-OFF1	13-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0012H-TO-BAS	A-0012H-031417-TO-001-BAS	14-Mar-17	TO15SIM-UGM3	1,4-Dioxane	123-91-1	0.18		0.18	µg/m^3	N	U
AI_All	Indoor Air	0012H-TO-BAS	A-0012H-031417-TO-001-BAS	14-Mar-17	TO15SIM-UGM3	cis-1,2-Dichloroethene	156-59-2	0.2		0.2	µg/m^3	N	U
AI_All	Indoor Air	0012H-TO-BAS	A-0012H-031417-TO-001-BAS	14-Mar-17	TO15SIM-UGM3	Tetrachloroethene	127-18-4	2.3		0.34	µg/m^3	Y	
AI_All	Indoor Air	0012H-TO-BAS	A-0012H-031417-TO-001-BAS	14-Mar-17	TO15SIM-UGM3	Trichlorethene	79-01-6	0.27		0.27	µg/m^3	N	U
AI_All	Indoor Air	0012H-TO-BAS	A-0012H-031417-TO-001-BAS	14-Mar-17	TO15SIM-UGM3	Vinyl Chloride	75-01-4	0.13		0.13	µg/m^3	N	U
AI_All	Indoor Air	0013H-IA-BAS1	A-0013H-030917-IA-020-BAS1	09-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0013H-IA-BAS1	A-0013H-030917-IA-020-BAS1	09-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0013H-IA-BAS1	A-0013H-030917-IA-020-BAS1	09-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0013H-IA-HAL1	A-0013H-030917-IA-018-HAL1	09-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0013H-IA-HAL1	A-0013H-030917-IA-018-HAL1	09-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0013H-IA-HAL1	A-0013H-030917-IA-018-HAL1	09-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0013H-IA-LAN1	A-0013H-030917-IA-019-LAN1	09-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0013H-IA-LAN1	A-0013H-030917-IA-019-LAN1	09-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0013H-IA-LAN1	A-0013H-030917-IA-019-LAN1	09-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0013H-TO-BAS	A-0013H-031017-TO-001-BAS	10-Mar-17	TO15SIM-UGM3	1,4-Dioxane	123-91-1	0.18		0.18	µg/m^3	N	U
AI_All	Indoor Air	0013H-TO-BAS	A-0013H-031017-TO-001-BAS	10-Mar-17	TO15SIM-UGM3	cis-1,2-Dichloroethene	156-59-2	0.2		0.2	µg/m^3	N	U
AI_All	Indoor Air	0013H-TO-BAS	A-0013H-031017-TO-001-BAS	10-Mar-17	TO15SIM-UGM3	Tetrachloroethene	127-18-4	0.34		0.34	µg/m^3	N	U
AI_All	Indoor Air	0013H-TO-BAS	A-0013H-031017-TO-001-BAS	10-Mar-17	TO15SIM-UGM3	Trichlorethene	79-01-6	0.27		0.27	µg/m^3	N	U
AI_All	Indoor Air	0013H-TO-BAS	A-0013H-031017-TO-001-BAS	10-Mar-17	TO15SIM-UGM3	Vinyl Chloride	75-01-4	0.13		0.13	µg/m^3	N	U
AI_All	Indoor Air	0017H-IA-BAS	A-0017H-031616-IA-BAS	16-Mar-16	TO15SIM-UGM3	1,4-Dioxane	123-91-1	0.18		0.18	µg/m^3	N	U
AI_All	Indoor Air	0017H-IA-BAS	A-0017H-031616-IA-BAS	16-Mar-16	TO15SIM-UGM3	cis-1,2-Dichloroethene	156-59-2	0.2		0.2	µg/m^3	N	U
AI_All	Indoor Air	0017H-IA-BAS	A-0017H-031616-IA-BAS	16-Mar-16	TO15SIM-UGM3	Tetrachloroethene	127-18-4	10		0.34	µg/m^3	Y	J
AI_All	Indoor Air	0017H-IA-BAS	A-0017H-031616-IA-BAS	16-Mar-16	TO15SIM-UGM3	Trichlorethene	79-01-6	0.39		0.27	µg/m^3	Y	
AI_All	Indoor Air	0017H-IA-BAS	A-0017H-031616-IA-BAS	16-Mar-16	TO15SIM-UGM3	Vinyl Chloride	75-01-4	0.13		0.13	µg/m^3	N	U
AI_All	Indoor Air	0018H-IA-BAS	A-0018H-031616-IA-BAS	16-Mar-16	TO15SIM-UGM3	1,4-Dioxane	123-91-1	0.18		0.18	µg/m^3	N	U
AI_All	Indoor Air	0018H-IA-BAS	A-0018H-031616-IA-BAS	16-Mar-16	TO15SIM-UGM3	cis-1,2-Dichloroethene	156-59-2	0.2		0.2	µg/m^3	N	U
AI_All	Indoor Air	0018H-IA-BAS	A-0018H-031616-IA-BAS	16-Mar-16	TO15SIM-UGM3	Tetrachloroethene	127-18-4	12		0.34	µg/m^3	Y	J
AI_All	Indoor Air	0018H-IA-BAS	A-0018H-031616-IA-BAS	16-Mar-16	TO15SIM-UGM3	Trichlorethene	79-01-6	0.83		0.27	µg/m^3	Y	

TABLE F2-1
Human Health Risk Assessment Dataset
700 South 1600 East PCE Plume AOU-1: East Side Springs
Department of Veterans Affairs Salt Lake City Health Care System

Data Group	Medium	Location ID	Sample Name	Sample Date	Analysis Method	Preliminary COPC	CASRN	Final Result	Method Detection Limit	Reporting Limit	Unit	Detect Flag	Qualifier
AI_All	Indoor Air	0018H-IA-BAS	A-0018H-031616-IA-BAS	16-Mar-16	TO15SIM-UGM3	Vinyl Chloride	75-01-4	0.13		0.13	μg/m^3	N	U
AI_All	Indoor Air	0023-IA-BA1	A-0023-031616-IA-BA1	16-Mar-16	TO15SIM-UGM3	1,4-Dioxane	123-91-1	0.18		0.18	μg/m^3	N	U
AI_All	Indoor Air	0023-IA-BA1	A-0023-031616-IA-BA1	16-Mar-16	TO15SIM-UGM3	cis-1,2-Dichloroethene	156-59-2	0.2		0.2	μg/m^3	N	U
AI_All	Indoor Air	0023-IA-BA1	A-0023-031616-IA-BA1	16-Mar-16	TO15SIM-UGM3	Tetrachloroethene	127-18-4	1.4		0.34	μg/m^3	Y	
AI_All	Indoor Air	0023-IA-BA1	A-0023-031616-IA-BA1	16-Mar-16	TO15SIM-UGM3	Trichlorethene	79-01-6	0.27		0.27	μg/m^3	N	U
AI_All	Indoor Air	0023-IA-BA1	A-0023-031616-IA-BA1	16-Mar-16	TO15SIM-UGM3	Vinyl Chloride	75-01-4	0.13		0.13	μg/m^3	N	U
AI_All	Indoor Air	0025H-IA-BAS1	A-0025H-031317-IA-005-BAS1	13-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	μg/m^3	N	U
AI_All	Indoor Air	0025H-IA-BAS1	A-0025H-031317-IA-005-BAS1	13-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	μg/m^3	N	U
AI_All	Indoor Air	0025H-IA-BAS1	A-0025H-031317-IA-005-BAS1	13-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	μg/m^3	N	U
AI_All	Indoor Air	0025H-IA-LIV1	A-0025H-031317-IA-004-LIV1	13-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	μg/m^3	N	U
AI_All	Indoor Air	0025H-IA-LIV1	A-0025H-031317-IA-004-LIV1	13-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	μg/m^3	N	U
AI_All	Indoor Air	0025H-IA-LIV1	A-0025H-031317-IA-004-LIV1	13-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	μg/m^3	N	U
AI_All	Indoor Air	0025H-TO-BAS	A-0025H-031417-TO-001-BAS	14-Mar-17	TO15SIM-UGM3	1,4-Dioxane	123-91-1	2.3		0.18	μg/m^3	Y	
AI_All	Indoor Air	0025H-TO-BAS	A-0025H-031417-TO-001-BAS	14-Mar-17	TO15SIM-UGM3	cis-1,2-Dichloroethene	156-59-2	0.2		0.2	μg/m^3	N	U
AI_All	Indoor Air	0025H-TO-BAS	A-0025H-031417-TO-001-BAS	14-Mar-17	TO15SIM-UGM3	Tetrachloroethene	127-18-4	0.37		0.34	μg/m^3	Y	
AI_All	Indoor Air	0025H-TO-BAS	A-0025H-031417-TO-001-BAS	14-Mar-17	TO15SIM-UGM3	Trichlorethene	79-01-6	0.27		0.27	μg/m^3	N	U
AI_All	Indoor Air	0025H-TO-BAS	A-0025H-031417-TO-001-BAS	14-Mar-17	TO15SIM-UGM3	Vinyl Chloride	75-01-4	0.13		0.13	μg/m^3	N	U
AI_All	Indoor Air	0026H-IA-BAS1	A-0026H-030917-IA-007-BAS1	09-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	μg/m^3	N	U
AI_All	Indoor Air	0026H-IA-BAS1	A-0026H-030917-IA-007-BAS1	09-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	1.29	0.7	0.7	μg/m^3	Y	
AI_All	Indoor Air	0026H-IA-BAS1	A-0026H-030917-IA-007-BAS1	09-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	μg/m^3	N	U
AI_All	Indoor Air	0026H-IA-HAL1	A-0026H-030917-IA-010-HAL1	09-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	μg/m^3	N	U
AI_All	Indoor Air	0026H-IA-HAL1	A-0026H-030917-IA-010-HAL1	09-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.88	0.7	0.7	μg/m^3	Y	
AI_All	Indoor Air	0026H-IA-HAL1	A-0026H-030917-IA-010-HAL1	09-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	μg/m^3	N	U
AI_All	Indoor Air	0026H-IA-LAN1	A-0026H-030917-IA-011-LAN1	09-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	μg/m^3	N	U
AI_All	Indoor Air	0026H-IA-LAN1	A-0026H-030917-IA-011-LAN1	09-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.95	0.7	0.7	μg/m^3	Y	
AI_All	Indoor Air	0026H-IA-LAN1	A-0026H-030917-IA-011-LAN1	09-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	μg/m^3	N	U
AI_All	Indoor Air	0026H-IA-LAU1	A-0026H-030917-IA-008-LAU1	09-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	μg/m^3	N	U
AI_All	Indoor Air	0026H-IA-LAU1	A-0026H-030917-IA-008-LAU1	09-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	1.08	0.7	0.7	μg/m^3	Y	
AI_All	Indoor Air	0026H-IA-LAU1	A-0026H-030917-IA-008-LAU1	09-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	μg/m^3	N	U
AI_All	Indoor Air	0026H-IA-LIV1	A-0026H-030917-IA-009-LIV1	09-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.48	0.4	0.4	μg/m^3	Y	
AI_All	Indoor Air	0026H-IA-LIV1	A-0026H-030917-IA-009-LIV1	09-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.88	0.7	0.7	μg/m^3	Y	
AI_All	Indoor Air	0026H-IA-LIV1	A-0026H-030917-IA-009-LIV1	09-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	μg/m^3	N	U
AI_All	Indoor Air	0026H-IA-UTI1	A-0026H-030917-IA-012-UTI1	09-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	μg/m^3	N	U
AI_All	Indoor Air	0026H-IA-UTI1	A-0026H-030917-IA-012-UTI1	09-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	1.08	0.7	0.7	μg/m^3	Y	
AI_All	Indoor Air	0026H-IA-UTI1	A-0026H-030917-IA-012-UTI1	09-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	μg/m^3	N	U
AI_All	Indoor Air	0026H-TO-LIV	A-0026H-031617-TO-001-LIV	16-Mar-17	TO15SIM-UGM3	1,4-Dioxane	123-91-1	0.18		0.18	μg/m^3	N	U
AI_All	Indoor Air	0026H-TO-LIV	A-0026H-031617-TO-001-LIV	16-Mar-17	TO15SIM-UGM3	cis-1,2-Dichloroethene	156-59-2	0.2		0.2	μg/m^3	N	U
AI_All	Indoor Air	0026H-TO-LIV	A-0026H-031617-TO-001-LIV	16-Mar-17	TO15SIM-UGM3	Tetrachloroethene	127-18-4	2		0.34	μg/m^3	Y	
AI_All	Indoor Air	0026H-TO-LIV	A-0026H-031617-TO-001-LIV	16-Mar-17	TO15SIM-UGM3	Trichlorethene	79-01-6	0.27		0.27	μg/m^3	N	U
AI_All	Indoor Air	0026H-TO-LIV	A-0026H-031617-TO-001-LIV	16-Mar-17	TO15SIM-UGM3	Vinyl Chloride	75-01-4	0.13		0.13	μg/m^3	N	U
AI_All	Indoor Air	0026H-TO-PAN	A-0026H-040815-TO-001-PAN	08-Apr-15	TO15-UGM3	cis-1,2-Dichloroethene	156-59-2	2	0.59	2	μg/m^3	N	U
AI_All	Indoor Air	0026H-TO-PAN	A-0026H-040815-TO-001-PAN	08-Apr-15	TO15-UGM3	Tetrachloroethene	127-18-4	2.1	1		μg/m^3	Y	J
AI_All	Indoor Air	0026H-TO-PAN	A-0026H-040815-TO-001-PAN	08-Apr-15	TO15-UGM3	Trichlorethene	79-01-6	2.7	0.81	2.7	μg/m^3	N	U
AI_All	Indoor Air	0026H-TO-PAN	A-0026H-040815-TO-001-PAN	08-Apr-15	TO15-UGM3	Vinyl Chloride	75-01-4	1.3	0.38	1.3	μg/m^3	N	U
AI_All	Indoor Air	0027H-IA-BAS1	A-0027H-030917-IA-015-BAS1	09-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	μg/m^3	N	U

TABLE F2-1
Human Health Risk Assessment Dataset
700 South 1600 East PCE Plume AOU-1: East Side Springs
Department of Veterans Affairs Salt Lake City Health Care System

Data Group	Medium	Location ID	Sample Name	Sample Date	Analysis Method	Preliminary COPC	CASRN	Final Result	Method Detection Limit	Reporting Limit	Unit	Detect Flag	Qualifier
AI_All	Indoor Air	0027H-IA-BAS1	A-0027H-030917-IA-015-BAS1	09-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0027H-IA-BAS1	A-0027H-030917-IA-015-BAS1	09-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0027H-IA-LIV1	A-0027H-030917-IA-014-LIV1	09-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0027H-IA-LIV1	A-0027H-030917-IA-014-LIV1	09-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0027H-IA-LIV1	A-0027H-030917-IA-014-LIV1	09-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0027H-IA-MEC1	A-0027H-030917-IA-016-MEC1	09-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0027H-IA-MEC1	A-0027H-030917-IA-016-MEC1	09-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0027H-IA-MEC1	A-0027H-030917-IA-016-MEC1	09-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0027H-TO-BAS	A-0027H-031017-TO-001-BAS	10-Mar-17	TO15SIM-UGM3	1,4-Dioxane	123-91-1	0.18		0.18	µg/m^3	N	U
AI_All	Indoor Air	0027H-TO-BAS	A-0027H-031017-TO-001-BAS	10-Mar-17	TO15SIM-UGM3	cis-1,2-Dichloroethene	156-59-2	0.2		0.2	µg/m^3	N	U
AI_All	Indoor Air	0027H-TO-BAS	A-0027H-031017-TO-001-BAS	10-Mar-17	TO15SIM-UGM3	Tetrachloroethene	127-18-4	0.34		0.34	µg/m^3	N	U
AI_All	Indoor Air	0027H-TO-BAS	A-0027H-031017-TO-001-BAS	10-Mar-17	TO15SIM-UGM3	Trichlorethene	79-01-6	0.27		0.27	µg/m^3	N	U
AI_All	Indoor Air	0027H-TO-BAS	A-0027H-031017-TO-001-BAS	10-Mar-17	TO15SIM-UGM3	Vinyl Chloride	75-01-4	0.13		0.13	µg/m^3	N	U
AI_All	Indoor Air	0029H-IA-BAS1	A-0029H-033017-IA-004-BAS1	30-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0029H-IA-BAS1	A-0029H-033017-IA-004-BAS1	30-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	1.22	0.7	0.7	µg/m^3	Y	
AI_All	Indoor Air	0029H-IA-BAS1	A-0029H-033017-IA-004-BAS1	30-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0029H-IA-LAN1	A-0029H-033017-IA-005-LAN1	30-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0029H-IA-LAN1	A-0029H-033017-IA-005-LAN1	30-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	6.58	0.7	0.7	µg/m^3	Y	
AI_All	Indoor Air	0029H-IA-LAN1	A-0029H-033017-IA-005-LAN1	30-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0029H-IA-LIV1	A-0029H-033017-IA-002-LIV1	30-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0029H-IA-LIV1	A-0029H-033017-IA-002-LIV1	30-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	5.29	0.7	0.7	µg/m^3	Y	
AI_All	Indoor Air	0029H-IA-LIV1	A-0029H-033017-IA-002-LIV1	30-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0029H-TO-BAS	A-0029H-033117-TO-001-BAS	31-Mar-17	TO15SIM-UGM3	1,4-Dioxane	123-91-1	0.18		0.18	µg/m^3	N	U
AI_All	Indoor Air	0029H-TO-BAS	A-0029H-033117-TO-001-BAS	31-Mar-17	TO15SIM-UGM3	cis-1,2-Dichloroethene	156-59-2	0.2		0.2	µg/m^3	N	U
AI_All	Indoor Air	0029H-TO-BAS	A-0029H-033117-TO-001-BAS	31-Mar-17	TO15SIM-UGM3	Tetrachloroethene	127-18-4	2		0.34	µg/m^3	Y	
AI_All	Indoor Air	0029H-TO-BAS	A-0029H-033117-TO-001-BAS	31-Mar-17	TO15SIM-UGM3	Trichlorethene	79-01-6	0.27		0.27	µg/m^3	N	U
AI_All	Indoor Air	0029H-TO-BAS	A-0029H-033117-TO-001-BAS	31-Mar-17	TO15SIM-UGM3	Vinyl Chloride	75-01-4	0.13		0.13	µg/m^3	N	U
AI_All	Indoor Air	0030H-TO-BAS	A-0030H-041115-TO-001-BAS	11-Apr-15	TO15-UGM3	cis-1,2-Dichloroethene	156-59-2	2	0.59	2	µg/m^3	N	U
AI_All	Indoor Air	0030H-TO-BAS	A-0030H-041115-TO-001-BAS	11-Apr-15	TO15-UGM3	Tetrachloroethene	127-18-4	5.9	1		µg/m^3	Y	
AI_All	Indoor Air	0030H-TO-BAS	A-0030H-041115-TO-001-BAS	11-Apr-15	TO15-UGM3	Trichlorethene	79-01-6	2.7	0.81	2.7	µg/m^3	N	U
AI_All	Indoor Air	0030H-TO-BAS	A-0030H-041115-TO-001-BAS	11-Apr-15	TO15-UGM3	Vinyl Chloride	75-01-4	1.3	0.38	1.3	µg/m^3	N	U
AI_All	Indoor Air	0036H-TO-BAS	A-0036H-040415-TO-001-BAS	02-Apr-15	TO15-UGM3	cis-1,2-Dichloroethene	156-59-2	2	0.59	2	µg/m^3	N	U
AI_All	Indoor Air	0036H-TO-BAS	A-0036H-040415-TO-001-BAS	02-Apr-15	TO15-UGM3	Tetrachloroethene	127-18-4	3.6	1		µg/m^3	Y	
AI_All	Indoor Air	0036H-TO-BAS	A-0036H-040415-TO-001-BAS	02-Apr-15	TO15-UGM3	Trichlorethene	79-01-6	2.7	0.81	2.7	µg/m^3	N	U
AI_All	Indoor Air	0036H-TO-BAS	A-0036H-040415-TO-001-BAS	02-Apr-15	TO15-UGM3	Vinyl Chloride	75-01-4	1.3	0.38	1.3	µg/m^3	N	U
AI_All	Indoor Air	0037H-TO-LAU	A-0037H-030816-IA-LAU	08-Mar-16	TO15-UGM3	1,4-Dioxane	123-91-1	0.18		0.18	µg/m^3	Y	
AI_All	Indoor Air	0037H-TO-LAU	A-0037H-030816-IA-LAU	08-Mar-16	TO15-UGM3	cis-1,2-Dichloroethene	156-59-2	0.2		0.2	µg/m^3	N	U
AI_All	Indoor Air	0037H-TO-LAU	A-0037H-030816-IA-LAU	08-Mar-16	TO15-UGM3	Tetrachloroethene	127-18-4	4			µg/m^3	Y	
AI_All	Indoor Air	0037H-TO-LAU	A-0037H-030816-IA-LAU	08-Mar-16	TO15-UGM3	Trichlorethene	79-01-6	0.27		0.27	µg/m^3	N	U
AI_All	Indoor Air	0037H-TO-LAU	A-0037H-030816-IA-LAU	08-Mar-16	TO15-UGM3	Vinyl Chloride	75-01-4	0.13		0.13	µg/m^3	N	U
AI_All	Indoor Air	0038H-IA-BAS1	A-0038H-041017-IA-003-BAS1	10-Apr-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0038H-IA-BAS1	A-0038H-041017-IA-003-BAS1	10-Apr-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0038H-IA-BAS1	A-0038H-041017-IA-003-BAS1	10-Apr-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0038H-IA-LIV1	A-0038H-041017-IA-002-LIV1	10-Apr-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0038H-IA-LIV1	A-0038H-041017-IA-002-LIV1	10-Apr-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U

TABLE F2-1
Human Health Risk Assessment Dataset
700 South 1600 East PCE Plume AOU-1: East Side Springs
Department of Veterans Affairs Salt Lake City Health Care System

Data Group	Medium	Location ID	Sample Name	Sample Date	Analysis Method	Preliminary COPC	CASRN	Final Result	Method Detection Limit	Reporting Limit	Unit	Detect Flag	Qualifier
AI_All	Indoor Air	0038H-IA-LIV1	A-0038H-041017-IA-002-LIV1	10-Apr-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0038H-TO-BAS	A-0038H-041117-TO-001-BAS	11-Apr-17	TO15SIM-UGM3	1,4-Dioxane	123-91-1	0.18		0.18	µg/m^3	N	U
AI_All	Indoor Air	0038H-TO-BAS	A-0038H-041117-TO-001-BAS	11-Apr-17	TO15SIM-UGM3	cis-1,2-Dichloroethene	156-59-2	0.2		0.2	µg/m^3	N	U
AI_All	Indoor Air	0038H-TO-BAS	A-0038H-041117-TO-001-BAS	11-Apr-17	TO15SIM-UGM3	Tetrachloroethene	127-18-4	0.34		0.34	µg/m^3	N	U
AI_All	Indoor Air	0038H-TO-BAS	A-0038H-041117-TO-001-BAS	11-Apr-17	TO15SIM-UGM3	Trichlorethene	79-01-6	0.27		0.27	µg/m^3	N	U
AI_All	Indoor Air	0038H-TO-BAS	A-0038H-041117-TO-001-BAS	11-Apr-17	TO15SIM-UGM3	Vinyl Chloride	75-01-4	0.13		0.13	µg/m^3	N	U
AI_All	Indoor Air	0041H-IA-BAS	0041H-IA-BAS-20160308-BL-004	08-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.59	0.4		µg/m^3	Y	
AI_All	Indoor Air	0041H-IA-BAS	0041H-IA-BAS-20160308-BL-004	08-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0041H-IA-BAS	0041H-IA-BAS-20160308-BL-004	08-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0041H-IA-HAL	0041H-IA-HAL-20160308-BL-003	08-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.75	0.4		µg/m^3	Y	
AI_All	Indoor Air	0041H-IA-HAL	0041H-IA-HAL-20160308-BL-003	08-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0041H-IA-KBED	0041H-IA-KBED-20160308-BL-007	08-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.87	0.4		µg/m^3	Y	
AI_All	Indoor Air	0041H-IA-KBED	0041H-IA-KBED-20160308-BL-007	08-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0041H-IA-KBED	0041H-IA-KBED-20160308-BL-007	08-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0041H-IA-KIT	0041H-IA-KIT-20160308-BL-008	08-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.75	0.4		µg/m^3	Y	
AI_All	Indoor Air	0041H-IA-KIT	0041H-IA-KIT-20160308-BL-008	08-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0041H-IA-KIT	0041H-IA-KIT-20160308-BL-008	08-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0041H-IA-LIV	0041H-IA-LIV-20160308-BL-002	08-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.95	0.4		µg/m^3	Y	
AI_All	Indoor Air	0041H-IA-LIV	0041H-IA-LIV-20160308-BL-002	08-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0041H-IA-LIV	0041H-IA-LIV-20160308-BL-002	08-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0041H-IA-OA1	0041H-IA-OA1-20160308-BL-001	08-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0041H-IA-OA1	0041H-IA-OA1-20160308-BL-001	08-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0041H-IA-OA1	0041H-IA-OA1-20160308-BL-001	08-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0041H-IA-UBED	0041H-IA-UBED-20160308-BL-005	08-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.87	0.4		µg/m^3	Y	
AI_All	Indoor Air	0041H-IA-UBED	0041H-IA-UBED-20160308-BL-005	08-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0041H-IA-UBED	0041H-IA-UBED-20160308-BL-005	08-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-A204-A	0045S-IA-A204-A-20160304-BL-009	04-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-A204-A	0045S-IA-A204-A-20160304-BL-009	04-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-A204-A	0045S-IA-A204-A-20160304-BL-009	04-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-A215	0045S-IA-A215-20160321-028	21-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-A215	0045S-IA-A215-20160321-028	21-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-A215	0045S-IA-A215-20160321-028	21-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-A219-A	0045S-IA-A219-A-20160304-BL-010	04-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-A219-A	0045S-IA-A219-A-20160304-BL-010	04-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-A219-A	0045S-IA-A219-A-20160304-BL-010	04-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-A312-A	0045S-IA-A312-A-20160304-BL-008	04-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-A312-A	0045S-IA-A312-A-20160304-BL-008	04-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-A312-A	0045S-IA-A312-A-20160304-BL-008	04-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-A315-A	0045S-IA-A315-A-20160304-BL-006	04-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-A315-A	0045S-IA-A315-A-20160304-BL-006	04-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-A315-A	0045S-IA-A315-A-20160304-BL-006	04-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-A322-A	0045S-IA-A322-A-20160304-BL-007	04-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-A322-A	0045S-IA-A322-A-20160304-BL-007	04-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-A322-A	0045S-IA-A322-A-20160304-BL-007	04-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-A404-A	0045S-IA-A404-A-20160304-BL-005	04-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U

TABLE F2-1

Human Health Risk Assessment Dataset

700 South 1600 East PCE Plume AOU-1: East Side Springs

Department of Veterans Affairs Salt Lake City Health Care System

Data Group	Medium	Location ID	Sample Name	Sample Date	Analysis Method	Preliminary COPC	CASRN	Final Result	Method Detection Limit	Reporting Limit	Unit	Detect Flag	Qualifier
AI_All	Indoor Air	0045S-IA-A404-A	0045S-IA-A404-A-20160304-BL-005	04-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-A404-A	0045S-IA-A404-A-20160304-BL-005	04-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-AUDI-B	0045S-IA-AUDI-B-20160304-BL-017	04-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-AUDI-B	0045S-IA-AUDI-B-20160304-BL-017	04-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-AUDI-B	0045S-IA-AUDI-B-20160304-BL-017	04-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-AUTO-A	0045S-IA-AUTO-A-20160304-BL-013	04-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-AUTO-A	0045S-IA-AUTO-A-20160304-BL-013	04-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-AUTO-A	0045S-IA-AUTO-A-20160304-BL-046	04-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	1.4	0.7		µg/m^3	Y	
AI_All	Indoor Air	0045S-IA-B208-B	0045S-IA-B208-B-20160304-BL-030	04-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-B208-B	0045S-IA-B208-B-20160304-BL-030	04-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-B208-B	0045S-IA-B208-B-20160304-BL-030	04-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-B215-B	0045S-IA-B215-B-20160304-BL-029	04-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-B215-B	0045S-IA-B215-B-20160304-BL-029	04-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-B215-B	0045S-IA-B215-B-20160304-BL-029	04-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-B325-B	0045S-IA-B325-B-20160304-BL-034	04-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-B325-B	0045S-IA-B325-B-20160304-BL-034	04-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-B325-B	0045S-IA-B325-B-20160304-BL-034	04-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-C107-C	0045S-IA-C107-C-20160304-BL-050	04-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-C107-C	0045S-IA-C107-C-20160304-BL-050	04-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-C107-C	0045S-IA-C107-C-20160304-BL-050	04-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-C213-C	0045S-IA-C213-C-20160304-BL-049	04-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-C213-C	0045S-IA-C213-C-20160304-BL-049	04-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-C213-C	0045S-IA-C213-C-20160304-BL-049	04-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-C216-C	0045S-IA-C216-C-20160304-BL-048	04-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-C216-C	0045S-IA-C216-C-20160304-BL-048	04-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-C216-C	0045S-IA-C216-C-20160304-BL-048	04-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-C305-C	0045S-IA-C305-C-20160304-BL-042	04-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-C305-C	0045S-IA-C305-C-20160304-BL-042	04-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-C305-C	0045S-IA-C305-C-20160304-BL-042	04-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-C317-C	0045S-IA-C317-C-20160304-BL-041	04-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-C317-C	0045S-IA-C317-C-20160304-BL-041	04-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-C317-C	0045S-IA-C317-C-20160304-BL-041	04-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-C406-C	0045S-IA-C406-C-20160304-BL-040	04-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-C406-C	0045S-IA-C406-C-20160304-BL-040	04-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-C406-C	0045S-IA-C406-C-20160304-BL-040	04-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-CA203	0045S-IA-CA203-20160321-BL-003	21-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-CA203	0045S-IA-CA203-20160321-BL-003	21-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-CA203	0045S-IA-CA203-20160321-BL-003	21-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-CA213	0045S-IA-CA213-20160321-BL-029	21-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-CA213	0045S-IA-CA213-20160321-BL-029	21-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-CA213	0045S-IA-CA213-20160321-BL-029	21-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-CA215	0045S-IA-CA215-20160322-BL-004	22-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-CA215	0045S-IA-CA215-20160322-BL-004	22-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-CA215	0045S-IA-CA215-20160322-BL-004	22-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-CA219	0045S-IA-CA219-20160322-BL-005	22-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U

TABLE F2-1
Human Health Risk Assessment Dataset
700 South 1600 East PCE Plume AOU-1: East Side Springs
Department of Veterans Affairs Salt Lake City Health Care System

Data Group	Medium	Location ID	Sample Name	Sample Date	Analysis Method	Preliminary COPC	CASRN	Final Result	Method Detection Limit	Reporting Limit	Unit	Detect Flag	Qualifier
AI_All	Indoor Air	0045S-IA-CA219	0045S-IA-CA219-20160322-BL-005	22-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-CA219	0045S-IA-CA219-20160322-BL-005	22-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-CAF-A	0045S-IA-CAF-A-20160304-BL-004	04-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-CAF-A	0045S-IA-CAF-A-20160304-BL-004	04-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-CAF-A	0045S-IA-CAF-A-20160304-BL-004	04-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-CHEM-A	0045S-IA-CHEM-A-20160304-BL-014	04-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-CHEM-A	0045S-IA-CHEM-A-20160304-BL-014	04-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	40	0.7		µg/m^3	Y	
AI_All	Indoor Air	0045S-IA-CHEM-A	0045S-IA-CHEM-A-20160304-BL-014	04-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-D202-D	0045S-IA-D202-D-20160304-BL-037	04-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-D202-D	0045S-IA-D202-D-20160304-BL-037	04-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-D202-D	0045S-IA-D202-D-20160304-BL-037	04-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-D210-D	0045S-IA-D210-D-20160304-BL-036	04-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-D210-D	0045S-IA-D210-D-20160304-BL-036	04-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-D210-D	0045S-IA-D210-D-20160304-BL-036	04-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-D305-D	0045S-IA-D305-D-20160304-BL-038	04-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-D305-D	0045S-IA-D305-D-20160304-BL-038	04-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-D305-D	0045S-IA-D305-D-20160304-BL-038	04-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-D311-D	0045S-IA-D311-D-20160304-BL-039	04-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-D311-D	0045S-IA-D311-D-20160304-BL-039	04-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-D311-D	0045S-IA-D311-D-20160304-BL-039	04-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-FLOB	0045S-IA-FLOB-20160321-BL-005	21-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-FLOB	0045S-IA-FLOB-20160321-BL-005	21-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-FLOB	0045S-IA-FLOB-20160321-BL-005	21-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-HA215	0045S-IA-HA215-20160321-BL-030	21-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-HA215	0045S-IA-HA215-20160321-BL-030	21-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-HA215	0045S-IA-HA215-20160321-BL-030	21-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-HAL	0045S-IA-HAL-20160322-BL-006	22-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-HAL	0045S-IA-HAL-20160322-BL-006	22-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-HAL	0045S-IA-HAL-20160322-BL-006	22-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-HEXIT	0045S-IA-HEXIT-20160322-BL-039	22-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-HEXIT	0045S-IA-HEXIT-20160322-BL-039	22-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-HEXIT	0045S-IA-HEXIT-20160322-BL-039	22-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	1.3	0.5		µg/m^3	Y	
AI_All	Indoor Air	0045S-IA-HTHE-A	0045S-IA-HTHE-A-20160304-BL-011	04-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-HTHE-A	0045S-IA-HTHE-A-20160304-BL-011	04-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-HTHE-A	0045S-IA-HTHE-A-20160304-BL-011	04-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-LGYM-B	0045S-IA-LGYM-B-20160304-BL-035	04-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-LGYM-B	0045S-IA-LGYM-B-20160304-BL-035	04-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-LGYM-B	0045S-IA-LGYM-B-20160304-BL-035	04-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-MENT-B	0045S-IA-MENT-B-20160304-BL-033	04-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-MENT-B	0045S-IA-MENT-B-20160304-BL-033	04-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-MENT-B	0045S-IA-MENT-B-20160304-BL-033	04-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-MLOB	0045S-IA-MLOB-20160322-BL-003	22-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-MLOB	0045S-IA-MLOB-20160322-BL-003	22-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-MLOB	0045S-IA-MLOB-20160322-BL-003	22-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-RB211	0045S-IA-RB211-20160322- BL-041	22-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U

TABLE F2-1
Human Health Risk Assessment Dataset
700 South 1600 East PCE Plume AOU-1: East Side Springs
Department of Veterans Affairs Salt Lake City Health Care System

Data Group	Medium	Location ID	Sample Name	Sample Date	Analysis Method	Preliminary COPC	CASRN	Final Result	Method Detection Limit	Reporting Limit	Unit	Detect Flag	Qualifier
AI_All	Indoor Air	0045S-IA-RB211	0045S-IA-RB211-20160322- BL-041	22-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-RB211	0045S-IA-RB211-20160322- BL-041	22-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-SHAL	0045S-IA-SHAL-20160321-BL-006	21-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-SHAL	0045S-IA-SHAL-20160321-BL-006	21-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-SHAL	0045S-IA-SHAL-20160321-BL-006	21-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-THEA-A	0045S-IA-THEA-A-20160304-BL-012	04-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-THEA-A	0045S-IA-THEA-A-20160304-BL-012	04-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-THEA-A	0045S-IA-THEA-A-20160304-BL-012	04-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-TSTOR	0045S-IA-TSTOR-20160322-BL-040	22-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-TSTOR	0045S-IA-TSTOR-20160322-BL-040	22-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0045S-IA-TSTOR	0045S-IA-TSTOR-20160322-BL-040	22-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0047H-IA-BOFF	0047H-IA-BOFF-20160225-BL-008	25-Feb-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0047H-IA-BOFF	0047H-IA-BOFF-20160225-BL-008	25-Feb-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	7.6	0.7		µg/m^3	Y	
AI_All	Indoor Air	0047H-IA-BOFF	0047H-IA-BOFF-20160225-BL-008	25-Feb-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0047H-IA-LAU	0047H-IA-LAU-20160225-BL-003	25-Feb-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.38	0.4		µg/m^3	Y	
AI_All	Indoor Air	0047H-IA-LAU	0047H-IA-LAU-20160225-BL-003	25-Feb-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	3.9	0.7		µg/m^3	Y	
AI_All	Indoor Air	0047H-IA-LAU	0047H-IA-LAU-20160225-BL-003	25-Feb-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0047H-IA-LIV	0047H-IA-LIV-20160225-BL-002	25-Feb-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	6.2	0.7		µg/m^3	Y	
AI_All	Indoor Air	0047H-IA-LIV	0047H-IA-LIV-20160225-BL-002	25-Feb-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0047H-IA-MEC	0047H-IA-MEC-20160225-BL-010	25-Feb-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.36	0.4		µg/m^3	Y	
AI_All	Indoor Air	0047H-IA-MEC	0047H-IA-MEC-20160225-BL-010	25-Feb-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	9	0.7		µg/m^3	Y	
AI_All	Indoor Air	0047H-IA-MEC	0047H-IA-MEC-20160225-BL-010	25-Feb-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0047H-IA-MECC	0047H-IA-MEC-20160225-BL-011	25-Feb-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0047H-IA-MECS	0047H-IA-MEC-20160225-BL-012	25-Feb-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.36	0.4		µg/m^3	Y	
AI_All	Indoor Air	0047H-IA-MECS	0047H-IA-MEC-20160225-BL-012	25-Feb-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	8.3	0.7		µg/m^3	Y	
AI_All	Indoor Air	0047H-IA-MECS	0047H-IA-MEC-20160225-BL-012	25-Feb-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0047H-IA-REST	0047H-IA-REST-20160225-BL-005	25-Feb-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	1.15	0.4		µg/m^3	Y	
AI_All	Indoor Air	0047H-IA-REST	0047H-IA-REST-20160225-BL-005	25-Feb-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	6.8	0.7		µg/m^3	Y	
AI_All	Indoor Air	0047H-IA-REST	0047H-IA-REST-20160225-BL-005	25-Feb-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0047H-IA-UBED	0047H-IA-UBED-20160225-BL-006	25-Feb-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	2.14	0.4		µg/m^3	Y	
AI_All	Indoor Air	0047H-IA-UBED	0047H-IA-UBED-20160225-BL-006	25-Feb-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	6.7	0.7		µg/m^3	Y	
AI_All	Indoor Air	0047H-IA-UBED	0047H-IA-UBED-20160225-BL-006	25-Feb-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0047H-IA-UOFF	0047H-IA-UOFF-20160225-BL-004	25-Feb-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.87	0.4		µg/m^3	Y	
AI_All	Indoor Air	0047H-IA-UOFF	0047H-IA-UOFF-20160225-BL-004	25-Feb-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	5.3	0.7		µg/m^3	Y	
AI_All	Indoor Air	0047H-IA-UOFF	0047H-IA-UOFF-20160225-BL-004	25-Feb-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0050H-IA-BAS	0050H-IA-BAS-20160323-BL-003	23-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0050H-IA-BAS	0050H-IA-BAS-20160323-BL-003	23-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0050H-IA-BAS	0050H-IA-BAS-20160323-BL-003	23-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0051H-IA-BLIV	0051H-IA-BLIV-20160226-BL-004	26-Feb-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0051H-IA-BLIV	0051H-IA-BLIV-20160226-BL-004	26-Feb-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	2.4	0.7		µg/m^3	Y	
AI_All	Indoor Air	0051H-IA-BLIV	0051H-IA-BLIV-20160226-BL-004	26-Feb-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0051H-IA-MEC	0051H-IA-MEC-20160226-BL-006	26-Feb-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0051H-IA-MEC	0051H-IA-MEC-20160226-BL-006	26-Feb-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0051H-IA-MULIV	0051H-IA-ULIV-20160226-BL-003	26-Feb-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0051H-IA-MULIV	0051H-IA-ULIV-20160226-BL-003	26-Feb-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	2.2	0.7		µg/m^3	Y	

TABLE F2-1
Human Health Risk Assessment Dataset
700 South 1600 East PCE Plume AOU-1: East Side Springs
Department of Veterans Affairs Salt Lake City Health Care System

Data Group	Medium	Location ID	Sample Name	Sample Date	Analysis Method	Preliminary COPC	CASRN	Final Result	Method Detection Limit	Reporting Limit	Unit	Detect Flag	Qualifier
AI_All	Indoor Air	0051H-IA-MULIV	0051H-IA-ULIV-20160226-BL-003	26-Feb-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0051H-IA-UBED	0051H-IA-UBED-20160226-BL-005	26-Feb-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0051H-IA-UBED	0051H-IA-UBED-20160226-BL-005	26-Feb-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	2.4	0.7		µg/m^3	Y	
AI_All	Indoor Air	0051H-IA-UBED	0051H-IA-UBED-20160226-BL-005	26-Feb-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0051H-IA-BAS	A-0051-031616-IA-BAS	16-Mar-16	TO-15 SIM	Tetrachloroethene	127-18-4	2			µg/m^3	Y	
AI_All	Indoor Air	0051H-IA-BAS	A-0051-031616-IA-BAS	16-Mar-16	TO-15 SIM	Trichloroethene	79-01-6	0.27		0.27	µg/m^3	N	U
AI_All	Indoor Air	0051H-IA-BAS	A-0051-031616-IA-BAS	16-Mar-16	TO-15 SIM	cis-1,2-Dichloroethene	156-59-2	0.2		0.2	µg/m^3	N	U
AI_All	Indoor Air	0051H-IA-BAS	A-0051-031616-IA-BAS	16-Mar-16	TO-15 SIM	Vinyl Chloride	75-01-4	0.13		0.13	µg/m^3	N	U
AI_All	Indoor Air	0051H-IA-BAS	A-0051-031616-IA-BAS	16-Mar-16	TO-15 SIM	1,4-Dioxane	123-91-1	0.18		0.18	µg/m^3	N	U
AI_All	Indoor Air	0051H-IA-ULIV	0051H-IA-ULIV-20160323-BL-002	23-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0051H-IA-ULIV	0051H-IA-ULIV-20160323-BL-002	23-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0051H-IA-ULIV	0051H-IA-ULIV-20160323-BL-002	23-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0052H-IA-BAT	0052H-IA-BAT-20160311-BL-013	11-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.91	0.4		µg/m^3	Y	
AI_All	Indoor Air	0052H-IA-BAT	0052H-IA-BAT-20160311-BL-013	11-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	1.9	0.7		µg/m^3	Y	
AI_All	Indoor Air	0052H-IA-BAT	0052H-IA-BAT-20160311-BL-013	11-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0052H-IA-BLIV	0052H-IA-BLIV-20160311-BL-007	11-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.44	0.4		µg/m^3	Y	
AI_All	Indoor Air	0052H-IA-BLIV	0052H-IA-BLIV-20160311-BL-007	11-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0052H-IA-BLIV	0052H-IA-BLIV-20160311-BL-007	11-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0052H-IA-ENT	0052H-IA-ENT-20160311-BL-004	11-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.79	0.4		µg/m^3	Y	
AI_All	Indoor Air	0052H-IA-ENT	0052H-IA-ENT-20160311-BL-004	11-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0052H-IA-ENT	0052H-IA-ENT-20160311-BL-004	11-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0052H-IA-LAU	0052H-IA-LAU-20160311-BL-011	11-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0052H-IA-LAU	0052H-IA-LAU-20160311-BL-011	11-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0052H-IA-LAU	0052H-IA-LAU-20160311-BL-011	11-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0052H-IA-OFF	0052H-IA-OFF-20160311-BL-012	11-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.83	0.4		µg/m^3	Y	
AI_All	Indoor Air	0052H-IA-OFF	0052H-IA-OFF-20160311-BL-012	11-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	1	0.7		µg/m^3	Y	
AI_All	Indoor Air	0052H-IA-OFF	0052H-IA-OFF-20160311-BL-012	11-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0052H-IA-UBEDN	0052H-IA-UBEDN-20160311-BL-008	11-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.95	0.4		µg/m^3	Y	
AI_All	Indoor Air	0052H-IA-UBEDN	0052H-IA-UBEDN-20160311-BL-008	11-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	1.9	0.7		µg/m^3	Y	
AI_All	Indoor Air	0052H-IA-UBEDN	0052H-IA-UBEDN-20160311-BL-008	11-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0052H-IA-UBEDS	0052H-IA-UBEDS-20160311-BL-010	11-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	1.07	0.4		µg/m^3	Y	
AI_All	Indoor Air	0052H-IA-UBEDS	0052H-IA-UBEDS-20160311-BL-010	11-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	1.4	0.7		µg/m^3	Y	
AI_All	Indoor Air	0052H-IA-UBEDS	0052H-IA-UBEDS-20160311-BL-010	11-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0052H-IA-UDIN	0052H-IA-UDIN-20160311-BL-009	11-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0052H-IA-UDIN	0052H-IA-UDIN-20160311-BL-009	11-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0052H-IA-UDIN	0052H-IA-UDIN-20160311-BL-009	11-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0052H-IA-UHAL	0052H-IA-UHAL-20160311-BL-005	11-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	1.7	0.4		µg/m^3	Y	
AI_All	Indoor Air	0052H-IA-UHAL	0052H-IA-UHAL-20160311-BL-005	11-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	1	0.7		µg/m^3	Y	
AI_All	Indoor Air	0052H-IA-UHAL	0052H-IA-UHAL-20160311-BL-005	11-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0053H-IA-CRWL	0053H-IA-CRWL-20160502-BL-023	02-May-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0053H-IA-CRWL	0053H-IA-CRWL-20160502-BL-023	02-May-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	13.1	0.7		µg/m^3	Y	
AI_All	Indoor Air	0053H-IA-CRWL	0053H-IA-CRWL-20160502-BL-023	02-May-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0053H-IA-KIT	0053H-IA-KIT-20160502-BL-019	02-May-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.71	0.4		µg/m^3	Y	
AI_All	Indoor Air	0053H-IA-KIT	0053H-IA-KIT-20160502-BL-019	02-May-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	9.7	0.7		µg/m^3	Y	
AI_All	Indoor Air	0053H-IA-KIT	0053H-IA-KIT-20160502-BL-019	02-May-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U

TABLE F2-1
Human Health Risk Assessment Dataset
700 South 1600 East PCE Plume AOU-1: East Side Springs
Department of Veterans Affairs Salt Lake City Health Care System

Data Group	Medium	Location ID	Sample Name	Sample Date	Analysis Method	Preliminary COPC	CASRN	Final Result	Method Detection Limit	Reporting Limit	Unit	Detect Flag	Qualifier
AI_All	Indoor Air	0053H-IA-LIV	0053H-IA-LIV-20160502-BL-020	02-May-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0053H-IA-LIV	0053H-IA-LIV-20160502-BL-022	02-May-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.55	0.4		µg/m^3	Y	
AI_All	Indoor Air	0054H-IA-BAT	0054H-IA-BAT-20160509-BL-015	09-May-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0054H-IA-BAT	0054H-IA-BAT-20160509-BL-015	09-May-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	6.7	0.7		µg/m^3	Y	
AI_All	Indoor Air	0054H-IA-BAT	0054H-IA-BAT-20160509-BL-015	09-May-16	HAPSITE VOCS	Trichlorethene	79-01-6	5.2	0.5		µg/m^3	Y	
AI_All	Indoor Air	0054H-IA-CONT	0054H-IA-CONT-20160603-BL-044	03-Jun-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0054H-IA-CONT	0054H-IA-CONT-20160603-BL-044	03-Jun-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	3	0.7		µg/m^3	Y	
AI_All	Indoor Air	0054H-IA-CONT	0054H-IA-CONT-20160603-BL-044	03-Jun-16	HAPSITE VOCS	Trichlorethene	79-01-6	4	0.5		µg/m^3	Y	
AI_All	Indoor Air	0054H-IA-GAR	0054H-IA-GAR-20160509-BL-012	09-May-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0054H-IA-GAR	0054H-IA-GAR-20160509-BL-012	09-May-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0054H-IA-GAR	0054H-IA-GAR-20160509-BL-012	09-May-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.7	0.5		µg/m^3	Y	
AI_All	Indoor Air	0054H-IA-GAR	0054H-IA-GAR-20160603-BL-009	03-Jun-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0054H-IA-GAR	0054H-IA-GAR-20160603-BL-009	03-Jun-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0054H-IA-GAR	0054H-IA-GAR-20160603-BL-009	03-Jun-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0054H-IA-LAU	0054H-IA-LAU-20160509-BL-010	09-May-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0054H-IA-LAU	0054H-IA-LAU-20160509-BL-017	09-May-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	5.8	0.7		µg/m^3	Y	
AI_All	Indoor Air	0054H-IA-LAU	0054H-IA-LAU-20160509-BL-017	09-May-16	HAPSITE VOCS	Trichlorethene	79-01-6	4.8	0.5		µg/m^3	Y	
AI_All	Indoor Air	0054H-IA-LAU	0054H-IA-LAU-20160603-BL-003	03-Jun-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0054H-IA-LAU	0054H-IA-LAU-20160603-BL-008	03-Jun-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	1.3	0.7		µg/m^3	Y	
AI_All	Indoor Air	0054H-IA-LAU	0054H-IA-LAU-20160603-BL-008	03-Jun-16	HAPSITE VOCS	Trichlorethene	79-01-6	1.7	0.5		µg/m^3	Y	
AI_All	Indoor Air	0054H-IA-LIV	0054H-IA-LIV-20160509-BL-009	09-May-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0054H-IA-LIV	0054H-IA-LIV-20160509-BL-009	09-May-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	6	0.7		µg/m^3	Y	
AI_All	Indoor Air	0054H-IA-LIV	0054H-IA-LIV-20160509-BL-009	09-May-16	HAPSITE VOCS	Trichlorethene	79-01-6	5.4	0.5		µg/m^3	Y	
AI_All	Indoor Air	0054H-IA-LIV	0054H-IA-LIV-20160603-BL-002	03-Jun-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0054H-IA-LIV	0054H-IA-LIV-20160603-BL-011	03-Jun-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.8	0.7		µg/m^3	Y	
AI_All	Indoor Air	0054H-IA-LIV	0054H-IA-LIV-20160603-BL-011	03-Jun-16	HAPSITE VOCS	Trichlorethene	79-01-6	1.9	0.5		µg/m^3	Y	
AI_All	Indoor Air	0054H-IA-SBED	0054H-IA-SBED-20160509-BL-020	09-May-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0054H-IA-SBED	0054H-IA-SBED-20160509-BL-020	09-May-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	6.9	0.7		µg/m^3	Y	
AI_All	Indoor Air	0054H-IA-SBED	0054H-IA-SBED-20160509-BL-020	09-May-16	HAPSITE VOCS	Trichlorethene	79-01-6	5.4	0.5		µg/m^3	Y	
AI_All	Indoor Air	0054H-IA-SHOP	0054H-IA-SHOP-20160509-BL-014	09-May-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0054H-IA-SHOP	0054H-IA-SHOP-20160509-BL-019	09-May-16	HAPSITE VOCS	Trichlorethene	79-01-6	9.3	0.5		µg/m^3	Y	
AI_All	Indoor Air	0054H-IA-SHOP	0054H-IA-SHOP-20160603-BL-004	03-Jun-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0054H-IA-SHOP	0054H-IA-SHOP-20160603-BL-006	03-Jun-16	HAPSITE VOCS	Trichlorethene	79-01-6	2.9	0.5		µg/m^3	Y	
AI_All	Indoor Air	0054H-IA-SUM	0054H-IA-SUM-20160603-BL-007	03-Jun-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0054H-IA-SUM	0054H-IA-SUM-20160603-BL-007	03-Jun-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	1.7	0.7		µg/m^3	Y	
AI_All	Indoor Air	0054H-IA-SUM	0054H-IA-SUM-20160603-BL-007	03-Jun-16	HAPSITE VOCS	Trichlorethene	79-01-6	3.5	0.5		µg/m^3	Y	
AI_All	Indoor Air	0054H-IA-TVR	0054H-IA-TVR-20160509-BL-016	09-May-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0054H-IA-TVR	0054H-IA-TVR-20160603-BL-010	03-Jun-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0055H-IA-BBHAL	0055H-IA-BHAL-20160513-BL-016	13-May-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0055H-IA-BBHAL	0055H-IA-BHAL-20160513-BL-016	13-May-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7		µg/m^3	Y	
AI_All	Indoor Air	0055H-IA-BBHAL	0055H-IA-BHAL-20160513-BL-016	13-May-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0055H-IA-KIT	0055H-IA-KIT-20160513-BL-014	13-May-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0055H-IA-LAU	0055H-IA-LAU-20160513-BL-017	13-May-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.55	0.4		µg/m^3	Y	
AI_All	Indoor Air	0055H-IA-LAU	0055H-IA-LAU-20160513-BL-017	13-May-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7		µg/m^3	Y	
AI_All	Indoor Air	0055H-IA-LAU	0055H-IA-LAU-20160513-BL-017	13-May-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U

TABLE F2-1
Human Health Risk Assessment Dataset
700 South 1600 East PCE Plume AOU-1: East Side Springs
Department of Veterans Affairs Salt Lake City Health Care System

Data Group	Medium	Location ID	Sample Name	Sample Date	Analysis Method	Preliminary COPC	CASRN	Final Result	Method Detection Limit	Reporting Limit	Unit	Detect Flag	Qualifier
AI_All	Indoor Air	0055H-IA-UHAL	0055H-IA-UHAL-20160513-BL-015	13-May-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.52	0.4		µg/m^3	Y	
AI_All	Indoor Air	0055H-IA-UHAL	0055H-IA-UHAL-20160513-BL-015	13-May-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.9	0.7		µg/m^3	Y	
AI_All	Indoor Air	0055H-IA-UHAL	0055H-IA-UHAL-20160513-BL-015	13-May-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0056H-IA-BAS	0056H-IA-BAS-20160503-NA-004	03-May-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	1.66	0.4		µg/m^3	Y	
AI_All	Indoor Air	0056H-IA-BAS	0056H-IA-BAS-20160503-NA-004	03-May-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	4	0.7		µg/m^3	Y	
AI_All	Indoor Air	0056H-IA-BAS	0056H-IA-BAS-20160503-NA-004	03-May-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0056H-IA-BBED	0056H-IA-BBED-20160503-NA-006	03-May-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	1.86	0.4		µg/m^3	Y	
AI_All	Indoor Air	0056H-IA-BBED	0056H-IA-BBED-20160503-NA-006	03-May-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	4.1	0.7		µg/m^3	Y	
AI_All	Indoor Air	0056H-IA-BBED	0056H-IA-BBED-20160503-NA-006	03-May-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0056H-IA-CRWL	0056H-IA-CRWL-20160503-NA-005	03-May-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	1.74	0.4		µg/m^3	Y	
AI_All	Indoor Air	0056H-IA-FRM	0056H-IA-FRM-20160503-NA-003	03-May-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	3.05	0.4		µg/m^3	Y	
AI_All	Indoor Air	0056H-IA-FRM	0056H-IA-FRM-20160503-NA-003	03-May-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	2.1	0.7		µg/m^3	Y	
AI_All	Outdoor Air	0056H-OA-OA1	0056H-OA-OA1-20160503-NA-002	03-May-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Outdoor Air	0056H-OA-OA1	0056H-OA-OA1-20160503-NA-002	03-May-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Outdoor Air	0056H-OA-OA1	0056H-OA-OA1-20160503-NA-002	03-May-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0057H-IA-HAL1	A-0057H-04052017-IA-003-HAL1	05-Apr-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0057H-IA-HAL1	A-0057H-04052017-IA-003-HAL1	05-Apr-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0057H-IA-HAL1	A-0057H-04052017-IA-003-HAL1	05-Apr-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0057H-IA-LHAL1	A-0057H-04052017-IA-005-LHAL1	05-Apr-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0057H-IA-LHAL1	A-0057H-04052017-IA-005-LHAL1	05-Apr-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0057H-IA-LHAL1	A-0057H-04052017-IA-005-LHAL1	05-Apr-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0057H-IA-LIV1	A-0057H-04052017-IA-002-LIV1	05-Apr-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0057H-IA-LIV1	A-0057H-04052017-IA-002-LIV1	05-Apr-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0057H-IA-LIV1	A-0057H-04052017-IA-002-LIV1	05-Apr-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0057H-IA-LLIV1	A-0057H-04052017-IA-004-LLIV1	05-Apr-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0057H-IA-LLIV1	A-0057H-04052017-IA-004-LLIV1	05-Apr-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0057H-IA-LLIV1	A-0057H-04052017-IA-004-LLIV1	05-Apr-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0057H-IA-STO1	A-0057H-04052017-IA-006-STO1	05-Apr-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0057H-IA-STO1	A-0057H-04052017-IA-006-STO1	05-Apr-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0057H-IA-STO1	A-0057H-04052017-IA-006-STO1	05-Apr-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0058H-IA-BAS1	A-0058H-030617-IA-006-BAS1	06-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0058H-IA-BAS1	A-0058H-030617-IA-006-BAS1	06-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0058H-IA-BAS1	A-0058H-030617-IA-006-BAS1	06-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0058H-IA-LIV1	A-0058H-030617-IA-005-LIV1	06-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0058H-IA-LIV1	A-0058H-030617-IA-005-LIV1	06-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0058H-IA-LIV1	A-0058H-030617-IA-005-LIV1	06-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0059H-IA-BAS1	A-0059H-031717-IA-018-BAS1	17-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0059H-IA-BAS1	A-0059H-031717-IA-018-BAS1	17-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0059H-IA-BAS1	A-0059H-031717-IA-018-BAS1	17-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0059H-IA-HAL1	A-0059H-031717-IA-016-HAL1	17-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0059H-IA-HAL1	A-0059H-031717-IA-016-HAL1	17-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0059H-IA-HAL1	A-0059H-031717-IA-016-HAL1	17-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0059H-IA-LAN1	A-0059H-031717-IA-017-LAN1	17-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0059H-IA-LAN1	A-0059H-031717-IA-017-LAN1	17-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0059H-IA-LAN1	A-0059H-031717-IA-017-LAN1	17-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U

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700 South 1600 East PCE Plume AOU-1: East Side Springs
Department of Veterans Affairs Salt Lake City Health Care System

Data Group	Medium	Location ID	Sample Name	Sample Date	Analysis Method	Preliminary COPC	CASRN	Final Result	Method Detection Limit	Reporting Limit	Unit	Detect Flag	Qualifier
AI_All	Indoor Air	0059H-IA-STO1	A-0059H-031717-IA-019-STO1	17-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0059H-IA-STO1	A-0059H-031717-IA-019-STO1	17-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0059H-IA-STO1	A-0059H-031717-IA-019-STO1	17-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0060H-IA-BAS1	A-0060H-030717-IA-008-BAS1	07-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0060H-IA-BAS1	A-0060H-030717-IA-008-BAS1	07-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0060H-IA-BAS1	A-0060H-030717-IA-008-BAS1	07-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0060H-IA-ENT1	A-0060H-030717-IA-006-ENT1	07-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0060H-IA-ENT1	A-0060H-030717-IA-006-ENT1	07-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0060H-IA-ENT1	A-0060H-030717-IA-006-ENT1	07-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0060H-IA-STA1	A-0060H-030717-IA-007-STA1	07-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0060H-IA-STA1	A-0060H-030717-IA-007-STA1	07-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0060H-IA-STA1	A-0060H-030717-IA-007-STA1	07-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0060H-IA-STO1	A-0060H-030717-IA-009-STO1	07-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0060H-IA-STO1	A-0060H-030717-IA-009-STO1	07-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0060H-IA-STO1	A-0060H-030717-IA-009-STO1	07-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0060H-IA-STO2	A-0060H-030717-IA-010-STO2	07-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0060H-IA-STO2	A-0060H-030717-IA-010-STO2	07-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0060H-IA-STO2	A-0060H-030717-IA-010-STO2	07-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0061H-IA-BAS1	A-0061H-030817-IA-004-BAS1	08-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0061H-IA-BAS1	A-0061H-030817-IA-004-BAS1	08-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0061H-IA-BAS1	A-0061H-030817-IA-004-BAS1	08-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0061H-IA-BED1	A-0061H-030817-IA-006-BED1	08-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0061H-IA-BED1	A-0061H-030817-IA-006-BED1	08-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0061H-IA-BED1	A-0061H-030817-IA-006-BED1	08-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0061H-IA-KIT1	A-0061H-030817-IA-007-KIT1	08-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0061H-IA-KIT1	A-0061H-030817-IA-007-KIT1	08-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0061H-IA-KIT1	A-0061H-030817-IA-007-KIT1	08-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0061H-IA-LIV1	A-0061H-030817-IA-003-LIV1	08-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0061H-IA-LIV1	A-0061H-030817-IA-003-LIV1	08-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0061H-IA-LIV1	A-0061H-030817-IA-003-LIV1	08-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0062H-IA-BAS1	A-0062H-032917-IA-006-BAS1	29-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0062H-IA-BAS1	A-0062H-032917-IA-006-BAS1	29-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0062H-IA-BAS1	A-0062H-032917-IA-006-BAS1	29-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0062H-IA-GAR1	A-0062H-032917-IA-010-GAR1	29-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0062H-IA-GAR1	A-0062H-032917-IA-010-GAR1	29-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0062H-IA-GAR1	A-0062H-032917-IA-010-GAR1	29-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0062H-IA-KIT1	A-0062H-032917-IA-005-KIT1	29-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0062H-IA-KIT1	A-0062H-032917-IA-005-KIT1	29-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0062H-IA-KIT1	A-0062H-032917-IA-005-KIT1	29-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0062H-IA-LAN1	A-0062H-032917-IA-009-LAN1	29-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0062H-IA-LAN1	A-0062H-032917-IA-009-LAN1	29-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
AI_All	Indoor Air	0062H-IA-LAN1	A-0062H-032917-IA-009-LAN1	29-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0063H-IA-BAS1	A-0063H-032117-IA-013-BAS1	21-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0063H-IA-BAS1	A-0063H-032117-IA-013-BAS1	21-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	2.85	0.7	0.7	µg/m^3	Y	
AI_All	Indoor Air	0063H-IA-BAS1	A-0063H-032117-IA-013-BAS1	21-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U

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Data Group	Medium	Location ID	Sample Name	Sample Date	Analysis Method	Preliminary COPC	CASRN	Final Result	Method Detection Limit	Reporting Limit	Unit	Detect Flag	Qualifier
AI_All	Indoor Air	0063H-IA-BAT1	A-0063H-032117-IA-014-BAT1	21-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0063H-IA-BAT1	A-0063H-032117-IA-014-BAT1	21-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	3.25	0.7	0.7	µg/m^3	Y	
AI_All	Indoor Air	0063H-IA-BAT1	A-0063H-032117-IA-014-BAT1	21-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0064H-IA-LIV1	A-0064H-041317-IA-002-LIV1	13-Apr-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
AI_All	Indoor Air	0064H-IA-LIV1	A-0064H-041317-IA-002-LIV1	13-Apr-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	2.51	0.7	0.7	µg/m^3	Y	
AI_All	Indoor Air	0064H-IA-LIV1	A-0064H-041317-IA-002-LIV1	13-Apr-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
AI_All	Indoor Air	0064H-TO-LIV	A-0064H-041417-TO-001-LIV	14-Apr-17	TO15SIM-UGM3	1,4-Dioxane	123-91-1	0.18		0.18	µg/m^3	N	UJ
AI_All	Indoor Air	0064H-TO-LIV	A-0064H-041417-TO-001-LIV	14-Apr-17	TO15SIM-UGM3	cis-1,2-Dichloroethene	156-59-2	0.2		0.2	µg/m^3	N	UJ
AI_All	Indoor Air	0064H-TO-LIV	A-0064H-041417-TO-001-LIV	14-Apr-17	TO15SIM-UGM3	Tetrachloroethene	127-18-4	1.9		0.34	µg/m^3	Y	J
AI_All	Indoor Air	0064H-TO-LIV	A-0064H-041417-TO-001-LIV	14-Apr-17	TO15SIM-UGM3	Trichlorethene	79-01-6	0.27		0.27	µg/m^3	N	UJ
AI_All	Indoor Air	0064H-TO-LIV	A-0064H-041417-TO-001-LIV	14-Apr-17	TO15SIM-UGM3	Vinyl Chloride	75-01-4	0.13		0.13	µg/m^3	N	UJ
AI_All	Indoor Air	0053H-TO-BAS	A-0053H-052416-IA-BAS	24-May-16	TO15SIM-UGM3	1,4-Dioxane	123-91-1	0.18		0.18	µg/m^3	N	U
AI_All	Indoor Air	0053H-TO-BAS	A-0053H-052416-IA-BAS	24-May-16	TO15SIM-UGM3	cis-1,2-Dichloroethene	156-59-2	0.2		,2	µg/m^3	N	U
AI_All	Indoor Air	0053H-TO-BAS	A-0053H-052416-IA-BAS	24-May-16	TO15SIM-UGM3	Tetrachloroethene	127-18-4	13		0.3	µg/m^3	Y	J
AI_All	Indoor Air	0053H-TO-BAS	A-0053H-052416-IA-BAS	24-May-16	TO15SIM-UGM3	Trichlorethene	79-01-6	0.27		0.27	µg/m^3	N	U
AI_All	Indoor Air	0053H-TO-BAS	A-0053H-052416-IA-BAS	24-May-16	TO15SIM-UGM3	Vinyl Chloride	75-01-4	0.13		0.13	µg/m^3	N	U
GS_All	Soil Gas	0003H-SG	A-0003H-040915-SG-001-4	09-Apr-15	TO15-UGM3	cis-1,2-Dichloroethene	156-59-2	2	0.59	2	µg/m^3	N	U
GS_All	Soil Gas	0003H-SG	A-0003H-040915-SG-001-4	09-Apr-15	TO15-UGM3	Tetrachloroethene	127-18-4	3.4	1	3.4	µg/m^3	N	U
GS_All	Soil Gas	0003H-SG	A-0003H-040915-SG-001-4	09-Apr-15	TO15-UGM3	Trichlorethene	79-01-6	2.7	0.81	2.7	µg/m^3	N	U
GS_All	Soil Gas	0003H-SG	A-0003H-040915-SG-001-4	09-Apr-15	TO15-UGM3	Vinyl Chloride	75-01-4	1.3	0.38	1.3	µg/m^3	N	U
GS_All	Soil Gas	0008H-SG	A-0008H-041015-SG-001A-4	10-Apr-15	TO15-UGM3	cis-1,2-Dichloroethene	156-59-2	2	0.59	2	µg/m^3	N	U
GS_All	Soil Gas	0008H-SG	A-0008H-041015-SG-001A-4	10-Apr-15	TO15-UGM3	Trichlorethene	79-01-6	2.7	0.81	2.7	µg/m^3	N	U
GS_All	Soil Gas	0008H-SG	A-0008H-041015-SG-001A-4	10-Apr-15	TO15-UGM3	Vinyl Chloride	75-01-4	1.3	0.38	1.3	µg/m^3	N	U
GS_All	Soil Gas	0008H-SG	A-0008H-041015-SG-001B-4	10-Apr-15	TO15-UGM3	Tetrachloroethene	127-18-4	3	1		µg/m^3	Y	J
GS_All	Soil Gas	0026H-SG	A-0026H-040815-SG-003-4	08-Apr-15	TO15-UGM3	cis-1,2-Dichloroethene	156-59-2	2	0.59	2	µg/m^3	N	U
GS_All	Soil Gas	0026H-SG	A-0026H-040815-SG-003-4	08-Apr-15	TO15-UGM3	Tetrachloroethene	127-18-4	3.4	1	3.4	µg/m^3	N	U
GS_All	Soil Gas	0026H-SG	A-0026H-040815-SG-003-4	08-Apr-15	TO15-UGM3	Trichlorethene	79-01-6	2.7	0.81	2.7	µg/m^3	N	U
GS_All	Soil Gas	0026H-SG	A-0026H-040815-SG-003-4	08-Apr-15	TO15-UGM3	Vinyl Chloride	75-01-4	1.3	0.38	1.3	µg/m^3	N	U
GS_All	Soil Gas	0030H-SG	A-0030H-041115-SG-001A-6	11-Apr-15	TO15-UGM3	cis-1,2-Dichloroethene	156-59-2	2.8	0.59		µg/m^3	Y	
GS_All	Soil Gas	0030H-SG	A-0030H-041115-SG-001A-6	11-Apr-15	TO15-UGM3	Tetrachloroethene	127-18-4	1.5	1		µg/m^3	Y	J
GS_All	Soil Gas	0030H-SG	A-0030H-041115-SG-001A-6	11-Apr-15	TO15-UGM3	Trichlorethene	79-01-6	17	0.81		µg/m^3	Y	
GS_All	Soil Gas	0030H-SG	A-0030H-041115-SG-001A-6	11-Apr-15	TO15-UGM3	Vinyl Chloride	75-01-4	1.3	0.38	1.3	µg/m^3	N	U
GS_All	Soil Gas	0041H-SG-SG1	0041H-SG-SG1-20160308-038-7'	08-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.59	0.4		µg/m^3	Y	
GS_All	Soil Gas	0041H-SG-SG1	0041H-SG-SG1-20160308-038-7'	08-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
GS_All	Soil Gas	0041H-SG-SG1	0041H-SG-SG1-20160308-038-7'	08-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
GS_All	Soil Gas	0045S-SG-SG1	0045S-SG-SG1-20160322-042-4'	22-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
GS_All	Soil Gas	0045S-SG-SG1	0045S-SG-SG1-20160322-042-4'	22-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
GS_All	Soil Gas	0045S-SG-SG1	0045S-SG-SG1-20160322-043-4'	22-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	2.55	0.7		µg/m^3	Y	
GS_All	Soil Gas	0047H-SG-SG1	0047H-SG-SG1-20160226-028-4.5'	26-Feb-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
GS_All	Soil Gas	0047H-SG-SG1	0047H-SG-SG1-20160226-028-4.5'	26-Feb-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	26.9	0.7		µg/m^3	Y	
GS_All	Soil Gas	0047H-SG-SG1	0047H-SG-SG1-20160226-028-4.5'	26-Feb-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
GS_All	Soil Gas	0051H-SG-SG1-45	0051H-SG-SG1-20160226-028-4.5'	26-Feb-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
GS_All	Soil Gas	0051H-SG-SG1-45	0051H-SG-SG1-20160226-028-4.5'	26-Feb-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	26.9	0.7		µg/m^3	Y	
GS_All	Soil Gas	0051H-SG-SG1-45	0051H-SG-SG1-20160226-028-4.5'	26-Feb-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
GS_All	Soil Gas	0050H-SG-SG1-50	0050H-SG-SG1-20160323-016-5'	23-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U

TABLE F2-1
Human Health Risk Assessment Dataset
700 South 1600 East PCE Plume AOU-1: East Side Springs
Department of Veterans Affairs Salt Lake City Health Care System

Data Group	Medium	Location ID	Sample Name	Sample Date	Analysis Method	Preliminary COPC	CASRN	Final Result	Method Detection Limit	Reporting Limit	Unit	Detect Flag	Qualifier
GS_All	Soil Gas	0050H-SG-SG1-50	0050H-SG-SG1-20160323-016-5'	23-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	13.1	0.7		μg/m³	Y	
GS_All	Soil Gas	0050H-SG-SG1-50	0050H-SG-SG1-20160323-016-5'	23-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	3.6	0.5		μg/m³	Y	
GS_All	Soil Gas	0051H-SG-SG1-75	0051H-SG-SG1-20160226-029-7.5'	26-Feb-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	μg/m³	N	U
GS_All	Soil Gas	0051H-SG-SG1-75	0051H-SG-SG1-20160226-029-7.5'	26-Feb-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	μg/m³	N	U
GS_All	Soil Gas	0051H-SG-SG1-75	0051H-SG-SG1-20160226-030-7.5'	26-Feb-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.59	0.4		μg/m³	Y	
GS_All	Soil Gas	0051H-SG-SG2-75	0051H-SG-SG2-20160226-032-7.5'	26-Feb-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	μg/m³	N	U
GS_All	Soil Gas	0051H-SG-SG2-75	0051H-SG-SG2-20160226-032-7.5'	26-Feb-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	3	0.7		μg/m³	Y	
GS_All	Soil Gas	0051H-SG-SG2-75	0051H-SG-SG2-20160226-032-7.5'	26-Feb-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	μg/m³	N	U
GS_All	Soil Gas	0051H-SG-SG2-85	0051H-SG-SG2-20160226-031-8.5'	26-Feb-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	μg/m³	N	U
GS_All	Soil Gas	0051H-SG-SG2-85	0051H-SG-SG2-20160226-031-8.5'	26-Feb-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	10.3	0.7		μg/m³	Y	
GS_All	Soil Gas	0051H-SG-SG2-85	0051H-SG-SG2-20160226-031-8.5'	26-Feb-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	μg/m³	N	U
GS_All	Soil Gas	0052H-SG-SG1	0052H-SG-SG1-20160311-032-4.5'	11-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	μg/m³	N	U
GS_All	Soil Gas	0052H-SG-SG1	0052H-SG-SG1-20160311-032-4.5'	11-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	10.3	0.7		μg/m³	Y	
GS_All	Soil Gas	0052H-SG-SG1	0052H-SG-SG1-20160311-032-4.5'	11-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	μg/m³	N	U
GS_All	Soil Gas	0053H-SG-0037	A-0053H-052316-SG-001-6'(0037)	23-May-16	TO15-UGM3	1,4-Dioxane	123-91-1	7.2	7.2	7.2	μg/m³	N	U
GS_All	Soil Gas	0053H-SG-0037	A-0053H-052316-SG-001-6'(0037)	23-May-16	TO15-UGM3	cis-1,2-Dichloroethene	156-59-2	2	0.59	2	μg/m³	N	U
GS_All	Soil Gas	0053H-SG-0037	A-0053H-052316-SG-001-6'(0037)	23-May-16	TO15-UGM3	Tetrachloroethene	127-18-4	2000	10	34	μg/m³	Y	J
GS_All	Soil Gas	0053H-SG-0037	A-0053H-052316-SG-001-6'(0037)	23-May-16	TO15-UGM3	Trichlorethene	79-01-6	18	0.81	2.7	μg/m³	Y	
GS_All	Soil Gas	0053H-SG-0037	A-0053H-052316-SG-001-6'(0037)	23-May-16	TO15-UGM3	Vinyl Chloride	75-01-4	1.3	0.38	1.3	μg/m³	N	U
GS_All	Soil Gas	0053H-SG-0050	A-0053H-052316-SG-001-6'(0050)	23-May-16	TO15-UGM3	1,4-Dioxane	123-91-1	7.2	7.2	7.2	μg/m³	N	U
GS_All	Soil Gas	0053H-SG-0050	A-0053H-052316-SG-001-6'(0050)	23-May-16	TO15-UGM3	cis-1,2-Dichloroethene	156-59-2	2	0.59	2	μg/m³	N	U
GS_All	Soil Gas	0053H-SG-0050	A-0053H-052316-SG-001-6'(0050)	23-May-16	TO15-UGM3	Tetrachloroethene	127-18-4	1500	10	34	μg/m³	Y	J
GS_All	Soil Gas	0053H-SG-0050	A-0053H-052316-SG-001-6'(0050)	23-May-16	TO15-UGM3	Trichlorethene	79-01-6	21	0.81	2.7	μg/m³	Y	
GS_All	Soil Gas	0053H-SG-0050	A-0053H-052316-SG-001-6'(0050)	23-May-16	TO15-UGM3	Vinyl Chloride	75-01-4	1.3	0.38	1.3	μg/m³	N	U
GS_All	Soil Gas	0053H-SG-SG1	0053H-SG-SG1-20160502-056-6.5'	02-May-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	μg/m³	N	U
GS_All	Soil Gas	0053H-SG-SG1	0053H-SG-SG1-20160502-056-6.5'	02-May-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	627.7	0.7		μg/m³	Y	
GS_All	Soil Gas	0053H-SG-SG1	0053H-SG-SG1-20160502-056-6.5'	02-May-16	HAPSITE VOCS	Trichlorethene	79-01-6	4.5	0.5		μg/m³	Y	
GS_All	Soil Gas	0054H-SG-SG1	0054H-SG-SG1-20160603-042-7'	03-Jun-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	μg/m³	N	U
GS_All	Soil Gas	0054H-SG-SG1	0054H-SG-SG1-20160603-042-7'	03-Jun-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	μg/m³	N	U
GS_All	Soil Gas	0054H-SG-SG1	0054H-SG-SG1-20160603-043-7'	03-Jun-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	61.4	0.7		μg/m³	Y	
GS_All	Soil Gas	0055H-SG-SG1	0055H-SG-SG1-20160513--038	13-May-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	μg/m³	N	U
GS_All	Soil Gas	0055H-SG-SG1	0055H-SG-SG1-20160513--038	13-May-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	μg/m³	N	U
GS_All	Soil Gas	0055H-SG-SG1	0055H-SG-SG1-20160513--039	13-May-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.48	0.4		μg/m³	Y	
GS_All	Soil Gas	0056H-SG-SG1	0056H-SG-SG1-20160503-031-5.5'	03-May-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	μg/m³	N	U
GS_All	Soil Gas	0056H-SG-SG1	0056H-SG-SG1-20160503-031-5.5'	03-May-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	μg/m³	N	U
GS_All	Soil Gas	0056H-SG-SG1	0056H-SG-SG1-20160503-032-5.5'	03-May-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	3.2	0.7		μg/m³	Y	
GS_All	Soil Gas	0057H-SG-2FT	A-0057H-04052017-SG-022-2'	05-Apr-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	μg/m³	N	U
GS_All	Soil Gas	0057H-SG-2FT	A-0057H-04052017-SG-022-2'	05-Apr-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	2.1	0.7	0.7	μg/m³	Y	
GS_All	Soil Gas	0057H-SG-2FT	A-0057H-04052017-SG-022-2'	05-Apr-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	μg/m³	N	U
GS_All	Soil Gas	0058H-SG-4FT	A-0058H-030617-SG-025-4'	06-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	μg/m³	N	U
GS_All	Soil Gas	0058H-SG-4FT	A-0058H-030617-SG-025-4'	06-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	μg/m³	N	U
GS_All	Soil Gas	0058H-SG-4FT	A-0058H-030617-SG-025-4'	06-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	μg/m³	N	U
GS_All	Soil Gas	0058H-SG-6FT	A-0058H-030617-SG-027-6'	06-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	μg/m³	N	U
GS_All	Soil Gas	0058H-SG-6FT	A-0058H-030617-SG-027-6'	06-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	μg/m³	N	U
GS_All	Soil Gas	0058H-SG-6FT	A-0058H-030617-SG-027-6'	06-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	μg/m³	N	U

TABLE F2-1
Human Health Risk Assessment Dataset
700 South 1600 East PCE Plume AOU-1: East Side Springs
Department of Veterans Affairs Salt Lake City Health Care System

Data Group	Medium	Location ID	Sample Name	Sample Date	Analysis Method	Preliminary COPC	CASRN	Final Result	Method Detection Limit	Reporting Limit	Unit	Detect Flag	Qualifier
GS_All	Soil Gas	0059H-SG-1.8FT	A-0059H-031717-SG-039-1.8'	17-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
GS_All	Soil Gas	0059H-SG-1.8FT	A-0059H-031717-SG-039-1.8'	17-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
GS_All	Soil Gas	0059H-SG-1.8FT	A-0059H-031717-SG-039-1.8'	17-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
GS_All	Soil Gas	0059H-SG-5FT	A-0059H-031717-SG-040-5'	17-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
GS_All	Soil Gas	0059H-SG-5FT	A-0059H-031717-SG-040-5'	17-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
GS_All	Soil Gas	0059H-SG-5FT	A-0059H-031717-SG-040-5'	17-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
GS_All	Soil Gas	0060H-SG-4.8FT	A-0060H-030717-SG-037-4.8'	07-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
GS_All	Soil Gas	0060H-SG-4.8FT	A-0060H-030717-SG-037-4.8'	07-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
GS_All	Soil Gas	0060H-SG-4.8FT	A-0060H-030717-SG-038-4.8'	07-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	4.81	0.7	0.7	µg/m^3	Y	
GS_All	Soil Gas	0061H-SG-4.7FT	A-0061H-030817-SG-029-4.7'	08-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
GS_All	Soil Gas	0061H-SG-4.7FT	A-0061H-030817-SG-029-4.7'	08-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
GS_All	Soil Gas	0061H-SG-4.7FT	A-0061H-030817-SG-029-4.7'	08-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
GS_All	Soil Gas	0061H-SG-6.1FT	A-0061H-030817-SG-031-6.1'	08-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
GS_All	Soil Gas	0061H-SG-6.1FT	A-0061H-030817-SG-031-6.1'	08-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
GS_All	Soil Gas	0061H-SG-6.1FT	A-0061H-030817-SG-031-6.1'	08-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
GS_All	Soil Gas	0062H-SG-6.5FT	A-0062H-032917-SG-025-6.5'	29-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
GS_All	Soil Gas	0062H-SG-6.5FT	A-0062H-032917-SG-025-6.5'	29-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
GS_All	Soil Gas	0062H-SG-6.5FT	A-0062H-032917-SG-025-6.5'	29-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
GS_All	Soil Gas	0063H-SG-SG1	A-0063H-032117-6'-SG-041-SG1	21-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
GS_All	Soil Gas	0063H-SG-SG1	A-0063H-032117-6'-SG-041-SG1	21-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	108.5	0.7	0.7	µg/m^3	Y	
GS_All	Soil Gas	0063H-SG-SG1	A-0063H-032117-6'-SG-041-SG1	21-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
OA_All	Outdoor Air	0001H-OA-OUT1	A-0001H-031517-OA-003-OUT1	15-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
OA_All	Outdoor Air	0001H-OA-OUT1	A-0001H-031517-OA-003-OUT1	15-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
OA_All	Outdoor Air	0001H-OA-OUT1	A-0001H-031517-OA-003-OUT1	15-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
OA_All	Outdoor Air	0001H-OA-OUT1	A-0001H-031517-OA-011-OUT1	22-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
OA_All	Outdoor Air	0001H-OA-OUT1	A-0001H-031517-OA-011-OUT1	22-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
OA_All	Outdoor Air	0001H-OA-OUT1	A-0001H-031517-OA-011-OUT1	22-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
OA_All	Outdoor Air	0002H-OA-OUT1	A-0002H-032217-OA-014-OUT1	22-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
OA_All	Outdoor Air	0002H-OA-OUT1	A-0002H-032217-OA-014-OUT1	22-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
OA_All	Outdoor Air	0002H-OA-OUT1	A-0002H-032217-OA-014-OUT1	22-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
OA_All	Outdoor Air	0004H-OA-OUT1	A-0004H-031317-OA-006-OUT1	13-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
OA_All	Outdoor Air	0004H-OA-OUT1	A-0004H-031317-OA-006-OUT1	13-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
OA_All	Outdoor Air	0004H-OA-OUT1	A-0004H-031317-OA-006-OUT1	13-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
OA_All	Outdoor Air	0012H-OA-OUT1	A-0012H-031317-OA-015-OUT1	13-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
OA_All	Outdoor Air	0012H-OA-OUT1	A-0012H-031317-OA-015-OUT1	13-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
OA_All	Outdoor Air	0012H-OA-OUT1	A-0012H-031317-OA-015-OUT1	13-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
OA_All	Outdoor Air	0013H-OA-OUT1	A-0013H-030917-OA-017-OUT1	09-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
OA_All	Outdoor Air	0013H-OA-OUT1	A-0013H-030917-OA-017-OUT1	09-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
OA_All	Outdoor Air	0013H-OA-OUT1	A-0013H-030917-OA-017-OUT1	09-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
OA_All	Outdoor Air	0025H-OA-OUT1	A-0025H-031317-OA-003-OUT1	13-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
OA_All	Outdoor Air	0025H-OA-OUT1	A-0025H-031317-OA-003-OUT1	13-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
OA_All	Outdoor Air	0025H-OA-OUT1	A-0025H-031317-OA-003-OUT1	13-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
OA_All	Outdoor Air	0026H-OA-OUT1	A-0026H-030917-OA-006-OUT1	09-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
OA_All	Outdoor Air	0026H-OA-OUT1	A-0026H-030917-OA-006-OUT1	09-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
OA_All	Outdoor Air	0026H-OA-OUT1	A-0026H-030917-OA-006-OUT1	09-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U

TABLE F2-1
Human Health Risk Assessment Dataset
700 South 1600 East PCE Plume AOU-1: East Side Springs
Department of Veterans Affairs Salt Lake City Health Care System

Data Group	Medium	Location ID	Sample Name	Sample Date	Analysis Method	Preliminary COPC	CASRN	Final Result	Method Detection Limit	Reporting Limit	Unit	Detect Flag	Qualifier
OA_All	Outdoor Air	0026H-TO-OUT	A-0026H-040815-TO-003-OUT	08-Apr-15	TO15-UGM3	cis-1,2-Dichloroethene	156-59-2	2	0.59	2	µg/m^3	N	U
OA_All	Outdoor Air	0026H-TO-OUT	A-0026H-040815-TO-003-OUT	08-Apr-15	TO15-UGM3	Tetrachloroethene	127-18-4	3.4	1	3.4	µg/m^3	N	U
OA_All	Outdoor Air	0026H-TO-OUT	A-0026H-040815-TO-003-OUT	08-Apr-15	TO15-UGM3	Trichlorethene	79-01-6	2.7	0.81	2.7	µg/m^3	N	U
OA_All	Outdoor Air	0026H-TO-OUT	A-0026H-040815-TO-003-OUT	08-Apr-15	TO15-UGM3	Vinyl Chloride	75-01-4	1.3	0.38	1.3	µg/m^3	N	U
OA_All	Outdoor Air	0027H-OA-OUT1	A-0027H-030917-OA-013-OUT1	09-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
OA_All	Outdoor Air	0027H-OA-OUT1	A-0027H-030917-OA-013-OUT1	09-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
OA_All	Outdoor Air	0027H-OA-OUT1	A-0027H-030917-OA-013-OUT1	09-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
OA_All	Outdoor Air	0029H-OA-OUT1	A-0029H-033017-OA-003-OUT1	30-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
OA_All	Outdoor Air	0029H-OA-OUT1	A-0029H-033017-OA-003-OUT1	30-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
OA_All	Outdoor Air	0029H-OA-OUT1	A-0029H-033017-OA-003-OUT1	30-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
OA_All	Outdoor Air	0030H-TO-OUT	A-0030H-041115-TO-002-OUT	11-Apr-15	TO15-UGM3	cis-1,2-Dichloroethene	156-59-2	2	0.59	2	µg/m^3	N	U
OA_All	Outdoor Air	0030H-TO-OUT	A-0030H-041115-TO-002-OUT	11-Apr-15	TO15-UGM3	Tetrachloroethene	127-18-4	3.4	1	3.4	µg/m^3	N	U
OA_All	Outdoor Air	0030H-TO-OUT	A-0030H-041115-TO-002-OUT	11-Apr-15	TO15-UGM3	Trichlorethene	79-01-6	2.7	0.81	2.7	µg/m^3	N	U
OA_All	Outdoor Air	0030H-TO-OUT	A-0030H-041115-TO-002-OUT	11-Apr-15	TO15-UGM3	Vinyl Chloride	75-01-4	1.3	0.38	1.3	µg/m^3	N	U
OA_All	Outdoor Air	0041H-OA-OA1	0041H-OA-OA1-20160308-BL-037	08-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
OA_All	Outdoor Air	0041H-OA-OA1	0041H-OA-OA1-20160308-BL-037	08-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
OA_All	Outdoor Air	0041H-OA-OA1	0041H-OA-OA1-20160308-BL-037	08-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
OA_All	Outdoor Air	0045S-OA-OA1	0045S-OA-OA1-20160304-BL-003	04-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
OA_All	Outdoor Air	0045S-OA-OA1	0045S-OA-OA1-20160304-BL-003	04-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
OA_All	Outdoor Air	0045S-OA-OA1	0045S-OA-OA1-20160304-BL-003	04-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
OA_All	Outdoor Air	0045S-OA-OA1	0045S-OA-OA1-20160321-BL-004	21-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
OA_All	Outdoor Air	0045S-OA-OA1	0045S-OA-OA1-20160321-BL-004	21-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
OA_All	Outdoor Air	0045S-OA-OA1	0045S-OA-OA1-20160321-BL-004	21-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
OA_All	Outdoor Air	0045S-OA-OA1	0045S-OA-OA1-20160322-NA-002	22-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
OA_All	Outdoor Air	0045S-OA-OA1	0045S-OA-OA1-20160322-NA-002	22-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
OA_All	Outdoor Air	0045S-OA-OA1	0045S-OA-OA1-20160322-NA-002	22-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
OA_All	Outdoor Air	0045S-OA-OA2	0045S-OA-OA2-20160304-BL-045	04-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
OA_All	Outdoor Air	0045S-OA-OA2	0045S-OA-OA2-20160304-BL-045	04-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
OA_All	Outdoor Air	0045S-OA-OA2	0045S-OA-OA2-20160304-BL-045	04-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
OA_All	Outdoor Air	0047H-OA-OA1	0047H-OA-OA1-20160225-BL-001	25-Feb-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
OA_All	Outdoor Air	0047H-OA-OA1	0047H-OA-OA1-20160225-BL-001	25-Feb-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
OA_All	Outdoor Air	0047H-OA-OA1	0047H-OA-OA1-20160225-BL-001	25-Feb-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
OA_All	Outdoor Air	0051H-OA-OA1	0051H-OA-OA1-20160226-BL-002	26-Feb-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
OA_All	Outdoor Air	0051H-OA-OA1	0051H-OA-OA1-20160226-BL-002	26-Feb-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
OA_All	Outdoor Air	0051H-OA-OA1	0051H-OA-OA1-20160226-BL-002	26-Feb-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
OA_All	Outdoor Air	0051H-OA-OA1	0051H-OA-OA1-20160323-BL-001	23-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
OA_All	Outdoor Air	0051H-OA-OA1	0051H-OA-OA1-20160323-BL-001	23-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
OA_All	Outdoor Air	0051H-OA-OA1	0051H-OA-OA1-20160323-BL-001	23-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
OA_All	Outdoor Air	0051H-OA-SPR	0051H-OA-SPR-20160226-027	26-Feb-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
OA_All	Outdoor Air	0051H-OA-SPR	0051H-OA-SPR-20160226-027	26-Feb-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	75.9	0.7		µg/m^3	Y	
OA_All	Outdoor Air	0051H-OA-SPR	0051H-OA-SPR-20160226-027	26-Feb-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
OA_All	Outdoor Air	0052H-OA-OA1	0052H-OA-OA1-20160311-NA-003	11-Mar-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U
OA_All	Outdoor Air	0052H-OA-OA1	0052H-OA-OA1-20160311-NA-003	11-Mar-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	µg/m^3	N	U
OA_All	Outdoor Air	0052H-OA-OA1	0052H-OA-OA1-20160311-NA-003	11-Mar-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	µg/m^3	N	U
OA_All	Outdoor Air	0053H-OA-OA1	0053H-OA-OA1-20160502-BL-018	02-May-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	µg/m^3	N	U

TABLE F2-1
Human Health Risk Assessment Dataset
700 South 1600 East PCE Plume AOU-1: East Side Springs
Department of Veterans Affairs Salt Lake City Health Care System

Data Group	Medium	Location ID	Sample Name	Sample Date	Analysis Method	Preliminary COPC	CASRN	Final Result	Method Detection Limit	Reporting Limit	Unit	Detect Flag	Qualifier
OA_All	Outdoor Air	0053H-OA-OA1	0053H-OA-OA1-20160502-BL-018	02-May-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	μg/m^3	N	U
OA_All	Outdoor Air	0053H-OA-OA1	0053H-OA-OA1-20160502-BL-018	02-May-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	μg/m^3	N	U
OA_All	Outdoor Air	0054H-OA-FOA1	0054H-OA-OA1-20160603-BL-001	03-Jun-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	μg/m^3	N	U
OA_All	Outdoor Air	0054H-OA-FOA1	0054H-OA-OA1-20160603-BL-001	03-Jun-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	μg/m^3	N	U
OA_All	Outdoor Air	0054H-OA-FOA1	0054H-OA-OA1-20160603-BL-001	03-Jun-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	μg/m^3	N	U
OA_All	Outdoor Air	0054H-OA-OA1	0054H-OA-OA1-20160509-NA-008	09-May-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	μg/m^3	N	U
OA_All	Outdoor Air	0054H-OA-OA1	0054H-OA-OA1-20160509-NA-008	09-May-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	μg/m^3	N	U
OA_All	Outdoor Air	0054H-OA-OA1	0054H-OA-OA1-20160509-NA-008	09-May-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	μg/m^3	N	U
OA_All	Outdoor Air	0055H-OA-OA1	0055H-OA-OA1-20160513-BL-013	13-May-16	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	μg/m^3	N	U
OA_All	Outdoor Air	0055H-OA-OA1	0055H-OA-OA1-20160513-BL-013	13-May-16	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	μg/m^3	N	U
OA_All	Outdoor Air	0055H-OA-OA1	0055H-OA-OA1-20160513-BL-013	13-May-16	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	μg/m^3	N	U
OA_All	Outdoor Air	0058H-OA-OUT1	A-0058H-030617-OA-004-OUT1	06-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	μg/m^3	N	U
OA_All	Outdoor Air	0058H-OA-OUT1	A-0058H-030617-OA-004-OUT1	06-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	μg/m^3	N	U
OA_All	Outdoor Air	0058H-OA-OUT1	A-0058H-030617-OA-004-OUT1	06-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	μg/m^3	N	U
OA_All	Outdoor Air	0059H-OA-OUT1	A-0059H-031717-OA-015-OUT1	17-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	μg/m^3	N	U
OA_All	Outdoor Air	0059H-OA-OUT1	A-0059H-031717-OA-015-OUT1	17-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	μg/m^3	N	U
OA_All	Outdoor Air	0059H-OA-OUT1	A-0059H-031717-OA-015-OUT1	17-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	μg/m^3	N	U
OA_All	Outdoor Air	0060H-OA-OUT1	A-0060H-030717-OA-005-OUT1	07-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	μg/m^3	N	U
OA_All	Outdoor Air	0060H-OA-OUT1	A-0060H-030717-OA-005-OUT1	07-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	μg/m^3	N	U
OA_All	Outdoor Air	0060H-OA-OUT1	A-0060H-030717-OA-005-OUT1	07-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	μg/m^3	N	U
OA_All	Outdoor Air	0061H-OA-OUT1	A-0061H-030817-OA-002-OUT1	08-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	μg/m^3	N	U
OA_All	Outdoor Air	0061H-OA-OUT1	A-0061H-030817-OA-002-OUT1	08-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	μg/m^3	N	U
OA_All	Outdoor Air	0061H-OA-OUT1	A-0061H-030817-OA-002-OUT1	08-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	μg/m^3	N	U
OA_All	Outdoor Air	0062H-OA-OUT1	A-0062H-032917-OA-004-OUT1	29-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	μg/m^3	N	U
OA_All	Outdoor Air	0062H-OA-OUT1	A-0062H-032917-OA-004-OUT1	29-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	μg/m^3	N	U
OA_All	Outdoor Air	0062H-OA-OUT1	A-0062H-032917-OA-004-OUT1	29-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	μg/m^3	N	U
OA_All	Outdoor Air	0063H-OA-OUT1	A-0063H-032117-OA-010-OUT1	21-Mar-17	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.4	0.4	0.4	μg/m^3	N	U
OA_All	Outdoor Air	0063H-OA-OUT1	A-0063H-032117-OA-010-OUT1	21-Mar-17	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7	0.7	0.7	μg/m^3	N	U
OA_All	Outdoor Air	0063H-OA-OUT1	A-0063H-032117-OA-010-OUT1	21-Mar-17	HAPSITE VOCS	Trichlorethene	79-01-6	0.5	0.5	0.5	μg/m^3	N	U
SO_All	Soil	SW-09	A-SS-09_05032016	03-May-16	SOM02.3 SVOA	1,4-Dioxane	123-91-1	0.1	0.033	0.1	mg/kg	N	U
SO_All	Soil	SW-09	A-SS-09_05032016	03-May-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.01	0.00046	0.01	mg/kg	N	U
SO_All	Soil	SW-09	A-SS-09_05032016	03-May-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	0.01	0.00039	0.01	mg/kg	N	U
SO_All	Soil	SW-09	A-SS-09_05032016	03-May-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.01	0.00048	0.01	mg/kg	N	U
SO_All	Soil	SW-09	A-SS-09_05032016	03-May-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.01	0.00039	0.01	mg/kg	N	U
SO_All	Soil	SW-26	A-SS-26_05032016	03-May-16	SOM02.3 SVOA	1,4-Dioxane	123-91-1	0.12	0.038	0.12	mg/kg	N	UJ
SO_All	Soil	SW-26	A-SS-26_05032016	03-May-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.01	0.00044	0.01	mg/kg	N	U
SO_All	Soil	SW-26	A-SS-26_05032016	03-May-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	0.022	0.00037	0.01	mg/kg	Y	
SO_All	Soil	SW-26	A-SS-26_05032016	03-May-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.01	0.00046	0.01	mg/kg	N	U
SO_All	Soil	SW-26	A-SS-26_05032016	03-May-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.01	0.00037	0.01	mg/kg	N	U
WG_All	Groundwater	GW-001	A-GW-001_03042016	04-Mar-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.5	0.076	0.5	µg/L	N	U
WG_All	Groundwater	GW-001	A-GW-001_03042016	04-Mar-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	0.78	0.077	0.5	µg/L	Y	
WG_All	Groundwater	GW-001	A-GW-001_03042016	04-Mar-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.5	0.07	0.5	µg/L	N	U
WG_All	Groundwater	GW-001	A-GW-001_03042016	04-Mar-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.081	0.5	µg/L	N	U
WG_All	Groundwater	GW-003	A-GW-003_02262016	26-Feb-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.5	0.076	0.5	µg/L	N	U
WG_All	Groundwater	GW-003	A-GW-003_02262016	26-Feb-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	0.48	0.077	0.5	µg/L	Y	J
WG_All	Groundwater	GW-003	A-GW-003_02262016	26-Feb-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.5	0.07	0.5	µg/L	N	U
WG_All	Groundwater	GW-003	A-GW-003_02262016	26-Feb-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.081	0.5	µg/L	N	U
WG_All	Groundwater	GW-004	A-GW-004_02262016	26-Feb-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.5	0.076	0.5	µg/L	N	UJ

TABLE F2-1
Human Health Risk Assessment Dataset
700 South 1600 East PCE Plume AOU-1: East Side Springs
Department of Veterans Affairs Salt Lake City Health Care System

Data Group	Medium	Location ID	Sample Name	Sample Date	Analysis Method	Preliminary COPC	CASRN	Final Result	Method Detection Limit	Reporting Limit	Unit	Detect Flag	Qualifier
WG_All	Groundwater	GW-004	A-GW-004_02262016	26-Feb-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	12	0.077	0.5	µg/L	Y	
WG_All	Groundwater	GW-004	A-GW-004_02262016	26-Feb-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.34	0.07	0.5	µg/L	Y	J
WG_All	Groundwater	GW-004	A-GW-004_02262016	26-Feb-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.081	0.5	µg/L	N	U
WG_All	Groundwater	GW-005	A-GW-005_02262016	26-Feb-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.5	0.076	0.5	µg/L	N	UJ
WG_All	Groundwater	GW-005	A-GW-005_02262016	26-Feb-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	1.4	0.077	0.5	µg/L	Y	
WG_All	Groundwater	GW-005	A-GW-005_02262016	26-Feb-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.5	0.07	0.5	µg/L	N	U
WG_All	Groundwater	GW-005	A-GW-005_02262016	26-Feb-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.081	0.5	µg/L	N	U
WG_All	Groundwater	GW-006	A-GW-006_02262016	26-Feb-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.45	0.076	0.5	µg/L	Y	J
WG_All	Groundwater	GW-006	A-GW-006_02262016	26-Feb-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	3.1	0.077	0.5	µg/L	Y	
WG_All	Groundwater	GW-006	A-GW-006_02262016	26-Feb-16	SOM02.3 VOA	Trichlorethene	79-01-6	1	0.07	0.5	µg/L	Y	
WG_All	Groundwater	GW-006	A-GW-006_02262016	26-Feb-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.081	0.5	µg/L	N	U
WG_All	Groundwater	GW-007	A-GW-007_02282016	28-Feb-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.5	0.05	0.5	µg/L	N	U
WG_All	Groundwater	GW-007	A-GW-007_02282016	28-Feb-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	33	0.057	2.5	µg/L	Y	
WG_All	Groundwater	GW-007	A-GW-007_02282016	28-Feb-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.59	0.041	0.5	µg/L	Y	
WG_All	Groundwater	GW-007	A-GW-007_02282016	28-Feb-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.054	0.5	µg/L	N	U
WG_All	Groundwater	GW-008	A-GW-008_02272016	27-Feb-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.5	0.076	0.5	µg/L	N	U
WG_All	Groundwater	GW-008	A-GW-008_02272016	27-Feb-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	9.6	0.077	0.5	µg/L	Y	
WG_All	Groundwater	GW-008	A-GW-008_02272016	27-Feb-16	SOM02.3 VOA	Trichlorethene	79-01-6	1.8	0.07	0.5	µg/L	Y	
WG_All	Groundwater	GW-008	A-GW-008_02272016	27-Feb-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.081	0.5	µg/L	N	U
WG_All	Groundwater	GW-009	A-GW-009_02262016	26-Feb-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.68	0.076	0.5	µg/L	Y	
WG_All	Groundwater	GW-009	A-GW-009_02262016	26-Feb-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	0.7	0.077	0.5	µg/L	Y	
WG_All	Groundwater	GW-009	A-GW-009_02262016	26-Feb-16	SOM02.3 VOA	Trichlorethene	79-01-6	2.4	0.07	0.5	µg/L	Y	
WG_All	Groundwater	GW-009	A-GW-009_02262016	26-Feb-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.081	0.5	µg/L	N	U
WG_All	Groundwater	GW-010	A-GW-010_02272016	27-Feb-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.5	0.076	0.5	µg/L	N	U
WG_All	Groundwater	GW-010	A-GW-010_02272016	27-Feb-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.081	0.5	µg/L	N	U
WG_All	Groundwater	GW-010	A-GW-010-D_02272016	27-Feb-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	1.4	0.057	0.5	µg/L	Y	
WG_All	Groundwater	GW-010	A-GW-010-D_02272016	27-Feb-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.11	0.041	0.5	µg/L	Y	J
WG_All	Groundwater	GW-010	A-GW-10_07122016	12-Jul-16	SOM02.3 SVOA	1,4-Dioxane	123-91-1	2	1.4	2	µg/L	N	U
WG_All	Groundwater	GW-010	A-GW-10_07122016	12-Jul-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.5	0.066	0.5	µg/L	N	U
WG_All	Groundwater	GW-010	A-GW-10_07122016	12-Jul-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	1.1	0.079	0.5	µg/L	Y	
WG_All	Groundwater	GW-010	A-GW-10_07122016	12-Jul-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.5	0.082	0.5	µg/L	N	U
WG_All	Groundwater	GW-010	A-GW-10_07122016	12-Jul-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.091	0.5	µg/L	N	U
WG_All	Groundwater	GW-010	A-GW-10_09202016	20-Sep-16	SOM02.3 SVOA	1,4-Dioxane	123-91-1	2	0.38	2	µg/L	N	UJ
WG_All	Groundwater	GW-010	A-GW-10_09202016	20-Sep-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.5	0.076	0.5	µg/L	N	U
WG_All	Groundwater	GW-010	A-GW-10_09202016	20-Sep-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	1.1	0.077	0.5	µg/L	Y	
WG_All	Groundwater	GW-010	A-GW-10_09202016	20-Sep-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.19	0.07	0.5	µg/L	Y	J
WG_All	Groundwater	GW-010	A-GW-10_09202016	20-Sep-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.081	0.5	µg/L	N	U
WG_All	Groundwater	GW-011	A-GW-011_02272016	27-Feb-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.39	0.076	0.5	µg/L	Y	J
WG_All	Groundwater	GW-011	A-GW-011_02272016	27-Feb-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	45	0.057	5	µg/L	Y	
WG_All	Groundwater	GW-011	A-GW-011_02272016	27-Feb-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.82	0.07	0.5	µg/L	Y	
WG_All	Groundwater	GW-011	A-GW-011_02272016	27-Feb-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.081	0.5	µg/L	N	U
WG_All	Groundwater	GW-011	A-GW-11_07112016	11-Jul-16	SOM02.3 SVOA	1,4-Dioxane	123-91-1	2	1.4	2	µg/L	N	U
WG_All	Groundwater	GW-011	A-GW-11_07112016	11-Jul-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.37	0.066	0.5	µg/L	Y	J
WG_All	Groundwater	GW-011	A-GW-11_07112016	11-Jul-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	44	0.32	2	µg/L	Y	
WG_All	Groundwater	GW-011	A-GW-11_07112016	11-Jul-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.56	0.082	0.5	µg/L	Y	
WG_All	Groundwater	GW-011	A-GW-11_07112016	11-Jul-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.091	0.5	µg/L	N	U
WG_All	Groundwater	GW-011	A-GW-11_09192016	19-Sep-16	SOM02.3 SVOA	1,4-Dioxane	123-91-1	2	0.38	2	µg/L	N	UJ
WG_All	Groundwater	GW-011	A-GW-11_09192016	19-Sep-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.43	0.076	0.5	µg/L	Y	J
WG_All	Groundwater	GW-011	A-GW-11_09192016	19-Sep-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	35	0.077	2.5	µg/L	Y	
WG_All	Groundwater	GW-011	A-GW-11_09192016	19-Sep-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.62	0.07	0.5	µg/L	Y	
WG_All	Groundwater	GW-011	A-GW-11_09192016	19-Sep-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.081	0.5	µg/L	N	U
WG_All	Groundwater	GW-012	A-GW-012_03022016	02-Mar-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.14	0.05	0.5	µg/L	Y	J
WG_All	Groundwater	GW-012	A-GW-012_03022016	02-Mar-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	4.8	0.057	0.5	µg/L	Y	

TABLE F2-1
Human Health Risk Assessment Dataset
700 South 1600 East PCE Plume AOU-1: East Side Springs
Department of Veterans Affairs Salt Lake City Health Care System

Data Group	Medium	Location ID	Sample Name	Sample Date	Analysis Method	Preliminary COPC	CASRN	Final Result	Method Detection Limit	Reporting Limit	Unit	Detect Flag	Qualifier
WG_All	Groundwater	GW-012	A-GW-012_03022016	02-Mar-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.22	0.041	0.5	µg/L	Y	J
WG_All	Groundwater	GW-012	A-GW-012_03022016	02-Mar-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.054	0.5	µg/L	N	U
WG_All	Groundwater	GW-013	A-GW-013_03042016	04-Mar-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.11	0.076	0.5	µg/L	Y	J
WG_All	Groundwater	GW-013	A-GW-013_03042016	04-Mar-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	22	0.077	2.5	µg/L	Y	
WG_All	Groundwater	GW-013	A-GW-013_03042016	04-Mar-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.18	0.07	0.5	µg/L	Y	J
WG_All	Groundwater	GW-013	A-GW-013_03042016	04-Mar-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.081	0.5	µg/L	N	U
WG_All	Groundwater	GW-014	A-GW-014_03022016	02-Mar-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.24	0.05	0.5	µg/L	Y	J
WG_All	Groundwater	GW-014	A-GW-014_03022016	02-Mar-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	3.2	0.057	0.5	µg/L	Y	
WG_All	Groundwater	GW-014	A-GW-014_03022016	02-Mar-16	SOM02.3 VOA	Trichlorethene	79-01-6	1.9	0.041	0.5	µg/L	Y	
WG_All	Groundwater	GW-014	A-GW-014_03022016	02-Mar-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.054	0.5	µg/L	N	U
WG_All	Groundwater	GW-015	A-GW-015_02292016	29-Feb-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	31	0.057	5	µg/L	Y	
WG_All	Groundwater	GW-015	A-GW-015_02292016	29-Feb-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.054	0.5	µg/L	N	U
WG_All	Groundwater	GW-015	A-GW-015-D_02292016	29-Feb-16	SOM02.3 SVOA	1,4-Dioxane	123-91-1	2	0.54	2	µg/L	N	UJ
WG_All	Groundwater	GW-015	A-GW-015-D_02292016	29-Feb-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.32	0.05	0.5	µg/L	Y	J
WG_All	Groundwater	GW-015	A-GW-015-D_02292016	29-Feb-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.63	0.041	0.5	µg/L	Y	J
WG_All	Groundwater	GW-016	A-GW-016_02282016	28-Feb-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.26	0.05	0.5	µg/L	Y	J
WG_All	Groundwater	GW-016	A-GW-016_02282016	28-Feb-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	20	0.057	0.5	µg/L	Y	J
WG_All	Groundwater	GW-016	A-GW-016_02282016	28-Feb-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.61	0.041	0.5	µg/L	Y	
WG_All	Groundwater	GW-016	A-GW-016_02282016	28-Feb-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.054	0.5	µg/L	N	U
WG_All	Groundwater	GW-016	A-GW-16_07112016	11-Jul-16	SOM02.3 SVOA	1,4-Dioxane	123-91-1	2	1.4	2	µg/L	N	U
WG_All	Groundwater	GW-016	A-GW-16_07112016	11-Jul-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.5	0.066	0.5	µg/L	N	U
WG_All	Groundwater	GW-016	A-GW-16_07112016	11-Jul-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	13	0.079	0.5	µg/L	Y	
WG_All	Groundwater	GW-016	A-GW-16_07112016	11-Jul-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.53	0.082	0.5	µg/L	Y	
WG_All	Groundwater	GW-016	A-GW-16_07112016	11-Jul-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.091	0.5	µg/L	N	U
WG_All	Groundwater	GW-016	A-GW-16_09192016	19-Sep-16	SOM02.3 SVOA	1,4-Dioxane	123-91-1	2	0.38	2	µg/L	N	UJ
WG_All	Groundwater	GW-016	A-GW-16_09192016	19-Sep-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.3	0.076	0.5	µg/L	Y	J
WG_All	Groundwater	GW-016	A-GW-16_09192016	19-Sep-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	18	0.077	0.5	µg/L	Y	
WG_All	Groundwater	GW-016	A-GW-16_09192016	19-Sep-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.73	0.07	0.5	µg/L	Y	
WG_All	Groundwater	GW-016	A-GW-16_09192016	19-Sep-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.081	0.5	µg/L	N	U
WG_All	Groundwater	GW-017	A-GW-017_03022016	02-Mar-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.5	0.05	0.5	µg/L	N	U
WG_All	Groundwater	GW-017	A-GW-017_03022016	02-Mar-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	1.1	0.057	0.5	µg/L	Y	
WG_All	Groundwater	GW-017	A-GW-017_03022016	02-Mar-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.56	0.041	0.5	µg/L	Y	
WG_All	Groundwater	GW-017	A-GW-017_03022016	02-Mar-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.054	0.5	µg/L	N	U
WG_All	Groundwater	GW-018	A-GW-018_03022016	02-Mar-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.27	0.05	0.5	µg/L	Y	J-
WG_All	Groundwater	GW-018	A-GW-018_03022016	02-Mar-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	10	0.057	0.5	µg/L	Y	
WG_All	Groundwater	GW-018	A-GW-018_03022016	02-Mar-16	SOM02.3 VOA	Trichlorethene	79-01-6	2.1	0.041	0.5	µg/L	Y	
WG_All	Groundwater	GW-018	A-GW-018_03022016	02-Mar-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.054	0.5	µg/L	N	U
WG_All	Groundwater	GW-020	A-GW-020_03012016	01-Mar-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.5	0.05	0.5	µg/L	N	U
WG_All	Groundwater	GW-020	A-GW-020_03012016	01-Mar-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	2.7	0.057	0.5	µg/L	Y	
WG_All	Groundwater	GW-020	A-GW-020_03012016	01-Mar-16	SOM02.3 VOA	Trichlorethene	79-01-6	1	0.041	0.5	µg/L	Y	
WG_All	Groundwater	GW-020	A-GW-020_03012016	01-Mar-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.054	0.5	µg/L	N	U
WG_All	Groundwater	GW-020	A-GW-20_07112016	11-Jul-16	SOM02.3 SVOA	1,4-Dioxane	123-91-1	2	1.4	2	µg/L	N	U
WG_All	Groundwater	GW-020	A-GW-20_07112016	11-Jul-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.5	0.066	0.5	µg/L	N	U
WG_All	Groundwater	GW-020	A-GW-20_07112016	11-Jul-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	8.3	0.079	0.5	µg/L	Y	
WG_All	Groundwater	GW-020	A-GW-20_07112016	11-Jul-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.4	0.082	0.5	µg/L	Y	J
WG_All	Groundwater	GW-020	A-GW-20_07112016	11-Jul-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.091	0.5	µg/L	N	U
WG_All	Groundwater	GW-020	A-GW-20_09192016	19-Sep-16	SOM02.3 SVOA	1,4-Dioxane	123-91-1	2.1	0.39	2.1	µg/L	N	UJ
WG_All	Groundwater	GW-020	A-GW-20_09192016	19-Sep-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.5	0.076	0.5	µg/L	N	U
WG_All	Groundwater	GW-020	A-GW-20_09192016	19-Sep-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	8.6	0.077	0.5	µg/L	Y	
WG_All	Groundwater	GW-020	A-GW-20_09192016	19-Sep-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.29	0.07	0.5	µg/L	Y	J
WG_All	Groundwater	GW-020	A-GW-20_09192016	19-Sep-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.081	0.5	µg/L	N	U
WG_All	Groundwater	GW-021	A-GW-021_03012016	01-Mar-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.5	0.05	0.5	µg/L	N	U
WG_All	Groundwater	GW-021	A-GW-021_03012016	01-Mar-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	0.5	0.057	0.5	µg/L	N	U

TABLE F2-1
Human Health Risk Assessment Dataset
700 South 1600 East PCE Plume AOU-1: East Side Springs
Department of Veterans Affairs Salt Lake City Health Care System

Data Group	Medium	Location ID	Sample Name	Sample Date	Analysis Method	Preliminary COPC	CASRN	Final Result	Method Detection Limit	Reporting Limit	Unit	Detect Flag	Qualifier
WG_All	Groundwater	GW-021	A-GW-021_03012016	01-Mar-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.5	0.041	0.5	µg/L	N	U
WG_All	Groundwater	GW-021	A-GW-021_03012016	01-Mar-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.054	0.5	µg/L	N	U
WG_All	Groundwater	GW-022	A-GW-022_03012016	01-Mar-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.5	0.05	0.5	µg/L	N	U
WG_All	Groundwater	GW-022	A-GW-022_03012016	01-Mar-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	0.5	0.057	0.5	µg/L	N	U
WG_All	Groundwater	GW-022	A-GW-022_03012016	01-Mar-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.5	0.041	0.5	µg/L	N	U
WG_All	Groundwater	GW-022	A-GW-022_03012016	01-Mar-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.054	0.5	µg/L	N	U
WG_All	Groundwater	GW-023	A-GW-023_02222016	22-Feb-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.5	0.076	0.5	µg/L	N	U
WG_All	Groundwater	GW-023	A-GW-023_02222016	22-Feb-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	0.5	0.077	0.5	µg/L	N	U
WG_All	Groundwater	GW-023	A-GW-023_02222016	22-Feb-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.5	0.07	0.5	µg/L	N	U
WG_All	Groundwater	GW-023	A-GW-023_02222016	22-Feb-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.081	0.5	µg/L	N	U
WG_All	Groundwater	GW-024	A-GW-024_02252016	25-Feb-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.5	0.077	0.5	µg/L	N	U
WG_All	Groundwater	GW-024	A-GW-024_02252016	25-Feb-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	0.5	0.077	0.5	µg/L	N	U
WG_All	Groundwater	GW-024	A-GW-024_02252016	25-Feb-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.5	0.07	0.5	µg/L	N	U
WG_All	Groundwater	GW-024	A-GW-024_02252016	25-Feb-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.15	0.5	µg/L	N	U
WG_All	Groundwater	GW-025	A-GW-025_02292016	29-Feb-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.5	0.076	0.5	µg/L	N	U
WG_All	Groundwater	GW-025	A-GW-025_02292016	29-Feb-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	0.5	0.077	0.5	µg/L	N	U
WG_All	Groundwater	GW-025	A-GW-025_02292016	29-Feb-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.5	0.07	0.5	µg/L	N	U
WG_All	Groundwater	GW-025	A-GW-025_02292016	29-Feb-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.081	0.5	µg/L	N	U
WG_All	Groundwater	GW-026	A-GW-026_02282016	28-Feb-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.5	0.076	0.5	µg/L	N	U
WG_All	Groundwater	GW-026	A-GW-026_02282016	28-Feb-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	0.27	0.077	0.5	µg/L	Y	J
WG_All	Groundwater	GW-026	A-GW-026_02282016	28-Feb-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.5	0.07	0.5	µg/L	N	U
WG_All	Groundwater	GW-026	A-GW-026_02282016	28-Feb-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.081	0.5	µg/L	N	U
WG_All	Groundwater	GW-027	A-GW-027_03052016	05-Mar-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.14	0.076	0.5	µg/L	Y	J
WG_All	Groundwater	GW-027	A-GW-027_03052016	05-Mar-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	22	0.077	2.5	µg/L	Y	
WG_All	Groundwater	GW-027	A-GW-027_03052016	05-Mar-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.21	0.07	0.5	µg/L	Y	J
WG_All	Groundwater	GW-027	A-GW-027_03052016	05-Mar-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.081	0.5	µg/L	N	U
WG_All	Groundwater	GW-028	A-GW-028_03052016	05-Mar-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.27	0.076	0.5	µg/L	Y	J
WG_All	Groundwater	GW-028	A-GW-028_03052016	05-Mar-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	43	0.077	5	µg/L	Y	
WG_All	Groundwater	GW-028	A-GW-028_03052016	05-Mar-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.4	0.07	0.5	µg/L	Y	J
WG_All	Groundwater	GW-028	A-GW-028_03052016	05-Mar-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.081	0.5	µg/L	N	U
WG_All	Groundwater	GW-031	A-GW-031_02282016	28-Feb-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.5	0.076	0.5	µg/L	N	U
WG_All	Groundwater	GW-031	A-GW-031_02282016	28-Feb-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	0.5	0.077	0.5	µg/L	N	U
WG_All	Groundwater	GW-031	A-GW-031_02282016	28-Feb-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.5	0.07	0.5	µg/L	N	U
WG_All	Groundwater	GW-031	A-GW-031_02282016	28-Feb-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.081	0.5	µg/L	N	U
WG_All	Groundwater	GW-039	A-GW-039_02232016	23-Feb-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.5	0.076	0.5	µg/L	N	U
WG_All	Groundwater	GW-039	A-GW-039_02232016	23-Feb-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	0.5	0.077	0.5	µg/L	N	U
WG_All	Groundwater	GW-039	A-GW-039_02232016	23-Feb-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.5	0.07	0.5	µg/L	N	U
WG_All	Groundwater	GW-039	A-GW-039_02232016	23-Feb-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.081	0.5	µg/L	N	U
WG_All	Groundwater	GW-040	A-GW-040_03032016	03-Mar-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.5	0.05	0.5	µg/L	N	UJ
WG_All	Groundwater	GW-040	A-GW-040_03032016	03-Mar-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	0.13	0.057	0.5	µg/L	Y	J
WG_All	Groundwater	GW-040	A-GW-040_03032016	03-Mar-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.5	0.041	0.5	µg/L	N	U
WG_All	Groundwater	GW-040	A-GW-040_03032016	03-Mar-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.054	0.5	µg/L	N	U
WG_All	Groundwater	GW-043	A-GW-043_03032016	03-Mar-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.5	0.076	0.5	µg/L	N	U
WG_All	Groundwater	GW-043	A-GW-043_03032016	03-Mar-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	0.35	0.077	0.5	µg/L	Y	J
WG_All	Groundwater	GW-043	A-GW-043_03032016	03-Mar-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.5	0.07	0.5	µg/L	N	U
WG_All	Groundwater	GW-043	A-GW-043_03032016	03-Mar-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.081	0.5	µg/L	N	U
WG_All	Groundwater	GW-046	A-GW-046_02242016	24-Feb-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.5	0.077	0.5	µg/L	N	U
WG_All	Groundwater	GW-046	A-GW-046_02242016	24-Feb-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	0.2	0.077	0.5	µg/L	Y	J
WG_All	Groundwater	GW-046	A-GW-046_02242016	24-Feb-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.5	0.07	0.5	µg/L	N	U
WG_All	Groundwater	GW-046	A-GW-046_02242016	24-Feb-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.15	0.5	µg/L	N	U
WG_All	Groundwater	GW-048	A-GW-048_03032016	03-Mar-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.5	0.05	0.5	µg/L	N	U
WG_All	Groundwater	GW-048	A-GW-048_03032016	03-Mar-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	0.5	0.057	0.5	µg/L	N	U
WG_All	Groundwater	GW-048	A-GW-048_03032016	03-Mar-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.5	0.041	0.5	µg/L	N	U

TABLE F2-1
Human Health Risk Assessment Dataset
700 South 1600 East PCE Plume AOU-1: East Side Springs
Department of Veterans Affairs Salt Lake City Health Care System

Data Group	Medium	Location ID	Sample Name	Sample Date	Analysis Method	Preliminary COPC	CASRN	Final Result	Method Detection Limit	Reporting Limit	Unit	Detect Flag	Qualifier
WG_All	Groundwater	GW-048	A-GW-048_03032016	03-Mar-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.054	0.5	µg/L	N	U
WG_All	Groundwater	GW-049	A-GW-049_02252016	25-Feb-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.5	0.077	0.5	µg/L	N	U
WG_All	Groundwater	GW-049	A-GW-049_02252016	25-Feb-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	1.2	0.077	0.5	µg/L	Y	
WG_All	Groundwater	GW-049	A-GW-049_02252016	25-Feb-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.5	0.07	0.5	µg/L	N	U
WG_All	Groundwater	GW-049	A-GW-049_02252016	25-Feb-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.15	0.5	µg/L	N	U
WG_All	Groundwater	GW-049	A-GW-49_07122016	12-Jul-16	SOM02.3 SVOA	1,4-Dioxane	123-91-1	2	1.4	2	µg/L	N	U
WG_All	Groundwater	GW-049	A-GW-49_07122016	12-Jul-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.5	0.066	0.5	µg/L	N	U
WG_All	Groundwater	GW-049	A-GW-49_07122016	12-Jul-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	1.1	0.079	0.5	µg/L	Y	
WG_All	Groundwater	GW-049	A-GW-49_07122016	12-Jul-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.5	0.082	0.5	µg/L	N	U
WG_All	Groundwater	GW-049	A-GW-49_07122016	12-Jul-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.091	0.5	µg/L	N	U
WG_All	Groundwater	GW-049	A-GW-49_09202016	20-Sep-16	SOM02.3 SVOA	1,4-Dioxane	123-91-1	2.1	0.39	2.1	µg/L	N	UJ
WG_All	Groundwater	GW-049	A-GW-49_09202016	20-Sep-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.5	0.076	0.5	µg/L	N	U
WG_All	Groundwater	GW-049	A-GW-49_09202016	20-Sep-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	1.1	0.077	0.5	µg/L	Y	
WG_All	Groundwater	GW-049	A-GW-49_09202016	20-Sep-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.5	0.07	0.5	µg/L	N	U
WG_All	Groundwater	GW-049	A-GW-49_09202016	20-Sep-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.081	0.5	µg/L	N	U
WG_All	Groundwater	GW-050	A-GW-050_02292016	29-Feb-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	1.1	0.076	0.5	µg/L	Y	
WG_All	Groundwater	GW-050	A-GW-050_02292016	29-Feb-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	2.5	0.077	0.5	µg/L	Y	
WG_All	Groundwater	GW-050	A-GW-050_02292016	29-Feb-16	SOM02.3 VOA	Trichlorethene	79-01-6	1.7	0.07	0.5	µg/L	Y	
WG_All	Groundwater	GW-050	A-GW-050_02292016	29-Feb-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.081	0.5	µg/L	N	U
WG_All	Groundwater	GW-050	A-GW-50_07122016	12-Jul-16	SOM02.3 SVOA	1,4-Dioxane	123-91-1	2	1.4	2	µg/L	N	U
WG_All	Groundwater	GW-050	A-GW-50_07122016	12-Jul-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	1.3	0.066	0.5	µg/L	Y	
WG_All	Groundwater	GW-050	A-GW-50_07122016	12-Jul-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	2.8	0.079	0.5	µg/L	Y	
WG_All	Groundwater	GW-050	A-GW-50_07122016	12-Jul-16	SOM02.3 VOA	Trichlorethene	79-01-6	6.1	0.082	0.5	µg/L	Y	
WG_All	Groundwater	GW-050	A-GW-50_07122016	12-Jul-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.091	0.5	µg/L	N	U
WG_All	Groundwater	GW-050	A-GW-50_09202016	20-Sep-16	SOM02.3 SVOA	1,4-Dioxane	123-91-1	2	0.38	2	µg/L	N	UJ
WG_All	Groundwater	GW-050	A-GW-50_09202016	20-Sep-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	1.4	0.076	0.5	µg/L	Y	
WG_All	Groundwater	GW-050	A-GW-50_09202016	20-Sep-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	3	0.077	0.5	µg/L	Y	
WG_All	Groundwater	GW-050	A-GW-50_09202016	20-Sep-16	SOM02.3 VOA	Trichlorethene	79-01-6	6.4	0.07	0.5	µg/L	Y	
WG_All	Groundwater	GW-050	A-GW-50_09202016	20-Sep-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.081	0.5	µg/L	N	U
WG_All	Groundwater	GW-051	A-GW-051_03042016	04-Mar-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.5	0.076	0.5	µg/L	N	U
WG_All	Groundwater	GW-051	A-GW-051_03042016	04-Mar-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	23	0.077	2.5	µg/L	Y	
WG_All	Groundwater	GW-051	A-GW-051_03042016	04-Mar-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.19	0.07	0.5	µg/L	Y	J
WG_All	Groundwater	GW-051	A-GW-051_03042016	04-Mar-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.081	0.5	µg/L	N	U
WG_All	Groundwater	GW-052	A-GW-052_03032016	03-Mar-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.054	0.5	µg/L	N	U
WG_All	Groundwater	GW-052	A-GW-052-D_03032016	03-Mar-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.42	0.05	0.5	µg/L	Y	J
WG_All	Groundwater	GW-052	A-GW-052-D_03032016	03-Mar-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	61	0.057	5	µg/L	Y	
WG_All	Groundwater	GW-052	A-GW-052-D_03032016	03-Mar-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.61	0.041	0.5	µg/L	Y	J
WG_All	Groundwater	GW-052	A-GW-52_07122016	12-Jul-16	SOM02.3 SVOA	1,4-Dioxane	123-91-1	2.7	1.4	2	µg/L	Y	
WG_All	Groundwater	GW-052	A-GW-52_07122016	12-Jul-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.32	0.066	0.5	µg/L	Y	J
WG_All	Groundwater	GW-052	A-GW-52_07122016	12-Jul-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	52	0.39	2.5	µg/L	Y	
WG_All	Groundwater	GW-052	A-GW-52_07122016	12-Jul-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.56	0.082	0.5	µg/L	Y	
WG_All	Groundwater	GW-052	A-GW-52_07122016	12-Jul-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.091	0.5	µg/L	N	U
WG_All	Groundwater	GW-052	A-GW-52_09202016	20-Sep-16	SOM02.3 SVOA	1,4-Dioxane	123-91-1	2	0.38	2	µg/L	N	UJ
WG_All	Groundwater	GW-052	A-GW-52_09202016	20-Sep-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.3	0.076	0.5	µg/L	Y	J
WG_All	Groundwater	GW-052	A-GW-52_09202016	20-Sep-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	43	0.077	2.5	µg/L	Y	
WG_All	Groundwater	GW-052	A-GW-52_09202016	20-Sep-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.44	0.07	0.5	µg/L	Y	J
WG_All	Groundwater	GW-052	A-GW-52_09202016	20-Sep-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.081	0.5	µg/L	N	U
WG_All	Groundwater	GW-053	A-GW-053_03032016	03-Mar-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.31	0.05	0.5	µg/L	Y	J
WG_All	Groundwater	GW-053	A-GW-053_03032016	03-Mar-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	37	0.057	5	µg/L	Y	
WG_All	Groundwater	GW-053	A-GW-053_03032016	03-Mar-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.83	0.041	0.5	µg/L	Y	
WG_All	Groundwater	GW-053	A-GW-053_03032016	03-Mar-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.054	0.5	µg/L	N	U
WG_All	Groundwater	GW-053	A-GW-53_07112016	11-Jul-16	SOM02.3 SVOA	1,4-Dioxane	123-91-1	2	1.4	2	µg/L	N	U
WG_All	Groundwater	GW-053	A-GW-53_07112016	11-Jul-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.21	0.066	0.5	µg/L	Y	J

TABLE F2-1
Human Health Risk Assessment Dataset
700 South 1600 East PCE Plume AOU-1: East Side Springs
Department of Veterans Affairs Salt Lake City Health Care System

Data Group	Medium	Location ID	Sample Name	Sample Date	Analysis Method	Preliminary COPC	CASRN	Final Result	Method Detection Limit	Reporting Limit	Unit	Detect Flag	Qualifier
WG_All	Groundwater	GW-053	A-GW-53_07112016	11-Jul-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	40	0.32	2	µg/L	Y	
WG_All	Groundwater	GW-053	A-GW-53_07112016	11-Jul-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.84	0.082	0.5	µg/L	Y	
WG_All	Groundwater	GW-053	A-GW-53_07112016	11-Jul-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.091	0.5	µg/L	N	U
WG_All	Groundwater	GW-053	A-GW-53_09192016	19-Sep-16	SOM02.3 SVOA	1,4-Dioxane	123-91-1	2	0.38	2	µg/L	N	UJ
WG_All	Groundwater	GW-053	A-GW-53_09192016	19-Sep-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.22	0.076	0.5	µg/L	Y	J
WG_All	Groundwater	GW-053	A-GW-53_09192016	19-Sep-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	45	0.077	2.5	µg/L	Y	
WG_All	Groundwater	GW-053	A-GW-53_09192016	19-Sep-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.59	0.07	0.5	µg/L	Y	
WG_All	Groundwater	GW-053	A-GW-53_09192016	19-Sep-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.081	0.5	µg/L	N	U
WG_All	Groundwater	GW-055	A-GW-055_03052016	05-Mar-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.5	0.076	0.5	µg/L	N	U
WG_All	Groundwater	GW-055	A-GW-055_03052016	05-Mar-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	0.19	0.077	0.5	µg/L	Y	J
WG_All	Groundwater	GW-055	A-GW-055_03052016	05-Mar-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.5	0.07	0.5	µg/L	N	U
WG_All	Groundwater	GW-055	A-GW-055_03052016	05-Mar-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.081	0.5	µg/L	N	U
WG_All	Groundwater	GW-059	A-GW-059_03052016	05-Mar-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	3.9	0.076	0.5	µg/L	Y	
WG_All	Groundwater	GW-059	A-GW-059_03052016	05-Mar-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	0.17	0.077	0.5	µg/L	Y	J
WG_All	Groundwater	GW-059	A-GW-059_03052016	05-Mar-16	SOM02.3 VOA	Trichlorethene	79-01-6	7.7	0.07	0.5	µg/L	Y	
WG_All	Groundwater	GW-059	A-GW-059_03052016	05-Mar-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.081	0.5	µg/L	N	U
WG_All	Groundwater	GW-059	A-GW-59_07112016	11-Jul-16	SOM02.3 SVOA	1,4-Dioxane	123-91-1	2	1.4	2	µg/L	N	U
WG_All	Groundwater	GW-059	A-GW-59_07112016	11-Jul-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	2.5	0.066	0.5	µg/L	Y	
WG_All	Groundwater	GW-059	A-GW-59_07112016	11-Jul-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	2	0.079	0.5	µg/L	Y	
WG_All	Groundwater	GW-059	A-GW-59_07112016	11-Jul-16	SOM02.3 VOA	Trichlorethene	79-01-6	6.1	0.082	0.5	µg/L	Y	
WG_All	Groundwater	GW-059	A-GW-59_07112016	11-Jul-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.091	0.5	µg/L	N	U
WG_All	Groundwater	GW-059	A-GW-59_09192016	19-Sep-16	SOM02.3 SVOA	1,4-Dioxane	123-91-1	2	0.38	2	µg/L	N	UJ
WG_All	Groundwater	GW-059	A-GW-59_09192016	19-Sep-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	3	0.076	0.5	µg/L	Y	
WG_All	Groundwater	GW-059	A-GW-59_09192016	19-Sep-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	1	0.077	0.5	µg/L	Y	
WG_All	Groundwater	GW-059	A-GW-59_09192016	19-Sep-16	SOM02.3 VOA	Trichlorethene	79-01-6	7.2	0.07	0.5	µg/L	Y	
WG_All	Groundwater	GW-059	A-GW-59_09192016	19-Sep-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.081	0.5	µg/L	N	U
WG_All	Groundwater	GW-060	A-GW-060_03082016	08-Mar-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.5	0.076	0.5	µg/L	N	U
WG_All	Groundwater	GW-060	A-GW-060_03082016	08-Mar-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	10	0.077	0.5	µg/L	Y	
WG_All	Groundwater	GW-060	A-GW-060_03082016	08-Mar-16	SOM02.3 VOA	Trichlorethene	79-01-6	1	0.07	0.5	µg/L	Y	
WG_All	Groundwater	GW-060	A-GW-060_03082016	08-Mar-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.081	0.5	µg/L	N	U
WG_All	Groundwater	GW-061	A-GW-061_03052016	05-Mar-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.5	0.076	0.5	µg/L	N	U
WG_All	Groundwater	GW-061	A-GW-061_03052016	05-Mar-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	2.3	0.077	0.5	µg/L	Y	
WG_All	Groundwater	GW-061	A-GW-061_03052016	05-Mar-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.5	0.07	0.5	µg/L	N	U
WG_All	Groundwater	GW-061	A-GW-061_03052016	05-Mar-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.081	0.5	µg/L	N	U
WG_All	Groundwater	GW-061	A-GW-61_07122016	12-Jul-16	SOM02.3 SVOA	1,4-Dioxane	123-91-1	2	1.4	2	µg/L	N	U
WG_All	Groundwater	GW-061	A-GW-61_07122016	12-Jul-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.5	0.066	0.5	µg/L	N	U
WG_All	Groundwater	GW-061	A-GW-61_07122016	12-Jul-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	2.9	0.079	0.5	µg/L	Y	
WG_All	Groundwater	GW-061	A-GW-61_07122016	12-Jul-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.5	0.082	0.5	µg/L	N	U
WG_All	Groundwater	GW-061	A-GW-61_07122016	12-Jul-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.091	0.5	µg/L	N	U
WG_All	Groundwater	GW-061	A-GW-61_09202016	20-Sep-16	SOM02.3 SVOA	1,4-Dioxane	123-91-1	2	0.38	2	µg/L	N	UJ
WG_All	Groundwater	GW-061	A-GW-61_09202016	20-Sep-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.5	0.076	0.5	µg/L	N	U
WG_All	Groundwater	GW-061	A-GW-61_09202016	20-Sep-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	3	0.077	0.5	µg/L	Y	
WG_All	Groundwater	GW-061	A-GW-61_09202016	20-Sep-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.15	0.07	0.5	µg/L	Y	J
WG_All	Groundwater	GW-061	A-GW-61_09202016	20-Sep-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.081	0.5	µg/L	N	U
WG_All	Groundwater	GW-062	A-GW-062_03082016	08-Mar-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.16	0.05	0.5	µg/L	Y	J
WG_All	Groundwater	GW-062	A-GW-062_03082016	08-Mar-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	20	0.077	2.5	µg/L	Y	
WG_All	Groundwater	GW-062	A-GW-062_03082016	08-Mar-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.23	0.041	0.5	µg/L	Y	J
WG_All	Groundwater	GW-062	A-GW-062_03082016	08-Mar-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.054	0.5	µg/L	N	U
WS_All	Surface Water	SW-01	A-SW-01_05042016	04-May-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.5	0.077	0.5	µg/L	N	U
WS_All	Surface Water	SW-01	A-SW-01_05042016	04-May-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	0.13	0.077	0.5	µg/L	Y	J
WS_All	Surface Water	SW-01	A-SW-01_05042016	04-May-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.5	0.07	0.5	µg/L	N	U
WS_All	Surface Water	SW-01	A-SW-01_05042016	04-May-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.15	0.5	µg/L	N	U
WS_All	Surface Water	SW-02	A-SW-02_05112016	11-May-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.5	0.077	0.5	µg/L	N	U

TABLE F2-1
Human Health Risk Assessment Dataset
700 South 1600 East PCE Plume AOU-1: East Side Springs
Department of Veterans Affairs Salt Lake City Health Care System

Data Group	Medium	Location ID	Sample Name	Sample Date	Analysis Method	Preliminary COPC	CASRN	Final Result	Method Detection Limit	Reporting Limit	Unit	Detect Flag	Qualifier
WS_All	Surface Water	SW-02	A-SW-02_05112016	11-May-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	0.5	0.077	0.5	µg/L	N	U
WS_All	Surface Water	SW-02	A-SW-02_05112016	11-May-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.5	0.07	0.5	µg/L	N	U
WS_All	Surface Water	SW-02	A-SW-02_05112016	11-May-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.15	0.5	µg/L	N	U
WS_All	Surface Water	SW-03	A-SW-03_05112016	11-May-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.5	0.077	0.5	µg/L	N	U
WS_All	Surface Water	SW-03	A-SW-03_05112016	11-May-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	0.5	0.077	0.5	µg/L	N	U
WS_All	Surface Water	SW-03	A-SW-03_05112016	11-May-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.5	0.07	0.5	µg/L	N	U
WS_All	Surface Water	SW-03	A-SW-03_05112016	11-May-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.15	0.5	µg/L	N	U
WS_All	Surface Water	SW-04	A-SW-04_05022016	02-May-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.19	0.077	0.5	µg/L	Y	J
WS_All	Surface Water	SW-04	A-SW-04_05022016	02-May-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	27	0.077	2.5	µg/L	Y	
WS_All	Surface Water	SW-04	A-SW-04_05022016	02-May-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.34	0.07	0.5	µg/L	Y	J
WS_All	Surface Water	SW-04	A-SW-04_05022016	02-May-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.15	0.5	µg/L	N	U
WS_All	Surface Water	SW-05	A-SW-05_05112016	11-May-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.5	0.077	0.5	µg/L	N	U
WS_All	Surface Water	SW-05	A-SW-05_05112016	11-May-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	0.38	0.077	0.5	µg/L	Y	J
WS_All	Surface Water	SW-05	A-SW-05_05112016	11-May-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.5	0.07	0.5	µg/L	N	U
WS_All	Surface Water	SW-05	A-SW-05_05112016	11-May-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.15	0.5	µg/L	N	U
WS_All	Surface Water	SW-06	A-SW-06_05042016	04-May-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.58	0.077	0.5	µg/L	Y	
WS_All	Surface Water	SW-06	A-SW-06_05042016	04-May-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.96	0.07	0.5	µg/L	Y	
WS_All	Surface Water	SW-06	A-SW-06_05042016	04-May-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.15	0.5	µg/L	N	U
WS_All	Surface Water	SW-06	A-SW-06-D_05042016	04-May-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	80	0.077	5	µg/L	Y	
WS_All	Surface Water	SW-07	A-SW-07_05042016	04-May-16	SOM02.3 SVOA	1,4-Dioxane	123-91-1	2	0.99	2	µg/L	N	UJ
WS_All	Surface Water	SW-07	A-SW-07_05042016	04-May-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.5	0.077	0.5	µg/L	N	U
WS_All	Surface Water	SW-07	A-SW-07_05042016	04-May-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	2.9	0.077	0.5	µg/L	Y	
WS_All	Surface Water	SW-07	A-SW-07_05042016	04-May-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.5	0.07	0.5	µg/L	N	U
WS_All	Surface Water	SW-07	A-SW-07_05042016	04-May-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.15	0.5	µg/L	N	U
WS_All	Surface Water	SW-08	A-SW-08_05042016	04-May-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.5	0.077	0.5	µg/L	N	U
WS_All	Surface Water	SW-08	A-SW-08_05042016	04-May-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	7.5	0.077	0.5	µg/L	Y	
WS_All	Surface Water	SW-08	A-SW-08_05042016	04-May-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.13	0.07	0.5	µg/L	Y	J
WS_All	Surface Water	SW-08	A-SW-08_05042016	04-May-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.15	0.5	µg/L	N	U
WS_All	Surface Water	SW-09	A-SW-09_05032016	03-May-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.11	0.077	0.5	µg/L	Y	J
WS_All	Surface Water	SW-09	A-SW-09_05032016	03-May-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	19	0.077	0.5	µg/L	Y	
WS_All	Surface Water	SW-09	A-SW-09_05032016	03-May-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.88	0.07	0.5	µg/L	Y	
WS_All	Surface Water	SW-09	A-SW-09_05032016	03-May-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.15	0.5	µg/L	N	U
WS_All	Surface Water	SW-10	A-SW-10_05112016	11-May-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.5	0.077	0.5	µg/L	N	U
WS_All	Surface Water	SW-10	A-SW-10_05112016	11-May-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	0.5	0.077	0.5	µg/L	N	U
WS_All	Surface Water	SW-10	A-SW-10_05112016	11-May-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.5	0.07	0.5	µg/L	N	U
WS_All	Surface Water	SW-10	A-SW-10_05112016	11-May-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.15	0.5	µg/L	N	U
WS_All	Surface Water	SW-11	A-SW-11_05032016	03-May-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.6	0.077	0.5	µg/L	Y	
WS_All	Surface Water	SW-11	A-SW-11_05032016	03-May-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	20	0.077	0.5	µg/L	Y	
WS_All	Surface Water	SW-11	A-SW-11_05032016	03-May-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.61	0.07	0.5	µg/L	Y	
WS_All	Surface Water	SW-11	A-SW-11_05032016	03-May-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.15	0.5	µg/L	N	U
WS_All	Surface Water	SW-12	A-SW-12_05032016	03-May-16	SOM02.3 SVOA	1,4-Dioxane	123-91-1	2	0.99	2	µg/L	N	UJ
WS_All	Surface Water	SW-12	A-SW-12_05032016	03-May-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.12	0.077	0.5	µg/L	Y	J
WS_All	Surface Water	SW-12	A-SW-12_05032016	03-May-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	23	0.077	2.5	µg/L	Y	
WS_All	Surface Water	SW-12	A-SW-12_05032016	03-May-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.39	0.07	0.5	µg/L	Y	J
WS_All	Surface Water	SW-12	A-SW-12_05032016	03-May-16	SOM02.3	Vinyl Chloride	75-01-4	0.5	0.22	0.5	µg/L	N	U
WS_All	Surface Water	SW-13	A-SW-13_05032016	03-May-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.5	0.077	0.5	µg/L	N	U
WS_All	Surface Water	SW-13	A-SW-13_05032016	03-May-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	1.8	0.077	0.5	µg/L	Y	
WS_All	Surface Water	SW-13	A-SW-13_05032016	03-May-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.37	0.07	0.5	µg/L	Y	J
WS_All	Surface Water	SW-13	A-SW-13_05032016	03-May-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.15	0.5	µg/L	N	U
WS_All	Surface Water	SW-14	A-SW-14_05042016	04-May-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.5	0.077	0.5	µg/L	N	U
WS_All	Surface Water	SW-14	A-SW-14_05042016	04-May-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	18	0.077	0.5	µg/L	Y	
WS_All	Surface Water	SW-14	A-SW-14_05042016	04-May-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.53	0.07	0.5	µg/L	Y	
WS_All	Surface Water	SW-14	A-SW-14_05042016	04-May-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.15	0.5	µg/L	N	U

TABLE F2-1
Human Health Risk Assessment Dataset
700 South 1600 East PCE Plume AOU-1: East Side Springs
Department of Veterans Affairs Salt Lake City Health Care System

Data Group	Medium	Location ID	Sample Name	Sample Date	Analysis Method	Preliminary COPC	CASRN	Final Result	Method Detection Limit	Reporting Limit	Unit	Detect Flag	Qualifier
WS_All	Surface Water	SW-15	A-SW-15_05042016	04-May-16	SOM02.3 SVOA	1,4-Dioxane	123-91-1	2	0.99	2	µg/L	N	UJ
WS_All	Surface Water	SW-15	A-SW-15_05042016	04-May-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.5	0.077	0.5	µg/L	N	U
WS_All	Surface Water	SW-15	A-SW-15_05042016	04-May-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	14	0.077	0.5	µg/L	Y	
WS_All	Surface Water	SW-15	A-SW-15_05042016	04-May-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.32	0.07	0.5	µg/L	Y	J
WS_All	Surface Water	SW-15	A-SW-15_05042016	04-May-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.15	0.5	µg/L	N	U
WS_All	Surface Water	SW-16	A-SW-16_05042016	04-May-16	SOM02.3 SVOA	1,4-Dioxane	123-91-1	2	0.99	2	µg/L	N	UJ
WS_All	Surface Water	SW-16	A-SW-16_05042016	04-May-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.5	0.077	0.5	µg/L	N	U
WS_All	Surface Water	SW-16	A-SW-16_05042016	04-May-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	0.5	0.077	0.5	µg/L	N	U
WS_All	Surface Water	SW-16	A-SW-16_05042016	04-May-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.5	0.07	0.5	µg/L	N	U
WS_All	Surface Water	SW-16	A-SW-16_05042016	04-May-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.15	0.5	µg/L	N	U
WS_All	Surface Water	SW-17	A-SW-17_05112016	11-May-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.5	0.076	0.5	µg/L	N	U
WS_All	Surface Water	SW-17	A-SW-17_05112016	11-May-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	0.5	0.077	0.5	µg/L	N	U
WS_All	Surface Water	SW-17	A-SW-17_05112016	11-May-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.5	0.07	0.5	µg/L	N	U
WS_All	Surface Water	SW-17	A-SW-17_05112016	11-May-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.081	0.5	µg/L	N	U
WS_All	Surface Water	SW-18	A-SW-18_05052016	05-May-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.35	0.077	0.5	µg/L	Y	J
WS_All	Surface Water	SW-18	A-SW-18_05052016	05-May-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	17	0.077	0.5	µg/L	Y	
WS_All	Surface Water	SW-18	A-SW-18_05052016	05-May-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.43	0.07	0.5	µg/L	Y	J
WS_All	Surface Water	SW-18	A-SW-18_05052016	05-May-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.15	0.5	µg/L	N	U
WS_All	Surface Water	SW-19	A-SW-19_05042016	04-May-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.5	0.077	0.5	µg/L	N	U
WS_All	Surface Water	SW-19	A-SW-19_05042016	04-May-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	0.18	0.077	0.5	µg/L	Y	J
WS_All	Surface Water	SW-19	A-SW-19_05042016	04-May-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.5	0.07	0.5	µg/L	N	U
WS_All	Surface Water	SW-19	A-SW-19_05042016	04-May-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.15	0.5	µg/L	N	U
WS_All	Surface Water	SW-20	A-SW-20_05052016	05-May-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.5	0.077	0.5	µg/L	N	U
WS_All	Surface Water	SW-20	A-SW-20_05052016	05-May-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	0.23	0.077	0.5	µg/L	Y	J
WS_All	Surface Water	SW-20	A-SW-20_05052016	05-May-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.5	0.07	0.5	µg/L	N	U
WS_All	Surface Water	SW-20	A-SW-20_05052016	05-May-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.15	0.5	µg/L	N	U
WS_All	Surface Water	SW-21	A-SW-21_05032016	03-May-16	SOM02.3 SVOA	1,4-Dioxane	123-91-1	2	0.99	2	µg/L	N	UJ
WS_All	Surface Water	SW-21	A-SW-21_05032016	03-May-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.44	0.077	0.5	µg/L	Y	J
WS_All	Surface Water	SW-21	A-SW-21_05032016	03-May-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	6.5	0.077	0.5	µg/L	Y	
WS_All	Surface Water	SW-21	A-SW-21_05032016	03-May-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.62	0.07	0.5	µg/L	Y	
WS_All	Surface Water	SW-21	A-SW-21_05032016	03-May-16	SOM02.3	Vinyl Chloride	75-01-4	0.5	0.22	0.5	µg/L	N	U
WS_All	Surface Water	SW-22	A-SW-22_05032016	03-May-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.13	0.077	0.5	µg/L	Y	J
WS_All	Surface Water	SW-22	A-SW-22_05032016	03-May-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	2.9	0.077	0.5	µg/L	Y	
WS_All	Surface Water	SW-22	A-SW-22_05032016	03-May-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.47	0.07	0.5	µg/L	Y	J
WS_All	Surface Water	SW-22	A-SW-22_05032016	03-May-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.15	0.5	µg/L	N	U
WS_All	Surface Water	SW-23	A-SW-23_05032016	03-May-16	SOM02.3 SVOA	1,4-Dioxane	123-91-1	1.9	0.49	1.9	µg/L	N	U
WS_All	Surface Water	SW-23	A-SW-23_05032016	03-May-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.15	0.077	0.5	µg/L	Y	J
WS_All	Surface Water	SW-23	A-SW-23_05032016	03-May-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	25	0.077	2.5	µg/L	Y	
WS_All	Surface Water	SW-23	A-SW-23_05032016	03-May-16	SOM02.3	Trichlorethene	79-01-6	0.47	0.08	0.5	µg/L	Y	J
WS_All	Surface Water	SW-23	A-SW-23_05032016	03-May-16	SOM02.3	Vinyl Chloride	75-01-4	0.5	0.22	0.5	µg/L	N	U
WS_All	Surface Water	SW-24	A-SW-24_05112016	11-May-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.5	0.076	0.5	µg/L	N	U
WS_All	Surface Water	SW-24	A-SW-24_05112016	11-May-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	0.5	0.077	0.5	µg/L	N	U
WS_All	Surface Water	SW-24	A-SW-24_05112016	11-May-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.5	0.07	0.5	µg/L	N	U
WS_All	Surface Water	SW-24	A-SW-24_05112016	11-May-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.081	0.5	µg/L	N	U
WS_All	Surface Water	SW-25	A-SW-25_05052016	05-May-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.5	0.077	0.5	µg/L	N	U
WS_All	Surface Water	SW-25	A-SW-25_05052016	05-May-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	1.4	0.077	0.5	µg/L	Y	
WS_All	Surface Water	SW-25	A-SW-25_05052016	05-May-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.5	0.07	0.5	µg/L	N	U
WS_All	Surface Water	SW-25	A-SW-25_05052016	05-May-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.15	0.5	µg/L	N	U
WS_All	Surface Water	SW-26	A-SW-26_05032016	03-May-16	SOM02.3 SVOA	1,4-Dioxane	123-91-1	2	0.99	2	µg/L	N	UJ
WS_All	Surface Water	SW-26	A-SW-26_05032016	03-May-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.5	0.077	0.5	µg/L	N	U
WS_All	Surface Water	SW-26	A-SW-26_05032016	03-May-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	23	0.077	2.5	µg/L	Y	
WS_All	Surface Water	SW-26	A-SW-26_05032016	03-May-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.3	0.07	0.5	µg/L	Y	J
WS_All	Surface Water	SW-26	A-SW-26_05032016	03-May-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.15	0.5	µg/L	N	U

TABLE F2-1
Human Health Risk Assessment Dataset
700 South 1600 East PCE Plume AOU-1: East Side Springs
Department of Veterans Affairs Salt Lake City Health Care System

Data Group	Medium	Location ID	Sample Name	Sample Date	Analysis Method	Preliminary COPC	CASRN	Final Result	Method Detection Limit	Reporting Limit	Unit	Detect Flag	Qualifier
WS_All	Surface Water	SW-27	A-SW-27_05032016	03-May-16	SOM02.3 SVOA	1,4-Dioxane	123-91-1	2	0.99	2	µg/L	N	UJ
WS_All	Surface Water	SW-27	A-SW-27_05032016	03-May-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.57	0.077	0.5	µg/L	Y	
WS_All	Surface Water	SW-27	A-SW-27_05032016	03-May-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	19	0.077	0.5	µg/L	Y	
WS_All	Surface Water	SW-27	A-SW-27_05032016	03-May-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.61	0.07	0.5	µg/L	Y	
WS_All	Surface Water	SW-27	A-SW-27_05032016	03-May-16	SOM02.3	Vinyl Chloride	75-01-4	0.5	0.22	0.5	µg/L	N	U
WS_All	Surface Water	SW-28	A-SW-28_05032016	03-May-16	SOM02.3 SVOA	1,4-Dioxane	123-91-1	2	0.99	2	µg/L	N	UJ
WS_All	Surface Water	SW-28	A-SW-28_05032016	03-May-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.56	0.077	0.5	µg/L	Y	
WS_All	Surface Water	SW-28	A-SW-28_05032016	03-May-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	16	0.077	0.5	µg/L	Y	
WS_All	Surface Water	SW-28	A-SW-28_05032016	03-May-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.66	0.07	0.5	µg/L	Y	
WS_All	Surface Water	SW-28	A-SW-28_05032016	03-May-16	SOM02.3	Vinyl Chloride	75-01-4	0.5	0.22	0.5	µg/L	N	U
WS_All	Surface Water	SW-29	A-SW-29_05112016	11-May-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.5	0.076	0.5	µg/L	N	U
WS_All	Surface Water	SW-29	A-SW-29_05112016	11-May-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	26	0.077	2.5	µg/L	Y	
WS_All	Surface Water	SW-29	A-SW-29_05112016	11-May-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.28	0.07	0.5	µg/L	Y	J
WS_All	Surface Water	SW-29	A-SW-29_05112016	11-May-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.081	0.5	µg/L	N	U
WS_All	Surface Water	SW-30	A-SW-30_05032016	03-May-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.5	0.077	0.5	µg/L	N	U
WS_All	Surface Water	SW-30	A-SW-30_05032016	03-May-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	0.5	0.077	0.5	µg/L	Y	
WS_All	Surface Water	SW-30	A-SW-30_05032016	03-May-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.09	0.07	0.5	µg/L	Y	J
WS_All	Surface Water	SW-30	A-SW-30_05032016	03-May-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.15	0.5	µg/L	N	U
WS_All	Surface Water	SW-31	A-SW-31_05022016	02-May-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.27	0.077	0.5	µg/L	Y	J
WS_All	Surface Water	SW-31	A-SW-31_05022016	02-May-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	20	0.077	1	µg/L	Y	
WS_All	Surface Water	SW-31	A-SW-31_05022016	02-May-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.48	0.07	0.5	µg/L	Y	J
WS_All	Surface Water	SW-31	A-SW-31_05022016	02-May-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.15	0.5	µg/L	N	U
WS_All	Surface Water	SW-32	A-SW-32_05052016	05-May-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.5	0.077	0.5	µg/L	N	U
WS_All	Surface Water	SW-32	A-SW-32_05052016	05-May-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	0.46	0.077	0.5	µg/L	Y	J
WS_All	Surface Water	SW-32	A-SW-32_05052016	05-May-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.5	0.07	0.5	µg/L	N	U
WS_All	Surface Water	SW-32	A-SW-32_05052016	05-May-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.15	0.5	µg/L	N	U
WS_All	Surface Water	SW-33	A-SW-33_05022016	02-May-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.15	0.077	0.5	µg/L	Y	J
WS_All	Surface Water	SW-33	A-SW-33_05022016	02-May-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	35	0.077	2.5	µg/L	Y	
WS_All	Surface Water	SW-33	A-SW-33_05022016	02-May-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.78	0.07	0.5	µg/L	Y	
WS_All	Surface Water	SW-33	A-SW-33_05022016	02-May-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.15	0.5	µg/L	N	U
WS_All	Surface Water	SW-34	A-SW-34_05022016	02-May-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.13	0.077	0.5	µg/L	Y	J
WS_All	Surface Water	SW-34	A-SW-34_05022016	02-May-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	13	0.077	0.5	µg/L	Y	
WS_All	Surface Water	SW-34	A-SW-34_05022016	02-May-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.27	0.07	0.5	µg/L	Y	J
WS_All	Surface Water	SW-34	A-SW-34_05022016	02-May-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.15	0.5	µg/L	N	U
WS_All	Surface Water	SW-35	A-SW-35_05042016	04-May-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.54	0.077	0.5	µg/L	Y	
WS_All	Surface Water	SW-35	A-SW-35_05042016	04-May-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	82	0.077	5	µg/L	Y	
WS_All	Surface Water	SW-35	A-SW-35_05042016	04-May-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.67	0.07	0.5	µg/L	Y	
WS_All	Surface Water	SW-35	A-SW-35_05042016	04-May-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.15	0.5	µg/L	N	U
WS_All	Surface Water	SW-36	A-SW-36_05032016	03-May-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.69	0.077	0.5	µg/L	Y	
WS_All	Surface Water	SW-36	A-SW-36_05032016	03-May-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	1.2	0.077	0.5	µg/L	Y	
WS_All	Surface Water	SW-36	A-SW-36_05032016	03-May-16	SOM02.3 VOA	Trichlorethene	79-01-6	2.3	0.07	0.5	µg/L	Y	
WS_All	Surface Water	SW-36	A-SW-36_05032016	03-May-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.15	0.5	µg/L	N	U
WS_All	Surface Water	SW-37	A-SW-37_05052016	05-May-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.24	0.077	0.5	µg/L	Y	J
WS_All	Surface Water	SW-37	A-SW-37_05052016	05-May-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	15	0.077	0.5	µg/L	Y	
WS_All	Surface Water	SW-37	A-SW-37_05052016	05-May-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.39	0.07	0.5	µg/L	Y	J
WS_All	Surface Water	SW-37	A-SW-37_05052016	05-May-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.15	0.5	µg/L	N	U
WS_All	Surface Water	SW-38	A-SW-38_05112016	11-May-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.5	0.076	0.5	µg/L	N	U
WS_All	Surface Water	SW-38	A-SW-38_05112016	11-May-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	6	0.077	0.5	µg/L	Y	
WS_All	Surface Water	SW-38	A-SW-38_05112016	11-May-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.22	0.07	0.5	µg/L	Y	J
WS_All	Surface Water	SW-38	A-SW-38_05112016	11-May-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.081	0.5	µg/L	N	U
WS_All	Surface Water	SW-39	A-SW-39_05032016	03-May-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.31	0.077	0.5	µg/L	Y	J
WS_All	Surface Water	SW-39	A-SW-39_05032016	03-May-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	31	0.077	2.5	µg/L	Y	
WS_All	Surface Water	SW-39	A-SW-39_05032016	03-May-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.5	0.07	0.5	µg/L	Y	

TABLE F2-1
Human Health Risk Assessment Dataset
700 South 1600 East PCE Plume AOU-1: East Side Springs
Department of Veterans Affairs Salt Lake City Health Care System

Data Group	Medium	Location ID	Sample Name	Sample Date	Analysis Method	Preliminary COPC	CASRN	Final Result	Method Detection Limit	Reporting Limit	Unit	Detect Flag	Qualifier
WS_All	Surface Water	SW-39	A-SW-39_05032016	03-May-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.15	0.5	µg/L	N	U
WS_All	Surface Water	SW-40	A-SW-40_05052016	05-May-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.18	0.077	0.5	µg/L	Y	J
WS_All	Surface Water	SW-40	A-SW-40_05052016	05-May-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	28	0.077	2.5	µg/L	Y	
WS_All	Surface Water	SW-40	A-SW-40_05052016	05-May-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.38	0.07	0.5	µg/L	Y	J
WS_All	Surface Water	SW-40	A-SW-40_05052016	05-May-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.15	0.5	µg/L	N	U
WS_All	Surface Water	SW-41	A-SW-41_05052016	05-May-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.5	0.077	0.5	µg/L	N	U
WS_All	Surface Water	SW-41	A-SW-41_05052016	05-May-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	0.49	0.077	0.5	µg/L	Y	J
WS_All	Surface Water	SW-41	A-SW-41_05052016	05-May-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.5	0.07	0.5	µg/L	N	U
WS_All	Surface Water	SW-41	A-SW-41_05052016	05-May-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.15	0.5	µg/L	N	U
WS_All	Surface Water	SW-42	A-SW-42_05022016	02-May-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.5	0.077	0.5	µg/L	N	U
WS_All	Surface Water	SW-42	A-SW-42_05022016	02-May-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	16	0.077	0.5	µg/L	Y	
WS_All	Surface Water	SW-42	A-SW-42_05022016	02-May-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.19	0.07	0.5	µg/L	Y	J
WS_All	Surface Water	SW-42	A-SW-42_05022016	02-May-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.15	0.5	µg/L	N	U
WS_All	Surface Water	SW-43	A-SW-43_05022016	02-May-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.5	0.077	0.5	µg/L	N	U
WS_All	Surface Water	SW-43	A-SW-43_05022016	02-May-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	4.1	0.077	0.5	µg/L	Y	
WS_All	Surface Water	SW-43	A-SW-43_05022016	02-May-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.1	0.07	0.5	µg/L	Y	J
WS_All	Surface Water	SW-43	A-SW-43_05022016	02-May-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.15	0.5	µg/L	N	U
WS_All	Surface Water	SW-44	A-SW-44_05042016	04-May-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.5	0.077	0.5	µg/L	N	U
WS_All	Surface Water	SW-44	A-SW-44_05042016	04-May-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	2.2	0.077	0.5	µg/L	Y	
WS_All	Surface Water	SW-44	A-SW-44_05042016	04-May-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.5	0.07	0.5	µg/L	N	U
WS_All	Surface Water	SW-44	A-SW-44_05042016	04-May-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.15	0.5	µg/L	N	U
WS_All	Surface Water	SW-45	A-SW-45_05052016	05-May-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.11	0.077	0.5	µg/L	Y	J
WS_All	Surface Water	SW-45	A-SW-45_05052016	05-May-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	3.1	0.077	0.5	µg/L	Y	
WS_All	Surface Water	SW-45	A-SW-45_05052016	05-May-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.11	0.07	0.5	µg/L	Y	J
WS_All	Surface Water	SW-45	A-SW-45_05052016	05-May-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.15	0.5	µg/L	N	U
WS_All	Surface Water	SW-46	A-SW-46_05052016	05-May-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.5	0.077	0.5	µg/L	N	U
WS_All	Surface Water	SW-46	A-SW-46_05052016	05-May-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	2.4	0.077	0.5	µg/L	Y	
WS_All	Surface Water	SW-46	A-SW-46_05052016	05-May-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.5	0.07	0.5	µg/L	N	U
WS_All	Surface Water	SW-46	A-SW-46_05052016	05-May-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.15	0.5	µg/L	N	U
WS_All	Surface Water	SW-47	A-SW-47_05042016	04-May-16	SOM02.3 SVOA	1,4-Dioxane	123-91-1	2	0.99	2	µg/L	N	UJ
WS_All	Surface Water	SW-47	A-SW-47_05042016	04-May-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.5	0.077	0.5	µg/L	N	U
WS_All	Surface Water	SW-47	A-SW-47_05042016	04-May-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	0.5	0.077	0.5	µg/L	N	U
WS_All	Surface Water	SW-47	A-SW-47_05042016	04-May-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.5	0.07	0.5	µg/L	N	U
WS_All	Surface Water	SW-47	A-SW-47_05042016	04-May-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.15	0.5	µg/L	N	U
WS_All	Surface Water	SW-48	A-SW-48_05042016	04-May-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.5	0.077	0.5	µg/L	N	U
WS_All	Surface Water	SW-48	A-SW-48_05042016	04-May-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	0.5	0.077	0.5	µg/L	N	U
WS_All	Surface Water	SW-48	A-SW-48_05042016	04-May-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.5	0.07	0.5	µg/L	N	U
WS_All	Surface Water	SW-48	A-SW-48_05042016	04-May-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.15	0.5	µg/L	N	U
WS_All	Surface Water	SW-49	A-SW-49_05052016	05-May-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.5	0.077	0.5	µg/L	N	U
WS_All	Surface Water	SW-49	A-SW-49_05052016	05-May-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	0.21	0.077	0.5	µg/L	Y	J
WS_All	Surface Water	SW-49	A-SW-49_05052016	05-May-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.5	0.07	0.5	µg/L	N	U
WS_All	Surface Water	SW-49	A-SW-49_05052016	05-May-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.15	0.5	µg/L	N	U
WS_All	Surface Water	SW-50	A-SW-001_02262016	26-Feb-16	SOM02.3 VOA	cis-1,2-Dichloroethene	156-59-2	0.5	0.076	0.5	µg/L	N	UJ
WS_All	Surface Water	SW-50	A-SW-001_02262016	26-Feb-16	SOM02.3 VOA	Tetrachloroethene	127-18-4	6.3	0.077	0.5	µg/L	Y	
WS_All	Surface Water	SW-50	A-SW-001_02262016	26-Feb-16	SOM02.3 VOA	Trichlorethene	79-01-6	0.13	0.07	0.5	µg/L	Y	J
WS_All	Surface Water	SW-50	A-SW-001_02262016	26-Feb-16	SOM02.3 VOA	Vinyl Chloride	75-01-4	0.5	0.081	0.5	µg/L	N	U

NOTES:

µg/L = Micrograms per liter.

µg/m^3 = Micrograms per cubic meter.

CASRN = Chemical Abstracts Service Registry Number.

COPC = Contaminant of potential concern.

TABLE F2-1
Human Health Risk Assessment Dataset
700 South 1600 East PCE Plume AOU-1: East Side Springs
Department of Veterans Affairs Salt Lake City Health Care System

Data Group	Medium	Location ID	Sample Name	Sample Date	Analysis Method	Preliminary COPC	CASRN	Final Result	Method Detection Limit	Reporting Limit	Unit	Detect Flag	Qualifier

J = Analyte was present but the reported value is estimated.

mg/kg = Milligrams per kilogram.

U = Analyte was not detected above the method detection limit.

UJ = Analyte was not detected above the method detection limit. The reported detection limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

VOCS = Volatile organic compounds.

TABLE F2-2
Comparison of COPC Concentrations in Indoor Air/Outdoor Air/Soil Gas/Groundwater to Applicable Screening Levels
700 South 1600 East PCE Plume AOU-1: East Side Springs
Department of Veterans Affairs Salt Lake City Health Care System

					Groundwater SL		Comparison to the Maximum MDL							Comparison to Maximum RL				
Medium/ Data Group	AnalysisGroup	Preliminary COPC	CASRN	Unit	Residential SL (a)(b)	Commercial/ School Worker SL	Number of Samples	Number of Detections	Min MDL	Max MDL	Max MDL Exceeds Residential SL? (Yes/No)	Number of MDL Exceeds Residential SL	Max MDL Exceeds Commercial/ School Worker SL? (Yes/No)	Min RL	Max RL	Max RL Exceed Residential SL? (Yes/No)	Number of RL Exceed Residential SL	Max RL Exceed Commercial/ School Worker SL? (Yes/No)
Indoor Air																		
AI_All	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	$\mu g/m^3$	NSL	NSL	162	28	0.4	0.4	--	--	--	0.4	0.4	--	--	--
AI_All	HAPSITE VOCS	Tetrachloroethene	127-18-4	$\mu g/m^3$	11	47	155	63	0.7	0.7	N	--	N	0.7	0.7	N	--	N
AI_All	HAPSITE VOCS	Trichlorethene	79-01-6	$\mu g/m^3$	0.48	3	161	12	0.5	0.5	Y	161	N	0.5	0.5	Y	149	N
AI_All	TO15	1,4-Dioxane	123-91-1	$\mu g/m^3$	0.56	2.5	16	1	n/a	n/a	--	--	--	0.18	0.18	N	--	N
AI_All	TO15	cis-1,2-Dichloroethene	156-59-2	$\mu g/m^3$	NSL	NSL	23	0	0.59	0.59	--	--	--	0.2	2	--	--	--
AI_All	TO15	Tetrachloroethene	127-18-4	$\mu g/m^3$	11	47	23	19	1	1	N	--	N	0.34	0.34	N	--	N
AI_All	TO15	Trichlorethene	79-01-6	$\mu g/m^3$	0.48	3	23	3	0.81	0.81	Y	7	N	0.27	2.7	Y	7	N
AI_All	TO15	Vinyl Chloride	75-01-4	$\mu g/m^3$	0.17	2.8	23	1	0.38	0.38	Y	7	N	0.13	1.3	Y	7	N
Outdoor Air																		
OA_All	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	$\mu g/m^3$	NSL	NSL	30	0	0.4	0.4	--	--	--	0.4	0.4	--	--	--
OA_All	HAPSITE VOCS	Tetrachloroethene	127-18-4	$\mu g/m^3$	11	47	30	1	0.7	0.7	--	--	--	0.7	0.7	--	--	--
OA_All	HAPSITE VOCS	Trichlorethene	79-01-6	$\mu g/m^3$	0.48	3	30	0	0.5	0.5	--	--	--	0.5	0.5	--	--	--
OA_All	TO15	cis-1,2-Dichloroethene	156-59-2	$\mu g/m^3$	NSL	NSL	2	0	0.59	0.59	--	--	--	2	2	--	--	--
OA_All	TO15	Tetrachloroethene	127-18-4	$\mu g/m^3$	11	47	2	0	1	1	--	--	--	3.4	3.4	--	--	--
OA_All	TO15	Trichlorethene	79-01-6	$\mu g/m^3$	0.48	3	2	0	0.81	0.81	--	--	--	2.7	2.7	--	--	--
OA_All	TO15	Vinyl Chloride	75-01-4	$\mu g/m^3$	0.17	2.8	2	0	0.38	0.38	--	--	--	1.3	1.3	--	--	--
Soil Gas																		
GS_All	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	$\mu g/m^3$	NSL	NSL	23	3	0.4	0.4	--	--	--	0.4	0.4	--	--	--
GS_All	HAPSITE VOCS	Tetrachloroethene	127-18-4	$\mu g/m^3$	370	1600	22	12	0.7	0.7	N	--	N	0.7	0.7	N	--	N
GS_All	HAPSITE VOCS	Trichlorethene	79-01-6	$\mu g/m^3$	16	100	23	2	0.5	0.5	N	--	N	0.5	0.5	N	--	N
GS_All	TO15	1,4-Dioxane	123-91-1	$\mu g/m^3$	19	83	2	0	7.2	7.2	N	--	N	7.2	7.2	N	--	N
GS_All	TO15	cis-1,2-Dichloroethene	156-59-2	$\mu g/m^3$	NSL	NSL	6	1	0.59	0.59	--	--	--	2	2	--	--	--
GS_All	TO15	Tetrachloroethene	127-18-4	$\mu g/m^3$	370	1600	6	4	1	10	N	--	N	3.4	34	N	--	N
GS_All	TO15	Trichlorethene	79-01-6	$\mu g/m^3$	16	100	6	3	0.81	0.81	N	--	N	2.7	2.7	N	--	N
GS_All	TO15	Vinyl Chloride	75-01-4	$\mu g/m^3$	5.7	93	6	0	0.38	0.38	N	--	N	1.3	1.3	N	--	N
Groundwater																		
WG_All	SOM02.3	1,4-Dioxane	123-91-1	$\mu g/L$	2900	13000	21	1	0.38	1.4	N	--	N	2	2.1	N	--	N
WG_All	SOM02.3	cis-1,2-Dichloroethene	156-59-2	$\mu g/L$	NSL	NSL	62	27	0.05	0.077	--	--	--	0.5	0.5	--	--	--
WG_All	SOM02.3	Tetrachloroethene	127-18-4	$\mu g/L$	15	65	62	54	0.057	0.39	N	--	N	0.5	5	N	--	N
WG_All	SOM02.3	Trichlorethene	79-01-6	$\mu g/L$	1.2	7.5	62	40	0.041	0.082	N	--	N	0.5	0.5	N	--	N
WG_All	SOM02.3	Vinyl Chloride	75-01-4	$\mu g/L$	0.15	2.5	62	0	0.054	0.15	N	--	N	0.5	0.5	Y	62	N

NOTES:

a. The Indoor Air SLs are the indoor air RSLs from the EPA RSL table (EPA 2017a).

The Soil Gas SLs are the indoor air RSLs divided by a generic soil-gas-to-indoor air attenuation factor of 0.03 (EPA 2017b).

The Groundwater SLs are based on the indoor air RSLs from the EPA RSL table (EPA 2017a) and the generic groundwater-to-indoor air attenuation factor of 0.001, assuming an average groundwater temperature of 25 degrees Celsius (EPA 2017b).

b. The SLs are based on either a target cancer risk of 1×10^{-6} and a noncancer hazard quotient of 1, whichever results in the lower SL.

-- = Not applicable.
$\mu g/L$ = Micrograms per liter.
$\mu g/m^3$ = Micrograms per cubic meter.
CASRN = Chemical Abstracts Service Registry Number.

TABLE F2-2
Comparison of COPC Concentrations in Indoor Air/Outdoor Air/Soil Gas/Groundwater to Applicable Screening Levels
700 South 1600 East PCE Plume AOU-1: East Side Springs
Department of Veterans Affairs Salt Lake City Health Care System

COPC	=	Contaminant of potential concern.
EPA	=	U.S. Environmental Protection Agency.
MDL	=	Method detection limit.
n/a	=	Not available.
NSL	=	No screening level.
RL	=	Reporting limit.
RSL	=	Regional screening level.
SL	=	Screening level.
VOCS	=	Volatile organic compounds.

TABLE F2-3

Comparison of COPC Concentrations in Surface Water to Applicable Screening Levels

700 South 1600 East PCE Plume AOU-1: East Side Springs

Department of Veterans Affairs Salt Lake City Health Care System

		Surface Water SL				Comparison to Maximum MDL								Comparison to Max RL					
Preliminary COPC	**CASRN**	**Residential SL [a][b] (µg/L)**	**Commercial/ School Worker SL [a][b] (µg/L)**	**SW SL_{Direct} (Direct Contact Ing/Derm) [b][c] (µg/L)**	**SW SL_{plant} (Ingestion) [b][d] (µg/L)**	**Number of Samples**	**Number of Detections**	**Min MDL**	**Max MDL**	**Max MDL Exceeds Residential SL? (Yes/No)**	**Max MDL Exceeds Commercial/ School Worker SL? (Yes/No)**	**Max MDL Exceed SW SL_{Direct} (Direct Contact Ing/Derm)? (Yes/No)**	**Max MDL Exceeds SW SL_{Plant} (Ingestion)? (Yes/No)**	**Min RL**	**Max RL**	**Max RL Exceeds Residential SL? (Yes/No)**	**Max RL Exceeds Commercial/ School Worker SL? (Yes/No)**	**Max RL Exceeds SW SL_{Direct} (Direct Contact Ing/Derm)? (Yes/No)**	**Max RL Exceeds SW SL_{Plant} (Ingestion)? (Yes/No)**
1,4-Dioxane	123-91-1	1,000,000	4,600,000	160	77	10	0	0.49	0.99	N	N	N	N	1.9	2	N	N	N	N
cis-1,2-Dichloroethene	156-59-2	2,000,000	29,000,000	3,000	1,204	50	20	0.076	0.077	N	N	N	N	0.5	0.5	N	N	N	N
Tetrachloroethene	127-18-4	130,000	530,000	1,500	247	50	42	0.077	0.077	N	N	N	N	0.5	5	N	N	N	N
Trichlorethene	79-01-6	7,700	49,000	110	63	50	31	0.07	0.08	N	N	N	N	0.5	0.5	N	N	N	N
Vinyl Chloride	75-01-4	1,400	39,000	0.61	7.4	50	0	0.081	0.22	N	N	N	N	0.5	0.5	N	N	N	N

NOTES:

a. SW SL Protection of Soil.

b. The SLs are based on a target cancer risk of 1×10^{-6} and a noncancer hazard quotient of 1, whichever results in the lower SL.

c. SW SL_{Direct} was calculated using the EPA RSL calculator (EPA 2017b).

d. SW SL_{Plant} was calculated in Attachment 4 of the Risk Assessment Work Plan (FE 2015).

µg/L = Micrograms per liter.
CASRN = Chemical Abstracts Service Registry Number.
COPC = Contaminant of potential concern.
EPA = U.S. Environmental Protection Agency.
MDL = Method detection limit.
RL = Reporting limit.
RSL = Regional screening level.
SL = Screening level.
SW = Surface water.

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TABLE F2-4

Comparison of COPC Concentrations in Soil to Applicable Screening Levels

700 South 1600 East PCE Plume AOU-1: East Side Springs

Department of Veterans Affairs Salt Lake City Health Care System

		Soil SL		Comparison to Maximum MDL						Comparison to Maximum RL			
Preliminary COPC	CASRN	Residential SL [(a)(b)] (mg/kg)	Commercial/ School Worker SL [(a)(b)] (mg/kg)	Number of Samples	Number of Detections	Min MDL	Max MDL	Max MDL Exceeds Residential SL? (Yes/No)	Max MDL Exceeds Commercial/ School Worker SL? (Yes/No)	Min RL	Max RL	Max RL Exceeds Residential SL? (Yes/No)	Max RL Exceeds Commercial/ School Worker SL? (Yes/No)
1,4-Dioxane	123-91-1	5.3	24	2	0	0.033	0.038	N	N	0.1	0.14	N	N
cis-1,2-Dichloroethene	156-59-2	160	2,300	2	0	0.00044	0.00046	N	N	0.01	0.011	N	N
Tetrachloroethene	127-18-4	24	100	2	1	0.00037	0.00039	N	N	0.01	0.011	N	N
Trichlorethene	79-01-6	0.94	6	2	0	0.00046	0.00048	N	N	0.01	0.011	N	N
Vinyl Chloride	75-01-4	0.059	1.7	2	0	0.00037	0.00039	N	N	0.01	0.011	N	N

NOTES:

a. Soil SLs were obtained from EPA RSL table (EPA 2017a).

b. The SLs are based on a target cancer risk of 1 x 10^{-6} and a noncancer hazard quotient of 1, whichever results in the lower SL.

CASRN = Chemical Abstracts Service Registry Number.

COPC = Contaminant of potential concern.

EPA = U.S. Environmental Protection Agency.

MDL = Method detection limit.

mg/kg = Milligrams per kilogram.

RL = Reporting limit.

RSL = Regional screening level.

SL = Screening level.

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Attachment 3
Human Health Risk Calculation Worksheets

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TABLE F3-1

Detailed Risk Calculation Worksheet – Groundwater to Indoor Air - Detection Only

700 South 1600 East PCE Plume AOU-1: East Side Springs

Department of Veterans Affairs Salt Lake City Health Care System

							Future Residential Receptor							Future Commercial/School Worker (Commercial, School, Church)						
Location ID	Sample Name	Contaminant of Potential Concern	CASRN	Result (µg/L)	Qualifier	Henry's Law Constant	Residential SL [a]	Exceeds Residential SL? (Yes/No)	Res SL (ELCR =1E-6)	Res SL (HQ=1)	Groundwater-to-Indoor-Air AF [-]	ELCR	HQ	Commercial/School Worker SL [(a)]	Exceeds Commercial/School Worker SL? (Yes/No)	Groundwater-to Indoor-Air AF [-]	Com/SW SL (ELCR =1E-6)	Com/SW SL (HQ=1)	ELCR	HQ
GW-001	A-GW-001_03042016	Tetrachloroethene	127-18-4	0.78		0.7236304	15	N	15	58	0.001	5.2.E-08	1.3.E-02	65	N	0.001	65	240	1.2.E-08	3.3.E-03
GW-003	A-GW-003_02262016	Tetrachloroethene	127-18-4	0.48	J	0.7236304	15	N	15	58	0.001	3.2.E-08	8.3.E-03	65	N	0.001	65	240	7.4.E-09	2.0.E-03
GW-004	A-GW-004_02262016	Tetrachloroethene	127-18-4	12		0.7236304	15	N	15	58	0.001	8.0.E-07	2.1.E-01	65	N	0.001	65	240	1.8.E-07	5.0.E-02
		Trichlorethene	79-01-6	0.34	J	0.4026983	1.2	N	1.2	5.2	0.001	2.8.E-07	6.5.E-02	7.5	N	0.001	7.5	22	4.5.E-08	1.5.E-02
GW-005	A-GW-005_02262016	Tetrachloroethene	127-18-4	1.4		0.7236304	15	N	15	58	0.001	9.3.E-08	2.4.E-02	65	N	0.001	65	240	2.2.E-08	5.8.E-03
GW-006		cis-1,2-Dichloroethene	156-59-2	0.45	J	0.1668029	NSL	--	NSL	NSL	0.001	--	--	NSL	--	0.001	NSL	NSL	--	--
	A-GW-006_02262016	Tetrachloroethene	127-18-4	3.1		0.7236304	15	N	15	58	0.001	2.1.E-07	5.3.E-02	65	N	0.001	65	240	4.8.E-08	1.3.E-02
		Trichlorethene	79-01-6	1		0.4026983	1.2	N	1.2	5.2	0.001	8.3.E-07	1.9.E-01	7.5	N	0.001	7.5	22	1.3.E-07	4.5.E-02
GW-007	A-GW-007_02282016	Tetrachloroethene	127-18-4	33		0.7236304	15	Y	15	58	0.001	2.2.E-06	5.7.E-01	65	N	0.001	65	240	5.1.E-07	1.4.E-01
		Trichlorethene	79-01-6	0.59		0.4026983	1.2	N	1.2	5.2	0.001	4.9.E-07	1.1.E-01	7.5	N	0.001	7.5	22	7.9.E-08	2.7.E-02
GW-008	A-GW-008_02272016	Trichlorethene	79-01-6	1.8		0.4026983	1.2	Y	1.2	5.2	0.001	1.5.E-06	3.5.E-01	7.5	N	0.001	7.5	22	2.4.E-07	8.2.E-02
		Tetrachloroethene	127-18-4	9.6		0.7236304	15	N	15	58	0.001	6.4.E-07	1.7.E-01	65	N	0.001	65	240	1.5.E-07	4.0.E-02
GW-009		cis-1,2-Dichloroethene	156-59-2	0.68		0.1668029	NSL	--	NSL	NSL	0.001	--	--	NSL	--	0.001	NSL	NSL	--	--
GW-009	A-GW-009_02262016	Tetrachloroethene	127-18-4	0.7		0.7236304	15	N	15	58	0.001	4.7.E-08	1.2.E-02	65	N	0.001	65	240	1.1.E-08	2.9.E-03
		Trichlorethene	79-01-6	2.4		0.4026983	1.2	Y	1.2	5.2	0.001	2.0.E-06	4.6.E-01	7.5	N	0.001	7.5	22	3.2.E-07	1.1.E-01
GW-010	A-GW-010-D_02272016	Tetrachloroethene	127-18-4	1.4		0.7236304	15	N	15	58	0.001	9.3.E-08	2.4.E-02	65	N	0.001	65	240	2.2.E-08	5.8.E-03
		Trichlorethene	79-01-6	0.11	J	0.4026983	1.2	N	1.2	5.2	0.001	9.2.E-08	2.1.E-02	7.5	N	0.001	7.5	22	1.5.E-08	5.0.E-03
	A-GW-10_07122016	Tetrachloroethene	127-18-4	1.1		0.7236304	15	N	15	58	0.001	7.3.E-08	1.9.E-02	65	N	0.001	65	240	1.7.E-08	4.6.E-03
	A-GW-10_09202016	Tetrachloroethene	127-18-4	1.1		0.7236304	15	N	15	58	0.001	7.3.E-08	1.9.E-02	65	N	0.001	65	240	1.7.E-08	4.6.E-03
		Trichlorethene	79-01-6	0.19	J	0.4026983	1.2	N	1.2	5.2	0.001	1.6.E-07	3.7.E-02	7.5	N	0.001	7.5	22	2.5.E-08	8.6.E-03
GW-011	A-GW-011_02272016	Tetrachloroethene	127-18-4	45		0.7236304	15	Y	15	58	0.001	3.0.E-06	7.8.E-01	65	N	0.001	65	240	6.9.E-07	1.9.E-01
		Trichlorethene	79-01-6	0.82		0.4026983	1.2	N	1.2	5.2	0.001	6.8.E-07	1.6.E-01	7.5	N	0.001	7.5	22	1.1.E-07	3.7.E-02
		cis-1,2-Dichloroethene	156-59-2	0.39	J	0.1668029	NSL	--	NSL	NSL	0.001	--	--	NSL	--	0.001	NSL	NSL	--	--
		cis-1,2-Dichloroethene	156-59-2	0.37	J	0.1668029	NSL	--	NSL	NSL	0.001	--	--	NSL	--	0.001	NSL	NSL	--	--
	A-GW-11_07112016	Tetrachloroethene	127-18-4	44		0.7236304	15	Y	15	58	0.001	2.9.E-06	7.6.E-01	65	N	0.001	65	240	6.8.E-07	1.8.E-01
		Trichlorethene	79-01-6	0.56		0.4026983	1.2	N	1.2	5.2	0.001	4.7.E-07	1.1.E-01	7.5	N	0.001	7.5	22	7.5.E-08	2.5.E-02
	A-GW-11_09192016	Trichlorethene	79-01-6	0.62		0.4026983	1.2	N	1.2	5.2	0.001	5.2.E-07	1.2.E-01	7.5	N	0.001	7.5	22	8.3.E-08	2.8.E-02
		cis-1,2-Dichloroethene	156-59-2	0.43	J	0.1668029	NSL	--	NSL	NSL	0.001	--	--	NSL	--	0.001	NSL	NSL	--	--
	A-GW-11_09192016	Tetrachloroethene	127-18-4	35		0.7236304	15	Y	15	58	0.001	2.3.E-06	6.0.E-01	65	N	0.001	65	240	5.4.E-07	1.5.E-01
GW-012	A-GW-012_03092016	Trichlorethene	79-01-6	0.22	J	0.4026983	1.2	N	1.2	5.2	0.001	1.8.E-07	4.2.E-02	7.5	N	0.001	7.5	22	2.9.E-08	1.0.E-02
		cis-1,2-Dichloroethene	156-59-2	0.14	J	0.1668029	NSL	--	NSL	NSL	0.001	--	--	NSL	--	0.001	NSL	NSL	--	--
	A-GW-012_03092016	Tetrachloroethene	127-18-4	4.8		0.7236304	15	N	15	58	0.001	3.2.E-07	8.3.E-02	65	N	0.001	65	240	7.4.E-08	2.0.E-02
GW-013		cis-1,2-Dichloroethene	156-59-2	0.11	J	0.1668029	NSL	--	NSL	NSL	0.001	--	--	NSL	--	0.001	NSL	NSL	--	--
	A-GW-013_03042016	Tetrachloroethene	127-18-4	22		0.7236304	15	Y	15	58	0.001	1.5.E-06	3.8.E-01	65	N	0.001	65	240	3.4.E-07	9.2.E-02
GW-013	A-GW-013_03042016	Trichlorethene	79-01-6	0.18	J	0.4026983	1.2	N	1.2	5.2	0.001	1.5.E-07	3.5.E-02	7.5	N	0.001	7.5	22	2.4.E-08	8.2.E-03
GW-014		cis-1,2-Dichloroethene	156-59-2	0.24	J	0.1668029	NSL	--	NSL	NSL	0.001	--	--	NSL	--	0.001	NSL	NSL	--	--
	A-GW-014_03022016	Tetrachloroethene	127-18-4	3.2		0.7236304	15	N	15	58	0.001	2.1.E-07	5.5.E-02	65	N	0.001	65	240	4.9.E-08	1.3.E-02
		Trichlorethene	79-01-6	1.9		0.4026983	1.2	Y	1.2	5.2	0.001	1.6.E-06	3.7.E-01	7.5	N	0.001	7.5	22	2.5.E-07	8.6.E-02
GW-015	A-GW-015_02292016	Tetrachloroethene	127-18-4	31		0.7236304	15	Y	15	58	0.001	2.1.E-06	5.3.E-01	65	N	0.001	65	240	4.8.E-07	1.3.E-01
	A-GW-015-D_02292016	Trichlorethene	79-01-6	0.63	J	0.4026983	1.2	N	1.2	5.2	0.001	5.3.E-07	1.2.E-01	7.5	N	0.001	7.5	22	8.4.E-08	2.9.E-02
		cis-1,2-Dichloroethene	156-59-2	0.32	J	0.1668029	NSL	--	NSL	NSL	0.001	--	--	NSL	--	0.001	NSL	NSL	--	--
GW-016		cis-1,2-Dichloroethene	156-59-2	0.26	J	0.1668029	NSL	--	NSL	NSL	0.001	--	--	NSL	--	0.001	NSL	NSL	--	--
GW-016	A-GW-016_02282016	Tetrachloroethene	127-18-4	20	J	0.7236304	15	Y	15	58	0.001	1.3.E-06	3.4.E-01	65	N	0.001	65	240	3.1.E-07	8.3.E-02

TABLE F3-1
Detailed Risk Calculation Worksheet – Groundwater to Indoor Air - Detection Only
700 South 1600 East PCE Plume AOU-1: East Side Springs
Department of Veterans Affairs Salt Lake City Health Care System

							Future Residential Receptor							Future Commercial/School Worker (Commercial, School, Church)						
Location ID	**Sample Name**	**Contaminant of Potential Concern**	**CASRN**	**Result (µg/L)**	**Qualifier**	**Henry's Law Constant**	**Residential SL**	**Exceeds Residential SL? (Yes/No)**	**Res SL (ELCR =1E-6)**	**Res SL (HQ=1)**	**Groundwater-to-Indoor-Air AF [-]**	**ELCR**	**HQ**	**Commercial/School Worker SL**	**Exceeds Commercial/School Worker SL? (Yes/No)**	**Groundwater-to Indoor-Air AF [-]**	**Com/SW SL (ELCR =1E-6)**	**Com/SW SL (HQ=1)**	**ELCR**	**HQ**
		Trichlorethene	79-01-6	0.61		0.4026983	1.2	N	1.2	5.2	0.001	5.1.E-07	1.2.E-01	7.5	N	0.001	7.5	22	8.1.E-08	2.8.E-02
	A-GW-16_07112016	Tetrachloroethene	127-18-4	13		0.7236304	15	N	15	58	0.001	8.7.E-07	2.2.E-01	65	N	0.001	65	240	2.0.E-07	5.4.E-02
		Trichlorethene	79-01-6	0.53		0.4026983	1.2	N	1.2	5.2	0.001	4.4.E-07	1.0.E-01	7.5	N	0.001	7.5	22	7.1.E-08	2.4.E-02
	A-GW-16_09192016	Trichlorethene	79-01-6	0.73		0.4026983	1.2	N	1.2	5.2	0.001	6.1.E-07	1.4.E-01	7.5	N	0.001	7.5	22	9.7.E-08	3.3.E-02
		cis-1,2-Dichloroethene	156-59-2	0.3	J	0.1668029	NSL	--	NSL	NSL	0.001	--	--	NSL	--	0.001	NSL	NSL	--	--
	A-GW-16_09192016	Tetrachloroethene	127-18-4	18		0.7236304	15	Y	15	58	0.001	1.2.E-06	3.1.E-01	65	N	0.001	65	240	2.8.E-07	7.5.E-02
GW-017	A-GW-017_03022016	Tetrachloroethene	127-18-4	1.1		0.7236304	15	N	15	58	0.001	7.3.E-08	1.9.E-02	65	N	0.001	65	240	1.7.E-08	4.6.E-03
		Trichlorethene	79-01-6	0.56		0.4026983	1.2	N	1.2	5.2	0.001	4.7.E-07	1.1.E-01	7.5	N	0.001	7.5	22	7.5.E-08	2.5.E-02
GW-018		cis-1,2-Dichloroethene	156-59-2	0.27	J-	0.1668029	NSL	--	NSL	NSL	0.001	--	--	NSL	--	0.001	NSL	NSL	--	--
GW-018	A-GW-018_03022016	Tetrachloroethene	127-18-4	10		0.7236304	15	N	15	58	0.001	6.7.E-07	1.7.E-01	65	N	0.001	65	240	1.5.E-07	4.2.E-02
		Trichlorethene	79-01-6	2.1		0.4026983	1.2	Y	1.2	5.2	0.001	1.8.E-06	4.0.E-01	7.5	N	0.001	7.5	22	2.8.E-07	9.5.E-02
GW-020	A-GW-020_03012016	Tetrachloroethene	127-18-4	2.7		0.7236304	15	N	15	58	0.001	1.8.E-07	4.7.E-02	65	N	0.001	65	240	4.2.E-08	1.1.E-02
		Trichlorethene	79-01-6	1		0.4026983	1.2	N	1.2	5.2	0.001	8.3.E-07	1.9.E-01	7.5	N	0.001	7.5	22	1.3.E-07	4.5.E-02
	A-GW-20_07112016	Tetrachloroethene	127-18-4	8.3		0.7236304	15	N	15	58	0.001	5.5.E-07	1.4.E-01	65	N	0.001	65	240	1.3.E-07	3.5.E-02
		Trichlorethene	79-01-6	0.4	J	0.4026983	1.2	N	1.2	5.2	0.001	3.3.E-07	7.7.E-02	7.5	N	0.001	7.5	22	5.3.E-08	1.8.E-02
	A-GW-20_09192016	Tetrachloroethene	127-18-4	8.6		0.7236304	15	N	15	58	0.001	5.7.E-07	1.5.E-01	65	N	0.001	65	240	1.3.E-07	3.6.E-02
		Trichlorethene	79-01-6	0.29	J	0.4026983	1.2	N	1.2	5.2	0.001	2.4.E-07	5.6.E-02	7.5	N	0.001	7.5	22	3.9.E-08	1.3.E-02
GW-026	A-GW-026_02282016	Tetrachloroethene	127-18-4	0.27	J	0.7236304	15	N	15	58	0.001	1.8.E-08	4.7.E-03	65	N	0.001	65	240	4.2.E-09	1.1.E-03
GW-027		cis-1,2-Dichloroethene	156-59-2	0.14	J	0.1668029	NSL	--	NSL	NSL	0.001	--	--	NSL	--	0.001	NSL	NSL	--	--
	A-GW-027_03052016	Tetrachloroethene	127-18-4	22		0.7236304	15	Y	15	58	0.001	1.5.E-06	3.8.E-01	65	N	0.001	65	240	3.4.E-07	9.2.E-02
		Trichlorethene	79-01-6	0.21	J	0.4026983	1.2	N	1.2	5.2	0.001	1.8.E-07	4.0.E-02	7.5	N	0.001	7.5	22	2.8.E-08	9.5.E-03
GW-028		cis-1,2-Dichloroethene	156-59-2	0.27	J	0.1668029	NSL	--	NSL	NSL	0.001	--	--	NSL	--	0.001	NSL	NSL	--	--
	A-GW-028_03052016	Tetrachloroethene	127-18-4	43		0.7236304	15	Y	15	58	0.001	2.9.E-06	7.4.E-01	65	N	0.001	65	240	6.6.E-07	1.8.E-01
		Trichlorethene	79-01-6	0.4	J	0.4026983	1.2	N	1.2	5.2	0.001	3.3.E-07	7.7.E-02	7.5	N	0.001	7.5	22	5.3.E-08	1.8.E-02
GW-040	A-GW-040_03032016	Tetrachloroethene	127-18-4	0.13	J	0.7236304	15	N	15	58	0.001	8.7.E-09	2.2.E-03	65	N	0.001	65	240	2.0.E-09	5.4.E-04
GW-043	A-GW-043_03032016	Tetrachloroethene	127-18-4	0.35	J	0.7236304	15	N	15	58	0.001	2.3.E-08	6.0.E-03	65	N	0.001	65	240	5.4.E-09	1.5.E-03
GW-046	A-GW-046_02242016	Tetrachloroethene	127-18-4	0.2	J	0.7236304	15	N	15	58	0.001	1.3.E-08	3.4.E-03	65	N	0.001	65	240	3.1.E-09	8.3.E-04
GW-049	A-GW-049_02252016	Tetrachloroethene	127-18-4	1.2		0.7236304	15	N	15	58	0.001	8.0.E-08	2.1.E-02	65	N	0.001	65	240	1.8.E-08	5.0.E-03
	A-GW-49_07122016	Tetrachloroethene	127-18-4	1.1		0.7236304	15	N	15	58	0.001	7.3.E-08	1.9.E-02	65	N	0.001	65	240	1.7.E-08	4.6.E-03
	A-GW-49_09202016	Tetrachloroethene	127-18-4	1.1		0.7236304	15	N	15	58	0.001	7.3.E-08	1.9.E-02	65	N	0.001	65	240	1.7.E-08	4.6.E-03
GW-050		cis-1,2-Dichloroethene	156-59-2	1.1		0.1668029	NSL	--	NSL	NSL	0.001	--	--	NSL	--	0.001	NSL	NSL	--	--
GW-050	A-GW-050_02292016	Tetrachloroethene	127-18-4	2.5		0.7236304	15	N	15	58	0.001	1.7.E-07	4.3.E-02	65	N	0.001	65	240	3.8.E-08	1.0.E-02
		Trichlorethene	79-01-6	1.7		0.4026983	1.2	Y	1.2	5.2	0.001	1.4.E-06	3.3.E-01	7.5	N	0.001	7.5	22	2.3.E-07	7.7.E-02
	A-GW-50_07122016	Tetrachloroethene	127-18-4	2.8		0.7236304	15	N	15	58	0.001	1.9.E-07	4.8.E-02	65	N	0.001	65	240	4.3.E-08	1.2.E-02
		cis-1,2-Dichloroethene	156-59-2	1.3		0.1668029	NSL	--	NSL	NSL	0.001	--	--	NSL	--	0.001	NSL	NSL	--	--
	A-GW-50_07122016	Trichlorethene	79-01-6	6.1		0.4026983	1.2	Y	1.2	5.2	0.001	5.1.E-06	1.2.E+00	7.5	N	0.001	7.5	22	8.1.E-07	2.8.E-01
	A-GW-50_09202016	Tetrachloroethene	127-18-4	3		0.7236304	15	N	15	58	0.001	2.0.E-07	5.2.E-02	65	N	0.001	65	240	4.6.E-08	1.3.E-02
		Trichlorethene	79-01-6	6.4		0.4026983	1.2	Y	1.2	5.2	0.001	5.3.E-06	1.2.E+00	7.5	N	0.001	7.5	22	8.5.E-07	2.9.E-01
		cis-1,2-Dichloroethene	156-59-2	1.4		0.1668029	NSL	--	NSL	NSL	0.001	--	--	NSL	--	0.001	NSL	NSL	--	--
GW-051	A-GW-051_03042016	Tetrachloroethene	127-18-4	23		0.7236304	15	Y	15	58	0.001	1.5.E-06	4.0.E-01	65	N	0.001	65	240	3.5.E-07	9.6.E-02
		Trichlorethene	79-01-6	0.19	J	0.4026983	1.2	N	1.2	5.2	0.001	1.6.E-07	3.7.E-02	7.5	N	0.001	7.5	22	2.5.E-08	8.6.E-03
GW-052		cis-1,2-Dichloroethene	156-59-2	0.42	J	0.1668029	NSL	--	NSL	NSL	0.001	--	--	NSL	--	0.001	NSL	NSL	--	--
GW-052	A-GW-052-D_03032016	Tetrachloroethene	127-18-4	61		0.7236304	15	Y	15	58	0.001	4.1.E-06	1.1.E+00	65	N	0.001	65	240	9.4.E-07	2.5.E-01

TABLE F3-1
Detailed Risk Calculation Worksheet – Groundwater to Indoor Air - Detection Only
700 South 1600 East PCE Plume AOU-1: East Side Springs
Department of Veterans Affairs Salt Lake City Health Care System

							Future Residential Receptor							Future Commercial/School Worker (Commercial, School, Church)						
Location ID	Sample Name	Contaminant of Potential Concern	CASRN	Result (µg/L)	Qualifier	Henry's Law Constant	Residential SL	Exceeds Residential SL? (Yes/No)	Res SL (ELCR =1E-6)	Res SL (HQ=1)	Groundwater-to-Indoor-Air AF [-]	ELCR	HQ	Commercial/School Worker SL	Exceeds Commercial/School Worker SL? (Yes/No)	Groundwater-to Indoor-Air AF [-]	Com/SW SL (ELCR =1E-6)	Com/SW SL (HQ=1)	ELCR	HQ
		Trichlorethene	79-01-6	0.61	J	0.4026983	1.2	N	1.2	5.2	0.001	5.1.E-07	1.2.E-01	7.5	N	0.001	7.5	22	8.1.E-08	2.8.E-02
	A-GW-52_07122016	1,4-Dioxane	123-91-1	2.7		0.0001962	2900	N	2900	160000	0.001	9.3.E-10	1.7.E-05	13000	N	0.001	13000	670000	2.1.E-10	4.0.E-06
		Trichlorethene	79-01-6	0.56		0.4026983	1.2	N	1.2	5.2	0.001	4.7.E-07	1.1.E-01	7.5	N	0.001	7.5	22	7.5.E-08	2.5.E-02
		cis-1,2-Dichloroethene	156-59-2	0.32	J	0.1668029	NSL	--	NSL	NSL	0.001	--	--	NSL	--	0.001	NSL	NSL	--	--
	A-GW-52_07122016	Tetrachloroethene	127-18-4	52		0.7236304	15	Y	15	58	0.001	3.5.E-06	9.0.E-01	65	N	0.001	65	240	8.0.E-07	2.2.E-01
		cis-1,2-Dichloroethene	156-59-2	0.3	J	0.1668029	NSL	--	NSL	NSL	0.001	--	--	NSL	--	0.001	NSL	NSL	--	--
	A-GW-52_09202016	Tetrachloroethene	127-18-4	43		0.7236304	15	Y	15	58	0.001	2.9.E-06	7.4.E-01	65	N	0.001	65	240	6.6.E-07	1.8.E-01
		Trichlorethene	79-01-6	0.44	J	0.4026983	1.2	N	1.2	5.2	0.001	3.7.E-07	8.5.E-02	7.5	N	0.001	7.5	22	5.9.E-08	2.0.E-02
GW-053		cis-1,2-Dichloroethene	156-59-2	0.31	J	0.1668029	NSL	--	NSL	NSL	0.001	--	--	NSL	--	0.001	NSL	NSL	--	--
GW-053	A-GW-053_03032016	Tetrachloroethene	127-18-4	37		0.7236304	15	Y	15	58	0.001	2.5.E-06	6.4.E-01	65	N	0.001	65	240	5.7.E-07	1.5.E-01
		Trichlorethene	79-01-6	0.83		0.4026983	1.2	N	1.2	5.2	0.001	6.9.E-07	1.6.E-01	7.5	N	0.001	7.5	22	1.1.E-07	3.8.E-02
		cis-1,2-Dichloroethene	156-59-2	0.21	J	0.1668029	NSL	--	NSL	NSL	0.001	--	--	NSL	--	0.001	NSL	NSL	--	--
	A-GW-53_07112016	Trichlorethene	79-01-6	0.84		0.4026983	1.2	N	1.2	5.2	0.001	7.0.E-07	1.6.E-01	7.5	N	0.001	7.5	22	1.1.E-07	3.8.E-02
		Tetrachloroethene	127-18-4	40		0.7236304	15	Y	15	58	0.001	2.7.E-06	6.9.E-01	65	N	0.001	65	240	6.2.E-07	1.7.E-01
		cis-1,2-Dichloroethene	156-59-2	0.22	J	0.1668029	NSL	--	NSL	NSL	0.001	--	--	NSL	--	0.001	NSL	NSL	--	--
	A-GW-53_09192016	Tetrachloroethene	127-18-4	45		0.7236304	15	Y	15	58	0.001	3.0.E-06	7.8.E-01	65	N	0.001	65	240	6.9.E-07	1.9.E-01
		Trichlorethene	79-01-6	0.59		0.4026983	1.2	N	1.2	5.2	0.001	4.9.E-07	1.1.E-01	7.5	N	0.001	7.5	22	7.9.E-08	2.7.E-02
GW-055	A-GW-055_03052016	Tetrachloroethene	127-18-4	0.19	J	0.7236304	15	N	15	58	0.001	1.3.E-08	3.3.E-03	65	N	0.001	65	240	2.9.E-09	7.9.E-04
GW-059		cis-1,2-Dichloroethene	156-59-2	3.9		0.1668029	NSL	--	NSL	NSL	0.001	--	--	NSL	--	0.001	NSL	NSL	--	--
GW-059	A-GW-059_03052016	Tetrachloroethene	127-18-4	0.17	J	0.7236304	15	N	15	58	0.001	1.1.E-08	2.9.E-03	65	N	0.001	65	240	2.6.E-09	7.1.E-04
		Trichlorethene	79-01-6	7.7		0.4026983	1.2	Y	1.2	5.2	0.001	6.4.E-06	1.5.E+00	7.5	Y	0.001	7.5	22	1.0.E-06	3.5.E-01
		cis-1,2-Dichloroethene	156-59-2	2.5		0.1668029	NSL	--	NSL	NSL	0.001	--	--	NSL	--	0.001	NSL	NSL	--	--
	A-GW-59_07112016	Tetrachloroethene	127-18-4	2		0.7236304	15	N	15	58	0.001	1.3.E-07	3.4.E-02	65	N	0.001	65	240	3.1.E-08	8.3.E-03
		Trichlorethene	79-01-6	6.1		0.4026983	1.2	Y	1.2	5.2	0.001	5.1.E-06	1.2.E+00	7.5	N	0.001	7.5	22	8.1.E-07	2.8.E-01
		cis-1,2-Dichloroethene	156-59-2	3		0.1668029	NSL	--	NSL	NSL	0.001	--	--	NSL	--	0.001	NSL	NSL	--	--
	A-GW-59_09192016	Tetrachloroethene	127-18-4	1		0.7236304	15	N	15	58	0.001	6.7.E-08	1.7.E-02	65	N	0.001	65	240	1.5.E-08	4.2.E-03
		Trichlorethene	79-01-6	7.2		0.4026983	1.2	Y	1.2	5.2	0.001	6.0.E-06	1.4.E+00	7.5	N	0.001	7.5	22	9.6.E-07	3.3.E-01
GW-060	A-GW-060_03082016	Tetrachloroethene	127-18-4	10		0.7236304	15	N	15	58	0.001	6.7.E-07	1.7.E-01	65	N	0.001	65	240	1.5.E-07	4.2.E-02
		Trichlorethene	79-01-6	1		0.4026983	1.2	N	1.2	5.2	0.001	8.3.E-07	1.9.E-01	7.5	N	0.001	7.5	22	1.3.E-07	4.5.E-02
GW-061	A-GW-061_03052016	Tetrachloroethene	127-18-4	2.3		0.7236304	15	N	15	58	0.001	1.5.E-07	4.0.E-02	65	N	0.001	65	240	3.5.E-08	9.6.E-03
	A-GW-61_07122016	Tetrachloroethene	127-18-4	2.9		0.7236304	15	N	15	58	0.001	1.9.E-07	5.0.E-02	65	N	0.001	65	240	4.5.E-08	1.2.E-02
	A-GW-61_09202016	Tetrachloroethene	127-18-4	3		0.7236304	15	N	15	58	0.001	2.0.E-07	5.2.E-02	65	N	0.001	65	240	4.6.E-08	1.3.E-02
		Trichlorethene	79-01-6	0.15	J	0.4026983	1.2	N	1.2	5.2	0.001	1.3.E-07	2.9.E-02	7.5	N	0.001	7.5	22	2.0.E-08	6.8.E-03
GW-062		cis-1,2-Dichloroethene	156-59-2	0.16	J	0.1668029	NSL	--	NSL	NSL	0.001	--	--	NSL	--	0.001	NSL	NSL	--	--
GW-062	A-GW-062_03082016	Tetrachloroethene	127-18-4	20		0.7236304	15	Y	15	58	0.001	1.3.E-06	3.4.E-01	65	N	0.001	65	240	3.1.E-07	8.3.E-02
		Trichlorethene	79-01-6	0.23	J	0.4026983	1.2	N	1.2	5.2	0.001	1.9.E-07	4.4.E-02	7.5	N	0.001	7.5	22	3.1.E-08	1.0.E-02

NOTES:

a. The Groundwater SLs are based on the indoor air RSLs from the EPA RSL table (EPA 2017a) and the generic groundwater-to-indoor air attenuation factor of 0.001, assuming an average groundwater temperature of 25 degrees Celsius (EPA 2017b). See Table F1-1.

-- = Not applicable.
µg/L = Micrograms per liter.
AF = Attenuation factor (EPA 2017b).
CASRN = Chemical Abstracts Service Registry Number.
ConcLifeAvg-C = Lifetime averaged concentration - cancer effects (based on groundwater concentration * HLC * 1000 L/m^3 * AF).

TABLE F3-1
Detailed Risk Calculation Worksheet – Groundwater to Indoor Air - Detection Only
700 South 1600 East PCE Plume AOU-1: East Side Springs
Department of Veterans Affairs Salt Lake City Health Care System

ConcLifeAvg-NC	=	Lifetime averaged concentration - noncancer effects (based on groundwater concentration * HLC * 1000 L/m^3 * AF).
ELCR	=	Excess lifetime cancer risk.
EPA	=	U.S. Environmental Protection Agency.
HQ	=	Hazard quotient.
J	=	Analyte was present but the reported value is estimated.
J-	=	Analyte was positively identified; the associated numerical value is its approximate concentration with a low bias in the sample.
L/m^3	=	Liters per cubic meter.
NSL	=	No screening level.
RSL	=	Regional screening level.
SL	=	Screening level.
SW	=	Surface water.

Detected concentrations only are presented on this table.

TABLE F3-2

Detailed Risk Calculation Worksheet – Soil Gas to Indoor Air - Detections Only

700 South 1600 East PCE Plume AOU-1: East Side Springs

Department of Veterans Affairs Salt Lake City Health Care System

							Future Residential Receptor						Future Commercial/School Worker (Commercial, School, Church)					
Location ID	**Sample Name**	**Analysis Method**	**Contaminant of Potential Concern**	**CASRN**	**Result (µg/m3)**	**Qualifier**	**Residential SL [a]**	**Exceeds Residential SL? (Yes/No)**	**Res SL (ELCR =1E-6)**	**Res SL (HQ=1)**	**Soil-Gas-to-Indoor Air AF [-]**	**HQ**	**Commercial/ School Worker SL [a]**	**Exceeds Commercial/School Worker SL? (Yes/No)**	**Com/SW SL (ELCR =1E-6)**	**Com/SL SL (HQ=1)**	**Soil-Gas-to-Indoor Air AF [-]**	**HQ**
0008H-SG	A-0008H-041015-SG-001B-4	TO15	Tetrachloroethene	127-18-4	3	J	370	N	370	1,400	0.03	2.1.E-03	1,600	N	1,600	6,000	0.03	5.0.E-04
0030H-SG	A-0030H-041115-SG-001A-6	TO15	Tetrachloroethene	127-18-4	1.5	J	370	N	370	1,400	0.03	1.1.E-03	1,600	N	1,600	6,000	0.03	2.5.E-04
		TO15	Trichlorethene	79-01-6	17		16	Y	16	70	0.03	2.4.E-01	100	N	100	290	0.03	5.9.E-02
0045S-SG-SG1	0045S-SG-SG1-20160322-043-4'	HAPSITE VOCS	Tetrachloroethene	127-18-4	2.55		370	N	370	1,400	0.03	1.8.E-03	1,600	N	1,600	6,000	0.03	4.3.E-04
0047H-SG-SG1	0047H-SG-SG1-20160226-028-4.5'	HAPSITE VOCS	Tetrachloroethene	127-18-4	26.9		370	N	370	1,400	0.03	1.9.E-02	1,600	N	1,600	6,000	0.03	4.5.E-03
0051H-SG-SG1-45	0051H-SG-SG1-20160226-028-4.5'	HAPSITE VOCS	Tetrachloroethene	127-18-4	26.9		370	N	370	1,400	0.03	1.9.E-02	1,600	N	1,600	6,000	0.03	4.5.E-03
0050H-SG-SG1-50	0050H-SG-SG1-20160323-016-5'	HAPSITE VOCS	Tetrachloroethene	127-18-4	13.1		370	N	370	1,400	0.03	9.4.E-03	1,600	N	1,600	6,000	0.03	2.2.E-03
		HAPSITE VOCS	Trichloroethene	79-01-6	3.6		16	N	16	70	0.03	5.1.E-02	100	N	100	290	0.03	1.2.E-02
0051H-SG-SG2-75	0051H-SG-SG2-20160226-032-7.5'	HAPSITE VOCS	Tetrachloroethene	127-18-4	3		370	N	370	1,400	0.03	2.1.E-03	1,600	N	1,600	6,000	0.03	5.0.E-04
0051H-SG-SG2-85	0051H-SG-SG2-20160226-031-8.5'	HAPSITE VOCS	Tetrachloroethene	127-18-4	10.3		370	N	370	1,400	0.03	7.4.E-03	1,600	N	1,600	6,000	0.03	1.7.E-03
0052H-SG-SG1	0052H-SG-SG1-20160311-032-4.5'	HAPSITE VOCS	Tetrachloroethene	127-18-4	10.3		370	N	370	1,400	0.03	7.4.E-03	1,600	N	1,600	6,000	0.03	1.7.E-03
0053H-SG-0037	A-0053H-052316-SG-001-6'(0037)	TO15	Tetrachloroethene	127-18-4	2000	J	370	Y	370	1,400	0.03	1.4.E+00	1,600	Y	1,600	6,000	0.03	3.3.E-01
		TO15	Trichlorethene	79-01-6	18		16	Y	16	70	0.03	2.6.E-01	100	N	100	290	0.03	6.2.E-02
0053H-SG-0050	A-0053H-052316-SG-001-6'(0050)	TO15	Tetrachloroethene	127-18-4	1500	J	370	Y	370	1,400	0.03	1.1.E+00	1,600	N	1,600	6,000	0.03	2.5.E-01
		TO15	Trichlorethene	79-01-6	21		16	Y	16	70	0.03	3.0.E-01	100	N	100	290	0.03	7.2.E-02
0053H-SG-SG1	0053H-SG-SG1-20160502-056-6.5'	HAPSITE VOCS	Trichlorethene	79-01-6	4.5		16	N	16	70	0.03	6.4.E-02	100	N	100	290	0.03	1.6.E-02
		HAPSITE VOCS	Tetrachloroethene	127-18-4	627.7		370	Y	370	1,400	0.03	4.5.E-01	1,600	N	1,600	6,000	0.03	1.0.E-01
0054H-SG-SG1	0054H-SG-SG1-20160603-043-7'	HAPSITE VOCS	Tetrachloroethene	127-18-4	61.4		370	N	370	1,400	0.03	4.4.E-02	1,600	N	1,600	6,000	0.03	1.0.E-02
0056H-SG-SG1	0056H-SG-SG1-20160503-032-5.5'	HAPSITE VOCS	Tetrachloroethene	127-18-4	3.2		370	N	370	1,400	0.03	2.3.E-03	1,600	N	1,600	6,000	0.03	5.3.E-04
0057H-SG-2FT	A-0057H-04052017-SG-022-2'	HAPSITE VOCS	Tetrachloroethene	127-18-4	2.1		370	N	370	1,400	0.03	1.5.E-03	1,600	N	1,600	6,000	0.03	3.5.E-04
0060H-SG-4.8FT	A-0060H-030717-SG-038-4.8'	HAPSITE VOCS	Tetrachloroethene	127-18-4	4.81		370	N	370	1,400	0.03	3.4.E-03	1,600	N	1,600	6,000	0.03	8.0.E-04

NOTES:

a. The Soil Gas SLs are the indoor air RSLs divided by a generic soil-gas-to-indoor air attenuation factor of 0.03 (EPA 2017b). See Table F1-1.

$\mu g/m^3$ = Micrograms per cubic meter.

AF = Attenuation factor (EPA 2017b)

CASRN = Chemical Abstracts Service Registry Number.

ConcLifeAvg-C = Lifetime averaged concentration - cancer effects (based on soil gas concentration * AF).

ConcLifeAvg-NC = Lifetime averaged concentration - noncancer effects (based on soil gas concentration * AF).

ELCR = Excess lifetime cancer risk.

EPA = U.S. Environmental Protection Agency.

HQ = Hazard quotient.

j = Analyte was present but the reported value is estimated.

RSL = Regional screening level.

SL = Screening level.

SW = Surface water.

VOCS = Volatile organic compounds.

Detected concentrations only are presented on this table.

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TABLE F3-3
Detailed Risk Calculation Worksheet – Indoor Air - Detections Only
700 South 1600 East PCE Plume AOU-1: East Side Springs
Department of Veterans Affairs Salt Lake City Health Care System

									Current Residential Receptor											Current Commercial/School Worker (School)									
Location ID	Associated Yes Source?	Sample Name	Sample Date	Analysis Method	Contaminant of Potential Concern	CASRN	Result (µg/m3)	Qualifier	SL [(a)]	Tier 1 RAL [(b)]	Tier 2 RAL [(c)]	Result > SL [(a)]? (Yes/No)	Result > Tier 1 RAL [(b)] (Yes/No)	Result > Tier 2 RAL [(c)] (Yes/No)	Res SL (ELCR =1E-6)	Res SL (HQ=1)	ELCR	HQ	SL [(a)]	Tier 1 RAL [(b)]	Tier 2 RAL [(c)]	Result > SL [(a)]? (Yes/No)	Result > Tier 1 RAL [(b)] (Yes/No)	Result > Tier 2 RAL [(c)] (Yes/No)	Com/SW SL (ELCR =1E-6)	Com/SW SL (HI=1)	ELCR	HQ
0001H-IA-BAS1	No	A-0001H-031517-IA-005-BAS1	3/15/2017	HAPSITE VOCS	Tetrachloroethene	127-18-4	2.24		11	41	120	N	N	N	na	na	na	na	47	180	540	N	N	N	na	na	na	na
0001H-IA-BAS1	No	A-0001H-031517-IA-012-BAS1	3/22/2017	HAPSITE VOCS	Tetrachloroethene	127-18-4	1.36		11	41	120	N	N	N	na	na	na	na	47	180	540	N	N	N	na	na	na	na
0001H-IA-BAT1	No	A-0001H-031517-IA-010-BAT1	3/15/2017	HAPSITE VOCS	Tetrachloroethene	127-18-4	4.81		11	41	120	N	N	N	na	na	na	na	47	180	540	N	N	N	na	na	na	na
0001H-IA-BED1	No	A-0001H-031517-IA-007-BED1	3/15/2017	HAPSITE VOCS	Tetrachloroethene	127-18-4	1.69		11	41	120	N	N	N	na	na	na	na	47	180	540	N	N	N	na	na	na	na
0001H-IA-LIV1	No	A-0001H-031517-IA-004-LIV1	3/15/2017	HAPSITE VOCS	Tetrachloroethene	127-18-4	4.95		11	41	120	N	N	N	na	na	na	na	47	180	540	N	N	N	na	na	na	na
	No	A-0001H-031517-IA-010-LIV1	3/22/2017	HAPSITE VOCS	Tetrachloroethene	127-18-4	1.94		11	41	120	N	N	N	na	na	na	na	47	180	540	N	N	N	na	na	na	na
0001H-IA-MBED1	No	A-0001H-031517-IA-009-MBED1	3/15/2017	HAPSITE VOCS	Tetrachloroethene	127-18-4	5.15		11	41	120	N	N	N	na	na	na	na	47	180	540	N	N	N	na	na	na	na
0001H-IA-SUM1	No	A-0001H-031517-IA-006-SUM1	3/15/2017	HAPSITE VOCS	Tetrachloroethene	127-18-4	2.31		11	41	120	N	N	N	na	na	na	na	47	180	540	N	N	N	na	na	na	na
0001H-IA-WBED1	No	A-0001H-031517-IA-008-WBED1	3/15/2017	HAPSITE VOCS	Tetrachloroethene	127-18-4	2.44		11	41	120	N	N	N	na	na	na	na	47	180	540	N	N	N	na	na	na	na
0002H-IA-FLD1	No	A-0002H-032217-IA-019-FLD1	3/22/2017	HAPSITE VOCS	Tetrachloroethene	127-18-4	1.02		11	41	120	N	N	N	na	na	na	na	47	180	540	N	N	N	na	na	na	na
0002H-IA-KIT1	No	A-0002H-032217-IA-018-KIT1	3/22/2017	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.88		11	41	120	N	N	N	na	na	na	na	47	180	540	N	N	N	na	na	na	na
0012H-IA-BAS1	No	A-0012H-031317-IA-016-BAS1	3/13/2017	HAPSITE VOCS	Tetrachloroethene	127-18-4	1.9		11	41	120	N	N	N	na	na	na	na	47	180	540	N	N	N	na	na	na	na
0012H-IA-BAT1	No	A-0012H-031317-IA-018-BAT1	3/13/2017	HAPSITE VOCS	Tetrachloroethene	127-18-4	2.03		11	41	120	N	N	N	na	na	na	na	47	180	540	N	N	N	na	na	na	na
0012H-IA-FDR1	No	A-0012H-031317-IA-020-FDR1	3/13/2017	HAPSITE VOCS	Tetrachloroethene	127-18-4	2.24		11	41	120	N	N	N	na	na	na	na	47	180	540	N	N	N	na	na	na	na
0012H-IA-LAU1	No	A-0012H-031317-IA-019-LAU1	3/13/2017	HAPSITE VOCS	Tetrachloroethene	127-18-4	2.03		11	41	120	N	N	N	na	na	na	na	47	180	540	N	N	N	na	na	na	na
0012H-IA-LIV1	No	A-0012H-031317-IA-014-LIV1	3/13/2017	HAPSITE VOCS	Tetrachloroethene	127-18-4	1.22		11	41	120	N	N	N	na	na	na	na	47	180	540	N	N	N	na	na	na	na
0012H-IA-OFF1	No	A-0012H-031317-IA-017-OFF1	3/13/2017	HAPSITE VOCS	Tetrachloroethene	127-18-4	2.58		11	41	120	N	N	N	na	na	na	na	47	180	540	N	N	N	na	na	na	na
0026H-IA-BAS1	No	A-0026H-030917-IA-007-BAS1	3/9/2017	HAPSITE VOCS	Tetrachloroethene	127-18-4	1.29		11	41	120	N	N	N	na	na	na	na	47	180	540	N	N	N	na	na	na	na
0026H-IA-HAL1	No	A-0026H-030917-IA-010-HAL1	3/9/2017	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.88		11	41	120	N	N	N	na	na	na	na	47	180	540	N	N	N	na	na	na	na
0026H-IA-LAN1	No	A-0026H-030917-IA-011-LAN1	3/9/2017	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.95		11	41	120	N	N	N	na	na	na	na	47	180	540	N	N	N	na	na	na	na
0026H-IA-LAU1	No	A-0026H-030917-IA-008-LAU1	3/9/2017	HAPSITE VOCS	Tetrachloroethene	127-18-4	1.08		11	41	120	N	N	N	na	na	na	na	47	180	540	N	N	N	na	na	na	na
0026H-IA-LIV1	No	A-0026H-030917-IA-009-LIV1	3/9/2017	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.48		NSL	NSL	NSL	--	--	--	na	na	na	na	NSL	NSL	NSL	--	--	--	na	na	na	na
	No		3/9/2017	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.88		11	41	120	N	N	N	na	na	na	na	47	180	540	N	N	N	na	na	na	na
0026H-IA-UTI1	No	A-0026H-030917-IA-012-UTI1	3/9/2017	HAPSITE VOCS	Tetrachloroethene	127-18-4	1.08		11	41	120	N	N	N	na	na	na	na	47	180	540	N	N	N	na	na	na	na
0029H-IA-BAS1	No	A-0029H-033017-IA-004-BAS1	3/30/2017	HAPSITE VOCS	Tetrachloroethene	127-18-4	1.22		11	41	120	N	N	N	na	na	na	na	47	180	540	N	N	N	na	na	na	na
0029H-IA-LAN1	No	A-0029H-033017-IA-005-LAN1	3/30/2017	HAPSITE VOCS	Tetrachloroethene	127-18-4	6.58		11	41	120	N	N	N	na	na	na	na	47	180	540	N	N	N	na	na	na	na
0029H-IA-LIV1	No	A-0029H-033017-IA-002-LIV1	3/30/2017	HAPSITE VOCS	Tetrachloroethene	127-18-4	5.29		11	41	120	N	N	N	na	na	na	na	47	180	540	N	N	N	na	na	na	na
0041H-IA-BAS	No	0041H-IA-BAS-20160308-BL-004	3/8/2016	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.59		NSL	NSL	NSL	--	--	--	na	na	na	na	NSL	NSL	NSL	--	--	--	na	na	na	na
0041H-IA-HAL	No	0041H-IA-HAL-20160308-BL-003	3/8/2016	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.75		NSL	NSL	NSL	--	--	--	na	na	na	na	NSL	NSL	NSL	--	--	--	na	na	na	na
0041H-IA-KBED	No	0041H-IA-KBED-20160308-BL-007	3/8/2016	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.87		NSL	NSL	NSL	--	--	--	na	na	na	na	NSL	NSL	NSL	--	--	--	na	na	na	na
0041H-IA-KIT	No	0041H-IA-KIT-20160308-BL-008	3/8/2016	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.75		NSL	NSL	NSL	--	--	--	na	na	na	na	NSL	NSL	NSL	--	--	--	na	na	na	na
0041H-IA-LIV	No	0041H-IA-LIV-20160308-BL-002	3/8/2016	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.95		NSL	NSL	NSL	--	--	--	na	na	na	na	NSL	NSL	NSL	--	--	--	na	na	na	na
0041H-IA-UBED	No	0041H-IA-UBED-20160308-BL-005	3/8/2016	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.87		NSL	NSL	NSL	--	--	--	na	na	na	na	NSL	NSL	NSL	--	--	--	na	na	na	na
0045S-IA-AUTO-A	Yes	0045S-IA-AUTO-A-20160304-BL-046	3/4/2016	HAPSITE VOCS	Tetrachloroethene	127-18-4	1.4		11	41	120	N	N	N	na	na	na	na	47	180	540	N	N	N	na	na	na	na
0045S-IA-CHEM-A	Yes	0045S-IA-CHEM-A-20160304-BL-014	3/4/2016	HAPSITE VOCS	Tetrachloroethene	127-18-4	40		11	41	120	Y	N	N	na	na	na	na	47	180	540	N	N	N	na	na	na	na
0045S-IA-HEXIT	Yes	0045S-IA-HEXIT-20160322-BL-039	3/22/2016	HAPSITE VOCS	Trichlorethene	79-01-6	1.3		0.48	2.1	6.3	Y	N	N	na	na	na	na	3	8.8	26	N	N	N	na	na	na	na
0047H-IA-BOFF	No	0047H-IA-BOFF-20160225-BL-008	2/25/2016	HAPSITE VOCS	Tetrachloroethene	127-18-4	7.6		11	41	120	N	N	N	na	na	na	na	47	180	540	N	N	N	na	na	na	na
0047H-IA-LAU	No	0047H-IA-LAU-20160225-BL-003	2/25/2016	HAPSITE VOCS	Tetrachloroethene	127-18-4	3.9		11	41	120	N	N	N	na	na	na	na	47	180	540	N	N	N	na	na	na	na
	No		2/25/2016	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.38		NSL	NSL	NSL	--	--	--	na	na	na	na	NSL	NSL	NSL	--	--	--	na	na	na	na
0047H-IA-LIV	No	0047H-IA-LIV-20160225-BL-002	2/25/2016	HAPSITE VOCS	Tetrachloroethene	127-18-4	6.2		11	41	120	N	N	N	na	na	na	na	47	180	540	N	N	N	na	na	na	na
0047H-IA-MEC	No	0047H-IA-MEC-20160225-BL-010	2/25/2016	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.36		NSL	NSL	NSL	--	--	--	na	na	na	na	NSL	NSL	NSL	--	--	--	na	na	na	na
	No		2/25/2016	HAPSITE VOCS	Tetrachloroethene	127-18-4	9		11	41	120	N	N	N	na	na	na	na	47	180	540	N	N	N	na	na	na	na
0047H-IA-MECS	No	0047H-IA-MEC-20160225-BL-012	2/25/2016	HAPSITE VOCS	Tetrachloroethene	127-18-4	8.3		11	41	120	N	N	N	na	na	na	na	47	180	540	N	N	N	na	na	na	na
	No		2/25/2016	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.36		NSL	NSL	NSL	--	--	--	na	na	na	na	NSL	NSL	NSL	--	--	--	na	na	na	na
0047H-IA-REST	No	0047H-IA-REST-20160225-BL-005	2/25/2016	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	1.15		NSL	NSL	NSL	--	--	--	na	na	na	na	NSL	NSL	NSL	--	--	--	na	na	na	na
	No		2/25/2016	HAPSITE VOCS	Tetrachloroethene	127-18-4	6.8		11	41	120	N	N	N	na	na	na	na	47	180	540	N	N	N	na	na	na	na
0047H-IA-UBED	No	0047H-IA-UBED-20160225-BL-006	2/25/2016	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	2.14		NSL	NSL	NSL	--	--	--	na	na	na	na	NSL	NSL	NSL	--	--	--	na	na	na	na
	No		2/25/2016	HAPSITE VOCS	Tetrachloroethene	127-18-4	6.7		11	41	120	N	N	N	na	na	na	na	47	180	540	N	N	N	na	na	na	na
0047H-IA-UOFF	No	0047H-IA-UOFF-20160225-BL-004	2/25/2016	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.87		NSL	NSL	NSL	--	--	--	na	na	na	na	NSL	NSL	NSL	--	--	--	na	na	na	na
	No		2/25/2016	HAPSITE VOCS	Tetrachloroethene	127-18-4	5.3		11	41	120	N	N	N	na	na	na	na	47	180	540	N	N	N	na	na	na	na
0051H-IA-BLIV	No	0051H-IA-BLIV-20160226-BL-004	2/26/2016	HAPSITE VOCS	Tetrachloroethene	127-18-4	2.4		11	41	120	N	N	N	na	na	na	na	47	180	540	N	N	N	na	na	na	na
0051H-IA-MULIV	No	0051H-IA-ULIV-20160226-BL-003	2/26/2016	HAPSITE VOCS	Tetrachloroethene	127-18-4	2.2		11	41	120	N	N	N	na	na	na	na	47	180	540	N	N	N	na	na	na	na
0051H-IA-UBED	No	0051H-IA-UBED-20160226-BL-005	2/26/2016	HAPSITE VOCS	Tetrachloroethene	127-18-4	2.4		11	41	120	N	N	N	na	na	na	na	47	180	540	N	N	N	na	na	na	na
0052H-IA-BAT	No	0052H-IA-BAT-20160311-BL-013	3/11/2016	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.91		NSL	NSL	NSL	--	--	--	na	na	na	na	NSL	NSL	NSL	--	--	--	na	na	na	na
	No		3/11/2016	HAPSITE VOCS	Tetrachloroethene	127-18-4	1.9		11	41	120	N	N	N	na	na	na	na	47	180	540	N	N	N	na	na	na	na
0052H-IA-BLIV	No	0052H-IA-BLIV-20160311-BL-007	3/11/2016	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.44		NSL	NSL	NSL	--	--	--	na	na	na	na	NSL	NSL	NSL	--	--	--	na	na	na	na
0052H-IA-ENT	No	0052H-IA-ENT-20160311-BL-004	3/11/2016	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.79		NSL	NSL	NSL	--	--	--	na	na	na	na	NSL	NSL	NSL	--	--	--	na	na	na	na
0052H-IA-OFF	No	0052H-IA-OFF-20160311-BL-012	3/11/2016	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.83		NSL	NSL	NSL	--	--	--	na	na	na	na	NSL	NSL	NSL	--	--	--	na	na	na	na
	No		3/11/2016	HAPSITE VOCS	Tetrachloroethene	127-18-4	1		11	41	120	N	N	N	na	na	na	na	47	180	540	N	N	N	na	na	na	na

TABLE F3-3
Detailed Risk Calculation Worksheet – Indoor Air - Detections Only
700 South 1600 East PCE Plume AOU-1: East Side Springs
Department of Veterans Affairs Salt Lake City Health Care System

									Current Residential Receptor										Current Commercial/School Worker (School)									
Location ID	Associated Yes Source?	Sample Name	Sample Date	Analysis Method	Contaminant of Potential Concern	CASRN	Result (µg/m3)	Qualifier	SL [(a)]	Tier 1 RAL [(b)]	Tier 2 RAL [(c)]	Result > SL [(a)]? (Yes/No)	Result > Tier 1 RAL [(b)] (Yes/No)	Result > Tier 2 RAL [(c)] (Yes/No)	Res SL (ELCR =1E-6)	Res SL (HQ=1)	ELCR	HQ	SL [(a)]	Tier 1 RAL [(b)]	Tier 2 RAL [(c)]	Result > SL [(a)]? (Yes/No)	Result > Tier 1 RAL [(b)] (Yes/No)	Result > Tier 2 RAL [(c)] (Yes/No)	Com/SW SL (ELCR =1E-6)	Com/SW SL (HI=1)	ELCR	HQ
0052H-IA-UBEDN	No	0052H-IA-UBEDN-20160311-BL-008	3/11/2016	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.95		NSL	NSL	NSL	--	--	--	na	na	na	na	NSL	NSL	NSL	--	--	--	na	na	na	na
	No		3/11/2016	HAPSITE VOCS	Tetrachloroethene	127-18-4	1.9		11	41	120	N	N	N	na	na	na	na	47	180	540	N	N	N	na	na	na	na
0052H-IA-UBEDS	No	0052H-IA-UBEDS-20160311-BL-010	3/11/2016	HAPSITE VOCS	Tetrachloroethene	127-18-4	1.4		11	41	120	N	N	N	na	na	na	na	47	180	540	N	N	N	na	na	na	na
	No		3/11/2016	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	1.07		NSL	NSL	NSL	--	--	--	na	na	na	na	NSL	NSL	NSL	--	--	--	na	na	na	na
0052H-IA-UHAL	No	0052H-IA-UHAL-20160311-BL-005	3/11/2016	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	1.7		NSL	NSL	NSL	--	--	--	na	na	na	na	NSL	NSL	NSL	--	--	--	na	na	na	na
	No		3/11/2016	HAPSITE VOCS	Tetrachloroethene	127-18-4	1		11	41	120	N	N	N	na	na	na	na	47	180	540	N	N	N	na	na	na	na
0053H-IA-CRWL	No	0053H-IA-CRWL-20160502-BL-023	5/2/2016	HAPSITE VOCS	Tetrachloroethene	127-18-4	13.1		11	41	120	Y	N	N	na	na	na	na	47	180	540	N	N	N	na	na	na	na
0053H-IA-KIT	No	0053H-IA-KIT-20160502-BL-019	5/2/2016	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.71		NSL	NSL	NSL	--	--	--	na	na	na	na	NSL	NSL	NSL	--	--	--	na	na	na	na
	No		5/2/2016	HAPSITE VOCS	Tetrachloroethene	127-18-4	9.7		11	41	120	N	N	N	na	na	na	na	47	180	540	N	N	N	na	na	na	na
0053H-IA-LIV	No	0053H-IA-LIV-20160502-BL-022	5/2/2016	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.55		NSL	NSL	NSL	--	--	--	na	na	na	na	NSL	NSL	NSL	--	--	--	na	na	na	na
0054H-IA-BAT	Yes	0054H-IA-BAT-20160509-BL-015	5/9/2016	HAPSITE VOCS	Tetrachloroethene	127-18-4	6.7		11	41	120	N	N	N	na	na	na	na	47	180	540	N	N	N	na	na	na	na
	Yes		5/9/2016	HAPSITE VOCS	Trichlorethene	79-01-6	5.2		0.48	2.1	6.3	Y	Y	N	na	na	na	na	3	8.8	26	Y	N	N	na	na	na	na
0054H-IA-CONT	Yes	0054H-IA-CONT-20160603-BL-044	6/3/2016	HAPSITE VOCS	Tetrachloroethene	127-18-4	3		11	41	120	N	N	N	na	na	na	na	47	180	540	N	N	N	na	na	na	na
	Yes		6/3/2016	HAPSITE VOCS	Trichlorethene	79-01-6	4		0.48	2.1	6.3	Y	Y	N	na	na	na	na	3	8.8	26	Y	N	N	na	na	na	na
0054H-IA-GAR	Yes	0054H-IA-GAR-20160509-BL-012	5/9/2016	HAPSITE VOCS	Trichlorethene	79-01-6	0.7		0.48	2.1	6.3	Y	N	N	na	na	na	na	3	8.8	26	N	N	N	na	na	na	na
0054H-IA-LAU	Yes	0054H-IA-LAU-20160509-BL-017	5/9/2016	HAPSITE VOCS	Tetrachloroethene	127-18-4	5.8		11	41	120	N	N	N	na	na	na	na	47	180	540	N	N	N	na	na	na	na
	Yes		5/9/2016	HAPSITE VOCS	Trichlorethene	79-01-6	4.8		0.48	2.1	6.3	Y	Y	N	na	na	na	na	3	8.8	26	Y	N	N	na	na	na	na
	Yes	0054H-IA-LAU-20160603-BL-008	6/3/2016	HAPSITE VOCS	Tetrachloroethene	127-18-4	1.3		11	41	120	N	N	N	na	na	na	na	47	180	540	N	N	N	na	na	na	na
	Yes		6/3/2016	HAPSITE VOCS	Trichlorethene	79-01-6	1.7		0.48	2.1	6.3	Y	N	N	na	na	na	na	3	8.8	26	N	N	N	na	na	na	na
0054H-IA-LIV	Yes	0054H-IA-LIV-20160509-BL-009	5/9/2016	HAPSITE VOCS	Tetrachloroethene	127-18-4	6		11	41	120	N	N	N	na	na	na	na	47	180	540	N	N	N	na	na	na	na
	Yes	0054H-IA-LIV-20160509-BL-009	5/9/2016	HAPSITE VOCS	Trichlorethene	79-01-6	5.4		0.48	2.1	6.3	Y	Y	N	na	na	na	na	3	8.8	26	Y	N	N	na	na	na	na
	Yes	0054H-IA-LIV-20160603-BL-011	6/3/2016	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.8		11	41	120	N	N	N	na	na	na	na	47	180	540	N	N	N	na	na	na	na
	Yes		6/3/2016	HAPSITE VOCS	Trichlorethene	79-01-6	1.9		0.48	2.1	6.3	Y	N	N	na	na	na	na	3	8.8	26	N	N	N	na	na	na	na
0054H-IA-SBED	Yes	0054H-IA-SBED-20160509-BL-020	5/9/2016	HAPSITE VOCS	Trichlorethene	79-01-6	5.4		0.48	2.1	6.3	Y	Y	N	na	na	na	na	3	8.8	26	Y	N	N	na	na	na	na
	Yes		5/9/2016	HAPSITE VOCS	Tetrachloroethene	127-18-4	6.9		11	41	120	N	N	N	na	na	na	na	47	180	540	N	N	N	na	na	na	na
0054H-IA-SHOP	Yes	0054H-IA-SHOP-20160509-BL-019	5/9/2016	HAPSITE VOCS	Trichlorethene	79-01-6	9.3		0.48	2.1	6.3	Y	Y	Y	na	na	na	na	3	8.8	26	Y	Y	N	na	na	na	na
	Yes	0054H-IA-SHOP-20160603-BL-006	6/3/2016	HAPSITE VOCS	Trichlorethene	79-01-6	2.9		0.48	2.1	6.3	Y	Y	N	na	na	na	na	3	8.8	26	N	N	N	na	na	na	na
0054H-IA-SUM	Yes	0054H-IA-SUM-20160603-BL-007	6/3/2016	HAPSITE VOCS	Tetrachloroethene	127-18-4	1.7		11	41	120	N	N	N	na	na	na	na	47	180	540	N	N	N	na	na	na	na
	Yes		6/3/2016	HAPSITE VOCS	Trichlorethene	79-01-6	3.5		0.48	2.1	6.3	Y	Y	N	na	na	na	na	3	8.8	26	Y	N	N	na	na	na	na
0055H-IA-BBHAL	No	0055H-IA-BHAL-20160513-BL-016	5/13/2016	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7		11	41	120	N	N	N	na	na	na	na	47	180	540	N	N	N	na	na	na	na
0055H-IA-LAU	No	0055H-IA-LAU-20160513-BL-017	5/13/2016	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.55		NSL	NSL	NSL	--	--	--	na	na	na	na	NSL	NSL	NSL	--	--	--	na	na	na	na
	No		5/13/2016	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.7		11	41	120	N	N	N	na	na	na	na	47	180	540	N	N	N	na	na	na	na
0055H-IA-UHAL	No	0055H-IA-UHAL-20160513-BL-015	5/13/2016	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	0.52		NSL	NSL	NSL	--	--	--	na	na	na	na	NSL	NSL	NSL	--	--	--	na	na	na	na
	No		5/13/2016	HAPSITE VOCS	Tetrachloroethene	127-18-4	0.9		11	41	120	N	N	N	na	na	na	na	47	180	540	N	N	N	na	na	na	na
0056H-IA-BAS	No	0056H-IA-BAS-20160503-NA-004	5/3/2016	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	1.66		NSL	NSL	NSL	--	--	--	na	na	na	na	NSL	NSL	NSL	--	--	--	na	na	na	na
	No		5/3/2016	HAPSITE VOCS	Tetrachloroethene	127-18-4	4		11	41	120	N	N	N	na	na	na	na	47	180	540	N	N	N	na	na	na	na
0056H-IA-BBED	No	0056H-IA-BBED-20160503-NA-006	5/3/2016	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	1.86		NSL	NSL	NSL	--	--	--	na	na	na	na	NSL	NSL	NSL	--	--	--	na	na	na	na
	No	0056H-IA-BBED-20160503-NA-006	5/3/2016	HAPSITE VOCS	Tetrachloroethene	127-18-4	4.1		11	41	120	N	N	N	na	na	na	na	47	180	540	N	N	N	na	na	na	na
0056H-IA-CRWL	No	0056H-IA-CRWL-20160503-NA-005	5/3/2016	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	1.74		NSL	NSL	NSL	--	--	--	na	na	na	na	NSL	NSL	NSL	--	--	--	na	na	na	na
0056H-IA-FRM	No	0056H-IA-FRM-20160503-NA-003	5/3/2016	HAPSITE VOCS	cis-1,2-Dichloroethene	156-59-2	3.05		NSL	NSL	NSL	--	--	--	na	na	na	na	NSL	NSL	NSL	--	--	--	na	na	na	na
	No		5/3/2016	HAPSITE VOCS	Tetrachloroethene	127-18-4	2.1		11	41	120	N	N	N	na	na	na	na	47	180	540	N	N	N	na	na	na	na
0063H-IA-BAS1	No	A-0063H-032117-IA-013-BAS1	3/21/2017	HAPSITE VOCS	Tetrachloroethene	127-18-4	2.85		11	41	120	N	N	N	na	na	na	na	47	180	540	N	N	N	na	na	na	na
0063H-IA-BAT1	No	A-0063H-032117-IA-014-BAT1	3/21/2017	HAPSITE VOCS	Tetrachloroethene	127-18-4	3.25		11	41	120	N	N	N	na	na	na	na	47	180	540	N	N	N	na	na	na	na
0064H-IA-LIV1	No	A-0064H-041317-IA-002-LIV1	4/13/2017	HAPSITE VOCS	Tetrachloroethene	127-18-4	2.51		11	41	120	N	N	N	na	na	na	na	47	180	540	N	N	N	na	na	na	na
0001H-TO-BAS	No	A-0001H-032317-TO-001-BAS	3/23/2017	TO15	Tetrachloroethene	127-18-4	1.1		11	41	120	N	N	N	11	41	1.E-07	3.E-02	47	180	540	N	N	N	47	180	2.3.E-08	6.1.E-03
	No	A-0001H-032317-TO-002-BAS	3/23/2017	TO15	Vinyl Chloride	75-01-4	0.19		0.17	1.7	17	Y	N	N	0.17	100	1.E-06	2.E-03	2.8	28	280	N	N	N	2.8	440	6.8.E-08	4.3.E-04
0002H-TO-BAS	No	A-0002H-032317-TO-001-BAS	3/23/2017	TO15	Trichlorethene	79-01-6	0.29		0.48	2.1	6.3	N	N	N	0.48	2.1	6.E-07	1.E-01	3	8.8	26	N	N	N	3	8.8	9.7.E-08	3.3.E-02
	No		3/23/2017	TO15	Tetrachloroethene	127-18-4	1.4		11	41	120	N	N	N	11	41	1.E-07	3.E-02	47	180	540	N	N	N	47	180	3.0.E-08	7.8.E-03
0003H-IA-BAS	Yes	A-0003H-030316-IA-BAS	3/3/2016	TO15	Tetrachloroethene	127-18-4	1.3		11	41	120	N	N	N	11	41	1.E-07	3.E-02	47	180	540	N	N	N	47	180	2.8.E-08	7.2.E-03
0003H-TO-BAS	Yes	A-0003H-040915-TO-002-BAS	4/9/2015	TO15	Tetrachloroethene	127-18-4	1.5	J	11	41	120	N	N	N	11	41	1.E-07	4.E-02	47	180	540	N	N	N	47	180	3.2.E-08	8.3.E-03
0003H-TO-BBB	Yes	A-0003H-040915-TO-003-BBB	4/9/2015	TO15	Tetrachloroethene	127-18-4	1.7	J	11	41	120	N	N	N	11	41	2.E-07	4.E-02	47	180	540	N	N	N	47	180	3.6.E-08	9.4.E-03
0003H-TO-LIV	Yes	A-0003H-040915-TO-001-LIV	4/9/2015	TO15	Tetrachloroethene	127-18-4	17		11	41	120	Y	N	N	11	41	2.E-06	4.E-01	47	180	540	N	N	N	47	180	3.6.E-07	9.4.E-02
0008H-TO-BAS	Yes	A-0008H-041015-TO-001-BAS	4/10/2015	TO15	Tetrachloroethene	127-18-4	2.9	J	11	41	120	N	N	N	11	41	3.E-07	7.E-02	47	180	540	N	N	N	47	180	6.2.E-08	1.6.E-02
0011H-IA-LLL	No	A-0011H-030116-IA-012A-LLL	3/1/2016	TO15	Tetrachloroethene	127-18-4	12	J	11	41	120	Y	N	N	11	41	1.E-06	3.E-01	47	180	540	N	N	N	47	180	2.6.E-07	6.7.E-02
0012H-TO-BAS	No	A-0012H-031417-TO-001-BAS	3/14/2017	TO15	Tetrachloroethene	127-18-4	2.3		11	41	120	N	N	N	11	41	2.E-07	6.E-02	47	180	540	N	N	N	47	180	4.9.E-08	1.3.E-02
0017H-IA-BAS	No	A-0017H-031616-IA-BAS	3/16/2016	TO15	Trichlorethene	79-01-6	0.39		0.48	2.1	6.3	N	N	N	0.48	2.1	8.E-07	2.E-01	3	8.8	26	N	N	N	3	8.8	1.3.E-07	4.4.E-02
	No		3/16/2016	TO15	Tetrachloroethene	127-18-4	10	J	11	41	120	N	N	N	11	41	9.E-07	2.E-01	47	180	540	N	N	N	47	180	2.1.E-07	5.6.E-02
0018H-IA-BAS	No	A-0018H-031616-IA-BAS	3/16/2016	TO15	Trichlorethene	79-01-6	0.83		0.48	2.1	6.3	Y	N	N	0.48	2.1	2.E-06	4.E-01	3	8.8	26	N	N	N	3	8.8	2.8.E-07	9.4.E-02
	No		3/16/2016	TO15	Tetrachloroethene	127-18-4	12	J	11	41	120	Y	N	N	11	41	1.E-06	3.E-01	47	180	540	N	N	N	47	180	2.6.E-07	6.7.E-02

TABLE F3-3

Detailed Risk Calculation Worksheet – Indoor Air - Detections Only

700 South 1600 East PCE Plume AOU-1: East Side Springs

Department of Veterans Affairs Salt Lake City Health Care System

									Current Residential Receptor										Current Commercial/School Worker (School)									
Location ID	Associated Yes Source?	Sample Name	Sample Date	Analysis Method	Contaminant of Potential Concern	CASRN	Result (µg/m3)	Qualifier	SL [(a)]	Tier 1 RAL [(b)]	Tier 2 RAL [(c)]	Result > SL [(a)]? (Yes/No)	Result > Tier 1 RAL [(b)] (Yes/No)	Result > Tier 2 RAL [(c)] (Yes/No)	Res SL (ELCR =1E-6)	Res SL (HQ=1)	ELCR	HQ	SL [(a)]	Tier 1 RAL [(b)]	Tier 2 RAL [(c)]	Result > SL [(a)]? (Yes/No)	Result > Tier 1 RAL [(b)] (Yes/No)	Result > Tier 2 RAL [(c)] (Yes/No)	Com/SW SL (ELCR =1E-6)	Com/SW SL (HI=1)	ELCR	HQ
0023-IA-BA1	No	A-0023-031616-IA-BA1	3/16/2016	TO15	Tetrachloroethene	127-18-4	1.4		11	41	120	N	N	N	11	41	1.E-07	3.E-02	47	180	540	N	N	N	47	180	3.0.E-08	7.8.E-03
0025H-TO-BAS	Yes	A-0025H-031417-TO-001-BAS	3/14/2017	TO15	1,4-Dioxane	123-91-1	2.3		0.56	5.6	56	Y	N	N	0.56	31	4.E-06	7.E-02	2.5	25	250	N	N	N	2.5	130	9.2.E-07	1.8.E-02
	Yes		3/14/2017	TO15	Tetrachloroethene	127-18-4	0.37		11	41	120	N	N	N	11	41	3.E-08	9.E-03	47	180	540	N	N	N	47	180	7.9.E-09	2.1.E-03
0026H-TO-LIV	No	A-0026H-031617-TO-001-LIV	3/16/2017	TO15	Tetrachloroethene	127-18-4	2		11	41	120	N	N	N	11	41	2.E-07	5.E-02	47	180	540	N	N	N	47	180	4.3.E-08	1.1.E-02
0026H-TO-PAN	No	A-0026H-040815-TO-001-PAN	4/8/2015	TO15	Tetrachloroethene	127-18-4	2.1	J	11	41	120	N	N	N	11	41	2.E-07	5.E-02	47	180	540	N	N	N	47	180	4.5.E-08	1.2.E-02
0029H-TO-BAS	No	A-0029H-033117-TO-001-BAS	3/31/2017	TO15	Tetrachloroethene	127-18-4	2		11	41	120	N	N	N	11	41	2.E-07	5.E-02	47	180	540	N	N	N	47	180	4.3.E-08	1.1.E-02
0030H-TO-BAS	No	A-0030H-041115-TO-001-BAS	4/11/2015	TO15	Tetrachloroethene	127-18-4	5.9		11	41	120	N	N	N	11	41	5.E-07	1.E-01	47	180	540	N	N	N	47	180	1.3.E-07	3.3.E-02
0036H-TO-BAS	No	A-0036H-040415-TO-001-BAS	4/2/2015	TO15	Tetrachloroethene	127-18-4	3.6		11	41	120	N	N	N	11	41	3.E-07	9.E-02	47	180	540	N	N	N	47	180	7.7.E-08	2.0.E-02
0037H-TO-LAU	No	A-0037H-030816-IA-LAU	3/8/2016	TO15	Tetrachloroethene	127-18-4	4		11	41	120	N	N	N	11	41	4.E-07	1.E-01	47	180	540	N	N	N	47	180	8.5.E-08	2.2.E-02
	No		3/8/2016	TO15	1,4-Dioxane	123-91-1	0.18		0.56	5.6	56	N	N	N	0.56	31	3.E-07	6.E-03	2.5	25	250	N	N	N	2.5	130	7.2.E-08	1.4.E-03
0051H-IA-BAS	No	A-0051-031616-IA-BAS	3/16/2016	TO15	Tetrachloroethene	127-18-4	2		11	41	120	N	N	N	11	41	2.E-07	5.E-02	47	180	540	N	N	N	47	180	4.3.E-08	1.1.E-02
0053H-TO-BAS	No	A-0053H-052416-IA-BAS	3/16/2016	TO15	Tetrachloroethene	127-18-4	13	J	11	41	120	Y	N	N	11	41	1.E-06	3.E-01	47	180	540	N	N	N	47	180	2.8.E-07	7.2.E-02
0064H-TO-LIV	No	A-0064H-041417-TO-001-LIV	4/14/2017	TO15	Tetrachloroethene	127-18-4	1.9	J	11	41	120	N	N	N	11	41	2.E-07	5.E-02	47	180	540	N	N	N	47	180	4.0.E-08	1.1.E-02

NOTES:

a. The Indoor Air SLs are the indoor air RSLs from the EPA RSL table (EPA 2017a). The Soil Gas SLs are the indoor air RSLs multiplied by a generic soil-gas-to-indoor air attenuation factor of 0.03 (EPA 2017b). The Indoor Air SL and the Soil Gas SL based on either a target cancer risk of 1 x 10^{-6} and an noncancer hazard quotient of 1, whichever results in the lower SL.

b. The Indoor Air Tier 1 RALs are based on the indoor air RSLs from the EPA RSL table (EPA 2017a) using either a target cancer risk of 1 x 10^{-5} and a noncancer hazard quotient of 1, whichever results in the lower RAL.

c. The Indoor Air Tier 2 RALs are based on the indoor air RSLs from the EPA RSL table (EPA 2017a) using either a target cancer risk of 1 x 10^{-4} and a noncancer hazard quotient of 3, whichever results in the lower RAL.

-- = Not applicable.

µg/m^3 = Micrograms per cubic meter.

CASRN = Chemical Abstracts Service Registry Number.

ConcLifeAvg-C = Lifetime averaged concentration - cancer effects (based on indoor air concentration).

ConcLifeAvg-NC = Lifetime averaged concentration - noncancer effects (based on indoor air concentration).

ELCR = Excess lifetime cancer risk.

EPA = U.S. Environmental Protection Agency.

HQ = Hazard quotient.

J = Analyte was present but the reported value is estimated.

na = Not applicable; risk estimates not generated for HAPSITE (short-duration) results.

NSL = No screening level.

RAL = Response action level

RSL = Regional screening level.

SL = Screening level.

VOCS = Volatile organic compounds.

Detected concentrations only are presented on this table.

Yes (Y) sources identified for 0045-S, 0003-H, 0025-H, and 0054-H. See Table F-11.

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Appendix G
Screening Level Ecological Risk Assessment

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G.0 Screening Level Ecological Risk Assessment

G.1 Introduction

This report describes the methods and results of a screening level ecological risk assessment (SLERA) focused on tetrachloroethene (PCE) contamination in groundwater at Accelerated Operable Unit 1 (AOU-1) at 700 South 1600 East, Salt Lake City, Utah (Figure 1-1 of the Remedial Investigation [RI] Report). The SLERA evaluated PCE-contaminated groundwater and surface water located in the southwestern, downgradient portion of the 700 South 1600 East Street PCE Plume site (the Site) (Figure 1-2 of the RI Report). The SLERA was completed in the absence of any actions to control or mitigate those releases and will be used to support the RI risk management decisions under Comprehensive Environmental Response, Compensation, and Liability Act.

G.1.1 Objectives and Scope

The overall objective of this SLERA is to quantitatively or qualitatively evaluate baseline exposure and risks to ecological receptors and domestic pets from target contaminants of potential ecological concern (COPECs) in surface water and groundwater. The scope of the SLERA includes the following tasks:

- Identifying habitats, ecological receptors, and COPECs
- Selecting assessment endpoints and measures
- Characterizing potential ecological exposures
- Selecting appropriate benchmarks and toxicity reference values
- Evaluating potential ecological risks to determine contaminants of ecological concern (COECs)

This SLERA provides risk managers the information regarding potential risk to ecological receptors under current and potential future land use conditions to assist in potential remedial decisions and other actions needed to meet risk management goals.

G.1.2 Guidance

This SLERA was performed in general accordance with U.S. Environmental Protection Agency (EPA) guidance and the Risk Assessment Work Plan (Appendix E of First Environment [FE] 2015):

- *Interim Final Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments* (EPA 1997)

- *Guidelines for Ecological Risk Assessment* (EPA 1998)

- *Ecological Risk Assessment and Risk Management Principles for Superfund Sites* (EPA 1999)

- *The Role of Screening-Level Risk Assessments and Refining Contaminants of Concern in Baseline Ecological Risk Assessments* (EPA 2001)

- *ProUCL Version 5.1.00 Statistical Software for Environmental Applications for Data Sets with and without Nondetect Observations* (EPA 2016)

- *Risk Assessment Work Plan, 700 South 1600 East PCE Plume AOU-1: East Side Springs, Salt Lake City, Utah* (Appendix E of FE 2015)

G.1.3 Approach

This SLERA followed Steps 1 and 2 of the eight-step approach recommended by the EPA (EPA 1997) and is the first phase that may be completed to characterize potential risks at a site. The three phases are as follows:

1. **Screening Level Ecological Risk Assessment** – The SLERA represents Steps 1 and 2 of the EPA guidance (EPA 1997). The principal components of the SLERA are the screening level problem formulation (Step 1), exposure estimation, screening level effect level identification, and screening level risk calculation (Step 2). A scientific management decision point (SMDP) is conducted at the conclusion of the SLERA to recommend COPECs for further evaluation into the baseline ecological risk assessment (BERA) or, if the potential for adverse effects is low, COPECs may not be recommended for further evaluation in the BERA.

2. **Baseline Ecological Risk Assessment** – The BERA consists of several steps designed to refine exposure and risk estimates in a scientifically defensible manner. Refinements include use of more realistic, generally less conservative exposure and toxicity assumptions in the risk calculations (Step 3). These refined calculations can lead to a decision to conduct additional studies to further refine exposure estimates and effects relationships (Steps 4 through 6) or, through completion of the risk characterization (Step 7), serve as the BERA for the Site. COECs are identified for risk management consideration. An SMDP is completed after each step to assess whether additional evaluation is warranted.

3. **Risk Management** – The final step (Step 8) uses the results of the BERA to assist in risk management decisions.

The EPA recognizes that the eight-step approach is not a linear or sequential process and some steps may not be necessary to reach a decision point (EPA 1997). Throughout the ecological risk assessment (ERA) process, the risk assessment review team and risk managers evaluate available information for use in planning future needs and direction of the ERA. This communication between the ecological risk review team and the risk managers is termed the SMDP. It is an integral part of the ERA process. The scope of the ERA for AOU-1 includes a SLERA and recommendations for risk management (Step 8).

G.1.4 Assumptions

This SLERA was conducted under the following assumptions and constraints:

- All evaluation of current exposures is derived from existing conditions and future land use is assumed to remain the same as current use.

- The abiotic media of primary ecological concern are groundwater and surface waters that may be impacted by the 700 South 1600 East PCE plume.

- Ecological receptors evaluated are those that may be commonly found in residential and/or commercial settings as well as domestic dogs.

- Chemicals evaluated in this SLERA are limited to PCE and its degradation products: cis-1,2-dichloroethene (DCE), 1,4-dioxane, trichloroethene (TCE), and vinyl chloride (VC) (i.e., target COPECs).

- Each chemical is as bioavailable as the chemical on which the toxicity information is based when used for estimating direct exposure to chemicals in surface water and groundwater.

- Toxicological information used represents information currently available from literature and database searches.

G.2 SLERA Problem Formulation

The SLERA problem formulation provides an overview of the Site and establishes the goals, scope, and focus of the SLERA.

G.2.1 Ecological Setting

AOU-1 lies within an urban/residential setting. Properties include residences, schools, churches, and parks. A habitat survey was completed for the site in 2016 (Attachment G1). The AOU-1 area contains low quality habitat for native plants and wildlife, primarily due to the extent of urban and suburban development. The habitat is generally non-contiguous and includes ruderal, park, and urban/residential landscaping. Seeps and springs are found within AOU-1; however, they are seasonal and would not be available to ecological receptors year-round. Seeps/springs generally occur within the existing landscaping, but limited non-native habitat may occur around the larger seeps and springs. Native habitat is highly altered and very limited and what remains is primarily attractive to those ecological receptors easily adapted to urban/residential settings (e.g., songbirds and small mammals).

The Jordan River is located several miles west of AOU-1. It was considered possible for surface water and groundwater to reach the river through the Salt Lake City storm drain system, which is conveyed by piping to discharge into the Jordan River.

G.2.2 Ecological Conceptual Site Model

The ecological conceptual site model (CSM) combines information on potential ecological receptors, potential sources of contaminants, and potential exposure pathways to provide an overall picture of Site-related exposures and to focus the SLERA. Figure G-1 presents the ecological CSM for the Site.

G.2.2.1 Exposure Pathway Analysis

Exposure pathways refer to the media and routes through which PCE and its degradation products may reach ecological receptors. Potential exposure pathways must meet specific criteria for an exposure to occur. Aside from necessary habitat for ecological receptors, a complete exposure pathway must include the following elements:

- Contaminant source (e.g., chemicals in groundwater)
- Mechanism for contaminant release and transport (e.g., groundwater daylighting to surface)

- Exposure point (e.g., seeps/springs)
- Exposure medium (e.g., surface water)
- Feasible route of exposure (e.g., ingestion)
- Receptor (e.g., bird, dog, or other).

Many of the seeps and springs are generally seasonal. Wet areas observed in the spring were typically not visible in late summer. Thus, ecological exposures in most instances will be of short annual duration, between the spring thaw and when the seeps and springs dry up.

Exposure pathways considered potentially complete for AOU-1 include the following:

- Direct contact with water in seeps/springs by aquatic organisms
- Direct contact with water in seeps/springs by plants
- Incidental ingestion of water from seeps/springs by urban wildlife
- Incidental ingestion of water from seeps/springs by domestic pets.

Surface water samples collected from surface features including seeps/springs along AOU-1 as well as groundwater samples from the PCE plume were evaluated in this SLERA. Potential exposure pathways from groundwater would only be complete if the water reached the surface. However, both surface water and groundwater were evaluated to provide a conservative assessment.

In addition, ecological risk assessments do not evaluate potential risks to domesticated species. However, given that the site is predominantly urban/residential, domesticated dogs were included in this SLERA in response to stakeholder concerns.

G.2.2.2 Selection of Representative Endpoint Species

To evaluate ecological exposure, representative endpoint species are selected for the functional feeding guilds that may have potentially complete exposure pathways. Consistent with *Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments, Interim Final* (EPA 1997), these endpoint species are preferably those that have ecological relevance, are of societal value, and are susceptible to chemical stressors at the Site. These factors were used to select representative endpoint species that are present or may potentially use the Site or adjacent habitats:

- Aquatic organisms – aquatic plants, invertebrates, fish, amphibians
- Plants – wetland and upland plans
- Birds – American robin (*Turdus migratorius)*
- Small mammals – Deer mouse (*Peromyscus maniculatus*)
- Domestic pets – dogs (*Canus lupus familiaris*)
  - Small breed (pomeranian)
  - Medium breed (labrador retriever)
  - Large breed (great dane)

G.2.2.3 Assessment Endpoints and Measures

Assessment endpoints are an expression of the important ecological values to be protected (EPA 1997, 1998; Suter et al. 2000) and are developed based on known information concerning the contaminants present, the study area, and the ecological CSM. Assessment endpoints were selected based on technical considerations, including the target chemicals being evaluated, mechanisms of toxicity, ecologically relevant receptor groups that may be particularly sensitive or highly exposed to site COPECs, and potentially complete exposure pathways. Adverse effects on these assessment endpoints are predicted from measurement endpoints. The measurement endpoints for this Site are the effects of chemical exposure on reproduction, survival, or growth, which can be used to predict effects at all levels of organization (individual, population, and community); these factors are considered in the identification and evaluation of appropriate toxicity information.

Assessment endpoints frequently cannot be directly measured because they tend to correspond to complex ecosystem attributes. Therefore, this SLERA identifies other related measures that serve as representations or surrogates of each assessment endpoint. These measures are called measures of exposure and measures of effect (EPA 1998). The strength of the relationships between these measures and their corresponding assessment endpoints is critical to the identification of ecological adversity. For this SLERA, these measures are defined as follows:

- Measures of exposure are quantitative or qualitative indicators of a constituent's occurrence and movement in the environment in a way that results in contact with the assessment endpoint.

- Measures of effect are measurable adverse changes in an attribute of an assessment endpoint (or its surrogate) in response to a chemical to which it is exposed.

The assessment endpoints and corresponding measures of exposure and effects identified for the Site are summarized in Table G-1.

G.3 SLERA Analysis

G.3.1 Exposure Assessment

The exposure assessment defines the exposure parameters to be evaluated in the SLERA based on the results of the ecological CSM (Figure G-1).

G.3.1.1 Data Evaluation

The SLERA data set comprises available groundwater and surface water sampling data collected within the PCE plume during 2016. Groundwater and surface water sample locations are shown on Figure 5-1 of the RI Report. Site data were reviewed for use in the SLERA and reduced to a "best result" for each chemical/sample location/date. The following data reduction rules were applied to identify data for use in this SLERA:

- Chemical results with final validation qualifiers of any letter(s) other than those containing a "U" or "R" were considered detected.

- Estimated values (flagged with "J" qualifiers) were treated as detected concentrations.

- Chemical results with final validation qualifiers containing an "R" were considered rejected data and were removed from the database.

- For duplicate samples, the following procedure was applied:
  - If there were two detections, the higher of the two concentrations was used.
  - If there was one detection and one non-detection, the detected value was used.
  - If there were two non-detections, the lowest detection limit was used.

The data considered usable for purposes of this SLERA are presented in Attachment G2. Samples evaluated are summarized in Table G-2 with an indication of whether the target COPECs were or were not detected. Summary statistics for all surface water and groundwater samples are presented in Table G-3.

G.3.1.2 Exposure Assumptions

The exposure assumptions used in this SLERA include the following:

- Receptors are exposed to the maximum detected concentrations of target analytes.
- Receptors are assumed to receive 100 percent of their daily intake from surface water or groundwater via seeps/springs, noting that this is a very conservative assumption due to the seasonal nature of seeps/springs.
- Concentrations in groundwater are assumed to be unchanged as the water move to the surface (i.e., other fate and transport processes such as volatilization are not used to adjust exposure concentrations).

These assumptions provide a conservative estimate of potential exposure and risk. Actual exposure and potential risks are considered to be lower as (1) maximum detected concentrations are applied; (2) the seep/springs dry up later in the year in many cases; (3) birds and mammals are mobile and will obtain water from a variety of sources; and (4) the primary source of water for domesticated animals is from potable water sources unaffected by groundwater contamination.

G.3.2 Ecological Effects Assessment

The SLERA uses conservative screening levels for each receptor group. Groundwater and surface water screening levels for aquatic organisms are obtained from the literature and represent chronic exposure levels. Water screening levels for birds, mammals, and domestic pets are a back calculated media-based value for each receptor/chemical pair. Screening levels for all receptor groups are referred to collectively as Water Screening Levels (WSLs).

Water benchmarks for aquatic organisms (plants, invertebrates, fish, amphibians) and terrestrial/wetland plant exposure to surface waters and/or groundwater via seeps and springs were obtained from the following literature sources (note: national recommended water quality criterion were not available for the target COPECs):

- Los Alamos National Laboratory (LANL) surface water screening levels (LANL 2017)
- EPA Region 5 Ecological Screening Levels (EPA 2003)

- Oak Ridge National Laboratory Tier II Chronic Surface Water Benchmarks (Suter and Tsao 1996)

- Oak Ridge National Laboratory Toxicological Benchmarks for Terrestrial Plants (Efroymson et al. 1997).

Species-specific exposure factors and chemical toxicity reference values are summarized on Table G-4 and Table G-5, respectively. No observed adverse effect levels were used in the development of the WSLs for birds and mammals and were back calculated using the iterative function (GoalSeek) in Excel through the following set of equations. Resulting receptor-specific WSLs are shown in Table G-6.

$$[Water]\ x\ WIR = \ Water\ Ingestion\ Dose$$

$$\frac{Water\ Ingestion\ Dose}{Receptor\ TRV} = \ HQ$$

$$[Water]\ that\ results\ in\ HQ\ of\ 1\ \ = WSL$$

where:

[Water]	=	Water concentration (milligrams per liter)
WIR	=	Water ingestion rate (liters/kilogram body weight per day)
Water Ingestion Dose	=	Average daily dose of water intake (milligrams/kilogram body weight per day)
TRV	=	Toxicity reference value (milligrams/kilogram body weight per day)
HQ	=	Hazard quotient
WSL	=	Water risk-based screening level (milligrams per liter)

WSLs for all receptors are summarized in Table G-7.

G.4 Risk Screening

The maximum detected concentrations in surface water and groundwater samples collected from AOU-1 were compared to the receptor-specific water screening levels (Table G-8). Maximum detected concentrations and/or minimum method detection limits for non-detects did not exceed surface water screening levels for any of the evaluated receptors.

G.5 SLERA Conclusions

A conservative evaluation of potential risks was conducted using the available groundwater and surface water (seeps/springs) data for AOU-1 and a range of potential ecological receptors that may be found in a residential setting. Maximum detected concentrations of the target COPECs in groundwater and surface water did not exceed chronic and/or no-effect level based WSLs for aquatic organisms, plants, wildlife (birds and mammals), or domestic dogs.

In addition, PCE and its degradation products: cis-1,2-DCE, 1,4-dioxane, TCE, and VC are unlikely to pose a risk to ecological receptors and/or domestic pets due to the following:

- Analytes will begin volatilizing upon exposure to the atmosphere.

- Springs and seeps are generally temporal in nature.

- Concentrations in surface water will undergo significant dilution in stormwater.
- Concentrations in groundwater were evaluated to provide the most conservative estimate of potential for risk. The likelihood of exposure is low.
- Concentrations that may potentially reach the Jordan River will be significantly lower than those evaluated in this SLERA due to (1) volatilization during conveyance, (2) dilution during conveyance, and (3) dilution in the river.

G.6 Scientific Management Decision Point

Based on the available site investigation data, compared to the WSLs, PCE and its degradation products: cis-1,2-DCE, 1,4-dioxane, TCE, and VC in either groundwater or surface water of AOU-1 are recommended for no further action for ecological receptors and domestic pets.

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G-1

Screening Level Ecological Risk Assessment

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Tables

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TABLE G-1
Assessment Endpoints and Measures
Screening Level Ecological Risk Assessment
700 South 1600 East PCE Plume AOU-1: East Side Springs
Department of Veterans Affairs Salt Lake City Health Care System

Receptor Group	Representative Receptors	Assessment Endpoint	Measures of Exposure	Measures of Effect
Wildlife				
Aquatic organisms	-Aquatic plants -Aquatic invertebrates -Fish -Amphibians	Protect plant communities by limiting adverse effects from exposure to site-related COPECs in groundwater in seeps/springs and surface water.	Measured concentrations of COPECs in surface water and groundwater.	Comparison of COPEC concentrations in groundwater and surface water to toxicity-based benchmarks.
Plants	-Terrestrial and wetland plants	Protect plant communities by limiting adverse effects from exposure to site-related COPECs in groundwater in seeps/springs and surface water.	Measured concentrations of COPECs in surface water and groundwater.	Comparison of COPEC concentrations in groundwater and surface water to toxicity-based benchmarks.
Birds	-American robin	Protect avian consumers using terrestrial areas from adverse effects on growth, survival, and reproduction from site-related COPECs in groundwater in seeps/springs and surface water.	Measured concentrations of COPECs in surface water and groundwater. Calculation of daily intake as a dosage using receptor-specific exposure factors.	Comparison of total uptake (dosage) to dosage-based no effect level and low effect level-based TRVs for representative bird species (or acceptable surrogates).
Mammals	-Deer mouse	Protect mammalian consumers using terrestrial areas from adverse effects on growth, survival, and reproduction from site-related COPECs in groundwater in seeps/springs and surface water.	Measured concentrations of COPECs in surface water and groundwater. Calculation of daily intake as a dosage using receptor-specific exposure factors.	Comparison of total uptake (dosage) to dosage-based no effect level and low effect level-based TRVs for representative mammal species (or acceptable surrogates).
Domestic Pets				
Mammals	-Dogs	Protect mammalian consumers using terrestrial areas from adverse effects on growth, survival, and reproduction from site-related COPECs in groundwater in seeps/springs and surface water.	Measured concentrations of COPECs in surface water and groundwater. Calculation of daily intake as a dosage using receptor-specific exposure factors.	Comparison of total uptake (dosage) to dosage-based no effect level and low effect level-based TRVs for representative mammal species (or acceptable surrogates).

NOTES:
COPEC = Contaminant of potential ecological concern.
TRV = Toxicity reference value.

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TABLE G-2
Sample Dates and Detections for Surface Water and Groundwater
Screening Level Ecological Risk Assessment
700 South 1600 East PCE Plume AOU-1: East Side Springs
Department of Veterans Affairs Salt Lake City Health Care System

Location ID	Sample Date	Detection				
		1,4-Dioxane	cis-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	Vinyl chloride
Surface Water						
SW-01	04-May-16	N	N	Y	N	N
SW-02	11-May-16	N	N	N	N	N
SW-03	11-May-16	N	N	N	N	N
SW-04	02-May-16	N	Y	Y	Y	N
SW-05	11-May-16	N	N	Y	N	N
SW-06	04-May-16	N	Y	Y	Y	N
SW-07	04-May-16	N	N	Y	N	N
SW-08	04-May-16	N	N	Y	Y	N
SW-09	03-May-16	N	Y	Y	Y	N
SW-10	11-May-16	N	N	N	N	N
SW-11	03-May-16	N	Y	Y	Y	N
SW-12	03-May-16	N	Y	Y	Y	N
SW-13	03-May-16	N	N	Y	Y	N
SW-14	04-May-16	N	N	Y	Y	N
SW-15	04-May-16	N	N	Y	Y	N
SW-16	04-May-16	N	N	N	N	N
SW-17	11-May-16	N	N	N	N	N
SW-18	05-May-16	N	Y	Y	Y	N
SW-19	04-May-16	N	N	Y	N	N
SW-20	05-May-16	N	N	Y	N	N
SW-21	03-May-16	N	Y	Y	Y	N
SW-22	03-May-16	N	Y	Y	Y	N
SW-23	03-May-16	N	Y	Y	Y	N
SW-24	11-May-16	N	N	N	N	N
SW-25	05-May-16	N	N	Y	N	N
SW-26	03-May-16	N	N	Y	Y	N
SW-27	03-May-16	N	Y	Y	Y	N
SW-28	03-May-16	N	Y	Y	Y	N
SW-29	11-May-16	N	N	Y	Y	N
SW-30	03-May-16	N	N	Y	Y	N
SW-31	02-May-16	N	Y	Y	Y	N
SW-32	05-May-16	N	N	Y	N	N
SW-33	02-May-16	N	Y	Y	Y	N
SW-34	02-May-16	N	Y	Y	Y	N
SW-35	04-May-16	N	Y	Y	Y	N
SW-36	03-May-16	N	Y	Y	Y	N
SW-37	05-May-16	N	Y	Y	Y	N
SW-38	11-May-16	N	N	Y	Y	N
SW-39	03-May-16	N	Y	Y	Y	N
SW-40	05-May-16	N	Y	Y	Y	N
SW-41	05-May-16	N	N	Y	N	N
SW-42	02-May-16	N	N	Y	Y	N
SW-43	02-May-16	N	N	Y	Y	N
SW-44	04-May-16	N	N	Y	N	N
SW-45	05-May-16	N	Y	Y	Y	N
SW-46	05-May-16	N	N	Y	N	N
SW-47	04-May-16	N	N	N	N	N
SW-48	04-May-16	N	N	N	N	N
SW-49	05-May-16	N	N	Y	N	N
SW-50	26-Feb-16	N	N	Y	Y	N

TABLE G-2

Sample Dates and Detections for Surface Water and Groundwater

Screening Level Ecological Risk Assessment

700 South 1600 East PCE Plume AOU-1: East Side Springs

Department of Veterans Affairs Salt Lake City Health Care System

Location ID	Sample Date	Detection				
		1,4-Dioxane	cis-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	Vinyl chloride
Groundwater						
GW-001	04-Mar-16	N	N	Y	N	N
GW-003	26-Feb-16	N	N	Y	N	N
GW-004	26-Feb-16	N	N	Y	Y	N
GW-005	26-Feb-16	N	N	Y	N	N
GW-006	26-Feb-16	N	Y	Y	Y	N
GW-007	28-Feb-16	N	N	Y	Y	N
GW-008	27-Feb-16	N	N	Y	Y	N
GW-009	26-Feb-16	N	Y	Y	Y	N
GW-010	27-Feb-16	N	Y	Y	Y	N
GW-010	12-Jul-16	N	N	Y	N	N
GW-010	20-Sep-16	N	N	Y	Y	N
GW-011	27-Feb-16	N	Y	Y	Y	N
GW-011	11-Jul-16	N	Y	Y	Y	N
GW-011	19-Sep-16	N	Y	Y	Y	N
GW-012	02-Mar-16	N	Y	Y	Y	N
GW-013	04-Mar-16	N	Y	Y	Y	N
GW-014	02-Mar-16	N	Y	Y	Y	N
GW-015	29-Feb-16	N	Y	Y	Y	N
GW-016	28-Feb-16	N	Y	Y	Y	N
GW-016	11-Jul-16	N	N	Y	Y	N
GW-016	19-Sep-16	N	Y	Y	Y	N
GW-017	02-Mar-16	N	N	Y	Y	N
GW-018	02-Mar-16	N	Y	Y	Y	N
GW-020	01-Mar-16	N	N	Y	Y	N
GW-020	11-Jul-16	N	N	Y	Y	N
GW-020	19-Sep-16	N	N	Y	Y	N
GW-021	01-Mar-16	N	N	N	N	N
GW-022	01-Mar-16	N	N	N	N	N
GW-023	22-Feb-16	N	N	N	N	N
GW-024	25-Feb-16	N	N	N	N	N
GW-025	29-Feb-16	N	N	N	N	N
GW-026	28-Feb-16	N	N	Y	N	N
GW-027	05-Mar-16	N	Y	Y	Y	N
GW-028	05-Mar-16	N	Y	Y	Y	N
GW-031	28-Feb-16	N	N	N	N	N
GW-039	23-Feb-16	N	N	N	N	N
GW-040	03-Mar-16	N	N	Y	N	N
GW-043	03-Mar-16	N	N	Y	N	N
GW-046	24-Feb-16	N	N	Y	N	N
GW-048	03-Mar-16	N	N	N	N	N
GW-049	25-Feb-16	N	N	Y	N	N
GW-049	12-Jul-16	N	N	Y	N	N
GW-049	20-Sep-16	N	N	Y	N	N
GW-050	29-Feb-16	N	Y	Y	Y	N
GW-050	12-Jul-16	N	Y	Y	Y	N
GW-050	20-Sep-16	N	Y	Y	Y	N
GW-051	04-Mar-16	N	N	Y	Y	N
GW-052	03-Mar-16	N	Y	Y	Y	N
GW-052	12-Jul-16	Y	Y	Y	Y	N
GW-052	20-Sep-16	N	Y	Y	Y	N

TABLE G-2

Sample Dates and Detections for Surface Water and Groundwater

Screening Level Ecological Risk Assessment

700 South 1600 East PCE Plume AOU-1: East Side Springs

Department of Veterans Affairs Salt Lake City Health Care System

Location ID	Sample Date	Detection				
		1,4-Dioxane	cis-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	Vinyl chloride
Groundwater (cont'd.)						
GW-053	03-Mar-16	N	Y	Y	Y	N
GW-053	11-Jul-16	N	Y	Y	Y	N
GW-053	19-Sep-16	N	Y	Y	Y	N
GW-055	05-Mar-16	N	N	Y	N	N
GW-059	05-Mar-16	N	Y	Y	Y	N
GW-059	11-Jul-16	N	Y	Y	Y	N
GW-059	19-Sep-16	N	Y	Y	Y	N
GW-060	08-Mar-16	N	N	Y	Y	N
GW-061	05-Mar-16	N	N	Y	N	N
GW-061	12-Jul-16	N	N	Y	N	N
GW-061	20-Sep-16	N	N	Y	Y	N
GW-062	08-Mar-16	N	Y	Y	Y	N

NOTES:

N = Not detected

Y = Detected

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TABLE G-3

Summary Statistics for Surface Water and Groundwater

Screening Level Ecological Risk Assessment

700 South 1600 East PCE Plume AOU-1: East Side Springs

Department of Veterans Affairs Salt Lake City Health Care System

Analyte	Detects	Sample Size	Frequency of Detection	Units	Minimum Concentration	Maximum Concentration
Surface Water						
1,4-Dioxane	0	10	0%	mg/L	<0.0019	<0.002
cis-1,2-Dichloroethene	20	50	40%	mg/L	<0.0005	0.00069
Tetrachloroethene	42	50	84%	mg/L	<0.0005	0.082
Trichloroethene	31	50	62%	mg/L	<0.0005	0.0023
Vinyl chloride	0	50	0%	mg/L	<0.0005	<0.0005
Groundwater						
1,4-Dioxane	1	21	5%	mg/L	<0.002	0.0027
cis-1,2-Dichloroethene	27	62	44%	mg/L	<0.0005	0.0039
Tetrachloroethene	54	62	87%	mg/L	<0.0005	0.061
Trichloroethene	40	62	65%	mg/L	<0.0005	0.0077
Vinyl chloride	0	62	0%	mg/L	<0.0005	<0.0005

NOTES:

mg/L = Milligrams per liter.

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TABLE G-4
Exposure Factors for Representative Species
Screening Level Ecological Risk Assessment
700 South 1600 East PCE Plume AOU-1: East Side Springs
Department of Veterans Affairs Salt Lake City Health Care System

Species	Representative species	Exposure Factors					
		Body Weight			Ingestion Rate - water		
		Mean (kg)	Notes	Source	(L/kgbw/d)	Notes	Source
Birds							
American robin	--	0.079	breeding males and females	Wheelwright 1986 in EPA 1993	0.136	allometric estimation for "all birds" normalized to L/kgbw-d	Calder and Braun 1983 in EPA 1993
Mammals							
Deer mouse	--	0.018	mean body weight from field collected specimens	Nagy 2001	0.148	allometric estimation for "all mammals" normalized to L/kgbw-d	Calder and Braun 1983 in EPA 1993
Dog - small/toy	Pomeranian	1.87	3-7lbs (mean 5 lbs)	American Kennel Club 2014	0.093	allometric estimation for "all mammals" normalized to L/kgbw-d	Calder and Braun 1983 in EPA 1994
Dog - medium	Labrador retriever	24.3	55-75 lbs (mean = 65 lbs)	American Kennel Club 2014	0.072	allometric estimation for "all mammals" normalized to L/kgbw-d	Calder and Braun 1983 in EPA 1995
Dog - large	Great dane	54.1	110-180 lbs (mean = 145 lbs)	American Kennel Club 2014	0.066	allometric estimation for "all mammals" normalized to L/kgbw-d	Calder and Braun 1983 in EPA 1996

NOTES:
-- not applicable
kg = Kilogram(s).
L/kgbw/d = Liters per kilogram of body weight per day.
lbs = Pound(s).
WI = Water intake.

Calder and Braun 1983 water intake rates --> *WI(L/kgbw/day)* = *a* (kilograms body weight)^{b} / kilograms body weight

Group	***a***	***b***
birds	0.059	0.67
mammals	0.099	0.9

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TABLE G-5
Toxicity Reference Values for Birds and Mammals
Screening Level Ecological Risk Assessment
700 South 1600 East PCE Plume AOU-1: East Side Springs
Department of Veterans Affairs Salt Lake City Health Care System

	Bird Toxicity Reference Values				Mammal Toxicity Reference Values			
Analyte	**Low Toxicity Value (mg/kgbw/d)**	**Endpoint**	**Type**	**Source**	**Low Toxicity Value (mg/kgbw/d)**	**Endpoint**	**Type**	**Source**
1,4-Dioxane	--	--	--	--	9.6	NOAEL	Chronic	EPA 2018
cis-1,2-Dichloroethene	--	--	--	--	45.2	NOAEL	Chronic	Sample et al. 1996
Tetrachloroethene	--	--	--	--	1.4	NOAEL	Chronic	Sample et al. 1996
Trichloroethene	--	--	--	--	0.7	NOAEL	Chronic	Sample et al. 1996
Vinyl chloride	--	--	--	--	1.7	LOAEL	Chronic	Sample et al. 1996

NOTES:
-- = Not available.
LOAEL = Lowest observed adverse effect level.
mg/kgbw/d = Milligram(s) per kilogram body weight per day.
NOAEL = No observed adverse effect level.
UF = Uncertainty factor.

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TABLE G-6
Receptor-specific Water Screening Levels for Birds and Mammals
Screening Level Ecological Risk Assessment
700 South 1600 East PCE Plume AOU-1: East Side Springs
Department of Veterans Affairs Salt Lake City Health Care System

		Exposure Parameters			Uptake from Water			Target Hazard	
Analyte	**Receptor**	**Body Weight (kg)**	**Water Intake (L/kgbw/d)**	**SLERA Area Use Factor[a]**	**Surface Water Concentration (mg/L)**	**Water Ingestion Dose (mg/kgbw/d)**	**No Effect Level TRV (mg/kgbw/d)**	**No Effect Level**	**Surface Water WSL (mg/L)**
1,4-Dioxane	American robin	0.079	0.136	1	--	--	--	--	--
cis-1,2-Dichloroethene	American robin	0.079	0.136	1	--	--	--	--	--
Tetrachloroethene	American robin	0.079	0.136	1	--	--	--	--	--
Trichloroethene	American robin	0.079	0.136	1	--	--	--	--	--
Vinyl chloride	American robin	0.079	0.136	1	--	--	--	--	--
1,4-Dioxane	Deer mouse	0.018	0.148	1	65	9.6	9.6	1.0	65
cis-1,2-Dichloroethene	Deer mouse	0.018	0.148	1	305	45.2	45.2	1.0	305
Tetrachloroethene	Deer mouse	0.018	0.148	1	9.5	1.4	1.4	1.0	9.5
Trichloroethene	Deer mouse	0.018	0.148	1	4.7	0.70	0.7	1.0	4.7
Vinyl chloride	Deer mouse	0.018	0.148	1	11.5	1.7	1.7	1.0	11
1,4-Dioxane	Dog - small/toy	1.87	0.093	1	103	9.6	9.6	1.0	103
cis-1,2-Dichloroethene	Dog - small/toy	1.87	0.093	1	486	45.2	45.2	1.0	486
Tetrachloroethene	Dog - small/toy	1.87	0.093	1	15	1.4	1.4	1.0	15
Trichloroethene	Dog - small/toy	1.87	0.093	1	7.5	0.70	0.7	1.0	7.5
Vinyl chloride	Dog - small/toy	1.87	0.093	1	18.3	1.7	1.7	1.0	18
1,4-Dioxane	Dog - medium	24.3	0.072	1	133	9.6	9.6	1.0	133
cis-1,2-Dichloroethene	Dog - medium	24.3	0.072	1	628	45.2	45.2	1.0	628
Tetrachloroethene	Dog - medium	24.3	0.072	1	19	1.4	1.4	1.0	19
Trichloroethene	Dog - medium	24.3	0.072	1	10	0.70	0.7	1.0	10
Vinyl chloride	Dog - medium	24.3	0.072	1	23.6	1.7	1.7	1.0	24
1,4-Dioxane	Dog - large	54.1	0.066	1	145	9.6	9.6	1.0	145
cis-1,2-Dichloroethene	Dog - large	54.1	0.066	1	685	45.2	45.2	1.0	685
Tetrachloroethene	Dog - large	54.1	0.066	1	21	1.4	1.4	1.0	21
Trichloroethene	Dog - large	54.1	0.066	1	11	0.70	0.7	1.0	11
Vinyl chloride	Dog - large	54.1	0.066	1	25.8	1.7	1.7	1.0	26

NOTES:
(a) AUFs calculated as follows: portion of *exposure area (ac) with habitat / foraging range (ac)* .
If foraging range is smaller than the exposure area, the AUF defaults to 1.
Approximately only 1/3 of each Site has viable habitat.

-- = Not available.
AUF = Area use factor.
kg = Kilogram(s).
L/kgbw/d = Liter(s) per kilogram(s) body weight per day.
mg/kgbw/d = Milligram(s) per kilogram(s) body weight per day.
mg/L = Milligram(s) per liter.
SLERA = Screening level ecological risk assessment.
TRV = Toxicity reference value.
WSL = Water screening level.

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TABLE G-7
Summary of Water Screening Levels
Screening Level Ecological Risk Assessment
700 South 1600 East PCE Plume AOU-1: East Side Springs
Department of Veterans Affairs Salt Lake City Health Care System

	Water Screening Levels (mg/L)						
Analyte	**Aquatic Organisms**	**Plants**	**American Robin**	**Deer Mouse**	**Dog - Small/Toy**	**Dog - Medium**	**Dog - Large**
1,4-Dioxane	22	trv	trv	65	103	133	145
cis-1,2-Dichloroethene	0.59	100	trv	305	486	628	685
Tetrachloroethene	0.12	10	trv	9.5	15	19	21
Trichloroethene	0.35	10	trv	4.7	7.5	10	11
Vinyl chloride	0.93	trv	trv	11	18	24	26

NOTES:
mg/L = Milligram(s) per liter.
trv = No toxicity reference value available.

Sources:
Aquatic organisms -
1,2-Dichloroethene (cis/trans) - Tier II values (Suter and Tsao, 1996)
1,4-Dioxane and vinyl chloride - Region 5 ESLs (USEPA Region 5, 2003)
Tetrachloroethene and trichloroethene - No effect level ESLs (LANL, 2017)

Plants - Efroymson et al., 1997
Birds - no TRVs available to backcalculate screening levels.
Mammals - Screening levels are backcalculated.

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TABLE G-8

AOU-1 Surface Water and Groundwater Screening

Screening Level Ecological Risk Assessment

700 South 1600 East PCE Plume AOU-1: East Side Springs

Department of Veterans Affairs Salt Lake City Health Care System

Analyte	Maximum Concentration [1] (mg/L)	Ecological Screening Levels (mg/L)							No Effect Level Hazard Quotients [2]						
		Aquatic Organisms	Plants	American Robin	Deer Mouse	Dog - Small/Toy	Dog - Medium	Dog - Large	Aquatic Organisms	Plants	American Robin	Deer Mouse	Dog - Small/Toy	Dog - Medium	Dog - Large
Surface Water															
1,4-Dioxane	<0.002	22	trv	trv	65	103	133	145	<1	trv	trv	<1	<1	<1	<1
cis-1,2-Dichloroethene	0.00069	0.59	100	trv	305	486	628	685	<1	<1	trv	<1	<1	<1	<1
Tetrachloroethene	0.082	0.12	10	trv	9.5	15	19	21	<1	<1	trv	<1	<1	<1	<1
Trichloroethene	0.0023	0.35	10	trv	4.7	7.5	10	11	<1	<1	trv	<1	<1	<1	<1
Vinyl chloride	<0.0005	0.93	trv	trv	11	18	24	26	<1	trv	trv	<1	<1	<1	<1
Groundwater															
1,4-Dioxane	0.0027	22	trv	trv	65	103	133	145	<1	trv	trv	<1	<1	<1	<1
cis-1,2-Dichloroethene	0.0039	0.59	100	trv	305	486	628	685	<1	<1	trv	<1	<1	<1	<1
Tetrachloroethene	0.061	0.12	10	trv	9.5	15	19	21	<1	<1	trv	<1	<1	<1	<1
Trichloroethene	0.0077	0.35	10	trv	4.7	7.5	10	11	<1	<1	trv	<1	<1	<1	<1
Vinyl chloride	<0.0005	0.93	trv	trv	11	18	24	26	<1	trv	trv	<1	<1	<1	<1

NOTES:

1. < indicates analyte was not detected above the minimum method detection limit.
2. <1 indicates site concentration is below screening level.

mg/L = Milligrams per liter.

trv = No toxicity reference value available.

Figure

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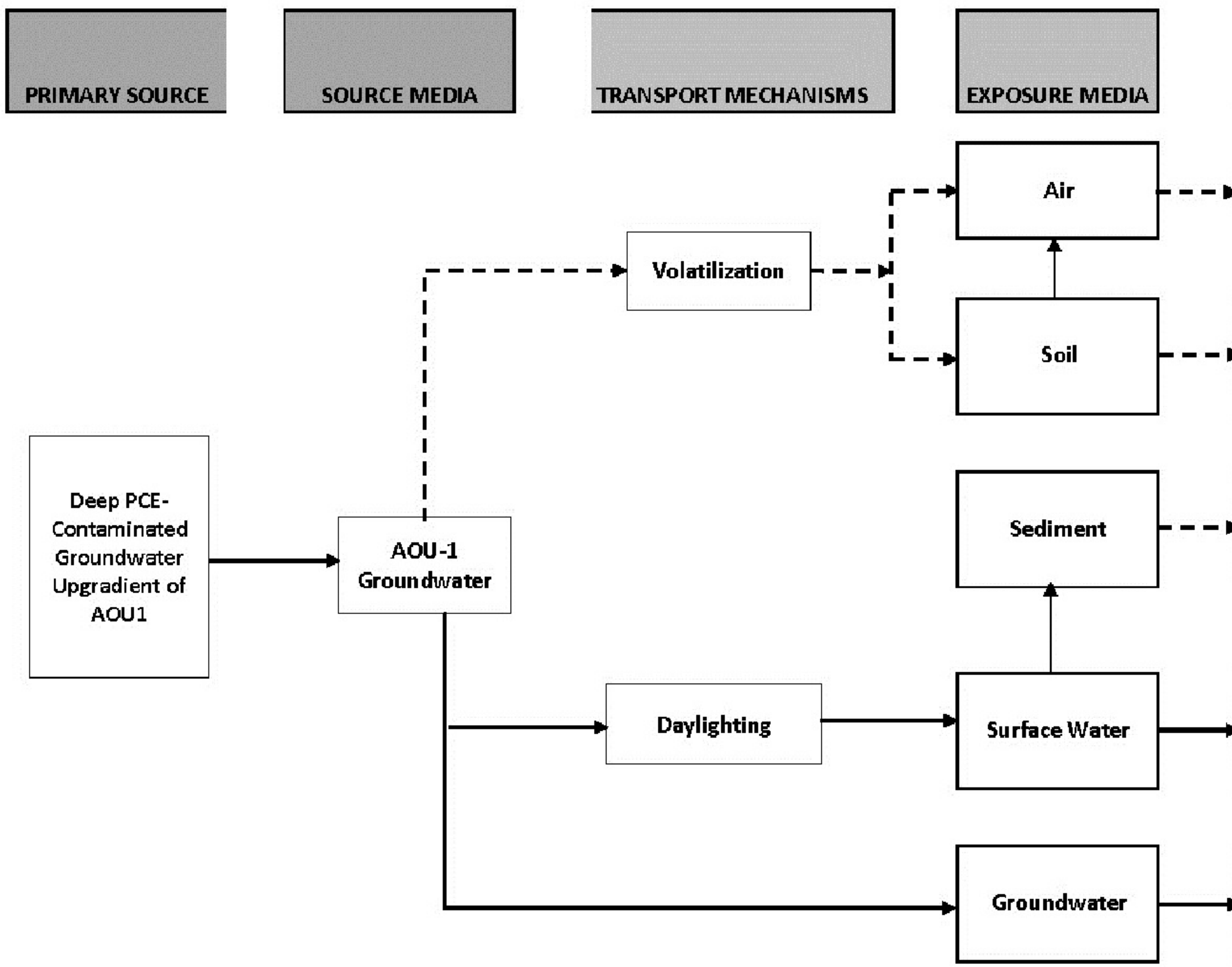

EXPOSURE MEDIA	EXPOSURE ROUTES	Aquatic Organisms	Terrestrial/ Wetland Plants	American robin	Deer mouse	Domestic dogs
Air	Inhalation					
Soil	Root Uptake					
	Direct Contact					
	Ingestion					
	Food Chain Exposure					
Sediment	Root Uptake					
	Direct Contact					
	Ingestion					
	Food Chain Exposure					
Surface Water	Root Uptake	•	•			
	Direct Contact	•	•			
	Ingestion	•		•	•	•
	Food Chain Exposure					
Groundwater	Root Uptake		C			
	Direct Contact	C	C			
	Ingestion	C		C	C	C
	Food Chain Exposure					

POTENTIAL RECEPTORS

LEGEND

- Incomplete exposure pathway (dashed arrow)
- Potentially complete but minor exposure pathway (dash-dot arrow)
- Potentially complete exposure pathway evaluated quantitatively (solid arrow)
- • Exposure route quantitatively evaluated assuming potential migration of groundwater to surface water
- C Exposure route quantitatively evaluated to be conservative.

FIGURE G-1 ECOLOGICAL CONCEPTUAL SITE MODEL
700 South 1600 East PCE Plume, AOU-1: East Side Springs
Remedial Investigation Report
Salt Lake City, Utah

US Department of Veterans Affairs

DATE 5-09-18
DWN. CO
APPRVD.
SHEET 1 of 1

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Attachment G1
Habitat Assessments

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TECHNICAL MEMORANDUM

AOU-1 Habitat Assessments

PREPARED FOR:	Michael Novak
PREPARED BY:	Bridget M Atkin
DATE:	July 5, 2016
PROJECT NUMBER:	665353.ZZ.01.08
REVISION NO.:	n/a

The below summarizes habitat observations of a selected number of sites assessed as related to the AOU-1 project located in Salt Lake City, Utah. Fifty (50) representative sites were reviewed and/or visited to assess broader conditions of habitats present within the area. The following categories were qualitatively characterized for sites SW 1-50: 1) Habitat Value, 2) Habitat Character, Ecological Receptors Likely Present, 3) Natural Resources, 4) Unique Habitat Present, 5) Likely to Support T&E Plant or Animal Species. An Excel spreadsheet has been prepared to summarize these data.

Qualitative Assessments

The overarching objective of habitat assessments is to provide a snapshot of habitat quality and potential ecological receptors for locations associated with the AOU-1 assessments. As introduced above, the qualitative habitat assessments were broken into five categories. Ratings for each category are summarized below in Table 1 and details of rating criteria are outlined in the text that follows.

Table 1. Qualitative Habitat Assessment Categories

HABITAT VALUE	HABITAT CHARACTER	RECEPTORS	LIKELY TO SUPPORT T&E SPECIES
None Low Low-moderate Moderate High	Hardened Disturbed Natural Area (Urban)	Pollinators Songbirds Small Mammals mid-Sized Mammals	Highly likely Moderately likely Not likely
Some Data	Some More Data	Some More Data	Additional information
Some Data	Some More Data	Some More Data	Additional information

Locations were assigned a Habitat Value rating based on the following parameters:

- None: No identified habitat value for native flora or fauna.
- Low: Capacity for intermittent support of small mammals, songbirds, and/or pollinators. Little to no native flora present.
- Low-moderate: Capacity to provide some seasonal food sources and cover from predators. Native flora present , not dominant

- Moderate: Capacity to provide some seasonal food sources, cover from predators, and habitat to breed/rear young. Native flora present at levels that provide moderate species diversity and structure (e.g. fills niches of herbaceous/graminoid, shrub, and woody canopy)
- High: Capacity to support a diverse suite of flora species as typical pre-settlement / disturbance conditions. Supports diversity of large and small bird species, small, mid and larger mammals throughout the year.

Locations were assigned a Habitat Character rating based on the following parameters:

- Hardened: Site primarily characterized by being located in a well-developed residential area. Includes moderately high percent coverage occupied by asphalt, concrete, and structures (e.g. housing/commercial buildings).
- Disturbed: Still located within residentially developed areas, although includes pockets of naturalized, or minimally maintained areas that could potentially provide habitat to urban wildlife and pollinators
- Natural Area: Located in an area that includes remnant connective corridors for wildlife use and includes remnants of native vegetation communities (e.g. gambel oak/maple forests or riparian forest dominated by willow, cottonwood, and other native woody species)

Based on degree of hardening, presence or absence of water source(s), presence or absence of native vegetation, availability of vegetal cover and diversity of structure (e.g. herbaceous, shrub and canopy), estimates were made regarding potential wildlife species that could be supported at a given location. The following ecological receptors and requirements for occupancy were used:

- Songbirds: Assumed intermittently present with the inclusion of moderate canopy cover and increasing use with the presence of a diverse structural component of native flora and developed vegetation community. In addition, surface water was assumed a valuable resource for this category
- Small Mammals: Assumed small mammals (e.g. mice, squirrels, rodents) intermittently present with the inclusion of moderate herbaceous and shrub layer with increasing abundance in less maintained and natural areas dominated by native flora.
- Mid-sized Mammals: Assumed mid-sized mammals (e.g. fox, coyote, marmot, etc) intermittently present with the inclusion of a moderate herbaceous and shrub layer in increasing abundance in less maintained and natural areas dominated by native flora.
- Pollinators: Assumed use and habitat with the presence of introduced and native perennial forb species and some species of insect pollinated shrubs/trees.
- Large Mammals: Not likely to occur in a densely urbanized area. Would require more connectivity to larger areas that include natural resources and well developed native plant communities.

Conclusions

SW point locations assessed for habitat within the AOU-1 project were generally classified to contain none to low quality habitat as related to fauna (wildlife and pollinators), primarily due to the developed urban character and overall lack of native flora and accompanying structure that is typically present within undisturbed or minimally disturbed vegetation communities. Sites that that contained the highest value of habitat were near or within the Red Butte Creek vicinity, although this area has also been disturbed and is occupied by introduced herbaceous species, primarily Vinca (*Vinca minor*) and

English ivy (*Hedera helix*), and the shrub layer is intermixed with introduced and invasive woody tree species. Further absent in much of the Red Butte riparian corridor was the presence of a developed shrub layer (native or introduced) that would provide cover and foraging habitat for a host of mammal and bird species. Perhaps the most valuable natural resource provided within many of these locations was the presence of surface water, which can be heavily relied upon for urban wildlife that is present.

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Attachment G2
Data

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FacilityCode	LocationID	XCoord	YCoord	SampleName	SampleDateOnly	Sample Type	ParentSampleName	MatrixCode	Medium	FieldFiltered	Fraction	AnalysisGroup	ReportAnalyte	FinalResult Unit	Final Result	FinalMDL	FinalRL	Detect Flag	Final Qual	RA Selected Result	SLERA Use
VHA_SLC	SW-01	-111.860719	40.753794	A-SW-01_05042016	04-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.5	0.077	0.5	N	U	Y	Y
VHA_SLC	SW-01	-111.860719	40.753794	A-SW-01_05042016	04-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	0.13	0.077	0.5	Y	J	Y	Y
VHA_SLC	SW-01	-111.860719	40.753794	A-SW-01_05042016	04-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.5	0.07	0.5	N	U	Y	Y
VHA_SLC	SW-01	-111.860719	40.753794	A-SW-01_05042016	04-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.15	0.5	N	U	Y	Y
VHA_SLC	SW-02	-111.860055	40.752011	A-SW-02_05112016	11-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.5	0.077	0.5	N	U	Y	Y
VHA_SLC	SW-02	-111.860055	40.752011	A-SW-02_05112016	11-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	0.5	0.077	0.5	N	U	Y	Y
VHA_SLC	SW-02	-111.860055	40.752011	A-SW-02_05112016	11-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.5	0.07	0.5	N	U	Y	Y
VHA_SLC	SW-02	-111.860055	40.752011	A-SW-02_05112016	11-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.15	0.5	N	U	Y	Y
VHA_SLC	SW-03	-111.862604	40.752007	A-SW-03_05112016	11-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.5	0.077	0.5	N	U	Y	Y
VHA_SLC	SW-03	-111.862604	40.752007	A-SW-03_05112016	11-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	0.5	0.077	0.5	N	U	Y	Y
VHA_SLC	SW-03	-111.862604	40.752007	A-SW-03_05112016	11-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.5	0.07	0.5	N	U	Y	Y
VHA_SLC	SW-03	-111.862604	40.752007	A-SW-03_05112016	11-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.15	0.5	N	U	Y	Y
VHA_SLC	SW-04	-111.855398	40.748911	A-SW-04_05022016	02-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.19	0.077	0.5	Y	J	Y	Y
VHA_SLC	SW-04	-111.855398	40.748911	A-SW-04_05022016	02-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	27	0.077	2.5	Y		Y	Y
VHA_SLC	SW-04	-111.855398	40.748911	A-SW-04_05022016	02-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.34	0.07	0.5	Y	J	Y	Y
VHA_SLC	SW-04	-111.855398	40.748911	A-SW-04_05022016	02-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.15	0.5	N	U	Y	Y
VHA_SLC	SW-05	-111.859361	40.749801	A-SW-05_05112016	11-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.5	0.077	0.5	N	U	Y	Y
VHA_SLC	SW-05	-111.859361	40.749801	A-SW-05_05112016	11-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	0.38	0.077	0.5	Y	J	Y	Y
VHA_SLC	SW-05	-111.859361	40.749801	A-SW-05_05112016	11-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.5	0.07	0.5	N	U	Y	Y
VHA_SLC	SW-05	-111.859361	40.749801	A-SW-05_05112016	11-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.15	0.5	N	U	Y	Y
VHA_SLC	SW-06	-111.857629	40.7495	A-SW-06_05042016	04-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.58	0.077	0.5	Y		Y	Y
VHA_SLC	SW-06	-111.857629	40.7495	A-SW-06-D_05042016	04-May-16	FD	A-SW-06_05042016	WS	Surface Water	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	80	0.077	5	Y		Y	Y
VHA_SLC	SW-06	-111.857629	40.7495	A-SW-06_05042016	04-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.96	0.07	0.5	Y		Y	Y
VHA_SLC	SW-06	-111.857629	40.7495	A-SW-06_05042016	04-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.15	0.5	N	U	Y	Y
VHA_SLC	SW-07	-111.858676	40.752827	A-SW-07_05042016	04-May-16	N		WS	Surface Water	FALSE	N	Emergent Compounds	1,4-Dioxane	ug/L	2	0.99	2	N	UJ	Y	Y
VHA_SLC	SW-07	-111.858676	40.752827	A-SW-07_05042016	04-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.5	0.077	0.5	N	U	Y	Y
VHA_SLC	SW-07	-111.858676	40.752827	A-SW-07_05042016	04-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	2.9	0.077	0.5	Y		Y	Y
VHA_SLC	SW-07	-111.858676	40.752827	A-SW-07_05042016	04-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.5	0.07	0.5	N	U	Y	Y
VHA_SLC	SW-07	-111.858676	40.752827	A-SW-07_05042016	04-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.15	0.5	N	U	Y	Y
VHA_SLC	SW-08	-111.857528	40.75326	A-SW-08_05042016	04-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.5	0.077	0.5	N	U	Y	Y
VHA_SLC	SW-08	-111.857528	40.75326	A-SW-08_05042016	04-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	7.5	0.077	0.5	Y		Y	Y
VHA_SLC	SW-08	-111.857528	40.75326	A-SW-08_05042016	04-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.13	0.07	0.5	Y	J	Y	Y
VHA_SLC	SW-08	-111.857528	40.75326	A-SW-08_05042016	04-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.15	0.5	N	U	Y	Y
VHA_SLC	SW-09	-111.857738	40.750353	A-SW-09_05032016	03-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.11	0.077	0.5	Y	J	Y	Y
VHA_SLC	SW-09	-111.857738	40.750353	A-SW-09_05032016	03-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	19	0.077	0.5	Y		Y	Y
VHA_SLC	SW-09	-111.857738	40.750353	A-SW-09_05032016	03-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.88	0.07	0.5	Y		Y	Y
VHA_SLC	SW-09	-111.857738	40.750353	A-SW-09_05032016	03-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.15	0.5	N	U	Y	Y
VHA_SLC	SW-10	-111.855727	40.752005	A-SW-10_05112016	11-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.5	0.077	0.5	N	U	Y	Y
VHA_SLC	SW-10	-111.855727	40.752005	A-SW-10_05112016	11-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	0.5	0.077	0.5	N	U	Y	Y
VHA_SLC	SW-10	-111.855727	40.752005	A-SW-10_05112016	11-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.5	0.07	0.5	N	U	Y	Y
VHA_SLC	SW-10	-111.855727	40.752005	A-SW-10_05112016	11-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.15	0.5	N	U	Y	Y
VHA_SLC	SW-11	-111.85843	40.750954	A-SW-11_05032016	03-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.6	0.077	0.5	Y		Y	Y
VHA_SLC	SW-11	-111.85843	40.750954	A-SW-11_05032016	03-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	20	0.077	0.5	Y		Y	Y
VHA_SLC	SW-11	-111.85843	40.750954	A-SW-11_05032016	03-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.61	0.07	0.5	Y		Y	Y
VHA_SLC	SW-11	-111.85843	40.750954	A-SW-11_05032016	03-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.15	0.5	N	U	Y	Y
VHA_SLC	SW-12	-111.858079	40.75121	A-SW-12_05032016	03-May-16	N		WS	Surface Water	FALSE	N	Emergent Compounds	1,4-Dioxane	ug/L	2	0.99	2	N	UJ	Y	Y
VHA_SLC	SW-12	-111.858079	40.75121	A-SW-12_05032016	03-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.12	0.077	0.5	Y	J	Y	Y
VHA_SLC	SW-12	-111.858079	40.75121	A-SW-12_05032016	03-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	23	0.077	2.5	Y		Y	Y
VHA_SLC	SW-12	-111.858079	40.75121	A-SW-12_05032016	03-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.39	0.07	0.5	Y	J	Y	Y
VHA_SLC	SW-12	-111.858079	40.75121	A-SW-12_05032016	03-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.22	0.5	N	U	Y	Y
VHA_SLC	SW-13	-111.859015	40.751468	A-SW-13_05032016	03-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.5	0.077	0.5	N	U	Y	Y
VHA_SLC	SW-13	-111.859015	40.751468	A-SW-13_05032016	03-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	1.8	0.077	0.5	Y		Y	Y
VHA_SLC	SW-13	-111.859015	40.751468	A-SW-13_05032016	03-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.37	0.07	0.5	Y	J	Y	Y
VHA_SLC	SW-13	-111.859015	40.751468	A-SW-13_05032016	03-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.15	0.5	N	U	Y	Y
VHA_SLC	SW-14	-111.858658	40.751599	A-SW-14_05042016	04-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.5	0.077	0.5	N	U	Y	Y
VHA_SLC	SW-14	-111.858658	40.751599	A-SW-14_05042016	04-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	18	0.077	0.5	Y		Y	Y
VHA_SLC	SW-14	-111.858658	40.751599	A-SW-14_05042016	04-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.53	0.07	0.5	Y		Y	Y
VHA_SLC	SW-14	-111.858658	40.751599	A-SW-14_05042016	04-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.15	0.5	N	U	Y	Y
VHA_SLC	SW-15	-111.85897	40.75248	A-SW-15_05042016	04-May-16	N		WS	Surface Water	FALSE	N	Emergent Compounds	1,4-Dioxane	ug/L	2	0.99	2	N	UJ	Y	Y
VHA_SLC	SW-15	-111.85897	40.75248	A-SW-15_05042016	04-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.5	0.077	0.5	N	U	Y	Y
VHA_SLC	SW-15	-111.85897	40.75248	A-SW-15_05042016	04-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	14	0.077	0.5	Y		Y	Y
VHA_SLC	SW-15	-111.85897	40.75248	A-SW-15_05042016	04-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.32	0.07	0.5	Y	J	Y	Y
VHA_SLC	SW-15	-111.85897	40.75248	A-SW-15_05042016	04-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.15	0.5	N	U	Y	Y
VHA_SLC	SW-16	-111.860455	40.754333	A-SW-16_05042016	04-May-16	N		WS	Surface Water	FALSE	N	Emergent Compounds	1,4-Dioxane	ug/L	2	0.99	2	N	UJ	Y	Y
VHA_SLC	SW-16	-111.860455	40.754333	A-SW-16_05042016	04-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.5	0.077	0.5	N	U	Y	Y
VHA_SLC	SW-16	-111.860455	40.754333	A-SW-16_05042016	04-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	0.5	0.077	0.5	N	U	Y	Y
VHA_SLC	SW-16	-111.860455	40.754333	A-SW-16_05042016	04-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.5	0.07	0.5	N	U	Y	Y
VHA_SLC	SW-16	-111.860455	40.754333	A-SW-16_05042016	04-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.15	0.5	N	U	Y	Y
VHA_SLC	SW-17	-111.862566	40.753619	A-SW-17_05112016	11-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.5	0.076	0.5	N	U	Y	Y
VHA_SLC	SW-17	-111.862566	40.753619	A-SW-17_05112016	11-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	0.5	0.077	0.5	N	U	Y	Y
VHA_SLC	SW-17	-111.862566	40.753619	A-SW-17_05112016	11-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.5	0.07	0.5	N	U	Y	Y
VHA_SLC	SW-17	-111.862566	40.753619	A-SW-17_05112016	11-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.081	0.5	N	U	Y	Y
VHA_SLC	SW-18	-111.85944	40.749998	A-SW-18_05052016	05-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.35	0.077	0.5	Y	J	Y	Y
VHA_SLC	SW-18	-111.85944	40.749998	A-SW-18_05052016	05-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	17	0.077	0.5	Y		Y	Y
VHA_SLC	SW-18	-111.85944	40.749998	A-SW-18_05052016	05-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.43	0.07	0.5	Y	J	Y	Y

FacilityCode	LocationID	XCoord	YCoord	SampleName	SampleDateOnly	Sample Type	ParentSampleName	MatrixCode	Medium	FieldFiltered	Fraction	AnalysisGroup	ReportAnalyte	FinalResult Unit	Final Result	FinalMDL	FinalRL	Detect Flag	Final Qual	RA Selected Result	SLERA Use
VHA_SLC	SW-18	-111.85944	40.749998	A-SW-18_05052016	05-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.15	0.5	N	U	Y	Y
VHA_SLC	SW-19	-111.855465	40.745341	A-SW-19_05042016	04-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.5	0.077	0.5	N	U	Y	Y
VHA_SLC	SW-19	-111.855465	40.745341	A-SW-19_05042016	04-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	0.18	0.077	0.5	Y	J	Y	Y
VHA_SLC	SW-19	-111.855465	40.745341	A-SW-19_05042016	04-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.5	0.07	0.5	N	U	Y	Y
VHA_SLC	SW-19	-111.855465	40.745341	A-SW-19_05042016	04-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.15	0.5	N	U	Y	Y
VHA_SLC	SW-20	-111.860983	40.748081	A-SW-20_05052016	05-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.5	0.077	0.5	N	U	Y	Y
VHA_SLC	SW-20	-111.860983	40.748081	A-SW-20_05052016	05-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	0.23	0.077	0.5	Y	J	Y	Y
VHA_SLC	SW-20	-111.860983	40.748081	A-SW-20_05052016	05-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.5	0.07	0.5	N	U	Y	Y
VHA_SLC	SW-20	-111.860983	40.748081	A-SW-20_05052016	05-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.15	0.5	N	U	Y	Y
VHA_SLC	SW-21	-111.858773	40.75134	A-SW-21_05032016	03-May-16	N		WS	Surface Water	FALSE	N	Emergent Compounds	1,4-Dioxane	ug/L	2	0.99	2	N	UJ	Y	Y
VHA_SLC	SW-21	-111.858773	40.75134	A-SW-21_05032016	03-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.44	0.077	0.5	Y	J	Y	Y
VHA_SLC	SW-21	-111.858773	40.75134	A-SW-21_05032016	03-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	6.5	0.077	0.5	Y		Y	Y
VHA_SLC	SW-21	-111.858773	40.75134	A-SW-21_05032016	03-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.62	0.07	0.5	Y		Y	Y
VHA_SLC	SW-21	-111.858773	40.75134	A-SW-21_05032016	03-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.22	0.5	N	U	Y	Y
VHA_SLC	SW-22	-111.859138	40.751773	A-SW-22_05032016	03-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.13	0.077	0.5	Y	J	Y	Y
VHA_SLC	SW-22	-111.859138	40.751773	A-SW-22_05032016	03-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	2.9	0.077	0.5	Y		Y	Y
VHA_SLC	SW-22	-111.859138	40.751773	A-SW-22_05032016	03-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.47	0.07	0.5	Y	J	Y	Y
VHA_SLC	SW-22	-111.859138	40.751773	A-SW-22_05032016	03-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.15	0.5	N	U	Y	Y
VHA_SLC	SW-23	-111.857621	40.751247	A-SW-23_05032016	03-May-16	N		WS	Surface Water	FALSE	N	Emergent Compounds	1,4-Dioxane	ug/L	1.9	0.49	1.9	N	U	Y	Y
VHA_SLC	SW-23	-111.857621	40.751247	A-SW-23_05032016	03-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.15	0.077	0.5	Y	J	Y	Y
VHA_SLC	SW-23	-111.857621	40.751247	A-SW-23_05032016	03-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	25	0.077	2.5	Y		Y	Y
VHA_SLC	SW-23	-111.857621	40.751247	A-SW-23_05032016	03-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.47	0.08	0.5	Y	J	Y	Y
VHA_SLC	SW-23	-111.857621	40.751247	A-SW-23_05032016	03-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.22	0.5	N	U	Y	Y
VHA_SLC	SW-24	-111.854266	40.749793	A-SW-24_05112016	11-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.5	0.076	0.5	N	U	Y	Y
VHA_SLC	SW-24	-111.854266	40.749793	A-SW-24_05112016	11-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	0.5	0.077	0.5	N	U	Y	Y
VHA_SLC	SW-24	-111.854266	40.749793	A-SW-24_05112016	11-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.5	0.07	0.5	N	U	Y	Y
VHA_SLC	SW-24	-111.854266	40.749793	A-SW-24_05112016	11-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.081	0.5	N	U	Y	Y
VHA_SLC	SW-25	-111.854835	40.748993	A-SW-25_05052016	05-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.5	0.077	0.5	N	U	Y	Y
VHA_SLC	SW-25	-111.854835	40.748993	A-SW-25_05052016	05-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	1.4	0.077	0.5	Y		Y	Y
VHA_SLC	SW-25	-111.854835	40.748993	A-SW-25_05052016	05-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.5	0.07	0.5	N	U	Y	Y
VHA_SLC	SW-25	-111.854835	40.748993	A-SW-25_05052016	05-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.15	0.5	N	U	Y	Y
VHA_SLC	SW-26	-111.857288	40.750516	A-SW-26_05032016	03-May-16	N		WS	Surface Water	FALSE	N	Emergent Compounds	1,4-Dioxane	ug/L	2	0.99	2	N	UJ	Y	Y
VHA_SLC	SW-26	-111.857288	40.750516	A-SW-26_05032016	03-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.5	0.077	0.5	N	U	Y	Y
VHA_SLC	SW-26	-111.857288	40.750516	A-SW-26_05032016	03-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	23	0.077	2.5	Y		Y	Y
VHA_SLC	SW-26	-111.857288	40.750516	A-SW-26_05032016	03-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.3	0.07	0.5	Y	J	Y	Y
VHA_SLC	SW-26	-111.857288	40.750516	A-SW-26_05032016	03-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.15	0.5	N	U	Y	Y
VHA_SLC	SW-27	-111.858233	40.750938	A-SW-27_05032016	03-May-16	N		WS	Surface Water	FALSE	N	Emergent Compounds	1,4-Dioxane	ug/L	2	0.99	2	N	UJ	Y	Y
VHA_SLC	SW-27	-111.858233	40.750938	A-SW-27_05032016	03-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.57	0.077	0.5	Y		Y	Y
VHA_SLC	SW-27	-111.858233	40.750938	A-SW-27_05032016	03-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	19	0.077	0.5	Y		Y	Y
VHA_SLC	SW-27	-111.858233	40.750938	A-SW-27_05032016	03-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.61	0.07	0.5	Y		Y	Y
VHA_SLC	SW-27	-111.858233	40.750938	A-SW-27_05032016	03-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.22	0.5	N	U	Y	Y
VHA_SLC	SW-28	-111.858415	40.750908	A-SW-28_05032016	03-May-16	N		WS	Surface Water	FALSE	N	Emergent Compounds	1,4-Dioxane	ug/L	2	0.99	2	N	UJ	Y	Y
VHA_SLC	SW-28	-111.858415	40.750908	A-SW-28_05032016	03-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.56	0.077	0.5	Y		Y	Y
VHA_SLC	SW-28	-111.858415	40.750908	A-SW-28_05032016	03-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	16	0.077	0.5	Y		Y	Y
VHA_SLC	SW-28	-111.858415	40.750908	A-SW-28_05032016	03-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.66	0.07	0.5	Y		Y	Y
VHA_SLC	SW-28	-111.858415	40.750908	A-SW-28_05032016	03-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.22	0.5	N	U	Y	Y
VHA_SLC	SW-29	-111.857896	40.751258	A-SW-29_05112016	11-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.5	0.076	0.5	N	U	Y	Y
VHA_SLC	SW-29	-111.857896	40.751258	A-SW-29_05112016	11-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	26	0.077	2.5	Y		Y	Y
VHA_SLC	SW-29	-111.857896	40.751258	A-SW-29_05112016	11-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.28	0.07	0.5	Y	J	Y	Y
VHA_SLC	SW-29	-111.857896	40.751258	A-SW-29_05112016	11-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.081	0.5	N	U	Y	Y
VHA_SLC	SW-30	-111.857359	40.749488	A-SW-30_05032016	03-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.5	0.077	0.5	N	U	Y	Y
VHA_SLC	SW-30	-111.857359	40.749488	A-SW-30_05032016	03-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	0.5	0.077	0.5	Y		Y	Y
VHA_SLC	SW-30	-111.857359	40.749488	A-SW-30_05032016	03-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.09	0.07	0.5	Y	J	Y	Y
VHA_SLC	SW-30	-111.857359	40.749488	A-SW-30_05032016	03-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.15	0.5	N	U	Y	Y
VHA_SLC	SW-31	-111.858016	40.750523	A-SW-31_05022016	02-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.27	0.077	0.5	Y	J	Y	Y
VHA_SLC	SW-31	-111.858016	40.750523	A-SW-31_05022016	02-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	20	0.077	1	Y		Y	Y
VHA_SLC	SW-31	-111.858016	40.750523	A-SW-31_05022016	02-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.48	0.07	0.5	Y	J	Y	Y
VHA_SLC	SW-31	-111.858016	40.750523	A-SW-31_05022016	02-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.15	0.5	N	U	Y	Y
VHA_SLC	SW-32	-111.856691	40.747991	A-SW-32_05052016	05-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.5	0.077	0.5	N	U	Y	Y
VHA_SLC	SW-32	-111.856691	40.747991	A-SW-32_05052016	05-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	0.46	0.077	0.5	Y	J	Y	Y
VHA_SLC	SW-32	-111.856691	40.747991	A-SW-32_05052016	05-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.5	0.07	0.5	N	U	Y	Y
VHA_SLC	SW-32	-111.856691	40.747991	A-SW-32_05052016	05-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.15	0.5	N	U	Y	Y
VHA_SLC	SW-33	-111.856921	40.748254	A-SW-33_05022016	02-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.15	0.077	0.5	Y	J	Y	Y
VHA_SLC	SW-33	-111.856921	40.748254	A-SW-33_05022016	02-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	35	0.077	2.5	Y		Y	Y
VHA_SLC	SW-33	-111.856921	40.748254	A-SW-33_05022016	02-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.78	0.07	0.5	Y		Y	Y
VHA_SLC	SW-33	-111.856921	40.748254	A-SW-33_05022016	02-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.15	0.5	N	U	Y	Y
VHA_SLC	SW-34	-111.857193	40.748231	A-SW-34_05022016	02-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.13	0.077	0.5	Y	J	Y	Y
VHA_SLC	SW-34	-111.857193	40.748231	A-SW-34_05022016	02-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	13	0.077	0.5	Y		Y	Y
VHA_SLC	SW-34	-111.857193	40.748231	A-SW-34_05022016	02-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.27	0.07	0.5	Y	J	Y	Y
VHA_SLC	SW-34	-111.857193	40.748231	A-SW-34_05022016	02-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.15	0.5	N	U	Y	Y
VHA_SLC	SW-35	-111.858565	40.751494	A-SW-35_05042016	04-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.54	0.077	0.5	Y		Y	Y
VHA_SLC	SW-35	-111.858565	40.751494	A-SW-35_05042016	04-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	82	0.077	5	Y		Y	Y
VHA_SLC	SW-35	-111.858565	40.751494	A-SW-35_05042016	04-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.67	0.07	0.5	Y		Y	Y
VHA_SLC	SW-35	-111.858565	40.751494	A-SW-35_05042016	04-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.15	0.5	N	U	Y	Y
VHA_SLC	SW-36	-111.857239	40.7493	A-SW-36_05032016	03-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.69	0.077	0.5	Y		Y	Y

FacilityCode	LocationID	XCoord	YCoord	SampleName	SampleDateOnly	Sample Type	ParentSampleName	MatrixCode	Medium	FieldFiltered	Fraction	AnalysisGroup	ReportAnalyte	FinalResult Unit	Final Result	FinalMDL	FinalRL	Detect Flag	Final Qual	RA Selected Result	SLERA Use
VHA_SLC	SW-36	-111.857239	40.7493	A-SW-36_05032016	03-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	1.2	0.077	0.5	Y		Y	Y
VHA_SLC	SW-36	-111.857239	40.7493	A-SW-36_05032016	03-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	2.3	0.07	0.5	Y		Y	Y
VHA_SLC	SW-36	-111.857239	40.7493	A-SW-36_05032016	03-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.15	0.5	N	U	Y	Y
VHA_SLC	SW-37	-111.859294	40.749625	A-SW-37_05052016	05-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.24	0.077	0.5	Y	J	Y	Y
VHA_SLC	SW-37	-111.859294	40.749625	A-SW-37_05052016	05-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	15	0.077	0.5	Y		Y	Y
VHA_SLC	SW-37	-111.859294	40.749625	A-SW-37_05052016	05-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.39	0.07	0.5	Y	J	Y	Y
VHA_SLC	SW-37	-111.859294	40.749625	A-SW-37_05052016	05-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.15	0.5	N	U	Y	Y
VHA_SLC	SW-38	-111.860548	40.749879	A-SW-38_05112016	11-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.5	0.076	0.5	N	U	Y	Y
VHA_SLC	SW-38	-111.860548	40.749879	A-SW-38_05112016	11-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	6	0.077	0.5	Y		Y	Y
VHA_SLC	SW-38	-111.860548	40.749879	A-SW-38_05112016	11-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.22	0.07	0.5	Y	J	Y	Y
VHA_SLC	SW-38	-111.860548	40.749879	A-SW-38_05112016	11-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.081	0.5	N	U	Y	Y
VHA_SLC	SW-39	-111.857669	40.749314	A-SW-39_05032016	03-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.31	0.077	0.5	Y	J	Y	Y
VHA_SLC	SW-39	-111.857669	40.749314	A-SW-39_05032016	03-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	31	0.077	2.5	Y		Y	Y
VHA_SLC	SW-39	-111.857669	40.749314	A-SW-39_05032016	03-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.5	0.07	0.5	Y		Y	Y
VHA_SLC	SW-39	-111.857669	40.749314	A-SW-39_05032016	03-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.15	0.5	N	U	Y	Y
VHA_SLC	SW-40	-111.855686	40.748701	A-SW-40_05052016	05-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.18	0.077	0.5	Y	J	Y	Y
VHA_SLC	SW-40	-111.855686	40.748701	A-SW-40_05052016	05-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	28	0.077	2.5	Y		Y	Y
VHA_SLC	SW-40	-111.855686	40.748701	A-SW-40_05052016	05-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.38	0.07	0.5	Y	J	Y	Y
VHA_SLC	SW-40	-111.855686	40.748701	A-SW-40_05052016	05-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.15	0.5	N	U	Y	Y
VHA_SLC	SW-41	-111.854448	40.748858	A-SW-41_05052016	05-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.5	0.077	0.5	N	U	Y	Y
VHA_SLC	SW-41	-111.854448	40.748858	A-SW-41_05052016	05-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	0.49	0.077	0.5	Y	J	Y	Y
VHA_SLC	SW-41	-111.854448	40.748858	A-SW-41_05052016	05-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.5	0.07	0.5	N	U	Y	Y
VHA_SLC	SW-41	-111.854448	40.748858	A-SW-41_05052016	05-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.15	0.5	N	U	Y	Y
VHA_SLC	SW-42	-111.856768	40.748586	A-SW-42_05022016	02-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.5	0.077	0.5	N	U	Y	Y
VHA_SLC	SW-42	-111.856768	40.748586	A-SW-42_05022016	02-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	16	0.077	0.5	Y		Y	Y
VHA_SLC	SW-42	-111.856768	40.748586	A-SW-42_05022016	02-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.19	0.07	0.5	Y	J	Y	Y
VHA_SLC	SW-42	-111.856768	40.748586	A-SW-42_05022016	02-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.15	0.5	N	U	Y	Y
VHA_SLC	SW-43	-111.857909	40.747961	A-SW-43_05022016	02-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.5	0.077	0.5	N	U	Y	Y
VHA_SLC	SW-43	-111.857909	40.747961	A-SW-43_05022016	02-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	4.1	0.077	0.5	Y		Y	Y
VHA_SLC	SW-43	-111.857909	40.747961	A-SW-43_05022016	02-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.1	0.07	0.5	Y	J	Y	Y
VHA_SLC	SW-43	-111.857909	40.747961	A-SW-43_05022016	02-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.15	0.5	N	U	Y	Y
VHA_SLC	SW-44	-111.858445	40.748086	A-SW-44_05042016	04-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.5	0.077	0.5	N	U	Y	Y
VHA_SLC	SW-44	-111.858445	40.748086	A-SW-44_05042016	04-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	2.2	0.077	0.5	Y		Y	Y
VHA_SLC	SW-44	-111.858445	40.748086	A-SW-44_05042016	04-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.5	0.07	0.5	N	U	Y	Y
VHA_SLC	SW-44	-111.858445	40.748086	A-SW-44_05042016	04-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.15	0.5	N	U	Y	Y
VHA_SLC	SW-45	-111.861726	40.751783	A-SW-45_05052016	05-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.11	0.077	0.5	Y	J	Y	Y
VHA_SLC	SW-45	-111.861726	40.751783	A-SW-45_05052016	05-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	3.1	0.077	0.5	Y		Y	Y
VHA_SLC	SW-45	-111.861726	40.751783	A-SW-45_05052016	05-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.11	0.07	0.5	Y	J	Y	Y
VHA_SLC	SW-45	-111.861726	40.751783	A-SW-45_05052016	05-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.15	0.5	N	U	Y	Y
VHA_SLC	SW-46	-111.858516	40.748355	A-SW-46_05052016	05-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.5	0.077	0.5	N	U	Y	Y
VHA_SLC	SW-46	-111.858516	40.748355	A-SW-46_05052016	05-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	2.4	0.077	0.5	Y		Y	Y
VHA_SLC	SW-46	-111.858516	40.748355	A-SW-46_05052016	05-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.5	0.07	0.5	N	U	Y	Y
VHA_SLC	SW-46	-111.858516	40.748355	A-SW-46_05052016	05-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.15	0.5	N	U	Y	Y
VHA_SLC	SW-47	-111.855475	40.745126	A-SW-47_05042016	04-May-16	N		WS	Surface Water	FALSE	N	Emergent Compounds	1,4-Dioxane	ug/L	2	0.99	2	N	UJ	Y	Y
VHA_SLC	SW-47	-111.855475	40.745126	A-SW-47_05042016	04-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.5	0.077	0.5	N	U	Y	Y
VHA_SLC	SW-47	-111.855475	40.745126	A-SW-47_05042016	04-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	0.5	0.077	0.5	N	U	Y	Y
VHA_SLC	SW-47	-111.855475	40.745126	A-SW-47_05042016	04-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.5	0.07	0.5	N	U	Y	Y
VHA_SLC	SW-47	-111.855475	40.745126	A-SW-47_05042016	04-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.15	0.5	N	U	Y	Y
VHA_SLC	SW-48	-111.85776	40.753177	A-SW-48_05042016	04-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.5	0.077	0.5	N	U	Y	Y
VHA_SLC	SW-48	-111.85776	40.753177	A-SW-48_05042016	04-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	0.5	0.077	0.5	N	U	Y	Y
VHA_SLC	SW-48	-111.85776	40.753177	A-SW-48_05042016	04-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.5	0.07	0.5	N	U	Y	Y
VHA_SLC	SW-48	-111.85776	40.753177	A-SW-48_05042016	04-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.15	0.5	N	U	Y	Y
VHA_SLC	SW-49	-111.861303	40.746471	A-SW-49_05052016	05-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.5	0.077	0.5	N	U	Y	Y
VHA_SLC	SW-49	-111.861303	40.746471	A-SW-49_05052016	05-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	0.21	0.077	0.5	Y	J	Y	Y
VHA_SLC	SW-49	-111.861303	40.746471	A-SW-49_05052016	05-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.5	0.07	0.5	N	U	Y	Y
VHA_SLC	SW-49	-111.861303	40.746471	A-SW-49_05052016	05-May-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.15	0.5	N	U	Y	Y
VHA_SLC	SW-50	-111.857424	40.748154	A-SW-001_02/26/2016	26-Feb-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.5	0.076	0.5	N	UJ	Y	Y
VHA_SLC	SW-50	-111.857424	40.748154	A-SW-001_02/26/2016	26-Feb-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	6.3	0.077	0.5	Y		Y	Y
VHA_SLC	SW-50	-111.857424	40.748154	A-SW-001_02/26/2016	26-Feb-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.13	0.07	0.5	Y	J	Y	Y
VHA_SLC	SW-50	-111.857424	40.748154	A-SW-001_02/26/2016	26-Feb-16	N		WS	Surface Water	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.081	0.5	N	U	Y	Y
VHA_SLC	GW-001	-111.85330245	40.748994335	A-GW-001_03042016	04-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.5	0.076	0.5	N	U	Y	Y
VHA_SLC	GW-001	-111.85330245	40.748994335	A-GW-001_03042016	04-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	0.78	0.077	0.5	Y		Y	Y
VHA_SLC	GW-001	-111.85330245	40.748994335	A-GW-001_03042016	04-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.5	0.07	0.5	N	U	Y	Y
VHA_SLC	GW-001	-111.85330245	40.748994335	A-GW-001_03042016	04-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.081	0.5	N	U	Y	Y
VHA_SLC	GW-003	-111.85518336	40.748103429	A-GW-003_02/26/2016	26-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.5	0.076	0.5	N	U	Y	Y
VHA_SLC	GW-003	-111.85518336	40.748103429	A-GW-003_02/26/2016	26-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	0.48	0.077	0.5	Y	J	Y	Y
VHA_SLC	GW-003	-111.85518336	40.748103429	A-GW-003_02/26/2016	26-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.5	0.07	0.5	N	U	Y	Y
VHA_SLC	GW-003	-111.85518336	40.748103429	A-GW-003_02/26/2016	26-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.081	0.5	N	U	Y	Y
VHA_SLC	GW-004	-111.85738971	40.748207685	A-GW-004_02/26/2016	26-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.5	0.076	0.5	N	UJ	Y	Y
VHA_SLC	GW-004	-111.85738971	40.748207685	A-GW-004_02/26/2016	26-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	12	0.077	0.5	Y		Y	Y
VHA_SLC	GW-004	-111.85738971	40.748207685	A-GW-004_02/26/2016	26-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.34	0.07	0.5	Y	J	Y	Y
VHA_SLC	GW-004	-111.85738971	40.748207685	A-GW-004_02/26/2016	26-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.081	0.5	N	U	Y	Y
VHA_SLC	GW-005	-111.85476413	40.749013168	A-GW-005_02/26/2016	26-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.5	0.076	0.5	N	UJ	Y	Y
VHA_SLC	GW-005	-111.85476413	40.749013168	A-GW-005_02/26/2016	26-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	1.4	0.077	0.5	Y		Y	Y
VHA_SLC	GW-005	-111.85476413	40.749013168	A-GW-005_02/26/2016	26-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.5	0.07	0.5	N	U	Y	Y

FacilityCode	LocationID	XCoord	YCoord	SampleName	SampleDateOnly	Sample Type	ParentSampleName	MatrixCode	Medium	FieldFiltered	Fraction	AnalysisGroup	ReportAnalyte	FinalResult Unit	Final Result	FinalMDL	FinalRL	Detect Flag	Final Qual	RA Selected Result	SLERA Use
VHA_SLC	GW-005	-111.85476413	40.749013168	A-GW-005_02/26/2016	26-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.081	0.5	N	U	Y	Y
VHA_SLC	GW-006	-111.85531859	40.748721897	A-GW-006_02/26/2016	26-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.45	0.076	0.5	Y	J	Y	Y
VHA_SLC	GW-006	-111.85531859	40.748721897	A-GW-006_02/26/2016	26-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	3.1	0.077	0.5	Y		Y	Y
VHA_SLC	GW-006	-111.85531859	40.748721897	A-GW-006_02/26/2016	26-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	1	0.07	0.5	Y		Y	Y
VHA_SLC	GW-006	-111.85531859	40.748721897	A-GW-006_02/26/2016	26-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.081	0.5	N	U	Y	Y
VHA_SLC	GW-007	-111.85632691	40.748975486	A-GW-007_02282016	28-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.5	0.05	0.5	N	U	Y	Y
VHA_SLC	GW-007	-111.85632691	40.748975486	A-GW-007_02282016	28-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	33	0.057	2.5	Y		Y	Y
VHA_SLC	GW-007	-111.85632691	40.748975486	A-GW-007_02282016	28-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.59	0.041	0.5	Y		Y	Y
VHA_SLC	GW-007	-111.85632691	40.748975486	A-GW-007_02282016	28-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.054	0.5	N	U	Y	Y
VHA_SLC	GW-008	-111.85769492	40.74989217	A-GW-008_02272016	27-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.5	0.076	0.5	N	U	Y	Y
VHA_SLC	GW-008	-111.85769492	40.74989217	A-GW-008_02272016	27-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	9.6	0.077	0.5	Y		Y	Y
VHA_SLC	GW-008	-111.85769492	40.74989217	A-GW-008_02272016	27-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	1.8	0.07	0.5	Y		Y	Y
VHA_SLC	GW-008	-111.85769492	40.74989217	A-GW-008_02272016	27-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.081	0.5	N	U	Y	Y
VHA_SLC	GW-009	-111.85756205	40.749329284	A-GW-009_02/26/2016	26-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.68	0.076	0.5	Y		Y	Y
VHA_SLC	GW-009	-111.85756205	40.749329284	A-GW-009_02/26/2016	26-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	0.7	0.077	0.5	Y		Y	Y
VHA_SLC	GW-009	-111.85756205	40.749329284	A-GW-009_02/26/2016	26-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	2.4	0.07	0.5	Y		Y	Y
VHA_SLC	GW-009	-111.85756205	40.749329284	A-GW-009_02/26/2016	26-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.081	0.5	N	U	Y	Y
VHA_SLC	GW-010	-111.85913037	40.749623062	A-GW-010_02272016	27-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.5	0.076	0.5	N	U	Y	Y
VHA_SLC	GW-010	-111.85913037	40.749623062	A-GW-010-D_02272016	27-Feb-16	FD	A-GW-010_02272016	WG	Groundwater	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	1.4	0.057	0.5	Y		Y	Y
VHA_SLC	GW-010	-111.85913037	40.749623062	A-GW-010-D_02272016	27-Feb-16	FD	A-GW-010_02272016	WG	Groundwater	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.11	0.041	0.5	Y	J	Y	Y
VHA_SLC	GW-010	-111.85913037	40.749623062	A-GW-010_02272016	27-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.081	0.5	N	U	Y	Y
VHA_SLC	GW-010	-111.85913037	40.749623062	A-GW-10_07/12/2016	12-Jul-16	N		WG	Groundwater	FALSE	N	Emergent Compounds	1,4-Dioxane	ug/L	2	1.4	2	N	U	Y	Y
VHA_SLC	GW-010	-111.85913037	40.749623062	A-GW-10_07/12/2016	12-Jul-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.5	0.066	0.5	N	U	Y	Y
VHA_SLC	GW-010	-111.85913037	40.749623062	A-GW-10_07/12/2016	12-Jul-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	1.1	0.079	0.5	Y		Y	Y
VHA_SLC	GW-010	-111.85913037	40.749623062	A-GW-10_07/12/2016	12-Jul-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.5	0.082	0.5	N	U	Y	Y
VHA_SLC	GW-010	-111.85913037	40.749623062	A-GW-10_07/12/2016	12-Jul-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.091	0.5	N	U	Y	Y
VHA_SLC	GW-010	-111.85913037	40.749623062	A-GW-10_09202016	20-Sep-16	N		WG	Groundwater	FALSE	N	Emergent Compounds	1,4-Dioxane	ug/L	2	0.38	2	N	UJ	Y	Y
VHA_SLC	GW-010	-111.85913037	40.749623062	A-GW-10_09202016	20-Sep-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.5	0.076	0.5	N	U	Y	Y
VHA_SLC	GW-010	-111.85913037	40.749623062	A-GW-10_09202016	20-Sep-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	1.1	0.077	0.5	Y		Y	Y
VHA_SLC	GW-010	-111.85913037	40.749623062	A-GW-10_09202016	20-Sep-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.19	0.07	0.5	Y	J	Y	Y
VHA_SLC	GW-010	-111.85913037	40.749623062	A-GW-10_09202016	20-Sep-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.081	0.5	N	U	Y	Y
VHA_SLC	GW-011	-111.85782655	40.750399707	A-GW-011_02272016	27-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.39	0.076	0.5	Y	J	Y	Y
VHA_SLC	GW-011	-111.85782655	40.750399707	A-GW-011_02272016	27-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	45	0.057	5	Y		Y	Y
VHA_SLC	GW-011	-111.85782655	40.750399707	A-GW-011_02272016	27-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.82	0.07	0.5	Y		Y	Y
VHA_SLC	GW-011	-111.85782655	40.750399707	A-GW-011_02272016	27-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.081	0.5	N	U	Y	Y
VHA_SLC	GW-011	-111.85782655	40.750399707	A-GW-11_07/11/2016	11-Jul-16	N		WG	Groundwater	FALSE	N	Emergent Compounds	1,4-Dioxane	ug/L	2	1.4	2	N	U	Y	Y
VHA_SLC	GW-011	-111.85782655	40.750399707	A-GW-11_07/11/2016	11-Jul-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.37	0.066	0.5	Y	J	Y	Y
VHA_SLC	GW-011	-111.85782655	40.750399707	A-GW-11_07/11/2016	11-Jul-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	44	0.32	2	Y		Y	Y
VHA_SLC	GW-011	-111.85782655	40.750399707	A-GW-11_07/11/2016	11-Jul-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.56	0.082	0.5	Y		Y	Y
VHA_SLC	GW-011	-111.85782655	40.750399707	A-GW-11_07/11/2016	11-Jul-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.091	0.5	N	U	Y	Y
VHA_SLC	GW-011	-111.85782655	40.750399707	A-GW-11_09192016	19-Sep-16	N		WG	Groundwater	FALSE	N	Emergent Compounds	1,4-Dioxane	ug/L	2	0.38	2	N	UJ	Y	Y
VHA_SLC	GW-011	-111.85782655	40.750399707	A-GW-11_09192016	19-Sep-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.43	0.076	0.5	Y	J	Y	Y
VHA_SLC	GW-011	-111.85782655	40.750399707	A-GW-11_09192016	19-Sep-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	35	0.077	2.5	Y		Y	Y
VHA_SLC	GW-011	-111.85782655	40.750399707	A-GW-11_09192016	19-Sep-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.62	0.07	0.5	Y		Y	Y
VHA_SLC	GW-011	-111.85782655	40.750399707	A-GW-11_09192016	19-Sep-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.081	0.5	N	U	Y	Y
VHA_SLC	GW-012	-111.8594078	40.750454255	A-GW-012_03/02/2016	02-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.14	0.05	0.5	Y	J	Y	Y
VHA_SLC	GW-012	-111.8594078	40.750454255	A-GW-012_03/02/2016	02-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	4.8	0.057	0.5	Y		Y	Y
VHA_SLC	GW-012	-111.8594078	40.750454255	A-GW-012_03/02/2016	02-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.22	0.041	0.5	Y	J	Y	Y
VHA_SLC	GW-012	-111.8594078	40.750454255	A-GW-012_03/02/2016	02-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.054	0.5	N	U	Y	Y
VHA_SLC	GW-013	-111.85641596	40.750810352	A-GW-013_03042016	04-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.11	0.076	0.5	Y	J	Y	Y
VHA_SLC	GW-013	-111.85641596	40.750810352	A-GW-013_03042016	04-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	22	0.077	2.5	Y		Y	Y
VHA_SLC	GW-013	-111.85641596	40.750810352	A-GW-013_03042016	04-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.18	0.07	0.5	Y	J	Y	Y
VHA_SLC	GW-013	-111.85641596	40.750810352	A-GW-013_03042016	04-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.081	0.5	N	U	Y	Y
VHA_SLC	GW-014	-111.85882802	40.750412396	A-GW-014_03/02/2016	02-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.24	0.05	0.5	Y	J	Y	Y
VHA_SLC	GW-014	-111.85882802	40.750412396	A-GW-014_03/02/2016	02-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	3.2	0.057	0.5	Y		Y	Y
VHA_SLC	GW-014	-111.85882802	40.750412396	A-GW-014_03/02/2016	02-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	1.9	0.041	0.5	Y		Y	Y
VHA_SLC	GW-014	-111.85882802	40.750412396	A-GW-014_03/02/2016	02-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.054	0.5	N	U	Y	Y
VHA_SLC	GW-015	-111.85796458	40.751157622	A-GW-015-D_02292016	29-Feb-16	FD	A-GW-015_02292016	WG	Groundwater	FALSE	N	Emergent Compounds	1,4-Dioxane	ug/L	2	0.54	2	N	UJ	Y	Y
VHA_SLC	GW-015	-111.85796458	40.751157622	A-GW-015-D_02292016	29-Feb-16	FD	A-GW-015_02292016	WG	Groundwater	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.32	0.05	0.5	Y	J	Y	Y
VHA_SLC	GW-015	-111.85796458	40.751157622	A-GW-015_02292016	29-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	31	0.057	5	Y		Y	Y
VHA_SLC	GW-015	-111.85796458	40.751157622	A-GW-015-D_02292016	29-Feb-16	FD	A-GW-015_02292016	WG	Groundwater	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.63	0.041	0.5	Y	J	Y	Y
VHA_SLC	GW-015	-111.85796458	40.751157622	A-GW-015_02292016	29-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.054	0.5	N	U	Y	Y
VHA_SLC	GW-016	-111.858418	40.750926798	A-GW-016_02282016	28-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.26	0.05	0.5	Y	J	Y	Y
VHA_SLC	GW-016	-111.858418	40.750926798	A-GW-016_02282016	28-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	20	0.057	0.5	Y	J	Y	Y
VHA_SLC	GW-016	-111.858418	40.750926798	A-GW-016_02282016	28-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.61	0.041	0.5	Y		Y	Y
VHA_SLC	GW-016	-111.858418	40.750926798	A-GW-016_02282016	28-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.054	0.5	N	U	Y	Y
VHA_SLC	GW-016	-111.858418	40.750926798	A-GW-16_07/11/2016	11-Jul-16	N		WG	Groundwater	FALSE	N	Emergent Compounds	1,4-Dioxane	ug/L	2	1.4	2	N	U	Y	Y
VHA_SLC	GW-016	-111.858418	40.750926798	A-GW-16_07/11/2016	11-Jul-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.5	0.066	0.5	N	U	Y	Y
VHA_SLC	GW-016	-111.858418	40.750926798	A-GW-16_07/11/2016	11-Jul-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	13	0.079	0.5	Y		Y	Y
VHA_SLC	GW-016	-111.858418	40.750926798	A-GW-16_07/11/2016	11-Jul-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.53	0.082	0.5	Y		Y	Y
VHA_SLC	GW-016	-111.858418	40.750926798	A-GW-16_07/11/2016	11-Jul-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.091	0.5	N	U	Y	Y
VHA_SLC	GW-016	-111.858418	40.750926798	A-GW-16_09192016	19-Sep-16	N		WG	Groundwater	FALSE	N	Emergent Compounds	1,4-Dioxane	ug/L	2	0.38	2	N	UJ	Y	Y
VHA_SLC	GW-016	-111.858418	40.750926798	A-GW-16_09192016	19-Sep-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.3	0.076	0.5	Y	J	Y	Y
VHA_SLC	GW-016	-111.858418	40.750926798	A-GW-16_09192016	19-Sep-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	18	0.077	0.5	Y		Y	Y
VHA_SLC	GW-016	-111.858418	40.750926798	A-GW-16_09192016	19-Sep-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.73	0.07	0.5	Y		Y	Y

FacilityCode	LocationID	XCoord	YCoord	SampleName	SampleDateOnly	Sample Type	ParentSampleName	MatrixCode	Medium	FieldFiltered	Fraction	AnalysisGroup	ReportAnalyte	FinalResult Unit	Final Result	FinalMDL	FinalRL	Detect Flag	Final Qual	RA Selected Result	SLERA Use
VHA_SLC	GW-016	-111.858418	40.750926798	A-GW-16_09192016	19-Sep-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.081	0.5	N	U	Y	Y
VHA_SLC	GW-017	-111.85940304	40.751529891	A-GW-017_03/02/2016	02-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.5	0.05	0.5	N	U	Y	Y
VHA_SLC	GW-017	-111.85940304	40.751529891	A-GW-017_03/02/2016	02-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	1.1	0.057	0.5	Y		Y	Y
VHA_SLC	GW-017	-111.85940304	40.751529891	A-GW-017_03/02/2016	02-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.56	0.041	0.5	Y		Y	Y
VHA_SLC	GW-017	-111.85940304	40.751529891	A-GW-017_03/02/2016	02-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.054	0.5	N	U	Y	Y
VHA_SLC	GW-018	-111.858681	40.751833992	A-GW-018_03/02/2016	02-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.27	0.05	0.5	Y	J-	Y	Y
VHA_SLC	GW-018	-111.858681	40.751833992	A-GW-018_03/02/2016	02-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	10	0.057	0.5	Y		Y	Y
VHA_SLC	GW-018	-111.858681	40.751833992	A-GW-018_03/02/2016	02-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	2.1	0.041	0.5	Y		Y	Y
VHA_SLC	GW-018	-111.858681	40.751833992	A-GW-018_03/02/2016	02-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.054	0.5	N	U	Y	Y
VHA_SLC	GW-020	-111.85940495	40.752555628	A-GW-020_03012016	01-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.5	0.05	0.5	N	U	Y	Y
VHA_SLC	GW-020	-111.85940495	40.752555628	A-GW-020_03012016	01-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	2.7	0.057	0.5	Y		Y	Y
VHA_SLC	GW-020	-111.85940495	40.752555628	A-GW-020_03012016	01-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	1	0.041	0.5	Y		Y	Y
VHA_SLC	GW-020	-111.85940495	40.752555628	A-GW-020_03012016	01-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.054	0.5	N	U	Y	Y
VHA_SLC	GW-020	-111.85940495	40.752555628	A-GW-20_07/11/2016	11-Jul-16	N		WG	Groundwater	FALSE	N	Emergent Compounds	1,4-Dioxane	ug/L	2	1.4	2	N	U	Y	Y
VHA_SLC	GW-020	-111.85940495	40.752555628	A-GW-20_07/11/2016	11-Jul-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.5	0.066	0.5	N	U	Y	Y
VHA_SLC	GW-020	-111.85940495	40.752555628	A-GW-20_07/11/2016	11-Jul-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	8.3	0.079	0.5	Y		Y	Y
VHA_SLC	GW-020	-111.85940495	40.752555628	A-GW-20_07/11/2016	11-Jul-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.4	0.082	0.5	Y	J	Y	Y
VHA_SLC	GW-020	-111.85940495	40.752555628	A-GW-20_07/11/2016	11-Jul-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.091	0.5	N	U	Y	Y
VHA_SLC	GW-020	-111.85940495	40.752555628	A-GW-20_09192016	19-Sep-16	N		WG	Groundwater	FALSE	N	Emergent Compounds	1,4-Dioxane	ug/L	2.1	0.39	2.1	N	UJ	Y	Y
VHA_SLC	GW-020	-111.85940495	40.752555628	A-GW-20_09192016	19-Sep-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.5	0.076	0.5	N	U	Y	Y
VHA_SLC	GW-020	-111.85940495	40.752555628	A-GW-20_09192016	19-Sep-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	8.6	0.077	0.5	Y		Y	Y
VHA_SLC	GW-020	-111.85940495	40.752555628	A-GW-20_09192016	19-Sep-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.29	0.07	0.5	Y	J	Y	Y
VHA_SLC	GW-020	-111.85940495	40.752555628	A-GW-20_09192016	19-Sep-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.081	0.5	N	U	Y	Y
VHA_SLC	GW-021	-111.85899616	40.754018633	A-GW-021_03012016	01-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.5	0.05	0.5	N	U	Y	Y
VHA_SLC	GW-021	-111.85899616	40.754018633	A-GW-021_03012016	01-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	0.5	0.057	0.5	N	U	Y	Y
VHA_SLC	GW-021	-111.85899616	40.754018633	A-GW-021_03012016	01-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.5	0.041	0.5	N	U	Y	Y
VHA_SLC	GW-021	-111.85899616	40.754018633	A-GW-021_03012016	01-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.054	0.5	N	U	Y	Y
VHA_SLC	GW-022	-111.86074431	40.75366459	A-GW-022_03012016	01-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.5	0.05	0.5	N	U	Y	Y
VHA_SLC	GW-022	-111.86074431	40.75366459	A-GW-022_03012016	01-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	0.5	0.057	0.5	N	U	Y	Y
VHA_SLC	GW-022	-111.86074431	40.75366459	A-GW-022_03012016	01-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.5	0.041	0.5	N	U	Y	Y
VHA_SLC	GW-022	-111.86074431	40.75366459	A-GW-022_03012016	01-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.054	0.5	N	U	Y	Y
VHA_SLC	GW-023	-111.85809095	40.754945695	A-GW-023_02/22/2016	22-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.5	0.076	0.5	N	U	Y	Y
VHA_SLC	GW-023	-111.85809095	40.754945695	A-GW-023_02/22/2016	22-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	0.5	0.077	0.5	N	U	Y	Y
VHA_SLC	GW-023	-111.85809095	40.754945695	A-GW-023_02/22/2016	22-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.5	0.07	0.5	N	U	Y	Y
VHA_SLC	GW-023	-111.85809095	40.754945695	A-GW-023_02/22/2016	22-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.081	0.5	N	U	Y	Y
VHA_SLC	GW-024	-111.86158488	40.754276121	A-GW-024_02/25/2016	25-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.5	0.077	0.5	N	U	Y	Y
VHA_SLC	GW-024	-111.86158488	40.754276121	A-GW-024_02/25/2016	25-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	0.5	0.077	0.5	N	U	Y	Y
VHA_SLC	GW-024	-111.86158488	40.754276121	A-GW-024_02/25/2016	25-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.5	0.07	0.5	N	U	Y	Y
VHA_SLC	GW-024	-111.86158488	40.754276121	A-GW-024_02/25/2016	25-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.15	0.5	N	U	Y	Y
VHA_SLC	GW-025	-111.86119087	40.752100013	A-GW-025_02292016	29-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.5	0.076	0.5	N	U	Y	Y
VHA_SLC	GW-025	-111.86119087	40.752100013	A-GW-025_02292016	29-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	0.5	0.077	0.5	N	U	Y	Y
VHA_SLC	GW-025	-111.86119087	40.752100013	A-GW-025_02292016	29-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.5	0.07	0.5	N	U	Y	Y
VHA_SLC	GW-025	-111.86119087	40.752100013	A-GW-025_02292016	29-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.081	0.5	N	U	Y	Y
VHA_SLC	GW-026	-111.85921621	40.747684727	A-GW-026_02282016	28-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.5	0.076	0.5	N	U	Y	Y
VHA_SLC	GW-026	-111.85921621	40.747684727	A-GW-026_02282016	28-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	0.27	0.077	0.5	Y	J	Y	Y
VHA_SLC	GW-026	-111.85921621	40.747684727	A-GW-026_02282016	28-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.5	0.07	0.5	N	U	Y	Y
VHA_SLC	GW-026	-111.85921621	40.747684727	A-GW-026_02282016	28-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.081	0.5	N	U	Y	Y
VHA_SLC	GW-027	-111.85565635	40.751732516	A-GW-027_03052016	05-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.14	0.076	0.5	Y	J	Y	Y
VHA_SLC	GW-027	-111.85565635	40.751732516	A-GW-027_03052016	05-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	22	0.077	2.5	Y		Y	Y
VHA_SLC	GW-027	-111.85565635	40.751732516	A-GW-027_03052016	05-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.21	0.07	0.5	Y	J	Y	Y
VHA_SLC	GW-027	-111.85565635	40.751732516	A-GW-027_03052016	05-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.081	0.5	N	U	Y	Y
VHA_SLC	GW-028	-111.8556802	40.749970608	A-GW-028_03052016	05-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.27	0.076	0.5	Y	J	Y	Y
VHA_SLC	GW-028	-111.8556802	40.749970608	A-GW-028_03052016	05-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	43	0.077	5	Y		Y	Y
VHA_SLC	GW-028	-111.8556802	40.749970608	A-GW-028_03052016	05-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.4	0.07	0.5	Y	J	Y	Y
VHA_SLC	GW-028	-111.8556802	40.749970608	A-GW-028_03052016	05-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.081	0.5	N	U	Y	Y
VHA_SLC	GW-031	-111.8627665	40.750481448	A-GW-031_02282016	28-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.5	0.076	0.5	N	U	Y	Y
VHA_SLC	GW-031	-111.8627665	40.750481448	A-GW-031_02282016	28-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	0.5	0.077	0.5	N	U	Y	Y
VHA_SLC	GW-031	-111.8627665	40.750481448	A-GW-031_02282016	28-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.5	0.07	0.5	N	U	Y	Y
VHA_SLC	GW-031	-111.8627665	40.750481448	A-GW-031_02282016	28-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.081	0.5	N	U	Y	Y
VHA_SLC	GW-039	-111.86265044	40.752907534	A-GW-039_02/23/2016	23-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.5	0.076	0.5	N	U	Y	Y
VHA_SLC	GW-039	-111.86265044	40.752907534	A-GW-039_02/23/2016	23-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	0.5	0.077	0.5	N	U	Y	Y
VHA_SLC	GW-039	-111.86265044	40.752907534	A-GW-039_02/23/2016	23-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.5	0.07	0.5	N	U	Y	Y
VHA_SLC	GW-039	-111.86265044	40.752907534	A-GW-039_02/23/2016	23-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.081	0.5	N	U	Y	Y
VHA_SLC	GW-040	-111.860866	40.751340955	A-GW-040_03/03/2016	03-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.5	0.05	0.5	N	UJ	Y	Y
VHA_SLC	GW-040	-111.860866	40.751340955	A-GW-040_03/03/2016	03-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	0.13	0.057	0.5	Y	J	Y	Y
VHA_SLC	GW-040	-111.860866	40.751340955	A-GW-040_03/03/2016	03-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.5	0.041	0.5	N	U	Y	Y
VHA_SLC	GW-040	-111.860866	40.751340955	A-GW-040_03/03/2016	03-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.054	0.5	N	U	Y	Y
VHA_SLC	GW-043	-111.85585893	40.74711773	A-GW-043_03032016	03-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.5	0.076	0.5	N	U	Y	Y
VHA_SLC	GW-043	-111.85585893	40.74711773	A-GW-043_03032016	03-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	0.35	0.077	0.5	Y	J	Y	Y
VHA_SLC	GW-043	-111.85585893	40.74711773	A-GW-043_03032016	03-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.5	0.07	0.5	N	U	Y	Y
VHA_SLC	GW-043	-111.85585893	40.74711773	A-GW-043_03032016	03-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.081	0.5	N	U	Y	Y
VHA_SLC	GW-046	-111.8569676	40.746248606	A-GW-046_02/24/2016	24-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.5	0.077	0.5	N	U	Y	Y
VHA_SLC	GW-046	-111.8569676	40.746248606	A-GW-046_02/24/2016	24-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	0.2	0.077	0.5	Y	J	Y	Y
VHA_SLC	GW-046	-111.8569676	40.746248606	A-GW-046_02/24/2016	24-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.5	0.07	0.5	N	U	Y	Y
VHA_SLC	GW-046	-111.8569676	40.746248606	A-GW-046_02/24/2016	24-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.15	0.5	N	U	Y	Y

FacilityCode	LocationID	XCoord	YCoord	SampleName	SampleDateOnly	Sample Type	ParentSampleName	MatrixCode	Medium	FieldFiltered	Fraction	AnalysisGroup	ReportAnalyte	FinalResult Unit	Final Result	FinalMDL	FinalRL	Detect Flag	Final Qual	RA Selected Result	SLERA Use
VHA_SLC	GW-048	-111.8532236	40.747394704	A-GW-048_03/03/2016	03-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.5	0.05	0.5	N	U	Y	Y
VHA_SLC	GW-048	-111.8532236	40.747394704	A-GW-048_03/03/2016	03-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	0.5	0.057	0.5	N	U	Y	Y
VHA_SLC	GW-048	-111.8532236	40.747394704	A-GW-048_03/03/2016	03-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.5	0.041	0.5	N	U	Y	Y
VHA_SLC	GW-048	-111.8532236	40.747394704	A-GW-048_03/03/2016	03-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.054	0.5	N	U	Y	Y
VHA_SLC	GW-049	-111.8546166	40.748929183	A-GW-049_02/25/2016	25-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.5	0.077	0.5	N	U	Y	Y
VHA_SLC	GW-049	-111.8546166	40.748929183	A-GW-049_02/25/2016	25-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	1.2	0.077	0.5	Y		Y	Y
VHA_SLC	GW-049	-111.8546166	40.748929183	A-GW-049_02/25/2016	25-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.5	0.07	0.5	N	U	Y	Y
VHA_SLC	GW-049	-111.8546166	40.748929183	A-GW-049_02/25/2016	25-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.15	0.5	N	U	Y	Y
VHA_SLC	GW-049	-111.8546166	40.748929183	A-GW-49_07/12/2016	12-Jul-16	N		WG	Groundwater	FALSE	N	Emergent Compounds	1,4-Dioxane	ug/L	2	1.4	2	N	U	Y	Y
VHA_SLC	GW-049	-111.8546166	40.748929183	A-GW-49_07/12/2016	12-Jul-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.5	0.066	0.5	N	U	Y	Y
VHA_SLC	GW-049	-111.8546166	40.748929183	A-GW-49_07/12/2016	12-Jul-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	1.1	0.079	0.5	Y		Y	Y
VHA_SLC	GW-049	-111.8546166	40.748929183	A-GW-49_07/12/2016	12-Jul-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.5	0.082	0.5	N	U	Y	Y
VHA_SLC	GW-049	-111.8546166	40.748929183	A-GW-49_07/12/2016	12-Jul-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.091	0.5	N	U	Y	Y
VHA_SLC	GW-049	-111.8546166	40.748929183	A-GW-49_09202016	20-Sep-16	N		WG	Groundwater	FALSE	N	Emergent Compounds	1,4-Dioxane	ug/L	2.1	0.39	2.1	N	UJ	Y	Y
VHA_SLC	GW-049	-111.8546166	40.748929183	A-GW-49_09202016	20-Sep-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.5	0.076	0.5	N	U	Y	Y
VHA_SLC	GW-049	-111.8546166	40.748929183	A-GW-49_09202016	20-Sep-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	1.1	0.077	0.5	Y		Y	Y
VHA_SLC	GW-049	-111.8546166	40.748929183	A-GW-49_09202016	20-Sep-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.5	0.07	0.5	N	U	Y	Y
VHA_SLC	GW-049	-111.8546166	40.748929183	A-GW-49_09202016	20-Sep-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.081	0.5	N	U	Y	Y
VHA_SLC	GW-050	-111.85600439	40.748343447	A-GW-050_02292016	29-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	1.1	0.076	0.5	Y		Y	Y
VHA_SLC	GW-050	-111.85600439	40.748343447	A-GW-050_02292016	29-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	2.5	0.077	0.5	Y		Y	Y
VHA_SLC	GW-050	-111.85600439	40.748343447	A-GW-050_02292016	29-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	1.7	0.07	0.5	Y		Y	Y
VHA_SLC	GW-050	-111.85600439	40.748343447	A-GW-050_02292016	29-Feb-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.081	0.5	N	U	Y	Y
VHA_SLC	GW-050	-111.85600439	40.748343447	A-GW-50_07/12/2016	12-Jul-16	N		WG	Groundwater	FALSE	N	Emergent Compounds	1,4-Dioxane	ug/L	2	1.4	2	N	U	Y	Y
VHA_SLC	GW-050	-111.85600439	40.748343447	A-GW-50_07/12/2016	12-Jul-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	1.3	0.066	0.5	Y		Y	Y
VHA_SLC	GW-050	-111.85600439	40.748343447	A-GW-50_07/12/2016	12-Jul-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	2.8	0.079	0.5	Y		Y	Y
VHA_SLC	GW-050	-111.85600439	40.748343447	A-GW-50_07/12/2016	12-Jul-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	6.1	0.082	0.5	Y		Y	Y
VHA_SLC	GW-050	-111.85600439	40.748343447	A-GW-50_07/12/2016	12-Jul-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.091	0.5	N	U	Y	Y
VHA_SLC	GW-050	-111.85600439	40.748343447	A-GW-50_09202016	20-Sep-16	N		WG	Groundwater	FALSE	N	Emergent Compounds	1,4-Dioxane	ug/L	2	0.38	2	N	UJ	Y	Y
VHA_SLC	GW-050	-111.85600439	40.748343447	A-GW-50_09202016	20-Sep-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	1.4	0.076	0.5	Y		Y	Y
VHA_SLC	GW-050	-111.85600439	40.748343447	A-GW-50_09202016	20-Sep-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	3	0.077	0.5	Y		Y	Y
VHA_SLC	GW-050	-111.85600439	40.748343447	A-GW-50_09202016	20-Sep-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	6.4	0.07	0.5	Y		Y	Y
VHA_SLC	GW-050	-111.85600439	40.748343447	A-GW-50_09202016	20-Sep-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.081	0.5	N	U	Y	Y
VHA_SLC	GW-051	-111.8566376	40.751368162	A-GW-051_03042016	04-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.5	0.076	0.5	N	U	Y	Y
VHA_SLC	GW-051	-111.8566376	40.751368162	A-GW-051_03042016	04-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	23	0.077	2.5	Y		Y	Y
VHA_SLC	GW-051	-111.8566376	40.751368162	A-GW-051_03042016	04-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.19	0.07	0.5	Y	J	Y	Y
VHA_SLC	GW-051	-111.8566376	40.751368162	A-GW-051_03042016	04-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.081	0.5	N	U	Y	Y
VHA_SLC	GW-052	-111.85525392	40.74967759	A-GW-052-D_03/03/2016	03-Mar-16	FD	A-GW-052_03/03/2016	WG	Groundwater	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.42	0.05	0.5	Y	J	Y	Y
VHA_SLC	GW-052	-111.85525392	40.74967759	A-GW-052-D_03/03/2016	03-Mar-16	FD	A-GW-052_03/03/2016	WG	Groundwater	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	61	0.057	5	Y		Y	Y
VHA_SLC	GW-052	-111.85525392	40.74967759	A-GW-052-D_03/03/2016	03-Mar-16	FD	A-GW-052_03/03/2016	WG	Groundwater	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.61	0.041	0.5	Y	J	Y	Y
VHA_SLC	GW-052	-111.85525392	40.74967759	A-GW-052_03/03/2016	03-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.054	0.5	N	U	Y	Y
VHA_SLC	GW-052	-111.85525392	40.74967759	A-GW-52_07/12/2016	12-Jul-16	N		WG	Groundwater	FALSE	N	Emergent Compounds	1,4-Dioxane	ug/L	2.7	1.4	2	Y		Y	Y
VHA_SLC	GW-052	-111.85525392	40.74967759	A-GW-52_07/12/2016	12-Jul-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.32	0.066	0.5	Y	J	Y	Y
VHA_SLC	GW-052	-111.85525392	40.74967759	A-GW-52_07/12/2016	12-Jul-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	52	0.39	2.5	Y		Y	Y
VHA_SLC	GW-052	-111.85525392	40.74967759	A-GW-52_07/12/2016	12-Jul-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.56	0.082	0.5	Y		Y	Y
VHA_SLC	GW-052	-111.85525392	40.74967759	A-GW-52_07/12/2016	12-Jul-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.091	0.5	N	U	Y	Y
VHA_SLC	GW-052	-111.85525392	40.74967759	A-GW-52_09202016	20-Sep-16	N		WG	Groundwater	FALSE	N	Emergent Compounds	1,4-Dioxane	ug/L	2	0.38	2	N	UJ	Y	Y
VHA_SLC	GW-052	-111.85525392	40.74967759	A-GW-52_09202016	20-Sep-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.3	0.076	0.5	Y	J	Y	Y
VHA_SLC	GW-052	-111.85525392	40.74967759	A-GW-52_09202016	20-Sep-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	43	0.077	2.5	Y		Y	Y
VHA_SLC	GW-052	-111.85525392	40.74967759	A-GW-52_09202016	20-Sep-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.44	0.07	0.5	Y	J	Y	Y
VHA_SLC	GW-052	-111.85525392	40.74967759	A-GW-52_09202016	20-Sep-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.081	0.5	N	U	Y	Y
VHA_SLC	GW-053	-111.85674611	40.749623141	A-GW-053_03/03/2016	03-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.31	0.05	0.5	Y	J	Y	Y
VHA_SLC	GW-053	-111.85674611	40.749623141	A-GW-053_03/03/2016	03-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	37	0.057	5	Y		Y	Y
VHA_SLC	GW-053	-111.85674611	40.749623141	A-GW-053_03/03/2016	03-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.83	0.041	0.5	Y		Y	Y
VHA_SLC	GW-053	-111.85674611	40.749623141	A-GW-053_03/03/2016	03-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.054	0.5	N	U	Y	Y
VHA_SLC	GW-053	-111.85674611	40.749623141	A-GW-53_07/11/2016	11-Jul-16	N		WG	Groundwater	FALSE	N	Emergent Compounds	1,4-Dioxane	ug/L	2	1.4	2	N	U	Y	Y
VHA_SLC	GW-053	-111.85674611	40.749623141	A-GW-53_07/11/2016	11-Jul-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.21	0.066	0.5	Y	J	Y	Y
VHA_SLC	GW-053	-111.85674611	40.749623141	A-GW-53_07/11/2016	11-Jul-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	40	0.32	2	Y		Y	Y
VHA_SLC	GW-053	-111.85674611	40.749623141	A-GW-53_07/11/2016	11-Jul-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.84	0.082	0.5	Y		Y	Y
VHA_SLC	GW-053	-111.85674611	40.749623141	A-GW-53_07/11/2016	11-Jul-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.091	0.5	N	U	Y	Y
VHA_SLC	GW-053	-111.85674611	40.749623141	A-GW-53_09192016	19-Sep-16	N		WG	Groundwater	FALSE	N	Emergent Compounds	1,4-Dioxane	ug/L	2	0.38	2	N	UJ	Y	Y
VHA_SLC	GW-053	-111.85674611	40.749623141	A-GW-53_09192016	19-Sep-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.22	0.076	0.5	Y	J	Y	Y
VHA_SLC	GW-053	-111.85674611	40.749623141	A-GW-53_09192016	19-Sep-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	45	0.077	2.5	Y		Y	Y
VHA_SLC	GW-053	-111.85674611	40.749623141	A-GW-53_09192016	19-Sep-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.59	0.07	0.5	Y		Y	Y
VHA_SLC	GW-053	-111.85674611	40.749623141	A-GW-53_09192016	19-Sep-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.081	0.5	N	U	Y	Y
VHA_SLC	GW-055	-111.85674793	40.747644695	A-GW-055_03052016	05-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.5	0.076	0.5	N	U	Y	Y
VHA_SLC	GW-055	-111.85674793	40.747644695	A-GW-055_03052016	05-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	0.19	0.077	0.5	Y	J	Y	Y
VHA_SLC	GW-055	-111.85674793	40.747644695	A-GW-055_03052016	05-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.5	0.07	0.5	N	U	Y	Y
VHA_SLC	GW-055	-111.85674793	40.747644695	A-GW-055_03052016	05-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.081	0.5	N	U	Y	Y
VHA_SLC	GW-059	-111.85939921	40.750770387	A-GW-059_03052016	05-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	3.9	0.076	0.5	Y		Y	Y
VHA_SLC	GW-059	-111.85939921	40.750770387	A-GW-059_03052016	05-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	0.17	0.077	0.5	Y	J	Y	Y
VHA_SLC	GW-059	-111.85939921	40.750770387	A-GW-059_03052016	05-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	7.7	0.07	0.5	Y		Y	Y
VHA_SLC	GW-059	-111.85939921	40.750770387	A-GW-059_03052016	05-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.081	0.5	N	U	Y	Y
VHA_SLC	GW-059	-111.85939921	40.750770387	A-GW-59_07/11/2016	11-Jul-16	N		WG	Groundwater	FALSE	N	Emergent Compounds	1,4-Dioxane	ug/L	2	1.4	2	N	U	Y	Y
VHA_SLC	GW-059	-111.85939921	40.750770387	A-GW-59_07/11/2016	11-Jul-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	2.5	0.066	0.5	Y		Y	Y
VHA_SLC	GW-059	-111.85939921	40.750770387	A-GW-59_07/11/2016	11-Jul-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	2	0.079	0.5	Y		Y	Y

FacilityCode	LocationID	XCoord	YCoord	SampleName	SampleDateOnly	Sample Type	ParentSampleName	MatrixCode	Medium	FieldFiltered	Fraction	AnalysisGroup	ReportAnalyte	FinalResult Unit	Final Result	FinalMDL	FinalRL	Detect Flag	Final Qual	RA Selected Result	SLERA Use
VHA_SLC	GW-059	-111.85939921	40.750770387	A-GW-59_07/11/2016	11-Jul-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	6.1	0.082	0.5	Y		Y	Y
VHA_SLC	GW-059	-111.85939921	40.750770387	A-GW-59_07/11/2016	11-Jul-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.091	0.5	N	U	Y	Y
VHA_SLC	GW-059	-111.85939921	40.750770387	A-GW-59_09192016	19-Sep-16	N		WG	Groundwater	FALSE	N	Emergent Compounds	1,4-Dioxane	ug/L	2	0.38	2	N	UJ	Y	Y
VHA_SLC	GW-059	-111.85939921	40.750770387	A-GW-59_09192016	19-Sep-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	3	0.076	0.5	Y		Y	Y
VHA_SLC	GW-059	-111.85939921	40.750770387	A-GW-59_09192016	19-Sep-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	1	0.077	0.5	Y		Y	Y
VHA_SLC	GW-059	-111.85939921	40.750770387	A-GW-59_09192016	19-Sep-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	7.2	0.07	0.5	Y		Y	Y
VHA_SLC	GW-059	-111.85939921	40.750770387	A-GW-59_09192016	19-Sep-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.081	0.5	N	U	Y	Y
VHA_SLC	GW-060	-111.85872892	40.749877864	A-GW-060_03/08/2016	08-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.5	0.076	0.5	N	U	Y	Y
VHA_SLC	GW-060	-111.85872892	40.749877864	A-GW-060_03/08/2016	08-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	10	0.077	0.5	Y		Y	Y
VHA_SLC	GW-060	-111.85872892	40.749877864	A-GW-060_03/08/2016	08-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	1	0.07	0.5	Y		Y	Y
VHA_SLC	GW-060	-111.85872892	40.749877864	A-GW-060_03/08/2016	08-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.081	0.5	N	U	Y	Y
VHA_SLC	GW-061	-111.85804273	40.747598878	A-GW-061_03052016	05-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.5	0.076	0.5	N	U	Y	Y
VHA_SLC	GW-061	-111.85804273	40.747598878	A-GW-061_03052016	05-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	2.3	0.077	0.5	Y		Y	Y
VHA_SLC	GW-061	-111.85804273	40.747598878	A-GW-061_03052016	05-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.5	0.07	0.5	N	U	Y	Y
VHA_SLC	GW-061	-111.85804273	40.747598878	A-GW-061_03052016	05-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.081	0.5	N	U	Y	Y
VHA_SLC	GW-061	-111.85804273	40.747598878	A-GW-61_07/12/2016	12-Jul-16	N		WG	Groundwater	FALSE	N	Emergent Compounds	1,4-Dioxane	ug/L	2	1.4	2	N	U	Y	Y
VHA_SLC	GW-061	-111.85804273	40.747598878	A-GW-61_07/12/2016	12-Jul-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.5	0.066	0.5	N	U	Y	Y
VHA_SLC	GW-061	-111.85804273	40.747598878	A-GW-61_07/12/2016	12-Jul-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	2.9	0.079	0.5	Y		Y	Y
VHA_SLC	GW-061	-111.85804273	40.747598878	A-GW-61_07/12/2016	12-Jul-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.5	0.082	0.5	N	U	Y	Y
VHA_SLC	GW-061	-111.85804273	40.747598878	A-GW-61_07/12/2016	12-Jul-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.091	0.5	N	U	Y	Y
VHA_SLC	GW-061	-111.85804273	40.747598878	A-GW-61_09202016	20-Sep-16	N		WG	Groundwater	FALSE	N	Emergent Compounds	1,4-Dioxane	ug/L	2	0.38	2	N	UJ	Y	Y
VHA_SLC	GW-061	-111.85804273	40.747598878	A-GW-61_09202016	20-Sep-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.5	0.076	0.5	N	U	Y	Y
VHA_SLC	GW-061	-111.85804273	40.747598878	A-GW-61_09202016	20-Sep-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	3	0.077	0.5	Y		Y	Y
VHA_SLC	GW-061	-111.85804273	40.747598878	A-GW-61_09202016	20-Sep-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.15	0.07	0.5	Y	J	Y	Y
VHA_SLC	GW-061	-111.85804273	40.747598878	A-GW-61_09202016	20-Sep-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.081	0.5	N	U	Y	Y
VHA_SLC	GW-062	-111.85809735	40.752430973	A-GW-062_03/08/2016	08-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	cis-1,2-Dichloroethene	ug/L	0.16	0.05	0.5	Y	J	Y	Y
VHA_SLC	GW-062	-111.85809735	40.752430973	A-GW-062_03/08/2016	08-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Tetrachloroethene	ug/L	20	0.077	2.5	Y		Y	Y
VHA_SLC	GW-062	-111.85809735	40.752430973	A-GW-062_03/08/2016	08-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Trichloroethylene	ug/L	0.23	0.041	0.5	Y	J	Y	Y
VHA_SLC	GW-062	-111.85809735	40.752430973	A-GW-062_03/08/2016	08-Mar-16	N		WG	Groundwater	FALSE	N	Volatile Organic Compounds	Vinyl Chloride	ug/L	0.5	0.054	0.5	N	U	Y	Y

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G-2

Ecological Checklists

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CHECKLIST FOR ECOLOGICAL ASSESSMENT / SURFACE WATER SAMPLING

Site Name: 700 S 1600 East PCE Plume

Date: ~~5/3/16~~ KL 5/4/16 Time: 1400 Temperature: 82°F Precipitation (24 hr): 0

Surface Water Sample Location: SW-01

Sample location site use description (circle one): residential parcel, commercial parcel, industrial, park, other: ______

Seep? Y / N

Spring? Y / N

Pond? Y / N

Creek/Stream? Y / N

Describe and estimate flow (i.e., barely accumulating seep, spring with noticeably free flowing water, ponded area [depth], creek [width, depth]. : water accumulating at about 0.1L/min

Describe area immediately surrounding the surface water location. Circle all that apply: mowed lawn, sidewalk, street, ornamental planting/garden, wild grass, brush, maintained trees, unmaintained/undisturbed woods, ravine, other. Description: seep is coming out of sidewalk/front yard

Describe surrounding habitat (within 200 feet of sampling location), circle all that apply: mowed lawn, ornamental planting/garden, wild grass, brush, sporadic/maintained tree plantings, unmaintained woods, other. Description: residential neighborhood

Do any potentially sensitive environmental areas exist adjacent to or in proximity to the site? For example, flood plains, wetlands? Y / N Describe: ______

Are there any wooded areas on the parcel? Y / N What percentage of the parcel is wooded? ____

What is dominant type of vegetation in wooded area (circle one): evergreen / deciduous.
What is predominant size of trees on the parcel (diameter at breast height) (circle one): 0-6 in., 6-12 in., > 12 in.

Is shrub/scrub vegetation present at the parcel? Y / N What percentage of the parcel is shrub/scrub vegetation? __—__. Is the shrub/scrub unmaintained (wild) or maintained (circle one). Average height of the shrub/scrub: 0-2ft, 2-2.5 ft, > 5 ft. Is scrub/shrub dense, patchy or sparse (circle one).

Are there open field areas present on the parcel? Y / N. *lawn, right-of-way What percentage of the parcel is open field / lawn? __40%__. What is the predominant height of field plants: __2"__

Are there other types of terrestrial habitats present (other than woods, shrub, field/lawn): __man made__

Observations regarding the presence and/or absence of insects, fish, birds, mammals, etc.? __insects observed where seep emerges__

Other notes/observations: __seep runs across sidewalk into grass__

Photo collected? Y / N

CHECKLIST FOR ECOLOGICAL ASSESSMENT / SURFACE WATER SAMPLING

Site Name: 700 S 1600 East PCE Plume

Date: 5/11/16 Time: 0910 Temperature: 53°F Precipitation (24 hr): 0

Surface Water Sample Location: SW-02

Sample location site use description (circle one): residential parcel, commercial parcel, industrial, park, other: road

Seep? Y / N

Spring? Y / N

Pond? Y / N

Creek/Stream? Y / N

*storm drain

Describe and estimate flow (i.e., barely accumulating seep, spring with noticeably free flowing water, ponded area [depth], creek [width, depth]. : water is moving very quickly - great quantity of water

Describe area immediately surrounding the surface water location. Circle all that apply: mowed lawn, sidewalk, street, ornamental planting/garden, wild grass, brush, maintained trees, unmaintained/undisturbed woods, ravine, other. Description: ______

Describe surrounding habitat (within 200 feet of sampling location), circle all that apply: mowed lawn, ornamental planting/garden, wild grass, brush, sporadic/maintained tree plantings, unmaintained woods, other. Description: street in city

Do any potentially sensitive environmental areas exist adjacent to or in proximity to the site? For example, flood plains, wetlands? Y / N Describe: ______

Are there any wooded areas on the parcel? Y / N. What percentage of the parcel is wooded? —

What is dominant type of vegetation in wooded area (circle one): NA evergreen / deciduous.
What is predominant size of trees on the parcel (diameter at breast height) (circle one): 0-6 in., 6-12 in., > 12 in.

Is shrub/scrub vegetation present at the parcel? Y / N What percentage of the parcel is shrub/scrub vegetation? ___—___. Is the shrub/scrub unmaintained (wild) or maintained (circle one). Average height of the shrub/scrub: 0-2ft, 2-2.5 ft, > 5 ft. Is scrub/shrub dense, patchy or sparse (circle one).

Are there open field areas present on the parcel? Y / N What percentage of the parcel is open field / lawn? ___—___. What is the predominant height of field plants: ___—___

Are there other types of terrestrial habitats present (other than woods, shrub, field/lawn): ___—___

Observations regarding the presence and/or absence of insects, fish, birds, mammals, etc.? ____
No wildlife

Other notes/observations: ____

Photo collected? Y / N

Kristi Hopper 3/11/16

CHECKLIST FOR ECOLOGICAL ASSESSMENT / SURFACE WATER SAMPLING

Site Name: 700 S 1600 East PCE Plume

Date: 5/11/16 Time: 0920 Temperature: 53°F Precipitation (24 hr): 0

Surface Water Sample Location: SW-03

Sample location site use description (circle one): residential parcel, commercial parcel, industrial, park, other: street

Seep? Y / N

Spring? Y / N

Pond? Y / N

Creek/Stream? Y / N

*storm drain

Describe and estimate flow (i.e., barely accumulating seep, spring with noticeably free flowing water, ponded area [depth], creek [width, depth]. : water is moving very quickly - great quantity of water

Describe area immediately surrounding the surface water location. Circle all that apply: mowed lawn, sidewalk, street, ornamental planting/garden, wild grass, brush, maintained trees, unmaintained/undisturbed woods, ravine, other. Description:

Describe surrounding habitat (within 200 feet of sampling location), circle all that apply: mowed lawn, ornamental planting/garden, wild grass, brush, sporadic/maintained tree plantings, unmaintained woods, other. Description: city street

Do any potentially sensitive environmental areas exist adjacent to or in proximity to the site? For example, flood plains, wetlands? Y / N Describe:

Are there any wooded areas on the parcel? Y / N What percentage of the parcel is wooded? -

What is dominant type of vegetation in wooded area (circle one): NA evergreen / deciduous.
What is predominant size of trees on the parcel (diameter at breast height) (circle one): 0-6 in., 6-12 in., > 12 in.

Is shrub/scrub vegetation present at the parcel? Y / N What percentage of the parcel is shrub/scrub vegetation? ___—___. Is the shrub/scrub unmaintained (wild) or maintained (circle one). Average height of the shrub/scrub: 0-2ft, 2-2.5 ft, > 5 ft. Is scrub/shrub dense, patchy or sparse (circle one).

Are there open field areas present on the parcel? Y / N What percentage of the parcel is open field / lawn? ___—___. What is the predominant height of field plants: ___—___

Are there other types of terrestrial habitats present (other than woods, shrub, field/lawn): ___—___

Observations regarding the presence and/or absence of insects, fish, birds, mammals, etc.? ______
No wildlife

Other notes/observations: ______

Photo collected? Y / N

[illegible] 5/10/14

CHECKLIST FOR ECOLOGICAL ASSESSMENT / SURFACE WATER SAMPLING

Site Name: 700 S 1600 East PCE Plume
Date: 5/2/16 Time: 1340 Temperature: 65 Precipitation (24 hr): 0
Surface Water Sample Location: SW-04

Sample location site use description (circle one): residential parcel, commercial parcel, industrial, park, other: ______

Seep? Y / N
Spring? Y / N
Pond? Y / N
Creek/Stream? Y / N

Describe and estimate flow (i.e., barely accumulating seep, spring with noticeably free flowing water, ponded area [depth], creek [width, depth]. : Ponded spring with slight outflow

Describe area immediately surrounding the surface water location. Circle ~~all that apply~~: mowed lawn, sidewalk, street, ornamental planting/garden, wild grass, brush, maintained trees, unmaintained/undisturbed woods, ravine, other. Description: ______

Describe surrounding ~~habitat~~ (within 200 feet of sampling location~~), circle all that apply~~: mowed lawn, ornamental planting/garden, wild grass, brush, ~~sporadic/~~maintained tree plantings, unmaintained woods, other. Description: ______
Ivy

Do any potentially sensitive environmental areas exist adjacent to or in proximity to the site? For example, flood plains, wetlands? Y / N Describe: "Pollinator Habitat" plants for pollinators across street

Are there any wooded areas on the parcel? Y / N. What percentage of the parcel is wooded? 15%

What is dominant type of vegetation in wooded area (circle one): evergreen / deciduous.
What is predominant size of trees on the parcel (diameter at breast height) (circle one): 0-6 in, 6-12 in, > 12 in.

Is shrub/scrub vegetation present at the parcel? Y / N. What percentage of the ~~parcel is~~ shrub/scrub vegetation? 15%. Is the shrub/~~scrub~~ unmaintained (wild) or maintained (circle one). Average height of the shrub/scrub: 0-2ft, 2-2.5 ft, > 5 ft. Is scrub/shrub dense, patchy or sparse (circle one).

Are there open field areas present on the parcel? Y / N. What percentage of the parcel is open field / lawn? 70%. What is the predominant height of field plants: ______

Are there other types of terrestrial habitats present (other than woods, shrub, field/lawn): man made - homes, etc.

Observations regarding the presence and/or absence of insects, fish, birds, mammals, etc.?
Bees across the street
Birds in trees

Other notes/observations: spring formed into a series of ponds

Photo collected? Y / N

CHECKLIST FOR ECOLOGICAL ASSESSMENT / SURFACE WATER SAMPLING

Site Name: 700 S 1600 East PCE Plume

Date: 5/11/16 Time: 0757 Temperature: 5~~4~~ 45°F Precipitation (24 hr): 0

Surface Water Sample Location: SW-05

Sample location site use description (circle one): residential parcel, commercial parcel, industrial, park, other: street

Seep? Y / N

Spring? Y / N

Pond? Y / N

Creek/Stream? Y / N

*storm drain

Describe and estimate flow (i.e., barely accumulating seep, spring with noticeably free flowing water, ponded area [depth], creek [width, depth]. : average Flow of water

Describe area immediately surrounding the surface water location. Circle all that apply: mowed lawn, sidewalk, street, ornamental planting/garden, wild grass, brush, maintained trees, unmaintained/undisturbed woods, ravine, other. Description:

Describe surrounding habitat (within 200 feet of sampling location), circle all that apply: mowed lawn, ornamental planting/garden, wild grass, brush, sporadic/maintained tree plantings, unmaintained woods, other. Description: city street

Do any potentially sensitive environmental areas exist adjacent to or in proximity to the site? For example, flood plains, wetlands? Y / N Describe:

Are there any wooded areas on the parcel? Y / N. What percentage of the parcel is wooded? —

What is dominant type of vegetation in wooded area (circle one): NA evergreen / deciduous.
What is predominant size of trees on the parcel (diameter at breast height) (circle one): 0-6 in., 6-12 in., > 12 in.

Is shrub/scrub vegetation present at the parcel? Y / N What percentage of the parcel is shrub/scrub vegetation? ___—___. Is the shrub/scrub unmaintained (wild) or maintained (circle one). Average height of the shrub/scrub: 0-2ft, 2-2.5 ft, > 5 ft. Is scrub/shrub dense, patchy or sparse (circle one).

Are there open field areas present on the parcel? Y / N. What percentage of the parcel is open field / lawn? ___—___. What is the predominant height of field plants: ___—___

Are there other types of terrestrial habitats present (other than woods, shrub, field/lawn): ___—___

Observations regarding the presence and/or absence of insects, fish, birds, mammals, etc.? ____
No wildlife

Other notes/observations: ____

Photo collected? Y / N

Kristen Rogers 5/11/16

CHECKLIST FOR ECOLOGICAL ASSESSMENT / SURFACE WATER SAMPLING

Site Name: 700 S 1600 East PCE Plume

Date: 5/4/16 ~~SW-06~~ KL Time: 1700 Temperature: 81°F Precipitation (24 hr): 0

Surface Water Sample Location: SW-06

Sample location site use description (circle one): residential parcel, commercial parcel, industrial, park, other: ______

Seep? Y / N

Spring? Y / N *well on property (more like sump)

Pond? Y / N

Creek/Stream? Y / N

Describe and estimate flow (i.e., barely accumulating seep, spring with noticeably free flowing water, ponded area [depth], creek [width, depth]. : ~4' deep

Describe area immediately surrounding the surface water location. Circle all that apply: mowed lawn, sidewalk, street, ornamental planting/garden, wild grass, brush, maintained trees, unmaintained/undisturbed woods, ravine, other. Description: water not in direct contact with these surroundings - located in backyard

Describe surrounding habitat (within 200 feet of sampling location), circle all that apply: mowed lawn, ornamental planting/garden, wild grass, brush, sporadic/maintained tree plantings, unmaintained woods, other. Description: residential neighborhood

Do any potentially sensitive environmental areas exist adjacent to or in proximity to the site? For example, flood plains, wetlands? Y / N Describe: ______

Are there any wooded areas on the parcel? Y / N What percentage of the parcel is wooded? ____

What is dominant type of vegetation in wooded area (circle one): evergreen / deciduous.
What is predominant size of trees on the parcel (diameter at breast height) (circle one) 0-6 in., 6-12 in., > 12 in.

Is shrub/scrub vegetation present at the parcel? Y / N What percentage of the parcel is shrub/scrub vegetation? ___–___. Is the shrub/scrub unmaintained (wild) or maintained (circle one). Average height of the shrub/scrub: 0-2ft, 2-2.5 ft, > 5 ft. Is scrub/shrub dense, patchy or sparse (circle one).

* lawn

Are there open field areas present on the parcel? Y / N. What percentage of the parcel is open field / lawn? ___5%___. What is the predominant height of field plants: 1"

Are there other types of terrestrial habitats present (other than woods, shrub, field/lawn): _______
manmade structures

Observations regarding the presence and/or absence of insects, fish, birds, mammals, etc.? _____
Homeowners have chickens
Other birds in yard

Other notes/observations: water in well from spring in backyard

Photo collected? Y / N

CHECKLIST FOR ECOLOGICAL ASSESSMENT / SURFACE WATER SAMPLING

Site Name: 700 S 1600 East PCE Plume

Date: 5/4/16 Time: 1100 Temperature: 82°F Precipitation (24 hr): 0

Surface Water Sample Location: SW-07

Sample location site use description (circle one): residential parcel, commercial parcel, industrial, park, other: ______

Seep? Y / N

Spring? Y / N *spring box

Pond? Y / N

Creek/Stream? Y / N

Describe and estimate flow (i.e., barely accumulating seep, spring with noticeably free flowing water, ponded area [depth], creek [width, depth]. : 2" deep

Describe area immediately surrounding the surface water location. Circle all that apply: mowed lawn, sidewalk, street, ornamental planting/garden, wild grass, brush, maintained trees, unmaintained/undisturbed woods, ravine, other. Description: spring box is made of concrete

Describe surrounding habitat (within 200 feet of sampling location), circle all that apply: mowed lawn, ornamental planting/garden, wild grass, brush, sporadic/maintained tree plantings, unmaintained woods, other. Description: Backyard is wooded in residential neighborhood

Do any potentially sensitive environmental areas exist adjacent to or in proximity to the site? For example, flood plains, wetlands? Y / N Describe: ______

Are there any wooded areas on the parcel? Y / N. What percentage of the parcel is wooded? 90%

What is dominant type of vegetation in wooded area (circle one): evergreen / deciduous
What is predominant size of trees on the parcel (diameter at breast height) (circle one): 0-6 in., 6-12 in., ~~>12 in.~~

Is shrub/scrub vegetation present at the parcel? Y / N What percentage of the parcel is shrub/scrub vegetation? ___—___. Is the shrub/scrub unmaintained (wild) or maintained (circle one). Average height of the shrub/scrub: 0-2ft, 2-2.5 ft, > 5 ft. Is scrub/shrub dense, patchy or sparse (circle one).

Are there open field areas present on the parcel? Y / N What percentage of the parcel is open field / lawn? ___—___. What is the predominant height of field plants: ___—___

Are there other types of terrestrial habitats present (other than woods, shrub, field/lawn): _______
man made structures

Observations regarding the presence and/or absence of insects, fish, birds, mammals, etc.? _____
Mosquitoes around water
Homeowner said a badger lives near the spring box

Other notes/observations: ______

Photo collected? Y / N

CHECKLIST FOR ECOLOGICAL ASSESSMENT / SURFACE WATER SAMPLING

Site Name: 700 S 1600 East PCE Plume

Date: 5/4/16 Time: 1010 Temperature: 81°F Precipitation (24 hr): 0

Surface Water Sample Location: SW-08

Sample location site use description (circle one): residential parcel, commercial parcel, industrial, park, other: ______

Seep? Y / N

Spring? Y / N

Pond? Y / N

Creek/Stream? Y / N

Describe and estimate flow (i.e., barely accumulating seep, spring with noticeably free flowing water, ponded area [depth], creek [width, depth]. : standing water about 2" deep, slowly flows into stream below

Describe area immediately surrounding the surface water location. Circle all that apply: mowed lawn, sidewalk, street, ornamental planting/garden, wild grass, brush, maintained trees, unmaintained/undisturbed woods, ravine, other. Description: small trees and small plants

Describe surrounding habitat (within 200 feet of sampling location), circle all that apply: mowed lawn, ornamental planting/garden, wild grass, brush, sporadic/maintained tree plantings, unmaintained woods, other. Description: ______

Do any potentially sensitive environmental areas exist adjacent to or in proximity to the site? For example, flood plains, wetlands? Y / N Describe: ______

Are there any wooded areas on the parcel? Y / N. What percentage of the parcel is wooded? 60%

What is dominant type of vegetation in wooded area (circle one): evergreen / deciduous.
What is predominant size of trees on the parcel (diameter at breast height) (circle one): 0-6 in., 6-12 in., > 12 in.

Is shrub/scrub vegetation present at the parcel? Y / N What percentage of the parcel is shrub/scrub vegetation? ___—___. Is the shrub/scrub unmaintained (wild) or maintained (circle one). Average height of the shrub/scrub: 0-2ft, 2-2.5 ft, > 5 ft. Is scrub/shrub dense, patchy or sparse (circle one).

Are there open field areas present on the parcel? Y / N. What percentage of the parcel is open field / lawn? __—__. What is the predominant height of field plants: ___—___

Are there other types of terrestrial habitats present (other than woods, shrub, field/lawn): __—__

Observations regarding the presence and/or absence of insects, fish, birds, mammals, etc.? _____
Fish (koi) in ponded area below seep
Mosquitoes around water

Other notes/observations: ____________

Photo collected? Y / N

CHECKLIST FOR ECOLOGICAL ASSESSMENT / SURFACE WATER SAMPLING

Site Name: 700 S 1600 East PCE Plume

Date: 5/3/16 Time: 0855 Temperature: 55° Precipitation (24 hr): 0

Surface Water Sample Location: SW-09

Sample location site use description (circle one): ~~residential~~ parcel, commercial parcel, industrial, park, other: ______

Seep? Y / N

Spring? Y / N

Pond? Y / N

Creek/Stream? Y / N

Describe and estimate flow (i.e., ~~barely accumulating~~ seep, spring with noticeably free flowing water, ponded area [depth], creek [width, depth]. : ______

Describe area immediately surrounding the surface water location. Circle all that apply: mowed lawn, sidewalk, street, ornamental planting/garden, wild grass, brush, maintained trees, unmaintained/undisturbed woods, ravine, other. Description: lawn on one side, fence to alley on other

Describe surrounding habitat (within 200 feet of sampling ~~location~~), ~~circle all~~ that apply: mowed lawn, ~~ornamental planting/garden~~, wild grass, brush, ~~sporadic/maintained~~ tree plantings, unmaintained woods, other. Description: ______

Do any potentially sensitive environmental areas exist adjacent to or in proximity to the site? For example, flood plains, wetlands? Y / N Describe: ______

Are there any wooded areas on the parcel? Y / N. N What percentage of the parcel is wooded? ____

What is dominant type of vegetation in wooded area (circle one): evergreen / deciduous.
What is predominant size of trees on the parcel (diameter at breast height) (circle one): 0-6 in., 6-12 in., > 12 in.

Is shrub/scrub vegetation present at the parcel? Y / N. What percentage of the parcel is shrub/scrub vegetation? ___________. Is the shrub/scrub unmaintained (wild) or maintained (circle one). Average height of the shrub/scrub: 0-2ft, 2-2.5 ft, > 5 ft. Is scrub/shrub dense, patchy or sparse (circle one).

Are there open field areas present on the parcel? Y / N. What percentage of the parcel is open field / lawn? 50% What is the predominant height of field plants: ____________________

Are there other types of terrestrial habitats present (other than woods, shrub, field/lawn): patio

Observations regarding the presence and/or absence of insects, fish, birds, mammals, etc.? Quail seen in next door yard

Other notes/observations: seep running along backyard fence

Photo collected? Y / N

CHECKLIST FOR ECOLOGICAL ASSESSMENT / SURFACE WATER SAMPLING

Site Name: 700 S 1600 East PCE Plume

Date: 5/11/16 Time: 0840 Temperature: 50°F Precipitation (24 hr): 0

Surface Water Sample Location: SW-10

Sample location site use description (circle one): residential parcel, commercial parcel, industrial, park, other: street

Seep? Y / N

Spring? Y / N

Pond? Y / N

Creek/Stream? Y / N

* storm drain

Describe and estimate flow (i.e., barely accumulating seep, spring with noticeably free flowing water, ponded area [depth], creek [width, depth]. : Water is moving very quickly - great quantity of water

Describe area immediately surrounding the surface water location. Circle all that apply: mowed lawn, sidewalk, street, ornamental planting/garden, wild grass, brush, maintained trees, unmaintained/undisturbed woods, ravine, other. Description:

Describe surrounding habitat (within 200 feet of sampling location), circle all that apply: mowed lawn, ornamental planting/garden, wild grass, brush, sporadic/maintained tree plantings, unmaintained woods, other. Description: City street

Do any potentially sensitive environmental areas exist adjacent to or in proximity to the site? For example, flood plains, wetlands? Y / N Describe:

Are there any wooded areas on the parcel? Y / N What percentage of the parcel is wooded? —

What is dominant type of vegetation in wooded area (circle one): NA evergreen / deciduous.
What is predominant size of trees on the parcel (diameter at breast height) (circle one): 0-6 in., 6-12 in., > 12 in.

Is shrub/scrub vegetation present at the parcel? Y / N. What percentage of the parcel is shrub/scrub vegetation? — . Is the shrub/scrub unmaintained (wild) or maintained (circle one). Average height of the shrub/scrub: 0-2ft, 2-2.5 ft, > 5 ft. Is scrub/shrub dense, patchy or sparse (circle one).

Are there open field areas present on the parcel? Y / N. What percentage of the parcel is open field / lawn? — . What is the predominant height of field plants: —

Are there other types of terrestrial habitats present (other than woods, shrub, field/lawn): ~~No wildlife~~ KL —

Observations regarding the presence and/or absence of insects, fish, birds, mammals, etc.? No wildlife

Other notes/observations:

Photo collected? Y / N

Kristin Flagger 5/11/16

CHECKLIST FOR ECOLOGICAL ASSESSMENT / SURFACE WATER SAMPLING

Site Name: 700 S 1600 East PCE Plume

Date: 5/3/16 Time: 1230 Temperature: 73°F Precipitation (24 hr): 0

Surface Water Sample Location: SW-11

Sample location site use description (circle one): residential parcel, commercial parcel, industrial, park, other: ______

Seep? Y / N

Spring? Y / N

Pond? Y / N

Creek/Stream? Y / N

Describe and estimate flow (i.e., barely accumulating seep, spring with noticeably free flowing water, ponded area [depth], creek [width, depth]. : Flowing at about 0.5 L/min

Describe area immediately surrounding the surface water location. Circle all that apply: mowed lawn, sidewalk, street, ornamental planting/garden, wild grass, brush, maintained trees, unmaintained/undisturbed woods, ravine, other. Description: located in Front yard of residence and flows onto sidewalk

Describe surrounding habitat (within 200 feet of sampling location), circle all that apply: mowed lawn, ornamental planting/garden, wild grass, brush, sporadic/maintained tree plantings, unmaintained woods, other. Description: about 10 feet from street/along sidewalk Residential neighborhood

Do any potentially sensitive environmental areas exist adjacent to or in proximity to the site? For example, flood plains, wetlands? Y / N Describe: ______

Are there any wooded areas on the parcel? Y / N What percentage of the parcel is wooded? 0

What is dominant type of vegetation in wooded area (circle one): evergreen deciduous
What is predominant size of trees on the parcel (diameter at breast height) (circle one): 0-6 in, 6-12 in., > 12 in.

Is shrub/scrub vegetation present at the parcel? Y / N What percentage of the parcel is shrub/scrub vegetation? ___—___. Is the shrub/scrub unmaintained (wild) or maintained (circle one). Average height of the shrub/scrub: 0-2ft, 2-2.5 ft, > 5 ft. Is scrub/shrub dense, patchy or sparse (circle one).

*mowed lawn/right-of-way
Are there open field areas present on the parcel? Y / N. What percentage of the parcel is open field / lawn? __30%__. What is the predominant height of field plants: 2"

Are there other types of terrestrial habitats present (other than woods, shrub, field/lawn): man made (ie, homes)

Observations regarding the presence and/or absence of insects, fish, birds, mammals, etc.? No wildlife observed.

Other notes/observations:

Photo collected? Y / N

CHECKLIST FOR ECOLOGICAL ASSESSMENT / SURFACE WATER SAMPLING

Site Name: 700 S 1600 East PCE Plume

Date: 5/3/16 Time: 1030 Temperature: 60°F Precipitation (24 hr): 0

Surface Water Sample Location: SW-12

Sample location site use description (circle one): residential parcel, commercial parcel, industrial, park, other: ______

Seep? Y / N

Spring? Y / N

Pond? Y / N

Creek/Stream? Y / N

Describe and estimate flow (i.e., barely accumulating seep, spring with noticeably free flowing water, ponded area [depth], creek [width, depth]. : spring flowing at about 1.5 L/min about 2" thick

Describe area immediately surrounding the surface water location. Circle all that apply: mowed lawn sidewalk, street, ornamental planting/garden, wild grass, brush, maintained trees, unmaintained/undisturbed woods, ravine, other. Description: ______

Describe surrounding habitat (within 200 feet of sampling location), circle all that apply: mowed lawn, ornamental planting/garden, wild grass, brush, sporadic/maintained tree plantings, unmaintained woods, other. Description: neighboring backyards

Do any potentially sensitive environmental areas exist adjacent to or in proximity to the site? For example, flood plains, wetlands? Y / N Describe: ______

Are there any wooded areas on the parcel? Y / N What percentage of the parcel is wooded? ____

What is dominant type of vegetation in wooded area (circle one): evergreen / deciduous.
What is predominant size of trees on the parcel (diameter at breast height) (circle one): 0-6 in., 6-12 in., > 12 in.

Is shrub/scrub vegetation present at the parcel? Y / N What percentage of the parcel is shrub/scrub vegetation? ___—___. Is the shrub/scrub unmaintained (wild) or maintained (circle one). Average height of the shrub/scrub: 0-2ft, 2-2.5 ft, > 5 ft. Is scrub/shrub dense, patchy or sparse (circle one).

Are there open field areas present on the parcel? Y / N. What percentage of the parcel is open field / lawn? __70%__. What is the predominant height of field plants: __5"__

Are there other types of terrestrial habitats present (other than woods, shrub, field/lawn): ______
man made habitats - houses

Observations regarding the presence and/or absence of insects, fish, birds, mammals, etc.? ______
some birds can be heard in yard

Other notes/observations: spring runs into sump

Photo collected? Y / N

CHECKLIST FOR ECOLOGICAL ASSESSMENT / SURFACE WATER SAMPLING

Site Name: 700 S 1600 East PCE Plume

Date: 5/3/16 Time: 1430 Temperature: 75°F Precipitation (24 hr): 0

Surface Water Sample Location: SW-13

Sample location site use description (circle one): residential parcel, commercial parcel, industrial, park, other: ______

Seep? Y / N

Spring? Y / N

Pond? Y / N

Creek/Stream? Y / N

Describe and estimate flow (i.e., barely accumulating seep, spring with noticeably free flowing water, ponded area [depth], creek [width, depth]. : barely accumulating - almost standing water

Describe area immediately surrounding the surface water location. Circle all that apply: mowed lawn, sidewalk, street, ornamental planting/garden, wild grass, brush, maintained trees, unmaintained/undisturbed woods, ravine, other. Description: raspberry bushes

Describe surrounding habitat (within 200 feet of sampling location), circle all that apply: mowed lawn, ornamental planting/garden, wild grass, brush, sporadic/maintained tree plantings, unmaintained woods, other. Description: Grass not mowed

Do any potentially sensitive environmental areas exist adjacent to or in proximity to the site? For example, flood plains, wetlands? Y / N Describe: ______

Are there any wooded areas on the parcel? Y / N What percentage of the parcel is wooded? —

What is dominant type of vegetation in wooded area (circle one): evergreen / deciduous.
What is predominant size of trees on the parcel (diameter at breast height) (circle one): 0-6 in., 6-12 in., > 12 in.

Is shrub/scrub vegetation present at the parcel? Y / N What percentage of the parcel is shrub/scrub vegetation? ___—___. Is the shrub/scrub unmaintained (wild) or maintained (circle one). Average height of the shrub/scrub: 0-2ft, 2-2.5 ft, > 5 ft. Is scrub/shrub dense, patchy or sparse (circle one).

Are there open field areas present on the parcel? Y / N. What percentage of the parcel is open field / lawn? __70%__. What is the predominant height of field plants: 1'

Are there other types of terrestrial habitats present (other than woods, shrub, field/lawn): man made (ie, homes)

Observations regarding the presence and/or absence of insects, fish, birds, mammals, etc.? No wildlife observed

Other notes/observations: ____________________

Photo collected? Y / N

CHECKLIST FOR ECOLOGICAL ASSESSMENT / SURFACE WATER SAMPLING

Site Name: 700 S 1600 East PCE Plume

Date: ~~5/3/16~~ 5/4/16 Time: 0900 Temperature: 71°F Precipitation (24 hr): 0

Surface Water Sample Location: SW-14

Sample location site use description (circle one): residential parcel, commercial parcel, industrial, park, other: ______

Seep? Y / N *sump

Spring? Y / N

Pond? Y / N

Creek/Stream? Y / N

Describe and estimate flow (i.e., barely accumulating seep, spring with noticeably free flowing water, ponded area [depth], creek [width, depth]. : ~3' deep

Describe area immediately surrounding the surface water location. Circle all that apply: mowed lawn, sidewalk, street, ornamental planting/garden, wild grass, brush, maintained trees, unmaintained/undisturbed woods, ravine, other Description: gravel and driveway

Describe surrounding habitat (within 200 feet of sampling location), circle all that apply: mowed lawn, ornamental planting/garden, wild grass, brush, sporadic/maintained tree plantings, unmaintained woods, other Description: gravel, sidewalk / driveway

Do any potentially sensitive environmental areas exist adjacent to or in proximity to the site? For example, flood plains, wetlands? Y / N Describe: ______

Are there any wooded areas on the parcel? Y / N What percentage of the parcel is wooded? —

What is dominant type of vegetation in wooded area (circle one): NA evergreen / deciduous.
What is predominant size of trees on the parcel (diameter at breast height) (circle one): 0-6 in., 6-12 in., > 12 in.

Is shrub/scrub vegetation present at the parcel? Y / N What percentage of the parcel is shrub/scrub vegetation? ___–___. Is the shrub/scrub unmaintained (wild) or maintained (circle one). Average height of the shrub/scrub: 0-2ft, 2-2.5 ft, > 5 ft. Is scrub/shrub dense, patchy or sparse (circle one).

Are there open field areas present on the parcel? Y / N. What percentage of the parcel is open field / lawn? 30 %. What is the predominant height of field plants: ____________

Are there other types of terrestrial habitats present (other than woods, shrub, field/lawn): man-made (ie. buildings)

Observations regarding the presence and/or absence of insects, fish, birds, mammals, etc.? Birds heard in trees

Other notes/observations: ____________

Photo collected? Y / N

CHECKLIST FOR ECOLOGICAL ASSESSMENT / SURFACE WATER SAMPLING

Site Name: 700 S 1600 East PCE Plume

Date: 5/4/16 Time: 1130 Temperature: 75°F Precipitation (24 hr): 0

Surface Water Sample Location: SW-15

Sample location site use description (circle one): residential parcel, commercial parcel, industrial, park, other: ______

Seep? Y / N

Spring? Y / N

Pond? Y / N

Creek/Stream? Y / N

Describe and estimate flow (i.e., barely accumulating seep, spring with noticeably free flowing water, ponded area [depth], creek [width, depth]. : Flowing at a rate of ~0.1 L/min

Describe area immediately surrounding the surface water location. Circle all that apply: ~~mowed~~ lawn, sidewalk, street, ornamental planting/garden, wild grass, brush, maintained trees, unmaintained/undisturbed woods, ravine, other Description: Seep coming out of retaining wall in backyard. Water collects in small drain

Describe surrounding habitat (within 200 feet of sampling location), circle all that apply: mowed lawn, ornamental planting/garden, wild grass, brush, sporadic/maintained tree plantings, unmaintained woods, other. Description: Mowed grass above retaining wall woods start about 20' to north of seep

Do any potentially sensitive environmental areas exist adjacent to or in proximity to the site? For example, flood plains, wetlands? Y / N Describe: ______

Are there any wooded areas on the parcel? Y / N. What percentage of the parcel is wooded? 70%

What is dominant type of vegetation in wooded area (circle one): evergreen / deciduous.
What is predominant size of trees on the parcel (diameter at breast height) (circle one): 0-6 in., 6-12 in., > 12 in.

Is shrub/scrub vegetation present at the parcel? Y / N What percentage of the parcel is shrub/scrub vegetation? ___—___. Is the shrub/scrub unmaintained (wild) or maintained (circle one). Average height of the shrub/scrub: 0-2ft, 2-2.5 ft, > 5 ft. Is scrub/shrub dense, patchy or sparse (circle one).

Are there open field areas present on the parcel? Y / N. What percentage of the parcel is open field / lawn? __5%__. What is the predominant height of field plants: __1"__

Are there other types of terrestrial habitats present (other than woods, shrub, field/lawn): man made (ie. buildings)

Observations regarding the presence and/or absence of insects, fish, birds, mammals, etc.? ____
Badger lives in woods

Other notes/observations: ____

Photo collected? Y / N

CHECKLIST FOR ECOLOGICAL ASSESSMENT / SURFACE WATER SAMPLING

Site Name: 700 S 1600 East PCE Plume

Date: 5/4/16 Time: 1320 Temperature: 80°F Precipitation (24 hr): 0

Surface Water Sample Location: SW-16

Sample location site use description (circle one): residential parcel, commercial parcel, industrial, park, other: our Lady of Lourdes

Seep? Y / N
Spring? Y / N
Pond? Y / N
Creek/Stream? Y / N

Describe and estimate flow (i.e., barely accumulating seep, spring with noticeably free flowing water, ponded area [depth], creek [width, depth].: spring is mitigated through underground piping

Describe area immediately surrounding the surface water location. Circle all that apply: mowed lawn, sidewalk, street, ornamental planting/garden, wild grass, brush, maintained trees, unmaintained/undisturbed woods, ravine, other. Description: mulch/rocks

Describe surrounding habitat (within 200 feet of sampling location), circle all that apply: mowed lawn, ornamental planting/garden, wild grass, brush, sporadic/maintained tree plantings, unmaintained woods, other. Description: mulch/rocks/sidewalk

Do any potentially sensitive environmental areas exist adjacent to or in proximity to the site? For example, flood plains, wetlands? Y / N Describe:

Are there any wooded areas on the parcel? Y / N What percentage of the parcel is wooded? —

What is dominant type of vegetation in wooded area (circle one): NA evergreen / deciduous.
What is predominant size of trees on the parcel (diameter at breast height) (circle one): 0-6 in., 6-12 in., > 12 in.

Is shrub/scrub vegetation present at the parcel? Y / N What percentage of the parcel is shrub/scrub vegetation? __–__. Is the shrub/scrub unmaintained (wild) or maintained (circle one). Average height of the shrub/scrub: 0-2ft, 2-2.5 ft, > 5 ft. Is scrub/shrub dense, patchy or sparse (circle one).

Are there open field areas present on the parcel? Y / N. What percentage of the parcel is open field / lawn? __30%__. What is the predominant height of field plants: __1"__

Are there other types of terrestrial habitats present (other than woods, shrub, field/lawn): __man made (ie. buildings, athletic fields)__

Observations regarding the presence and/or absence of insects, fish, birds, mammals, etc.? __No wildlife observed__

Other notes/observations: ____

Photo collected? Y / N

CHECKLIST FOR ECOLOGICAL ASSESSMENT / SURFACE WATER SAMPLING

Site Name: 700 S 1600 East PCE Plume

Date: 5/11/16 Time: 1018 Temperature: 55°F Precipitation (24 hr): 0

Surface Water Sample Location: SW-17

Sample location site use description (circle one): residential parcel, commercial parcel, industrial, park, other: Street

Seep? Y / N

Spring? Y / N

Pond? Y / N

Creek/Stream? Y / N

* Jordan and Salt Lake Canal

Describe and estimate flow (i.e., barely accumulating seep, spring with noticeably free flowing water, ponded area [depth], creek [width, depth]. : Noticeable Flow, but not rushing

Describe area immediately surrounding the surface water location. Circle all that apply: mowed lawn, sidewalk, street, ornamental planting/garden, wild grass, brush, maintained trees, unmaintained/undisturbed woods, ravine, other. Description:

Describe surrounding habitat (within 200 feet of sampling location), circle all that apply: mowed lawn, ornamental planting/garden, wild grass, brush, sporadic/maintained tree plantings, unmaintained woods, other. Description: City street near neighborhood

Do any potentially sensitive environmental areas exist adjacent to or in proximity to the site? For example, flood plains, wetlands? Y / N Describe:

Are there any wooded areas on the parcel? Y / N What percentage of the parcel is wooded? —

What is dominant type of vegetation in wooded area (circle one): NA evergreen / deciduous.
What is predominant size of trees on the parcel (diameter at breast height) (circle one): 0-6 in., 6-12 in., > 12 in.

Is shrub/scrub vegetation present at the parcel? Y / N. What percentage of the parcel is shrub/scrub vegetation? ___—___. Is the shrub/scrub unmaintained (wild) or maintained (circle one). Average height of the shrub/scrub: 0-2ft, 2-2.5 ft, > 5 ft. Is scrub/shrub dense, patchy or sparse (circle one).

Are there open field areas present on the parcel? Y / N. What percentage of the parcel is open field / lawn? ___—___. What is the predominant height of field plants: ___—___

Are there other types of terrestrial habitats present (other than woods, shrub, field/lawn): ___—___

Observations regarding the presence and/or absence of insects, fish, birds, mammals, etc.? ______
No wildlife

Other notes/observations: ______

Photo collected? Y / N

Knotsfogger 5/11/16

CHECKLIST FOR ECOLOGICAL ASSESSMENT / SURFACE WATER SAMPLING

Site Name: 700 S 1600 East PCE Plume

Date: 5/5/16 Time: 0910 Temperature: 70°F Precipitation (24 hr): 0

Surface Water Sample Location: SW-18

Sample location site use description (circle one): residential parcel, commercial parcel, industrial, park, other: ____

Seep? Y / N

Spring? Y / N *mitigated spring water in storm drain

Pond? Y / N

Creek/Stream? Y / N

Describe and estimate flow (i.e., barely accumulating seep, spring with noticeably free flowing water, ponded area [depth], creek [width, depth]. : Flowing through storm drain. Flowing ~2L/min

Describe area immediately surrounding the surface water location. Circle all that apply: mowed lawn, sidewalk, street, ornamental planting/garden, wild grass, brush, maintained trees, unmaintained/undisturbed woods, ravine, other. Description: ____

Describe surrounding habitat (within 200 feet of sampling location), circle all that apply: mowed lawn, ornamental planting/garden, wild grass, brush, sporadic/maintained tree plantings, unmaintained woods, other. Description: residential neighborhood with some businesses

Do any potentially sensitive environmental areas exist adjacent to or in proximity to the site? For example, flood plains, wetlands? Y / N Describe: ____

Are there any wooded areas on the parcel? Y / N What percentage of the parcel is wooded? –

What is dominant type of vegetation in wooded area (circle one): NA evergreen / deciduous.
What is predominant size of trees on the parcel (diameter at breast height) (circle one): 0-6 in., 6-12 in., > 12 in.

Is shrub/scrub vegetation present at the parcel? Y / N What percentage of the parcel is shrub/scrub vegetation? ___—___. Is the shrub/scrub unmaintained (wild) or maintained (circle one). Average height of the shrub/scrub: 0-2ft, 2-2.5 ft, > 5 ft. Is scrub/shrub dense, patchy or sparse (circle one).

Are there open field areas present on the parcel? Y / N. What percentage of the parcel is open field / lawn? __10%__. What is the predominant height of field plants: __1"__

Are there other types of terrestrial habitats present (other than woods, shrub, field/lawn): man made structures

Observations regarding the presence and/or absence of insects, fish, birds, mammals, etc.? ____
Birds and insects observed

Other notes/observations: ____

Photo collected? Y N

CHECKLIST FOR ECOLOGICAL ASSESSMENT / SURFACE WATER SAMPLING

Site Name: 700 S 1600 East PCE Plume

Date: 5/4/16 Time: 0820 Temperature: 71°F Precipitation (24 hr): 0

Surface Water Sample Location: SW-19

Sample location site use description (circle one): residential parcel, commercial parcel, industrial, park, other: ______

Seep? Y / N

Spring? Y / N Bowen spring

Pond? Y / N

Creek/Stream? Y / N

Describe and estimate flow (i.e., barely accumulating seep, spring with noticeably free flowing water, ponded area [depth], creek [width, depth]. : spring flowing at ~ 1L/min

Flows into water feature, then into Red Butte Creek

Describe area immediately surrounding the surface water location. Circle all that apply: mowed lawn, sidewalk, street, ornamental planting/garden, wild grass, brush, maintained trees, unmaintained/undisturbed woods, ravine, other. Description: dirt/rocks and ivy plants

Describe surrounding habitat (within 200 feet of sampling location), circle all that apply: mowed lawn, ornamental planting/garden, wild grass, brush, sporadic/maintained tree plantings, unmaintained woods, other. Description: Backyard has lawn and pathway surrounded by ivy

Do any potentially sensitive environmental areas exist adjacent to or in proximity to the site? For example, flood plains, wetlands? Y / N Describe: ______

Are there any wooded areas on the parcel? Y / N. What percentage of the parcel is wooded? 10%

What is dominant type of vegetation in wooded area (circle one): evergreen / deciduous
What is predominant size of trees on the parcel (diameter at breast height) (circle one): 0-6 in., 6-12 in., > 12 in.

Is shrub/scrub vegetation present at the parcel? Y N What percentage of the parcel is shrub/scrub vegetation? ___—___. Is the shrub/scrub unmaintained (wild) or maintained (circle one). Average height of the shrub/scrub: 0-2ft, 2-2.5 ft, > 5 ft. Is scrub/shrub dense, patchy or sparse (circle one).

Are there open field areas present on the parcel? Y N. What percentage of the parcel is open field (lawn)? 15%. What is the predominant height of field plants: 1"

Are there other types of terrestrial habitats present (other than woods, shrub, field/lawn): man made structures

Observations regarding the presence and/or absence of insects, fish, birds, mammals, etc.?
Fish (koi) in small pond
Mallards in pond adjacent to property

Other notes/observations:

Photo collected? Y N

CHECKLIST FOR ECOLOGICAL ASSESSMENT / SURFACE WATER SAMPLING

Site Name: 700 S 1600 East PCE Plume

Date: 5/5/16 Time: 1020 Temperature: 71°F Precipitation (24 hr): 0

Surface Water Sample Location: SW-20

Sample location site use description (circle one): residential parcel, commercial parcel, industrial, park, other: ______

Seep? Y / N

Spring? Y / N storm drain with mitigated spring water

Pond? Y / N

Creek/Stream? Y / N

Describe and estimate flow (i.e., barely accumulating seep, spring with noticeably free flowing water, ponded area [depth], creek [width, depth]. : Flowing at about 3L/min through storm drain

Describe area immediately surrounding the surface water location. Circle all that apply: mowed lawn, sidewalk, street, ornamental planting/garden, wild grass, brush, maintained trees, unmaintained/undisturbed woods, ravine, other. Description: ______

Describe surrounding habitat (within 200 feet of sampling location), circle all that apply: mowed lawn, ornamental planting/garden, wild grass, brush, sporadic/maintained tree plantings, unmaintained woods, other. Description: residential neighborhood

Do any potentially sensitive environmental areas exist adjacent to or in proximity to the site? For example, flood plains, wetlands? Y / N Describe: ______

Are there any wooded areas on the parcel? Y / N What percentage of the parcel is wooded? —

What is dominant type of vegetation in wooded area (circle one): NA evergreen / deciduous.
What is predominant size of trees on the parcel (diameter at breast height) (circle one): 0-6 in., 6-12 in., > 12 in.

Is shrub/scrub vegetation present at the parcel? Y N What percentage of the parcel is shrub/scrub vegetation? ___—___. Is the shrub/scrub unmaintained (wild) or maintained (circle one). Average height of the shrub/scrub: 0-2ft, 2-2.5 ft, > 5 ft. Is scrub/shrub dense, patchy or sparse (circle one).

Are there open field areas present on the parcel? Y N. What percentage of the parcel is open field / lawn? __20%__. What is the predominant height of field plants: __1"__

Are there other types of terrestrial habitats present (other than woods, shrub, field/lawn): man made Structures

Observations regarding the presence and/or absence of insects, fish, birds, mammals, etc.? Birds observed

Other notes/observations: ______

Photo collected? Y N

CHECKLIST FOR ECOLOGICAL ASSESSMENT / SURFACE WATER SAMPLING

Site Name: 700 S 1600 East PCE Plume
Date: 5/3/16 Time: 1320 Temperature: 65° Precipitation (24 hr): 0
Surface Water Sample Location: SW-21

Sample location site use description (circle one): residential parcel, commercial parcel, industrial, park, other: ________

Seep? Y / N
Spring? Y / N
Pond? Y / N cistern
Creek/Stream? Y / N

Describe and estimate flow (i.e., barely accumulating seep, spring with noticeably free flowing water, ponded area [depth], creek [width, depth]. : water flowing into cistern <5gal/min.

Describe area immediately ~~surrounding the surface~~ water location. Circle all that apply: mowed lawn, sidewalk, street, ornamental planting/garden, wild grass, brush, maintained trees, unmaintained/undisturbed woods, ravine, other. Description: ________

Describe surrounding ~~habitat~~ (within 200 feet of sampling ~~location), circle all that apply~~: mowed lawn, ornamental planting/garden, wild grass, brush, sporadic/maintained tree plantings, unmaintained woods, other. Description: ________

Do any potentially sensitive environmental areas exist adjacent to or in proximity to the site? For example, flood plains, wetlands? Y / N Describe: ________

Are there any wooded areas on the parcel? Y / N. What percentage of the parcel is wooded? 5%
4 very small trees in yard.

What is dominant type of vegetation in wooded area (circle one): evergreen / deciduous.
What is predominant size of trees on the parcel (diameter at breast height) (circle one): 0-6 in., 6-12 in., > 12 in.

Is shrub/scrub vegetation present at the parcel? Y / N. What percentage of the parcel is shrub/scrub vegetation? __________. Is the shrub/scrub unmaintained (wild) or maintained (circle one). Average height of the shrub/scrub: 0-2ft, 2-2.5 ft, > 5 ft. Is scrub/shrub dense, patchy or sparse (circle one).

Are there open field areas present on the parcel? Y / N. What percentage of the parcel is open field / lawn? 70%. What is the predominant height of field plants: mowed lawn

Are there other types of terrestrial habitats present (other than woods, shrub, field/lawn): __________

Observations regarding the presence and/or absence of insects, fish, birds, mammals, etc.? Homeowners have pet rabbits, no wildlife observed

Other notes/observations: __________

Photo collected? Y / N

CHECKLIST FOR ECOLOGICAL ASSESSMENT / SURFACE WATER SAMPLING

Site Name: 700 S 1600 East PCE Plume

Date: 5/3/16 Time: 1550 Temperature: 72°F Precipitation (24 hr): 0

Surface Water Sample Location: SW-22

Sample location site use description (circle one): residential parcel, commercial parcel, industrial, park, other: ______

Seep? Y / N

Spring? Y / N sump filled with spring water

Pond? Y / N

Creek/Stream? Y / N

Describe and estimate flow (i.e., barely accumulating seep, spring with noticeably free flowing water, ponded area [depth], creek [width, depth]. : water a couple of feet deep

Describe area immediately surrounding the surface water location. Circle all that apply: mowed lawn, sidewalk, street, ornamental planting/garden, wild grass, brush, maintained trees, unmaintained/undisturbed woods, ravine, other. Description: sump surrounded by concrete (not in direct contact with water)

Describe surrounding habitat (within 200 feet of sampling location), circle all that apply: mowed lawn, ornamental planting/garden, wild grass, brush, sporadic/maintained tree plantings, unmaintained woods, other. Description: pavers, rocks

Do any potentially sensitive environmental areas exist adjacent to or in proximity to the site? For example, flood plains, wetlands? Y / N Describe: ______

Are there any wooded areas on the parcel? Y / N What percentage of the parcel is wooded? —

What is dominant type of vegetation in wooded area (circle one): NA evergreen / deciduous.
What is predominant size of trees on the parcel (diameter at breast height) (circle one): 0-6 in., 6-12 in., > 12 in.

Is shrub/scrub vegetation present at the parcel? Y / N. What percentage of the parcel is shrub/scrub vegetation? ____–____. Is the shrub/scrub unmaintained (wild) or maintained (circle one). Average height of the shrub/scrub: 0-2ft, 2-2.5 ft, > 5 ft. Is scrub/shrub dense, patchy or sparse (circle one).

Are there open field areas present on the parcel? Y / N. What percentage of the parcel is open field / lawn? 15%. What is the predominant height of field plants: 1"

Are there other types of terrestrial habitats present (other than woods, shrub, field/lawn): man made structures

Observations regarding the presence and/or absence of insects, fish, birds, mammals, etc.? No animals observed

Other notes/observations:

Photo collected? Y / N

CHECKLIST FOR ECOLOGICAL ASSESSMENT / SURFACE WATER SAMPLING

Site Name: 700 S 1600 East PCE Plume
Date: 5/3/16 Time: 0150 Temperature: 55° Precipitation (24 hr): 0
Surface Water Sample Location: SW-23

Sample location site use description (circle one): residential parcel, commercial parcel, industrial, park, other: ______

Seep? Y / N
Spring? Y / N French drain
Pond? Y / N
Creek/Stream? Y / N

Describe ~~and estimate~~ flow (i.e., barely accumulating seep, spring with noticeably free flowing water, ponded area [depth], creek [width, depth]. :
2 ft.

Describe area immediately surrounding the surface water location. Circle all that apply: mowed lawn, sidewalk, street, ornamental planting/garden, wild grass, brush, maintained trees, unmaintained/undisturbed woods, ravine, other. Description: ______

Describe surrounding ~~habitat~~ (within 200 feet of sampling location), circle all that apply: mowed lawn, ornamental planting/garden, wild grass, brush, sporadic/maintained tree plantings, unmaintained woods, other. Description: ______

Do any potentially sensitive environmental areas exist adjacent to or in proximity to the site? For example, flood plains, wetlands? Y / N Describe: ______

Are there any wooded areas on the parcel? Y / N. What percentage of the parcel is wooded? 2%
5 trees

What is dominant type of vegetation in wooded area (circle one): evergreen / deciduous. 3 2
What is predominant size of trees on the parcel (diameter at breast height) (circle one): 0-6 in., 6-12 in., > 12 in.

Is shrub/scrub vegetation present at the parcel? Y / N. What percentage of the parcel is shrub/scrub vegetation? 20%. Is the shrub/scrub unmaintained (wild) or maintained (circle one). Average height of the shrub/scrub: 0-2ft, 2-2.5 ft, > 5 ft. Is scrub/shrub dense, patchy or sparse (circle one).

Are there open field areas present on the parcel? Y / N. What percentage of the parcel is open field / lawn? 50%. What is the predominant height of field plants: mowed lawn

Are there other types of terrestrial habitats present (other than woods, shrub, field/lawn): No

Observations regarding the presence and/or absence of insects, fish, birds, mammals, etc.?
Snails in well
Mourning doves heard

Other notes/observations:

Photo collected? Y / N

CHECKLIST FOR ECOLOGICAL ASSESSMENT / SURFACE WATER SAMPLING

Site Name: 700 S 1600 East PCE Plume

Date: 5/11/16 Time: 0925 Temperature: 58°F Precipitation (24 hr): 0

Surface Water Sample Location: SW-24

Sample location site use description (circle one): residential parcel, commercial parcel, industrial, park, other: Street

Seep? Y / N

Spring? Y / N

Pond? Y / N

Creek/Stream? Y / N

*storm drain

Describe and estimate flow (i.e., barely accumulating seep, spring with noticeably free flowing water, ponded area [depth], creek [width, depth]. : No Flowing water, just some sitting at bottom of storm drain

Describe area immediately surrounding the surface water location. Circle all that apply: mowed lawn, sidewalk, street, ornamental planting/garden, wild grass, brush, maintained trees, unmaintained/undisturbed woods, ravine, other. Description: ______

Describe surrounding habitat (within 200 feet of sampling location), circle all that apply: mowed lawn, ornamental planting/garden, wild grass, brush, sporadic/maintained tree plantings, unmaintained woods, other. Description: located on city street

Do any potentially sensitive environmental areas exist adjacent to or in proximity to the site? For example, flood plains, wetlands? Y / N Describe: ______

Are there any wooded areas on the parcel? Y / N What percentage of the parcel is wooded? —

What is dominant type of vegetation in wooded area (circle one): NA evergreen / deciduous.
What is predominant size of trees on the parcel (diameter at breast height) (circle one): 0-6 in., 6-12 in., > 12 in.

Is shrub/scrub vegetation present at the parcel? Y / N What percentage of the parcel is shrub/scrub vegetation? __—__. Is the shrub/scrub unmaintained (wild) or maintained (circle one). Average height of the shrub/scrub: 0-2ft, 2-2.5 ft, > 5 ft. Is scrub/shrub dense, patchy or sparse (circle one).

Are there open field areas present on the parcel? Y / N What percentage of the parcel is open field / lawn? __—__. What is the predominant height of field plants: __—__

Are there other types of terrestrial habitats present (other than woods, shrub, field/lawn): __—__

Observations regarding the presence and/or absence of insects, fish, birds, mammals, etc.? ____
No wildlife

Other notes/observations: ____

Photo collected? Y / N

Krista Arzzi 5/11/16

CHECKLIST FOR ECOLOGICAL ASSESSMENT / SURFACE WATER SAMPLING

Site Name: 700 S 1600 East PCE Plume

Date: 5/5/16 Time: 1800 Temperature: 75°F Precipitation (24 hr): 0

Surface Water Sample Location: SW-25

Sample location site use description (circle one): residential parcel, commercial parcel, industrial, park, other: ______

Seep? Y / N

Spring? Y / N storm drain with mitigated spring water

Pond? Y / N

Creek/Stream? Y / N

Describe and estimate flow (i.e., barely accumulating seep, spring with noticeably free flowing water, ponded area [depth], creek [width, depth]. : spring flowing at ~1.5L/min

Flows through storm drain

Describe area immediately surrounding the surface water location. Circle all that apply: mowed lawn, sidewalk, street, ornamental planting/garden, wild grass, brush, maintained trees, unmaintained/undisturbed woods, ravine, other. Description: ______

Describe surrounding habitat (within 200 feet of sampling location), circle all that apply: mowed lawn, ornamental planting/garden, wild grass, brush, sporadic/maintained tree plantings, unmaintained woods, other. Description: residential neighborhood

Do any potentially sensitive environmental areas exist adjacent to or in proximity to the site? For example, flood plains, wetlands? Y / N Describe: ______

Are there any wooded areas on the parcel? Y / N What percentage of the parcel is wooded? —

What is dominant type of vegetation in wooded area (circle one): NA evergreen / deciduous.
What is predominant size of trees on the parcel (diameter at breast height) (circle one): 0-6 in., 6-12 in., > 12 in.

Is shrub/scrub vegetation present at the parcel? Y / N What percentage of the parcel is shrub/scrub vegetation? — . Is the shrub/scrub unmaintained (wild) or maintained (circle one). Average height of the shrub/scrub: 0-2ft, 2-2.5 ft, > 5 ft. Is scrub/shrub dense, patchy or sparse (circle one).

Are there open field areas present on the parcel? Y / N. What percentage of the parcel is open field / lawn? 20%. What is the predominant height of field plants: —

Are there other types of terrestrial habitats present (other than woods, shrub, field/lawn): man made structures

Observations regarding the presence and/or absence of insects, fish, birds, mammals, etc.? ~~man made structures~~ KL
No wild life observed

Other notes/observations:
~~No wildlife observed~~ KL

Photo collected? Y / N

CHECKLIST FOR ECOLOGICAL ASSESSMENT / SURFACE WATER SAMPLING

Site Name: 700 S 1600 East PCE Plume

Date: 5/3/16 Time: 1345 Temperature: 71°F Precipitation (24 hr): 0

Surface Water Sample Location: SW-26

Sample location site use description (circle one): residential parcel, commercial parcel, industrial, park, other: ________

Seep? Y / N
Spring? Y / N
Pond? Y / N
Creek/Stream? Y / N

Describe and estimate flow (i.e., barely accumulating seep, spring with noticeably free flowing water, ponded area [depth], creek [width, depth]. : water ponded up along green house

Describe area immediately surrounding the surface water location. Circle all that apply: mowed lawn, sidewalk, street, ornamental planting/garden, wild grass, brush, maintained trees, unmaintained/undisturbed woods, ravine, other. Description: soil/gravel

Describe surrounding habitat (within 200 feet of sampling location), circle all that apply: mowed lawn, ornamental planting/garden, wild grass, brush, sporadic/maintained tree plantings, unmaintained woods, other. Description: ________

Do any potentially sensitive environmental areas exist adjacent to or in proximity to the site? For example, flood plains, wetlands? Y / N Describe: ________

Are there any wooded areas on the parcel? Y / N What percentage of the parcel is wooded? —

What is dominant type of vegetation in wooded area (circle one): NA evergreen / deciduous.
What is predominant size of trees on the parcel (diameter at breast height) (circle one): 0-6 in., 6-12 in., > 12 in.

Is shrub/scrub vegetation present at the parcel? Y / N What percentage of the parcel is shrub/scrub vegetation? ___—___. Is the shrub/scrub unmaintained (wild) or maintained (circle one). Average height of the shrub/scrub: 0-2ft, 2-2.5 ft, > 5 ft. Is scrub/shrub dense, patchy or sparse (circle one).

Are there open field areas present on the parcel? Y / N What percentage of the parcel is open field / lawn? ___—___. What is the predominant height of field plants: ___—___

Are there other types of terrestrial habitats present (other than woods, shrub, field/lawn): man made structures

Observations regarding the presence and/or absence of insects, fish, birds, mammals, etc.? Neighbors have chickens (in contact with same watr)

Other notes/observations: ______

Photo collected? Y / N

CHECKLIST FOR ECOLOGICAL ASSESSMENT / SURFACE WATER SAMPLING

Site Name: 700 S 1600 East PCE Plume

Date: 5/3/16 Time: 1120 Temperature: 60°F Precipitation (24 hr): 0

Surface Water Sample Location: SW-27

Sample location site use description (circle one): residential parcel, commercial parcel, industrial, park, other: ______

Seep? Y / N
Spring? Y / N
Pond? Y / N
Creek/Stream? Y / N

Describe and estimate flow (i.e., barely accumulating seep, spring with noticeably free flowing water, ponded area [depth], creek [width, depth]. : seep with good flow (~0.5 L/min) About 1" wide

Describe area immediately surrounding the surface water location. Circle all that apply: mowed lawn, sidewalk, street, ornamental planting/garden, wild grass, brush, maintained trees, unmaintained/undisturbed woods, ravine, other. Description: located along sidewalk, seeping out of retention wall in front yard

Describe surrounding habitat (within 200 feet of sampling location), circle all that apply: mowed lawn, ornamental planting/garden, wild grass, brush, sporadic/maintained tree plantings, unmaintained woods, other. Description: about 10 feet from street / along sidewalk. ornamental trees and plantings above seep

Do any potentially sensitive environmental areas exist adjacent to or in proximity to the site? For example, flood plains, wetlands? Y / N Describe: ______

Are there any wooded areas on the parcel? Y / N. What percentage of the parcel is wooded? –

What is dominant type of vegetation in wooded area (circle one): evergreen / deciduous.
What is predominant size of trees on the parcel (diameter at breast height) (circle one) 0-6 in, 6-12 in., > 12 in.

Is shrub/scrub vegetation present at the parcel? Y / N What percentage of the parcel is shrub/scrub vegetation? ___—___. Is the shrub/scrub unmaintained (wild) or maintained (circle one). Average height of the shrub/scrub: 0-2ft, 2-2.5 ft, > 5 ft. Is scrub/shrub dense, patchy or sparse (circle one).

* mowed lawn / right-of-way

Are there open field areas present on the parcel? Y / N. What percentage of the parcel is open field / lawn? 20%. What is the predominant height of field plants: 2"

Are there other types of terrestrial habitats present (other than woods, shrub, field/lawn):
man made - houses

Observations regarding the presence and/or absence of insects, fish, birds, mammals, etc.?
No wildlife observed

Other notes/observations:

Photo collected? Y N

CHECKLIST FOR ECOLOGICAL ASSESSMENT / SURFACE WATER SAMPLING

Site Name: 700 S 1600 East PCE Plume
Date: 5/3/14 Time: 1200 Temperature: 65 Precipitation (24 hr): 0
Surface Water Sample Location: SW-28

Sample location site use description (circle one): residential parcel, commercial parcel, industrial, park, other: storm sewer/grate in road

Seep? Y / N
Spring? Y / N
Pond? Y / N
Creek/Stream? Y / N

Describe and estimate flow (i.e., barely accumulating seep, spring with noticeably free flowing water, ponded area [depth], creek [width, depth]. : 5-10 gal/minute

Describe area immediately surrounding the surface water location. Circle all that apply: mowed lawn, sidewalk, street, ornamental planting/garden, wild grass, brush, maintained trees, unmaintained/~~undisturbed~~ woods, ravine, other. Description:

Describe surrounding habitat (within 200 feet of sampling location), ~~circle all that apply~~ mowed lawn, ornamental planting/garden, wild grass, brush, sporadic/maintained tree plantings, unmaintained woods, other. Description:

Do any potentially sensitive environmental areas exist adjacent to or in proximity to the site? For example, flood plains, wetlands? Y / N Describe:

Are there any wooded areas on the parcel? Y / N What percentage of the parcel is wooded?

few trees along road

What is dominant type of vegetation in wooded area (circle one): evergreen / deciduous.
What is predominant size of trees on the parcel (diameter at breast height) ~~(circle one)~~: 0-6 in., 6-12 in., > 12 in.

Is shrub/scrub vegetation present at the parcel? Y / N. What percentage of the parcel is shrub/scrub vegetation? __________. Is the shrub/scrub unmaintained (wild) or maintained (circle one). Average height of the shrub/scrub: 0-2ft, 2-2.5 ft, > 5 ft. Is scrub/shrub dense, patchy or sparse (circle one).

*lawns, right-of-ways

Are there open field areas present on the parcel? Y / N. What percentage of the parcel is open field / lawn? 20%. What is the predominant height of field plants: ____________________

Are there other types of terrestrial habitats present (other than woods, shrub, field/lawn): _______
man made - houses

Observations regarding the presence and/or absence of insects, fish, birds, mammals, etc.? _____
No wildlife observed

Other notes/observations: mitigated spring water

Photo collected? Y / N

CHECKLIST FOR ECOLOGICAL ASSESSMENT / SURFACE WATER SAMPLING

Site Name: 700 S 1600 East PCE Plume

Date: 5/11/16 Time: 0935 Temperature: 52°F Precipitation (24 hr): 0

Surface Water Sample Location: SW-29

Sample location site use description (circle one): residential parcel, commercial parcel, industrial, park, other: ______

Seep? Y / N

Spring? Y / N

Pond? Y / N

Creek/Stream? Y / N

Describe and estimate flow (i.e., barely accumulating seep, spring with noticeably free flowing water, ponded area [depth], creek [width, depth]. : water flowing out of pipe

Describe area immediately surrounding the surface water location. Circle all that apply: mowed lawn, sidewalk, street, ornamental planting/garden, wild grass, brush, maintained trees, unmaintained/undisturbed woods, ravine, other. Description: ______

Describe surrounding habitat (within 200 feet of sampling location), circle all that apply: mowed lawn, ornamental planting/garden, wild grass, brush, sporadic/maintained tree plantings, unmaintained woods, other. Description: located in residential neighborhood

Do any potentially sensitive environmental areas exist adjacent to or in proximity to the site? For example, flood plains, wetlands? Y / N Describe: ______

Are there any wooded areas on the parcel? Y / N. What percentage of the parcel is wooded? —

What is dominant type of vegetation in wooded area (circle one): NA evergreen / deciduous.
What is predominant size of trees on the parcel (diameter at breast height) (circle one): 0-6 in., 6-12 in., > 12 in.

Is shrub/scrub vegetation present at the parcel? Y / N What percentage of the parcel is shrub/scrub vegetation? ___—___. Is the shrub/scrub unmaintained (wild) or maintained (circle one). Average height of the shrub/scrub: 0-2ft, 2-2.5 ft, > 5 ft. Is scrub/shrub dense, patchy or sparse (circle one).

Are there open field areas present on the parcel? Y / N. What percentage of the parcel is open field / lawn? ___60%___. What is the predominant height of field plants: ___1"___

Are there other types of terrestrial habitats present (other than woods, shrub, field/lawn): ___man made structures___

Observations regarding the presence and/or absence of insects, fish, birds, mammals, etc.? ___
No wildlife

Other notes/observations: ___

Photo collected? Y / N

Kristi R-Yoder 5/11/16

CHECKLIST FOR ECOLOGICAL ASSESSMENT / SURFACE WATER SAMPLING

Site Name: 700 S 1600 East PCE Plume

Date: 5/3/16 Time: 1630 Temperature: 74°F Precipitation (24 hr): 0

Surface Water Sample Location: SW-30

Sample location site use description (circle one): residential parcel, commercial parcel, industrial, park, other: ________

Seep? Y / N

Spring? Y / N Smith Spring

Pond? Y / N

Creek/Stream? Y / N

Describe and estimate flow (i.e., barely accumulating seep, spring with noticeably free flowing water, ponded area [depth], creek [width, depth]. : Flows at about 2 L/min

Describe area immediately surrounding the surface water location. Circle all that apply: mowed lawn, sidewalk, street, ornamental planting/garden, wild grass, brush, maintained trees, unmaintained/undisturbed woods, ravine, other. Description: rocks

Describe surrounding habitat (within 200 feet of sampling location), circle all that apply: mowed lawn, ornamental planting/garden, wild grass, brush, sporadic/maintained tree plantings, unmaintained woods, other. Description: residential neighborhood

Do any potentially sensitive environmental areas exist adjacent to or in proximity to the site? For example, flood plains, wetlands? Y / N Describe: ________

Are there any wooded areas on the parcel? Y / N What percentage of the parcel is wooded? —

What is dominant type of vegetation in wooded area (circle one): NA evergreen / deciduous.
What is predominant size of trees on the parcel (diameter at breast height) (circle one): 0-6 in., 6-12 in., > 12 in.

Is shrub/scrub vegetation present at the parcel? Y / N What percentage of the parcel is shrub/scrub vegetation? ___—___. Is the shrub/scrub unmaintained (wild) or maintained (circle one). Average height of the shrub/scrub: 0-2ft, 2-2.5 ft, > 5 ft. Is scrub/shrub dense, patchy or sparse (circle one).

Are there open field areas present on the parcel? Y *lawn / N. What percentage of the parcel is open field / lawn? ___5%___. What is predominant height of field plants: ___1"___

Are there other types of terrestrial habitats present (other than woods, shrub, field/lawn): man made structures

Observations regarding the presence and/or absence of insects, fish, birds, mammals, etc.? ______
Homeowners have chickens
other birds in yard
______

Other notes/observations: ______

Photo collected? Y N

CHECKLIST FOR ECOLOGICAL ASSESSMENT / SURFACE WATER SAMPLING

Site Name: 700 S 1600 East PCE Plume

Date: 5/2/16 Time: 1500 Temperature: 65° Precipitation (24 hr): 0

Surface Water Sample Location: SW-31

Sample location site use description (circle one): residential parcel, commercial parcel, industrial, park, other: ______

Seep? Y / N

Spring? Y / N

Pond? Y / N

Creek/Stream? Y / N

Describe and estimate flow (i.e., barely accumulating seep, spring with noticeably free flowing water, ponded area [depth], creek [width, depth]. : Slow flowing seep, little to no accumulation

Describe area immediately surrounding the surface water location. Circle all that apply: mowed lawn, sidewalk, street, ornamental planting/garden, wild grass, brush, maintained trees, unmaintained/undisturbed woods, ravine, other. Description: ______

Describe surrounding habitat (within 200 feet of sampling location), circle all that apply: mowed lawn, ornamental planting/garden, wild grass, brush, sporadic/maintained tree plantings, unmaintained woods, other. Description: ______

Do any potentially sensitive environmental areas exist adjacent to or in proximity to the site? For example, flood plains, wetlands? Y / N Describe: ______

Are there any wooded areas on the parcel? Y / N. What percentage of the parcel is wooded? ____

2 trees in back yard

What is dominant type of vegetation in wooded area (circle one): evergreen / deciduous.
What is predominant size of trees on the parcel (diameter at breast height) (circle one): 0-6 in., 6-12 in., > 12 in.

Is shrub/scrub vegetation present at the parcel? Y / N. What percentage of the ~~parcel is~~ shrub/scrub vegetation? 50%. Is the ~~shrub/scrub~~ unmaintained (wild) or maintained (circle one). Average height of the shrub/scrub: 0-2ft, 2-2.5 ft, > 5 ft. Is scrub/~~shrub~~ ~~dense~~, patchy or sparse (circle one).

Are there open field areas present on the parcel? Y / ~~N~~. What percentage of the parcel is open field / lawn? 50%. What is the predominant height of field plants: 12"

Are there other types of terrestrial habitats present (other than woods, shrub, field/lawn): _______

Observations regarding the presence and/or absence of insects, fish, birds, mammals, etc.? _____
man made - homes, etc.

Other notes/observations: _______

Photo collected? Y / N

CHECKLIST FOR ECOLOGICAL ASSESSMENT / SURFACE WATER SAMPLING

Site Name: 700 S 1600 East PCE Plume

Date: 5/5/16 Time: 1120 Temperature: 75°F Precipitation (24 hr): 0

Surface Water Sample Location: SW-32

Sample location site use description (circle one): residential parcel, commercial parcel, industrial, park, other: ________

Seep? Y / N

Spring? Y / N mitigated spring water into storm drain

Pond? Y / N

Creek/Stream? Y / N

Describe and estimate flow (i.e., barely accumulating seep, spring with noticeably free flowing water, ponded area [depth], creek [width, depth]. : Flows at about 2 L/min

Describe area immediately surrounding the surface water location. Circle all that apply: mowed lawn, sidewalk, street, ornamental planting/garden, wild grass, brush, maintained trees, unmaintained/undisturbed woods, ravine, other. Description: ________

Describe surrounding habitat (within 200 feet of sampling location), circle all that apply: mowed lawn, ornamental planting/garden, wild grass, brush, sporadic/maintained tree plantings, unmaintained woods, other. Description: residential neighborhood

Do any potentially sensitive environmental areas exist adjacent to or in proximity to the site? For example, flood plains, wetlands? Y / N Describe: ________

Are there any wooded areas on the parcel? Y / N What percentage of the parcel is wooded? —

What is dominant type of vegetation in wooded area (circle one): NA evergreen / deciduous.
What is predominant size of trees on the parcel (diameter at breast height) (circle one): 0-6 in., 6-12 in., > 12 in.

Is shrub/scrub vegetation present at the parcel? Y / N What percentage of the parcel is shrub/scrub vegetation? ___—___. Is the shrub/scrub unmaintained (wild) or maintained (circle one). Average height of the shrub/scrub: 0-2ft, 2-2.5 ft, > 5 ft. Is scrub/shrub dense, patchy or sparse (circle one).

Are there open field areas present on the parcel? Y / N. What percentage of the parcel is open field / lawn? 10%. What is the predominant height of field plants: —

Are there other types of terrestrial habitats present (other than woods, shrub, field/lawn): manmade structures

Observations regarding the presence and/or absence of insects, fish, birds, mammals, etc.? No wildlife observed

Other notes/observations: ______

Photo collected? Y / N

CHECKLIST FOR ECOLOGICAL ASSESSMENT / SURFACE WATER SAMPLING

Site Name: 700 S 1600 East PCE Plume
Date: 5/2/16 Time: 1355 Temperature: 65 Precipitation (24 hr): 0
Surface Water Sample Location: SW-33

Sample location site use description (circle one): ~~residential~~ residential parcel, commercial parcel, industrial, park, other: ______

Seep? Y / N
Spring? Y / N
Pond? Y / N
Creek/Stream? Y / N

Describe and estimate flow (~~i.e., barely~~ accumulating seep, spring with noticeably free flowing water, ponded area [depth], creek [width, depth]. : 4" wide outflow < 1 cm deep

Describe area immediately surrounding the surface water location. Circle all that apply: mowed lawn, sidewalk, street, ornamental planting/garden, wild grass, brush, maintained trees, unmaintained/undisturbed woods, ravine, other. Description: flowing out of lawn into street

Describe ~~surrounding habitat~~ (within 200 feet of sampling ~~location~~), ~~circle all that~~ apply: mowed lawn, ornamental planting/garden, wild grass, brush, sporadic/maintained tree plantings, un~~maintained woods~~, other. Description: ______

Do any potentially sensitive environmental areas exist adjacent to or in proximity to the site? For example, flood plains, wetlands? Y / N Describe: ______

Are there any wooded areas on the parcel? Y / N. What percentage of the parcel is wooded? 5%
Trees in lawn

What is dominant type of vegetation in wooded area (circle one): evergreen / deciduous.
What is predominant size of trees on the parcel (diameter at breast height) (~~circle one~~): 0-6 in., 6-12 in., > 12 in.

Is shrub/scrub vegetation present at the parcel? Y / N. What percentage of the ~~parcel is~~ shrub/scrub vegetation? 10%. Is the shrub/~~scrub~~ unmaintained (wild) or maintained (~~circle~~ one). Average height of the shrub/scrub: 0-2ft, 2-2.5 ft, > 5 ft. Is scrub/~~shrub~~ dense, patchy or sparse (circle one).

Are there open field areas present on the parcel? Y / N. What percentage of the parcel is open field / lawn? 80% What is the predominant height of field plants: grass (mowed)

Are there other types of terrestrial habitats present (other than woods, shrub, field/lawn): man made - homes, etc.

Observations regarding the presence and/or absence of insects, fish, birds, mammals, etc.? can hear birds

Other notes/observations:

Photo collected? Y / N

CHECKLIST FOR ECOLOGICAL ASSESSMENT / SURFACE WATER SAMPLING

Site Name: 700 S 1600 East PCE Plume

Date: 5/2/16 Time: 1430 Temperature: 65 Precipitation (24 hr): 0

Surface Water Sample Location: SW34

Sample location site use description (circle one): residential parcel, commercial parcel, industrial, park, other: ______

Seep? Y / N

Spring? Y / N

Pond? Y / N

Creek/Stream? Y / N

Describe and estimate flow (i.e., barely accumulating seep, spring with noticeably free flowing water, ponded area [depth], creek [width, depth]. : ______

Describe area immediately surrounding the surface water location. Circle all that apply: mowed lawn, sidewalk, street, ornamental planting/garden, wild grass, brush, maintained trees, unmaintained/undisturbed woods, ravine, other. Description: ______

Describe surrounding habitat (within 200 feet of sampling location), circle all that apply: mowed lawn, ornamental planting/garden, wild grass, brush, sporadic/maintained tree plantings, unmaintained woods, other. Description:

patio

Do any potentially sensitive environmental areas exist adjacent to or in proximity to the site? For example, flood plains, wetlands? Y / N Describe: ______

Are there any wooded areas on the parcel? Y / N. What percentage of the parcel is wooded? 15%

What is dominant type of vegetation in wooded area (circle one): evergreen / deciduous.
What is predominant size of trees on the parcel (diameter at breast height) (circle one): 0-6 in., 6-12 in., > 12 in.

Is shrub/scrub vegetation present at the parcel? Y / N. What percentage of the ~~parcel is~~ shrub/scrub vegetation? 20% . Is the ~~shrub/scrub~~ unmaintained (wild) or maintained (circle one). Average height of the shrub/scrub: 0-2ft, 2-2.5 ft, > 5 ft. Is scrub/~~shrub~~ dense, patchy or sparse (circle one).

Are there open field areas present ~~on~~ the parcel? Y / N. What percentage of the parcel is open field / lawn? 40% . What is the predominant height of field plants: lawn/ivy

ivy

Are there other types of terrestrial habitats present (other than woods, shrub, field/lawn):
man made - homes, etc.

Observations regarding the presence and/or absence of insects, fish, birds, mammals, etc.?
birds can be heard

Other notes/observations:

Photo collected? Y / N

CHECKLIST FOR ECOLOGICAL ASSESSMENT / SURFACE WATER SAMPLING

Site Name: 700 S 1600 East PCE Plume

Date: 5/4/16 Time: 0930 Temperature: 76°F Precipitation (24 hr): 0

Surface Water Sample Location: SW-35

Sample location site use description (circle one): residential parcel, commercial parcel, industrial, park, other: ___

Seep? Y / N

Spring? Y / N

Pond? Y / N

Creek/Stream? Y / N

Describe and estimate flow (i.e., barely accumulating seep, spring with noticeably free flowing water, ponded area [depth], creek [width, depth]. : ___

Describe area immediately surrounding the surface water location. Circle all that apply: mowed lawn, sidewalk, street, ornamental planting/garden, wild grass, brush, maintained trees, unmaintained/undisturbed woods, ravine, other. Description: ___

Describe surrounding habitat (within 200 feet of sampling location), circle all that apply: mowed lawn, ornamental planting/garden, wild grass, brush, sporadic/maintained tree plantings, unmaintained woods, other Description: pavers

Do any potentially sensitive environmental areas exist adjacent to or in proximity to the site? For example, flood plains, wetlands? Y / N Describe: ___

Are there any wooded areas on the parcel? Y / N What percentage of the parcel is wooded? -

What is dominant type of vegetation in wooded area (circle one): NA evergreen / deciduous.
What is predominant size of trees on the parcel (diameter at breast height) (circle one): 0-6 in., 6-12 in., > 12 in.

Is shrub/scrub vegetation present at the parcel? Y / N What percentage of the parcel is shrub/scrub vegetation? —. Is the shrub/scrub unmaintained (wild) or maintained (circle one). Average height of the shrub/scrub: 0-2ft, 2-2.5 ft, > 5 ft. Is scrub/shrub dense, patchy or sparse (circle one).

Are there open field areas present on the parcel? Y / N. What percentage of the parcel is open field /lawn? 100%. What is the predominant height of field plants: 1"

Are there other types of terrestrial habitats present (other than woods, shrub, field/lawn): man made structures

Observations regarding the presence and/or absence of insects, fish, birds, mammals, etc.? No wildlife observed

Other notes/observations:

Photo collected? Y / N

CHECKLIST FOR ECOLOGICAL ASSESSMENT / SURFACE WATER SAMPLING

Site Name: 700 S 1600 East PCE Plume

Date: 5/3/16 Time: 1730 Temperature: 74° F Precipitation (24 hr): 0

Surface Water Sample Location: SW-36

Sample location site use description (circle one): residential parcel, commercial parcel, industrial, park, other: ____

Seep? Y / N

Spring? Y / N

Pond? Y / N

Creek/Stream? Y / N

Describe and estimate flow (i.e., barely accumulating seep, spring with noticeably free flowing water, ponded area [depth], creek [width, depth]. : seep coming out of piping

Describe area immediately surrounding the surface water location. Circle all that apply: mowed lawn, sidewalk, street, ornamental planting/garden, wild grass, brush, maintained trees, unmaintained/undisturbed woods, ravine, other Description: concrete/rock

Describe surrounding habitat (within 200 feet of sampling location), circle all that apply: mowed lawn, ornamental planting/garden, wild grass, brush, sporadic/maintained tree plantings, unmaintained woods, other. Description: residential ~~neighborhood~~ neighborhood

Do any potentially sensitive environmental areas exist adjacent to or in proximity to the site? For example, flood plains, wetlands? Y / N Describe: ____

Are there any wooded areas on the parcel? Y / N What percentage of the parcel is wooded? --

What is dominant type of vegetation in wooded area (circle one): NA evergreen / deciduous.
What is predominant size of trees on the parcel (diameter at breast height) (circle one): 0-6 in., 6-12 in., > 12 in.

Is shrub/scrub vegetation present at the parcel? Y / N. What percentage of the parcel is shrub/scrub vegetation? ___—___. Is the shrub/scrub unmaintained (wild) or maintained (circle one). Average height of the shrub/scrub: 0-2ft, 2-2.5 ft, > 5 ft. Is scrub/shrub dense, patchy or sparse (circle one).

Are there open field areas present on the parcel? Y / N. What percentage of the parcel is open field / lawn? 20%. What is the predominant height of field plants: 1.5"

Are there other types of terrestrial habitats present (other than woods, shrub, field/lawn): man made structures

Observations regarding the presence and/or absence of insects, fish, birds, mammals, etc.? No wildlife observed

Other notes/observations: ______

Photo collected? Y N

CHECKLIST FOR ECOLOGICAL ASSESSMENT / SURFACE WATER SAMPLING

Site Name: 700 S 1600 East PCE Plume

Date: 5/5/16 Time: 1815 Temperature: 75°F Precipitation (24 hr): 0

Surface Water Sample Location: SW-37

Sample location site use description (circle one): residential parcel, commercial parcel, industrial, park, other: ____

Seep? Y / N

Spring? Y / N mitigated spring water in storm drain

Pond? Y / N

Creek/Stream? Y / N

Describe and estimate flow (i.e., barely accumulating seep, spring with noticeably free flowing water, ponded area [depth], creek [width, depth]. : confluence of 3 mitigation lines Flows at ~4 L/min

Describe area immediately surrounding the surface water location. Circle all that apply: mowed lawn, sidewalk, street, ornamental planting/garden, wild grass, brush, maintained trees, unmaintained/undisturbed woods, ravine, other. Description: ____

Describe surrounding habitat (within 200 feet of sampling location), circle all that apply: mowed lawn, ornamental planting/garden, wild grass, brush, sporadic/maintained tree plantings, unmaintained woods, other. Description: residential neighborhood

Do any potentially sensitive environmental areas exist adjacent to or in proximity to the site? For example, flood plains, wetlands? Y / N Describe: ____

Are there any wooded areas on the parcel? Y / N What percentage of the parcel is wooded? ____

What is dominant type of vegetation in wooded area (circle one): NA evergreen / deciduous.
What is predominant size of trees on the parcel (diameter at breast height) (circle one): 0-6 in., 6-12 in., > 12 in.

Is shrub/scrub vegetation present at the parcel? Y / N. What percentage of the parcel is shrub/scrub vegetation? —. Is the shrub/scrub unmaintained (wild) or maintained (circle one). Average height of the shrub/scrub: 0-2ft, 2-2.5 ft, > 5 ft. Is scrub/shrub dense, patchy or sparse (circle one).

Are there open field areas present on the parcel? Y / N. What percentage of the parcel is open field / lawn? 45%. What is the predominant height of field plants: 1"

Are there other types of terrestrial habitats present (other than woods, shrub, field/lawn): man made structures

Observations regarding the presence and/or absence of insects, fish, birds, mammals, etc.? No wildlife observed

Other notes/observations:

Photo collected? Y N

CHECKLIST FOR ECOLOGICAL ASSESSMENT / SURFACE WATER SAMPLING

Site Name: 700 S 1600 East PCE Plume

Date: 5/11/16 Time: 0810 Temperature: 52°F Precipitation (24 hr): 0

Surface Water Sample Location: SW-38

Sample location site use description (circle one): residential parcel, commercial parcel, industrial, park, other: street

Seep? Y / N

Spring? Y / N

Pond? Y / N

Creek/Stream? Y / N

* storm drain

Describe and estimate flow (i.e., barely accumulating seep, spring with noticeably free flowing water, ponded area [depth], creek [width, depth]. : Flowing at decent rate

Describe area immediately surrounding the surface water location. Circle all that apply: mowed lawn, sidewalk, street, ornamental planting/garden, wild grass, brush, maintained trees, unmaintained/undisturbed woods, ravine, other. Description:

Describe surrounding habitat (within 200 feet of sampling location), circle all that apply: mowed lawn, ornamental planting/garden, wild grass, brush, sporadic/maintained tree plantings, unmaintained woods, other. Description: Located on city street

Do any potentially sensitive environmental areas exist adjacent to or in proximity to the site? For example, flood plains, wetlands? Y / N Describe: –

Are there any wooded areas on the parcel? Y / N What percentage of the parcel is wooded? –

What is dominant type of vegetation in wooded area (circle one): NA evergreen / deciduous.
What is predominant size of trees on the parcel (diameter at breast height) (circle one): 0-6 in., 6-12 in., > 12 in.

Is shrub/scrub vegetation present at the parcel? Y N What percentage of the parcel is shrub/scrub vegetation? — . Is the shrub/scrub unmaintained (wild) or maintained (circle one). Average height of the shrub/scrub: 0-2ft, 2-2.5 ft, > 5 ft. Is scrub/shrub dense, patchy or sparse (circle one).

Are there open field areas present on the parcel? Y N What percentage of the parcel is open field / lawn? — . What is the predominant height of field plants: —

Are there other types of terrestrial habitats present (other than woods, shrub, field/lawn): —

Observations regarding the presence and/or absence of insects, fish, birds, mammals, etc.?
No wildlife

Other notes/observations:

Photo collected? Y N

Kristy Rogge 5/11/16

CHECKLIST FOR ECOLOGICAL ASSESSMENT / SURFACE WATER SAMPLING

Site Name: 700 S 1600 East PCE Plume

Date: 5/3/16 Time: 1700 Temperature: 78° F Precipitation (24 hr): 0

Surface Water Sample Location: ~~SW-38~~ SW-39

Sample location site use description (circle one) residential parcel, commercial parcel, industrial, park, other: ______

Seep? Y / N

Spring? Y / N Mitigated spring water in storm drain

Pond? Y / N

Creek/Stream? Y / N

Describe and estimate flow (i.e., barely accumulating seep, spring with noticeably free flowing water, ponded area [depth], creek [width, depth]. : mitigated water flowing at about 1.5 L/min

Describe area immediately surrounding the surface water location. Circle all that apply: mowed lawn, sidewalk, street, ornamental planting/garden, wild grass, brush, maintained trees, unmaintained/undisturbed woods, ravine, other. Description: ______

Describe surrounding habitat (within 200 feet of sampling location), circle all that apply: mowed lawn, ornamental planting/garden, wild grass, brush, sporadic/maintained tree plantings, unmaintained woods, other. Description: residential neighborhood

Do any potentially sensitive environmental areas exist adjacent to or in proximity to the site? For example, flood plains, wetlands? Y / N Describe: ______

Are there any wooded areas on the parcel? Y / N What percentage of the parcel is wooded? –

What is dominant type of vegetation in wooded area (circle one): NA evergreen / deciduous.
What is predominant size of trees on the parcel (diameter at breast height) (circle one): 0-6 in., 6-12 in., > 12 in.

Is shrub/scrub vegetation present at the parcel? Y / N. What percentage of the parcel is shrub/scrub vegetation? ___—___. Is the shrub/scrub unmaintained (wild) or maintained (circle one). Average height of the shrub/scrub: 0-2ft, 2-2.5 ft, > 5 ft. Is scrub/shrub dense, patchy or sparse (circle one).

Are there open field areas present on the parcel? Y / N. What percentage of the parcel is open field / lawn? __20%__. What is the predominant height of field plants: __1"__

Are there other types of terrestrial habitats present (other than woods, shrub, field/lawn): man made structures

Observations regarding the presence and/or absence of insects, fish, birds, mammals, etc.? No wildlife observed

Other notes/observations: ______

Photo collected? Y / N

CHECKLIST FOR ECOLOGICAL ASSESSMENT / SURFACE WATER SAMPLING

Site Name: 700 S 1600 East PCE Plume

Date: 5/5/16 Time: 1745 Temperature: 76°F Precipitation (24 hr): 0

Surface Water Sample Location: SW-40

Sample location site use description (circle one): residential parcel, commercial parcel, industrial, park, other: ______

Seep? Y / N

Spring? Y / N sump underneath house

Pond? Y / N

Creek/Stream? Y / N

Describe and estimate flow (i.e., barely accumulating seep, spring with noticeably free flowing water, ponded area [depth], creek [width, depth]. : unable to tell flow or depth of water

Describe area immediately surrounding the surface water location. Circle all that apply: mowed lawn, sidewalk, street, ornamental planting/garden, wild grass, brush, maintained trees, unmaintained/undisturbed woods, ravine, other. Description: ______

Describe surrounding habitat (within 200 feet of sampling location), circle all that apply: mowed lawn, ornamental planting/garden, wild grass, brush, sporadic/maintained tree plantings, unmaintained woods, other. Description: Residential neighborhood

Do any potentially sensitive environmental areas exist adjacent to or in proximity to the site? For example, flood plains, wetlands? Y / N Describe: ______

Are there any wooded areas on the parcel? Y / N What percentage of the parcel is wooded? —

What is dominant type of vegetation in wooded area (circle one): NA evergreen / deciduous.
What is predominant size of trees on the parcel (diameter at breast height) (circle one): 0-6 in., 6-12 in., > 12 in.

Is shrub/scrub vegetation present at the parcel? Y N What percentage of the parcel is shrub/scrub vegetation? __—__. Is the shrub/scrub unmaintained (wild) or maintained (circle one). Average height of the shrub/scrub: 0-2ft, 2-2.5 ft, > 5 ft. Is scrub/shrub dense, patchy or sparse (circle one).

Are there open field areas present on the parcel? Y N. What percentage of the parcel is open field / lawn? __45%__. What is the predominant height of field plants: __1"__

Are there other types of terrestrial habitats present (other than woods, shrub, field/lawn): __man made structure__

Observations regarding the presence and/or absence of insects, fish, birds, mammals, etc.? __No wildlife observed__

Other notes/observations: ______

Photo collected? Y / N

Kristy Rogers 5/5/16

CHECKLIST FOR ECOLOGICAL ASSESSMENT / SURFACE WATER SAMPLING

Site Name: 700 S 1600 East PCE Plume

Date: 5/5/16 Time: 1100 Temperature: 76°F Precipitation (24 hr): 0

Surface Water Sample Location: SW-41

Sample location site use description (circle one): residential parcel, commercial parcel, industrial, park, other: Area located in Beatrice Evans Park

Seep? Y / N

Spring? Y / N irrigated spring water in storm drain

Pond? Y / N

Creek/Stream? Y / N

Describe and estimate flow (i.e., barely accumulating seep, spring with noticeably free flowing water, ponded area [depth], creek [width, depth]. : water about 6" deep

Describe area immediately surrounding the surface water location. Circle all that apply: mowed lawn, sidewalk, street, ornamental planting/garden, wild grass, brush, maintained trees, unmaintained/undisturbed woods, ravine, other. Description: grass not in contact with storm drain

Describe surrounding habitat (within 200 feet of sampling location), circle all that apply: mowed lawn, ornamental planting/garden, wild grass, brush, sporadic/maintained tree plantings, unmaintained woods, other. Description: residential neighborhood

Do any potentially sensitive environmental areas exist adjacent to or in proximity to the site? For example, flood plains, wetlands? Y / N Describe:

Are there any wooded areas on the parcel? Y / N What percentage of the parcel is wooded? —

What is dominant type of vegetation in wooded area (circle one): NA evergreen / deciduous.
What is predominant size of trees on the parcel (diameter at breast height) (circle one): 0-6 in., 6-12 in., > 12 in.

Is shrub/scrub vegetation present at the parcel? Y N. What percentage of the parcel is shrub/scrub vegetation? — . Is the shrub/scrub unmaintained (wild) or maintained (circle one). Average height of the shrub/scrub: 0-2ft, 2-2.5 ft, > 5 ft. Is scrub/shrub dense, patchy or sparse (circle one).

Are there open field areas present on the parcel? Y N. What percentage of the parcel is open field / lawn? 55%. What is the predominant height of field plants: 1"

Are there other types of terrestrial habitats present (other than woods, shrub, field/lawn): man made structures

Observations regarding the presence and/or absence of insects, fish, birds, mammals, etc.? No wildlife observed

Other notes/observations:

Photo collected? Y N

Kristi Pozzi 5/5/16

CHECKLIST FOR ECOLOGICAL ASSESSMENT / SURFACE WATER SAMPLING

Site Name: 700 S 1600 East PCE Plume

Date: 5/2/16 Time: 1410 Temperature: 65 Precipitation (24 hr): 0

Surface Water Sample Location: SW-42

Sample location site use description (circle one): residential parcel, commercial parcel, industrial, park, other: __________

Seep? Y / N

Spring? Y / N

Pond? Y / N

Creek/Stream? Y / N

Describe and estimate flow (i.e., ~~barely accumulating~~ seep, spring with noticeably free flowing water, ponded area [depth], creek [width, depth]. : __________

Describe area immediately surrounding the surface water location. ~~Circle all that apply~~: mowed lawn, sidewalk, street, ornamental planting/garden, wild grass, brush, ~~maintained~~ trees, unmaintained/undisturbed woods, ravine, other. Description: __________

Describe surrounding habitat (within 200 feet of sampling location), circle all that apply: mowed lawn, ornamental planting/garden, wild grass, brush, sporadic/maintained tree plantings, unmaintained woods, other. Description: __________

Do any potentially sensitive environmental areas exist adjacent to or in proximity to the site? For example, flood plains, wetlands? Y / N Describe: __________

Are there any wooded areas on the parcel? Y / N. What percentage of the parcel is wooded? 10%

What is dominant type of vegetation in wooded area (circle one): evergreen / deciduous.
What is predominant size of trees on the parcel (diameter at breast height) (circle one): 0-6 in., 6-12 in., > 12 in.

Is shrub/scrub vegetation present at the parcel? Y / N. What percentage of the parcel is shrub/scrub vegetation? 40%. Is the shrub/scrub ~~unmaintained~~ (wild) or maintained (circle one). Average height of the shrub/scrub: 0-2ft, 2-2.5 ft, > 5 ft. Is scrub/~~shrub dense~~, patchy or sparse (circle one). ivy in between

Are there open field areas present on the parcel? Y / N. What percentage of the parcel is open field / lawn? 0%. What is the predominant height of field plants: ____

Are there other types of terrestrial habitats present (other than woods, shrub, field/lawn): No

Observations regarding the presence and/or absence of insects, fish, birds, mammals, etc.? ____
some mosquitoes

Other notes/observations: Seep is chanelized into concrete lined ditch

Photo collected? Y / N

Kristi Pozzi 5/2/16

CHECKLIST FOR ECOLOGICAL ASSESSMENT / SURFACE WATER SAMPLING

Site Name: 700 S 1600 East PCE Plume
Date: 5/2/15 Time: 1305 Temperature: 60° Precipitation (24 hr): 0
Surface Water Sample Location: A-SW-043

Sample location site use description (circle one): residential parcel, commercial parcel, industrial, park, other: ______

Seep? Y / N
Spring? Y / N → sample collected from spring
Pond? Y / N
Creek/Stream? Y / N

Describe and estimate flow (i.e., barely accumulating seep, spring with noticeably free flowing water, ponded area [depth], creek [width, depth]. : Steady flow ~ 1 ft/sec with ponded area on side (~8" deep)

Describe area immediately surrounding the surface water location. Circle all that apply: mowed lawn, sidewalk, street, ornamental planting/garden, wild grass, brush, maintained trees, unmaintained/undisturbed woods, ravine, other. Description: watercress
Cement bottom in flow area.

Describe surrounding habitat (within 200 feet of sampling location), circle all that apply: mowed lawn, ornamental planting/garden, wild grass, brush, sporadic/maintained tree plantings, unmaintained woods, other. Description: ______

Do any potentially sensitive environmental areas exist adjacent to or in proximity to the site? For example, flood plains, wetlands? Y / N Describe: ______

Are there any wooded areas on the parcel? Y / N. What percentage of the parcel is wooded? 5%

What is dominant type of vegetation in wooded area (circle one): evergreen / deciduous.
What is predominant size of trees on the parcel (diameter at breast height) (circle one): 0-6 in., 6-12 in., > 12 in.

Is shrub/scrub vegetation present at the parcel? Y / N. What percentage of the parcel is shrub/scrub vegetation? 40%. Is the shrub/scrub unmaintained (wild) or maintained (circle one). Average height of the shrub/scrub: 0-2ft, 2-2.5 ft, > 5 ft. Is scrub/shrub dense, patchy or sparse (circle one).

Are there open field areas present on the parcel? Y / N. What percentage of the parcel is open field / lawn? 30%. What is the predominant height of field plants: Mowed lawn

Are there other types of terrestrial habitats present (other than woods, shrub, field/lawn): No

Observations regarding the presence and/or absence of insects, fish, birds, mammals, etc.? Sprayed for mosquitos.

Other notes/observations: Sample collected from flowing water

Photo collected? Y / N

Kush Rajpa 5/2/16

CHECKLIST FOR ECOLOGICAL ASSESSMENT / SURFACE WATER SAMPLING

Site Name: 700 S 1600 East PCE Plume

Date: 5/4/16 Time: 1430 Temperature: 76°F Precipitation (24 hr): 0

Surface Water Sample Location: SW-44

Sample location site use description (circle one): residential parcel, commercial parcel, industrial, park, other: ____

Seep? Y / N

Spring? Y / N

Pond? Y / N

Creek/Stream? Y / N

Describe and estimate flow (i.e., barely accumulating seep, spring with noticeably free flowing water, ponded area [depth], creek [width, depth]. : Steady Flow ~1 ft/sec

Water Flows into ponded structures

Describe area immediately surrounding the surface water location. Circle all that apply: mowed lawn, sidewalk, street, ornamental planting/garden, wild grass, brush, maintained trees, unmaintained/undisturbed woods, ravine, other. Description: ____

Describe surrounding habitat (within 200 feet of sampling location), circle all that apply: mowed lawn, ornamental planting/garden, wild grass, brush, sporadic/maintained tree plantings, unmaintained woods, other. Description: ____

Do any potentially sensitive environmental areas exist adjacent to or in proximity to the site? For example, flood plains, wetlands? Y / N Describe: ____

Are there any wooded areas on the parcel? Y / N. What percentage of the parcel is wooded? --

What is dominant type of vegetation in wooded area (circle one): NA evergreen / deciduous.
What is predominant size of trees on the parcel (diameter at breast height) (circle one): 0-6 in., 6-12 in., > 12 in.

Is shrub/scrub vegetation present at the parcel? Y / N. What percentage of the parcel is shrub/scrub vegetation? __—__. Is the shrub/scrub unmaintained (wild) or maintained (circle one). Average height of the shrub/scrub: 0-2ft, 2-2.5 ft, > 5 ft. Is scrub/shrub dense, patchy or sparse (circle one).

Are there open field areas present on the parcel? Y / N. What percentage of the parcel is open field / lawn? __10%__. What is the predominant height of field plants: __1"__

Are there other types of terrestrial habitats present (other than woods, shrub, field/lawn): __man made structures__

Observations regarding the presence and/or absence of insects, fish, birds, mammals, etc.? __some birds in trees__

Other notes/observations: ______

Photo collected? Y / N

Kurt Jozze 5/4/16

CHECKLIST FOR ECOLOGICAL ASSESSMENT / SURFACE WATER SAMPLING

Site Name: 700 S 1600 East PCE Plume

Date: 5/5/16 Time: 1000 Temperature: 80°F Precipitation (24 hr): 0

Surface Water Sample Location: SW-45

Sample location site use description (circle one): residential parcel, commercial parcel, industrial, park, other: ______

Seep? Y / N

Spring? Y / N

Pond? Y / N

Creek/Stream? Y / N

Describe and estimate flow (i.e., barely accumulating seep, spring with noticeably free flowing water, ponded area [depth], creek [width, depth]. : Jordan and Salt Lake canal Flowing at a great rate

Describe area immediately surrounding the surface water location. Circle all that apply: mowed lawn, sidewalk, street, ornamental planting/garden, wild grass, brush, maintained trees, unmaintained/undisturbed woods, ravine, other. Description: storm grate

Describe surrounding habitat (within 200 feet of sampling location), circle all that apply: mowed lawn, ornamental planting/garden, wild grass, brush, sporadic/maintained tree plantings, unmaintained woods, other. Description: residential neighborhood

Do any potentially sensitive environmental areas exist adjacent to or in proximity to the site? For example, flood plains, wetlands? Y / N Describe: ______

Are there any wooded areas on the parcel? Y / N What percentage of the parcel is wooded? —

What is dominant type of vegetation in wooded area (circle one): NA evergreen / deciduous.
What is predominant size of trees on the parcel (diameter at breast height) (circle one): 0-6 in., 6-12 in., > 12 in.

Is shrub/scrub vegetation present at the parcel? Y / N. What percentage of the parcel is shrub/scrub vegetation? __—__. Is the shrub/scrub unmaintained (wild) or maintained (circle one). Average height of the shrub/scrub: 0-2ft, 2-2.5 ft, > 5 ft. Is scrub/shrub dense, patchy or sparse (circle one).

Are there open field areas present on the parcel? Y / N. What percentage of the parcel is open field / lawn? __60%__. What is the predominant height of field plants: __1"__

Are there other types of terrestrial habitats present (other than woods, shrub, field/lawn): __man made structures__

Observations regarding the presence and/or absence of insects, fish, birds, mammals, etc.? __No wildlife observed__

Other notes/observations: ____

Photo collected? Y / N

Kurt Lappe 5/5/16

CHECKLIST FOR ECOLOGICAL ASSESSMENT / SURFACE WATER SAMPLING

Site Name: 700 S 1600 East PCE Plume

Date: 5/5/16 Time: 1730 Temperature: 75°F Precipitation (24 hr): 0

Surface Water Sample Location: SW-46

Sample location site use description (circle one): residential parcel, commercial parcel, industrial, park, other: ______

Seep? Y / N

Spring? Y / N

Pond? Y / N

Creek/Stream? Y / N

Describe and estimate flow (i.e., barely accumulating seep, spring with noticeably free flowing water, ponded area [depth], creek [width, depth]. : Flowing at about 2.5 L/min

Describe area immediately surrounding the surface water location. Circle all that apply: mowed lawn, sidewalk, street, ornamental planting/garden, wild grass, brush, maintained trees, unmaintained/undisturbed woods, ravine, other. Description: landscaped garden

Describe surrounding habitat (within 200 feet of sampling location), circle all that apply: mowed lawn, ornamental planting/garden, wild grass, brush, sporadic/maintained tree plantings, unmaintained woods, other. Description: residential neighborhood

Do any potentially sensitive environmental areas exist adjacent to or in proximity to the site? For example, flood plains, wetlands? Y / N Describe: ______

Are there any wooded areas on the parcel? Y / N What percentage of the parcel is wooded? —

What is dominant type of vegetation in wooded area (circle one): evergreen / deciduous. NA

What is predominant size of trees on the parcel (diameter at breast height) (circle one): 0-6 in., 6-12 in., > 12 in.

Is shrub/scrub vegetation present at the parcel? Y / N. What percentage of the parcel is shrub/scrub vegetation? — . Is the shrub/scrub unmaintained (wild) or maintained (circle one). Average height of the shrub/scrub: 0-2ft, 2-2.5 ft, > 5 ft. Is scrub/shrub dense, patchy or sparse (circle one).

Are there open field areas present on the parcel? Y / N. What percentage of the parcel is open field / lawn? 30%. What is the predominant height of field plants: 1"

Are there other types of terrestrial habitats present (other than woods, shrub, field/lawn): man made structures

Observations regarding the presence and/or absence of insects, fish, birds, mammals, etc.? No wildlife observed

Other notes/observations:

Photo collected? Y / N

Knot Pappi 5/5/16

CHECKLIST FOR ECOLOGICAL ASSESSMENT / SURFACE WATER SAMPLING

Site Name: 700 S 1600 East PCE Plume

Date: 5/4/10 Time: 0840 Temperature: 75°F Precipitation (24 hr): 0

Surface Water Sample Location: SW-47

Sample location site use description (circle one): residential parcel, commercial parcel, industrial, park, other: ____

Seep? Y / N

Spring? Y / N

Pond? Y / N

Creek/Stream? Y / N

Describe and estimate flow (i.e., barely accumulating seep, spring with noticeably free flowing water, ponded area [depth], creek [width, depth]. : sample collected from Red Butte Creek section 5' wide and 5" deep

Describe area immediately surrounding the surface water location. Circle all that apply: mowed lawn, sidewalk, street, ornamental planting/garden, wild grass, brush, maintained trees, unmaintained/undisturbed woods, ravine, other. Description: ____

Describe surrounding habitat (within 200 feet of sampling location), circle all that apply: mowed lawn, ornamental planting/garden, wild grass, brush, sporadic/maintained tree plantings, unmaintained woods, other. Description: Backyard had lawn and some landscaping

Do any potentially sensitive environmental areas exist adjacent to or in proximity to the site? For example, flood plains, wetlands? Y / N Describe: ____

Are there any wooded areas on the parcel? Y / ~~N~~ What percentage of the parcel is wooded? 10%

What is dominant type of vegetation in wooded area (circle one): evergreen / deciduous.
What is predominant size of trees on the parcel (diameter at breast height) (circle one): 0-6 in., 6-12 in., > 12 in.

Is shrub/scrub vegetation present at the parcel? Y / N What percentage of the parcel is shrub/scrub vegetation? __—__. Is the shrub/scrub unmaintained (wild) or maintained (circle one). Average height of the shrub/scrub: 0-2ft, 2-2.5 ft, > 5 ft. Is scrub/shrub dense, patchy or sparse (circle one).

Are there open field areas present on the parcel? Y / N. What percentage of the parcel is open field / lawn? __15%__. What is the predominant height of field plants: __1"__

Are there other types of terrestrial habitats present (other than woods, shrub, field/lawn): __man made structures__

Observations regarding the presence and/or absence of insects, fish, birds, mammals, etc.? ____
Fish (koi) in small pond
Mallards in pond adjacent to creek

Other notes/observations: ____

Photo collected? Y / N

Knot Rozzi 5/4/16

CHECKLIST FOR ECOLOGICAL ASSESSMENT / SURFACE WATER SAMPLING

Site Name: 700 S 1600 East PCE Plume

Date: 5/4/16 Time: 0945 Temperature: 81°F Precipitation (24 hr): 0

Surface Water Sample Location: SW-48

Sample location site use description (circle one): residential parcel, commercial parcel, industrial, park, other: ______

Seep? Y / N

Spring? Y / N Benson Spring

Pond? Y / N

Creek/Stream? Y / N

Describe and estimate flow (i.e., barely accumulating seep, spring with noticeably free flowing water, ponded area [depth], creek [width, depth]. : water flowing about 0.2 ~~L~~/min

Describe area immediately surrounding the surface water location. Circle all that apply: mowed lawn, sidewalk, street, ornamental planting/garden, wild grass, brush, maintained trees, unmaintained/undisturbed woods, ravine, other. Description: Small trees and plants

Describe surrounding habitat (within 200 feet of sampling location), circle all that apply: mowed lawn, ornamental planting/garden, wild grass, brush, sporadic/maintained tree plantings, unmaintained woods, other. Description: ______

Do any potentially sensitive environmental areas exist adjacent to or in proximity to the site? For example, flood plains, wetlands? Y / N Describe: ______

Are there any wooded areas on the parcel? Y N. What percentage of the parcel is wooded? 60%

What is dominant type of vegetation in wooded area (circle one): evergreen / deciduous.
What is predominant size of trees on the parcel (diameter at breast height) (circle one): 0-6 in., 6-12 in., > 12 in.

Is shrub/scrub vegetation present at the parcel? Y / N What percentage of the parcel is shrub/scrub vegetation? ___—___. Is the shrub/scrub unmaintained (wild) or maintained (circle one). Average height of the shrub/scrub: 0-2ft, 2-2.5 ft, > 5 ft. Is scrub/shrub dense, patchy or sparse (circle one).

Are there open field areas present on the parcel? Y / N What percentage of the parcel is open field / lawn? ___—___. What is the predominant height of field plants: ___—___

Are there other types of terrestrial habitats present (other than woods, shrub, field/lawn): ______

____

Observations regarding the presence and/or absence of insects, fish, birds, mammals, etc.? _____
Fish (koi) in ponded area below spring
Mosquitoes around water
____

Other notes/observations: ______________________

____

Photo collected? Y / N

Kurt Rizzo 5/4/16

CHECKLIST FOR ECOLOGICAL ASSESSMENT / SURFACE WATER SAMPLING

Site Name: 700 S 1600 East PCE Plume

Date: 5/5/16 Time: 1040 Temperature: 75°F Precipitation (24 hr): 0

Surface Water Sample Location: SW-49

Sample location site use description (circle one): residential parcel, commercial parcel, industrial, park, other: ______

Seep? Y / N

Spring? Y / N

Pond? Y / N

Creek/Stream? Y / N

Describe and estimate flow (i.e., barely accumulating seep, spring with noticeably free flowing water, ponded area [depth], creek [width, depth]. : Jordan and Salt Lake Canal Flowing at good rate

Describe area immediately surrounding the surface water location. Circle all that apply: mowed lawn, sidewalk, street, ornamental planting/garden, wild grass, brush, maintained trees, unmaintained/undisturbed woods, ravine, other. Description: storm drain in road

Describe surrounding habitat (within 200 feet of sampling location), circle all that apply: mowed lawn, ornamental planting/garden, wild grass, brush, sporadic/maintained tree plantings, unmaintained woods, other. Description: residential neighborhood

Do any potentially sensitive environmental areas exist adjacent to or in proximity to the site? For example, flood plains, wetlands? Y / N Describe: ______

Are there any wooded areas on the parcel? Y / N What percentage of the parcel is wooded? —

What is dominant type of vegetation in wooded area (circle one): NA evergreen / deciduous.
What is predominant size of trees on the parcel (diameter at breast height) (circle one): 0-6 in., 6-12 in., > 12 in.

Is shrub/scrub vegetation present at the parcel? Y / N What percentage of the parcel is shrub/scrub vegetation? __—__. Is the shrub/scrub unmaintained (wild) or maintained (circle one). Average height of the shrub/scrub: 0-2ft, 2-2.5 ft, > 5 ft. Is scrub/shrub dense, patchy or sparse (circle one).

Are there open field areas present on the parcel? Y / ~~N~~ What percentage of the parcel is open field / lawn? __25%__. What is the predominant height of field plants: __1"__

Are there other types of terrestrial habitats present (other than woods, shrub, field/lawn): __man made structures__

Observations regarding the presence and/or absence of insects, fish, birds, mammals, etc.? __No wildlife observed__

Other notes/observations: ____

Photo collected? Y / N

Kush Arzei 5/5/16

CHECKLIST FOR ECOLOGICAL ASSESSMENT / SURFACE WATER SAMPLING

Site Name: 700 S 1600 East PCE Plume

Date: 5/11/16 Time: 1100 Temperature: 61°F Precipitation (24 hr): 0

Surface Water Sample Location: SW-50

Sample location site use description (circle one): residential parcel, commercial parcel, industrial, park, other: ______

Seep? Y / N
Spring? Y / N
Pond? Y / N
Creek/Stream? Y / N

Describe and estimate flow (i.e., barely accumulating seep, spring with noticeably free flowing water, ponded area [depth], creek [width, depth]. : water flowing at about 1.5L/min

Describe area immediately surrounding the surface water location. Circle all that apply: mowed lawn, sidewalk, street, ornamental planting/garden, wild grass, brush, maintained trees, unmaintained/undisturbed woods, ravine, other. Description: ______

Describe surrounding habitat (within 200 feet of sampling location), circle all that apply: mowed lawn, ornamental planting/garden, wild grass, brush, sporadic/maintained tree plantings, unmaintained woods, other. Description: residential neighborhood

Do any potentially sensitive environmental areas exist adjacent to or in proximity to the site? For example, flood plains, wetlands? Y / N Describe: ______

Are there any wooded areas on the parcel? Y / N What percentage of the parcel is wooded? —

What is dominant type of vegetation in wooded area (circle one): NA evergreen / deciduous.
What is predominant size of trees on the parcel (diameter at breast height) (circle one): 0-6 in., 6-12 in., > 12 in.

Is shrub/scrub vegetation present at the parcel? Y / N. What percentage of the parcel is shrub/scrub vegetation? __—__. Is the shrub/scrub unmaintained (wild) or maintained (circle one). Average height of the shrub/scrub: 0-2ft, 2-2.5 ft, > 5 ft. Is scrub/shrub dense, patchy or sparse (circle one).

Are there open field areas present on the parcel? Y / N. What percentage of the parcel is open field / lawn? __30%__. What is the predominant height of field plants: __1"__

Are there other types of terrestrial habitats present (other than woods, shrub, field/lawn): __man made structures__

Observations regarding the presence and/or absence of insects, fish, birds, mammals, etc.? __some birds in trees__

Other notes/observations: ____

Photo collected? Y / N

Knut Ragen 5/11/16