Appendix E: Groundwater Monitoring Well Data

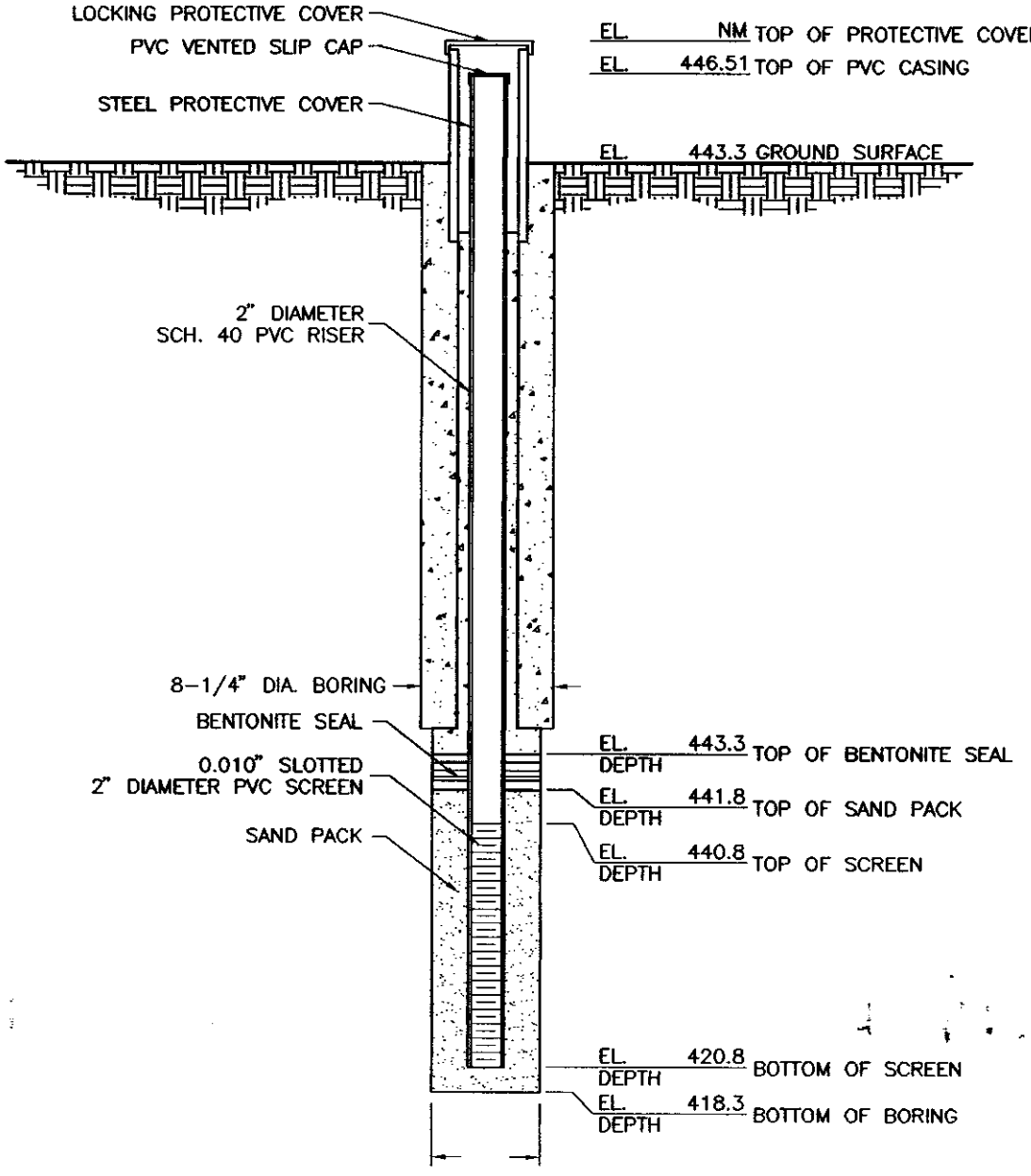
E-1: Well Construction Records

McLaren Hart
ENVIRONMENTAL ENGINEERING CORPORATION

MONITORING WELL DETAILS

PROJECT NO. 070803035
WELL NO. S-1

PROJECT NAME WEST LAKE LANDFILL
WELL LOCATION BRIDGETON, MISSOURI DATE 8/2/95 BY HART ENVIRONMENTAL DRILLING



NOTES:

1. REFER TO SOIL BORING WL-204 FOR SOIL DESCRIPTION.
2. DETAIL NOT TO SCALE.
3. NM = NOT MEASURED

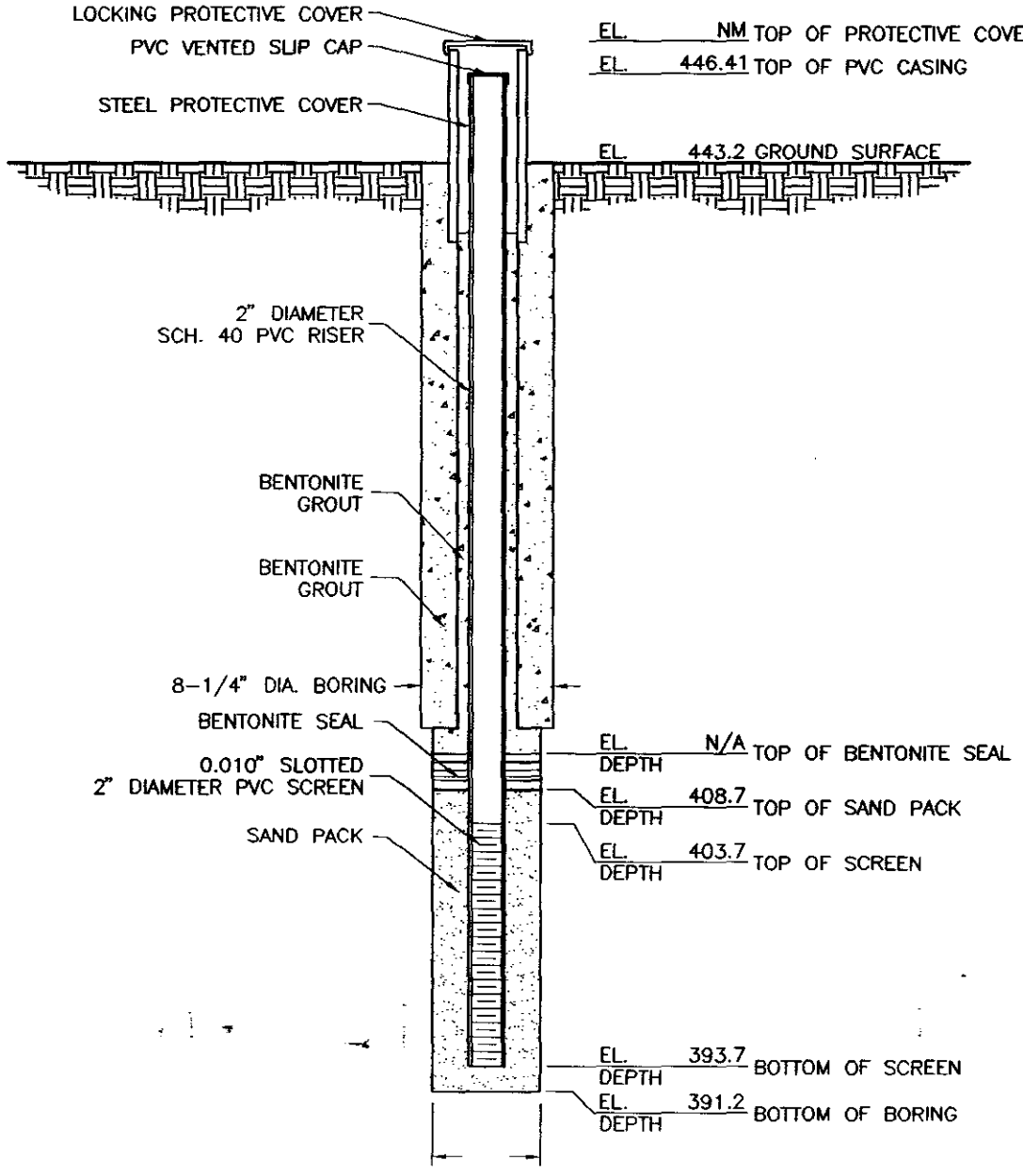
(W1.DWG)

McLaren Hart
ENVIRONMENTAL ENGINEERING CORPORATION

MONITORING WELL DETAILS

PROJECT NO. 070803035
WELL NO. I-2

PROJECT NAME WEST LAKE LANDFILL
WELL LOCATION BRIDGETON, MISSOURI DATE 8/2/95 BY HART ENVIRONMENTAL DRILLING



NOTES:

1. REFER TO SOIL BORING WL-205 FOR SOIL DESCRIPTION.
2. DETAIL NOT TO SCALE.
3. NM = NOT MEASURED
4. N/A NOT APPLICABLE, BENTONITE GROUT WAS USED TO SEAL WELL UP TO SURFACE.

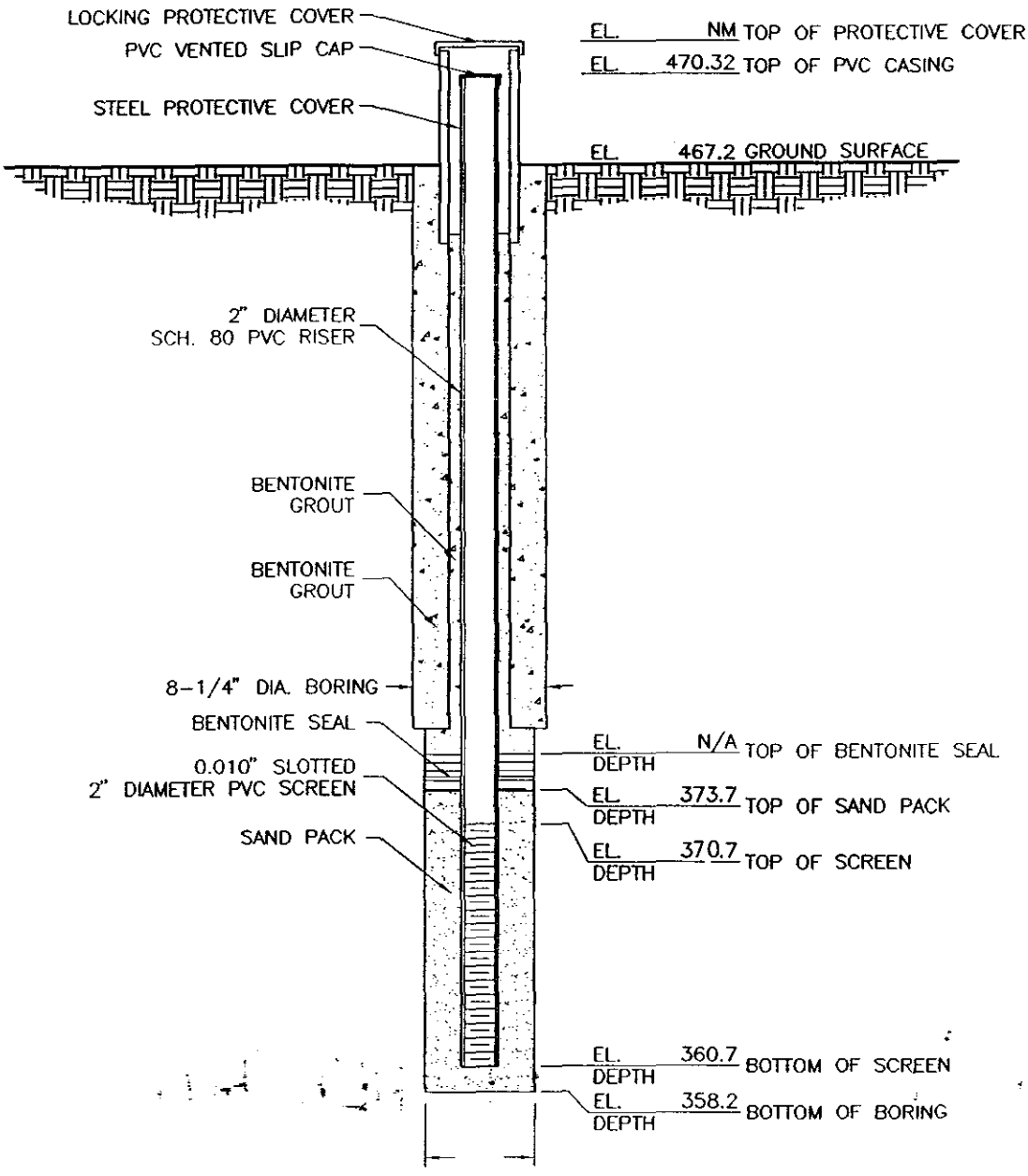
(W2.DWG)

McLaren Hart
ENVIRONMENTAL ENGINEERING CORPORATION

MONITORING WELL DETAILS

PROJECT NO. 070803035
WELL NO. D-3

PROJECT NAME WEST LAKE LANDFILL
WELL LOCATION BRIDGETON, MISSOURI DATE 8/9/95 BY HART ENVIRONMENTAL DRILLING



NOTES:

1. REFER TO SOIL BORING WL-105A FOR SOIL DESCRIPTION.
2. DETAIL NOT TO SCALE.
3. NM = NOT MEASURED
4. N/A NOT APPLICABLE, BENTONITE GROUT/CHIPS USED TO SEAL WELL UP TO SURFACE.

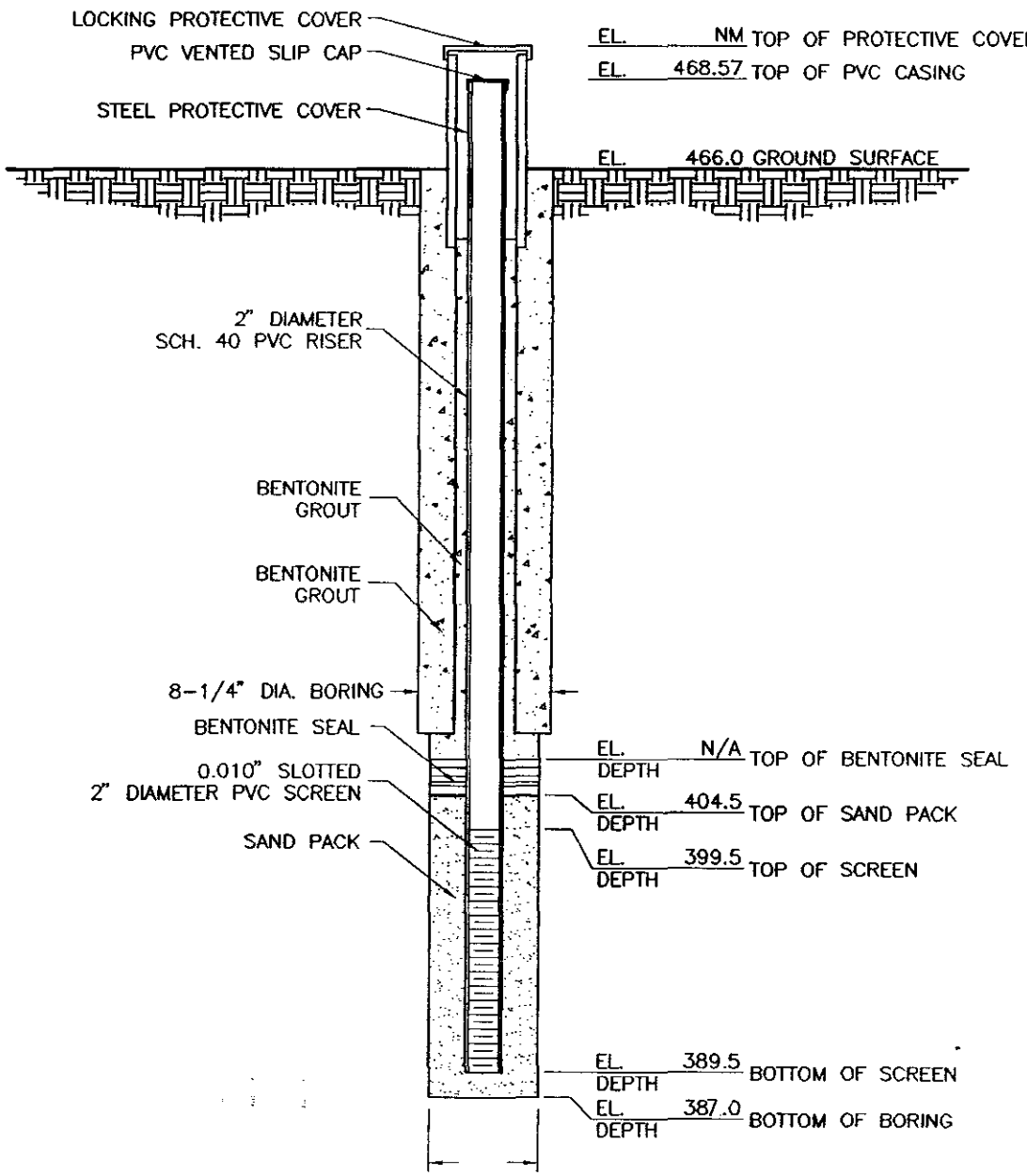
(W3.DWG)

McLaren Hart
ENVIRONMENTAL ENGINEERING CORPORATION

MONITORING WELL DETAILS

PROJECT NO. 070803035
WELL NO. I-4

PROJECT NAME WEST LAKE LANDFILL
WELL LOCATION BRIDGETON, MISSOURI DATE 8/10/95 BY HART ENVIRONMENTAL DRILLING



NOTES:

1. REFER TO SOIL BORING WL-105B FOR SOIL DESCRIPTION.
2. DETAIL NOT TO SCALE.
3. NM = NOT MEASURED
4. N/A NOT APPLICABLE, BENTONITE GROUT/CHIPS USED TO SEAL WELL UP TO SURFACE.

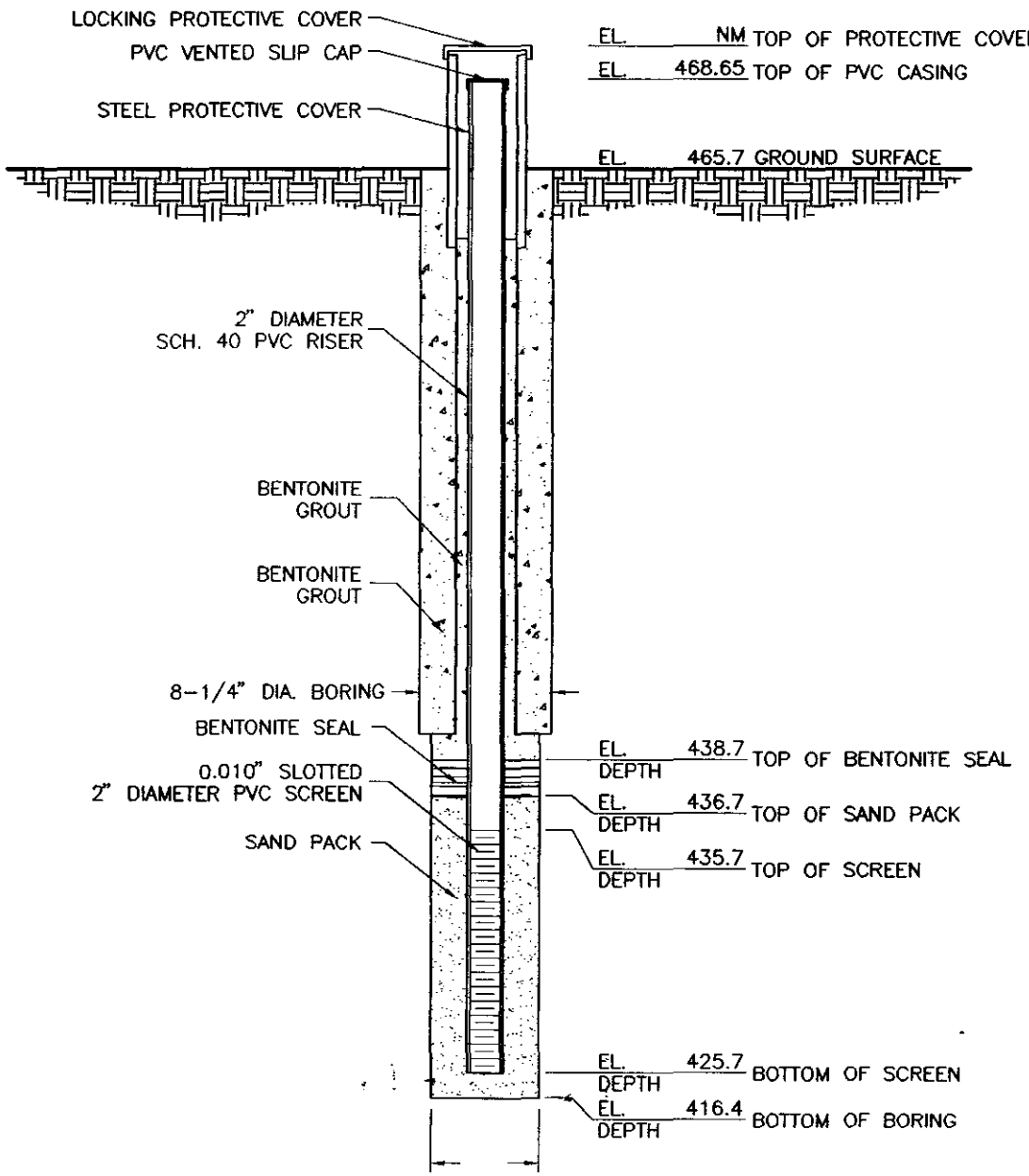
(W4.DWG)

McLaren Hart
ENVIRONMENTAL ENGINEERING CORPORATION

MONITORING WELL DETAILS

PROJECT NO. 070803035
WELL NO. S-5

PROJECT NAME WEST LAKE LANDFILL
WELL LOCATION BRIDGETON, MISSOURI DATE 8/15/95 BY HART ENVIRONMENTAL DRILLING



NOTES:

1. REFER TO SOIL BORING WL-105C FOR SOIL DESCRIPTION.
2. DETAIL NOT TO SCALE.
3. NM = NOT MEASURED

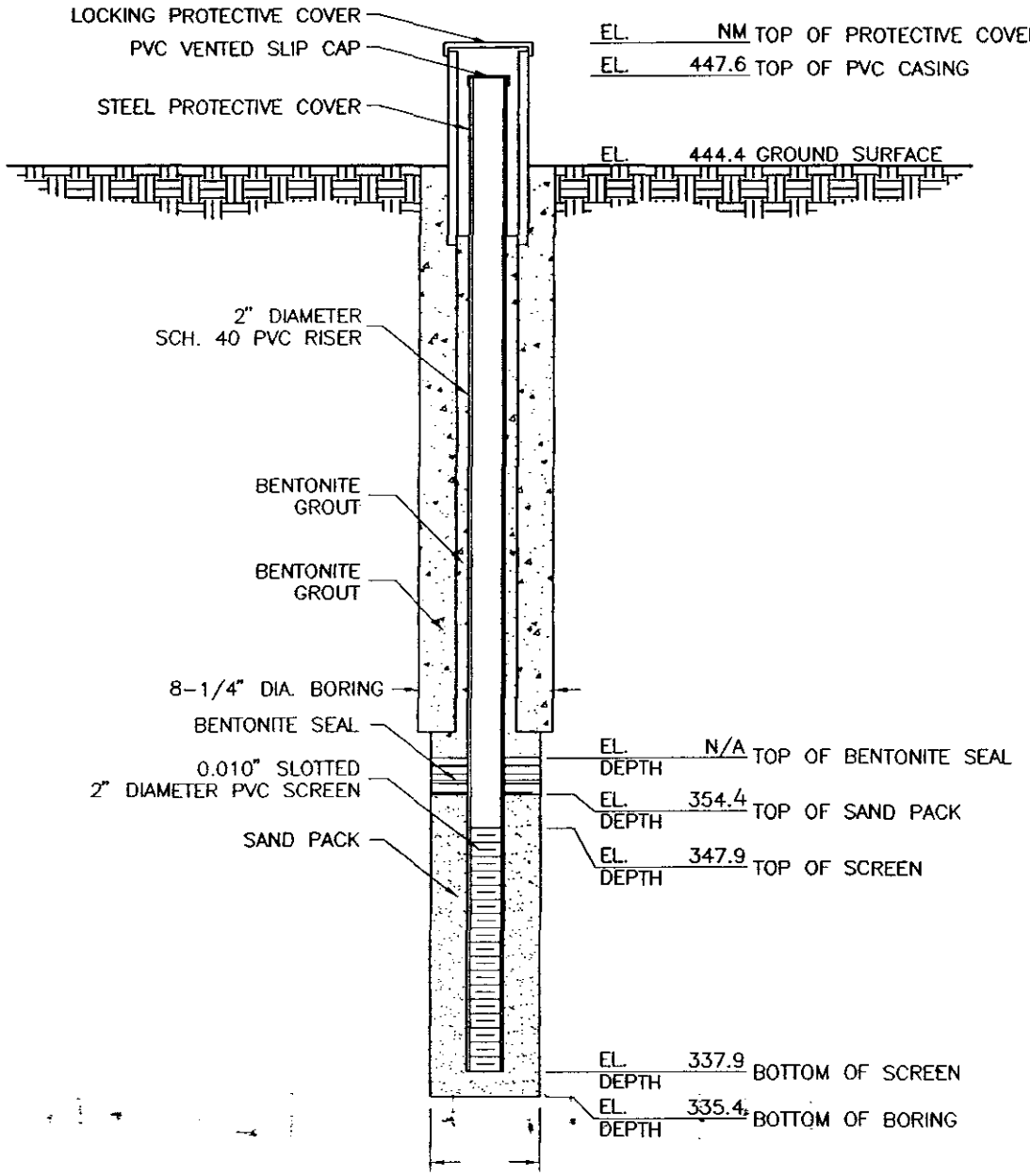
(W5.DWG)

McLaren Hart
ENVIRONMENTAL ENGINEERING CORPORATION

MONITORING WELL DETAILS

PROJECT NO. 070803035
WELL NO. D-6

PROJECT NAME WEST LAKE LANDFILL
WELL LOCATION BRIDGETON, MISSOURI DATE 8/17/95 BY HART ENVIRONMENTAL DRILLING



NOTES:

1. REFER TO SOIL BORING WL-206 SOIL DESCRIPTION.
2. DETAIL NOT TO SCALE.
3. NM = NOT MEASURED
4. N/A NOT APPLICABLE; BENTONITE GROUT USED TO SEAL WELL UP TO SURFACE

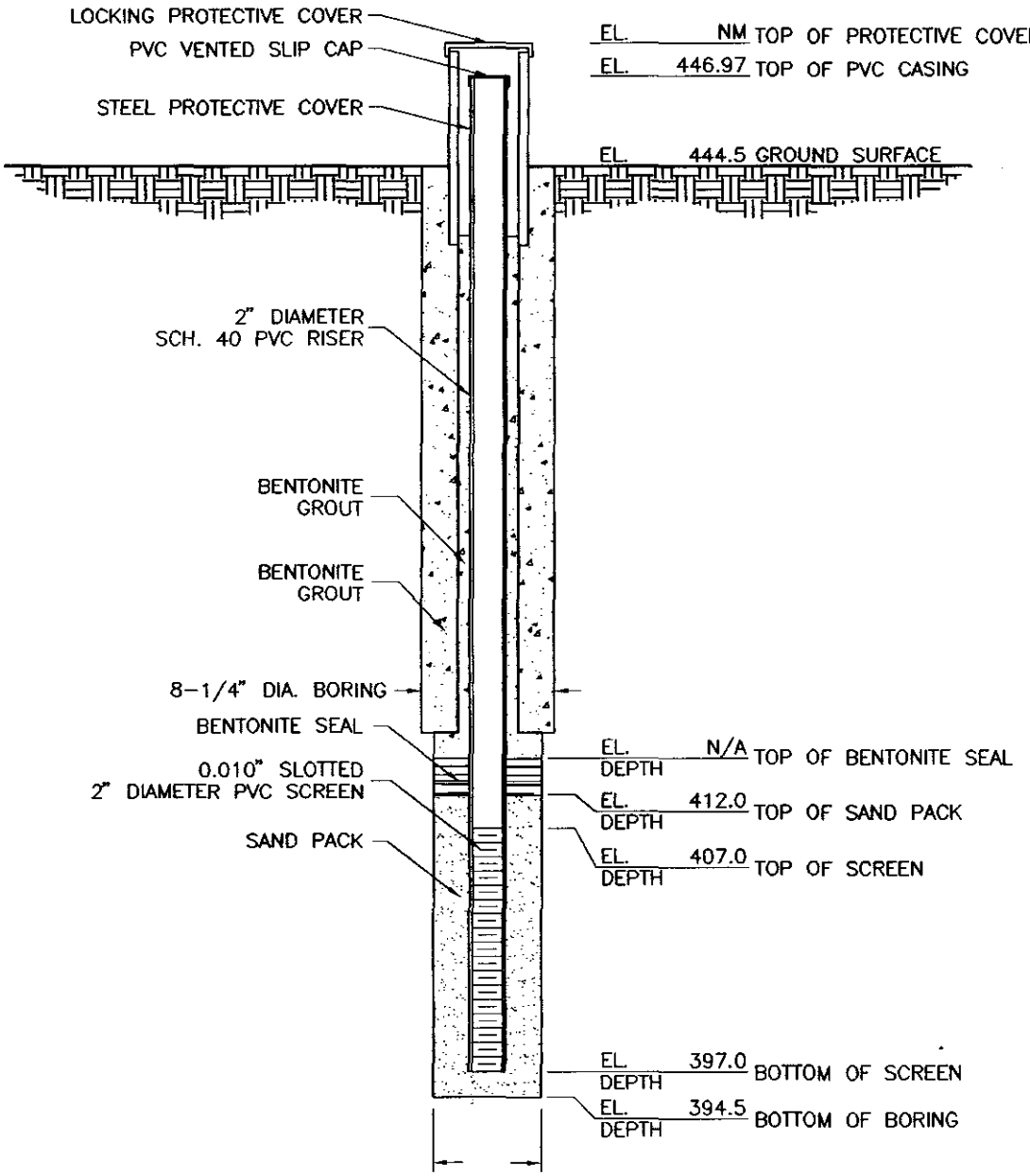
(W6.DWG)

McLaren Hart
ENVIRONMENTAL ENGINEERING CORPORATION

MONITORING WELL DETAILS

PROJECT NO. 070803035
WELL NO. I-7

PROJECT NAME WEST LAKE LANDFILL
WELL LOCATION BRIDGETON, MISSOURI DATE 8/3/95 BY HART ENVIRONMENTAL DRILLING



NOTES:
1. REFER TO SOIL BORING WL-207 SOIL DESCRIPTION.
2. DETAIL NOT TO SCALE.
3. NM = NOT MEASURED
4. N/A NOT APPLICABLE; BENTONITE GROUT USED TO SEAL WELL UP TO SURFACE

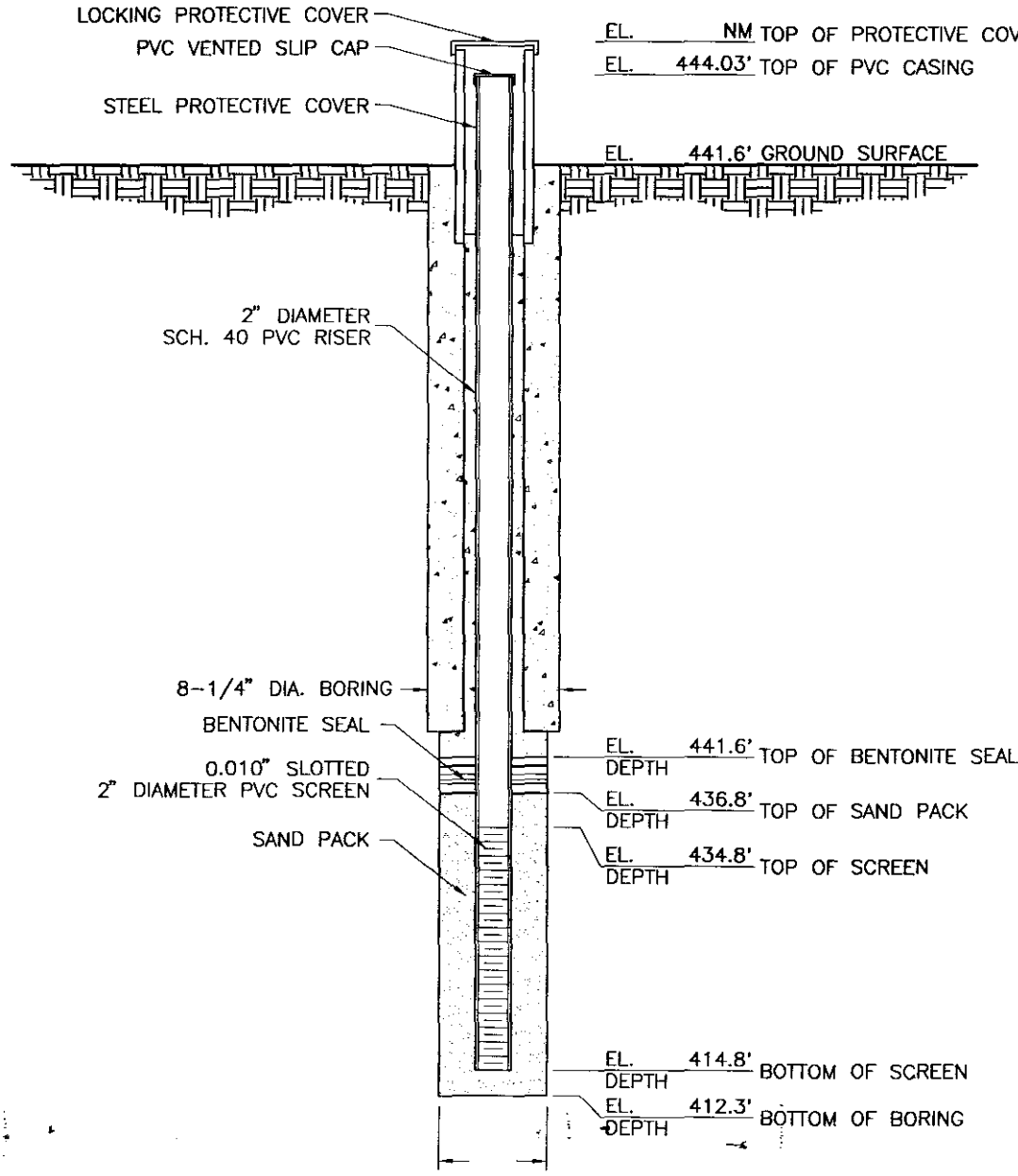
(W7.DWG)

McLaren Hart
ENVIRONMENTAL ENGINEERING CORPORATION

MONITORING WELL DETAILS

PROJECT NO. 070803035
WELL NO. S-8

PROJECT NAME WEST LAKE LANDFILL
WELL LOCATION BRIDGETON, MISSOURI DATE 9/15/95 BY HART ENVIRONMENTAL DRILLING



NOTES:

1. REFER TO SOIL BORING WL-228 FOR SOIL DESCRIPTION.
2. DETAIL NOT TO SCALE.
3. NM = NOT MEASURED.

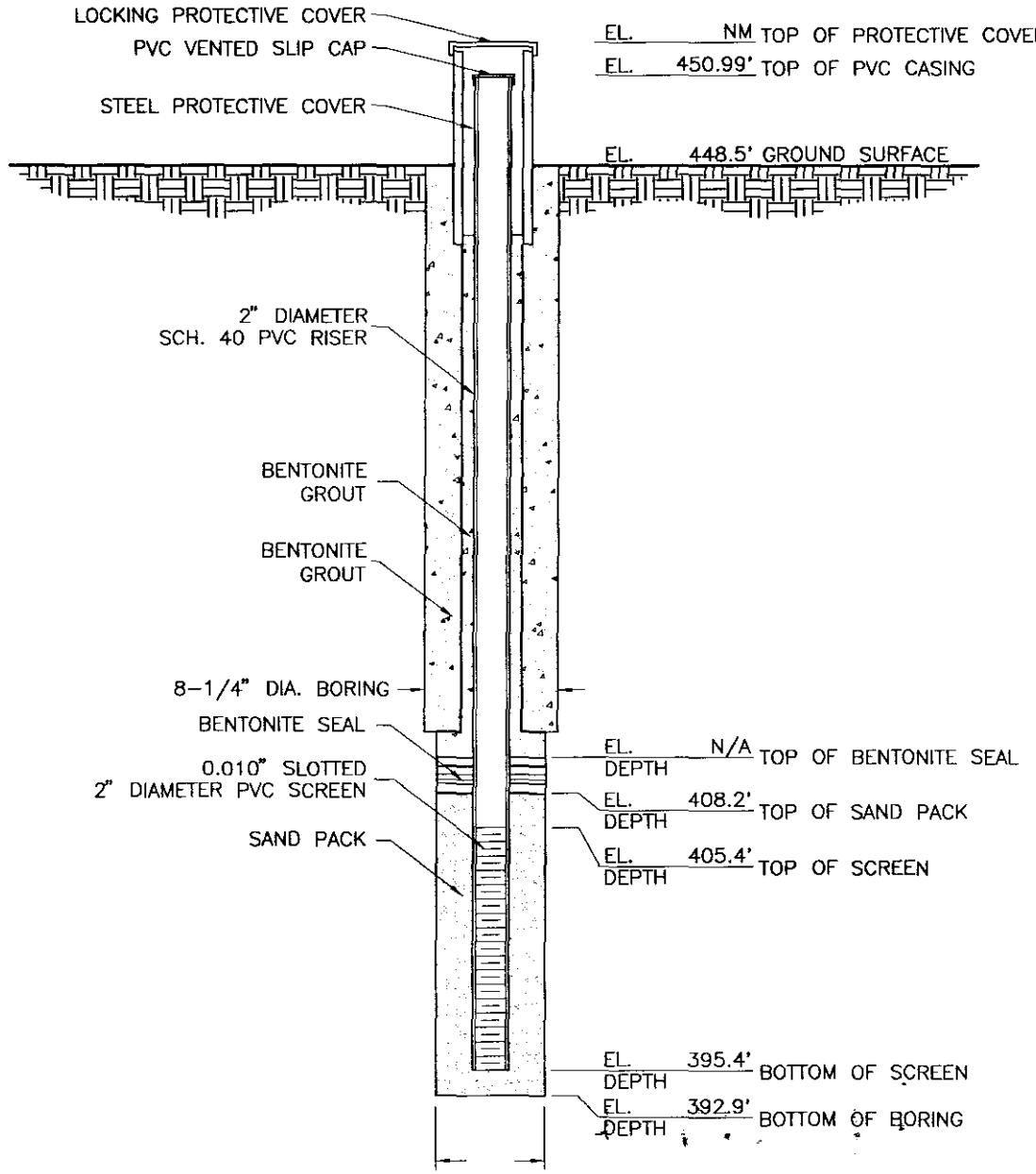
(W8)

McLaren Hart
ENVIRONMENTAL ENGINEERING CORPORATION

MONITORING WELL DETAILS

PROJECT NO. 070803035
WELL NO. I-9

PROJECT NAME WEST LAKE LANDFILL
WELL LOCATION BRIDGETON, MISSOURI DATE 9/18/95 BY HART ENVIRONMENTAL DRILLING



NOTES:

1. REFER TO SOIL BORING WL-229 FOR SOIL DESCRIPTION.
2. DETAIL NOT TO SCALE.
3. NM = NOT MEASURED.
4. N/A = NOT APPLICABLE; BENTONITE GROUT USED TO SEAL WELL UP TO SURFACE.

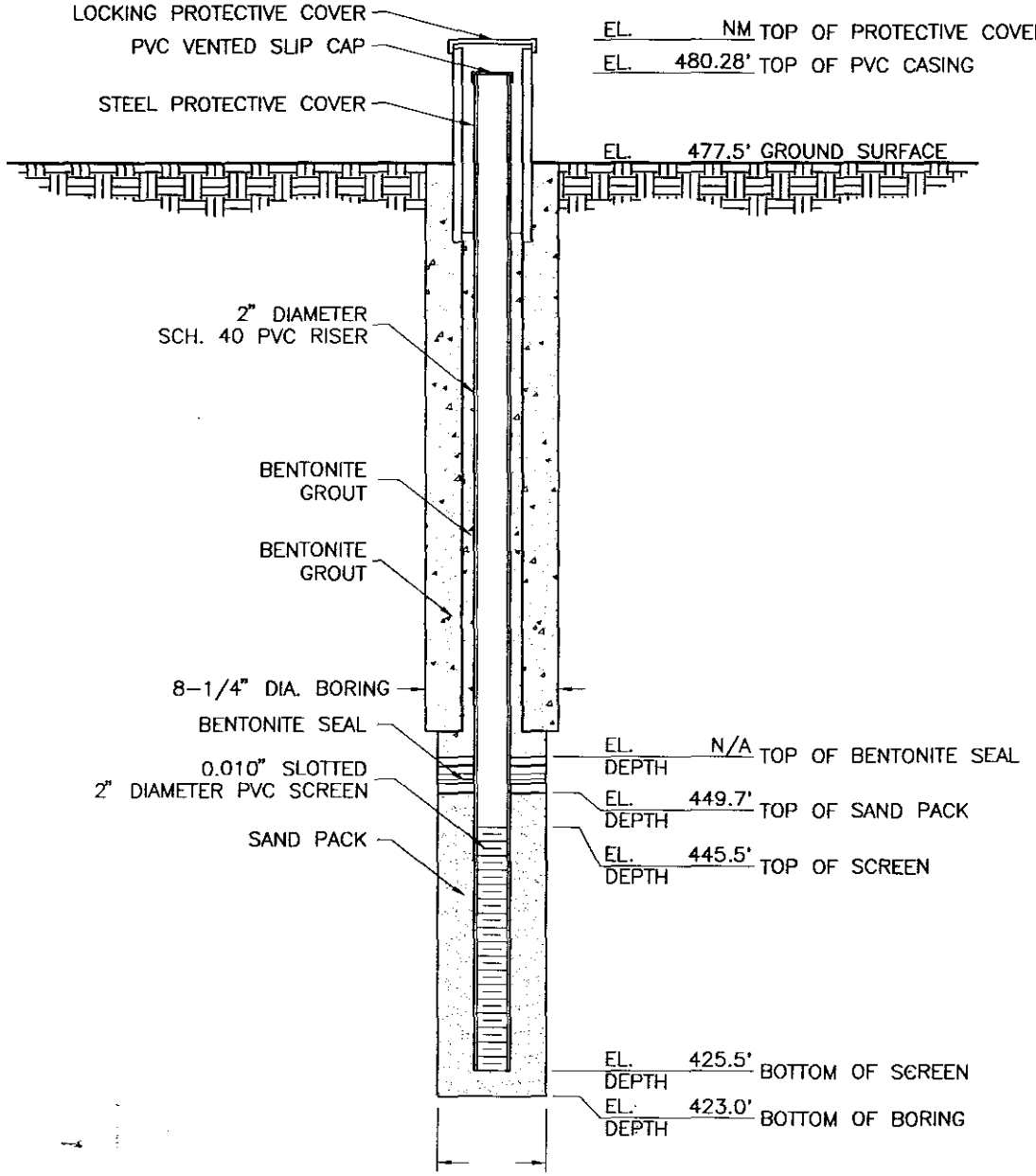
(W9)

McLaren Hart
ENVIRONMENTAL ENGINEERING CORPORATION

MONITORING WELL DETAILS

PROJECT NO. 070803035
WELL NO. S-10

PROJECT NAME WEST LAKE LANDFILL
WELL LOCATION BRIDGETON, MISSOURI DATE 9/19/95 BY HART ENVIRONMENTAL DRILLING



NOTES:

1. REFER TO SOIL BORING WL-216B FOR SOIL DESCRIPTION.
2. DETAIL NOT TO SCALE.
3. NM = NOT MEASURED.
4. N/A = NOT APPLICABLE; BENTONITE GROUT/CHIPS USED TO SEAL WELL UP TO SURFACE.

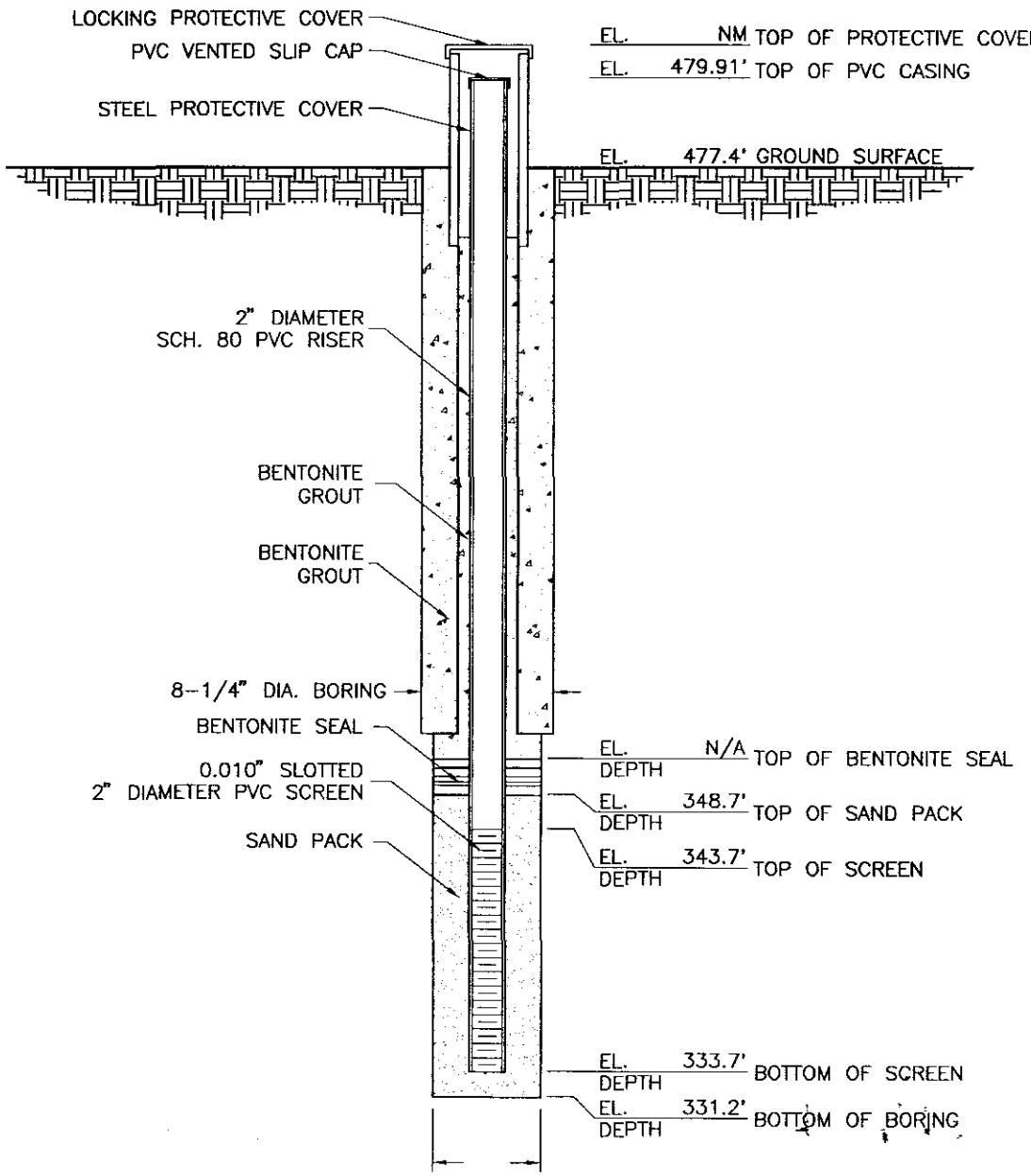
(W10)

McLaren Hart
ENVIRONMENTAL ENGINEERING CORPORATION

MONITORING WELL DETAILS

PROJECT NO. 070803035
WELL NO. D-12

PROJECT NAME WEST LAKE LANDFILL
WELL LOCATION BRIDGETON, MISSOURI
DATE 10/17/95 BY HART ENVIRONMENTAL DRILLING



NOTES:

1. REFER TO SOIL BORING WL-216A FOR SOIL DESCRIPTION.
2. DETAIL NOT TO SCALE.
3. NM = NOT MEASURED.
4. N/A = NOT APPLICABLE; BENTONITE GROUT USED TO SEAL WELL UP TO SURFACE.

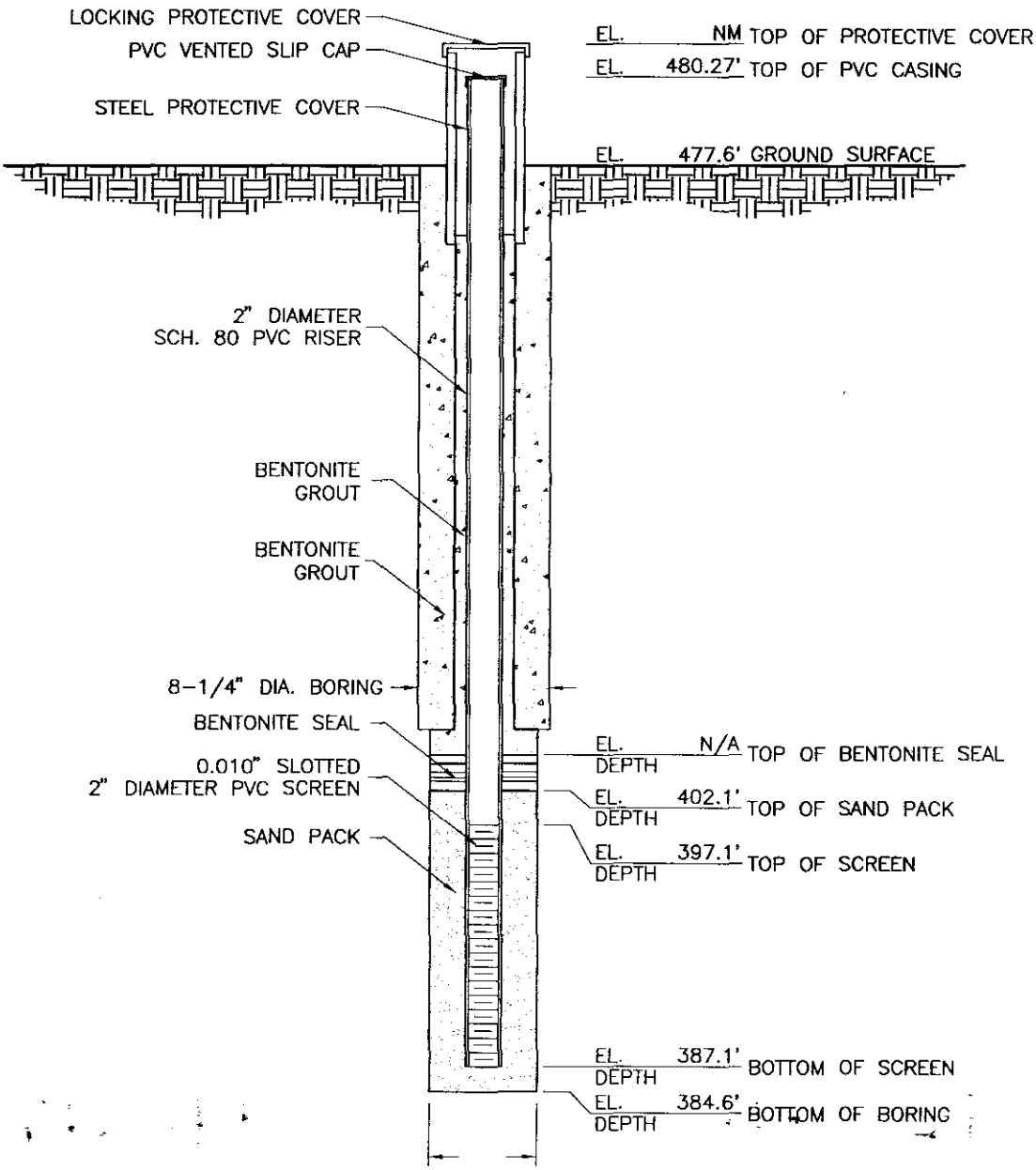
(W12)

McLaren Hart
ENVIRONMENTAL ENGINEERING CORPORATION

MONITORING WELL DETAILS

PROJECT NO. 070803035
WELL NO. I-11

PROJECT NAME WEST LAKE LANDFILL
WELL LOCATION BRIDGETON, MISSOURI DATE 10/13/95 BY HART ENVIRONMENTAL DRILLING



NOTES:

1. REFER TO SOIL BORING WL-216C FOR SOIL DESCRIPTION.
2. DETAIL NOT TO SCALE.
3. NM = NOT MEASURED.
4. N/A = NOT APPLICABLE; BENTONITE GROUT USED TO SEAL WELL UP TO SURFACE.

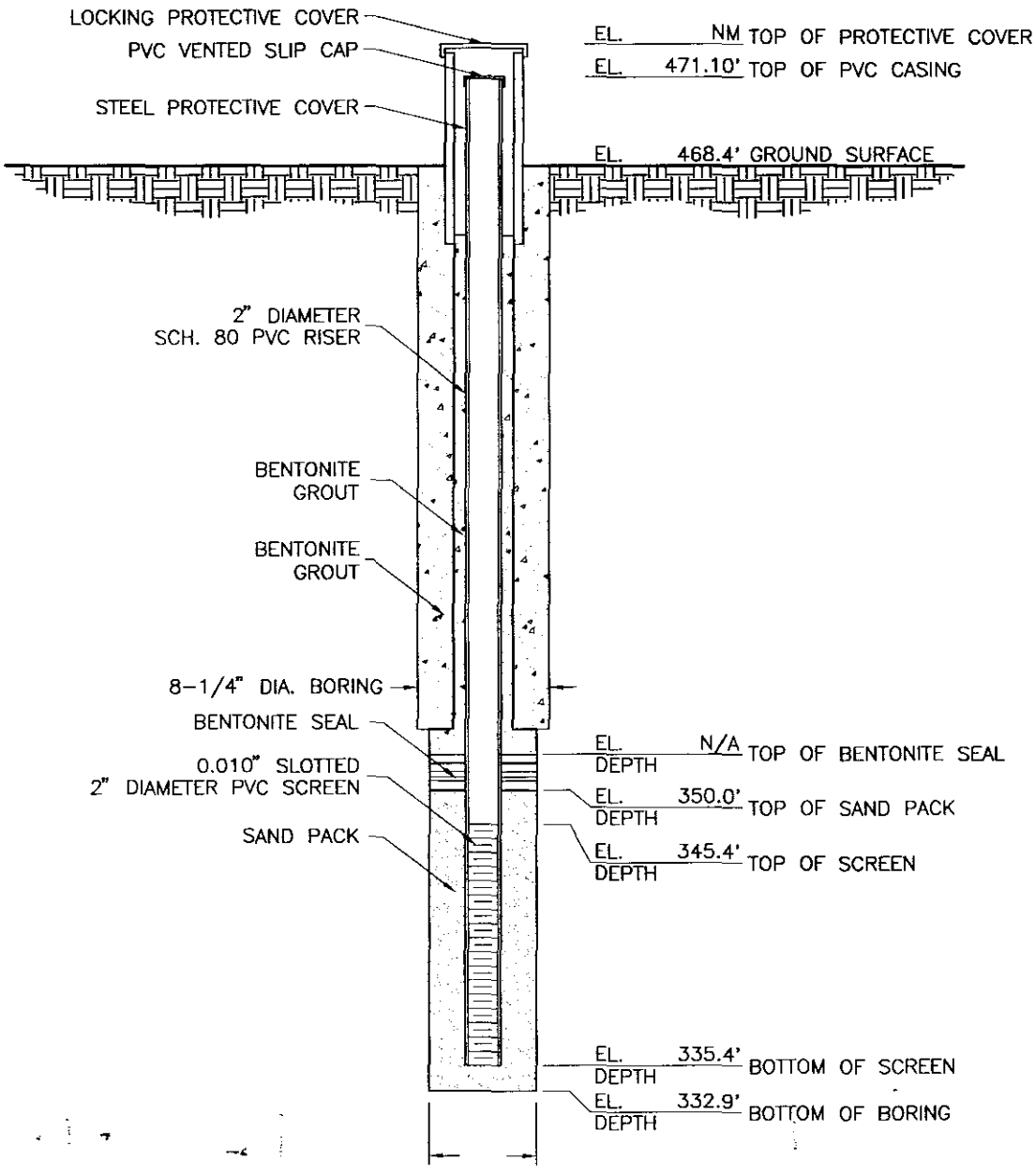
(W11)

McLaren Hart
ENVIRONMENTAL ENGINEERING CORPORATION

MONITORING WELL DETAILS

PROJECT NO. 070803035
WELL NO. D-13

PROJECT NAME WEST LAKE LANDFILL
WELL LOCATION BRIDGETON, MISSOURI DATE 10/19/95 BY HART ENVIRONMENTAL DRILLING



NOTES:

1. REFER TO SOIL BORING WL-224 FOR SOIL DESCRIPTION.
2. DETAIL NOT TO SCALE.
3. NM = NOT MEASURED.
4. N/A = NOT APPLICABLE; BENTONITE GROUT USED TO SEAL WELL UP TO SURFACE.

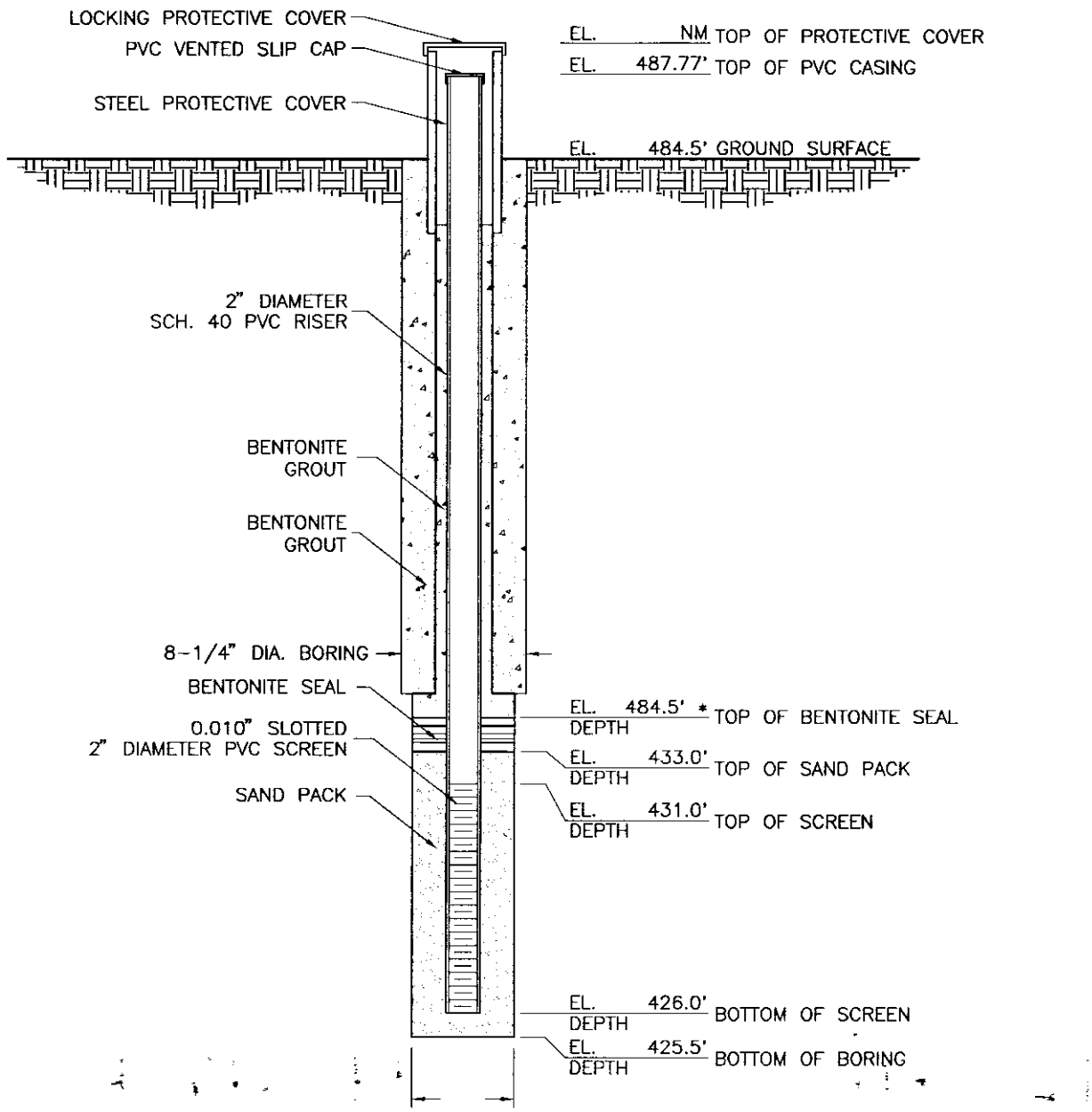
(W13)

McLaren Hart
ENVIRONMENTAL ENGINEERING CORPORATION

MONITORING WELL DETAILS

PROJECT NO. 070803035
WELL NO. D-14

PROJECT NAME WEST LAKE LANDFILL
WELL LOCATION BRIDGETON, MISSOURI
DATE 10/24/95 BY HART ENVIRONMENTAL DRILLING



NOTES:

1. REFER TO SOIL BORING WL-109B FOR SOIL DESCRIPTION.
2. DETAIL NOT TO SCALE.
3. NM = NOT MEASURED.
4. * = HYDRATED BENTONITE CHIPS USED TO SEAL WELL UP TO SURFACE.

(W14)

APPENDIX E

CONSTRUCTION SUMMARIES

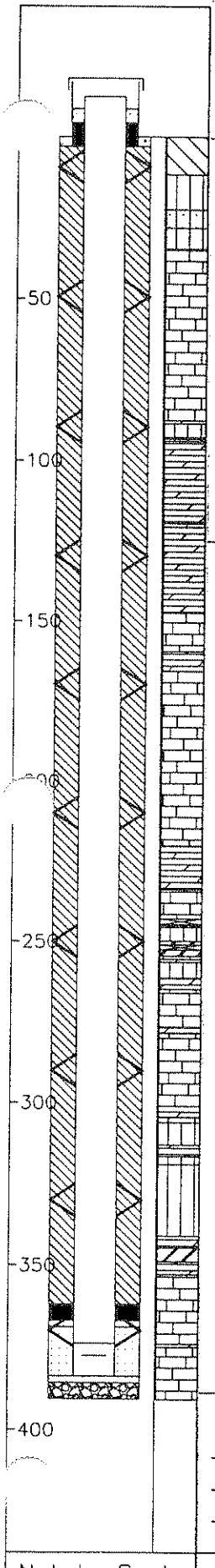
APPENDIX E-1

PIEZOMETER CONSTRUCTION SUMMARIES

Well No. PZ-100-KS

Boring No. X-Ref: PZ-100-KS

PIEZOMETER CONSTRUCTION SUMMARY



Not to Scale

Survey Coords: Northing: 1068842 ft. Easting: 517212 ft.

Elevation Ground Level 483.8 ft. NGVD

Top of PVC Casing 485.64 ft. NGVD

Drilling Summary:

Total Depth 390.0 ft.

Borehole Diameter 10 1/4 in. (0.0-34.0 ft.) 5 7/8 in. (34.0-391.0 ft.)

Casing Stickup Height 1.88 ft.

Driller Layne-Western St. Louis, MO

Rig CME 75, Schramm Portadrill T660H

Bit(s) 6 1/4 in. ID Hollow Stem Auger Bit, NX Core, 5 7/8 in. Button Bit for Reaming

Drilling Fluid Auger-None, NX Core Water, Air Rotary

Protective Casing 8x8 in. Square Steel, by 5 ft. long

Construction Time log:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling				
CME 75	1/25/95	13:20	2/9/95	15:15
Schramm Rotary	2/11/95	11:00	2/13/95	15:30
Geophys.Logging:	2/9/95	16:15	2/9/95	18:15
Casing:	2/17/95	7:55	2/17/95	11:00
Filter Placement:	2/17/95	11:00	2/17/95	13:30
Cementing:				
Development				
Bentonite Grout	2/20/95	7:30	2/20/95	11:30
Bentonite Seal	2/17/95	13:30	2/17/95	13:45

Well Design & Specifications

Basis: Geologic Log X Geophysical Log X

Casing string(s): C = Casing S = Screen

Depth			String(s)	Elevation		
+ 1.88	-	374.00	C1	485.64	-	109.76
374.00	-	383.80	S1	109.76	-	99.96
383.80	-	384.13	C2	99.96	-	99.63

Casing: C1 2 in. dia. Schedule 80 PVC, flush threaded with O-rings

C2 2 in. dia. threaded PVC end cap (4 in. long or 0.33 ft.)

Screen: S1 2 in. dia. Schedule 80 PVC, 0.010 in. machine cut slot, flush threaded with O-rings

Sand Pack: 16-35 mesh Silica Sand, 369.0-384.0 ft.

Filter Pack: Less than 50 mesh Silica Sand, 367.0-369.0 ft. and 384.0-386.0 ft.

Grout Seal: Wyo-Ben Grout Well Bentonite Slurry, 3.0-362.0 ft.

Bentonite Seal: Extra high yield Wyo-Ben (100%) Slurry, 362.0-367.0 ft.

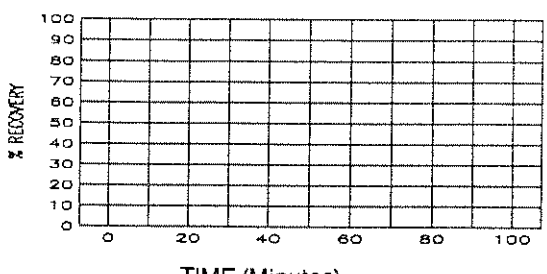
Concrete: 0.0-3.0 ft.

Well Development

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)

Recovery Data:



Comments: Prior to well installation, there was about 4 ft. of slough at base of borehole which could not be removed.

Supervised by W. Herst

Job Number 943-2848

Site LAIDLAW/OU2 RI-FS/MO

File Name PZ100KS

Well No. PZ-100-SD

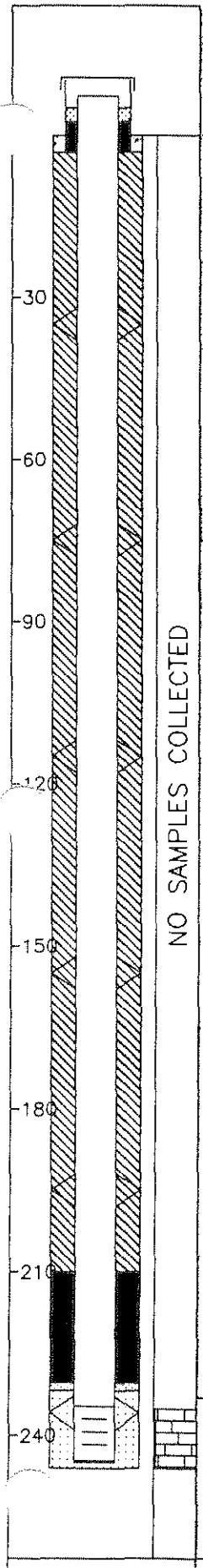
Boring No. X-Ref: PZ-100-SD

PIEZOMETER WELL CONSTRUCTION SUMMARY

Survey Coords: Northing: 1068852 ft. Easting: 517195 ft.

Elevation Ground Level 484.4 ft. NGVD

Top of PVC Casing 485.82 ft. NGVD



Drilling Summary:

Total Depth 246.0 ft.

Borehole Diameter 10 1/4 in. (0.0–51.0 ft.) 5 7/8 in. (51.0–246.0 ft.)

Casing Stickup Height 1.47 ft.

Driller Layne-Western, St. Louis, MO

Rig CME 75, Schramm Portadrill T660H

Bit(s) 6 1/4 in. ID Hollow Stem Auger Bit, NX Core, 5 7/8 in. Button Bit for Reaming

Drilling Fluid Auger–None, NX Core Water, Air Rotary

Protective Casing 8x8 in. Square Steel, by 5 ft. long

Construction Time log:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling				
CME 75	1/25/95	14:00	1/25/95	14:45
Schramm Rotary	2/21/95	8:30	2/22/95	15:00
Geophys.Logging:				
Casing:	2/23/95	9:50	2/23/95	10:15
Filter Placement:	2/23/95	10:35	2/23/95	11:40
Cementing:				
Development				
Bentonite Grout	2/23/95	13:45	2/23/95	15:30
Bentonite Seal	2/23/95	13:15	2/23/95	13:45

Well Design & Specifications

Basis: Geologic Log X Geophysical Log

Casing string(s): C = Casing S = Screen

Depth			String(s)	Elevation		
+ 1.47	–	234.80	C1	485.82	–	249.55
234.80	–	244.60	S1	249.55	–	239.75
244.60	–	244.93	C2	239.75	–	239.42

Casing: C1 2 in. dia. Schedule 80 PVC, flush threaded with O-rings

C2 2 in. dia. threaded PVC end cap (4 in. long or 0.33 ft.)

Screen: S1 2 in. dia. Schedule 80 PVC, 0.010 in. machine cut slot, flush threaded with O-rings

Sand Pack: 16–35 mesh Silica Sand, 232.0–246. ft.

Filter Pack: Less than 50 mesh Silica Sand, 230.5–232.0 ft.

Grout Seal: Wyo-Ben Grout Well Bentonite Slurry, 3.0–210.0 ft.

Bentonite Seal: Extra high yield Wyo-Ben (100%) Slurry, 210.0–230.5 ft.

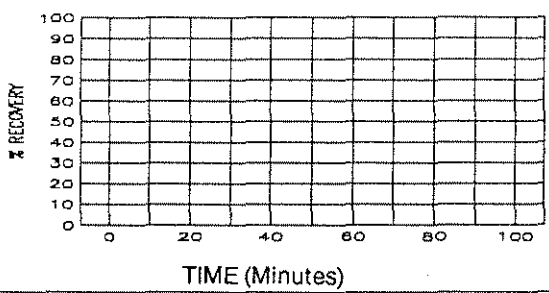
Concrete: 0.0–3.0 ft.

Well Development

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)

Recovery Data:



Comments:

Supervised by B. Tilton

Job Number 943–2848

Site LAIDLAW/OU2 RI–FS/MO

File Name PZ100SD

Well No. PZ-100-SS

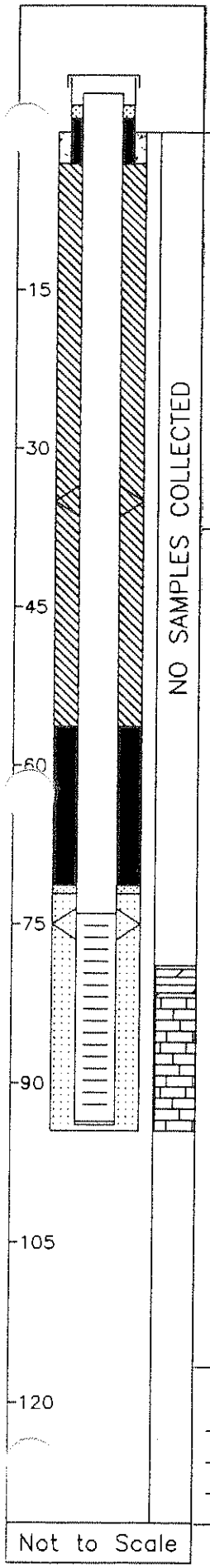
Boring No. X-Ref: PZ-100-SS

PIEZOMETER CONSTRUCTION SUMMARY

Survey Coords: Northing: 1068868 ft. Easting: 517175 ft.

Elevation Ground Level 484.4 ft. NGVD

Top of PVC Casing 485.84 ft. NGVD



Not to Scale

Drilling Summary:

Total Depth 94.5 ft.

Borehole Diameter 10 1/4 in. (0.0-51.0 ft.) 5 7/8 in. (51.0-94.5 ft.)

Casing Stickup Height 1.49 ft.

Driller Layne-Western, St. Louis, MO

Rig CME 75, Schramm Portadrill T660H

Bit(s) 6 1/4 in. ID Hollow Stem Auger Bit, NX Core, 5 7/8 in. Button Bit for Reaming

Drilling Fluid Auger-None, NX Core Water, Air Rotary

Protective Casing 8x8 in. Square Steel, by 5 ft. long

Construction Time log:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling				
CME 75	2/20/95	16:00	2/20/95	16:40
Schramm Rotary	2/24/95	7:30	2/25/95	11:30
Geophys.Logging:				
Casing:	2/25/95	11:30	2/25/95	11:45
Filter Placement:	2/25/95	11:45	2/25/95	12:30
Cementing:				
Development				
Bentonite Grout	2/25/95	12:50	2/25/95	14:00
Bentonite Seal	2/25/95	12:30	2/25/95	12:50

Well Design & Specifications

Basis: Geologic Log X Geophysical Log

Casing string(s): C = Casing S = Screen

Depth			String(s)	Elevation		
+ 1.49	-	73.96	C1	485.84	-	410.39
73.96	-	93.60	S1	410.39	-	390.75
93.60	-	93.93	C2	390.75	-	390.42

Casing: C1 2 in. dia. Schedule 80 PVC, flush threaded with O-rings

C2 2 in. dia. threaded PVC end cap (4 in. long or 0.33 ft.)

Screen: S1 2 in. dia. Schedule 80 PVC, 0.010 in. machine cut slot, flush threaded with O-rings

Sand Pack: 16-35 mesh Silica Sand, 72.1-94.5 ft.

Filter Pack: Less than 50 mesh Silica Sand, 71.3-72.1 ft.

Grout Seal: Wyo-Ben Grout Well Bentonite Slurry, 3.0-56.3 ft.

Bentonite Seal: Extra high yield Wyo-Ben (100%) Slurry, 56.3-71.3 ft.

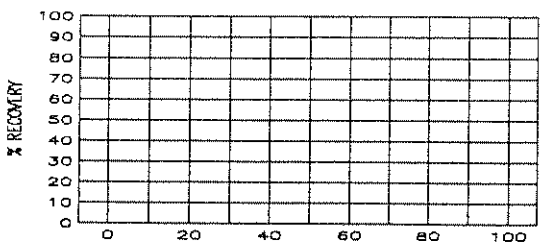
Concrete: 0.0-3.0 ft.

Well Development

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)

Recovery Data:



Comments:

Supervised by B. Tilton

Job Number 943-2848

Site LAIDLAW/OU2 RI-FS/MO

File Name PZ100SS

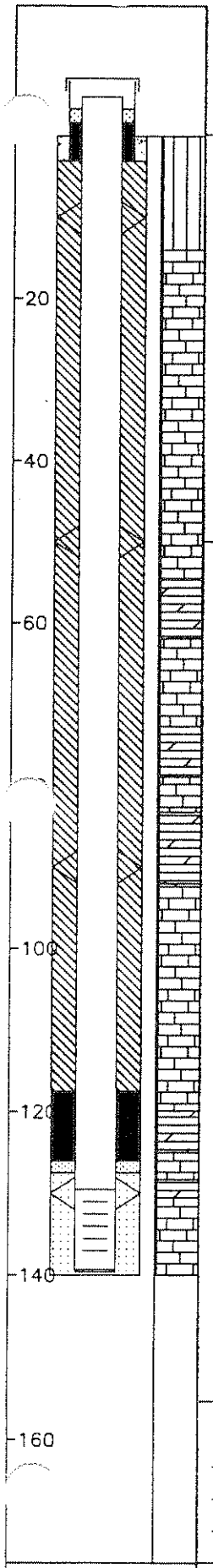
Well No. PZ-101-SS

Boring No. X-Ref: PZ-101-SS

PIEZOMETER CONSTRUCTION SUMMARY

Survey Coords: Northing: 1068473 ft.
Easting: 516623 ft.

Elevation Ground Level 474.9 ft. NGVD
Top of PVC Casing 476.68 ft. NGVD



Not to Scale

Drilling Summary:

Total Depth 140.0 ft.
Borehole Diameter 10 1/4 in. (0.0-14.0 ft.) 5 7/8 in. (14.0-140.0 ft.)
Casing Stickup Height 1.79 ft.
Driller Layne-Western
St. Louis, MO

Rig CME 75, Schramm Portadrill T660H
Bit(s) 6 1/4 in. ID Hollow Stem Auger Bit,
NX Core, 5 7/8 in. Button Bit for Reaming
Drilling Fluid Auger-None, NX Core Water,
Air Rotary
Protective Casing 8x8 in. Square Steel, by 5 ft. long

Construction Time log:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling				
CME 75	2/23/95	13:35	2/23/95	14:30
Schramm Rotary	3/6/95	8:15	3/6/95	9:45
Geophys.Logging:				
Casing:	3/6/95	9:50	3/6/95	10:10
Filter Placement:	3/6/95	10:20	3/6/95	10:50
Cementing:				
Development				
Bentonite Grout	3/6/95	11:30	3/6/95	12:30
Bentonite Seal	3/6/95	10:50	3/6/95	11:30

Well Design & Specifications

Basis: Geologic Log X Geophysical Log
Casing string(s): C = Casing S = Screen

Depth			String(s)	Elevation		
+ 1.79	-	129.48	C1	476.68	-	345.41
129.48	-	139.28	S1	345.41	-	335.61
139.28	-	139.61	C2	335.61	-	335.28
	-				-	
	-				-	
	-				-	

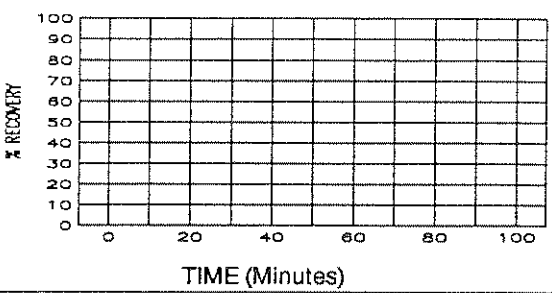
Casing: C1 2 in. dia. Schedule 80 PVC, flush threaded with O-rings
C2 2 in. dia. threaded PVC end cap (4 in. long or 0.33 ft.)
Screen: S1 2 in. dia. Schedule 80 PVC, 0.010 in. machine cut slot, flush threaded with O-rings
Sand Pack: 16-35 mesh Silica Sand, 127.5-140.0 ft.
Filter Pack: Less than 50 mesh Silica Sand, 126.0-127.5 ft.
Grout Seal: Wyo-Ben Grout Well Bentonite Slurry, 3.0-117.5 ft.
Bentonite Seal: Extra high yield Wyo-Ben (100%) Slurry, 117.5-126.0 ft.
Concrete: 0.0-3.0 ft.

Well Development

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)

Recovery Data:



Comments:

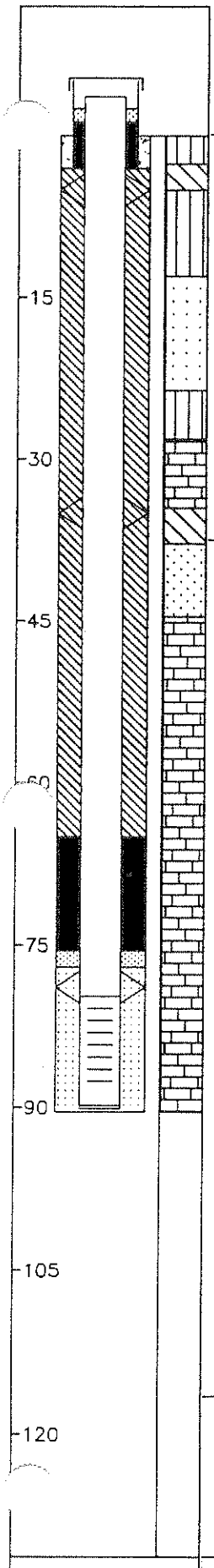
Supervised by B. Tilton
Job Number 943-2848

Site LAIDLAW/OU2 RI-FS/MO
File Name PZ101SS

Well No. PZ-102-SS

Boring No. X-Ref: PZ-102-SS

PIEZOMETER CONSTRUCTION SUMMARY



Not to Scale

Survey Coords: Northing: 1068088 ft. Easting: 516888 ft.

Elevation Ground Level 482.1 ft. NGVD

Top of PVC Casing 483.85 ft. NGVD

Drilling Summary:

Total Depth 90.4 ft.

Borehole Diameter 10 1/4 in. (0.0-37.0 ft.) 5 7/8 in. (37.0-90.4 ft.)

Casing Stickup Height 1.80 ft.

Driller Layne-Western, St. Louis, MO

Rig CME 75, Schramm Portadrill T660H

Bit(s) 6 1/4 in. ID Hollow Stem Auger Bit, NX Core, 5 7/8 in. Button Bit for Reaming

Drilling Fluid Auger-None, NX Core Water, Air Rotary

Protective Casing 8x8 in. Square Steel, by 5 ft. long

Construction Time log:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling				
CME 75	2/13/95	15:21	2/13/95	14:25
Schramm Rotary	3/12/95	12:45	3/12/95	13:45
Geophys.Logging:				
Casing:	3/12/95	13:40	3/12/95	13:50
Filter Placement:	3/12/95	13:55	3/12/95	14:10
Cementing:				
Development				
Bentonite Grout	3/12/95	14:15	3/12/95	14:30
Bentonite Seal	3/12/95	14:30	3/12/95	15:30

Well Design & Specifications

Basis: Geologic Log X Geophysical Log

Casing string(s): C = Casing S = Screen

Depth			String(s)	Elevation		
+ 1.80	-	79.70	C1	483.85	-	402.35
79.70	-	89.50	S1	402.35	-	392.55
89.50	-	90.83	C2	392.55	-	391.22

Casing: C1 2 in. dia. Schedule 80 PVC, flush threaded with O-rings

C2 2 in. dia. threaded PVC end cap (4 in. long or 0.33 ft.)

Screen: S1 2 in. dia. Schedule 80 PVC, 0.010 in. machine cut slot, flush threaded with O-rings

Sand Pack: 16-35 mesh Silica Sand, 77.0-90.4 ft.

Filter Pack: Less than 50 mesh Silica Sand, 75.5-77.0 ft.

Grout Seal: Wyo-Ben Grout Well Bentonite Slurry, 3.0-65.0 ft.

Bentonite Seal: Extra high yield Wyo-Ben (100%) Slurry, 65.0-75.5 ft.

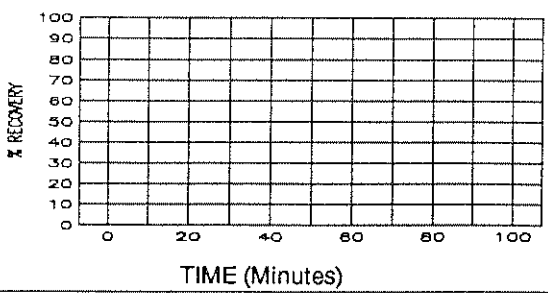
Concrete: 0.0-3.0 ft.

Well Development

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)

Recovery Data:



Comments:

Supervised by B. Tilton

Job Number 943-2848

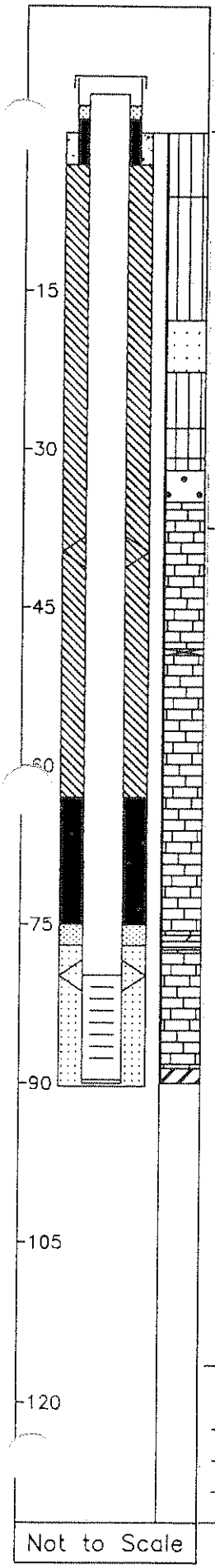
Site LAIDLAW/OU2 RI-FS/MO

File Name PZ102SS

Well No. PZ-102R-SS

Boring No. X-Ref: PZ-102R-SS

PIEZOMETER CONSTRUCTION SUMMARY



Not to Scale

Survey Coords: Northing: 1068132 ft. Easting: 516859 ft.

Elevation Ground Level 484.5 ft. NGVD

Top of PVC Casing 485.62 ft. NGVD

Drilling Summary:

Total Depth 90.3 ft.

Borehole Diameter 10 1/4" (0.0–35.0') 5 7/8" (35.0–90.3')

Casing Stickup Height 1.12 ft.

Driller Layne-Western, St. Louis, MO

Rig CME 75, Schramm Portadrill T660H

Bit(s) 6 1/4" ID Hollow Stem Auger Bit, NX Core, 5 7/8" Button Bit for Reaming

Drilling Fluid Auger-None, NX Core Water, Air Rotary

Protective Casing 8x8" Square Steel, by 5' long

Construction Time log:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling				
CME 75	6/15/95	8:30	6/16/95	13:00
Schramm Rotary	6/18/95	13:00	6/18/95	13:45
Geophys.Logging:				
Casing:				
Filter Placement:	6/18/96	13:45	6/18/95	14:30
Cementing:				
Development				
Bentonite Grout	6/18/95	14:50	6/18/95	15:15
Bentonite Seal	6/18/95	14:35	6/18/95	14:55

Well Design & Specifications

Basis: Geologic Log X Geophysical Log

Casing string(s): C = Casing S = Screen

Depth			String(s)	Elevation		
+ 1.12	–	79.83	C1	485.62	–	404.67
79.83	–	89.63	S1	404.67	–	394.87
89.63	–	89.96	C2	394.87	–	394.54
	–				–	
	–				–	
	–				–	

Casing: C1 2 in. dia. Schedule 80 PVC, flush threaded with O-rings

C2 2 in. dia. threaded PVC end cap (4 in. long or 0.33 ft.)

Screen: S1 2 in. dia. Schedule 80 PVC, 0.010 in. machine cut slot, flush threaded with O-rings

Sand Pack: 16–35 mesh Silica Sand, 77.0–90.3 ft.

Filter Pack: Less than 50 mesh Silica Sand, 75.0–77.0 ft.

Grout Seal: Wyo-Ben Grout Well Bentonite Slurry, 3.0–63.0 ft.

Bentonite Seal: Extra high yield Wyo-Ben (100%) Slurry, 63.0–75.0 ft.

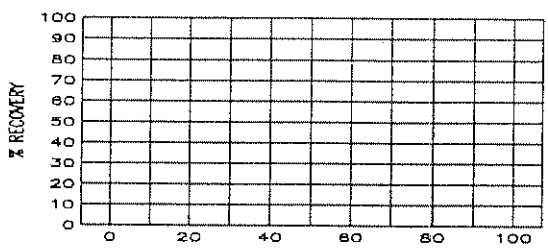
Concrete: 0.0–3.0 ft.

Well Development

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)

Recovery Data:



Comments:

Supervised by B. Tilton

Job Number 943-2848

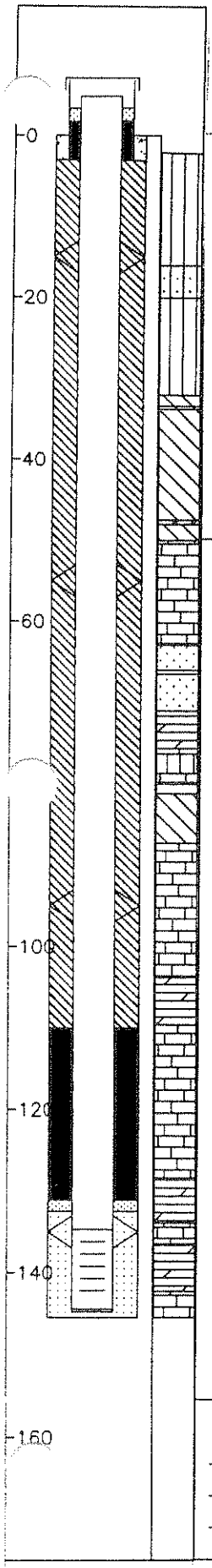
Site LAIDLAW/OU2 RI-FS/MO

File Name PZ102RSS

Well No. PZ-103-SS

Boring No. X-Ref: PZ-103-SS

PIEZOMETER CONSTRUCTION SUMMARY



Not to Scale

Survey Coords: Northing: 1067660 ft. Easting: 516724 ft.

Elevation Ground Level 477.8 ft. NGVD

Top of PVC Casing 480.17 ft. NGVD

Drilling Summary:

Total Depth 145.5 ft.

Borehole Diameter 10 1/4 in. (0.0-51.0 ft.) 5 7/8 in. (51.0-145.5 ft.)

Casing Stickup Height 2.39 ft.

Driller Layne-Western
St. Louis, MO

Rig CME 75, Schramm Portadrill T660H

Bit(s) 6 1/4 in. ID Hollow Stem Auger Bit,
NX Core, 5 7/8 in. Button Bit for Reaming

Drilling Fluid Auger-None, NX Core Water,
Air Rotary

Protective Casing 8x8 in. Square Steel, by 5 ft. long

Construction Time log:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling				
CME 75	2/21/95	7:30	2/23/95	9:45
Schramm Rotary	2/26/95	9:30	2/26/95	11:20
Geophys.Logging:				
Casing:	2/26/95	11:20	2/26/95	11:40
Filter Placement:	2/26/95	11:45	2/26/95	12:00
Cementing:				
Development				
Bentonite Grout	2/26/95	13:30	2/26/95	14:30
Bentonite Seal	2/26/95	12:30	2/26/95	13:00

Well Design & Specifications

Basis: Geologic Log X Geophysical Log

Casing string(s): C = Casing S = Screen

Depth			String(s)	Elevation		
+ 2.39	-	134.70	C1	480.17	-	343.08
134.70	-	144.50	S1	343.08	-	333.28
144.50	-	144.83	C2	333.28	-	332.95
	-				-	
	-				-	
	-				-	

Casing: C1 2 in. dia. Schedule 80 PVC, flush threaded with O-rings

C2 2 in. dia. threaded PVC end cap (4 in. long or 0.33 ft.)

Screen: S1 2 in. dia. Schedule 80 PVC, 0.010 in. machine cut slot, flush threaded with O-rings

Sand Pack: 16-35 mesh Silica Sand, 132.5-145.5 ft.

Filter Pack: Less than 50 mesh Silica Sand, 131.1-132.5 ft.

Grout Seal: Wyo-Ben Grout Well Bentonite Slurry, 3.0-35.0 ft. and 60.0-110.0 ft.

Bentonite Seal: Extra high yield Wyo-Ben (100%) Slurry, 110.0-131.1 ft.

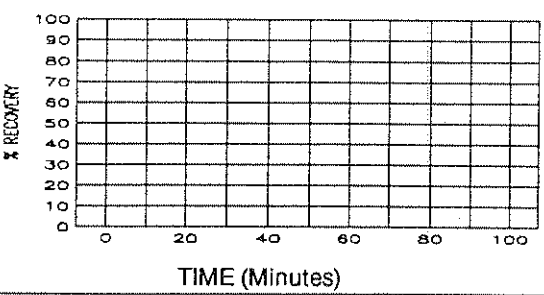
Concrete: 0.0-3.0 ft.

Well Development

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)

Recovery Data:



Comments:

Due to grout slurry lose above 60.0 ft., bentonite chips were placed from 35.0-60.0 ft. to seal borehole. The chips were hydrated at 1 ft. intervals during placement and were monitored with a weighted tape measure.

Supervised by B. Tilton

Job Number 943-2848

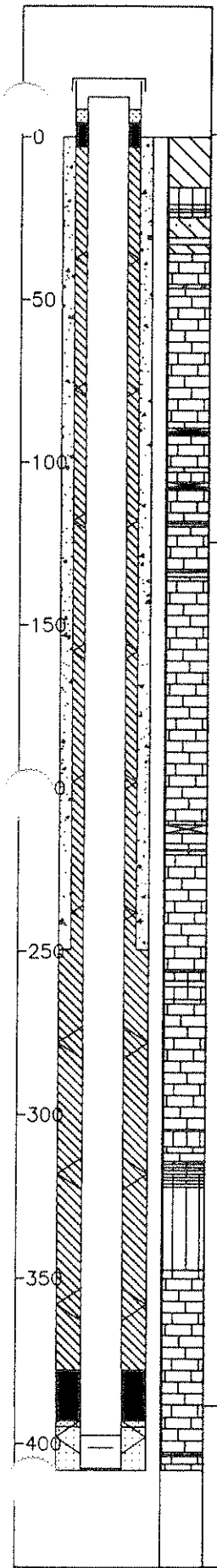
Site LAIDLAW/OU2 RI-FS/MO

File Name PZ103SS

Well No. PZ-104-KS

Boring No. X-Ref: PZ-104-KS

PIEZOMETER CONSTRUCTION SUMMARY



Not to Scale

Survey Coords: Northing: 1066993 ft.
Easting: 516821 ft.

Elevation Ground Level 482.3 ft. NGVD
Top of PVC Casing 484.04 ft. NGVD

Drilling Summary:

Total Depth 408.0 ft.
Borehole Diameter 10 in. (0.0-249.0 ft.) 5 7/8 in. (249.0-408.0 ft.)
Casing Stickup Height 1.72 ft.
Driller Layne-Western
St. Louis, MO

Rig CME 75, Schramm Portadrill T660H
Bit(s) 6 1/4 in. ID Hollow Stem Auger Bit,
NX Core, 5 7/8 in. and 10 in. Button Bits
Drilling Fluid Auger-None, NX Core Water,
Air Rotary
Protective Casing 8x8 in. Square Steel, by 5 ft. long

Construction Time log:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling				
CME 75 (augers)	2/21/95	15:40	2/21/95	17:58
CME 75 (core)	5/22/95	14:00	5/22/95	14:45
Schramm Rotary	6/7/95	7:15	6/7/95	11:30
Geophys.Logging:	6/8/95	10:30	6/8/95	12:15
Casing:				
2" PVC	6/19/95	9:30	6/19/95	11:00
6" Steel	5/25/95	12:30	5/25/95	13:30
Filter Placement:	6/19/95	11:05	6/19/95	13:00
Cementing:				
Development				
Bentonite Grout	6/19/95	13:15	6/19/95	17:00
Bentonite Seal	6/19/95	13:00	6/19/95	13:15

Well Design & Specifications

Basis: Geologic Log X Geophysical Log X
Casing string(s): C = Casing S = Screen

Depth			String(s)	Elevation		
+ 1.72	-	397.37	C1	484.04	-	84.95
397.37	-	407.17	S1	84.95	-	75.15
407.17	-	407.50	C2	75.15	-	74.82
+ 1.00	-	249.00	C3	483.30	-	233.32
	-				-	
	-				-	

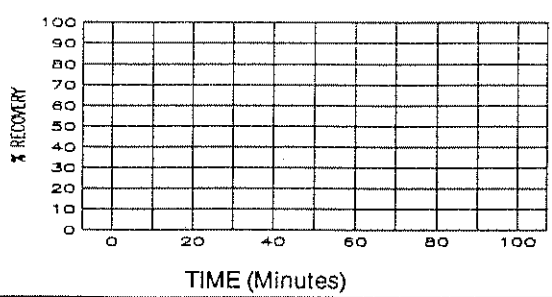
Casing: C1 2 in. dia. Schedule 80 PVC, flush threaded with O-rings
C2 2 in. dia. threaded PVC end cap (4 in. long or 0.33 ft.) (C3-see comments)
Screen: S1 2 in. dia. Schedule 80 PVC, 0.010 in. machine cut slot, flush threaded with O-rings
Sand Pack: 16-35 mesh Silica Sand, 395.0-408.0 ft.
Filter Pack: Less than 50 mesh Silica Sand, 393.0-395.0 ft.
Grout Seal: Wyo-Ben Grout Well Bentonite Slurry, 3.0-378.0 ft., Neat cement, 3.0-249.0 ft.
Bentonite Seal: Extra high yield Wyo-Ben (100%) Slurry, 378.0-393.0 ft.
Concrete: 0.0-3.0 ft.

Well Development

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)

Recovery Data:



Comments: Surface Casing C3: 6 1/8 in. ID / 6 5/8 in. OD Steel Casing

Supervised by B. Tilton
Job Number 943-2848
Site LAIDLAW/OU2 RI-FS/MO
File Name PZ104KS

Well No. PZ-104-SD

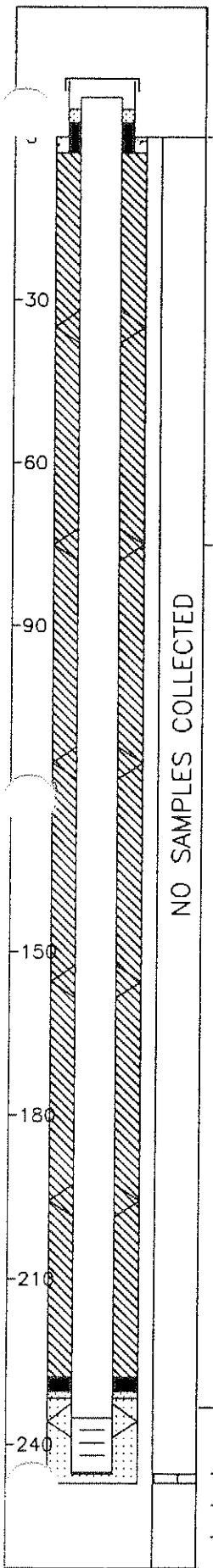
Boring No. X-Ref: PZ-104-SD

PIEZOMETER CONSTRUCTION SUMMARY

Survey Coords: Northing: 1067013 ft. Easting: 516834 ft.

Elevation Ground Level 482.1 ft. NGVD

Top of PVC Casing 483.69 ft. NGVD



Not to Scale

Drilling Summary:

Total Depth 252.5 ft.

Borehole Diameter 10 1/4 in. (0.0-38.0 ft.) 5 7/8 in. (38.0-252.5 ft.)

Casing Stickup Height 1.59 ft.

Driller Layne-Western, St. Louis, MO

Rig CME 75, Schramm Portadrill T660H

Bit(s) 6 1/4 in. ID Hollow Stem Auger Bit, NX Core, 5 7/8 in. Button Bit for Reaming

Drilling Fluid Auger-None, NX Core Water, Air Rotary

Protective Casing 8x8 in. Square Steel, by 5 ft. long

Construction Time log:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling				
CME 75				
Schramm Rotary	5/5/95	15:00	5/8/95	14:00
Geophys.Logging:	6/8/95	12:30	6/8/95	15:00
Casing:	6/17/95	12:10	6/17/95	12:30
Filter Placement:	6/17/95	12:30	6/17/95	13:00
Cementing:				
Development				
Bentonite Grout	6/17/95	13:20	6/17/95	15:00
Bentonite Seal	6/17/95	13:00	6/17/95	13:20

Well Design & Specifications

Basis: Geologic Log X Geophysical Log X

Casing string(s): C = Casing S = Screen

Depth			String(s)	Elevation		
+ 1.59	-	235.20	C1	483.69	-	248.90
235.20	-	245.00	S1	246.90	-	237.10
245.00	-	245.33	C2	237.10	-	236.77
	-				-	
	-				-	
	-				-	

Casing: C1 2 in. dia. Schedule 80 PVC, flush threaded with O-rings

C2 2 in. dia. threaded PVC end cap (4 in. long or 0.33 ft.)

Screen: S1 2 in. dia. Schedule 80 PVC, 0.010 in. machine cut slot, flush threaded with O-rings

Sand Pack: 16-35 mesh Silica Sand, 231.8-247.0 ft.

Filter Pack: Less than 50 mesh Silica Sand, 230.5-231.8 ft.

Grout Seal: Wyo-Ben Grout Well Bentonite Slurry, 3.0-220.0 ft.

Bentonite Seal: Extra high yield Wyo-Ben (100%) Slurry, 220.0-230.5 ft.

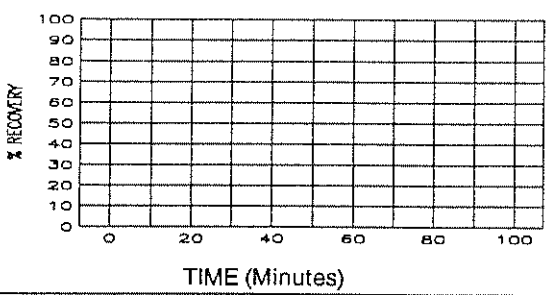
Concrete: 0.0-3.0 ft.

Well Development

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)

Recovery Data:



Comments:

When PVC casing was installed, it was observed that there was about 5.0 ft. of sluff in borehole from 247.5-252.5 ft. It did not appear that the sluff could be removed from the borehole since the borehole had remained open to allow for geophysical logging and packer testing and slaking of shale units and argillaceous limestones in the borehole. Two feet of sand pack was used to seperate the bottom of the piezometer from the sluff at the bottom of the borehole.

Supervised by B. Tilton

Job Number 943-2848

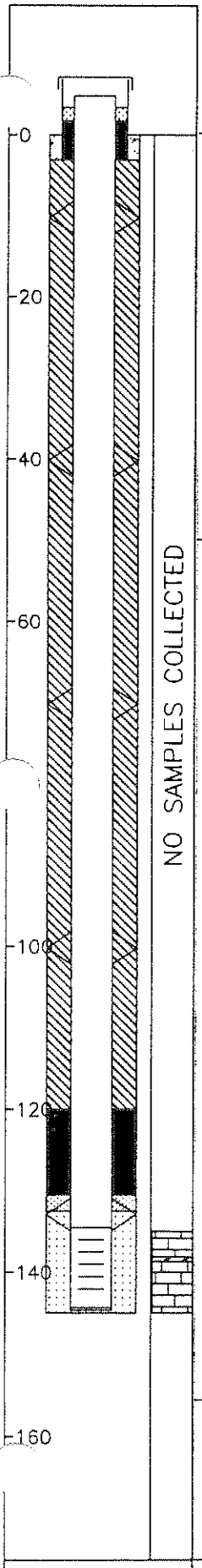
Site LAIDLAW/OU2 RI-FS/MO

File Name PZ104SD

Well No. PZ-104-SS

Boring No. X-Ref: PZ-104-SS

PIEZOMETER CONSTRUCTION SUMMARY



Not to Scale

Survey Coords: Northing: 1067028 ft.
Easting: 516847 ft.

Elevation Ground Level 481.6 ft. NGVD
Top of PVC Casing 483.63 ft. NGVD

Drilling Summary:

Total Depth 145.0 ft.
Borehole Diameter 10 1/4" (0.0-37.0') 5 7/8" (37.0-145.0')
Casing Stickup Height 2.07 ft.
Driller Layne-Western
St. Louis, MO

Rig CME 75, Schramm Portadrill T660H
Bit(s) 6 1/4" ID Hollow Stem Auger Bit,
NX Core, 5 7/8" Button Bit for Reaming
Drilling Fluid Auger-None, NX Core Water,
Air Rotary
Protective Casing 8x8" Square Steel, by 5' long

Construction Time log:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling				
CME 75				
Schramm Rotary	6/3/95	12:30	6/4/95	11:45
Geophys.Logging:				
Casing:	6/4/95	11:45	6/4/95	12:00
Filter Placement:	6/4/95	12:00	6/4/95	12:45
Cementing:				
Development				
Bentonite Grout	6/4/95	13:06	6/4/95	13:25
Bentonite Seal	6/4/95	12:45	6/4/95	13:05

Well Design & Specifications

Basis: Geologic Log X Geophysical Log
Casing string(s): C = Casing S = Screen

Depth			String(s)	Elevation		
+ 2.07	-	134.50	C1	483.63	-	347.06
134.50	-	144.30	S1	347.06	-	337.26
144.30	-	144.63	C2	337.26	-	336.93

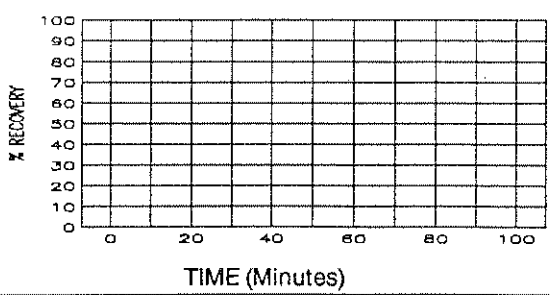
Casing: C1 2 in. dia. Schedule 80 PVC, flush threaded with O-rings
C2 2 in. dia. threaded PVC end cap (4 in. long or 0.33 ft.)
Screen: S1 2 in. dia. Schedule 80 PVC, 0.010 in. machine cut slot, flush threaded with O-rings
Sand Pack: 16-35 mesh Silica Sand, 132.5-145.0 ft.
Filter Pack: Less than 50 mesh Silica Sand, 130.5-132.5 ft.
Grout Seal: Wyo-Ben Grout Well Bentonite Slurry, 3.0-120.0 ft.
Bentonite Seal: Extra high yield Wyo-Ben (100%) Slurry, 120.0-130.5 ft.
Concrete: 0.0-3.0 ft.

Well Development

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)

Recovery Data:



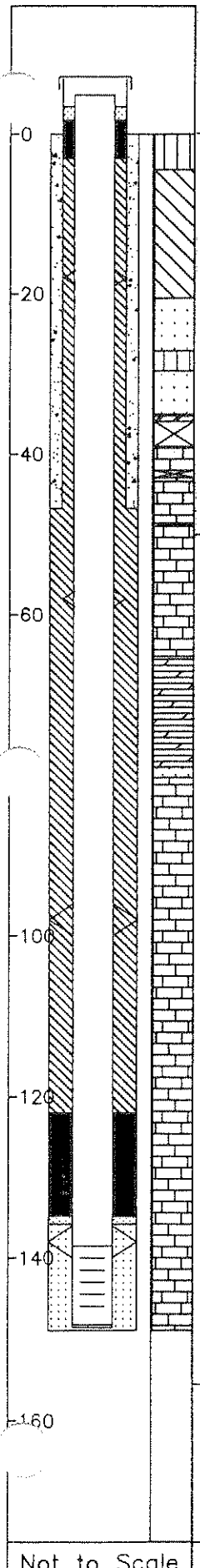
Comments:

Supervised by B. Tilton
Job Number 943-2848
Site LAIDLAW/OU2 RI-FS/MO
File Name PZ104SS

Well No. PZ-105-SS

Boring No. X-Ref: PZ-105-SS

PIEZOMETER CONSTRUCTION SUMMARY



Not to Scale

Survey Coords: Northing: 1066421 ft. Easting: 516230 ft.

Elevation Ground Level 481.2 ft. NGVD

Top of PVC Casing 483.61 ft. NGVD

Drilling Summary:

Total Depth 149.0 ft.

Borehole Diameter 9 7/8 in. (0.0-45.0 ft.) 5 7/8 in. (45.0-149.0 ft.)

Casing Stickup Height 2.39 ft.

Driller Layne-Western, St. Louis, MO

Rig CME 75, Schramm Portadrill T660H

Bit(s) 6 1/4 in. ID Hollow Stem Auger Bit, NX Core, 5 7/8 in. Button Bit and 7 7/8 in. Tricone Bit

Drilling Fluid Auger-None, NX Core Water, Air and Mud Rotary

Protective Casing 8x8 in. Square Steel, by 5 ft. long

Construction Time log:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling				
CME 75	5/19/95	14:20	5/21/95	10:30
Schramm Rotary	5/24/95	7:45	5/24/95	12:00
Geophys.Logging:				
Casing:				
2" PVC	5/24/95	12:00	5/24/95	12:20
6" Steel	5/23/95	7:30	5/23/95	13:00
Filter Placement:	5/24/95	12:30	5/24/95	13:05
Cementing:				
Development				
Bentonite Grout	5/24/95	14:15	5/24/95	15:00
Bentonite Seal	5/24/95	14:00	5/24/95	14:15

Well Design & Specifications

Basis: Geologic Log X Geophysical Log

Casing string(s): C = Casing S = Screen

Depth			String(s)	Elevation		
+ 2.39	-	138.50	C1	483.61	-	342.72
138.50	-	148.30	S1	342.72	-	332.92
148.30	-	148.63	C2	332.92	-	332.59
+ 1.50	-	45.00	C3	482.70	-	436.22
	-				-	
	-				-	

Casing: C1 2 in. dia. Schedule 80 PVC, flush threaded with O-rings

C2 2 in. dia. threaded PVC end cap (4 in. long or 0.33 ft.) (C3-see comments)

Screen: S1 2 in. dia. Schedule 80 PVC, 0.010 in. machine cut slot, flush threaded with O-rings

Sand Pack: 16-35 mesh Silica Sand, 135.8-149.0 ft.

Filter Pack: Less than 50 mesh Silica Sand, 134.8-135.8 ft.

Grout Seal: Wyo-Ben Grout Well Bentonite Slurry, 3.0-122.0 ft., Neat cement, 3.0-45.0 ft.

Bentonite Seal: Extra high yield Wyo-Ben (100%) Slurry, 122.0-134.8 ft.

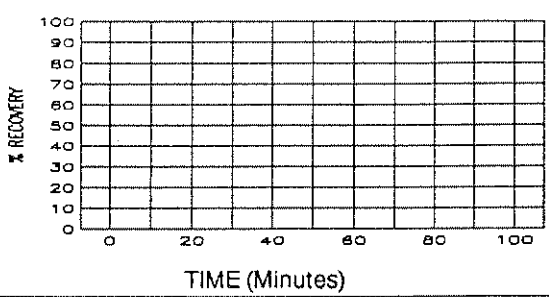
Concrete: 0.0-3.0 ft.

Well Development

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)

Recovery Data:



Comments: Surface Casing C3: 6 1/2 in. ID / 6 5/8 in. OD Steel Casing

Supervised by B. Tilton

Job Number 943-2848

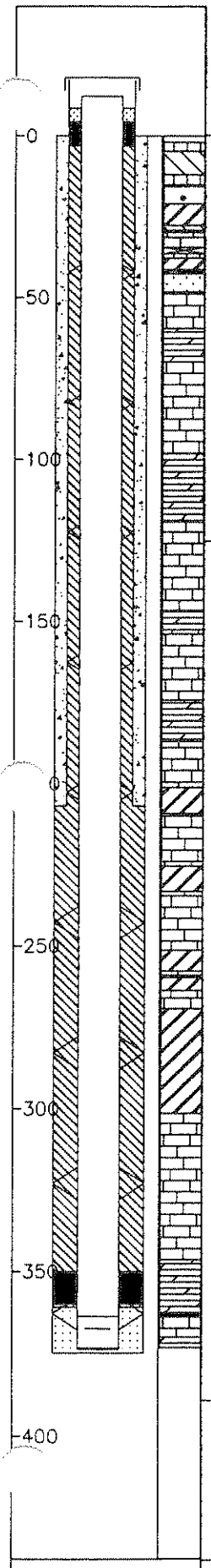
Site LAIDLAW/OU2 RI-FS/MO

File Name PZ105SS

Well No. PZ-106-KS

Boring No. X-Ref: PZ-106-KS

PIEZOMETER CONSTRUCTION SUMMARY



Not to Scale

Survey Coords: Northing: 1066704 ft.
Easting: 515432 ft.

Elevation Ground Level 461.8 ft. NGVD
Top of PVC Casing 464.26 ft. NGVD

Drilling Summary:

Total Depth 375.0 ft.
Borehole Diameter 9 7/8 in. (0.0-204.0 ft.) 5 7/8 in. (204.0-375.0 ft.)
Casing Stickup Height 2.49 ft.
Driller Layne-Western
St. Louis, MO

Rig CME 75, Schramm Portadrill T660H
Bit(s) 6 1/4 in. ID Hollow Stem Auger Bit,
NX Core, 5 7/8 in. and 9 7/8 in. Button Bits
Drilling Fluid Auger-None, NX Core Water,
Air Rotary
Protective Casing 8x8 in. Square Steel, by 5 ft. long

Construction Time log:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling				
CME 75	2/28/95	10:30	3/6/95	17:30
Schramm Rotary	3/20/95	7:30	3/20/95	11:30
Geophys.Logging:	3/20/95	12:45	3/20/95	18:30
Casing:				
2" PVC	3/23/95	8:30	3/23/95	9:40
6" Steel	3/9/95	11:45	3/10/95	9:00
Filter Placement:	3/23/95	9:40	3/23/95	10:45
Cementing:	3/9/95	14:15	3/9/95	9:00
Development				
Bentonite Grout	3/23/95	11:15	3/23/95	13:15
Bentonite Seal	3/23/95	10:45	3/23/95	11:15

Well Design & Specifications

Basis: Geologic Log X Geophysical Log X
Casing string(s): C = Casing S = Screen

Depth			String(s)	Elevation		
+ 2.49	-	363.75	C1	464.26	-	98.02
363.75	-	373.57	S1	98.02	-	88.20
373.57	-	373.90	C2	88.20	-	87.87
+ 1.50	-	204.00	C3	463.30	-	257.77
	-				-	
	-				-	

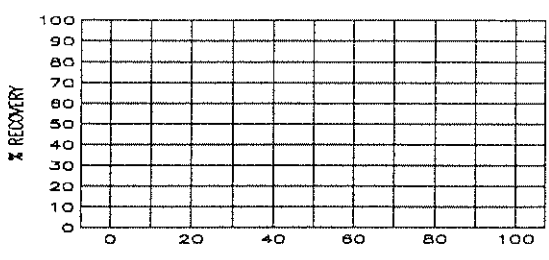
Casing: C1 2 in. dia. Schedule 80 PVC, flush threaded with O-rings
C2 2 in. dia. threaded PVC end cap (4 in. long or 0.33 ft.) (C3-see comments)
Screen: S1 2 in. dia. Schedule 80 PVC, 0.010 in. machine cut slot, flush threaded with O-rings
Sand Pack: 16-35 mesh Silica Sand, 361.0-375.0 ft.
Filter Pack: Less than 50 mesh Silica Sand, 360.0-361.0 ft.
Grout Seal: Wyo-Ben Grout Well Bentonite Slurry, 3.0-350.0 ft., Neat cement, 3.0-204.0 ft.
Bentonite Seal: Extra high yield Wyo-Ben (100%) Slurry, 350.0-360.0 ft.
Concrete: 0.0-3.0 ft.

Well Development

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)

Recovery Data:



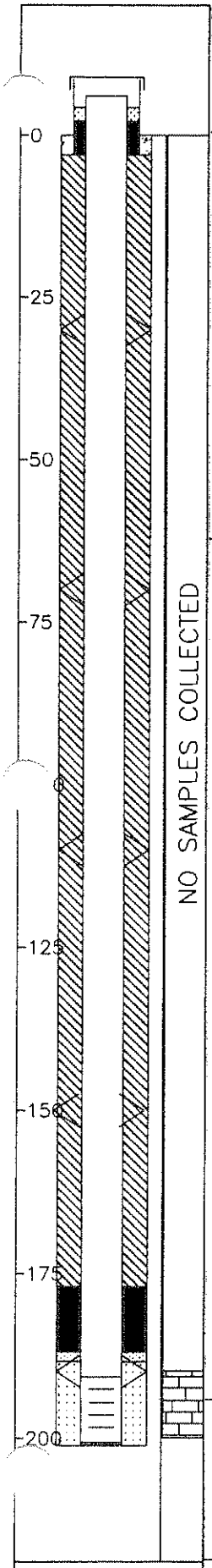
Comments: Surface Casing C3: 6 1/8 in. ID / 6 5/8 OD Steel Casing

Supervised by B. Tilton
Job Number 943-2848
Site LAIDLAW/OU2 RI-FS/MO
File Name PZ106KS

Well No. PZ-106-SD

Boring No. X-Ref: PZ-106-SD

PIEZOMETER CONSTRUCTION SUMMARY



Not to Scale

Survey Coords: Northing: 1066715 ft. Easting: 515416 ft.

Elevation Ground Level 461.5 ft. NGVD

Top of PVC Casing 463.42 ft. NGVD

Drilling Summary:

Total Depth 201.1 ft.

Borehole Diameter 10 1/4 in. (0.0-26.0 ft.) 5 7/8 in. (26.0-201.1 ft.)

Casing Stickup Height 1.97 ft.

Driller Layne-Western, St. Louis, MO

Rig CME 75, Schramm Portadrill T660H

Bit(s) 6 1/4 in. ID Hollow Stem Auger Bit, NX Core, 5 7/8 in. Button Bit for Reaming

Drilling Fluid Auger-None, NX Core Water, Air Rotary

Protective Casing 8x8 in. Square Steel, by 5 ft. long

Construction Time log:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling				
CME 75				
Schramm Rotary	3/23/95	16:15	3/24/95	13:00
Geophys.Logging:	3/24/95	16:15	3/24/95	18:30
Casing:	3/24/95	12:40	3/24/95	13:00
Filter Placement:	3/24/95	13:10	3/24/95	13:40
Cementing:				
Development				
Bentonite Grout	3/24/95	14:00	3/24/95	14:45
Bentonite Seal	3/24/95	13:40	3/24/95	13:55

Well Design & Specifications

Basis: Geologic Log X Geophysical Log X

Casing string(s): C = Casing S = Screen

Depth			String(s)	Elevation		
+ 1.97	-	190.79	C1	463.42	-	270.66
190.79	-	200.59	S1	270.66	-	260.86
200.59	-	200.93	C2	260.86	-	260.52
	-				-	
	-				-	
	-				-	

Casing: C1 2 in. dia. Schedule 80 PVC, flush threaded with O-rings

C2 2 in. dia. threaded PVC end cap (4 in. long or 0.33 ft.)

Screen: S1 2 in. dia. Schedule 80 PVC, 0.010 in. machine cut slot, flush threaded with O-rings

Sand Pack: 16-35 mesh Silica Sand, 188.5-201.1 ft.

Filter Pack: Less than 50 mesh Silica Sand, 187.0-188.5 ft.

Grout Seal: Wyo-Ben Grout Well Bentonite Slurry, 3.0-177.0 ft.

Bentonite Seal: Extra high yield Wyo-Ben (100%) Slurry, 177.0-187.0 ft.

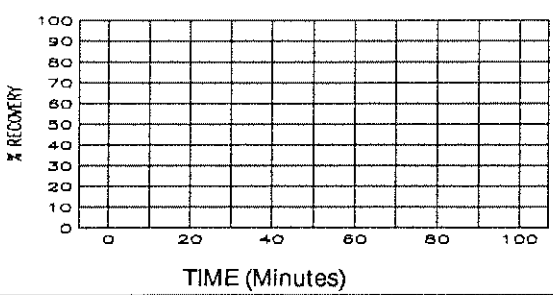
Concrete: 0.0-3.0 ft.

Well Development

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)

Recovery Data:



Comments:

Supervised by W. Herst

Job Number 943-2848

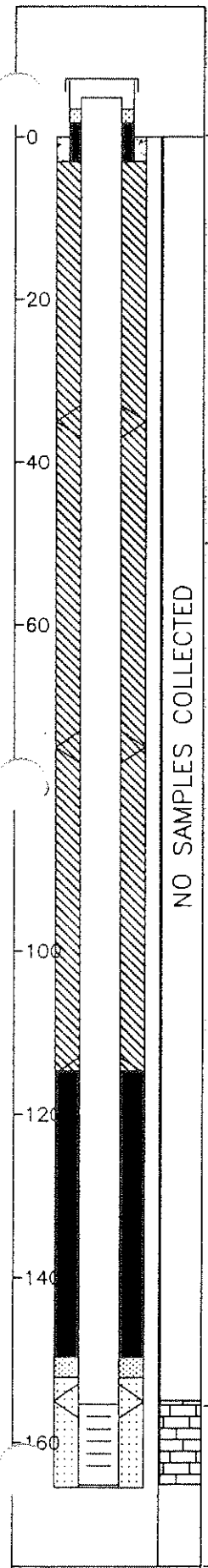
Site LAIDLAW/OU2 RI-FS/MO

File Name PZ106SD

Well No. PZ-106-SS

Boring No. X-Ref: PZ-106-SS

PIEZOMETER CONSTRUCTION SUMMARY



Not to Scale

Survey Coords: Northing: 1066726 ft. Easting: 515400 ft.

Elevation Ground Level 461.0 ft. NGVD

Top of PVC Casing 462.70 ft. NGVD

Drilling Summary:

Total Depth 165.4 ft.

Borehole Diameter 10 1/4 in. (0.0–23.0 ft.) 5 7/8 in. (23.0–165.4 ft.)

Casing Stickup Height 1.75 ft.

Driller Layne-Western, St. Louis, MO

Rig CME 75, Schramm Portadrill T660H

Bit(s) 6 1/4 in. ID Hollow Stem Auger Bit, NX Core, 5 7/8 in. Button Bit for Reaming

Drilling Fluid Auger-None, NX Core Water, Air Rotary

Protective Casing 8x8 in. Square Steel, by 5 ft. long

Construction Time log:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling				
CME 75				
Schramm Rotary	4/4/95	8:25	4/5/95	10:00
Geophys.Logging:				
Casing:	4/5/95	11:45	4/5/95	12:10
Filter Placement:	4/5/95	12:15	4/5/95	12:30
Cementing:				
Development				
Bentonite Grout	4/5/95	13:05	4/5/95	13:41
Bentonite Seal	4/5/95	12:30	4/5/95	13:05

Well Design & Specifications

Basis: Geologic Log X Geophysical Log

Casing string(s): C = Casing S = Screen

Depth			String(s)	Elevation		
+ 1.75	-	155.30	C1	462.70	-	305.65
155.30	-	165.10	S1	305.65	-	295.85
165.10	-	165.43	C2	295.85	-	295.52
	-				-	
	-				-	
	-				-	

Casing: C1 2 in. dia. Schedule 80 PVC, flush threaded with O-rings

C2 2 in. dia. threaded PVC end cap (4 in. long or 0.33 ft.)

Screen: S1 2 in. dia. Schedule 80 PVC, 0.010 in. machine cut slot, flush threaded with O-rings

Sand Pack: 16-35 mesh Silica Sand, 152.2-165.0 ft.

Filter Pack: Less than 50 mesh Silica Sand, 149.7-152.2 ft.

Grout Seal: Wyo-Ben Grout Well Bentonite Slurry, 3.0-114.7 ft.

Bentonite Seal: Extra high yield Wyo-Ben (100%) Slurry, 114.7-149.7 ft.

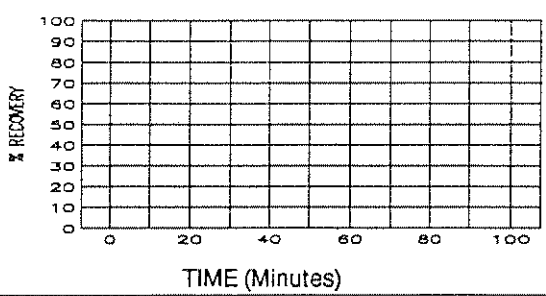
Concrete: 0.0-3.0 ft.

Well Development

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)

Recovery Data:



Comments:

Supervised by J. Miller

Job Number 943-2848

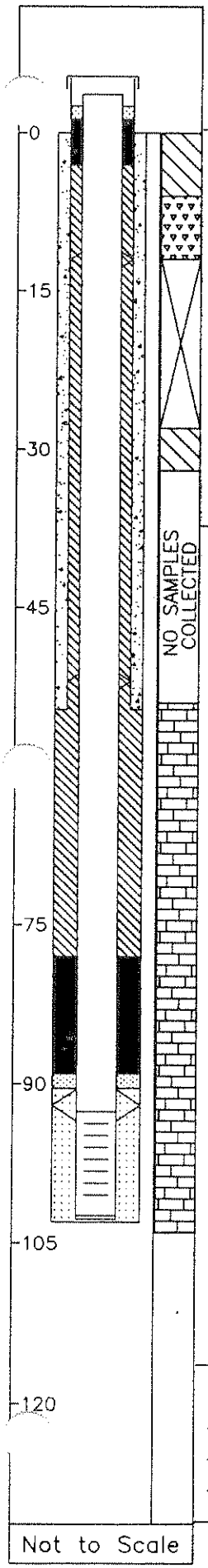
Site LAIDLAW/OU2 RI-FS/MO

File Name PZ106SS

Well No. PZ-107-SS

Boring No. X-Ref: PZ-107-SS

PIEZOMETER CONSTRUCTION SUMMARY



Not to Scale

Survey Coords: Northing: 1067163 ft. Easting: 515255 ft.

Elevation Ground Level 462.6 ft. NGVD

Top of PVC Casing 464.66 ft. NGVD

Drilling Summary:

Total Depth 103.0 ft.

Borehole Diameter 14 1/4 in. (0.0-32.0 ft.) 5 7/8 in. (32.0-103.0 ft.)

Casing Stickup Height 2.03 ft.

Driller Layne-Western, St. Louis, MO

Rig CME 75, Schramm Portadrill T660H

Bit(s) 6 1/4 in. ID Hollow Stem Auger Bit, NX Core, 5 7/8 in. Button Bit for Reaming

Drilling Fluid Auger-None, NX Core Water, Air and Mud Rotary

Protective Casing 8x8 in. Square Steel, by 5 ft. long

Construction Time log:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling				
CME 75 (augers)	3/26/95	13:00	3/26/95	16:25
CME 75 (core)	5/21/95	15:30	5/22/95	8:30
Schramm Rotary	5/22/95	11:00	5/22/95	11:30
Geophys.Logging:				
Casing:				
2" PVC	5/22/95	11:30	5/22/95	11:35
6" Steel	5/18/95	9:00	5/18/95	14:00
Filter Placement:	5/22/95	11:40	5/22/95	11:55
Cementing:				
Development				
Bentonite Grout	5/22/95	12:10	5/22/95	12:45
Bentonite Seal	5/22/95	11:55	5/22/95	12:10

Well Design & Specifications

Basis: Geologic Log X Geophysical Log

Casing string(s): C = Casing S = Screen

Depth			String(s)	Elevation		
+ 2.03	-	92.60	C1	464.66	-	370.03
92.60	-	102.40	S1	370.03	-	360.23
102.40	-	102.73	C2	360.23	-	359.90
+ 1.00	-	55.00	C3	463.60	-	407.63
	-				-	
	-				-	

Casing: C1 2 in. dia. Schedule 80 PVC, flush threaded with O-rings

C2 2 in. dia. threaded PVC end cap (4 in. long or 0.33 ft.) (C3-see comments)

Screen: S1 2 in. dia. Schedule 80 PVC, 0.010 in. machine cut slot, flush threaded with O-rings

Sand Pack: 16-35 mesh Silica Sand, 90.4-103.0 ft.

Filter Pack: Less than 50 mesh Silica Sand, 89.0-90.4 ft.

Grout Seal: Wyo-Ben Grout Well Bentonite Slurry, 3.0-78.0 ft.

Bentonite Seal: Extra high yield Wyo-Ben (100%) Slurry, 78.0-89.0 ft.

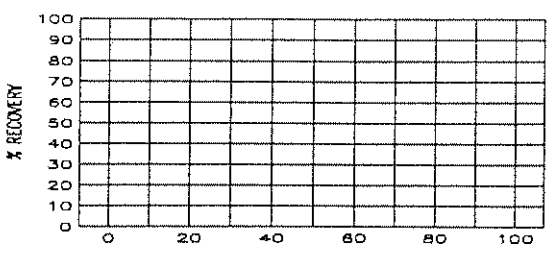
Concrete: 0.0-3.0 ft.

Well Development

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)

Recovery Data:



Comments:

Surface Casing C3: 6 1/8 ID / 6 5/8 in. OD Steel Casing

Supervised by B. Tilton

Job Number 943-2848

Site LAIDLAW/OU2 RI-FS/MO

File Name PZ107SS

Well No. PZ-108-SS

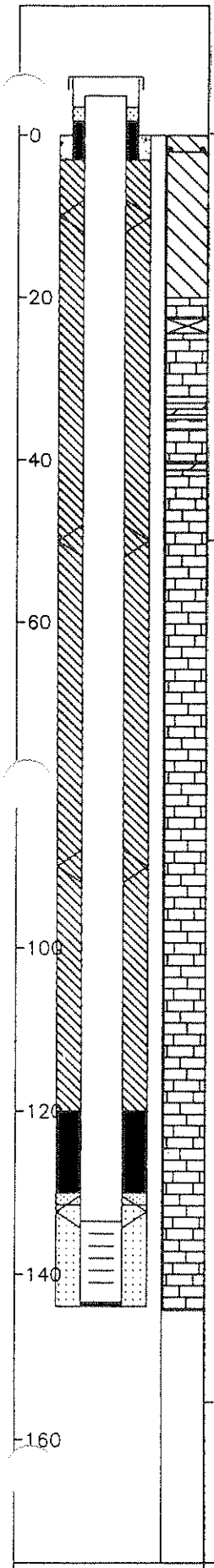
Boring No. X-Ref: PZ-108-SS

PIEZOMETER CONSTRUCTION SUMMARY

Survey Coords: Northing: 1067678 ft. Easting: 515973 ft.

Elevation Ground Level 454.1 ft. NGVD

Top of PVC Casing 456.20 ft. NGVD



Drilling Summary:

Total Depth 143.9 ft.

Borehole Diameter 10 1/4 in. (0.0-20.0 ft.) 5 7/8 in. (20.0-143.9 ft.)

Casing Stickup Height 2.08 ft.

Driller Layne-Western
St. Louis, MO

Rig CME 75, Schramm Portadrill T660H

Bit(s) 6 1/4 in. ID Hollow Stem Auger Bit,
NX Core, 5 7/8 in. Button Bit for Reaming

Drilling Fluid Auger-None, NX Core Water,
Air Rotary

Protective Casing 8x in. Square Steel, by 5 ft. long

Construction Time log:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling				
CME 75	3/21/95	16:30	3/23/95	16:35
Schramm Rotary	3/29/95	7:30	3/29/95	9:15
Geophys.Logging:				
Casing:	3/29/95	9:30	3/29/95	9:45
Filter Placement:	3/29/95	9:50	3/29/95	10:15
Cementing:				
Development				
Bentonite Grout	3/29/95	11:00	3/29/95	13:15
Bentonite Seal	3/29/95	10:20	3/29/95	11:00

Well Design & Specifications

Basis: Geologic Log X Geophysical Log

Casing string(s): C = Casing S = Screen

Depth			String(s)	Elevation		
+ 2.08	-	133.54	C1	456.20	-	320.58
133.54	-	143.35	S1	320.58	-	310.77
143.35	-	143.68	C2	310.77	-	310.44
	-				-	
	-				-	
	-				-	

Casing: C1 2 in. dia. Schedule 80 PVC, flush threaded with O-rings

C2 2 in. dia. threaded PVC end cap (4 in. long or 0.33 ft.)

Screen: S1 2 in. dia. Schedule 80 PVC, 0.010 in. machine cut slot, flush threaded with O-rings

Sand Pack: 16-35 mesh Silica Sand, 131.5-143.9 ft.

Filter Pack: Less than 50 mesh Silica Sand, 130.0-131.5 ft.

Grout Seal: Wyo-Ben Grout Well Bentonite Slurry, 3.0-120.0 ft.

Bentonite Seal: Extra high yield Wyo-Ben (100%) Slurry, 120.0-131.5 ft.

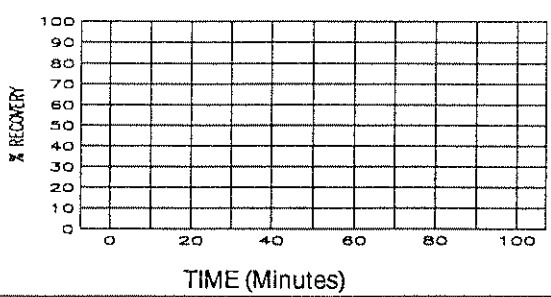
Concrete: 0.0-3.0 ft.

Well Development

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)

Recovery Data:



Comments:

Not to Scale

Supervised by B. Tilton

Job Number 943-2848

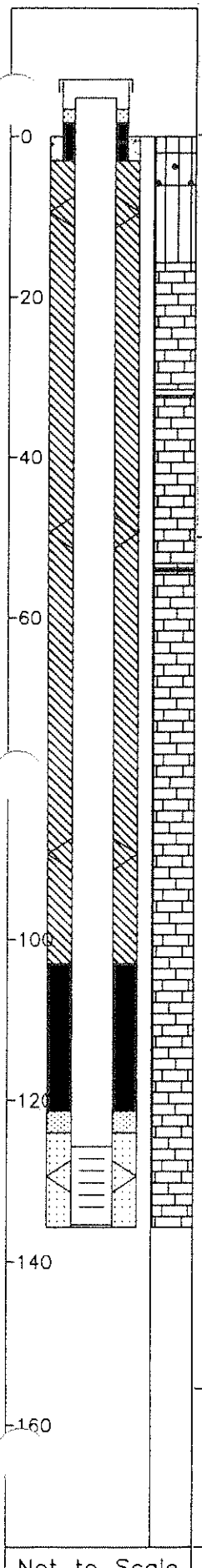
Site LAIDLAW/OU2 RI-FS/MO

File Name PZ108SS

Well No. PZ-109-SS

Boring No. X-Ref: PZ-109-SS

PIEZOMETER CONSTRUCTION SUMMARY



Not to Scale

Survey Coords: Northing: 1068012 ft.
Easting: 516144 ft.

Elevation Ground Level 456.8 ft. NGVD
Top of PVC Casing 458.50 ft. NGVD

Drilling Summary:

Total Depth 135.7 ft.
Borehole Diameter 10 1/4 in. (0.0–15.0 ft.) 5 7/8 in. (15.0–135.7 ft.)
Casing Stickup Height 1.73 ft.
Driller Layne-Western
St. Louis, MO

Rig CME 75, Schramm Portadrill T660H
Bit(s) 6 1/4 in. ID Hollow Stem Auger Bit,
NX Core, 5 7/8 in. Button Bit for Reaming
Drilling Fluid Auger-None, NX Core Water,
Air Rotary
Protective Casing 8x8 in. Square Steel, by 5 ft. long

Construction Time log:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling				
CME 75	4/7/95	7:48	4/8/95	15:30
Schramm Rotary	4/25/95	9:30	4/25/95	11:40
Geophys.Logging:				
Casing:	4/25/95	12:00	4/25/95	12:10
Filter Placement:	4/25/95	12:10	4/25/95	12:20
Cementing:				
Development				
Bentonite Grout	4/25/95	12:45	4/25/95	13:15
Bentonite Seal	4/25/95	12:20	4/25/95	12:45

Well Design & Specifications

Basis: Geologic Log X Geophysical Log
Casing string(s): C = Casing S = Screen

Depth			String(s)	Elevation		
+ 1.73	-	125.70	C1	458.50	-	331.07
125.70	-	135.50	S1	331.07	-	321.27
135.50	-	135.83	C2	321.27	-	320.94
	-				-	
	-				-	
	-				-	

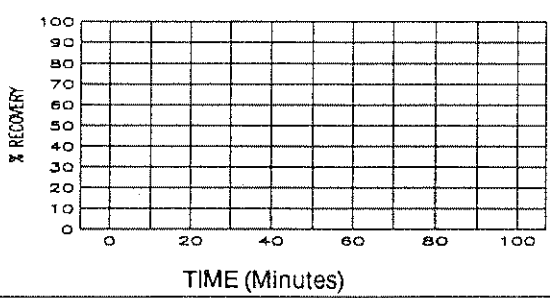
Casing: C1 2 in. dia. Schedule 80 PVC, flush threaded with O-rings
C2 2 in. dia. threaded PVC end cap (4 in. long or 0.33 ft.)
Screen: S1 2 in. dia. Schedule 80 PVC, 0.010 in. machine cut slot, flush threaded with O-rings
Sand Pack: 16-35 mesh Silica Sand, 124.0-135.7 ft.
Filter Pack: Less than 50 mesh Silica Sand, 121.3-124.0 ft.
Grout Seal: Wyo-Ben Grout Well Bentonite Slurry, 3.0-103.0 ft.
Bentonite Seal: Extra high yield Wyo-Ben (100%) Slurry, 103.0-121.3 ft.
Concrete: 0.0-3.0 ft.

Well Development

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)

Recovery Data:



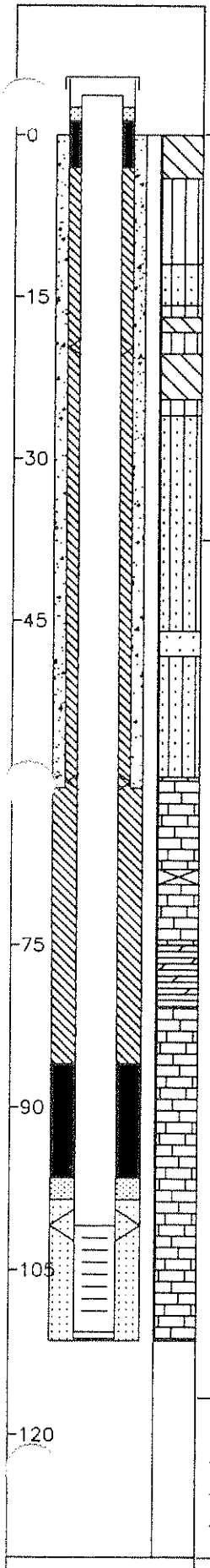
Comments:

Supervised by D. Alloway
Job Number 943-2848
Site LAIDLAW/OU2 RI-FS/MO
File Name PZ109SS

Well No. PZ-110-SS

Boring No. X-Ref: PZ-110-SS

PIEZOMETER CONSTRUCTION SUMMARY



Not to Scale

Survey Coords: Northing: 1068336 ft.
Easting: 515920 ft.

Elevation Ground Level 456.8 ft. NGVD
Top of PVC Casing 458.91 ft. NGVD

Drilling Summary:

Total Depth 111.5 ft.
Borehole Diameter 10 in. (0.0-61.0 ft.) 5 7/8 in. (61.0-111.5 ft.)
Casing Stickup Height 2.07 ft.
Driller Layne-Western
St. Louis, MO

Rig CME 75, Schramm Portadrill T660H
Bit(s) 6 1/4 in. and 10 1/4 in. ID Hollow Stem Auger Bits,
NX Core, 5 7/8 in. and 10.0 in. Button Bits
Drilling Fluid Auger-None, NX Core Water,
Air Rotary
Protective Casing 8x8 in. Square Steel, by 5 ft. long

Construction Time log:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling				
Schramm (augers)	3/13/95	13:30	3/13/95	14:00
CME 75 (Core)	3/24/95	15:25	3/23/95	13:15
Schramm Rotary	5/20/95	7:50	5/20/95	8:45
Geophys.Logging:				
Casing:				
2" PVC	5/20/95	9:05	5/20/95	9:15
6" Steel	5/19/95	11:30	5/19/95	15:00
Filter Placement:	5/20/95	9:20	5/20/95	10:05
Cementing:				
Development				
Bentonite Grout	5/20/95	10:15	5/20/95	10:45
Bentonite Seal	5/20/95	10:45	5/20/95	11:30

Well Design & Specifications

Basis: Geologic Log X Geophysical Log
Casing string(s): C = Casing S = Screen

Depth			String(s)	Elevation		
+ 2.07	-	100.90	C1	458.91	-	355.94
100.90	-	110.70	S1	355.94	-	346.14
110.70	-	111.30	C2	346.14	-	345.54
+ 0.50	-	61.00	C3	457.30	-	395.84
	-				-	
	-				-	

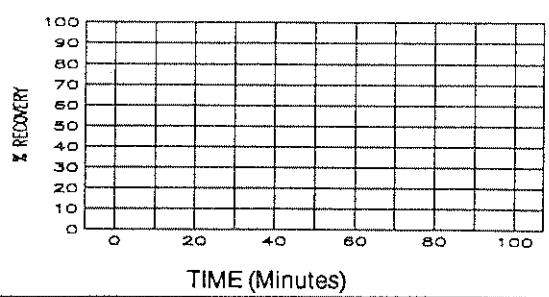
Casing: C1 2 in. dia. Schedule 80 PVC, flush threaded with O-rings
C2 2 in. dia. threaded PVC end cap (4 in. long or 0.33 ft.) (C3-see comments)
Screen: S1 2 in. dia. Schedule 80 PVC, 0.010 in. machine cut slot, flush threaded with O-rings
Sand Pack: 16-35 mesh Silica Sand, 98.5-111.5 ft.
Filter Pack: Less than 50 mesh Silica Sand, 96.5-98.5 ft.
Grout Seal: Wyo-Ben Grout Well Bentonite Slurry, 3.0-86.0 ft., Neat cement, 3.0-61.0 ft.
Bentonite Seal: Extra high yield Wyo-Ben (100%) Slurry, 86.0-96.5 ft.
Concrete: 0.0-3.0 ft.

Well Development

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)

Recovery Data:



Comments:

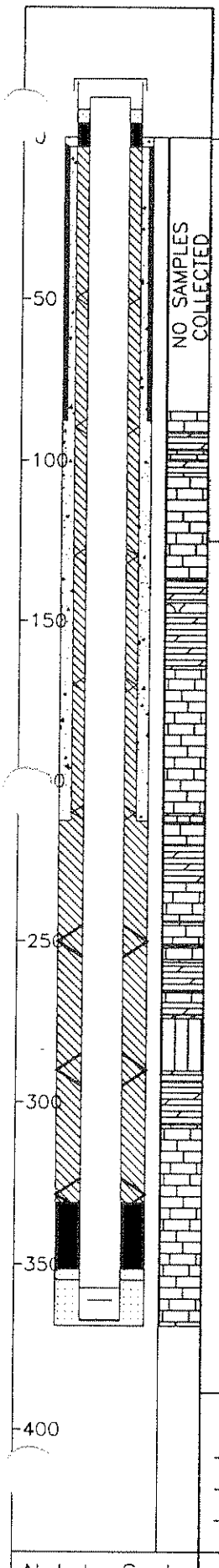
Surface Casing C3: 6 1/8 in. ID / 6 5/8 in. OD Steel Casing

Supervised by B. Tilton
Job Number 943-2848
Site LAIDLAW/OU2 RI-FS/MO
File Name PZ110SS

Well No. PZ-111-KS

Boring No. X-Ref: PZ-111-KS

PIEZOMETER CONSTRUCTION SUMMARY



Not to Scale

Survey Coords: Northing: 1068821 ft.
Easting: 515850 ft.

Elevation Ground Level 459.2 ft. NGVD
Top of PVC Casing 460.87 ft. NGVD

Drilling Summary:

Total Depth 368.8 ft.
Borehole Diameter See comments
Casing Stickup Height 1.69 ft.
Driller Layne-Western
St. Louis, MO

Rig CME 75, Schramm Portadrill T660H
Bit(s) 6 1/4 in. ID Hollow Stem Auger Bit, NX Core,
14 3/4 in. Tricone Bit, 10 in. and 5 7/8 in. Button Bits
Drilling Fluid Auger-None, NX Core Water,
Air and Mud Rotary
Protective Casing 8x8 in. Square Steel, by 5 ft. long

Construction Time log:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling				
CME 75	3/15/95	7:45	4/24/95	18:45
Schramm Rotary	4/26/95	8:20	4/26/95	10:30
Geophys.Logging:				
Casing:				
2" PVC	5/6/95	7:30	5/6/95	9:00
6" Steel	4/9/95	11:00	4/9/95	15:15
10" Steel	4/8/95	8:00	4/8/95	11:00
Filter Placement:	5/6/95	9:00	5/6/95	10:15
Cementing:				
Development				
Bentonite Grout	5/6/95	10:30	5/6/95	12:30
Bentonite Seal	5/6/95	10:15	5/6/95	10:30

Well Design & Specifications

Basis: Geologic Log X Geophysical Log
Casing string(s): C = Casing S = Screen

Depth			String(s)	Elevation		
+ 1.69	-	357.15	C1	460.87	-	102.03
357.15	-	366.96	S1	102.03	-	92.22
366.96	-	367.30	C2	92.22	-	91.88
+ 0.50	-	83.80	C3	459.70	-	375.38
+ 1.00	-	215.30	C4	460.20	-	243.88
	-				-	

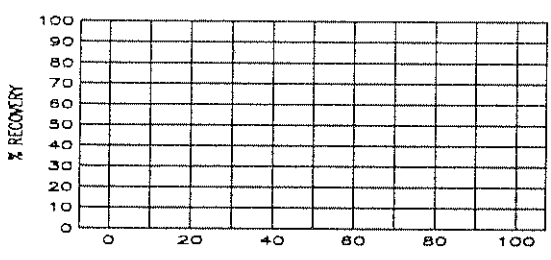
Casing: C1 2 in. dia. Schedule 80 PVC, flush threaded with O-rings
C2 2 in. dia. threaded PVC end cap (4 in. long or 0.33 ft.) (C3&C4-see comments)
Screen: S1 2 in. dia. Schedule 80 PVC, 0.010 in. machine cut slot, flush threaded with O-rings
Sand Pack: 16-35 mesh Silica Sand, 354.7-368.8 ft.
Filter Pack: Less than 50 mesh Silica Sand, 351.4-354.7 ft.
Grout Seal: Wyo-Ben Grout Well Bentonite Slurry, 3.0-330.97 ft., Neat cement, 3.0-215.3 ft.
Bentonite Seal: Extra high yield Wyo-Ben (100%) Slurry, 330.97-351.4 ft.
Concrete: 0.0-3.0 ft.

Well Development

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)

Recovery Data:



Comments:

14 3/4 in. (0.0-84.0 ft.), 10 in. (84.0-215.5 ft.), 5 7/8 in. (215.5-368.8 ft.)
Surface Casing C3: 10 in. ID / 10 7/8 in. OD Steel Casing
Surface Casing C4: 6 1/8 in. ID / 6 5/8 in. OD Steel Casing

Supervised by D. Alloway
Job Number 943-2848
Site LAIDLAW/OU2 RI-FS/MO
File Name PZ111KS

Well No. PZ-111-SD

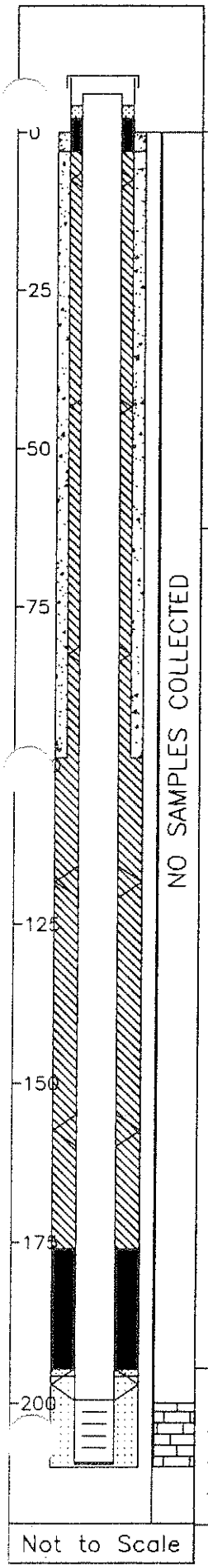
Boring No. X-Ref: PZ-111-SD

PIEZOMETER CONSTRUCTION SUMMARY

Survey Coords: Northing: 1068638 ft. Easting: 515835 ft.

Elevation Ground Level 459.2 ft. NGVD

Top of PVC Casing 461.55 ft. NGVD



Not to Scale

Drilling Summary:

Total Depth	210.0 ft.
Borehole Diameter	10 in. (0.0-98.0 ft.) 5 7/8 in. (98.0-210.0 ft.)
Casing Stickup Height	2.33 ft.
Driller	Layne-Western, St. Louis, MO
Rig	CME 75, Schramm Portadrill T660H
Bit(s)	6 1/4 in. ID Hollow Stem Auger Bit, NX Core 5 7/8 in. Button Bit and 9 7/8 in. Tricone Bit
Drilling Fluid	Auger-None, NX Core Water, Air and Mud Rotary
Protective Casing	8x8 in. Square Steel, by 5 ft. long

Construction Time log:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling				
CME 75				
Schramm Rotary	4/10/95	9:45	4/11/95	13:38
Geophys.Logging:	4/14/95	13:00	4/14/95	16:00
Casing:				
2" PVC	4/21/95	8:00	4/21/95	8:18
6" Steel	4/10/95	14:05	4/10/95	16:21
Filter Placement:	4/21/95	8:32	4/21/95	9:12
Cementing:				
Development				
Bentonite Grout	4/21/95	9:20	4/21/95	9:50
Bentonite Seal	4/21/95	9:15	4/21/95	9:18

Well Design & Specifications

Basis: Geologic Log X Geophysical Log X

Casing string(s): C = Casing S = Screen

Depth			String(s)	Elevation		
+ 2.33	-	199.40	C1	461.55	-	259.82
199.40	-	209.20	S1	259.82	-	250.02
209.20	-	209.50	C2	250.02	-	249.72
+ 0.50	-	98.00	C3	459.70	-	361.22
	-				-	
	-				-	

Casing: C1 2 in. dia. Schedule 80 PVC, flush threaded with O-rings

C2 2 in. dia. threaded PVC end cap (4 in. long or 0.33 ft.) (C3-see comments)

Screen: S1 2 in. dia. Schedule 80 PVC, 0.010 in. machine cut slot, flush threaded with O-rings

Sand Pack: 16-35 mesh Silica Sand, 195.8-210.0 ft.

Filter Pack: Less than 50 mesh Silica Sand, 194.7-195.8 ft.

Grout Seal: Wyo-Ben Grout Well Bentonite Slurry, 3.0-176.0 ft., Neat cement, 3.0-98.0 ft.

Bentonite Seal: Extra high yield Wyo-Ben (100%) Slurry, 176.0-194.7 ft.

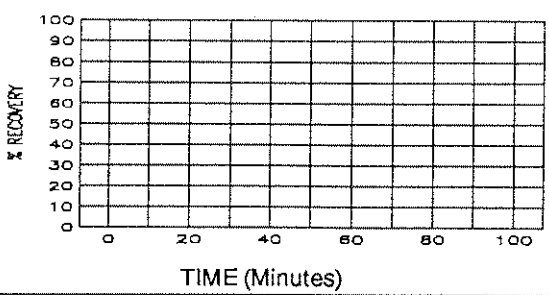
Concrete: 0.0-3.0 ft.

Well Development

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)

Recovery Data:



Comments:

Surface Casing C3: 6 1/8 in. ID / 6 5/8 in. OD Steel Casing

Supervised by J. Miller

Job Number 943-2848

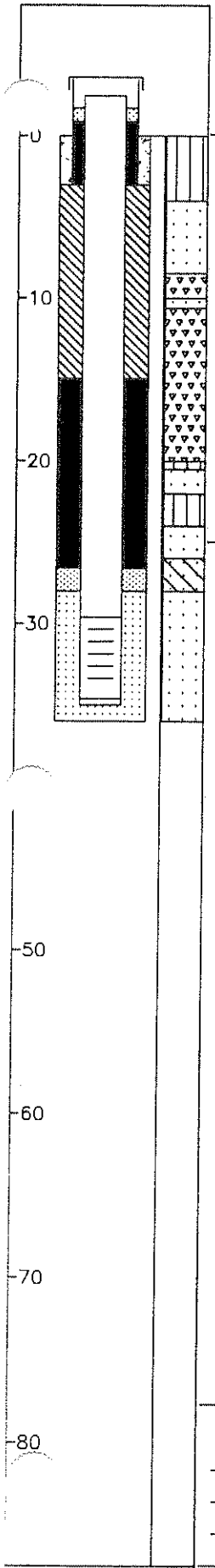
Site LAIDLAW/OU2 RI-FS/MO

File Name PZ111SD

Well No. PZ-112-AS

Boring No. X-Ref: PZ-112-AS

PIEZOMETER CONSTRUCTION SUMMARY



Not to Scale

Survey Coords: Northing: 1069002 ft. Easting: 515674 ft.

Elevation Ground Level 457.9 ft. NGVD

Top of PVC Casing 459.83 ft. NGVD

Drilling Summary:

Total Depth 36.0 ft.

Borehole Diameter 8 1/4 in.

Casing Stickup Height 1.90 ft.

Driller Layne-Western, St. Louis, MO

Rig CME 75

Bit(s) 4 1/4 in. ID Hollow Stem Auger Bit

Drilling Fluid Auger-None

Protective Casing 8x8 in. Square Steel, by 5 ft. long

Construction Time log:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling				
CME 75	4/10/95	13:20	4/10/95	15:45
Schramm Rotary				
Geophys.Logging:				
Casing:	4/10/95	16:30	4/10/95	16:40
Filter Placement:	4/10/95	16:40	4/10/95	16:59
Cementing:				
Development				
Bentonite Grout	4/10/95	17:15	4/10/95	17:40
Bentonite Seal	4/10/95	17:12	4/10/95	17:15

Well Design & Specifications

Basis: Geologic Log X Geophysical Log

Casing string(s): C = Casing S = Screen

Depth			String(s)	Elevation		
+ 1.90	-	29.60	C1	459.83	-	428.33
29.60	-	34.40	S1	428.33	-	423.53
34.40	-	34.73	C2	423.53	-	423.20
	-				-	
	-				-	
	-				-	

Casing: C1 2 in. dia. Schedule 80 PVC, flush threaded with O-rings

C2 2 in. dia. threaded PVC end cap (4 in. long or 0.33 ft.)

Screen: S1 2 in. dia. Schedule 80 PVC, 0.010 in. machine cut slot, flush threaded with O-rings

Sand Pack: 16-35 mesh Silica Sand, 28.0-36.0 ft.

Filter Pack: Less than 50 mesh Silica Sand, 26.6-28.0 ft.

Grout Seal: Wyo-Ben Grout Well Bentonite Slurry, 3.0-15.0 ft.

Bentonite Seal: Extra high yield Wyo-Ben (100%) Slurry, 15.0-26.6 ft.

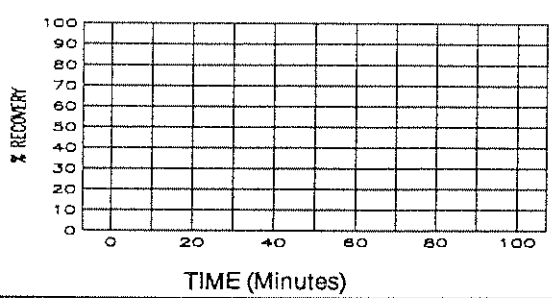
Concrete: 0.0-3.0 ft.

Well Development

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)

Recovery Data:



Comments:

Supervised by S. Cosio

Job Number 943-2848

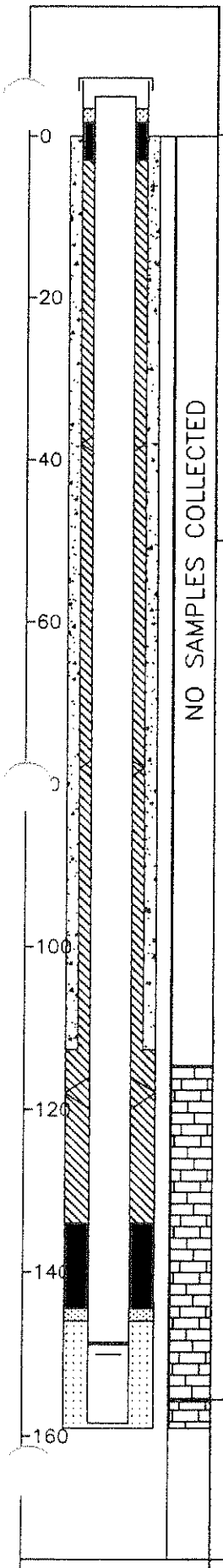
Site LAIDLAW/OU2 RI-FS/MO

File Name PZ112AS

Well No. PZ-113-SS

Boring No. X-Ref: PZ-113-SS

PIEZOMETER CONSTRUCTION SUMMARY



Not to Scale

Survey Coords: Northing: 1069242 ft.
Easting: 515777 ft.

Elevation Ground Level 460.0 ft. NGVD
Top of PVC Casing 461.77 ft. NGVD

Drilling Summary:

Total Depth 159.0 ft.
Borehole Diameter 9 3/4 in. (0.0–115.0 ft.) 5 7/8 in. (115.0–159.0 ft.)
Casing Stickup Height 1.81 ft.
Driller Layne-Western
St. Louis, MO

Rig CME 75, Schramm Portadrill T660H
Bit(s) 6 1/4 in. ID Hollow Stem Auger Bit, NX Core,
5 7/8 in. Button Bit and 9 3/4 in. Tricone Bit
Drilling Fluid Auger-None, NX Core Water,
Air and Mud Rotary
Protective Casing 8x8 in. Square Steel, by 5 ft. long

Construction Time log:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling				
CME 75	5/9/95	9:30	5/9/95	15:40
Schramm Rotary	5/20/95	13:30	5/20/95	14:30
Geophys.Logging:				
Casing:				
2" PVC	5/20/95	14:35	5/20/95	14:45
6" Steel	5/7/95	7:30	5/7/95	16:00
Filter Placement:	5/20/95	14:50	5/20/95	15:40
Cementing:				
Development				
Bentonite Grout	5/20/95	16:05	5/20/95	16:30
Bentonite Seal	5/20/95	15:55	5/20/95	16:05

Well Design & Specifications

Basis: Geologic Log X Geophysical Log
Casing string(s): C = Casing S = Screen

Depth			String(s)	Elevation		
+ 1.81	-	148.57	C1	461.77	-	311.39
148.57	-	158.37	S1	311.39	-	301.59
158.37	-	158.70	C2	301.59	-	301.26
+ 0.50	-	115.00	C3	460.40	-	344.96
	-				-	
	-				-	

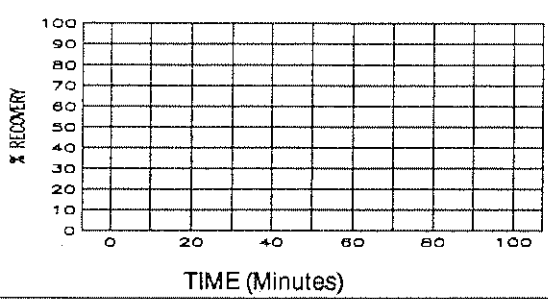
Casing: C1 2 in. dia. Schedule 80 PVC, flush threaded with O-rings
C2 2 in. dia. threaded PVC end cap (4 in. long or 0.33 ft.) (C3-see comments)
Screen: S1 2 in. dia. Schedule 80 PVC, 0.010 in. machine cut slot, flush threaded with O-rings
Sand Pack: 16-35 mesh Silica Sand, 146.0-159.0 ft.
Filter Pack: Less than 50 mesh Silica Sand, 144.5-146.0 ft.
Grout Seal: Wyo-Ben Grout Well Bentonite Slurry, 3.0-134.0 ft., Neat cement, 3.0-115.0 ft.
Bentonite Seal: Extra high yield Wyo-Ben (100%) Slurry, 134.0-144.5 ft.
Concrete: 0.0-3.0 ft.

Well Development

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)

Recovery Data:



Comments: Surface Casing C3: 6 1/8 in. ID / 6 5/8 in. OD Steel Casing

Supervised by B. Tilton
Job Number 943-2848

Site LAIDLAW/OU2 RI-FS/MO
File Name PZ113SS

Well No. PZ-113-AD

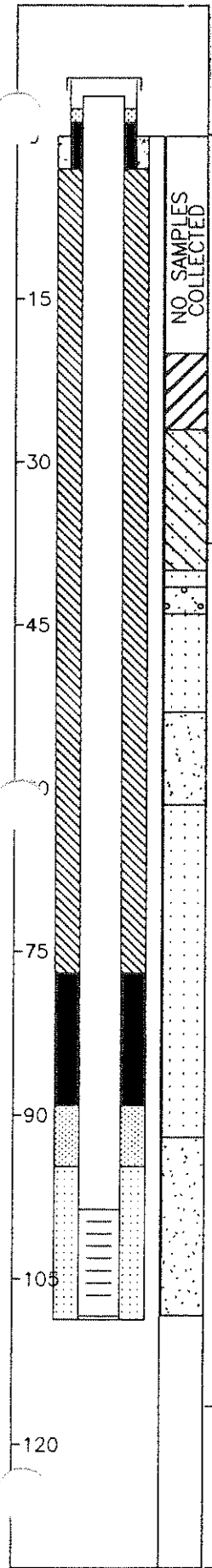
Boring No. X-Ref: PZ-113-AD

PIEZOMETER CONSTRUCTION SUMMARY

Survey Coords: Northing: 1069233 ft. Easting: 515760 ft.

Elevation Ground Level 459.9 ft. NGVD

Top of PVC Casing 461.46 ft. NGVD



Not to Scale

Drilling Summary:

Total Depth 108.7 ft.
Borehole Diameter 10 1/4 in.
Casing Stickup Height 1.60 ft.
Driller Layne-Western
St. Louis, MO

Rig CME 75
Bit(s) 6 1/4 in. ID Hollow Stem Auger Bit

Drilling Fluid Auger-None

Protective Casing 8x8 in. Square Steel, by 5 ft. long

Construction Time log:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling				
CME 75	5/3/95	8:00	5/3/95	9:30
Schramm Rotary				
Geophys.Logging:				
Casing:	5/3/95	13:20	5/3/95	13:30
Filter Placement:	5/3/95	13:30	5/3/95	15:10
Cementing:				
Development				
Bentonite Grout	5/3/95	15:30	5/3/95	18:30
Bentonite Seal	5/3/95	15:10	5/3/95	15:30

Well Design & Specifications

Basis: Geologic Log X Geophysical Log

Casing string(s): C = Casing S = Screen

Depth			String(s)	Elevation		
+ 1.60	-	98.60	C1	461.46	-	361.26
98.60	-	108.40	S1	361.26	-	351.46
108.40	-	108.73	C2	351.46	-	351.13
	-				-	
	-				-	
	-				-	

Casing: C1 2 in. dia. Schedule 80 PVC, flush threaded with O-rings
C2 2 in. dia. threaded PVC end cap (4 in. long or 0.33 ft.)

Screen: S1 2 in. dia. Schedule 80 PVC, 0.010 in. machine cut slot, flush threaded with O-rings

Sand Pack: 16-35 mesh Silica Sand, 94.7-108.7 ft.

Filter Pack: Less than 50 mesh Silica Sand, 89.1-94.7 ft.

Grout Seal: Wyo-Ben Grout Well Bentonite Slurry, 3.0-77.0 ft.

Bentonite Seal: Extra high yield Wyo-Ben (100%) Slurry, 77.0-89.1 ft.

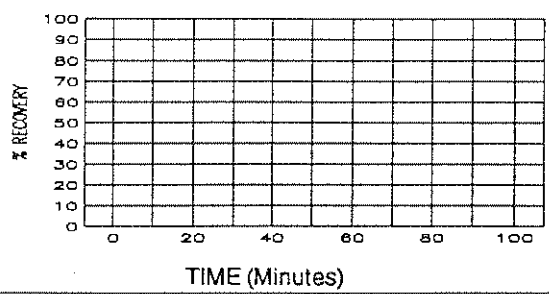
Concrete: 0.0-3.0 ft.

Well Development

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)

Recovery Data:



Comments:

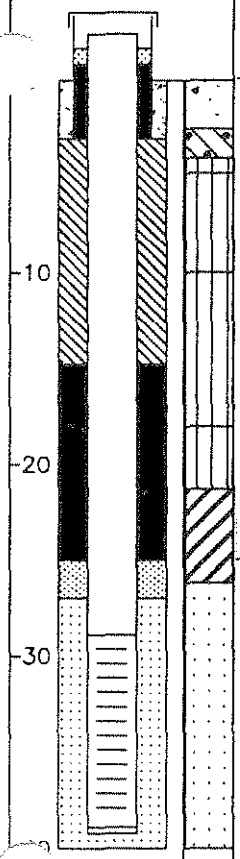
Supervised by D. Alloway
Job Number 943-2848

Site LAIDLAW/OU2 RI-FS/MO
File Name PZ113AD

Well No. PZ-113-AS

Boring No. X-Ref: PZ-113-AS

PIEZOMETER CONSTRUCTION SUMMARY



Not to Scale

Survey Coords: Northing: 1069224 ft. Easting: 515748 ft.

Elevation Ground Level 459.9 ft. NGVD

Top of PVC Casing 461.42 ft. NGVD

Drilling Summary:

Total Depth 40.0 ft.

Borehole Diameter 8 1/4 in.

Casing Stickup Height 1.50 ft.

Driller Layne-Western, St. Louis, MO

Rig CME 75

Bit(s) 4 1/4 in. ID Hollow Stem Auger Bit

Drilling Fluid Auger-None

Protective Casing 8x8 in. Square Steel, by 5 ft. long

Construction Time log:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling				
CME 75	4/11/95	11:07	4/11/95	14:58
Schramm Rotary				
Geophys.Logging:				
Casing:	4/11/95	15:00	4/11/95	15:10
Filter Placement:	4/11/95	15:12	4/11/95	15:29
Cementing:				
Development				
Bentonite Grout	4/11/95	15:48	4/11/95	16:20
Bentonite Seal	4/11/95	15:40	4/11/95	15:48

Well Design & Specifications

Basis: Geologic Log X Geophysical Log

Casing string(s): C = Casing S = Screen

Depth			String(s)	Elevation		
+ 1.50	-	28.90	C1	461.42	-	431.02
28.90	-	38.70	S1	431.02	-	421.22
38.70	-	39.03	C2	421.22	-	420.89
	-				-	
	-				-	
	-				-	

Casing: C1 2 in. dia. Schedule 80 PVC, flush threaded with O-rings

C2 2 in. dia. threaded PVC end cap (4 in. long or 0.33 ft.)

Screen: S1 2 in. dia. Schedule 80 PVC, 0.010 in. machine cut slot, flush threaded with O-rings

Sand Pack: 16-35 mesh Silica Sand, 27.0-40.0 ft.

Filter Pack: Less than 50 mesh Silica Sand, 25.0-27.0 ft.

Grout Seal: Wyo-Ben Grout Well Bentonite Slurry, 3.0-15.0 ft.

Bentonite Seal: Extra high yield Wyo-Ben (100%) Slurry, 15.0-25.0 ft.

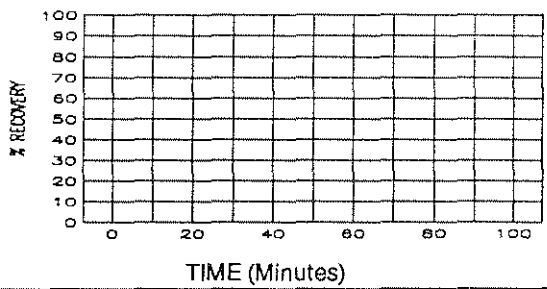
Concrete: 0.0-3.0 ft.

Well Development

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)

Recovery Data:



Comments:

Supervised by S. Cosio

Job Number 943-2848

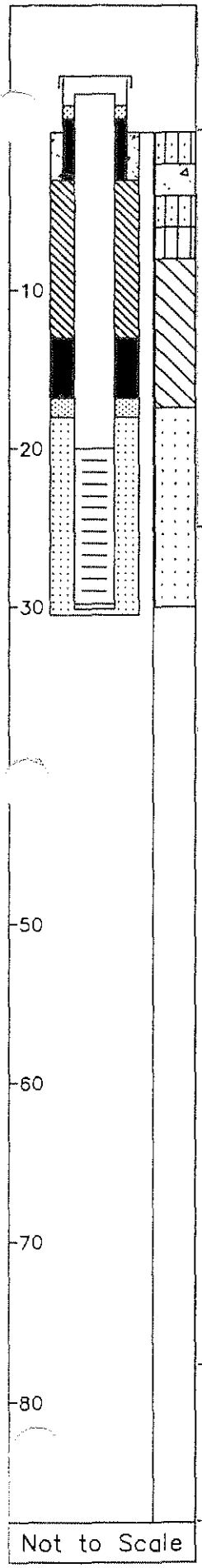
Site LAIDLAW/OU2 RI-FS/MO

File Name PZ113AS

Well No. PZ-114-AS

Boring No. X-Ref: PZ-114-AS

PIEZOMETER CONSTRUCTION SUMMARY



Not to Scale

Survey Coords: Northing: 1069419 ft. Easting: 516768 ft.

Elevation Ground Level 449.8 ft. NGVD

Top of PVC Casing 451.31 ft. NGVD

Drilling Summary:

Total Depth 30.5 ft.

Borehole Diameter 10 1/4 in.

Casing Stickup Height 1.53 ft.

Driller Layne-Western, St. Louis, MO

Rig CME 75

Bit(s) 6 1/4 in. ID Hollow Stem Auger Bit

Drilling Fluid Auger-None

Protective Casing 8x8 in. Square Steel, by 5 ft. long

Construction Time log:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling				
CME 75	4/20/95	11:50	4/20/95	12:40
Schramm Rotary				
Geophys.Logging:				
Casing:	4/20/95	13:00	4/20/95	13:30
Filter Placement:	4/20/95	13:15	4/20/95	14:00
Cementing:				
Development				
Bentonite Grout	4/20/95	13:45	4/20/95	14:45
Bentonite Seal	4/20/95	13:30	4/20/95	13:45

Well Design & Specifications

Basis: Geologic Log X Geophysical Log

Casing string(s): C = Casing S = Screen

Depth			String(s)	Elevation		
+ 1.53	-	19.90	C1	451.31	-	429.88
19.90	-	29.70	S1	429.88	-	420.08
29.70	-	30.03	C2	420.08	-	419.75

Casing: C1 2 in. dia. Schedule 80 PVC, flush threaded with O-rings

C2 2 in. dia. threaded PVC end cap (4 in. long or 0.33 ft.)

Screen: S1 2 in. dia. Schedule 80 PVC, 0.010 in. machine cut slot, flush threaded with O-rings

Sand Pack: 16-35 mesh Silica Sand, 18.0-30.5 ft.

Filter Pack: Less than 50 mesh Silica Sand, 16.8-18.0 ft.

Grout Seal: Wyo-Ben Grout Well Bentonite Slurry, 3.0-13.0 ft.

Bentonite Seal: Extra high yield Wyo-Ben (100%) Slurry, 13.0-16.8 ft.

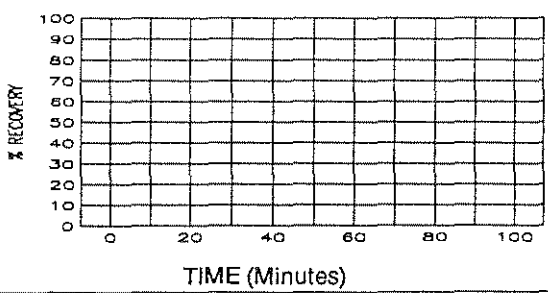
Concrete: 0.0-3.0 ft.

Well Development

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)

Recovery Data:



Comments:

Supervised by D. Alloway

Job Number 943-2848

Site LAIDLAW/OU2 RI-FS/MO

File Name PZ114AS

Well No. PZ-115-SS

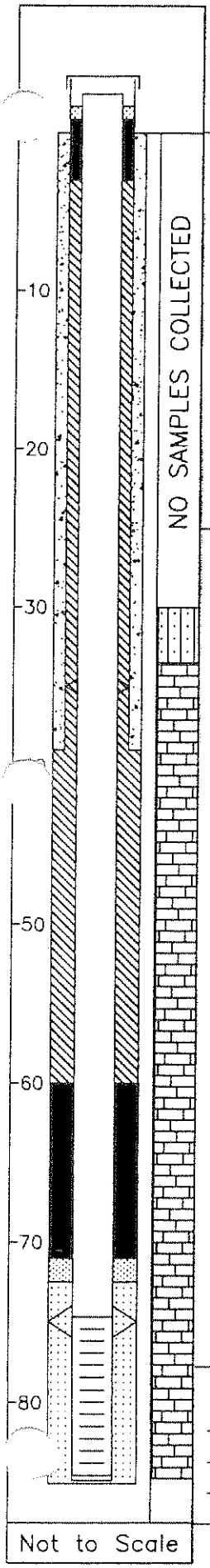
Boring No. X-Ref: PZ-115-SS

PIEZOMETER CONSTRUCTION SUMMARY

Survey Coords: Northing: 1069409 ft. Easting: 516755 ft.

Elevation Ground Level 450.6 ft. NGVD

Top of PVC Casing 452.30 ft. NGVD



Not to Scale

Drilling Summary:

Total Depth	85.0 ft.
Borehole Diameter	9 7/8 in. (0.0-39.0 ft.) 5 7/8 in. (39.0-85.0 ft.)
Casing Stickup Height	1.69 ft.
Driller	Layne-Western St. Louis, MO
Rig	CME 75, Schramm Portadrill T660H
Bit(s)	6 1/4 in. ID Hollow Stem Auger Bit, NX Core, 5 7/8 in. Button Bit and 9 7/8 in. Tricone Bit
Drilling Fluid	Auger-None, NX Core Water, Air and Mud Rotary
Protective Casing	8x8 in. Square Steel, by 5 ft. long

Construction Time log:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling				
CME 75	5/5/95	8:30	5/5/95	10:00
Schramm Rotary	5/21/95	8:30	5/21/95	10:00
Geophys.Logging:				
Casing:				
2" PVC	5/21/95	10:15	5/21/95	10:20
6" Steel	5/9/95	9:15	5/9/95	12:00
Filter Placement:	5/21/95	10:40	5/21/95	11:00
Cementing:				
Development				
Bentonite Grout	5/21/95	11:10	5/21/95	11:30
Bentonite Seal	5/21/95	11:00	5/21/95	11:10

Well Design & Specifications

Basis: Geologic Log X Geophysical Log

Casing string(s): C = Casing S = Screen

Depth			String(s)	Elevation		
+ 1.69	-	74.68	C1	452.30	-	375.93
74.68	-	84.48	S1	375.93	-	366.13
84.48	-	84.81	C2	366.13	-	365.80
+ 1.00	-	39.00	C3	451.60	-	411.61
	-				-	
	-				-	

Casing: C1 2 in. dia. Schedule 80 PVC, flush threaded with O-rings

C2 2 in. dia. threaded PVC end cap (4 in. long or 0.33 ft.) (C3-see comments)

Screen: S1 2 in. dia. Schedule 80 PVC, 0.010 in. machine cut slot, flush threaded with O-rings

Sand Pack: 16-35 mesh Silica Sand, 72.5-85.0 ft.

Filter Pack: Less than 50 mesh Silica Sand, 71.0-72.5 ft.

Grout Seal: Wyo-Ben Grout Well Bentonite Slurry, 3.0-60.0 ft., Neat cement, 3.0-39.0 ft.

Bentonite Seal: Extra high yield Wyo-Ben (100%) Slurry, 60.0-71.0 ft.

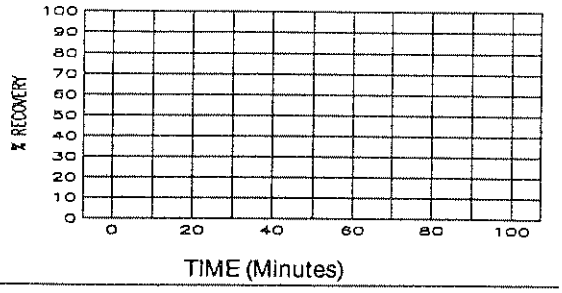
Concrete: 0.0-3.0 ft.

Well Development

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)

Recovery Data:



Comments:

Surface Casing C3: 6 1/8 in. ID / 6 5/8 in. OD Steel Casing

Supervised by B. Tilton

Job Number 943-2848

Site LAIDLAW/OU2 RI-FS/MO

File Name PZ115SS

Well No. PZ-116-SS

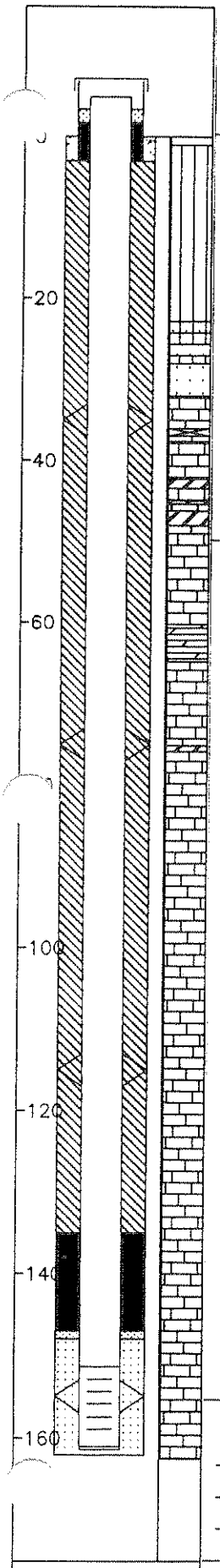
Boring No. X-Ref: PZ-116-SS

PIEZOMETER CONSTRUCTION SUMMARY

Survey Coords: Northing: 1066410 ft. Easting: 515844 ft.

Elevation Ground Level 483.1 ft. NGVD

Top of PVC Casing 484.87 ft. NGVD



Not to Scale

Drilling Summary:

Total Depth 162.0 ft.

Borehole Diameter 10 1/4 in. (0.0–33.0 ft.) 5 7/8 in. (33.0–162.0 ft.)

Casing Stickup Height 1.80 ft.

Driller Layne-Western, St. Louis, MO

Rig CME 75, Schramm Portadrill T660H

Bit(s) 6 1/4 in. ID Hollow Stem Auger Bit, NX Core, 5 7/8 in. Button Bit for Reaming

Drilling Fluid Auger-None, NX Core Water, Air Rotary

Protective Casing 8x8 in. Square Steel, by 5 ft. long

Construction Time log:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling				
CME 75	6/5/95	7:30	6/14/95	13:25
Schramm Rotary	6/20/95	8:00	6/20/95	11:45
Geophys.Logging:				
Casing:	6/20/95	12:30	6/20/95	12:50
Filter Placement:	6/20/95	12:55	6/20/95	13:00
Cementing:				
Development				
Bentonite Grout	6/20/95	13:30	6/20/95	15:30
Bentonite Seal	6/20/95	13:15	6/20/95	13:30

Well Design & Specifications

Basis: Geologic Log X Geophysical Log

Casing string(s): C = Casing S = Screen

Depth			String(s)	Elevation		
+ 1.80	–	151.40	C1	484.87	–	331.67
151.40	–	161.00	S1	331.67	–	322.07
161.00	–	161.33	C2	322.07	–	321.74

Casing: C1 2 in. dia. Schedule 80 PVC, flush threaded with O-rings

C2 2 in. dia. threaded PVC end cap (4 in. long or 0.33 ft.)

Screen: S1 2 in. dia. Schedule 80 PVC, 0.010 in. machine cut slot, flush threaded with O-rings

Sand Pack: 16–35 mesh Silica Sand, 148.0–162.0 ft.

Filter Pack: Less than 50 mesh Silica Sand, 147.0–148.0 ft.

Grout Seal: Wyo-Ben Grout Well Bentonite Slurry, 3.0–135.0 ft.

Bentonite Seal: Extra high yield Wyo-Ben (100%) Slurry, 135.0–147.0 ft.

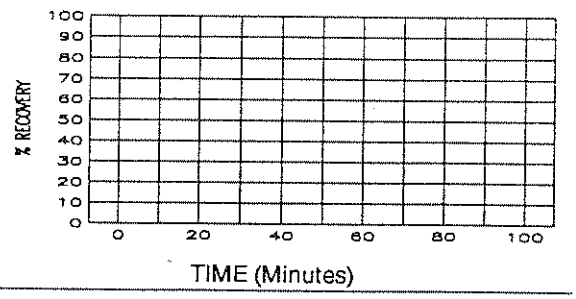
Concrete: 0.0–3.0 ft.

Well Development

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)

Recovery Data:



Comments:

Supervised by B. Tilton

Job Number 943-2848

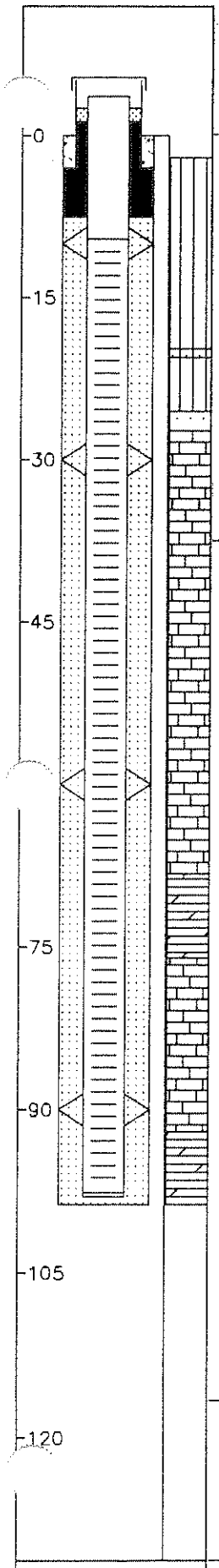
Site LAIDLAW/OU2 RI-FS/MO

File Name PZ116SS

Well No. PZ-200-SS

Boring No. X-Ref: PZ-200-SS

PIEZOMETER CONSTRUCTION SUMMARY



Not to Scale

Survey Coords: Northing: 1068496 ft. Easting: 516972 ft.

Elevation Ground Level 483.6 ft. NGVD

Top of PVC Casing 485.63 ft. NGVD

Drilling Summary:

Total Depth 98.7 ft.

Borehole Diameter 10 1/4 in. (0.0-27.5 ft.) 5 7/8 in. (27.5-98.3 ft.)

Casing Stickup Height 2.02 ft.

Driller Layne-Western
St. Louis, MO

Rig CME 75, Schramm Portadrill T660H

Bit(s) 6 1/4 in. ID Hollow Stem Auger Bit, NX Core, 5 7/8 in. Button Bit for Reaming

Drilling Fluid Auger-None, NX Core Water, Air Rotary

Protective Casing 8x8 in. Square Steel, by 5 ft. long

Construction Time log:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling				
CME 75	2/10/95	10:58	2/10/95	14:05
Schramm Rotary	2/28/95	7:30	2/28/95	9:30
Geophys.Logging:				
Casing:	2/28/95	9:45	2/28/95	10:10
Filter Placement:	2/28/95	10:30	2/28/95	11:30
Cementing:				
Development				
Bentonite Grout				
Bentonite Seal	2/28/95	11:30	2/28/95	11:45

Well Design & Specifications

Basis: Geologic Log X Geophysical Log

Casing string(s): C = Casing S = Screen

Depth			String(s)	Elevation		
+ 2.02	-	9.62	C1	485.63	-	473.99
9.62	-	97.64	S1	473.99	-	385.97
97.64	-	97.97	C2	385.97	-	385.64

Casing: C1 2 in. Schedule 80 PVC, flush threaded with O-rings

C2 2 in. dia. threaded PVC end cap (4 in. long or 0.33 ft.)

Screen: S1 2 in. dia. Schedule 80 PVC, 0.010 in. machine cut slot, flush threaded with O-rings

Sand Pack: 16-35 mesh Silica Sand, 7.5-98.7 ft.

Filter Pack:

Grout Seal:

Bentonite Seal: Medium Bentonite Chips, 3.0-7.5 ft.

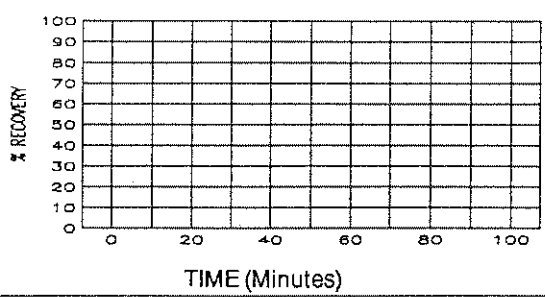
Concrete: 0.0-3.0 ft.

Well Development

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)

Recovery Data:



Comments:

Supervised by B. Tilton

Job Number 943-2848

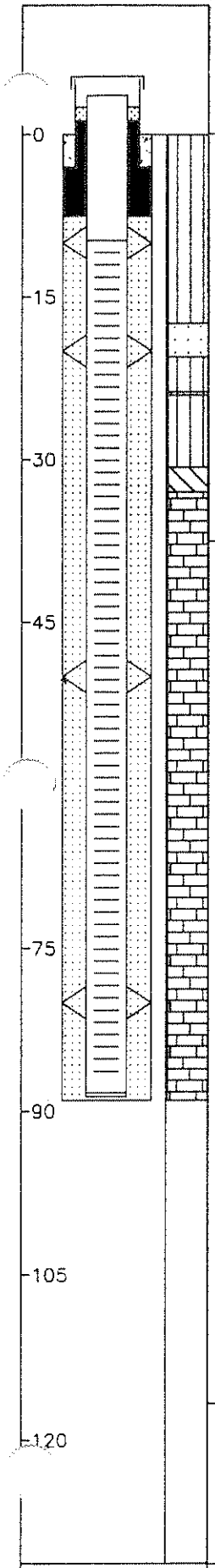
Site LAIDLAW/OU2 RI-FS/MO

File Name PZ200SS

Well No. PZ-201-SS

Boring No. X-Ref: PZ-201-SS

PIEZOMETER CONSTRUCTION SUMMARY



Not to Scale

Survey Coords: Northing: 1067820 ft. Easting: 516862 ft.

Elevation Ground Level 478.0 ft. NGVD

Top of PVC Casing 480.33 ft. NGVD

Drilling Summary:

Total Depth 89.0 ft.

Borehole Diameter 10 1/4 in. (0.0–33.0 ft.) 5 7/8 in. (33.0–39.0 ft.)

Casing Stickup Height 2.32 ft.

Driller Layne-Western St. Louis, MO

Rig CME 75, Schramm Portadrill T660H

Bit(s) 6 1/4 in. ID Hollow Stem Auger Bit, NX Core, 5 7/8 in. Button Bit for Reaming

Drilling Fluid Auger–None, NX Core Water, Air Rotary

Protective Casing 8x8 in. Square Steel, by 5 ft. long

Construction Time log:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling				
CME 75	2/15/95	8:30	2/15/95	10:30
Schramm Rotary	3/6/95	15:00	3/6/95	16:00
Geophys.Logging:				
Casing:	3/6/95	16:00	3/6/95	16:15
Filter Placement:	3/6/95	16:00	3/6/95	17:40
Cementing:				
Development				
Bentonite Grout Bentonite Seal	3/6/95	17:40	3/6/95	17:45

Well Design & Specifications

Basis: Geologic Log X Geophysical Log

Casing string(s): C = Casing S = Screen

Depth			String(s)	Elevation		
+ 2.32	–	9.75	C1	480.33	–	468.26
9.75	–	88.31	S1	468.26	–	389.70
88.31	–	88.64	C2	389.70	–	389.37
	–				–	
	–				–	
	–				–	

Casing: C1 2 in. dia. Schedule 80 PVC, flush threaded with O-rings

C2 2 in. dia. threaded PVC end cap (4 in. long or 0.33 ft.)

Screen: S1 2 in. dia. Schedule 80 PVC, 0.010 in. machine cut slot, flush threaded with O-rings

Sand Pack: 16–35 mesh Silica Sand, 7.5–89.0 ft.

Filter Pack:

Grout Seal:

Bentonite Seal: Medium Bentonite Chips, 3.0–7.5 ft.

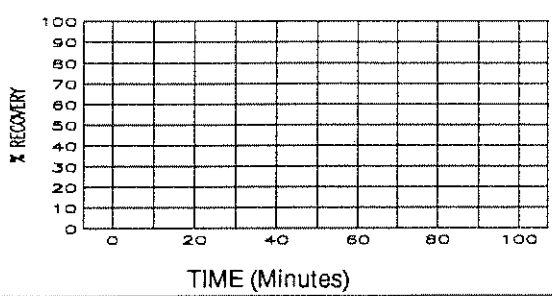
Concrete: 0.0–3.0 ft.

Well Development

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)

Recovery Data:



Comments:

Supervised by B. Tilton

Job Number 943–2848

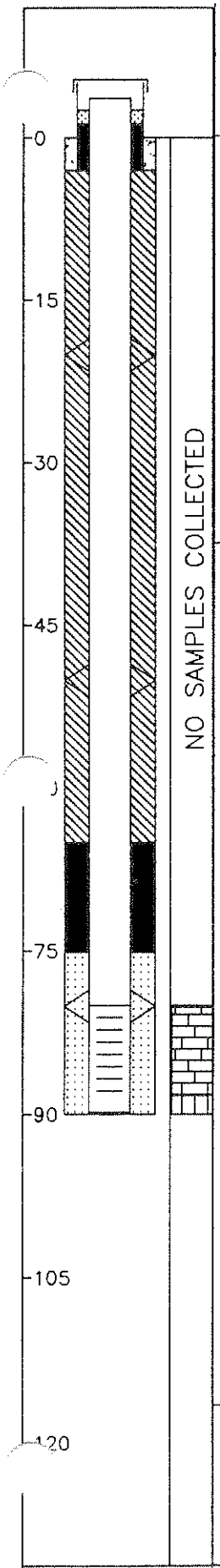
Site LAIDLAW/OU2 RI–FS/MO

File Name PZ201SS

Well No. PZ-201A-SS

Boring No. X-Ref: PZ-201A-SS

PIEZOMETER CONSTRUCTION SUMMARY



Not to Scale

Survey Coords: Northing: 1067832 ft. Easting: 516746 ft.

Elevation Ground Level 478.4 ft. NGVD

Top of PVC Casing 480.16 ft. NGVD

Drilling Summary:

Total Depth 90.0 ft.

Borehole Diameter 10 1/4 in. (0.0–33.0 ft.) 5 7/8 in. (33.0–90.0 ft.)

Casing Stickup Height 1.81 ft.

Driller Layne-Western, St. Louis, MO

Rig CME 75, Schramm Portadrill T660H

Bit(s) 6 1/4 in. ID Hollow Stem Auger Bit, NX Core, 5 7/8 in. Button Bit for Reaming

Drilling Fluid Auger–None, NX Core Water, Air Rotary

Protective Casing 8x8 in. Square Steel, by 5 ft. long

Construction Time log:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling				
CME 75				
Schramm Rotary	4/22/95	11:00	4/23/95	7:45
Geophys.Logging:				
Casing:	4/23/95	7:50	4/22/95	8:00
Filter Placement:	4/23/95	8:00	4/23/95	9:10
Cementing:				
Development				
Bentonite Grout	4/23/95	9:20	4/23/95	11:00
Bentonite Seal	4/23/95	9:00	4/23/95	9:20

Well Design & Specifications

Basis: Geologic Log X Geophysical Log

Casing string(s): C = Casing S = Screen

Depth			String(s)	Elevation		
+ 1.81	–	80.00	C1	480.16	–	398.35
80.00	–	89.80	S1	398.35	–	388.55
89.80	–	90.13	C2	388.55	–	388.22

Casing: C1 2 in. dia. Schedule 80 PVC, flush threaded with O-rings

C2 2 in. dia. threaded PVC end cap (4 in. long or 0.33 ft.)

Screen: S1 2 in. dia. Schedule 80 PVC, 0.010 in. machine cut slot, flush threaded with O-rings

Sand Pack: 16–35 mesh Silica Sand, 75.1–90.0 ft.

Filter Pack:

Grout Seal: Wyo-Ben Grout Well Bentonite Slurry, 3.0–65.0 ft.

Bentonite Seal: Extra high yield Wyo-Ben (100%) Slurry, 65.0–75.1 ft.

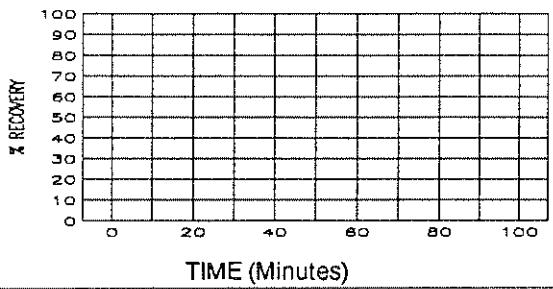
Concrete: 0.0–3.0 ft.

Well Development

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)

Recovery Data:



Comments:

Supervised by D. Alloway

Job Number 943-2848

Site LAIDLAW/OU2 RI-FS/MO

File Name PZ201ASS

Well No. PZ-202-SS

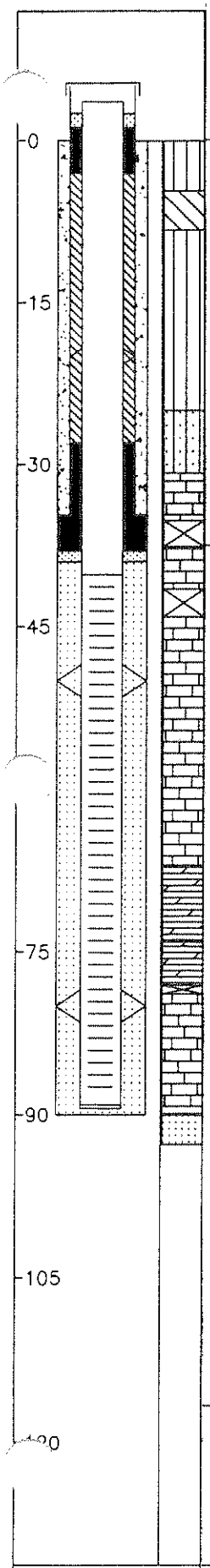
Boring No. X-Ref: PZ-202-SS

PIEZOMETER CONSTRUCTION SUMMARY

Survey Coords: Northing: 1067320 ft. Easting: 517102 ft.

Elevation Ground Level 479.0 ft. NGVD

Top of PVC Casing 481.17 ft. NGVD



Drilling Summary:

Total Depth 90.0 ft.

Borehole Diameter 10 1/4 in. (0.0–33.5 ft.) 5 7/8 in. (33.5–90.0 ft.)

Casing Stickup Height 2.16 ft.

Driller Layne-Western, St. Louis, MO

Rig CME 75, Schramm Portadrill T660H

Bit(s) 6 1/4 in. ID Hollow Stem Auger Bit, NX Core, 5 7/8 in. Button Bit for Reaming

Drilling Fluid Auger-None, NX Core Water, Air Rotary

Protective Casing 8x8 in. Square Steel, by 5 ft. long

Construction Time log:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling				
CME 75	2/26/95	7:50	2/27/95	11:05
Schramm Rotary	3/11/95	10:30	3/12/95	8:00
Geophys. Logging:				
Casing:				
2" PVC	3/12/95	8:10	3/12/95	8:30
6" Steel	3/11/95	14:15	3/11/95	14:30
Filter Placement:	3/12/95	8:35	3/12/95	9:10
Cementing:				
Development				
Bentonite Grout	3/12/95	9:35	3/12/95	10:30
Bentonite Seal	3/12/95	9:20	3/12/95	9:35

Well Design & Specifications

Basis: Geologic Log X Geophysical Log

Casing string(s): C = Casing S = Screen

Depth			String(s)	Elevation		
+ 2.16	-	40.20	C1	481.17	-	438.81
40.20	-	89.10	S1	438.81	-	389.91
89.10	-	89.43	C2	389.91	-	389.58
+ 1.00	-	34.00	C3	480.00	-	445.01
	-				-	
	-				-	

Casing: C1 2 in. dia. Schedule 80 PVC, flush threaded with O-rings

C2 2 in. dia. threaded PVC end cap (4 in. long or 0.33 ft.) (C3-see comments)

Screen: S1 2 in. dia. Schedule 80 PVC, 0.010 in. machine cut slot, flush threaded with O-rings

Sand Pack: 16-35 mesh Silica Sand, 39.0-90.0 ft.

Filter Pack: Less than 50 mesh Silica Sand, 38.0-39.0ft.

Grout Seal: Wyo-Ben Grout Well Bentonite Slurry, 3.0-28.0 ft., Neat cement, 3.0-34.0 ft.

Bentonite Seal: Extra high yield Wyo-Ben (100%) Slurry, 28.0-38.0 ft.

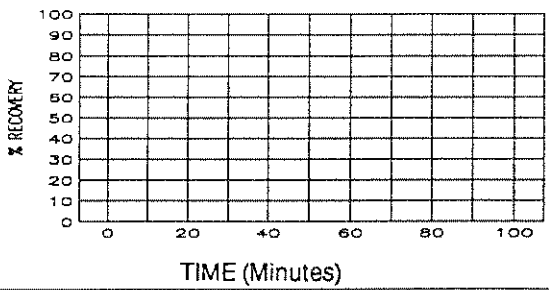
Concrete: 0.0-3.0 ft.

Well Development

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)

Recovery Data:



Comments:

Surface Casing C3: 6 1/8 in. ID / 6 5/8 in. OD Steel Casing

Not to Scale

Supervised by B. Tilton

Job Number 943-2848

Site LAIDLAW/OU2 RI-FS/MO

File Name PZ202SS

Well No. PZ-203-SS

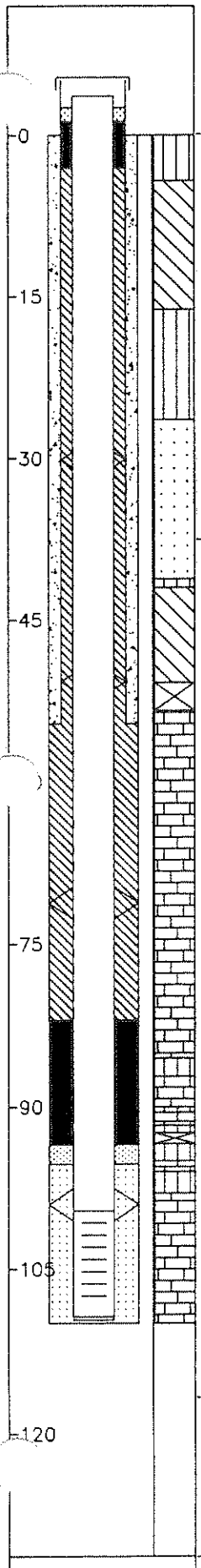
Boring No. X-Ref: PZ-203-SS

PIEZOMETER CONSTRUCTION SUMMARY

Survey Coords: Northing: 1066662 ft. Easting: 516608 ft.

Elevation Ground Level 484.2 ft. NGVD

Top of PVC Casing 486.59 ft. NGVD



Not to Scale

Drilling Summary:

Total Depth	110.0 ft.
Borehole Diameter	10 1/4 in. (0.0-56.0 ft.) 5 7/8 in. (56.0-110.0 ft.)
Casing Stickup Height	2.41 ft.
Driller	Layne-Western St. Louis, MO
Rig	CME 75, Schramm Portadrill T660H
Bit(s)	6 1/4 in. ID Hollow Stem Auger Bit, NX Core, 5 7/8 in. Button Bit and 9 7/8 in. Tricone Bit
Drilling Fluid	Auger-None, NX Core Water, Air and Mud Rotary
Protective Casing	8x8 in. Square Steel, by 5 ft. long

Construction Time log:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling				
CME 75	5/25/95	15:00	5/25/95	11:00
Schramm Rotary	6/3/95	7:20	6/3/95	8:30
Geophys.Logging:				
Casing:				
2" PVC	6/3/95	8:20	6/3/95	8:50
6" Steel	6/2/95	10:30	6/2/95	13:00
Filter Placement:	6/3/95	8:50	6/3/95	9:40
Cementing:				
Development				
Bentonite Grout	6/3/95	10:30	6/3/95	11:00
Bentonite Seal	6/3/95	9:40	6/3/95	10:30

Well Design & Specifications

Basis: Geologic Log X Geophysical Log

Casing string(s): C = Casing S = Screen

Depth			String(s)	Elevation		
+ 2.41	-	99.60	C1	486.59	-	384.58
99.60	-	109.40	S1	384.58	-	374.78
109.40	-	109.70	C2	374.78	-	374.48
+ 0.50	-	56.10	C3	484.70	-	428.08
	-				-	
	-				-	

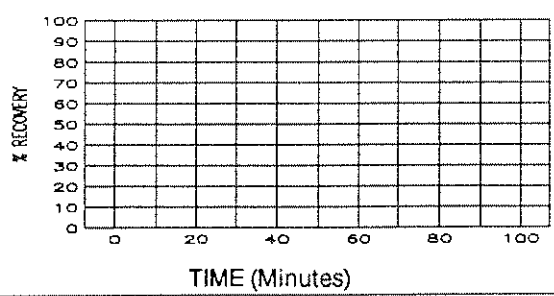
Casing: C1	2 in. dia. Schedule 80 PVC, flush threaded with O-rings
C2	2 in. dia. threaded PVC end cap (4 in. long or 0.33 ft.) (C3-see comments)
Screen: S1	2 in. dia. Schedule 80 PVC, 0.010 in. machine cut slot, flush threaded with O-rings
Sand Pack:	16-35 mesh Silica Sand, 95.3-110.0 ft.
Filter Pack:	Less than 50 mesh Silica Sand, 93.5-95.3 ft.
Grout Seal:	Wyo-Ben Grout Well Bentonite Slurry, 3.0-82.0 ft., Neat cement, 3.0-56.1 ft.
Bentonite Seal:	Extra high yield Wyo-Ben (100%) Slurry, 82.0-93.5 ft.
Concrete:	0.0-3.0 ft.

Well Development

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)

Recovery Data:



Comments: Surface Casing C3: 6 1/8 in. ID / 6 5/8 in. OD Steel Casing

Supervised by E. Swanson

Job Number 943-2848

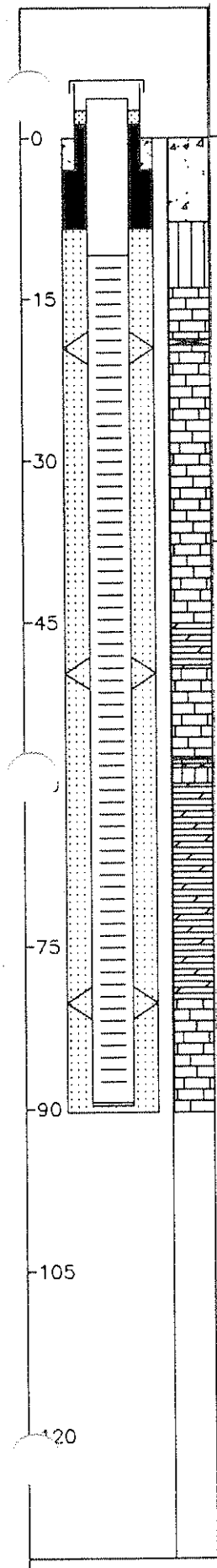
Site LAIDLAW/OU2 RI-FS/MO

File Name PZ203SS

Well No. PZ-204-SS

Boring No. X-Ref: PZ-204-SS

PIEZOMETER CONSTRUCTION SUMMARY



Not to Scale

Survey Coords: Northing: 1066427 ft.
Easting: 515533 ft.

Elevation Ground Level 467.0 ft. NGVD
Top of PVC Casing 469.63 ft. NGVD

Drilling Summary:

Total Depth 90.3 ft.
Borehole Diameter 10 1/4 in. (0.0–14.0 ft.) 5 7/8 in. (14.0–90.3 ft.)
Casing Stickup Height 2.60 ft.
Driller Layne-Western
St. Louis, MO

Rig CME 75, Schramm Portadrill T660H
Bit(s) 6 1/4 in. ID Hollow Stem Auger Bit,
NX Core, 5 7/8 in. Button Bit for Reaming
Drilling Fluid Auger-None, NX Core Water,
Air Rotary
Protective Casing 8x8 in. Square Steel, by 5 ft. long

Construction Time log:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling				
CME 75	3/7/95	15:50	3/8/95	7:45
Schramm Rotary	3/10/95	12:15	3/10/95	14:15
Geophys.Logging:				
Casing:	3/10/95	14:15	3/10/95	14:35
Filter Placement:	3/10/95	14:35	3/10/95	15:05
Cementing:				
Development				
Bentonite Grout Bentonite Seal	3/10/95	15:05	3/10/95	15:15

Well Design & Specifications

Basis: Geologic Log X Geophysical Log
Casing string(s): C = Casing S = Screen

Depth			String(s)	Elevation		
+ 2.60	-	10.95	C1	469.63	-	456.08
10.95	-	89.35	S1	456.08	-	377.68
89.35	-	89.68	C2	377.68	-	377.35

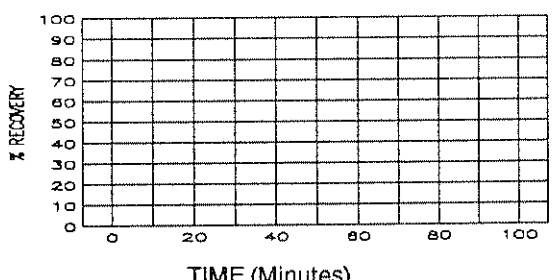
Casing: C1 2 in. dia. Schedule 80 PVC, flush threaded with O-rings
C2 2 in. dia. threaded PVC end cap (4 in. long or 0.33 ft.)
Screen: S1 2 in. dia. Schedule 80 PVC, 0.010 in. machine cut slot, flush threaded with O-rings
Sand Pack: 16-35 mesh Silica Sand, 8.5-90.3 ft.
Filter Pack:
Grout Seal:
Bentonite Seal: Medium Bentonite Chips, 3.0-8.5 ft.
Concrete: 0.0-3.0 ft.

Well Development

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)

Recovery Data:



Comments:

Supervised by B. Tilton
Job Number 943-2848

Site LAIDLAW/OU2 RI-FS/MO
File Name PZ204SS

Well No. PZ-204A-SS

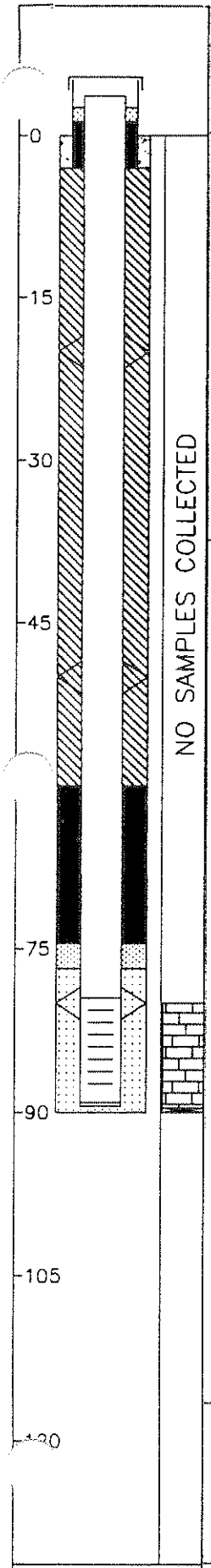
Boring No. X-Ref: PZ-204A-SS

PIEZOMETER CONSTRUCTION SUMMARY

Survey Coords: Northing: 1068430 ft. Easting: 515556 ft.

Elevation Ground Level 466.7 ft. NGVD

Top of PVC Casing 468.16 ft. NGVD



Not to Scale

Drilling Summary:

Total Depth 90.0 ft.

Borehole Diameter 10 1/4 in. (0.0-14.0 ft.) 5 7/8 in. (14.0-90.0 ft.)

Casing Stickup Height 1.50 ft.

Driller Layne-Western
St. Louis, MO

Rig CME 75, Schramm Portadrill T660H

Bit(s) 6 1/4 in. ID Hollow Stem Auger Bit,
NX Core, 5 7/8 in. Button Bit for Reaming

Drilling Fluid Auger-None, NX Core Water,
Air Rotary

Protective Casing 8x8 in. Square Steel, by 5 ft. long

Construction Time log:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling				
CME 75				
Schramm Rotary	6/21/95	8:00	6/21/95	14:00
Geophys.Logging:				
Casing:	6/22/95	7:30	6/22/95	7:35
Filter Placement:	6/22/95	7:35	6/22/95	7:45
Cementing:				
Development				
Bentonite Grout	6/22/95	8:00	6/22/95	9:00
Bentonite Seal	6/22/95	7:45	6/22/95	8:00

Well Design & Specifications

Basis: Geologic Log X Geophysical Log

Casing string(s): C = Casing S = Screen

Depth			String(s)	Elevation		
+ 1.50	-	79.50	C1	468.16	-	387.16
79.50	-	89.10	S1	387.16	-	377.56
89.10	-	89.43	C2	377.56	-	377.23
	-				-	
	-				-	
	-				-	

Casing: C1 2 in. dia. Schedule 80 PVC, flush threaded with O-rings

C2 2 in. dia. threaded PVC end cap (4 in. long or 0.33 ft.)

Screen: S1 2 in. dia. Schedule 80 PVC, 0.010 in. machine cut slot, flush threaded with O-rings

Sand Pack: 16-35 mesh Silica Sand, 76.8-90.0 ft.

Filter Pack: Less than 50 mesh Silica Sand, 74.5-76.8 ft.

Grout Seal: Wyo-Ben Grout Well Bentonite Slurry, 3.0-60.0 ft.

Bentonite Seal: Extra high yield Wyo-Ben (100%) Slurry, 60.0-74.5 ft.

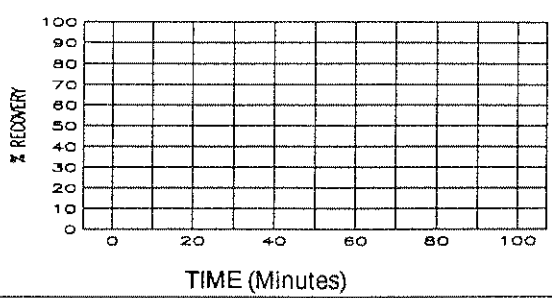
Concrete: 0.0-3.0 ft.

Well Development

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)

Recovery Data:



Comments:

Supervised by B.. Tilton

Job Number 943-2848

Site LAIDLAW/OU2 RI-FS/MO

File Name PZ204ASS

Well No. PZ-205-SS

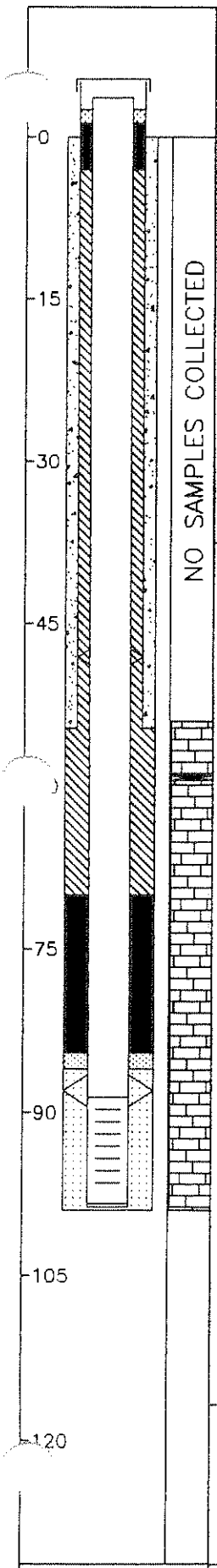
Boring No. X-Ref: PZ-205-SS

PIEZOMETER CONSTRUCTION SUMMARY

Survey Coords: Northing: 1067484 ft. Easting: 515478 ft.

Elevation Ground Level 459.5 ft. NGVD

Top of PVC Casing 461.78 ft. NGVD



Not to Scale

Drilling Summary:

Total Depth	99.0 ft.
Borehole Diameter	9 3/4 in. (0.0–54.0 ft.) 5 7/8 in. (54.0–99.0 ft.)
Casing Stickup Height	1.66 ft.
Driller	Layne-Western St. Louis, MO
Rig	CME 75, Schramm Portadrill T660H
Bit(s)	6 1/4 in. ID Hollow Stem Auger Bit, NX Core, 5 7/8 in. Button Bit and 9 3/4 in. Tricone Bit
Drilling Fluid	Auger–None, NX Core Water, Air and Mud Rotary
Protective Casing	8x8 in. Square Steel, by 5 ft. long

Construction Time log:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling				
CME 75	5/18/95	8:15	5/19/95	11:30
Schramm Rotary	5/21/95	13:30	5/21/95	14:30
Geophys.Logging:				
Casing:				
2" PVC	5/21/95	14:25	5/21/95	14:30
6" Steel	5/11/95	7:30	5/11/95	11:00
Filter Placement:	5/21/95	14:40	5/21/95	15:15
Cementing:				
Development				
Bentonite Grout	5/21/95	15:20	5/21/95	15:35
Bentonite Seal	5/21/95	15:15	5/21/95	15:20

Well Design & Specifications

Basis: Geologic Log X Geophysical Log

Casing string(s): C = Casing S = Screen

Depth			String(s)	Elevation		
+ 1.66	–	88.57	C1	461.78	–	370.96
88.57	–	98.37	S1	370.96	–	361.16
98.37	–	98.70	C2	361.16	–	360.83
+ 1.00	–	54.00	C3	460.50	–	405.53
	–				–	
	–				–	

Casing: C1 2 in. dia. Schedule 80 PVC, flush threaded with O-rings

C2 2 in. dia. threaded PVC end cap (4 in. long or 0.33 ft.) (C3-see comments)

Screen: S1 2 in. dia. Schedule 80 PVC, 0.010 in. machine cut slot, flush threaded with O-rings

Sand Pack: 16-35 mesh Silica Sand, 86.0-99.0 ft.

Filter Pack: Less than 50 mesh Silica Sand, 84.5-86.0 ft.

Grout Seal: Wyo-Ben Grout Well Bentonite Slurry, 3.0-70.0 ft.

Bentonite Seal: Extra high yield Wyo-Ben (100%) Slurry, 70.0-84.5 ft.

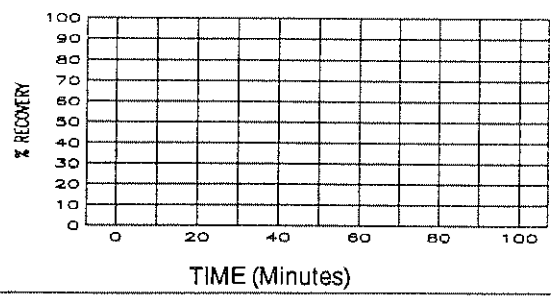
Concrete: 0.0-3.0 ft.

Well Development

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)

Recovery Data:



Comments:

Surface Casing C3: 6 1/8 in. ID / 6 5/8 in. OD Steel Casing

Supervised by W. Herst

Job Number 943-2848

Site LAIDLAW/OU2 RI-FS/MO

File Name PZ205SS

Well No. PZ-205-AS

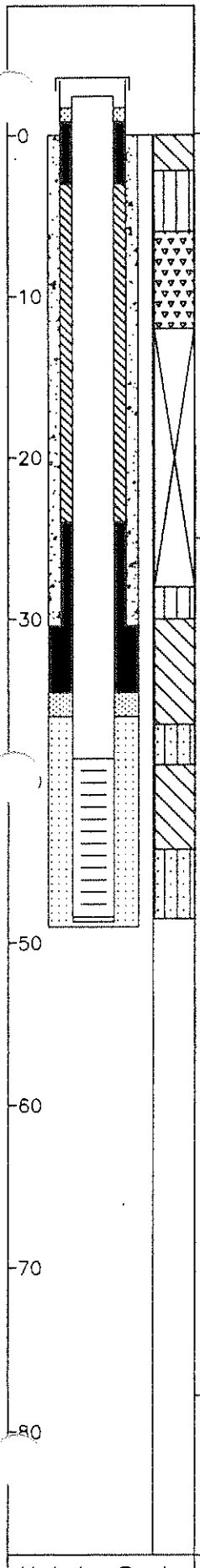
Boring No. X-Ref: PZ-205-AS

PIEZOMETER CONSTRUCTION SUMMARY

Survey Coords: Northing: 1067464 ft. Easting: 515463 ft.

Elevation Ground Level 459.3 ft. NGVD

Top of PVC Casing 460.99 ft. NGVD



Drilling Summary:

Total Depth 49.0 ft.

Borehole Diameter 14 1/4 in. (0.0–29.0 ft.) 8 1/4 in. (29.0–49.0 ft.)

Casing Stickup Height 1.66 ft.

Driller Layne-Western, St. Louis, MO

Rig CME 75, Schramm Portadrill T660H

Bit(s) 6 1/4 in. and 10 1/4 in. ID Hollow Stem Auger Bits

Drilling Fluid Auger-None

Protective Casing 8x8 in. Square Steel, by 5 ft. long

Construction Time log:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling				
CME 75	3/25/95	16:35	3/25/95	11:00
CME 75	4/21/95	14:10	4/21/95	15:30
CME 75	5/5/95	13:30	5/5/95	15:30
Geophys.Logging:				
Casing:				
2" PVC	5/5/95	16:00	5/5/95	16:05
10" Steel	4/21/95	15:29	4/21/95	16:30
Filter Placement:	5/5/95	16:05	5/5/95	16:45
Cementing:				
Development				
Bentonite Grout	5/5/95	17:00	5/5/95	17:30
Bentonite Seal	5/5/95	16:45	5/5/95	17:00

Well Design & Specifications

Basis: Geologic Log X Geophysical Log

Casing string(s): C = Casing S = Screen

Depth			String(s)	Elevation		
+ 1.66	–	38.55	C1	460.99	–	420.78
38.55	–	48.35	S1	420.78	–	410.98
48.35	–	48.68	C2	410.98	–	410.65
+ 0.70	–	29.00	C3	460.00	–	430.33
	–				–	
	–				–	

Casing: C1 2 in. dia. Schedule 80 PVC, flush threaded with O-rings

C2 2 in. dia. threaded PVC end cap (4 in. long or 0.33 ft.) (C3-see comments)

Screen: S1 2 in. dia. Schedule 80 PVC, 0.010 in. machine cut slot, flush threaded with O-rings

Sand Pack: 16-35 mesh Silica Sand, 36.0-49.0 ft.

Filter Pack: Less than 50 mesh Silica Sand, 34.5-36.0 ft.

Grout Seal: Wyo-Ben Grout Well Bentonite Slurry, 3.0-24.0 ft., Neat cement, 3.0-29.0 ft.

Bentonite Seal: Extra high yield Wyo-Ben (100%) Slurry, 24.0-34.5 ft.

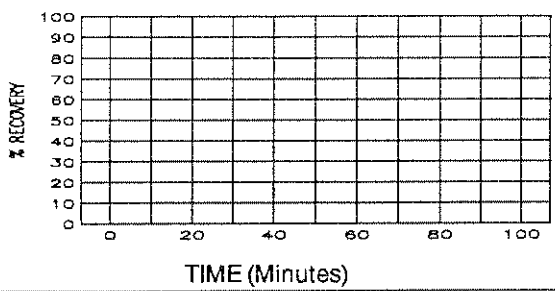
Concrete: 0.0-3.0 ft.

Well Development

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)

Recovery Data:



Comments:

Surface Casing C3: 10 in. ID / 10 7/8 in. OD Steel Casing

Not to Scale

Supervised by B. Tilton

Job Number 943-2848

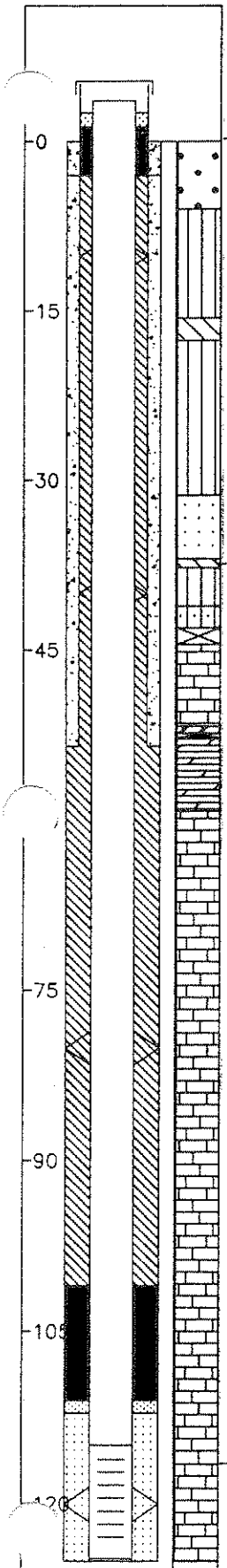
Site LAIDLAW/OU2 RI-FS/MO

File Name PZ205AS

Well No. PZ-206-SS

Boring No. X-Ref: PZ-206-SS

PIEZOMETER CONSTRUCTION SUMMARY



Not to Scale

Survey Coords: Northing: 1068031 ft. Easting: 515809 ft.

Elevation Ground Level 458.4 ft. NGVD

Top of PVC Casing 460.20 ft. NGVD

Drilling Summary:

Total Depth	125.5 ft.
Borehole Diameter	10 in. (0.0–52.0 ft.) 5 7/8 in. (52.0–125.5 ft.)
Casing Stickup Height	1.82 ft.
Driller	Layne-Western St. Louis, MO
Rig	CME 75, Schramm Portadrill T660H
Bit(s)	6 1/4 in. and 10 1/4 in. ID Hollow Stem Auger Bits, NX Core, 5 7/8 in. and 10 in. Button Bits
Drilling Fluid	Auger-None, NX Core Water, Air Rotary
Protective Casing	8x8 in. Square Steel, by 5 ft. long

Construction Time log:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling				
CME 75	3/9/95	14:30	3/10/95	11:05
Schramm Rotary	4/24/95	11:30	4/24/95	13:30
Geophys.Logging:				
Casing:				
2" PVC	4/24/95	13:45	4/24/95	14:02
6" Steel	3/27/95	9:30	3/23/95	10:15
Filter Placement:	4/24/95	14:00	4/24/95	14:15
Cementing:				
Development				
Bentonite Grout	4/24/95	14:20	4/24/95	15:30
Bentonite Seal	4/24/95	14:10	4/24/95	14:20

Well Design & Specifications

Basis: Geologic Log X Geophysical Log

Casing string(s): C = Casing S = Screen

Depth			String(s)	Elevation		
+ 1.82	–	115.00	C1	460.20	–	343.38
115.00	–	124.80	S1	343.38	–	333.58
124.80	–	125.00	C2	333.58	–	333.38
+ 0.70	–	52.00	C3	459.10	–	406.38
	–				–	
	–				–	

Casing: C1 2 in. dia. Schedule 80 PVC, flush threaded with O-rings

C2 2 in. dia. threaded PVC end cap (4 in. long or 0.33 ft.) (C3-see comments)

Screen: S1 2 in. dia. Schedule 80 PVC, 0.010 in. machine cut slot, flush threaded with O-rings

Sand Pack: 16-35 mesh Silica Sand, 112.2-125.5 ft.

Filter Pack: Less than 50 mesh Silica Sand, 111.1-112.2 ft.

Grout Seal: Wyo-Ben Grout Well Bentonite Slurry, 3.0-101.0 ft., Neat cement, 3.0-52.0 ft.

Bentonite Seal: Extra high yield Wyo-Ben (100%) Slurry, 101.0-111.1 ft.

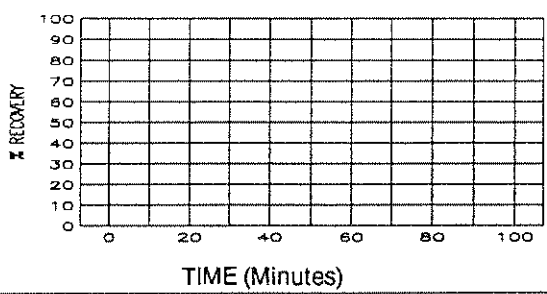
Concrete: 0.0-3.0 ft.

Well Development

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)

Recovery Data:



Comments:

Surface Casing C3: 6 1/8 in. ID / 6 5/8 in. OD Steel Casing

Supervised by D. Alloway

Job Number 943-2848

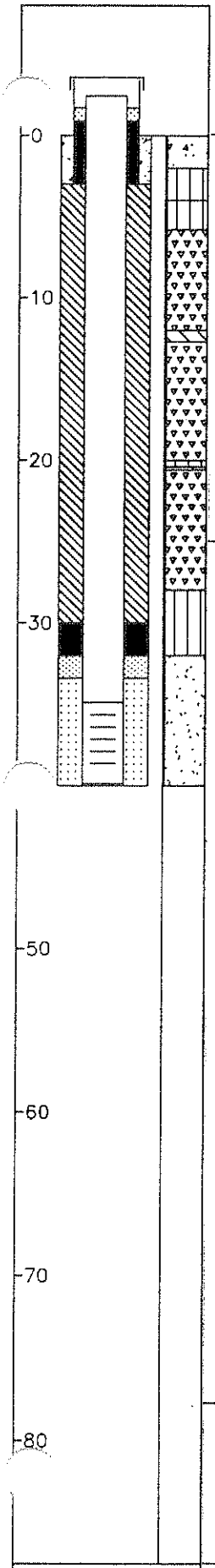
Site LAIDLAW/OU2 RI-FS/MO

File Name PZ206SS

Well No. PZ-207-AS

Boring No. X-Ref: PZ-207-AS

PIEZOMETER CONSTRUCTION SUMMARY



Not to Scale

Survey Coords: Northing: 1069645 ft. Easting: 516038 ft.

Elevation Ground Level 461.9 ft. NGVD

Top of PVC Casing 463.57 ft. NGVD

Drilling Summary:

Total Depth 40.0 ft.

Borehole Diameter 8 1/4 in.

Casing Stickup Height 1.69 ft.

Driller Layne-Western, St. Louis, MO

Rig CME 75

Bit(s) 6 1/4 in. ID Hollow Stem Auger Bit,

Drilling Fluid Auger-None

Protective Casing 8x8 in. Square Steel, by 5 ft. long

Construction Time log:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling				
CME 75	4/9/95	12:35	4/9/95	17:45
Schramm Rotary				
Geophys.Logging:				
Casing:	4/10/95	9:45	4/10/95	10:00
Filter Placement:	4/10/95	10:00	4/10/95	10:17
Cementing:				
Development				
Bentonite Grout	4/10/95	10:35	4/10/95	11:10
Bentonite Seal	4/10/95	10:32	4/10/95	10:35

Well Design & Specifications

Basis: Geologic Log X Geophysical Log

Casing string(s): C = Casing S = Screen

Depth			String(s)	Elevation		
+ 1.69	-	34.90	C1	463.57	-	426.98
34.90	-	39.70	S1	426.98	-	422.18
39.70	-	40.03	C2	422.18	-	421.85

Casing: C1 2 in. dia. Schedule 80 PVC, flush threaded with O-rings

C2 2 in. dia. threaded PVC end cap (4 in. long or 0.33 ft.)

Screen: S1 2 in. dia. Schedule 80 PVC, 0.010 in. machine cut slot, flush threaded with O-rings

Sand Pack: 16-35 mesh Silica Sand, 33.4-40.0 ft.

Filter Pack: Less than 50 mesh Silica Sand, 32.0-33.4 ft.

Grout Seal: Wyo-Ben Grout Well Bentonite Slurry, 3.0-20.0 ft.

Bentonite Seal: Extra high yield Wyo-Ben (100%) Slurry, 20.0-32.0 ft.

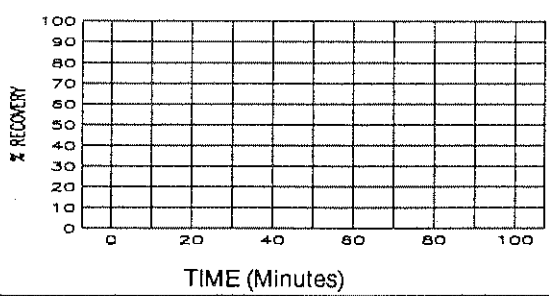
Concrete: 0.0-3.0 ft.

Well Development

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)

Recovery Data:



Comments:

Supervised by S. Cosio

Job Number 943-2848

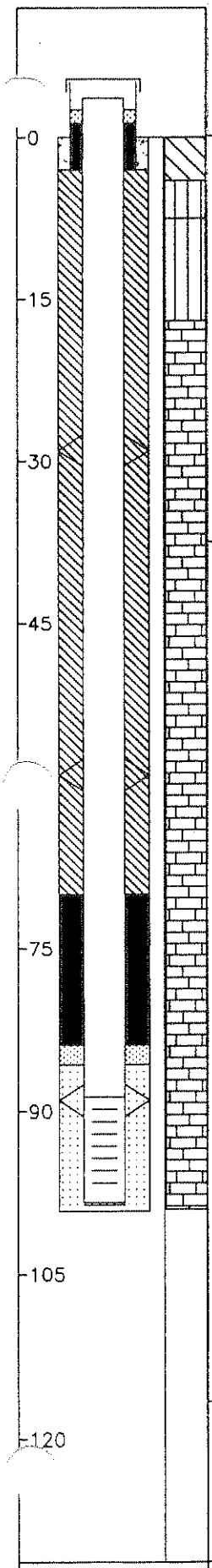
Site LAIDLAW/OU2 RI-FS/MO

File Name PZ207AS

Well No. PZ-208-SS

Boring No. X-Ref: PZ-208-SS

PIEZOMETER CONSTRUCTION SUMMARY



Not to Scale

Survey Coords: Northing: 1069219 ft. Easting: 517169 ft.

Elevation Ground Level 472.5 ft. NGVD

Top of PVC Casing 474.25 ft. NGVD

Drilling Summary:

Total Depth 99.2 ft.

Borehole Diameter 10 1/4 in. (0.0–17.0 ft.) 5 7/8 in. (17.0–99.2 ft.)

Casing Stickup Height 1.72 ft.

Driller Layne-Western St. Louis, MO

Rig CME 75, Schramm Portadrill T660H

Bit(s) 6 1/4 in. ID Hollow Stem Auger Bit, NX Core, 5 7/8 in. Button Bit for Reaming

Drilling Fluid Auger-None, NX Core Water, Air Rotary

Protective Casing 8x8 in. Square Steel, by 5 ft. long

Construction Time log:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling				
CME 75	6/17/95	8:15	6/17/95	17:35
Schramm Rotary	6/18/95	8:50	6/18/95	10:00
Geophys.Logging:				
Casing:	6/18/95	10:10	6/18/95	10:20
Filter Placement:	6/18/95	10:30	6/18/95	10:55
Cementing:				
Development				
Bentonite Grout	6/18/95	11:15	6/18/95	14:00
Bentonite Seal	6/18/95	11:05	6/18/95	11:15

Well Design & Specifications

Basis: Geologic Log X Geophysical Log

Casing string(s): C = Casing S = Screen

Depth			String(s)	Elevation		
+ 1.72	–	88.70	C1	474.25	–	383.83
88.70	–	98.50	S1	383.83	–	374.03
98.50	–	98.83	C2	374.03	–	373.70
	–				–	
	–				–	
	–				–	

Casing: C1 2 ft. dia. Schedule 80 PVC, flush threaded with O-rings

C2 2 ft. dia. threaded PVC end cap (4 in. long or 0.33 ft.)

Screen: S1 2 in. dia. Schedule 80 PVC, 0.010 in. machine cut slot, flush threaded with O-rings

Sand Pack: 16–35 mesh Silica Sand, 85.65–99.2 ft.

Filter Pack: Less than 50 mesh Silica Sand, 83.90–85.65 ft.

Grout Seal: Wyo-Ben Grout Well Bentonite Slurry, 3.0–70.0 ft.

Bentonite Seal: Extra high yield Wyo-Ben (100%) Slurry, 70.0–83.90 ft.

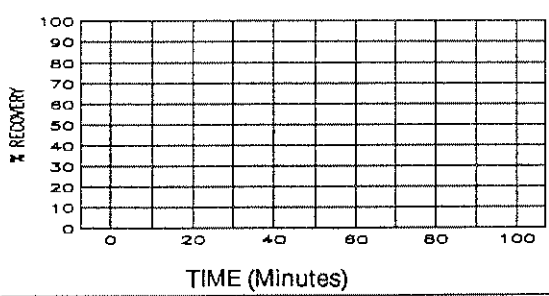
Concrete: 0.0–3.0 ft.

Well Development

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)

Recovery Data:



Comments:

Supervised by B. Tilton

Job Number 943–2848

Site LAIDLAW/OU2 RI-FS/MO

File Name PZ208SS

Well No. PZ-1201-SS

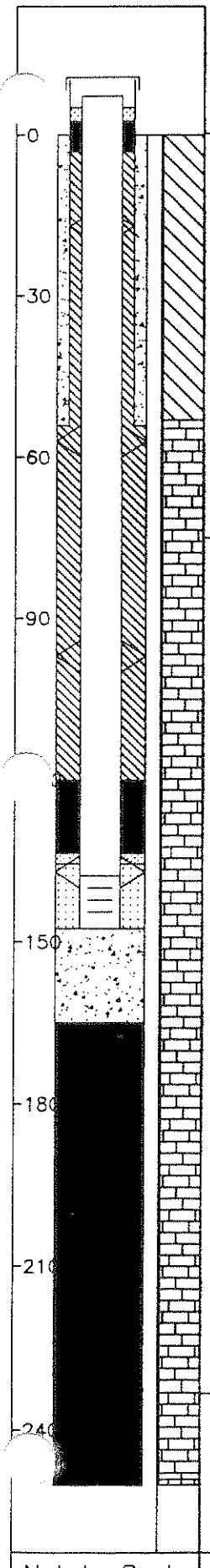
Boring No. X-Ref: PZ-1201-SS

PIEZOMETER CONSTRUCTION SUMMARY

Survey Coords: Northing: 1067302 ft. Easting: 516904 ft.

Elevation Ground Level 480.4 ft. NGVD

Top of PVC Casing 482.42 ft. NGVD



Not to Scale

Drilling Summary:

Total Depth 250.0 ft.

Borehole Diameter Unknown (0.0–53.0 ft.) 5 7/8 in. (53.0–250.0 ft.)

Casing Stickup Height 2.01 ft.

Driller Drilling Service Company/Layne-Western St. Louis, MO

Rig Unknown

Bit(s) Unknown

Drilling Fluid Unknown

Protective Casing Surface Casing (C3–see comments)

Construction Time log:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling	3/11/85	11:30	3/11/85	19:00
CME 75				
Schramm Rotary				
Geophys.Logging:	6/8/95	15:00	6/8/95	17:30
Casing:	7/7/95	8:15	7/7/95	8:30
Filter Placement:	7/7/95	8:30	7/7/95	8:50
Cementing:				
Development				
Bentonite Grout	7/7/95	9:15	7/7/95	11:00
Bentonite Seal	7/7/95	8:50	7/7/95	9:15

Well Design & Specifications

Basis: Geologic Log X Geophysical Log

Casing string(s): C = Casing S = Screen

Depth			String(s)	Elevation		
+ 2.01	–	137.70	C1	482.42	–	342.71
137.70	–	147.30	S1	342.71	–	333.11
147.30	–	147.63	C2	333.11	–	332.78
+ 2.60	–	53.00	C3	483.00	–	427.41
	–				–	
	–				–	

Casing: C1 2 in. dia. Schedule 80 PVC, flush threaded with O-rings

C2 2 in. dia. threaded PVC end cap (4 in. long or 0.33 ft.) (C3–see comments)

Screen: S1 2 in. dia. Schedule 80 PVC, 0.010 in. machine cut slot, flush threaded with O-rings

Sand Pack: 16–35 mesh Silica Sand, 135.5–147.5 ft.

Filter Pack: Less than 50 mesh Silica Sand, 133.5–135.5 ft.

Grout Seal: Wyo-Ben Grout Well Bentonite Slurry, 3.0–120.0 ft.

Bentonite Seal: Extra high yield Wyo-Ben (100%) Slurry, 120.0–133.5 ft.

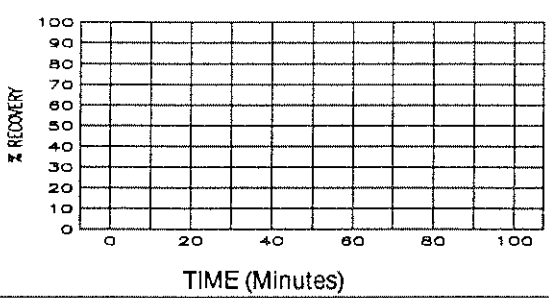
Concrete: 0.0–3.0 ft.

Well Development

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)

Recovery Data:



Comments:

The borehole was originally drilled by Drilling Service Company in 1985 to a total depth of 250.0 ft. The borehole remained open from below the surface casing to total depth until the bottom of the borehole was sealed with bentonite grout from 165.0–250.0 ft., and neat cement from 148.5–165.0 ft. A piezometer was then constructed within the remainder of the borehole. The grout seals and well installation were performed by Layne-Western Drilling of St. Louis, MO, in July, 1995. Surface Casing C3: 6 1/8 in. ID / 6 5/8 in. OD Steel Casing

Supervised by B. Tilton

Job Number 943-2848

Site LAIDLAW/OU2 RI-FS/MO

File Name PZ1201SS

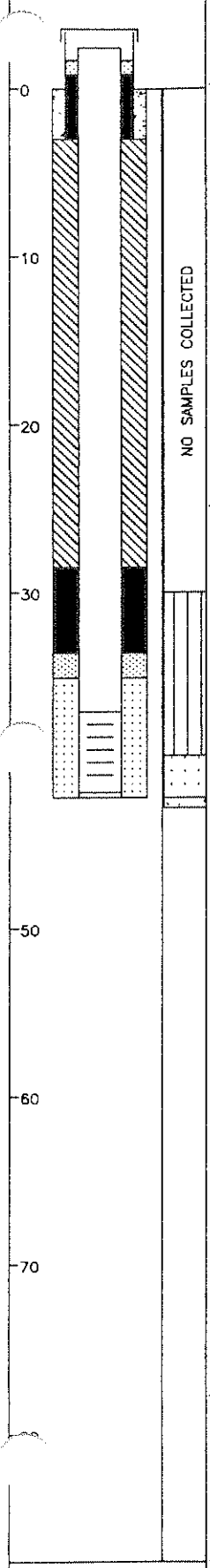
Well No. PZ-300-AD

Boring No. X-Ref: PZ-300-AD

PIEZOMETER CONSTRUCTION SUMMARY

Survey Coords: Northing: 1065214 ft.
Easting: 513828 ft.

Elevation Ground Level 448.1 ft. NGVD
Top of PVC Casing 449.62 ft. NGVD



Not to Scale

Drilling Summary:

Total Depth 42.2 ft.
Borehole Diameter 8 1/4" (0.0-42.2')
Casing Stickup Height 1.52 ft.
Driller Layne-Western
St. Louis, MO

Rig CME 750
Bit(s) 4 1/4" ID Hollow Stem Auger Bit

Drilling Fluid None

Protective Casing 8x8" Square Steel, by 5' long

Construction Time log:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling				
CME 750	9/24/95	13:00	9/24/95	16:00
Geophys.Logging:				
Casing:				
2" I.D. PVC	9/24/95	17:05	9/24/95	17:10
Filter Placement:	9/24/95	17:10	9/24/95	18:15
Cementing:				
Development				
Bentonite Grout	9/24/95	18:20	9/24/95	18:45
Bentonite Seal	9/24/95	18:15	9/24/95	18:20

Well Design & Specifications

Basis: Geologic Log X Geophysical Log
Casing string(s): C = Casing S = Screen

Depth			String(s)	Elevation		
+ 1.52	-	37.10	C1	449.62	-	411.00
37.10	-	41.90	S1	411.00	-	406.20
41.90	-	42.20	C2	406.20	-	405.90
	-				-	
	-				-	
	-				-	

Casing: C1 2" dia. Schedule 80 PVC, flush threaded with O-rings
C2 2" dia. threaded PVC end cap (4" long or 0.33')
Screen: S1 2" dia. Schedule 80 PVC, 0.010" machine cut slot, flush threaded with O-rings

Sand Pack: 16-35 mesh Silica Sand 35.1-42.2'

Filter Pack: 100 mesh Silica Sand 33.6-35.1'

Grout Seal: Wyo-Ben Grout Well Bentonite Slurry 3.0-28.5'

Bentonite Seal: Extra high yield Wyo-Ben (100%) Slurry 28.5-33.6'

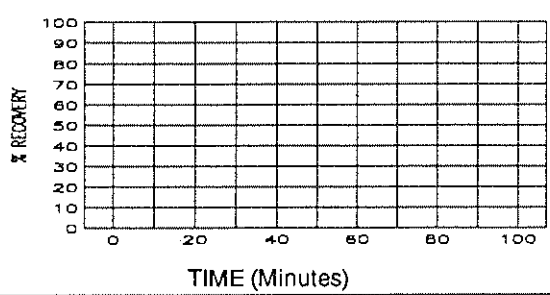
Concrete: 0.0-3.0'

Well Development

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)

Recovery Data:



Comments:

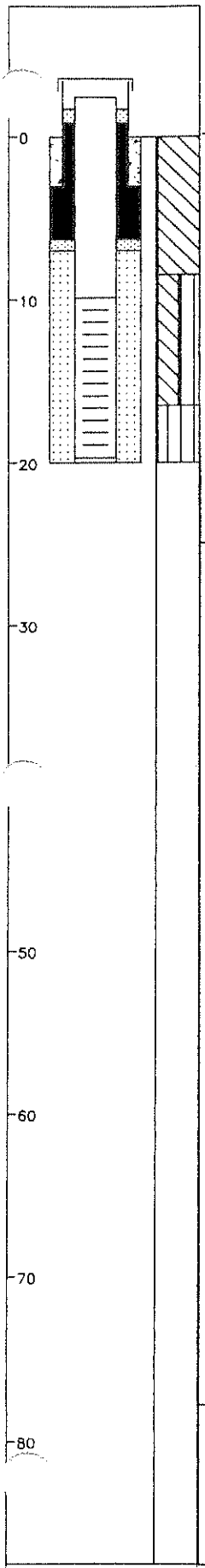
Supervised by B. Harrington
Job Number 943-2848

Site LAIDLAW/OU2 RI-FS/MO
File Name PZ300AD

Well No. PZ-300-AS

Boring No. X-Ref: PZ-300-AS

PIEZOMETER CONSTRUCTION SUMMARY



Not to Scale

Survey Coords: Northing: 1065198 ft. Easting: 513868 ft.

Elevation Ground Level 448.5 ft. NGVD

Top of PVC Casing 450.66 ft. NGVD

Drilling Summary:

Total Depth 20.0 ft.

Borehole Diameter 8 1/4" (0.0-20.0')

Casing Stickup Height 2.16 ft.

Driller Layne-Western, St. Louis, MO

Rig CME 750

Bit(s) 4 1/4" ID Hollow Stem Auger Bit

Drilling Fluid None

Protective Casing 8x8" Square Steel, by 5' long

Construction Time log:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling CME 750	9/26/95	16:15	9/26/95	17:00
Geophys.Logging:				
Casing: 2" I.D. PVC	9/26/95	17:00	9/26/95	17:05
Filter Placement:	9/26/95	17:05	9/26/95	17:15
Cementing:				
Development				
Bentonite Grout Bentonite Seal	9/26/95	17:15	9/26/95	17:25

Well Design & Specifications

Basis: Geologic Log X Geophysical Log

Casing string(s): C = Casing S = Screen

Depth			String(s)	Elevation		
+ 2.16	-	9.90	C1	450.66	-	438.60
9.90	-	19.70	S1	438.60	-	428.80
19.70	-	20.00	C2	428.80	-	428.50
	-				-	
	-				-	
	-				-	

Casing: C1 2" dia. Schedule 80 PVC, flush threaded with O-rings

C2 2" dia. threaded PVC end cap (4" long or 0.33')

Screen: S1 2" dia. Schedule 80 PVC, 0.010" machine cut slot, flush threaded with O-rings

Sand Pack: 16-35 mesh Silica Sand 7.0-20.0'

Filter Pack: 100 mesh Silica Sand 6.3-7.0'

Grout Seal:

Bentonite Seal: Extra high yield Wyo-Ben (100%) Slurry 3.0-6.3'

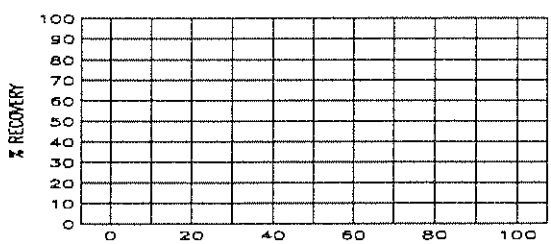
Concrete: 0.0-3.0'

Well Development

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)

Recovery Data:



Comments:

Supervised by B. Harrington

Job Number 943-2848

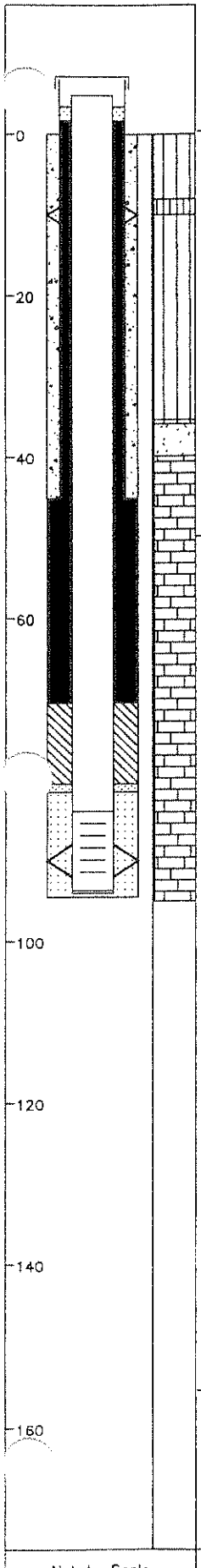
Site LAIDLAW/OU2 RI-FS/MO

File Name PZ300AS

Well No. PZ-300-SS

Boring No. X-Ref: PZ-300-SS

PIEZOMETER CONSTRUCTION SUMMARY



Not to Scale

Survey Coords: Northing: 1065205 ft.
Easting: 513850 ft.

Elevation Ground Level 448.4 ft. NGVD
Top of PVC Casing 449.60 ft. NGVD

Drilling Summary:

Total Depth	94.5 ft.
Borehole Diameter	9 7/8" (0.0–46.0') 5 7/8" (46.0–93.0')
Casing Stickup Height	1.20 ft.
Driller	Layne-Western
	St. Louis, MO
Rig	CME 750 Schramm Rotadrill T660H
Bit(s)	4 1/4" ID Hollow Stem Auger Bit,
	NX Core, 5 7/8" Button Bit for Reaming
Drilling Fluid	NX Core Water, Air and Bentonite
	Mud Rotary
Protective Casing	8x8" Square Steel, by 5' long

Construction Time log:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling				
CME 75 (Auger)	9/22/95	16:30	9/23/95	10:30
Schramm Rotary	9/25/95	10:30	9/25/95	13:00
CME 75 (Core)	9/23/95	13:05	9/23/95	9:15
Geophys.Logging:				
Casing:				
2" I.D. PVC	9/26/95	10:45	9/26/95	10:55
8" I.D. Steel	9/25/95	13:00	9/25/95	16:00
Filter Placement:	9/26/95	10:50	9/26/95	11:00
Cementing:				
Development				
Bentonite Grout	9/26/95	11:30	9/26/95	12:35
Bentonite Seal	9/26/95	11:00	9/26/95	11:30

Well Design & Specifications

Basis: Geologic Log X Geophysical Log

Casing string(s): C = Casing S = Screen

Depth			String(s)	Elevation		
+ 1.20	-	83.88	C1	449.60	-	364.52
83.88	-	93.70	S1	364.52	-	354.70
93.70	-	94.00	C2	354.70	-	354.40
+ 0.80	-	46.00	C3	447.60	-	402.40
	-				-	
	-				-	

Casing: C1 2" dia. Schedule 80 PVC, flush threaded with O-rings

C2 2" dia. threaded PVC end cap (4" long or 0.33') (C3-see comments)

Screen: S1 2" dia. Schedule 80 PVC, 0.010" machine cut slot, flush threaded with O-rings

Sand Pack: 16-35 mesh Silica Sand 81.5-94.5'

Filter Pack: 100 mesh Silica Sand 80.5-81.5'

Grout Seal: Wyo-Ben Grout Well Bentonite Slurry 70.5-81.5'

Bentonite Seal: Extra high yield Wyo-Ben (100%) Slurry 3.0-70.5'

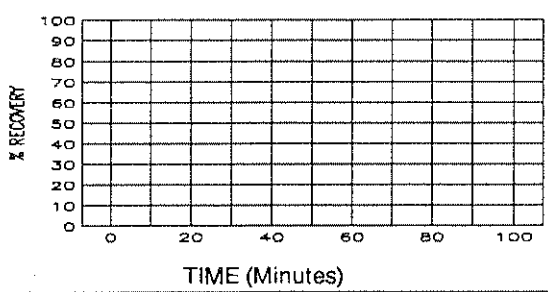
Concrete: 0.0-3.0'

Well Development

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)

Recovery Data:



Comments:

Surface Casing C3: 6 1/8 in. ID / 6 5/8 in. OD Steel Casing

Neat cement grout used to seal annulus between 6 7/8 in. OD steel casing and 9 7/8 in. diameter

Supervised by B. Tilton
Job Number 943-2848

Site LAIDLAW/OU2 RI-FS/MO
File Name PZ300SS

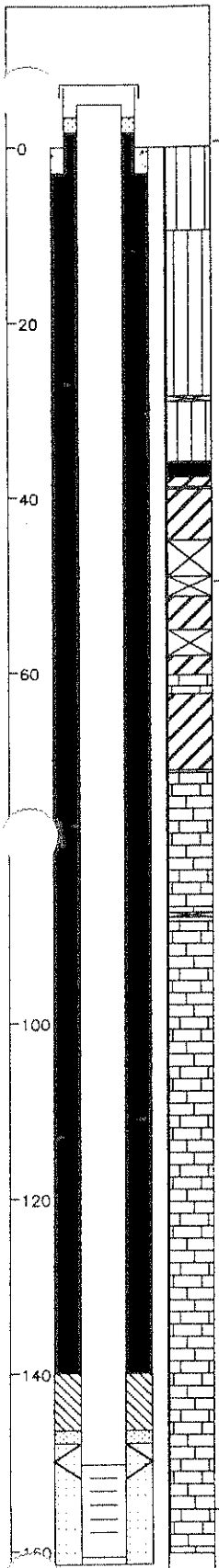
Well No. PZ-301-SS

Boring No. X-Ref: PZ-301-SS

PIEZOMETER CONSTRUCTION SUMMARY

Survey Coords: Northing: 1064802 ft.
Easting: 515517 ft.

Elevation Ground Level 513.1 ft. NGVD
Top of PVC Casing 514.71 ft. NGVD



Not to Scale

Drilling Summary:

Total Depth	161.5 ft.
Borehole Diameter	8 1/4" (0.0-19.0') 5 7/8" (19.0-161.5')
Casing Stickup Height	1.61 ft.
Driller	Layne-Western
	St. Louis, MO
Rig	CME 75, Schramm Portadrill T660H
Bit(s)	4 1/4" ID Hollow Stem Auger Bit,
	NX Core, 5 7/8" Button Bit for Reaming
Drilling Fluid	NX Core Water, Air Rotary
Protective Casing	8x8" Square Steel, by 5' long

Construction Time log:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling				
CME 75 (Auger)	9/19/95	11:30	9/19/95	14:15
Schramm Rotary	9/22/95	9:15	9/23/95	11:30
CME 75 (Core)	9/19/95	16:00	9/21/95	12:35
Geophys.Logging:				
Casing:				
2" I.D. PVC	9/23/95	12:00	9/23/95	12:15
Filter Placement:	9/23/95	12:15	9/23/95	13:00
Cementing:				
Development				
Bentonite Grout	9/23/95	13:15	9/23/95	13:45
Bentonite Seal	9/23/95	13:45	9/23/95	15:30

Well Design & Specifications

Basis: Geologic Log X Geophysical Log

Casing string(s): C = Casing S = Screen

Depth			String(s)	Elevation		
+ 1.61	-	150.90	C1	514.71	-	362.20
150.90	-	160.70	S1	362.20	-	352.40
160.70	-	161.00	C2	352.40	-	352.10
	-				-	
	-				-	
	-				-	

Casing: C1 2" dia. Schedule 80 PVC, flush threaded with O-rings

C2 2" dia. threaded PVC end cap (4" long or 0.33')

Screen: S1 2" dia. Schedule 80 PVC, 0.010" machine cut slot, flush threaded with O-rings

Sand Pack: 16-35 mesh Silica Sand 148.0-161.5'

Filter Pack: Less than 50 mesh Silica Sand 146.5-148.0'

Grout Seal: Wyo-Ben Grout Well Bentonite Slurry 140.0-146.5'

Bentonite Seal: Extra high yield Wyo-Ben (100%) Slurry 3.0-140.0'

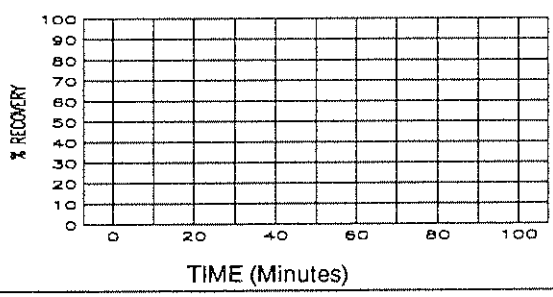
Concrete: 0.0-3.0'

Well Development

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)

Recovery Data:



Comments:

Supervised by B. Tilton
Job Number 943-2848

Site LAIDLAW/OU2 RI-FS/MO
File Name PZ301SS

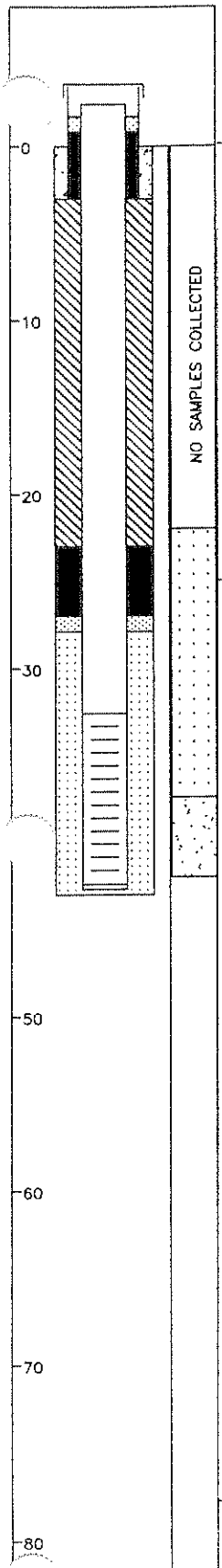
Well No. PZ-302-AI

Boring No. X-Ref: PZ-302-AI

PIEZOMETER CONSTRUCTION SUMMARY

Survey Coords: Northing: 1067210 ft.
Easting: 514720 ft.

Elevation Ground Level 450.0 ft. NGVD
Top of PVC Casing 451.15 ft. NGVD



Drilling Summary:

Total Depth 43.0 ft.
Borehole Diameter 8 1/4" (0.0-43.0')
Casing Stickup Height 1.15 ft.
Driller Layne-Western
St. Louis, MO

Rig CME 750
Bit(s) 4 1/4" ID Hollow Stem Auger Bit,
3 5/8" Tricone Bit
Drilling Fluid Bentonite Drilling Mud (20.0-42.0')

Protective Casing 8x8" Square Steel, by 5' long

Construction Time log:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling				
CME 750	9/26/95	8:15	9/26/95	11:30
Geophys.Logging:				
Casing:				
2" I.D. PVC	9/26/95	12:50	9/26/95	12:55
Filter Placement:	9/26/95	13:05	9/26/95	13:40
Cementing:				
Development				
Bentonite Grout	9/26/95	14:00	9/26/95	14:15
Bentonite Seal	9/26/95	13:40	9/26/95	13:50

Well Design & Specifications

Basis: Geologic Log X Geophysical Log
Casing string(s): C = Casing S = Screen

Depth			String(s)	Elevation		
+ 1.15	-	32.60	C1	451.15	-	417.40
32.60	-	42.40	S1	417.40	-	407.60
42.40	-	42.70	C2	407.60	-	407.30
	-				-	
	-				-	
	-				-	

Casing: C1 2" dia. Schedule 80 PVC, flush threaded with O-rings
C2 2" dia. threaded PVC end cap (4" long or 0.33')
Screen: S1 2" dia. Schedule 80 PVC, 0.010" machine cut slot, flush threaded with O-rings

Sand Pack: 16-35 mesh Silica Sand 27.9-43.0'

Filter Pack: 100 mesh Silica Sand 27.0-27.9'

Grout Seal: Wyo-Ben Grout Well Bentonite Slurry 3.0-23.0'

Bentonite Seal: Extra high yield Wyo-Ben (100%) Slurry 23.0-27.0'

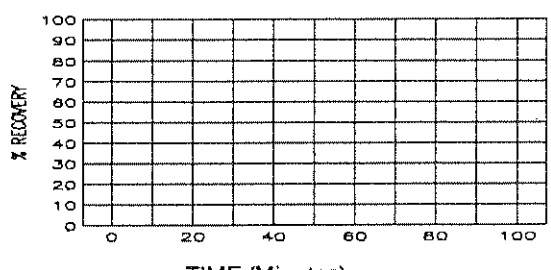
Concrete: 0.0-3.0'

Well Development

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)

Recovery Data:



Comments:

Not to Scale

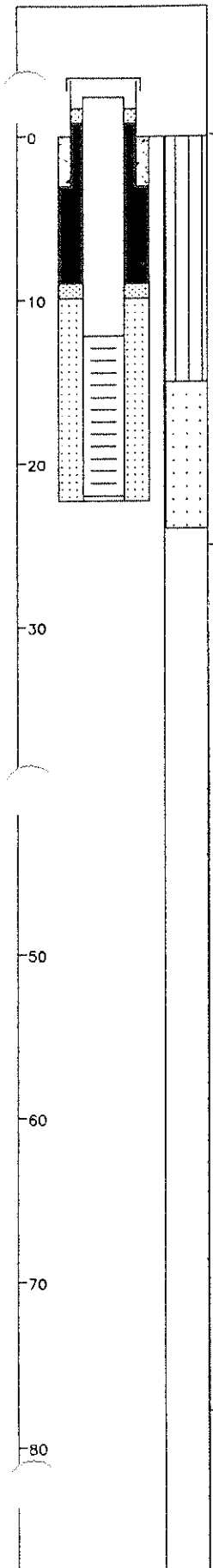
Supervised by B. Harrington
Job Number 943-2848

Site LAIDLAW/OU2 RI-FS/MO
File Name PZ302AI

Well No. PZ-302-AS

Boring No. X-Ref: PZ-302-AS

PIEZOMETER CONSTRUCTION SUMMARY



Survey Coords: Northing: 1067198 ft. Easting: 514737 ft.

Elevation Ground Level 449.5 ft. NGVD

Top of PVC Casing 451.42 ft. NGVD

Drilling Summary:

Total Depth 22.3 ft.

Borehole Diameter 8 1/4" (0.0-22.3')

Casing Stickup Height 1.92 ft.

Driller Layne-Western
St. Louis, MO

Rig CME 750

Bit(s) 4 1/4" ID Hollow Stem Auger Bit

Drilling Fluid None

Protective Casing 8x8" Square Steel, by 5' long

Construction Time log:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling				
CME 750	9/25/95	11:45	9/25/95	14:35
Geophys.Logging:				
Casing:				
2" I.D. PVC	9/25/95	14:55	9/25/95	15:00
Filter Placement:	9/25/95	15:00	9/25/95	15:40
Cementing:				
Development				
Bentonite Grout Bentonite Seal	9/25/95	15:40	9/25/95	15:50

Well Design & Specifications

Basis: Geologic Log X Geophysical Log

Casing string(s): C = Casing S = Screen

Depth			String(s)	Elevation		
+ 1.92	-	12.20	C1	451.42	-	437.30
12.20	-	22.00	S1	437.30	-	427.50
22.00	-	22.30	C2	427.50	-	427.20
	-				-	
	-				-	
	-				-	

Casing: C1 2" dia. Schedule 80 PVC, flush threaded with O-rings

C2 2" dia. threaded PVC end cap (4" long or 0.33')

Screen: S1 2" dia. Schedule 80 PVC, 0.010" machine cut slot, flush threaded with O-rings

Sand Pack: 16-35 mesh Silica Sand 9.9-22.3'

Filter Pack: 100 mesh Silica Sand 9.0-9.9'

Grout Seal:

Bentonite Seal: Extra high yield Wyo-Ben (100%) Slurry 3.0-9.0'

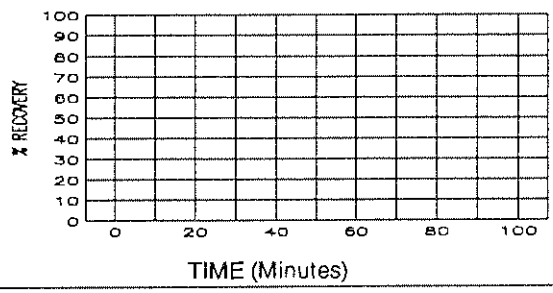
Concrete: 0.0-3.0'

Well Development

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)

Recovery Data:



Comments:

Not to Scale

Supervised by B. Harrington

Job Number 943-2848

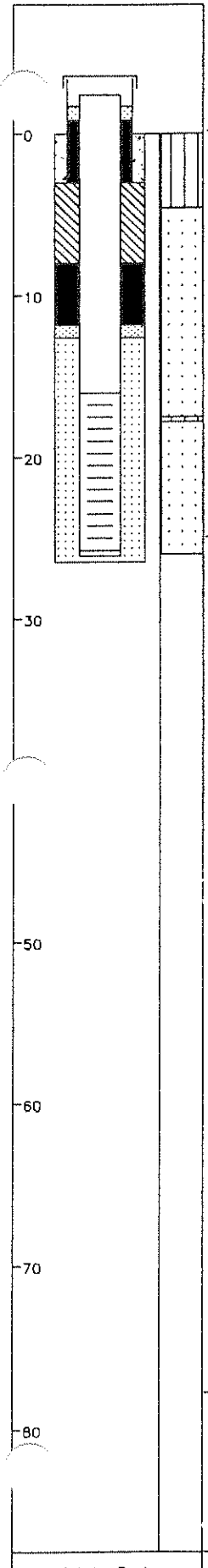
Site LAIDLAW/OU2 RI-FS/MO

File Name PZ302AS

Well No. PZ-303-AS

Boring No. X-Ref: PZ-303-AS

PIEZOMETER CONSTRUCTION SUMMARY



Not to Scale

Survey Coords: Northing: 1067763 ft. Easting: 514426 ft.

Elevation Ground Level 450.8 ft. NGVD

Top of PVC Casing 453.18 ft. NGVD

Drilling Summary:

Total Depth 26.5 ft.

Borehole Diameter 8 1/4" (0.0-26.5')

Casing Stickup Height 2.38 ft.

Driller Layne-Western, St. Louis, MO

Rig CME 750

Bit(s) 4 1/4" ID Hollow Stem Auger Bit

Drilling Fluid None

Protective Casing 8x8" Square Steel, by 5' long

Construction Time log:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling CME 750	10/4/95	16:45	10/5/95	8:45
Geophys.Logging:				
Casing: 2" I.D. PVC	10/5/95	9:00	10/5/95	9:05
Filter Placement:	10/5/95	9:05	10/5/95	9:55
Cementing:				
Development				
Bentonite Grout	10/5/95	10:15	10/5/95	10:20
Bentonite Seal	10/5/95	9:55	10/5/95	10:05

Well Design & Specifications

Basis: Geologic Log X Geophysical Log

Casing string(s): C = Casing S = Screen

Depth			String(s)	Elevation		
+ 2.38	-	16.00	C1	453.18	-	434.80
16.00	-	25.80	S1	434.80	-	425.00
25.80	-	26.10	C2	425.00	-	424.70
	-				-	
	-				-	
	-				-	

Casing: C1 2" dia. Schedule 80 PVC, flush threaded with O-rings

C2 2" dia. threaded PVC end cap (4" long or 0.33')

Screen: S1 2" dia. Schedule 80 PVC, 0.010" machine cut slot, flush threaded with O-rings

Sand Pack: 16-35 mesh Silica Sand 12.6-26.5'

Filter Pack: Less than 50 mesh Silica Sand 11.8-12.6'

Grout Seal: Wyo-Ben Grout Well Bentonite Slurry 3.0-8.0'

Bentonite Seal: Extra high yield Wyo-Ben (100%) Slurry 8.0-11.8'

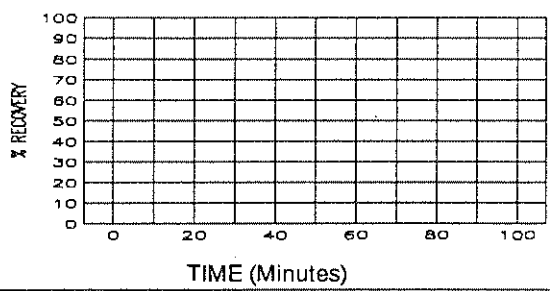
Concrete: 0.0-3.0'

Well Development

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)

Recovery Data:



Comments:

Supervised by B. Harrington

Job Number 943-2848

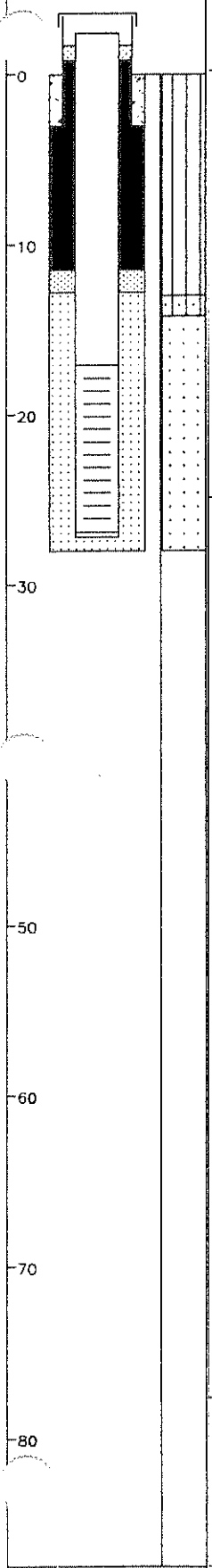
Site LAIDLAW/OU2 RI-FS/MO

File Name PZ303AS

Well No. PZ-304-AS

Boring No. X-Ref: PZ-304-AS

PIEZOMETER CONSTRUCTION SUMMARY



Not to Scale

Survey Coords: Northing: 1068146 ft. Easting: 514435 ft.

Elevation Ground Level 451.4 ft. NGVD

Top of PVC Casing 453.71 ft. NGVD

Drilling Summary:

Total Depth 28.0 ft.

Borehole Diameter 8 1/4" (0.0-28.0')

Casing Stickup Height 2.31 ft.

Driller Layne-Western, St. Louis, MO

Rig CME 750

Bit(s) 4 1/4" ID Hollow Stem Auger Bit

Drilling Fluid None

Protective Casing 8x8" Square Steel, by 5' long

Construction Time log:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling				
CME 750	9/27/95	10:10	9/27/95	12:10
Geophys.Logging:				
Casing:				
2" I.D. PVC	9/27/95	13:40	9/27/95	13:45
Filter Placement:	9/27/95	13:45	9/27/95	14:30
Cementing:				
Development				
Bentonite Grout / Bentonite Seal	9/27/95	14:30	9/27/95	14:45

Well Design & Specifications

Basis: Geologic Log X Geophysical Log

Casing string(s): C = Casing S = Screen

Depth			String(s)	Elevation		
+ 2.31	-	17.10	C1	453.71	-	434.30
17.10	-	26.90	S1	434.30	-	424.50
26.90	-	27.20	C2	424.50	-	424.20
	-				-	
	-				-	
	-				-	

Casing: C1 2" dia. Schedule 80 PVC, flush threaded with O-rings

C2 2" dia. threaded PVC end cap (4" long or 0.33')

Screen: S1 2" dia. Schedule 80 PVC, 0.010" machine cut slot, flush threaded with O-rings

Sand Pack: 16-35 mesh Silica Sand 12.8-28.0'

Filter Pack: 100 mesh Silica Sand 11.5-12.8'

Grout Seal:

Bentonite Seal: Extra high yield Wyo-Ben (100%) Slurry 3.0-11.5'

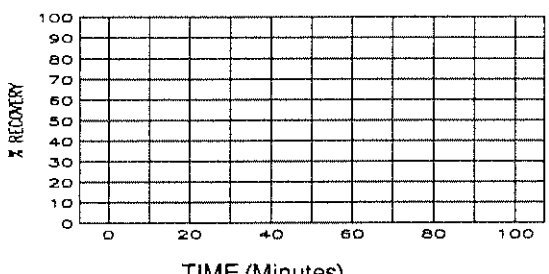
Concrete: 0.0-3.0'

Well Development

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)

Recovery Data:



Comments:

Supervised by B. Harrington

Job Number 943-2848

Site LAIDLAW/OU2 RI-FS/MO

File Name PZ304AS

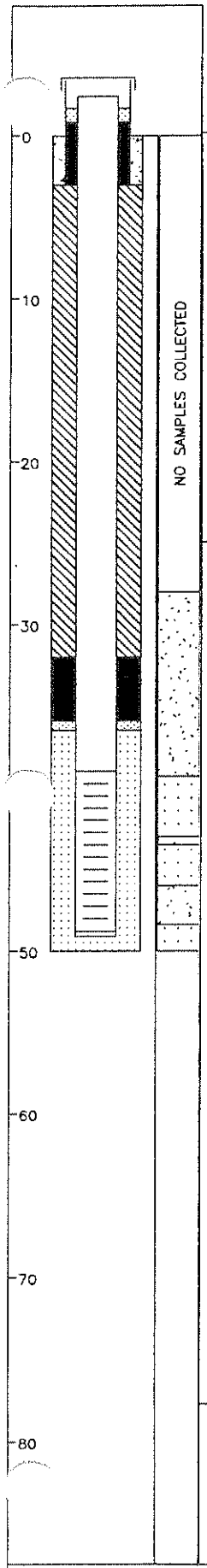
Well No. PZ-304-AI

Boring No. X-Ref: PZ-304-AI

PIEZOMETER CONSTRUCTION SUMMARY

Survey Coords: Northing: 1068126 ft.
Easting: 514435 ft.

Elevation Ground Level 451.6 ft. NGVD
Top of PVC Casing 454.02 ft. NGVD



Not to Scale

Drilling Summary:

Total Depth 50.0 ft.
Borehole Diameter 8 1/4" (0.0-50.0')
Casing Stickup Height 2.42 ft.
Driller Layne-Western
St. Louis, MO

Rig CME 75, Schramm Portadrill T660H
Bit(s) 4 1/4" ID Hollow Stem Auger Bit
3/8" Tricone Bit
Drilling Fluid Bentonite Drilling Mud (23.0-50.0')

Protective Casing 8x8" Square Steel, by 5' long

Construction Time log:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling				
CME 750	10/2/95	8:00	10/2/95	14:15
Geophys.Logging:				
Casing:				
2" I.D. PVC	10/2/95	14:20	10/2/95	14:25
Filter Placement:	10/2/95	14:25	10/2/95	15:10
Cementing:				
Development				
Bentonite Grout	10/2/95	15:45	10/2/95	16:45
Bentonite Seal	10/2/95	15:15	10/2/95	15:20

Well Design & Specifications

Basis: Geologic Log X Geophysical Log

Casing string(s): C = Casing S = Screen

Depth			String(s)	Elevation		
+ 2.42	-	39.00	C1	454.02	-	412.60
39.00	-	48.80	S1	412.60	-	402.80
48.80	-	49.10	C2	402.80	-	402.50

Casing: C1 2" dia. Schedule 80 PVC, flush threaded with O-rings
C2 2" dia. threaded PVC end cap (4" long or 0.33')

Screen: S1 2" dia. Schedule 80 PVC, 0.010" machine cut slot, flush threaded with O-rings

Sand Pack: 16-35 mesh Silica Sand 36.5-50.0'

Filter Pack: 100 mesh Silica Sand 35.9-36.5'

Grout Seal: Wyo-Ben Grout Well Bentonite Slurry 3.0-32.0'

Bentonite Seal: Extra high yield Wyo-Ben (100%) Slurry 32.0-35.9'

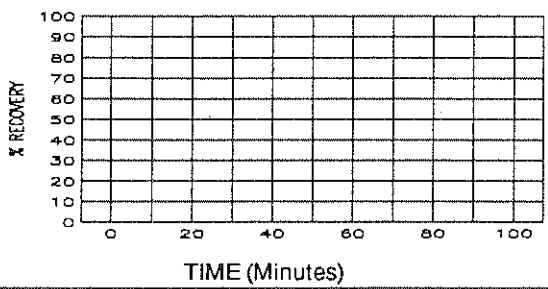
Concrete: 0.0-3.0'

Well Development

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)

Recovery Data:



Comments:

Supervised by B. Harrington
Job Number 943-2848

Site LAIDLAW/OU2 RI-FS/MO
File Name PZ304AI

Well No. PZ-305-AI

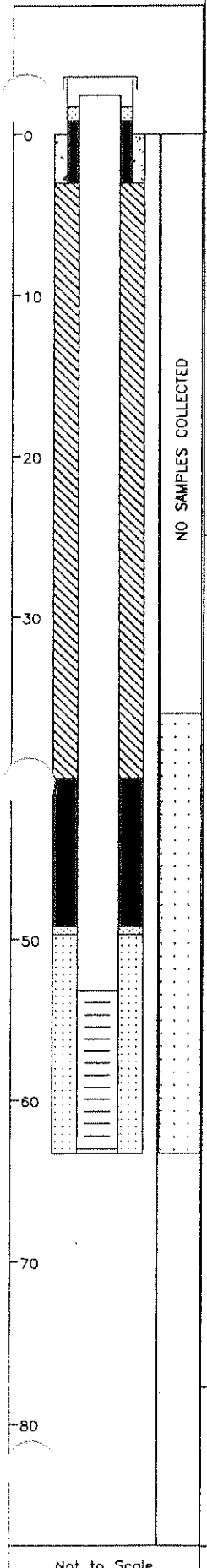
Boring No. X-Ref: PZ-305-AI

PIEZOMETER CONSTRUCTION SUMMARY

Survey Coords: Northing: 1068065 ft. Easting: 515634 ft.

Elevation Ground Level 457.6 ft. NGVD

Top of PVC Casing 459.28 ft. NGVD



Not to Scale

Drilling Summary:

Total Depth 64.0 ft.

Borehole Diameter 8 1/4" (0.0–64.0')

Casing Stickup Height 1.68 ft.

Driller Layne-Western
St. Louis, MO

Rig CME 750

Bit(s) 4 1/4" ID Hollow Stem Auger Bit
3/8" Tricone Bit

Drilling Fluid Bentonite Mud below 28.0'

Protective Casing 8x8" Square Steel, by 5' long

Construction Time log:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling				
CME 750	10/18/95	11:00	10/19/95	8:30
Geophys.Logging:				
Casing:				
2" I.D. PVC	10/19/95	10:22	10/19/95	10:30
Filter Placement:	10/19/95	10:39	10/19/95	10:24
Cementing:				
Development				
Bentonite Grout	10/19/95	10:32	10/19/95	11:15
Bentonite Seal	10/19/95	10:24	10/19/95	10:32

Well Design & Specifications

Basis: Geologic Log X Geophysical Log

Casing string(s): C = Casing S = Screen

Depth			String(s)	Elevation		
+ 1.68	-	53.20	C1	459.28	-	404.40
53.20	-	63.00	S1	404.40	-	394.60
63.00	-	63.30	C2	394.60	-	394.30

Casing: C1 2" dia. Schedule 80 PVC, flush threaded with O-rings

C2 2" dia. threaded PVC end cap (4" long or 0.33')

Screen: S1 2" dia. Schedule 80 PVC, 0.010" machine cut slot, flush threaded with O-rings

Sand Pack: 16-35 mesh Silica Sand 49.7-63.3'

Filter Pack: 100 mesh Silica Sand 49.2-49.7'

Grout Seal: Wyo-Ben Grout Well Bentonite Slurry 3.0-40.0'

Bentonite Seal: Extra high yield Wyo-Ben (100%) Slurry 40.0-49.2'

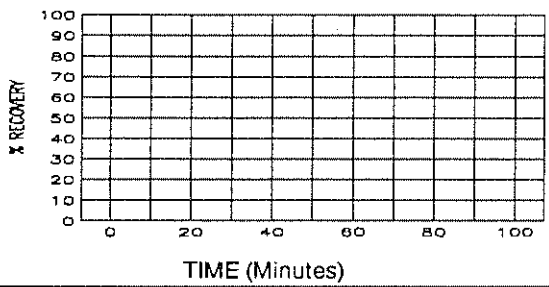
Concrete: 0.0-3.0'

Well Development

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)

Recovery Data:



Comments:

Supervised by M. Sandfort

Job Number 943-2848

Site LAIDLAW/OU2 RI-FS/MO

File Name PZ305AI

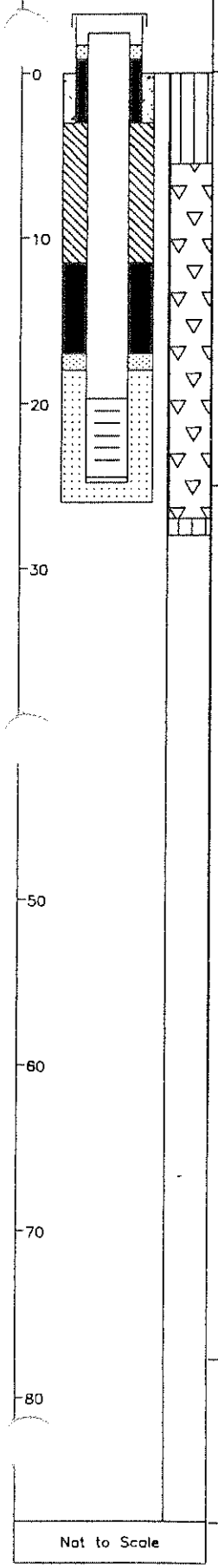
APPENDIX E-2

LEACHATE RISER CONSTRUCTION SUMMARIES

Well No. LR-100

Boring No. X-Ref: LR-100

PIEZOMETER CONSTRUCTION SUMMARY



Not to Scale

Survey Coords: Northing: 1067294 ft.
Easting: 514894 ft.

Elevation Ground Level 467.2 ft. NGVD
Top of PVC Casing 469.12 ft. NGVD

Drilling Summary:

Total Depth 26.0 ft.
Borehole Diameter 8 1/4" (0.0-26.0')
Casing Stickup Height 1.92 ft.
Driller Layne-Western
St. Louis, MO

Rig CME 750
Bit(s) 4 1/4" ID Hollow Stem Auger Bit

Drilling Fluid None

Protective Casing 8x8" Square Steel, by 5' long

Construction Time log:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling				
CME 750	10/4/95	7:30	10/4/95	11:00
Geophys.Logging:				
Casing:				
2" I.D. PVC	10/4/95	12:00	10/4/95	12:10
Filter Placement:	10/4/95	12:10	10/4/95	13:05
Cementing:				
Development				
Bentonite Grout	10/4/95	14:45	10/4/95	14:55
Bentonite Seal	10/4/95	14:30	10/4/95	14:35

Well Design & Specifications

Basis: Geologic Log X Geophysical Log
Casing string(s): C = Casing S = Screen

Depth			String(s)	Elevation		
+ 1.92	-	19.70	C1	469.12	-	447.50
19.70	-	24.50	S1	447.50	-	442.70
24.50	-	24.80	C2	442.70	-	442.40
	-				-	
	-				-	
	-				-	

Casing: C1 2" dia. Schedule 80 PVC, flush threaded with O-rings
C2 2" dia. threaded PVC end cap (4" long or 0.33')
Screen: S1 2" dia. Schedule 80 PVC, 0.010" machine cut slot, flush threaded with O-rings

Sand Pack: 16-35 mesh Silica Sand 18.0-26.0'

Filter Pack: 100 mesh Silica Sand 17.0-18.0'

Grout Seal: Wyo-Ben Grout Well Bentonite Slurry 3.0-11.5'

Bentonite Seal: Extra high yield Wyo-Ben (100%) Slurry 11.5-16.0'; Chips 16.0-17.0'

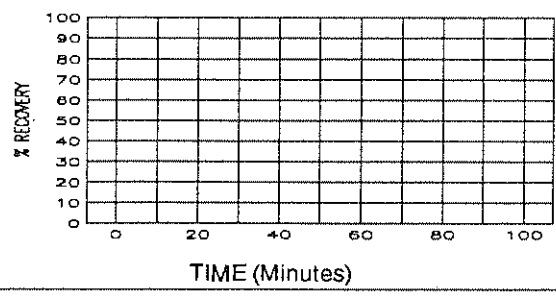
Concrete: 0.0-3.0'

Well Development

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)

Recovery Data:



Comments:

Drilled to 26.0 ft. then collected split spoon sample from 26.0-28.0 ft.

Supervised by B. Harrington
Job Number 943-2848

Site LAIDLAW/OU2 RI-FS/MO
File Name LR100

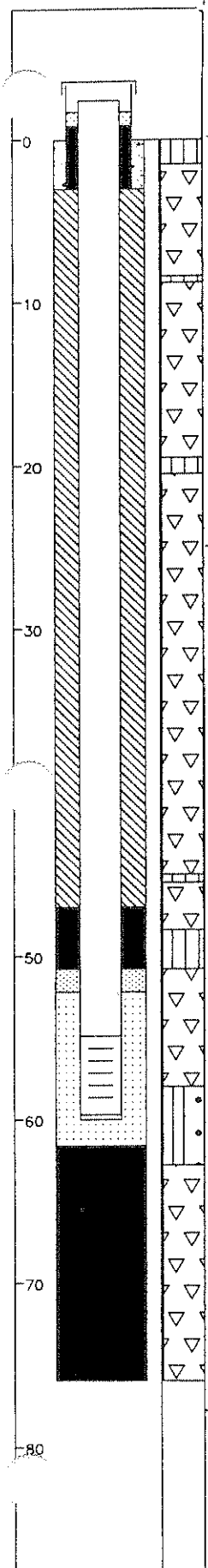
Well No. LR-102

Boring No. X-Ref: LR-102

PIEZOMETER CONSTRUCTION SUMMARY

Survey Coords: Northing: 1068937 ft.
Easting: 514788 ft.

Elevation Ground Level 512.0 ft. NGVD
Top of PVC Casing 513.52 ft. NGVD



Drilling Summary:

Total Depth 76.0 ft.
Borehole Diameter 8 1/4" (0.0-76.0')
Casing Stickup Height 1.52 ft.
Driller Layne-Western
St. Louis, MO

Rig CME 750
Bit(s) 4 1/4" ID Hollow Stem Auger Bit

Drilling Fluid None

Protective Casing 8x8" Square Steel, by 5' long

Construction Time log:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling				
CME 750	10/6/95	11:55	10/7/95	14:30
Geophys.Logging:				
Casing:				
2" I.D. PVC	10/8/95	14:30	10/8/95	15:05
Filter Placement:	10/8/95	12:50	10/8/95	15:45
Cementing:				
Development				
Bentonite Grout	10/8/95	16:20	10/8/95	
Bentonite Seal	10/8/95	15:45	10/8/95	15:55

Well Design & Specifications

Basis: Geologic Log X Geophysical Log

Casing string(s): C = Casing S = Screen

Depth			String(s)	Elevation		
+ 1.52	-	54.90	C1	513.52	-	457.10
54.90	-	59.70	S1	457.10	-	452.30
59.70	-	60.00	C2	452.30	-	452.00
	-				-	
	-				-	
	-				-	

Casing: C1 2" dia. Schedule 80 PVC, flush threaded with O-rings
C2 2" dia. threaded PVC end cap (4" long or 0.33')

Screen: S1 2" dia. Schedule 80 PVC, 0.010" machine cut slot, flush threaded with O-rings

Sand Pack: 16-35 mesh Silica Sand 52.2-61.6'

Filter Pack: Less than 50 mesh Silica Sand 50.8-52.2'

Grout Seal: Wyo-Ben Grout Well Bentonite Slurry 3.0-47.0'

Bentonite Seal: Extra high yield Wyo-Ben (100%) Slurry 47.0-50.8', Chips 61.6-76.0'

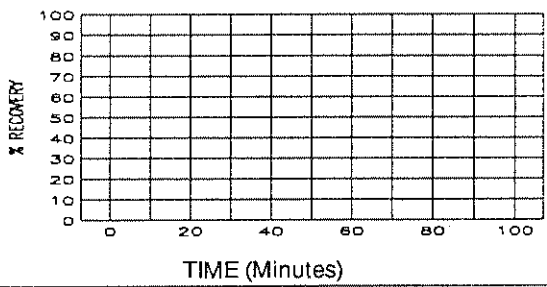
Concrete: 0.0-3.0'

Well Development

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)

Recovery Data:



Comments:

Not to Scale

Supervised by B. Harrington
Job Number 943-2848

Site LAIDLAW/OU2 RI-FS/MO
File Name LR102

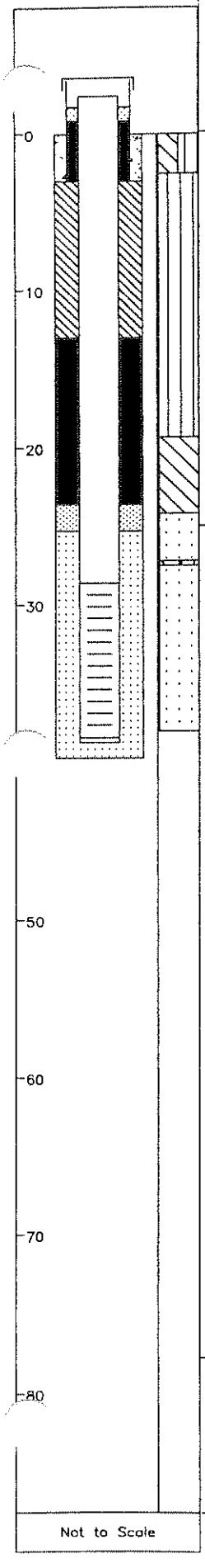
Well No. LR-103

Boring No. X-Ref: LR-103

PIEZOMETER CONSTRUCTION SUMMARY

Survey Coords: Northing: 1068527 ft.
Easting: 515217 ft.

Elevation Ground Level 460.1 ft. NGVD
Top of PVC Casing 461.28 ft. NGVD



Drilling Summary:

Total Depth 40.0 ft.
Borehole Diameter 8 1/4" (0.0-40.0')
Casing Stickup Height 1.10 ft.
Driller Layne-Western
St. Louis, MO

Rig CME 750
Bit(s) 4 1/4" ID/8 1/4" O.D. Hollow Stem Auger Bit

Drilling Fluid None

Protective Casing 8x8" Square Steel, by 5' long

Construction Time log:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling				
CME 75	10/19/95	14:00	10/20/95	9:00
Geophys.Logging:				
Casing:				
2" I.D. PVC	10/20/95	8:55	10/20/95	8:59
Filter Placement:	10/20/95	9:10	10/20/95	10:25
Cementing:				
Development				
Bentonite Grout	10/20/95	10:35	10/20/95	10:50
Bentonite Seal	10/20/95	10:28	10/20/95	10:35

Well Design & Specifications

Basis: Geologic Log X Geophysical Log
Casing string(s): C = Casing S = Screen

Depth			String(s)	Elevation		
+ 1.10	-	28.60	C1	461.28	-	431.50
28.60	-	38.40	S1	431.50	-	421.70
38.40	-	38.70	C2	421.70	-	421.40
	-				-	
	-				-	
	-				-	

Casing: C1 2" dia. Schedule 80 PVC, flush threaded with O-rings
C2 2" dia. threaded PVC end cap (4" long or 0.33')
Screen: S1 2" dia. Schedule 80 PVC, 0.010" machine cut slot, flush threaded with O-rings

Sand Pack: 16-35 mesh Silica Sand 25.3-39.7'

Filter Pack: 100 mesh Silica Sand 23.6-25.3'

Grout Seal: Wyo-Ben Grout Well Bentonite Slurry 3.0-13.0'

Bentonite Seal: Extra high yield Wyo-Ben (100%) Slurry 13.0-23.6'

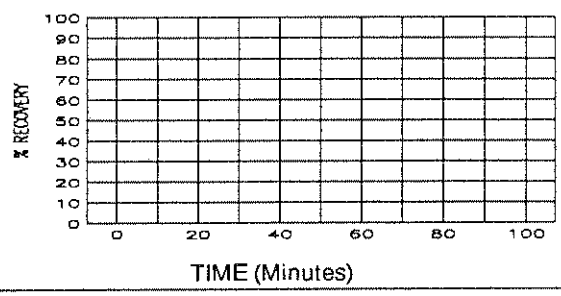
Concrete: 0.0-3.0'

Well Development

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)

Recovery Data:



Comments:

Not to Scale

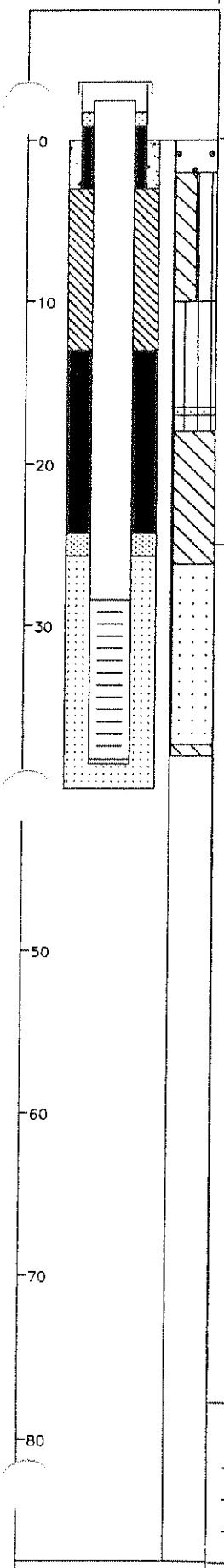
Supervised by M. Sandfort
Job Number 943-2848

Site LAIDLAW/OU2 RI-FS/MO
File Name LR103

Well No. LR-104

Boring No. X-Ref: LR-104

PIEZOMETER CONSTRUCTION SUMMARY



Not to Scale

Survey Coords: Northing: 1068079 ft.
Easting: 515623 ft.

Elevation Ground Level 458.0 ft. NGVD
Top of PVC Casing 459.73 ft. NGVD

Drilling Summary:

Total Depth 40.0 ft.
Borehole Diameter 8 1/4" (0.0-40.0')
Casing Stickup Height 1.73 ft.
Driller Layne-Western
St. Louis, MO

Rig CME 750
Bit(s) 4 1/4" ID Hollow Stem Auger Bit

Drilling Fluid None

Protective Casing 8x8" Square Steel, by 5' long

Construction Time log:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling				
CME 750	10/17/95	13:00	10/17/95	15:25
Geophys.Logging:				
Casing:				
2" I.D. PVC	10/18/95	7:45	10/18/95	7:48
Filter Placement:	10/18/95	7:52	10/18/95	8:48
Cementing:				
Development				
Bentonite Grout	10/18/95	8:44	10/18/95	8:56
Bentonite Seal	10/18/95	8:56	10/18/95	11:00

Well Design & Specifications

Basis: Geologic Log X Geophysical Log

Casing string(s): C = Casing S = Screen

Depth			String(s)	Elevation		
+ 1.73	-	28.40	C1	459.73	-	429.60
28.40	-	38.20	S1	429.60	-	419.80
38.20	-	38.50	C2	419.80	-	419.50
	-				-	
	-				-	
	-				-	

Casing: C1 2" dia. Schedule 80 PVC, flush threaded with O-rings
C2 2" dia. threaded PVC end cap (4" long or 0.33')

Screen: S1 2" dia. Schedule 80 PVC, 0.010" machine cut slot, flush threaded with O-rings

Sand Pack: 16-35 mesh Silica Sand 25.7-40.0'

Filter Pack: 100 mesh Silica Sand 24.3-25.7'

Grout Seal: Wyo-Ben Grout Well Bentonite Slurry 3.0-13.0'

Bentonite Seal: Extra high yield Wyo-Ben (100%) Slurry 13.0-24.3'

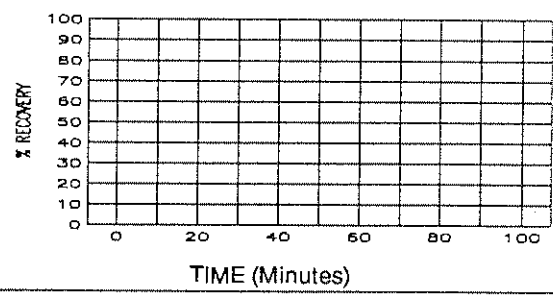
Concrete: 0.0-3.0'

Well Development

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)

Recovery Data:



Comments:

Supervised by M. Sandfort
Job Number 943-2848

Site LAIDLAW/OU2 RI-FS/MO
File Name LR104

Well No. LR-105

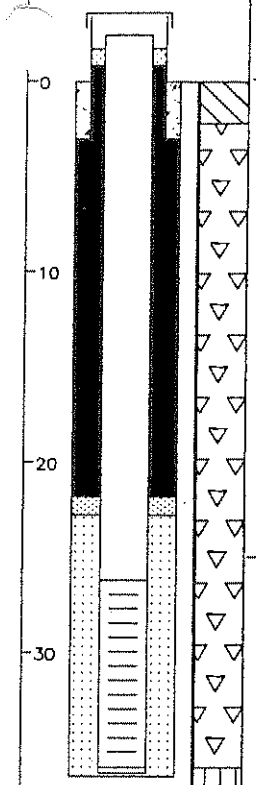
Boring No. X-Ref: LR-105

PIEZOMETER CONSTRUCTION SUMMARY

Survey Coords: Northing: 1067710 ft. Easting: 514525 ft.

Elevation Ground Level 484.2 ft. NGVD

Top of PVC Casing 486.79 ft. NGVD



Not to Scale

Drilling Summary:

Total Depth 38.0 ft.

Borehole Diameter 8 1/4" (0.0-38.0')

Casing Stickup Height 2.59 ft.

Driller Layne-Western, St. Louis, MO

Rig CME 750

Bit(s) 4 1/4" ID Hollow Stem Auger Bit

Drilling Fluid None

Protective Casing 8x8" Square Steel, by 5' long

Construction Time log:

Task	Start Date	Start Time	Finish Date	Finish Time
Drilling				
CME 750	10/3/95	9:45	10/3/95	14:45
Geophys.Logging:				
Casing:				
2" I.D. PVC	10/3/95	15:00	10/3/95	15:05
Filter Placement:	10/3/95	15:10	10/3/95	16:00
Cementing:				
Development				
Bentonite Grout				
Bentonite Seal	10/3/95	15:00	10/3/95	16:40

Well Design & Specifications

Basis: Geologic Log X Geophysical Log

Casing string(s): C = Casing S = Screen

Depth			String(s)	Elevation		
+ 2.59	-	26.20	C1	486.79	-	458.00
26.20	-	36.00	S1	458.00	-	448.20
36.00	-	36.30	C2	448.20	-	447.90

Casing: C1 2" dia. Schedule 80 PVC, flush threaded with O-rings

C2 2" dia. threaded PVC end cap (4" long or 0.33')

Screen: S1 2" dia. Schedule 80 PVC, 0.010" machine cut slot, flush threaded with O-rings

Sand Pack: 16-35 mesh Silica Sand 22.8-36.5'

Filter Pack: Less than 50 mesh Silica Sand 21.8-22.8'

Grout Seal:

Bentonite Seal: Extra high yield Wyo-Ben (100%) Chips 3.0-21.8'

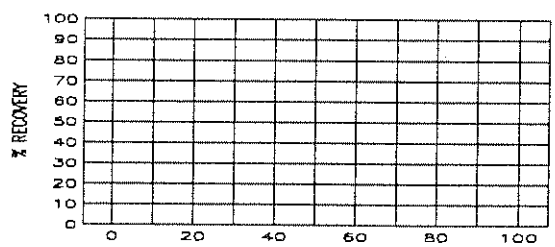
Concrete: 0.0-3.0'

Well Development

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)

Recovery Data:



Comments:

Drilled to 36.0' and collected split spoon sample from 36.0-38.0'

Supervised by B. Harrington

Job Number 943-2848

Site LAIDLAW/OU2 RI-FS/MO

File Name LR105

APPENDIX F

MONITORING WELL CERTIFICATION RECORDS

661574

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY

MONITORING WELL CERTIFICATION RECORD

OFFICE USE ONLY	DATE RECEIVED
REF. NO. 115082	CHECK NO.
ROUTE	TRANSMITTAL NO.
STATE WELL NUMBER	CROSS REFERENCE NO.
CHECKED BY	ENTERED Ph 1 Ph 2 Ph 3
APPROVED BY	DATE APPROVED

INFORMATION SUPPLIED BY OWNER

SITE NAME	WELL NUMBER
LAIDLAW BRIDGETON SANITARY LANDFILL	P2-100-55

SITE ADDRESS	CITY	STATE	ZIP CODE
ST. CHARLES ROCK RD.	BRIDGETON	MO.	63044

NAME	TELEPHONE
LAIDLAW WASTE SYSTEMS, INC.	314-344-3710

ADDRESS	CITY	STATE	ZIP CODE
1638 N. BROADWAY	ST. LOUIS	MO.	63102

INFORMATION SUPPLIED BY MONITORING WELL CONTRACTOR

LOCATION OF WELL SHOW LOCATION IN SECTION PLAT

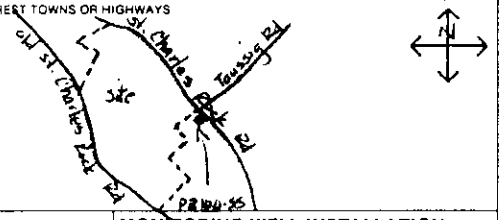
COUNTY: ST. LOUIS
ELEVATION: 484.35
AREA NO.:

SMALLEST ¼ ____ ¼ ____ ¼ ____ ¼ LARGEST ¼

SEC. ____ TWN. 47 N,RNG. 5 E OR W

LAT. 38 ° 46 ' 09 " LONG. 90 ° 32 ' 23 "

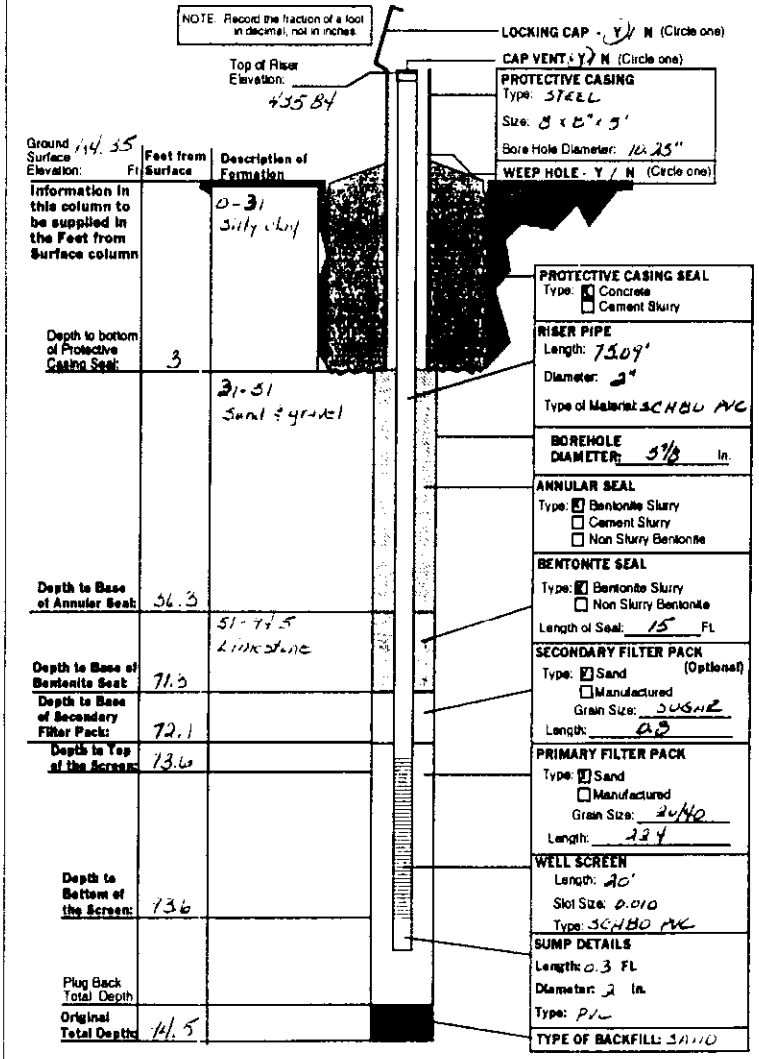
SKETCH THE LOCATION TO THE WELL INCLUDING MILEAGE ON ALL ROADS TRAVELED FROM NEAREST TOWNS OR HIGHWAYS



DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT IT

MONITORING WELL INSTALLATION CONTRACTOR'S NAME

LAYNE WESTERN CO., INC.



DRILLING CONTRACTOR'S NAME

LAYNE WESTERN CO, INC

TYPE OF INSTALLATION
[X] ABOVE GROUND [ ] FLUSH MOUNT

STATIC WATER LEVEL
FEET FROM MEASURING POINT

DATE OF STATIC WATER LEVEL

ELEVATION OF MEASURING POINT

MEASURING POINT IS
[ ] TOP OF RISER PIPE
[ ] OTHER

DRILLING EQUIPMENT
[X] AIR ROTARY [X] AUGER TYPE 6¼ H.S.A.
[ ] REVERSE ROTARY [ ] OTHER

CENTRALIZERS USED
[X] YES, AT 3 TOTAL
[ ] STAINLESS STEEL
[ ] OTHER
[ ] NO

MULTIPLE CASED WELLS
SUBMIT ADDITIONAL AS BUILT DIAGRAM SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS, AND GROUT USED.

DATE WELL CONSTRUCTION WAS COMPLETED
2-25-95

I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE (MONITORING WELL CONTRACTOR)
Michael P. Vogl

PERMIT NUMBER	DATE
001256 WIA	4-11-95

SIGNATURE (DRILLING CONTRACTOR)
Michael P. Vogl

PERMIT NUMBER	DATE
001256 WIA	4-11-95

MO 780-1415 (2-94) DISTRIBUTION: WHITE DIVISION CANARY MONITORING WELL CONTRACTOR PINK OWNER

661574

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY

MONITORING WELL CERTIFICATION RECORD

OFFICE USE ONLY	DATE RECEIVED
REF NO 15081	CHECK NO
ROUTE	TRANSMITTAL NO
STATE WELL NUMBER	CROSS REFERENCE NO
CHECKED BY	ENTERED Ph 1 Ph 2 Ph 3
APPROVED BY	DATE APPROVED

INFORMATION SUPPLIED BY OWNER

SITE NAME: LAIDLAW BRIDGETON SANITARY LANDFILL
WELL NUMBER: P2-100-3D

SITE ADDRESS: ST. CHARLES ROCK RD. | CITY: BRIDGETON | STATE: MO | ZIP CODE: 63044

NAME: LAIDLAW WASTE SYSTEMS, INC. | TELEPHONE: 314-741-3710

ADDRESS: 1438 N. BROADWAY | CITY: ST. LOUIS | STATE: MO | ZIP CODE: 63102

INFORMATION SUPPLIED BY MONITORING WELL CONTRACTOR

LOCATION OF WELL
SHOW LOCATION IN SECTION PLAT

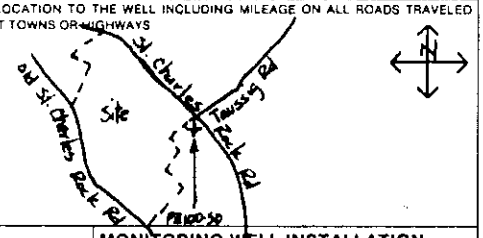
COUNTY: ST. LOUIS
ELEVATION: 484.35
AREA NO.:

SMALLEST ¼ ____ ¼ ____ ¼ ____ ¼ LARGEST ¼

SEC. ____ TWN. 47 N.RNG. 5 (E) OR W

LAT. 38° 46' 09" LONG. 90° 26' 23"

SKETCH THE LOCATION TO THE WELL INCLUDING MILEAGE ON ALL ROADS TRAVELED FROM NEAREST TOWNS OR HIGHWAYS



DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT IT

MONITORING WELL INSTALLATION CONTRACTOR'S NAME
LAYNE WESTERN CO., INC.

DRILLING CONTRACTOR'S NAME
LAYNE WESTERN CO, INC.

TYPE OF INSTALLATION: ☒ ABOVE GROUND ☐ FLUSH MOUNT

STATIC WATER LEVEL: ____ FEET FROM MEASURING POINT

DATE OF STATIC WATER LEVEL:

ELEVATION OF MEASURING POINT:

MEASURING POINT IS: ☒ TOP OF RISER PIPE ☐ OTHER ____

DRILLING EQUIPMENT: ☒ AIR ROTARY ☒ AUGER TYPE 6¼ H.S.A. ☐ REVERSE ROTARY ☐ OTHER ____

CENTRALIZERS USED: ☒ YES, AT 5 TOTAL ☐ STAINLESS STEEL ☐ OTHER ____ ☐ NO

MULTIPLE CASED WELLS: SUBMIT ADDITIONAL AS BUILT DIAGRAM SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS, AND GROUT USED.

DATE WELL CONSTRUCTION WAS COMPLETED: 2-28-95

I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE (MONITORING WELL CONTRACTOR): Michael P. Vogt
PERMIT NUMBER: 001256 WIM | DATE: 4-11-95
SIGNATURE (DRILLING CONTRACTOR): Michael P. Vogt
PERMIT NUMBER: 001256 WIM | DATE: 4-11-95

NOTE: Record the fraction of a foot in decimal, not in inches.

Top of Riser Elevation: 485.82

Ground Surface Elevation: 484.35 Ft.

Information in this column to be supplied in the Feet from Surface column	Feet from Surface	Description of Formation
		0-13 Clay
Depth to bottom of Protective Casing Seal:	3	
		13-36 Silt
		36-88 Limestone
		88-94 Shale
		94-143 Dolomite
		143-159 Limestone
		159-165 Dolomite
		165-210 Limestone
Depth to Base of Annular Seal:	210.0	
		210-234 Dolomite
Depth to Base of Bentonite Seal:	230.5	
Depth to Base of Secondary Filter Pack:	232.0	
Depth to Top of the Screen:	234.8	
		234-246 Limestone
Depth to Bottom of the Screen:	244.8	
Plug Back Total Depth:		
Original Total Depth:	246.0	

LOCKING CAP - (Y) N (Circle one)
CAP VENT (Y) N (Circle one)
PROTECTIVE CASING Type: STEEL Size: 8"x8"x5' Bore Hole Diameter: 10.25"
WEEP HOLE - Y / N (Circle one)
PROTECTIVE CASING SEAL Type: ☒ Concrete ☐ Cement Slurry
RISER PIPE Length: 236.27' Diameter: 2" Type of Material: SCH80 PVC
BOREHOLE DIAMETER: 5⅞ In.
ANNULAR SEAL Type: ☒ Bentonite Slurry ☐ Cement Slurry ☐ Non Slurry Bentonite
BENTONITE SEAL Type: ☒ Bentonite Slurry ☐ Non Slurry Bentonite Length of Seal: 20.5 FL
SECONDARY FILTER PACK (Optional) Type: ☒ Sand ☐ Manufactured Grain Size: SUGAR Length: 1.5'
PRIMARY FILTER PACK Type: ☒ Sand ☐ Manufactured Grain Size: 2x4/6 Length: 14'
WELL SCREEN Length: 10' Slot Size: 0.010" Type: SCH 80 PVC
SUMP DETAILS Length: 0.3 FL Diameter: 2 In. Type: PVC
TYPE OF BACKFILL: SAND

MO 780-1315 (2-94)

DISTRIBUTION: WHITE DIVISION CANARY MONITORING WELL CONTRACTOR PINK/OWNER

66154

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY

MONITORING WELL CERTIFICATION RECORD

OFFICE USE ONLY	DATE RECEIVED
REF NO 115086	CHECK NO.
ROUTE	TRANSMITTAL NO
STATE WELL NUMBER	CROSS REFERENCE NO
CHECKED BY	ENTERED Ph 1 Ph 2 Ph 3
APPROVED BY	DATE APPROVED

INFORMATION SUPPLIED BY OWNER

SITE NAME	WELL NUMBER
LAIDLAW BRIDGETON SANITARY LANDFILL	P2-101-55

SITE ADDRESS	CITY	STATE	ZIP CODE
ST. CHARLES ROCK RD.	BRIDGETON	MO	63044

NAME	TELEPHONE
LAIDLAW WASTE SYSTEMS, INC.	314-291-3710

ADDRESS	CITY	STATE	ZIP CODE
1235 N. LINDBERGH	ST. LOUIS	MO	63132

INFORMATION SUPPLIED BY MONITORING WELL CONTRACTOR

LOCATION OF WELL SHOW LOCATION IN SECTION PLAT

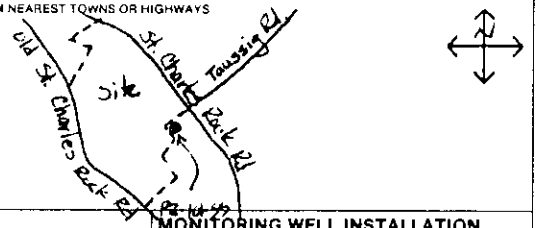
COUNTY ST. LOUIS
ELEVATION 474.1
AREA NO

SMALLEST ¼ ____ ¼ ____ ¼ ____ ¼ LARGEST ¼

SEC. ____ TWN 47 N, RNG 5 E OR W

LAT 38° 46' 06" LONG 90° 16' 30"

SKETCH THE LOCATION TO THE WELL INCLUDING MILEAGE ON ALL ROADS TRAVELED FROM NEAREST TOWNS OR HIGHWAYS



DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT IT

MONITORING WELL INSTALLATION CONTRACTOR'S NAME
LAYNE WESTERN CO, INC.

DRILLING CONTRACTOR'S NAME
LAYNE WESTERN CO, INC.

TYPE OF INSTALLATION
☒ ABOVE GROUND ☐ FLUSH MOUNT

STATIC WATER LEVEL
FEET FROM MEASURING POINT

DATE OF STATIC WATER LEVEL

ELEVATION OF MEASURING POINT

MEASURING POINT IS
☐ TOP OF RISER PIPE
☐ OTHER

DRILLING EQUIPMENT
☒ AIR ROTARY ☒ AUGER TYPE 6¼ H.S.A.
☐ REVERSE ROTARY ☐ OTHER

CENTRALIZERS USED
☒ YES, AT 4 TOTAL
☐ STAINLESS STEEL
☐ OTHER
☐ NO

MULTIPLE CASED WELLS
SUBMIT ADDITIONAL AS BUILT DIAGRAM SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS, AND GROUT USED.

DATE WELL CONSTRUCTION WAS COMPLETED
3-06-75

I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE (MONITORING WELL CONTRACTOR) Michael P. Vogt

PERMIT NUMBER	DATE
001256 WM	4-11-75

SIGNATURE (DRILLING CONTRACTOR) Michael P. Vogt

PERMIT NUMBER	DATE
001256 WM	4-11-75

NOTE: Record the fraction of a foot in decimal, not in inches

Top of Riser Elevation: 477.4

LOCKING CAP - Y) N (Circle one)
CAP VENT - Y) N (Circle one)

PROTECTIVE CASING
Type: STEEL
Size: 8" x 8" x 5'
Bore Hole Diameter: 10.25"
WEEP HOLE - Y / N (Circle one)

Ground Surface Elevation: 474.1 Ft	Feet from Surface	Description of Formation
Information in this column to be supplied in the Feet from Surface column		0-14 Silt
Depth to bottom of Protective Casing Seal:	3	
		14-55 Limestone
		55-62 Dolomite
		62-73 Limestone
		73-77 Dolomite
Depth to Base of Annular Seal:	117.5	77-84 Limestone
		84-93 Dolomite
Depth to Base of Bentonite Seal:	124	93-120 Limestone
Depth to Base of Secondary Filter Pack:	127.5	120-125 Dolomite
Depth to Top of the Screen:	127.5	
		125-140 Limestone
Depth to Bottom of the Screen:	137.5	
Plug Back Total Depth		
Original Total Depth:	140	

PROTECTIVE CASING SEAL
Type: ☒ Concrete ☐ Cement Slurry

RISER PIPE
Length: 132
Diameter: 4
Type of Material: SCH 80 PVC

BOREHOLE DIAMETER: 5½ In.

ANNULAR SEAL
Type: ☒ Bentonite Slurry ☐ Cement Slurry ☐ Non Slurry Bentonite

BENTONITE SEAL
Type: ☒ Bentonite Slurry ☐ Non Slurry Bentonite
Length of Seal: 6.5 FL

SECONDARY FILTER PACK (Optional)
Type: ☒ Sand ☐ Manufactured
Grain Size: SIEVE #2
Length: 1.5

PRIMARY FILTER PACK
Type: ☒ Sand ☐ Manufactured
Grain Size: 16-35
Length: 12.5

WELL SCREEN
Length: 10'
Slot Size: .010"
Type: 4"/1.40 PVC

SUMP DETAILS
Length: 3 FL
Diameter: 4 In.
Type: PVC

TYPE OF BACKFILL: SAND

DISTRIBUTION: WHITE DIVISION CANARY MONITORING WELL CONTRACTOR PINK OWNER

661574

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY

MONITORING WELL CERTIFICATION RECORD

OFFICE USE ONLY	DATE RECEIVED
REF NO 115088	CHECK NO.
ROUTE	TRANSMITTAL NO
STATE WELL NUMBER	CROSS REFERENCE NO
CHECKED BY	ENTERED Ph 1 Ph 2 Ph 3
APPROVED BY	DATE APPROVED

INFORMATION SUPPLIED BY OWNER

SITE NAME	WELL NUMBER
LAIDLAW BRIDGETON SANITARY LANDFILL	AZ-102-55

SITE ADDRESS	CITY	STATE	ZIP CODE
ST. CHARLES ROCK RD.	BRIDGETON	MO	63044

NAME	TELEPHONE
LAIDLAW WASTE SYSTEMS, INC.	314-241-3710

ADDRESS	CITY	STATE	ZIP CODE
1839 N. BROADWAY	ST. LOUIS	MO	63102

INFORMATION SUPPLIED BY MONITORING WELL CONTRACTOR

LOCATION OF WELL SHOW LOCATION IN SECTION PLAT

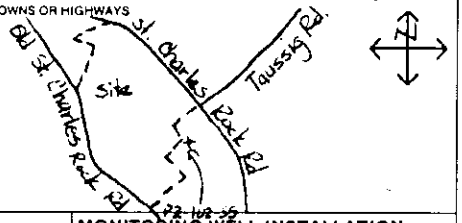
COUNTY ST. LOUIS
ELEVATION 482.0
AREA NO.

SMALLEST ¼ LARGEST ¼

SEC. ____ TWN. 47 N,RNG. 5 E OR W

LAT. 38 ° 46 ' 02 " LONG 90 ° 26 ' 27 "

SKETCH THE LOCATION TO THE WELL INCLUDING MILEAGE ON ALL ROADS TRAVELED FROM NEAREST TOWNS OR HIGHWAYS



DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT IT

MONITORING WELL INSTALLATION CONTRACTOR'S NAME
LAYNE WESTERN Co, INC.

DRILLING CONTRACTOR'S NAME
LAYNE WESTERN Co, INC.

TYPE OF INSTALLATION
☒ ABOVE GROUND ☐ FLUSH MOUNT

STATIC WATER LEVEL
FEET FROM MEASURING POINT

DATE OF STATIC WATER LEVEL

ELEVATION OF MEASURING POINT

MEASURING POINT IS
☐ TOP OF RISER PIPE
☐ OTHER

DRILLING EQUIPMENT
☒ AIR ROTARY ☒ AUGER TYPE 6¼ H.S.A.
☐ REVERSE ROTARY ☐ OTHER

CENTRALIZERS USED
☒ YES, AT 3 TOTAL
☐ STAINLESS STEEL
☐ OTHER
☐ NO

MULTIPLE CASED WELLS
SUBMIT ADDITIONAL AS BUILT DIAGRAM SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS, AND GROUT USED.

DATE WELL CONSTRUCTION WAS COMPLETED
3-12-95

I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE (MONITORING WELL CONTRACTOR)
Michael J. Vogt

PERMIT NUMBER	DATE
001256WM	4-11-95

SIGNATURE (DRILLING CONTRACTOR)
Michael J. Vogt

PERMIT NUMBER	DATE
001256WM	4-11-95

NOTE: Record the fraction of a foot in decimal, not in inches.

Top of Riser Elevation: 484.6

LOCKING CAP - Y / N (Circle one)
CAP VENT - Y / N (Circle one)
PROTECTIVE CASING Type: STEEL Size: 8" x 3' x 5' Bore Hole Diameter: 10.25"
WEEP HOLE - Y / N (Circle one)

Ground Surface Elevation: 482.0 Ft

Information in this column to be supplied in the Feet from Surface column	Feet from Surface	Description of Formation
		0-2.5 Silt
Depth to bottom of Protective Casing Seal:	3	2.5-5 clay
		5-13 Silt
		13-24 Sandstone
		24-28 Silt
Depth to Base of Annular Seal:	65.0	28-35 Limestone
		35-38 clay
Depth to Base of Bentonite Seal:	75.5 ~~77.5~~	
Depth to Base of Secondary Filter Pack:	77.0	38-45 Sandstone
Depth to Top of the Screen:	79.75	
		45-90 Limestone
Depth to Bottom of the Screen:	89.75	
Plug Back Total Depth:		
Original Total Depth:	92.4	

PROTECTIVE CASING SEAL Type: ☒ Concrete ☐ Cement Slurry
RISER PIPE Length: 72.35' Diameter: 2" Type of Material: SCH80 PVC
BOREHOLE DIAMETER: 5 7/8 In.
ANNULAR SEAL Type: ☒ Bentonite Slurry ☐ Cement Slurry ☐ Non Slurry Bentonite
BENTONITE SEAL Type: ☒ Bentonite Slurry ☐ Non Slurry Bentonite Length of Seal: 10.5 FL
SECONDARY FILTER PACK (Optional) Type: ☒ Sand ☐ Manufactured Grain Size: SCH#2 Length: 1.5'
PRIMARY FILTER PACK Type: ☒ Sand ☐ Manufactured Grain Size: 16-35 Length: 13.4'
WELL SCREEN Length: 10' Slot Size: 0.010" Type: SCH 80 PVC
SUMP DETAILS Length: 0.3 FT. Diameter: 2 In. Type: PVC
TYPE OF BACKFILL: SAND

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY

MONITORING WELL CERTIFICATION RECORD

OFFICE USE ONLY	DATE RECEIVED
REF NO 122513	CHECK NO
ROUTE	TRANSMITTAL NO
STATE WELL NUMBER	CROSS REFERENCE NO
CHECKED BY	ENTERED Ph 1 Ph 2 Ph 3
APPROVED BY	DATE APPROVED

INFORMATION SUPPLIED BY OWNER

SITE NAME	WELL NUMBER
LAIDLAW BRIDGETON SANITARY LANDFILL	P2-102-R-SS

SITE ADDRESS	CITY	STATE	ZIP CODE
ST. CHARLES ROCK RD.	BRIDGETON	MO	63044

NAME	TELEPHONE
LAIDLAW WASTE SYSTEMS, INC.	314-341-9110

ADDRESS	CITY	STATE	ZIP CODE
1938 N. BROADWAY	ST LOUIS	MO	63102

INFORMATION SUPPLIED BY MONITORING WELL CONTRACTOR

LOCATION OF WELL SHOW LOCATION IN SECTION PLAT

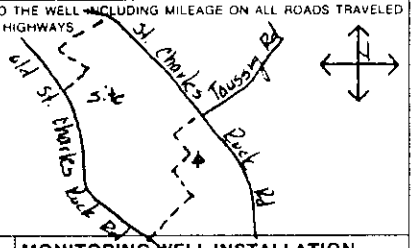
COUNTY ST LOUIS
ELEVATION 484.46
AREA NO.

SMALLEST ¼ LARGEST ¼

SEC. ____ TWN. 47 N,RNG 5 E OR W

LAT. 38° 46' 01" LONG 90° 26' 27"

SKETCH THE LOCATION TO THE WELL INCLUDING MILEAGE ON ALL ROADS TRAVELED FROM NEAREST TOWNS OR HIGHWAYS



DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT IT

MONITORING WELL INSTALLATION CONTRACTOR'S NAME

LAYNE WESTERN CO, INC.

DRILLING CONTRACTOR'S NAME

LAYNE WESTERN CO, INC.

TYPE OF INSTALLATION
☑ ABOVE GROUND ☐ FLUSH MOUNT

STATIC WATER LEVEL
FEET FROM MEASURING POINT

DATE OF STATIC WATER LEVEL

ELEVATION OF MEASURING POINT
485.38

MEASURING POINT IS
☑ TOP OF RISER PIPE
☐ OTHER

DRILLING EQUIPMENT
☑ AIR ROTARY ☑ AUGER TYPE 6¼ H.S.A.
☐ REVERSE ROTARY ☐ OTHER

CENTRALIZERS USED
☑ YES, AT 2 TOTAL
☑ STAINLESS STEEL
☐ OTHER
☐ NO

MULTIPLE CASED WELLS
SUBMIT ADDITIONAL AS BUILT DIAGRAM SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS, AND GROUT USED.

DATE WELL CONSTRUCTION WAS COMPLETED
6-18-95

I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE (MONITORING WELL CONTRACTOR) Michael T. Vogt

PERMIT NUMBER 001256 WWW — DATE 7-07-95

SIGNATURE (DRILLING CONTRACTOR) Michael T. Vogt

PERMIT NUMBER 001256 WWW — DATE 7-07-95

NOTE: Record the fraction of a foot in decimal, not in inches

Top of Riser Elevation: 485.58

Ground Surface Elevation: 484.46 Ft

Information in this column to be supplied in the Feet from Surface column	Feet from Surface	Description of Formation
		0-1' Silt
Depth to bottom of Protective Casing Seal:	3.0	
		17-22 Sand
		22-32 Silt
		32-35 Sand
Depth to Base of Annular Seal:	63.0	
		35-75 Limestone
Depth to Base of Bentonite Seal:	75.0	75-77
Depth to Base of Secondary Filter Pack:	77.0	Dolomite
Depth to Top of the Screen:	79.4	
		77-87 Limestone
		87-90.3 Shale
Depth to Bottom of the Screen:	87.4	
Plug Back Total Depth:		
Original Total Depth:	90.3	

LOCKING CAP - Y / N (Circle one)

CAP VENT - Y / N (Circle one)

PROTECTIVE CASING
Type: STEEL
Size: 9"x8"x5'
Bore Hole Diameter: 10¼"

WEEP HOLE - Y / N (Circle one)

PROTECTIVE CASING SEAL
Type: ☑ Concrete ☐ Cement Slurry

RISER PIPE
Length: 82'
Diameter: 3"
Type of Material: SCH 80 PVC

BOREHOLE DIAMETER: 5⅛ in.

ANNULAR SEAL
Type: ☐ Bentonite Slurry ☑ Cement Slurry ☐ Non Slurry Bentonite

BENTONITE SEAL
Type: ☑ Bentonite Slurry ☐ Non Slurry Bentonite
Length of Seal: 1.3 Ft.

SECONDARY FILTER PACK (Optional)
Type: ☑ Sand ☐ Manufactured
Grain Size: < 50
Length: 2'

PRIMARY FILTER PACK
Type: ☑ Sand ☐ Manufactured
Grain Size: 16-35
Length: 13.3'

WELL SCREEN
Length: 10'
Slot Size: 0.010
Type: SCH 80 PVC

SUMP DETAILS
Length: 0.3 Ft.
Diameter: ø in.
Type: PVC

TYPE OF BACKFILL: SAND

DISTRIBUTION WHITE DIVISION CANARY MONITORING WELL CONTRACTOR PINK OWNER

661574

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY

MONITORING WELL CERTIFICATION RECORD

OFFICE USE ONLY	DATE RECEIVED
REF NO 115083	CHECK NO.
ROUTE	TRANSMITTAL NO
STATE WELL NUMBER	CROSS REFERENCE NO
CHECKED BY	ENTERED Ph 1 Ph 2 Ph 3
APPROVED BY	DATE APPROVED

INFORMATION SUPPLIED BY OWNER

SITE NAME	WELL NUMBER
LAIDLAW BRIDGETON SANITARY LANDFILL	PZ-103-SS

SITE ADDRESS	CITY	STATE	ZIP CODE
St. Charles Rock Rd	BRIDGETON	Mo	63044

NAME	TELEPHONE
LAIDLAW WASTE SYSTEMS, INC.	314-241-3710

ADDRESS	CITY	STATE	ZIP CODE
1838 N. BROADWAY	St. Louis	Mo.	63102

INFORMATION SUPPLIED BY MONITORING WELL CONTRACTOR

LOCATION OF WELL SHOW LOCATION IN SECTION PLAT

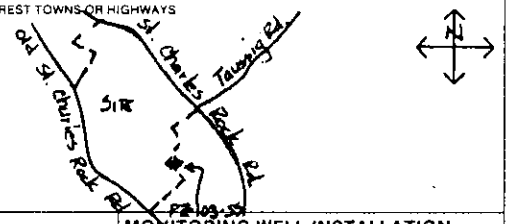
COUNTY St. Louis
ELEVATION 477.78
AREA NO.

SMALLEST ¼ ____ ¼ ____ ¼ ____ ¼ LARGEST ¼

SEC. ____ TWN. 47 N,RNG 5 (E) OR W

LAT. 38 ° 45 ' 57 " LONG. 90 ° 16 ' 29 "

SKETCH THE LOCATION TO THE WELL INCLUDING MILEAGE ON ALL ROADS TRAVELED FROM NEAREST TOWNS OR HIGHWAYS



DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT IT

MONITORING WELL INSTALLATION CONTRACTOR'S NAME

LAYNE WESTERN Co., INC.

DRILLING CONTRACTOR'S NAME

LAYNE WESTERN Co., INC.

TYPE OF INSTALLATION
☒ ABOVE GROUND ☐ FLUSH MOUNT

STATIC WATER LEVEL
FEET FROM MEASURING POINT

DATE OF STATIC WATER LEVEL

ELEVATION OF MEASURING POINT

MEASURING POINT IS
☐ TOP OF RISER PIPE
☐ OTHER

DRILLING EQUIPMENT
☒ AIR ROTARY ☒ AUGER TYPE 6¼ H.S.A.
☐ REVERSE ROTARY ☐ OTHER

CENTRALIZERS USED
☒ YES, AT 4 TOTAL
☐ STAINLESS STEEL
☐ OTHER
☐ NO

MULTIPLE CASED WELLS
SUBMIT ADDITIONAL AS BUILT DIAGRAM SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS, AND GROUT USED.

DATE WELL CONSTRUCTION WAS COMPLETED
2-27-95

I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE (MONITORING WELL CONTRACTOR) Michael P. Vogl

PERMIT NUMBER	DATE
001256 WMA	4-11-95

SIGNATURE (DRILLING CONTRACTOR) Michael P. Vogl

PERMIT NUMBER	DATE
001256 WMA	4-11-95

NOTE: Record the fraction of a foot in decimal, not in inches

Top of Riser Elevation: 480.17

LOCKING CAP - Y / N (Circle one)
CAP VENT - Y / N (Circle one)
PROTECTIVE CASING Type: STEEL
Size: 8" x 8" x 3'
Bore Hole Diameter: 10.25"
WEEP HOLE - Y / N (Circle one)

Ground Surface Elevation: 477.78 Ft.

Information in this column to be supplied in the Feet from Surface column:	Feet from Surface	Description of Formation
		0-15 Silt
Depth to bottom of Protective Casing Seal:	3	
		15-20 Sandy silt
		20-32 Silt
		32-51 Clay
		51-64 Limestone
Depth to Base of Annular Seal:	110.0	64-72 Sandy silt
		72-78 Shale
Depth to Base of Bentonite Seal:	131.1	78-87 Limestone
Depth to Base of Secondary Filter Pack:	132.5	87-111 Dolomite
Depth to Top of the Screen:	134.5	
		111-128 Limestone
		128-135 Dolomite
Depth to Bottom of the Screen:	144.5	135-137 Limestone
		137-143 Dolomite
Plug Back Total Depth:		143-144.5 Limestone
Original Total Depth:	145.5	

PROTECTIVE CASING SEAL Type: ☒ Concrete ☐ Cement Slurry

RISER PIPE Length: 136.67' Diameter: 2" Type of Material: SCH80 PVC

BOREHOLE DIAMETER: 5⅞ In.

ANNULAR SEAL Type: ☒ Bentonite Slurry ☐ Cement Slurry ☐ Non Slurry Bentonite

BENTONITE SEAL Type: ☒ Bentonite Slurry ☐ Non Slurry Bentonite Length of Seal: 21.1 Ft.

SECONDARY FILTER PACK (Optional) Type: ☒ Sand ☐ Manufactured Grain Size: SUGAR Length: 1.4'

PRIMARY FILTER PACK Type: ☒ Sand ☐ Manufactured Grain Size: 20/40 Length: 1.3'

WELL SCREEN Length: 10' Slot Size: 0.010" Type: SCH80 PVC

SUMP DETAILS Length: 0.3 Ft. Diameter: 2 In. Type: PVC

TYPE OF BACKFILL: SAND

MO 780-1415 (2-94) DISTRIBUTION: WHITE DIVISION CANARY MONITORING WELL CONTRACTOR PINK OWNER

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY

MONITORING WELL CERTIFICATION RECORD

OFFICE USE ONLY	DATE RECEIVED
REF NO 122511	CHECK NO
ROUTE	TRANSMITTAL NO
STATE WELL NUMBER	CROSS REFERENCE NO
CHECKED BY	ENTERED Ph 1 Ph 2 Ph 3
APPROVED BY	DATE APPROVED

INFORMATION SUPPLIED BY OWNER

SITE NAME: LAIDLAW BRIDGETON SANITARY LANDFILL
WELL NUMBER: PZ-104-SS

SITE ADDRESS: ST. CHARLES ROCK RD. | CITY: BRIDGETON | STATE: MO | ZIP CODE: 63044

NAME: LAIDLAW WASTE SYSTEMS, INC. | TELEPHONE: 314-241-3710

ADDRESS: 1838 I. EXCHANGE | CITY: ST LOUIS | STATE: MO | ZIP CODE: 63102

INFORMATION SUPPLIED BY MONITORING WELL CONTRACTOR

LOCATION OF WELL (SHOW LOCATION IN SECTION PLAT)

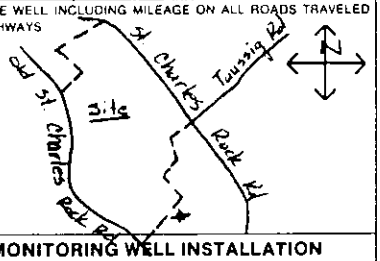
COUNTY: ST. LOUIS
ELEVATION: 481.6
AREA NO:

SMALLEST ¼ ____ ¼ ____ ¼ ____ ¼ LARGEST ¼

SEC. ____ TWN. 47 N,RNG. 5 (E) OR W

LAT. 38 : 45 : 50 LONG. 90 : 26 : 27

SKETCH THE LOCATION TO THE WELL INCLUDING MILEAGE ON ALL ROADS TRAVELED FROM NEAREST TOWNS OR HIGHWAYS



DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT IT

MONITORING WELL INSTALLATION CONTRACTOR'S NAME
LAYNE WESTERN CO., INC.

DRILLING CONTRACTOR'S NAME
LAYNE WESTERN CO., INC.

TYPE OF INSTALLATION: ☒ ABOVE GROUND ☐ FLUSH MOUNT

STATIC WATER LEVEL: FEET FROM MEASURING POINT

DATE OF STATIC WATER LEVEL:

ELEVATION OF MEASURING POINT: 483.6

MEASURING POINT IS: ☒ TOP OF RISER PIPE ☐ OTHER

DRILLING EQUIPMENT: ☒ AIR ROTARY ☒ AUGER TYPE 6¼ H.S.A. ☐ REVERSE ROTARY ☐ OTHER

CENTRALIZERS USED: ☒ YES, AT 5 TOTAL ☒ STAINLESS STEEL ☐ OTHER ☐ NO

MULTIPLE CASED WELLS: SUBMIT ADDITIONAL AS BUILT DIAGRAM SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS, AND GROUT USED.

DATE WELL CONSTRUCTION WAS COMPLETED: 6-04-95

I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE (MONITORING WELL CONTRACTOR): Michael P. Vogt
PERMIT NUMBER: 001256 WM | DATE: 7-07-95

SIGNATURE (DRILLING CONTRACTOR): Michael P. Vogt
PERMIT NUMBER: 001256 WM | DATE: 7-07-95

NOTE: Record the fraction of a foot in decimal, not in inches.

Top of Riser Elevation: 483.6

LOCKING CAP - (Y) N (Circle one)
CAP VENT - Y / (N) (Circle one)

PROTECTIVE CASING
Type: STEEL
Size: 8" x 8" x 5'
Bore Hole Diameter: 10¼"

WEEP HOLE - Y / (N) (Circle one)

Ground Surface Elevation: 481.6

Information in this column to be supplied in the Feet from Surface column	Feet from Surface	Description of Formation
Depth to bottom of Protective Casing Seal:	3.0	
Depth to Base of Annular Seal:	120.0	
Depth to Base of Bentonite Seal:	130.5	
Depth to Base of Secondary Filter Pack:	132.5	
Depth to Top of the Screen:	134.5	
Depth to Bottom of the Screen:	144.5	
Plug Back Total Depth		
Original Total Depth:	145.0	

PROTECTIVE CASING SEAL
Type: ☒ Concrete ☐ Cement Slurry

RISER PIPE
Length: 136.6'
Diameter: 2"
Type of Material: SCH 80 PVC

BOREHOLE DIAMETER: 5 7/8 In.

ANNULAR SEAL
Type: ☐ Bentonite Slurry ☒ Cement Slurry ☐ Non Slurry Bentonite

BENTONITE SEAL
Type: ☒ Bentonite Slurry ☐ Non Slurry Bentonite
Length of Seal: 10.5 Ft.

SECONDARY FILTER PACK (Optional)
Type: ☒ Sand ☐ Manufactured
Grain Size: <50
Length: 3'

PRIMARY FILTER PACK
Type: ☒ Sand ☐ Manufactured
Grain Size: 16-35
Length: 12.5'

WELL SCREEN
Length: 10'
Slot Size: 0.010"
Type: SCH 80 PVC

SUMP DETAILS
Length: 0.3 Ft.
Diameter: 2 In.
Type: PVC

TYPE OF BACKFILL: SAND

DISTRIBUTION: WHITE DIVISION CANARY MONITORING WELL CONTRACTOR PINK OWNER

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY

MONITORING WELL CERTIFICATION RECORD

OFFICE USE ONLY	
REF NO 122512	DATE RECEIVED
ROUTE	CHECK NO
STATE WELL NUMBER	TRANSMITTAL NO
CHECKED BY	CROSS REFERENCE NO
APPROVED BY	ENTERED Ph 1 Ph 2 Ph 3
	DATE APPROVED

INFORMATION SUPPLIED BY OWNER

SITE NAME	WELL NUMBER
LANDFILL BRIDGETON SANITARY LANDFILL	P2-104-SD

SITE ADDRESS	CITY	STATE	ZIP CODE
31 CHARLES ROCK RD.	BRIDGETON	MO.	63044

NAME	TELEPHONE
LANDFILL WASTE SYSTEMS, INC.	314 241 3110

ADDRESS	CITY	STATE	ZIP CODE
1530 N. LINDBERGH	ST. LOUIS	MO	63132

INFORMATION SUPPLIED BY MONITORING WELL CONTRACTOR

LOCATION OF WELL
SHOW LOCATION IN SECTION PLAT

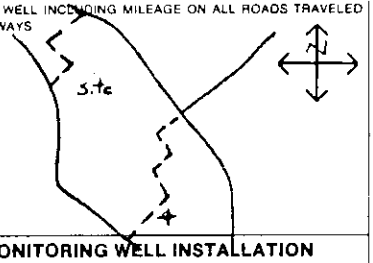
COUNTY ST LOUIS
ELEVATION 453.69
AREA NO

SMALLEST ¼ LARGEST ¼

SEC. ____ TWN. 47 N,RNG 5 E OR W

LAT. 38° 45' 50" LONG. 90° 26' 27"

SKETCH THE LOCATION TO THE WELL INCLUDING MILEAGE ON ALL ROADS TRAVELED FROM NEAREST TOWNS OR HIGHWAYS



DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT IT

MONITORING WELL INSTALLATION CONTRACTOR'S NAME
LAYNE WESTERN CO, INC.

DRILLING CONTRACTOR'S NAME
LAYNE WESTERN CO, INC.

TYPE OF INSTALLATION
☒ ABOVE GROUND ☐ FLUSH MOUNT

STATIC WATER LEVEL
FEET FROM MEASURING POINT

DATE OF STATIC WATER LEVEL

ELEVATION OF MEASURING POINT
453.69

MEASURING POINT IS
☒ TOP OF RISER PIPE
☐ OTHER

DRILLING EQUIPMENT
☒ AIR ROTARY ☒ AUGER TYPE 6¼ H.S.A.
☐ REVERSE ROTARY ☐ OTHER

CENTRALIZERS USED
☒ YES, AT 6 TOTAL
☒ STAINLESS STEEL
☐ OTHER
☐ NO

MULTIPLE CASED WELLS
SUBMIT ADDITIONAL AS BUILT DIAGRAM SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS, AND GROUT USED.

DATE WELL CONSTRUCTION WAS COMPLETED
6-17-95

I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE (MONITORING WELL CONTRACTOR) Michael P. Vogt

PERMIT NUMBER	DATE
001256 WI.9	7-27-95

SIGNATURE (DRILLING CONTRACTOR) Michael P. Vogt

PERMIT NUMBER	DATE
001256 WI.9	7-27-95

NOTE: Record the fraction of a foot in decimal, not in inches

Top of Riser Elevation: 453.69

LOCKING CAP - Y / N (Circle one)
CAP VENT - Y / N (Circle one)
PROTECTIVE CASING Type: STEEL Size: 8" OD x 5" Bore Hole Diameter: 10¼"
WEEP HOLE - Y / N (Circle one)

Ground Surface Elevation: 453.69 Ft

Information in this column to be supplied in the Feet from Surface column	Feet from Surface	Description of Formation
Depth to bottom of Protective Casing Seal:	3.0	
Depth to Base of Annular Seal:	228.5	
Depth to Base of Bentonite Seal:	230.5	
Depth to Base of Secondary Filter Pack:	231.8	
Depth to Top of the Screen:	235.0	
Depth to Bottom of the Screen:	245.0	
Plug Back Total Depth		
Original Total Depth:	252.5	

PROTECTIVE CASING SEAL Type: ☒ Concrete ☐ Cement Slurry

RISER PIPE Length: 232' Diameter: 2" Type of Material: SCH 80 PVC

BOREHOLE DIAMETER: 5 7/8 In.

ANNULAR SEAL Type: ☐ Bentonite Slurry ☒ Cement Slurry ☐ Non Slurry Bentonite

BENTONITE SEAL Type: ☒ Bentonite Slurry ☐ Non Slurry Bentonite Length of Seal: 2.5 Ft.

SECONDARY FILTER PACK (Optional) Type: ☒ Sand ☐ Manufactured Grain Size: #50 Length: 1.3'

PRIMARY FILTER PACK Type: ☒ Sand ☐ Manufactured Grain Size: 16-35 Length: 20.7'

WELL SCREEN Length: 10 Slot Size: 0.010" Type: PVC

SUMP DETAILS Length: 0.5 Ft. Diameter: 2 In. Type: PVC

TYPE OF BACKFILL: NONE

MO 780-1415 (2-94) DISTRIBUTION: WHITE DIVISION CANARY MONITORING WELL CONTRACTOR PINK OWNER

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY

MONITORING WELL CERTIFICATION RECORD

OFFICE USE ONLY	DATE RECEIVED
REF NO 122504	CHECK NO
ROUTE	TRANSMITTAL NO
STATE WELL NUMBER	CROSS REFERENCE NO
CHECKED BY	ENTERED Ph 1 Ph 2 Ph 3
APPROVED BY	DATE APPROVED

INFORMATION SUPPLIED BY OWNER

SITE NAME	WELL NUMBER
LAIDLAW BRIDGETON SANITARY LANDFILL	[redacted] PZ-104-KS

SITE ADDRESS	CITY	STATE	ZIP CODE
ST. CHARLES ROCK RD	BRIDGETON	MO	63044

NAME	TELEPHONE
LAIDLAW WASTE SYSTEMS, INC.	314-241-3710

ADDRESS	CITY	STATE	ZIP CODE
1838 N BROADWAY	ST. LOUIS	MO	63102

INFORMATION SUPPLIED BY MONITORING WELL CONTRACTOR

LOCATION OF WELL SHOW LOCATION IN SECTION PLAT

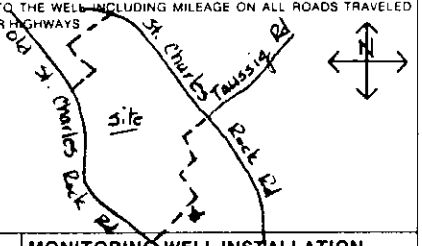
COUNTY ST. LOUIS
ELEVATION 482.32
AREA NO

SMALLEST ¼ LARGEST ¼

SEC. ____ TWN. 47 N,RNG 5 E OR W

LAT. 38° 45' 50" LONG 90° 26' 27"

SKETCH THE LOCATION TO THE WELL INCLUDING MILEAGE ON ALL ROADS TRAVELED FROM NEAREST TOWNS OR HIGHWAYS



DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT IT

MONITORING WELL INSTALLATION CONTRACTOR'S NAME

LAYNE WESTERN Co., INC.

NOTE Record the fraction of a foot in decimal, not in inches

Top of Riser Elevation: 484.04

LOCKING CAP - (Y) N (Circle one)

CAP VENT - Y / (N) (Circle one)

PROTECTIVE CASING
Type: STEEL
Size: 8" x 5'
Bore Hole Diameter: 9 7/8"
WEEP HOLE - Y / (N) (Circle one)

Ground Surface Elevation: 482.32 Ft.

Information in this column to be supplied in the Feet from Surface column	Feet from Surface	Description of Formation
		0-37 No sampling
Depth to bottom of Protective Casing Seal:	3.0	
		37-100 Limestone
		100-105 Shale
		105-250 Limestone
		250-253 Shale
		253-256 Limestone
		256-259 Shale
		259-266 Limestone
Depth to Base of Annular Seal:	378.0	266-270 Dolomite
		270-297 Limestone
		297-304 Shale
Depth to Base of Bentonite Seal:	343.0	304-317 Limestone
Depth to Base of Secondary Filter Pack:	345.0	317-342 Shale
		342-402 Limestone
Depth to Top of the Screen:	347.5	
Depth to Bottom of the Screen:	407.5	
Plug Back Total Depth:		
Original Total Depth:	408.0	

PROTECTIVE CASING SEAL
Type: (X) Concrete ( ) Cement Slurry

RISER PIPE
Length: 349.2'
Diameter: 2"
Type of Material: SCH 80 PVC

BOREHOLE DIAMETER: 5 7/8 In.

ANNULAR SEAL
Type: (X) Bentonite Slurry 245-378
(X) Cement Slurry 3-245
( ) Non Slurry Bentonite

BENTONITE SEAL
Type: (X) Bentonite Slurry
( ) Non Slurry Bentonite
Length of Seal: 15 Ft.

SECONDARY FILTER PACK (Optional)
Type: (X) Sand ( ) Manufactured
Grain Size: 2 50
Length: 2.0'

PRIMARY FILTER PACK
Type: (X) Sand ( ) Manufactured
Grain Size: 16-35
Length: 13.0'

WELL SCREEN
Length: 10'
Slot Size: 0.010
Type: SCH 80 PVC

SUMP DETAILS
Length: 0.5 Ft.
Diameter: 2 In.
Type: PVC

TYPE OF BACKFILL SAND

DRILLING CONTRACTOR'S NAME

LAYNE WESTERN Co., INC.

TYPE OF INSTALLATION
(X) ABOVE GROUND ( ) FLUSH MOUNT

STATIC WATER LEVEL
FEET FROM MEASURING POINT

DATE OF STATIC WATER LEVEL

ELEVATION OF MEASURING POINT
484.04

MEASURING POINT IS
(X) TOP OF RISER PIPE
( ) OTHER

DRILLING EQUIPMENT
(X) AIR ROTARY (X) AUGER TYPE 6¼ H.S.A.
( ) REVERSE ROTARY ( ) OTHER

CENTRALIZERS USED
(X) YES, AT 9 TOTAL
(X) STAINLESS STEEL
( ) OTHER
( ) NO

MULTIPLE CASED WELLS
SUBMIT ADDITIONAL AS BUILT DIAGRAM SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS, AND GROUT USED.

DATE WELL CONSTRUCTION WAS COMPLETED
6-19-95

I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE (MONITORING WELL CONTRACTOR) Michael P. Vogt

PERMIT NUMBER	DATE
001256 WM	7-07-95

SIGNATURE (DRILLING CONTRACTOR) Michael P. Vogt

PERMIT NUMBER	DATE
001256 WM	7-07-95

MO 780-1195 (2-90) DISTRIBUTION: WHITE DIVISION CANARY MONITORING WELL CONTRACTOR PINK OWNER

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY

MONITORING WELL CERTIFICATION RECORD

OFFICE USE ONLY	DATE RECEIVED
REF NO 122510	CHECK NO
ROUTE	TRANSMITTAL NO
STATE WELL NUMBER	CROSS REFERENCE NO
CHECKED BY	ENTERED Ph 1 Ph 2 Ph 3
APPROVED BY	DATE APPROVED

INFORMATION SUPPLIED BY OWNER

SITE NAME	WELL NUMBER
LANDLAW BRIDGETON SANITARY LANDFILL	PZ-10555

SITE ADDRESS	CITY	STATE	ZIP CODE
51. CHARLES ROCK RD.	BRIDGETON	MO	63044

NAME	TELEPHONE
LANDLAW WASTE SYSTEMS, INC.	314-241-3710

ADDRESS	CITY	STATE	ZIP CODE
12 SE 41 BROADWAY	ST LOUIS	MO	63102

INFORMATION SUPPLIED BY MONITORING WELL CONTRACTOR

LOCATION OF WELL SHOW LOCATION IN SECTION PLAT

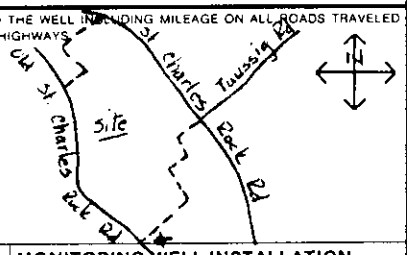
COUNTY ST LOUIS
ELEVATION 481.2
AREA NO.

SMALLEST ¼ LARGEST ¼

SEC. ____ TWN. 47 N,RNG 5 E OR W

LAT. 38° 45' 44" LONG. 90° 26' 25"

SKETCH THE LOCATION TO THE WELL INCLUDING MILEAGE ON ALL ROADS TRAVELED FROM NEAREST TOWNS OR HIGHWAYS



DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT IT

MONITORING WELL INSTALLATION CONTRACTOR'S NAME

LAYNE WESTERN CO, INC.

DRILLING CONTRACTOR'S NAME

LAYNE WESTERN CO, INC.

TYPE OF INSTALLATION
☒ ABOVE GROUND ☐ FLUSH MOUNT

STATIC WATER LEVEL
FEET FROM MEASURING POINT

DATE OF STATIC WATER LEVEL

ELEVATION OF MEASURING POINT
483.6

MEASURING POINT IS
☒ TOP OF RISER PIPE
☐ OTHER

DRILLING EQUIPMENT
☒ AIR ROTARY ☒ AUGER TYPE 6¼ H.S.A.
☐ REVERSE ROTARY ☐ OTHER

CENTRALIZERS USED
☒ YES, AT 4 TOTAL
☒ STAINLESS STEEL
☐ OTHER
☐ NO

MULTIPLE CASED WELLS
SUBMIT ADDITIONAL AS BUILT DIAGRAM SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS, AND GROUT USED.

DATE WELL CONSTRUCTION WAS COMPLETED
5-24-95

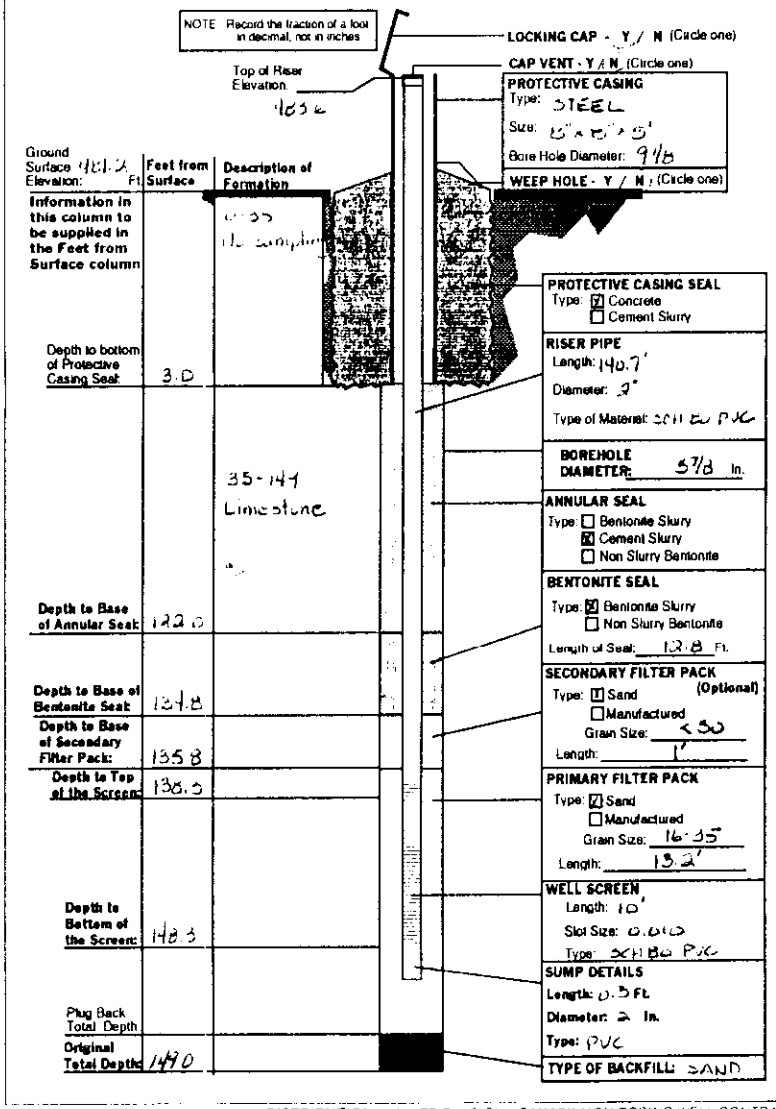
I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE (MONITORING WELL CONTRACTOR) Michael P. Vogl

PERMIT NUMBER	DATE
001296WIM	7-07-95

SIGNATURE (DRILLING CONTRACTOR) Michael P. Vogl

PERMIT NUMBER	DATE
001296WIM	7-07-95



MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY

MONITORING WELL CERTIFICATION RECORD

OFFICE USE ONLY	DATE RECEIVED
REF NO 122480	CHECK NO
ROUTE	TRANSMITTAL NO.
STATE WELL NUMBER	CROSS REFERENCE NO.
CHECKED BY	ENTERED Ph 1 Ph 2 Ph 3
APPROVED BY	DATE APPROVED

INFORMATION SUPPLIED BY OWNER

SITE NAME	WELL NUMBER		
LAIDLAW BRIDGETON SANITARY LANDFILL	PZ-106-SS		
SITE ADDRESS	**CITY**	**STATE**	**ZIP CODE**
ST. CHARLES ROCK RD.	BRIDGETON	MO	63044
NAME		**TELEPHONE**	
LAIDLAW WASTE SYSTEMS, INC		314-241-3710	
ADDRESS	**CITY**	**STATE**	**ZIP CODE**
1838 N BROADWAY	ST. LOUIS	MO	63102

INFORMATION SUPPLIED BY MONITORING WELL CONTRACTOR

LOCATION OF WELL SHOW LOCATION IN SECTION PLAT

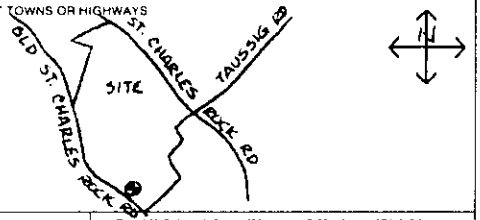
COUNTY ST. LOUIS
ELEVATION 460.9
AREA NO.

SMALLEST ¼ ____ ¼ ____ ¼ ____ ¼ LARGEST ¼

SEC. ____ TWN. 47 N,RNG 5 E OR W

LAT 38 ° 45 ' 47 " LONG. 90 ° 26 ' 46 "

SKETCH THE LOCATION TO THE WELL INCLUDING MILEAGE ON ALL ROADS TRAVELED FROM NEAREST TOWNS OR HIGHWAYS



DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT IT

NOTE: Record the fraction of a foot in decimal, not in inches

LOCKING CAP - (Y) / N (Circle one)
CAP VENT - Y / N (Circle one)
Top of Riser Elevation: 462.7

PROTECTIVE CASING
Type: STEEL
Size: 8"x8"x5'
Bore Hole Diameter: 10.25'
WEEP HOLE - Y / N (Circle one)

Ground Surface Elevation: 460.7 Ft

Information in this column to be supplied in the Feet from Surface column	Feet from Surface	Description of Formation
Depth to bottom of Protective Casing Seal:	3.0	
Depth to Base of Annular Seal:	114.7	
Depth to Base of Bentonite Seal:	147.7	
Depth to Base of Secondary Filter Pack:	152.2	
Depth to Top of the Screen:	155.1	Limestone
Depth to Bottom of the Screen:	165.1	
Plug Back Total Depth		
Original Total Depth:	165.4	

PROTECTIVE CASING SEAL
Type: (X) Concrete ( ) Cement Slurry

RISER PIPE
Length: 156.9'
Diameter: 2"
Type of Material: SCH. 80 PVC

BOREHOLE DIAMETER: 5 7/8 in.

ANNULAR SEAL
Type: (X) Bentonite Slurry ( ) Cement Slurry ( ) Non Slurry Bentonite

BENTONITE SEAL
Type: (X) Bentonite Slurry ( ) Non Slurry Bentonite
Length of Seal: 35 Ft.

SECONDARY FILTER PACK (Optional)
Type: (X) Sand ( ) Manufactured
Grain Size: SUGAR <30
Length: 2.5'

PRIMARY FILTER PACK
Type: (X) Sand ( ) Manufactured
Grain Size: 16-35
Length: 13.2'

WELL SCREEN
Length: 10'
Slot Size: 0.010"
Type: SCH. 80 PVC

SUMP DETAILS
Length: 0.3 Ft.
Diameter: 2 In.
Type: PVC

TYPE OF BACKFILL: SAND

MONITORING WELL INSTALLATION CONTRACTOR'S NAME
LAYNE WESTERN Co., INC.

DRILLING CONTRACTOR'S NAME
LAYNE WESTERN Co., INC.

TYPE OF INSTALLATION
(X) ABOVE GROUND ( ) FLUSH MOUNT

STATIC WATER LEVEL
FEET FROM MEASURING POINT

DATE OF STATIC WATER LEVEL

ELEVATION OF MEASURING POINT
462.70

MEASURING POINT IS
(X) TOP OF RISER PIPE
( ) OTHER

DRILLING EQUIPMENT
(X) AIR ROTARY (X) AUGER TYPE 6 1/4 H.S.A.
( ) REVERSE ROTARY ( ) OTHER

CENTRALIZERS USED
(X) YES, AT 15', 35', 75', 115', 155'
(X) STAINLESS STEEL
( ) OTHER
( ) NO

MULTIPLE CASED WELLS
SUBMIT ADDITIONAL AS BUILT DIAGRAM SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS, AND GROUT USED.

DATE WELL CONSTRUCTION WAS COMPLETED
4-05-95

I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE (MONITORING WELL CONTRACTOR) Michael P. Vogl

PERMIT NUMBER	DATE
001256WIM	5-10-95

SIGNATURE (DRILLING CONTRACTOR) Michael P. Vogl

PERMIT NUMBER	DATE
001256WIM	5-10-95

DISTRIBUTION: WHITE DIVISION CANARY MONITORING WELL CONTRACTOR PINK OWNER

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY

MONITORING WELL CERTIFICATION RECORD

OFFICE USE ONLY	DATE RECEIVED
REF NO 115091	CHECK NO.
ROUTE	TRANSMITTAL NO
STATE WELL NUMBER	CROSS REFERENCE NO
CHECKED BY	ENTERED Ph 1 Ph 2 Ph 3
APPROVED BY	DATE APPROVED

INFORMATION SUPPLIED BY OWNER

SITE NAME: LAIDLAW BRIDGETON SANITARY LANDFILL
WELL NUMBER: PZ-106-SD
SITE ADDRESS: St. Charles Rock Rd. | CITY: Bridgeton | STATE: Mo. | ZIP CODE: 63044
NAME: LAIDLAW WASTE SYSTEMS, INC. | TELEPHONE: 314-291-3710
ADDRESS: 1838 N. BROADWAY | CITY: St. Louis | STATE: Mo. | ZIP CODE: 63102

INFORMATION SUPPLIED BY MONITORING WELL CONTRACTOR

LOCATION OF WELL SHOW LOCATION IN SECTION PLAT

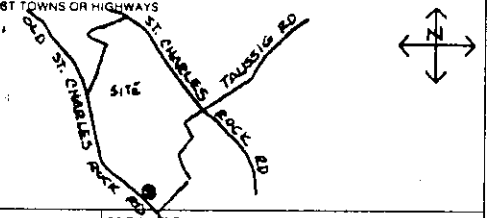
COUNTY: St. Louis
ELEVATION: 461.4
AREA NO.:

SMALLEST ¼ ____ ¼ ____ ¼ ____ ¼ LARGEST ¼

SEC. ____ TWN. 47 N.RNG. 5 (E) OR W

LAT. 38 ° 45 ' 47 " LONG. 90 ° 26 ' 46 "

SKETCH THE LOCATION TO THE WELL INCLUDING MILEAGE ON ALL ROADS TRAVELED FROM NEAREST TOWNS OR HIGHWAYS



DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT IT

MONITORING WELL INSTALLATION CONTRACTOR'S NAME
LAYNE WESTERN Co., INC.

DRILLING CONTRACTOR'S NAME
LAYNE WESTERN Co, INC.

TYPE OF INSTALLATION: [X] ABOVE GROUND [ ] FLUSH MOUNT

STATIC WATER LEVEL: FEET FROM MEASURING POINT

DATE OF STATIC WATER LEVEL:

ELEVATION OF MEASURING POINT: 463.42

MEASURING POINT IS: [X] TOP OF RISER PIPE [ ] OTHER

DRILLING EQUIPMENT: [X] AIR ROTARY [X] AUGER TYPE 6¼ H.S.A. [ ] REVERSE ROTARY [ ] OTHER

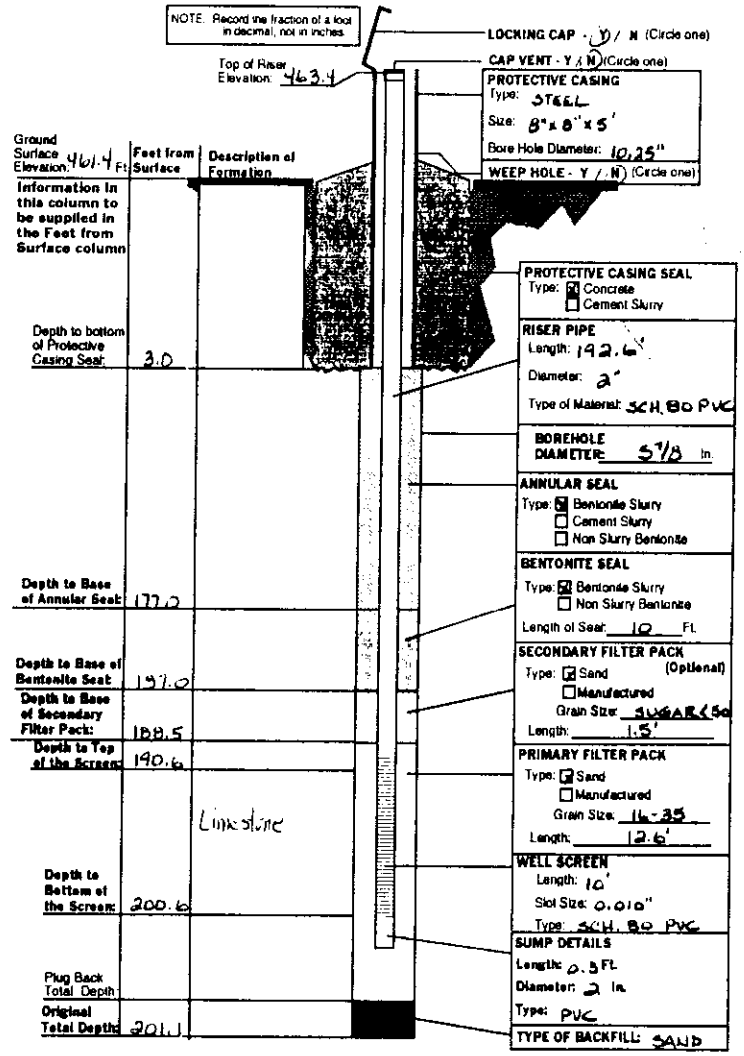
CENTRALIZERS USED: [X] YES, AT 6 TOTAL [X] STAINLESS STEEL [ ] OTHER [ ] NO

MULTIPLE CASED WELLS: SUBMIT ADDITIONAL AS BUILT DIAGRAM SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS, AND GROUT USED.

DATE WELL CONSTRUCTION WAS COMPLETED: 8-26-95

I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE (MONITORING WELL CONTRACTOR): Michael P. Vogl
PERMIT NUMBER: 001256WM | DATE: 5-10-95
SIGNATURE (DRILLING CONTRACTOR): Michael P. Vogl
PERMIT NUMBER: 001256WM | DATE: 5-10-95



MO 780-1415 (2-94)

DISTRIBUTION: WHITE DIVISION CANARY MONITORING WELL CONTRACTOR PINK OWNER

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY

MONITORING WELL CERTIFICATION RECORD

OFFICE USE ONLY	DATE RECEIVED
REF NO 115092	CHECK NO.
ROUTE	TRANSMITTAL NO
STATE WELL NUMBER	CROSS REFERENCE NO
CHECKED BY	ENTERED Ph 1 Ph 2 Ph 3
APPROVED BY	DATE APPROVED

INFORMATION SUPPLIED BY OWNER

SITE NAME	WELL NUMBER	
LAIDLAW BRIDGETON SANITARY LANDFILL	PZ-106-KS	
SITE ADDRESS: ST. CHARLES ROCK RD.	CITY: BRIDGETON	STATE: MO ZIP CODE: 63044
NAME: LAIDLAW WASTE SYSTEMS, INC.		TELEPHONE: 314-241-3710
ADDRESS: 1838 N. BROADWAY	CITY: ST. LOUIS	STATE: MO ZIP CODE: 63102

INFORMATION SUPPLIED BY MONITORING WELL CONTRACTOR

LOCATION OF WELL SHOW LOCATION IN SECTION PLAT

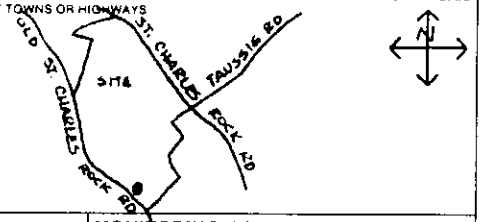
COUNTY: ST. LOUIS
ELEVATION: 461.8
AREA NO.:

SMALLEST ¼ ____ ¼ ____ ¼ ____ ¼ LARGEST ¼

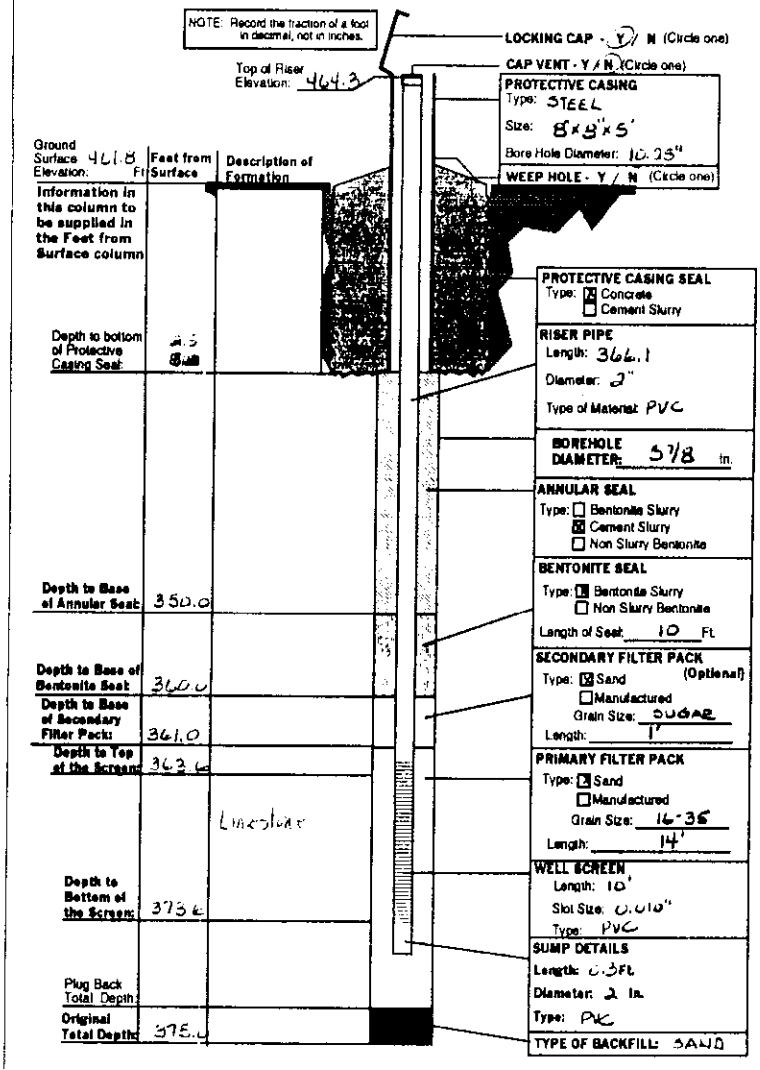
SEC. ____ TWN. 47 N.RNG. 5 (E) OR W

LAT. 38 ° 45 ' 47 " LONG. 90 ° 26 ' 45 "

SKETCH THE LOCATION TO THE WELL INCLUDING MILEAGE ON ALL ROADS TRAVELED FROM NEAREST TOWNS OR HIGHWAYS



DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT IT



MONITORING WELL INSTALLATION CONTRACTOR'S NAME
LAYNE WESTERN CO., INC.

DRILLING CONTRACTOR'S NAME
LAYNE WESTERN CO., INC.

TYPE OF INSTALLATION
☒ ABOVE GROUND ☐ FLUSH MOUNT

STATIC WATER LEVEL
FEET FROM MEASURING POINT

DATE OF STATIC WATER LEVEL

ELEVATION OF MEASURING POINT
464.26

MEASURING POINT IS
☒ TOP OF RISER PIPE
☐ OTHER

DRILLING EQUIPMENT
☒ AIR ROTARY ☒ AUGER TYPE 6¼" H.S.A.
☐ REVERSE ROTARY ☐ OTHER

CENTRALIZERS USED
☒ YES, AT 10 TOTAL
☒ STAINLESS STEEL
☐ OTHER
☐ NO

MULTIPLE CASED WELLS
SUBMIT ADDITIONAL AS BUILT DIAGRAM SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS, AND GROUT USED.

DATE WELL CONSTRUCTION WAS COMPLETED
3-23-95

I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE (MONITORING WELL CONTRACTOR) Michael P. Vogl

PERMIT NUMBER	DATE
CC1256W/M	5-10-95

SIGNATURE (DRILLING CONTRACTOR) Michael P. Vogl

PERMIT NUMBER	DATE
CC1256W/M	5-10-95

MO 780-1415 (2-94) DISTRIBUTION: WHITE DIVISION CANARY MONITORING WELL CONTRACTOR PINK OWNER

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY

MONITORING WELL CERTIFICATION RECORD

OFFICE USE ONLY	DATE RECEIVED
REF NO 122508	CHECK NO
ROUTE	TRANSMITTAL NO
STATE WELL NUMBER	CROSS REFERENCE NO
CHECKED BY	ENTERED Ph 1 Ph 2 Ph 3
APPROVED BY	DATE APPROVED

INFORMATION SUPPLIED BY OWNER

SITE NAME	WELL NUMBER
LAIDLAW BRIDGETON SANITARY LANDFILL	P2 - 10755

SITE ADDRESS	CITY	STATE	ZIP CODE
ST. CHARLES ROCK RD	BRIDGETON	MO	63044

NAME	TELEPHONE
LAIDLAW WASTE SYSTEMS, INC.	314-341-3710

ADDRESS	CITY	STATE	ZIP CODE
1638 N. BROADWAY	ST. LOUIS	MO	63102

INFORMATION SUPPLIED BY MONITORING WELL CONTRACTOR

LOCATION OF WELL SHOW LOCATION IN SECTION PLAT

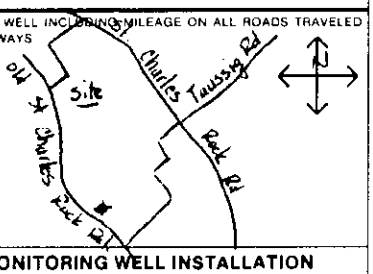
COUNTY ST. LOUIS
ELEVATION 452.6
AREA NO.

SMALLEST ¼ LARGEST ¼

SEC. ____ TWN. 47 N,RNG. 5 E OR W

LAT. 38° 45' 52" LONG. 90° 26' 48"

SKETCH THE LOCATION TO THE WELL INCLUDING MILEAGE ON ALL ROADS TRAVELED FROM NEAREST TOWNS OR HIGHWAYS



DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT IT

MONITORING WELL INSTALLATION CONTRACTOR'S NAME

LAYNE WESTERN Co, INC.

DRILLING CONTRACTOR'S NAME

LAYNE WESTERN Co, INC.

NOTE Record the fraction of a foot in decimal, not in inches

Top of Riser Elevation: 464.7

Ground Surface Elevation: 462.6

Feet from Surface	Description of Formation
Information in this column to be supplied in the Feet from Surface column	0-5 Clay
Depth to bottom of Protective Casing Seal: 3.0	
	3-28 Trash
	28-54 Not sampled
	54-103 Limestone
Depth to Base of Annular Seal: 78.0	
Depth to Base of Bentonite Seal: 89.0	
Depth to Base of Secondary Filter Pack: 90.4	
Depth to Top of the Screen: 92.6	
Depth to Bottom of the Screen: 102.6	
Plug Back Total Depth:	
Original Total Depth: 103.0	

LOCKING CAP - (Y) N (Circle one)
CAP VENT - Y / N (Circle one)

PROTECTIVE CASING
Type: STEEL
Size: 8"x8"x5'
Bore Hole Diameter: 9 1/8"
WEEP HOLE - Y / N (Circle one)

PROTECTIVE CASING SEAL
Type: [X] Concrete [ ] Cement Slurry

RISER PIPE
Length: 94.6
Diameter: 2"
Type of Material: SCH. 80 PVC

BOREHOLE DIAMETER: 5 7/8 In.

ANNULAR SEAL
Type: [X] Bentonite Slurry [ ] Cement Slurry [ ] Non Slurry Bentonite

BENTONITE SEAL
Type: [X] Bentonite Slurry [ ] Non Slurry Bentonite
Length of Seal: 11 Ft.

SECONDARY FILTER PACK (Optional)
Type: [X] Sand [ ] Manufactured
Grain Size: #50
Length: 1.4'

PRIMARY FILTER PACK
Type: [X] Sand [ ] Manufactured
Grain Size: 16-35
Length: 12.6'

WELL SCREEN
Length: 10'
Slot Size: 0.010"
Type: SCH. 80 PVC

SUMP DETAILS
Length: 0.5 Ft.
Diameter: 2 In.
Type: PVC

TYPE OF BACKFILL: CHIP

MONITORING WELL INSTALLATION CONTRACTOR'S NAME

LAYNE WESTERN Co, INC.

DRILLING CONTRACTOR'S NAME

LAYNE WESTERN Co, INC.

TYPE OF INSTALLATION
[X] ABOVE GROUND [ ] FLUSH MOUNT

STATIC WATER LEVEL
FEET FROM MEASURING POINT

DATE OF STATIC WATER LEVEL

ELEVATION OF MEASURING POINT
464.7

MEASURING POINT IS
[X] TOP OF RISER PIPE
[ ] OTHER

DRILLING EQUIPMENT
[X] AIR ROTARY [X] AUGER TYPE 6¼ HSA
[ ] REVERSE ROTARY [ ] OTHER

CENTRALIZERS USED
[X] YES, AT 4 TOTAL
[X] STAINLESS STEEL
[ ] OTHER
[ ] NO

MULTIPLE CASED WELLS
SUBMIT ADDITIONAL AS BUILT DIAGRAM SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS, AND GROUT USED.

DATE WELL CONSTRUCTION WAS COMPLETED
5-22-95

I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE (MONITORING WELL CONTRACTOR) Richard P. Vogt

PERMIT NUMBER	DATE
001256WM	6-02-95

SIGNATURE (DRILLING CONTRACTOR) Richard P. Vogt

PERMIT NUMBER	DATE
001256WM	6-02-95

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY

MONITORING WELL CERTIFICATION RECORD

OFFICE USE ONLY	DATE RECEIVED
REF NO 115090	CHECK NO
ROUTE	TRANSMITTAL NO
STATE WELL NUMBER	CROSS REFERENCE NO
CHECKED BY	ENTERED Ph 1 Ph 2 Ph 3
APPROVED BY	DATE APPROVED

INFORMATION SUPPLIED BY OWNER

SITE NAME	WELL NUMBER		
LAIDLAW BRIDGETON SANITARY LANDFILL	P2-108-SS		
SITE ADDRESS	CITY	STATE	ZIP CODE
St. Charles Rock Rd.	Bridgeton	Mo	63044
NAME		TELEPHONE	
Laidlaw Waste Systems, Inc		314-241-3710	
ADDRESS	CITY	STATE	ZIP CODE
1938 N. Broadway	St. Louis	Mo.	63102

INFORMATION SUPPLIED BY MONITORING WELL CONTRACTOR

LOCATION OF WELL SHOW LOCATION IN SECTION PLAT

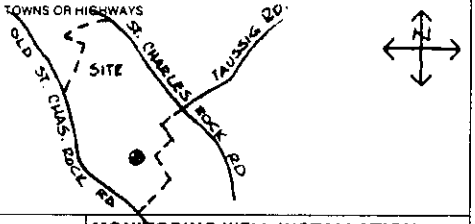
COUNTY St. Louis
ELEVATION 454.1
AREA NO.

SMALLEST ¼ ____ ¼ ____ ¼ ____ ¼ LARGEST ¼

SEC. ____ TWN. 47 N.RNG. 5 (E) OR W

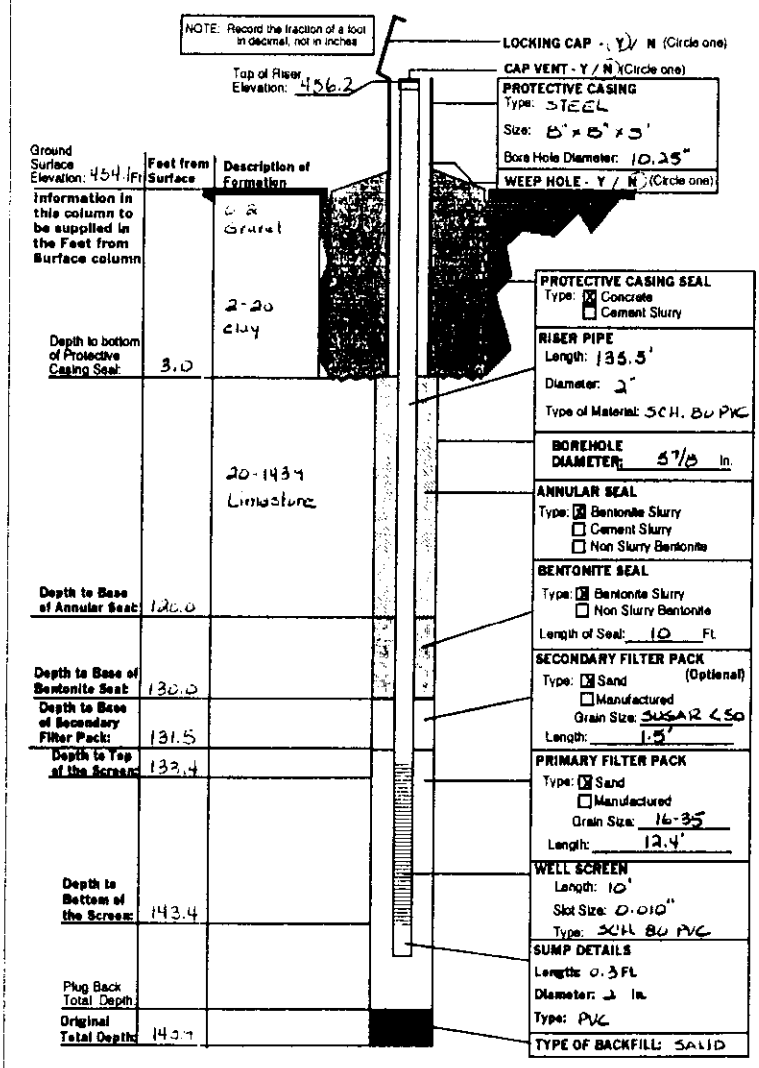
LAT. 38 ° 45 ' 57 " LONG. 90 ° 26 ' 39 "

SKETCH THE LOCATION TO THE WELL INCLUDING MILEAGE ON ALL ROADS TRAVELED FROM NEAREST TOWNS OR HIGHWAYS



DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT IT

MONITORING WELL INSTALLATION CONTRACTOR'S NAME
Layne Western Co, Inc.



DRILLING CONTRACTOR'S NAME
Layne Western Co, Inc

TYPE OF INSTALLATION
☒ ABOVE GROUND ☐ FLUSH MOUNT

STATIC WATER LEVEL
FEET FROM MEASURING POINT

DATE OF STATIC WATER LEVEL

ELEVATION OF MEASURING POINT
456.2

MEASURING POINT IS
☒ TOP OF RISER PIPE
☐ OTHER

DRILLING EQUIPMENT
☒ AIR ROTARY ☒ AUGER TYPE 6¼ H.S.A.
☐ REVERSE ROTARY ☐ OTHER

CENTRALIZERS USED
☒ YES, AT 4 TOTAL
☒ STAINLESS STEEL
☐ OTHER
☐ NO

MULTIPLE CASED WELLS
SUBMIT ADDITIONAL AS BUILT DIAGRAM SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS, AND GROUT USED.

DATE WELL CONSTRUCTION WAS COMPLETED
3-29-95

I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE (MONITORING WELL CONTRACTOR) Michael P. Vogl

PERMIT NUMBER	DATE
001256 WM1	5-10-95

SIGNATURE (DRILLING CONTRACTOR) Michael P. Vogl

PERMIT NUMBER	DATE
001256 WM1	5-10-95

MO 780-1415 (2-94) DISTRIBUTION: WHITE-DIVISION CANARY-MONITORING WELL CONTRACTOR PINK-OWNER

6' 1574

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY

MONITORING WELL CERTIFICATION RECORD

OFFICE USE ONLY	DATE RECEIVED
REF. NO 122485	CHECK NO.
ROUTE	TRANSMITTAL NO
STATE WELL NUMBER	CROSS REFERENCE NO
CHECKED BY	ENTERED Ph 1 Ph 2 Ph 3
APPROVED BY	DATE APPROVED

INFORMATION SUPPLIED BY OWNER

SITE NAME	WELL NUMBER		
LAIDLAW BRIDGETON SANITARY LANDFILL	P2-109-SS		
SITE ADDRESS	CITY	STATE	ZIP CODE
ST. CHARLES ROCK RD.	BRIDGETON	MO	63044
NAME		TELEPHONE	
LAIDLAW WASTE SYSTEMS, INC.		314-241-3710	
ADDRESS	CITY	STATE	ZIP CODE
1838 N. BROADWAY	ST. LOUIS	MO	63102

INFORMATION SUPPLIED BY MONITORING WELL CONTRACTOR

LOCATION OF WELL SHOW LOCATION IN SECTION PLAT

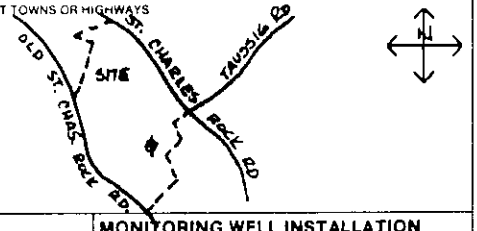
COUNTY ST. LOUIS
ELEVATION
AREA NO.

SMALLEST ¼ LARGEST ¼

SEC ____ TWN 47 N RNG 5 (E) OR W

LAT. 38 ° 46 ' 00 " LONG. 90 ° 26 ' 36 "

SKETCH THE LOCATION TO THE WELL INCLUDING MILEAGE ON ALL ROADS TRAVELED FROM NEAREST TOWNS OR HIGHWAYS



DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT IT

MONITORING WELL INSTALLATION CONTRACTOR'S NAME
LAYNE WESTERN CO., INC.

DRILLING CONTRACTOR'S NAME
LAYNE WESTERN CO., INC.

TYPE OF INSTALLATION
☒ ABOVE GROUND ☐ FLUSH MOUNT

STATIC WATER LEVEL
FEET FROM MEASURING POINT

DATE OF STATIC WATER LEVEL

ELEVATION OF MEASURING POINT

MEASURING POINT IS
☐ TOP OF RISER PIPE
☐ OTHER

DRILLING EQUIPMENT
☒ AIR ROTARY ☒ AUGER TYPE 6¼ H.S.A.
☐ REVERSE ROTARY ☐ OTHER

CENTRALIZERS USED
☒ YES, AT 4 TOTAL
☒ STAINLESS STEEL
☐ OTHER
☐ NO

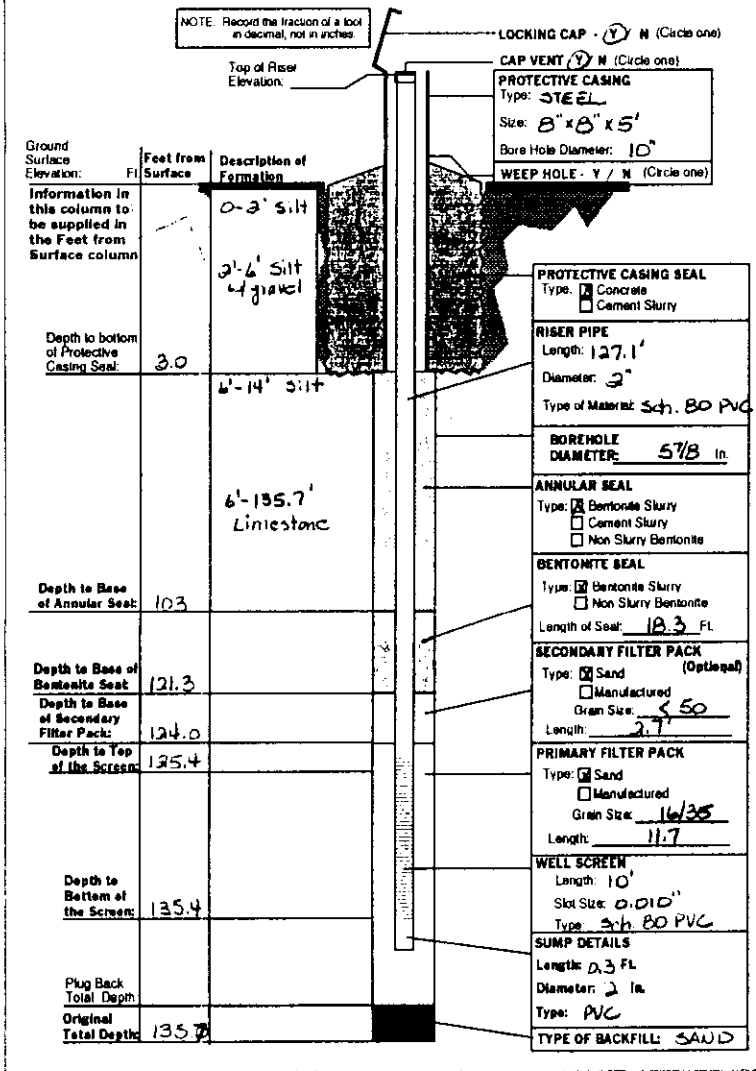
MULTIPLE CASED WELLS
SUBMIT ADDITIONAL AS BUILT DIAGRAM SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS, AND GROUT USED.

DATE WELL CONSTRUCTION WAS COMPLETED
4-25-95

I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE (MONITORING WELL CONTRACTOR) Michael P. Vogl
PERMIT NUMBER 001256WM | DATE 6-02-95

SIGNATURE (DRILLING CONTRACTOR) Michael P. Vogl
PERMIT NUMBER 001256WM | DATE 6-02-95



DISTRIBUTION: WHITE DIVISION CANARY MONITORING WELL CONTRACTOR PINK OWNER

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY

MONITORING WELL CERTIFICATION RECORD

OFFICE USE ONLY	DATE RECEIVED
REF NO 115097	CHECK NO.
ROUTE	TRANSMITTAL NO.
STATE WELL NUMBER	CROSS REFERENCE NO
CHECKED BY	ENTERED Ph 1 Ph 2 Ph 3
APPROVED BY	DATE APPROVED

INFORMATION SUPPLIED BY OWNER

SITE NAME	WELL NUMBER
LAIDLAW BRIDGETON SANITARY LANDFILL	P2-110-55

SITE ADDRESS	CITY	STATE	ZIP CODE
ST. CHARLES ROCK RD.	BRIDGETON	MO.	63044

NAME	TELEPHONE
LAIDLAW WASTE SYSTEMS, INC.	314-241-3710

ADDRESS	CITY	STATE	ZIP CODE
1938 N. BROADWAY	ST. LOUIS	MO.	63102

INFORMATION SUPPLIED BY MONITORING WELL CONTRACTOR

LOCATION OF WELL SHOW LOCATION IN SECTION PLAT

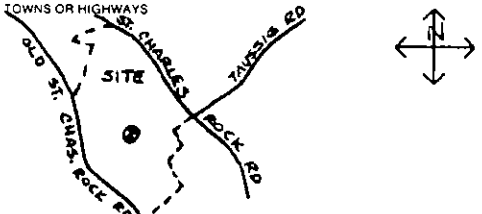
COUNTY ST. LOUIS
ELEVATION USGS P 456.8
AREA NO.

SMALLEST ¼ LARGEST ¼

SEC. ____ TWN. 47 N,RNG. 5 (E) OR W

LAT. 38° 46' 03" LONG. 90° 26' 34"

SKETCH THE LOCATION TO THE WELL INCLUDING MILEAGE ON ALL ROADS TRAVELED FROM NEAREST TOWNS OR HIGHWAYS



DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT IT

MONITORING WELL INSTALLATION CONTRACTOR'S NAME

LAYNE WESTERN CO., INC.

DRILLING CONTRACTOR'S NAME

LAYNE WESTERN CO., INC.

TYPE OF INSTALLATION
☒ ABOVE GROUND ☐ FLUSH MOUNT

STATIC WATER LEVEL
FEET FROM MEASURING POINT

DATE OF STATIC WATER LEVEL

ELEVATION OF MEASURING POINT
458.7

MEASURING POINT IS
☒ TOP OF RISER PIPE
☐ OTHER

DRILLING EQUIPMENT
☒ AIR ROTARY ☒ AUGER TYPE
☐ REVERSE ROTARY ☐ OTHER

CENTRALIZERS USED
☒ YES, AT 4 TOTAL
☒ STAINLESS STEEL
☐ OTHER
☐ NO

MULTIPLE CASED WELLS
SUBMIT ADDITIONAL AS BUILT DIAGRAM SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS, AND GROUT USED.

DATE WELL CONSTRUCTION WAS COMPLETED
5-30-95

I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE (MONITORING WELL CONTRACTOR) Michael P. Vogt
PERMIT NUMBER 001256WM1 DATE 6-02-95

SIGNATURE (DRILLING CONTRACTOR) Michael P. Vogt
PERMIT NUMBER 001256WM1 DATE 6-02-95

NOTE: Record the fraction of a foot in decimal, not in inches

Top of Riser Elevation: 458.9

LOCKING CAP - (Y) N (Circle one)
CAP VENT - (Y) N (Circle one)

PROTECTIVE CASING
Type: STEEL
Size: 8"x8"x5'
Bore Hole Diameter: 10.25"
WEEP HOLE - Y / N (Circle one)

Ground Surface Elevation: 456.8 Ft

Information in this column to be supplied in the Feet from Surface column	Feet from Surface	Description of Formation
		0-4' Clay
Depth to bottom of Protective Casing Seal:	8.0	
		4'-12' Silt
		12'-61' Sand
		61'-111' Limestone
Depth to Base of Annular Seal:	86.0	
Depth to Base of Bentonite Seal:	96.5	
Depth to Base of Secondary Filter Pack:	98.5	
Depth to Top of the Screen:	101.2	
Depth to Bottom of the Screen:	101.2	
Plug Back Total Depth:	[redacted]	
Original Total Depth:	111.5	

PROTECTIVE CASING SEAL
Type: ☒ Concrete ☐ Cement Slurry

RISER PIPE
Length:
Diameter: 2"
Type of Material: SCH. 80 PVC

BOREHOLE DIAMETER: 5⅞ in.

ANNULAR SEAL
Type: ☒ Bentonite Slurry ☐ Cement Slurry ☐ Non Slurry Bentonite

BENTONITE SEAL
Type: ☒ Bentonite Slurry ☐ Non Slurry Bentonite
Length of Seal: 10.5 FL

SECONDARY FILTER PACK (Optional)
Type: ☒ Sand ☐ Manufactured
Grain Size: #30
Length: 2

PRIMARY FILTER PACK
Type: ☒ Sand ☐ Manufactured
Grain Size: 16/35
Length: 13'

WELL SCREEN
Length: 10'
Slot Size: 0.010"
Type: SCH. 80 PVC

SUMP DETAILS
Length: 0.3FL
Diameter: 2 In.
Type: PVC

TYPE OF BACKFILL: SAND

DISTRIBUTION: WHITE DIVISION CANARY MONITORING WELL CONTRACTOR PINK OWNER

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY

MONITORING WELL CERTIFICATION RECORD

OFFICE USE ONLY	DATE RECEIVED
REF NO 122482	CHECK NO
ROUTE	TRANSMITTAL NO
STATE WELL NUMBER	CROSS REFERENCE NO
CHECKED BY	ENTERED Ph 1 Ph 2 Ph 3
APPROVED BY	DATE APPROVED

INFORMATION SUPPLIED BY OWNER

SITE NAME	WELL NUMBER
LAIDLAW BRIDGETON SANITARY LANDFILL	PZ-111-SD

SITE ADDRESS	CITY	STATE	ZIP CODE
ST. CHARLES ROCK RD.	BRIDGETON	Mo	63044

NAME	TELEPHONE
LAIDLAW WASTE SYSTEMS, INC.	314-241-3710

ADDRESS	CITY	STATE	ZIP CODE
1839 N. BROADWAY	ST. LOUIS	Mo.	63102

INFORMATION SUPPLIED BY MONITORING WELL CONTRACTOR

LOCATION OF WELL
SHOW LOCATION IN SECTION PLAT

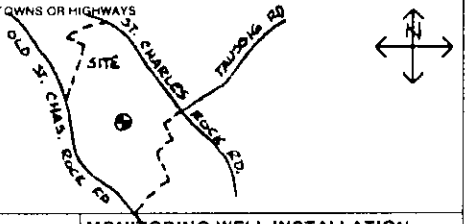
COUNTY ST. LOUIS
ELEVATION 459.2
AREA NO.

SMALLEST ¼ LARGEST ¼

SEC. ____ TWN. 47 N RNG 5 (E) OR W

LAT. 38 ° 46 ' 06 " LONG. 90 ° 26 ' 39 "

SKETCH THE LOCATION TO THE WELL INCLUDING MILEAGE ON ALL ROADS TRAVELED FROM NEAREST TOWNS OR HIGHWAYS



DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT IT

MONITORING WELL INSTALLATION CONTRACTOR'S NAME
LAYNE WESTERN Co, INC.

DRILLING CONTRACTOR'S NAME
LAYNE WESTERN Co, INC.

TYPE OF INSTALLATION
☒ ABOVE GROUND ☐ FLUSH MOUNT

STATIC WATER LEVEL
FEET FROM MEASURING POINT

DATE OF STATIC WATER LEVEL

ELEVATION OF MEASURING POINT
461.55

MEASURING POINT IS
☒ TOP OF RISER PIPE
☐ OTHER

DRILLING EQUIPMENT
☒ AIR ROTARY ☐ AUGER TYPE
☐ REVERSE ROTARY ☐ OTHER

CENTRALIZERS USED
☒ YES, AT 3 TOTAL
☒ STAINLESS STEEL
☐ OTHER
☐ NO

MULTIPLE CASED WELLS
SUBMIT ADDITIONAL AS BUILT DIAGRAM SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS, AND GROUT USED.

DATE WELL CONSTRUCTION WAS COMPLETED
4-21-95

I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE (MONITORING WELL CONTRACTOR)
Michael P. Vogt

PERMIT NUMBER	DATE
001256WM	5-10-95

SIGNATURE (DRILLING CONTRACTOR)
Michael P. Vogt

PERMIT NUMBER	DATE

NOTE: Record the fraction of a foot in decimal, not in inches

Top of Riser Elevation: 461.6
Ground Surface Elevation: 459.2

LOCKING CAP - Y / N (Circle one)
CAP VENT - Y / N (Circle one)
PROTECTIVE CASING
Type: STEEL
Size: 8"x8"x5'
Bore Hole Diameter: 9 7/8"
WEEP HOLE - Y / N (Circle one)

	Feet from Surface	Description of Formation
Information in this column to be supplied in the Feet from Surface column		
Depth to bottom of Protective Casing Seal	2.5	
Depth to Base of Annular Seal	176.3	
Depth to Base of Bentonite Seal	144.7	
Depth to Base of Secondary Filter Pack:	145.3	
Depth to Top of the Screen:	199.2	Limestone
Depth to Bottom of the Screen:	209.2	
Plug Back Total Depth		
Original Total Depth	210	

PROTECTIVE CASING SEAL
Type: ☒ Concrete ☐ Cement Slurry

RISER PIPE
Length: 201.5'
Diameter: 2"
Type of Material: SCH. 80 PVC

BOREHOLE DIAMETER: 5 7/8 in.

ANNULAR SEAL
Type: ☒ Bentonite Slurry ☐ Cement Slurry ☐ Non Slurry Bentonite

BENTONITE SEAL
Type: ☒ Bentonite Slurry ☐ Non Slurry Bentonite
Length of Seal: 18.7 FT.

SECONDARY FILTER PACK (Optional)
Type ☒ Sand ☐ Manufactured
Grain Size: SUGAR < 50
Length: 1.1'

PRIMARY FILTER PACK
Type: ☒ Sand ☐ Manufactured
Grain Size: 16-35
Length: 14.2'

WELL SCREEN
Length: 10'
Slot Size: 0.010"
Type: SCH. 80 PVC

SUMP DETAILS
Length: 0.3 FT.
Diameter: 2 In.
Type: PVC

TYPE OF BACKFILL: SAND

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY

MONITORING WELL CERTIFICATION RECORD

OFFICE USE ONLY	DATE RECEIVED
REF NO 122481	CHECK NO
ROUTE	TRANSMITTAL NO
STATE WELL NUMBER	CROSS REFERENCE NO
CHECKED BY	ENTERED Ph 1 Ph 2 Ph 3
APPROVED BY	DATE APPROVED

INFORMATION SUPPLIED BY OWNER

SITE NAME	WELL NUMBER
LAIDLAW BRIDGETON SANITARY LANDFILL	P2-111-KS

SITE ADDRESS	CITY	STATE	ZIP CODE
ST. CHARLES ROCK RD.	BRIDGETON	MO.	63044

NAME	TELEPHONE
LAIDLAW WASTE SYSTEMS, INC.	314-241-3710

ADDRESS	CITY	STATE	ZIP CODE
1838 N. BROADWAY	ST. LOUIS	MO.	63102

INFORMATION SUPPLIED BY MONITORING WELL CONTRACTOR

LOCATION OF WELL
SHOW LOCATION IN SECTION PLAT

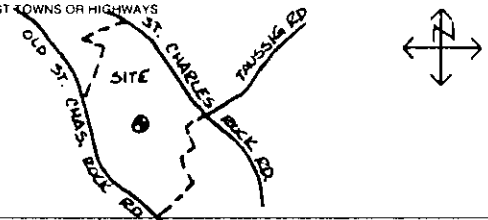
COUNTY ST. LOUIS
ELEVATION 459.2
AREA NO

SMALLEST ¼ LARGEST ¼

SEC. ____ TWN. 47 N,RNG. 5 (E) OR W

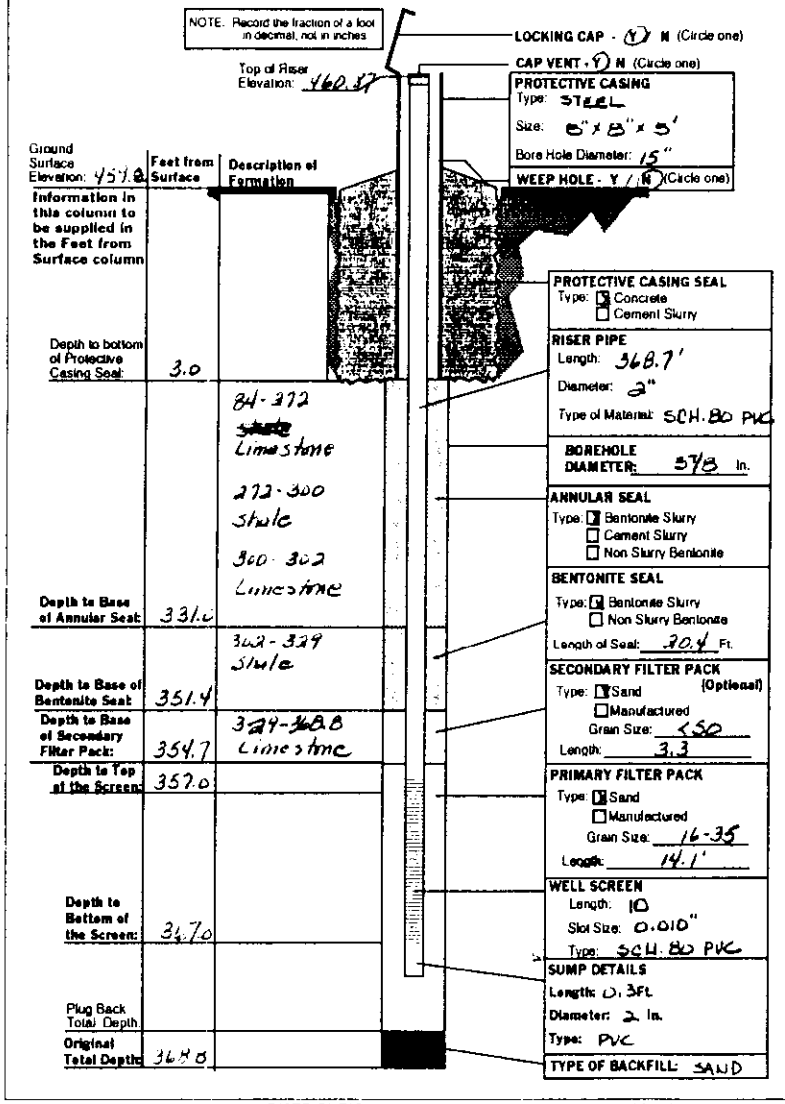
LAT. 38° 46' 06" LONG. 90° 26' 40"

SKETCH THE LOCATION TO THE WELL INCLUDING MILEAGE ON ALL ROADS TRAVELED FROM NEAREST TOWNS OR HIGHWAYS



DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT IT

MONITORING WELL INSTALLATION CONTRACTOR'S NAME
LAYNE WESTERN CO., INC.



DRILLING CONTRACTOR'S NAME
LAYNE WESTERN CO., INC.

TYPE OF INSTALLATION
[X] ABOVE GROUND [ ] FLUSH MOUNT

STATIC WATER LEVEL
FEET FROM MEASURING POINT

DATE OF STATIC WATER LEVEL

ELEVATION OF MEASURING POINT
460.87

MEASURING POINT IS
[X] TOP OF RISER PIPE
[ ] OTHER

DRILLING EQUIPMENT
[X] AIR ROTARY [X] AUGER TYPE 6¼ H.S.A.
[ ] REVERSE ROTARY [ ] OTHER

CENTRALIZERS USED
[X] YES, AT 10 TOTAL
[X] STAINLESS STEEL
[ ] OTHER
[ ] NO

MULTIPLE CASED WELLS
SUBMIT ADDITIONAL AS BUILT DIAGRAM SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS, AND GROUT USED.

DATE WELL CONSTRUCTION WAS COMPLETED
5-06-95

I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE (MONITORING WELL CONTRACTOR)
Michael P. Vogl

PERMIT NUMBER	DATE
001256 WM	6-02-95

SIGNATURE (DRILLING CONTRACTOR)
Michael P. Vogl

PERMIT NUMBER	DATE
001256 WM	6-02-95

MO 780-1415 (2-94)

DISTRIBUTION: WHITE DIVISION CANARY MONITORING WELL CONTRACTOR PINK OWNER

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY

MONITORING WELL CERTIFICATION RECORD

OFFICE USE ONLY	DATE RECEIVED
REF NO 122489	CHECK NO
ROUTE	TRANSMITTAL NO
STATE WELL NUMBER	CROSS REFERENCE NO
CHECKED BY	ENTERED Ph 1 Ph 2 Ph 3
APPROVED BY	DATE APPROVED

INFORMATION SUPPLIED BY OWNER

SITE NAME	WELL NUMBER		
LAIDLAW BRIDGETON SANITARY LANDFILL	PZ-112-AS		
SITE ADDRESS	**CITY**	**STATE**	**ZIP CODE**
ST. CHARLES ROCK RD.	BRIDGETON	MO	63044
NAME		**TELEPHONE**	
LAIDLAW WASTE SYSTEMS, INC.		314-241-3710	
ADDRESS	**CITY**	**STATE**	**ZIP CODE**
1838 N. BROADWAY	ST. LOUIS	MO	63102

INFORMATION SUPPLIED BY MONITORING WELL CONTRACTOR

LOCATION OF WELL
SHOW LOCATION IN SECTION PLAT

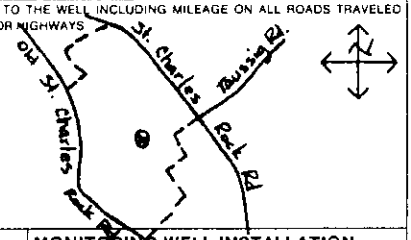
COUNTY ST. LOUIS
ELEVATION 457.9
AREA NO.

SMALLEST ¼ LARGEST ¼

SEC. ____ TWN. 47 N.RNG. 5 E OR W

LAT. 38° 46' 10" LONG. 90° 26' 42"

SKETCH THE LOCATION TO THE WELL INCLUDING MILEAGE ON ALL ROADS TRAVELED FROM NEAREST TOWNS OR HIGHWAYS



DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT IT

MONITORING WELL INSTALLATION CONTRACTOR'S NAME
LAYNE WESTERN CO., INC.

DRILLING CONTRACTOR'S NAME
LAYNE WESTERN CO., INC.

TYPE OF INSTALLATION
☒ ABOVE GROUND ☐ FLUSH MOUNT

STATIC WATER LEVEL
FEET FROM MEASURING POINT

DATE OF STATIC WATER LEVEL

ELEVATION OF MEASURING POINT
457.83

MEASURING POINT IS
☒ TOP OF RISER PIPE
☐ OTHER

DRILLING EQUIPMENT
☐ AIR ROTARY ☒ AUGER TYPE 4¼ H.S.A.
☐ REVERSE ROTARY ☐ OTHER

CENTRALIZERS USED
☐ YES, AT
☐ STAINLESS STEEL
☐ OTHER
☒ NO

MULTIPLE CASED WELLS
SUBMIT ADDITIONAL AS BUILT DIAGRAM SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS, AND GROUT USED.

DATE WELL CONSTRUCTION WAS COMPLETED
4-10-95

I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

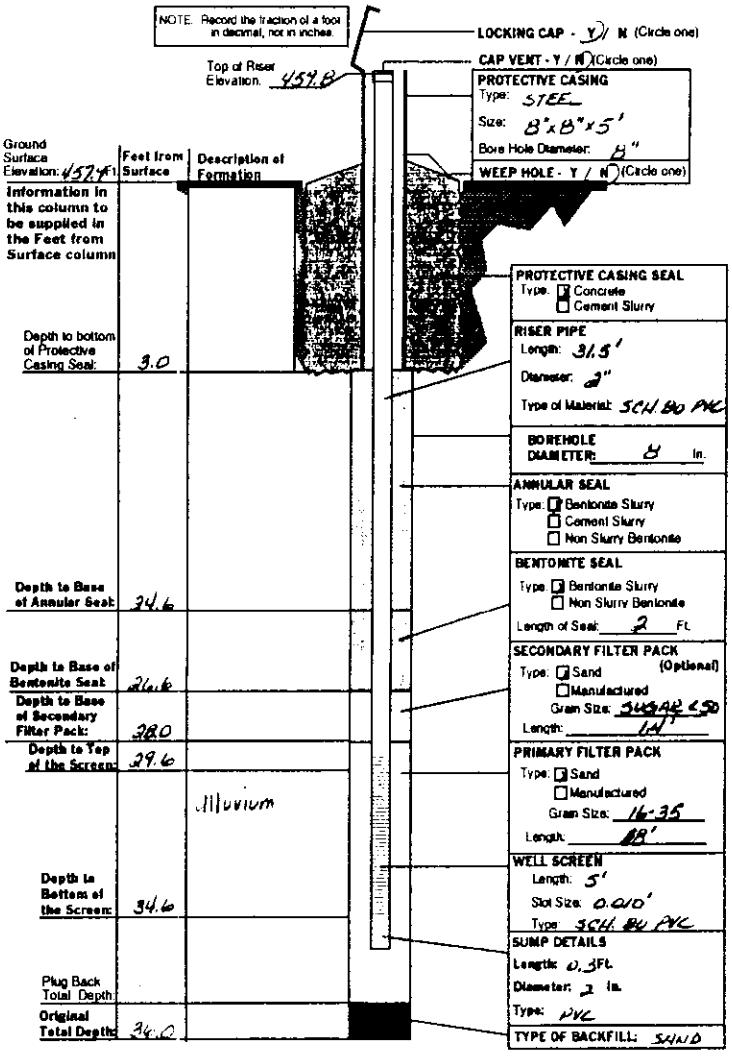
SIGNATURE (MONITORING WELL CONTRACTOR)

PERMIT NUMBER	DATE
00125BWPM1	5-10-95

SIGNATURE (DRILLING CONTRACTOR)

PERMIT NUMBER	DATE
00125BWPM1	5-10-95

NOTE: Record the fraction of a foot in decimal, not in inches.



MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY

MONITORING WELL CERTIFICATION RECORD

OFFICE USE ONLY	DATE RECEIVED
REF NO 122488	CHECK NO.
ROUTE	TRANSMITTAL NO.
STATE WELL NUMBER	CROSS REFERENCE NO.
CHECKED BY	ENTERED Ph 1 Ph 2 Ph 3
APPROVED BY	DATE APPROVED

INFORMATION SUPPLIED BY OWNER

SITE NAME: Laidlaw Bridgeton Sanitary Landfill		WELL NUMBER: P2-113-AS	
SITE ADDRESS: St Charles Rock Rd	CITY: Bridgeton	STATE: Mo	ZIP CODE: 63044
NAME: Laidlaw Waste Systems, Inc.		TELEPHONE: 314-241-3710	
ADDRESS: 1434 N Broadway	CITY: St. Louis	STATE: Mo	ZIP CODE: 63102

INFORMATION SUPPLIED BY MONITORING WELL CONTRACTOR

LOCATION OF WELL
SHOW LOCATION IN SECTION PLAT

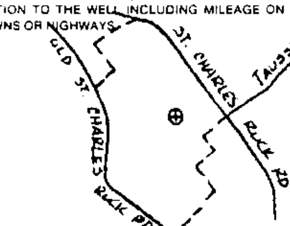
COUNTY: St. Louis
ELEVATION: 457.4
AREA NO.

SMALLEST ¼ ____ ¼ ____ ¼ ____ ¼ ____ ¼ LARGEST ¼

SEC. ____ TWN. 47 N.RNG. 5 E OR W

LAT. 38 ° 46 ' 12 " LONG. 90 ° 26 ' 41 "

SKETCH THE LOCATION TO THE WELL INCLUDING MILEAGE ON ALL ROADS TRAVELED FROM NEAREST TOWNS OR HIGHWAYS



DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT IT

MONITORING WELL INSTALLATION CONTRACTOR'S NAME
Layne Western Co., Inc.

DRILLING CONTRACTOR'S NAME
Layne Western Co., Inc.

TYPE OF INSTALLATION
☒ ABOVE GROUND ☐ FLUSH MOUNT

STATIC WATER LEVEL
FEET FROM MEASURING POINT

DATE OF STATIC WATER LEVEL

ELEVATION OF MEASURING POINT: 461.42

MEASURING POINT IS
☒ TOP OF RISER PIPE
☐ OTHER

DRILLING EQUIPMENT
☐ AIR ROTARY ☒ AUGER TYPE 4¼ HSA
☐ REVERSE ROTARY ☐ OTHER

CENTRALIZERS USED
☐ YES, AT
☐ STAINLESS STEEL
☐ OTHER
☒ NO

MULTIPLE CASED WELLS
SUBMIT ADDITIONAL AS BUILT DIAGRAM SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS, AND GROUT USED.

DATE WELL CONSTRUCTION WAS COMPLETED: 4-11-95

I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE (MONITORING WELL CONTRACTOR): [signature]
PERMIT NUMBER: 001258WPM DATE: 5-10-95

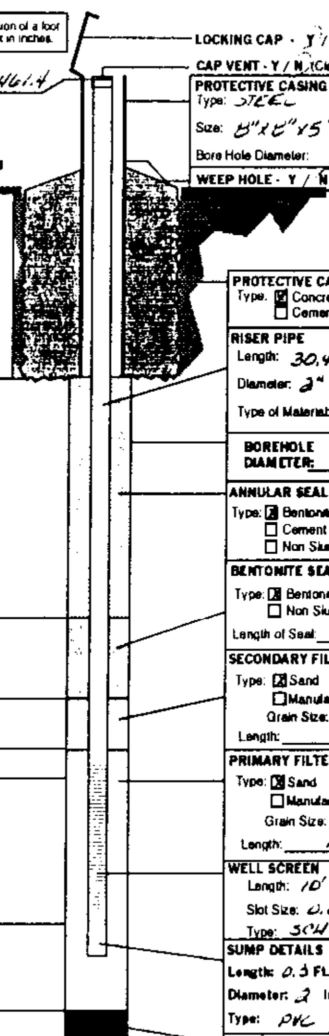
SIGNATURE (DRILLING CONTRACTOR): [signature]
PERMIT NUMBER: 001258WPM DATE: 5-10-95

Well construction diagram

NOTE: Record the fraction of a foot in decimal, not in inches.

LOCKING CAP - Y / N (Circle one): Y
CAP VENT - Y / N (Circle one): N
Top of Riser Elevation: 461.4

PROTECTIVE CASING
Type: Steel
Size: 8"x8"x5'
Bore Hole Diameter: 8"
WEEP HOLE - Y / N (Circle one): N



Ground Surface Elevation 457.4 Ft

Information in this column to be supplied in the Feet from Surface column

	Feet from Surface	Description of Formation
Depth to bottom of Protective Casing Seal	3.0	
Depth to Base of Annular Seal	23.0	
Depth to Base of Bentonite Seal	25.0	
Depth to Base of Secondary Filter Pack	27.0	
Depth to Top of the Screen	28.7	Alluvium
Depth to Bottom of the Screen	38.7	
Plug Back Total Depth		
Original Total Depth	40.0	

PROTECTIVE CASING SEAL
Type: ☒ Concrete ☐ Cement Slurry

RISER PIPE
Length: 30.4'
Diameter: 2"
Type of Material: Sch. 80 PVC

BOREHOLE DIAMETER: 8 In.

ANNULAR SEAL
Type: ☒ Bentonite Slurry ☐ Cement Slurry ☐ Non Slurry Bentonite

BENTONITE SEAL
Type: ☒ Bentonite Slurry ☐ Non Slurry Bentonite
Length of Seal: 2 Ft.

SECONDARY FILTER PACK (Optional)
Type: ☒ Sand ☐ Manufactured
Grain Size: Sugar (50
Length: 2'

PRIMARY FILTER PACK
Type: ☒ Sand ☐ Manufactured
Grain Size: 16-35
Length: 13'

WELL SCREEN
Length: 10'
Slot Size: 0.010"
Type: Sch. 80 PVC

SUMP DETAILS
Length: 0.3 Ft.
Diameter: 2 In.
Type: PVC

TYPE OF BACKFILL: Sand

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY

MONITORING WELL CERTIFICATION RECORD

REF NO 122527	CHECK NO
ROUTE	TRANSMITTAL NO
STATE WELL NUMBER	CROSS REFERENCE NO.
CHECKED BY	ENTERED Ph 1 Ph 2 Ph 3
APPROVED BY	DATE APPROVED

INFORMATION SUPPLIED BY OWNER

SITE NAME: LAIDLAW BRIDGETON SANITARY LANDFILL		WELL NUMBER: P2-113-AD	
SITE ADDRESS: ST. CHARLES ROCK RD.	CITY: BRIDGETON	STATE: Mo	ZIP CODE: 63044
NAME: LAIDLAW WASTE SYSTEMS, INC.		TELEPHONE: 314-241-3700	
ADDRESS: 1838 N. BROADWAY	CITY: ST. LOUIS	STATE: Mo	ZIP CODE: 63102

INFORMATION SUPPLIED BY MONITORING WELL CONTRACTOR

LOCATION OF WELL SHOW LOCATION IN SECTION PLAT

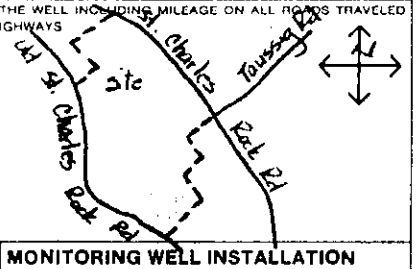
COUNTY: St. Louis
ELEVATION: 459.9
AREA NO.:

SMALLEST ¼ ____ ¼ ____ ¼ ____ ¼ LARGEST ¼

SEC. ____ TWN. 47 N,RNG. 5 (E) OR W

LAT. 38 ° 46 ' 12 " LONG. 90 ° 36 ' 41 "

SKETCH THE LOCATION TO THE WELL INCLUDING MILEAGE ON ALL ROADS TRAVELED FROM NEAREST TOWNS OR HIGHWAYS



DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT IT

MONITORING WELL INSTALLATION CONTRACTOR'S NAME
LAYNE WESTERN Co., INC.

DRILLING CONTRACTOR'S NAME
LAYNE WESTERN Co., INC.

NOTE: Record the fraction of a foot in decimal, not in inches

Top of Riser Elevation: 461.46

LOCKING CAP - (Y) N (Circle one)
CAP VENT - Y / (N) (Circle one)
PROTECTIVE CASING Type: STEEL Size: 8"x8"x5' Bore Hole Diameter: 10 1/4"
WEEP HOLE - Y / (N) (Circle one)

Ground Surface Elevation: 459.9 Ft.

Information in this column to be supplied in the Feet from Surface column	Feet from Surface	Description of Formation
		0-20 No Sample
Depth to bottom of Protective Casing Seal:	3.0	
		20-37 Clay
		37-39 Clay & Sand
		39-41 Sand
		41-44 Sand and gravel
Depth to Base of Annular Seal:	77.0	44-53 Sandstone
		53-66 Sand
Depth to Base of Bentonite Seal:	89.1	"
Depth to Base of Secondary Filter Pack:	94.7	66-91 Sandstone
Depth to Top of the Screen:	98.6	
		91-108.7 Sand
Depth to Bottom of the Screen:	108.6	
Plug Back Total Depth:		
Original Total Depth:	108.7	

PROTECTIVE CASING SEAL Type: (X) Concrete ( ) Cement Slurry
RISER PIPE Length: 100.2' Diameter: 3" Type of Material: SCH80 PVC
BOREHOLE DIAMETER: 10¼ In.
ANNULAR SEAL Type: (X) Bentonite Slurry ( ) Cement Slurry ( ) Non Slurry Bentonite
BENTONITE SEAL Type: (X) Bentonite Slurry ( ) Non Slurry Bentonite Length of Seal: 12.1 Ft.
SECONDARY FILTER PACK Type: (X) Sand (Optional) ( ) Manufactured Grain Size: < 50 Length: 5.6'
PRIMARY FILTER PACK Type: (X) Sand ( ) Manufactured Grain Size: 16-35 Length: 14'
WELL SCREEN Length: 10' Slot Size: 0.010" Type: SCH80 PVC
SUMP DETAILS Length: 0.3 FL Diameter: 3 In. Type: PVC
TYPE OF BACKFILL: SAND

TYPE OF INSTALLATION: (X) ABOVE GROUND ( ) FLUSH MOUNT

STATIC WATER LEVEL: FEET FROM MEASURING POINT

DATE OF STATIC WATER LEVEL:

ELEVATION OF MEASURING POINT: 461.46

MEASURING POINT IS: (X) TOP OF RISER PIPE ( ) OTHER

DRILLING EQUIPMENT: ( ) AIR ROTARY (X) AUGER TYPE 6¼ H.S.A. ( ) REVERSE ROTARY ( ) OTHER

CENTRALIZERS USED: (X) YES, AT 2 TOTAL (X) STAINLESS STEEL ( ) OTHER ( ) NO

MULTIPLE CASED WELLS: SUBMIT ADDITIONAL AS BUILT DIAGRAM SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS, AND GROUT USED.

DATE WELL CONSTRUCTION WAS COMPLETED: 5-03-95

I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE (MONITORING WELL CONTRACTOR): Lemon H. Mahurin Jr.
PERMIT NUMBER: 001259 WPM DATE: 7-31-95
SIGNATURE (DRILLING CONTRACTOR): Lemon H. Mahurin Jr.
PERMIT NUMBER: 001258WPM DATE: 7-31-95

MO 780-1415 (2-94)

DISTRIBUTION: WHITE/DIVISION CANARY/MONITORING WELL CONTRACTOR PINK/OWNER
MAIL WHITE COPY TO DEPARTMENT OF NATURAL RESOURCES, P.O. BOX 250, ROLLA, MO 65401

RECYCLED PAPER

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY

MONITORING WELL CERTIFICATION RECORD

OFFICE USE ONLY	DATE RECEIVED
REF NO 122509	CHECK NO
ROUTE	TRANSMITTAL NO.
STATE WELL NUMBER	CROSS REFERENCE NO
CHECKED BY	ENTERED Ph 1 Ph 2 Ph 3
APPROVED BY	DATE APPROVED

INFORMATION SUPPLIED BY OWNER

SITE NAME	WELL NUMBER
LAIDLAW WASTE SYSTEMS SANITARY LANDFILL	PZ-113S5

SITE ADDRESS	CITY	STATE	ZIP CODE
ST. CHARLES ROCK RD.	BRIDGETON	MO	63044

NAME	TELEPHONE
LAIDLAW WASTE SYSTEMS, INC.	314-241-3710

ADDRESS	CITY	STATE	ZIP CODE
1838 N. BROADWAY	ST. LOUIS	MO	63102

INFORMATION SUPPLIED BY MONITORING WELL CONTRACTOR

LOCATION OF WELL
SHOW LOCATION IN SECTION PLAT

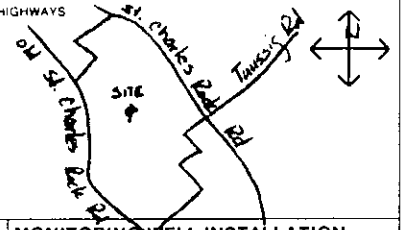
COUNTY ST. LOUIS
ELEVATION 459.7
AREA NO.

SMALLEST ¼ LARGEST ¼

SEC. ___ TWN. 47 N.RNG 5 (E) OR W

LAT. 38 ° 46 ' 12 " LONG. 90 ° 26 ' 41 "

SKETCH THE LOCATION TO THE WELL INCLUDING MILEAGE ON ALL ROADS TRAVELED FROM NEAREST TOWNS OR HIGHWAYS



DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT IT

MONITORING WELL INSTALLATION CONTRACTOR'S NAME
LAYNE WESTERN CO, INC.

DRILLING CONTRACTOR'S NAME
LAYNE WESTERN CO., INC.

TYPE OF INSTALLATION
☒ ABOVE GROUND ☐ FLUSH MOUNT

STATIC WATER LEVEL
FEET FROM MEASURING POINT

DATE OF STATIC WATER LEVEL

ELEVATION OF MEASURING POINT
461.8

MEASURING POINT IS
☒ TOP OF RISER PIPE
☐ OTHER

DRILLING EQUIPMENT
☒ AIR ROTARY ☒ AUGER TYPE 6¼ H.S.A.
☐ REVERSE ROTARY ☐ OTHER

CENTRALIZERS USED
☒ YES, AT 5 TOTAL
☒ STAINLESS STEEL
☐ OTHER
☐ NO

MULTIPLE CASED WELLS
SUBMIT ADDITIONAL AS BUILT DIAGRAM SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS, AND GROUT USED.

DATE WELL CONSTRUCTION WAS COMPLETED
5-20-95

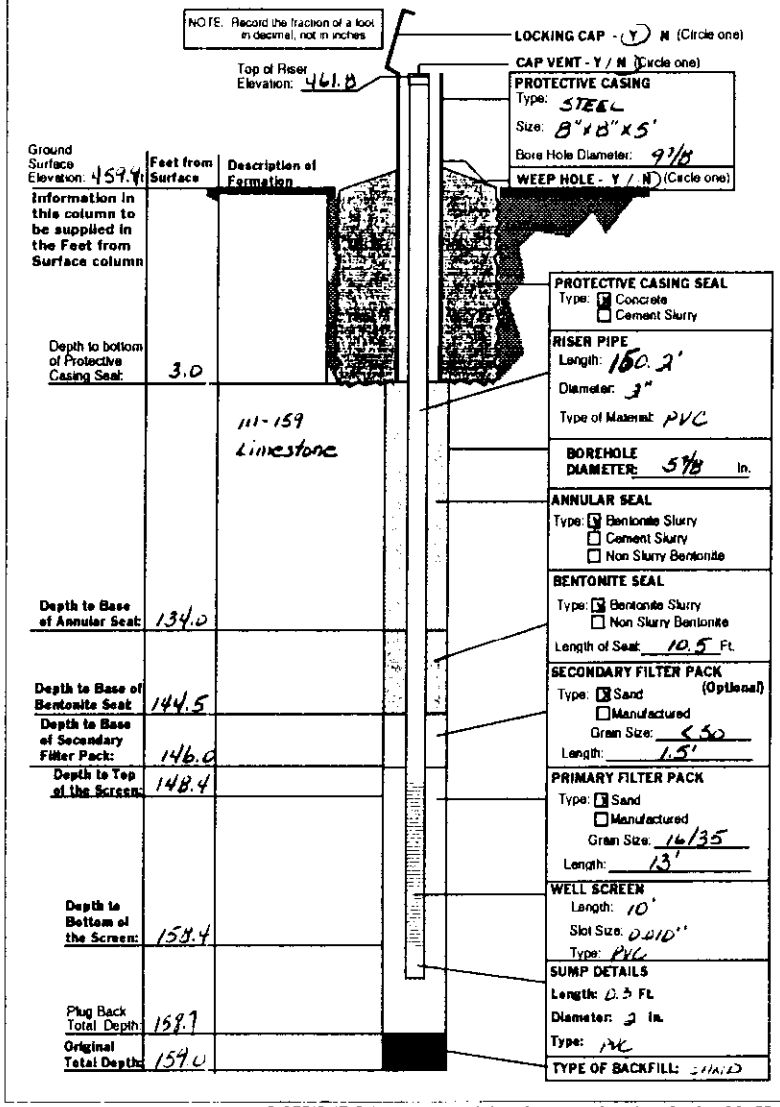
I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE (MONITORING WELL CONTRACTOR) Michael P. Vogt

PERMIT NUMBER	DATE
001256 WM	6-02-95

SIGNATURE (DRILLING CONTRACTOR) Michael P. Vogt

PERMIT NUMBER	DATE
001256 WM	6-02-95



MO 780-1315 (2-94) DISTRIBUTION: WHITE DIVISION CANARY MONITORING WELL CONTRACTOR PINK OWNER

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY

MONITORING WELL CERTIFICATION RECORD

OFFICE USE ONLY	
REF NO 122487	CHECK NO
ROUTE	TRANSMITTAL NO
STATE WELL NUMBER	CROSS REFERENCE NO
CHECKED BY	ENTERED Ph 1 Ph 2 Ph 3
APPROVED BY	DATE APPROVED

DATE RECEIVED

INFORMATION SUPPLIED BY OWNER

SITE NAME	WELL NUMBER
LAIDLAW BRIDGETON SANITARY LANDFILL	PZ-114-AS

SITE ADDRESS	CITY	STATE	ZIP CODE
37 CHARLES ROCK RD.	BRIDGETON	Mo.	63044

NAME	TELEPHONE
LAIDLAW WASTE SYSTEMS, INC.	314-241-3710

ADDRESS	CITY	STATE	ZIP CODE
1939 N BROADWAY	ST. LOUIS	Mo	63102

INFORMATION SUPPLIED BY MONITORING WELL CONTRACTOR

LOCATION OF WELL
SHOW LOCATION IN SECTION PLAT

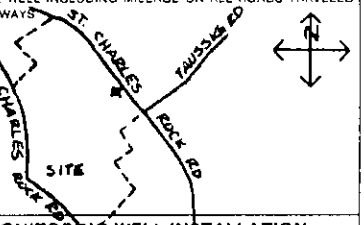
COUNTY ST. LOUIS
ELEVATION 449.8
AREA NO.

SMALLEST ¼ ____ ¼ ____ ¼ ____ LARGEST ¼

SEC. ____ TWN. 47 N.RNG. 5 E OR W

LAT. 38 ° 46 ' 14 " LONG. 90 ° 26 ' 28 "

SKETCH THE LOCATION TO THE WELL INCLUDING MILEAGE ON ALL ROADS TRAVELED FROM NEAREST TOWNS OR HIGHWAYS



DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT IT

MONITORING WELL INSTALLATION CONTRACTOR'S NAME
LAYNE WESTERN Co, INC

DRILLING CONTRACTOR'S NAME
LAYNE WESTERN Co, INC.

TYPE OF INSTALLATION
☒ ABOVE GROUND ☐ FLUSH MOUNT

STATIC WATER LEVEL
FEET FROM MEASURING POINT

DATE OF STATIC WATER LEVEL

ELEVATION OF MEASURING POINT
451.31

MEASURING POINT IS
☒ TOP OF RISER PIPE
☐ OTHER

DRILLING EQUIPMENT
☐ AIR ROTARY ☒ AUGER TYPE 6¼ HSA
☐ REVERSE ROTARY ☐ OTHER

CENTRALIZERS USED
☐ YES, AT
☐ STAINLESS STEEL
☐ OTHER
☒ NO

MULTIPLE CASED WELLS
SUBMIT ADDITIONAL AS BUILT DIAGRAM SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS, AND GROUT USED.

DATE WELL CONSTRUCTION WAS COMPLETED
4-20-95

I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

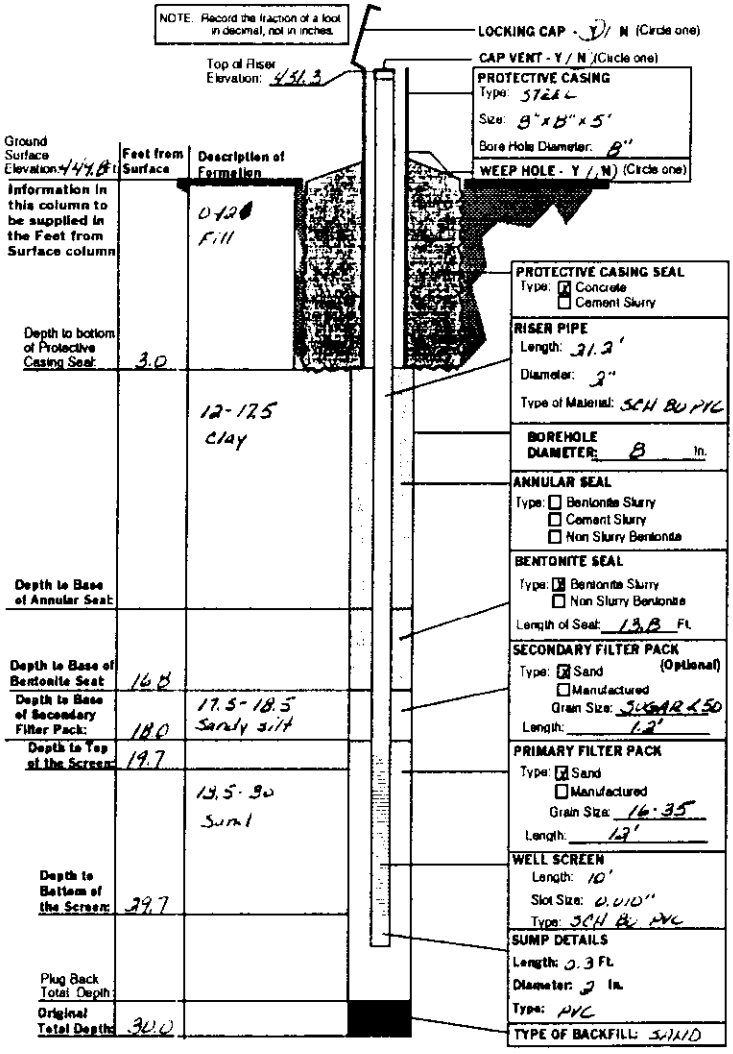
SIGNATURE (MONITORING WELL CONTRACTOR)

PERMIT NUMBER	DATE
001258 WPM	5-10-95

SIGNATURE (DRILLING CONTRACTOR)

PERMIT NUMBER	DATE
001258WPM	5-10-95

NOTE: Record the fraction of a foot in decimal, not in inches.



MO 780-1415 (2-94)

DISTRIBUTION: WHITE DIVISION CANARY MONITORING WELL CONTRACTOR PINK OWNER

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY

MONITORING WELL CERTIFICATION RECORD

OFFICE USE ONLY	DATE RECEIVED
REF NO 122507	CHECK NO
ROUTE	TRANSMITTAL NO
STATE WELL NUMBER	CROSS REFERENCE NO
CHECKED BY	ENTERED Ph 1 Ph 2 Ph 3
APPROVED BY	DATE APPROVED

INFORMATION SUPPLIED BY OWNER

SITE NAME	WELL NUMBER		
LAIDLAW BRIDGETON SANITARY LANDFILL	PZ-1155S		
SITE ADDRESS	CITY	STATE	ZIP CODE
ST. CHARLES ROCK RD.	BRIDGETON	MO	63044
NAME		TELEPHONE	
LAIDLAW WASTE SYSTEMS, INC.		314-241-3710	
ADDRESS	CITY	STATE	ZIP CODE
1838 N. BROADWAY	ST. LOUIS	MO.	63102

INFORMATION SUPPLIED BY MONITORING WELL CONTRACTOR

LOCATION OF WELL SHOW LOCATION IN SECTION PLAT

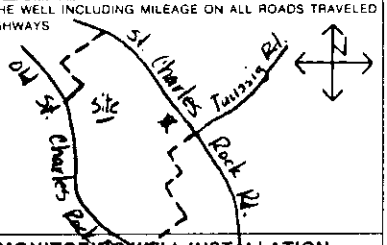
COUNTY ST. LOUIS
ELEVATION 452.6
AREA NO.

SMALLEST ¼ LARGEST ¼

SEC. ____ TWN. 47 N,RNG. 5 E OR W

LAT. 38° 46' 14" LONG. 90° 26' 29"

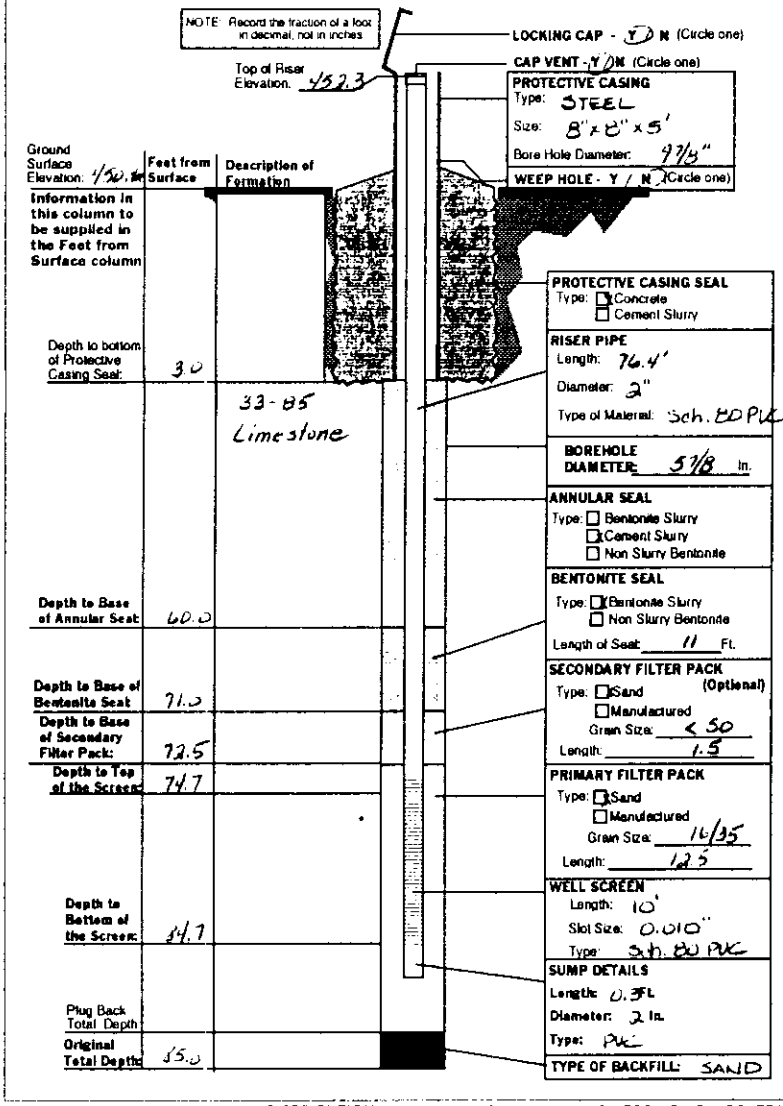
SKETCH THE LOCATION TO THE WELL INCLUDING MILEAGE ON ALL ROADS TRAVELED FROM NEAREST TOWNS OR HIGHWAYS



DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT IT

MONITORING WELL INSTALLATION CONTRACTOR'S NAME

LAYNE WESTERN CO., INC.



DRILLING CONTRACTOR'S NAME

LAYNE WESTERN CO., INC.

TYPE OF INSTALLATION
☒ ABOVE GROUND ☐ FLUSH MOUNT

STATIC WATER LEVEL
FEET FROM MEASURING POINT

DATE OF STATIC WATER LEVEL

ELEVATION OF MEASURING POINT
452.3

MEASURING POINT IS
☒ TOP OF RISER PIPE
☐ OTHER

DRILLING EQUIPMENT
☒ AIR ROTARY ☐ AUGER TYPE 6¼ H.S.A.
☐ REVERSE ROTARY ☐ OTHER

CENTRALIZERS USED
☒ YES, AT 3 TOTAL
☒ STAINLESS STEEL
☐ OTHER
☐ NO

MULTIPLE CASED WELLS
SUBMIT ADDITIONAL AS BUILT DIAGRAM SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS, AND GROUT USED.

DATE WELL CONSTRUCTION WAS COMPLETED
5-31-95

I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE (MONITORING WELL CONTRACTOR) Michael P. Vogt

PERMIT NUMBER	DATE
001256 WM	6-02-95

SIGNATURE (DRILLING CONTRACTOR) Michael P. Vogt

PERMIT NUMBER	DATE
001256 WM	6-02-95

MO 780-1415 (2-94) DISTRIBUTION: WHITE DIVISION CANARY MONITORING WELL CONTRACTOR PINK OWNER

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY

MONITORING WELL CERTIFICATION RECORD

OFFICE USE ONLY	DATE RECEIVED
REF. NO 122519	CHECK NO
ROUTE	TRANSMITTAL NO
STATE WELL NUMBER	CROSS REFERENCE NO
CHECKED BY	ENTERED Ph 1 Ph 2 Ph 3
APPROVED BY	DATE APPROVED

INFORMATION SUPPLIED BY OWNER

SITE NAME: LAIDLAW BRIDGETON SANITARY LANDFILL
WELL NUMBER: PZ-116-55
SITE ADDRESS: 51. CHARLES ROCK RD. CITY: BRIDGETON STATE: MO ZIP CODE: 63044
NAME: LAIDLAW WASTE SYSTEMS, INC. TELEPHONE: 314-241-3710
ADDRESS: 1338 N. BROADWAY CITY: ST. LOUIS STATE: MO ZIP CODE: 63102

INFORMATION SUPPLIED BY MONITORING WELL CONTRACTOR

LOCATION OF WELL
SHOW LOCATION IN SECTION PLAT

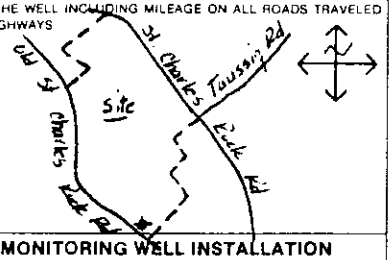
COUNTY: ST LOUIS
ELEVATION: 493.07
AREA NO:

SMALLEST ¼ LARGEST ¼

SEC. ____ TWN. 47 N,RNG. 5 E OR W

LAT. 38 ° 45 ' 44 " LONG. 90 ° 36 ' 40 "

SKETCH THE LOCATION TO THE WELL INCLUDING MILEAGE ON ALL ROADS TRAVELED FROM NEAREST TOWNS OR HIGHWAYS



DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT IT

MONITORING WELL INSTALLATION CONTRACTOR'S NAME
LAYNE WESTERN Co, INC.

DRILLING CONTRACTOR'S NAME
LAYNE WESTERN Co, INC.

TYPE OF INSTALLATION: ☒ ABOVE GROUND ☐ FLUSH MOUNT

STATIC WATER LEVEL
FEET FROM MEASURING POINT

DATE OF STATIC WATER LEVEL

ELEVATION OF MEASURING POINT: 494.07

MEASURING POINT IS: ☒ TOP OF RISER PIPE ☐ OTHER

DRILLING EQUIPMENT: ☒ AIR ROTARY ☒ AUGER TYPE 6¼ H.S.A. ☐ REVERSE ROTARY ☐ OTHER

CENTRALIZERS USED: ☒ YES, AT 5 TOTAL ☒ STAINLESS STEEL ☐ OTHER ☐ NO

MULTIPLE CASED WELLS
SUBMIT ADDITIONAL AS BUILT DIAGRAM SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS, AND GROUT USED.

DATE WELL CONSTRUCTION WAS COMPLETED: 6-20-95

I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE (MONITORING WELL CONTRACTOR): Michael P. Vogt
PERMIT NUMBER: OWI256 DATE: 7-27-95
SIGNATURE (DRILLING CONTRACTOR): Michael P. Vogt
PERMIT NUMBER: OWI256 DATE: 7-27-95

NOTE: Record the fraction of a foot in decimal, not in inches

Top of Riser Elevation: 494.07

Ground Surface Elevation: 493.07 Ft

Information in this column to be supplied in the Feet from Surface column	Feet from Surface	Description of Formation
		0-24 Silt
Depth to bottom of Protective Casing Seal:	3.0	
		24-28 Silt w/ Sand
		28-30 Silt
		30-34 Sand
		34-61 Limestone
		61-65 Dolomite
		65-162 Limestone
Depth to Base of Annular Seal:	135.0	
Depth to Base of Bentonite Seal:	147.0	
Depth to Base of Secondary Filter Pack:	148.0	
Depth to Top of the Screen:	151.0	
Depth to Bottom of the Screen:	161.0	
Plug Back Total Depth:		
Original Total Depth:	162.0	

LOCKING CAP - (Y) N (Circle one)
CAP VENT - Y / N (Circle one)

PROTECTIVE CASING
Type: STEEL
Size: 8" x 6" x 5'
Bore Hole Diameter: 10¼ "

WEEP HOLE - Y / N (Circle one)

PROTECTIVE CASING SEAL
Type: ☒ Concrete ☐ Cement Slurry

RISER PIPE
Length: 153 '
Diameter: 2"
Type of Material: SCH 80 PVC

BOREHOLE DIAMETER: 5⅛ In.

ANNULAR SEAL
Type: ☐ Bentonite Slurry ☒ Cement Slurry ☐ Non Slurry Bentonite

BENTONITE SEAL
Type: ☒ Bentonite Slurry ☐ Non Slurry Bentonite
Length of Seal: 12 Ft.

SECONDARY FILTER PACK (Optional)
Type: ☒ Sand ☐ Manufactured
Grain Size: 4-50
Length: 1'

PRIMARY FILTER PACK
Type: ☒ Sand ☐ Manufactured
Grain Size: 16-35
Length: 14'

WELL SCREEN
Length: 10'
Slot Size: 0.010
Type: SCH 80 PVC

SUMP DETAILS
Length: 0.3 Ft.
Diameter: 2 In.
Type: PVC

TYPE OF BACKFILL: SAND

DISTRIBUTION: WHITE [illegible] CANARY MONITORING WELL CONTRACTOR PINK OWNER

661574

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY

MONITORING WELL CERTIFICATION RECORD

OFFICE USE ONLY	DATE RECEIVED
REF NO 15084	CHECK NO.
ROUTE	TRANSMITTAL NO.
STATE WELL NUMBER	CROSS REFERENCE NO
CHECKED BY	ENTERED Ph 1 Ph 2 Ph 3
APPROVED BY	DATE APPROVED

INFORMATION SUPPLIED BY OWNER

SITE NAME	WELL NUMBER
LAIDLAW BRIDGETON SANITARY LANDFILL	PZ-200-55

SITE ADDRESS	CITY	STATE	ZIP CODE
ST CHARLES ROCK RD.	BRIDGETON	MO	63044

NAME	TELEPHONE
LAIDLAW WASTE SYSTEMS, INC	314-291-3710

ADDRESS	CITY	STATE	ZIP CODE
1138 N. BROADWAY	ST. LOUIS	MO.	63102

INFORMATION SUPPLIED BY MONITORING WELL CONTRACTOR

LOCATION OF WELL
SHOW LOCATION IN SECTION PLAT

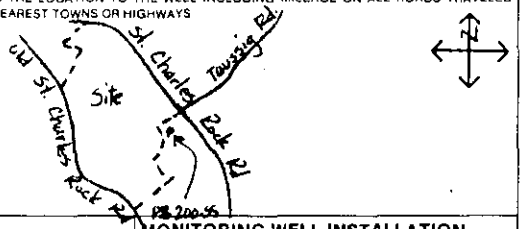
COUNTY ST LOUIS
ELEVATION 433.61
AREA NO.

SMALLEST ¼ LARGEST ¼

SEC. ____ TWN. 47 N,RNG. 5 E OR W

LAT. 38 ° 46 ' 07 " LONG. 90 ° 26 ' 26 "

SKETCH THE LOCATION TO THE WELL INCLUDING MILEAGE ON ALL ROADS TRAVELED FROM NEAREST TOWNS OR HIGHWAYS



DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT IT

MONITORING WELL INSTALLATION CONTRACTOR'S NAME
LAYNE WESTERN CO, INC.

DRILLING CONTRACTOR'S NAME
LAYNE WESTERN CO, INC.

TYPE OF INSTALLATION
☒ ABOVE GROUND ☐ FLUSH MOUNT

STATIC WATER LEVEL
FEET FROM MEASURING POINT

DATE OF STATIC WATER LEVEL

ELEVATION OF MEASURING POINT

MEASURING POINT IS
☐ TOP OF RISER PIPE
☐ OTHER

DRILLING EQUIPMENT
☒ AIR ROTARY ☒ AUGER TYPE 6¼ H.S.A.
☐ REVERSE ROTARY ☐ OTHER

CENTRALIZERS USED
☐ YES, AT 4 TOTAL
☐ STAINLESS STEEL
☐ OTHER
☐ NO

MULTIPLE CASED WELLS
SUBMIT ADDITIONAL AS BUILT DIAGRAM SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS, AND GROUT USED.

DATE WELL CONSTRUCTION WAS COMPLETED
2-28-95

I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE (MONITORING WELL CONTRACTOR) Richard P. Vogl

PERMIT NUMBER	DATE
001256 WIA	4-11-95

SIGNATURE (DRILLING CONTRACTOR) Richard P Vogl

PERMIT NUMBER	DATE
001256 WIA	4-11-95

NOTE: Record the fraction of a foot in decimal, not in inches

Top of Riser Elevation: 435.63

LOCKING CAP - Y / N (Circle one)
CAP VENT - Y / N (Circle one)
PROTECTIVE CASING Type: Size: Bore Hole Diameter:
WEEP HOLE - Y / N (Circle one)

Ground Surface Elevation: 433.61 Ft

Information in this column to be supplied in the Feet from Surface column	Feet from Surface	Description of Formation
		0-27 Silt
Depth to bottom of Protective Casing Seal:	3	
Depth to Base of Annular Seal:	3	
Depth to Base of Bentonite Seal:	7.5	
Depth to Base of Secondary Filter Pack:		
Depth to Top of the Screen:	9.6	
		27-37 Sandstone
		37-68 Limestone
Depth to Bottom of the Screen:	47.6	68-76 Dolomite
		76-93 Limestone
Plug Back Total Depth		93-95' Dolomite
Original Total Depth:	99.7	

PROTECTIVE CASING SEAL Type: ☒ Concrete ☐ Cement Slurry

RISER PIPE Length: 11.63' Diameter: 2" Type of Material: SCH80 PVC

BOREHOLE DIAMETER: 5⅞ In.

ANNULAR SEAL Type: ☐ Bentonite Slurry ☐ Cement Slurry ☐ Non Slurry Bentonite

BENTONITE SEAL Type: ☐ Bentonite Slurry ☒ Non Slurry Bentonite Length of Seal: 4.5 FT.

SECONDARY FILTER PACK (Optional) Type: ☐ Sand ☐ Manufactured Grain Size: ____ Length: ____

PRIMARY FILTER PACK Type: ☒ Sand ☐ Manufactured Grain Size: 16-35 Length: 91.2

WELL SCREEN Length: 38' Slot Size: 0.010" Type: SCH80 PVC

SUMP DETAILS Length: 0.3 Ft. Diameter: 2 In. Type: PVC

TYPE OF BACKFILL: SAND

MO 780-1415 (2-94) DISTRIBUTION: WHITE DIVISION CANARY MONITORING WELL CONTRACTOR PINK OWNER

661574

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY

MONITORING WELL CERTIFICATION RECORD

OFFICE USE ONLY	
REF NO 115085	DATE RECEIVED
ROUTE	CHECK NO
STATE WELL NUMBER	TRANSMITTAL NO
CHECKED BY	CROSS REFERENCE NO
APPROVED BY	ENTERED Ph 1 Ph 2 Ph 3
	DATE APPROVED

INFORMATION SUPPLIED BY OWNER

SITE NAME: LAIDLAW BRIDGETON SANITARY LANDFILL
WELL NUMBER: PZ-201-SS
SITE ADDRESS: ST. CHARLES ROCK RD. CITY: BRIDGETON STATE: MO. ZIP CODE: 63044
NAME: LAIDLAW WASTE SYSTEMS, INC. TELEPHONE: 314-841-3710
ADDRESS: 1838 N. BROADWAY CITY: ST. LOUIS STATE: MO. ZIP CODE: 63102

INFORMATION SUPPLIED BY MONITORING WELL CONTRACTOR

LOCATION OF WELL SHOW LOCATION IN SECTION PLAT

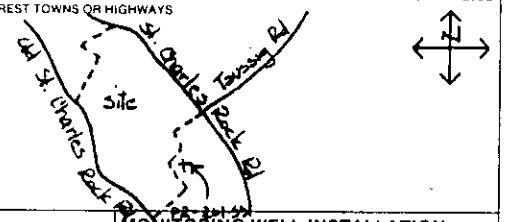
COUNTY: ST. LOUIS
ELEVATION: 478.0
AREA NO:

SMALLEST ¼ ____ ¼ ____ ¼ ____ ¼ LARGEST ¼

SEC. ____ TWN. 47 N.RNG. 5 (E) OR W

LAT 38 ° 45 ' 57 " LONG. 90 ° 26 ' 27 "

SKETCH THE LOCATION TO THE WELL INCLUDING MILEAGE ON ALL ROADS TRAVELED FROM NEAREST TOWNS OR HIGHWAYS



DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT IT

NOTE: Record the fraction of a foot in decimal, not in inches

Top of Riser Elevation: 491.05

LOCKING CAP - (Y) N (Circle one)
CAP VENT - (Y) N (Circle one)

PROTECTIVE CASING
Type: STEEL
Size: 8"x6'x5'
Bore Hole Diameter: 10.25"
WEEP HOLE - Y / N (Circle one)

Ground Surface Elevation: 478.01 Ft.

Information in this column to be supplied in the Feet from Surface column	Feet from Surface	Description of Formation
		0-17.5 Silt
Depth to bottom of Protective Casing Seal:	3	
Depth to Base of Annular Seal:	3	
Depth to Base of Bentonite Seal:	7.5	
Depth to Base of Secondary Filter Pack:		
Depth to Top of the Screen:	9.75	
		17.5-21 Sandstone
		21-31 Silt
		31-33.5 Clay
		33.5-89.5 Limestone
Depth to Bottom of the Screen:	88.25	
Plug Back Total Depth:		
Original Total Depth:	91.5	

PROTECTIVE CASING SEAL
Type: (X) Concrete ( ) Cement Slurry

RISER PIPE
Length: 12.71
Diameter: 2
Type of Material: SCHED PVC

BOREHOLE DIAMETER: 5.75 in.

ANNULAR SEAL
Type: ( ) Bentonite Slurry ( ) Cement Slurry ( ) Non Slurry Bentonite

BENTONITE SEAL
Type: ( ) Bentonite Slurry (X) Non Slurry Bentonite
Length of Seal: 4.5 Ft.

SECONDARY FILTER PACK (Optional)
Type: ( ) Sand ( ) Manufactured
Grain Size:
Length:

PRIMARY FILTER PACK
Type: (X) Sand ( ) Manufactured
Grain Size: 16-35
Length: 82'

WELL SCREEN
Length: 78.5'
Slot Size: 0.010"
Type: SCH 80 PVC

SUMP DETAILS
Length: 0.5 Ft.
Diameter: 2 In.
Type: PVC

TYPE OF BACKFILL: SAND

MONITORING WELL INSTALLATION CONTRACTOR'S NAME
LAYNE WESTERN Co, INC.

DRILLING CONTRACTOR'S NAME
LAYNE WESTERN Co, INC.

TYPE OF INSTALLATION
(X) ABOVE GROUND ( ) FLUSH MOUNT

STATIC WATER LEVEL
FEET FROM MEASURING POINT

DATE OF STATIC WATER LEVEL

ELEVATION OF MEASURING POINT

MEASURING POINT IS
( ) TOP OF RISER PIPE
( ) OTHER

DRILLING EQUIPMENT
(X) AIR ROTARY (X) AUGER TYPE 6¼ I.S.A.
( ) REVERSE ROTARY ( ) OTHER

CENTRALIZERS USED
(X) YES, AT 3 TOTAL
( ) STAINLESS STEEL
( ) OTHER
( ) NO

MULTIPLE CASED WELLS
SUBMIT ADDITIONAL AS BUILT DIAGRAM SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS, AND GROUT USED.

DATE WELL CONSTRUCTION WAS COMPLETED
3-06-95

I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE (MONITORING WELL CONTRACTOR) Michael P. Vogl
PERMIT NUMBER 001256WM DATE 4-11-95
SIGNATURE (DRILLING CONTRACTOR) Michael P. Vogl
PERMIT NUMBER 001256WM DATE 4-11-95

MO 780-1415 (2-94) DISTRIBUTION: WHITE DIVISION CANARY MONITORING WELL CONTRACTOR PINK OWNER

LL1574

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY

MONITORING WELL CERTIFICATION RECORD

OFFICE USE ONLY	
REF NO 122484	DATE RECEIVED
ROUTE	CHECK NO
STATE WELL NUMBER	TRANSMITTAL NO
CHECKED BY	CROSS REFERENCE NO
APPROVED BY	ENTERED Ph 1 Ph 2 Ph 3
	DATE APPROVED

INFORMATION SUPPLIED BY OWNER

SITE NAME: LAIDLAW BRIDGETON SANITARY LANDFILL
WELL NUMBER: PZ-201-A-SS
SITE ADDRESS: ST. CHARLES ROCK RD.
CITY: BRIDGETON
STATE: MO. ZIP CODE: 63044
NAME: LAIDLAW WASTE SYSTEMS, INC.
TELEPHONE: 314-241-3710
ADDRESS: 1638 N. BROADWAY
CITY: ST. LOUIS
STATE: MO ZIP CODE: 63102

INFORMATION SUPPLIED BY MONITORING WELL CONTRACTOR

LOCATION OF WELL SHOW LOCATION IN SECTION PLAT

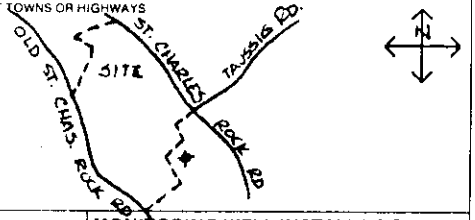
COUNTY: ST. LOUIS
ELEVATION: 472.4
AREA NO

SMALLEST ¼ ____ ¼ ____ ¼ LARGEST ¼

SEC. ____ TWN. 47 N/RNG 5 (E) OR W

LAT. 38° 45' 58" LONG. 90° 26' 28"

SKETCH THE LOCATION TO THE WELL INCLUDING MILEAGE ON ALL ROADS TRAVELED FROM NEAREST TOWNS OR HIGHWAYS



DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT IT

MONITORING WELL INSTALLATION CONTRACTOR'S NAME
LAYNE WESTERN Co, INC.

DRILLING CONTRACTOR'S NAME
LAYNE WESTERN Co, INC.

TYPE OF INSTALLATION
☒ ABOVE GROUND ☐ FLUSH MOUNT

STATIC WATER LEVEL
FEET FROM MEASURING POINT

DATE OF STATIC WATER LEVEL

ELEVATION OF MEASURING POINT

MEASURING POINT IS
☐ TOP OF RISER PIPE
☐ OTHER

DRILLING EQUIPMENT
☒ AIR ROTARY ☒ AUGER TYPE 6.25" HSA, NX CORE
☐ REVERSE ROTARY ☐ OTHER

CENTRALIZERS USED
☒ YES, AT 3 TOTAL
☒ STAINLESS STEEL
☐ OTHER
☐ NO

MULTIPLE CASED WELLS
SUBMIT ADDITIONAL AS BUILT DIAGRAM SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS, AND GROUT USED.

DATE WELL CONSTRUCTION WAS COMPLETED
4-23-95

I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE (MONITORING WELL CONTRACTOR)
Michael P. Vogl
PERMIT NUMBER 001256WM DATE 6-02-95

SIGNATURE (DRILLING CONTRACTOR)
Michael P. Vogl
PERMIT NUMBER 001256WM DATE 6-03-95

NOTE: Record the fraction of a foot in decimal, not in inches

Top of Riser Elevation: 474.5

Ground Surface Elevation: 472.4 Ft

Information in this column to be supplied in the Feet from Surface column	Feet from Surface	Description of Formation
		0-18' Silt
Depth to bottom of Protective Casing Seal:	3.0	
		18'-21' Sand
		21'-23.5' Silt
		23.5'-24' Sand
Depth to Base of Annular Seal:	65.0	24'-33' Silt
Depth to Base of Bentonite Seal:	75.1	33'-34' Clay
Depth to Base of Secondary Filter Pack:		34'-40' Limestone
Depth to Top of the Screen:	79.7	
Depth to Bottom of the Screen:	89.7	
Plug Back Total Depth:		
Original Total Depth:	90'	

LOCKING CAP - Y / N (Circle one)
CAP VENT - Y / N (Circle one)
PROTECTIVE CASING
Type: STEEL
Size: 8"x5"x5'
Bore Hole Diameter: 10 3/4"
WEEP HOLE - Y / N (Circle one)

PROTECTIVE CASING SEAL
Type: ☒ Concrete ☐ Cement Slurry

RISER PIPE
Length: 81.8'
Diameter: 2"
Type of Material: SCH 80 PVC

BOREHOLE DIAMETER: 5 7/8 In.

ANNULAR SEAL
Type: ☒ Bentonite Slurry ☐ Cement Slurry ☐ Non Slurry Bentonite

BENTONITE SEAL
Type: ☒ Bentonite Slurry ☐ Non Slurry Bentonite
Length of Seal: 9.9 Ft.

SECONDARY FILTER PACK (Optional)
Type: ☐ Sand ☐ Manufactured
Grain Size: ____
Length: ____

PRIMARY FILTER PACK
Type: ☒ Sand ☐ Manufactured
Grain Size: 16/35
Length: 14.9'

WELL SCREEN
Length: 10'
Slot Size: 0.010"
Type: SCH. 80 PVC

SUMP DETAILS
Length: 0.3 Ft.
Diameter: 2 In.
Type: PVC

TYPE OF BACKFILL: SAND

MO 780-1415 (2-94) DISTRIBUTION: WHITE DIVISION CANARY MONITORING WELL CONTRACTOR PINK OWNER

W1574

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY

MONITORING WELL CERTIFICATION RECORD

OFFICE USE ONLY	DATE RECEIVED
REF. NO 115089	CHECK NO
ROUTE	TRANSMITTAL NO.
STATE WELL NUMBER	CROSS REFERENCE NO
CHECKED BY	ENTERED Ph 1 Ph 2 Ph 3
APPROVED BY	DATE APPROVED

INFORMATION SUPPLIED BY OWNER

SITE NAME	WELL NUMBER
LAIDLAW BRIDGETON SANITARY LANDFILL	PZ-202-SS

SITE ADDRESS	CITY	STATE	ZIP CODE
ST. CHARLES ROCK ROAD	BRIDGETON	MO	63044

NAME	TELEPHONE
LAIDLAW WASTE SYSTEMS, INC.	314-241-9710

ADDRESS	CITY	STATE	ZIP CODE
1538 N. BROADWAY	ST. LOUIS	MO	63102

INFORMATION SUPPLIED BY MONITORING WELL CONTRACTOR

LOCATION OF WELL
SHOW LOCATION IN SECTION PLAT

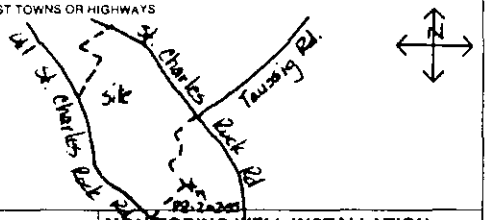
COUNTY ST. LOUIS
ELEVATION 479.0
AREA NO

SMALLEST ¼ LARGEST ¼

SEC. ___ TWN. 47 N.RNG 5 E OR W

LAT. 38° 45' 54" LONG. 90° 26' 24"

SKETCH THE LOCATION TO THE WELL INCLUDING MILEAGE ON ALL ROADS TRAVELED FROM NEAREST TOWNS OR HIGHWAYS



DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT IT

MONITORING WELL INSTALLATION CONTRACTOR'S NAME
LAYNE WESTERN CO., INC.

DRILLING CONTRACTOR'S NAME
LAYNE WESTERN CO., INC.

TYPE OF INSTALLATION
☒ ABOVE GROUND ☐ FLUSH MOUNT

STATIC WATER LEVEL
FEET FROM MEASURING POINT

DATE OF STATIC WATER LEVEL

ELEVATION OF MEASURING POINT

MEASURING POINT IS
☐ TOP OF RISER PIPE
☐ OTHER

DRILLING EQUIPMENT
☒ AIR ROTARY ☒ AUGER TYPE 6¼ H.S.A.
☐ REVERSE ROTARY ☐ OTHER

CENTRALIZERS USED
☒ YES, AT 3 TOTAL
☐ STAINLESS STEEL
☐ OTHER
☐ NO

MULTIPLE CASED WELLS
SUBMIT ADDITIONAL AS BUILT DIAGRAM SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS, AND GROUT USED.

DATE WELL CONSTRUCTION WAS COMPLETED
3-12-75

I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE (MONITORING WELL CONTRACTOR) Richard J. Vogt

PERMIT NUMBER	DATE
001256 WM	4-11-75

SIGNATURE (DRILLING CONTRACTOR) Richard J. Vogt

PERMIT NUMBER	DATE
001256 WM	4-11-75

NOTE: Record the fraction of a foot in decimal, not in inches

Top of Riser Elevation: 481.8

Ground Surface Elevation: 479.0 Ft.

Information in this column to be supplied in the Feet from Surface column:	Feet from Surface	Description of Formation
	0-3	Silt
Depth to bottom of Protective Casing Seal:	3	
	3-22	Clay
	22-32	Silt
Depth to Base of Annular Seal:	38.0	
	32-67	Limestone
Depth to Base of Bentonite Seal:	38.0	
Depth to Base of Secondary Filter Pack:	39.0	
Depth to Top of the Screen:	40.2	
	67-78	Dolomite
	78-90.2	Limestone
Depth to Bottom of the Screen:	90.2	
Plug Back Total Depth:		
Original Total Depth:	102	

LOCKING CAP - Y / N (Circle one)
CAP VENT - Y / N (Circle one)

PROTECTIVE CASING
Type: STEEL
Size: 8" x 0" x 5'
Bore Hole Diameter: 10.25"

WEEP HOLE - Y / N (Circle one)

PROTECTIVE CASING SEAL
Type: ☒ Concrete ☐ Cement Slurry

RISER PIPE
Length: 43'
Diameter: 2
Type of Material: SCHED. 40

BOREHOLE DIAMETER: 5⅞ In.

ANNULAR SEAL
Type: ☒ Bentonite Slurry ☐ Cement Slurry ☐ Non Slurry Bentonite

BENTONITE SEAL
Type: ☒ Bentonite Slurry ☐ Non Slurry Bentonite
Length of Seal: 10' Ft.

SECONDARY FILTER PACK (Optional)
Type: ☒ Sand ☐ Manufactured
Grain Size: SUGAR
Length: 1'

PRIMARY FILTER PACK
Type: ☒ Sand ☐ Manufactured
Grain Size: 16-35
Length: 51.2'

WELL SCREEN
Length: 50'
Slot Size: 0.010"
Type: SCHED. PVC

SUMP DETAILS
Length: 2.3 Ft.
Diameter: 2 In.
Type: PVC

TYPE OF BACKFILL: SAND

MO 780-1415 (2-94)

DISTRIBUTION: WHITE DIVISION CANARY MONITORING WELL CONTRACTOR PINK OWNER

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY

MONITORING WELL CERTIFICATION RECORD

OFFICE USE ONLY	
REF NO 122505	DATE RECEIVED
ROUTE	CHECK NO.
STATE WELL NUMBER	TRANSMITTAL NO
CHECKED BY	CROSS REFERENCE NO
APPROVED BY	ENTERED Ph 1 Ph 2 Ph 3
	DATE APPROVED

INFORMATION SUPPLIED BY OWNER

SITE NAME	WELL NUMBER
LAIDLAW BRIDGETON SANITARY LANDFILL	PZ-203-55

SITE ADDRESS	CITY	STATE	ZIP CODE
ST. CHARLES ROCK RD.	BRIDGETON	MO	63044

NAME	TELEPHONE
LAIDLAW WASTE SYSTEMS, INC.	314-241-3710

ADDRESS	CITY	STATE	ZIP CODE
1638 N. BROADWAY	ST. LOUIS	MO	63102

INFORMATION SUPPLIED BY MONITORING WELL CONTRACTOR

LOCATION OF WELL
SHOW LOCATION IN SECTION PLAT

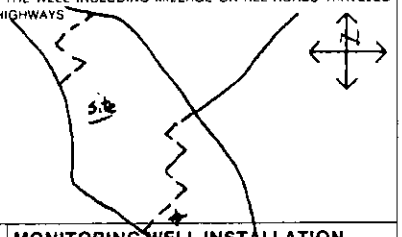
COUNTY ST. LOUIS
ELEVATION 484.2
AREA NO

SMALLEST ¼ LARGEST ¼

SEC. ____ TWN. 47 N.RNG. 5 (E) OR W

LAT. 38° 45' 47" LONG. 90° 26' 30"

SKETCH THE LOCATION TO THE WELL INCLUDING MILEAGE ON ALL ROADS TRAVELED FROM NEAREST TOWNS OR HIGHWAYS



DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT IT

MONITORING WELL INSTALLATION CONTRACTOR'S NAME
LAYNE WESTERN CO., INC

DRILLING CONTRACTOR'S NAME
LAYNE WESTERN CO., INC

TYPE OF INSTALLATION
☒ ABOVE GROUND ☐ FLUSH MOUNT

STATIC WATER LEVEL
FEET FROM MEASURING POINT

DATE OF STATIC WATER LEVEL

ELEVATION OF MEASURING POINT
486.6

MEASURING POINT IS
☒ TOP OF RISER PIPE
☐ OTHER

DRILLING EQUIPMENT
☒ AIR ROTARY ☒ AUGER TYPE 6¼ H.S.A.
☐ REVERSE ROTARY ☐ OTHER

CENTRALIZERS USED
☒ YES, AT 4 TOTAL
☒ STAINLESS STEEL
☐ OTHER
☐ NO

MULTIPLE CASED WELLS
SUBMIT ADDITIONAL AS BUILT DIAGRAM SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS, AND GROUT USED.

DATE WELL CONSTRUCTION WAS COMPLETED
6-23-95

I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE (MONITORING WELL CONTRACTOR) Michael P. Vogt

PERMIT NUMBER	DATE
001256WM	7-07-95

SIGNATURE (DRILLING CONTRACTOR) Michael P. Vogt

PERMIT NUMBER	DATE
001256 WM	7-07-95

NOTE: Record the fraction of a foot in decimal, not in inches

Top of Riser Elevation: 486.6

Ground Surface Elevation: 484.2

Information in this column to be supplied in the Feet from Surface column	Feet from Surface	Description of Formation
Depth to bottom of Protective Casing Seal:	3.0	0-44 No sample
		44-51 Silt
		51-67 Dolomite
		67-110 Limestone
Depth to Base of Annular Seal:	82.0	
Depth to Base of Bentonite Seal:	93.5	
Depth to Base of Secondary Filter Pack:	95.3	
Depth to Top of the Screen:	99.6	
Depth to Bottom of the Screen:	109.6	
Plug Back Total Depth:		
Original Total Depth:	110.0	

LOCKING CAP - (Y) N (Circle one)
CAP VENT - Y (N) (Circle one)

PROTECTIVE CASING
Type: STEEL
Size: 8"x8"x5'
Bore Hole Diameter: 9⅞
WEEP HOLE - Y / N (Circle one)

PROTECTIVE CASING SEAL
Type: ☒ Concrete ☐ Cement Slurry

RISER PIPE
Length: 102'
Diameter: 2"
Type of Material: SCH 80 PVC

BOREHOLE DIAMETER: 5⅞ in.

ANNULAR SEAL
Type: ☐ Bentonite Slurry ☒ Cement Slurry ☐ Non Slurry Bentonite

BENTONITE SEAL
Type: ☒ Bentonite Slurry ☐ Non Slurry Bentonite
Length of Seal: 11.5 FT

SECONDARY FILTER PACK (Optional)
Type: ☒ Sand ☐ Manufactured
Grain Size: < 50
Length: 1.8'

PRIMARY FILTER PACK
Type: ☒ Sand ☐ Manufactured
Grain Size: 16-35
Length: 14.7'

WELL SCREEN
Length: 10'
Slot Size: 0.010
Type: SCH 80 PVC

SUMP DETAILS
Length: 0.3FT
Diameter: 2 In.
Type: PVC

TYPE OF BACKFILL: SAND

MO 780-1415 (2-94)

DISTRIBUTION: WHITE DIVISION CANARY MONITORING WELL CONTRACTOR PINK OWNER

LL15N

OFFICE USE ONLY	DATE RECEIVED
REF NO 115087	CHECK NO.
ROUTE	TRANSMITTAL NO
STATE WELL NUMBER	CROSS REFERENCE NO
CHECKED BY	ENTERED Ph 1 Ph 2 Ph 3
APPROVED BY	DATE APPROVED

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY

MONITORING WELL CERTIFICATION RECORD

INFORMATION SUPPLIED BY OWNER

SITE NAME: LAIDLAW BRIDGETON SANITARY LANDFILL
WELL NUMBER: PZ-204-SS
SITE ADDRESS: ST. CHARLES ROCK RD.
CITY: BRIDGETON
STATE: MO.
ZIP CODE: 63044
NAME: LAIDLAW WASTE SYSTEMS, INC.
TELEPHONE:
ADDRESS: 1338 N. BROADWAY
CITY: ST. LOUIS
STATE: MO.
ZIP CODE: 63102

INFORMATION SUPPLIED BY MONITORING WELL CONTRACTOR

LOCATION OF WELL
SHOW LOCATION IN SECTION PLAT

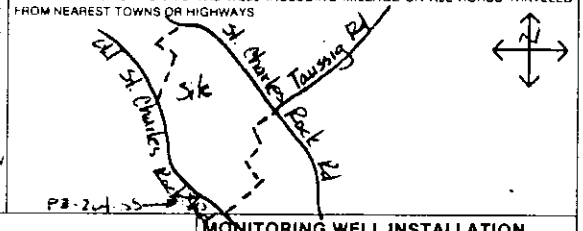
COUNTY: ST. LOUIS
ELEVATION: 467.0
AREA NO:

SMALLEST ¼ LARGEST ¼

SEC. ____ TWN. 47 N,RNG 5 (E) OR W

LAT. 38° 45' 45" LONG 90° 36' 44"

SKETCH THE LOCATION TO THE WELL INCLUDING MILEAGE ON ALL ROADS TRAVELED FROM NEAREST TOWNS OR HIGHWAYS



DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT IT

MONITORING WELL INSTALLATION CONTRACTOR'S NAME
LAYNE WESTERN CO, INC.

DRILLING CONTRACTOR'S NAME
LAYNE WESTERN CO, INC.

TYPE OF INSTALLATION
☒ ABOVE GROUND ☐ FLUSH MOUNT

STATIC WATER LEVEL
FEET FROM MEASURING POINT

DATE OF STATIC WATER LEVEL

ELEVATION OF MEASURING POINT

MEASURING POINT IS
☐ TOP OF RISER PIPE
☐ OTHER

DRILLING EQUIPMENT
☒ AIR ROTARY ☒ AUGER TYPE 6¼ H.S.A.
☐ REVERSE ROTARY ☐ OTHER

CENTRALIZERS USED
☒ YES, AT 4 TOTAL
☐ STAINLESS STEEL
☐ OTHER
☐ NO

MULTIPLE CASED WELLS
SUBMIT ADDITIONAL AS BUILT DIAGRAM SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS, AND GROUT USED.

DATE WELL CONSTRUCTION WAS COMPLETED
3-10-95

I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE (MONITORING WELL CONTRACTOR) Michael P. Vogl
PERMIT NUMBER 001256WM1 DATE 4-11-95
SIGNATURE (DRILLING CONTRACTOR) Michael P. Vogl
PERMIT NUMBER 001256WM1 DATE 4-11-95

NOTE: Record the fraction of a foot in decimal, not in inches

Top of Riser Elevation: 470.35

LOCKING CAP: (Y) N (Circle one)
CAP VENT - (Y) N (Circle one)
PROTECTIVE CASING
Type: STEEL
Size: 8" x 6" x 5'
Bore Hole Diameter: 10.25"
WEEP HOLE - Y / N (Circle one)

Ground Surface Elevation: 467.0 Ft

Information in this column to be supplied in the Feet from Surface column	Feet from Surface	Description of Formation
		0-7 Fill
Depth to bottom of Protective Casing Seal:	3	
		7-14 Silt
Depth to Base of Annular Seal:	3	
Depth to Base of Bentonite Seal:	35	
Depth to Base of Secondary Filter Pack:		
Depth to Top of the Screen:	10	
		14-64 Limestone
		64-81 Dolomite
Depth to Bottom of the Screen:	90	
		81-90.3 Limestone
Plug Back Total Depth:		
Original Total Depth:	90.3	

PROTECTIVE CASING SEAL
Type: ☒ Concrete ☐ Cement Slurry

RISER PIPE
Length: 13.25'
Diameter: 2"
Type of Material: SCH 80 PVC

BOREHOLE DIAMETER: 5⅞ In.

ANNULAR SEAL
Type: ☐ Bentonite Slurry ☐ Cement Slurry ☒ Non Slurry Bentonite

BENTONITE SEAL
Type: ☐ Bentonite Slurry ☒ Non Slurry Bentonite
Length of Seal: 5.5 Ft.

SECONDARY FILTER PACK (Optional)
Type: ☐ Sand ☐ Manufactured
Grain Size:
Length:

PRIMARY FILTER PACK
Type: ☒ Sand ☐ Manufactured
Grain Size: 16-35
Length: 81.3

WELL SCREEN
Length: 80'
Slot Size: 0.010"
Type: SCH 80 PVC

SUMP DETAILS
Length: 0.3 Ft.
Diameter: 2 In.
Type: PVC

TYPE OF BACKFILL: SAND

MO 780-1415 (2-94) DISTRIBUTION: WHITE DIVISION CANARY MONITORING WELL CONTRACTOR PINK OWNER

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY

MONITORING WELL CERTIFICATION RECORD

OFFICE USE ONLY	DATE RECEIVED
REF NO 122518	CHECK NO
ROUTE	TRANSMITTAL NO
STATE WELL NUMBER	CROSS REFERENCE NO
CHECKED BY	ENTERED Ph 1 Ph 2 Ph 3
APPROVED BY	DATE APPROVED

INFORMATION SUPPLIED BY OWNER

SITE NAME	WELL NUMBER
LANDFILL BRIDGETON SANITARY LANDFILL	MW-1044-55

SITE ADDRESS	CITY	STATE	ZIP CODE
51 CHARLES EDDY RD.	BRIDGETON	MO	63044

NAME	TELEPHONE
LANDFILL SERVICES INC	314 291-3110

ADDRESS	CITY	STATE	ZIP CODE
1855 N. LINDBERGH	ST LOUIS	MO	63132

INFORMATION SUPPLIED BY MONITORING WELL CONTRACTOR

LOCATION OF WELL
SHOW LOCATION IN SECTION PLAT

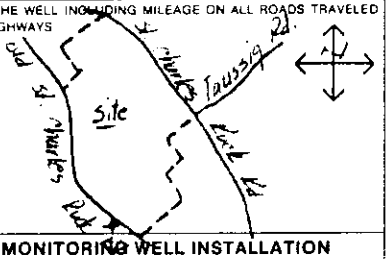
COUNTY ST. LOUIS
ELEVATION 466.66
AREA NO

SMALLEST ¼ LARGEST ¼

SEC. ____ TWN. 47 N,RNG 5 E,OR W

LAT. 38° 45' 44" LONG 90° 26' 44"

SKETCH THE LOCATION TO THE WELL INCLUDING MILEAGE ON ALL ROADS TRAVELED FROM NEAREST TOWNS OR HIGHWAYS



DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT IT

MONITORING WELL INSTALLATION CONTRACTOR'S NAME
LAYNE WESTERN CO, INC

DRILLING CONTRACTOR'S NAME
LAYNE WESTERN CO, INC

TYPE OF INSTALLATION
☑ ABOVE GROUND ☐ FLUSH MOUNT

STATIC WATER LEVEL
FEET FROM MEASURING POINT

DATE OF STATIC WATER LEVEL

ELEVATION OF MEASURING POINT
468.16

MEASURING POINT IS
☑ TOP OF RISER PIPE
☐ OTHER

DRILLING EQUIPMENT
☑ AIR ROTARY ☑ AUGER TYPE 6¼ H.S.A.
☐ REVERSE ROTARY ☐ OTHER

CENTRALIZERS USED
☑ YES, AT 3 TOTAL
☑ STAINLESS STEEL
☐ OTHER
☐ NO

MULTIPLE CASED WELLS
SUBMIT ADDITIONAL AS BUILT DIAGRAM SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS, AND GROUT USED.

DATE WELL CONSTRUCTION WAS COMPLETED
6-22-95

I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE (MONITORING WELL CONTRACTOR)
Michael P. Vogt

PERMIT NUMBER	DATE
001256 WIM	7-07-95

SIGNATURE (DRILLING CONTRACTOR)
Michael P. Vogt

PERMIT NUMBER	DATE
001256 WIM	7-07-95

NOTE: Record the fraction of a foot in decimal, not in inches

Top of Riser Elevation: 468.16

LOCKING CAP - Y / N (Circle one)
CAP VENT - Y / N (Circle one)
PROTECTIVE CASING
Type: STEEL
Size: 8"x5"x5'
Bore Hole Diameter: 10¼"
WEEP HOLE - Y / N (Circle one)

Ground Surface Elevation: 466.66 Ft

Information in this column to be supplied in the Feet from Surface column	Feet from Surface	Description of Formation
Depth to bottom of Protective Casing Seal:	3.0	
Depth to Base of Annular Seal:	66.0	
Depth to Base of Bentonite Seal:	74.5	
Depth to Base of Secondary Filter Pack:	76.8	
Depth to Top of the Screen:	79.5	
Depth to Bottom of the Screen:	89.5	
Plug Back Total Depth:		
Original Total Depth:	90.0	

PROTECTIVE CASING SEAL
Type: ☑ Concrete ☐ Cement Slurry

RISER PIPE
Length: 81'
Diameter: 2"
Type of Material: SCH 80 PVC

BOREHOLE DIAMETER: 5⅞ In.

ANNULAR SEAL
Type: ☐ Bentonite Slurry ☑ Cement Slurry ☐ Non Slurry Bentonite

BENTONITE SEAL
Type: ☑ Bentonite Slurry ☐ Non Slurry Bentonite
Length of Seal: 14.5 FL

SECONDARY FILTER PACK (Optional)
Type: ☑ Sand ☐ Manufactured
Grain Size: < 50
Length: 2.3'

PRIMARY FILTER PACK
Type: ☑ Sand ☐ Manufactured
Grain Size: 16-35
Length: 13.2'

WELL SCREEN
Length: 10'
Slot Size: 0.010
Type: SCH 80 PVC

SUMP DETAILS
Length: 0.3 FT.
Diameter: 2 In.
Type: PVC

TYPE OF BACKFILL: CUTTINGS

DISTRIBUTION: WHITE (DIVISION) CANARY (MONITORING WELL CONTRACTOR) PINK (OWNER)

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY

MONITORING WELL CERTIFICATION RECORD

OFFICE USE ONLY	DATE RECEIVED
REF NO 122496	CHECK NO
ROUTE	TRANSMITTAL NO
STATE WELL NUMBER	CROSS REFERENCE NO
CHECKED BY	ENTERED Ph 1 Ph 2 Ph 3
APPROVED BY	DATE APPROVED

INFORMATION SUPPLIED BY OWNER

SITE NAME		WELL NUMBER	
LANDFILL BRIDGETON SANITARY LANDFILL		P2-305AS	
SITE ADDRESS	CITY	STATE	ZIP CODE
ST CHARLES ROCK RD.	BRIDGETON	MO.	63044
NAME		TELEPHONE	
LANDFILL GAS SYSTEMS, INC.		314-241-3710	
ADDRESS	CITY	STATE	ZIP CODE
1838 N. BROADWAY	ST. LOUIS	MO	63102

INFORMATION SUPPLIED BY MONITORING WELL CONTRACTOR

LOCATION OF WELL
SHOW LOCATION IN SECTION PLAT

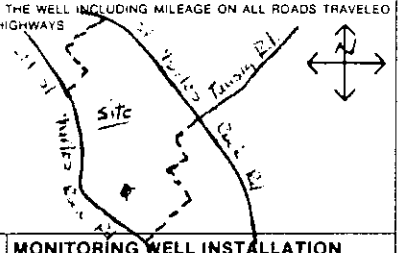
SMALLEST ¼ ____ ¼ ____ ¼ ____ ¼ LARGEST ¼

SEC. ____ TWN. 47 N,RNG. 5 (E OR W)

LAT. 38 ° 45 ' 35 " LONG. 90 ° 26 ' 45 "

COUNTY ST. LOUIS
ELEVATION 457.3
AREA NO ____

SKETCH THE LOCATION TO THE WELL INCLUDING MILEAGE ON ALL ROADS TRAVELED FROM NEAREST TOWNS OR HIGHWAYS



DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT IT

NOTE: Record the fraction of a foot in decimal, not in inches.

Top of Riser Elevation: 461.0

Ground Surface Elevation: 457.3 Ft.

Feet from Surface	Description of Formation
Information in this column to be supplied in the Feet from Surface column	0-2 clay 2-6 silt 6-27 Trash
Depth to bottom of Protective Casing Seal: 4.0	
Depth to Base of Annular Seal: 34.0	27-31 silt
Depth to Base of Bentonite Seal: 27.5	31-38 clay
Depth to Base of Secondary Filter Pack: 36.0	
Depth to Top of the Screen: 38.4	38-47 silt w/ sand
Depth to Bottom of the Screen: 48.4	
Plug Back Total Depth:	
Original Total Depth: 47.0	

LOCKING CAP - (Y) N (Circle one)
CAP VENT (Y) N (Circle one)
PROTECTIVE CASING Type: STEEL Size: 8"x5' Bore Hole Diameter: 14"
WEEP HOLE - Y / N (Circle one)

PROTECTIVE CASING SEAL Type: [X] Concrete [ ] Cement Slurry
RISER PIPE Length: 40.1' Diameter: 2" Type of Material: SCH. 80 PVC
BOREHOLE DIAMETER: 8 In.
ANNULAR SEAL Type: [ ] Bentonite Slurry [X] Cement Slurry [ ] Non Slurry Bentonite
BENTONITE SEAL Type: [X] Bentonite Slurry [ ] Non Slurry Bentonite Length of Seal: 10.5 Ft.
SECONDARY FILTER PACK (Optional) Type: [X] Sand [ ] Manufactured Grain Size: 2 SW Length: 1.5'
PRIMARY FILTER PACK Type: [X] Sand [ ] Manufactured Grain Size: 16-35 Length: 13'
WELL SCREEN Length: 10 Slot Size: 0.010" Type: SCH. 80 PVC
SUMP DETAILS Length: 0.3 Ft. Diameter: 2 In. Type: PVC
TYPE OF BACKFILL: SAND

MONITORING WELL INSTALLATION CONTRACTOR'S NAME
LAYNE WESTERN Co, INC.

DRILLING CONTRACTOR'S NAME
LAYNE WESTERN Co, INC.

TYPE OF INSTALLATION
[X] ABOVE GROUND [ ] FLUSH MOUNT

STATIC WATER LEVEL
FEET FROM MEASURING POINT

DATE OF STATIC WATER LEVEL

ELEVATION OF MEASURING POINT
461.0

MEASURING POINT IS
[X] TOP OF RISER PIPE
[ ] OTHER

DRILLING EQUIPMENT
[ ] AIR ROTARY [X] AUGER TYPE 4¼ H.S.A.
[ ] REVERSE ROTARY [ ] OTHER

CENTRALIZERS USED
[X] YES, AT 2 TOTAL
[X] STAINLESS STEEL
[ ] OTHER
[ ] NO

MULTIPLE CASED WELLS
SUBMIT ADDITIONAL AS BUILT DIAGRAM SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS, AND GROUT USED.

DATE WELL CONSTRUCTION WAS COMPLETED
5-06-15

I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE (MONITORING WELL CONTRACTOR)

PERMIT NUMBER	DATE
OW1258 WMM	6-02-15

SIGNATURE (DRILLING CONTRACTOR)

PERMIT NUMBER	DATE
OW1258 WMM-1	6-02-15

DISTRIBUTION WHITE [illegible] CANARY MONITORING WELL CONTRACTOR PINK OWNER

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY

MONITORING WELL CERTIFICATION RECORD

OFFICE USE ONLY	DATE RECEIVED
REF NO 122506	CHECK NO
ROUTE	TRANSMITTAL NO
STATE WELL NUMBER	CROSS REFERENCE NO
CHECKED BY	ENTERED Ph 1 Ph 2 Ph 3
APPROVED BY	DATE APPROVED

INFORMATION SUPPLIED BY OWNER

SITE NAME		WELL NUMBER	
LAIDLAW BRIDGETON SANITARY LANDFILL		PZ-30555	
SITE ADDRESS	CITY	STATE	ZIP CODE
31. CHARLES ROCK RD.	BRIDGETON	MO	63044
NAME		TELEPHONE	
LAIDLAW WASTE SYSTEMS, INC.		314-241-3710	
ADDRESS	CITY	STATE	ZIP CODE
1638 N BROADWAY	ST. LOUIS	MO	63102

INFORMATION SUPPLIED BY MONITORING WELL CONTRACTOR

LOCATION OF WELL SHOW LOCATION IN SECTION PLAT

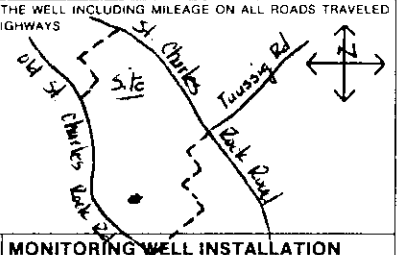
COUNTY ST. LOUIS
ELEVATION 454.5
AREA NO

SMALLEST ¼ LARGEST ¼

SEC. ____ TWN. 47 N RNG 5 E OR W

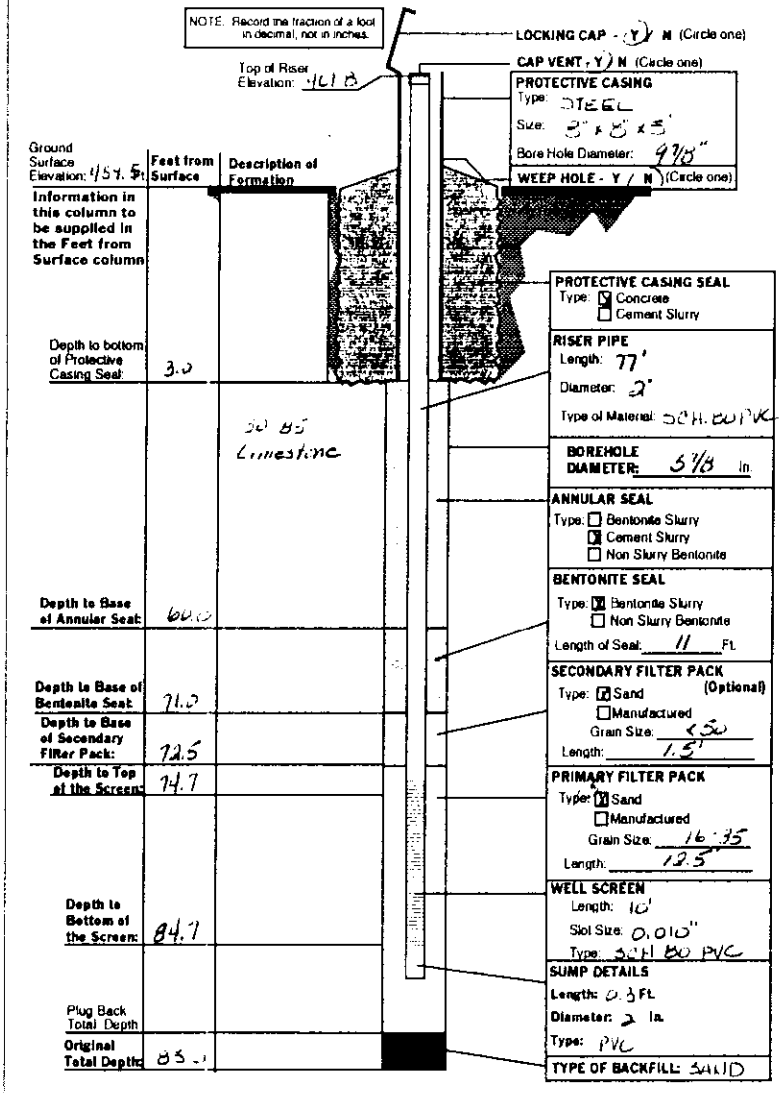
LAT. 38° 45' 35" LONG 90° 26' 45"

SKETCH THE LOCATION TO THE WELL INCLUDING MILEAGE ON ALL ROADS TRAVELED FROM NEAREST TOWNS OR HIGHWAYS



DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT IT

NOTE: Record the fraction of a foot in decimal, not in inches.



MONITORING WELL INSTALLATION CONTRACTOR'S NAME

LAYNE WESTERN CO., INC.

DRILLING CONTRACTOR'S NAME

LAYNE WESTERN CO., INC.

TYPE OF INSTALLATION
(X) ABOVE GROUND ( ) FLUSH MOUNT

STATIC WATER LEVEL
FEET FROM MEASURING POINT

DATE OF STATIC WATER LEVEL

ELEVATION OF MEASURING POINT
461.8

MEASURING POINT IS
(X) TOP OF RISER PIPE
( ) OTHER

DRILLING EQUIPMENT
( ) AIR ROTARY ( ) AUGER TYPE
( ) REVERSE ROTARY ( ) OTHER

CENTRALIZERS USED
(X) YES, AT 4 TOTAL
(X) STAINLESS STEEL
( ) OTHER
( ) NO

MULTIPLE CASED WELLS
SUBMIT ADDITIONAL AS BUILT DIAGRAM SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS, AND GROUT USED.

DATE WELL CONSTRUCTION WAS COMPLETED
5-21-95

I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE (MONITORING WELL CONTRACTOR)
Michael P. Vogt

PERMIT NUMBER	DATE
001256 WIM	6-20-95

SIGNATURE (DRILLING CONTRACTOR)
Michael P. Vogt

PERMIT NUMBER	DATE
001256 WIM	6-20-95

DISTRIBUTION: WHITE - DIVISION CANARY MONITORING WELL CONTRACTOR PINK OWNER

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY

MONITORING WELL CERTIFICATION RECORD

OFFICE USE ONLY	DATE RECEIVED
REF. NO 115096	CHECK NO
ROUTE	TRANSMITTAL NO
STATE WELL NUMBER	CROSS REFERENCE NO.
CHECKED BY	ENTERED Ph 1 Ph 2 Ph 3
APPROVED BY	DATE APPROVED

INFORMATION SUPPLIED BY OWNER

SITE NAME	WELL NUMBER
LAIDLAW BRIDGETON SANITARY LANDFILL	PZ-206-55

SITE ADDRESS	CITY	STATE	ZIP CODE
ST. CHARLES ROCK RD.	BRIDGETON	MO.	63044

NAME	TELEPHONE
LAIDLAW WASTE SYSTEMS, INC.	314-241-3710

ADDRESS	CITY	STATE	ZIP CODE
1888 N. BROADWAY	ST. LOUIS	MO	63102

INFORMATION SUPPLIED BY MONITORING WELL CONTRACTOR

LOCATION OF WELL SHOW LOCATION IN SECTION PLAT

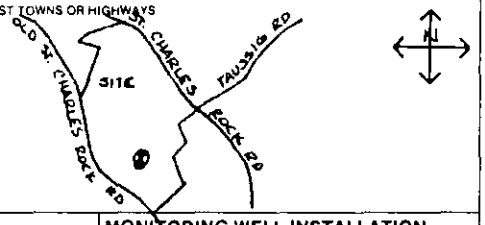
COUNTY ST. LOUIS
ELEVATION 458.4
AREA NO.

SMALLEST ¼ ____ ¼ ____ ¼ ____ ¼ LARGEST ¼

SEC. ____ TWN. 47 N, RNG. 5 E OR W

LAT. 38 ° 46 ' 00 " LONG. 90 ° 26 ' 40 "

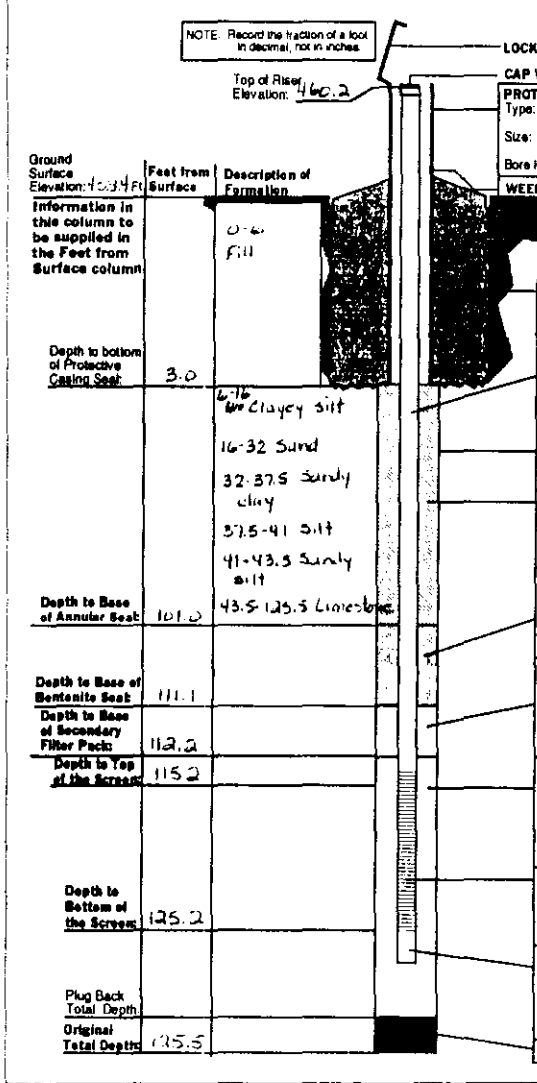
SKETCH THE LOCATION TO THE WELL INCLUDING MILEAGE ON ALL ROADS TRAVELED FROM NEAREST TOWNS OR HIGHWAYS



DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT IT

MONITORING WELL INSTALLATION CONTRACTOR'S NAME

LAYNE WESTERN CO., INC.



DRILLING CONTRACTOR'S NAME

LAYNE WESTERN CO., INC.

TYPE OF INSTALLATION
☒ ABOVE GROUND ☐ FLUSH MOUNT

STATIC WATER LEVEL
FEET FROM MEASURING POINT

DATE OF STATIC WATER LEVEL

ELEVATION OF MEASURING POINT
460.20

MEASURING POINT IS
☒ TOP OF RISER PIPE
☐ OTHER

DRILLING EQUIPMENT
☒ AIR ROTARY ☒ AUGER TYPE 6¼ HSA
☐ REVERSE ROTARY ☐ OTHER

CENTRALIZERS USED
☒ YES, AT 4 TOTAL
☒ STAINLESS STEEL
☐ OTHER
☐ NO

MULTIPLE CASED WELLS
SUBMIT ADDITIONAL AS BUILT DIAGRAM SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS, AND GROUT USED.

DATE WELL CONSTRUCTION WAS COMPLETED
4-24-95

I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE (MONITORING WELL CONTRACTOR) Michael P. Vogt

PERMIT NUMBER	DATE
001256 WM	5-10-95

SIGNATURE (DRILLING CONTRACTOR) Michael P. Vogt

PERMIT NUMBER	DATE
001256 WM	5-10-95

MO 780-1415 (2-94)

DISTRIBUTION: WHITE: DIVISION CANARY: MONITORING WELL CONTRACTOR PINK: OWNER

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY

MONITORING WELL CERTIFICATION RECORD

OFFICE USE ONLY	DATE RECEIVED
REF NO 122486	CHECK NO
ROUTE	TRANSMITTAL NO
STATE WELL NUMBER	CROSS REFERENCE NO
CHECKED BY	ENTERED Ph 1 Ph 2 Ph 3
APPROVED BY	DATE APPROVED

INFORMATION SUPPLIED BY OWNER

SITE NAME	WELL NUMBER
LADUAM BRIDGETON SANITARY LANDFILL	PZ-207-AS

SITE ADDRESS	CITY	STATE	ZIP CODE
5th CHARLES ROCK RD.	BRIDGETON	MO.	63044

NAME	TELEPHONE
LAIDLAW WASTE SYSTEMS, INC.	314-341-3710

ADDRESS	CITY	STATE	ZIP CODE
1122 N BROADWAY	ST LOUIS	MO.	63102

INFORMATION SUPPLIED BY MONITORING WELL CONTRACTOR

LOCATION OF WELL SHOW LOCATION IN SECTION PLAT

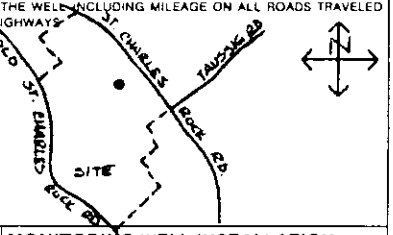
COUNTY ST. LOUIS
ELEVATION 460.4
AREA NO

SMALLEST ¼ LARGEST ¼

SEC. ____ TWN. 47 N,RNG. 5 E OR W

LAT. 38 ° 46 ' 06 " LONG. 90 ° 24 ' 38 "

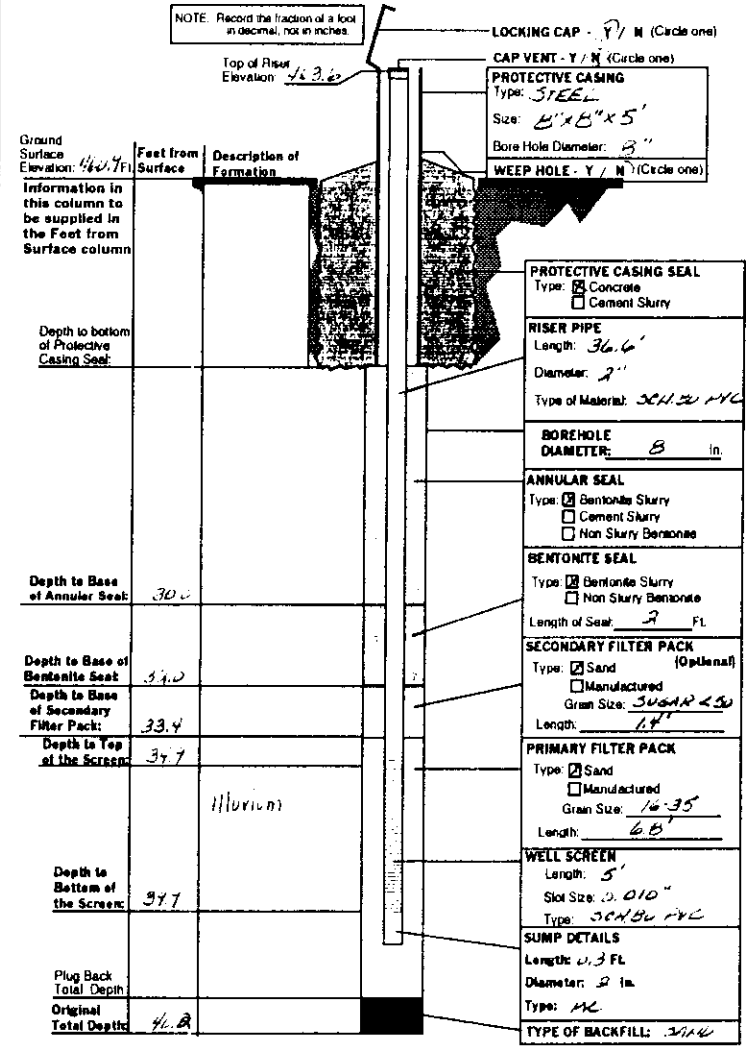
SKETCH THE LOCATION TO THE WELL INCLUDING MILEAGE ON ALL ROADS TRAVELED FROM NEAREST TOWNS OR HIGHWAYS



DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT IT

MONITORING WELL INSTALLATION CONTRACTOR'S NAME

LAYNE WESTERN CO, INC.



DRILLING CONTRACTOR'S NAME

LAYNE WESTERN CO, INC.

TYPE OF INSTALLATION
☒ ABOVE GROUND ☐ FLUSH MOUNT

STATIC WATER LEVEL
FEET FROM MEASURING POINT

DATE OF STATIC WATER LEVEL

ELEVATION OF MEASURING POINT
463.57

MEASURING POINT IS
☒ TOP OF RISER PIPE
☐ OTHER

DRILLING EQUIPMENT
☐ AIR ROTARY ☒ AUGER TYPE 4¼ H.S.A.
☐ REVERSE ROTARY ☐ OTHER

CENTRALIZERS USED
☒ YES, AT 1 TOTAL
☒ STAINLESS STEEL
☐ OTHER
☐ NO

MULTIPLE CASED WELLS
SUBMIT ADDITIONAL AS BUILT DIAGRAM SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS, AND GROUT USED.

DATE WELL CONSTRUCTION WAS COMPLETED
4-10-15

I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE (MONITORING WELL CONTRACTOR)

PERMIT NUMBER	DATE
CC1258 MWM	5-10-15

SIGNATURE (DRILLING CONTRACTOR)

PERMIT NUMBER	DATE
CC1258 MWM	5-10-15

MO 780-1415 (2-94)

DISTRIBUTION: WHITE DIVISION CANARY MONITORING WELL CONTRACTOR PINK OWNER

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY

MONITORING WELL CERTIFICATION RECORD

OFFICE USE ONLY	
REF NO 122514	DATE RECEIVED
ROUTE	CHECK NO
STATE WELL NUMBER	TRANSMITTAL NO
CHECKED BY	CROSS REFERENCE NO
APPROVED BY	ENTERED Ph 1 Ph 2 Ph 3
	DATE APPROVED

INFORMATION SUPPLIED BY OWNER

SITE NAME: Laidlaw Bridgeton Sanitary Landfill		WELL NUMBER: PZ-208-SS	
SITE ADDRESS: St. Charles Rock Rd.	CITY: Bridgeton	STATE: Mo	ZIP CODE: 63044
NAME: Laidlaw Waste Systems, Inc.		TELEPHONE: 314-241-3710	
ADDRESS: [illegible]	CITY: St. Louis	STATE: Mo	ZIP CODE: 63102

INFORMATION SUPPLIED BY MONITORING WELL CONTRACTOR

LOCATION OF WELL
SHOW LOCATION IN SECTION PLAT

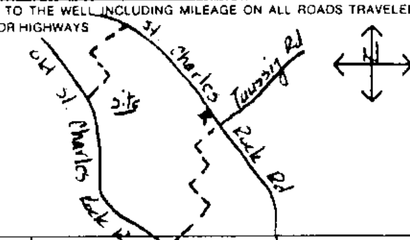
COUNTY St. Louis
ELEVATION 472.23
AREA NO

SMALLEST ¼ ____ ¼ ____ ¼ ____ ¼ ____ ¼ LARGEST ¼

SEC. ____ TWN. 47 N, RNG 5 E OR W

LAT 38 ° 46 ' 12 " LONG 90 ° 26 ' 32 "

SKETCH THE LOCATION TO THE WELL INCLUDING MILEAGE ON ALL ROADS TRAVELED FROM NEAREST TOWNS OR HIGHWAYS



DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT IT

MONITORING WELL INSTALLATION CONTRACTOR'S NAME
Layne Western Co., Inc.

DRILLING CONTRACTOR'S NAME
Layne Western Co., Inc.

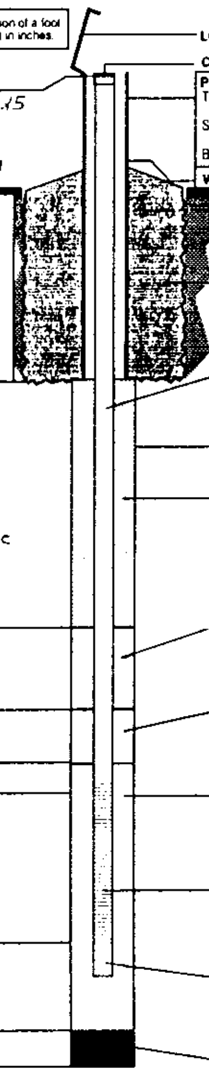
NOTE: Record the fraction of a foot in decimal, not in inches.

LOCKING CAP - (Y) / N (Circle one)
CAP VENT - Y / (N) (Circle one)

Top of Riser Elevation: 474.75

PROTECTIVE CASING
Type: Steel
Size: 5"x5"x5'
Bore Hole Diameter: 10¼"
WEEP HOLE - Y / (N) (Circle one)

Ground Surface Elevation: 472.50 Ft



Feet from Surface	Description of Formation
Information in this column to be supplied in the Feet from Surface column	0-4 clay
Depth to bottom of Protective Casing Seal: 3.0	
	4-16 silt
	16-47.0 Limestone
Depth to Base of Annular Seal: 20.0	
Depth to Base of Bentonite Seal: 33.7	
Depth to Base of Secondary Filter Pack: 35.7	
Depth to Top of the Screen: 38.7	
Depth to Bottom of the Screen: 48.7	
Plug Back Total Depth	
Original Total Depth: 47.0	

PROTECTIVE CASING SEAL
Type: ☒ Concrete ☐ Cement Slurry

RISER PIPE
Length: 40.5'
Diameter: 2"
Type of Material: Sch 80 PVC

BOREHOLE DIAMETER: 5 7/8 In.

ANNULAR SEAL
Type: ☐ Bentonite Slurry ☒ Cement Slurry ☐ Non Slurry Bentonite

BENTONITE SEAL
Type: ☒ Bentonite Slurry ☐ Non Slurry Bentonite
Length of Seal: 13.7 Ft.

SECONDARY FILTER PACK (Optional)
Type: ☒ Sand ☐ Manufactured
Grain Size: < 30
Length: 1.8'

PRIMARY FILTER PACK
Type: ☒ Sand ☐ Manufactured
Grain Size: 16-35
Length: 13.5'

WELL SCREEN
Length: 10
Slot Size: 0.010
Type: Sch 80 PVC

SUMP DETAILS
Length: 0.3 Ft.
Diameter: 2 In.
Type: PVC

TYPE OF BACKFILL: [illegible]

TYPE OF INSTALLATION
☒ ABOVE GROUND ☐ FLUSH MOUNT

STATIC WATER LEVEL
FEET FROM MEASURING POINT

DATE OF STATIC WATER LEVEL

ELEVATION OF MEASURING POINT
474.75

MEASURING POINT IS
☒ TOP OF RISER PIPE
☐ OTHER

DRILLING EQUIPMENT
☒ AIR ROTARY ☒ AUGER TYPE 6¼ HSA
☐ REVERSE ROTARY ☐ OTHER

CENTRALIZERS USED
☒ YES, AT 3 TOTAL
☒ STAINLESS STEEL
☐ OTHER
☐ NO

MULTIPLE CASED WELLS
SUBMIT ADDITIONAL AS BUILT DIAGRAM SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS, AND GROUT USED.

DATE WELL CONSTRUCTION WAS COMPLETED
6-18-95

I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE (MONITORING WELL CONTRACTOR) Michael P. Vogt
PERMIT NUMBER 001256WM1 DATE 7-07-95

SIGNATURE (DRILLING CONTRACTOR) Michael P. Vogt
PERMIT NUMBER 001256WM1 DATE 7-07-95

(MODIFICATION TO EXISTING)

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY

MONITORING WELL CERTIFICATION RECORD

OFFICE USE ONLY	DATE RECEIVED
REF NO 122517	CHECK NO
ROUTE	TRANSMITTAL NO
STATE WELL NUMBER	CROSS REFERENCE NO
CHECKED BY	ENTERED Ph 1 Ph 2 Ph 3
APPROVED BY	DATE APPROVED

INFORMATION SUPPLIED BY OWNER

SITE NAME: LANDFILL BRIDGETON SANITARY LANDFILL	WELL NUMBER: MW-1301		
SITE ADDRESS: ST. CHARLES ROCK RD	CITY: BRIDGETON	STATE: MO	ZIP CODE: 63044
NAME: LANDFILL WASTE SYSTEMS, INC.		TELEPHONE: 314-241-3710	
ADDRESS: 1833 N BROADWAY	CITY: ST LOUIS	STATE: MO.	ZIP CODE: 63102

INFORMATION SUPPLIED BY MONITORING WELL CONTRACTOR

LOCATION OF WELL SHOW LOCATION IN SECTION PLAT

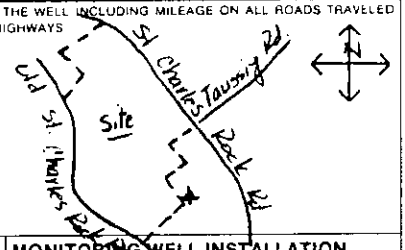
COUNTY: ST. LOUIS
ELEVATION: 480.41
AREA NO:

SMALLEST ¼ LARGEST ¼

SEC. ___ TWN. 47 N,RNG 5 E OR W

LAT 38° 45' 53" LONG. 90° 26' 36"

SKETCH THE LOCATION TO THE WELL INCLUDING MILEAGE ON ALL ROADS TRAVELED FROM NEAREST TOWNS OR HIGHWAYS



DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT IT

OPEN BORE HOLE, ORIGINALLY DRILLED IN 1995 BY DRILLING SERVICE WAS GROUTED TO 149.5' AND MONITORING WELL MATERIALS WERE INSTALLED BY LAYNE WESTERN 7/95.

NOTE: Record the fraction of a foot in decimal, not in inches.

LOCKING CAP - Y / N (Circle one)
CAP VENT - Y / N (Circle one)
Top of Riser Elevation: 482.42
PROTECTIVE CASING Type: STEEL Size: 8"x8"x5' Bore Hole Diameter:
WEEP HOLE - Y / N (Circle one)

Ground Surface Elevation: 480.44

Information in this column to be supplied in the Feet from Surface column	Feet from Surface	Description of Formation
Depth to bottom of Protective Casing Seal:	3.0	
Depth to Base of Annular Seal:	120.0	
Depth to Base of Bentonite Seal:	133.5	
Depth to Base of Secondary Filter Pack:	135.5	
Depth to Top of the Screen:	137.7	
Depth to Bottom of the Screen:	147.7	
Plug Back Total Depth:	148.5	
Original Total Depth:	150.0	

PROTECTIVE CASING SEAL Type: [X] Concrete [ ] Cement Slurry

RISER PIPE Length: 139.7' Diameter: 2" Type of Material: SCH 80 PVC

BOREHOLE DIAMETER: ___ in.

ANNULAR SEAL Type: [ ] Bentonite Slurry [X] Cement Slurry [ ] Non Slurry Bentonite

BENTONITE SEAL Type: [X] Bentonite Slurry [ ] Non Slurry Bentonite Length of Seal: 13.5 Ft.

SECONDARY FILTER PACK (Optional) Type: [X] Sand [ ] Manufactured Grain Size: #50 Length: 2.0'

PRIMARY FILTER PACK Type: [X] Sand [ ] Manufactured Grain Size: 16-35 Length: 13'

WELL SCREEN Length: 10' Slot Size: 0.010 Type: SCH 80 PVC

SUMP DETAILS Length: 0.3 Ft. Diameter: 2 In. Type: PVC

TYPE OF BACKFILL: GROUT

MONITORING WELL INSTALLATION CONTRACTOR'S NAME
LAYNE WESTERN Co, INC.

DRILLING CONTRACTOR'S NAME
DRILLING SERVICE Co.

TYPE OF INSTALLATION [X] ABOVE GROUND [ ] FLUSH MOUNT

STATIC WATER LEVEL
FEET FROM MEASURING POINT

DATE OF STATIC WATER LEVEL

ELEVATION OF MEASURING POINT: 482.42

MEASURING POINT IS [X] TOP OF RISER PIPE [ ] OTHER

DRILLING EQUIPMENT [ ] AIR ROTARY [ ] AUGER TYPE ___ [ ] REVERSE ROTARY [ ] OTHER

CENTRALIZERS USED [X] YES, AT 3 TOTAL [X] STAINLESS STEEL [ ] OTHER [ ] NO

MULTIPLE CASED WELLS
SUBMIT ADDITIONAL AS BUILT DIAGRAM SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS, AND GROUT USED.

DATE WELL CONSTRUCTION WAS COMPLETED: 7-07-95

I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE (MONITORING WELL CONTRACTOR): Michael P. Vogt

PERMIT NUMBER	DATE
001256 WM	7-07-95

SIGNATURE (DRILLING CONTRACTOR): [illegible]

PERMIT NUMBER	DATE

DISTRIBUTION WHITE [illegible] CANARY MONITORING WELL CONTRACTOR PINK OWNER

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY

MONITORING WELL CERTIFICATION RECORD

OFFICE USE ONLY	DATE RECEIVED
REF. NO. 145095	
C.R. NO.	CHECK NO.
STATE WELL NUMBER	TRANSMITTAL NO.
CHECKED BY	ROUTE
APPROVED BY	ENTERED Ph 1 Ph 2 Ph 3

INFORMATION SUPPLIED BY MONITORING WELL CONTRACTOR

SITE/FACILITY NAME: LAIDLAW BRIDGETON SANITARY LANDFILL
WELL NUMBER: PZ-300AS

SITE ADDRESS: ST. CHARLES ROCK ROAD
CITY: BRIDGETON
STATE: Mo
ZIP CODE: 63044

OWNER NAME: LAIDLAW WASTE SYSTEMS, INC.
TELEPHONE: 314-241-3760

OWNER ADDRESS: 1838 N. BROADWAY
CITY: ST. LOUIS
STATE: Mo
ZIP CODE: 63102

VARIANCE ISSUED: ☐ YES ☒ NO
DATE ISSUED:
VARIANCE NUMBER: V

DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT IT
1100' S.W. OF BANK OF LEACHATE RETENSION POND, SOUTH OF OLD ST. CHARLES ROCK RD.

LOCATION OF WELL
SHOW LOCATION IN SECTION PLAT
COUNTY: ST. LOUIS
SURFACE ELEVATION: 448.5
SMALLEST ¼ ____ ¼ ____ ¼ LARGEST ¼ ____ ¼
SEC. ____ TWN. 47 N,RNG. 5 E OR W
LAT. 38 ° 45 ' 32 " LONG. 90 ° 27 ' 05 "

MONITORING WELL INSTALLATION CONTRACTOR'S NAME: LAYNE WESTERN CO., INC.
PERMIT NUMBER: 001258 WPM

DRILLING CONTRACTOR'S NAME: LAYNE WESTERN CO., INC.
PERMIT NUMBER: 001258 WPM

WELL CONSTRUCTION INFORMATION

TYPE OF WELL: ☐ MONITORING WELL ☒ PIEZOMETER ☐ OTHER ____
TYPE OF POTENTIAL SITE: ☐ HAZARDOUS MATERIAL ☒ LANDFILL ☐ OTHER ☐ L.U.S.T.
MONITORING FOR: (CHECK ALL THAT APPLY) ☒ V.O.C. ☐ METALS ☐ PETROLEUM PRODUCT ☐ OTHER ____ ONLY

PROTECTIVE CASING DETAILS (IF USED): LENGTH 5' FT. | DIAMETER OF CASING 8"x8" IN. | WEIGHT OR SDR # a188" | DIAMETER AND DEPTH OF DRILL HOLE 8¼ IN. 20 FT. | JOINTS ☐ THREADED ☐ MECHANICAL ☐ WELDED ☐ OTHER ____ | MATERIAL ☐ THERMO PLASTIC ☒ STEEL ☐ FLUORO POLYMER TYPE ____ | LOCKING CAP? ☒ YES ☐ NO

CAP VENTED ☒ YES ☐ NO
WEEP HOLE? ☒ YES ☐ NO
CASING GROUT DETAILS: MATERIAL ☐ CEMENT ☒ CONCRETE ☐ OTHER ____ | DEPTH FROM THE SURFACE TO THE BOTTOM OF THE CASING GROUT SEAL 2.5 FT. | TYPE OF SURFACE COMPLETION ☒ ABOVE GROUND ☐ FLUSH MOUNT
DESCRIBE HOW THE FLUSH MOUNT WAS CONSTRUCTED

CENTRALIZER USED ON RISER ☒ NO ☐ YES LOCATED AT ____
MATERIAL ☐ STAINLESS STEEL ☐ OTHER ____

RISER PIPE DETAILS: LENGTH 12 FT. | DIAMETER OF RISER PIPE 2 IN | WEIGHT OR SDR # SCH.40 | DIAMETER OF DRILL HOLE 8¼ IN. | JOINTS ☒ THREADED ☐ MECHANICAL ☐ WELDED ☐ OTHER ____ | MATERIAL ☒ THERMO PLASTIC ☐ STEEL ☐ FLUORO POLYMER ☐ OTHER ____

ANNULAR SEAL: ☐ CEMENT SLURRY ☐ BENTONITE SLURRY ☒ NON SLURRY BENTONITE TYPE: MED. CHIPS ☐ CEMENT/BENTONITE SLURRY BAGS OF CEMENT USED ____ % BENTONITE USED ____ WATER USED/BAG ____ GAL.
BENTONITE SEAL: MATERIAL BENTONITE ☐ SLURRY ☒ CHIPS ☐ GRANULAR ☐ PELLETS | LENGTH OF SEAL 3.8 | BENTONITE SEAL INSTALLED IN ☒ UNSATURATED ZONE ☐ SATURATED ZONE

PRIMARY FILTER PACK: TYPE ☒ SAND ☐ MANUFACTURED ☐ NATURAL | GRAIN SIZE 16/35 | LENGTH OF FILTER PACK 13 FT. | METHOD OF INSTALLATION POURED THRU U.S.A.
SECONDARY FILTER PACK: TYPE ☒ SAND ☐ MANUFACTURED ☐ NONE | GRAIN SIZE 100 | LENGTH OF FILTER PACK 0.7 FT. | METHOD OF INSTALLATION POURED THRU U.S.A.
WELL SCREEN: LENGTH OF SCREEN 10 FT. | DIAMETER 2 IN | SLOT SIZE 0.010 | WEIGHT OR SDR # SCH.40 | MATERIAL ☒ PLASTIC ☐ STEEL ☐ FLUORO POLYMER
SUMP DETAILS: LENGTH OF SUMP | DIAMETER OF SUMP | MATERIAL ☐ PVC ☐ STEEL ☐ FLUORO POLYMER ☐ OTHER ____
BACK FILL: WAS THE WELL BACK FILLED? ☐ YES ☒ NO | MATERIAL USED | LENGTH OF BACK FILLED BORE HOLE

Information in this column to be supplied in the Feet from Surface column

	FEET FROM SURFACE	FORMATION DESCRIPTION
		0-20 Silty clay
Depth to bottom of Protective Casing Seat:	2.5	
Depth to Base of Annular Seal:	6.3	
Depth to Base of Bentonite Seal:	6.3	
Depth to Top of Primary Filter Pack:	7.0	
Depth to Top of the Screen:	10	
Depth to Bottom of the Screen:	20	
Total Depth:	20	

STATIC WATER LEVEL ____ FEET FROM MEASURING POINT
DATE OF STATIC WATER LEVEL
MEASURING POINT FOR STATIC WATER LEVEL IS ☒ TOP OF RISER PIPE ☐ OTHER ____
ELEVATION OF MEASURING POINT 450.66
MULTIPLE CASED WELLS: SUBMIT ADDITIONAL AS BUILT DIAGRAM SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS, AND GROUT USED.
DRILLING EQUIPMENT: ☐ AIR ROTARY ☒ AUGER TYPE 4¼ H.S.A. ☐ REVERSE ROTARY ☐ OTHER ____
DATE WELL DRILLING WAS COMPLETED 9-26-95

I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE PRIMARY CONTRACTOR/PERMIT #: [signature] DATE: 11-14-95
SIGNATURE DRILLER/PERMIT #: [signature] DATE: 11-14-95

MO 780-1415 (7-95)
DISTRIBUTION: WHITE/DIVISION CANARY/MONITORING WELL CONTRACTOR PINK/OWNER
MAIL WHITE COPY TO: DEPARTMENT OF NATURAL RESOURCES, P.O. BOX 250, ROLLA, MO 65402
ENCLOSE $25 PER MONITORING WELL FOR THE FIRST 5
RECYCLED PAPER

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY

MONITORING WELL CERTIFICATION RECORD

OFFICE USE ONLY	DATE RECEIVED
REF. NO. 145096	
C.R. NO.	CHECK NO.
STATE WELL NUMBER	TRANSMITTAL NO.
CHECKED BY	ROUTE
APPROVED BY	ENTERED Ph 1 Ph 2 Ph 3

INFORMATION SUPPLIED BY MONITORING WELL CONTRACTOR

SITE/FACILITY NAME: LAIDLAW BRIDGETON SANITARY LANDFILL
WELL NUMBER: PZ-300AD

SITE ADDRESS: ST. CHARLES ROCK RD. | CITY: BRIDGETON | STATE: Mo | ZIP CODE: 63044

OWNER NAME: LAIDLAW WASTE SYSTEMS, INC. | TELEPHONE: 314-241-3740

OWNER ADDRESS: 1838 N. BROADWAY | CITY: ST. LOUIS | STATE: Mo | ZIP CODE: 63102

VARIANCE ISSUED: ☐ YES ☒ NO | DATE ISSUED | VARIANCE NUMBER: V

DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT IT:
1120' SOUTHWEST OF BANK OF LEACHATE RETENSION POND, SOUTH OF OLD ST. CHARLES ROCK RD.

LOCATION OF WELL
SHOW LOCATION IN SECTION PLAT
COUNTY: ST. LOUIS
SURFACE ELEVATION: 448.1
SMALLEST ¼ ____ ¼ ____ ¼ ____ ¼ LARGEST ¼
SEC. ____ TWN. 47 N,RNG. 5 (E) OR W
LAT. 38 ° 45 ' 32 " LONG. 90 ° 27 ' 06 "

MONITORING WELL INSTALLATION CONTRACTOR'S NAME: LAYNE WESTERN Co, INC. | PERMIT NUMBER: 001258 WPM

DRILLING CONTRACTOR'S NAME: LAYNE WESTERN Co., INC. | PERMIT NUMBER: 001258 WPM

WELL CONSTRUCTION INFORMATION

TYPE OF WELL: ☐ MONITORING WELL ☒ PIEZOMETER ☐ OTHER ____
TYPE OF POTENTIAL SITE: ☐ HAZARDOUS MATERIAL ☒ LANDFILL ☐ OTHER ____ ☐ L.U.S.T.
MONITORING FOR: (CHECK ALL THAT APPLY) ☒ V.O.C. ☐ METALS ☐ PETROLEUM PRODUCT ☐ OTHER ____ ONLY

PROTECTIVE CASING DETAILS (IF USED): LENGTH 5 FT. | DIAMETER OF CASING 8x8 IN. | WEIGHT OR SDR # 0.188" | DIAMETER AND DEPTH OF DRILL HOLE 8¼ IN. 42.2 FT. | JOINTS ☐ THREADED ☐ MECHANICAL ☐ WELDED ☐ OTHER ____ | MATERIAL ☐ THERMO PLASTIC ☒ STEEL ☐ FLUORO POLYMER TYPE ____ | LOCKING CAP? ☒ YES ☐ NO

CASING GROUT DETAILS: CAP VENTED ☒ YES ☐ NO | WEEP HOLE? ☒ YES ☐ NO | MATERIAL ☐ CEMENT ☒ CONCRETE ☐ OTHER ____ | DEPTH FROM THE SURFACE TO THE BOTTOM OF THE CASING GROUT SEAL 3.0 FT. | TYPE OF SURFACE COMPLETION ☒ ABOVE GROUND ☐ FLUSH MOUNT | DESCRIBE HOW THE FLUSH MOUNT WAS CONSTRUCTED

CENTRALIZER USED ON RISER: ☒ NO ☐ YES LOCATED AT ____ | MATERIAL ☐ STAINLESS STEEL ☐ OTHER ____

RISER PIPE DETAILS: LENGTH 38.7 FT. | DIAMETER OF RISER PIPE 2 IN. | WEIGHT OR SDR # SCH 80 | DIAMETER OF DRILL HOLE 8¼ IN. | JOINTS ☒ THREADED ☐ MECHANICAL ☐ WELDED ☐ OTHER ____ | MATERIAL ☒ THERMO PLASTIC ☐ STEEL ☐ FLUORO POLYMER ☐ OTHER ____

ANNULAR SEAL: ☐ CEMENT SLURRY ☒ BENTONITE SLURRY ☐ NON SLURRY BENTONITE ☐ CEMENT/BENTONITE SLURRY TYPE: ____ BAGS OF CEMENT USED ____ % BENTONITE USED ____ WATER USED/BAG ____ GAL.

BENTONITE SEAL: MATERIAL BENTONITE ☒ SLURRY ☐ CHIPS ☐ GRANULAR ☐ PELLETS | LENGTH OF SEAL 5.1 | BENTONITE SEAL INSTALLED IN ☐ UNSATURATED ZONE ☒ SATURATED ZONE

	TYPE	GRAIN SIZE	LENGTH OF FILTER PACK	METHOD OF INSTALLATION	Information in this column to be supplied in the Feet from Surface column	FEET FROM SURFACE	FORMATION DESCRIPTION
PRIMARY FILTER PACK	☒ SAND ☐ MANUFACTURED ☐ NATURAL	16-35	7.1 FT.	H.S.A. POUR			
SECONDARY FILTER PACK	☒ SAND ☐ MANUFACTURED ☐ NONE	100	1.5 FT.	H.S.A. POUR	Depth to bottom of Protective Casing Seal:	3.0	0-30 Not sampled
WELL SCREEN	LENGTH OF SCREEN 5 FT.	DIAMETER 2 IN.	SLOT SIZE 10	WEIGHT OR SDR # SCH 80	MATERIAL ☒ PLASTIC ☐ STEEL ☐ FLUORO POLYMER	Depth to Base of Annular Seal:	28.5	
SUMP DETAILS	LENGTH OF SUMP	DIAMETER OF SUMP	MATERIAL ☐ PVC ☐ STEEL ☐ FLUORO POLYMER ☐ OTHER ____		Depth to Base of Bentonite Seal:	33.6	30-38 Silt
BACK FILL	WAS THE WELL BACK FILLED? ☐ YES ☒ NO	MATERIAL USED	LENGTH OF BACK FILLED BORE HOLE		Depth to Top of Primary Filter Pack:	35.1	
					Depth to Top of the Screen:	37.2	
					Depth to Bottom of the Screen:	42.2	38-42.2 Silty sand
					Total Depth:	42.2	

STATIC WATER LEVEL FEET FROM MEASURING POINT: ____
DATE OF STATIC WATER LEVEL: ____
MEASURING POINT FOR STATIC WATER LEVEL IS: ☒ TOP OF RISER PIPE ☐ OTHER ____
ELEVATION OF MEASURING POINT: 449.62

MULTIPLE CASED WELLS: SUBMIT ADDITIONAL AS BUILT DIAGRAM SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS, AND GROUT USED.

DRILLING EQUIPMENT: ☐ AIR ROTARY ☒ AUGER TYPE 4¼ H.S.A. ☐ REVERSE ROTARY ☐ OTHER ____

DATE WELL DRILLING WAS COMPLETED: 9-24-95

I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE PRIMARY CONTRACTOR/PERMIT #	DATE	SIGNATURE DRILLER/PERMIT #	DATE
[signature]	10-14-95	[signature]	11-14-95

MO 780-1415 (7-95)

DISTRIBUTION: WHITE/DIVISION CANARY/MONITORING WELL CONTRACTOR PINK/OWNER
MAIL WHITE COPY TO: DEPARTMENT OF NATURAL RESOURCES, P.O. BOX 250, ROLLA, MO 65402
ENCLOSE $25 PER MONITORING WELL FOR THIS CERTIFICATION

RECYCLED PAPER

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY

MONITORING WELL CERTIFICATION RECORD

OFFICE USE ONLY	DATE RECEIVED
REF. NO. 145097	
C.R. NO.	CHECK NO.
STATE WELL NUMBER	TRANSMITTAL NO.
CHECKED BY	ROUTE
APPROVED BY	ENTERED Ph 1 Ph 2 Ph 3

INFORMATION SUPPLIED BY MONITORING WELL CONTRACTOR

SITE/FACILITY NAME	WELL NUMBER
LAIDLAW BRIDGETON SANITARY LANDFILL	PZ-3005S

SITE ADDRESS	CITY	STATE	ZIP CODE
ST. CHARLES ROCK RD.	BRIDGETON	Mo	63044

OWNER NAME	TELEPHONE
LAIDLAW WASTE SYSTEMS INC.	314-241-3710

OWNER ADDRESS	CITY	STATE	ZIP CODE
1828 N. BROADWAY	ST. LOUIS	Mo	63102

VARIANCE ISSUED ☐ YES ☒ NO — DATE ISSUED — VARIANCE NUMBER: V

DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT IT
1110' SOUTHWEST OF BANK OF LEACHATE RETENSION POND, SOUTH OF OLD ST. CHARLES ROCK RD.

LOCATION OF WELL SHOW LOCATION IN SECTION PLAT — COUNTY ST. LOUIS — SURFACE ELEVATION 448.4

SMALLEST ¼ ____ ¼ ____ ¼ ____ ¼ LARGEST ¼

SEC. ____ TWN. 47 N,RNG. 5 (E OR W)

LAT. 38 ° 45 ' 32 " LONG. 90 ° 27 ' 05 "

MONITORING WELL INSTALLATION CONTRACTOR'S NAME	PERMIT NUMBER
LAYNE WESTERN Co., INC.	001258 WPM
DRILLING CONTRACTOR'S NAME LAYNE WESTERN Co., INC.	PERMIT NUMBER 001258 WPM

WELL CONSTRUCTION INFORMATION

TYPE OF WELL: ☐ MONITORING WELL ☒ PIEZOMETER ☐ OTHER ____

TYPE OF POTENTIAL SITE: ☐ HAZARDOUS MATERIAL ☒ LANDFILL ☐ OTHER ☐ L.U.S.T. ____

MONITORING FOR: (CHECK ALL THAT APPLY) ☒ V.O.C. ☐ METALS ☐ PETROLEUM PRODUCT ☐ OTHER ____ ONLY

PROTECTIVE CASING DETAILS (IF USED): LENGTH 5 FT. — DIAMETER OF CASING 8x8 IN. — WEIGHT OR SDR # 0.188" — DIAMETER AND DEPTH OF DRILL HOLE 8¼ IN. 46 FT. — JOINTS ☐ THREADED ☐ MECHANICAL ☐ WELDED ☐ OTHER ____ — MATERIAL ☐ THERMO PLASTIC ☒ STEEL ☐ FLUORO POLYMER TYPE ____ — LOCKING CAP? ☒ YES ☐ NO

CASING GROUT DETAILS: CAP VENTED ☒ YES ☐ NO — WEEP HOLE? ☒ YES ☐ NO — MATERIAL ☐ CEMENT ☒ CONCRETE ☐ OTHER ____ — DEPTH FROM THE SURFACE TO THE BOTTOM OF THE CASING GROUT SEAL 3.0 FT.

TYPE OF SURFACE COMPLETION: ☒ ABOVE GROUND ☐ FLUSH MOUNT — DESCRIBE HOW THE FLUSH MOUNT WAS CONSTRUCTED

CENTRALIZER USED ON RISER ☐ NO ☒ YES LOCATED AT 10', 50', 90' — MATERIAL ☒ STAINLESS STEEL ☐ OTHER ____

RISER PIPE DETAILS: LENGTH 84.9 FT. — DIAMETER OF RISER PIPE 2 IN. — WEIGHT OR SDR # SCH 80 — DIAMETER OF DRILL HOLE 6⅞ IN. — JOINTS ☒ THREADED ☐ MECHANICAL ☐ WELDED ☐ OTHER ____ — MATERIAL ☒ THERMO PLASTIC ☐ STEEL ☐ FLUORO POLYMER ☐ OTHER ____

ANNULAR SEAL: ☐ CEMENT SLURRY ☒ BENTONITE SLURRY ☐ NON SLURRY BENTONITE TYPE: ____ ☐ CEMENT/BENTONITE SLURRY BAGS OF CEMENT USED ____ % BENTONITE USED ____ WATER USED/BAG ____ GAL.

BENTONITE SEAL: MATERIAL BENTONITE ☒ SLURRY ☐ CHIPS ☐ GRANULAR ☐ PELLETS — LENGTH OF SEAL 11' — BENTONITE SEAL INSTALLED IN ☐ UNSATURATED ZONE ☒ SATURATED ZONE

	TYPE	GRAIN SIZE	LENGTH OF FILTER PACK	METHOD OF INSTALLATION	Information in this column to be supplied in the Feet from Surface column	FEET FROM SURFACE	FORMATION DESCRIPTION
PRIMARY FILTER PACK	☒ SAND ☐ MANUFACTURED ☐ NATURAL	16-35	13 FT.	TREMIE			
SECONDARY FILTER PACK	☒ SAND ☐ MANUFACTURED ☐ NONE	100	1.0 FT.	TREMIE	Depth to bottom of Protective Casing Seal:	3.0	0-35.5 Silt
WELL SCREEN	LENGTH OF SCREEN 10 FT. — DIAMETER 2 IN. — SLOT SIZE 10 — WEIGHT OR SDR # SCH80 — MATERIAL ☒ PLASTIC ☐ STEEL ☐ FLUORO POLYMER				Depth to Base of Annular Seal:	70.5	35.5-39.5 Sand
SUMP DETAILS	LENGTH OF SUMP	DIAMETER OF SUMP	MATERIAL ☐ PVC ☐ STEEL ☐ FLUORO POLYMER ☐ OTHER		Depth to Base of Bentonite Seal:	80.5	39.5-94.5 Limestone
BACK FILL	WAS THE WELL BACK FILLED? ☒ YES ☐ NO	MATERIAL USED 16-35 SAND	LENGTH OF BACK FILLED BORE HOLE 0.8'		Depth to Top of Primary Filter Pack:	81.5	
					Depth to Top of the Screen:	83.7	
					Depth to Bottom of the Screen:	93.7	
					Total Depth:	94.5	
					DATE WELL DRILLING WAS COMPLETED	9-26-95	

STATIC WATER LEVEL ____ FEET FROM MEASURING POINT

DATE OF STATIC WATER LEVEL ____

MEASURING POINT FOR STATIC WATER LEVEL IS ☒ TOP OF RISER PIPE ☐ OTHER ____

ELEVATION OF MEASURING POINT 449.60

MULTIPLE CASED WELLS — SUBMIT ADDITIONAL AS BUILT DIAGRAM SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS, AND GROUT USED.

DRILLING EQUIPMENT ☒ AIR ROTARY ☒ AUGER TYPE 4¼ H.S.A. ☐ REVERSE ROTARY ☐ OTHER ____

I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE PRIMARY CONTRACTOR/PERMIT #	DATE	SIGNATURE DRILLER/PERMIT #	DATE
Lorman D. Mahurin Jr.	11-14-95	Lorman D. Mahurin Jr.	11-14-95

MO 780-1415 (7-95)

DISTRIBUTION: WHITE/DIVISION CANARY/MONITORING WELL CONTRACTOR PINK/OWNER
MAIL WHITE COPY TO: DEPARTMENT OF NATURAL RESOURCES, P.O. BOX 250, ROLLA, MO 65402
ENCLOSE $35 PER MONITORING WELL FOR THE CERTIFICATION FEE WITHIN 60 DAYS AFTER WELL COMPLETION

RECYCLED PAPER

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY

MONITORING WELL CERTIFICATION RECORD

OFFICE USE ONLY	DATE RECEIVED
REF. NO. 145098	
C.R. NO.	CHECK NO.
STATE WELL NUMBER	TRANSMITTAL NO.
CHECKED BY	ROUTE
APPROVED BY	ENTERED Ph 1 Ph 2 Ph 3

INFORMATION SUPPLIED BY MONITORING WELL CONTRACTOR

SITE/FACILITY NAME: LAIDLAW BRIDGETON SANITARY LANDFILL
WELL NUMBER: PZ-30155
SITE ADDRESS: ST. CHARLES ROCK RD. | CITY: BRIDGETON | STATE: Mo | ZIP CODE: 63044
OWNER NAME: LAIDLAW WASTE SYSTEMS, INC. | TELEPHONE: 314-241-3710
OWNER ADDRESS: 1238 N. BROADWAY | CITY: ST. LOUIS | STATE: Mo | ZIP CODE: 63102

VARIANCE ISSUED: ☐ YES ☒ NO | DATE ISSUED | VARIANCE NUMBER: V

DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT IT:
1750' SOUTH OF SOUTH ENTRANCE TO LANDFILL, SOUTH OF OLD ST. CHARLES ROCK RD.

LOCATION OF WELL
SHOW LOCATION IN SECTION PLAT
COUNTY: ST. LOUIS
SURFACE ELEVATION: 513.1
SMALLEST ¼ ____ ¼ ____ ¼ ____ LARGEST ¼ ____ ¼
SEC. ____ TWN. 47 N,RNG. 5 (E OR W)
LAT. 38 ° 45 ' 28 " LONG. 90 ° 26 ' 44 "

MONITORING WELL INSTALLATION CONTRACTOR'S NAME: LAYNE WESTERN Co, INC. | PERMIT NUMBER: 001258 WIPM
DRILLING CONTRACTOR'S NAME: LAYNE WESTERN Co. INC. | PERMIT NUMBER: 001258 WIPM

WELL CONSTRUCTION INFORMATION

TYPE OF WELL: ☐ MONITORING WELL ☒ PIEZOMETER ☐ OTHER ____
TYPE OF POTENTIAL SITE: ☐ HAZARDOUS MATERIAL ☒ LANDFILL ☐ OTHER ☐ L.U.S.T. ____
MONITORING FOR: (CHECK ALL THAT APPLY) ☒ V.O.C. ☐ METALS ☐ PETROLEUM PRODUCT ☐ OTHER ____ ONLY

PROTECTIVE CASING DETAILS (IF USED):
LENGTH: 5 FT. | DIAMETER OF CASING: 8x8 IN. | WEIGHT OR SDR #: 0.188" | DIAMETER AND DEPTH OF DRILL HOLE: 8.25 IN. 19 FT.
JOINTS: ☐ THREADED ☐ MECHANICAL ☐ WELDED ☐ OTHER ____
MATERIAL: ☐ THERMO PLASTIC ☒ STEEL ☐ FLUORO POLYMER TYPE ____
LOCKING CAP? ☒ YES ☐ NO

CASING GROUT DETAILS:
CAP VENTED ☒ YES ☐ NO | WEEP HOLE? ☒ YES ☐ NO
MATERIAL: ☐ CEMENT ☒ CONCRETE ☐ OTHER ____
DEPTH FROM THE SURFACE TO THE BOTTOM OF THE CASING GROUT SEAL: 3.0 FT.
TYPE OF SURFACE COMPLETION: ☒ ABOVE GROUND ☐ FLUSH MOUNT
DESCRIBE HOW THE FLUSH MOUNT WAS CONSTRUCTED

CENTRALIZER USED ON RISER: ☐ NO ☒ YES LOCATED AT 30', 70', 110', 150'
MATERIAL: ☒ STAINLESS STEEL ☐ OTHER ____

RISER PIPE DETAILS:
LENGTH: 152.8 FT. | DIAMETER OF RISER PIPE: 2 IN. | WEIGHT OR SDR #: SCH. 80 | DIAMETER OF DRILL HOLE: 5⅞ IN.
JOINTS: ☒ THREADED ☐ MECHANICAL ☐ WELDED ☐ OTHER ____
MATERIAL: ☒ THERMO PLASTIC ☐ STEEL ☐ FLUORO POLYMER ☐ OTHER ____

ANNULAR SEAL: ☐ CEMENT SLURRY ☒ BENTONITE SLURRY ☐ NON SLURRY BENTONITE ☐ CEMENT/BENTONITE SLURRY
BAGS OF CEMENT USED ____ % BENTONITE USED ____ WATER USED/BAG ____ GAL. TYPE: ____

BENTONITE SEAL:
MATERIAL: BENTONITE ☒ SLURRY ☐ CHIPS ☐ GRANULAR ☐ PELLETS
LENGTH OF SEAL: 6.5'
BENTONITE SEAL INSTALLED IN: ☐ UNSATURATED ZONE ☒ SATURATED ZONE

PRIMARY FILTER PACK:
TYPE: ☒ SAND ☐ MANUFACTURED ☐ NATURAL
GRAIN SIZE: 16-35 | LENGTH OF FILTER PACK: 13.5 FT. | METHOD OF INSTALLATION: TREMIE

SECONDARY FILTER PACK:
TYPE: ☒ SAND ☐ MANUFACTURED ☐ NONE
GRAIN SIZE: 16-35 | LENGTH OF FILTER PACK: 1.5 FT. | METHOD OF INSTALLATION: TREMIE

WELL SCREEN:
LENGTH OF SCREEN: 10 FT. | DIAMETER: 2 IN. | SLOT SIZE: 10 | WEIGHT OR SDR #: SCH 80
MATERIAL: ☒ PLASTIC ☐ STEEL ☐ FLUORO POLYMER

SUMP DETAILS:
LENGTH OF SUMP | DIAMETER OF SUMP
MATERIAL: ☐ PVC ☐ STEEL ☐ FLUORO POLYMER ☐ OTHER

BACK FILL:
WAS THE WELL BACK FILLED? ☒ YES ☐ NO
MATERIAL USED: 16-35 SAND
LENGTH OF BACK FILLED BORE HOLE: 0.5'

Information in this column to be supplied in the Feet from Surface column	FEET FROM SURFACE	FORMATION DESCRIPTION
		0-10 silt
Depth to bottom of Protective Casing Seal:	3.0	
		10-28.5 Siltstone
		28.5-59.5 Claystone
Depth to Base of Annular Seal:	140.0	59.5-62 Limestone
		62-70.5 Claystone
Depth to Base of Bentonite Seal:	146.5	70.5-161.5 Limestone
Depth to Top of Primary Filter Pack:	148.0	
Depth to Top of the Screen:	161.0	
Depth to Bottom of the Screen:	161.0	
Total Depth:	161.5'	
DATE WELL DRILLING WAS COMPLETED		

STATIC WATER LEVEL FEET FROM MEASURING POINT
DATE OF STATIC WATER LEVEL
MEASURING POINT FOR STATIC WATER LEVEL IS: ☒ TOP OF RISER PIPE ☐ OTHER ____
ELEVATION OF MEASURING POINT: 514.71

MULTIPLE CASED WELLS: SUBMIT ADDITIONAL AS BUILT DIAGRAM SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS, AND GROUT USED.

DRILLING EQUIPMENT: ☒ AIR ROTARY ☒ AUGER TYPE 4.25 H.S.A. ☐ REVERSE ROTARY ☐ OTHER ____

I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE PRIMARY CONTRACTOR/PERMIT #	DATE	SIGNATURE DRILLER/PERMIT #	DATE
Leonard F. Mahurin Jr.	11-15-95	Leonard F. Mahurin Jr.	11-15-95

MO 780-1415 (7-95)
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RECYCLED PAPER

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY

MONITORING WELL CERTIFICATION RECORD

OFFICE USE ONLY	DATE RECEIVED
REF. NO. 145099	
C.R. NO.	CHECK NO.
STATE WELL NUMBER	TRANSMITTAL NO.
CHECKED BY	ROUTE
APPROVED BY	ENTERED Ph 1 Ph 2 Ph 3

INFORMATION SUPPLIED BY MONITORING WELL CONTRACTOR

SITE/FACILITY NAME: LAIDLAW BRIDGETON SANITARY LANDFILL
WELL NUMBER: PZ-302AS
SITE ADDRESS: ST CHARLES ROCK RD. | CITY: BRIDGETON | STATE: Mo | ZIP CODE: 63044
OWNER NAME: LAIDLAW WASTE SYSTEMS, INC. | TELEPHONE: 314-241-3710
OWNER ADDRESS: 1838 N. BROADWAY | CITY: ST. LOUIS | STATE: Mo | ZIP CODE: 63102

VARIANCE ISSUED: ☐ YES ☒ NO | DATE ISSUED | VARIANCE NUMBER: V

DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT IT
20' INSIDE FENCE LINE, 700' NORTHWEST OF SOUTH ENTRANCE OFF OLD ST CHARLES ROCK RD.

LOCATION OF WELL SHOW LOCATION IN SECTION PLAT
COUNTY: ST. LOUIS
SURFACE ELEVATION: 449.2
SMALLEST ¼ ____ ¼ ____ ¼ ____ ¼ LARGEST ¼
SEC. ____ TWN. 47 N,RNG. 5 ☐E ☐W
LAT. 38 ° 45 ' 52 " LONG. 90 ° 26 ' 54 "

MONITORING WELL INSTALLATION CONTRACTOR'S NAME: LAYNE WESTERN Co, INC. | PERMIT NUMBER: 001258 WPM
DRILLING CONTRACTOR'S NAME: LAYNE WESTERN Co., INC. | PERMIT NUMBER: 001258 WPM

WELL CONSTRUCTION INFORMATION

TYPE OF WELL: ☐ MONITORING WELL ☒ PIEZOMETER ☐ OTHER ____
TYPE OF POTENTIAL SITE: ☐ HAZARDOUS MATERIAL ☒ LANDFILL ☐ OTHER ____ ☐ L.U.S.T.
MONITORING FOR: (CHECK ALL THAT APPLY): ☒ V.O.C. ☐ METALS ☐ PETROLEUM PRODUCT ☐ OTHER ____ ONLY

PROTECTIVE CASING DETAILS (IF USED)
- LENGTH: 5 FT.
- DIAMETER OF CASING: 8x8 IN.
- WEIGHT OR SDR #: 0.188"
- DIAMETER AND DEPTH OF DRILL HOLE: 8¼ IN. 22.3 FT.
- JOINTS: ☐ THREADED ☐ MECHANICAL ☐ WELDED ☐ OTHER ____
- MATERIAL: ☐ THERMO PLASTIC ☒ STEEL ☐ FLUORO POLYMER TYPE ____
- LOCKING CAP? ☒ YES ☐ NO

CASING GROUT DETAILS
- CAP VENTED ☒ YES ☐ NO
- WEEP HOLE? ☒ YES ☐ NO
- MATERIAL: ☐ CEMENT ☒ CONCRETE ☐ OTHER ____
- DEPTH FROM THE SURFACE TO THE BOTTOM OF THE CASING GROUT SEAL: 3.0 FT.

TYPE OF SURFACE COMPLETION: ☒ ABOVE GROUND ☐ FLUSH MOUNT
DESCRIBE HOW THE FLUSH MOUNT WAS CONSTRUCTED

CENTRALIZER USED ON RISER: ☒ NO ☐ YES LOCATED AT ____
MATERIAL: ☐ STAINLESS STEEL ☐ OTHER ____

RISER PIPE DETAILS
- LENGTH: 14.2 FT.
- DIAMETER OF RISER PIPE: 2 IN.
- WEIGHT OR SDR #: SCH 80
- DIAMETER OF DRILL HOLE: 8¼ IN.
- JOINTS: ☒ THREADED ☐ MECHANICAL ☐ WELDED ☐ OTHER ____
- MATERIAL: ☒ THERMO PLASTIC ☐ STEEL ☐ FLUORO POLYMER ☐ OTHER ____

ANNULAR SEAL: ☐ CEMENT SLURRY ☒ BENTONITE SLURRY ☐ NON SLURRY BENTONITE TYPE: ____ ☐ CEMENT/BENTONITE SLURRY BAGS OF CEMENT USED ____ % BENTONITE USED ____ WATER USED/BAG ____ GAL.

BENTONITE SEAL
- MATERIAL: BENTONITE ☒ SLURRY ☐ CHIPS ☐ GRANULAR ☐ PELLETS
- LENGTH OF SEAL: 6.0
- BENTONITE SEAL INSTALLED IN: ☐ UNSATURATED ZONE ☒ SATURATED ZONE

PRIMARY FILTER PACK
- TYPE: ☒ SAND ☐ MANUFACTURED ☐ NATURAL
- GRAIN SIZE: 16-35
- LENGTH OF FILTER PACK: 12.4 FT.
- METHOD OF INSTALLATION: H.S.A. POUR

SECONDARY FILTER PACK
- TYPE: ☒ SAND ☐ MANUFACTURED ☐ NONE
- GRAIN SIZE: 100
- LENGTH OF FILTER PACK: 0.9 FT.
- METHOD OF INSTALLATION: H.S.A. POUR

WELL SCREEN
- LENGTH OF SCREEN: 10 FT.
- DIAMETER: 2 IN.
- SLOT SIZE: 10
- WEIGHT OR SDR #: SCH 80
- MATERIAL: ☒ PLASTIC ☐ STEEL ☐ FLUORO POLYMER

SUMP DETAILS
- LENGTH OF SUMP
- DIAMETER OF SUMP
- MATERIAL: ☐ PVC ☐ STEEL ☐ FLUORO POLYMER ☐ OTHER ____

BACK FILL
- WAS THE WELL BACK FILLED? ☐ YES ☒ NO
- MATERIAL USED
- LENGTH OF BACK FILLED BORE HOLE

Information in this column to be supplied in the Feet from Surface column

Depth to bottom of Protective Casing Seal:	FEET FROM SURFACE	FORMATION DESCRIPTION
	3.0	0-15 Silty clay
Depth to Base of Annular Seal:	9.0	
Depth to Base of Bentonite Seal:	9.0	
Depth to Top of Primary Filter Pack:	9.9	
Depth to Top of the Screen:	12.3	
Depth to Bottom of the Screen:	22.3	15-22.3 Silty sand
Total Depth:	22.3	
DATE WELL DRILLING WAS COMPLETED	9-25-95	

STATIC WATER LEVEL FEET FROM MEASURING POINT
DATE OF STATIC WATER LEVEL
MEASURING POINT FOR STATIC WATER LEVEL IS: ☒ TOP OF RISER PIPE ☐ OTHER ____
ELEVATION OF MEASURING POINT: 451.42

MULTIPLE CASED WELLS: SUBMIT ADDITIONAL AS BUILT DIAGRAM SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS, AND GROUT USED.

DRILLING EQUIPMENT: ☐ AIR ROTARY ☒ AUGER TYPE 4¼ H.S.A. ☐ REVERSE ROTARY ☐ OTHER ____

I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE PRIMARY CONTRACTOR/PERMIT #	DATE	SIGNATURE DRILLER/PERMIT #	DATE
Loman D. Mahurin Jr.	11-15-95	Loman D. Mahurin Jr.	11-15-95

MO 780-1415 (7-95)
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MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY

MONITORING WELL CERTIFICATION RECORD

OFFICE USE ONLY	DATE RECEIVED
REF. NO. 145100	
C.R. NO.	CHECK NO.
STATE WELL NUMBER	TRANSMITTAL NO.
CHECKED BY	ROUTE
APPROVED BY	ENTERED Ph 1 Ph 2 Ph 3

INFORMATION SUPPLIED BY MONITORING WELL CONTRACTOR

SITE/FACILITY NAME: LAIDLAW BRIDGETON SANITARY LANDFILL	WELL NUMBER: PZ-302AI		
SITE ADDRESS: ST. CHARLES ROCK RD.	CITY: BRIDGETON	STATE: MO	ZIP CODE: 63044
OWNER NAME: LAIDLAW WASTE SYSTEMS, INC.		TELEPHONE: 314-241-3710	
OWNER ADDRESS: 1830 N. BROADWAY	CITY: ST. LOUIS	STATE: MO	ZIP CODE: 63102

VARIANCE ISSUED ☐ YES ☒ NO DATE ISSUED VARIANCE NUMBER: V

DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT IT: 15' INSIDE FENCE LINE, 720' NORTHWEST OF SOUTH ENTRANCE OFF OLD ST. CHARLES ROCK RD.

LOCATION OF WELL — SHOW LOCATION IN SECTION PLAT
COUNTY ST. LOUIS
SURFACE ELEVATION 450.0
SMALLEST ¼ ____¼ ____¼ ____¼ ____¼ LARGEST ¼
SEC. ____ TWN. 47 N, RNG. 5 (E) OR W
LAT. 38 ° 45 ' 52 " LONG. 90 ° 26 ' 54 "

MONITORING WELL INSTALLATION CONTRACTOR'S NAME	LAYNE WESTERN CO, INC.	PERMIT NUMBER	001258 WPM
DRILLING CONTRACTOR'S NAME	LAYNE WESTERN CO, INC.	PERMIT NUMBER	001258 WPM

WELL CONSTRUCTION INFORMATION

TYPE OF WELL: ☐ MONITORING WELL ☒ PIEZOMETER ☐ OTHER
TYPE OF POTENTIAL SITE: ☐ HAZARDOUS MATERIAL ☒ LANDFILL ☐ OTHER ☐ L.U.S.T.
MONITORING FOR: (CHECK ALL THAT APPLY) ☒ V.O.C. ☐ METALS ☐ PETROLEUM PRODUCT ONLY ☐ OTHER

PROTECTIVE CASING DETAILS (IF USED): LENGTH 5 FT. | DIAMETER OF CASING 8 x 8 IN. | WEIGHT OR SDR # 0.188" | DIAMETER AND DEPTH OF DRILL HOLE 8 1/4 IN. 43 FT. | JOINTS ☐ THREADED ☐ MECHANICAL ☐ WELDED ☐ OTHER | MATERIAL ☐ THERMO PLASTIC ☒ STEEL ☐ FLUORO POLYMER TYPE ____ | LOCKING CAP? ☒ YES ☐ NO

CAP VENTED ☒ YES ☐ NO; WEEP HOLE? ☒ YES ☐ NO
CASING GROUT DETAILS: MATERIAL ☐ CEMENT ☒ CONCRETE ☐ OTHER ____; DEPTH FROM THE SURFACE TO THE BOTTOM OF THE CASING GROUT SEAL 3.0 FT.
TYPE OF SURFACE COMPLETION: ☒ ABOVE GROUND ☐ FLUSH MOUNT
DESCRIBE HOW THE FLUSH MOUNT WAS CONSTRUCTED

CENTRALIZER USED ON RISER ☒ NO ☐ YES LOCATED AT ____; MATERIAL ☐ STAINLESS STEEL ☐ OTHER

RISER PIPE DETAILS: LENGTH 34.2 FT. | DIAMETER OF RISER PIPE 2 IN. | WEIGHT OR SDR # SCH 80 | DIAMETER OF DRILL HOLE 8 1/4 IN. | JOINTS ☒ THREADED ☐ MECHANICAL ☐ WELDED ☐ OTHER | MATERIAL ☒ THERMO PLASTIC ☐ STEEL ☐ FLUORO POLYMER ☐ OTHER

ANNULAR SEAL: ☐ CEMENT SLURRY ☒ BENTONITE SLURRY ☐ NON SLURRY BENTONITE TYPE: ____ ☐ CEMENT/BENTONITE SLURRY BAGS OF CEMENT USED ____ % BENTONITE USED ____ WATER USED/BAG ____ GAL.
BENTONITE SEAL: MATERIAL BENTONITE ☒ SLURRY ☐ CHIPS ☐ GRANULAR ☐ PELLETS | LENGTH OF SEAL 4.0 | BENTONITE SEAL INSTALLED IN ☐ UNSATURATED ZONE ☒ SATURATED ZONE

PRIMARY FILTER PACK: TYPE ☒ SAND ☐ MANUFACTURED ☐ NATURAL | GRAIN SIZE 16-35 | LENGTH OF FILTER PACK 15.1 FT. | METHOD OF INSTALLATION HSA POUR
SECONDARY FILTER PACK: TYPE ☒ SAND ☐ MANUFACTURED ☐ NONE | GRAIN SIZE 100 | LENGTH OF FILTER PACK 0.9 FT. | METHOD OF INSTALLATION HSA POUR
WELL SCREEN: LENGTH OF SCREEN 10 FT | DIAMETER 2 IN. | SLOT SIZE 10 | WEIGHT OR SDR # SCH 80 | MATERIAL ☒ PLASTIC ☐ STEEL ☐ FLUORO POLYMER
SUMP DETAILS: LENGTH OF SUMP | DIAMETER OF SUMP | MATERIAL ☐ PVC ☐ STEEL ☐ FLUORO POLYMER ☐ OTHER
BACK FILL: WAS THE WELL BACK FILLED? ☐ YES ☒ NO | MATERIAL USED | LENGTH OF BACK FILLED BORE HOLE

Information in this column to be supplied in the Feet from Surface column	FEET FROM SURFACE	FORMATION DESCRIPTION
Depth to bottom of Protective Casing Seal:	3.0	0-15 Silty clay
Depth to Base of Annular Seal:	23.0	15-43 Silty sand
Depth to Base of Bentonite Seal:	27.0	
Depth to Top of Primary Filter Pack:	27.9	
Depth to Top of the Screen:	33.0	
Depth to Bottom of the Screen:	43.0	
Total Depth:	43.0	

STATIC WATER LEVEL ____ FEET FROM MEASURING POINT
DATE OF STATIC WATER LEVEL
MULTIPLE CASED WELLS: SUBMIT ADDITIONAL AS BUILT DIAGRAM SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS, AND GROUT USED.
MEASURING POINT FOR STATIC WATER LEVEL IS: ☒ TOP OF RISER PIPE ☐ OTHER ____
DRILLING EQUIPMENT: ☐ AIR ROTARY ☒ AUGER TYPE 4 1/4 H.S.A. ☐ REVERSE ROTARY ☐ OTHER ____
ELEVATION OF MEASURING POINT 451.15
DATE WELL DRILLING WAS COMPLETED 9-26-95

I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE PRIMARY CONTRACTOR/PERMIT #	DATE	SIGNATURE DRILLER/PERMIT #	DATE
[signature]	11-15-95	[signature]	11-15-95

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MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY

MONITORING WELL CERTIFICATION RECORD

OFFICE USE ONLY	DATE RECEIVED
REF. NO. 145101	
C.R. NO.	CHECK NO.
STATE WELL NUMBER	TRANSMITTAL NO.
CHECKED BY	ROUTE
APPROVED BY	ENTERED Ph 1 Ph 2 Ph 3

INFORMATION SUPPLIED BY MONITORING WELL CONTRACTOR

SITE/FACILITY NAME: LAIDLAW @ BRIDGETON SANITARY LANDFILL
WELL NUMBER: P2-303A3

SITE ADDRESS: ST. CHARLES ROCK RD | CITY: BRIDGETON | STATE: Mo | ZIP CODE: 63044

OWNER NAME: LAIDLAW WASTE SYSTEMS, INC. | TELEPHONE: 314-291-3710

OWNER ADDRESS: 1839 N. BROADWAY | CITY: ST. LOUIS | STATE: Mo | ZIP CODE: 63102

VARIANCE ISSUED: ☐ YES ☒ NO | DATE ISSUED: | VARIANCE NUMBER: V

DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT IT:
AT FENCE LINE, 360' NORTH OF SOUTHWEST FENCE CORNER

LOCATION OF WELL
SHOW LOCATION IN SECTION PLAT
COUNTY:
SURFACE ELEVATION: 450.8
SMALLEST ¼ ____ ¼ ____ ¼ ____ ¼ LARGEST ¼
SEC. ____ TWN. 47 N,RNG. 5 (E OR W)
LAT. 38° 45' 58" LONG. 90° 26' 58"

MONITORING WELL INSTALLATION CONTRACTOR'S NAME: LAYNE WESTERN CO, INC. | PERMIT NUMBER: 001258 WPM

DRILLING CONTRACTOR'S NAME: LAYNE WESTERN CO., INC. | PERMIT NUMBER: 001258 WPM

WELL CONSTRUCTION INFORMATION

TYPE OF WELL: ☐ MONITORING WELL ☒ PIEZOMETER ☐ OTHER ____

TYPE OF POTENTIAL SITE: ☐ HAZARDOUS MATERIAL ☒ LANDFILL ☐ OTHER ____ ☐ L.U.S.T.

MONITORING FOR: (CHECK ALL THAT APPLY) ☒ V.O.C. ☐ METALS ☐ PETROLEUM PRODUCT ☐ OTHER ____ ONLY

PROTECTIVE CASING DETAILS (IF USED):
LENGTH: 5.0 FT. | DIAMETER OF CASING: 8x8 IN. | WEIGHT OR SDR #: 0.185" | DIAMETER AND DEPTH OF DRILL HOLE: 8¼ IN. 26.5 FT. | JOINTS: ☐ THREADED ☐ MECHANICAL ☐ WELDED ☐ OTHER ____ | MATERIAL: ☐ THERMO PLASTIC ☒ STEEL ☐ FLUORO POLYMER TYPE ____ | LOCKING CAP? ☒ YES ☐ NO

CASING GROUT DETAILS:
CAP VENTED: ☒ YES ☐ NO | WEEP HOLE? ☒ YES ☐ NO
MATERIAL: ☐ CEMENT ☒ CONCRETE ☐ OTHER ____
DEPTH FROM THE SURFACE TO THE BOTTOM OF THE CASING GROUT SEAL: 3.0 FT.
TYPE OF SURFACE COMPLETION: ☒ ABOVE GROUND ☐ FLUSH MOUNT
DESCRIBE HOW THE FLUSH MOUNT WAS CONSTRUCTED:

CENTRALIZER USED ON RISER: ☒ NO ☐ YES LOCATED AT ____
MATERIAL: ☐ STAINLESS STEEL ☐ OTHER ____

RISER PIPE DETAILS:
LENGTH: 18.9 FT. | DIAMETER OF RISER PIPE: 2 IN. | WEIGHT OR SDR #: SCH80 | DIAMETER OF DRILL HOLE: 8¼ IN. | JOINTS: ☒ THREADED ☐ MECHANICAL ☐ WELDED ☐ OTHER ____ | MATERIAL: ☒ THERMO PLASTIC ☐ STEEL ☐ FLUORO POLYMER ☐ OTHER ____

ANNULAR SEAL: ☐ CEMENT SLURRY ☒ BENTONITE SLURRY ☐ NON SLURRY BENTONITE TYPE: ____ ☐ CEMENT/BENTONITE SLURRY BAGS OF CEMENT USED ____ % BENTONITE USED ____ WATER USED/BAG ____ GAL.

BENTONITE SEAL: MATERIAL: BENTONITE ☒ SLURRY ☐ CHIPS ☐ GRANULAR ☐ PELLETS | LENGTH OF SEAL: 3.8 | BENTONITE SEAL INSTALLED IN: ☐ UNSATURATED ZONE ☒ SATURATED ZONE

PRIMARY FILTER PACK: TYPE: ☒ SAND ☐ MANUFACTURED ☐ NATURAL | GRAIN SIZE: 16-35 | LENGTH OF FILTER PACK: 13.9 FT. | METHOD OF INSTALLATION: H.S.A. POUR

SECONDARY FILTER PACK: TYPE: ☒ SAND ☐ MANUFACTURED ☐ NONE | GRAIN SIZE: <50 | LENGTH OF FILTER PACK: 0.8 FT. | METHOD OF INSTALLATION: H.S.A. POUR

WELL SCREEN: LENGTH OF SCREEN: 10 FT. | DIAMETER: 2 IN. | SLOT SIZE: 10 | WEIGHT OR SDR #: SCH 80 | MATERIAL: ☒ PLASTIC ☐ STEEL ☐ FLUORO POLYMER

SUMP DETAILS: LENGTH OF SUMP: | DIAMETER OF SUMP: | MATERIAL: ☐ PVC ☐ STEEL ☐ FLUORO POLYMER ☐ OTHER ____

BACK FILL: WAS THE WELL BACK FILLED? ☐ YES ☒ NO | MATERIAL USED: | LENGTH OF BACK FILLED BORE HOLE:

STATIC WATER LEVEL: FEET FROM MEASURING POINT:
DATE OF STATIC WATER LEVEL:
MEASURING POINT FOR STATIC WATER LEVEL IS: ☒ TOP OF RISER PIPE ☐ OTHER ____
ELEVATION OF MEASURING POINT: 453.18
MULTIPLE CASED WELLS: SUBMIT ADDITIONAL AS BUILT DIAGRAM SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS, AND GROUT USED
DRILLING EQUIPMENT: ☐ AIR ROTARY ☒ AUGER TYPE 4¼ H.S.A. ☐ REVERSE ROTARY ☐ OTHER ____

Information in this column to be supplied in the Feet from Surface column	FEET FROM SURFACE	FORMATION DESCRIPTION
		0-4.5 Silty clay
Depth to bottom of Protective Casing Seal:	3.0	
		4.5-26.5 Silty sand
Depth to Base of Annular Seal:	8.0	
Depth to Base of Bentonite Seal:	11.8	
Depth to Top of Primary Filter Pack:	12.6	
Depth to Top of the Screen:	16.5	
Depth to Bottom of the Screen:	26.5	
Total Depth:	26.5	

DATE WELL DRILLING WAS COMPLETED: 10-05-95

I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE PRIMARY CONTRACTOR/PERMIT #	DATE	SIGNATURE DRILLER/PERMIT #	DATE
Tomas J. Mahurin M.	11-15-95	Tomas J. Mahurin M.	11-15-95

MO 780-1415 (7-95)

DISTRIBUTION: WHITE/DIVISION CANARY/MONITORING WELL CONTRACTOR PINK/OWNER
MAIL WHITE COPY TO: DEPARTMENT OF NATURAL RESOURCES, P.O. BOX 250, ROLLA, MO 65402
ENCLOSE $15 PER MONITORING WELL FOR THE CERTIFICATION FEE WITH THE TRANSMITTAL

RECYCLED PAPER

661574

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY

MONITORING WELL CERTIFICATION RECORD

OFFICE USE ONLY	
REF. NO 115080	DATE RECEIVED
ROUTE	CHECK NO
STATE WELL NUMBER	TRANSMITTAL NO.
CHECKED BY	CROSS REFERENCE NO
APPROVED BY	ENTERED Ph 1 Ph 2 Ph 3
	DATE APPROVED

INFORMATION SUPPLIED BY OWNER

SITE NAME: LAIDLAW BRIDGETON SANITARY LANDFILL
WELL NUMBER: PZ-100-KS
SITE ADDRESS: St Charles Rock Road
CITY: BRIDGETON
STATE: MO
ZIP CODE: 63044
NAME: LAIDLAW WASTE SYSTEMS, INC
TELEPHONE: 314-241-3710
ADDRESS: 1638 N BROADWAY
CITY: ST. LOUIS
STATE: MO
ZIP CODE: 63102

INFORMATION SUPPLIED BY MONITORING WELL CONTRACTOR

LOCATION OF WELL
SHOW LOCATION IN SECTION PLAT

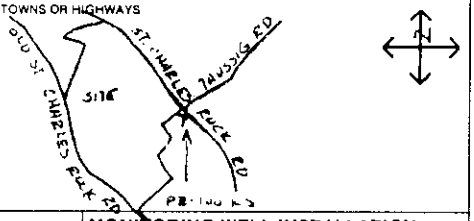
COUNTY: St. Louis
ELEVATION: 433.76
AREA NO.

SMALLEST ¼ ____ ¼ ____ ¼ ____ ¼ LARGEST ¼

SEC. ____ TWN. 47 N.RNG. 5 (E) OR W

LAT. 38° 46' 09" LONG. 90° 26' 32"

SKETCH THE LOCATION TO THE WELL INCLUDING MILEAGE ON ALL ROADS TRAVELED FROM NEAREST TOWNS OR HIGHWAYS



DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT IT

MONITORING WELL INSTALLATION CONTRACTOR'S NAME
LAYNE WESTERN CO, INC.

DRILLING CONTRACTOR'S NAME
LAYNE WESTERN CO, INC.

TYPE OF INSTALLATION: [X] ABOVE GROUND [ ] FLUSH MOUNT

STATIC WATER LEVEL ____ FEET FROM MEASURING POINT

DATE OF STATIC WATER LEVEL

ELEVATION OF MEASURING POINT: 435.67

MEASURING POINT IS: [X] TOP OF RISER PIPE [ ] OTHER

DRILLING EQUIPMENT: [X] AIR ROTARY [X] AUGER TYPE 6¼ HSA [ ] REVERSE ROTARY [ ] OTHER

CENTRALIZERS USED: [X] YES, AT 3 TOTAL [X] STAINLESS STEEL [ ] OTHER [ ] NO

MULTIPLE CASED WELLS: SUBMIT ADDITIONAL AS BUILT DIAGRAM SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS, AND GROUT USED.

DATE WELL CONSTRUCTION WAS COMPLETED: 2-20-75

I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE (MONITORING WELL CONTRACTOR): Richard P. Vogt
PERMIT NUMBER: UC1256WM DATE: 4-11-75
SIGNATURE (DRILLING CONTRACTOR): Richard P. Vogt
PERMIT NUMBER: UC1256WM DATE: 4-11-75

NOTE: Record the fraction of a foot in decimal, not in inches

Top of Riser Elevation: 435.67

LOCKING CAP - Y / N (Circle one)
CAP VENT - Y / N (Circle one)
PROTECTIVE CASING Type: STEEL Size: 8"x8"x5' Bore Hole Diameter: 10.25"
WEEP HOLE - Y / N (Circle one)

Ground Surface Elevation: 433.76 Ft	Feet from Surface	Description of Formation
Information in this column to be supplied in the Feet from Surface column:		0-13 clay
Depth to bottom of Protective Casing Seal:	3	
		13-36 Silt
		36-88 Limestone
		88-94 Shale
		94-143 Dolomite
		143-154 Limestone
		154-165 Dolomite
		165-210 Limestone
Depth to Base of Annular Seal:	326	210-234 Dolomite
		234-246 Limestone
		246-262 Shale
		262-307 Dolomite
Depth to Base of Bentonite Seal:	307	307-312 Limestone
Depth to Base of Secondary Filter Pack:	309	312-317 Dolomite
		317-343 Shale
Depth to Top of the Screen:	324	343-346 Dolomite
		346-351 Shale
		351-354 Dolomite
		354-371 Limestone
Depth to Bottom of the Screen:	344	
Plug Back Total Depth		
Original Total Depth:	371	

PROTECTIVE CASING SEAL Type: [X] Concrete [ ] Cement Slurry

RISER PIPE Length: 375.88' Diameter: 3" Type of Material: PVC SCH 80

BOREHOLE DIAMETER: 5⅞ In.

ANNULAR SEAL Type: [X] Bentonite Slurry [ ] Cement Slurry [ ] Non Slurry Bentonite

BENTONITE SEAL Type: [X] Bentonite Slurry [ ] Non Slurry Bentonite Length of Seal: 5 Ft.

SECONDARY FILTER PACK Type: [X] Sand [ ] Manufactured (Optional) Grain Size: 30/65 #2 Length: 2'

PRIMARY FILTER PACK Type: [X] Sand [ ] Manufactured Grain Size: 16-30 Length: 15'

WELL SCREEN Length: 10' Slot Size: 0.010" Type: SCH 80 PVC

SUMP DETAILS Length: 0.3 Ft. Diameter: 3 In. Type: PVC

TYPE OF BACKFILL: DRILLING MUD/BENTONITE SLURRY

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY

MONITORING WELL CERTIFICATION RECORD

OFFICE USE ONLY	DATE RECEIVED
REF. NO. 145102	
C.R. NO.	CHECK NO.
STATE WELL NUMBER	TRANSMITTAL NO.
CHECKED BY	ROUTE
APPROVED BY	ENTERED Ph 1 Ph 2 Ph 3

INFORMATION SUPPLIED BY MONITORING WELL CONTRACTOR

SITE/FACILITY NAME: LAIDLAW BRIDGETON SANITARY LANDFILL
WELL NUMBER: PZ-304AS
SITE ADDRESS: ST. CHARLES ROCK RD
CITY: BRIDGETON
STATE: Mo
ZIP CODE: 63044
OWNER NAME: LAIDLAW WASTE SYSTEMS, INC.
TELEPHONE: 314-241-3710
OWNER ADDRESS: 1238 N. BROADWAY
CITY: ST. LOUIS
STATE: Mo
ZIP CODE: 63102

VARIANCE ISSUED: ☐ YES ☒ NO
DATE ISSUED:
VARIANCE NUMBER: V

DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT IT:
AT WEST FENCE LINE, 740' NORTH OF SOUTHWEST FENCE CORNER

LOCATION OF WELL
SHOW LOCATION IN SECTION PLAT
COUNTY: ST LOUIS
SURFACE ELEVATION: 451.4
SMALLEST ¼ ____ ¼ ____ ¼ ____ ¼ LARGEST ¼
SEC. ____ TWN. 47 N,RNG. 5 E OR W
LAT. 38° 46' 01" LONG. 90° 26' 58"

MONITORING WELL INSTALLATION CONTRACTOR'S NAME: LAYNE WESTERN CO., INC.
PERMIT NUMBER: 001238 WPM

DRILLING CONTRACTOR'S NAME: LAYNE WESTERN CO., INC.
PERMIT NUMBER: 001253 WPM

WELL CONSTRUCTION INFORMATION

TYPE OF WELL: ☐ MONITORING WELL ☒ PIEZOMETER ☐ OTHER ____
TYPE OF POTENTIAL SITE: ☐ HAZARDOUS MATERIAL ☒ LANDFILL ☐ OTHER ____ ☐ L.U.S.T.
MONITORING FOR: (CHECK ALL THAT APPLY) ☒ V.O.C. ☐ METALS ☐ PETROLEUM PRODUCT ONLY ☐ OTHER ____

PROTECTIVE CASING DETAILS (IF USED): LENGTH 5 FT. | DIAMETER OF CASING 8x8 IN. | WEIGHT OR SDR # 0.188" | DIAMETER AND DEPTH OF DRILL HOLE 8¼ IN. 28 FT. | JOINTS ☐ THREADED ☐ MECHANICAL ☐ WELDED ☐ OTHER ____ | MATERIAL ☐ THERMO PLASTIC ☒ STEEL ☐ FLUORO POLYMER TYPE ____ | LOCKING CAP? ☒ YES ☐ NO

CAP VENTED ☒ YES ☐ NO | WEEP HOLE? ☒ YES ☐ NO
CASING GROUT DETAILS: MATERIAL ☐ CEMENT ☒ CONCRETE ☐ OTHER ____ | DEPTH FROM THE SURFACE TO THE BOTTOM OF THE CASING GROUT SEAL 3.0 FT.
TYPE OF SURFACE COMPLETION: ☒ ABOVE GROUND ☐ FLUSH MOUNT
DESCRIBE HOW THE FLUSH MOUNT WAS CONSTRUCTED:

CENTRALIZER USED ON RISER: ☒ NO ☐ YES LOCATED AT ____
MATERIAL: ☐ STAINLESS STEEL ☐ OTHER ____

RISER PIPE DETAILS: LENGTH 20.3 FT. | DIAMETER OF RISER PIPE 2 IN. | WEIGHT OR SDR # SCH 80 | DIAMETER OF DRILL HOLE 8¼ IN. | JOINTS ☒ THREADED ☐ MECHANICAL ☐ WELDED ☐ OTHER ____ | MATERIAL ☒ THERMO PLASTIC ☐ STEEL ☐ FLUORO POLYMER ☐ OTHER ____

ANNULAR SEAL: ☐ CEMENT SLURRY ☒ BENTONITE SLURRY ☐ NON SLURRY BENTONITE TYPE: ____ ☐ CEMENT/BENTONITE SLURRY BAGS OF CEMENT USED ____ % BENTONITE USED ____ WATER USED/BAG ____ GAL.
BENTONITE SEAL: MATERIAL BENTONITE ☒ SLURRY ☒ CHIPS ☐ GRANULAR ☐ PELLETS | LENGTH OF SEAL 8.5 | BENTONITE SEAL INSTALLED IN ☒ UNSATURATED ZONE ☐ SATURATED ZONE

	TYPE	GRAIN SIZE	LENGTH OF FILTER PACK	METHOD OF INSTALLATION	Information in this column to be supplied in the Feet from Surface column	FEET FROM SURFACE	FORMATION DESCRIPTION
PRIMARY FILTER PACK	☒ SAND ☐ MANUFACTURED ☐ NATURAL	16-35	15.2 FT.	H.S.A. POUR			
SECONDARY FILTER PACK	☒ SAND ☐ MANUFACTURED ☐ NONE	100	1.3 FT	H.S.A. POUR	Depth to bottom of Protective Casing Seal:	3.0	0-13 Silt
WELL SCREEN	LENGTH OF SCREEN 10 FT	DIAMETER 2 IN.	SLOT SIZE 10	WEIGHT OR SDR # SCH80	MATERIAL ☒ PLASTIC ☐ STEEL ☐ FLUORO POLYMER	Depth to Base of Annular Seal:	11.5	
SUMP DETAILS	LENGTH OF SUMP	DIAMETER OF SUMP	MATERIAL ☐ PVC ☐ STEEL ☐ FLUORO POLYMER ☐ OTHER ____			Depth to Base of Bentonite Seal:	11.5	
BACK FILL	WAS THE WELL BACK FILLED? ☐ YES ☒ NO	MATERIAL USED	LENGTH OF BACK FILLED BORE HOLE			Depth to Top of Primary Filter Pack:	12.8	
						Depth to Top of the Screen:	18.0	13-28 Sand
						Depth to Bottom of the Screen:	28.0	
						Total Depth:	28.0	

STATIC WATER LEVEL FEET FROM MEASURING POINT:
DATE OF STATIC WATER LEVEL:
MEASURING POINT FOR STATIC WATER LEVEL IS: ☒ TOP OF RISER PIPE ☐ OTHER ____
ELEVATION OF MEASURING POINT: 453.71
MULTIPLE CASED WELLS: SUBMIT ADDITIONAL AS BUILT DIAGRAM SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS, AND GROUT USED.
DRILLING EQUIPMENT: ☐ AIR ROTARY ☒ AUGER TYPE 4¼ H.S.A. ☐ REVERSE ROTARY ☐ OTHER ____
DATE WELL DRILLING WAS COMPLETED: 9-27-95

I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE PRIMARY CONTRACTOR/PERMIT #: Loman D. Mahurin Jr. | DATE: 11-15-95
SIGNATURE DRILLER/PERMIT #: Loman D. Mahurin Jr. | DATE: 11-15-95

MO 780-1415 (7-95)
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MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY

MONITORING WELL CERTIFICATION RECORD

OFFICE USE ONLY	DATE RECEIVED
REF. NO. 145103	
C.R. NO.	CHECK NO.
STATE WELL NUMBER	TRANSMITTAL NO.
CHECKED BY	ROUTE
APPROVED BY	ENTERED Ph 1 Ph 2 Ph 3

INFORMATION SUPPLIED BY MONITORING WELL CONTRACTOR

SITE/FACILITY NAME: LAIDLAW BRIDGETON SANITARY LANDFILL
WELL NUMBER: PZ-304AI
SITE ADDRESS: ST. CHARLES ROCK RD
CITY: BRIDGETON
STATE: Mo
ZIP CODE: 63044
OWNER NAME: LAIDLAW WASTE SYSTEMS, INC.
TELEPHONE: 314-241-3710
OWNER ADDRESS: 1938 N. BROADWAY
CITY: ST. LOUIS
STATE: Mo
ZIP CODE: 63102

VARIANCE ISSUED: ☐ YES ☒ NO
DATE ISSUED:
VARIANCE NUMBER: V

DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT IT
AT WEST FENCE LINE, 720' NORTH OF SOUTHWEST FENCE CORNER.

LOCATION OF WELL
SHOW LOCATION IN SECTION PLAT
COUNTY: ST. LOUIS
SURFACE ELEVATION: 451.6
SMALLEST ¼ ____ ¼ ____ ¼ ____ ¼
LARGEST ¼
SEC. ____ TWN. 47 N,RNG. 5 (E OR W)
LAT. 38° 46' 01" LONG. 40° 26' 58"

MONITORING WELL INSTALLATION CONTRACTOR'S NAME: LAYNE WESTERN CO, INC.
PERMIT NUMBER: 001258 WPM

DRILLING CONTRACTOR'S NAME: LAYNE WESTERN CO, INC.
PERMIT NUMBER: 001258 WPM

WELL CONSTRUCTION INFORMATION

TYPE OF WELL: ☐ MONITORING WELL ☒ PIEZOMETER ☐ OTHER
TYPE OF POTENTIAL SITE: ☐ HAZARDOUS MATERIAL ☒ LANDFILL ☐ OTHER ☐ L.U.S.T.
MONITORING FOR: (CHECK ALL THAT APPLY) ☒ V.O.C. ☐ METALS ☐ PETROLEUM PRODUCT ☐ OTHER ONLY

PROTECTIVE CASING DETAILS (IF USED):
LENGTH: 5 FT. | DIAMETER OF CASING: 8x8 IN | WEIGHT OR SDR #: 0.188" | DIAMETER AND DEPTH OF DRILL HOLE: 8¼ IN. 50 FT.
JOINTS: ☐ THREADED ☐ MECHANICAL ☐ WELDED ☐ OTHER
MATERIAL: ☒ STEEL ☐ THERMO PLASTIC ☐ FLUORO POLYMER ☐ OTHER
LOCKING CAP? ☒ YES ☐ NO

CAP VENTED ☒ YES ☐ NO
WEEP HOLE? ☒ YES ☐ NO
CASING GROUT DETAILS: MATERIAL: ☐ CEMENT ☒ CONCRETE ☐ OTHER
DEPTH FROM THE SURFACE TO THE BOTTOM OF THE CASING GROUT SEAL: 3.0 FT.
TYPE OF SURFACE COMPLETION: ☒ ABOVE GROUND ☐ FLUSH MOUNT
DESCRIBE HOW THE FLUSH MOUNT WAS CONSTRUCTED

CENTRALIZER USED ON RISER: ☒ NO ☐ YES LOCATED AT
MATERIAL: ☐ STAINLESS STEEL ☐ OTHER

RISER PIPE DETAILS:
LENGTH: 42.4 FT. | DIAMETER OF RISER PIPE: 2 IN. | WEIGHT OR SDR #: SCH 80 | DIAMETER OF DRILL HOLE: 8¼ IN.
JOINTS: ☒ THREADED ☐ MECHANICAL ☐ WELDED ☐ OTHER
MATERIAL: ☒ THERMO PLASTIC ☐ STEEL ☐ FLUORO POLYMER ☐ OTHER

ANNULAR SEAL: ☐ CEMENT SLURRY ☒ BENTONITE SLURRY ☐ NON SLURRY BENTONITE ☐ CEMENT/BENTONITE SLURRY
TYPE: ____ BAGS OF CEMENT USED ____ % BENTONITE USED ____ WATER USED/BAG ____ GAL.

BENTONITE SEAL: MATERIAL: BENTONITE ☒ SLURRY ☐ CHIPS ☐ GRANULAR ☐ PELLETS
LENGTH OF SEAL: 3.9
BENTONITE SEAL INSTALLED IN: ☐ UNSATURATED ZONE ☒ SATURATED ZONE

PRIMARY FILTER PACK: TYPE: ☒ SAND ☐ MANUFACTURED ☐ NATURAL | GRAIN SIZE: 16-35 | LENGTH OF FILTER PACK: 13.5 FT. | METHOD OF INSTALLATION: H.S.A. POUR

SECONDARY FILTER PACK: TYPE: ☒ SAND ☐ MANUFACTURED ☐ NONE | GRAIN SIZE: 100 | LENGTH OF FILTER PACK: 0.6 FT. | METHOD OF INSTALLATION: H.S.A. POUR

WELL SCREEN: LENGTH OF SCREEN: 10 FT. | DIAMETER: 2 IN. | SLOT SIZE: 10 | WEIGHT OR SDR #: SCH80 | MATERIAL: ☒ PLASTIC ☐ STEEL ☐ FLUORO POLYMER

SUMP DETAILS: LENGTH OF SUMP | DIAMETER OF SUMP | MATERIAL: ☐ PVC ☐ STEEL ☐ FLUORO POLYMER ☐ OTHER

BACK FILL: WAS THE WELL BACK FILLED? ☐ YES ☒ NO | MATERIAL USED | LENGTH OF BACK FILLED BORE HOLE

Information in this column to be supplied in the Feet from Surface column	FEET FROM SURFACE	FORMATION DESCRIPTION
Depth to bottom of Protective Casing Seal:	3.0	0-15 Gray silty clay
Depth to Base of Annular Seal:	32.0	15-18 Silty sand 18-28 Sand & gravel
Depth to Base of Bentonite Seal:	35.9	28-50 Sand
Depth to Top of Primary Filter Pack:	36.5	
Depth to Top of the Screen:	40.0	
Depth to Bottom of the Screen:	50.0	
Total Depth:	500	
DATE WELL DRILLING WAS COMPLETED	10-02-95	

STATIC WATER LEVEL FEET FROM MEASURING POINT:
DATE OF STATIC WATER LEVEL:
MEASURING POINT FOR STATIC WATER LEVEL IS: ☒ TOP OF RISER PIPE ☐ OTHER
ELEVATION OF MEASURING POINT: 454.02

MULTIPLE CASED WELLS
SUBMIT ADDITIONAL AS BUILT DIAGRAM SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS, AND GROUT USED

DRILLING EQUIPMENT: ☐ AIR ROTARY ☒ AUGER TYPE 4¼ H.S.A. ☐ REVERSE ROTARY ☐ OTHER

I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE PRIMARY CONTRACTOR/PERMIT #	DATE	SIGNATURE DRILLER/PERMIT #	DATE
Lorman D. Malwitz Jr.	11-15-95	Lorman D. Malwitz Jr.	11-15-95

MO 780-1415 (7-95)
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MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY

MONITORING WELL CERTIFICATION RECORD

OFFICE USE ONLY	DATE RECEIVED
REF. NO. 145104	
C.R. NO.	CHECK NO.
STATE WELL NUMBER	TRANSMITTAL NO.
CHECKED BY	ROUTE
APPROVED BY	ENTERED Ph 1 Ph 2 Ph 3

INFORMATION SUPPLIED BY MONITORING WELL CONTRACTOR

SITE/FACILITY NAME: LAIDLAW BRIDGETON SANITARY LANDFILL
WELL NUMBER: PZ-305AI
SITE ADDRESS: ST. CHARLES ROCK RD. | CITY: BRIDGETON | STATE: Mo | ZIP CODE: 63044
OWNER NAME: LAIDLAW WASTE SYSTEMS, INC. | TELEPHONE: 314-241-3710
OWNER ADDRESS: 1838 N. BROADWAY | CITY: ST. LOUIS | STATE: Mo | ZIP CODE: 63102

VARIANCE ISSUED: ☐ YES ☒ NO | DATE ISSUED | VARIANCE NUMBER: V

DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT IT:
SOUTH OF OVERHEAD CONVEYOR, 90' SOUTHEAST OF ROADWAY, 150' WEST OF SMALL BUILDING.

LOCATION OF WELL — SHOW LOCATION IN SECTION PLAT
COUNTY: ST. LOUIS
SURFACE ELEVATION: 457.6
SMALLEST ¼ ____ ¼ ____ ¼ ____ ¼ LARGEST ¼
SEC. ____ TWN. 47 N,RNG. 5 E OR W
LAT. 38 ° 46 ' 01 " LONG. 90 ° 26 ' 44 "

MONITORING WELL INSTALLATION CONTRACTOR'S NAME: LAYNE WESTERN CO, INC. | PERMIT NUMBER: 001358 WIPM
DRILLING CONTRACTOR'S NAME: LAYNE WESTERN CO, INC. | PERMIT NUMBER: 001358 WIPM

WELL CONSTRUCTION INFORMATION

TYPE OF WELL: ☐ MONITORING WELL ☒ PIEZOMETER ☐ OTHER
TYPE OF POTENTIAL SITE: ☐ HAZARDOUS MATERIAL ☒ LANDFILL ☐ OTHER ☐ L.U.S.T.
MONITORING FOR: (CHECK ALL THAT APPLY) ☒ V.O.C. ☐ METALS ☐ PETROLEUM PRODUCT ☐ OTHER ____ ONLY

PROTECTIVE CASING DETAILS (IF USED): LENGTH 5 FT. | DIAMETER OF CASING 8X8 IN. | WEIGHT OR SDR # 0.188" | DIAMETER AND DEPTH OF DRILL HOLE 8¼ IN. ____ FT. | JOINTS ☐ THREADED ☐ MECHANICAL ☐ WELDED ☐ OTHER | MATERIAL ☐ THERMO PLASTIC ☒ STEEL ☐ FLUORO POLYMER TYPE ____ | LOCKING CAP? ☒ YES ☐ NO

CASING GROUT DETAILS: CAP VENTED ☒ YES ☐ NO | WEEP HOLE? ☒ YES ☐ NO | MATERIAL ☐ CEMENT ☒ CONCRETE ☐ OTHER ____ | DEPTH FROM THE SURFACE TO THE BOTTOM OF THE CASING GROUT SEAL 3.0 FT. | TYPE OF SURFACE COMPLETION ☒ ABOVE GROUND ☐ FLUSH MOUNT | DESCRIBE HOW THE FLUSH MOUNT WAS CONSTRUCTED

CENTRALIZER USED ON RISER: ☒ NO ☐ YES LOCATED AT ____ | MATERIAL ☐ STAINLESS STEEL ☐ OTHER ____

RISER PIPE DETAILS: LENGTH 55.7 FT. | DIAMETER OF RISER PIPE 2 IN. | WEIGHT OR SDR # SCH80 | DIAMETER OF DRILL HOLE 8¼ IN. | JOINTS ☒ THREADED ☐ MECHANICAL ☐ WELDED ☐ OTHER ____ | MATERIAL ☒ THERMO PLASTIC ☐ STEEL ☐ FLUORO POLYMER ☐ OTHER ____

ANNULAR SEAL: ☐ CEMENT SLURRY ☒ BENTONITE SLURRY ☐ NON SLURRY BENTONITE TYPE: ____ ☐ CEMENT/BENTONITE SLURRY BAGS OF CEMENT USED ____ % BENTONITE USED ____ WATER USED/BAG ____ GAL.

BENTONITE SEAL: MATERIAL BENTONITE ☒ SLURRY ☐ CHIPS ☐ GRANULAR ☐ PELLETS | LENGTH OF SEAL 9.2 | BENTONITE SEAL INSTALLED IN ☐ UNSATURATED ZONE ☒ SATURATED ZONE

	TYPE	GRAIN SIZE	LENGTH OF FILTER PACK	METHOD OF INSTALLATION	Information in this column to be supplied in the Feet from Surface column	FEET FROM SURFACE	FORMATION DESCRIPTION
PRIMARY FILTER PACK	☒ SAND ☐ MANUFACTURED ☐ NATURAL	16-35	14.3 FT.	TREMIE			0-2 Gravel
SECONDARY FILTER PACK	☒ SAND ☐ MANUFACTURED ☐ NONE	100	0.5 FT	TREMIE	Depth to bottom of Protective Casing Seal:	3.0	2-10 Silty clay
WELL SCREEN	LENGTH OF SCREEN 10 FT.	DIAMETER 2 IN.	SLOT SIZE 10	WEIGHT OR SDR # SCH80	MATERIAL ☒ PLASTIC ☐ STEEL ☐ FLUORO POLYMER	Depth to Base of Annular Seal: 40.0	10-18 Silt 18-25 Silty clay
SUMP DETAILS	LENGTH OF SUMP	DIAMETER OF SUMP	MATERIAL ☐ PVC ☐ STEEL ☐ FLUORO POLYMER ☐ OTHER		Depth to Base of Bentonite Seal: 49.2		25-64 Sand
BACK FILL	WAS THE WELL BACK FILLED? ☐ YES ☒ NO	MATERIAL USED	LENGTH OF BACK FILLED BORE HOLE		Depth to Top of Primary Filter Pack: 49.7		
					Depth to Top of the Screen: 54.0		
					Depth to Bottom of the Screen: 64.0		
					Total Depth: 64.0		

STATIC WATER LEVEL ____ FEET FROM MEASURING POINT
DATE OF STATIC WATER LEVEL
MEASURING POINT FOR STATIC WATER LEVEL IS: ☒ TOP OF RISER PIPE ☐ OTHER ____
ELEVATION OF MEASURING POINT 459.28
MULTIPLE CASED WELLS: SUBMIT ADDITIONAL AS BUILT DIAGRAM SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS, AND GROUT USED.
DRILLING EQUIPMENT: ☐ AIR ROTARY ☒ AUGER TYPE 4¼ H.S.A. ☐ REVERSE ROTARY ☐ OTHER ____
DATE WELL DRILLING WAS COMPLETED 10-19-95

I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE PRIMARY CONTRACTOR/PERMIT # Loman D. Mahurin Jr. | DATE 11-15-95 | SIGNATURE DRILLER/PERMIT # Loman D. Mahurin Jr. | DATE 11-15-95

MO 780-1415 (7-95)
DISTRIBUTION: WHITE/DIVISION CANARY/MONITORING WELL CONTRACTOR PINK/OWNER
MAIL WHITE COPY TO: DEPARTMENT OF NATURAL RESOURCES, P.O. BOX 250, ROLLA, MO 65402
RECYCLED PAPER

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY

MONITORING WELL CERTIFICATION RECORD

OFFICE USE ONLY	DATE RECEIVED
REF. NO. 145105	
C.R. NO.	CHECK NO.
STATE WELL NUMBER	TRANSMITTAL NO.
CHECKED BY	ROUTE
APPROVED BY	ENTERED Ph 1 Ph 2 Ph 3

INFORMATION SUPPLIED BY MONITORING WELL CONTRACTOR

SITE/FACILITY NAME: LAIDLAW BRIDGETON SANITARY LANDFILL
WELL NUMBER: LR-100
SITE ADDRESS: ST. CHARLES ROCK RD
CITY: BRIDGETON
STATE: MO
ZIP CODE: 63044
OWNER NAME: LAIDLAW WASTE SYSTEMS, INC.
TELEPHONE: 314-241-3710
OWNER ADDRESS: 1838 N. BROADWAY
CITY: ST. LOUIS
STATE: MO
ZIP CODE: 63102

VARIANCE ISSUED: ☐ YES ☒ NO
DATE ISSUED:
VARIANCE NUMBER: V

DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT IT
200' NORTHEAST OF SOUTH FENCE AND 385' NORTHWEST OF WESTERN MOST BUILDING AT SOUTH ENTRANCE OFF OLD ST CHARLES ROCK RD.

LOCATION OF WELL
SHOW LOCATION IN SECTION PLAT
COUNTY: ST. LOUIS
SURFACE ELEVATION: 467.2
SMALLEST ¼ ____ ¼ ____ ¼ ____ ¼ LARGEST ¼
SEC. ____ TWN. 47 N.RNG. 5 (E OR W)
LAT. 38 ° 45 ' 53 " LONG. 90 ° 26 ' 52 "

MONITORING WELL INSTALLATION CONTRACTOR'S NAME: LAYNE WESTERN CO, INC. — PERMIT NUMBER: 001258 WPM
DRILLING CONTRACTOR'S NAME: LAYNE WESTERN CO., INC. — PERMIT NUMBER: 001258 WPM

WELL CONSTRUCTION INFORMATION

TYPE OF WELL: ☐ MONITORING WELL ☒ PIEZOMETER ☐ OTHER ____
TYPE OF POTENTIAL SITE: ☐ HAZARDOUS MATERIAL ☒ LANDFILL ☐ OTHER ____ ☐ L.U.S.T. ____
MONITORING FOR: (CHECK ALL THAT APPLY) ☒ V.O.C. ☐ METALS ☐ PETROLEUM PRODUCT ONLY ☐ OTHER ____

PROTECTIVE CASING DETAILS (IF USED):
LENGTH: 5 FT. | DIAMETER OF CASING: 8x8 IN. | WEIGHT OR SDR #: 0.188" | DIAMETER AND DEPTH OF DRILL HOLE: 8¼ IN. 26 FT. | JOINTS: ☐ THREADED ☐ MECHANICAL ☐ WELDED ☐ OTHER ____ | MATERIAL: ☐ THERMO PLASTIC ☒ STEEL ☐ FLUORO POLYMER TYPE ____ | LOCKING CAP? ☒ YES ☐ NO

CAP VENTED: ☒ YES ☐ NO
WEEP HOLE? ☒ YES ☐ NO
CASING GROUT DETAILS: MATERIAL: ☐ CEMENT ☒ CONCRETE ☐ OTHER ____
DEPTH FROM THE SURFACE TO THE BOTTOM OF THE CASING GROUT SEAL: 3.0 FT.
TYPE OF SURFACE COMPLETION: ☒ ABOVE GROUND ☐ FLUSH MOUNT
DESCRIBE HOW THE FLUSH MOUNT WAS CONSTRUCTED:

CENTRALIZER USED ON RISER: ☒ NO ☐ YES LOCATED AT ____
MATERIAL: ☐ STAINLESS STEEL ☐ OTHER ____

RISER PIPE DETAILS:
LENGTH: 22.9 FT. | DIAMETER OF RISER PIPE: 2 IN. | WEIGHT OR SDR #: SCH80 | DIAMETER OF DRILL HOLE: 8¼ IN. | JOINTS: ☒ THREADED ☐ MECHANICAL ☐ WELDED ☐ OTHER ____ | MATERIAL: ☒ THERMO PLASTIC ☐ STEEL ☐ FLUORO POLYMER ☐ OTHER ____

ANNULAR SEAL: ☐ CEMENT SLURRY ☒ BENTONITE SLURRY ☐ NON SLURRY BENTONITE ☐ CEMENT/BENTONITE SLURRY
TYPE: ____ BAGS OF CEMENT USED ____ % BENTONITE USED ____ WATER USED/BAG ____ GAL.
BENTONITE SEAL: MATERIAL: BENTONITE ☐ SLURRY ☒ CHIPS ☐ GRANULAR ☐ PELLETS | LENGTH OF SEAL: 1.0 | BENTONITE SEAL INSTALLED IN: ☒ UNSATURATED ZONE ☐ SATURATED ZONE

	TYPE	GRAIN SIZE	LENGTH OF FILTER PACK	METHOD OF INSTALLATION	Information in this column to be supplied in the Feet from Surface column	FEET FROM SURFACE	FORMATION DESCRIPTION
PRIMARY FILTER PACK	☒ SAND ☐ MANUFACTURED ☐ NATURAL	16-35	80 FT.	H.S.A. POUR			
SECONDARY FILTER PACK	☒ SAND ☐ MANUFACTURED ☐ NONE	100	1.0 FT.	H.S.A. POUR	Depth to bottom of Protective Casing Seal:	3.0	0-6 Clayey silt
WELL SCREEN	LENGTH OF SCREEN: 5 FT.	DIAMETER: 2 IN.	SLOT SIZE: 10	WEIGHT OR SDR #: SCH80	MATERIAL: ☒ PLASTIC ☐ STEEL ☐ FLUORO POLYMER	Depth to Base of Annular Seal:	16.0	6-25.5 Trash
SUMP DETAILS	LENGTH OF SUMP	DIAMETER OF SUMP	MATERIAL: ☐ PVC ☐ STEEL ☐ FLUORO POLYMER ☐ OTHER ____		Depth to Base of Bentonite Seal:	17.0	
BACK FILL	WAS THE WELL BACK FILLED? ☐ YES ☒ NO	MATERIAL USED	LENGTH OF BACK FILLED BORE HOLE		Depth to Top of Primary Filter Pack:	18.0	
					Depth to Top of the Screen:	21.0	
					Depth to Bottom of the Screen:	26.0	25.5-28 Clay
					Total Depth:	26.0	

STATIC WATER LEVEL FEET FROM MEASURING POINT: ____
DATE OF STATIC WATER LEVEL: ____
MEASURING POINT FOR STATIC WATER LEVEL IS: ☒ TOP OF RISER PIPE ☐ OTHER ____
ELEVATION OF MEASURING POINT: 469.12
MULTIPLE CASED WELLS: SUBMIT ADDITIONAL AS BUILT DIAGRAM SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS, AND GROUT USED.
DRILLING EQUIPMENT: ☐ AIR ROTARY ☒ AUGER TYPE 4¼ H.S.A. ☐ REVERSE ROTARY ☐ OTHER ____
DATE WELL DRILLING WAS COMPLETED: 10-04-95

I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE PRIMARY CONTRACTOR/PERMIT #: Leonard J. Mahurin Jr. — DATE: 11-15-95
SIGNATURE DRILLER/PERMIT #: Leonard J. Mahurin Jr. — DATE: 11-15-95

MO 780-1415 (7-95)
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MAIL WHITE COPY TO: DEPARTMENT OF NATURAL RESOURCES, P.O. BOX 250, ROLLA, MO 65402
ENCLOSE $25 PER MONITORING WELL FOR THIS CERTIFICATION
RECYCLED PAPER

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY

REGISTRATION RECORD

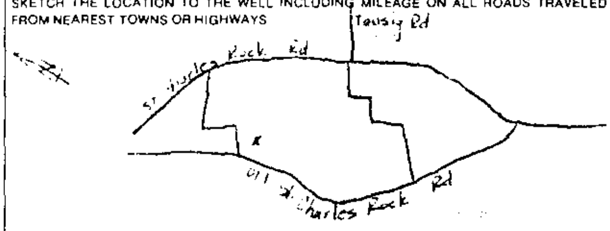
OFFICE USE ONLY	DATE RECEIVED	
REF. NO. 131862		
ROUTE	P.W.S. NUMBER	CHECK NUMBER
STATE WELL NUMBER	TRANSMITTAL NO.	
CHECKED BY	CROSS REFERENCE NO.	
APPROVED BY / DATE	ENTERED Ph 1 / Ph 2 / Ph 3	

INFORMATION SUPPLIED BY OWNER

NAME: Laidlaw Waste Systems, Inc.
TELEPHONE: 314-241-3710
ADDRESS: [illegible] Broadway
CITY: St. Louis
STATE: MO
ZIP CODE: 63102
SITE NAME: Laidlaw Sanitary Landfill
WELL NUMBER: LR-101
ADDRESS OF WELL SITE OR SITE NAME (IF DIFFERENT THAN ABOVE): St. Charles Rock Rd
OWNER STATUS: ☐ BUILDER ☐ PRIVATE HOME OWNER ☐ DEVELOPER ☒ OTHER (SPECIFY) Landfill
CITY: Bridgeton
STATE: Mo
ZIP CODE: 63044
PURPOSE OF REGISTRATION FORM: ☐ ABANDONED WELL ☐ MINERAL EXPLORATORY ☐ WELL RECONSTRUCTION TEST HOLE ☒ OTHER Abandoned Piezometer
VARIANCE ISSUED? ☐ YES ☒ NO
VARIANCE NUMBER:
WELL CERTIFICATION NUMBER:
DATE ORIGINALLY DRILLED: 10-[illegible]-95
SIGNATURE (WELL OWNER):
DATE:

INFORMATION SUPPLIED BY CONTRACTOR

SKETCH THE LOCATION TO THE WELL INCLUDING MILEAGE ON ALL ROADS TRAVELED FROM NEAREST TOWNS OR HIGHWAYS



LOCATION OF WELL
SHOW LOCATION IN SECTION PLAT
QUAD ______ COUNTY St. Louis
ELEV ______ AREA NO. ______
SMALLEST ¼ ______ ¼ ______ ¼ ______ ¼ LARGEST ¼
SEC. ______ TWN. 47 N,RNG. 55 E OR W
LAT. 38° 46' 02" LONG. 90° 26' 53"

DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT THE WELL
775' North of southwest fence corner and 390' East of fence
Hole was drilled and then abandoned before well was actually set

CONTRACTOR'S NAME: Layne Western Co, Inc. PERMIT NUMBER 001258
DRILLERS NAME: Dale Mahurin PERMIT NUMBER 001258 [illegible]

ABANDONMENT OF WELLS

FORMER USE OF WELL: ☐ HAND DUG ☐ SOIL BORING ☐ DOMESTIC (1 TO 3 CONNECTIONS) ☐ PUBLIC WATER SUPPLY ☐ MULTI-FAMILY ☐ MINERAL EXPLORATORY TEST HOLE ☐ HEAT PUMP ☒ MONITORING ☐ IRRIGATION ☐ OTHER ______
ORIGINAL DRILLER (IF KNOWN): [illegible]
DATE ORIGINALLY DRILLED: 10-10-95
DATE PLUGGED: [illegible]-10-95
STATIC WATER LEVEL: ______ FT
PUMP REMOVED FROM WELL? ☐ YES N/A ☐ NO
DEPTH OF THE WELL: 35'
LENGTH OF CASING: N/A
~~CASING DIAMETER~~/WELL DIA: 8 1/4"
GROUT INSTALLATION METHOD: ☐ GRAVITY ☒ TREMIE
CASING CUT OFF THREE FEET BELOW SURFACE? ☒ YES ☐ NO N/A
TYPE OF CASING: ☐ STEEL ☐ PLASTIC ☐ OTHER N/A
GROUT MATERIAL USED: NEAT CEMENT ☐ HI-EARLY ☒ PORTLAND TYPE 1 ☐ OTHER ______ ☒ BENTONITE SLURRY ☐ OTHER ______
BENTONITE: ☒ POWDER ☐ GRANULAR ☐ CHIPS ☐ PELLETS
NUMBER OF BAGS OF GROUT USED: 20.5
POUNDS OF GROUT PER BAG: 47
IF NEAT CEMENT USED, HOW MANY GALLONS OF WATER MIXED PER BAG OF CEMENT: [illegible]
TYPE OF FILL MATERIAL USED: Cement / Bentonite Grout
AMOUNT OF FILL MATERIAL USED: 0.75 CU. YDS.
DEPTH TO TOP OF FILL MATERIAL: 3'
WELL DISINFECTED BEFORE PLUGGING? ☐ YES ☒ NO
NUMBER USED FOR DISINFECTION: GALLONS OF CHLORINE ______ POUNDS OF CHLORINE ______ TABLETS OF CHLORINE ______
WAS THE WELL ABANDONED BECAUSE OF HOOKING UP TO A PUBLIC OR RURAL WATER SUPPLY DISTRICT? ☐ YES ☒ NO
IF YES, WHAT IS THE NAME OF THE WATER DISTRICT:

WELL RECONSTRUCTION

TYPE OF REPAIR: ☐ RAISED CASING ☐ LINING OF WELL ☐ DEEPENING OF WELL ☐ OTHER ______
USE OF WELL: ☐ DOMESTIC (1 TO 3 CONNECTIONS) ☐ PUBLIC WATER SUPPLY ☐ MULTI-FAMILY ☐ MONITORING ☐ HEAT PUMP ☐ OTHER ______ ☐ IRRIGATION
DIA. OF WELL CASING ______ IN.
WAS WELL DISINFECTED AFTER RECONSTRUCTION ☐ YES ☐ NO
DATE RECONSTRUCTION COMPLETED
RAISED CASING INFORMATION: LENGTH OF CASING ADDED ______ FT.; MATERIAL ☐ STEEL ☐ PLASTIC; METHOD OF ATTACHMENT ☐ THREADED ☐ FUSED ☐ WELDED ☐ GLUED ☐ COUPLED
LINER DETAILS: PURPOSE OF LINER ☐ USED ONLY TO HOLD BACK FORMATION ☐ USED TO SEAL OUT CONTAMINATION OR OTHER CONDITIONS; DIAMETER OF LINER ______ IN.; WEIGHT OR SDR #
DEPTH TO THE TOP OF LINER FROM SURFACE ______ FT.
MATERIAL: ☐ PLASTIC ☐ STEEL
AMOUNT OF LINER USED ______ FT.
JOINTS: ☐ GLUED ☐ WELDED ☐ OTHER ______
LINER PACKER DETAILS: TYPE USED ☐ NONE ☐ RUBBER BOOT; DEPTH(S) SET
LINER GROUT DETAILS: POSITION OF SEAL ☐ FULL LENGTH ☐ BETWEEN PACKERS; MATERIAL: CEMENT: ☐ PORTLAND TYPE 1 ☐ HI EARLY; BENTONITE: ☐ CHIPS ☐ PELLETS ☐ SLURRY ☐ GRANULAR
DEPTH PUMP WAS SET ______ FT.
GPM ______
DEPTH FROM SURFACE TO TOP OF THE GROUT SEAL ______ FT.
DEPTH FROM SURFACE TO BOTTOM OF THE GROUT SEAL ______ FT.

CHECK THE BOX WHICH APPLIES

☒ I HEREBY CERTIFY THAT THE WELL HEREIN DESCRIBED WAS ABANDONED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE ABANDONMENT OF WELLS

☐ I HEREBY CERTIFY THAT THE WELL HEREIN DESCRIBED WAS REPAIRED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE REPAIR OF WELLS

CONTRACTOR'S SIGNATURE: [illegible]
DATE: 11-15-95

DEEPENING OF WELL INFORMATION

DEPTH FROM	DEPTH TO	FORMATION DESCRIPTION	YIELD

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MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY

MONITORING WELL CERTIFICATION RECORD

OFFICE USE ONLY	DATE RECEIVED
REF. NO. 145106	
C.R. NO.	CHECK NO.
STATE WELL NUMBER	TRANSMITTAL NO.
CHECKED BY	ROUTE
APPROVED BY	ENTERED Ph 1 Ph 2 Ph 3

INFORMATION SUPPLIED BY MONITORING WELL CONTRACTOR

SITE/FACILITY NAME: LAIDLAW BRIDGETON SANITARY LANDFILL
WELL NUMBER: LR-102
SITE ADDRESS: ST. CHARLES ROCK RD
CITY: BRIDGETON
STATE: Mo
ZIP CODE: 63044
OWNER NAME: LAIDLAW WASTE SYSTEMS, INC.
TELEPHONE: 314-241-3710
OWNER ADDRESS: 1838 N. BROADWAY
CITY: ST. LOUIS
STATE: Mo
ZIP CODE: 63102

VARIANCE ISSUED: ☐ YES ☒ NO
DATE ISSUED:
VARIANCE NUMBER: V

DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT IT
WEST SIDE OF SITE, 390' EAST OF FENCE LINE AND 1580' NORTH OF SOUTHWEST FENCE CORNER. (ON TOP OF HILL)

LOCATION OF WELL
SHOW LOCATION IN SECTION PLAT
COUNTY: ST. LOUIS
SURFACE ELEVATION: 512.0
SMALLEST ¼ ____ ¼ ____ ¼ ____ ¼ LARGEST ¼
SEC. ____ TWN. 47 N,RNG. 5 E OR W
LAT. 38 ° 46 ' 09 " LONG. 90 ° 26 ' 53 "

MONITORING WELL INSTALLATION CONTRACTOR'S NAME: LAYNE WESTERN CO, INC.
PERMIT NUMBER: 001258 WPM
DRILLING CONTRACTOR'S NAME: LAYNE WESTERN CO, INC.
PERMIT NUMBER: 001258 WPM

WELL CONSTRUCTION INFORMATION

TYPE OF WELL: ☐ MONITORING WELL ☒ PIEZOMETER ☐ OTHER
TYPE OF POTENTIAL SITE: ☐ HAZARDOUS MATERIAL ☒ LANDFILL ☐ OTHER ☐ L.U.S.T.
MONITORING FOR: (CHECK ALL THAT APPLY) ☒ V.O.C. ☐ METALS ☐ PETROLEUM PRODUCT ☐ OTHER ONLY

PROTECTIVE CASING DETAILS (IF USED):
LENGTH: 5 FT. | DIAMETER OF CASING: 8x8 IN. | WEIGHT OR SDR #: 0.188" | DIAMETER AND DEPTH OF DRILL HOLE: 8¼ IN. 76 FT.
JOINTS: ☐ THREADED ☐ MECHANICAL ☐ WELDED ☐ OTHER
MATERIAL: ☐ THERMO PLASTIC ☒ STEEL ☐ FLUORO POLYMER TYPE
LOCKING CAP? ☒ YES ☐ NO

CAP VENTED: ☒ YES ☐ NO
WEEP HOLE? ☒ YES ☐ NO
CASING GROUT DETAILS: MATERIAL: ☐ CEMENT ☒ CONCRETE ☐ OTHER
DEPTH FROM THE SURFACE TO THE BOTTOM OF THE CASING GROUT SEAL: 3.0 FT.
TYPE OF SURFACE COMPLETION: ☒ ABOVE GROUND ☐ FLUSH MOUNT
DESCRIBE HOW THE FLUSH MOUNT WAS CONSTRUCTED

CENTRALIZER USED ON RISER: ☒ NO ☐ YES LOCATED AT
MATERIAL: ☐ STAINLESS STEEL ☐ OTHER

RISER PIPE DETAILS:
LENGTH: 56.5 FT. | DIAMETER OF RISER PIPE: 2 IN. | WEIGHT OR SDR #: SCH 80 | DIAMETER OF DRILL HOLE: 8¼ IN.
JOINTS: ☒ THREADED ☐ MECHANICAL ☐ WELDED ☐ OTHER
MATERIAL: ☒ THERMO PLASTIC ☐ STEEL ☐ FLUORO POLYMER ☐ OTHER

ANNULAR SEAL: ☐ CEMENT SLURRY ☒ BENTONITE SLURRY ☐ NON SLURRY BENTONITE TYPE: ☐ CEMENT/BENTONITE SLURRY BAGS OF CEMENT USED % BENTONITE USED WATER USED/BAG GAL.
BENTONITE SEAL: MATERIAL: BENTONITE ☒ SLURRY ☐ CHIPS ☐ GRANULAR ☐ PELLETS
LENGTH OF SEAL: 3.8
BENTONITE SEAL INSTALLED IN: ☒ UNSATURATED ZONE ☐ SATURATED ZONE

PRIMARY FILTER PACK:
TYPE: ☒ SAND ☐ MANUFACTURED ☐ NATURAL
GRAIN SIZE: 16-35
LENGTH OF FILTER PACK: 9.4 FT.
METHOD OF INSTALLATION: H.S.A. POUR

SECONDARY FILTER PACK:
TYPE: ☒ SAND ☐ MANUFACTURED ☐ NONE
GRAIN SIZE: 100
LENGTH OF FILTER PACK: 1.4 FT
METHOD OF INSTALLATION: H.S.A. POUR

WELL SCREEN:
LENGTH OF SCREEN: 5 FT.
DIAMETER: 2 IN.
SLOT SIZE: 10
WEIGHT OR SDR #: SCH 80
MATERIAL: ☒ PLASTIC ☐ STEEL ☐ FLUORO POLYMER

SUMP DETAILS:
LENGTH OF SUMP:
DIAMETER OF SUMP:
MATERIAL: ☐ PVC ☐ STEEL ☐ FLUORO POLYMER ☐ OTHER

BACK FILL:
WAS THE WELL BACK FILLED? ☒ YES ☐ NO
MATERIAL USED: MED. BENT. CHIPS
LENGTH OF BACK FILLED BORE HOLE: 14.4'

Information in this column to be supplied in the Feet from Surface column	FEET FROM SURFACE	FORMATION DESCRIPTION
Depth to bottom of Protective Casing Seal:	3.0	0-1.5 Clayey silt 1.5-76 Trash
Depth to Base of Annular Seal:	47.0	
Depth to Base of Bentonite Seal:	50.8	
Depth to Top of Primary Filter Pack:	52.2	
Depth to Top of the Screen:	55.0	
Depth to Bottom of the Screen:	60.0	
Total Depth:	76.0	

STATIC WATER LEVEL FEET FROM MEASURING POINT:
DATE OF STATIC WATER LEVEL:
MEASURING POINT FOR STATIC WATER LEVEL IS: ☒ TOP OF RISER PIPE ☐ OTHER
ELEVATION OF MEASURING POINT: 513.52

MULTIPLE CASED WELLS
SUBMIT ADDITIONAL AS BUILT DIAGRAM SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS, AND GROUT USED.

DRILLING EQUIPMENT: ☐ AIR ROTARY ☒ AUGER TYPE 4¼ H.S.A. ☐ REVERSE ROTARY ☐ OTHER
DATE WELL DRILLING WAS COMPLETED: 10-08-95

I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE PRIMARY CONTRACTOR/PERMIT #	DATE	SIGNATURE DRILLER/PERMIT #	DATE
Kenneth Mahurin Jr.	11-15-95	Kenneth Mahurin Jr.	11-15-95

MO 780-1415 (7-95)
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MAIL WHITE COPY TO: DEPARTMENT OF NATURAL RESOURCES, P.O. BOX 250, ROLLA, MO 65402
ENCLOSE $35 PER MONITORING WELL FOR THE CERTIFICATION FEE WITHIN 60 DAYS AFTER WELL CONSTRUCTION
RECYCLED PAPER

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY

MONITORING WELL CERTIFICATION RECORD

OFFICE USE ONLY	DATE RECEIVED
REF. NO. 145107	
C.R. NO.	CHECK NO.
STATE WELL NUMBER	TRANSMITTAL NO.
CHECKED BY	ROUTE
APPROVED BY	ENTERED Ph 1 Ph 2 Ph 3

INFORMATION SUPPLIED BY MONITORING WELL CONTRACTOR

SITE/FACILITY NAME: LAIDLAW BRIDGETON SANITARY LANDFILL
WELL NUMBER: LR-103
SITE ADDRESS: ST. CHARLES ROCK RD
CITY: BRIDGETON
STATE: Mo
ZIP CODE: 63044
OWNER NAME: LAIDLAW WASTE SYSTEMS, INC.
TELEPHONE: 314-241-3710
OWNER ADDRESS: 1838 N. BROADWAY
CITY: ST. LOUIS
STATE: MO
ZIP CODE: 63102

VARIANCE ISSUED: ☐ YES ☒ NO
DATE ISSUED:
VARIANCE NUMBER: V

DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT IT
AT WEST BASE OF GRAVEL PILE FOR ASPHALT PLANT.

LOCATION OF WELL
SHOW LOCATION IN SECTION PLAT
COUNTY: St. Louis
SURFACE ELEVATION: 460.1
SMALLEST ¼ LARGEST ¼
SEC. ____ TWN. 47 N,RNG. 5 (E OR W)
LAT. 38 ° 46 ' 05 " LONG. 90 ° 26 ' 48 "

MONITORING WELL INSTALLATION CONTRACTOR'S NAME: LAYNE WESTERN CO, INC.
PERMIT NUMBER: 001258 WPM

DRILLING CONTRACTOR'S NAME: LAYNE WESTERN CO, INC.
PERMIT NUMBER: 001258 WPM

WELL CONSTRUCTION INFORMATION

TYPE OF WELL: ☐ MONITORING WELL ☒ PIEZOMETER ☐ OTHER
TYPE OF POTENTIAL SITE: ☐ HAZARDOUS MATERIAL ☒ LANDFILL ☐ OTHER ☐ L.U.S.T.
MONITORING FOR: (CHECK ALL THAT APPLY) ☒ V.O.C. ☐ METALS ☐ PETROLEUM PRODUCT ☐ OTHER ONLY

PROTECTIVE CASING DETAILS (IF USED):
LENGTH: 5 FT. | DIAMETER OF CASING: 8x8 IN. | WEIGHT OR SDR #: 0.188 | DIAMETER AND DEPTH OF DRILL HOLE: 8¼ IN. 40 FT.
JOINTS: ☐ THREADED ☐ MECHANICAL ☐ WELDED ☐ OTHER
MATERIAL: ☐ THERMO PLASTIC ☒ STEEL ☐ FLUORO POLYMER TYPE
LOCKING CAP? ☒ YES ☐ NO

CAP VENTED: ☒ YES ☐ NO
WEEP HOLE? ☒ YES ☐ NO
CASING GROUT DETAILS: MATERIAL: ☐ CEMENT ☒ CONCRETE ☐ OTHER
DEPTH FROM THE SURFACE TO THE BOTTOM OF THE CASING GROUT SEAL: 3.0 FT.
TYPE OF SURFACE COMPLETION: ☒ ABOVE GROUND ☐ FLUSH MOUNT
DESCRIBE HOW THE FLUSH MOUNT WAS CONSTRUCTED

CENTRALIZER USED ON RISER: ☒ NO ☐ YES LOCATED AT
MATERIAL: ☐ STAINLESS STEEL ☐ OTHER

RISER PIPE DETAILS:
LENGTH: 31.2 FT. | DIAMETER OF RISER PIPE: 2 IN. | WEIGHT OR SDR #: SCH80 | DIAMETER OF DRILL HOLE: 8¼ IN.
JOINTS: ☒ THREADED ☐ MECHANICAL ☐ WELDED ☐ OTHER
MATERIAL: ☒ THERMO PLASTIC ☐ STEEL ☐ FLUORO POLYMER ☐ OTHER

ANNULAR SEAL: ☐ CEMENT SLURRY ☒ BENTONITE SLURRY ☐ NON SLURRY BENTONITE ☐ CEMENT/BENTONITE SLURRY
TYPE: BAGS OF CEMENT USED % BENTONITE USED WATER USED/BAG GAL.
BENTONITE SEAL: MATERIAL: BENTONITE ☒ SLURRY ☐ CHIPS ☐ GRANULAR ☐ PELLETS
LENGTH OF SEAL: 10.6
BENTONITE SEAL INSTALLED IN: ☐ UNSATURATED ZONE ☒ SATURATED ZONE

PRIMARY FILTER PACK: TYPE: ☒ SAND ☐ MANUFACTURED ☐ NATURAL
GRAIN SIZE: 16-35 | LENGTH OF FILTER PACK: 14.7 FT. | METHOD OF INSTALLATION: H.S.A. POUR

SECONDARY FILTER PACK: TYPE: ☒ SAND ☐ MANUFACTURED ☐ NONE
GRAIN SIZE: 100 | LENGTH OF FILTER PACK: 1.7 FT. | METHOD OF INSTALLATION: H.S.A. POUR

WELL SCREEN:
LENGTH OF SCREEN: 10 FT. | DIAMETER: 2 IN. | SLOT SIZE: 10 | WEIGHT OR SDR #: SCH 80
MATERIAL: ☒ PLASTIC ☐ STEEL ☐ FLUORO POLYMER

SUMP DETAILS:
LENGTH OF SUMP | DIAMETER OF SUMP | MATERIAL: ☐ PVC ☐ STEEL ☐ FLUORO POLYMER ☐ OTHER

BACK FILL:
WAS THE WELL BACK FILLED? ☐ YES ☒ NO
MATERIAL USED | LENGTH OF BACK FILLED BORE HOLE

STATIC WATER LEVEL FEET FROM MEASURING POINT
DATE OF STATIC WATER LEVEL
MEASURING POINT FOR STATIC WATER LEVEL IS: ☒ TOP OF RISER PIPE ☐ OTHER
ELEVATION OF MEASURING POINT: 461.28

MULTIPLE CASED WELLS
SUBMIT ADDITIONAL AS BUILT DIAGRAM SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS, AND GROUT USED.

DRILLING EQUIPMENT: ☐ AIR ROTARY ☒ AUGER TYPE 4¼ H.S.A. ☐ REVERSE ROTARY ☐ OTHER

Information in this column to be supplied in the Feet from Surface column	FEET FROM SURFACE	FORMATION DESCRIPTION
		0-7 Gravelly clay
Depth to bottom of Protective Casing Seal:	3.0	
		7-26 Silty clay
Depth to Base of Annular Seal:	13.0	
Depth to Base of Bentonite Seal:	23.6	
Depth to Top of Primary Filter Pack:	25.3	
Depth to Top of the Screen:	30.0	26-40 Silty sand
Depth to Bottom of the Screen:	40.0	
Total Depth:	40.0	
DATE WELL DRILLING WAS COMPLETED	10-20-95	

I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE PRIMARY CONTRACTOR/PERMIT #	DATE	SIGNATURE DRILLER/PERMIT #	DATE
Lorman N. Mahurin Jr.	11-15-95	Lorman N. Mahurin Jr.	11-15-95

MO 780-1415 (7-95)

DISTRIBUTION: WHITE/DIVISION CANARY/MONITORING WELL CONTRACTOR PINK/OWNER
MAIL WHITE COPY TO: DEPARTMENT OF NATURAL RESOURCES, P.O. BOX 250, ROLLA, MO 65402
ENCLOSE $35 PER MONITORING WELL FOR THE CERTIFICATION FEE WITHIN 60 DAYS AFTER WELL COMPLETION

RECYCLED PAPER

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY

MONITORING WELL CERTIFICATION RECORD

OFFICE USE ONLY	DATE RECEIVED
REF. NO. 145108	
C.R. NO.	CHECK NO.
STATE WELL NUMBER	TRANSMITTAL NO.
CHECKED BY	ROUTE
APPROVED BY	ENTERED Ph 1 Ph 2 Ph 3

INFORMATION SUPPLIED BY MONITORING WELL CONTRACTOR

SITE/FACILITY NAME: LAIDLAW BRIDGETON SANITARY LANDFILL
WELL NUMBER: LR-104
SITE ADDRESS: ST. CHARLES ROCK RD. | CITY: BRIDGETON | STATE: Mo | ZIP CODE: 63044
OWNER NAME: LAIDLAW WASTE SYSTEMS, INC. | TELEPHONE: 314-241-3710
OWNER ADDRESS: 1838 N. BROADWAY | CITY: ST. LOUIS | STATE: Mo | ZIP CODE: 63102

VARIANCE ISSUED ☐ YES ☒ NO | DATE ISSUED | VARIANCE NUMBER: V

DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT IT
SOUTH OF OVERHEAD CONVEYOR, MIDWAY BETWEEN ROAD AND BUILDING.

LOCATION OF WELL
SHOW LOCATION IN SECTION PLAT
COUNTY: ST. LOUIS
SURFACE ELEVATION: 458.0
SMALLEST ¼ ____ ¼ ____ ¼ ____ ¼ LARGEST ¼
SEC. ____ TWN. 47 N,RNG. 5 E OR W
LAT. 38 ° 46 ' 01 " LONG. 90 ° 26 ' 43 "

MONITORING WELL INSTALLATION CONTRACTOR'S NAME: LAYNE WESTERN CO., INC. | PERMIT NUMBER: 001258 WPM
DRILLING CONTRACTOR'S NAME: LAYNE WESTERN CO., INC. | PERMIT NUMBER: 001258 WPM

WELL CONSTRUCTION INFORMATION

TYPE OF WELL: ☐ MONITORING WELL ☒ PIEZOMETER ☐ OTHER ____
TYPE OF POTENTIAL SITE: ☐ HAZARDOUS MATERIAL ☒ LANDFILL ☐ L.U.S.T. ☐ OTHER ____
MONITORING FOR: (CHECK ALL THAT APPLY) ☒ V.O.C. ☐ METALS ☐ PETROLEUM PRODUCT ☐ OTHER ____ ONLY

PROTECTIVE CASING DETAILS (IF USED): LENGTH 5 FT. | DIAMETER OF CASING 8x8 IN. | WEIGHT OR SDR # 0.188 | DIAMETER AND DEPTH OF DRILL HOLE 8¼ IN. 40 FT | JOINTS ☐ THREADED ☐ MECHANICAL ☐ WELDED ☐ OTHER ____ | MATERIAL ☒ THERMO PLASTIC ☐ STEEL ☐ FLUORO POLYMER TYPE ____ | LOCKING CAP? ☒ YES ☐ NO

CAP VENTED ☒ YES ☐ NO | WEEP HOLE? ☒ YES ☐ NO
CASING GROUT DETAILS: MATERIAL ☐ CEMENT ☒ CONCRETE ☐ OTHER ____ | DEPTH FROM THE SURFACE TO THE BOTTOM OF THE CASING GROUT SEAL 3.0 FT.
TYPE OF SURFACE COMPLETION: ☒ ABOVE GROUND ☐ FLUSH MOUNT
DESCRIBE HOW THE FLUSH MOUNT WAS CONSTRUCTED

CENTRALIZER USED ON RISER ☒ NO ☐ YES LOCATED AT ____ | MATERIAL ☐ STAINLESS STEEL ☐ OTHER ____

RISER PIPE DETAILS: LENGTH 30.2 FT. | DIAMETER OF RISER PIPE 2 IN. | WEIGHT OR SDR # SCH80 | DIAMETER OF DRILL HOLE 8¼ IN. | JOINTS ☒ THREADED ☐ MECHANICAL ☐ WELDED ☐ OTHER ____ | MATERIAL ☒ THERMO PLASTIC ☐ STEEL ☐ FLUORO POLYMER ☐ OTHER ____

ANNULAR SEAL: ☐ CEMENT SLURRY ☒ BENTONITE SLURRY ☐ NON SLURRY BENTONITE ☐ CEMENT/BENTONITE SLURRY
TYPE: ____ BAGS OF CEMENT USED ____ % BENTONITE USED ____ WATER USED/BAG ____ GAL.
BENTONITE SEAL: MATERIAL BENTONITE ☒ SLURRY ☐ CHIPS ☐ GRANULAR ☐ PELLETS | LENGTH OF SEAL 11.3 VOA | BENTONITE SEAL INSTALLED IN ☒ UNSATURATED ZONE ☐ SATURATED ZONE

PRIMARY FILTER PACK	TYPE ☒ SAND ☐ MANUFACTURED ☐ NATURAL	GRAIN SIZE 16-35	LENGTH OF FILTER PACK 14.3 FT.	METHOD OF INSTALLATION H.S.A. POUR	Information in this column to be supplied in the Feet from Surface column	FEET FROM SURFACE	FORMATION DESCRIPTION
SECONDARY FILTER PACK	TYPE ☒ SAND ☐ MANUFACTURED ☐ NONE	GRAIN SIZE 100	LENGTH OF FILTER PACK 1.4 FT.	METHOD OF INSTALLATION H.S.A. POUR	Depth to bottom of Protective Casing Seal:	3.0	0-2 Gravel 2-10 Silty clay
WELL SCREEN	LENGTH OF SCREEN 10 FT.	DIAMETER 2 IN.	SLOT SIZE 10	WEIGHT OR SDR # SCH80	MATERIAL ☒ PLASTIC ☐ STEEL ☐ FLUORO POLYMER	Depth to Base of Annular Seal:	13.0	10-18 Silt
SUMP DETAILS	LENGTH OF SUMP	DIAMETER OF SUMP	MATERIAL ☐ PVC ☐ STEEL ☐ FLUORO POLYMER ☐ OTHER			Depth to Base of Bentonite Seal:	24.3 VOA	18-26.5 Clay
BACK FILL	WAS THE WELL BACK FILLED? ☐ YES ☒ NO	MATERIAL USED	LENGTH OF BACK FILLED BORE HOLE			Depth to Top of Primary Filter Pack:	25.7	
						Depth to Top of the Screen:	28.5	26.5 39.3 Sand
						Depth to Bottom of the Screen:	38.5	39.3-40 Clay
						Total Depth:	40.0	

STATIC WATER LEVEL ____ FEET FROM MEASURING POINT
DATE OF STATIC WATER LEVEL
MEASURING POINT FOR STATIC WATER LEVEL IS: ☒ TOP OF RISER PIPE ☐ OTHER ____
ELEVATION OF MEASURING POINT 457.73
MULTIPLE CASED WELLS: SUBMIT ADDITIONAL AS BUILT DIAGRAM SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS, AND GROUT USED.
DRILLING EQUIPMENT: ☐ AIR ROTARY ☒ AUGER TYPE 4¼ H.S.A. ☐ REVERSE ROTARY ☐ OTHER ____
DATE WELL DRILLING WAS COMPLETED 10-18-95

I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE PRIMARY CONTRACTOR/PERMIT #	DATE	SIGNATURE DRILLER/PERMIT #	DATE
Terran M. Mahurin Jr.	11-15-95	Terran M. Mahurin Jr.	11-15-95

MO 780-1415 (7-95)

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ENCLOSE $35 PER MONITORING WELL FOR THE CERTIFICATION FEE WITHIN 60 DAYS AFTER WELL COMPLETION

RECYCLED PAPER

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY

MONITORING WELL CERTIFICATION RECORD

OFFICE USE ONLY	DATE RECEIVED
REF. NO. 145109	
C.R. NO.	CHECK NO.
STATE WELL NUMBER	TRANSMITTAL NO.
CHECKED BY	ROUTE
APPROVED BY	ENTERED Ph 1 Ph 2 Ph 3

INFORMATION SUPPLIED BY MONITORING WELL CONTRACTOR

SITE/FACILITY NAME: LAIDLAW BRIDGETON SANITARY LANDFILL		WELL NUMBER: LR-105	
SITE ADDRESS: ST. CHARLES ROCK RD	CITY: BRIDGETON	STATE: MO	ZIP CODE: 63044
OWNER NAME: LAIDLAW WASTE SYSTEMS, INC.		TELEPHONE: 314-241-3710	
OWNER ADDRESS: 1838 N. BROADWAY	CITY: ST. LOUIS	STATE: MO	ZIP CODE: 63102

VARIANCE ISSUED ☐ YES ☒ NO — DATE ISSUED — VARIANCE NUMBER: V

DESCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT IT: 90' EAST OF WEST FENCE LINE AND 320' NORTH OF SOUTHWEST FENCE CORNER

LOCATION OF WELL — SHOW LOCATION IN SECTION PLAT
COUNTY ST. LOUIS
SURFACE ELEVATION 484.2
SMALLEST ¼ ____¼ ____¼ ____¼ ____¼ LARGEST ¼
SEC. ____ TWN. 47 N, RNG. 5 E OR W
LAT. 38° 45' 57" LONG. 90° 26' 57"

MONITORING WELL INSTALLATION CONTRACTOR'S NAME	LAYNE WESTERN CO., INC.	PERMIT NUMBER	001258 WPM
DRILLING CONTRACTOR'S NAME	LAYNE WESTERN CO., INC.	PERMIT NUMBER	001258 WPM

WELL CONSTRUCTION INFORMATION

TYPE OF WELL: ☐ MONITORING WELL ☒ PIEZOMETER ☐ OTHER
TYPE OF POTENTIAL SITE: ☐ HAZARDOUS MATERIAL ☒ LANDFILL ☐ OTHER ☐ L.U.S.T.
MONITORING FOR (CHECK ALL THAT APPLY): ☒ V.O.C. ☐ METALS ☐ PETROLEUM PRODUCT ONLY ☐ OTHER

PROTECTIVE CASING DETAILS (IF USED): LENGTH 5 FT.; DIAMETER OF CASING 8×8 IN.; WEIGHT OR SDR # 0.188"; DIAMETER AND DEPTH OF DRILLHOLE 8¼ IN. 38 FT.; JOINTS ☐ THREADED ☐ MECHANICAL ☐ WELDED ☐ OTHER; MATERIAL ☐ THERMO PLASTIC ☒ STEEL ☐ FLUORO POLYMER TYPE; LOCKING CAP? ☒ YES ☐ NO
CAP VENTED ☒ YES ☐ NO; WEEP HOLE? ☒ YES ☐ NO
CASING GROUT DETAILS: MATERIAL ☐ CEMENT ☒ CONCRETE ☐ OTHER; DEPTH FROM THE SURFACE TO THE BOTTOM OF THE CASING GROUT SEAL 3.0 FT.
TYPE OF SURFACE COMPLETION: ☒ ABOVE GROUND ☐ FLUSH MOUNT
DESCRIBE HOW THE FLUSH MOUNT WAS CONSTRUCTED:

CENTRALIZER USED ON RISER ☒ NO ☐ YES LOCATED AT ____ ; MATERIAL ☐ STAINLESS STEEL ☐ OTHER

RISER PIPE DETAILS: LENGTH 28.9 FT.; DIAMETER OF RISER PIPE 2 IN.; WEIGHT OR SDR # SCH 80; DIAMETER OF DRILL HOLE 8¼ IN.; JOINTS ☒ THREADED ☐ MECHANICAL ☐ WELDED ☐ OTHER; MATERIAL ☒ THERMO PLASTIC ☐ STEEL ☐ FLUORO POLYMER ☐ OTHER

ANNULAR SEAL: ☐ CEMENT SLURRY ☒ BENTONITE SLURRY ☐ NON SLURRY BENTONITE TYPE: ____ ☐ CEMENT/BENTONITE SLURRY BAGS OF CEMENT USED ____ % BENTONITE USED ____ WATER USED/BAG ____ GAL.
BENTONITE SEAL: MATERIAL BENTONITE ☒ SLURRY ☐ CHIPS ☐ GRANULAR ☐ PELLETS; LENGTH OF SEAL 18.8; BENTONITE SEAL INSTALLED IN ☒ UNSATURATED ZONE ☐ SATURATED ZONE

PRIMARY FILTER PACK: TYPE ☒ SAND ☐ MANUFACTURED ☐ NATURAL; GRAIN SIZE 16-35; LENGTH OF FILTER PACK 15.2 FT.; METHOD OF INSTALLATION H.S.A. POUR
SECONDARY FILTER PACK: TYPE ☒ SAND ☐ MANUFACTURED ☐ NONE; GRAIN SIZE 100; LENGTH OF FILTER PACK 1.0 FT.; METHOD OF INSTALLATION H.S.A. POUR
WELL SCREEN: LENGTH OF SCREEN 10 FT.; DIAMETER 2 IN.; SLOT SIZE 10; WEIGHT OR SDR # SCH 80; MATERIAL ☒ PLASTIC ☐ STEEL ☐ FLUORO POLYMER
SUMP DETAILS: LENGTH OF SUMP; DIAMETER OF SUMP; MATERIAL ☐ PVC ☐ STEEL ☐ FLUORO POLYMER ☐ OTHER
BACK FILL: WAS THE WELL BACK FILLED? ☐ YES ☒ NO; MATERIAL USED; LENGTH OF BACK FILLED BORE HOLE

Information in this column to be supplied in the Feet from Surface column	FEET FROM SURFACE	FORMATION DESCRIPTION
Depth to bottom of Protective Casing Seal:	3.0	0-2 Clay
Depth to Base of Annular Seal:	21.8	2-36 Trash
Depth to Base of Bentonite Seal:	21.8	
Depth to Top of Primary Filter Pack:	22.8	
Depth to Top of the Screen:	26.3	
Depth to Bottom of the Screen:	36.3	36-38 Silt
Total Depth:	38.0	

STATIC WATER LEVEL ____ FEET FROM MEASURING POINT
DATE OF STATIC WATER LEVEL
MULTIPLE CASED WELLS: SUBMIT ADDITIONAL AS BUILT DIAGRAM SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE AND SIZE OF ALL CASING, HOLE DIAMETERS, AND GROUT USED.
MEASURING POINT FOR STATIC WATER LEVEL IS ☒ TOP OF RISER PIPE ☐ OTHER
DRILLING EQUIPMENT ☐ AIR ROTARY ☒ AUGER TYPE 4¼ H.S.A. ☐ REVERSE ROTARY ☐ OTHER
ELEVATION OF MEASURING POINT 486.79
DATE WELL DRILLING WAS COMPLETED 10-03-95

I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

SIGNATURE PRIMARY CONTRACTOR/PERMIT #	DATE	SIGNATURE DRILLER/PERMIT #	DATE
[signature]	11-15-95	[signature]	11-15-95

DISTRIBUTION: WHITE/DIVISION CANARY/MONITORING WELL CONTRACTOR PINK/OWNER
MAIL WHITE COPY TO: DEPARTMENT OF NATURAL RESOURCES, P.O. BOX 250, ROLLA, MO 65402

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY

REGISTRATION RECORD

OFFICE USE ONLY		DATE RECEIVED	
REF. NO. 131863			
ROUTE		P.W.S. NUMBER	CHECK NUMBER
STATE WELL NUMBER		TRANSMITTAL NO.	
CHECKED BY		CROSS REFERENCE NO.	
APPROVED BY	DATE	ENTERED Ph 1 Ph 2 Ph 3	

INFORMATION SUPPLIED BY OWNER

NAME: LANDLAW WASTE SYSTEMS, INC. | TELEPHONE: 314-241-3710

ADDRESS: 1031 N BROADWAY | CITY: ST. LOUIS | STATE: MO | ZIP CODE: 63102

SITE NAME: LANDLAW SANITARY LANDFILL | WELL NUMBER: SOIL BORINGS | ADDRESS OF WELL SITE OR SITE NAME (IF DIFFERENT THAN ABOVE): ST. CHARLES ROCK RD.

OWNER STATUS: ☐ BUILDER ☐ PRIVATE HOME OWNER ☐ DEVELOPER ☒ OTHER (SPECIFY) LANDFILL | CITY: BRIDGETON | STATE: MO | ZIP CODE: 63044

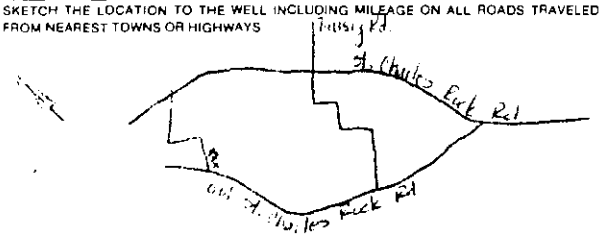
PURPOSE OF REGISTRATION FORM: ☐ ABANDONED WELL ☐ MINERAL EXPLORATORY ☐ WELL RECONSTRUCTION ☐ TEST HOLE ☐ OTHER _____

VARIANCE ISSUED? ☐ YES ☒ NO | VARIANCE NUMBER: | WELL CERTIFICATION NUMBER: | DATE ORIGINALLY DRILLED: 10-5, 11-1-95

SIGNATURE (WELL OWNER) | DATE

INFORMATION SUPPLIED BY CONTRACTOR

SKETCH THE LOCATION TO THE WELL INCLUDING MILEAGE ON ALL ROADS TRAVELED FROM NEAREST TOWNS OR HIGHWAYS



LOCATION OF WELL

SHOW LOCATION IN SECTION PLAT | QUAD _____ | COUNTY ST LOUIS | ELEV _____ | AREA NO. _____

SMALLEST ¼ _____ ¼ _____ ¼ _____ ¼ LARGEST ¼

SEC. _____ TWN. 47 N,RNG. 5 E OR W

LAT. 38 ° 45 ' 59 " LONG. 90 ° 22 ' 58 "

DESCRIBE LOCATION OF THE WELL SO WE WOULD BE able TO VISIT THE WELL

LIES WEST FENCE OF PROPERTY NEAR SOUTH CORNER

CONTRACTOR'S NAME ▶ LAKE WESTERN CO, INC 502 | PERMIT NUMBER

DRILLERS NAME ▶ DALE MAHURIN | PERMIT NUMBER 502

ABANDONMENT OF WELLS

FORMER USE OF WELL
☐ HAND DUG ☒ SOIL BORING
☐ DOMESTIC (1 TO 3 CONNECTIONS) ☐ PUBLIC WATER SUPPLY
☐ MULTI-FAMILY ☐ MINERAL EXPLORATORY TEST HOLE
☐ HEAT PUMP ☐ MONITORING
☐ IRRIGATION ☐ OTHER _____

ORIGINAL DRILLER (IF KNOWN): D. MAHURIN | DATE ORIGINALLY DRILLED: 10-5-95/10-24-95

DATE PLUGGED: 10-5-95 | STATIC WATER LEVEL: FT | PUMP REMOVED FROM WELL? ☐ YES N/A ☐ NO

DEPTH OF THE WELL: 90' | LENGTH OF CASING: N/A | ~~CASING DIAMETER~~/WELL DIA: 8 1/4"

GROUT INSTALLATION METHOD: ☐ GRAVITY ☒ TREMIE | CASING CUT OFF THREE FEET BELOW SURFACE? ☐ YES ☐ NO N/A | TYPE OF CASING: ☐ STEEL ☐ PLASTIC ☐ OTHER N/A

GROUT MATERIAL USED
NEAT CEMENT: ☐ HI-EARLY ☒ PORTLAND TYPE 1 ☐ OTHER _____
☐ BENTONITE SLURRY ☐ OTHER _____
BENTONITE: ☒ POWDER ☐ GRANULAR ☐ CHIPS ☐ PELLETS
NUMBER OF BAGS OF GROUT USED: 12
POUNDS OF GROUT PER BAG: 47

IF NEAT CEMENT USED, HOW MANY GALLONS OF WATER MIXED PER BAG OF CEMENT: 0

TYPE OF FILL MATERIAL USED: CUTTINGS / BENTONITE CHIPS

AMOUNT OF FILL MATERIAL USED: 0.43 CU. YDS.

DEPTH TO TOP OF FILL MATERIAL: 2'

WELL DISINFECTED BEFORE PLUGGING? ☐ YES ☒ NO

NUMBER USED FOR DISINFECTION: GALLONS OF CHLORINE _____ POUNDS OF CHLORINE _____ TABLETS OF CHLORINE _____

WAS THE WELL ABANDONED BECAUSE OF HOOKING UP TO A PUBLIC OR RURAL WATER SUPPLY DISTRICT? ☐ YES ☒ NO

IF YES, WHAT IS THE NAME OF THE WATER DISTRICT

CHECK THE BOX WHICH APPLIES

☒ I HEREBY CERTIFY THAT THE WELL HEREIN DESCRIBED WAS ABANDONED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE ABANDONMENT OF WELLS

☐ I HEREBY CERTIFY THAT THE WELL HEREIN DESCRIBED WAS REPAIRED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE REPAIR OF WELLS

CONTRACTOR'S SIGNATURE | DATE: 11-15-95

WELL RECONSTRUCTION

TYPE OF REPAIR
☐ RAISED CASING ☐ LINING OF WELL
☐ DEEPENING OF WELL ☐ OTHER _____

USE OF WELL
☐ DOMESTIC (1 TO 3 CONNECTIONS) ☐ PUBLIC WATER SUPPLY
☐ MULTI-FAMILY ☐ MONITORING
☐ HEAT PUMP ☐ OTHER _____
☒ IRRIGATION

DIA. OF WELL CASING: IN. | WAS WELL DISINFECTED AFTER RECONSTRUCTION ☐ YES ☐ NO | DATE RECONSTRUCTION COMPLETED

RAISED CASING INFORMATION
LENGTH OF CASING ADDED: FT.
MATERIAL: ☐ STEEL ☐ PLASTIC
METHOD OF ATTACHMENT: ☐ THREADED ☐ FUSED ☐ WELDED ☐ GLUED ☐ COUPLED

LINER DETAILS
PURPOSE OF LINER: ☐ USED ONLY TO HOLD BACK FORMATION ☐ USED TO SEAL OUT CONTAMINATION OR OTHER CONDITIONS
DIAMETER OF LINER: IN.
WEIGHT OR SDR #

DEPTH TO THE TOP OF LINER FROM SURFACE: FT. | MATERIAL: ☐ PLASTIC ☐ STEEL

AMOUNT OF LINER USED: FT. | JOINTS: ☐ GLUED ☐ WELDED ☐ OTHER

LINER PACKER DETAILS
TYPE USED: ☐ NONE ☐ RUBBER BOOT | DEPTH(S) SET

LINER GROUT DETAILS
POSITION OF SEAL: ☐ FULL LENGTH ☐ BETWEEN PACKERS
MATERIAL: CEMENT ☐ PORTLAND TYPE 1 ☐ HI EARLY; BENTONITE ☐ CHIPS ☐ PELLETS ☐ SLURRY ☐ GRANULAR

DEPTH PUMP WAS SET: FT. GPM | DEPTH FROM SURFACE TO TOP OF THE GROUT SEAL: FT. | DEPTH FROM SURFACE TO BOTTOM OF THE GROUT SEAL: FT.

DEEPENING OF WELL INFORMATION

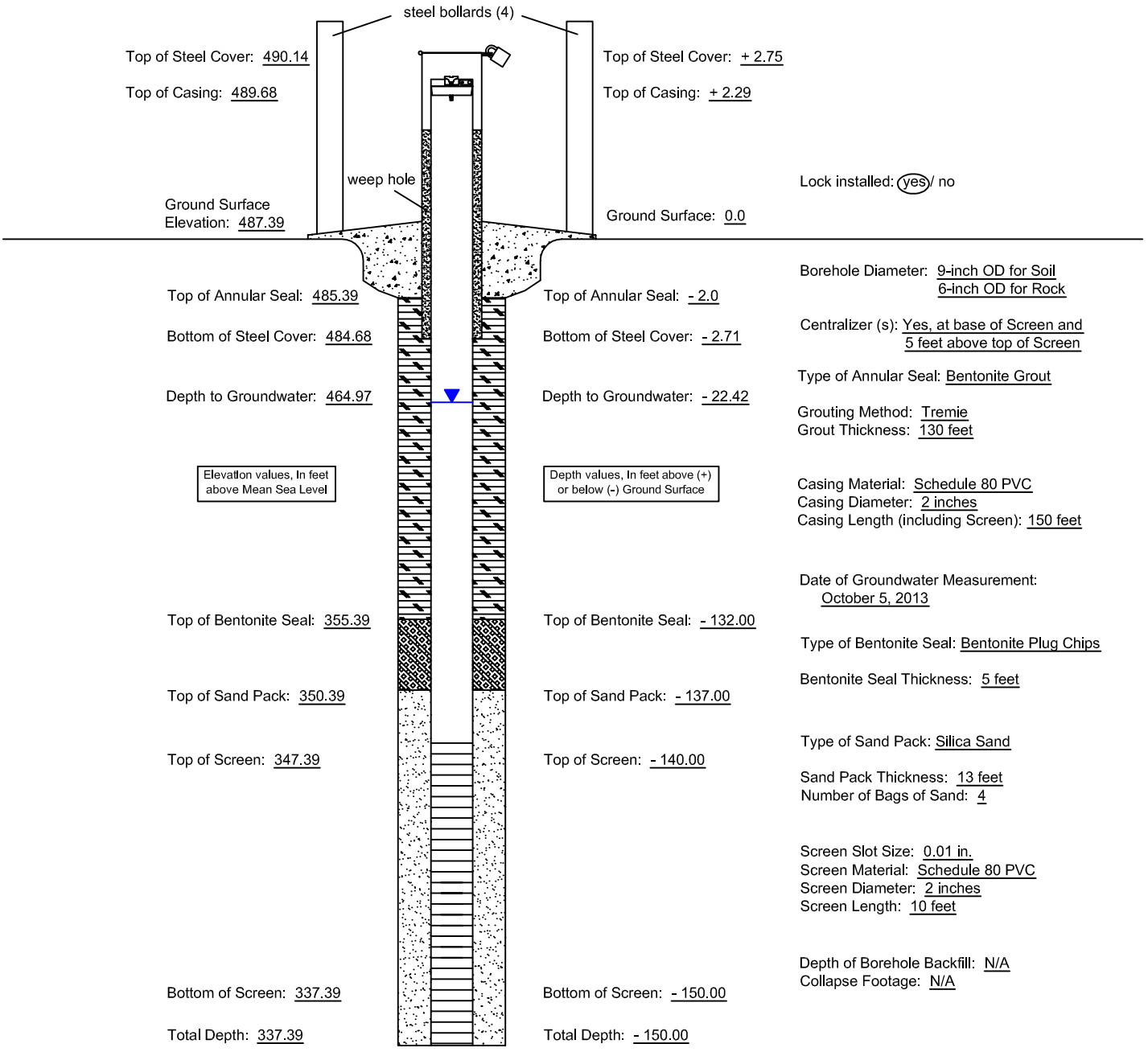
DEPTH FROM	DEPTH TO	FORMATION DESCRIPTION	YIELD

MO 780-1414 (1-95) DISTRIBUTION: WHITE/CONTRACTOR CANARY/DIVISION PINK/OWNER

MAIL CANARY COPY TO DEPARTMENT OF NATURAL RESOURCES P.O. BOX 250 ROLLA, MO 65401

Well Coordinates:
N 1067071.541
E 517108.567

Drilling Contractor: Frontz Drilling
Lead Driller: Rob Hamilton
Drilling Dates: October 5, 2013



Top of Steel Cover: 490.14
Top of Casing: 489.68
Ground Surface Elevation: 487.39

Top of Steel Cover: + 2.75
Top of Casing: + 2.29
Ground Surface: 0.0

Lock installed: (yes) / no

Top of Annular Seal: 485.39
Bottom of Steel Cover: 484.68
Depth to Groundwater: 464.97

Top of Annular Seal: - 2.0
Bottom of Steel Cover: - 2.71
Depth to Groundwater: - 22.42

Elevation values, In feet above Mean Sea Level

Depth values, In feet above (+) or below (-) Ground Surface

Top of Bentonite Seal: 355.39
Top of Sand Pack: 350.39
Top of Screen: 347.39

Top of Bentonite Seal: - 132.00
Top of Sand Pack: - 137.00
Top of Screen: - 140.00

Bottom of Screen: 337.39
Total Depth: 337.39

Bottom of Screen: - 150.00
Total Depth: - 150.00

(Not to Scale)

Borehole Diameter: 9-inch OD for Soil
6-inch OD for Rock

Centralizer (s): Yes, at base of Screen and 5 feet above top of Screen

Type of Annular Seal: Bentonite Grout

Grouting Method: Tremie
Grout Thickness: 130 feet

Casing Material: Schedule 80 PVC
Casing Diameter: 2 inches
Casing Length (including Screen): 150 feet

Date of Groundwater Measurement:
October 5, 2013

Type of Bentonite Seal: Bentonite Plug Chips

Bentonite Seal Thickness: 5 feet

Type of Sand Pack: Silica Sand

Sand Pack Thickness: 13 feet
Number of Bags of Sand: 4

Screen Slot Size: 0.01 in.
Screen Material: Schedule 80 PVC
Screen Diameter: 2 inches
Screen Length: 10 feet

Depth of Borehole Backfill: N/A
Collapse Footage: N/A

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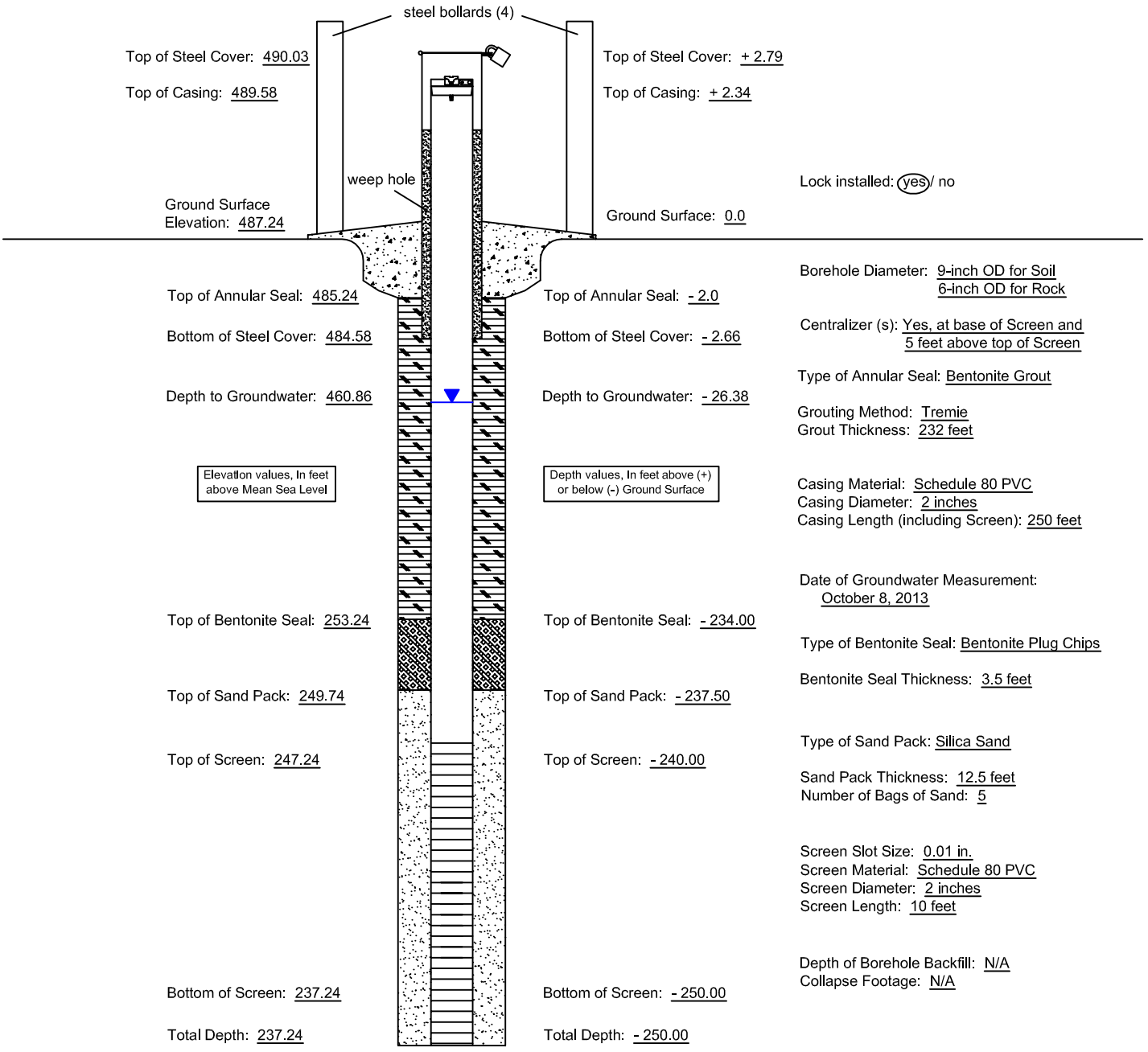
Bridgeton Landfill
Bridgeton, Missouri

PZ-209-SS
As-Built Diagram

Well Coordinates:
N 1067075.739
E 517104.415

Drilling Contractor: Frontz Drilling
Lead Driller: Rob Hamilton
Drilling Dates: October 4, 2013



Elevation values, In feet above Mean Sea Level

Depth values, In feet above (+) or below (-) Ground Surface

(Not to Scale)

Lock installed: (yes) / no

Borehole Diameter: 9-inch OD for Soil
6-inch OD for Rock

Centralizer (s): Yes, at base of Screen and 5 feet above top of Screen

Type of Annular Seal: Bentonite Grout

Grouting Method: Tremie
Grout Thickness: 232 feet

Casing Material: Schedule 80 PVC
Casing Diameter: 2 inches
Casing Length (including Screen): 250 feet

Date of Groundwater Measurement: October 8, 2013

Type of Bentonite Seal: Bentonite Plug Chips

Bentonite Seal Thickness: 3.5 feet

Type of Sand Pack: Silica Sand

Sand Pack Thickness: 12.5 feet
Number of Bags of Sand: 5

Screen Slot Size: 0.01 in.
Screen Material: Schedule 80 PVC
Screen Diameter: 2 inches
Screen Length: 10 feet

Depth of Borehole Backfill: N/A
Collapse Footage: N/A

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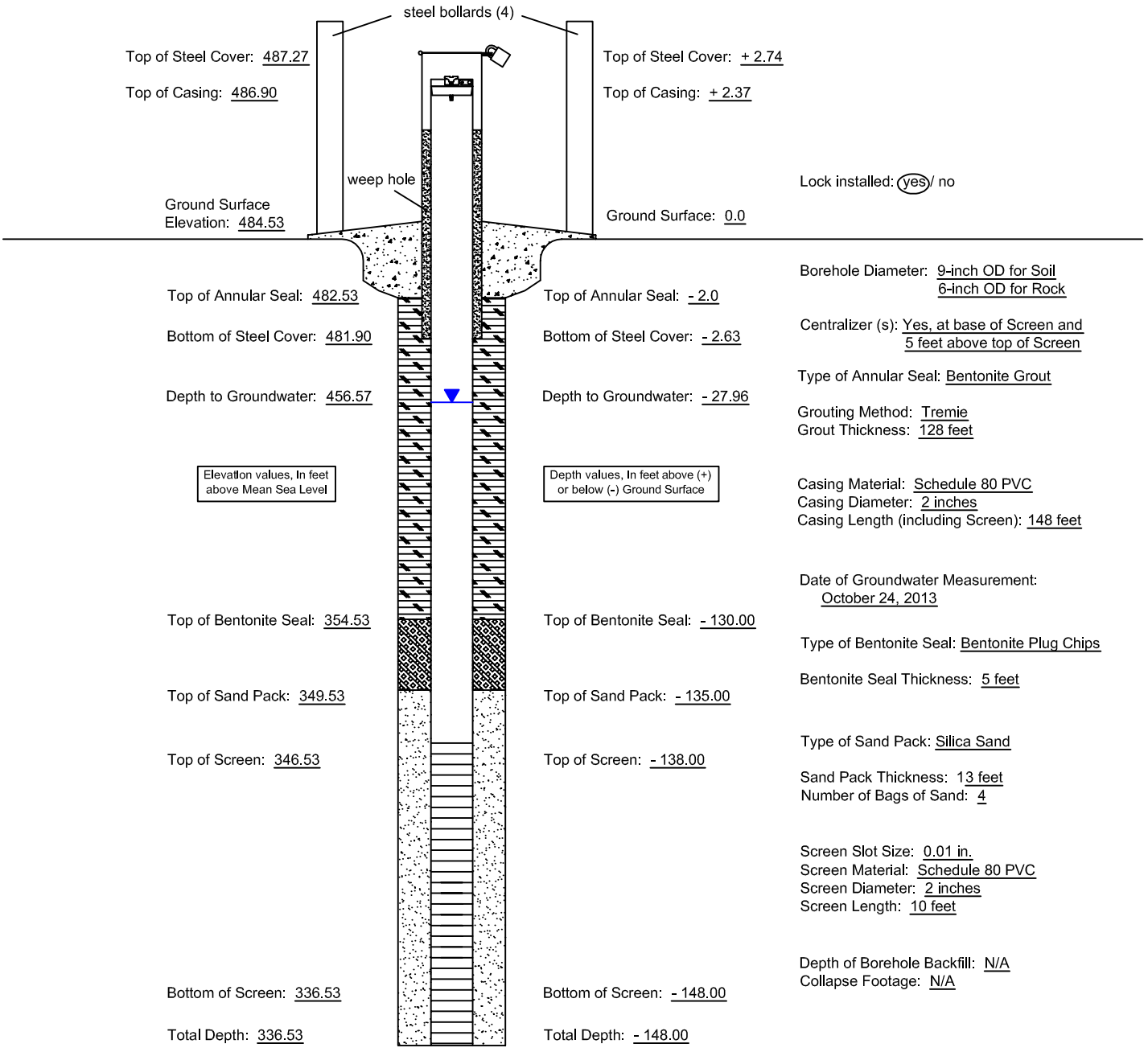
PZ-209-SD
As-Built Diagram

Well Coordinates:
N 1066828.381
E 516777.407

Drilling Contractor: Frontz Drilling
Lead Driller: Rob Hamilton
Drilling Dates: October 16-17, 2013



Top of Steel Cover: 487.27
Top of Casing: 486.90
Ground Surface Elevation: 484.53

Top of Steel Cover: + 2.74
Top of Casing: + 2.37
Ground Surface: 0.0

Lock installed: (yes) / no

Top of Annular Seal: 482.53
Bottom of Steel Cover: 481.90
Depth to Groundwater: 456.57

Top of Annular Seal: - 2.0
Bottom of Steel Cover: - 2.63
Depth to Groundwater: - 27.96

Elevation values, In feet above Mean Sea Level

Depth values, In feet above (+) or below (-) Ground Surface

Top of Bentonite Seal: 354.53
Top of Sand Pack: 349.53
Top of Screen: 346.53

Top of Bentonite Seal: - 130.00
Top of Sand Pack: - 135.00
Top of Screen: - 138.00

Bottom of Screen: 336.53
Total Depth: 336.53

Bottom of Screen: - 148.00
Total Depth: - 148.00

(Not to Scale)

Borehole Diameter: 9-inch OD for Soil
6-inch OD for Rock

Centralizer (s): Yes, at base of Screen and 5 feet above top of Screen

Type of Annular Seal: Bentonite Grout

Grouting Method: Tremie
Grout Thickness: 128 feet

Casing Material: Schedule 80 PVC
Casing Diameter: 2 inches
Casing Length (including Screen): 148 feet

Date of Groundwater Measurement: October 24, 2013

Type of Bentonite Seal: Bentonite Plug Chips

Bentonite Seal Thickness: 5 feet

Type of Sand Pack: Silica Sand

Sand Pack Thickness: 13 feet
Number of Bags of Sand: 4

Screen Slot Size: 0.01 in.
Screen Material: Schedule 80 PVC
Screen Diameter: 2 inches
Screen Length: 10 feet

Depth of Borehole Backfill: N/A
Collapse Footage: N/A

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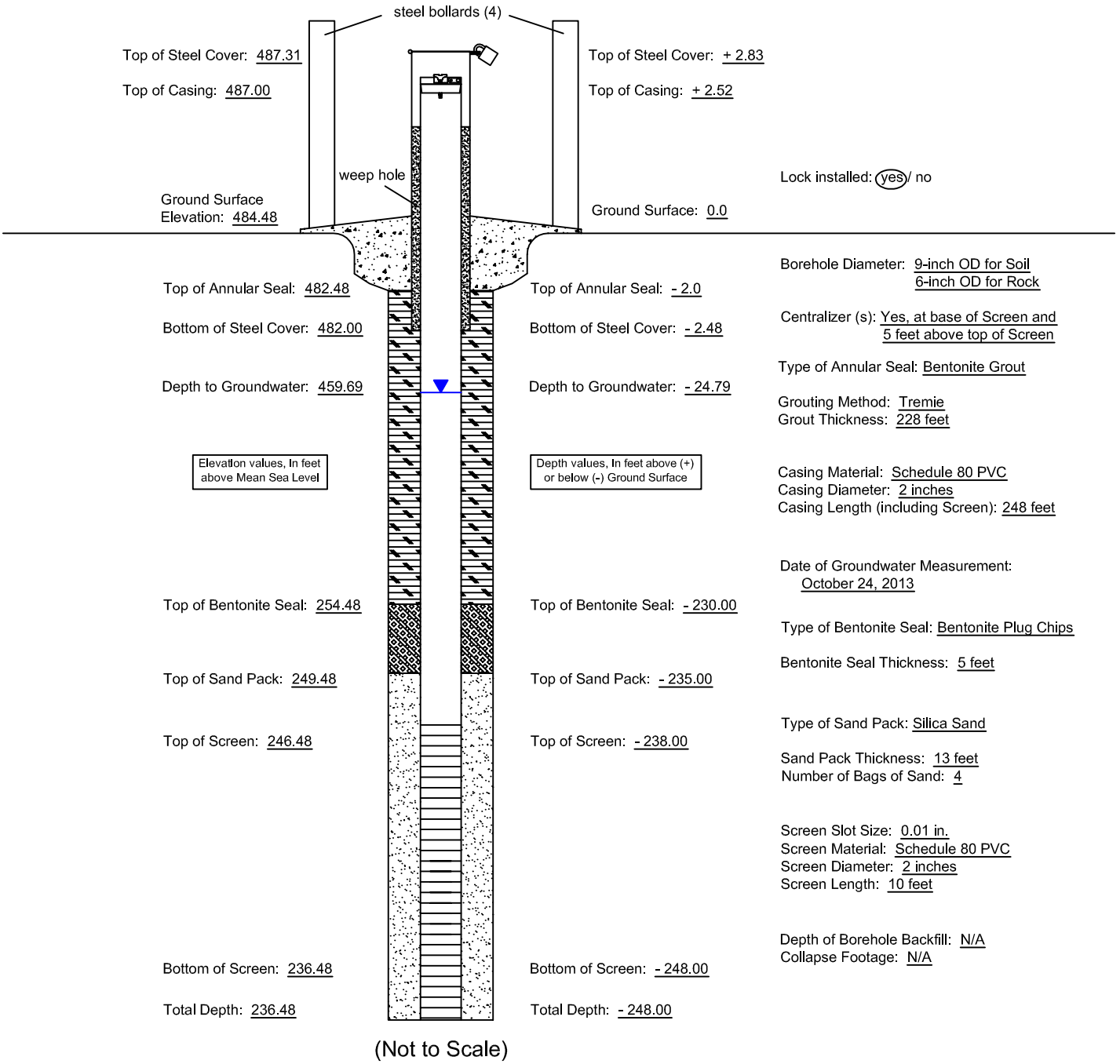
PZ-210-SS
As-Built Diagram

Well Coordinates:
N 1066824.035
E 516773.117

Drilling Contractor: Frontz Drilling
Lead Driller: Rob Hamilton
Drilling Dates: October 15-16, 2013



Top of Steel Cover: 487.31
Top of Casing: 487.00
Ground Surface Elevation: 484.48

Top of Steel Cover: + 2.83
Top of Casing: + 2.52
Ground Surface: 0.0

Lock installed: (yes) / no

Top of Annular Seal: 482.48
Bottom of Steel Cover: 482.00
Depth to Groundwater: 459.69

Top of Annular Seal: - 2.0
Bottom of Steel Cover: - 2.48
Depth to Groundwater: - 24.79

Elevation values, In feet above Mean Sea Level

Depth values, In feet above (+) or below (-) Ground Surface

Top of Bentonite Seal: 254.48
Top of Sand Pack: 249.48
Top of Screen: 246.48

Top of Bentonite Seal: - 230.00
Top of Sand Pack: - 235.00
Top of Screen: - 238.00

Bottom of Screen: 236.48
Total Depth: 236.48

Bottom of Screen: - 248.00
Total Depth: - 248.00

(Not to Scale)

Borehole Diameter: 9-inch OD for Soil
6-inch OD for Rock

Centralizer (s): Yes, at base of Screen and 5 feet above top of Screen

Type of Annular Seal: Bentonite Grout

Grouting Method: Tremie
Grout Thickness: 228 feet

Casing Material: Schedule 80 PVC
Casing Diameter: 2 inches
Casing Length (including Screen): 248 feet

Date of Groundwater Measurement: October 24, 2013

Type of Bentonite Seal: Bentonite Plug Chips

Bentonite Seal Thickness: 5 feet

Type of Sand Pack: Silica Sand

Sand Pack Thickness: 13 feet
Number of Bags of Sand: 4

Screen Slot Size: 0.01 in.
Screen Material: Schedule 80 PVC
Screen Diameter: 2 inches
Screen Length: 10 feet

Depth of Borehole Backfill: N/A
Collapse Footage: N/A

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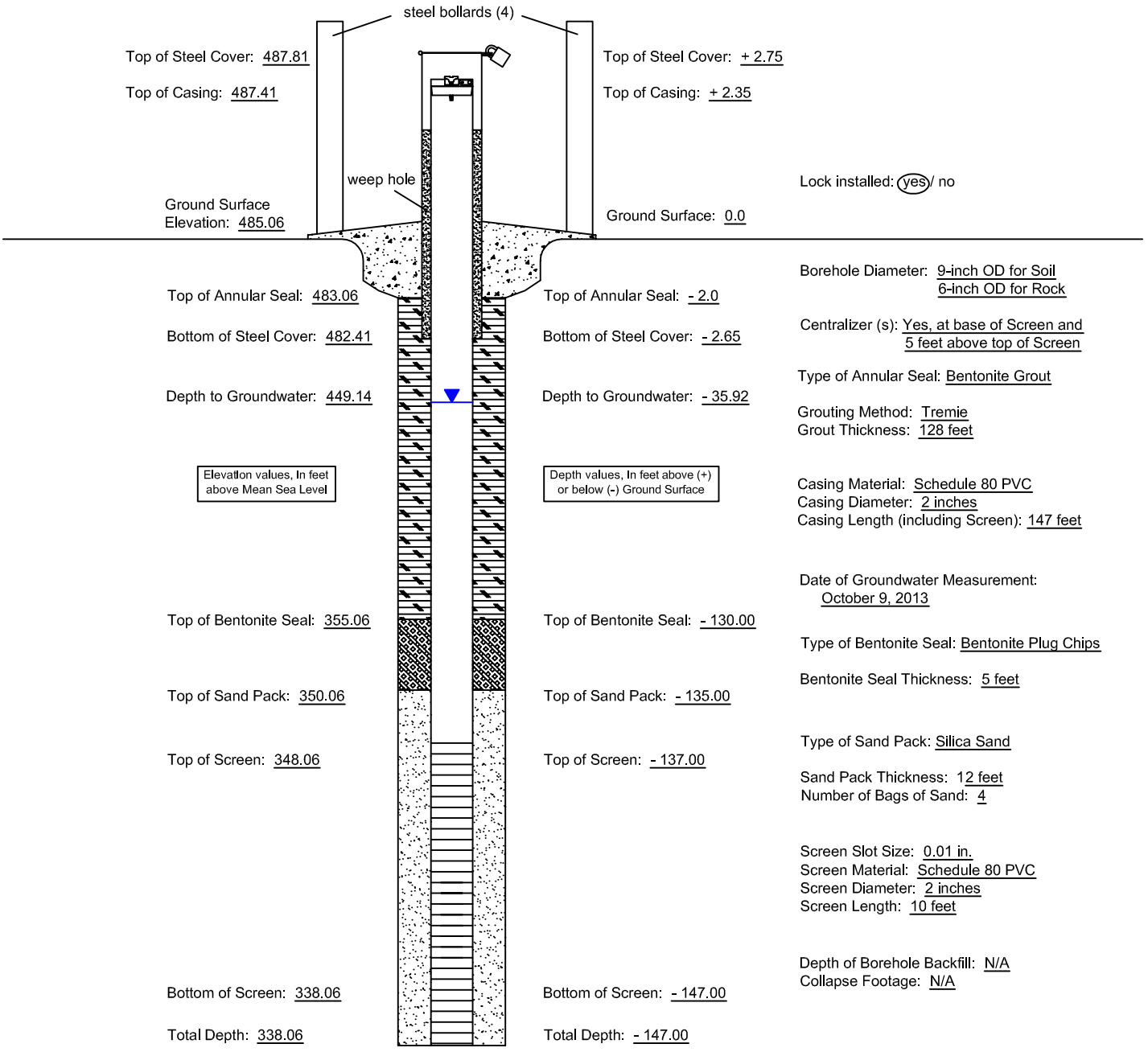
PZ-210-SD
As-Built Diagram

Well Coordinates:
N 1067060.785
E 517021.151

Drilling Contractor: Frontz Drilling
Lead Driller: Rob Hamilton
Drilling Dates: October 7-8, 2013



Top of Steel Cover: 487.81
Top of Casing: 487.41
Ground Surface Elevation: 485.06

Top of Steel Cover: + 2.75
Top of Casing: + 2.35
Ground Surface: 0.0

Lock installed: (yes) / no

Top of Annular Seal: 483.06
Bottom of Steel Cover: 482.41
Depth to Groundwater: 449.14

Top of Annular Seal: - 2.0
Bottom of Steel Cover: - 2.65
Depth to Groundwater: - 35.92

Elevation values, In feet above Mean Sea Level

Depth values, In feet above (+) or below (-) Ground Surface

Top of Bentonite Seal: 355.06
Top of Sand Pack: 350.06
Top of Screen: 348.06

Top of Bentonite Seal: - 130.00
Top of Sand Pack: - 135.00
Top of Screen: - 137.00

Bottom of Screen: 338.06
Total Depth: 338.06

Bottom of Screen: - 147.00
Total Depth: - 147.00

(Not to Scale)

Borehole Diameter: 9-inch OD for Soil
6-inch OD for Rock

Centralizer (s): Yes, at base of Screen and 5 feet above top of Screen

Type of Annular Seal: Bentonite Grout

Grouting Method: Tremie
Grout Thickness: 128 feet

Casing Material: Schedule 80 PVC
Casing Diameter: 2 inches
Casing Length (including Screen): 147 feet

Date of Groundwater Measurement:
October 9, 2013

Type of Bentonite Seal: Bentonite Plug Chips

Bentonite Seal Thickness: 5 feet

Type of Sand Pack: Silica Sand

Sand Pack Thickness: 12 feet
Number of Bags of Sand: 4

Screen Slot Size: 0.01 in.
Screen Material: Schedule 80 PVC
Screen Diameter: 2 inches
Screen Length: 10 feet

Depth of Borehole Backfill: N/A
Collapse Footage: N/A

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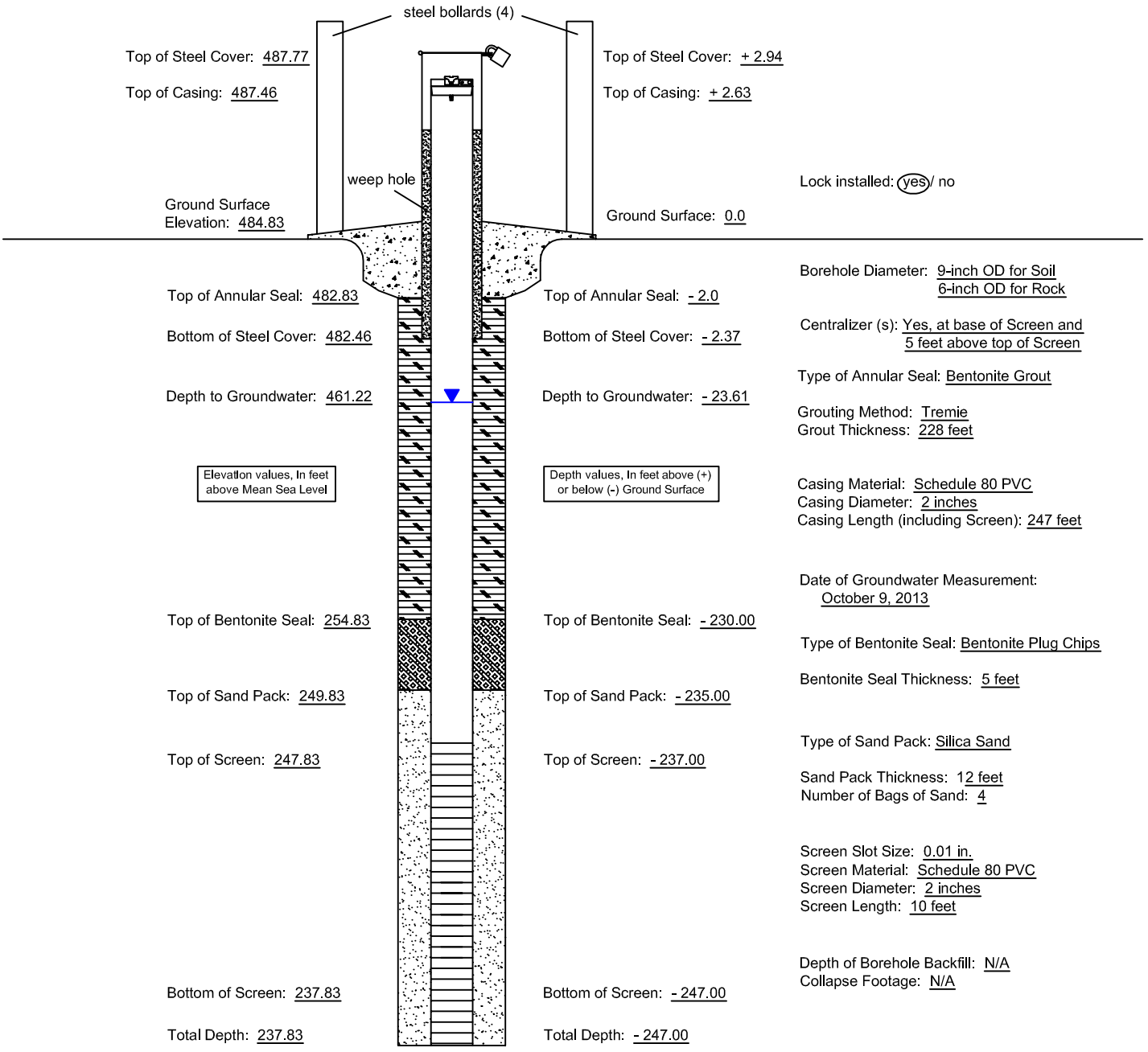
PZ-211-SS
As-Built Diagram

Well Coordinates:
N 1067056.698
E 517016.608

Drilling Contractor: Frontz Drilling
Lead Driller: Rob Hamilton
Drilling Dates: October 6-7, 2013



Top of Steel Cover: 487.77
Top of Casing: 487.46
Ground Surface Elevation: 484.83

Top of Steel Cover: + 2.94
Top of Casing: + 2.63
Ground Surface: 0.0

Lock installed: (yes) / no

Top of Annular Seal: 482.83
Bottom of Steel Cover: 482.46
Depth to Groundwater: 461.22

Top of Annular Seal: - 2.0
Bottom of Steel Cover: - 2.37
Depth to Groundwater: - 23.61

Elevation values, In feet above Mean Sea Level

Depth values, In feet above (+) or below (-) Ground Surface

Borehole Diameter: 9-inch OD for Soil
6-inch OD for Rock

Centralizer (s): Yes, at base of Screen and 5 feet above top of Screen

Type of Annular Seal: Bentonite Grout

Grouting Method: Tremie
Grout Thickness: 228 feet

Casing Material: Schedule 80 PVC
Casing Diameter: 2 inches
Casing Length (including Screen): 247 feet

Date of Groundwater Measurement: October 9, 2013

Top of Bentonite Seal: 254.83
Top of Sand Pack: 249.83
Top of Screen: 247.83

Top of Bentonite Seal: - 230.00
Top of Sand Pack: - 235.00
Top of Screen: - 237.00

Type of Bentonite Seal: Bentonite Plug Chips

Bentonite Seal Thickness: 5 feet

Type of Sand Pack: Silica Sand

Sand Pack Thickness: 12 feet
Number of Bags of Sand: 4

Screen Slot Size: 0.01 in.
Screen Material: Schedule 80 PVC
Screen Diameter: 2 inches
Screen Length: 10 feet

Depth of Borehole Backfill: N/A
Collapse Footage: N/A

Bottom of Screen: 237.83
Total Depth: 237.83

Bottom of Screen: - 247.00
Total Depth: - 247.00

(Not to Scale)

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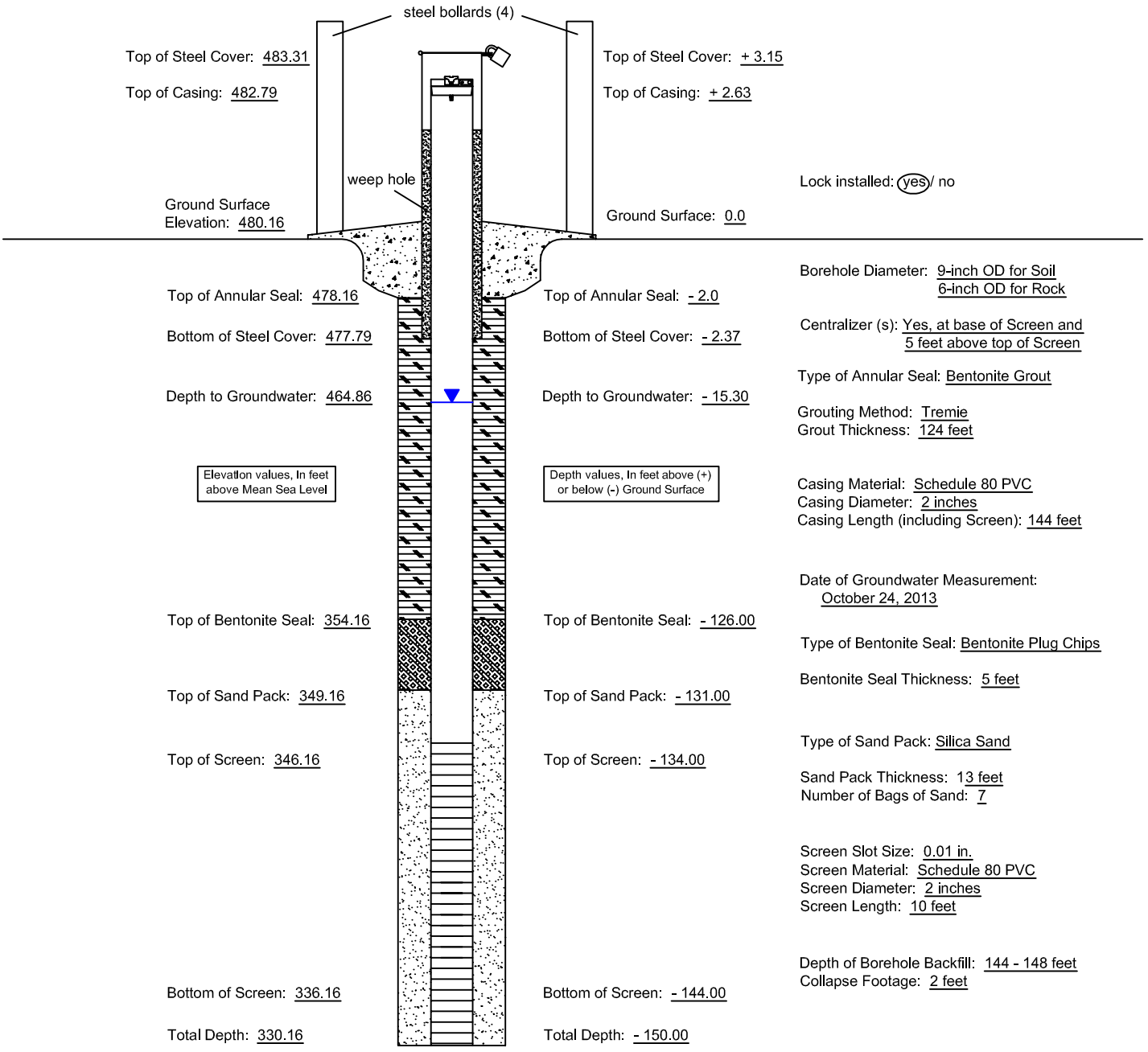
PZ-211-SD
As-Built Diagram

Well Coordinates:
N 1067490.987
E 517976.455

Drilling Contractor: Frontz Drilling
Lead Driller: Rob Hamilton
Drilling Dates: October 18, 2013



Top of Steel Cover: 483.31
Top of Casing: 482.79
Ground Surface Elevation: 480.16

Top of Steel Cover: + 3.15
Top of Casing: + 2.63
Ground Surface: 0.0

Lock installed: (yes) / no

Top of Annular Seal: 478.16
Bottom of Steel Cover: 477.79
Depth to Groundwater: 464.86

Top of Annular Seal: - 2.0
Bottom of Steel Cover: - 2.37
Depth to Groundwater: - 15.30

Elevation values, In feet above Mean Sea Level

Depth values, In feet above (+) or below (-) Ground Surface

Top of Bentonite Seal: 354.16
Top of Sand Pack: 349.16
Top of Screen: 346.16

Top of Bentonite Seal: - 126.00
Top of Sand Pack: - 131.00
Top of Screen: - 134.00

Bottom of Screen: 336.16
Total Depth: 330.16

Bottom of Screen: - 144.00
Total Depth: - 150.00

(Not to Scale)

Borehole Diameter: 9-inch OD for Soil
6-inch OD for Rock

Centralizer (s): Yes, at base of Screen and 5 feet above top of Screen

Type of Annular Seal: Bentonite Grout

Grouting Method: Tremie
Grout Thickness: 124 feet

Casing Material: Schedule 80 PVC
Casing Diameter: 2 inches
Casing Length (including Screen): 144 feet

Date of Groundwater Measurement:
October 24, 2013

Type of Bentonite Seal: Bentonite Plug Chips

Bentonite Seal Thickness: 5 feet

Type of Sand Pack: Silica Sand

Sand Pack Thickness: 13 feet
Number of Bags of Sand: 7

Screen Slot Size: 0.01 in.
Screen Material: Schedule 80 PVC
Screen Diameter: 2 inches
Screen Length: 10 feet

Depth of Borehole Backfill: 144 - 148 feet
Collapse Footage: 2 feet

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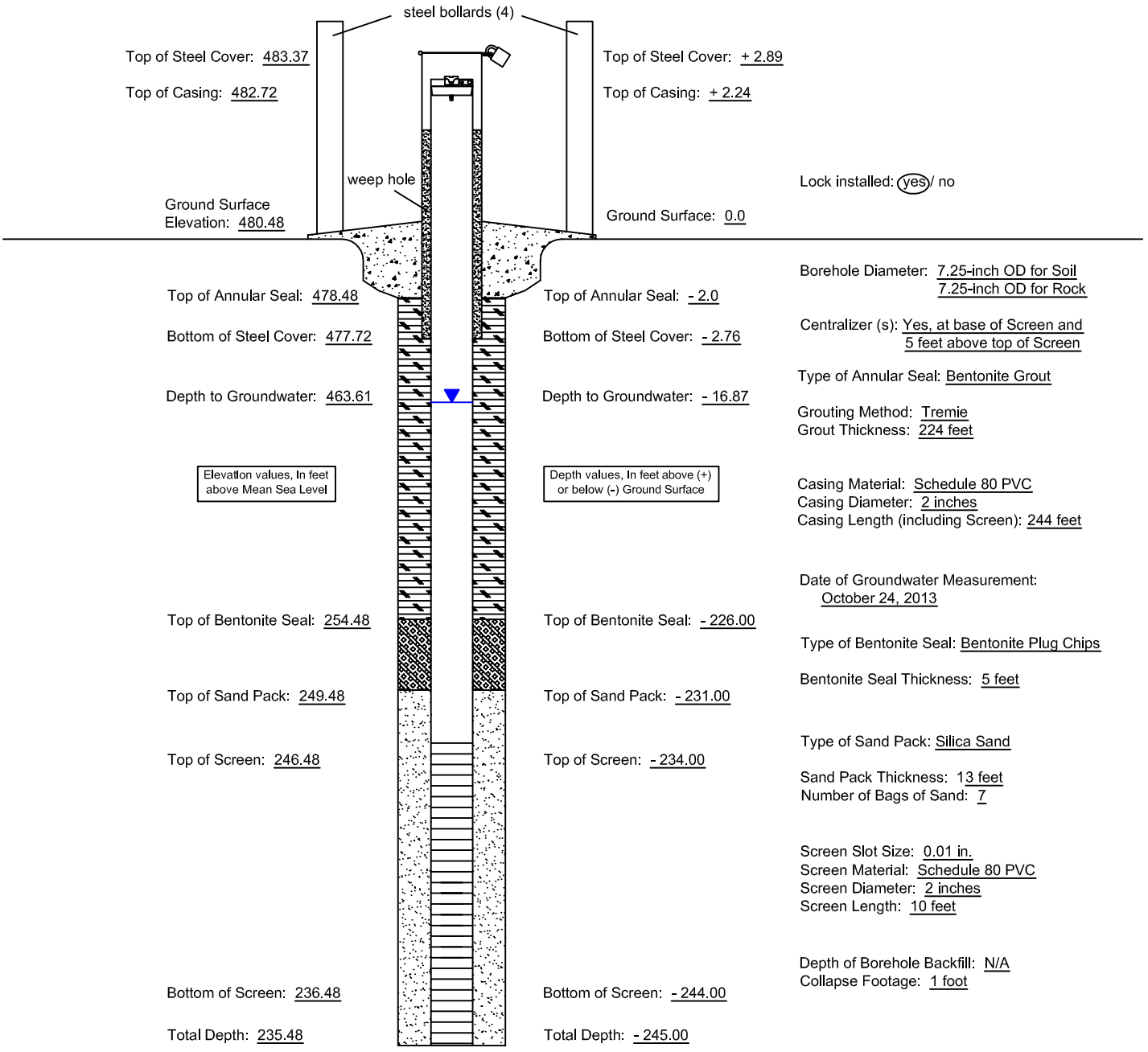
PZ-212-SS
As-Built Diagram

Well Coordinates:
N 1067495.693
E 517980.384

Drilling Contractor: Frontz Drilling
Lead Driller: Rob Hamilton
Drilling Dates: October 19 - 21, 2013



Top of Steel Cover: 483.37
Top of Casing: 482.72
Ground Surface Elevation: 480.48

Top of Steel Cover: + 2.89
Top of Casing: + 2.24
Ground Surface: 0.0

Lock installed: (yes) / no

Top of Annular Seal: 478.48
Bottom of Steel Cover: 477.72
Depth to Groundwater: 463.61

Top of Annular Seal: - 2.0
Bottom of Steel Cover: - 2.76
Depth to Groundwater: - 16.87

Elevation values, In feet above Mean Sea Level

Depth values, In feet above (+) or below (-) Ground Surface

Top of Bentonite Seal: 254.48
Top of Sand Pack: 249.48
Top of Screen: 246.48

Top of Bentonite Seal: - 226.00
Top of Sand Pack: - 231.00
Top of Screen: - 234.00

Bottom of Screen: 236.48
Total Depth: 235.48

Bottom of Screen: - 244.00
Total Depth: - 245.00

(Not to Scale)

Borehole Diameter: 7.25-inch OD for Soil
7.25-inch OD for Rock

Centralizer (s): Yes, at base of Screen and 5 feet above top of Screen

Type of Annular Seal: Bentonite Grout

Grouting Method: Tremie
Grout Thickness: 224 feet

Casing Material: Schedule 80 PVC
Casing Diameter: 2 inches
Casing Length (including Screen): 244 feet

Date of Groundwater Measurement: October 24, 2013

Type of Bentonite Seal: Bentonite Plug Chips

Bentonite Seal Thickness: 5 feet

Type of Sand Pack: Silica Sand

Sand Pack Thickness: 13 feet
Number of Bags of Sand: 7

Screen Slot Size: 0.01 in.
Screen Material: Schedule 80 PVC
Screen Diameter: 2 inches
Screen Length: 10 feet

Depth of Borehole Backfill: N/A
Collapse Footage: 1 foot

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PZ-212-SD
As-Built Diagram

WATER
MANAGEMENT
CONSULTANTS

5988 MID RIVERS MALL DRIVE
ST. CHARLES, MISSOURI 63304, USA

TELEPHONE: (314) 939 4926
TELEFAX: (314) 939 9631

Mr. Matt Kingsley
Bridgeton Landfill, LLC.
13570 St. Charles Rock Road
Bridgeton, Missouri 63044

April 21, 1998

Dear Mr. Kingsley:

Groundwater Monitoring Well Construction Information
Bridgeton Landfill, April 1998

Pursuant to our conversation, enclosed are the tabulated will construction details. This information has been compiled from existing reports submitted to Allied from Golder Associates and McLaren/Hart.

Please let me know if you have any questions or comments regarding this information.

Sincerely,

WATER MANAGEMENT CONSULTANTS, INC.

John D Regan
Project Hydrogeologist

Ward Herst, CPHG, CEM
Operations Manager

Get GMP info

Enclosures

Well #	State ID	Northing	Easting	Top of Casing Elevation	Ground Surface Elevation	Bottom of Well Elevation	Top of Screen Elevation
PZ-100-KS	1209	1068842	517212	485.64	483.8	99.63	109.76
PZ-100-SD	1208	1068852	517195	485.82	484.4	239.42	249.55
PZ-100-SS	1207	1068868	517175	485.84	484.4	390.42	410.39
PZ-101-SS	1210	1068473	516623	476.68	474.9	335.28	345.41
PZ-102-SS	N/A	1068088	516888	483.85	482.1	391.22	402.35
PZ-102R-SS	1211	1068132	516859	485.62	484.5	394.54	404.67
PZ-103-SS	1212	1067660	516724	480.17	477.8	332.95	343.08
PZ-104-KS	1215	1066993	516821	484.04	482.3	74.82	84.95
PZ-104-SD	1214	1067013	516834	483.69	482.1	236.77	246.90
PZ-104-SS	1213	1067028	516847	483.63	481.6	336.93	347.06
PZ-105-SS	1216	1066421	516230	483.61	481.2	332.59	342.72
PZ-106-KS	1219	1066704	515432	464.26	461.8	87.87	98.02
PZ-106-SD	1218	1066715	515416	463.42	461.5	260.52	270.66
PZ-106-SS	1217	1066726	515400	462.70	461.0	295.52	305.65
PZ-107-SS	1220	1067163	515255	464.66	462.6	359.90	370.03
PZ-108-SS	1221	1067678	515973	456.20	454.1	310.44	320.58
PZ-109-SS	1222	1068012	516144	458.50	456.8	320.94	331.07
PZ-110-SS	1223	1068336	515920	458.91	456.8	345.54	355.94
PZ-111-KS	1225	1068621	515850	460.87	459.2	91.88	102.03
PZ-111-SD	1224	1068638	515835	461.55	459.2	249.72	259.82
PZ-112-AS	1226	1069002	515674	459.83	457.9	423.20	428.33
PZ-113-SS	1229	1069242	515777	461.77	460.0	301.26	311.39
PZ-113-AD	1228	1069233	515760	461.46	459.9	351.13	361.26
PZ-113-AS	1227	1069224	515748	461.42	459.9	420.89	431.02
PZ-114-AS	1230	1069419	516768	451.31	449.8	419.75	429.88
PZ-115-SS	1231	1069409	516755	452.30	450.6	365.80	375.93
PZ-116-SS	1232	1066410	515844	484.87	483.1	321.74	331.67
PZ-200-SS	N/A	1068496	516972	485.63	483.6	385.64	473.99
PZ-201-SS	N/A	1067820	516862	480.33	478.0	389.37	468.26
PZ-201A-SS	1233	1067832	516746	480.16	478.4	388.22	398.35
PZ-202-SS	1234	1067320	517102	481.17	479.0	389.58	438.81
PZ-203-SS	1235	1066662	516608	486.59	484.2	374.48	384.58
PZ-204-SS	N/A	1066427	515533	469.63	467.0	377.35	456.08
PZ-204A-SS	1236	1066430	515556	468.16	466.7	377.23	387.16
PZ-205-SS	1238	1067484	515478	461.78	459.5	360.83	370.96
PZ-205-AS	1237	1067464	515463	460.99	459.3	410.65	420.78
PZ-206-SS	1239	1068031	515809	460.20	458.4	333.38	343.38
PZ-207-AS	1240	1069645	516038	463.57	461.9	421.85	426.98
PZ-208-SS	1241	1069219	517169	474.25	472.5	373.70	383.83
PZ-1201-SS	1201	1067302	516904	482.42	480.4	332.78	342.71
PZ-302-AI	N/A	1067210	514720	451.15	450.0	407.30	417.40
PZ-302-AS	N/A	1067198	514737	451.42	449.5	427.20	437.30
PZ-303-AS	N/A	1067763	514426	453.18	450.8	424.70	434.80

Well #	State ID	Northing	Easting	Top of Casing Elevation	Ground Surface Elevation	Bottom of Well Elevation	Top of Screen Elevation
PZ-304-AS	N/A	1068146	514435	453.71	451.4	424.20	434.30
PZ-304-AI	N/A	1068126	514435	454.02	451.6	402.50	412.60
PZ-305-AI	N/A	1068065	515634	459.28	457.6	394.30	404.40
LR-100	N/A	1067294	514894	469.12	467.2	442.40	447.50
LR-102	N/A	1068937	514788	513.52	512.0	452.00	457.10
LR-103	N/A	1068527	515217	461.28	460.1	421.40	431.50
LR-104	N/A	1068079	515623	459.73	458.0	419.50	429.60
LR-105	N/A	1067710	514525	486.79	484.2	447.90	458.00
MW-F-1-S	N/A	1068595	515890	No data	No data	No data	No data
MW-F-1-D	N/A	1068600	515805	No data	No data	No data	No data
MW-1204	1204	1066421	515823	485.63	483.3	259.80	269.80
S-1	N/A	1069686	514205	446.51	443.3	421.30	441.30
S-5	N/A	1069156	515901	468.65	465.7	425.70	435.70
S-8	N/A	1071044	514724	444.03	441.6	414.60	434.60
S-10	N/A	1069828	514931	480.28	477.5	425.50	445.50
S-51	N/A	1066140	514200	447.72	446.3	420.50	423.50
S-53	N/A	1066880	514500	449.00	444.8	421.10	424.10
S-61	N/A	1070160	514580	450.17	445.6	424.10	No data
S-75	N/A	1067270	514730	459.90	458.8	432.80	435.80
S-82	N/A	1069312	514273	450.70	447.7	422.20	432.20
S-84	N/A	1069685	516455	455.30	452.9	422.00	432.00
S-88	N/A	1068390	515270	462.20	460.0	418.50	430.00
I-2	N/A	1069698	514212	446.41	443.2	396.20	406.20
I-4	N/A	1069148	515890	468.57	466.0	390.00	400.00
I-7	N/A	1070743	514300	446.97	444.5	397.50	407.50
I-9	N/A	1069329	514269	450.99	448.5	395.50	405.50
I-11	N/A	1069819	514925	480.27	477.6	386.60	396.60
I-51	N/A	DAMAGED	UNUSABLE				
I-53	N/A	DAMAGED	UNUSABLE				
I-62	N/A	1070960	514675	446.08	444.1	400.10	410.10
I-65	N/A	1070940	515435	441.80	438.5	402.50	412.50
I-66	N/A	1070520	515935	441.80	437.7	400.80	410.80
I-67	N/A	1070090	516260	439.08	436.5	401.10	411.10
I-68	N/A	1069570	516690	448.32	440.9	409.70	419.70
I-73	N/A	1067680	515575	465.40	462.7	412.70	415.70
D-3	N/A	1069136	515872	470.32	467.2	361.20	371.20
D-6	N/A	1070194	514550	447.60	444.4	338.40	348.40
D-12	N/A	1069836	514936	479.91	477.4	333.40	343.40
D-13	N/A	1070486	515602	471.10	468.4	335.40	345.40
D-14	N/A	1068947	516523	487.77	484.5	425.50	430.50
D-81	N/A	1067338	514464	450.80	447.8	387.80	402.80
D-83	N/A	1070940	514660	447.70	444.4	347.40	367.40
D-85	N/A	1069680	516445	455.65	453.1	371.10	391.10
D-87	N/A	1069210	515400	462.55	460.0	349.00	369.00

Well #	State ID	Northing	Easting	Top of Casing Elevation	Ground Surface Elevation	Bottom of Well Elevation	Top of Screen Elevation
D-93	N/A	1069318	514270	450.70	448.3	336.30	356.30
MW-101	N/A	No data	No data	447.66	445.36	420.36	430.36
MW-102	N/A	No data	No data	448.98	446.68	422.18	432.18
MW-103	N/A	No data	No data	441.16	438.46	422.76	432.76
MW-104	N/A	No data	No data	441.88	438.98	421.98	431.98
MW-107	N/A	No data	No data	449.25	No data	No data	No data
MW-F3	N/A	1070380	515880	No data	No data	No data	No data
MW-F2	N/A	1067685	514417	450.10	447.90	422.60	437.60

TABLE 3-2

WELL CONSTRUCTION DATA

Well # Original	Well # Current	Completion Date	Driller	Consultant	Northing	Easting	Area	Construction & Boring Log	Total Depth	Completion Depth	Status
41	41	3/85	Wabash	NONE	1,069,287	514,377		YES	60.00	60.00	Abd 10/92
4/3	1201	3/85	Drlg.Serv.Co.	B&M	1,067,303	516,903		YES	250.00	NI	
14/3	1202	7/85	Drlg.Serv.Co.	B&M	1,067,343	516,875		YES	250.00	NI	ABD 3/91
17/4	1203	4/91	Drlg.Serv.Co.	B&M	1,067,189	516,955		YES	240.00	NI	ABD 3/91
1204	1204	4/91	Mathes & Asc	F & VD	1,066,421	515,823		YES	227.00	223.50	
1205	1205	4/1/91	Mathes & Asc	F & VD	1,067,387	515,621		YES	132.00	123.00	
1206	1206	4/24/91	Mathes & Asc	F & VD	1,067,396	515,624		YES	73.00	73.00	
HL-3	S-51	UNK	NI	Reitz & Jens	A 1,066,140	A 514,200	SW OUT	NO	25.80	NI	Missing
HL-2	S-52	6/78	NI	Reitz & Jens	A 1,066,470	A 514,200	SW OUT	NO	25.20	NI	
HL-1	S-53	UNK	NI	Reitz & Jens	A 1,066,880	A 514,500	SW OUT	NO	23.70	NI	
36	S-54	UNK	NI	NI	1,067,606	514,468	SW Berm	NO	40.40	NI	Abd 10/92
S-2	S-60	7/81	NI	NI	A 1,069,750	A 514,310	NW Berm	NO	21.00	21.00	
S-1	S-61	7/81	NI	NI	A 1,070,160	A 514,580	NW Berm	NO	21.50	NI	
37	S-75	UNK	NI	NI	A 1,067,270	A 514,730	SW Berm	NO	26.00	NI	
37A	S-76	6/78	Wabash	NONE	1,067,406	514,569	SW Berm	YES	50.00	50.00	Abd 10/92
S-80	S-80	8/84	Wabash	B&M	A 1,065,190	A 513,870	SW OUT	YES	22.00	20.00	Glued PVC at Surf.*
S-82	S-82	8/84	Wabash	B&M	1,069,312	514,273	W Berm	YES	26.50	25.50	Holes in riser*
S-84	S-84	8/84	Wabash	B&M	1,069,685	516,455	AREA 1	YES	30.90	31.50	
S-88	S-88	8/84	Wabash	B&M	A 1,068,390	A 515,270	Landfill	YES	40.00	41.50	Bent*
N-1	I-50	10/83	NI	Reitz & Jens	A 1,065,200	A 513,840	SW OUT	NO	40.60	40.60	
35	I-55	6/78	Wabash.	NONE	1,069,787	514,475	W Berm	YES	60.00	60.00	Abd 10/92
34	I-56	6/78	Wabash.	NONE	1,068,057	514,487	W Berm	YES	60.00	60+	Abd 10/92
40	I-58	6/78	Wabash.	NONE	1,068,874	514,458	W Berm	YES	60.00	60.00	Abd 10/92

TABLE 3-2

WELL CONSTRUCTION DATA

Well # Original	Well # Current	Casing & Screen Material	Slot Size	Casing Diameter (in)	Upper BH Diameter (in)	Base of Upper BH	Lower BH Diameter (in)	Surface Elevation	TOC Elevation	Bottom of Casing	Bottom of Casing (elev)	Bottom of Screen
41	41	NI	NI	NI	6"	NA	6"	unknown	485.50	NI		60
4/3	1201	NI						480.60	482.84	NI	427.6	NI
14/3	1202	NI	0.01	2 "	12"	110'	6"	480.50	482.70	240.0		250.0
17/4	1203	NI	0.01	2 "	12"	110.00	6"	481.10	483.70	240.0		250.0
1204	1204	Sch 80 PVC	0.01	2 "	8"	NA	8"	483.30	485.63	213.5	269.8	223.5
1205	1205	Sch 80 PVC	0.01	2"	11"	110.00	6"	384.50	386.77	113	271.5	123
1206	1206	Sch 80 PVC	0.01	2"	8"	NA	8"	386.20	388.48	63	323.2	73
HL-3	S-51	NI	NI					446.30	447.72	22.8	423.5	25.8
HL-2	S-52	NI	NI					444.70	447.08	22.2	422.5	25.2
HL-1	S-53	NI	NI					444.80	449.00	20.7	424.1	23.7
36	S-54	NI	NI					470.00	471.00	37.4	432.6	40.4
S-2	S-60	NI	NI					444.30	446.93	NI		21
S-1	S-61	NI	NI					445.60	450.17	NI		21.5
37	S-75	NI	NI					458.80	459.90	23	435.8	26
37A	S-76	NI	NI	NI	6"	NA	6"	474.40	477.50	47	427.4	50
S-80	S-80	Sch 40 PVC	0.01	2"	5"	NA	5"	448.40	452.55	10	438.4	20
S-82	S-82	Sch 40 PVC	0.01	2"	5"	20.00	No Info.	447.70	450.70	15.5	432.2	25.5
S-84	S-84	Sch 40 PVC	0.01	2"	5"	30.00	No Info.	452.90	455.30	20.9	432.0	30.9
S-88	S-88	Sch 40 PVC	0.01	2"	5"	30.00	4.5"	460.00	462.20	30	430.0	40
N-1	I-50	NI	NI	NI	NI	NI	NI	449.00	453.48	30.6	418.4	40.6
35	I-55	NI	NI	NI	6"	NA	6"	471.90	475.10	57	414.9	60
34	I-56	NI	NI	NI	6"	NA	6"	475.10	478.40	57	418.1	60
40	I-58	NI	NI	NI	6"	NA	6"	477.50	480.50	57	420.5	60

TABLE 3-2

WELL CONSTRUCTION DATA

Well # Original	Well # Current	Bottom of Screen (elev)	Top of Cement	Bottom of Cement	Bottom of Bentonite Seal	Bottom of Sand Pack	Bottom of Basal Bentonite Seal	Bottom of Backfill	Backfill Material	Top of Bedrock	Bedrock Elevation
41	41	NA	No Cement	No Cement	NA	60	None	NA	NA	Not Encountered	
4/3	1201	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
14/3	1202	NI	NI	NI	NI	250	NI	NI	NI	NI	NI
17/4	1203	NI	NI	NI	NI	250	NI	NI	NI	NI	NI
1204	1204	259.8	2	208	211	224	None	227.00	Hole Core	33	450.30
1205	1205	261.5	2	107	111	123	None	132.00	Sand Pack	surface	384.5
1206	1206	313.2	2	59	61	73	NA	NA	NA	surface	386.2
HL-3	S-51	420.5	NI	NI	NI	NI	NI	NI	NI	NI	NI
HL-2	S-52	419.5	NI	NI	NI	NI	NI	NI	NI	NI	NI
HL-1	S-53	421.1	NI	NI	NI	NI	NI	NI	NI	NI	NI
36	S-54	429.6	NI	NI	NI	NI	NI	NI	NI	NI	NI
S-2	S-60	423.3	NI	NI	NI	NI	NI	NI	NI	NI	NI
S-1	S-61	424.1	NI	NI	NI	NI	NI	NI	NI	NI	NI
37	S-75	432.8	NI	NI	NI	NI	NI	NI	NI	NI	NI
37A	S-76	424.4	No Cement	No Cement	None	50	NA	NA	NA	Not Encountered	
S-80	S-80	428.4	surface	7	9	20	NA	22.00	1' clay, 1' bent.	Not Encountered	
S-82	S-82	422.2	surface	11	13	26.5	NA	26.50	Sand Pack	Not Encountered	
S-84	S-84	422.0	surface	18.2	20	31.5	NA	31.50	Sand Pack	Not Encountered	
S-88	S-88	420.0	surface	28.5	30.5	41.5	NA	41.50	Sand Pack	Not Encountered	
N-1	I-50	408.4	NI	NI	NI	NI	NA	NA			
35	I-55	411.9	No Cement	No Cement	None	60	NA	NA	NA	Not Encountered	
34	I-56	415.1	No Cement	No Cement	None	60	NA	NA	NA	Not Encountered	
40	I-58	417.5	No Cement	No Cement	None	60	NA	NA	NA	Not Encountered	

TABLE 3-2

WELL CONSTRUCTION DATA

Well # Original	Well # Current	Concrete Surface Cap	Top of War. Shale	War. Shale Elevation
41	41			
4/3	1201			
14/3	1202			
17/4	1203			
1204	1204	2	224	259.30
1205	1205	2	122	262.50
1206	1206	2	NA	
HL-3	S-51			
HL-2	S-52			
HL-1	S-53			
36	S-54			
S-2	S-60			
S-1	S-61			
37	S-75			
37A	S-76			
S-80	S-80			
S-82	S-82			
S-84	S-84			
S-88	S-88			
N-1	I-50			
35	I-55			
34	I-56			
40	I-58			

TABLE 3-2

WELL CONSTRUCTION DATA

Well # Original	Well # Current	Completion Date	Driller	Consultant	Northing	Easting	Area	Construction & Boring Log	Total Depth	Completion Depth	Status
N-2	I-59	10/83	NI	Reitz & Jens	1,069,332	514,289	W Berm	NO	43.50	NI	Abd 10/92
N-3	I-62	10/83	NI	Reitz & Jens	A 1,070,960	A 514,675	NW Berm	NO	44.00	NI	
N-4	I-65	10/83	NI	Reitz & Jens	A 1,070,940	A 515,435	NE Berm	NO	36.00	NI	
N-5	I-66	10/83	NI	Reitz & Jens	A 1,070,520	A 515,935	NE Berm	NO	36.90	NI	
N-6	I-67	10/83	NI	Reitz & Jens	A 1,070,090	A 516,260	NE Berm	NO	35.40	NI	
N-7	I-68	10/83	NI	Reitz & Jens	A 1,069,570	A 516,690	NE Berm	NO	31.20	NI	Bent/broken riser
39	I-72	6/78	Wabash.	NONE	A 1,067,890	A 515,345	Landfill	YES	50.00	50.00	
38	I-73	6/78	Wabash.	NONE	A 1,067,680	A 515,575	Landfill	YES	50.00	50.00	
D-81	D-81	8/84	Wabash	B&M	1,067,338	514,464	W Berm	YES	61.50	60.00	
D-83	D-83	8/84	Wabash	B&M	1,070,940	514,660	NW Berm	YES	115.30	97.00	
D-85	D-85	8/84	Wabash	B&M	1,069,680	516,445	AREA 1	YES	84.10	82.00	
D-87	D-87	8/84	Wabash	B&M	1,069,210	515,400	Landfill	YES	111.70	111.00	
D-89	D-89	8/84	Wabash	B&M	1,066,970	515,100	Landfill	YES	49.00	48.00	
D-90	D-90	8/85	Wabash	B&M	1,066,160	514,300	SW OUT	YES	46.90	46.27	Holes in riser*
D-91	D-91	8/85	Wabash	B&M	1,065,220	513,770		YES	45.00	45.00	Missing*
D-92	D-92	4/85	Wabash	B&M	1,069,760	515,090		YES	143.60	143.00	Missing*
D-93	D-93	4/85	Wabash	B&M	1,069,318	514,270	W Berm	YES	119.20	112.00	Broken riser*
D-94	D-94	4/85	Wabash	B&M	1,070,645	515,820	W Berm	YES	106.00	109.00	
D-95	D-95	4/85	Wabash	B&M	NI	NI	Ford EC	YES	101.00	101.00	Missing*
GB-1	GB-1	10/8/90	Layne-Western	F&VD	1,067,015	517,414	EAST	YES	36	Not Completed	
GB-2	GB-2	10/10/90	Layne-Western	F&VD	1,067,038	517,769	EAST	YES	72	Not Completed	
GB-3	GB-3	10/11/90	Layne-Western	F&VD	1,067,391	517,514	EAST	YES	34.5	Not Completed	

TABLE 3-2

WELL CONSTRUCTION DATA

Well # Original	Well # Current	Casing & Screen Material	Slot Size	Casing Diameter (in)	Upper BH Diameter (in)	Base of Upper BH	Lower BH Diameter (in)	Surface Elevation	TOC Elevation	Bottom of Casing	Bottom of Casing (elev)	Bottom of Screen
N-2	I-59	NI	NI	NI	NI	NI	NI	444.90	448.67	33.5	411.4	43.5
N-3	I-62	NI	NI	NI	NI	NI	NI	444.10	446.08	34	410.1	44
N-4	I-65	NI	NI	NI	NI	NI	NI	438.50	441.80	26	412.5	36
N-5	I-66	NI	NI	NI	NI	NI	NI	437.70	441.80	26.9	410.8	36.9
N-6	I-67	NI	NI	NI	NI	NI	NI	436.50	439.08	25.4	411.1	35.4
N-7	I-68	NI	NI	NI	NI	NI	NI	440.90	448.32	21.2	419.7	31.2
39	I-72	NI	NI	NI	6"	NA	6"	462.70	465.40	47	415.7	50
38	I-73	NI	NI	NI	6"	NA	6"	462.70	465.40	47	415.7	50
D-81	D-81	Sch 40 PVC	0.01	2"	5"	15.00	4.5"	447.80	450.80	45	402.8	60
D-83	D-83	Sch 40 PVC	0.01	2"	5"	15.00	4.5"	444.40	447.70	77	367.4	97
D-85	D-85	Sch 40 PVC	0.01	2"	5"	10.00	4.5"	453.10	455.65	62	391.1	82
D-87	D-87	Sch 40 PVC	0.01	2"	5"	30.00	4.5"	460.00	462.55	91	369.0	111
D-89	D-89	Sch 40 PVC	0.01	2"	5"	25.00	4.5"	454.35	457.10	33	421.4	48
D-90	D-90	Sch 40 PVC	0.01	2"	4"	7.00	3.875"	447.30	450.60	36.33	411.0	46.33
D-91	D-91	Sch 40 & 20 PVC	0.02	2"	3.875"	NA	3.875"	448.00	453.37	35	413.0	45
D-92	D-92	NI	NI	NI	4"	40.00	3.875"	475.50	475.37	123	352.5	143
D-93	D-93	Sch 40 PVC	0.01	2"	6"	8.00	4.875"	448.30	450.70	92	356.3	112
D-94	D-94	Sch 40 PVC	NI	2"	4"	5.00	3.875"	438.98	442.68	86	353.0	106
D-95	D-95	PVC	0.01	2"	6"	20.00	3.875"	449.79	453.09	81	368.8	101
GB-1	GB-1	NA	NA	NA	4.25" ID	NA	4.25" ID	496.6	NA	NA	NA	NA
GB-2	GB-2	NA	NA	NA	4.25" ID	NA	4.25" ID	513.9	NA	NA	NA	NA
GB-3	GB-3	NA	NA	NA	4.25" ID	NA	4.25" ID	479.7	NA	NA	NA	NA

TABLE 3-2

WELL CONSTRUCTION DATA

Well # Original	Well # Current	Bottom of Screen (elev)	Top of Cement	Bottom of Cement	Bottom of Bentonite Seal	Bottom of Sand Pack	Bottom of Basal Bentonite Seal	Bottom of Backfill	Backfill Material	Top of Bedrock	Bedrock Elevation
N-2	I-59	401.4	NI	NI	NI	NI	NI	NI	NI	NI	NI
N-3	I-62	400.1	NI	NI	NI	NI	NI	NI	NI	NI	NI
N-4	I-65	402.5	NI	NI	NI	NI	NI	NI	NI	NI	NI
N-5	I-66	400.8	NI	NI	NI	NI	NI	NI	NI	NI	NI
N-6	I-67	401.1	NI	NI	NI	NI	NI	NI	NI	NI	NI
N-7	I-68	409.7	NI	NI	NI	NI	NI	NI	NI	NI	NI
39	I-72	412.7	No Cement	No Cement	None	50	NA	NA	NA	Not Encountered	
38	I-73	412.7	No Cement	No Cement	None	50	NA	NA	NA	Not Encountered	
D-81	D-81	387.8	surface	41	44	61.5	NA	NA	NA	Not Encountered	
D-83	D-83	347.4	surface	73.5	75.5	99	100	115.30	Sand Pack	115	329.40
D-85	D-85	371.1	surface	57.5	59.7	84.1	NA	NA	NA	83.5	369.60
D-87	D-87	349.0	surface	84.7	87.7	111.7	NA	NA	NA	111	349.00
D-89	D-89	406.4	surface	30.5	32.5	49	NA	NA	NA	47.8	406.55
D-90	D-90	401.0	NI	NI		46.9	NA	NA	NA	46	401.30
D-91	D-91	403.0	surface	NI		45	NA	NA	NA	44	404.00
D-92	D-92	332.5	NI	NI		143.6	NA	NA	NA	Not Encountered	
D-93	D-93	356.3	surface	89.6	91	None	NA	Hole caved from 91 to 112	cavings	118	330.30
D-94	D-94	333.0	surface	64	65	None	NA	Hole caved from 65 to 109	cavings	108.8	330.18
D-95	D-95	348.8	surface	62	None	None	NA	Hole caved from 62 to 101	cavings	100.6	349.19
GB-1	GB-1	NA	surface	36	NA	NA	NA	NA	NA	30.5	466.1#
GB-2	GB-2	NA	surface	72	NA	NA	NA	NA	NA	71.50	442.40
GB-3	GB-3	NA	surface	34.5	NA	NA	NA	NA	NA	32.5	447.2

TABLE 3-2

WELL CONSTRUCTION DATA

Well # Original	Well # Current	Concrete Surface Cap	Top of War. Shale	War. Shale Elevation
N-2	I-59			
N-3	I-62			
N-4	I-65			
N-5	I-66			
N-6	I-67			
N-7	I-68			
39	I-72			
38	I-73			
D-81	D-81			
D-83	D-83			
D-85	D-85			
D-87	D-87			
D-89	D-89			
D-90	D-90			
D-91	D-91			
D-92	D-92			
D-93	D-93			
D-94	D-94			
D-95	D-95			
GB-1	GB-1			
GB-2	GB-2			
GB-3	GB-3			

TABLE 3-2

WELL CONSTRUCTION DATA

Well # Original	Well # Current	Completion Date	Driller	Consultant	Northing	Easting	Area	Construction & Boring Log	Total Depth	Completion Depth	Status
GB-4	GB-4	10/11/90	Layne-Western	F&VD	1,067,716	517,270	EAST	YES	29.5	Not Completed	
GB-5	GB-5	10/11/90	Layne-Western	F&VD	1,067,400	517,109	EAST	YES	27	Not Completed	
GB-6	GB-6	10/12/90	Layne-Western	F&VD	1,067,638	517,709	EAST	YES	92	Not Completed	
MW-101	MW-101	4/11/90	NI	D&M	NI	NI	Ford EC	YES	25.00	25.00	
MW-102	MW-102	4/11/90	NI	D&M	NI	NI	Ford EC	YES	25.00	24.50	
MW-103	MW-103	4/9/90	NI	D&M	NI	NI	Ford EC	YES	18.00	15.70	
MW-104	MW-104	4/11/90	NI	D&M	NI	NI	Ford EC	YES	17.00	17.00	
MW-105	MW-105	4/12/90	NI	D&M	NI	NI	Ford EC	YES	15.00	15.00	
MW-106	MW-106	4/12/90	NI	D&M	NI	NI	Ford EC	YES	15.00	15.00	
MW-107	MW-107	4/12/90	NI	D&M	NI	NI	Ford EC	YES	15.00	15.00	
MW-F1D	MW-F1D	8/8/90	Brotcke Eng.	F & VD	A 1,068,600.00	A 515,805.00		YES	79.50	79.10	
MW-F1S	MW-F1S	8/9/90	Brotcke Eng.	F & VD	A 1,068,595.00	A 515,890.00		YES	32.90	32.40	
MW-F2	MW-F2	8/9/90	Brotcke Eng.	F & VD	1,067,685	514,417		YES	25.70	25.30	
MW-F3	MW-F3	8/10/90	Brotcke Eng.	F & VD	A 1,070,380.00	A 515,880.00		YES	46.00	42.80	
EC-8	EC-8				NI	NI	Ford EC	NO	NI	NI	
EC-9	EC-9				NI	NI	Ford EC	NO	NI	NI	
EC-12	EC-12				NI	NI	Ford EC	NO	NI	NI	

TABLE 3-2

WELL CONSTRUCTION DATA

Well # Original	Well # Current	Casing & Screen Material	Slot Size	Casing Diameter (in)	Upper BH Diameter (in)	Base of Upper BH	Lower BH Diameter (in)	Surface Elevation	TOC Elevation	Bottom of Casing	Bottom of Casing (elev)	Bottom of Screen
GB-4	GB-4	NA	NA	NA	4.25" ID	NA	4.25" ID	476.2	NA	NA	NA	NA
GB-5	GB-5	NA	NA	NA	4.25" ID	NA	4.25" ID	478.4	NA	NA	NA	NA
GB-6	GB-6	NA	NA	NA	4.25" ID	NA	4.25" ID	556.8	NA	NA	NA	NA
MW-101	MW-101	PVC	0.01	2"	8"	NA	8"	445.36	447.66	15.00	430.36	25.00
MW-102	MW-102	PVC	0.01	2"	8"	NA	8"	446.68	448.98	14.50	432.18	24.50
MW-103	MW-103	PVC	0.01	2"	8"	NA	8"	438.46	441.16	5.70	432.76	15.70
MW-104	MW-104	PVC	0.01	2"	8"	NA	8"	438.98	441.88	7.00	431.98	17.00
MW-105	MW-105	PVC	0.01	2"	8"	NA	8"	437.87	440.17	5.00	432.87	15.00
MW-106	MW-106	PVC	0.01	2"	8"	NA	8"	NI	444.70	5.00	NI	15.00
MW-107	MW-107	PVC	0.01	2"	8"	NA	8"	NI	449.25	5.00	NI	15.00
MW-F1D	MW-F1D	Sch 40 PVC	0.01	2"	8"	NA	8"	NI	NI	74.1	NI	79.1
MW-F1S	MW-F1S	Sch 40 PVC	0.01	2"	8"	NA	8"	NI	NI	22.5	NI	32.5
MW-F2	MW-F2	Sch 40 PVC	0.01	2"	8"	NA	8"	447.90	450.10	10.3	437.6	25.3
MW-F3	MW-F3	Sch 40 PVC	0.01	2"	8"	NA	8"	NI	NI	32.8	NI	42.8
EC-8	EC-8	NI	NI	NI	NI	NI	NI	NI	441.87	NI	NI	NI
EC-9	EC-9	NI	NI	NI	NI	NI	NI	NI	441.85	NI	NI	NI
EC-12	EC-12	NI	NI	NI	NI	NI	NI	NI	440.59	NI	NI	NI

TABLE 3-2

WELL CONSTRUCTION DATA

Well # Original	Well # Current	Bottom of Screen (elev)	Top of Cement	Bottom of Cement	Bottom of Bentonite Seal	Bottom of Sand Pack	Bottom of Basal Bentonite Seal	Bottom of Backfill	Backfill Material	Top of Bedrock	Bedrock Elevation
GB-4	GB-4	NA	surface	29.5	NA	NA	NA	NA	NA	27.50	448.70
GB-5	GB-5	NA	surface	27	NA	NA	NA	NA	NA	26.7	451.7
GB-6	GB-6	NA	surface	92	NA	NA	NA	NA	NA	81.50	475.3#
MW-101	MW-101	420.36	NI	9.50	12.50	25.00	NA	NA	NA	Not Encountered	
MW-102	MW-102	422.18	NI	9.50	12.00	24.50	NA	25.00	Native sand	Not Encountered	
MW-103	MW-103	422.76	NI	2.50	7.00	15.70	NA	18.00	Native sand	Not Encountered	
MW-104	MW-104	421.98	NI	2.30	5.00	17.00	NA	NA	NA	Not Encountered	
MW-105	MW-105	422.87	NI	2.00	3.50	15.00	NA	NA	NA	Not Encountered	
MW-106	MW-106	NI	NI	2.00	3.50	15.00	NA	NA	NA	Not Encountered	
MW-107	MW-107	NI	NI	2.00	3.50	15.00	NA	NA	NA	Not Encountered	
MW-F1D	MW-F1D	NI	2	63.5	67	79.5	NA	NA	NA	79.4	
MW-F1S	MW-F1S	NI	2.4	17	19.9	32.9	NA	NA	NA	Not Encountered	
MW-F2	MW-F2	NI	2.55	5.55	8.4	25.7	NA	NA	NA	Not Encountered	
MW-F3	MW-F3	NI	2.4	24.8	27.9	46	NA	NA	NA	Not Encountered	
EC-8	EC-8	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
EC-9	EC-9	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
EC-12	EC-12	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI

TABLE 3-2

WELL CONSTRUCTION DATA

Well # Original	Well # Current	Concrete Surface Cap	Top of War. Shale	War. Shale Elevation
GB-4	GB-4			
GB-5	GB-5			
GB-6	GB-6			
MW-101	MW-101			
MW-102	MW-102			
MW-103	MW-103			
MW-104	MW-104			
MW-105	MW-105			
MW-106	MW-106			
MW-107	MW-107			
MW-F1D	MW-F1D			
MW-F1S	MW-F1S			
MW-F2	MW-F2			
MW-F3	MW-F3			
EC-8	EC-8			
EC-9	EC-9			
EC-12	EC-12			

All values in feet unless noted.
NA = Not applicable.
NI = No information.
UNK = Unknown.
B&M = Burns & McDonnell.
+ = B&M gaging data indicates 61.1'.

D&M = Dames & Moore.
F&VD = Foth & VanDyke.
= Shale.
* = F&VD letter 6/90.
A = Approximate value (F&VD).

E-2: Hydraulic Conductivity Test Data

Table 5-3 : Summary of Alluvial Aquifer Hydraulic Conductivity Values

Hydraulic Conductivity K (cm/s) *
3.78E-03
8.76E-04
3.43E-02
2.32E-03
4.17E-03
3.83E-03
3.27E-02
5.41E-02
6.68E-02
5.47E-02
4.63E-02
1.22E-02
3.15E-02
4.29E-02
4.14E-02
8.85E-02
4.50E-03
4.78E-02

Maximum	3.43E-02
Minimum	8.76E-04
Average	8.22E-03

Maximum	6.68E-02
Minimum	1.22E-02
Average	4.45E-02

Maximum	8.85E-02
Minimum	4.50E-03
Average	4.28E-02

Note: All hydraulic conductivity values were determined using the AQTESOLV™ computer program (Geraghty & Miller, 1989)

Table 3-5. Summary of Flexible Wall Permeability Test Results, West Lake Landfill

Sample Number	Sample Length (cm)	Sample Diameter (cm)	Sample Dry Density (pcf)	Maximum Dry Density (pcf)	Compaction (%)	Initial Moisture Content (%)	Optimum Moisture Content (%)	Effective Pressure (psi)	Back Pressure (psi)	Gradient	Average Permeability (cm/sec)
PZ-101-SS 6-8	7.99	7.22	91.7	---	---	24.4	---	6	94	2	3×10^{-4}
PZ-102-SS 4-6	8.82	7.07	92.2	---	---	28.2	---	5	95	9	8×10^{-7}
PZ-103-SS 14-16	7.73	7.18	97.7	---	---	28.3	---	13	87	4	2×10^{-6}
PZ-104-KS 6-8	9.11	7.14	95.7	---	---	23.6	---	6	94	24	2×10^{-7}
PZ-106-KS 6-8	8.89	7.14	103.0	---	---	22.2	---	6	94	5	3×10^{-6}
PZ-106-KS GTS-1 201.9-202.5	7.63	4.50	151.9	---	---	4.5	---	153	98	129	$<1.1 \times 10^{-10}$
PZ-106-KS GTS-2 229.6-230.1	7.66	4.47	148.0	---	---	4.4	---	170	88	94	1.5×10^{-10}
PZ-200-SS 6-8	9.59	7.17	95.3	---	---	27.5	---	6	94	4	2×10^{-6}
PZ-201-SS 26-28	8.11	7.13	86.4	---	---	34.5	---	23	77	14	3×10^{-6}
PZ-202-SS 6-8	8.08	7.10	96.4	---	---	26.7	---	6	94	10	3×10^{-7}
PS-1 10	9.56	7.23	100.8	105.0	96	18.4	19.0	5	95	6	2×10^{-7}
PS-2 7	9.55	7.24	101.7	106.0	96	17.5	17.5	5	95	10	3×10^{-7}
LR-103	10.16	7.22	79.9	---	---	37.4	17.5	5	95	3	2×10^{-4}

Table 3-6. Summary of Packer Testing Results
Keokuk Formation - West Lake Landfill

Borehole	Ground Surface Elevation	Keokuk Test Interval (depth below ground surface)	Hydraulic Conductivity	
			cm/sec	ft/min
PZ-100-KS	438.3	366.0-391.0	7.6E-7	1.5E-6
		377.0-391.0	1.4E-6	2.7E-6
PZ-104-KS	482.3	366.0-371.0	4.0E-6	7.9E-6
		360.0-408.0	5.7E-6	1.1E-5
		390.0-408.0	1.3E-5	2.6E-5
PZ-106-KS	460.8	357.0-362.2	2.8E-5	5.5E-5
		346.0-374.1	2.2E-5	4.3E-5
		364.0-374.0	1.7E-5	3.4E-5
PZ-111-KS	459.2	343.0-348.0	2.5E-5	4.9E-5
		355.0-360.0	4.3E-5	8.5E-5
		343.0-368.0	2.1E-5	4.1E-5
Geometric Mean			**9.7E-6**	**1.9E-5**

Table 3-6. Summary of Packer Testing Results
Keokuk Formation - West Lake Landfill

Borehole	Ground Surface Elevation	Keokuk Test Interval (depth below ground surface)	Hydraulic Conductivity	
			cm/sec	ft/min
PZ-100-KS	438.3	366.0-391.0	7.6E-7	1.5E-6
		377.0-391.0	1.4E-6	2.7E-6
PZ-104-KS	482.3	366.0-371.0	4.0E-6	7.9E-6
		360.0-408.0	5.7E-6	1.1E-5
		390.0-408.0	1.3E-5	2.6E-5
PZ-106-KS	460.8	357.0-362.2	2.8E-5	5.5E-5
		346.0-374.1	2.2E-5	4.3E-5
		364.0-374.0	1.7E-5	3.4E-5
PZ-111-KS	459.2	343.0-348.0	2.5E-5	4.9E-5
		355.0-360.0	4.3E-5	8.5E-5
		343.0-368.0	2.1E-5	4.1E-5
Geometric Mean			**9.7E-6**	**1.9E-5**

Table 3-8. Summary of Packer Testing Results
Salem Formation - West Lake Landfill

Borehole	Ground Surface Elevation	Keokuk Test Interval (depth below ground surface)	Hydraulic Conductivity	
			cm/sec	ft/min
PZ-100-KS	438.3	195.0-200.0	3.9E-6	7.7E-6
		220.0-225.0	2.1E-6	4.1E-6
PZ-104-KS	482.3	208.0-213.0	8.4E-6	1.7E-5
		162.0-252.5	4.9E-6	9.7E-6
		235.0-252.5	3.2E-7	6.4E-7
PZ-106-KS	460.8	148.0-153.0	4.5E-6	8.8E-6
		140.0-201.0	2.5E-5	5.0E-5
		187.0-201.0	1.8E-7	3.5E-7
PZ-111-KS	459.2	127.0-210.0	1.3E-6	2.6E-6
		162.0-167.0	7.9E-7	1.5E-6
		195.0-200.0	5.8E-8	1.1E-7
		140.0-210.0	3.3E-6	6.4E-6
		175.0-210.0	1.2E-6	2.4E-6
Geometric Mean			**1.6E-6**	**3.2E-6**

Table 3-9. Summary of Packer Testing Results
Saint Louis Formation - West Lake Landfill

Borehole	Ground Surface Elevation	Keokuk Test Interval (depth below ground surface)	Hydraulic Conductivity		Comments
			cm/sec	ft/min	
PZ-100-KS	438.3	37.3-42.3	7.5E-4	1.5E-3	Unsaturated
		50.0-55.0	3.3E-6	6.6E-6	Unsaturated
		110.0-115.0	3.7E-7	7.2E-7	Saturated
PZ-104-KS	482.3	50.0-55.0	2.9E-6	5.7E-6	Unsaturated
		113.0-118.0	1.5E-7	2.9E-7	Unsaturated
PZ-106-KS	460.8	42.0-47.0	6.0E-6	1.2E-5	Unsaturated
		61.0-66.0	2.1E-6	4.1E-6	Unsaturated
PZ-111-KS	459.2	125.0-130.0	5.4E-7	1.1E-6	Saturated
		105.0-127.0	4.4E-6	8.6E-6	Saturated
Geometric Mean			**4.9E-6**	**9.6E-6**	**Unsaturated**
			1.6E-6	**3.2E-6**	**Saturated**

Table 3-10. Summary of Slug Test Results, West Lake Landfill

Piezometer	Hydraulic Conductivity							
	Hvorslev		Bouwer & Rice		Cooper Papadopulos Best Fit		Mean Value of Hvorslev & Bouwer and Rice	
	cm/sec	ft/min	cm/sec	ft/min	cm/sec	ft/min	cm/sec	ft/min
Shallow Alluvial Piezometers								
PZ-112-AS-RH1	1.9E-03	3.7E-03	1.1E-03	2.2E-03	NA	NA	1.5E-03	3.0E-03
PZ-112-AS-FH1	3.0E-03	5.9E-03	1.7E-03	3.3E-03	NA	NA	2.4E-03	4.6E-03
PZ-113-AS-RH1	1.4E-02	2.8E-02	5.3E-02	1.0E-01	NA	NA	3.4E-02	6.6E-02
PZ-113-AS-FH1	8.0E-03	1.6E-02	5.1E-03	1.0E-02	NA	NA	6.6E-03	1.3E-02
PZ-114-AS-FH1	3.1E-03	6.1E-03	1.7E-03	3.3E-03	NA	NA	2.4E-03	4.7E-03
PZ-114-AS-FH2	4.5E-03	8.9E-03	2.7E-03	5.3E-03	NA	NA	3.6E-03	7.1E-03
PZ-205-AS	6.0E-04	1.2E-03	4.4E-04	8.7E-04	NA	NA	5.2E-04	1.0E-03
PZ-207-AS	7.6E-03	1.5E-02	4.8E-03	9.4E-03	NA	NA	6.2E-03	1.2E-02
PZ-300-AS-FH[2]	5.8E-04	1.1E-03	NA	NA	NA	NA	5.8E-04	1.1E-03
PZ-300-AS-RH	7.1E-04	1.4E-03	2.1E-03	4.1E-03	NA	NA	1.4E-03	2.8E-03
PZ-302-AS-FH[2]	1.1E-04	2.2E-04	NA	NA	NA	NA	1.1E-04	2.2E-04
PZ-302-AS-RH	1.2E-04	2.4E-04	NA	NA	NA	NA	1.2E-04	2.4E-04
PZ-303-AS-FH1[2]	4.0E-04	7.9E-04	NA	NA	NA	NA	4.0E-04	7.9E-04
PZ-303-AS-FH2[2]	6.0E-04	1.2E-03	NA	NA	NA	NA	6.0E-04	1.2E-03
PZ-303-AS-RH	3.7E-03	7.3E-03	1.5E-02	3.0E-02	NA	NA	9.4E-03	1.8E-02
PZ-304-AS-FH[2]	8.7E-04	1.7E-03	NA	NA	NA	NA	8.7E-04	1.7E-03
PZ-304-AS-RH	5.9E-03	1.2E-02	1.8E-02	3.5E-02	NA	NA	1.2E-02	2.4E-02
Geometric Mean	**2.5E-03**	**5.0E-03**	**3.9E-03**	**7.6E-03**	**NA**	**NA**	**2.9E-03**	**5.8E-03**
Intermediate Alluvial Piezometers								
PZ-302-AI-FH	1.5E-02	3.0E-02	9.8E-03	1.9E-02	NA	NA	1.2E-02	2.4E-02
PZ-302-AI-RH	1.5E-02	3.0E-02	1.0E-02	2.0E-02	NA	NA	1.3E-02	2.5E-02
PZ-304-AI-FH	2.4E-02	4.7E-02	1.7E-02	3.3E-02	NA	NA	2.1E-02	4.0E-02
PZ-305-AI-FH[1]	1.8E-02	3.5E-02	1.4E-02	2.8E-02	NA	NA	1.6E-02	3.1E-02
PZ-305-AI-FH[2]	1.9E-04	3.7E-04	1.7E-04	3.3E-04	NA	NA	1.8E-04	3.5E-04
Geometric Mean	**1.8E-02**	**3.5E-02**	**1.2E-02**	**2.3E-02**	**NA**	**NA**	**1.5E-02**	**2.9E-02**
Deep Alluvial Piezometers								
PZ-113-AD-FH1	1.8E-03	3.5E-03	1.5E-03	3.0E-03	NA	NA	1.7E-03	3.2E-03
PZ-113-AD-FH2	1.9E-03	3.7E-03	1.4E-03	2.8E-03	NA	NA	1.7E-03	3.2E-03
PZ-300-AD-FH	3.7E-04	7.3E-04	2.7E-04	5.3E-04	NA	NA	3.2E-04	6.3E-04
PZ-300-AD-RH	1.6E-04	3.1E-04	1.1E-04	2.2E-04	NA	NA	1.4E-04	2.7E-04
Geometric Mean	**6.7E-04**	**1.3E-03**	**5.0E-04**	**9.8E-04**	**NA**	**NA**	**5.9E-04**	**1.2E-03**

Table 3-10. Summary of Slug Test Results, West Lake Landfill (continued)

Piezometer	Hydraulic Conductivity							
	Hvorslev		Bouwer & Rice		Cooper Papadopulos Best Fit		Mean Value of Hvorslev & Bouwer and Rice	
	cm/sec	ft/min	cm/sec	ft/min	cm/sec	ft/min	cm/sec	ft/min
Shallow St. Louis/Salem Piezometers								
PZ-100-SS	1.0E-07	2.0E-07	5.7E-08	1.1E-07	NA	NA	7.9E-08	1.5E-07
PZ-101-SS	8.6E-07	1.7E-06	5.1E-07	1.0E-06	NA	NA	6.9E-07	1.3E-06
PZ-102R-SS	4.7E-08	9.3E-08	3.0E-08	5.9E-08	NA	NA	3.9E-08	7.6E-08
PZ-103-SS	8.4E-07	1.7E-06	1.7E-06	3.3E-06	NA	NA	1.3E-06	2.5E-06
PZ-104-SS	6.0E-07	1.2E-06	1.3E-06	2.6E-06	NA	NA	9.5E-07	1.9E-06
PZ-105-SS	3.5E-06	6.9E-06	8.5E-06	1.7E-05	NA	NA	6.0E-06	1.2E-05
PZ-106-SS	3.9E-06	7.7E-06	2.5E-06	4.9E-06	NA	NA	3.2E-06	6.3E-06
PZ-107-SS	1.6E-06	3.1E-06	1.2E-06	2.4E-06	NA	NA	1.4E-06	2.8E-06
PZ-108-SS	6.3E-07	1.2E-06	4.3E-07	8.5E-07	NA	NA	5.3E-07	1.0E-06
PZ-109-SS	1.8E-07	3.5E-07	8.7E-08	1.7E-07	NA	NA	1.3E-07	2.6E-07
PZ-110-SS[1]	1.6E-06	3.1E-06	8.9E-07	1.8E-06	NA	NA	1.2E-06	2.5E-06
PZ-113-SS	5.2E-06	1.0E-05	4.9E-06	9.6E-06	NA	NA	5.1E-06	9.9E-06
PZ-115-SS	2.9E-05	5.7E-05	2.4E-05	4.7E-05	NA	NA	2.7E-05	5.2E-0-5
PZ-116-SS	2.9E-08	5.7E-08	1.7E-08	3.3E-08	NA	NA	2.3E-08	4.5E-08
PZ-200-SS	1.5E-06	3.0E-06	2.8E-06	5.5E-06	NA	NA	2.2E-06	4.2E-06
PZ-201-SS	3.3E-05	6.5E-05	5.4E-05	1.1E-04	NA	NA	4.4E-05	8.6E-05
PZ-201A-SS	1.3E-07	2.6E-07	8.3E-08	1.6E-07	NA	NA	1.1E-07	2.1E-07
PZ-202-SS	3.0E-03	5.9E-03	2.5E-03	4.9E-03	NA	NA	2.8E-03	5.4E-03
PZ-204-SS	1.8E-06	3.5E-06	2.8E-06	5.5E-06	NA	NA	2.3E-06	4.5E-06
PZ-204A-SS	3.5E-07	6.9E-07	2.3E-07	4.5E-07	NA	NA	2.9E-07	5.7E-07
PZ-205-SS	4.4E-07	8.7E-07	3.9E-07	7.7E-07	NA	NA	4.2E-07	8.2E-07
PZ-206-SS	1.8E-05	3.5E-05	1.1E-05	2.2E-05	NA	NA	1.5E-05	2.9E-05
PZ-208-SS	4.3E-07	8.5E-07	2.7E-07	5.3E-07	NA	NA	3.5E-07	6.9E-07
PZ-300-SS	9.0E-07	1.8E-06	7.7E-07	1.5E-06	NA	NA	8.4E-07	1.6E-06
PZ-301-SS[1]	7.5E-07	1.5E-06	NA	NA	NA	NA	7.5E-07	1.5E-06
Geometric Mean	**1.3E-06**	**2.6E-06**	**1.2E-06**	**2.4E-06**	**NA**	**NA**	**1.3E-06**	**2.6E-06**

Table 3-10. Summary of Slug Test Results, West Lake Landfill (continued)

Piezometer	Hydraulic Conductivity							
	Hvorslev		Bouwer & Rice		Cooper Papadopulos Best Fit		Mean Value of Hvorslev & Bouwer and Rice	
	cm/sec	ft/min	cm/sec	ft/min	cm/sec	ft/min	cm/sec	ft/min
Deep Salem Piezometers								
PZ-100-SD	9.1E-07	1.8E-06	6.4E-07	1.3E-06	NA	NA	7.8E-07	1.5E-06
PZ-104-SD	1.8E-05	3.5E-05	1.2E-05	2.3E-05	NA	NA	1.5E-05	2.9E-05
PZ-106-SD	3.0E-07	5.9E-07	1.6E-07	3.1E-07	NA	NA	2.3E-07	4.5E-07
PZ-111-SD	1.0E-07	2.0E-07	6.8E-08	1.3E-07	NA	NA	8.4E-08	1.7E-07
Geometric Mean	**8.4E-07**	**1.6E-06**	**5.4E-07**	**1.1E-06**	**NA**	**NA**	**6.9E-07**	**1.4E-06**
Keokuk Piezometers								
PZ-100-KS	NA	NA	NA	NA	6.0E-07	1.2E-06	NA	NA
PZ-104-KS	NA	NA	NA	NA	2.5E-06	4.9E-06	NA	NA
PZ-106-KS	NA	NA	NA	NA	3.1E-06	6.1E-06	NA	NA
PZ-111-KS	NA	NA	NA	NA	3.8E-06	7.5E-06	NA	NA
Geometric Mean	**NA**	**NA**	**NA**	**NA**	**2.1E-06**	**4.0E-06**	**NA**	**NA**

Notes:
cm/sec = centimeters per second
ft/min = feet per minute

NA = Not Applicable. These analyses were not performed and/or were inapplicable for data from these boreholes.

[1] Slug tests conducted before piezometer reached equilibrium; data presented but not included in geometric means.

[2] Falling head slug tests conducted within sand pack zone of well; data presented but not included in geometric means.

E-3: Water Level Measurements

Table 4-3 : Summary of RI Depth to Water Measurements

Well	Northing	Easting	Reference Point Elevation (Feet, MSL)	Depth to Water (Feet below TOC)															
				1994		1995										1996			
				Nov. 22, 23, 28	December 29	January 30	March 3	March 30	April 28	May 26	June 30	July 28, Aug. 3*	Aug 31	Oct. 2	Oct. 31	Nov. 30	Jan. 5	April 2	July 5	Oct. 2
Shallow Wells																			
S-1	1069685.83	514205.01	446.51	----	----	----	----	----	----	----	----	----	12.26	13.75	14.38	14.88	15.62	16.94	12.01	13.99
S-5	1069155.84	515901.03	468.65	----	----	----	----	----	----	----	----	----	34.2	35.78	36.51	36.84	37.62	38.96	34.02	35.92
S-8	1071044.35	514724.16	444.03	----	----	----	----	----	----	----	----	----	----	----	11.85	12.52	13.19	14.50	9.11	11.51
S-10	1069827.87	514931.35	480.28	----	----	----	----	----	----	----	----	----	----	47.37	48.16	48.61	49.17	50.85	45.71	47.77
S-51	1066161.31	514320.72	449.57	18.77	18.66	17.81	18.22	18.2	17.81	13.38	14.41	14.81	15.54	16.74	17.42	17.46	17.98	19.09	15.43	16.95
S-53	1066871.02	514496.97	447.95	17.27	17.37	16.47	16.93	16.86	16.30	12.57	12.99	13.06	13.77	15.17	15.89	17.97	16.65	18.04	casing damaged	casing damaged
S-61	1070159.98	514580.24	449.78	19.55	19.61	18.73	19.00	18.97	18.51	13.36	13.86	----	15.27	16.76	17.51	18.18	18.93	20.29	15.08	17.25
S-75	1067250.41	514718.75	462.08	29.92	30.05	29.12	29.85	29.42	29.22	25.31	26.61	26.88	27.41	28.91	29.56	29.81	29.90	29.89	27.23	29.20
S-80	1065191.77	513858.35	453.11	19.15	18.97	17.48	16.96	16.17	16.28	12.70	13.91	14.69	14.85	15.82	16.55	17.77	18.87	18.99	abandoned	abandoned
S-82	1069311.99	514272.95	450.18	19.82	19.88	19.05	19.35	19.32	18.71	14.19	14.80	15.02	15.91	17.40	18.11	18.43	19.15	20.61	15.69	17.59
S-84	1069633.39	516439.68	456.23	26.59	26.60	25.67	25.92	25.89	25.68	20.37	20.88	21.49	22.26	23.92	24.67	25.21	25.87	27.07	22.15	24.42
S-88	1068398.39	515234.03	462.76	32.18	32.44	31.51	29.41	31.9	31.43	27.23	27.62	27.73	28.60	30.01	30.72	29.95	31.71	33.11	28.43	30.26
MW-F1S	1068603.00	515865.35	461.35	31.11	31.00	30.26	30.42	30.42	30.05	25.74	26.05	26.32	27.06	28.52	29.26	29.58	30.31	31.69	26.99	28.86
MW-101	1070830.48	514424.00	446.83	16.68	16.73	15.91	16.13	16.11	15.67	10.51	----	----	12.20	13.91	14.67	15.29	16.04	17.37	12.02	14.34
MW-102	1070095.01	514532.93	448.18	17.95	18.00	17.18	17.41	17.38	16.91	11.64	12.31	12.81	13.70	15.32	16.06	18.58	17.16	18.67	13.47	15.64
MW-103	1068628.37	514334.35	440.31	9.72	9.91	9.01	9.43	9.37	8.79	5.15	5.39	5.34	6.22	7.57	8.25	8.49	9.26	10.61	6.51	7.59
MW-104	1067525.17	514339.01	440.96	10.33	10.43	9.48	9.98	9.93	9.33	5.72	6.11	6.13	6.95	8.27	8.95	9.06	9.71	11.11	6.78	8.39
MW-106	1065955.75	513616.92	443.78	12.85	12.90	12.28	12.45	12.44	12.07	8.39	8.36	8.56*	9.27	casing damaged	NM	NM	NM	NM	NM	NM
MW-107	1064670.74	513601.12	448.14	5.13	5.44	4.53	5.36	5.1	5.26	-----	4.71	5.57	6.06	8.39	9.07	6.36	5.99	5.68	6.17	6.46
MW-F3	1070489.80	515819.83	469.23	38.96	38.97	38.09	38.00	38.29	38.06	32.31	32.94	36.62	34.47	36.21	37.02	37.61	38.39	39.60	34.33	36.73
Intermediate Depth Wells																				
I-2	1069698.26	514212.18	446.41	----	----	----	----	----	----	----	----	----	12.03	13.68	14.31	14.76	15.47	16.90	11.92	13.90
I-4	1069148.42	515889.5	468.57	----	----	----	----	----	----	----	----	----	34.19	35.75	36.45	38.85	37.62	38.92	33.96	35.95
I-7	1070743.05	514299.87	446.97	----	----	----	----	----	----	----	----	----	12.41	14.10	14.87	15.43	16.15	17.52	12.18	14.47
I-9	1069329.26	514268.59	450.99	----	----	----	----	----	----	----	----	----	----	----	18.79	19.2	19.98	21.40	16.52	18.40
I-11	1069819.16	514925.06	480.27	----	----	----	----	----	----	----	----	----	----	----	48.14	48.61	49.35	50.75	45.69	47.74
I-50	1065190.32	513831.96	453.66	22.02	22.27	21.26	21.76	21.65	21.13	16.60	17.40	19.96	18.74	20.27	21	21.03	21.57	23.05	abandoned	abandoned
I-62	1070938.26	514647.31	446.21	15.99	16.07	15.19	15.47	15.42	15.03	9.87	9.90	10.34*	11.55	13.02	13.78	14.71	15.36	16.71	11.34	13.71
I-65	1070953.26	515333.39	441.82	11.6	11.70	10.83	11.00	11.03	10.66	5.25	7.35	8.12	7.04	8.81	9.66	10.3	11.06	12.31	6.87	9.36
I-66	1070604.09	515851.01	441.91	11.61	11.66	10.78	11.00	10.95	10.61	5.18	5.56	6.26	7.11	8.83	9.69	10.32	11.04	12.28	6.98	9.45
I-67	1070101.57	516244.09	441.90	11.54	11.57	10.63	10.93	10.97	10.65	5.06	5.65	6.31	7.11	8.81	9.61	10.23	10.87	12.16	7.03	9.39
I-68	1069571.49	516686.36	450.50	20.16	20.10	19.05	19.44	19.45	19.24	13.94	14.52	16.16	15.91	17.52	18.29	18.8	19.45	20.64	15.74	18.03
I-73	1067695.45	515570.09	461.39	31.46	31.68	30.80	31.12	31.9	30.69	26.04	27.15	27.25	27.97	29.39	30.12	30.31	31.00	32.35	28.87	29.52
Deep Wells																				
D-3	1069136.26	515871.62	470.32	----	----	----	----	----	----	----	----	----	35.92	37.49	38.21	38.63	39.43	40.70	35.74	37.78
D-6	1070194.31	514549.5	447.6	----	----	----	----	----	----	----	----	----	13.23	14.82	15.5	16.09	16.77	18.16	12.99	15.12
D-12	1069836.29	514936.08	479.91	----	----	----	----	----	----	----	----	----	----	----	48	48.32	48.98	50.42	45.33	47.42
D-13	1070485.74	515601.73	471.1	----	----	----	----	----	----	----	----	----	----	----	38.94	39.48	40.19	41.49	36.21	38.53
D-14	1068947.16	516523.17	487.77	----	----	----	----	----	----	----	----	----	----	----	0	NM	58.62	59.69	56.21	57.79
D-81	1067338.19	514463.68	451.00	20.3	20.39	19.56	19.95	19.95	19.29	15.62	16.08	16.14	16.91	18.24	18.95	19.04	19.71	21.11	16.78	18.37
D-83	1070930.4	514633.64	448.48	18.29	18.40	17.50	17.82	17.76	17.27	12.17	12.16	12.61*	13.88	15.70	16.41	17.01	17.77	19.01	13.72	16.02
D-85	1069626.55	516430.42	457.13	26.82	26.77	25.87	26.12	26.13	25.89	20.60	21.11	21.71	22.48	24.13	24.87	25.42	26.11	27.39	22.39	24.61
D-87	1069211.46	515404.82	463.05	32.81	32.82	31.96	32.19	32.2	31.81	27.10	27.57	27.86	28.69	30.28	30.96	31.36	32.11	33.54	28.60	30.58
D-93	1069317.89	514269.69	448.62	19.66	19.74	18.92	19.22	19.18	18.58	14.02	14.67	14.83	15.79	17.25	18.01	18.34	19.06	20.51	15.59	17.50
MW-F1D	1068608.68	515860.04	461.63	31.42	31.31	30.51	30.70	30.78	30.41	26.04	26.34	26.61	27.36	28.86	29.6	29.88	30.62	32.02	27.29	29.19
Staff Gages																				
1	1071100.73	514883.10	438.57	----	----	----	----	----	----	----	4.2	3.25	2.35	----	1.5	Dry	Dry	Dry	2.30	Dry
2	1071107.71	514878.03	438.84	----	----	----	----	----	----	----	3.95	3.05	2.1	----	1.25	Dry	Dry	Dry	2.25	Dry
3	1071249.28	514645.19	440.73	----	----	----	----	----	----	----	1.98	1.05	< 0.5	----	3.2	Dry	Dry	Dry	Dry	Dry
4	1071253.42	514635.63	441.05	----	----	----	----	----	----	----	1.7	0.80	< 0.5	----	2.95	Dry	Dry	Dry	Dry	Dry
5	1070745.51	515414.94	460.94	----	----	----	----	----	----	----	----	----	----	----	Dry	Dry	Dry	Dry	Dry	Dry
6	1069471.76	514096.61	437.28	----	----	----	----	----	----	----	2.18	2.64	1.55	----	0.25	0.7	Dry	Dry	1.75	0.80
7	1069480.90	514091.25	437.01	----	----	----	----	----	----	----	2.45	2.95	1.8	0.30	0	1	Dry	Dry	2.00	1.00

NM = Not Measured

Table 5-2 : Summary of Water Level Measurements from Well Clusters

Well Cluster	Groundwater Elevation (Feet, MSL)																
	1994		1995											1996			
	Nov. 22, 23, 28	December 29	January 30	March 3	March 30	April 28	May 26	June 30	July 28, Aug. 3*	Aug 31	Oct. 2	Oct. 31	Nov. 30	Jan. 5	April 2	July 5	Oct. 2
S-1	----	----	----	----	----	----	----	----	----	434.25	432.76	432.13	431.63	430.89	429.57	434.50	432.52
I-2	----	----	----	----	----	----	----	----	----	434.38	432.73	432.1	431.65	430.94	429.51	434.49	432.51
S-5	----	----	----	----	----	----	----	----	----	434.45	432.87	432.14	431.81	431.03	429.69	434.63	432.73
I-4	----	----	----	----	----	----	----	----	----	434.38	432.82	432.12	429.72	430.95	429.65	434.61	432.62
D-3	----	----	----	----	----	----	----	----	----	434.40	432.83	432.11	431.69	430.89	429.62	434.58	432.54
S-8	----	----	----	----	----	----	----	----	----	----	----	432.18	431.51	430.84	429.53	434.92	432.52
I-62	430.22	430.14	431.02	430.74	430.79	431.18	436.34	436.31	435.87	434.66	433.19	432.43	431.5	430.85	429.5	434.87	432.50
D-83	430.19	430.08	430.98	430.66	430.72	431.21	436.31	436.32	435.87	434.60	432.78	432.07	431.47	430.71	429.47	434.76	432.46
S-10	----	----	----	----	----	----	----	----	----	----	432.91	432.12	431.67	431.11	429.43	434.57	432.51
I-11	----	----	----	----	----	----	----	----	----	----	----	432.13	431.66	430.92	429.52	434.58	432.53
D-12	----	----	----	----	----	----	----	----	----	----	----	431.91	431.59	430.93	429.49	434.58	432.49
S-61	430.23	430.17	431.05	430.78	430.81	431.27	436.42	435.92	----	434.51	433.02	432.27	431.6	430.85	429.49	434.70	432.53
MW-102	430.23	430.18	431.00	430.77	430.8	431.27	436.54	435.87	435.37	434.48	432.86	432.12	429.6	431.02	429.51	434.71	432.54
D-6	----	----	----	----	----	----	----	----	----	434.37	432.78	432.1	431.51	430.83	429.44	434.61	432.48
S-80	433.96	434.14	435.63	436.15	436.94	436.83	440.41	439.20	438.42	438.26	437.29	436.56	435.34	434.24	434.12	abandoned	abandoned
I-50	431.64	431.39	432.40	431.90	432.01	432.53	437.06	436.26	433.70	434.92	433.39	432.66	432.63	432.09	430.61	abandoned	abandoned
S-82	430.36	430.30	431.13	430.83	430.86	431.47	435.99	435.38	435.16	434.27	432.78	432.07	431.75	431.03	429.57	434.49	432.59
I-9	----	----	----	----	----	----	----	----	----	----	----	432.2	431.79	431.01	429.59	434.47	432.59
D-93	428.96	428.88	429.70	429.40	429.44	430.04	434.60	433.95	433.79	432.83	431.37	430.61	430.28	429.56	428.11	433.03	431.12
S-84	429.64	429.63	430.56	430.31	430.34	430.55	435.86	435.35	434.74	433.97	432.31	431.56	431.02	430.36	429.16	434.08	431.81
I-67	430.36	430.33	431.27	430.97	430.93	431.25	436.84	436.25	435.59	434.79	433.09	432.29	431.67	431.03	429.74	434.87	432.51
I-68	430.34	430.40	431.45	431.06	431.05	431.26	436.56	435.98	434.34	434.59	432.98	432.21	431.7	431.05	429.86	434.76	432.47
D-85	430.31	430.36	431.26	431.01	431	431.24	436.53	436.02	435.42	434.65	433.00	432.26	431.71	431.02	429.74	434.74	432.52
MW-F3	430.27	430.26	431.14	431.23	430.94	431.17	436.92	436.29	432.61	434.76	433.02	432.21	431.62	430.84	429.63	434.90	432.50
I-66	430.3	430.25	431.13	430.91	430.96	431.30	436.73	436.35	435.65	434.80	433.08	432.22	431.59	430.87	429.63	434.93	432.46
D-13		----	----	----	----	----	----	----	----	----	----	432.16	431.62	430.91	429.61	434.89	432.57
MW-F1S	430.24	430.35	431.09	430.93	430.93	431.30	435.61	435.30	435.03	434.29	432.83	432.09	431.77	431.04	429.66	434.36	432.49
MW-F1D	430.21	430.32	431.12	430.93	430.85	431.22	435.59	435.29	435.02	434.27	432.77	432.03	431.75	431.01	429.61	434.34	432.44

---- = not measured.

Table 3-11. Water Level Elevation Summary, West Lake Landfill

Monitoring Location	Date: June 27, 1995	July 26, 1995	Aug. 26, 1995	Sept. 30, 1995	Nov. 18, 1995	Dec. 14, 1995	Jan. 4, 1996
	Groundwater Elevation						
Shallow Alluvial Piezometers							
PZ-112-AS	436.12	435.12	434.67	432.84	431.84	431.15	431.05
PZ-113-AS	435.62	435.30	434.63	432.91	431.81	431.18	431.07
PZ-114-AS	435.94	435.35	434.90	433.06	431.93	431.23	431.20
PZ-205-AS	434.41	434.33	434.06	432.52	431.66	431.19	430.98
PZ-207-AS	435.94	435.41	434.91	433.02	431.87	431.19	431.10
PZ-300-AS	NA	NA	NA	NA	435.50	434.94	434.11
PZ-302-AS	NA	NA	NA	NA	432.08	431.86	431.34
PZ-303-AS	NA	NA	NA	NA	432.01	431.74	431.28
PZ-304-AS	NA	NA	NA	NA	431.91	431.63	431.13
Intermediate Alluvial Piezometers							
PZ-302-AI	NA	NA	NA	NA	432.00	431.73	431.27
PZ-304-AI	NA	NA	NA	NA	431.98	431.66	431.16
PZ-305-AI	NA	NA	NA	NA	431.80	431.34	431.03
Deep Alluvial Piezometers							
PZ-113-AD	435.68	435.13	433.74	432.89	431.82	431.18	431.03
PZ-300-AD	NA	NA	NA	NA	432.78	432.41	432.12
St. Louis/Upper Salem Hydrologic Unit Piezometers							
PZ-100-SS	405.36	416.06	415.23	414.35	413.85	413.68	413.63
PZ-101-SS	393.23	394.58	393.37	390.00	387.58	386.76	387.48
PZ-102-SS	413.54	Inactive	Inactive	Inactive	Inactive	Inactive	Inactive
PZ-102R-SS	403.09	424.30	424.87	422.80	421.63	420.78	420.59
PZ-103-SS	363.03	373.02	363.73	360.95	361.05	360.15	361.47
PZ-104-SS	340.67	360.04	366.22	361.01	360.41	360.55	361.53
PZ-105-SS	336.26	339.83	352.45	346.80	342.76	342.53	343.21
PZ-106-SS	359.72	357.60	364.20	349.41	350.01	342.64	343.70
PZ-107-SS	434.52	434.30	434.00	432.36	431.57	431.12	430.90
PZ-108-SS	368.99	368.99	367.02	352.14	356.78	347.44	346.47
PZ-109-SS	370.70	373.74	360.45	359.20	355.12	351.80	350.40
PZ-110-SS	413.76	433.53	433.27	431.57	430.58	430.11	429.87
PZ-113-SS	435.70	435.23	434.79	433.00	431.94	427.33	431.16
PZ-115-SS	426.75	424.83	424.18	417.06	411.71	407.86	414.34

Table 3-11. Water Level Elevation Summary, West Lake Landfill (continued)

Monitoring Location	Date: June 27, 1995	July 26, 1995	Aug. 26, 1995	Sept. 30, 1995	Nov. 18, 1995	Dec. 14, 1995	Jan. 4, 1996
	Groundwater Elevation						
PZ-116-SS	NA	346.79	356.46	338.17	331.43	330.07	330.68
PZ-200-SS	415.05	415.45	415.59	414.38	412.78	412.91	412.73
PZ-201-SS	456.42	455.53	454.86	453.55	452.98	452.80	452.45
PZ-201A-SS	415.03	414.63	414.38	412.94	412.57	412.12	412.13
PZ-202-SS	444.36	444.78	444.14	441.33	439.70	439.13	438.64
PZ-203-SS	(Dry)	(Dry)	(Dry)	(Dry)	(Dry)	(Dry)	(Dry)
PZ-204-SS	442.82	441.49	438.10	431.82	430.57	429.71	431.58
PZ-204A-SS	NA	405.65	405.53	404.05	403.55	403.45	403.78
PZ-205-SS	424.46	424.04	423.45	421.75	421.28	420.50	420.28
PZ-206-SS	420.04	419.04	418.22	415.49	415.19	NA	414.13
PZ-208-SS	NA	436.44	435.60	431.63	428.83	426.97	428.60
PZ-300-SS	NA	NA	NA	NA	428.32	427.80	427.50
PZ-301-SS	NA	NA	NA	NA	357.19	384.19	395.65
PZ-1201-SS	NA	392.33	365.30	377.98	374.88	374.88	376.00
MW-1206	368.19	367.12	367.86	351.67	362.46	348.15	348.17
Deep Salem Piezometers							
PZ-100-SD	394.61	370.68	381.79	366.35	364.43	356.68	355.04
PZ-104-SD	359.05	356.64	362.97	344.33	341.90	339.05	343.15
PZ-106-SD	358.64	353.52	361.98	348.44	347.38	340.60	341.52
PZ-111-SD	373.70	423.87	428.55	432.22	431.47	430.93	430.63
MW-1204	333.83	330.01	357.27	305.57	303.18	309.24	306.96
MW-1205	352.28	357.38	296.81	341.10	317.88	337.07	339.32
Keokuk Piezometers							
PZ-100-KS	438.17	438.93	437.84	434.72	433.67	432.84	432.69
PZ-104-KS	444.63	444.74	444.27	441.98	440.77	440.42	440.22
PZ-106-KS	442.18	442.51	442.48	440.30	439.02	438.82	438.61
PZ-111-KS	441.58	441.91	442.01	440.39	439.14	438.85	438.77

Notes:
NA = Not available. Water level data was not collected on the indicated date because the piezometer had not yet been installed, or development was not yet completed. An equipment malfunction prevented measurement of the water level in PZ-206-SS on December 14, 1995.

PZ-102-SS was replaced by PZ-102R-SS and is inactive.
All elevations provided in feet above Mean Sea Level (MSL).

Table 3-11. Water Level Elevation Summary, West Lake Landfill (continued)

Monitoring Location	June 27, 1995	July 26, 1995	Aug. 26, 1995	Sept. 30, 1995	Nov. 18, 1995	Dec. 14, 1995	Jan. 4, 1996
				Date			
				Lechate Elevation			
Leachate Risers							
LR-100	NA	NA	NA	NA	450.42	449.90	449.77
LR-102	NA	NA	NA	NA	452.38	452.31	452.28
LR-103	NA	NA	NA	NA	431.86	431.32	431.00
LR-104	NA	NA	NA	NA	432.20	431.35	431.01
LR-105	NA	NA	NA	NA	452.44	452.38	453.39
				Surface Water Elevation			
Staff Gauges							
SG-8	NA	NA	NA	NA	433.54	432.75	433.68
SG-9	NA	NA	NA	NA	433.54	432.75	433.68

Notes:
NA = Not available. Water level data was not collected on the indicated date either because the leachate riser or staff gauges had not yet been installed, or development was not yet completed.

LR-101 was not installed because leachate was not present.

Table 3-11. Water Level Elevation Summary, West Lake Landfill (continued)

Monitoring Location	Date: Feb. 6, 1996	Mar. 4, 1996	Apr. 3, 1996	May 3, 1996	June 13, 1996	July 12, 1996	May 22, 2000
	Groundwater Elevation						
Shallow Alluvial Piezometers							
PZ-112-AS	460.46	429.80	429.53	430.43	434.63	434.31	429.08
PZ-113-AS	430.47	429.93	429.48	430.79	432.74	434.39	428.67
PZ-114-AS	430.67	430.09	429.93	431.60	435.18	434.46	428.86
PZ-205-AS	430.54	431.04	429.85	430.68	433.79	433.71	429.05
PZ-207-AS	430.52	429.97	429.66	431.12	434.99	434.52	428.71
PZ-300-AS	434.03	433.72	434.02	****	****	****	****
PZ-302-AS	430.80	430.27	430.03	431.26	434.63	434.12	428.77
PZ-303-AS	430.64	430.03	429.77	430.99	434.37	434.23	428.92
PZ-304-AS	430.52	429.93	429.59	431.07	434.44	434.14	428.87
Intermediate Alluvial Piezometers							
PZ-302-AI	430.66	430.08	426.75	431.10	434.36	434.05	428.93
PZ-304-AI	430.57	429.96	429.62	431.13	434.48	434.20	428.92
PZ-305-AI	430.56	429.93	429.79	430.65	434.36	434.17	428.79
Deep Alluvial Piezometers							
PZ-113-AD	430.44	429.92	429.62	430.81	434.79	434.35	428.65
PZ-300-AD	431.44	430.73	430.63	****	****	****	****
St. Louis/Upper Salem Hydrologic Unit Piezometers							
PZ-100-SS	413.46	413.20	412.87	412.83	413.10	412.94	425.55
PZ-101-SS	385.28	385.58	385.24	385.09	377.47	387.08	418.16
PZ-102-SS	Inactive	Inactive	Inactive	Inactive	Inactive	Inactive	Inactive
PZ-102R-SS	404.70	404.61	418.91	418.24	419.58	420.60	437.30
PZ-103-SS	362.30	362.01	362.85	363.71	364.44	363.42	416.77
PZ-104-SS	365.31	362.92	362.99	376.44	376.30	371.10	411.78
PZ-105-SS	357.72	350.46	356.22	376.83	376.59	370.61	410.92
PZ-106-SS	359.94	347.42	357.55	371.56	375.01	368.46	406.03
PZ-107-SS	430.24	429.58	429.35	430.34	433.79	433.55	428.59
PZ-108-SS	351.88	346.25	356.00	359.97	361.50	358.19	404.48
PZ-109-SS	350.84	350.87	350.78	352.41	358.18	360.57	406.71
PZ-110-SS	429.09	428.31	427.51	428.65	432.45	432.09	425.12
PZ-113-SS	430.58	430.06	429.65	430.89	434.81	434.46	428.42
PZ-115-SS	413.23	406.34	414.31	423.51	425.80	421.85	426.24

Table 3-11. Water Level Elevation Summary, West Lake Landfill (continued)

Monitoring Location	Feb. 6, 1996	Mar. 4, 1996	Apr. 3, 1996	May 3, 1996	June 13, 1996	July 12, 1996	May 22. 2000
				Date			
				Groundwater Elevation			
PZ-116-SS	351.62	346.13	337.96	353.41	364.27	365.51	396.09
PZ-200-SS	412.42	412.14	412.03	412.05	412.36	412.28	431.34
PZ-201-SS	452.24	452.21	451.88	451.69	452.34	453.27	457.40
PZ-201A-SS	411.92	411.92	412.06	412.03	412.58	413.08	430.09
PZ-202-SS	441.28	440.27	441.20	441.81	446.98	447.77	455.96
PZ-203-SS	(Dry)	(Dry)	(Dry)	377.56	379.04	375.52	414.11
PZ-204-SS	440.83	439.74	440.02	441.19	441.45	440.23	447.69
PZ-204A-SS	405.38	405.15	405.46	406.69	406.07	405.53	413.86
PZ-205-SS	419.93	419.10	419.11	420.13	423.25	422.97	424.45
PZ-206-SS	413.86	413.53	413.80	414.81	419.31	418.89	425.00
PZ-208-SS	428.93	426.41	428.87	432.54	434.82	434.73	443.01
PZ-300-SS	427.88	426.56	426.58	****	****	****	****
PZ-301-SS	407.66	415.13	420.17	423.94	427.35	428.76	NM
PZ-1201-SS	378.52	372.92	379.44	NM	378.82	380.34	420.00
MW-1206	359.29	350.53	359.27	****	****	****	****
Deep Salem Piezometers							
PZ-100-SD	363.01	357.73	372.88	367.82	375.93	367.04	427.95
PZ-104-SD	361.88	348.24	360.25	370.88	376.92	367.77	412.80
PZ-106-SD	356.82	346.26	350.17	364.81	369.43	367.31	405.42
PZ-111-SD	430.06	429.43	428.90	429.00	432.55	433.46	428.31
MW-1204	356.52	318.98	332.51	344.32	360.30	332.89	*
MW-1205	350.89	314.15	342.90	****	****	****	****
Keokuk Piezometers							
PZ-100-KS	435.10	433.96	435.71	435.56	438.84	439.35	450.34
PZ-104-KS	443.10	441.74	442.94	443.35	447.35	447.40	455.78
PZ-106-KS	440.70	439.91	440.50	440.68	442.63	444.46	452.31
PZ-111-KS	440.04	439.92	440.13	440.16	442.55	443.66	450.62

Notes:
NA = Not available. Water level data was not collected on the indicated date because the piezometer had not yet been installed, or development was not yet completed.
* = Obstruction in well
**** = Wells decommissioned in May, 1996.
PZ-102-SS was replaced by PZ-102R-SS and is inactive.
All elevations provided in feet above Mean Sea Level (MSL).

Table 3-11. Water Level Elevation Summary, West Lake Landfill (continued)

Monitoring Location	Date: Feb. 6, 1996	Mar. 4, 1996	Apr. 3, 1996	May 3, 1996	June 13, 1996	July 12, 1996	May 22, 2000
	Lechate Elevation						
Leachate Risers							
LR-100	450.14	450.60	450.61	451.64	452.02	451.71	450.89
LR-102	452.18	452.22	452.51	452.30	454.20	453.82	453.79
LR-103	430.58	429.98	429.71	430.75	434.49	434.25	434.19
LR-104	430.56	429.95	429.82	430.59	434.37	434.15	428.79
LR-105	453.40	453.61	453.70	453.43	453.61	453.71	453.58
	Surface Water Elevation						
Staff Gauges							
SG-8	433.98	(Dry)	433.99	433.07	433.86	433.87	**
SG-9	433.98	(Dry)	433.97	433.02	433.86	433.87	**

Notes:
NA = Not available. Water level data was not collected on the indicated date either because the leachate riser or staff gauges had not yet been installed, or development was not yet completed.
** = SG-8 and SG-9 were apparently destroyed prior to May 2000
LR-101 was not installed because leachate was not present.

Bridgeton
Historical Water Levels
For Wells PZ-101-SS and PZ-102R-SS

Date	D-3	D-85	I-4	I-68	I-73	LR-103	LR-104	MW-1204	PZ-100-KS	PZ-100-SD	PZ-100-SS	PZ-101-SS	PZ-102R-SS	PZ-102-SS	PZ-103-SS	PZ-104-KS	PZ-104-SD
	Water Level	Water Level	Water Level	Water Level	Water Level	Water Level	Water Level	Water Level	Water Level	Water Level	Water Level	Water Level	Water Level	Water Level	Water Level	Water Level	Water Level
04/12/13	428.19	428.02	427.37	427.69	428.05	427.79	428.43	457.92	460.04	450.62	451.98	438.41	457.66	456.98	474.63	465.89	462.14
11/26/2012	428.43	428.30	427.60	427.82	428.10	427.85	428.63	452.25	456.80	440.31	446.35	421.75	451.98	448.37	456.91	462.71	459.11
5/9/2012	435.44	431.97	435.45	431.4	437.24		433.5	453.29	458.2	445.63	446.7	415.67	448.1	447.95	450.23	464.16	458.72
11/16/2011	434.57	434.56	434.56	430.25	437.48		432.59	443.48	449.85	410.63	418.31	386.58	439.67	418.56	415.27	460.04	454.29
5/9/2011	436.77	435.35	436.84	433.02	437.51		434.52	439.02	453.29	421.12	427.29	391.53	443.63	432.1	416.79	461.93	447.27
11/9/2010	434.99	431.32	435.06	430.61	437.67		433.05	411.85	447.94	401.54	415.93	375.3	438.37	414.03	401.79	458.69	434.71
5/18/2010	436.78	433.68	436.88	433.28	437.76		434.52	406.84	448.97	400.97	419.58	378.59	440.05	410.71	401.81	460.58	430.5
11/2/2009	436.57	433.61	436.62	433.24	436.02		434.25	409.58	450.89	405.93	424.16	395.4	442.24	409.6	402.18	461.29	430.81
5/5/2009	434.36	430.65	434.44	429.93	438.2		432.63	407.15	452.55	416.82	424.44	389.24	425.95	439.12	411.98	461.25	425.51
11/3/2008	435.32	431.76	435.43	431.2	439.21		433.13	423.73	454.35	425.87	433.35	389.09	447.06	432.39	420.67	461.3	429.35
5/6/2008	435.43	431.84	435.43	431.2	439.21		433.61	411.08	454.5	436.92	443.14	394.83	445.49	436.48	430.83	459.74	425.13
11/6/2007	431.12	427.46	431.14	426.8	440.37		429.4	409.5	448.42	414.4	424.13	375.46	437.85	425.4	409.35	456.23	422.14
5/31/2007	430.82	426.96	430.84	426.08	441.48		429.19	414.38	451.99	430.12	430.96	388.89	439.11	431.55	423.62	458.69	421.04
11/30/2006	426.38	423.85	426.67	423.12	443.85		425.53	436.23	452.9	440.59	442.04	411.33	438.58	440.15	436.63	457.36	440.71
5/31/2006	426.82	424.34	427.15	423.64	446.48		425.78	417.19	453.06	429.17	432.95	394.53	441.92	430.43	423.37	458.21	419.06
11/17/2005	429.2	426.74	429.52	426.17	450.64		428.5	448.04	458.06	448.06	447.81	424.74	451	447.56	449.37	463.12	450.89
5/23/2005	430.82	428.39	431.15	427.8	455.9	429.83	429.81	439.73	454.84	427.82	429.45	400.08	444.68	435.4	425.22	462.04	447.59
11/16/2004	430.24	428.21	430.49	427.62	451.85	429.54	429.71	441.45	456.67	437.32	439.62	411.61	449.2	437.85	433.06	462.6	450.57
5/10/2004	430.13	427.91	430.33	427.28	455.23	429.65	429.4	437.9	456.52	432.55	432.49	406.78	445.31	435.55	420.72	462.72	447.77
11/19/2003	428.47	426.35	428.7	425.73	450.59	427.86	427.95	440.23	457.46	445.73	447.11	424.74	452.11	445.66	443.11	462.62	449.1
5/27/2003	428.29	425.8	428.45	425.45	453.24	427.62	427.43	383.1	452.78	420.51	424.42	404.25	461.49	427.71	406.92	460.09	424.41
11/18/2002	429.92	429.3	430.08	420.93	429.37	429.01	429.42	392.69	455.3	435.14	434.23		448.12	434.08	427.66	460.63	437.12
5/20/2002	432.87	432.64	432.76	424.43	431.94	432.18	431.91	438.08	456.61	444.06	444.75	437.36	448.35	433.02	437.28	462.61	444.97

Notes:
*1 Has been raised 10ft - unable to measure water level

Date	PZ-104-SS	PZ-105-SS	PZ-106-KS	PZ-106-SD	PZ-106-SS	PZ-107-SS	PZ-108-SS	PZ-109-SS	PZ-110-SS	PZ-111-KS	PZ-111-SD	PZ-112-AS	PZ-113-AD	PZ-113-AS	PZ-113-SS	PZ-114-AS
	Water Level	Water Level	Water Level	Water Level	Water Level	Water Level	Water Level	Water Level	Water Level	Water Level	Water Level	Water Level	Water Level	Water Level	Water Level	Water Level
04/12/13	462.75	459.85	460.14	449.15	449.54	429.11		431.77	428.40	456.60	427.61	427.44	428.18	428.21	428.46	428.77
11/26/2012	460.95	456.52	458.14	445.91	446.39	428.96		404.65	426.51	455.14	428.25	427.67	428.41	428.39	428.68	428.74
5/9/2012	458.93	456.51	458.85	446.45	446.84	433.2	437.03	431.32	430.67	451.22	427.87	430.3	433.09	433.11	433.16	433.86
11/16/2011	450.83	450.79	455.77	434.61	435.73	432.18	399.18	375.53	427.04	448.71	427.39	429.6	432.2	432.24	432.29	432.37
5/9/2011	447.97	449.67	457.51	434.26	435.34	433.93	404.51	391.5	429.08	450.03	428.88	431.56	434.46	434.4	434.53	435.41
11/9/2010	429.29	437.62	454.95	420.56	421.71	432.5	381.46	363.96	427.09	447.98	427.76	429.85	432.64	432.7	432.82	432.79
5/18/2010	424.13	440.3	456.04	418.66	420.11	433.91	378.4	359.55	428.52	448.73	428.62	431.55	434.56	434.52	434.63	435.4
11/2/2009	425.4	441.69	456.33	422.15	423.52	433.75	382.78	367.87	428.23	448.86	427.86	431.28	434.31	434.3	434.65	435.53
5/5/2009	419.59	439.26	456.33	420.81	422.21	432.28	381.91	369.74	427.79	448.7	427.31	429.22	432.05	432.12	432.27	432.22
11/3/2008	427.4	442.52	456.54	426.7	428.1	432.53	387.72	376.9	428.61	449.03	428.34	430.05	433.01	433	433.08	433.27
5/6/2008	420.41	439.29	455.41	424.76	426.15	433.2	396.65	399.2	429.57	448.14	427.15	430.32	433.15	433.16	433.32	433.46
11/6/2007	415.04	430.09	452.45	416.13	417.2	428.87	375.85	360.6	423.25	445.49	424.04	425.97	428.89	428.88	428.98	429
5/31/2007	415.07	436.3		421.26	422.28	429.41	396.82	391.13	425.85	447.15	422.63	425.78	428.61	428.62	428.88	428.06
11/30/2006	435.01	436.91	453.37	431.83	427.8	425.75	419.09	418.5	424.07	446.23	420.77	422.43	425.22	425.27	425.45	425.36
5/31/2006	413.97	433.87	454.45	419.63	421.23	425.96	392.12	387.01	422.69	447.67	420.75	422.85	425.77	425.87	425.93	425.83
11/17/2005	449.18	450.11	458.16	441.95	442.16	428.67	434.1	435.72	427.97	450.52	424.08	425.22	429.98	428.13	427.24	428.61
5/23/2005	448.48	446.71	457.26	430.76	431.85	429.85	399.79	393.3	427.2	449.87	425.25	426.83	429.75	429.73	429.86	430.01
11/16/2004	450.51	449.61	457.51	438.83	439.28	429.85	424.95	418.05	427.63	449.82	424.92	426.58	429.5	429.52	429.58	429.89
5/10/2004	447.49	447.31	457.89	434.89	415.43	429.89	418.92	412.55	426.96	454.89	429.17	430.09	429.26	429.38	429.47	429.55
11/19/2003	449.53	448.83	457.73	438.14	438.6	428.36	434.16	435.87	427.25	454.61	428.19	428.45	427.71	427.75	427.77	428.3
5/27/2003	424.39	423.7	455.42	409.48	411.67	427.72	402.94	398.42	424.68		426.94	428.23	427.43	427.46	427.58	427.64
11/18/2002	439	437.73	457.13	423.19	425.38	429.44		422.44	428	454.6	429.5		429.13	429.16	429.32	429.65
5/20/2002	443.74	445.32	457.15	433.79	434.06	432.31		432.75	430.86	454.12	430.67		432.25	432.13	432.27	433.76

Date	PZ-115-SS	PZ-116-SS	PZ-200-SS	PZ-201A-SS	PZ-202-SS	PZ-203-SS	PZ-204A-SS	PZ-204-SS	PZ-205-AS	PZ-205-SS	PZ-206-SS	PZ-207-AS	PZ-208-SS	PZ-305-AI	S-5	S-84
	Water Level	Water Level	Water Level	Water Level	Water Level	Water Level	Water Level	Water Level	Water Level	Water Level	Water Level	Water Level	Water Level	Water Level	Water Level	Water Level
04/12/13	437.02	459.19	455.73	469.94	467.74	462.25	458.14	458.52	429.91	431.25	431.46	427.54	453.15	428.24	429.00	428.02
11/26/2012	421.41	454.71	447.28	459.01	464.32	459.24	456.18	453.98	429.43	429.63	425.12	427.72	449.86	428.48	428.64	428.30
5/9/2012	436.87	453.48	445.56	456.19	466.38	458.99	457.37	463.01	433.52	434.36	433.58	424.25	451.06	432.57	437.44	431.83
11/16/2011	405.4	445.66	419.81	432.19	460.65	454.13	459.41	450.34	432.24	428.28	422.45	433.36	445.19	431.67	434.81	430.92
5/9/2011	434.9	441.47	426.89	434.5	462.48	428.4	447.98	424.44	434.1	430.62	425.69	435.73	449.25	433.66	437.41	433.54
11/9/2010	395.9	421.28	415.65	426.85	458.86	440.31	455.97	436.76	432.51	425.61	419.89	433.85	442.76	432.17	435.07	431.2
5/18/2010	413.92	420.47	424.19	428.92	460.95	441.37	459.41	436.59	433.81	426.44	420.68	435.96	446.19	433.67	437.47	433.55
11/2/2009	432.95	421.97	442.75	429.43	462.08	442.53	460.96	438.95	433.61	427.03	420.78	435.78	448.3	433.4	436.74	433.43
5/5/2009	415.75	420.57	418.58	430.48	462.25	438.01	436.35	459.76	432.14	426.21	420.79	433.09	447.24	431.73	434.55	430.56
11/3/2008	410.3	434.57	433.7	436.21	462.17	436.76	458.74	442.42	432.51	427.48	421.9	433.78	447.28	432.28	435.44	431.62
5/6/2008	431.69	426.19	442.68	440.89	460.25	438.36	459.78	439.88	432.86	428.1	423.01	433.91	449.22	432.69	435.55	431.68
11/6/2007	390.67	415.46	422.01	426.63	456.23	429.51	458.45	431.53	428.83	421.65	415.62	429.6	440.71	428.48	431.85	427.4
5/31/2007	414.86	422.67	426.33	458.46	458.85	435.19	459.37	436.98	429.01	424.23	421.37	429.28	445.83	428.09	431.56	426.86
11/30/2006	428.48	427.67	442.21	443.16	457.34	443.44	459.11	445.03	425.99	421.08	424.77	425.97	447.96	425.53	426.85	423.74
5/31/2006	419.1	425.87	437.08	434.84	458.19	432.89	452.75	436.12	425.99	420.37	417.78	426.48	445.9	425.82	427.15	424.22
11/17/2005	435.24	447.08	444.25	453.31	465.39	451.13	458.89	453.72	429.17	430.38	430.6	428.81	448.83	424.67	430.9	426.66
5/23/2005	429.4	443.67	438.21	436.84	463.32	448.09	460.3	451.03	429.98	424.88	421.89	430.45	447.45	429.85	431.97	428.25
11/16/2004	433.13	445.54		442.18	464.39	451.04	460.36	452.33	430.17	430.78	429.58	429.94	448.43	429.67		428.12
5/10/2004	432.4	441.37		438.23	464.24	448.74	454.83	448.53	430.04	430.08	428.7		447.83	429.48	431.23	427.84
11/19/2003	435.95	446.49		448.46	464.19	449.64	456.4	452.28	428.91	430.34	430.26	428.17	449.79	428.05	429.73	426.29
5/27/2003	430.06	408.34	435.32	412.47	460.82	425.77	450.93	428	427.9	425.27	422.54	427.85	445.3		429.7	425.96
11/18/2002	433.1	431.77	441.06	439.01	461.66	438.5	452.12	443.37	429.75	429.25	428.61	429.52	447.36	429.42	430.87	428.61
5/20/2002	430.4	440.48	447.51	442.92	464.66	446.18	455.62	448.72	432.43	434.24	431.99	432.85	451.07	431.99	433.24	431.98

Table 5: Groundwater Elevations and Water Level Fluctuation

Well	July 30, 2012 Water Level Elevation (ft. MSL)	April 2, 2013 Water Level Elevation (ft. MSL)	July 8, 2013 Water Level Elevation (ft. MSL)	September 30, 2013 Water Level Elevation (ft. MSL)	Water Level Fluctuation (ft)
D-3	429.81	427.37	433.27	430.42	5.90
D-6	429.08	426.97	432.81	429.73	5.84
D-12	429.41	427.32	433.05	430.06	5.73
D-13	429.63	427.29	433.36	430.2	6.07
D-14	452.30[1]	N/A	454.12	452.92	1.82
D-81	429.85	428.05	433.12	430.53	5.07
D-83	429.56	427.4	433.45	430.18	6.05
D-85	429.77	427.41	433.46	430.43	6.05
D-87	429.69	427.39	433.21	420.36	12.85
D-93	429.42[2]	426.56	433.91	431.01	7.35
I-4	430.18	427.41	433.28	430.49	5.87
I-9	429.49[2]	428.46	432.02	429.16	3.56
I-11	429.44	427.24	433.11	430.12	5.87
I-62	429.67	427.47	433.57	430.37	6.10
I-65	429.28	427.1	433.45	430.04	6.35
I-66	429.67	427.3	433.58	430.33	6.28
I-67	429.6	427.27	433.55	430.33	6.28
I-68	429.76	427.48	433.51	430.47	6.03
I-73	433.15	427.97	433.33	430.67	5.36
LR-100	450.74	452.86	452.98	451.56	2.24
LR-103	429.84	427.69	433.25	430.59	5.56
LR-104	430.27	427.76	433.4	430.83	5.64
LR-105	453.98	452.83	454.87	453.97	2.04
MW-102	429.37	427.71	433.02	429.97	5.31
MW-103	427.97	426.03	432.45	430	6.42
MW-104	429.82	428.1	433.08	430.52	4.98
MW-1204	452.33	457.69	458.06	460.15	7.82
PZ-100-KS	455.2	459.29	459.47	459.54	4.34
PZ-100-SD	432.79	449.85	448.97	450.73	17.94
PZ-100-SS	438.25	451.18	451.57	452.03	13.78
PZ-101-SS	418.53	438.11	433.07	436.77	19.58
PZ-102R-SS	447.84	456.83	460.48	460.14	12.64
PZ-102-SS	439.1	456.23	458.27	459.13	20.03
PZ-103-SS	440.82	473.98	476.84	474.92	36.02
PZ-104-KS	461.55	465.24	464.84	463.9	3.69
PZ-104-SD	459.71	461.5	461.34	461.52	1.81
PZ-104-SS	459.97	462.2	463.34	463.89	3.92
PZ-105-SS	455.77	459.32	459.27	458.82	3.55
PZ-106-KS	457.38	459.61	459.86	459.15	2.48
PZ-106-SD	445.16	448.69	449.84	450.98	5.82
PZ-106-SS	445.79	449.14	450.24	451.32	5.53
PZ-107-SS	430.16	428.26	433.44	430.94	5.18
PZ-109-SS	398.64	431.02	422.7	430.75	32.38
PZ-110-SS	427.94	428.09	432.34	430.5	4.40

Table 5: Groundwater Elevations and Water Level Fluctuation

Well	July 30, 2012 Water Level Elevation (ft. MSL)	April 2, 2013 Water Level Elevation (ft. MSL)	July 8, 2013 Water Level Elevation (ft. MSL)	September 30, 2013 Water Level Elevation (ft. MSL)	Water Level Fluctuation (ft)
PZ-111-KS	454.85	456.36	457.05	456.45	2.20
PZ-111-SD	430.53	427.5	433.3	431.35	5.80
PZ-112-AS	429.72	427.41	433.2	430.42	5.79
PZ-113-AD	429.86	427.48	433.44	430.56	5.96
PZ-113-AS	429.85	427.42	433.35	430.5	5.93
PZ-113-SS	429.92	427.57	433.43	430.6	5.86
PZ-114-AS	429.91	427.89	433.87	430.72	5.98
PZ-115-SS	415.34	436.39	437.33	435.16	21.99
PZ-116-SS	453.05	457.6	459.17	460.64	7.59
PZ-200-SS	439.99	454.99	458.91	459.3	19.31
PZ-201A-SS	446.65	467.81	469.6	468.25	22.95
PZ-202-SS	463.24	466.94	465.78	465.53	3.70
PZ-203-SS	458.64	461.5	461.6	461.21	2.96
PZ-204A-SS	455.29	455.84	457.11	456.97	1.82
PZ-204-SS	451.94	459.84	456.83	457.27	7.90
PZ-205-AS	429.67	428.98	434.49	432.64	5.51
PZ-205-SS	430.22	430.71	435.98	434.9	5.76
PZ-206-SS	425.59	430.96	434.15	433.49	8.56
PZ-207-AS	429.74	427.38	433.41	430.4	6.03
PZ-208-SS	448.18	452.15	452.62	452.79	4.61
PZ-302-AI	428.95	427.06	433.06	430.5	6.00
PZ-302-AS	430.05	427.93	433.76	430.77	5.83
PZ-303-AS	429.66	427.87	432.97	430	5.10
PZ-304-AI	429.67	427.81	432.98	430.38	5.17
PZ-304-AS	429.71	427.81	433.02	430.35	5.21
PZ-305-AI	430.23	427.69	433.45	430.82	5.76
S-5	430.44	428.82	433.63	430.69	4.81
S-8	429.34	427.1	433.29	430.02	6.19
S-10	429.52	427.31	433.11	430.12	5.80
S-53	429.91	427.83	433.06	430.48	5.23
S-61	429.35	427.19	433.09	429.99	5.90
S-82	429.46	427.5	432.99	430.15	5.49
S-84	429.8	427.35	433.44	430.44	6.09

Notes:
1 D-14 was measured on 8/7/2012.
2 I-9 and D-93 may be mis-labeled based on total depths.

Appendix F: Groundwater Sampling Results Summary Tables

F-1: OU-1 RI Groundwater Sample Results

F-2: OU-1 FS Groundwater Sample Results

F-3: 2012 – 2013 Additional Groundwater Sampling Results

F-4: EPA and MDNR Groundwater Split Sample Results

F-5: Offsite Private Well Sample Results

F-6: Bridgeton Landfill Groundwater Monitoring Results (radionuclides)

F-7: Bridgeton Landfill Leachate Monitoring Results (radionuclides)

Appendix G: Stormwater and Sediment Sampling Results Summary Tables

G-1: OU-1 RI Rainwater/Runoff Sample Results

G-2: OU-1 Sediment Sample Results

G-3: Post-ROD Sediment Sample Results

G-4: NCC Removal Action Stormwater Monitoring Results

G-5: MDNR Water Sample Results

G-6: EPA Sediment Split Sample Results

Appendix H: Air Monitoring and Radon Flux Sampling Results Summary Tables

H-1: NRC (RMC) Air Monitoring Results

H-2: OU-1 RI Air Monitoring Results

H-3: OU-1 Post-ROD Air Monitoring Results

H-4: EPA Offsite Air Monitoring Results

H-5: MDNR Offsite Air Monitoring Results

H-6: NRC (RMC) Radon Flux Measurements

H-7: OU-1 RI Radon Flux Results

H-8: NCC Radon Flux Results

Appendix I: Vegetation Sampling Results Summary Tables

I-1: March 2009 OU-1 Vegetation Sampling

I-2: NCC Vegetation Sampling *(to be completed)*

Appendix J: Well Hydrographs

J-1: Alluvial Wells

J-2: Bedrock Wells

Appendix K: Water Level and Potentiometric Surface Maps

K-1: Alluvial Water Table Maps from the OU-1 RI

K-2: Water Table Contour and Potentiometric Maps 2012-2013 Monitoring Events

Appendix L: Borehole Summary Sheets

L-1: McLaren/Hart OU-1 RI Borings Summary Sheets

L-2: Phase 1C Investigation Borings Summary Sheets

L-3: Phase 1D Investigation Borings Summary Sheets

L-4: Additional Characterization of Areas 1 and 2 Borings Summary Sheets

L-5: Cotter Investigation Borings Summary Sheets

Appendix M: Cross-Sections

M-1: Area 1 Cross-Sections

M-2: Area 2 Cross-Sections

Appendix N: Groundwater Quality Summary Figures and Tables

N-1: Maps of Radionuclide Monitoring Results

N-2: Tabular Comparison of Radium Results from Pre-RI/FS, RI/FS and 2012-2013 Samples

N-3 Maps of Chemical Monitoring Results

N-4 Trilinear Diagrams

Appendix O: Historical Aerial Photographs

O-1: Historical Aerial Photographs of the West Lake Landfill Area

O-2: Aerial Photographic Interpretation of the HISS and Latty Avenue Properties

O-3: Historical Topographic Elevation Surfaces

Appendix P: Three-Dimensional Extent of RIM

P-1: Horizontal (Plan View) Slices of RIM Occurrences by Elevation

P-2: Cross-Sections of RIM Occurrences

Appendix F: Groundwater Sampling Results Summary Tables

F-1: OU-1 RI Groundwater Sample Results

Table C-1 : Gross Alpha - Unfiltered Grab Groundwater Samples

Monitoring Well	Gross Alpha		
	Result	+/- Sigma	MDA
Shallow Depth Wells			
S-51	*< MDA*	--	*4.64*
S-53	**5.76**		*4.49*
S-61	**5.39**		*4.63*
S-80	**285**		*46*
S-82	*< MDA*	--	*13.3*
S-84	*< MDA*	--	*7.3*
S-88	**52.5**		*9.7*
MW-F1S	*< MDA*	--	*9.32*
MW-101	*< MDA*	--	*6.03*
MW-102	*< MDA*	--	*4.16*
MW-102 DUP (F)	*< MDA*	--	*4.7*
MW-103	**13.7**		*11.8*
MW-104	*< MDA*	--	*14.4*
MW-106	*< MDA*	--	*12*
MW-107	*< MDA*	--	*7.16*
MW-F3	*< MDA*	--	*10.7*
Intermediate Depth Wells			
I-50	*< MDA*	--	*7.47*
I-62	*< MDA*	--	*4.7*
I-65	*< MDA*	--	*2.06*
I-66	*< MDA*	--	*5.86*
I-67	*< MDA*	--	*7.55*
I-68	*< MDA*	--	*11.7*
I-73	*< MDA*	--	*7.24*
Deep Depth Wells			
D-81	*< MDA*	--	*2.79*
D-81 DUP (F)	*< MDA*	--	*2.83*
D-83	*< MDA*	--	*3.29*
D-85	*< MDA*	--	*11.2*
D-87	*< MDA*	--	*8.14*
D-93	*< MDA*	--	*5.4*
MW-F1D	*< MDA*	--	*8.5*
Quarry Wells			
1201	*< MDA*	--	*5.54*
1204	**7.78**		*4.46*
1206	**138**		*20*

All values expressed as pCi/L, unless otherwise indicated.
DUP (F) = Field duplicate
MDA = Minimum Detectable Activity
Bold numbers indicate results above the Minimum Detectable Activity
Unfiltered grab groundwater samples were collected using a bailer. No purging was performed prior to sample collection since the samples were collected solely for characterization of the groundwater prior to well development.

Table C-2 : Filtered Groundwater Analytical Data For Three Existing Groundwater Wells That Exceeded Metropolitan St. Louis Sewer District (MSD) Gross Alpha Criteria

Monitoring Well	Uranium-238			Uranium-234			Thorium-230			Radium-226		
	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA
S-80	**0.15**		*0.08*	**0.74**		*0.08*	**0.19**		*0.16*	**0.27**		*0.21*
S-88	**23.1**		*0.2*	**28.0**		*0.2*	*< MDA*	--	*0.32*	**0.50**		*0.41*
S-88 DUP (L)	**0.63**		*0.22*	**0.84**		*0.19*	*< MDA*	--	*0.38*	*< MDA*	--	*0.58*
1206	**0.27**		*0.05*	**0.42**		*0.05*	**0.35**		*0.12*	**1.43**		*0.26*

Monitoring Well	Uranium-235/236		
	Result	+/- Sigma	MDA
S-80	**0.062**		*0.056*
S-88	**1.59**		*0.26*
S-88 DUP (L)	**0.12**		*0.11*
1206	**0.12**		*0.06*

Monitoring Well	Thorium-232			Thorium-228		
	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA
S-80	*< MDA*	--	*0.139*	*< MDA*	--	*0.174*
S-88	*< MDA*	--	*0.318*	*< MDA*	--	*0.400*
S-88 DUP (L)	*< MDA*	--	*0.298*	*< MDA*	--	*0.524*
1206	*< MDA*	--	*0.123*	*< MDA*	--	*0.223*

Monitoring Well	Gross Alpha		
	Result	+/- Sigma	MDA
S-80	*< MDA*	--	*10.1*
S-88	**10.3**		*9.0*
S-88 DUP (L)	*< MDA*	--	*11.1*
1206	*< MDA*	--	*9.34*

All Values expressed as pCi/L, unless otherwise noted.
DUP (L) = Laboratory duplicate
MDA = Minimum Detectable Activity
S = Shallow Depth Monitoring Well
1206 = Quarry well
Bold numbers indicate result above the Minimum Dectectable Activity

Table C-3 : Groundwater Analytical Results - Gross Alpha and Uranium-238 Decay Series

Monitoring Well	Date	Filtered	Gross Alpha			Uranium-238			Thorium-234			Uranium-234			Thorium-230			Radium-226			Lead-214			Bismuth-214			Lead-210		
			Result	+/- Sigma	MDA	Result	MDA	+/- Sigma	Result	MDA	+/- Sigma	Result	MDA	+/- Sigma	Result	MDA	+/- Sigma	Result	MDA	+/- Sigma	Result	MDA	+/- Sigma	Result	MDA	+/- Sigma	Result	MDA	+/- Sigma
Shallow Depth Wells																													
S-1	Nov-95	Filtered	---	---	---	2.25	0.27		MDA	71.65		3.35			1.19			MDA	20.7		MDA	18.63		MDA	20.67	---	MDA	108	---
S-1	Nov-95	unfiltered	---	---	---	2.7	0.19		MDA	145.2		2.97			MDA	0.64		MDA	29.4		MDA	29.95		MDA	29.39	---	MDA	172	---
S-1	Feb-96	Filtered	---	---	---	1.95	0.14		MDA	240.7		3.35			0.29			MDA	33		---	---	---	MDA	32.98	---	MDA	1290	---
S-1	Feb-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	0.96			0.52			---	---	---	---	---	---	---	---	---
S-1	May-96	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	0.39			0.1			---	---	---	---	---	---	---	---	---
S-1	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.43			---	---	---	---	---	---	---	---	---
S-1 DUP (F)	Nov-95	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-1 DUP (F)	Nov-95	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-1 DUP (F)	Feb-96	Filtered	---	---	---	---	---	---	MDA	187		---	---	---	---	---	---	28.6			---	---	---	MDA	27.52	---	MDA	299	---
S-1 DUP (F)	Feb-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	0.72			0.51			---	---	---	---	---	---	---	---	---
S-1 DUP (F)	May-96	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-1 DUP (F)	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-5	Nov-95	Filtered	---	---	---	MDA	0.35		178	---		0.58			2.79			MDA	32.5		MDA	10.55		MDA	32.5	---	MDA	209	---
S-5	Nov-95	unfiltered	---	---	---	0.35	0.33		MDA	103.6		0.63			xx			MDA	31.5		MDA	17.28		MDA	31.49	---	MDA	118	---
S-5	Feb-96	Filtered	---	---	---	MDA	0.11		MDA	344.4		0.2			0.58			MDA	41.7		---	---	---	MDA	41.66	---	MDA	3960	---
S-5	Feb-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	1.76			0.6			---	---	---	---	---	---	---	---	---
S-5	May-96	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	MDA	0.13		MDA	0.13		---	---	---	---	---	---	---	---	---
S-5	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.23			---	---	---	---	---	---	---	---	---
S-8	Nov-95	Filtered	---	---	---	1.28	0.34		MDA	112		1.69			xx			MDA	35.7		MDA	11.15		MDA	35.74	---	MDA	222	---
S-8	Nov-95	unfiltered	---	---	---	1.7	0.21		MDA	343.3		2.01			0.53			MDA	57.8		MDA	13.15		MDA	57.81	---	MDA	3680	---
S-8	Feb-96	Filtered	---	---	---	1.08	0.24		MDA	78.92		1.47			0.48			MDA	32.2		---	---	---	MDA	32.19	---	MDA	163	---
S-8	Feb-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	1.58			0.91			---	---	---	---	---	---	---	---	---
S-8	May-96	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	0.27			0.21			---	---	---	---	---	---	---	---	---
S-8	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.37			---	---	---	---	---	---	---	---	---
S-10	Nov-95	Filtered	---	---	---	1.08			MDA	157.1		1.31			MDA	6.7		MDA	35.5		56.7			MDA	35.49	---	MDA	221	---
S-10	Nov-95	unfiltered	---	---	---	0.95			MDA	98.05		1.28			MDA	5.73		MDA	38.8		MDA	18.89		MDA	38.77	---	MDA	211	---
S-10	Feb-96	Filtered	---	---	---	0.76			MDA	103.3		1.14			0.46			MDA	29.2		---	---	---	MDA	29.24	---	MDA	191	---
S-10	Feb-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	MDA	13.7		MDA	0.37		---	---	---	---	---	---	---	---	---
S-10	May-96	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	0.44			0.32			---	---	---	---	---	---	---	---	---
S-10	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.34			---	---	---	---	---	---	---	---	---
S-61	Nov-95	Filtered	---	---	---	0.62			MDA	143.6		1.51			1.62			MDA	25.7		MDA	12.43		MDA	25.67	---	MDA	145	---
S-61	Nov-95	unfiltered	---	---	---	0.76			MDA	139.4		1.12			2.3			MDA	30.6		MDA	16.53		MDA	30.61	---	MDA	152	---
S-61	Feb-96	Filtered	---	---	---	0.9			MDA	201.4		1.36			1.39			MDA	28		---	---	---	MDA	28.02	---	MDA	332	---
S-61	Feb-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	0.97			0.71			---	---	---	---	---	---	---	---	---
S-61	May-96	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	0.49			0.29			---	---	---	---	---	---	---	---	---
S-61	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.29			---	---	---	---	---	---	---	---	---
S-80	Nov-95	Filtered	---	---	---	0.49			MDA	145.5		0.88			0.61			34.9			34			MDA	39.54	---	MDA	165	---
S-80	Nov-95	unfiltered	---	---	---	1.69			MDA	152.3		2.72			MDA	2.09		MDA	31.3		MDA	16.88		MDA	31.3	---	MDA	186	---
S-80	Feb-96	Filtered	---	---	---	0.85			MDA	143.5		0.73			0.38			130			---	---	---	MDA	51.57	---	MDA	163	---
S-80	Feb-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	5.29			3.38			---	---	---	---	---	---	---	---	---
S-80	May-96	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-80	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-80 DUP (F)	Nov-95	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-80 DUP (F)	Nov-95	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-80 DUP (F)	Feb-96	Filtered	---	---	---	---	---	---	MDA	258.2		---	---	---	---	---	---	MDA	31		---	---	---	MDA	30.98	---	MDA	429	---
S-80 DUP (F)	Feb-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-80 DUP (F)	May-96	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-80 DUP (F)	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-82	Nov-95	Filtered	---	---	---	3.11			MDA	73.47		5.17			1.04			MDA	12.8		MDA	11.16		MDA	12.78	---	MDA	57.2	---
S-82	Nov-95	unfiltered	---	---	---	2.49			MDA	75.49		4.48			MDA	1.91		MDA	25.1		MDA	19.25		MDA	25.09	---	MDA	143	---
S-82	Feb-96	Filtered	---	---	---	1.86			MDA	306.1		2.51			0.93			MDA	39.2		---	---	---	MDA	39.23	---	MDA	3660	---
S-82	Feb-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	0.76			1.09			---	---	---	---	---	---	---	---	---
S-82	May-96	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	0.25			0.88			---	---	---	---	---	---	---	---	---
S-82	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1.39			---	---	---	---	---	---	---	---	---
S-82	May-97	Filtered	1.24			1.13			---	---		1.5			0.18			1.07			MDA	24.9		MDA	31	---	MDA	402	---
S-82	May-97	unfiltered	1.35			1.48			---	---		1.73			0.55			1.06			MDA	28.2		MDA	35.5	---	MDA	199	---
S-82	May-97	unfiltered	1.23			1.37			---	---		1.21			0.73			0.76			MDA	30.1		MDA	31.4		MDA	222	
S-84	Nov-95	Filtered	---	---	---	0.41			MDA	129.4		0.22			MDA	0.65		MDA	28.8		MDA	12.35		MDA	28.81	---	MDA	136	---
S-84	Nov-95	unfiltered	---	---	---	0.36			MDA	146.5		0.55			1.31			MDA	30.3		MDA	15.03		MDA	30.28	---	MDA	181	---
S-84	Feb-96	Filtered	---	---	---	0.63			MDA	189.2		0.5			0.37			MDA	28.7		---	---	---	MDA	28.67	---	MDA	309	---
S-84	Feb-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	0.77			0.64			---	---	---	---	---	---	---	---	---
S-84	May-96	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	0.35			0.34			---	---	---	---	---	---	---	---	---
S-84	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.34			---	---	---	---	---	---	---	---	---
S-84 DUP (F)	Nov-95	Filtered	---	---	---	---	---	---	MDA	228.5		---	---	---	---	---	---	MDA	23.2		MDA	12.21		MDA	23.19	---	MDA	1300	---
S-84 DUP (F)	Nov-95	unfiltered	---	---	---	---	---	---	MDA	146.9		---	---	---	---	---	---	MDA	33.5		MDA	15.98		MDA	33.5	---	MDA	196	---
S-84 DUP (F)	Feb-96	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-84 DUP (F)	Feb-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-84 DUP (F)	May-96	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-84 DUP (F)	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Table C-3 : Groundwater Analytical Results - Gross Alpha and Uranium-238 Decay Series

			Gross Alpha			Uranium-238			Thorium-234			Uranium-234			Thorium-230			Radium-226			Lead-214			Bismuth-214			Lead-210		
Monitoring Well	Date	Filtered	Result	+/- Sigma	MDA	Result	MDA	+/- Sigma	Result	MDA	+/- Sigma	Result	MDA	+/- Sigma	Result	MDA	+/- Sigma	Result	MDA	+/- Sigma	Result	MDA	+/- Sigma	Result	MDA	+/- Sigma	Result	MDA	+/- Sigma
MW-101	Nov-95	Filtered	----	----		1.58			MDA	131.1		3.92			0.96			MDA	26.2		MDA	20.46		MDA	26.19	----	MDA	137	----
MW-101	Nov-95	unfiltered	----	----	----	1.41			MDA	75.49		1.43			0.49			MDA	27.3		MDA	20.49		MDA	27.28	----	156		
MW-101	Feb-96	Filtered	----	----	----	0.95			MDA	77.63		1.69			MDA	0.15		MDA	34.7		----	----	----	MDA	34.66	----	MDA	118	----
MW-101	Feb-96	unfiltered	----	----	----	----	----	----	----	----	----	----	----	----	0.69			0.49			----	----	----	----	----	----	----	----	----
MW-101	May-96	Filtered	----	----	----	----	----	----	----	----	----	----	----	----	0.15			0.22			----	----	----	----	----	----	----	----	----
MW-101	May-96	unfiltered	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.18			----	----	----	----	----	----	----	----	----
MW-107	Nov-95	Filtered	----	----	----	0.68			MDA	109.3		1.03			2.63			33.7			29.2			MDA	18.2	----	MDA	174	----
MW-107	Nov-95	unfiltered	----	----	----	MDA	0.99		MDA	136.7		-1.12			1.61			36.8			36.1			MDA	19.47	----	MDA	432	----
MW-107	Feb-96	Filtered	----	----	----	0.24			MDA	162.1		0.18			0.77			MDA	50.8		----	----	----	MDA	50.8	----	MDA	231	----
MW-107	Feb-96	unfiltered	----	----	----	----	----	----	----	----	----	----	----	----	0.6			0.78			----	----	----	----	----	----	----	----	----
MW-107	May-96	Filtered	----	----	----	----	----	----	----	----	----	----	----	----	MDA	0.19		MDA			----	----	----	----	----	----	----	----	----
MW-107	May-96	unfiltered	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.56			----	----	----	----	----	----	----	----	----
MW-107 DUP (F)	Nov-95	Filtered	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MW-107 DUP (F)	Nov-95	unfiltered	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MW-107 DUP (F)	Feb-96	Filtered	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MW-107 DUP (F)	Feb-96	unfiltered	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MW-107 DUP (F)	May-96	Filtered	----	----	----	----	----	----	----	----	----	----	----	----	MDA	0.26		MDA	0.12		----	----	----	----	----	----	----	----	----
MW-107 DUP (F)	May-96	unfiltered	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.71			----	----	----	----	----	----	----	----	----
MW-F3	Nov-95	Filtered	----	----	----	MDA	0.28		MDA	195.9		0.41			MDA	6.6		MDA	23.4		MDA	23.87		MDA	23.36	----	MDA	301	----
MW-F3	Nov-95	unfiltered	----	----	----	1.79			MDA	360.8		2.03			MDA	6.28		MDA	54		MDA	42.93		MDA	53.98	----	MDA	3570	----
MW-F3	Feb-96	Filtered	----	----	----	MDA	0.31		MDA	259.1		0.78			0.54			MDA	33.3		----	----	----	MDA	33.33	----	MDA	1380	----
MW-F3	Feb-96	unfiltered	----	----	----	----	----	----	----	----	----	----	----	----	1.81			1.05			----	----	----	----	----	----	----	----	----
MW-F3	May-96	Filtered	----	----	----	----	----	----	----	----	----	----	----	----	MDA	0.11		0.5			----	----	----	----	----	----	----	----	----
MW-F3	May-96	unfiltered	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.44			----	----	----	----	----	----	----	----	----
PZ-114-AS	Nov-95	Filtered	----	----	----	2.44			MDA	76.03		2.86			2.67			MDA	24.6		MDA	18.48		MDA	24.62	----	MDA	104	----
PZ-114-AS	Nov-95	unfiltered	----	----	----	2.81			MDA	73.95		3.45			2.3			MDA	27.2		MDA	23.29		MDA	27.23	----	MDA	137	----
PZ-114-AS	Feb-96	Filtered	----	----	----	2.08			MDA	151.8		2.25			0.52			MDA	35.8		----	----	----	MDA	35.75	----	MDA	176	----
PZ-114-AS	Feb-96	unfiltered	----	----	----	----	----	----	----	----	----	----	----	----	1.35			0.68			----	----	----	----	----	----	----	----	----
PZ-114-AS	May-96	Filtered	----	----	----	----	----	----	----	----	----	----	----	----	0.69			0.51			----	----	----	----	----	----	----	----	----
PZ-114-AS	May-96	unfiltered	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.17			----	----	----	----	----	----	----	----	----
Intermediate Depth Wells																													
I-2	Nov-95	Filtered	----	----	----	1.62			MDA	108.1		3.27			MDA	0.49		MDA	12.9		MDA	11.8		MDA	12.88	----	MDA	172	----
I-2	Nov-95	unfiltered	----	----	----	2.11			MDA	131		2.87			1.04			MDA	13.6		MDA	13.19		MDA	13.55	----	MDA	433	----
I-2	Feb-96	Filtered	----	----	----	0.55			MDA	155.4		0.89			0.4			MDA	36.6		----	----	----	MDA	36.61	----	MDA	202	----
I-2	Feb-96	unfiltered	----	----	----	----	----	----	----	----	----	----	----	----	0.34			1.69			----	----	----	----	----	----	----	----	----
I-2	May-96	Filtered	----	----	----	----	----	----	----	----	----	----	----	----	0.31			1.17			----	----	----	----	----	----	----	----	----
I-2	May-96	unfiltered	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	1.44			----	----	----	----	----	----	----	----	----
I-2	May-97	Filtered	1.52			0.14			----	----	----	0.26			0.38			0.98			MDA	28.1		MDA	34.1	----	MDA	230	----
I-2	May-97	unfiltered	MDA		1.6	0.27			----	----	----	0.45			0.29			1.05			MDA	24.7		MDA	34.4	----	MDA	240	----
I-2-DUP	May-97	Filtered	0.99			0.2			----	----	----	0.38			0.13			0.82			MDA	30.4		MDA	32.5	----	MDA	77000	----
I-2-DUP	May-97	unfiltered	1.23			0.31			----	----	----	1.13			0.14			1.09			MDA	29.8		MDA	26.5	----	MDA	171000	----
I-4	Nov-95	Filtered	----	----		MDA	0.17		MDA	300.9		0.22			MDA	2.04		MDA	41.4		MDA	36.26		MDA	41.35	----	MDA	3070	----
I-4	Nov-95	unfiltered	----	----	----	MDA	0.14		MDA	66.91		MDA	0.18		MDA	1.84		MDA	25.4		MDA	22.05		MDA	25.39	----	MDA	132	----
I-4	Feb-96	Filtered	----	----	----	0.12			MDA	155.6		0.17			0.64			MDA	37.8		----	----		MDA	37.84	----	MDA	214	----
I-4	Feb-96	unfiltered	----	----	----	----	----	----	----	----	----	----	----	----	0.64			2.41			----	----	----	----	----	----	----	----	----
I-4	May-96	Filtered	----	----	----	----	----	----	----	----	----	----	----	----	0.65			0.87			----	----	----	----	----	----	----	----	----
I-4	May-96	unfiltered	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	1.5			----	----	----	----	----	----	----	----	----
I-4	May-97	Filtered	MDA		0.98	0.04			----	----	----	0.11			0.005			0.81			MDA	26.3		MDA	31.8	----	MDA	176	----
I-4	May-97	unfiltered	MDA		0.44	0.078			----	----	----	0.1			0.18			1.04			MDA	27.8		MDA	35.1	----	MDA	1400	----
I-4 DUP (F)	Nov-95	Filtered	----	----	----	----	----	----	MDA	221.2	----	----	----	----	----	----	----	MDA	28.3		MDA	26.9		MDA	28.28	----	MDA	1300	----
I-4 DUP (F)	Nov-95	unfiltered	----	----	----	----	----	----	MDA	140.4	----	----	----	----	----	----	----	MDA	29.6		MDA	25.38		MDA	29.65	----	MDA	141	----
I-4 DUP (F)	Feb-96	Filtered	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		----	----	----	----	----	----	----
I-4 DUP (F)	Feb-96	unfiltered	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		----	----	----	----	----	----	----
I-4 DUP (F)	May-96	Filtered	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		----	----	----	----	----	----	----
I-4 DUP (F)	May-96	unfiltered	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		----	----	----	----	----	----	----
I-7	Nov-95	Filtered	----	----	----	1.92			MDA	187.6		3.67			MDA	2.42		MDA	24.7		MDA	20.34		MDA	24.7	----	MDA	274	----
I-7	Nov-95	unfiltered	----	----	----	3.62			MDA	310.1		3.83			1.22			MDA	42.7		MDA	38.33		MDA	42.7	----	MDA	3420	----
I-7	Feb-96	Filtered	----	----	----	1.51			MDA	323		2.44			0.29			MDA	47.8		----		----	MDA	47.77	----	MDA	4180	----
I-7	Feb-96	unfiltered	----	----	----	----	----	----	----	----	----	----	----	----	1.06			0.69			----		----	----	----	----	----	----	----
I-7	May-96	Filtered	----	----	----	----	----	----	----	----	----	----	----	----	0.32			0.18			----		----	----	----	----	----	----	----
I-7	May-96	unfiltered	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.35			----		----	----	----	----	----	----	----
I-9	Nov-95	Filtered	----	----	----	1.78			MDA	55.32		2.89			MDA	1.04		MDA	12.7		MDA	11.12		MDA	12.72	----	MDA	54.5	----
I-9	Nov-95	unfiltered	----	----	----	2.54			MDA	203		3.77			1.54			MDA	25.1		MDA	23.3		MDA	25.14	----	MDA	2080	----
I-9	Feb-96	Filtered	----	----	----	2.02			MDA	153.6		2.36			0.44			MDA	31.1		----		----	MDA	31.13	----	MDA	187	----
I-9	Feb-96	unfiltered	----	----	----	----	----	----	----	----	----	----	----	----	0.84			1.08			----		----	----	----	----	----	----	----
I-9	May-96	Filtered	----	----	----	----	----	----	----	----	----	----	----	----	0.5			0.54			----		----	----	----	----	----	----	----
I-9	May-96	unfiltered	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.64			----		----	----	----	----	----	----	----
I-11	Nov-95	Filtered	----	----	----	0.43			MDA	141.1		0.9			MDA	0.78		MDA			MDA	25.62		MDA	25.46	----	MDA	190	----
I-11	Nov-95	unfiltered	----	----	----	MDA	0.2		MDA	149.6		0.36			1.18			MDA			MDA	30.59		MDA	34.9	----	MDA	213	----
I-11	Feb-96	Filtered	----	----	----	MDA	0.3		MDA	133.3		MDA	0.32		0.62			MDA			----		----	MDA	28.31	----	MDA	145	----

Table C-3 : Groundwater Analytical Results - Gross Alpha and Uranium-238 Decay Series

Monitoring Well	Date	Filtered	Gross Alpha			Uranium-238			Thorium-234			Uranium-234			Thorium-230			Radium-226			Lead-214			Bismuth-214			Lead-210		
			Result	+/- Sigma	MDA	Result	MDA	+/- Sigma	Result	MDA	+/- Sigma	Result	MDA	+/- Sigma	Result	MDA	+/- Sigma	Result	MDA	+/- Sigma	Result	MDA	+/- Sigma	Result	MDA	+/- Sigma	Result	MDA	+/- Sigma
I-11	Feb-96	unfiltered	----	----	----	----	----	----	----	----	----	----	----	----	MDA	0.11		0.85			----	----	----	----	----	----	----	----	----
I-11	May-96	Filtered	----	----	----	----	----	----	----	----	----	----	----	----	0.47			0.5			----	----	----	----	----	----	----	----	----
I-11	May-96	unfiltered	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.59			----	----	----	----	----	----	----	----	----
I-62	Nov-95	Filtered	----	----	----	MDA	0.44		MDA	57.19		0.71			1.43			MDA	17.1		MDA	14.5		MDA	17.06	----	MDA	114	----
I-62	Nov-95	unfiltered	----	----	----	0.4			MDA	42.7		0.39			1.16			MDA	14.2		MDA	12.16		MDA	14.17	----	MDA	58.7	----
I-62	Feb-96	Filtered	----	----	----	MDA	0.34		MDA	133.8		0.38			0.67			MDA	26.6		----		----	MDA	26.58	----	144		
I-62	Feb-96	unfiltered	----	----	----	----	----	----	----	----	----	----	----	----	1.63			0.37			----		----	----	----	----	----	----	----
I-62	May-96	Filtered	----	----	----	----	----	----	----	----	----	----	----	----	0.43			MDA	0.14		----		----	----	----	----	----	----	----
I-62	May-96	unfiltered	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.35			----		----	----	----	----	----	----	----
I-65	Nov-95	Filtered	----	----	----	0.34			MDA	88.22		0.58			0.61			MDA	23.3		MDA	19.6		MDA	23.32	----	MDA	133	----
I-65	Nov-95	unfiltered	----	----	----	0.31			MDA	130.9		0.34			1.89			MDA	24.6		MDA	20.9		MDA	24.59	----	MDA	109	----
I-65	Feb-96	Filtered	----	----	----	0.36			MDA	150.9		0.46			0.59			MDA	41.5		----		----	MDA	41.48	----	MDA	205	----
I-65	Feb-96	unfiltered	----	----	----	----	----	----	----	----	----	----	----	----	MDA	0.2		0.79			----		----	----	----	----	----	----	----
I-65	May-96	Filtered	----	----	----	----	----	----	----	----	----	----	----	----	0.67			MDA	0.44		----		----	----	----	----	----	----	----
I-65	May-96	unfiltered	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	MDA	0.15		----		----	----	----	----	----	----	----
I-66	Nov-95	Filtered	----	----	----	1.18			MDA	145.5		1.23			MDA	2.62		MDA	31.3		MDA	24.85		MDA	31.27	----	MDA	179	----
I-66	Nov-95	unfiltered	----	----	----	1.22			MDA	145.8		0.91			MDA	2.54		MDA	28.2		MDA	24.82		MDA	28.17	----	MDA	186	----
I-66	Feb-96	Filtered	----	----	----	0.89			MDA	163.2		1.1			0.66			MDA	33.6		----		----	MDA	33.63	----	MDA	161	----
I-66	Feb-96	unfiltered	----	----	----	----	----	----	----	----	----	----	----	----	0.97			0.57			----		----	----	----	----	----	----	----
I-66	May-96	Filtered	----	----	----	----	----	----	----	----	----	----	----	----	1.09			MDA	0.34		----		----	----	----	----	----	----	----
I-66	May-96	unfiltered	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	MDA	0.18		----		----	----	----	----	----	----	----
I-66 DUP (F)	Nov-95	Filtered	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		----	----	----	----	----	----	----
I-66 DUP (F)	Nov-95	unfiltered	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		----	----	----	----	----	----	----
I-66 DUP (F)	Feb-96	Filtered	----	----	----	3.09			MDA	137.6		14			0.56			MDA	35.5		----		----	MDA	35.51	----	MDA	142	----
I-66 DUP (F)	Feb-96	unfiltered	----	----	----	----	----	----	----	----	----	----	----	----	MDA	0.23		0.48			----		----	----	----	----	----	----	----
I-66 DUP (F)	May-96	Filtered	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		----	----	----	----	----	----	----
I-66 DUP (F)	May-96	unfiltered	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		----	----	----	----	----	----	----
I-67	Nov-95	Filtered	----	----	----	0.46			MDA	145.4		0.34			MDA	2.19		MDA	23.9		MDA	22.04		MDA	23.85	----	MDA	144	----
I-67	Nov-95	unfiltered	----	----	----	0.17			MDA	228.2		0.54			3.58			MDA	28.5		MDA	24.51		MDA	28.46	----	MDA	1300	----
I-67	Feb-96	Filtered	----	----	----	0.35			MDA	166.2		0.52			0.52			MDA	42		----		----	MDA	41.98	----	MDA	228	----
I-67	Feb-96	unfiltered	----	----	----	----	----	----	----	----	----	----	----	----	0.61			0.54			----		----	----	----	----	----	----	----
I-67	May-96	Filtered	----	----	----	----	----	----	----	----	----	----	----	----	0.55			0.52			----		----	----	----	----	----	----	----
I-67	May-96	unfiltered	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.22			----		----	----	----	----	----	----	----
I-68	Nov-95	Filtered	----	----	----	1.48			MDA	143.6		1.24			MDA	1.04		MDA	28.6		MDA	22.39		MDA	28.61	----	MDA	177	----
I-68	Nov-95	unfiltered	----	----	----	0.84			MDA	107.9		1.6			MDA	0.7		MDA	27.7		MDA	24.57		101			MDA	199	----
I-68	Feb-96	Filtered	----	----	----	1.06			101			1.47			0.46			MDA	36.5		----		----	MDA	36.32	----	MDA	158	----
I-68	Feb-96	unfiltered	----	----	----	----	----	----	----	----	----	----	----	----	0.53			0.72			----		----	----	----	----	----	----	----
I-68	May-96	Filtered	----	----	----	----	----	----	----	----	----	----	----	----	0.21			0.44			----		----	----	----	----	----	----	----
I-68	May-96	unfiltered	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.66			----		----	----	----	----	----	----	----
I-68 DUP (F)	Nov-95	Filtered	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		----	----	----	----	----	----	----
I-68 DUP (F)	Nov-95	unfiltered	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		----	----	----	----	----	----	----
I-68 DUP (F)	Feb-96	Filtered	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		----	----	----	----	----	----	----
I-68 DUP (F)	Feb-96	unfiltered	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		----	----	----	----	----	----	----
I-68 DUP (F)	May-96	Filtered	----	----	----	----	----	----	----	----	----	----	----	----	0.46			0.47			----		----	----	----	----	----	----	----
I-68 DUP (F)	May-96	unfiltered	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	0.6			----		----	----	----	----	----	----	----
Deep Depth Wells																													
D-3	Nov-95	Filtered	----	----	----	1.4			MDA	282.4		2.47			0.96			MDA	39.8		MDA	36.53		MDA	39.85	----	MDA	2940	----
D-3	Nov-95	unfiltered	----	----	----	2.5			MDA	65.68		3.39			MDA	0.58		MDA	28.1		MDA	20.4		MDA	28.07	----	MDA	101	----
D-3	Feb-96	Filtered	----	----	----	0.75			MDA	130.8		1.04			0.64			MDA	27.2		----		----	MDA	27.24	----	MDA	106	----
D-3	Feb-96	unfiltered	----	----	----	----	----	----	----	----	----	----	----	----	0.36			2.7			----		----	----	----	----	----	----	----
D-3	May-96	Filtered	----	----	----	----	----	----	----	----	----	----	----	----	0.41			0.78			----		----	----	----	----	----	----	----
D-3	May-96	unfiltered	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	1.19			----		----	----	----	----	----	----	----
D-3	May-97	Filtered	0.16			0.16			----	----	----	0.3			0.054			0.75			MDA	26.5		MDA	30.2	----	MDA	203	----
D-3	May-97	unfiltered	2.14			0.11			----	----	----	0.25			0.028			1.5			MDA	26.8		MDA	29.3	----	MDA	234	----
D-3 DUP (F)	Nov-95	Filtered	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		----	----	----	----	----	----	----
D-3 DUP (F)	Nov-95	unfiltered	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		----	----	----	----	----	----	----
D-3 DUP (F)	Feb-96	Filtered	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		----	----	----	----	----	----	----
D-3 DUP (F)	Feb-96	unfiltered	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		----	----	----	----	----	----	----
D-3 DUP (F)	May-96	Filtered	----	----	----	----	----	----	----	----	----	----	----	----	0.37			1.17			----		----	----	----	----	----	----	----
D-3 DUP (F)	May-96	unfiltered	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	1.21			----		----	----	----	----	----	----	----
D-6	Nov-95	Filtered	----	----	----	0.73			MDA	149		1.61			0.99			MDA	28.6		MDA	25.69		MDA	28.65	----	MDA	186	----
D-6	Nov-95	unfiltered	----	----	----	0.54			MDA	140.7		1.69			0.61			MDA	28.2		MDA	24.51		MDA	28.25	----	MDA	149	----
D-6	Feb-96	Filtered	----	----	----	0.36			MDA	122.3		0.68			0.2			MDA	36.7		----		----	MDA	36.69	----	MDA	227	----
D-6	Feb-96	unfiltered	----	----	----	----	----	----	----	----	----	----	----	----	0.71			1.78			----		----	----	----	----	----	----	----
D-6	May-96	Filtered	----	----	----	----	----	----	----	----	----	----	----	----	0.54			1.66			----		----	----	----	----	----	----	----
D-6	May-96	unfiltered	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	1.88			----		----	----	----	----	----	----	----
D-6	May-97	Filtered	1.54			0.063			----	----	----	0.13			0.13			1.8			MDA	27.2		MDA	27	----	204		
D-6	May-97	unfiltered	8.79			1.13			----	----	----	2.46			0.52			2.05			MDA	13.6		MDA	16.2		MDA	100	
D-12	Nov-95	Filtered	----	----	----	MDA	0.24		MDA	82.01		0.43			MDA	0.77		MDA	15.4		MDA	12.8		MDA	15.4	----	MDA	5.8	----
D-12	Nov-95	unfiltered	----	----	----	0.81			MDA	83.22		1.4			MDA	4.66		MDA	16.1		MDA	14.06		114			MDA	109	----

Table C-3 : Groundwater Analytical Results - Gross Alpha and Uranium-238 Decay Series

Monitoring Well	Date	Filtered	Gross Alpha			Uranium-238			Thorium-234			Uranium-234			Thorium-230			Radium-226			Lead-214			Bismuth-214			Lead-210		
			Result	+/- Sigma	MDA	Result	MDA	+/- Sigma	Result	MDA	+/- Sigma	Result	MDA	+/- Sigma	Result	MDA	+/- Sigma	Result	MDA	+/- Sigma	Result	MDA	+/- Sigma	Result	MDA	+/- Sigma	Result	MDA	+/- Sigma
D-12	Feb-96	Filtered	---	---	---	*MDA*	*0.117*		**114**			**0.24**			**5.08**			*MDA*	*44.7*		---		---	*MDA*	*44.67*	---	*MDA*	*166*	---
D-12	Feb-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	**0.51**			**0.5**			---		---	---	---	---	---	---	---
D-12	May-96	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	**0.5**			**0.36**			---		---	---	---	---	---	---	---
D-12	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.73**			---		---	---	---	---	---	---	---
D-12	May-97	Filtered	**1.15**			**0.23**			---	---	---	**0.22**			**0.14**			**0.49**			*MDA*	*24*		*MDA*	*30.6*	---	*MDA*	*355*	---
D-12	May-97	Filtered	**-0.35**		*0.35*	**0.02**			---	---	---	**0.23**			**0.16**			**0.26**			*MDA*	*28.8*		*MDA*	*40.7*	---	*MDA*	*212*	---
D-12	May-97	unfiltered	**2.27**			**0.14**			---	---	---	**0.23**			**0.2**			**0.54**			*MDA*	*25*	---	*MDA*	*28.4*	---	*MDA*	*411*	---
D-13	Nov-95	Filtered	---	---	---	*MDA*	*0.19*		*MDA*	*126.5*		**0.57**			*MDA*	*2.15*		*MDA*	*23.9*		*MDA*	*21.67*		*MDA*	*23.89*	---	*MDA*	*133*	---
D-13	Nov-95	unfiltered	---	---	---	*MDA*	*1.3*		*MDA*	*99.67*		**2.95**			**4.25**			*MDA*	*30.2*		*MDA*	*25.78*		*MDA*	*30.25*	---	*MDA*	*194*	---
D-13	Feb-96	Filtered	---	---	---	*MDA*	*0.189*		*MDA*	*141.5*		**0.44**			**0.29**			*MDA*	*24.6*		---		---	*MDA*	*24.6*	---	*MDA*	*135*	---
D-13	Feb-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	**0.64**			**1.33**			---		---	---	---	---	---	---	---
D-13	May-96	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	**0.27**			**0.58**			---		---	---	---	---	---	---	---
D-13	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.86**			---		---	---	---	---	---	---	---
D-14	Nov-95	Filtered	---	---	---	**3.33**			*MDA*	*139.1*		**3.11**			*MDA*	*2.23*		*MDA*	*31.3*		**30.6**			*MDA*	*31.33*	---	*MDA*		---
D-14	Nov-95	unfiltered	---	---	---	**3.71**			*MDA*	*143.2*		**4.16**			**0.93**			**69.8**			**71**			**69.4**			*MDA*		---
D-14	Feb-96	Filtered	---	---	---	**0.52**			*MDA*	*208.8*		**0.57**			**0.24**			**96.7**			---		---	*MDA*	*42.02*	---	*MDA*	*323*	---
D-14	Feb-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	**1.14**			**1.5**			---		---	---	---	---	---	---	---
D-14	May-96	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---		---	---	---	---	---	---	---
D-14	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---		---	---	---	---	---	---	---
D-83	Nov-95	Filtered	---	---	---	**0.33**			*MDA*	*53.81*		**0.48**			**0.95**			*MDA*	*14*		*MDA*	*10.82*		*MDA*	*13.96*	---	*MDA*	*81.3*	---
D-83	Nov-95	unfiltered	---	---	---	**0.73**			*MDA*	*204.6*		**0.71**			**1.24**			*MDA*	*25.8*		*MDA*	*23.92*		*MDA*	*25.75*	---	*MDA*	*2100*	---
D-83	Feb-96	Filtered	---	---	---	*MDA*	*0.21*		*MDA*	*116.1*		*MDA*	*0.2*		**0.4**			*MDA*	*30.5*		---		---	*MDA*	*30.46*	---	*MDA*	*222*	---
D-83	Feb-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	**0.83**			**1.25**			---		---	---	---	---	---	---	---
D-83	May-96	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	*MDA*			**0.82**			---		---	---	---	---	---	---	---
D-83	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.81**			---		---	---	---	---	---	---	---
D-85	Nov-95	Filtered	---	---	---	*MDA*	*0.24*		*MDA*	*144.7*		*MDA*	*0.3*		**4.66**			*MDA*	*31.4*		*MDA*	*24.28*		*MDA*	*31.38*	---	*MDA*	*190*	---
D-85	Nov-95	unfiltered	---	---	---	**0.21**			*MDA*	*143.8*		**0.76**			**1**			*MDA*	*25.9*		*MDA*	*22.54*		*MDA*	*25.86*	---	*MDA*	*151*	---
D-85	Feb-96	Filtered	---	---	---	**0.32**			*MDA*	*357.7*		**0.58**			**0.65**			*MDA*	*54.4*		---		---	*MDA*	*54.4*	---	*MDA*	*3070*	---
D-85	Feb-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	**0.92**			**0.58**			---		---	---	---	---	---	---	---
D-85	May-96	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	**0.7**			**0.54**			---		---	---	---	---	---	---	---
D-85	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**0.16**			---		---	---	---	---	---	---	---
D-85 DUP (F)	Nov-95	Filtered	---	---	---	---	---	---	*MDA*	*81.52*		---	---	---	---	---	---	*MDA*	*33.9*		*MDA*	*29.76*		*MDA*	*33.9*	---	*MDA*	*156*	---
D-85 DUP (F)	Nov-95	unfiltered	---	---	---	---	---	---	*MDA*	*122.1*		---	---	---	---	---	---	---	*27*		*MDA*	*22.88*		*MDA*	*27.02*	---	*MDA*	*146*	---
D-85 DUP (F)	Feb-96	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---		---	---	---	---	---	---	---
D-85 DUP (F)	Feb-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---		---	---	---	---	---	---	---
D-85 DUP (F)	May-96	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---		---	---	---	---	---	---	---
D-85 DUP (F)	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---		---	---	---	---	---	---	---
D-93	Nov-95	Filtered	---	---	---	**0.15**			*MDA*	*148.1*		**0.22**			**0.67**			*MDA*	*28.6*		*MDA*	*21.8*		*MDA*	*28.62*	---	*MDA*	*176*	---
D-93	Nov-95	unfiltered	---	---	---	*MDA*	*0.35*		*MDA*	*77.99*		*MDA*	*0.47*		**0.64**			*MDA*	*26.5*		*MDA*	*23.01*		*MDA*	*26.54*	---	*MDA*	*189*	---
D-93	Feb-96	Filtered	---	---	---	*MDA*	*0.18*		*MDA*	*198.1*		**0.42**			**0.25**			*MDA*	*29.6*		---		---	*MDA*	*29.59*	---	*MDA*	*306*	---
D-93	Feb-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	**0.53**			**1.43**			---		---	---	---	---	---	---	---
D-93	May-96	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	**0.47**			**0.95**			---		---	---	---	---	---	---	---
D-93	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	**2.09**			---		---	---	---	---	---	---	---
D-93	May-97	Filtered	*MDA*		*0.17*	**0.047**			---	---	---	**0.19**			**2.69**			**1.18**			*MDA*	*23.3*		*MDA*	*30.9*	---	*MDA*	*190*	---
D-93	May-97	unfiltered	**0.94**			**2.12**			---	---	---	**2.87**			**0.26**			**1.34**			*MDA*	*14.3*		*MDA*	*16.2*	---	*MDA*	*108*	---
D-93 DUP (F)	Nov-95	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---		---	---	---	---	---	---	---
D-93 DUP (F)	Feb-96	Filtered	---	---	---	*MDA*	*0.13*		*MDA*	*324.8*		**0.22**			**0.94**			*MDA*	*46*		---		---	*MDA*	*46.01*	---	*MDA*	*4050*	---
D-93 DUP (F)	Feb-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	**0.78**			**1.21**			---		---	---	---	---	---	---	---
D-93 DUP (F)	May-96	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---		---	---	---	---	---	---	---

All values expressed as pCi/L. unless otherwise noted.
--- = not analyzed
MDA = Minimum Detectable Activity
Bold numbers indicate results above the MDA.
xx = No tracer counts. Therefore, results could not be generated.

Table C-4 : Groundwater Analytical Results - Uranium-235 Decay Series

Monitoring Well	Date	Filtered	U-235/236			Uranium-235			Protactinium-231			Actinium-227			Radium-223		
			Result	MDA	+/- Sigma	Result	MDA	+/- Sigma	Result	MDA	+/- Sigma	Result	MDA	+/- Sigma	Result	MDA	+/- Sigma
Shallow Depth Wells																	
S-1	Nov-95	Filtered	0.71			<MDA	-43.9	---	<MDA	-242	---	<MDA	-47	---	<MDA	-567.1	---
S-1	Nov-95	unfiltered	0.57			<MDA	-56.75	---	<MDA	-289	---	<MDA	-58.4	---	<MDA	-683.2	---
S-1	Feb-96	Filtered				<MDA	-71.65	---	<MDA	-312	---	<MDA	-66.4	---	<MDA	-759.5	---
S-1	Feb-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-1	May-96	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-1	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-1 DUP (F)	Nov-95	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-1 DUP (F)	Nov-95	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-1 DUP (F)	Feb-96	Filtered				<MDA	-63.72	---	<MDA	-543	---	<MDA	-54.1	---	<MDA	-706	---
S-1 DUP (F)	Feb-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-1 DUP (F)	May-96	Filtered	<MDA	0.23	---	---	---	---	---	---	---	---	---	---	---	---	---
S-1 DUP (F)	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-5	Nov-95	Filtered	<MDA	0.39	---	<MDA	-59.82	---	<MDA	-313	---	<MDA	-64.2	---	<MDA	-350.1	---
S-5	Nov-95	unfiltered	<MDA	0.33	---	<MDA	-44.64	---	<MDA	-284	---	<MDA	-50	---	<MDA	-269.8	---
S-5	Feb-96	Filtered	---	---	---	<MDA	-118.4	---	<MDA	-287	---	<MDA	-110	---	<MDA	-479.7	---
S-5	Feb-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-5	May-96	Filtered	<MDA	0.18	---	---	---	---	---	---	---	---	---	---	---	---	---
S-5	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-8	Nov-95	Filtered	<MDA	0.46	---	<MDA	-60.68	---	<MDA	-364	---	<MDA	-65.4	---	<MDA	-324.8	---
S-8	Nov-95	unfiltered	<MDA	0.32	---	<MDA	-127.8	---	<MDA	-563	---	<MDA	-118	---	<MDA	-561.5	---
S-8	Feb-96	Filtered	0.38	0.38	---	<MDA	-39.49	---	<MDA	-333	---	<MDA	-50.6	---	<MDA	-770.33	---
S-8	Feb-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-8	May-96	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-8	May-96	unfiltered	---	---	---	---	---	---	---	---	---	<MDA	---	---	---	---	---
S-10	Nov-95	Filtered	<MDA	0.56	---	<MDA	-60.23	---	<MDA	-379	---	<MDA	-64.4	---	<MDA	-300.7	---
S-10	Nov-95	unfiltered	1.18			<MDA	-53.93	---	<MDA	-353	---	<MDA	-62.3	---	<MDA	-321.6	---
S-10	Feb-96	Filtered	---	---	---	<MDA	-55.66	---	<MDA	-326	---	<MDA	-58.6	---	<MDA	-378.8	---
S-10	Feb-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-10	May-96	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-10	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-61	Nov-95	Filtered	0.33			<MDA	-49.81	---	<MDA	-286	---	<MDA	-55.8	---	<MDA	-489.9	---
S-61	Nov-95	unfiltered	0.31			<MDA	-50.15	---	<MDA	-337	---	<MDA	-58.4	---	<MDA	-514.1	---
S-61	Feb-96	Filtered	<MDA	-0.191	---	<MDA	-73.64	---	<MDA	-258	---	<MDA	-63	---	<MDA	-350.6	---
S-61	Feb-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-61	May-96	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-61	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-80	Nov-95	Filtered	0.4			<MDA	-48.8	---	<MDA	-349	---	<MDA	-53.5	---	<MDA	-453.1	---
S-80	Nov-95	unfiltered	0.28			<MDA	-60.62	---	<MDA	-333	---	<MDA	-65.9	---	<MDA	-449.1	---
S-80	Feb-96	Filtered	<MDA	-0.206	---	<MDA	-49.66	---	<MDA	-420	---	<MDA	-54.6	---	<MDA	-320.2	---
S-80	Feb-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-80	May-96	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-80	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-80 DUP (F)	Nov-95	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-80 DUP (F)	Nov-95	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-80 DUP (F)	Feb-96	Filtered	<MDA	-0.33	---	<MDA	-87.47	---	<MDA	-482	---	<MDA	-92.6	---	<MDA	-944.6	---
S-80 DUP (F)	Feb-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-80 DUP (F)	May-96	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-80 DUP (F)	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-82	Nov-95	Filtered	0.43			<MDA	-23.51	---	<MDA	-136	---	<MDA	-25.1	---	<MDA	-306.7	---
S-82	Nov-95	unfiltered	0.82			<MDA	-40.38	---	<MDA	-255	---	<MDA	-45.8	---	<MDA	-556.7	---
S-82	Feb-96	Filtered	0.37			<MDA	-106.3	---	<MDA	-282	---	<MDA	-94.7	---	<MDA	-515.3	---
S-82	Feb-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-82	May-96	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-82	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-82	May-97	Filtered	0.1	0.028	0.07	---	---	---	<MDA	-390	---	<MDA	-72.8	---	<MDA	-232	---
S-82	May-97	unfiltered	0.18	0.25	0.18	---	---	---	<MDA	-344	---	<MDA	-56.1	---	<MDA	-120	---
S-82	May-97	unfiltered	0.12	0.24	0.15	---	---	---	<MDA	-382	---	<MDA	-71.1	---	<MDA	-172	---
S-84	Nov-95	Filtered	<MDA	-0.165	---	<MDA	-40.25	---	<MDA	-260	---	<MDA	-46.7	---	<MDA	-544.4	---
S-84	Nov-95	unfiltered	<MDA	-0.334	---	<MDA	-57	---	<MDA	-341	---	<MDA	-63.8	---	<MDA	-664.8	---
S-84	Feb-96	Filtered	0.28			<MDA	-64.21	---	---	---	---	<MDA	-61.3	---	<MDA	-348.4	---
S-84	Feb-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-84	May-96	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-84	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-84 DUP (F)	Nov-95	Filtered	---	---	---	<MDA	-68.47	---	<MDA	-314	---	<MDA	-71	---	<MDA	-768.3	---
S-84 DUP (F)	Nov-95	unfiltered	---	---	---	<MDA	-49	---	<MDA	-338	---	<MDA	-57.9	---	<MDA	-752.6	---
S-84 DUP (F)	Feb-96	Filtered	---	---	---	---	---	---	<MDA	-256	---	---	---	---	---	---	---
S-84 DUP (F)	Feb-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-84 DUP (F)	May-96	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Table C-4 : Groundwater Analytical Results - Uranium-235 Decay Series

Monitoring Well	Date	Filtered	U-235/236			Uranium-235			Protactinium-231			Actinium-227			Radium-223		
			Result	MDA	+/- Sigma	Result	MDA	+/- Sigma	Result	MDA	+/- Sigma	Result	MDA	+/- Sigma	Result	MDA	+/- Sigma
S-84 DUP (F)	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-101	Nov-95	Filtered	<MDA	-1.63	---	<MDA	-43.25	---	<MDA	-242	---	<MDA	-47.6	---	<MDA	-428	---
MW-101	Nov-95	unfiltered	0.56			<MDA	-42.47	---	<MDA	-270	---	<MDA	-46.6	---	<MDA	-376.9	---
MW-101	Feb-96	Filtered	<MDA	-0.24	---	<MDA	-46.5	---	<MDA	-385	---	<MDA	-51.1	---	<MDA	-619.9	---
MW-101	Feb-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-101	May-96	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-101	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-107	Nov-95	Filtered	0.5			<MDA	-38.12	---	<MDA	-160	---	<MDA	-34.3	---	<MDA	-207.1	---
MW-107	Nov-95	unfiltered	<MDA	-1.2	---	<MDA	-40.43	---	<MDA	-184	---	<MDA	-39.6	---	<MDA	-237.2	---
MW-107	Feb-96	Filtered	<MDA	-0.48	---	<MDA	-67.86	---	---	---	---	<MDA	-69.2	---	<MDA	-438.1	---
MW-107	Feb-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-107	May-96	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-107	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-107 DUP (F)	Nov-95	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-107 DUP (F)	Nov-95	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-107 DUP (F)	Feb-96	Filtered	---	---	---	---	---	---	<MDA	-308	---	---	---	---	---	---	---
MW-107 DUP (F)	Feb-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-107 DUP (F)	May-96	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-107 DUP (F)	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-F3	Nov-95	Filtered	<MDA	-0.35	---	<MDA	-60.71	---	<MDA	-294	---	<MDA	-60.2	---	<MDA	-439.1	---
MW-F3	Nov-95	unfiltered	<MDA	-0.56	---	<MDA	-128.2	---	<MDA	-602	---	<MDA	-125	---	<MDA	-933.4	---
MW-F3	Feb-96	Filtered	<MDA	-0.21	---	<MDA	-75.09	---	<MDA	-336	---	<MDA	-72.8	---	<MDA	-380.3	---
MW-F3	Feb-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-F3	May-96	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-F3	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
PZ-114-AS	Nov-95	Filtered	0.14			<MDA	-41.51	---	<MDA	-248	---	<MDA	-42.2	---	<MDA	-523.4	---
PZ-114-AS	Nov-95	unfiltered	<MDA	0.153	---	<MDA	-40.77	---	<MDA	-233	---	<MDA	-41.9	---	<MDA	-566	---
PZ-114-AS	Feb-96	Filtered	<MDA	0.163	---	<MDA	-52.37	---	<MDA	-391	---	<MDA	-67	---	<MDA	-372.8	---
PZ-114-AS	Feb-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
PZ-114-AS	May-96	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
PZ-114-AS	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Intermediate Depth Wells																	
I-2	Nov-95	Filtered	0.91			<MDA	-34.44	---	<MDA	-161	---	<MDA	-31.2	---	<MDA	-341.3	---
I-2	Nov-95	unfiltered	<MDA	0.48	---	<MDA	-34.97	---	<MDA	-166	---	<MDA	-36	---	<MDA	-374.1	---
I-2	Feb-96	Filtered	---	---	---	<MDA	-55.37	---	<MDA	-368	---	<MDA	-59.7	---	<MDA	-379.2	---
I-2	Feb-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
I-2	May-96	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
I-2	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
I-2	May-97	Filtered	<MDA	0.004	---	---	---	---	<MDA	-351	---	<MDA	-78.3	---	<MDA	-156	---
I-2	May-97	unfiltered	0.049	0.14	0.078	---	---	---	<MDA	-404	---	<MDA	-69.6	---	<MDA	-170	---
I-2-DUP	May-97	Filtered	0.029	0.15	0.07	---	---	---	<MDA	-399	---	<MDA	-84.3	---	<MDA	-479	---
I-2-DUP	May-97	unfiltered	0.08	0.17	0.11	---	---	---	<MDA	-433	---	<MDA	-83.8	---	<MDA	-524	---
I-4	Nov-95	Filtered	<MDA	-0.283	---	<MDA	-116.7	---	<MDA	-536	---	<MDA	-108	---	<MDA	-113.9	---
I-4	Nov-95	unfiltered	<MDA	-0.167	---	<MDA	-41.66	---	<MDA	-251	---	<MDA	-48.3	---	<MDA	-538.1	---
I-4	Feb-96	Filtered	<MDA	-0.48	---	<MDA	-61.32	---	---	---	---	<MDA	-69.1	---	<MDA	-305.9	---
I-4	Feb-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
I-4	May-96	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
I-4	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
I-4	May-97	Filtered	0.019	0.065	0.035	---	---	---	<MDA	-315	---	<MDA	-50.8	---	<MDA	-122	---
I-4	May-97	unfiltered	0.017	0.12	0.052	---	---	---	<MDA	-456	---	<MDA	-82.3	---	<MDA	-466	---
I-4 DUP (F)	Nov-95	Filtered	---	---	---	<MDA	-60.6	---	<MDA	-327	---	<MDA	-68	---	<MDA	-737.5	---
I-4 DUP (F)	Nov-95	unfiltered	---	---	---	56.48			<MDA	-290	---	<MDA	-53.6	---	<MDA	-701.8	---
I-4 DUP (F)	Feb-96	Filtered	<MDA	0.25	---	---	---	---	<MDA	-520	---	---	---	---	---	---	---
I-4 DUP (F)	Feb-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
I-4 DUP (F)	May-96	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
I-4 DUP (F)	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
I-7	Nov-95	Filtered	<MDA	-0.47	---	<MDA	-66.03	---	<MDA	-290	---	<MDA	-61.4	---	<MDA	-436.4	---
I-7	Nov-95	unfiltered	0.75			<MDA	-119.8	---	<MDA	-546	---	<MDA	-113	---	<MDA	-840.8	---
I-7	Feb-96	Filtered	<MDA	-0.26	---	<MDA	-120.2	---	<MDA	-310	---	<MDA	-110	---	<MDA	-139.2	---
I-7	Feb-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
I-7	May-96	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
I-7	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
I-9	Nov-95	Filtered	0.85			<MDA	-22.35	---	<MDA	-133	---	<MDA	-38.3	---	<MDA	-296.1	---
I-9	Nov-95	unfiltered	0.33			<MDA	-75.67	---	<MDA	-335	---	<MDA	-67	---	<MDA	-692.4	---
I-9	Feb-96	Filtered	<MDA	-0.062	---	<MDA	-53.89	---	<MDA	-262	---	<MDA	-56.3	---	<MDA	-371	---
I-9	Feb-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
I-9	May-96	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
I-9	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
I-11	Nov-95	Filtered	<MDA	-0.25	---	<MDA	-50.7	---	<MDA	-289	---	<MDA	-61.2	---	<MDA	-397.9	---

Table C-4 : Groundwater Analytical Results - Uranium-235 Decay Series

Monitoring Well	Date	Filtered	U-235/236			Uranium-235			Protactinium-231			Actinium-227			Radium-223		
			Result	MDA	+/- Sigma	Result	MDA	+/- Sigma	Result	MDA	+/- Sigma	Result	MDA	+/- Sigma	Result	MDA	+/- Sigma
I-11	Nov-95	unfiltered	0.39			< MDA	-56.7	----	< MDA	-298	----	< MDA	-69.3	----	< MDA	-442	----
I-11	Feb-96	Filtered	---	---	---	< MDA	-45.84	---	< MDA	-244	----	< MDA	-40.4	---	< MDA	-278.7	---
I-11	Feb-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
I-11	May-96	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
I-11	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
I-62	Nov-95	Filtered	< MDA	-0.64	---	< MDA	-32	---	< MDA	-186	----	< MDA	-35.9	----	< MDA	-243.8	----
I-62	Nov-95	unfiltered	< MDA	-0.47	---	< MDA	-20.34	---	< MDA	-142	---	< MDA	-24.6	---	< MDA	-187.2	---
I-62	Feb-96	Filtered	< MDA			< MDA	-42.74	---	< MDA	-326	---	< MDA	-45.1	---	MDA	-290.6	---
I-62	Feb-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
I-62	May-96	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
I-62	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
I-65	Nov-95	Filtered	< MDA	-0.16	---	< MDA	-39.84	---	< MDA	-241	---	< MDA	-47.7	---	< MDA	-464.8	---
I-65	Nov-95	unfiltered	MDA	-0.35	---	MDA	-44.52	---	MDA	-232	---	< MDA	-42.2	---	< MDA	-488.7	---
I-65	Feb-96	Filtered	0.24			< MDA	-51.03	---	< MDA	-337	---	< MDA	-62.8	---	< MDA	-326.2	---
I-65	Feb-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
I-65	May-96	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
I-65	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
I-66	Nov-95	Filtered	0.1			< MDA	-53.46	---	< MDA	-326	---	< MDA	-62.4	---	MDA	-615.5	---
I-66	Nov-95	unfiltered	0.57			< MDA	-52.99	---	< MDA	-281	---	< MDA	-56.1	---	< MDA	-556.9	---
I-66	Feb-96	Filtered	MDA	-0.37	---	< MDA	-58.84	---	< MDA	-261	---	< MDA	-59.5	---	< MDA	-275	---
I-66	Feb-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
I-66	May-96	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
I-66	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
I-66 DUP (F)	Nov-95	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
I-66 DUP (F)	Nov-95	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
I-66 DUP (F)	Feb-96	Filtered	< MDA	-0.381	---	< MDA	-47.09	---	< MDA	-319	---	< MDA	-48.1	---	< MDA	-270.8	---
I-66 DUP (F)	Feb-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
I-66 DUP (F)	May-96	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
I-66 DUP (F)	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
I-67	Nov-95	Filtered	< MDA	-0.245	---	< MDA	-50.13	---	< MDA	-276	---	< MDA	-54	---	< MDA	-526.8	---
I-67	Nov-95	unfiltered	< MDA	-0.207	---	< MDA	-66.19	---	< MDA	-303	---	< MDA	-69.6	---	< MDA	-636.9	---
I-67	Feb-96	Filtered	0.053			< MDA	-60.54	---	< MDA	-344	---	< MDA	-68.7	---	< MDA	-378.8	---
I-67	Feb-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
I-67	May-96	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
I-67	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
I-68	Nov-95	Filtered	< MDA	-0.159	---	< MDA	-54.69	---	< MDA	-292	---	< MDA	-55.4	---	< MDA	-725.1	---
I-68	Nov-95	unfiltered	< MDA	-0.22	---	< MDA	-56.01	---	< MDA	-314	---	< MDA	-62.1	---	< MDA	-776.8	---
I-68	Feb-96	Filtered	0.06			< MDA	-59.32	---	---	---	---	< MDA	-60.8	---	< MDA	-346.2	---
I-68	Feb-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
I-68	May-96	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
I-68	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
I-68 DUP (F)	Nov-95	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
I-68 DUP (F)	Nov-95	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
I-68 DUP (F)	Feb-96	Filtered	1.67			---	---	---	< MDA	-252	---	---	---	---	---	---	---
I-68 DUP (F)	Feb-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
I-68 DUP (F)	May-96	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
I-68 DUP (F)	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Deep Depth Wells								---			---			---			---
D-3	Nov-95	Filtered	< MDA	-0.21	---	< MDA	-105.8	---	< MDA	-490	---	< MDA	-99.6	---	< MDA	-112	---
D-3	Nov-95	unfiltered	< MDA	-0.18	---	< MDA	-40.8	---	< MDA	-234	---	< MDA	-44.4	---	< MDA	-610.2	---
D-3	Feb-96	Filtered	0.08			< MDA	-44.72	---	---	---	---	< MDA	-43.6	---	< MDA	-221.4	---
D-3	Feb-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
D-3	May-96	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
D-3	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
D-3	May-97	Filtered	0.047			---	---	---	< MDA	-381	---	< MDA	-56.3	---	< MDA	-135	---
D-3	May-97	unfiltered	0.087			---	---	---	< MDA	-340	---	< MDA	-50	---	< MDA	-135	---
D-3 DUP (F)	Nov-95	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
D-3 DUP (F)	Nov-95	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
D-3 DUP (F)	Feb-96	Filtered	< MDA	-0.147	---	---	---	---	< MDA	-359	---	---	---	---	---	---	---
D-3 DUP (F)	Feb-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
D-3 DUP (F)	May-96	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
D-3 DUP (F)	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
D-6	Nov-95	Filtered	0.29			< MDA	-57.74	---	< MDA	-320	---	< MDA	-59.5	---	< MDA	-516.1	---
D-6	Nov-95	unfiltered	< MDA	-0.46	---	< MDA	-52.89	---	< MDA	-282	---	< MDA	-53.7	---	< MDA	-456.2	---
D-6	Feb-96	Filtered	---	---	---	< MDA	-62.31	---	< MDA	-324	---	< MDA	-78.6	---	< MDA	-968.3	---
D-6	Feb-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
D-6	May-96	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
D-6	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
D-6	May-97	Filtered	0.049			---	---	---	< MDA	-358	---	< MDA	-68.3	---	< MDA	-127	---

Table C-4 : Groundwater Analytical Results - Uranium-235 Decay Series

Monitoring Well	Date	Filtered	U-235/236			Uranium-235			Protactinium-231			Actinium-227			Radium-223		
			Result	MDA	+/- Sigma	Result	MDA	+/- Sigma	Result	MDA	+/- Sigma	Result	MDA	+/- Sigma	Result	MDA	+/- Sigma
D-6	May-97	unfiltered	**0.67**			---	---	---	< MDA	-185	---	< MDA	-32.4	---	< MDA	-68.9	---
D-12	Nov-95	Filtered	< MDA	-0.3	---	< MDA	-28.2	---	< MDA	-164	---	< MDA	-31.2	---	< MDA	-210.9	---
D-12	Nov-95	unfiltered	< MDA	-0.33	---	< MDA	-20.07	---	< MDA	-176	---	< MDA	-31.2	---	< MDA	-230.1	---
D-12	Feb-96	Filtered	< MDA	-0.107	---	< MDA	-59.37	---	< MDA	-294	---	< MDA	-64.3	---	< MDA	-384.6	---
D-12	Feb-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
D-12	May-96	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
D-12	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
D-12	May-97	Filtered	**0.08**			---	---	---	< MDA	-317	---	< MDA	-67.9	---	< MDA	-225	---
D-12	May-97	Filtered	**0.1**			---	---	---	< MDA	-338	---	< MDA	-62.8	---	< MDA	-186	---
D-12	May-97	unfiltered	**0.003**			---	---	---	< MDA	-345	---	< MDA	-77.8	---	< MDA	-246	---
D-13	Nov-95	Filtered	< MDA	-0.24	---	< MDA	-42.82	---	< MDA	-270	---	< MDA	-45.5	---	< MDA	-358.6	---
D-13	Nov-95	unfiltered	< MDA	-1.51	---	< MDA	-58.25	---	< MDA	-324	---	< MDA	-60.9	---	< MDA	-483.2	---
D-13	Feb-96	Filtered	---	---	---	< MDA	-56.08	---	< MDA	-315	---	< MDA	-58.6	---	< MDA	-317.9	---
D-13	Feb-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
D-13	May-96	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
D-13	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
D-14	Nov-95	Filtered	**0.2**			< MDA	-47.86	---	< MDA	-309	---	< MDA	-53.4	---	< MDA	-265.7	---
D-14	Nov-95	unfiltered	**0.88**			< MDA	-65.63	---	< MDA	-332	---	< MDA	-65.5	---	< MDA	-282.8	---
D-14	Feb-96	Filtered	< MDA	-0.26	---	< MDA	-71.79	---	< MDA	-343	---	< MDA	-65.6	---	< MDA	-271	---
D-14	Feb-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
D-14	May-96	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
D-14	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
D-83	Nov-95	Filtered	< MDA	-0.31	---	< MDA	-22.81	---	< MDA	-134	---	< MDA	-25.2	---	< MDA	-197.2	---
D-83	Nov-95	unfiltered	< MDA	-0.49	---	< MDA	-73.92	---	< MDA	-341	---	< MDA	-40.3	---	< MDA	-468.6	---
D-83	Feb-96	Filtered	< MDA	-0.18	---	< MDA	-58.4	---	< MDA	-616	---	< MDA	-63.5	---	< MDA	-397.1	---
D-83	Feb-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
D-83	May-96	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
D-83	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
D-85	Nov-95	Filtered	< MDA	-0.39	---	< MDA	-57.02	---	< MDA	-326	---	< MDA	-65.4	---	< MDA	-776	---
D-85	Nov-95	unfiltered	**0.39**			< MDA	-50.08	---	< MDA	-316	---	< MDA	-57.2	---	< MDA	-626.9	---
D-85	Feb-96	Filtered	< MDA	-0.22	---	< MDA	-132.8	---	---	---	---	< MDA	-121	---	< MDA	-676.8	---
D-85	Feb-96	unfiltered	---	---	---	---	---	---	---	---	---	< MDA	---	---	---	---	---
D-85	May-96	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
D-85	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
D-85 DUP (F)	Nov-95	Filtered	---	---	---	< MDA	-50.48	---	< MDA	-305	---	< MDA	-56.7	---	< MDA	-635.9	---
D-85 DUP (F)	Nov-95	unfiltered	---	---	---	< MDA	-43.45	---	< MDA	-260	---	< MDA	-42.2	---	< MDA	-586	---
D-85 DUP (F)	Feb-96	Filtered	---	---	---	---	---	---	< MDA	-306	---	---	---	---	---	---	---
D-85 DUP (F)	Feb-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
D-85 DUP (F)	May-96	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
D-85 DUP (F)	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
D-93	Nov-95	Filtered	< MDA	-0.14	---	< MDA	-55.04	---	< MDA	-310	---	< MDA	-56.8	---	< MDA	-595.2	---
D-93	Nov-95	unfiltered	< MDA	-0.4	---	< MDA	-50.15	---	< MDA	-315	---	< MDA	-52.3	---	< MDA	-657.8	---
D-93	Feb-96	Filtered	< MDA	-0.3	---	< MDA	-66.79	---	< MDA	-532	---	< MDA	-61.4	---	< MDA	-317.2	---
D-93	Feb-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
D-93	May-96	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
D-93	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
D-93	May-97	Filtered	**0.041**			---	---	---	< MDA	-297	---	< MDA	-60.3	---	< MDA	-134	---
D-93	May-97	unfiltered	**1.15**			---	---	---	< MDA	-164	---	< MDA	-33.5	---	< MDA	-72	---
D-93 DUP (F)	Nov-95	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
D-93 DUP (F)	Feb-96	Filtered	< MDA	-0.46	---	< MDA	-11.78	---	---	---	---	< MDA	-105	---	< MDA	-681.9	---
D-93 DUP (F)	Feb-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
D-93 DUP (F)	May-96	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

All values expressed as pCi/L. unless otherwise noted.
--- = not analyzed
MDA = Minimum Detectable Activity
Bold numbers indicate results above the MDA.
xx = No tracer counts. Therefore, results could not be generated.

Table C-5 : Groundwater Analytical Results - Thorium-232 Decay Series

Monitoring Well	Date	Filtered	Thorium-232			Radium-228			Thorium-228			Radium-224			Lead-212			Bismuth-212			Thallium-208		
			Result	MDA	+/- Sigma	Result	MDA	+/- Sigma	Result	MDA	+/- Sigma	Result	MDA	+/- Sigma	Result	MDA	+/- Sigma	Result	MDA	+/- Sigma	Result	MDA	+/- Sigma
Shallow Depth Wells																							
S-1	Nov-95	Filtered	<MDA	-0.31	---	<MDA	-41.81	---	6.21			<MDA	-153	---	<MDA	-152.1	---	<MDA	-76.55	---	<MDA	-10.83	---
S-1	Nov-95	unfiltered	<MDA	-0.47	---	<MDA	-50.89	---	5.98			---	---	---	<MDA	-16.41	---	<MDA	-100.1	---	<MDA	-12.34	---
S-1	Feb-96	Filtered	<MDA	-0.11	---	<MDA	-38.1	---	<MDA	-0.14	---	<MDA	-219.4	---	<MDA	-18.58	---	<MDA	-83.36	---	<MDA	-12.41	---
S-1	Feb-96	unfiltered	0.3			---	---	---	<MDA	-0.18	---	---	---	---	---	---	---	---	---	---	---	---	---
S-1	May-96	Filtered	<MDA	-0.08	---	---	---	---	<MDA	-0.14	---	---	---	---	---	---	---	---	---	---	---	---	---
S-1	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-1 DUP (F)	Nov-95	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-1 DUP (F)	Nov-95	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-1 DUP (F)	Feb-96	Filtered	---	---	---	<MDA	-41.44	---	---	---	---	<MDA	-150.5	---	<MDA	-17.58	---	<MDA	-74.3	---	9.8		
S-1 DUP (F)	Feb-96	unfiltered	0.14			---	---	---	0.27			---	---	---	---	---	---	---	---	---	---	---	---
S-1 DUP (F)	May-96	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-1 DUP (F)	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-5	Nov-95	Filtered	<MDA	-1.58	---	<MDA	-47.04	---	<MDA	-1.26	---	<MDA	-207.8	---	<MDA	-18.47	---	<MDA	-112.4	---	<MDA	-14.27	---
S-5	Nov-95	unfiltered	---	---	---	<MDA	-45.58	---	---	---	---	---	---	---	<MDA	-16.97	---	<MDA	-86.38	---	<MDA	-12.4	---
S-5	Feb-96	Filtered	<MDA	-0.25	---	<MDA	-75.33	---	<MDA	-0.188	---	<MDA	-321.5	---	<MDA	-28.69	---	<MDA	-147	---	<MDA	-20.07	---
S-5	Feb-96	unfiltered	<MDA	-0.24	---	---	---	---	<MDA	-0.29	---	---	---	---	---	---	---	---	---	---	---	---	---
S-5	May-96	Filtered	<MDA	-0.1	---	---	---	---	<MDA	-0.12	---	---	---	---	---	---	---	---	---	---	---	---	---
S-5	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-8	Nov-95	Filtered	---	---	---	<MDA	-54.23	---	---	---	---	<MDA	-237.8	---	<MDA	-20.41	---	<MDA	-117.2	---	<MDA	-15	---
S-8	Nov-95	unfiltered	<MDA	-0.27	---	<MDA	-62.41	---	<MDA	-0.49	---	---	---	---	<MDA	-30.49	---	<MDA	-15.26	---	<MDA	-23.67	---
S-8	Feb-96	Filtered	<MDA	-0.21	---	<MDA	-44.55	---	<MDA	-0.17	---	<MDA	-180.4	---	<MDA	-17.79	---	<MDA	-84.4	---	<MDA	-11.8	---
S-8	Feb-96	unfiltered	0.5			---	---	---	0.55			---	---	---	---	---	---	---	---	---	---	---	---
S-8	May-96	Filtered	<MDA	-0.07	---	---	---	---	<MDA	-0.11	---	---	---	---	---	---	---	---	---	---	---	---	---
S-8	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-10	Nov-95	Filtered	<MDA	-3.94	---	<MDA	-56	---	<MDA	-5.27	---	<MDA	-214.3	---	<MDA	-17.81	---	<MDA	-98.82	---	<MDA	-15.15	---
S-10	Nov-95	unfiltered	<MDA	-2.91	---	<MDA	-62.07	---	<MDA	-4.68	---	---	---	---	<MDA	-18.59	---	<MDA	-106.9	---	<MDA	-11.91	---
S-10	Feb-96	Filtered	<MDA	-0.1	---	<MDA	-57.55	---	<MDA	-0.14	---	<MDA	-203	---	<MDA	-17.54	---	<MDA	-98.77	---	<MDA	-15.84	---
S-10	Feb-96	unfiltered	<MDA	-10.2	---	---	---	---	<MDA	-10.2	---	---	---	---	---	---	---	---	---	---	---	---	---
S-10	May-96	Filtered	<MDA	-0.2	---	---	---	---	<MDA	-0.15	---	---	---	---	---	---	---	---	---	---	---	---	---
S-10	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-61	Nov-95	Filtered	<MDA	-0.41	---	<MDA	-43.27	---	<MDA	-0.34	---	<MDA	-194.9	---	<MDA	-17.31	---	<MDA	-88.83	---	<MDA	-10.84	---
S-61	Nov-95	unfiltered	<MDA	-0.31	---	<MDA	-58.86	---	<MDA	-0.34	---	---	---	---	<MDA	-18.72	---	<MDA	-95.6	---	<MDA	-14.26	---
S-61	Feb-96	Filtered	<MDA	-0.16	---	<MDA	-47.31	---	<MDA	-0.24	---	<MDA	-198.6	---	<MDA	-17.19	---	<MDA	-88.8	---	<MDA	-12.99	---
S-61	Feb-96	unfiltered	<MDA	-0.15	---	---	---	---	<MDA	-0.19	---	---	---	---	---	---	---	---	---	---	---	---	---
S-61	May-96	Filtered	0.06			---	---	---	<MDA	-0.18	---	---	---	---	---	---	---	---	---	---	---	---	---
S-61	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-80	Nov-95	Filtered	<MDA	-0.38	---	<MDA	-46.59	---	<MDA	-0.61	---	<MDA	-197.4	---	<MDA	-17.87	---	<MDA	-89.79	---	<MDA	-13.78	---
S-80	Nov-95	unfiltered	<MDA	-1.35	---	<MDA	-45.1	---	<MDA	-1.65	---	---	---	---	<MDA	-18.89	---	<MDA	-96.42	---	<MDA	-14.76	---
S-80	Feb-96	Filtered	<MDA	-0.11	---	<MDA	-46.43	---	<MDA	-0.097	---	<MDA	-204.7	---	<MDA	-13.85	---	<MDA	-92.29	---	<MDA	-12.61	---
S-80	Feb-96	unfiltered	3.73			---	---	---	4.06			---	---	---	---	---	---	---	---	---	---	---	---
S-80	May-96	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-80	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-80 DUP (F)	Nov-95	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-80 DUP (F)	Nov-95	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-80 DUP (F)	Feb-96	Filtered	---	---	---	<MDA	-63.1	---	---	---	---	<MDA	-275	---	<MDA	-25.97	---	<MDA	-112.5	---	<MDA	-13.76	---
S-80 DUP (F)	Feb-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-80 DUP (F)	May-96	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-80 DUP (F)	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-82	Nov-95	Filtered	<MDA	-0.62	---	<MDA	-22.42	---	8.98			<MDA	-78.13	---	<MDA	-9	---	<MDA	-40.27	---	<MDA	6.53	---
S-82	Nov-95	unfiltered	<MDA	-1.1	---	<MDA	-46.16	---	7.99			---	---	---	<MDA	-14.71	---	<MDA	-88.62	---	<MDA	-10.54	---
S-82	Feb-96	Filtered	<MDA	-0.09	---	<MDA	-63.61	---	<MDA	-0.14	---	<MDA	-290.8	---	<MDA	-25.72	---	<MDA	-128.8	---	<MDA	-18.98	---
S-82	Feb-96	unfiltered	0.22			---	---	---	0.43			---	---	---	---	---	---	---	---	---	---	---	---
S-82	May-96	Filtered	<MDA	-0.19	---	---	---	---	<MDA	-0.17	---	---	---	---	---	---	---	---	---	---	---	---	---
S-82	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-82	May-97	Filtered	<MDA	-0.004	---	1.39			<MDA	-0.015	---	---	---	---	<MDA	-24.3	---	<MDA	-173	---	<MDA	14.9	---
S-82	May-97	unfiltered	0.085			1.07			0.048			---	---	---	<MDA	-18.1	---	<MDA	-213	---	<MDA	-12.2	---
S-82	May-97	unfiltered	0.093			1.31			0.023			---	---	---	<MDA	-20.3	---	<MDA	-209	---	<MDA	-15.1	---
S-84	Nov-95	Filtered	<MDA	-0.432	---	<MDA	-39.4	---	<MDA	-0.5	---	<MDA	-153.6	---	<MDA	-12.49	---	<MDA	-85.09	---	<MDA	-11.31	---
S-84	Nov-95	unfiltered	<MDA	-0.76	---	<MDA	-50.95	---	<MDA	-0.72	---	---	---	---	<MDA	-16.52	---	<MDA	-93.65	---	<MDA	-13.57	---
S-84	Feb-96	Filtered	<MDA	-0.12	---	<MDA	-34.28	---	<MDA	-0.12	---	<MDA	-194.3	---	<MDA	-19.15	---	<MDA	-78.44	---	<MDA	-13.01	---
S-84	Feb-96	unfiltered	0.14			---	---	---	<MDA	-0.19	---	---	---	---	---	---	---	---	---	---	---	---	---
S-84	May-96	Filtered	<MDA	-0.08	---	---	---	---	<MDA	-0.15	---	---	---	---	---	---	---	---	---	---	---	---	---
S-84	May-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-84 DUP (F)	Nov-95	Filtered	---	---	---	<MDA	-43.12	---	---	---	---	MDA	-205.9	---	MDA	-18.78	---	MDA	-68.22	---	11.1		
S-84 DUP (F)	Nov-95	unfiltered	---	---	---	<MDA	-56.36	---	---	---	---	---	---	---	MDA	-16.89	---	<MDA	-102.6	---	<MDA	-14.13	---
S-84 DUP (F)	Feb-96	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-84 DUP (F)	Feb-96	unfiltered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
S-84 DUP (F)	May-96	Filtered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Table C-5 : Groundwater Analytical Results - Thorium-232 Decay Series

Monitoring Well	Date	Filtered	Thorium-232			Radium-228			Thorium-228			Radium-224			Lead-212			Bismuth-212			Thallium-208		
			Result	MDA	+/- Sigma	Result	MDA	+/- Sigma	Result	MDA	+/- Sigma	Result	MDA	+/- Sigma	Result	MDA	+/- Sigma	Result	MDA	+/- Sigma	Result	MDA	+/- Sigma
S-84 DUP (F)	May-96	unfiltered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-101	Nov-95	Filtered	<MDA	-0.34	—	<MDA	-42.75	—	<MDA	-0.48	—	<MDA	-152.9	—	<MDA	-15.12	—	<MDA	-80.88	—	<MDA	-11.23	—
MW-101	Nov-95	unfiltered	<MDA	-0.22	—	<MDA	-41.24	—	<MDA	-0.24	—	—	—	—	<MDA	-14.05	—	<MDA	-90.96	—	<MDA	-10.54	—
MW-101	Feb-96	Filtered	<MDA	-0.11	—	<MDA	-45.04	—	<MDA	-0.15	—	<MDA	-174.9	—	<MDA	-15.78	—	<MDA	-89.76	—	<MDA	-12.44	—
MW-101	Feb-96	unfiltered	<MDA	-0.17	—	—	—	—	<MDA	-0.33	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-101	May-96	Filtered	<MDA	-0.11	—	—	—	—	<MDA	-0.15	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-101	May-96	unfiltered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-107	Nov-95	Filtered	<MDA	-1.2	—	<MDA	-22.37	—	<MDA	-1.05	—	<MDA	-96.18	—	<MDA	-10.38	—	<MDA	-43.46	—	<MDA	-6.43	—
MW-107	Nov-95	unfiltered	1.05			<MDA	-22.77	—	<MDA	-0.55	—	—	—	—	<MDA	-11.46	—	<MDA	-48.11	—	<MDA	-6.63	—
MW-107	Feb-96	Filtered	0.14			<MDA	-51.84	—	<MDA	-0.14	—	<MDA	-198	—	<MDA	-19.53	—	<MDA	-103	—	<MDA	-13.46	—
MW-107	Feb-96	unfiltered	0.37			—	—	—	0.44			—	—	—	—	—	—	—	—	—	—	—	—
MW-107	May-96	Filtered	<MDA	-0.16	—	—	—	—	<MDA	-0.13	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-107	May-96	unfiltered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-107 DUP (F)	Nov-95	Filtered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-107 DUP (F)	Nov-95	unfiltered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-107 DUP (F)	Feb-96	Filtered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-107 DUP (F)	Feb-96	unfiltered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-107 DUP (F)	May-96	Filtered	<MDA	-0.21	—	—	—	—	<MDA	-0.2	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-107 DUP (F)	May-96	unfiltered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-F3	Nov-95	Filtered	<MDA	-5.81	—	<MDA	-39.3	—	8.33			<MDA	-190	—	<MDA	-18.26	—	<MDA	-80.77	—	<MDA	-13.45	—
MW-F3	Nov-95	unfiltered	<MDA	-4.64	—	<MDA	-81.01	—	8.23			—	—	—	<MDA	-31.54	—	<MDA	-172.3	—	<MDA	-23.85	—
MW-F3	Feb-96	Filtered	<MDA	-0.1	—	<MDA	-40.71	—	<MDA	-0.28	—	<MDA	-246.2	—	<MDA	-21.53	—	<MDA	-80.54	—	<MDA	-14.08	—
MW-F3	Feb-96	unfiltered	0.22			—	—	—	0.31			—	—	—	—	—	—	—	—	—	—	—	—
MW-F3	May-96	Filtered	<MDA	-0.05	—	—	—	—	<MDA	-0.13	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-F3	May-96	unfiltered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
PZ-114-AS	Nov-95	Filtered	0.95			<MDA	-48.16	—	<MDA	-0.93	—	<MDA	-132.6	—	<MDA	-14.4	—	<MDA	-80.79	—	<MDA	-16.26	—
PZ-114-AS	Nov-95	unfiltered	1.36			<MDA	-40.94	—	<MDA	-0.947	—	—	—	—	<MDA	-17.33	—	<MDA	-74.16	—	<MDA	-12.86	—
PZ-114-AS	Feb-96	Filtered	<MDA	-0.1	—	<MDA	-57.36	—	<MDA	-0.1	—	<MDA	-217.7	—	<MDA	-18.97	—	<MDA	-117.3	—	<MDA	-11.6	—
PZ-114-AS	Feb-96	unfiltered	0.37			—	—	—	0.25			—	—	—	—	—	—	—	—	—	—	—	—
PZ-114-AS	May-96	Filtered	<MDA	-0.23	—	—	—	—	<MDA	-0.21	—	—	—	—	—	—	—	—	—	—	—	—	—
PZ-114-AS	May-96	unfiltered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Intermediate Depth Wells					—			—			—			—			—			—			—
I-2	Nov-95	Filtered	<MDA	-0.33	—	<MDA	-21.88	—	7.3			<MDA	-104.2	—	<MDA	-9.58	—	<MDA	-47.73	—	<MDA	-6.68	—
I-2	Nov-95	unfiltered	<MDA	-0.53	—	<MDA	-23.98	—	8.22			—	—	—	<MDA	-10.63	—	<MDA	-47.14	—	<MDA	-67.62	—
I-2	Feb-96	Filtered	<MDA	-0.22	—	<MDA	-51.73	—	<MDA	-0.21	—	<MDA	-196.7	—	<MDA	-17.96	—	<MDA	-81.48	—	<MDA	-14.15	—
I-2	Feb-96	unfiltered	<MDA	-0.1	—	—	—	—	0.33			<MDA	—	—	—	—	—	—	—	—	—	—	—
I-2	May-96	Filtered	<MDA	-0.07	—	—	—	—	<MDA	-0.14	—	—	—	—	—	—	—	—	—	—	—	—	—
I-2	May-96	unfiltered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
I-2	May-97	Filtered	0.009			2.08			0.032			—	—	—	<MDA	-21.2	—	<MDA	-196	—	<MDA	-13.4	—
I-2	May-97	unfiltered	0.026			2.58			0.043			—	—	—	<MDA	-19.6	—	<MDA	-210	—	<MDA	-14.8	—
I-2-DUP	May-97	Filtered	0.011			1.69			0.098			—	—	—	<MDA	-22.8	—	<MDA	-189	—	<MDA	-16.4	—
I-2-DUP	May-97	unfiltered	0.015			1.98			0.038			—	—	—	<MDA	-23.4	—	<MDA	-220	—	<MDA	-14.2	—
I-4	Nov-95	Filtered	<MDA	-1.4	—	<MDA	-76.08	—	<MDA	-1.26	—	<MDA	-332	—	<MDA	-28.47	—	<MDA	-155.3	—	<MDA	-18.69	—
I-4	Nov-95	unfiltered	<MDA	-1.06	—	<MDA	-43.31	—	<MDA	-1.55	—	—	—	—	<MDA	-16.57	—	<MDA	-73.97	—	<MDA	-12.21	—
I-4	Feb-96	Filtered	0.13			<MDA	-51.25	—	<MDA	-0.16	—	<MDA	-230.6	—	<MDA	-19.57	—	<MDA	-101.8	—	<MDA	-15.32	—
I-4	Feb-96	unfiltered	<MDA	-0.1	—	—	—	—	0.35			—	—	—	—	—	—	—	—	—	—	—	—
I-4	May-96	Filtered	<MDA	-0.08	—	—	—	—	<MDA	-0.11	—	—	—	—	—	—	—	—	—	—	—	—	—
I-4	May-96	unfiltered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
I-4	May-97	Filtered	0.009			1.11			0.039			—	—	—	<MDA	-17.8	—	<MDA	-188	—	<MDA	-11.8	—
I-4	May-97	unfiltered	0.032			2.21			0.063			—	—	—	<MDA	-23.8	—	<MDA	-160	—	<MDA	-14.4	—
I-4 DUP (F)	Nov-95	Filtered	—	—	—	<MDA	-43.14	—	—	—	—	<MDA	-205.4	—	<MDA	-18.99	—	<MDA	-78.42	—	<MDA	-12.07	—
I-4 DUP (F)	Nov-95	unfiltered	—	—	—	<MDA	-44.77	—	—	—	—	—	—	—	<MDA	-13.6	—	<MDA	-96.78	—	11.92		
I-4 DUP (F)	Feb-96	Filtered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
I-4 DUP (F)	Feb-96	unfiltered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
I-4 DUP (F)	May-96	Filtered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
I-4 DUP (F)	May-96	unfiltered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
I-7	Nov-95	Filtered	<MDA	-1.98	—	<MDA	-33.42	—	<MDA	-2.34	—	<MDA	-193.9	—	<MDA	-18.22	—	<MDA	-79.76	—	<MDA	-9.46	—
I-7	Nov-95	unfiltered	0.24			<MDA	-64.1	—	<MDA	-0.171	—	—	—	—	<MDA	-28.96	—	<MDA	-150.4	—	<MDA	-15.58	—
I-7	Feb-96	Filtered	<MDA	-0.16	—	<MDA	-70.51	—	<MDA	-0.15	—	<MDA	-317	—	<MDA	-29.51	—	<MDA	-113.2	—	<MDA	-16.89	—
I-7	Feb-96	unfiltered	0.22			—	—	—	<MDA	-0.22	—	—	—	—	—	—	—	—	—	—	—	—	—
I-7	May-96	Filtered	<MDA	-0.16	—	—	—	—	<MDA	-0.16	—	—	—	—	—	—	—	—	—	—	—	—	—
I-7	May-96	unfiltered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
I-9	Nov-95	Filtered	<MDA	-0.74	—	<MDA	-21.59	—	8.01			<MDA	-83.09	—	<MDA	-8.57	—	<MDA	-46.75	—	<MDA	-6.3	—
I-9	Nov-95	unfiltered	<MDA	-0.6	—	<MDA	-42.95	—	7.29			—	—	—	<MDA	-17.48	—	<MDA	-90.82	—	<MDA	-12.09	—
I-9	Feb-96	Filtered	<MDA	-0.1	—	<MDA	-45.77	—	<MDA	-0.14	—	<MDA	-189.4	—	<MDA	-17.36	—	<MDA	-101.5	—	<MDA	-13.06	—
I-9	Feb-96	unfiltered	<MDA	-0.24	—	—	—	—	<MDA			—	—	—	—	—	—	—	—	—	—	—	—
I-9	May-96	Filtered	<MDA	-0.2	—	—	—	—	<MDA	-0.15	—	—	—	—	—	—	—	—	—	—	—	—	—
I-9	May-96	unfiltered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
I-11	Nov-95	Filtered	<MDA	-0.49	—	<MDA	-47.45	—	<MDA	-0.7	—	<MDA	-179.8	—	<MDA	-17.9	—	<MDA	-111.5	—	<MDA	-11.2	—

Table C-5 : Groundwater Analytical Results - Thorium-232 Decay Series

Monitoring Well	Date	Filtered	Thorium-232			Radium-228			Thorium-228			Radium-224			Lead-212			Bismuth-212			Thallium-208		
			Result	MDA	+/- Sigma	Result	MDA	+/- Sigma	Result	MDA	+/- Sigma	Result	MDA	+/- Sigma	Result	MDA	+/- Sigma	Result	MDA	+/- Sigma	Result	MDA	+/- Sigma
I-11	Nov-95	unfiltered	<MDA	-0.44	—	<MDA	-48.54	—	<MDA	-0.42	—	—	—	—	<MDA	-18.48	—	<MDA	-10.33	—	<MDA	-13.5	—
I-11	Feb-96	Filtered	<MDA	-0.1	—	<MDA	-42.6	—	<MDA	-0.14	—	<MDA	-142.8	—	<MDA	-15.9	—	<MDA	-95.63	—	<MDA	-11.14	—
I-11	Feb-96	unfiltered	<MDA	-0.14	—	—	—	—	0.21			—	—	—	—	—	—	—	—	—	—	—	—
I-11	May-96	Filtered	<MDA	-0.14	—	—	—	—	<MDA	-0.1	—	—	—	—	—	—	—	—	—	—	—	—	—
I-11	May-96	unfiltered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
I-62	Nov-95	Filtered	<MDA	-0.41	—	<MDA	-26.73	—	<MDA	-0.52	—	<MDA	-109.1	—	<MDA	-9.95	—	<MDA	-55.35	—	<MDA	-6.3	—
I-62	Nov-95	unfiltered	<MDA	-0.32	—	<MDA	-22.21	—	<MDA	-0.47	—	—	—	—	<MDA	-9.01	—	<MDA	-95.13	—	<MDA	-6.5	—
I-62	Feb-96	Filtered	<MDA	-0.23	—	<MDA	-35.31	—	<MDA	-0.19	—	<MDA	-148	—	<MDA	-15.3	—	<MDA	-87.44	—	<MDA	-11.48	—
I-62	Feb-96	unfiltered	<MDA	-0.28	—	—	—	—	<MDA	-0.39	—	—	—	—	—	—	—	—	—	—	—	—	—
I-62	May-96	Filtered	<MDA	-0.08	—	—	—	—	<MDA	-0.15	—	—	—	—	—	—	—	—	—	—	—	—	—
I-62	May-96	unfiltered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
I-65	Nov-95	Filtered	<MDA	-0.2	—	<MDA	-37.29	—	<MDA	-0.328	—	<MDA	-154.6	—	<MDA	-15.8	—	<MDA	-57.82	—	<MDA	-11.92	—
I-65	Nov-95	unfiltered	<MDA	-0.51	—	<MDA	-39.23	—	<MDA	-0.409	—	—	—	—	<MDA	-15.48	—	<MDA	-85.16	—	<MDA	-12.1	—
I-65	Feb-96	Filtered	<MDA	-0.1	—	<MDA	-48.27	—	<MDA	-0.15	—	<MDA	-215.4	—	<MDA	-18.63	—	<MDA	-105.1	—	<MDA	-12.88	—
I-65	Feb-96	unfiltered	<MDA	-0.16	—	—	—	—	<MDA	-0.21	—	—	—	—	—	—	—	—	—	—	—	—	—
I-65	May-96	Filtered	<MDA	-0.1	—	—	—	—	<MDA	-0.13	—	—	—	—	—	—	—	—	—	—	—	—	—
I-65	May-96	unfiltered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
I-66	Nov-95	Filtered	<MDA	-1.96	—	<MDA	-51.48	—	<MDA	-1.84	—	<MDA	-206.5	—	<MDA	-18.94	—	<MDA	-95.45	—	<MDA	-13.78	—
I-66	Nov-95	unfiltered	<MDA	-2.24	—	<MDA	-41.27	—	<MDA	-2.07	—	—	—	—	<MDA	-17.98	—	<MDA	-101.4	—	<MDA	-13.89	—
I-66	Feb-96	Filtered	<MDA	-0.11	—	<MDA	-46.52	—	<MDA	-0.16	—	<MDA	-157.2	—	<MDA	-18.82	—	<MDA	-88.17	—	<MDA	-13.07	—
I-66	Feb-96	unfiltered	<MDA	-0.67	—	—	—	—	<MDA	-0.57	—	—	—	—	—	—	—	—	—	—	—	—	—
I-66	May-96	Filtered	<MDA	-0.28	—	—	—	—	<MDA	-0.35	—	—	—	—	—	—	—	—	—	—	—	—	—
I-66	May-96	unfiltered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
I-66 DUP (F)	Nov-95	Filtered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
I-66 DUP (F)	Nov-95	unfiltered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
I-66 DUP (F)	Feb-96	Filtered	<MDA	-0.09	—	<MDA	-45.78	—	<MDA	-0.14	—	<MDA	-177	—	<MDA	-17.96	—	<MDA	-82.43	—	<MDA	-11.71	—
I-66 DUP (F)	Feb-96	unfiltered	<MDA	-0.25	—	—	—	—	<MDA	-0.17	—	—	—	—	—	—	—	—	—	—	—	—	—
I-66 DUP (F)	May-96	Filtered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
I-66 DUP (F)	May-96	unfiltered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
I-67	Nov-95	Filtered	<MDA	-1.29	—	<MDA	-45.78	—	<MDA	-1.72	—	<MDA	-182	—	<MDA	-15.53	—	<MDA	-72.87	—	<MDA	-11.86	—
I-67	Nov-95	unfiltered	<MDA	-0.5	—	<MDA	-37.4	—	<MDA	-0.8	—	—	—	—	<MDA	-19.17	—	<MDA	-90.3	—	<MDA	-12.14	—
I-67	Feb-96	Filtered	<MDA	-0.1	—	<MDA	-52.33	—	<MDA	-0.14	—	<MDA	-229.3	—	<MDA	-20.25	—	<MDA	-97.23	—	<MDA	-13.92	—
I-67	Feb-96	unfiltered	<MDA	-0.26	—	—	—	—	<MDA	-0.26	—	—	—	—	—	—	—	—	—	—	—	—	—
I-67	May-96	Filtered	<MDA	-0.08	—	—	—	—	<MDA	-0.15	—	—	—	—	—	—	—	—	—	—	—	—	—
I-67	May-96	unfiltered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
I-68	Nov-95	Filtered	<MDA	-0.736	—	<MDA	-46.86	—	<MDA	-0.91	—	<MDA	-194.2	—	<MDA	-17.8	—	<MDA	-92.11	—	<MDA	-13.86	—
I-68	Nov-95	unfiltered	<MDA	-0.514	—	<MDA	-47.73	—	<MDA	-0.627	—	—	—	—	<MDA	-18.07	—	<MDA	-103	—	<MDA	-13.05	—
I-68	Feb-96	Filtered	<MDA	-0.13	—	<MDA	-51.01	—	<MDA	-0.19	—	<MDA	-198.6	—	<MDA	-17.91	—	<MDA	-94.11	—	<MDA	-14.88	—
I-68	Feb-96	unfiltered	<MDA	-0.14	—	—	—	—	<MDA	-0.15	—	—	—	—	—	—	—	—	—	—	—	—	—
I-68	May-96	Filtered	<MDA	-0.16	—	—	—	—	<MDA	-0.17	—	—	—	—	—	—	—	—	—	—	—	—	—
I-68	May-96	unfiltered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
I-68 DUP (F)	Nov-95	Filtered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
I-68 DUP (F)	Nov-95	unfiltered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
I-68 DUP (F)	Feb-96	Filtered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
I-68 DUP (F)	Feb-96	unfiltered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
I-68 DUP (F)	May-96	Filtered	<MDA	-0.07	—	—	—	—	<MDA	-0.14	—	—	—	—	—	—	—	—	—	—	—	—	—
I-68 DUP (F)	May-96	unfiltered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Deep Depth Wells					—			—			—			—			—			—			—
D-3	Nov-95	Filtered	<MDA	-0.6	—	<MDA	-67.18	—	<MDA	-0.71	—	<MDA	-30.52	—	<MDA	-27.59	—	<MDA	-131.1	—	<MDA	-11.46	—
D-3	Nov-95	unfiltered	<MDA	-0.3	—	<MDA	-51.73	—	<MDA	-0.56	—	—	—	—	<MDA	-12.33	—	<MDA	-66.83	—	<MDA	-10.8	—
D-3	Feb-96	Filtered	<MDA	-0.22	—	<MDA	-42.02	—	<MDA	-0.22	—	<MDA	-146	—	<MDA	-15.3	—	<MDA	-88.87	—	<MDA	-8.08	—
D-3	Feb-96	unfiltered	<MDA	-0.09	—	—	—	—	0.22			—	—	—	—	—	—	—	—	—	—	—	—
D-3	May-96	Filtered	<MDA	-0.09	—	—	—	—	<MDA	-0.14	—	—	—	—	—	—	—	—	—	—	—	—	—
D-3	May-96	unfiltered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
D-3	May-97	Filtered	0.00			2.55			0.1			—	—	—	<MDA	-20.2	—	<MDA	-173	—	<MDA	-11.3	—
D-3	May-97	unfiltered	<MDA	-0.02	—	3.43			0.11			—	—	—	<MDA	-19.1	—	<MDA	-174	—	<MDA	-11.9	—
D-3 DUP (F)	Nov-95	Filtered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
D-3 DUP (F)	Nov-95	unfiltered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
D-3 DUP (F)	Feb-96	Filtered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
D-3 DUP (F)	Feb-96	unfiltered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
D-3 DUP (F)	May-96	Filtered	<MDA	-0.1	—	—	—	—	0.12			—	—	—	—	—	—	—	—	—	—	—	—
D-3 DUP (F)	May-96	unfiltered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
D-6	Nov-95	Filtered	<MDA	-0.259	—	<MDA	-43.52	—	<MDA	-0.494	—	<MDA	-154.1	—	<MDA	-17.74	—	<MDA	-86.5	—	<MDA	-12.95	—
D-6	Nov-95	unfiltered	<MDA	-0.3	—	<MDA	-47.22	—	<MDA	-0.35	—	—	—	—	<MDA	-16.06	—	<MDA	-86.2	—	<MDA	-12.51	—
D-6	Feb-96	Filtered	<MDA	-0.12	—	<MDA	-48.98	—	0.16			<MDA	-240.1	—	<MDA	-21.72	—	<MDA	-111.6	—	<MDA	-11.31	—
D-6	Feb-96	unfiltered	<MDA	-0.13	—	—	—	—	0.23			—	—	—	—	—	—	—	—	—	—	—	—
D-6	May-96	Filtered	<MDA	-0.1	—	—	—	—	<MDA	-0.14	—	—	—	—	—	—	—	—	—	—	—	—	—
D-6	May-96	unfiltered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
D-6	May-97	Filtered	0.012			3.6			0.16			—	—	—	<MDA	-17.5	—	<MDA	-191	—	<MDA	[illegible]	—

Table C-5 : Groundwater Analytical Results - Thorium-232 Decay Series

Monitoring Well	Date	Filtered	Thorium-232			Radium-228			Thorium-228			Radium-224			Lead-212			Bismuth-212			Thallium-208		
			Result	MDA	+/- Sigma	Result	MDA	+/- Sigma	Result	MDA	+/- Sigma	Result	MDA	+/- Sigma	Result	MDA	+/- Sigma	Result	MDA	+/- Sigma	Result	MDA	+/- Sigma
D-6	May-97	unfiltered	**0.067**			**3.93**			**0.098**			----	----	----	< MDA	-10.1	----	< MDA	-108	----	< MDA	-7.91	----
D-12	Nov-95	Filtered	< MDA	-0.52	----	< MDA	-24.51	----	< MDA	-0.63	----	< MDA	-103.5	----	< MDA	-9.45	----	< MDA	-45.8	----	< MDA	-6.85	----
D-12	Nov-95	unfiltered	< MDA	-2.36	----	< MDA	-27.63	----	< MDA	-2.56	----	----	----	----	< MDA	-9.65	----	< MDA	-56.47	----	< MDA	-7.52	----
D-12	Feb-96	Filtered	**1.25**			< MDA	-53.45	----	< MDA	-0.34	----	< MDA	-216.8	----	< MDA	-19.39	----	< MDA	-120.2	----	< MDA	-14.76	----
D-12	Feb-96	unfiltered	< MDA	-0.12	----	----	----	----	< MDA	-0.13	----	----	----	----	----	----	----	----	----	----	----	----	----
D-12	May-96	Filtered	< MDA	-0.11	----	----	----	----	< MDA	-0.13	----	----	----	----	----	----	----	----	----	----	----	----	----
D-12	May-96	unfiltered	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
D-12	May-97	Filtered	**0.02**			**0.47**			< MDA	-0.23	----	----	----	----	< MDA	-21.7	----	< MDA	-198	----	< MDA	-13.2	----
D-12	May-97	Filtered	**0**			**0.67**			**0.05**			----	----	----	< MDA	-19.2	----	< MDA	-236	----	< MDA	-14.9	----
D-12	May-97	unfiltered	**0.042**			**0.62**			**0.04**			----	----	----	< MDA	-21.3	----	< MDA	-206	----	< MDA	-13.3	----
D-13	Nov-95	Filtered	< MDA	-1.79	----	< MDA	-40.97	----	**6.06**			< MDA	-128	----	< MDA	-16.33	----	< MDA	-77.42	----	< MDA	-10.13	----
D-13	Nov-95	unfiltered	< MDA	-2.11	----	< MDA	-53.85	----	**9.31**			----	----	----	< MDA	-16.98	----	< MDA	-94.22	----	< MDA	-12.74	----
D-13	Feb-96	Filtered	< MDA	-0.08	----	< MDA	-48.24	----	< MDA	-0.098	----	< MDA	-187.7	----	< MDA	-16.64	----	< MDA	-88.49	----	< MDA	-12.43	----
D-13	Feb-96	unfiltered	**0.11**			----	----	----	**0.14**			----	----	----	----	----	----	----	----	----	----	----	----
D-13	May-96	Filtered	< MDA	-0.07	----	----	----	----	< MDA	-0.1	----	----	----	----	----	----	----	----	----	----	----	----	----
D-13	May-96	unfiltered	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
D-14	Nov-95	Filtered	< MDA	-1.96	----	< MDA	-51.91	----	< MDA	-1.82	----	< MDA	-188	----	< MDA	-19.51	----	< MDA	-19.51	----	< MDA	-12.27	----
D-14	Nov-95	unfiltered	< MDA	-0.35	----	< MDA	-47.81	----	< MDA	-0.58	----	----	----	----	< MDA	-20.56	----	< MDA	-102.2	----	< MDA	-12.86	----
D-14	Feb-96	Filtered	< MDA	-0.22	----	< MDA	-43.37	----	< MDA	-0.19	----	< MDA	-246.8	----	< MDA	-19.49	----	< MDA	-83.93	----	< MDA	-11.39	----
D-14	Feb-96	unfiltered	**0.38**			----	----	----	**0.31**			----	----	----	----	----	----	----	----	----	----	----	----
D-14	May-96	Filtered	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
D-14	May-96	unfiltered	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
D-83	Nov-95	Filtered	< MDA	-0.44	----	< MDA	-23.39	----	< MDA	-0.41	----	< MDA	-79.67	----	< MDA	-8.26	----	< MDA	-38.24	----	< MDA	-6.42	----
D-83	Nov-95	unfiltered	**0.36**			< MDA	-40.34	----	< MDA	-0.32	----	----	----	----	< MDA	-18.49	----	< MDA	-84.77	----	< MDA	-12.63	----
D-83	Feb-96	Filtered	< MDA	-0.18	----	< MDA	-49.92	----	< MDA	-0.14	----	< MDA	-215.4	----	< MDA	-17.05	----	< MDA	-95.07	----	< MDA	-14.49	----
D-83	Feb-96	unfiltered	< MDA	-0.1	----	----	----	----	**0.22**			----	----	----	----	----	----	----	----	----	----	----	----
D-83	May-96	Filtered	< MDA	-0.07	----	----	----	----	< MDA	-0.13	----	----	----	----	----	----	----	----	----	----	----	----	----
D-83	May-96	unfiltered	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
D-85	Nov-95	Filtered	< MDA	2.48	----	< MDA	-50.18	----	< MDA	-2.53	----	< MDA	-197.2	----	< MDA	-18.78	----	< MDA	-89.36	----	< MDA	-14.19	----
D-85	Nov-95	unfiltered	< MDA	0.45	----	< MDA	-39.53	----	< MDA	-0.54	----	----	----	----	< MDA	-17.59	----	< MDA	-84.95	----	< MDA	-12.04	----
D-85	Feb-96	Filtered	< MDA	-0.13	----	< MDA	-81.61	----	< MDA	-0.16	----	< MDA	-305.2	----	< MDA	-32.62	----	< MDA	-167.5	----	< MDA	-22.03	----
D-85	Feb-96	unfiltered	< MDA	-0.08	----	----	----	----	**0.08**			----	----	----	----	----	----	----	----	----	----	----	----
D-85	May-96	Filtered	< MDA	-0.18	----	----	----	----	< MDA	-0.13	----	----	----	----	----	----	----	----	----	----	----	----	----
D-85	May-96	unfiltered	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
D-85 DUP (F)	Nov-95	Filtered	----	----	----	< MDA	-51.2	----	----	----	----	< MDA	-186	----	< MDA	-18.35	----	< MDA	-100.3	----	< MDA	-12.86	----
D-85 DUP (F)	Nov-95	unfiltered	----	----	----	< MDA	-40.27	----	----	----	----	----	----	----	< MDA	-16.75	----	< MDA	-78.79	----	< MDA	-11.15	----
D-85 DUP (F)	Feb-96	Filtered	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
D-85 DUP (F)	Feb-96	unfiltered	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
D-85 DUP (F)	May-96	Filtered	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
D-85 DUP (F)	May-96	unfiltered	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
D-93	Nov-95	Filtered	< MDA	-0.29	----	< MDA	-48.6	----	**6.48**			< MDA	-179.4	----	< MDA	-16.34	----	< MDA	-91.25	----	< MDA	-13.53	----
D-93	Nov-95	unfiltered	< MDA	-0.17	----	< MDA	-44.32	----	**7.48**			----	----	----	< MDA	-17.79	----	< MDA	-99.16	----	< MDA	-12.36	----
D-93	Feb-96	Filtered	< MDA	-0.079	----	< MDA	-43.9	----	< MDA	-0.13	----	< MDA	-198.2	----	< MDA	-17.48	----	< MDA	-82.58	----	< MDA	-11.5	----
D-93	Feb-96	unfiltered	< MDA	-0.21	----	----	----	----	< MDA	-0.2	----	----	----	----	----	----	----	----	----	----	----	----	----
D-93	May-96	Filtered	< MDA	-0.13	----	----	----	----	**0.16**			----	----	----	----	----	----	----	----	----	----	----	----
D-93	May-96	unfiltered	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
D-93	May-97	Filtered	**0.08**			**2.59**			**0.03**			----	----	----	< MDA	-19.4	----	< MDA	-222	----	< MDA	-11.4	----
D-93	May-97	unfiltered	**0.062**			**2.61**			**0.071**			----	----	----	< MDA	-9.9	----	< MDA	-99.6	----	< MDA	-7.53	----
D-93 DUP (F)	Nov-95	Filtered	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
D-93 DUP (F)	Feb-96	Filtered	< MDA	-0.15	----	< MDA	-60.82	----	< MDA	-0.2	----	< MDA	-373.3	----	< MDA	-28.13	----	< MDA	-148.1	----	< MDA	-17.49	----
D-93 DUP (F)	Feb-96	unfiltered	< MDA	-0.56	----	----	----	----	**0.56**			----	----	----	----	----	----	----	----	----	----	----	----
D-93 DUP (F)	May-96	Filtered	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

All values expressed as pCi/L unless otherwise noted.
---- = not analyzed
MDA = Minimum Detectable Activity
Bold numbers indicate results above the MDA.
xx = No tracer counts. Therefore, results could not be generated.

Table C-6 : Split Groundwater Analytical Results - Uranium-238 Decay Series

Monitoring Well	Uranium-238												Thorium-234											
	Unfiltered						Filtered						Unfiltered						Filtered					
	Quanterra			Accu-Labs			Quanterra			Accu-Labs			Quanterra			Accu-Labs			Quanterra			Accu-Labs		
	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA
S-5	*MDA*	--	*0.45*	0.1		*0.1*	*MDA*	--	*2.88*	0.1		*0.1*	*MDA*	--	*191*	*MDA*	--	*112*	*MDA*	--	*233*	*MDA*	--	*66*	*MDA*	--	*0.39*	0.1		*0.1*	*MDA*	--	*3.91*	0.1		*0.1*
MW-101	1.29		*0.11*	1.1		*0.1*	1.24		*0.23*	1.1		*0.1*	*MDA*	--	*140*	*MDA*	--	*118*	*MDA*	--	*93*	*MDA*	--	*107*	1.43		*0.11*	1.8		*0.1*	1.89		*0.17*	1.7		*0.1*
MW-107	0.15		*0.11*	*MDA*	--	*0.1*	0.39		*0.14*	*MDA*	--	*0.1*	*MDA*	--	*353*	*MDA*	--	*120*	*MDA*	--	*147*	*MDA*	--	*109*	0.23		*0.13*	0.2		*0.1*	0.53		*0.15*	0.2		*0.1*
MW-F3	*MDA*	--	*0.25*	*MDA*	--	*0.1*	1.24		*0.23*	*MDA*	--	*0.1*	*MDA*	--	*234*	*MDA*	--	*121*	*MDA*	--	*192*	*MDA*	--	*110*	*MDA*	--	*0.22*	*MDA*	--	*0.1*	*MDA*	--	*0.61*	*MDA*	--	*0.1*

Monitoring Well	Thorium-230												Radium-226											
	Unfiltered						Filtered						Unfiltered						Filtered					
	Quanterra			Accu-Labs			Quanterra			Accu-Labs			Quanterra			Accu-Labs			Quanterra			Accu-Labs		
	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA
S-5	0.51		*0.24*	0.1		*0.1*	0.48		*0.17*	0.2		*0.1*	0.80		*0.07*	0.9		*0.4*	0.20		*0.07*	0.7		*0.3*	*MDA*	--	*21.3*	*MDA*	--	*15*	*MDA*	--	*23.5*	*MDA*	--	*10*
MW-101	0.19		*0.09*	0.5		*0.1*	0.38		*0.13*	*MDA*	--	*0.1*	0.31		*0.07*	0.3		*0.3*	0.25		*0.09*	*MDA*	--	*0.3*	*MDA*	--	*29.9*	*MDA*	--	*17*	*MDA*	--	*20.5*	*MDA*	--	*13*
MW-107	0.49		*0.11*	0.2		*0.1*	0.24		*0.11*	0.1		*0.1*	0.39		*0.07*	0.3		*0.3*	0.17		*0.07*	*MDA*	--	*0.3*	*MDA*	--	*39.4*	*MDA*	--	*18*	*MDA*	--	*41.2*	*MDA*	--	*13*
MW-F3	0.22		*0.09*	0.2		*0.1*	0.59		*0.09*	0.2		*0.1*	1.35		*0.07*	0.6		*0.3*	1.34		*0.06*	0.8		*0.3*	*MDA*	--	*31.3*	*MDA*	--	*18*	*MDA*	--	*26*	*MDA*	--	*15*

Monitoring Well	Bismuth-214												Lead-210											
	Unfiltered						Filtered						Unfiltered						Filtered					
	Quanterra			Accu-Labs			Quanterra			Accu-Labs			Quanterra			Accu-Labs			Quanterra			Accu-Labs		
	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA
S-5	*MDA*	--	*24.1*	*MDA*	--	*16*	*MDA*	--	*27.6*	*MDA*	--	*10*	*MDA*	--	*292*	*MDA*	--	*150*	*MDA*	--	*1300*	*MDA*	--	*76*
MW-101	*MDA*	--	*37*	*MDA*	--	*24*	*MDA*	--	*33.9*	*MDA*	--	*16*	*MDA*	--	*156*	*MDA*	--	*130*	*MDA*	--	*139*	*MDA*	--	*140*
MW-107	*MDA*	--	*63.6*	*MDA*	--	*24*	82.1		*27.1*	*MDA*	--	*15*	*MDA*	--	*3960*	*MDA*	--	*130*	*MDA*	--	*226*	*MDA*	--	*150*
MW-F3	*MDA*	--	*30.7*	*MDA*	--	*23*	*MDA*	--	*28.6*	*MDA*	--	*13*	*MDA*	--	*1300*	*MDA*	--	*128*	*MDA*	--	*304*	*MDA*	--	*133*

Monitoring Well	Uranium-234												Lead-214											
	Unfiltered						Filtered						Unfiltered						Filtered					
	Quanterra			Accu-Labs			Quanterra			Accu-Labs			Quanterra			Accu-Labs			Quanterra			Accu-Labs		
	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA
S-5	*MDA*	--	*0.39*	0.1		*0.1*	*MDA*	--	*3.91*	0.1		*0.1*	*MDA*	--	*21.3*	*MDA*	--	*15*	*MDA*	--	*23.5*	*MDA*	--	*10*
MW-101	1.43		*0.11*	1.8		*0.1*	1.89		*0.17*	1.7		*0.1*	*MDA*	--	*29.9*	*MDA*	--	*17*	*MDA*	--	*20.5*	*MDA*	--	*13*
MW-107	0.23		*0.13*	0.2		*0.1*	0.53		*0.15*	0.2		*0.1*	*MDA*	--	*39.4*	*MDA*	--	*18*	*MDA*	--	*41.2*	*MDA*	--	*13*
MW-F3	*MDA*	--	*0.22*	*MDA*	--	*0.1*	*MDA*	--	*0.61*	*MDA*	--	*0.1*	*MDA*	--	*31.3*	*MDA*	--	*18*	*MDA*	--	*26*	*MDA*	--	*15*

All results expressed as pCi/L unless otherwise noted
-- = Not reported
MDA = Minimum detectable activity
Bolded numbers indicate result reported above the minimum detectable activity

Table C-7 : Split Groundwater Analytical Results - Uranium-235 Decay Series

Monitoring Well	Uranium-235/236												Uranium-235											
	Unfiltered						Filtered						Unfiltered						Filtered					
	Quanterra			Accu-Labs			Quanterra			Accu-Labs			Quanterra			Accu-Labs			Quanterra			Accu-Labs		
	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA
S-5	< MDA	--	0.46	< MDA	--	0.1	< MDA	--	3.57	< MDA	--	0.1	< MDA	--	62.7	< MDA	--	14	< MDA	--	68.3	< MDA	--	8.6
MW-101	**0.18**		0.14	< MDA	--	0.1	< MDA	--	0.30	< MDA	--	0.1	< MDA	--	53.3	< MDA	--	13	< MDA	--	49.5	< MDA	--	13
MW-107	**0.10**		0.09	< MDA	--	0.1	< MDA	--	0.17	< MDA	--	0.1	< MDA	--	133	< MDA	--	14	< MDA	--	57.4	< MDA	--	14
MW-F3	< MDA	--	0.29	< MDA	--	0.1	< MDA	--	0.74	**0.1**		0.1	< MDA	--	70.7	< MDA	--	14	< MDA	--	62.8	**12**		12

Monitoring Well	Protactinium-231												Actinium-227											
	Unfiltered						Filtered						Unfiltered						Filtered					
	Quanterra			Accu-Labs			Quanterra			Accu-Labs			Quanterra			Accu-labs [1]			Quanterra			Accu-Labs [1]		
	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA
S-5	MDA	--	291	< MDA	--	350	< MDA	--	338	< MDA	--	230	< MDA	--	54.6	--	--	--	< MDA	--	65.8	--	--	--
MW-101	< MDA	--	286	< MDA	--	420	< MDA	--	297	< MDA	--	330	< MDA	--	61.1	--	--	--	< MDA	--	55.8	--	--	--
MW-107	< MDA	--	640	< MDA	--	460	< MDA	--	355	< MDA	--	330	< MDA	--	125	--	--	--	< MDA	--	65.2	--	--	--
MW-F3	< MDA	--	314	< MDA	--	430	< MDA	--	275	MDA	--	380	< MDA	--	68	--	--	--	< MDA	--	60.6	--	--	--

Monitoring Well	Radium-223											
	Unfiltered						Filtered					
	Quanterra			Accu-labs			Quanterra			Accu-Labs		
	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA
S-5	< MDA	--	283	< MDA	--	14	< MDA	--	273	< MDA	--	8.3
MW-101	< MDA	--	300	< MDA	--	30	< MDA	--	245	< MDA	--	18
MW-107	< MDA	--	628	< MDA	--	31	< MDA	--	361	< MDA	--	14
MW-F3	< MDA	--	274	< MDA	--	30	< MDA	--	260	< MDA	--	16

All results expressed as pCi/L. unless otherwise noted.
1 = Accu-Labs actinium-227's energy and photon yield were too low to be seen on Accu-Labs gamma detectors.
-- = Not reported
MDA = Minimum detectable activity
Bolded numbers indicate result reported above the minimum detectable activity

Table C-8 : Split Groundwater Analytical Results - Thorium-232 Decay Series

Monitoring Well	Thorium-232												Radium-228												Thorium-228											
	Unfiltered						Filtered						Unfiltered						Filtered						Unfiltered						Filtered					
	Quanterra			Accu-Labs			Quanterra			Accu-Labs			Quanterra			Accu-Labs [1]			Quanterra			Accu-Labs [1]													
	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA
S-5	*MDA*	--	*0.22*	*MDA*	--	*0.1*	*MDA*	--	*0.14*	*MDA*	--	*0.1*	*MDA*	--	*42.9*	--	--	--	*MDA*	--	*42.3*	--	--	--	*MDA*	--	*0.18*	*MDA*	--	*0.1*	*MDA*	--	*0.31*	*MDA*	--	*0.1*
MW-101	*MDA*	--	*0.07*	*MDA*	--	*0.1*	*MDA*	--	*0.099*	*MDA*	--	*0.1*	*MDA*	--	*77.1*	--	--	--	*MDA*	--	*43.7*	--	--	--	*MDA*	--	*0.13*	*MDA*	--	*0.1*	*MDA*	--	*0.14*	*MDA*	--	*0.1*
MW-107	*MDA*	--	*0.11*	**0.1**		*0.1*	*MDA*	--	*0.075*	*MDA*	--	*0.1*	*MDA*	--	*48.5*	--	--	--	*MDA*	--	*50.5*	--	--	--	**0.15**		*0.14*	**0.1**		*0.1*	*MDA*	--	*0.12*	*MDA*	--	*0.1*
MW-F3	*MDA*	--	*0.07*	*MDA*	--	*0.1*	**0.08**		*0.08*	*MDA*	--	*0.1*	*MDA*	--	*41.8*	--	--	--	*MDA*	--	*40.8*	--	--	--	*MDA*	--	*0.09*	**0.1**		*0.1*	*MDA*	--	*0.10*	*MDA*	--	*0.1*

Monitoring Well	Radium-224												Lead-212												Bismuth-212											
	Unfiltered						Filtered						Unfiltered						Filtered						Unfiltered						Filtered					
	Quanterra			Accu-Labs [2]			Quanterra			Accu-Labs [2]			Quanterra			Accu-Labs			Quanterra			Accu-Labs													
	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA
S-5	*MDA*	--	*193*	--	--	--	*MDA*	--	*192*	--	--	--	*MDA*	--	*16.5*	*MDA*	--	*14*	*MDA*	--	*18.4*			*8.3*	*MDA*	--	*85*	*MDA*	--	*200*	*MDA*	--	*85*	*MDA*	--	*130*
MW-101	*MDA*	--	*189*	--	--	--	*MDA*	--	*198*	--	--	--	*MDA*	--	*17.0*	*MDA*	--	*16*	*MDA*	--	*16.8*			*13*	*MDA*	--	*107*	*MDA*	--	*190*	*MDA*	--	*80*	*MDA*	--	*190*
MW-107	*MDA*	--	*351*	--	--	--	*MDA*	--	*225*	--	--	--	*MDA*	--	*35.5*	*MDA*	--	*17*	*MDA*	--	*18.5*			*13*	*MDA*	--	*141*	*MDA*	--	*200*	*MDA*	--	*104*	*MDA*	--	*190*
MW-F3	*MDA*	--	*195*	--	--	--	*MDA*	--	*179*	--	--	--	*MDA*	--	*18.1*	*MDA*	--	*17*	*MDA*	--	*17.7*			*12*	*MDA*	--	*85*	*MDA*	--	*190*	*MDA*	--	*84*	*MDA*	--	*170*

Monitoring Well	Thallium-208											
	Unfiltered						Filtered					
	Quanterra			Accu-Labs			Quanterra			Accu-Labs		
	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA
S-5	*MDA*	--	*11.3*	*MDA*	--	*7.3*	*MDA*	--	*11.4*	*MDA*	--	*4.9*
MW-101	*MDA*	--	*13*	*MDA*	--	*8.2*	*MDA*	--	*10.2*	*MDA*	--	*7.5*
MW-107	*MDA*	--	*24.8*	*MDA*	--	*8.1*	*MDA*	--	*14.1*	*MDA*	--	*6.9*
MW-F3	*MDA*	--	*12.4*	*MDA*	--	*9.5*	*MDA*	--	*11.9*	*MDA*	--	*7.5*

All results expressed as pCi/L, unless otherwise noted.
[1] = Radium-228 is not a gamma emitter so it does not show up on gamma spectrometry. However, radium-228 decays to actinium-228, which has three strong gamma peaks. The peak at 911 KeV is traditionally reported as the radium-228 concentration because of the equilibrium that exists between radium-228 and actinium-228.
[2] = Radium-224 has its highest gamma emitter at 240 KeV, and has a photon yield of less than 4%. There are two strong peaks that usually interfere with the radium-224 peak: lead-212 at 241 KeV and lead-212 at 238 KeV. Both of these peaks have higher photon yields which prevents the visibility of radium-224.
-- = Not reported. Result reported below the minimum
MDA = Minimum detectable activity
Bolded numbers indicate result reported above the minimum detectable activity.

Table C-9 : Split Groundwater Analytical Results - Gross Alpha

Monitoring Well	Gross Alpha											
	Unfiltered						Filtered					
	Quanterra			Accu-Labs			Quanterra			Accu-Labs		
	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA
S-5	*< MDA*	--	*53.2*	*< MDA*	--	*23*	*< MDA*	--	*32.4*	*< MDA*	--	*27*
MW-101	**3.60**		*1.51*	**4**		*2*	**4.42**		*1.78*	*< MDA*	--	*3*
MW-107	**5.45**		*2.65*	*< MDA*	--	*9*	*< MDA*	--	*2.9*	**7**		*6*
MW-F3	**9.92**		*2.33*	**8**		*3*	**12.5**		*2.3*	**7**		*3*

All results expressed as pCi/L, unless otherwise noted.
-- = Not reported
MDA = Minimum detectable activity
Bolded numbers indicate results reported above the minimum detectable activity

Table C-10 : Split Groundwater Analytical Results - Priority Pollutant Metals

Monitoring Well	Arsenic				Chromium				Lead			
	Unfiltered		Filtered		Unfiltered		Filtered		Unfiltered		Filtered	
	MBT	Accu-Labs	MBT	Accu-Labs	MBT	Accu-Labs	MBT	Accu-Labs	MBT	Accu-Labs	MBT	Accu-Labs
	Result (ppb)	Result (ppb)	Result (ppb)	Result (ppb)	Result (ppb)	Result (ppb)	Result (ppb)	Result (ppb)	Result (ppb)	Result (ppb)	Result (ppb)	Result (ppb)
S-5	**19**	**23**	**22**	**26**	**11**	**13**	**11**	**10**	**18**	**17**	*< 3.0*	*< 50*
MW-101	*< 10*	*< 1*	*< 10*	*< 1*	*< 10*	*< 5*	*< 10*	*< 5*	*< 3.0*	*< 1*	*< 3.0*	*< 1*
MW-107	*< 10*	**4**	*< 10*	**4**	*< 10*	**6**	*< 10*	*< 5*	*< 3.0*	**2**	*< 3.0*	*< 1*
MW-F3	**200**	**180**	**200**	**190**	*< 10*	*< 5*	*< 10*	*< 5*	*< 3.0*	*< 50*	*< 3.0*	*< 50*

Monitoring Well	Nickel				Thallium				Zinc			
	Unfiltered		Filtered		Unfiltered		Filtered		Unfiltered		Filtered	
	MBT	Accu-Labs	MBT	Accu-Labs	MBT	Accu-Labs	MBT	Accu-Labs	MBT	Accu-Labs	MBT	Accu-Labs
	Result (ppb)	Result (ppb)	Result (ppb)	Result (ppb)	Result (ppb)	Result (ppb)	Result (ppb)	Result (ppb)	Result (ppb)	Result (ppb)	Result (ppb)	Result (ppb)
S-5	**84**	**80**	**86**	**90**	*< 10*	*< 50*	*< 10*	*< 100*	**56**	**57**	*< 20*	**11**
MW-101	*< 20*	*< 10*	*< 20*	*< 10*	*< 10*	*< 50*	*< 10*	*< 100*	*< 20*	**5**	*< 20*	*< 5*
MW-107	*< 20*	**10**	*< 20*	*< 10*	*< 10*	*< 50*	*< 10*	*< 100*	*< 20*	**11**	*< 20*	*< 5*
MW-F3	*< 20*	*< 10*	*< 20*	*< 10*	*< 10*	*< 10*	*< 10*	*< 100*	*< 20*	*< 5*	*< 20*	*< 5*

Copper was only detected in Accu-Labs Unfiltered S-5 (7 ppb).
The groundwater samples were additionally analyzed for Total Cyanide (USEPA method SW846-9010) but was not detected.
Bolded numbers indicate result reported above the reporting limit

Table C-11 : Split Groundwater Analytical Results - TPH, VOCs, and SVOCs

Total Petroleum Hydrocarbons

Monitoring Well	Diesel Range		Motor Oil Range	
	MBT	Accu-Labs	MBT	Accu-Labs
	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)
S-5	**3.2**	*< 0.3*	**1.1**	--
MW-101	*< 0.50*	*< 0.3*	*< 0.50*	--
MW-107	*< 0.50*	*< 0.3*	*< 0.50*	--
MW-F3	*< 0.50*	*< 0.3*	*< 0.50*	--

Volatile Organic Compounds

Monitoring Well	Toluene		m & p Xylene		o-Xylene		Chlorobenzene		1,4-Dichlorobenzene		Acetone	
	MBT	Accu-Labs	MBT	Accu-Labs	MBT	Accu-Labs	MBT	Accu-Labs	MBT	Accu-Labs	MBT	Accu-Labs
	Result (ppb)	Result (ppb)	Result (ppb)	Result (ppb)	Result (ppb)	Result (ppb)	Result (ppb)	Result (ppb)	Result (ppb)	Result (ppb)	Result (ppb)	Result (ppb)
S-5	**5.5**	**9**	**9.2**	**22**	*< 5.0*	**6**	*< 5.0*	*< 5*	**5.1**	--	**33**	*< 50*
MW-101	*< 5.0*	*< 5*	*< 5.0*	*< 5*	*< 5.0*	*< 5*	*< 5.0*	*< 5*	*< 5.0*	--	*< 25*	*< 50*
MW-107	*< 5.0*	*< 5*	*< 5.0*	*< 5*	*< 5.0*	*< 5*	*< 5.0*	*< 5*	*< 5.0*	--	*< 25*	*< 50*
MW-F3	*< 5.0*	*< 5*	*< 5.0*	*< 5*	*< 5.0*	*< 5*	**32**	**30**	**8.2**	--	*< 25*	*< 50*

Semi-Volatile Organic Compounds

Monitoring Well	1,4-Dichlorobenzene		4-Methylphenol	3/4-Methylphenol
	MBT	Accu-Labs	MBT	Accu-Labs
	Result (ppb)	Result (ppb)	Result (ppb)	Result (ppb)
S-5	*< 20*	*< 10*	**32**	*< 10*
MW-101	*< 10*	*< 10*	*< 10*	*< 10*
MW-107	*< 10*	*< 10*	*< 10*	*< 10*
MW-F3	*< 11*	*< 10*	*< 11*	*< 10*

-- = Not reported
Bolded numbers indicate result reported above the reporting limit

Table C-12 : Groundwater Analytical Results - Priority Pollutant Metals

Monitoring Well Number	Arsenic			Chromium			Copper			Lead			Nickel			Zinc		
	November 1995		February 1996	November 1995		February 1996	November 1995		February 1996	November 1995		February 1996	November 1995		February 1996	November 1995		February 1996
	Unfiltered	Filtered	Filtered	Unfiltered	Filtered	Filtered	Unfiltered	Filtered	Filtered	Unfiltered	Filtered	Filtered	Unfiltered	Filtered	Filtered	Unfiltered	Filtered	Filtered
Shallow Depth Wells																		
S-1	< 10	< 10	< 10	< 10	< 10	< 10	< 20	< 20	< 20	3.1	< 3.0	< 3.0	< 20	< 20	< 20	28	< 20	< 20
S-1 DUP (F)	--	--	< 10	--	--	< 10	--	--	< 20	--	--	< 3.0	--	--	< 20	--	--	20
S-5	26	21	13	< 10	< 10	22	< 20	< 20	< 20	26	< 3.0	7.9	93	99	110	< 20	28	22
S-8	< 10	< 10	< 10	< 10	< 10	< 10	< 20	< 20	< 20	3.2	< 3.0	< 3.0	< 20	< 20	< 20	47	< 20	< 20
S-10	50	40	86	17	11	15	< 20	< 20	< 20	< 3.0	< 3.0	< 3.0	27	21	< 20	47	< 20	< 20
S-61	< 10	< 10	< 10	< 10	< 10	< 10	< 20	< 20	< 20	43	< 3.0	< 3.0	< 20	< 20	20	< 20	< 20	< 20
S-80	20	< 10	< 10	62	< 10	< 10	76	< 20	< 20	< 3.0	< 3.0	< 3.0	74	< 20	< 20	270	< 20	< 20
S-82	32	20	35	< 10	< 10	< 10	< 20	< 20	< 20	12	< 3.0	< 3.0	78	70	81	130	< 20	26
S-84	84	38	71	< 10	< 10	< 10	< 20	< 20	< 20	5.5	< 3.0	< 3.0	< 20	< 20	< 20	< 20	< 20	< 20
S-84 DUP (F)	79	60	--	< 10	< 10	--	< 20	< 20	--	4.4	< 3.0	--	< 20	< 20	--	< 20	< 20	--
MW-101	< 10	< 10	< 10	< 10	< 10	< 10	< 20	< 20	< 20	< 3.0	< 3.0	< 3.0	< 20	< 20	< 20	32	< 20	< 20
MW-107	< 10	< 10	< 10	< 10	< 10	< 10	23	< 20	< 20	17	< 3.0	< 3.0	< 20	< 20	< 20	63	< 20	< 20
MW-F3	420	400	260	30	< 10	< 10	59	< 20	< 20	70	< 3.0	< 3.0	44	< 20	< 20	310	< 20	< 20
PZ-114-AS	21	18	29	14	< 10	< 10	< 20	< 20	< 20	19	< 3.0	< 3.0	28	< 20	< 20	76	< 20	< 20
Intermediate Depth Wells																		
I-2	< 10	< 10	12	< 10	< 10	< 10	< 20	< 20	< 20	< 3.0	< 3.0	< 3.0	< 20	< 20	< 20	97	< 20	< 20
I-4	< 10	< 10	< 10	10	< 10	< 10	< 20	< 20	< 20	4.1	4.1	< 3.0	< 20	< 20	< 20	170	< 20	< 20
I-4 DUP (F)	< 10	< 10	--	< 10	< 10	--	< 20	< 20	--	< 3.0	< 3.0	--	< 20	< 20	--	< 20	< 20	--
I-7	< 10	< 10	< 10	< 10	< 10	< 10	< 20	< 20	< 20	< 3.0	< 3.0	< 3.0	< 20	< 20	< 20	< 20	< 20	< 20
I-9	< 10	11	10	14	< 10	< 10	< 20	< 20	< 20	8.7	< 3.0	< 3.0	< 20	< 20	< 20	67	< 20	< 20
I-11	< 10	< 10	14	< 10	< 10	< 10	< 20	< 20	< 20	6.1	< 3.0	< 3.0	< 20	< 20	< 20	< 20	< 20	49
I-62	58	23	19	< 10	< 10	< 10	< 20	< 20	< 20	5.5	< 3.0	< 3.0	< 20	< 20	< 20	44	< 20	< 20
I-65	< 10	< 10	< 10	< 10	< 10	< 10	< 20	< 20	< 20	40	< 3.0	< 3.0	< 20	< 20	< 20	< 20	< 20	< 20
I-66	21	< 10	< 10	< 10	< 10	< 10	< 20	< 20	< 20	4.3	< 3.0	< 3.0	< 20	< 20	< 20	< 20	< 20	< 20
I-66 DUP (F)	--	--	< 10	--	--	--	--	--	--	--	--	< 3.0	--	--	--	--	--	--
I-67	18	11	< 10	< 10	< 10	< 10	< 20	< 20	< 20	< 3	< 3.0	< 3.0	< 20	< 20	< 20	22	< 20	< 20
I-68	< 10	< 10	< 10	< 10	< 10	< 10	< 20	< 20	< 20	3.6	< 3.0	< 3.0	< 20	< 20	< 20	< 20	< 20	< 20
Deep Depth Wells																		
D-3	< 10	< 10	10	10	10	< 10	< 20	< 20	< 20	< 3.0	< 3.0	< 3.0	< 20	< 20	< 20	170	< 20	< 20
D-6	< 10	< 10	< 10	< 10	< 10	< 10	< 20	< 20	< 20	< 3.0	< 3.0	< 3.0	29	23	< 20	43	< 20	< 20
D-12	< 10	< 10	< 10	< 10	< 10	< 10	< 20	< 20	< 20	5.4	< 3.0	< 3.0	23	< 20	< 20	< 20	< 20	< 20
D-13	< 10	< 10	< 10	< 10	< 10	< 10	< 20	< 20	< 20	5.4	< 3.0	< 3.0	< 20	< 20	< 20	< 20	< 20	< 20
D-14	94	49	68	49	< 10	< 10	46	< 20	< 20	14	< 3.0	< 3.0	59	42	35	330	< 20	< 20
D-83	< 10	< 10	< 10	< 10	< 10	< 10	40	< 20	< 20	6.8	< 3.0	< 3.0	< 20	< 20	< 20	120	77	< 20
D-85	27	22	31	12	< 10	< 10	< 20	< 20	< 20	< 3.0	< 3.0	< 3.0	< 20	< 20	< 20	< 20	< 20	< 20
D-85 DUP (F)	28	23	--	< 10	< 10	--	< 20	< 20	--	9.7	< 3.0	--	< 20	< 20	--	< 20	< 20	--
D-93	< 10	< 10	< 10	< 10	< 10	< 10	23	< 20	< 20	16	< 3.0	< 3.0	< 20	< 20	< 20	120	37	< 20
D-93 DUP (F)	--	--	< 10	--	--	< 10	--	--	< 20	--	--	< 3.0	--	--	< 20	--	--	< 20

All results expressed as parts per billion (ppb). unless otherwise noted.
-- = Not reported
DUP (F) = Field Duplicate
PZ-114-AS = Piezometer-114-Alluvial Shallow
Selenium (MCL: 50 ppb) was only detected in Feb. 1996 MW-101 Filtered (38 ppb).
Mercury (USEPA Method SW846-7470. MCL: 2.0 ppb) was only detected in November 1995 D-14 Unfiltered (0.21 ppb).
The groundwater samples were additionally analyzed for Total Cyanide (USEPA Method SW846-9010. MCL: 200 ppb) but was not detected.

Table C-13 : Groundwater Analytical Results - Total Petroleum Hydrocarbons

Monitoring Well Number	Diesel Range		Motor Oil Range	
	November 1995	February 1996	November 1995	February 1996
	Result (ppm)	Result (ppm)	Result (ppm)	Result (ppm)
Shallow Depth Wells				
S-1	< 0.50	< 0.50	< 0.50	< 0.50
S-1 DUP (F)	--	< 0.50	--	< 0.50
S-5	**3.5**	**1.9**	< 2.5	**1.9**
S-8	< 0.50	< 0.50	< 0.50	< 0.50
S-10	**0.59**	< 0.50	< 0.50	< 0.50
S-61	< 0.50	< 0.50	< 0.50	< 0.50
S-80	< 0.50	< 0.50	< 0.50	< 0.50
S-82	< 0.50	< 0.50	< 0.50	< 0.50
S-84	< 0.50	< 0.50	< 0.50	< 0.50
S-84 DUP (F)	< 0.50	--	< 0.50	--
MW-101	< 0.50	< 0.50	< 0.50	< 0.50
MW-107	< 0.50	< 0.50	< 0.50	< 0.50
MW-F3	< 0.50	< 0.50	< 0.50	< 0.50
PZ-114-AS	< 0.50	< 0.50	< 0.50	< 0.50
Intermediate Depth Wells				
I-2	< 0.50	< 0.50	< 0.50	< 0.50
I-4	< 0.50	< 0.50	< 0.50	< 0.50
I-4 DUP (F)	< 0.50	--	< 0.50	--
I-7	< 0.50	< 0.50	< 0.50	< 0.50
I-9	< 0.50	< 0.50	< 0.50	< 0.50
I-11	< 0.50	< 0.50	**2.3**	< 0.50
I-62	< 0.50	< 0.50	< 0.50	< 0.50
I-65	< 0.50	< 0.50	**0.76**	< 0.50
I-66	< 0.50	< 0.50	< 0.50	< 0.50
I-66 DUP (F)	--	< 0.50	--	< 0.50
I-67	< 0.50	< 0.50	< 0.50	< 0.50
I-68	< 0.50	< 0.50	< 0.50	< 0.50
Deep Depth Wells				
D-3	< 0.50	< 0.50	< 0.50	< 0.50
D-6	< 0.50	< 0.50	< 0.50	< 0.50
D-12	< 0.50	< 0.50	< 0.50	< 0.50
D-13	< 0.50	< 0.50	< 0.50	< 0.50
D-14	**0.70**	**0.53**	< 0.50	< 0.50
D-83	< 0.50	< 0.50	< 0.50	< 0.50
D-85	< 0.50	< 0.50	< 0.50	< 0.50
D-85 DUP (F)	< 0.50	--	**0.65**	--
D-93	< 0.50	< 0.50	< 0.50	< 0.50
D-93 DUP (F)	--	< 0.50	--	< 0.50

All results expressed as parts per million (ppm), unless otherwise noted.
-- = Not reported
DUP (F) = Field Duplicate
PZ-114-AS = Piezometer-114-Alluvial Shallow

Table C-14 : Groundwater Analytical Results - Volatile Organic Compounds

Monitoring Well Number	Benzene		Chlorobenzene		1,4-Dichlorobenzene		cis-1,2-Dichloroethene		Acetone	
	November 1995	February 1996	November 1995	February 1996	November 1995	February 1996	November 1995	February 1996	November 1995	February 1996
	Result (ppb)	Result (ppb)	Result (ppb)	Result (ppb)	Result (ppb)	Result (ppb)	Result (ppb)	Result (ppb)	Result (ppb)	Result (ppb)
Shallow Depth Wells										
S-1	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	25	< 25
S-1 DUP (F)	--	< 5.0	--	< 5.0	--	< 5.0	--	< 5.0	--	< 25
S-5	< 5.0	< 5.0	5.0	< 5.0	12	13	< 5.0	< 5.0	< 25	< 25
S-8	< 5.0	5.0	< 5.0	< 5.0	< 5.0	< 5.0	5.0	< 5.0	< 25	< 25
S-10	< 5.0	< 5.0	< 5.0	< 5.0	5.0	5.0	15	14	< 25	< 25
S-61	< 5.0	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 25	< 25
S-80	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	25	25
S-82	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	26	34	< 25	< 25
S-84	< 5.0	5.0	6.0	9.6	< 5.0	< 5.0	< 5.0	< 5.0	< 25	25
S-84 DUP (F)	< 5.0	--	5.3	--	< 5.0	--	< 5.0	--	< 25	--
MW-101	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 25	< 25
MW-107	< 5.0	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 25	< 25
MW-F3	< 5.0	< 5.0	58	43	12	9.9	< 5.0	< 5.0	< 25	< 25
PZ-114-AS	< 5.0	< 5.0	15	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 25	< 25
Intermediate Depth Wells										
I-2	11	5.6	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 25	< 25
I-4	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 25	< 25
I-4 DUP (F)	< 5.0	--	< 5.0	--	< 5.0	--	< 5.0	--	< 25	--
I-7	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 25	< 25
I-9	9.3	7.4	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 25	< 25
I-11	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	44	< 25
I-62	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 25	< 25
I-65	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 25	< 25
I-66	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 25	< 25
I-66 DUP (F)	--	< 5.0	--	< 5.0	--	< 5.0	--	< 5.0	--	< 25
I-67	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 25	< 25
I-68	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 25	< 25
Deep Depth Wells										
D-3	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 25	< 25
D-6	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 25	< 25
D-12	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	68	< 25
D-13	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	37	< 25
D-14	< 5.0	< 5.0	170	150	50	46	7.2	8.6	< 25	< 25
D-83	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 25	< 25
D-85	< 5.0	< 5.0	< 5.0	16	< 5.0	< 5.0	< 5.0	< 5.0	< 25	< 25
D-85 DUP (F)	< 5.0	--	< 5.0	--	< 5.0	--	< 5.0	--	< 25	--
D-93	< 5.0	5.8	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 25	< 25
D-93 DUP (F)	--	6.0	--	< 5.0	--	< 5.0	--	< 5.0	--	< 25

All results expressed as parts per billion (ppb), unless otherwise noted.
-- = Not reported
DUP (F) = Field Duplicate
PZ-114-AS = Piezometer-114-Alluvial Shallow
Toluene (MCL: 1,000 ppb) was only detected in Nov. 1995 S-5 (19 ppb) and Feb. 1996 S-5 (45 ppb).
Ethyl Benzene (MCL: 700 ppb) was only detected in Nov. 1995 S-5 (13 ppb), Feb. 1996 S-5 (22 ppb), and Nov. 1995 D-14 (14 ppb).
m & p Xylene (MCL (total): 10,000 ppb) was only detected in Nov. 1995 S-5 (56 ppb), Feb. 1996 S-5 (60 ppb), and Nov. 1995 D-14 (14 ppb).
o-Xylene (MCL (total): 10,000 ppb) was only detected in Nov. 1995 S-5 (14 ppb), Feb. 1996 S-5 (18 ppb), and Nov. 1995 D-14 (5.5 ppb).
1,2-Dichlorobenzene (MCL: 600 ppb) was only detected in Nov. 1995 S-5 (5.1 ppb), Nov. 1995 MW-F3 (8.1 ppb), and Feb. 1996 MW-F3 (5.6 ppb).
1,1-Dichloroethane (MCL: NE) was only detected in Nov. 1995 D-13 (7.6 ppb) and Feb. 1996 D-13 (8.0 ppb).
2-Butanone (MCL: NE) was only detected in Nov. 1995 D-12 (70 ppb).

Table C-15 : Groundwater Analytical Results - Semivolatile Organic Compounds

Monitoring Well Number	1,4-Dichlorobenzene		4-Methylphenol		Di-n-octylphthalate		Bis(2-Ethylhexyl)phthalate	
	November 1995	February 1996	November 1995	February 1996	November 1995	February 1996	November 1995	February 1996
	Result (ppb)	Result (ppb)	Result (ppb)	Result (ppb)	Result (ppb)	Result (ppb)	Result (ppb)	Result (ppb)
Shallow Depth Wells								
S-1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
S-1 DUP (F)	--	< 10	--	< 10	--	< 10	--	< 10
S-5	< 30	< 10	< 30	< 10	< 30	< 10	< 30	< 10
S-8	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
S-10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
S-61	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
S-80	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
S-82	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
S-84	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
S-84 DUP (F)	< 10	--	< 10	--	< 10	--	< 10	--
MW-101	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
MW-107	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
MW-F3	**12**	< 10	< 10	< 10	< 10	< 10	< 10	< 10
PZ-114-AS	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Intermediate Depth Wells								
I-2	< 10	< 20	< 10	< 20	< 10	< 20	< 10	< 20
I-4	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
I-4 DUP (F)	< 10	--	< 10	--	< 10	--	< 10	--
I-7	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
I-9	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
I-11	< 10	10	**290**	< 10	< 10	< 10	< 10	< 10
I-62	< 10	< 10	< 10	< 10	**13**	< 10	< 10	< 10
I-65	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
I-66	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
I-66 DUP (F)	--	< 10	--	< 10	--	< 10	--	< 10
I-67	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
I-68	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Deep Depth Wells								
D-3	< 10	< 10	< 10	< 10	< 10	< 10	**17**	< 10
D-6	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
D-12	< 10	10	**67**	< 10	< 10	< 10	< 10	< 10
D-13	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
D-14	**18**	**38**	< 10	< 10	< 10	< 10	**16**	< 10
D-83	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
D-85	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
D-85 DUP (F)	< 10	--	< 10	--	< 10	--	< 10	--
D-93	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
D-93 DUP (F)	--	< 10	--	< 10	--	< 10	--	< 10

All results expressed as parts per billion (ppb), unless otherwise noted.
-- = Not reported
DUP (F) = Field Duplicate
PZ-114-AS = Piezometer-114-Alluvial Shallow

Table C-16 : Groundwater Analytical Results - Pesticides and Polychlorinated Biphenyls

Monitoring Well Number	4,4'-DDD		Aldrin		gamma-BHC (Lindane)	
	November 1995	February 1996	November 1995	February 1996	November 1995	February 1996
	Result (ppb)	Result (ppb)	Result (ppb)	Result (ppb)	Result (ppb)	Result (ppb)
Shallow Depth Wells						
S-1	< 0.02	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01
S-1 DUP (F)	--	< 0.02	--	< 0.01	--	< 0.01
S-5	**0.11**	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01
S-8	< 0.02	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01
S-10	< 0.02	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01
S-61	< 0.02	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01
S-80	< 0.02	0.02	< 0.01	< 0.01	< 0.01	< 0.01
S-82	< 0.02	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01
S-84	< 0.02	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01
S-84 DUP (F)	< 0.02	--	< 0.01	--	< 0.01	--
MW-101	< 0.02	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01
MW-107	< 0.02	0.02	< 0.01	< 0.01	< 0.01	< 0.01
MW-F3	< 0.02	0.02	< 0.01	< 0.01	< 0.01	< 0.01
PZ-114-AS	< 0.02	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01
Intermediate Depth Wells						
I-2	0.02	0.02	< 0.01	< 0.01	< 0.01	< 0.01
I-4	< 0.02	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01
I-4 DUP (F)	< 0.02	--	< 0.01	--	< 0.01	--
I-7	0.02	0.02	< 0.01	< 0.01	< 0.01	< 0.01
I-9	< 0.02	0.02	< 0.01	< 0.01	< 0.01	< 0.01
I-11	< 0.02	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01
I-62	0.02	0.02	< 0.01	< 0.01	< 0.01	< 0.01
I-65	0.02	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01
I-66	< 0.02	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01
I-66 DUP (F)	--	< 0.02	--	< 0.01	--	< 0.01
I-67	0.02	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01
I-68	0.02	0.02	< 0.01	< 0.01	< 0.01	< 0.01
Deep Depth Wells						
D-3	0.02	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01
D-6	0.02	< 0.02	**0.02**	< 0.01	< 0.01	< 0.01
D-12	< 0.02	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01
D-13	< 0.02	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01
D-14	< 0.02	0.02	< 0.01	< 0.01	< 0.01	< 0.01
D-83	< 0.02	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01
D-85	< 0.02	< 0.02	< 0.01	< 0.01	**0.011**	< 0.01
D-85 DUP (F)	< 0.02	--	< 0.01	--	< 0.01	--
D-93	< 0.02	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01
D-93 DUP (F)	--	< 0.02	--	< 0.01	--	< 0.01

All results expressed as parts per billion (ppb), unless otherwise noted.
-- = Not reported
DUP (F) = Field Duplicate
PZ-114-AS = Piezometer-114-Alluvial Shallow
No Polychlorinated Biphenyl Aroclors were detected.

Table C-17 : Perched Water Analytical Results - Uranium-238, Uranium-235, and Thorium-232 Decay Series

Boring	Depth	Uranium-238			Thorium-234			Uranium-234			Thorium-230			Radium-226			Lead-214			Bismuth-214			Lead-210		
	(feet)	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA
AREA 1																									
WL-108	22	**0.35**		*0.30*	*MDA*	--		*MDA*	--	*0.33*	**0.59**		*0.072*	*MDA*	--	*38.2*	*MDA*	--		*MDA*	--		*MDA*	--	*1100*
AREA 2																									
WL-219	25	**0.39**		*0.15*	**133 ***		*104*	**0.35**		*0.18*	**0.15**		*0.047*	*MDA*	--	*28.9*	*MDA*	--		*MDA*	--		*MDA*	--	*181*
WL-220	30	*MDA*	--	*0.16*	*MDA*	--		**0.19**		*0.17*	**1.72**		*0.15*	*MDA*	--	*28.3*	*MDA*	--		*MDA*	--		*MDA*	--	*139*
WL-231	31	*MDA*	--	*0.62*	*MDA*	--		**0.97**		*0.49*	**3.70**		*1.93*	*MDA*	--	*27.7*	*MDA*	--		*MDA*	--		*MDA*	--	*181*
LEACHATE SEEP																									
Leachate Seep		**0.54**		*0.18*	--	--	--	**0.94**		*0.28*	**0.85**		*0.4*	**0.83**		*0.83*	--	--	--	--	--	--	--	--	--
Leachate Seep Dup (F)		**0.75**		*0.24*	--	--	--	**0.98**		*0.24*	*MDA*	--	*0.62*	*MDA*	--	*0.69*	--	--	--	--	--	--	--	--	--

= Combined Maximum Contaminant Level for Radium-226 and Radium-228

Boring	Depth	Uranium-235/236			Uranium-235			Protactinium-231			Actinium-227			Radium-223		
	(feet)	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA
AREA 1																
WL-108	22	*MDA*	--	*0.34*	*MDA*	--		*MDA*	--	*453*	*MDA*	--	*91.6*	*MDA*	--	
AREA 2																
WL-219	25	*MDA*	--	*0.18*	*MDA*	--		*MDA*	--	*292*	*MDA*	--	*61.8*	*MDA*	--	
WL-220	30	*MDA*	--	*0.22*	*MDA*	--		*MDA*	--	*298*	*MDA*	--	*55.3*	*MDA*	--	
WL-231	31	*MDA*	--	*0.72*	*MDA*	--		*MDA*	--	*302*	*MDA*	--	*60.6*	*MDA*	--	
LEACHATE SEEP																
Leachate Seep		*MDA*	--	*0.225*	--	--	--	--	--	--	--	--	--	--	--	--
Leachate Seep Dup (F)		*MDA*	--	*0.300*	--	--	--	--	--	--	--	--	--	--	--	--

Boring	Depth	Thorium-232			Radium-228			Thorium-228			Radium-224			Lead-212			Thallium-208		
	(feet)	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA	Result	+/- Sigma	MDA
AREA 1																			
WL-108	22	*MDA*	--	*0.040*	*MDA*	--		*MDA*	--	*0.099*	*MDA*	--		*MDA*	--		*MDA*	--	
AREA 2																			
WL-219	25	**0.042**		*0.024*	*MDA*	--		**0.12**		*0.050*	*MDA*	--		*MDA*	--		*MDA*	--	
WL-220	30	*MDA*	--	*0.09*	*MDA*	--		*MDA*	--	*0.16*	*MDA*	--		*MDA*	--		*MDA*	--	
WL-231	31	*MDA*	--	*1.76*	*MDA*	--		*MDA*	--	*1.44*	*MDA*	--		*MDA*	--		*MDA*	--	
LEACHATE SEEP																			
Leachate Seep		*MDA*	--	*0.38*	--	--	--	*MDA*	--	*0.60*	--	--	--	--	--	--	--	--	--
Leachate Seep Dup (F)		*MDA*	--	*0.52*	--	--	--	*MDA*	--	*0.63*	--	--	--	--	--	--	--	--	--

-- = Not reported

DUP (L) = Laboratory duplicate

MCL = Maximum Contaminant Level (Missouri Department of Natural Resources Drinking Water Program, October 1994)

DUP (F) = Field duplicate

MDA = Minimum Detectable Activity

* = Analytical result is a false positive. The half-life of thorium-234 is 24 days and therefore thorium-234 should be in secular equilibrium with uranium-238. Review of parent and daughter products of thorium-234 indicate that secular equilibrium conditions exist and that the thorium-234 concentration should approximate 0.35 to 0.39 pCi/l.

Bolded numbers indicate result above the Minimum Detectable Activity

F-2: OU-1 FS Groundwater Sample Results

Appendix F-2: 2004 Groundwater Monitoring Results – Radionuclides

Monitoring Well	Sample Date	Radium-226				Radium-228				COMBINED Ra-226 + Ra-228		Thorium-228				Thorium-230				Thorium-232				COMBINED Th-228 + Th-230 + Th-232		Uranium-234				Uranium-235				Uranium-238				COMBINED U-234 + U-235 + U-238	
		Result	+/- 2 Sigma	MDA	FINAL Q	Result	+/- 2 sigma	MDA	FINAL Q			Result	+/- 2 sigma	MDA	FINAL Q	Result	+/- 2 sigma	MDA	FINAL Q	Result	+/- 2 sigma	MDA	FINAL Q			Result	+/- 2 sigma	MDA	FINAL Q	Result	+/- 2 sigma	MDA	FINAL Q	Result	+/- 2 sigma	MDA	FINAL Q		
S-1	Mar-2004	0.14	0.14	0.22	U	0.29	0.47	0.78	U	ND	*	0.01	0.074	0.21	U	0.24	0.07	0.16		0	0	0.07	U	0.24	*	2.12	0.47	0.12		0.044	0.089	0.15	U	1.55	0.39	0.06		3.67	*
S-1	May-2004	0.04	0.11	0.21	U	0.94	0.62	0.95	U	ND	*	0.051	0.091	0.18	U	0.72	0.31	0.07		0.045	0.072	0.12	U	0.72	*	1.76	0.44	0.24		0.06	0.11	0.17	U	1.01	0.33	0.22		2.77	*
S-5	Mar-2004	-0.06	0.18	0.37	U	1.35	0.67	0.97		1.35	*	0.018	0.061	0.17	U	0.4	0.24	0.17		0	0	0.08	U	0.40	*	0.16	0.18	0.22	U	0.04	0.12	0.24	U	0.13	0.15	0.12		0.13	*
S-5	May-2004	0.22	0.17	0.25	U	0.58	0.32	0.47		0.58	*	0.05	0.14	0.32	U	0.37	0.26	0.28		-0.007	0.015	0.18	U	0.37	*	0.04	0.11	0.19	U	0.004	0.12	0.26	U	0.026	0.074	0.15	U	ND	*
S-10	Mar-2004	0.02	0.12	0.22	U	0.38	0.04	0.68	U	ND	*	0.13	0.12	0.13		0.059	0.1	0.18	U	-0.005	0.011	0.13	U	0.00	*	0.27	0.17	0.14		0.053	0.075	0.071	U	0.13	0.12	0.12		0.40	*
S-10	May-2004	0.23	0.14	0.19		0.57	0.33	0.5		0.80		0.07	0.13	0.28	U	0.52	0.29	0.24		-0.031	0.028	0.23	U	0.52	*	0.41	0.23	0.19		0.025	0.07	0.14	U	0.13	0.13	0.16	U	0.41	*
S-10 FD	May-2004	0.45	0.25	0.31		1.23	0.73	1.1		1.68		0.11	0.11	0.15	U	0.21	0.15	0.12		-0.005	0.0097	0.12	U	0.21	*	0.29	0.21	0.21		0.021	0.09	0.19	U	0.14	0.14	0.15	U	0.29	*
S-61	Mar-2004	0.25	0.16	0.22		0.3	0.44	0.73	U	0.25	*	0.036	0.075	0.16	U	0.13	0.12	0.07		0	0	0.07	U	0.13	*	0.52	0.21	0.11		0	0	0.1	U	0.34	0.17	0.09		0.86	*
S-61	May-2004	0.03	0.13	0.24	U	0.45	0.65	1.1	U	ND	*	0.06	0.11	0.22	U	0.3	0.21	0.24		-0.006	0.012	0.14	U	0.30	*	0.12	0.11	0.12		0.043	0.087	0.14	U	0.3	0.17	0.11		0.42	*
S-82	Mar-2004	0.58	0.2	0.19		0.87	0.47	0.7		1.45		0.1	0.12	0.16	U	0.25	0.18	0.08		-0.006	0.011	0.13	U	0.25	*	1.2	0.35	0.15		0.056	0.079	0.075	U	0.85	0.29	0.13		2.05	*
S-82	May-2004	0.5	0.17	0.16		0.75	0.53	0.81	U	0.50	*	0.08	0.1	0.14	U	0.2	0.16	0.08		0	0	0.08	U	0.20	*	0.83	0.3	0.18		0.023	0.067	0.13	U	0.58	0.25	0.15		1.41	*
S-84	Mar-2004	0.51	0.37	0.52	U	1.01	0.9	1.4	U	ND	*	-0.027	0.064	0.25	U	0.19	0.15	0.07		0.011	0.057	0.17	U	0.19	*	0.45	0.21	0.12		0.016	0.072	0.15	U	0.17	0.13	0.06		0.62	*
S-84	May-2004	0.63	0.24	0.25		0.44	0.3	0.47	U	0.63	*	0.09	0.12	0.19	U	0.35	0.21	0.13		0.028	0.055	0.075	U	0.35	*	0.28	0.21	0.24		0.11	0.14	0.17	U	0.3	0.21	0.22		0.58	*
I-2	Mar-2004	1.06	0.28	0.22		3.14	0.64	0.7		4.20		0.17	0.15	0.19	U	0.16	0.14	0.13		0.028	0.055	0.075	U	0.16	*	0.41	0.21	0.15		0	0	0.1	U	0.38	0.2	0.13		0.79	*
I-2	May-2004	1.01	0.3	0.26		3.46	0.9	1		4.47		0.19	0.18	0.25	U	0.35	0.22	0.09		-0.006	0.013	0.15	U	0.35	*	0.32	0.22	0.19		0.07	0.11	0.16	U	0.42	0.24	0.17		0.74	*
I-4	Mar-2004	0.03	0.1	0.19	U	0.38	0.31	0.49	U	ND	*	-0.032	0.027	0.21	U	0.19	0.15	0.07		0.027	0.054	0.073	U	0.19	*	0.11	0.12	0.14	U	0	0	0.07	U	0.056	0.081	0.11	U	ND	*
I-4	May-2004	1.26	0.29	0.19		1.83	0.42	0.43		3.09		0.14	0.13	0.16	U	0.3	0.18	0.12		0.025	0.05	0.068	U	0.30	*	0.17	0.13	0.11		0	0	0.01	U	0.013	0.059	0.13	U	0.17	*
I-9	Mar-2004	1.60	0.31	0.14		1.69	0.48	0.60		3.29		0.01	0.04	0.12	U	0.34	0.18	0.05		0.04	0.06	0.05	U	0.34	*	0.24	0.17	0.17		0.00	0.00	0.20	U	0.15	0.12	0.07		0.39	*
I-9	May-2004	0.94	0.29	0.27		3.71	0.84	0.90		4.65		0.03	0.12	0.31	U	0.25	0.20	0.25	U	0.03	0.09	0.23	U	ND	*	0.46	0.31	0.34		0.04	0.12	0.21	U	0.28	0.19	0.17		0.74	*
I-11	Mar-2004	0.59	0.20	0.20		1.58	0.50	0.69		2.17		0.22	0.15	0.15		0.20	0.14	0.06		0.00	0.00	0.06	U	0.42	*	0.85	0.28	0.11		0.07	0.10	0.12	U	0.58	0.24	0.14		1.43	*
I-11	May-2004	0.85	0.31	0.31		3.16	0.80	0.95		4.01		0.03	0.08	0.20	U	0.50	0.26	0.17		0.02	0.06	0.13	U	0.50	*	1.02	0.33	0.11		0.03	0.07	0.14	U	0.47	0.23	0.13		1.49	*
I-68	Mar-2004	0.38	0.19	0.22		1.34	0.56	0.82		1.72		0.03	0.09	0.24	U	0.22	0.16	0.12		-0.01	0.01	0.14	U	0.22	*	1.06	0.37	0.20		0.00	0.00	0.09	U	1.07	0.36	0.18		2.13	*
I-68	May-2004	0.46	0.18	0.20		2.04	0.73	0.97		2.50		0.04	0.08	0.16	U	0.52	0.26	0.13		0.10	0.11	0.07		0.62	*	1.40	0.41	0.23		0.11	0.13	0.16	U	1.21	0.36	0.14		2.61	*
D-3	Mar-2004	2.47	0.44	0.22		5.28	0.85	0.65		7.75		-0.01	0.11	0.33	U	0.14	0.15	0.23	U	0.09	0.14	0.27	U	ND	*	0.19	0.14	0.11		0.00	0.00	0.10	U	0.06	0.08	0.10	U	0.19	*
D-3	May-2004	2.54	0.46	0.25		5.41	0.82	0.53		7.95		0.27	0.25	0.27		0.66	0.39	0.23		0.00	0.00	0.10	U	0.93	*	0.20	0.19	0.21	U	0.08	0.14	0.20	U	0.18	0.20	0.24	U	ND	*
D-6	Mar-2004	2.61	0.49	0.26		4.42	0.80	0.81		7.03		0.15	0.14	0.17	U	0.16	0.14	0.07		0.00	0.00	0.07	U	0.16	*	0.34	0.19	0.14		0.00	0.00	0.10	U	0.12	0.12	0.13	U	0.34	*
D-6 FD	Mar-2004	2.08	0.40	0.18		4.33	0.77	0.76		6.41		0.23	0.17	0.21		0.30	0.19	0.17		-0.02	0.02	0.16	U	0.53	*	0.32	0.18	0.14		0.03	0.05	0.07	U	0.14	0.12	0.11		0.46	*
D-6	May-2004	2.56	0.49	0.27		5.62	0.81	0.47		8.18		0.11	0.12	0.19	U	0.13	0.12	0.07		-0.01	0.01	0.12	U	0.13	*	0.16	0.48	0.78	U	0.01	0.29	0.65	U	0.09	0.29	0.52	U	ND	*
D-12	Mar-2004	0.57	0.19	0.18		1.02	0.44	0.66		1.59		0.03	0.10	0.27	U	0.29	0.22	0.22		0.00	0.00	0.09	U	0.29	*	0.19	0.17	0.20	U	0.00	0.00	0.20	U	0.14	0.13	0.08		0.14	*
D-12	May-2004	0.65	0.22	0.21		0.86	0.35	0.49		1.51		0.00	0.08	0.25	U	0.58	0.31	0.09		-0.01	0.01	0.16	U	0.58	*	0.25	0.18	0.17		0.00	0.00	0.20	U	0.11	0.15	0.19	U	0.25	*
D-13	Mar-2004	1.00	0.29	0.24		2.27	0.59	0.74		3.27		-0.01	0.10	0.29	U	0.14	0.14	0.22	U	0.01	0.05	0.13	U	ND	*	0.26	0.21	0.24		0.00	0.09	0.20	U	0.15	0.13	0.14		0.41	*
D-13	May-2004	1.26	0.26	0.14		2.96	0.81	0.97		4.22		0.04	0.13	0.29	U	0.63	0.29	0.07		0.02	0.05	0.15	U	0.63	*	0.06	0.10	0.15	U	0.00	0.00	0.10	U	0.03	0.07	0.11	U	ND	*
D-85	Mar-2004	0.50	0.26	0.30		1.29	0.69	1.00		1.79		-0.02	0.10	0.29	U	0.43	0.24	0.24		0.02	0.05	0.14	U	0.43	*	0.09	0.11	0.15	U	0.00	0.00	0.10	U	0.03	0.07	0.13	U	ND	*
D-85	May-2004	0.52	0.21	0.23		0.80	0.36	0.50		1.32		0.04	0.08	0.15	U	0.29	0.16	0.06		0.00	0.01	0.10	U	0.29	*	0.06	0.20	0.31	U	0.00	0.09	0.20	U	0.34	0.20	0.16	U	ND	*
D-93	Mar-2004	1.30	0.28	0.18		2.08	0.56	0.69		3.38		-0.17	0.11	0.44	U	0.15	0.14	0.15	U	-0.02	0.02	0.19	U	ND	*	0.36	0.19	0.13		0.00	0.00	0.10	U	0.17	0.15	0.16		0.53	*
D-93	May-2004	1.02	0.27	0.20		2.83	0.77	0.92		3.85		0.08	0.12	0.23	U	0.57	0.29	0.14		0.09	0.10	0.08		0.66	*	0.18	0.15	0.17		0.00	0.00	0.08	U	0.11	0.11	0.11		0.29	*
D-93 FD	May-2004	0.95	0.25	0.21		3.90	1.10	1.20		4.85		0.07	0.12	0.24	U	0.48	0.27	0.16		0.03	0.07	0.16	U	0.48	*	0.22	0.18	0.20		0.00	0.08	0.18	U	0.09	0.12	0.15	U	0.22	*
MW-102	Mar-2004	0.09	0.15	0.25	U	0.63	0.54	0.86	U	ND	*	0.16	0.18	0.31	U	0.22	0.17	0.23	U	0.02	0.08	0.20	U	ND	*	0.85	0.29	0.12		0.11	0.12	0.12	U	0.56	0.23	0.06		1.41	*
MW-102	May-2004	0.00	0.16	0.20	U	0.28	0.33	0.54	U	ND	*	-0.03	0.03	0.21	U	0.47	0.27	0.19		0.06	0.09	0.15	U	0.47	*	0.74	0.27	0.14		0.05	0.08	0.12	U	0.79	0.27	0.12		1.53	*

Notes: All results are for filtered (dissolved phase) samples.
All results are in units of pCi/L.
U - non-detect
ND - non-detect
* one of the isotopes was non-detect

Appendix F-2: 2004 Monitoring Results - Volatile Organic Compounds

Monitoring Well	Sample Date	1,1-Dichloroethane		1,1-Dichloroethene		1,1-Dichloropropene		1,1,1-Trichloroethane		1,1,1,2-Tetrachloroethane		1,1,2-Trichloroethane		1,1,2,2-Tetrachloroethane		1,2-Dibromo-3-chloropropane		1,2-Dibromoethane		1,2-Dichlorobenzene		1,2-Dichloroethane		1,2-Dichloropropane		1,2,3-Trichlorobenzene		1,2,3-Trichloropropane		1,2,4-Trichlorobenzene		1,2,4-Trimethylbenzene		1,3-Dichlorobenzene		1,3-Dichloropropane		1,3,5-Trimethylbenzene		1,4-Dichlorobenzene	
		Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
S-1	Mar-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
S-1	May-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
S-5	Mar-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	13	5	ND	5	ND	5	ND	5	11	5
S-5	May-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	5.5	5
S-10	Mar-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
S-10	May-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
S-10 FD	May-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
S-61	Mar-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
S-61	May-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
S-82	Mar-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
S-82	May-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
S-84	Mar-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
S-84	May-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
I-2	Mar-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
I-2	May-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
I-4	Mar-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
I-4	May-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
I-9	Mar-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
I-9	May-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
I-11	Mar-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
I-11	May-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
I-68	Mar-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
I-68	May-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
D-3	Mar-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
D-3	May-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
D-6	Mar-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
D-6 FD	Mar-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
D-6	May-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
D-12	Mar-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
D-12	May-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
D-13	Mar-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
D-13	May-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
D-85	Mar-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
D-85	May-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
D-93	Mar-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
D-93	May-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
D-93 FD	May-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
MW-102	Mar-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
MW-102	May-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5

Notes: All results are from filtered samples and are reported in units of ug/L.

RL - Laboratory reporting limit ND - Non-Detect FD - Field Duplicate

Appendix F-2: 2004 Monitoring Results - Volatile Organic Compounds

Monitoring Well	Sample Date	2-Chloro-toluene		2,2-Dichloro-propane		4-Chloro-toluene		Benzene		Bromo-benzene		Bromo-chloro-methane		Bromo-dichloro-methane		Bromoform		Bromo-methane		Carbon Tetrachloride		Chloro-benzene		Chloro-dibromo-methane		Chloroethane		Chloroform		Chloro-methane		cis-1,2-Dichloro-ethene		Dibromo-methane		Dichloro-difluoro-methane		Ethyl benzene		Hexachloro-butadiene	
		Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
S-1	Mar-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	10	ND	5	ND	10	ND	5	ND	5	ND	10	ND	5	ND	5
S-1	May-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	10	ND	5	ND	10	ND	5	ND	5	ND	10	ND	5	ND	5
S-5	Mar-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	10	ND	5	ND	10	ND	5	ND	5	ND	10	16	5	ND	5
S-5	May-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	10	ND	5	ND	10	ND	5	ND	5	ND	10	ND	5	ND	5
S-10	Mar-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	10	ND	5	ND	10	ND	5	ND	5	ND	10	ND	5	ND	5
S-10	May-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	10	ND	5	ND	10	ND	5	ND	5	ND	10	ND	5	ND	5
S-10 FD	May-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	10	ND	5	ND	10	ND	5	ND	5	ND	10	ND	5	ND	5
S-61	Mar-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	10	ND	5	ND	10	ND	5	ND	5	ND	10	ND	5	ND	5
S-61	May-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	10	ND	5	ND	10	ND	5	ND	5	ND	10	ND	5	ND	5
S-82	Mar-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	10	ND	5	ND	10	7.1	5	ND	5	ND	10	ND	5	ND	5
S-82	May-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	10	ND	5	ND	10	ND	5	ND	5	ND	10	ND	5	ND	5
S-84	Mar-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	23	5	ND	5	ND	10	ND	5	ND	10	ND	5	ND	5	ND	10	ND	5	ND	5
S-84	May-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	25	5	ND	5	ND	10	ND	5	ND	10	ND	5	ND	5	ND	10	ND	5	ND	5
I-2	Mar-2004	ND	5	ND	5	ND	5	6.6	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	10	ND	5	ND	10	ND	5	ND	5	ND	10	ND	5	ND	5
I-2	May-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	10	ND	5	ND	10	ND	5	ND	5	ND	10	ND	5	ND	5
I-4	Mar-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	10	ND	5	ND	10	ND	5	ND	5	ND	10	ND	5	ND	5
I-4	May-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	10	ND	5	ND	10	ND	5	ND	5	ND	10	ND	5	ND	5
I-9	Mar-2004	ND	5	ND	5	ND	5	11	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	10	ND	5	ND	10	ND	5	ND	5	ND	10	ND	5	ND	5
I-9	May-2004	ND	5	ND	5	ND	5	5.9	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	10	ND	5	ND	10	ND	5	ND	5	ND	10	ND	5	ND	5
I-11	Mar-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	10	ND	5	ND	10	ND	5	ND	5	ND	10	ND	5	ND	5
I-11	May-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	10	ND	5	ND	10	ND	5	ND	5	ND	10	ND	5	ND	5
I-68	Mar-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	10	ND	5	ND	10	ND	5	ND	5	ND	10	ND	5	ND	5
I-68	May-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	10	ND	5	ND	10	ND	5	ND	5	ND	10	ND	5	ND	5
D-3	Mar-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	10	ND	5	ND	10	ND	5	ND	5	ND	10	ND	5	ND	5
D-3	May-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	10	ND	5	ND	10	ND	5	ND	5	ND	10	ND	5	ND	5
D-6	Mar-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	10	ND	5	ND	10	ND	5	ND	5	ND	10	ND	5	ND	5
D-6 FD	Mar-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	10	ND	5	ND	10	ND	5	ND	5	ND	10	ND	5	ND	5
D-6	May-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	10	ND	5	ND	10	ND	5	ND	5	ND	10	ND	5	ND	5
D-12	Mar-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	10	ND	5	ND	10	ND	5	ND	5	ND	10	ND	5	ND	5
D-12	May-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	10	ND	5	ND	10	ND	5	ND	5	ND	10	ND	5	ND	5
D-13	Mar-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	10	ND	5	ND	10	ND	5	ND	5	ND	10	ND	5	ND	5
D-13	May-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	10	ND	5	ND	10	ND	5	ND	5	ND	10	ND	5	ND	5
D-85	Mar-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	120	5	ND	5	ND	10	ND	5	ND	10	ND	5	ND	5	ND	10	ND	5	ND	5
D-85	May-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	120	5	ND	5	ND	10	ND	5	ND	10	ND	5	ND	5	ND	10	ND	5	ND	5
D-93	Mar-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	10	ND	5	ND	10	7.2	5	ND	5	ND	10	ND	5	ND	5
D-93	May-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	10	ND	5	ND	10	5.3	5	ND	5	ND	10	ND	5	ND	5
D-93 FD	May-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	10	ND	5	ND	10	5.2	5	ND	5	ND	10	ND	5	ND	5
MW-102	Mar-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	10	ND	5	ND	10	ND	5	ND	5	ND	10	ND	5	ND	5
MW-102	May-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	10	ND	5	ND	5	ND	5	ND	10	ND	5	ND	10	ND	5	ND	5	ND	10	ND	5	ND	5

Notes: All results a

RL - Labora

Appendix F-2: 2004 Monitoring Results - Volatile Organic Compounds

Monitoring Well	Sample Date	Isopropyl-benzene		Methylene Chloride		m,p-Xylene		n-Butyl-benzene		n-Propyl-benzene		Naphthalene		o-Xylene		p-Isopropyl-toluene		sec-Butylbenzene		Styrene		tert-Butylbenzene		Tetra-chloroethylene (PCE)		Toluene		trans-1,2-Dichloroethene		Trichloroethylene (TCE)		Trichlorofluoro-methane		Vinyl Chloride	
		Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
S-1	Mar-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
S-1	May-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
S-5	Mar-2004	ND	5	ND	5	51	5	ND	5	ND	5	16	5	20	5	ND	5	ND	5	ND	5	ND	5	ND	5	13	5	ND	5	ND	5	ND	5	ND	5
S-5	May-2004	ND	5	ND	5	32	5	ND	5	ND	5	13	5	25	5	ND	5	ND	5	ND	5	ND	5	ND	5	7.9	5	ND	5	ND	5	ND	5	ND	5
S-10	Mar-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
S-10	May-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
S-10 FD	May-2004	ND	5	5.9	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
S-61	Mar-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
S-61	May-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
S-82	Mar-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
S-82	May-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
S-84	Mar-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
S-84	May-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
I-2	Mar-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
I-2	May-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
I-4	Mar-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
I-4	May-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
I-9	Mar-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
I-9	May-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
I-11	Mar-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
I-11	May-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
I-68	Mar-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
I-68	May-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
D-3	Mar-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
D-3	May-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
D-6	Mar-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
D-6 FD	Mar-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
D-6	May-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
D-12	Mar-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
D-12	May-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
D-13	Mar-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
D-13	May-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
D-85	Mar-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
D-85	May-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
D-93	Mar-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
D-93	May-2004	ND	5	6.8	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
D-93 FD	May-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
MW-102	Mar-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5
MW-102	May-2004	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5	ND	5

Notes: All results a

RL - Labora

F-3: 2012 – 2013 Additional Groundwater Sampling Results

Sample ID	DATE	ALUMINUM(Dis)	ALUMINUM(Dis)	ANTIMONY(Dis)	ANTIMONY(Dis)	ARSENIC(Dis)	ARSENIC(Dis)	BARIUM(Dis)	BARIUM(Dis)	Beryllium(Dis)	Beryllium(Dis)	BORON(Dis)	BORON(Dis)	CADMIUM(Dis)	CADMIUM(Dis)
D-12	8/8/2012	ND	U	ND	U	ND	U	470		ND	U			ND	U
D-12	4/4/2013	ND	U	ND	U	ND	U	440		ND	U			ND	U
D-12	7/15/2013	220		5.1	J	ND	U	450		ND	U			ND	U
D-12	10/1/2013	ND	U	ND	U	ND	U	450		ND	U	1000		ND	U
D-12 FD	4/4/2013	ND	U	ND	U	ND	U	450		ND	U			ND	U
D-12 FD	7/15/2013	190	J	ND	U	ND	U	460		ND	U			ND	U
D-12 FD	10/7/2013														
D-13	8/10/2012	ND	U	ND	U	ND	U	530		ND	U			ND	U
D-13	4/4/2013	ND	U	ND	U	ND	U	680		ND	U			ND	U
D-13	7/18/2013	ND	U	4.4	J	ND	U	660		ND	U			ND	U
D-13	10/7/2013	ND	U	ND	U	ND	U	650		ND	U	210	U	ND	U
D-13 FD	8/10/2012	ND	U	ND	U	ND	U	510		ND	U			ND	U
D-14	8/10/2012														
D-14	4/12/2013	ND	U	ND	U	ND	U	530		ND	U			ND	U
D-14	7/18/2013	ND	U	8.2	J	7	J	600		ND	U			ND	U
D-14	10/15/2013	ND	U	ND	U	ND	U	560		ND	U	1800		ND	U
D-3	8/8/2012	ND	U	ND	U	13	U	1800		ND	U			ND	U
D-3	4/11/2013	ND	U	ND	U	ND	U	2300		ND	U			ND	U
D-3	7/9/2013	ND	U	ND	U	3.3	U	2600		ND	U			ND	U
D-3	10/7/2013	ND	U	ND	U	ND	U	2500		ND	U	1600		ND	U
D-3 FD	8/8/2012	ND	U	ND	U	ND	U	2000		ND	U			ND	U
D-6	8/7/2012	ND	U	ND	U	ND	U	950		ND	U			ND	U
D-6	4/9/2013	ND	U	ND	U	ND	U	1300		ND	U			ND	U
D-6	7/12/2013	ND	U	ND	U	ND	U	1300		ND	U			ND	U
D-6	10/8/2013	ND	U	ND	U	ND	U	1500		ND	U	920		ND	U
D-6 FD	8/7/2012	ND	U	ND	U	ND	U	1100		ND	U			ND	U
D-81	8/9/2012	ND	U	ND	U	ND	U	390		ND	U			ND	U
D-81	4/3/2013	ND	U	ND	U	11	U	390		ND	U			ND	U
D-81	7/17/2013	ND	U	ND	U	9.4	J	350		ND	U			ND	U
D-81	10/3/2013	ND	U	ND	U	ND	U	350		ND	U	210		ND	U
D-81 FD	7/17/2013	ND	U	4.3	J	7.9	J	350		ND	U			ND	U
D-83	8/9/2012	ND	U	ND	U	ND	U	1100		ND	U			ND	U
D-83	4/9/2013	ND	U	ND	U	ND	U	1900		ND	U			ND	U
D-83	7/11/2013	ND	U	ND	U	ND	U	1700		ND	U			ND	U
D-83	10/8/2013	ND	U	ND	U	ND	U	1900		ND	U	770		ND	U
D-83 FD	7/11/2013	ND	U	ND	U	2.2	J	1700		ND	U			ND	U
D-85	8/6/2012	ND	U	ND	U	32	U	1800		ND	U			ND	U
D-85	4/11/2013	500	J	ND	U	40	U	1900		ND	U			ND	U
D-85	7/10/2013	ND	U	4.8	J	43		1900		ND	U			ND	U
D-85	10/9/2013	ND	U	ND	U	43		1900		ND	U	270	J+	ND	U
D-87	8/1/2012	ND	U	ND	U	ND	U	1200		ND	U			ND	U
D-87	4/9/2013	ND	U	ND	U	ND	U	1300		ND	U			ND	U
D-87	7/17/2013	ND	U	4.7	J	2.3	J	1500		ND	U			ND	U
D-87	10/2/2013	ND	U	ND	U	ND	U	1500		ND	U	1500		ND	U
D-87 FD	10/2/2013	ND	U	ND	U	ND	U	1500		ND	U	1500		ND	U
D-93	8/14/2012	ND	U	ND	U	ND	U	1400		ND	U			ND	U
D-93	4/9/2013	ND	U	ND	U	ND	U	1400		ND	U			ND	U
D-93	7/11/2013	ND	U	ND	U	2.8	J	1300		ND	U			ND	U
D-93	10/8/2013	ND	U	ND	U	ND	U	1300		ND	U	1000		ND	U
USGS-E1	11/7/2013	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
USGS-B4-S	8/2/2013	ND	U	ND	U	3		360		ND	U			ND	U
USGS-B4-S	11/7/2013	ND	U	ND	U	ND	U	390		ND	U	87		ND	U
USGS-B4-D	8/2/2013	ND	U	ND	U	ND	U	670		ND	U			ND	U
USGS-A5	11/7/2013	ND	U	ND	U	ND	U	130		ND	U	190		ND	U
I-11	8/8/2012	ND	U	ND	U	15	U	760		ND	U			ND	U
I-11	4/4/2013	ND	U	ND	U	21	U	850		ND	U			ND	U
I-11	7/15/2013	ND	U	4.2	J	16		830		ND	U			ND	U
I-11	10/1/2013	ND	U	ND	U	15		650		ND	U	990		ND	U
I-4	8/14/2012	ND	U	ND	U	ND	U	1200		ND	U			ND	U

Sample ID	DATE	ALUMINUM(Dis)	ALUMINUM(Dis)	ANTIMONY(Dis)	ANTIMONY(Dis)	ARSENIC(Dis)	ARSENIC(Dis)	BARIUM(Dis)	BARIUM(Dis)	Beryllium(Dis)	Beryllium(Dis)	BORON(Dis)	BORON(Dis)	CADMIUM(Dis)	CADMIUM(Dis)
I-4	4/12/2013	ND	U	ND	U	ND	U	400		ND	U			ND	U
I-4	7/9/2013	ND	U	4.7	J	14		630		ND	U			ND	U
I-4	10/7/2013	ND	U	ND	U	ND	U	220		ND	U	2000		ND	U
I-4 FD	7/9/2013	ND	U	ND	U	13		620		ND	U			ND	U
I-62	8/9/2012	ND	U	ND	U	ND	U	270		ND	U			ND	U
I-62	4/4/2013	ND	U	ND	U	14	U	360		ND	U			ND	U
I-62	7/12/2013	ND	U	ND	U	11		380		ND	U			ND	U
I-62	10/1/2013	ND	U	ND	U	ND	U	420		ND	U	130		ND	U
I-62 FD	4/4/2013	ND	U	ND	U	16	U	350		ND	U			ND	U
I-62 FD	7/12/2013	ND	U	ND	U	11		370		ND	U			ND	U
I-65	8/6/2012	ND	U	ND	U	ND	U	200	J	ND	U			ND	U
I-65	4/16/2013	ND	U	ND	U	ND	U	190		ND	U			ND	U
I-65	7/18/2013	ND	U	4.1	J	ND	U	180		ND	U			ND	U
I-65	10/15/2013	ND	U	ND	U	ND	U	180		ND	U	180	U	ND	U
I-65 FD	4/16/2013	ND	U	ND	U	ND	U	190		ND	U			ND	U
I-65 FD	7/18/2013	ND	U	4.8	J	ND	U	190		ND	U			ND	U
I-66	8/10/2012	ND	U	ND	U	ND	U	100	J	ND	U			ND	U
I-66	4/5/2013	ND	U	ND	U	4.8	U	140		ND	U			ND	U
I-66	7/15/2013	ND	U	ND	U	4.6	J	120		ND	U			ND	U
I-66	10/9/2013	ND	U	ND	U	ND	U	130		ND	U	400	J+	ND	U
I-67	8/10/2012	ND	U	ND	U	ND	U	210	J	ND	U			ND	U
I-67	4/5/2013	ND	U	ND	U	ND	U	250		ND	U			ND	U
I-67	7/12/2013	ND	U	ND	U	4.9	J	290		ND	U			ND	U
I-67	10/3/2013	ND	U	ND	U	ND	U	300		ND	U	240		ND	U
I-67 FD	4/5/2013	ND	U	ND	U	2.7	U	250		ND	U			ND	U
I-67 FD	10/3/2013	ND	U	ND	U	ND	U	290		ND	U	250		ND	U
I-68	8/6/2012	ND	U	ND	U	11	U	540		ND	U			ND	U
I-68	4/9/2013	ND	U	ND	U	ND	U	570		ND	U			ND	U
I-68	7/12/2013	ND	U	ND	U	2.2	J	390		ND	U			ND	U
I-68	10/4/2013	ND	U	ND	U	ND	U	450		ND	U	140		ND	U
I-73	8/4/2012	ND	U	ND	U	45		680		ND	U			ND	U
I-73	4/12/2013	ND	U	ND	U	63	J+	1100		ND	U			ND	U
I-73	7/19/2013	ND	U	ND	U	130	J	3200		ND	U			ND	U
I-73	10/3/2013	ND	U	ND	U	200		4700		ND	U	10000		ND	U
I-9	8/14/2012	ND	U	ND	U	ND	U	1100		ND	U			ND	U
I-9	4/9/2013	ND	U	ND	U	21	J	1400		ND	U			ND	U
I-9	7/11/2013	ND	U	4.2	J	24		1500		ND	U			ND	U
I-9	10/8/2013	ND	U	20		24		1700		ND	U	1600		ND	U
I-9 FD	8/14/2012	ND	U	ND	U	ND	U	1100		ND	U			ND	U
I-9 FD	4/9/2013	ND	U	ND	U	24	U	1500		ND	U			ND	U
I-9 FD	10/8/2013	ND	U	ND	U	21		1700		ND	U	1600		ND	U
LR-100	8/13/2012	ND	U	ND	U	ND	U	450		ND	U			ND	U
LR-100	4/3/2013	ND	U	ND	U	ND	U	430		ND	U			ND	U
LR-100	7/17/2013	ND	U	4.6	J	ND	U	450		ND	U			ND	U
LR-100	10/4/2013	ND	U	ND	U	ND	U	470		ND	U	2200		ND	U
LR-100 FD	10/4/2013	ND	U	ND	U	ND	U	460		ND	U	2100		ND	U
LR-103	8/13/2012	ND	U	ND	U	64		960		ND	U			ND	U
LR-103	4/3/2013	ND	U	ND	U	53		1200		ND	U			ND	U
LR-103	7/17/2013	ND	U	5.3	J	52		1100		ND	U			ND	U
LR-103	10/2/2013	ND	U	ND	U	74		1100		ND	U	240		ND	U
LR-104	8/13/2012	ND	U	ND	U	ND	U	450		ND	U			ND	U
LR-104	4/4/2013	ND	U	ND	U	ND	U	390		ND	U			ND	U
LR-104	7/22/2013	ND	U	4.6	J	6.2	J	420		ND	U			ND	U
LR-104	10/2/2013	ND	U	ND	U	ND	U	400		ND	U	75		ND	U
LR-104 FD	8/13/2012	ND	U	ND	U	ND	U	430		ND	U			ND	U
LR-105	8/1/2012	ND	U	ND	U	4.9	J	750		ND	U			ND	U
LR-105	4/3/2013	ND	U	ND	U	ND	U	820		ND	U			ND	U
MW-102	8/7/2012	ND	U	ND	U	21	U	390		ND	U			ND	U
MW-102	7/15/2013	ND	U	ND	U	21		98		ND	U			ND	U

Sample ID	DATE	ALUMINUM(Dis)	ALUMINUM(Dis)	ANTIMONY(Dis)	ANTIMONY(Dis)	ARSENIC(Dis)	ARSENIC(Dis)	BARIUM(Dis)	BARIUM(Dis)	Beryllium(Dis)	Beryllium(Dis)	BORON(Dis)	BORON(Dis)	CADMIUM(Dis)	CADMIUM(Dis)
MW-102	10/3/2013	ND	U	ND	U	44		110		ND	U	110		ND	U
MW-103	8/11/2012	ND	U	ND	U	ND	U	230	J	ND	U			ND	U
MW-103	4/5/2013	ND	U	4.2	U	2.9	U	200		ND	U			ND	U
MW-103	7/15/2013	ND	U	ND	U	ND	U	160		ND	U			ND	U
MW-103	10/4/2013	ND	U	ND	U	ND	U	180		ND	U	110		ND	U
MW-104	8/9/2012	ND	U	ND	U	68	J+	550		ND	U			ND	U
MW-104	4/5/2013	ND	U	4	U	17		370		ND	U			ND	U
MW-104	7/16/2013	ND	U	4	J	17		410		ND	U			ND	U
MW-104	10/3/2013	ND	U	ND	U	30		520		ND	U	92		ND	U
MW-1204	8/2/2012	ND	U	ND	U	ND	U	290		ND	U			ND	U
MW-1204	4/12/2013	ND	U	ND	U	ND	U	340		ND	U			ND	U
MW-1204	7/11/2013	95	J	ND	U	4.6	J	1100		ND	U			ND	U
MW-1204	10/11/2013	2400	J	ND	UJ	ND	UJ	4100	J	ND	UJ	4100	J	ND	UJ
MW-1204 FD	4/12/2013	ND	U	ND	U	ND	U	350		ND	U			ND	U
PURGE TANK	8/16/2012														
PURGE TANK	4/16/2013	ND	U	ND	U	5.9	U	320		ND	U			ND	U
PURGE TANK	7/23/2013														
PURGE TANK	7/24/2013	ND	U	ND	U	2.1	J	210		ND	U			ND	U
PURGE TANK	11/8/2013	ND	U	ND	U	ND	U	190		ND	U	590		ND	U
PZ-100-KS	8/16/2012	ND	U	ND	U	ND	U	ND	U	ND	U			ND	U
PZ-100-KS	4/16/2013	ND	U	ND	U	ND	U	4.4	J	ND	U			ND	U
PZ-100-KS	7/23/2013	ND	U	ND	U	ND	U	4.4	J	ND	U			ND	U
PZ-100-KS	10/15/2013	ND	U	ND	U	ND	U	ND	U	ND	U	620		ND	U
PZ-100-SD	7/31/2012	ND	U	ND	U	2.4	U	310		ND	U			ND	U
PZ-100-SD	4/5/2013	ND	U	ND	U	2.3	U	320		ND	U			ND	U
PZ-100-SD	7/9/2013	ND	U	ND	U	2.3	J	330		ND	U			ND	U
PZ-100-SD	10/8/2013	ND	U	ND	U	ND	U	350		ND	U	ND	U	ND	U
PZ-100-SS	7/31/2012	ND	U	ND	U	ND	U	65		ND	U			ND	U
PZ-100-SS	4/5/2013	ND	U	ND	U	ND	U	65		ND	U			ND	U
PZ-100-SS	7/9/2013	ND	U	ND	U	ND	U	66		ND	U			ND	U
PZ-100-SS	10/8/2013	ND	U	ND	U	ND	U	69		ND	U	120		ND	U
PZ-101-SS	8/7/2012	ND	U	ND	U	20	U	370		ND	U			ND	U
PZ-101-SS	4/12/2013	ND	U	ND	U	ND	U	520		ND	U			ND	U
PZ-101-SS	7/11/2013	ND	U	ND	U	3.2	J	480		5.7				ND	U
PZ-101-SS	10/8/2013	ND	U	ND	U	ND	U	620		ND	U	870		ND	U
PZ-102R-SS	8/13/2012	ND	U	ND	U	ND	U	86	J	ND	U			ND	U
PZ-102R-SS	4/11/2013	ND	U	ND	U	ND	U	82	J	ND	U			ND	U
PZ-102R-SS	7/19/2013	ND	U	ND	U	ND	U	73	J	ND	U			ND	U
PZ-102R-SS	10/8/2013	ND	U	ND	U	ND	U	79		ND	U	180		ND	U
PZ-102-SS	8/13/2012	ND	U	ND	U	ND	U	500		ND	U			ND	U
PZ-102-SS	4/11/2013	ND	U	ND	U	11	U	430		ND	U			ND	U
PZ-102-SS	7/19/2013	ND	U	5.5	J	4	J	360	J	ND	U			ND	U
PZ-102-SS	10/8/2013	ND	U	ND	U	ND	U	350		ND	U	120		ND	U
PZ-103-SS	8/7/2012	ND	U	ND	U	ND	U	660		ND	U			ND	U
PZ-103-SS	4/8/2013	ND	U	ND	U	ND	U	560		ND	U			ND	U
PZ-103-SS	7/19/2013	ND	U	ND	U	2.1	J	400	J	ND	U			ND	U
PZ-103-SS	10/4/2013	ND	U	ND	U	ND	U	390		ND	U	340		ND	U
PZ-104-KS	8/13/2012														
PZ-104-KS	8/15/2012	ND	U	ND	U	ND	U	57	J	ND	U			ND	U
PZ-104-KS	4/11/2013	ND	U	ND	U	ND	U	61	J	ND	U			ND	U
PZ-104-KS	7/18/2013	ND	U	ND	U	ND	U	50		ND	U			ND	U
PZ-104-KS	10/4/2013	ND	U	ND	U	ND	U	51		ND	U	100		ND	U
PZ-104-SD	8/1/2012	ND	U	5	J	12	J+	1200		ND	U			ND	U
PZ-104-SD	4/11/2013	ND	U	ND	U	ND	U	660		ND	U			ND	U
PZ-104-SD	7/11/2013	ND	U	ND	U	14		1000		ND	U			ND	U
PZ-104-SD	10/7/2013	ND	U	ND	U	12		670		ND	U	700		ND	U
PZ-104-SS	8/1/2012	ND	U	ND	U	ND	U	100		ND	U			ND	U
PZ-104-SS	4/11/2013	ND	U	ND	U	ND	U	96	J	ND	U			ND	U
PZ-104-SS	7/11/2013	ND	U	ND	U	2.2	J	100		ND	U			ND	U

Sample ID	DATE	ALUMINUM(Dis)	ALUMINUM(Dis)	ANTIMONY(Dis)	ANTIMONY(Dis)	ARSENIC(Dis)	ARSENIC(Dis)	BARIUM(Dis)	BARIUM(Dis)	Beryllium(Dis)	Beryllium(Dis)	BORON(Dis)	BORON(Dis)	CADMIUM(Dis)	CADMIUM(Dis)
PZ-104-SS	10/9/2013	ND	U	ND	U	ND	U	100		ND	U	140	U	ND	U
PZ-104-SS FD	4/11/2013	ND	U	ND	U	ND	U	97	J	ND	U			ND	U
PZ-105-SS	8/1/2012	ND	U	4.3	J	ND	U	170		ND	U			ND	U
PZ-105-SS	4/4/2013	ND	U	ND	U	ND	U	170	J	ND	U			ND	U
PZ-105-SS	7/12/2013	ND	U	ND	U	ND	U	170		ND	U			ND	U
PZ-105-SS	10/9/2013	ND	U	ND	U	ND	U	160		ND	U	ND	U	ND	U
PZ-106-KS	8/14/2012	ND	U	ND	U	ND	U	45	J	ND	U			ND	U
PZ-106-KS	4/15/2013	ND	U	ND	U	2	U	45	J	ND	U			ND	U
PZ-106-KS	7/19/2013	ND	U	ND	U	ND	U	44	J	ND	U			ND	U
PZ-106-KS	10/11/2013	ND	U	ND	U	ND	U	46		ND	U	200	U	ND	U
PZ-106-KS FD	10/11/2013	ND	R	ND	R	ND	R	620	R	ND	R	ND	R	ND	R
PZ-106-SD	7/31/2012	ND	U	4.2	J	ND	U	93		ND	U			ND	U
PZ-106-SD	4/9/2013	ND	U	ND	U	ND	U	94	J	ND	U			ND	U
PZ-106-SD	7/10/2013	ND	U	ND	U	ND	U	95		ND	U			ND	U
PZ-106-SD	10/8/2013	ND	U	ND	U	ND	U	100		ND	U	78		ND	U
PZ-106-SS	7/31/2012	ND	U	ND	U	ND	U	140		ND	U			ND	U
PZ-106-SS	4/9/2013	ND	U	ND	U	ND	U	150	J	ND	U			ND	U
PZ-106-SS	7/10/2013	ND	U	ND	U	2	J	150		ND	U			ND	U
PZ-106-SS	10/7/2013	ND	U	ND	U	ND	U	150		ND	U	ND	U	ND	U
PZ-107-SS	8/3/2012	ND	U	ND	U	3.6	U	590		ND	U			ND	U
PZ-107-SS	8/4/2012														
PZ-107-SS	4/12/2013	ND	U	ND	U	ND	U	620		ND	U			ND	U
PZ-107-SS	7/19/2013	ND	U	ND	U	3.2	J	620	J	ND	U			ND	U
PZ-107-SS	10/3/2013	ND	U	ND	U	ND	U	720		ND	U	530		ND	U
PZ-107-SS FD	7/19/2013	ND	U	4.1	J	2.6	J	640	J	ND	U			ND	U
PZ-109-SS	8/2/2012	ND	U	ND	U	ND	U	63		ND	U			ND	U
PZ-109-SS	4/11/2013	ND	U	ND	U	ND	U	68	J	ND	U			ND	U
PZ-109-SS	7/10/2013	ND	U	ND	U	ND	U	66		ND	U			ND	U
PZ-109-SS	10/9/2013	ND	U	ND	U	ND	U	69		ND	U	270	J+	ND	U
PZ-110-SS	8/2/2012	ND	U	ND	U	ND	U	330		ND	U			ND	U
PZ-110-SS	4/4/2013	ND	U	ND	U	ND	U	320		ND	U			ND	U
PZ-110-SS	7/9/2013	ND	U	ND	U	ND	U	310		ND	U			ND	U
PZ-110-SS	10/8/2013	ND	U	ND	U	ND	U	320		ND	U	260		ND	U
PZ-111-KS	8/13/2012	ND	U	ND	U	ND	U	ND	U	ND	U			ND	U
PZ-111-KS	4/9/2013	ND	U	ND	U	ND	U	ND	U	ND	U			ND	U
PZ-111-KS	7/17/2013	170	J	ND	U	3.2	J	6.2	J	ND	U			ND	U
PZ-111-KS	10/3/2013	ND	U	ND	U	ND	U	ND	U	ND	U	1200		ND	U
PZ-111-SD	8/1/2012	ND	U	5.5	J	ND	U	120		ND	U			ND	U
PZ-111-SD	4/4/2013	ND	U	ND	U	ND	U	120	J	ND	U			ND	U
PZ-111-SD	7/9/2013	ND	U	ND	U	ND	U	110		ND	U			ND	U
PZ-111-SD	10/7/2013	ND	U	ND	U	ND	U	110		ND	U	58	U	ND	U
PZ-112-AS	8/8/2012	ND	U	ND	U	170		1800		ND	U			ND	U
PZ-112-AS	4/12/2013	ND	U	ND	U	190		2200		ND	U			ND	U
PZ-112-AS	7/9/2013	ND	U	4.5	J	190		2300		ND	U			ND	U
PZ-112-AS	10/2/2013	ND	U	ND	U	180		2100		ND	U	930		ND	U
PZ-113-AD	8/3/2012	ND	U	ND	U	ND	U	2000	J	ND	U			ND	U
PZ-113-AD	4/11/2013	ND	U	ND	U	ND	U	2200		ND	U			ND	U
PZ-113-AD	7/10/2013	ND	U	ND	U	4.9	J	2300		ND	U			ND	U
PZ-113-AD	10/7/2013	ND	U	ND	U	ND	U	2300		ND	U	1400		ND	U
PZ-113-AD FD	8/3/2012	ND	U	6	J	13	J+	1300	J	ND	U			ND	U
PZ-113-AD FD	7/10/2013	ND	U	ND	U	4.4	J	2400		ND	U			ND	U
PZ-113-AD FD	10/7/2013	ND	U	ND	U	ND	U	2300		ND	U	1400		ND	U
PZ-113-AS	8/8/2012	ND	U	ND	U	ND	U	740		ND	U			ND	U
PZ-113-AS	4/12/2013	ND	U	ND	U	10	J	670		ND	U			ND	U
PZ-113-AS	7/10/2013	ND	U	ND	U	10		690		ND	U			ND	U
PZ-113-AS	10/2/2013	ND	U	ND	U	16		800		ND	U	320		ND	U
PZ-113-SS	8/4/2012	ND	U	ND	U	ND	U	170		ND	U			ND	U
PZ-113-SS	4/12/2013	ND	U	ND	U	ND	U	190	J	ND	U			ND	U
PZ-113-SS	7/11/2013	ND	U	ND	U	ND	U	180		ND	U			ND	U

Sample ID	DATE	ALUMINUM(Dis)	ALUMINUM(Dis)	ANTIMONY(Dis)	ANTIMONY(Dis)	ARSENIC(Dis)	ARSENIC(Dis)	BARIUM(Dis)	BARIUM(Dis)	Beryllium(Dis)	Beryllium(Dis)	BORON(Dis)	BORON(Dis)	CADMIUM(Dis)	CADMIUM(Dis)
PZ-113-SS	10/3/2013	ND	U	ND	U	ND	U	190		ND	U	ND	U	ND	U
PZ-114-AS	7/31/2012	ND	U	ND	U	220		710		ND	U			ND	U
PZ-114-AS	4/8/2013	ND	U	ND	U	410		510		ND	U			ND	U
PZ-114-AS	7/12/2013	ND	U	4.7	J	270		460		ND	U			ND	U
PZ-114-AS	10/8/2013	ND	U	ND	U	240		460		ND	U	160		ND	U
PZ-115-SS	7/31/2012	ND	U	ND	U	2.9	U	200		ND	U			ND	U
PZ-115-SS	4/5/2013	ND	U	ND	U	4	U	260		ND	U			ND	U
PZ-115-SS	7/11/2013	ND	U	ND	U	5.1	J	320		ND	U			ND	U
PZ-115-SS	10/8/2013	ND	U	ND	U	ND	U	340		ND	U	210		ND	U
PZ-116-SS	8/3/2012	ND	U	ND	U	ND	U	59		ND	U			ND	U
PZ-116-SS	4/12/2013	ND	U	ND	U	ND	U	65	J	ND	U			ND	U
PZ-116-SS	7/11/2013	ND	U	ND	U	ND	U	69		ND	U			ND	U
PZ-116-SS	10/11/2013	ND	U	ND	U	ND	U	70		ND	U	350	U	ND	U
PZ-200-SS	8/2/2012	ND	U	ND	U	ND	U	740		ND	U			ND	U
PZ-200-SS	4/5/2013	ND	U	4.7	U	ND	U	950		ND	U			ND	U
PZ-200-SS	7/19/2013	ND	U	4.9	J	3.8	J	850	J	ND	U			ND	U
PZ-200-SS	10/2/2013	ND	U	ND	U	ND	U	790		ND	U	ND	U	ND	U
PZ-200-SS FD	8/2/2012	ND	U	ND	U	ND	U	690		ND	U			ND	U
PZ-201A-SS	8/1/2012	ND	U	6	J	ND	U	120		ND	U			ND	U
PZ-201A-SS	4/8/2013	ND	U	ND	U	ND	U	130	J	ND	U			ND	U
PZ-201A-SS	7/10/2013	ND	U	ND	U	ND	U	130		ND	U			ND	U
PZ-201A-SS	10/9/2013	ND	U	ND	U	ND	U	140		ND	U	63	U	ND	U
PZ-201A-SS FD	8/1/2012	ND	U	ND	U	ND	U	120		ND	U			ND	U
PZ-202-SS	8/2/2012	ND	U	ND	U	ND	U	410		ND	U			ND	U
PZ-202-SS	4/12/2013	ND	U	ND	U	ND	U	400		ND	U			ND	U
PZ-202-SS	7/11/2013	ND	U	ND	U	6.8	J	550		ND	U			ND	U
PZ-202-SS	10/11/2013	ND	U	ND	U	ND	U	620		ND	U	ND	U	ND	U
PZ-203-SS	8/1/2012	ND	U	ND	U	ND	U	90		ND	U			ND	U
PZ-203-SS	4/5/2013	ND	U	4.2	U	ND	U	90		ND	U			ND	U
PZ-203-SS	7/17/2013	ND	U	ND	U	ND	U	89		ND	U			ND	U
PZ-203-SS	10/2/2013	ND	U	ND	U	ND	U	88		ND	U	110		ND	U
PZ-204A-SS	8/2/2012	ND	U	ND	U	15	J+	140		ND	U			ND	U
PZ-204A-SS	4/8/2013	ND	U	ND	U	ND	U	390		ND	U			ND	U
PZ-204A-SS	7/16/2013	ND	U	4.7	J	15		350		ND	U			ND	U
PZ-204A-SS	10/8/2013	ND	U	ND	U	17		300		ND	U	340		ND	U
PZ-204-SS	8/3/2012	ND	U	ND	U	ND	U	180		ND	U			ND	U
PZ-204-SS	4/9/2013	ND	U	ND	U	ND	U	160	J	ND	U			ND	U
PZ-204-SS	7/17/2013	700		4.1	J	2.5	J	180		ND	U			ND	U
PZ-204-SS	10/8/2013	ND	U	ND	U	ND	U	170		ND	U	77		ND	U
PZ-205-AS	8/3/2012	ND	U	4.2	J	14	J+	1300		ND	U			ND	U
PZ-205-AS	4/8/2013	ND	U	ND	U	15	U	1200		ND	U			ND	U
PZ-205-AS	7/18/2013	ND	U	5.6	J	39		1300		ND	U			ND	U
PZ-205-AS	10/15/2013	ND	U	22		19		1600		ND	U	630		ND	U
PZ-205-SS	8/3/2012	ND	U	ND	U	ND	U	130		ND	U			ND	U
PZ-205-SS	4/8/2013	ND	U	ND	U	ND	U	140	J	ND	U			ND	U
PZ-205-SS	7/10/2013	ND	U	ND	U	ND	U	150		ND	U			ND	U
PZ-205-SS	10/9/2013	ND	U	ND	U	ND	U	140		ND	U	79	U	ND	U
PZ-206-SS	8/7/2012	ND	U	ND	U	ND	U	76	J	ND	U			ND	U
PZ-206-SS	4/8/2013	ND	U	ND	U	ND	U	60	J	ND	U			ND	U
PZ-206-SS	7/18/2013	ND	U	ND	U	ND	U	55		ND	U			ND	U
PZ-206-SS	10/7/2013	ND	U	ND	U	ND	U	57		ND	U	120	U	ND	U
PZ-207-AS	8/8/2012	ND	U	ND	U	12	U	660		ND	U			ND	U
PZ-207-AS	4/3/2013	ND	U	ND	U	35	U	820		ND	U			ND	U
PZ-207-AS	7/18/2013	ND	U	5.9	J	22		780		ND	U			ND	U
PZ-207-AS	10/4/2013	ND	U	ND	U	ND	U	700		ND	U	1500		ND	U
PZ-208-SS	8/2/2012	ND	U	ND	U	ND	U	160		ND	U			ND	U
PZ-208-SS	4/12/2013	ND	U	ND	U	ND	U	150	J	ND	U			ND	U
PZ-208-SS	7/16/2013	740		ND	U	ND	U	150		ND	U			ND	U
PZ-208-SS	10/8/2013	ND	U	ND	U	ND	U	170		ND	U	ND	U	ND	U

Sample ID	DATE	ALUMINUM(Dis)	ALUMINUM(Dis)	ANTIMONY(Dis)	ANTIMONY(Dis)	ARSENIC(Dis)	ARSENIC(Dis)	BARIUM(Dis)	BARIUM(Dis)	Beryllium(Dis)	Beryllium(Dis)	BORON(Dis)	BORON(Dis)	CADMIUM(Dis)	CADMIUM(Dis)
PZ-209-SD	11/7/2013	ND	U	ND	U	ND	U	32		ND	U	140		ND	U
PZ-209-SS	11/7/2013	ND	U	ND	U	ND	U	160		ND	U	170		ND	U
PZ-210-SD	11/6/2013	8500	J+	ND	U	ND	U	140		ND	U	460		ND	U
PZ-210-SD FD	11/6/2013	23000	J+	ND	U	ND	U	220		ND	U	490		ND	U
PZ-210-SS	11/7/2013	ND	U	ND	U	ND	U	97		ND	U	120		ND	U
PZ-211-SD	11/6/2013	42000	J+	ND	U	16		110		ND	U	170		ND	U
PZ-211-SS	11/7/2013	ND	U	ND	U	ND	U	63		ND	U	390		ND	U
PZ-212-SD	11/7/2013	ND	U	ND	U	ND	U	140		ND	U	93		ND	U
PZ-212-SS	11/7/2013	ND	U	ND	U	ND	U	140		ND	U	130		ND	U
PZ-302-AI	8/9/2012	ND	U	ND	U	ND	U	310		ND	U			ND	U
PZ-302-AI	4/3/2013	590	J	ND	U	11	U	380		ND	U			ND	U
PZ-302-AI	7/16/2013	ND	U	4.1	J	2.2	J	350		ND	U			ND	U
PZ-302-AI	10/3/2013	ND	U	ND	U	ND	U	360		ND	U	430		ND	U
PZ-302-AS	7/16/2013	ND	U	12		330		390		ND	U			ND	U
PZ-302-AS	10/8/2013	ND	U	ND	U	140		620		ND	U	380		ND	U
PZ-303-AS	8/10/2012	ND	U	ND	U	90		650		ND	U			ND	U
PZ-303-AS	4/4/2013	ND	U	ND	U	110		670		ND	U			ND	U
PZ-303-AS	7/15/2013	ND	U	10		150		690		ND	U			ND	U
PZ-303-AS	10/4/2013	ND	U	ND	U	190		810		ND	U	290		ND	U
PZ-304-AI	8/10/2012	ND	U	ND	U	15	U	1600		ND	U			ND	U
PZ-304-AI	4/4/2013	ND	U	ND	U	11	U	1200		ND	U			ND	U
PZ-304-AI	7/16/2013	ND	U	4.4	J	ND	U	1300		ND	U			ND	U
PZ-304-AI	10/1/2013	ND	U	ND	U	ND	U	1600		ND	U	740		ND	U
PZ-304-AI FD	10/1/2013	ND	U	ND	U	ND	U	1600		ND	U	750		ND	U
PZ-304-AS	8/10/2012	ND	U	ND	U	230		1500		ND	U			ND	U
PZ-304-AS	4/4/2013	ND	U	ND	U	230		1800		ND	U			ND	U
PZ-304-AS	7/16/2013	ND	U	4.3	J	210		2000		ND	U			ND	U
PZ-304-AS	10/1/2013	ND	U	ND	U	210		2400		ND	U	1900		ND	U
PZ-305-AI	8/8/2012	ND	U	ND	U	36	U	610		ND	U			ND	U
PZ-305-AI	4/5/2013	ND	U	4.3	U	14	J+	700		ND	U			ND	U
PZ-305-AI	7/22/2013	ND	U	6.5	J	25		630		ND	U			ND	U
PZ-305-AI	10/2/2013	ND	U	ND	U	ND	U	710		ND	U	64		ND	U
PZ-305-AI FD	4/5/2013	ND	U	5.4	U	16		690		ND	U			ND	U
USGS-B3	11/7/2013	ND	U	ND	U	ND	U	570		ND	U	93		ND	U
USGS-D1	11/20/2013	ND	U	ND	U	ND	U	230		ND	U	57	U	ND	U
S-10	8/8/2012	590	J	ND	U	36	U	100	J	ND	U			ND	U
S-10	4/4/2013	830	J	ND	U	63		200	J	ND	U			ND	U
S-10	7/15/2013	110	J	5.3	J	46		650		ND	U			ND	U
S-10	10/1/2013	400		ND	U	26		110	U	ND	U	1300		ND	U
S-5	8/14/2012	ND	U	ND	U	ND	U	420		ND	U			ND	U
S-5	4/11/2013	ND	U	ND	U	10	U	470		ND	U			ND	U
S-5	7/9/2013	ND	U	ND	U	10	J+	540		ND	U			ND	U
S-5	10/7/2013	ND	U	ND	U	ND	U	390		ND	U	2300		ND	U
S-53	4/12/2013	ND	U	ND	U	ND	U	370		ND	U			ND	U
S-53	7/18/2013	ND	U	6.3	J	ND	U	410		ND	U			ND	U
S-53	10/15/2013	ND	U	21		ND	U	290		ND	U	230	U	ND	U
S-61	8/7/2012	ND	U	ND	U	ND	U	190	J	ND	U			ND	U
S-61	4/5/2013	ND	U	ND	U	ND	U	200		ND	U			ND	U
S-61	7/12/2013	ND	U	ND	U	ND	U	240		ND	U			ND	U
S-61	10/3/2013	ND	U	ND	U	ND	U	220		ND	U	ND	U	ND	U
S-8	8/9/2012	ND	U	ND	U	15	U	260		ND	U			ND	U
S-8	4/4/2013	ND	U	ND	U	13	U	380		ND	U			ND	U
S-8	7/12/2013	ND	U	ND	U	ND	U	290		ND	U			ND	U
S-8	10/1/2013	ND	U	ND	U	ND	U	330		ND	U	77		ND	U
S-82	8/10/2012	ND	U	ND	U	200		900		ND	U			ND	U
S-82	4/9/2013	ND	U	ND	U	210		790		ND	U			ND	U
S-82	7/11/2013	ND	U	ND	U	210		790		ND	U			ND	U
S-82	10/8/2013	ND	U	ND	U	230		910		ND	U	2700		ND	U
S-84	8/6/2012	ND	U	ND	U	110		840		ND	U			ND	U

Sample ID	DATE	ALUMINUM(Dis)	ALUMINUM(Dis)	ANTIMONY(Dis)	ANTIMONY(Dis)	ARSENIC(Dis)	ARSENIC(Dis)	BARIUM(Dis)	BARIUM(Dis)	Beryllium(Dis)	Beryllium(Dis)	BORON(Dis)	BORON(Dis)	CADMIUM(Dis)	CADMIUM(Dis)
S-84	4/11/2013	ND	U	ND	U	130		730		ND	U			ND	U
S-84	7/10/2013	ND	U	4.5	J	140		850		ND	U			ND	U
S-84	10/9/2013	ND	U	ND	U	150		880		ND	U	370	J+	ND	U
S-84 FD	10/9/2013	ND	U	ND	U	140		840		ND	U	340	J+	ND	U

Sample ID	DATE	Calcium(Dis)	Calcium(Dis)	Chromium(Dis)	Chromium(Dis)	COBALT(Dis)	COBALT(Dis)	COPPER(Dis)	COPPER(Dis)	IRON(Dis)	IRON(Dis)	Lead(Dis)	Lead(Dis)	Magnesium(Dis)	Magnesium(Dis)	MANGANESE(Dis)	MANGANESE(Dis)	MERCURY(Dis)	MERCURY(Dis)	NICKEL(Dis)	NICKEL(Dis)
D-12	8/8/2012	510000		ND	U	ND	U	ND	U	11000		11	J	61000		1100		ND	UJ-	ND	U
D-12	4/4/2013	630000		ND	U	ND	U	ND	U	11000		ND	U	65000		1200		0.076	J+	ND	U
D-12	7/15/2013	700000		5.6	J	4	J	8.4	J	8600		ND	U	67000		990		ND	U	16	J
D-12	10/1/2013	620000		ND	U	ND	U	ND	U	9200		8.5		64000		1100		ND	U	ND	U
D-12 FD	4/4/2013	630000		ND	U	ND	U	ND	U	11000		ND	U	66000		1200		ND	U	ND	U
D-12 FD	7/15/2013	670000		ND	U	ND	U	7.3	J	8900		ND	U	68000		980		ND	U	15	J
D-12 FD	10/7/2013																				
D-13	8/10/2012	130000		ND	U	ND	U	ND	U	11000		ND	U	27000		310		ND	U	ND	U
D-13	4/4/2013	160000		ND	U	ND	U	ND	U	14000		ND	U	37000		430		0.11	J+	ND	U
D-13	7/18/2013	160000		ND	U	ND	U	ND	U	14000		3.1	J	33000		390		ND	UJ-	ND	U
D-13	10/7/2013	160000		ND	U	25		ND	U	14000		ND	U	32000		400		ND	U	ND	U
D-13 FD	8/10/2012	130000		ND	U	ND	U	ND	U	11000		ND	U	27000		310		ND	U	ND	U
D-14	8/10/2012																				
D-14	4/12/2013	180000		ND	U	ND	U	ND	U	11000		ND	U	68000		1600		0.068	J	ND	U
D-14	7/18/2013	170000		4.7	J	6.1	J	ND	U	1100		3.6	J	77000		1200		ND	UJ-	22	J
D-14	10/15/2013	140000		ND	U	ND	U	ND	U	6800		ND	U	66000		950		ND	U	ND	U
D-3	8/8/2012	230000		ND	U	ND	U	ND	U	27000		ND	U	73000		410		ND	UJ-	ND	U
D-3	4/11/2013	280000		ND	U	ND	U	ND	U	30000		ND	U	83000		500		0.074	J	ND	U
D-3	7/9/2013	27000		ND	U	5.6	J	ND	U	38000		3.2	J	84000		600		ND	U	19	J
D-3	10/7/2013	280000		ND	U	ND	U	ND	U	34000		ND	U	79000		550		ND	U	ND	U
D-3 FD	8/8/2012	240000		ND	U	ND	U	ND	U	31000		ND	U	82000		460		ND	UJ-	ND	U
D-6	8/7/2012	180000		ND	U	ND	U	ND	U	14000		ND	U	46000		420		ND	U	ND	U
D-6	4/9/2013	240000		ND	U	ND	U	ND	U	18000		12	J	61000		570		0.066	J	ND	U
D-6	7/12/2013	220000		ND	U	ND	U	ND	U	18000		2.8	J	59000		460		0.15	U	14	J
D-6	10/8/2013	250000		ND	U	ND	U	ND	U	19000		ND	U	62000		560		ND	U	ND	U
D-6 FD	8/7/2012	200000		ND	U	ND	U	ND	U	16000		ND	U	54000		500		ND	U	ND	U
D-81	8/9/2012	230000		ND	U	ND	U	ND	U	18000		ND	U	57000		1100		ND	U	ND	U
D-81	4/3/2013	230000		ND	U	ND	U	ND	U	18000		ND	U	56000		1100		ND	U	ND	U
D-81	7/17/2013	220000		ND	U	ND	U	ND	U	14000		2.4	J	43000		810		ND	U	ND	U
D-81	10/3/2013	210000		ND	U	ND	U	ND	U	16000		ND	U	46000		860		ND	U	ND	U
D-81 FD	7/17/2013	210000		ND	U	ND	U	ND	U	14000		2.1	J	43000		810		ND	U	ND	U
D-83	8/9/2012	76000		ND	U	ND	U	ND	U	11000		ND	U	26000		260		ND	U	ND	U
D-83	4/9/2013	120000		ND	U	ND	U	ND	U	16000		ND	U	37000		370		ND	U	ND	U
D-83	7/11/2013	110000		ND	U	ND	U	ND	U	16000		2.9	J	38000		390		0.29		ND	U
D-83	10/8/2013	130000		ND	U	ND	U	ND	U	18000		ND	U	44000		440		ND	U	ND	U
D-83 FD	7/11/2013	110000		ND	U	ND	U	ND	U	16000		2.4	J	38000		380		0.13	J	ND	U
D-85	8/6/2012	240000		ND	U	ND	U	ND	U	50000		ND	U	66000		950		ND	UJ-	ND	U
D-85	4/11/2013	280000		ND	U	ND	U	ND	U	57000		8.5	J	69000		1100		ND	U	ND	U
D-85	7/10/2013	280000		ND	U	ND	U	ND	U	55000		4	J	68000		1000		ND	U	ND	U
D-85	10/9/2013	280000		ND	U	ND	U	ND	U	55000		11	U	68000		1000		ND	U	ND	U
D-87	8/1/2012	250000		ND	U	ND	U	ND	U	30000		ND	U	62000		530		ND	UJ-	18	J
D-87	4/9/2013	300000		ND	U	ND	U	ND	U	33000		ND	U	69000		610		0.069	J	ND	U
D-87	7/17/2013	300000		4.1	J	ND	U	ND	U	32000		2.9	J	66000		570		ND	U	16	J
D-87	10/2/2013	290000		ND	U	34		ND	U	34000		7.5		68000		640		ND	U	ND	U
D-87 FD	10/2/2013	300000		ND	U	ND	U	ND	U	35000		12		68000		630		ND	U	ND	U
D-93	8/14/2012	300000		ND	U	ND	U	ND	U	32000		ND	U	79000		900		ND	U	ND	U
D-93	4/9/2013	310000		ND	U	ND	U	ND	U	20000		ND	U	79000		410		0.065	J	ND	U
D-93	7/11/2013	290000		ND	U	ND	U	ND	U	20000		2.5	J	75000		400		0.19	J	ND	U
D-93	10/8/2013	310000		ND	U	ND	U	ND	U	22000		ND	U	82000		480		ND	U	ND	U
USGS-E1	11/7/2013	1200		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
USGS-B4-S	8/2/2013	120000		ND	U	5.9		ND	U	4500		1.9		24000		660		0.061		ND	U
USGS-B4-S	11/7/2013	130000		ND	U	30		ND	U	4800		ND	U	23000		740		ND	U	ND	U
USGS-B4-D	8/2/2013	100000		ND	U	4.5		ND	U	9600		1.7		21000		440		ND	U	ND	U
USGS-A5	11/7/2013	78000		ND	U	ND	U	ND	U	ND	U	ND	U	38000		ND	U	ND	U	ND	U
I-11	8/8/2012	190000		ND	U	ND	U	ND	U	22000		ND	U	64000		1200		ND	UJ-	ND	U
I-11	4/4/2013	270000		ND	U	ND	U	ND	U	34000		9.5	J	99000		2200		ND	U	ND	U
I-11	7/15/2013	240000		ND	U	ND	U	ND	U	30000		2.4	J	82000		1800		ND	U	15	J
I-11	10/1/2013	280000		ND	U	ND	U	ND	U	36000		ND	U	92000		2200		ND	U	ND	U
I-4	8/14/2012	150000		ND	U	ND	U	ND	U	31000		8	J	54000		880		ND	U	ND	U

Sample ID	DATE	Calcium(Dis)	Calcium(Dis)	Chromium(Dis)	Chromium(Dis)	COBALT(Dis)	COBALT(Dis)	COPPER(Dis)	COPPER(Dis)	IRON(Dis)	IRON(Dis)	Lead(Dis)	Lead(Dis)	Magnesium(Dis)	Magnesium(Dis)	MANGANESE(Dis)	MANGANESE(Dis)	MERCURY(Dis)	MERCURY(Dis)	NICKEL(Dis)	NICKEL(Dis)
I-4	4/12/2013	110000		ND	U	ND	U	ND	U	25000		ND	U	64000		570		0.06	J	ND	U
I-4	7/9/2013	120000		4.5	J	4.6	J	ND	U	30000		3.4	J	66000		480		ND	U	19	J
I-4	10/7/2013	60000		ND	U	ND	U	ND	U	14000		ND	U	38000		250		ND	U	ND	U
I-4 FD	7/9/2013	120000		3.8	J	6.3	J	ND	U	29000		3.6	U	66000		470		ND	U	19	J
I-62	8/9/2012	87000		ND	U	ND	U	ND	U	3800		ND	U	23000		400		ND	U	ND	U
I-62	4/4/2013	120000		ND	U	ND	U	ND	U	6500		ND	U	28000		520		0.061	J+	ND	U
I-62	7/12/2013	120000		ND	U	ND	U	ND	U	6700		2.2	J	29000		490		0.11	U	ND	U
I-62	10/1/2013	150000		ND	U	ND	U	ND	U	7600		ND	U	31000		550		ND	U	ND	U
I-62 FD	4/4/2013	120000		16	J	ND	U	ND	U	6500		ND	U	28000		520		ND	U	ND	U
I-62 FD	7/12/2013	110000		ND	U	ND	U	ND	U	6500		2	J	28000		470		0.12	U	ND	U
I-65	8/6/2012	150000		ND	U	ND	U	ND	U	ND	U	ND	U	21000		83		ND	UJ-	ND	U
I-65	4/16/2013	130000		ND	U	ND	U	ND	U	ND	U	1.6	J	17000		14	J	ND	U	ND	U
I-65	7/18/2013	130000		ND	U	ND	U	ND	U	ND	U	2.2	J	16000		34	J+	ND	UJ-	ND	U
I-65	10/15/2013	120000		ND	U	ND	U	ND	U	ND	U	ND	U	15000		100		ND	U	ND	U
I-65 FD	4/16/2013	130000		ND	U	ND	U	ND	U	ND	U	2.4	J	17000		13	J	ND	U	ND	U
I-65 FD	7/18/2013	120000		ND	U	ND	U	ND	U	ND	U	2.1	J	17000		35	J+	ND	UJ-	ND	U
I-66	8/10/2012	140000		ND	U	ND	U	ND	U	1900		ND	U	14000		3200		ND	U	ND	U
I-66	4/5/2013	180000		ND	U	7.3	J	ND	U	2100		3.6	J	17000		4700		ND	U	14	J
I-66	7/15/2013	160000		ND	U	5.1	J	ND	U	950		1.9	J	15000		4200		ND	U	ND	U
I-66	10/9/2013	160000		ND	U	ND	U	ND	U	1400		7.5		16000		4400		ND	U	ND	U
I-67	8/10/2012	220000		ND	U	ND	U	ND	U	5900		ND	U	33000		1100		ND	U	ND	U
I-67	4/5/2013	240000		ND	U	ND	U	ND	U	4400		2.4	J	35000		1200		ND	U	ND	U
I-67	7/12/2013	230000		ND	U	ND	U	ND	U	8700		2.1	J	37000		1400		0.13	U	ND	U
I-67	10/3/2013	250000		ND	U	ND	U	ND	U	7900		ND	U	37000		1500		ND	U	ND	U
I-67 FD	4/5/2013	250000		ND	U	ND	U	ND	U	4800		2.5	J	36000		1200		ND	U	ND	U
I-67 FD	10/3/2013	240000		ND	U	ND	U	ND	U	7800		7.5		35000		1400		ND	U	ND	U
I-68	8/6/2012	210000		ND	U	ND	U	ND	U	400	J	ND	U	53000		1400		ND	UJ-	ND	U
I-68	4/9/2013	210000		ND	U	ND	U	ND	U	410	J	11	J	54000		1700		0.061	J	ND	U
I-68	7/12/2013	150000		ND	U	11	J	ND	U	130		2	J	39000		1500		0.13	U	24	J
I-68	10/4/2013	210000		ND	U	ND	U	ND	U	490		9		48000		2000		ND	U	ND	U
I-73	8/4/2012	300000		ND	U	7.6	J	ND	U	32000		4.7	J	87000		1100		0.08	U	49	
I-73	4/12/2013	450000		ND	U	26	J	ND	U	47000		ND	U	120000		1700		0.076	J	100	J
I-73	7/19/2013	1100000		ND	U	190	J	ND	U	140000		38	J	280000		3800	J+	ND	UJ-	390	J
I-73	10/3/2013	960000		140		200		ND	U	140000		22		270000		1700		ND	U	710	
I-9	8/14/2012	290000		ND	U	ND	U	ND	U	18000		ND	U	73000		360		ND	U	ND	U
I-9	4/9/2013	270000		ND	U	ND	U	ND	U	34000		9	J	71000		1100		0.066	J	ND	U
I-9	7/11/2013	270000		ND	U	ND	U	ND	U	34000		2.9	J	69000		1200		0.18	J	13	J
I-9	10/8/2013	300000		ND	U	ND	U	ND	U	37000		ND	U	78000		1200		ND	U	ND	U
I-9 FD	8/14/2012	300000		ND	U	ND	U	ND	U	19000		ND	U	75000		370		ND	U	ND	U
I-9 FD	4/9/2013	290000		ND	U	ND	U	ND	U	35000		9.5	J	72000		1100		0.064	J	ND	U
I-9 FD	10/8/2013	300000		ND	U	ND	U	ND	U	38000		7.5		78000		1200		ND	U	ND	U
LR-100	8/13/2012	120000		ND	U	ND	U	ND	U	21000		ND	U	64000		190		ND	U	ND	U
LR-100	4/3/2013	110000		ND	U	ND	U	ND	U	20000		ND	U	65000		160		0.083	J+	ND	U
LR-100	7/17/2013	130000		6.1	J	ND	U	ND	U	21000		2.6	J	61000		170		ND	U	24	J
LR-100	10/4/2013	130000		ND	U	ND	U	ND	U	23000		9.5		63000		190		ND	U	ND	U
LR-100 FD	10/4/2013	130000		ND	U	34		ND	U	22000		ND	U	60000		180		ND	U	ND	U
LR-103	8/13/2012	250000		ND	U	ND	U	ND	U	37000		ND	U	60000		1000		ND	U	ND	U
LR-103	4/3/2013	320000		ND	U	ND	U	ND	U	40000		ND	U	70000		1200		ND	U	ND	U
LR-103	7/17/2013	280000		ND	U	ND	U	ND	U	34000		3.1	J	59000		980		ND	U	ND	U
LR-103	10/2/2013	280000		ND	U	ND	U	ND	U	38000		11		60000		920		ND	U	ND	U
LR-104	8/13/2012	280000		ND	U	ND	U	ND	U	17000		8	J	63000		1200		ND	U	ND	U
LR-104	4/4/2013	270000		ND	U	ND	U	ND	U	14000		ND	U	60000		1200		0.066	J+	ND	U
LR-104	7/22/2013	250000		ND	U	4.7	J	ND	U	13000		2.6	J	56000		1200		ND	UJ-	ND	U
LR-104	10/2/2013	260000		ND	U	ND	U	ND	U	14000		ND	U	54000		1200		ND	U	ND	U
LR-104 FD	8/13/2012	280000		ND	U	ND	U	ND	U	16000		7.5	J	61000		1200		ND	U	ND	U
LR-105	8/1/2012	77000		4.3	J	9.6	J	ND	U	15000		1.5	J	100000		52		ND	UJ-	100	
LR-105	4/3/2013	70000		17	J	ND	U	ND	U	13000		ND	U	110000		52	J	0.095	J+	120	J
MW-102	8/7/2012	350000		ND	U	ND	U	ND	U	5700		ND	U	82000		1600		ND	U	ND	U
MW-102	7/15/2013	260000		ND	U	ND	U	ND	U	5000		1.6	J	82000		2600		ND	U	ND	U

Sample ID	DATE	Calcium(Dis)	Calcium(Dis)	Chromium(Dis)	Chromium(Dis)	COBALT(Dis)	COBALT(Dis)	COPPER(Dis)	COPPER(Dis)	IRON(Dis)	IRON(Dis)	Lead(Dis)	Lead(Dis)	Magnesium(Dis)	Magnesium(Dis)	MANGANESE(Dis)	MANGANESE(Dis)	MERCURY(Dis)	MERCURY(Dis)	NICKEL(Dis)	NICKEL(Dis)
MW-102	10/3/2013	390000		ND	U	27		ND	U	ND	U	ND	U	100000		1400		ND	U	ND	U
MW-103	8/11/2012	170000		ND	U	ND	U	ND	U	ND	U	ND	U	49000		730		ND	U	ND	U
MW-103	4/5/2013	160000		ND	U	ND	U	ND	U	210		1.7	J	43000		510		ND	U	13	J
MW-103	7/15/2013	140000		ND	U	ND	U	ND	U	ND	U	1.9	J	35000		880		ND	U	ND	U
MW-103	10/4/2013	140000		ND	U	ND	U	ND	U	1400		ND	U	36000		1100		ND	U	ND	U
MW-104	8/9/2012	250000		ND	U	ND	U	ND	U	50000		ND	U	89000		4400		ND	U	ND	U
MW-104	4/5/2013	230000		ND	U	ND	U	ND	U	16000		4.1	J	76000		3700		ND	U	ND	U
MW-104	7/16/2013	210000		ND	U	ND	U	ND	U	16000		1.7	J	62000		2400		ND	U	ND	U
MW-104	10/3/2013	260000		ND	U	ND	U	ND	U	30000		ND	U	76000		3400		ND	U	ND	U
MW-1204	8/2/2012	100000		ND	U	ND	U	ND	U	5100		ND	U	52000		100		0.061	J	ND	U
MW-1204	4/12/2013	120000		ND	U	ND	U	ND	U	4800		ND	U	59000		100		ND	U	ND	U
MW-1204	7/11/2013	300000		32		ND	U	ND	U	12000		2.4	J	130000		110		0.31		ND	U
MW-1204	10/11/2013	1700000	J	220	J	84	J	ND	UJ	130000	J	ND	UJ	280000	J	6400	J	ND	U	ND	UJ
MW-1204 FD	4/12/2013	130000		ND	U	ND	U	ND	U	5000		ND	U	61000		98		ND	U	ND	U
PURGE TANK	8/16/2012																				
PURGE TANK	4/16/2013	87000		ND	U	4.1	J	ND	U	ND	U	2.4	J	52000		6.9	J	ND	U	ND	U
PURGE TANK	7/23/2013																				
PURGE TANK	7/24/2013	40000		5	J	5.5	J	ND	U	ND	U	ND	U	43000		27		ND	U	ND	U
PURGE TANK	11/8/2013	33000		ND	U	ND	U	ND	U	ND	U	ND	U	51000		ND	U	ND	U	ND	U
PZ-100-KS	8/16/2012	21000		ND	U	ND	U	ND	U	ND	U	ND	U	12000	J-	18	J	ND	U	ND	U
PZ-100-KS	4/16/2013	21000		ND	U	ND	U	ND	U	32	J	1.5	J	13000		21		ND	U	ND	U
PZ-100-KS	7/23/2013	20000		4.8	J	ND	U	ND	U	50	J	ND	U	13000		17		ND	UJ-	ND	U
PZ-100-KS	10/15/2013	23000		ND	U	ND	U	ND	U	ND	U	ND	U	13000		17		ND	U	ND	U
PZ-100-SD	7/31/2012	78000		ND	U	ND	U	ND	U	1400		2.4	J	36000		73		ND	U	ND	U
PZ-100-SD	4/5/2013	85000		ND	U	ND	U	ND	U	1100		2.3	J	36000		72		ND	U	ND	U
PZ-100-SD	7/9/2013	84000		ND	U	ND	U	ND	U	820		1.8	J	36000		66		ND	U	ND	U
PZ-100-SD	10/8/2013	94000		ND	U	ND	U	ND	U	820		ND	U	37000		73		ND	U	ND	U
PZ-100-SS	7/31/2012	89000		ND	U	ND	U	ND	U	ND	U	ND	U	48000		ND	U	0.083	J	18	J
PZ-100-SS	4/5/2013	100000		ND	U	ND	U	ND	U	ND	U	2	J	52000		ND	U	ND	U	20	J
PZ-100-SS	7/9/2013	100000		4.8	J	ND	U	ND	U	ND	U	ND	U	55000		ND	U	ND	U	17	J
PZ-100-SS	10/8/2013	110000		ND	U	ND	U	ND	U	ND	U	ND	U	52000		ND	U	ND	U	ND	U
PZ-101-SS	8/7/2012	140000		ND	U	ND	U	ND	U	890		ND	U	69000		62	J	ND	U	ND	U
PZ-101-SS	4/12/2013	160000		ND	U	ND	U	ND	U	3000		ND	U	96000		57	J	0.073	J-	ND	U
PZ-101-SS	7/11/2013	150000		3.5	J	ND	U	ND	U	ND	U	2.1	J	90000		68		0.17	J	15	J
PZ-101-SS	10/8/2013	190000		ND	U	26	J+	ND	U	1100		ND	U	100000		85		ND	U	ND	U
PZ-102R-SS	8/13/2012	120000		ND	U	ND	U	ND	U	1100		ND	U	43000		35	J	ND	U	ND	U
PZ-102R-SS	4/11/2013	120000		ND	U	ND	U	ND	U	220	J	ND	U	46000		ND	U	ND	U	ND	U
PZ-102R-SS	7/19/2013	120000		ND	U	ND	U	ND	U	ND	UJ	ND	U	42000		23	J+	ND	UJ-	ND	U
PZ-102R-SS	10/8/2013	140000		ND	U	ND	U	ND	U	ND	U	ND	U	43000		ND	U	ND	U	ND	U
PZ-102-SS	8/13/2012	100000		ND	U	ND	U	ND	U	2900		8.5	J	39000		290		ND	U	ND	U
PZ-102-SS	4/11/2013	110000		ND	U	ND	U	ND	U	3500		ND	U	42000		260		ND	U	ND	U
PZ-102-SS	7/19/2013	110000		ND	U	ND	U	ND	U	1700	J	2.5	J	40000		190	J	ND	UJ-	ND	U
PZ-102-SS	10/8/2013	130000		ND	U	26	J+	ND	U	870		ND	U	43000		230		ND	U	ND	U
PZ-103-SS	8/7/2012	110000		ND	U	ND	U	ND	U	18000		ND	U	55000		120		ND	U	ND	U
PZ-103-SS	4/8/2013	140000		ND	U	ND	U	ND	U	18000		ND	U	66000		350		ND	U	ND	U
PZ-103-SS	7/19/2013	110000		ND	U	ND	U	ND	U	11000		2.7	J	58000		270	J	ND	UJ-	ND	U
PZ-103-SS	10/4/2013	150000		ND	U	ND	U	ND	U	14000		7.5		55000		330		ND	U	ND	U
PZ-104-KS	8/13/2012																				
PZ-104-KS	8/15/2012	72000		ND	U	ND	U	ND	U	560		ND	U	35000	J-	ND	U	ND	U	ND	U
PZ-104-KS	4/11/2013	75000		ND	U	ND	U	ND	U	810		ND	U	37000		19	J	ND	U	ND	U
PZ-104-KS	7/18/2013	74000		ND	U	ND	U	ND	U	430		2	J	35000		11	U	ND	UJ-	ND	U
PZ-104-KS	10/4/2013	80000		ND	U	36		ND	U	440		ND	U	34000		ND	U	ND	U	ND	U
PZ-104-SD	8/1/2012	160000		17		8.4	J	ND	U	28000		1.7	J	85000		190		ND	UJ-	52	
PZ-104-SD	4/11/2013	120000		19	J	ND	U	ND	U	7900		ND	U	65000		160		0.067	J	ND	U
PZ-104-SD	7/11/2013	140000		19		5.8	J	ND	U	14000		1.6	J	71000		160		0.16	J	36	J
PZ-104-SD	10/7/2013	130000		ND	U	ND	U	ND	U	8700		ND	U	63000		170		ND	U	ND	U
PZ-104-SS	8/1/2012	93000		ND	U	ND	U	ND	U	2400		ND	U	53000		65		ND	UJ-	ND	U
PZ-104-SS	4/11/2013	93000		ND	U	ND	U	ND	U	2100		ND	U	52000		51	J	ND	U	ND	U
PZ-104-SS	7/11/2013	89000		3.2	J	ND	U	ND	U	1800		ND	U	49000		39		0.064	J	ND	U

Sample ID	DATE	Calcium(Dis)	Calcium(Dis)	Chromium(Dis)	Chromium(Dis)	COBALT(Dis)	COBALT(Dis)	COPPER(Dis)	COPPER(Dis)	IRON(Dis)	IRON(Dis)	Lead(Dis)	Lead(Dis)	Magnesium(Dis)	Magnesium(Dis)	MANGANESE(Dis)	MANGANESE(Dis)	MERCURY(Dis)	MERCURY(Dis)	NICKEL(Dis)	NICKEL(Dis)
PZ-104-SS	10/9/2013	96000		ND	U	35		ND	U	1400		ND	U	49000		40		ND	U	ND	U
PZ-104-SS FD	4/11/2013	94000		ND	U	ND	U	ND	U	2100		ND	U	53000		48	J	0.062	J	ND	U
PZ-105-SS	8/1/2012	100000		ND	U	ND	U	ND	U	140		ND	U	53000		6.1	U	ND	UJ-	ND	U
PZ-105-SS	4/4/2013	100000		ND	U	ND	U	ND	U	210	J	ND	U	54000		ND	U	ND	U	ND	U
PZ-105-SS	7/12/2013	98000		9	J	ND	U	ND	U	210		1.8	J	48000		6.1	J	0.098	U	ND	U
PZ-105-SS	10/9/2013	100000		ND	U	ND	U	ND	U	ND	U	9.5		49000		ND	U	ND	U	ND	U
PZ-106-KS	8/14/2012	57000		ND	U	ND	U	ND	U	330	J	ND	U	37000		ND	U	ND	U	ND	U
PZ-106-KS	4/15/2013	60000		ND	U	5.1	J	ND	U	380		ND	U	36000		10	J	ND	U	ND	U
PZ-106-KS	7/19/2013	56000		ND	U	4.6	J	ND	U	220	J	2.1	J	36000		4.1	UJ	ND	UJ-	ND	U
PZ-106-KS	10/11/2013	61000		ND	U	ND	U	ND	U	240		ND	U	37000		ND	U	ND	U	ND	U
PZ-106-KS FD	10/11/2013	220000	R	ND	R	ND	R	ND	R	12000	R	9.5	R	80000	R	1100	R	ND	U	ND	R
PZ-106-SD	7/31/2012	98000		ND	U	ND	U	ND	U	620		1.9	J	48000		69		ND	U	ND	U
PZ-106-SD	4/9/2013	110000		ND	U	ND	U	ND	U	1100		ND	U	52000		120		0.062	J	ND	U
PZ-106-SD	7/10/2013	99000		ND	U	ND	U	ND	U	430		ND	U	48000		67		ND	U	ND	U
PZ-106-SD	10/8/2013	110000		ND	U	ND	U	ND	U	570		ND	U	50000		70		ND	U	ND	U
PZ-106-SS	7/31/2012	99000		ND	U	ND	U	ND	U	510		2.1	J	46000		14	U	ND	U	ND	U
PZ-106-SS	4/9/2013	110000		ND	U	ND	U	ND	U	820		ND	U	50000		31	J	0.066	J	ND	U
PZ-106-SS	7/10/2013	98000		ND	U	ND	U	ND	U	610		1.6	J	49000		26		ND	U	ND	U
PZ-106-SS	10/7/2013	110000		ND	U	ND	U	ND	U	590		ND	U	47000		20		ND	U	ND	U
PZ-107-SS	8/3/2012	220000		ND	U	ND	U	ND	U	2400		4.1	J	110000		120		0.067	U	40	
PZ-107-SS	8/4/2012																				
PZ-107-SS	4/12/2013	240000		ND	U	ND	U	ND	U	2200		9	J	120000		170		0.061	J	ND	U
PZ-107-SS	7/19/2013	240000		ND	U	ND	U	ND	U	1500		2.8	J	120000		170	J	ND	UJ-	41	
PZ-107-SS	10/3/2013	270000		18		ND	U	ND	U	540		8.5		120000		380		ND	U	ND	U
PZ-107-SS FD	7/19/2013	250000		3.1	J	ND	U	ND	U	1500		2.8	J	120000		170	J	ND	UJ-	42	
PZ-109-SS	8/2/2012	89000		ND	U	ND	U	ND	U	ND	U	ND	U	55000		ND	U	0.075	J	ND	U
PZ-109-SS	4/11/2013	93000		ND	U	ND	U	ND	U	ND	U	ND	U	56000		ND	U	ND	U	ND	U
PZ-109-SS	7/10/2013	95000		ND	U	ND	U	ND	U	ND	U	1.8	J	54000		ND	U	ND	U	ND	U
PZ-109-SS	10/9/2013	110000		ND	U	ND	U	ND	U	ND	U	8	U	61000		ND	U	ND	U	ND	U
PZ-110-SS	8/2/2012	250000		ND	U	ND	U	ND	U	6500		3.3	J	92000		210		0.074	J	23	J
PZ-110-SS	4/4/2013	250000		ND	U	ND	U	ND	U	6800		ND	U	92000		210		ND	U	ND	U
PZ-110-SS	7/9/2013	240000		ND	U	ND	U	ND	U	7000		1.9	J	89000		190		ND	U	17	J
PZ-110-SS	10/8/2013	270000		ND	U	ND	U	ND	U	7200		9.5		90000		210		ND	U	ND	U
PZ-111-KS	8/13/2012	9300		ND	U	ND	U	ND	U	140	J	ND	U	6100		ND	U	ND	U	ND	U
PZ-111-KS	4/9/2013	9900		ND	U	ND	U	ND	U	170	J	ND	U	6400		ND	U	ND	U	ND	U
PZ-111-KS	7/17/2013	8800		ND	U	ND	U	ND	U	160		ND	U	5700		3.3	J	ND	U	ND	U
PZ-111-KS	10/3/2013	10000		ND	U	ND	U	ND	U	ND	U	ND	U	6000		ND	U	ND	U	ND	U
PZ-111-SD	8/1/2012	99000		ND	U	ND	U	ND	U	ND	U	ND	U	58000		ND	U	ND	UJ-	ND	U
PZ-111-SD	4/4/2013	99000		ND	U	ND	U	ND	U	ND	U	ND	U	56000		ND	U	0.077	J+	ND	U
PZ-111-SD	7/9/2013	95000		ND	U	ND	U	ND	U	ND	U	ND	U	53000		ND	U	ND	U	ND	U
PZ-111-SD	10/7/2013	100000		ND	U	ND	U	ND	U	ND	U	ND	U	53000		ND	U	ND	U	ND	U
PZ-112-AS	8/8/2012	120000		ND	U	ND	U	ND	U	37000		ND	U	73000		220		ND	UJ-	ND	U
PZ-112-AS	4/12/2013	110000		ND	U	ND	U	ND	U	31000		ND	U	62000		170		ND	U	ND	U
PZ-112-AS	7/9/2013	130000		4.1	J	ND	U	ND	U	38000		3	U	69000		200		ND	U	14	J
PZ-112-AS	10/2/2013	130000		ND	U	ND	U	ND	U	39000		11		67000		220		ND	U	ND	U
PZ-113-AD	8/3/2012	250000		ND	U	5.1	J	ND	U	30000		3.4	J	73000		570		0.076	U	16	J
PZ-113-AD	4/11/2013	280000		ND	U	ND	U	ND	U	35000		ND	U	86000		650		0.083	J	ND	U
PZ-113-AD	7/10/2013	280000		ND	U	ND	U	ND	U	34000		3.1	J	81000		610		ND	U	20	J
PZ-113-AD	10/7/2013	290000		ND	U	30		ND	U	36000		8.5		87000		660		ND	U	ND	U
PZ-113-AD FD	8/3/2012	280000		ND	U	ND	U	ND	U	30000		4.6	J	78000		560		0.061	U	17	J
PZ-113-AD FD	7/10/2013	290000		ND	U	ND	U	ND	U	36000		3.6	J	84000		630		ND	U	21	J
PZ-113-AD FD	10/7/2013	290000		ND	U	ND	U	ND	U	36000		ND	U	86000		650		ND	U	ND	U
PZ-113-AS	8/8/2012	180000		ND	U	ND	U	ND	U	6700		ND	U	51000		6400		ND	UJ-	ND	U
PZ-113-AS	4/12/2013	190000		ND	U	ND	U	ND	U	4200		ND	U	52000		5500		ND	U	ND	U
PZ-113-AS	7/10/2013	180000		ND	U	11	J	ND	U	5500		2.7	J	49000		5400		ND	U	29	J
PZ-113-AS	10/2/2013	200000		ND	U	25		ND	U	11000		8		50000		6300		ND	U	ND	U
PZ-113-SS	8/4/2012	54000		ND	U	ND	U	ND	U	92		2.5	J	30000		32		0.081	U	ND	U
PZ-113-SS	4/12/2013	59000		ND	U	ND	U	ND	U	ND	U	ND	U	32000		37	J	ND	U	ND	U
PZ-113-SS	7/11/2013	55000		ND	U	ND	U	ND	U	54	J	ND	U	31000		26		ND	U	ND	U

Sample ID	DATE	Calcium(Dis)		Chromium(Dis)		COBALT(Dis)		COPPER(Dis)		IRON(Dis)		Lead(Dis)		Magnesium(Dis)		MANGANESE(Dis)		MERCURY(Dis)		NICKEL(Dis)	
PZ-113-SS	10/3/2013	63000		ND	U	ND	U	ND	U	ND	U	ND	U	30000		35		ND	U	ND	U
PZ-114-AS	7/31/2012	220000		ND	U	7.3	J	ND	U	80000		3.2	J	69000		4100		ND	U	ND	U
PZ-114-AS	4/8/2013	230000		ND	U	ND	U	ND	U	91000		12	J	72000		3300		ND	U	ND	U
PZ-114-AS	7/12/2013	150000		ND	U	ND	U	ND	U	72000		4.9	J	40000		2000		0.16	U	ND	U
PZ-114-AS	10/8/2013	150000		21		26	J+	ND	U	74000		15		36000		1900		ND	U	ND	U
PZ-115-SS	7/31/2012	130000		ND	U	5.6	J	ND	U	1500		3.6	J	61000		45		ND	U	24	J
PZ-115-SS	4/5/2013	170000		ND	U	13	J	ND	U	1200		3.3	J	77000		63		ND	U	39	J
PZ-115-SS	7/11/2013	180000		ND	U	20	J	ND	U	1600		1.8	J	79000		51		0.16	J	44	
PZ-115-SS	10/8/2013	200000		ND	U	31	J+	ND	U	1300		ND	U	80000		51		ND	U	ND	U
PZ-116-SS	8/3/2012	37000		ND	U	ND	U	ND	U	ND	U	3.3	J	27000		ND	U	0.066	U	ND	U
PZ-116-SS	4/12/2013	43000		ND	U	ND	U	ND	U	ND	U	ND	U	28000		ND	U	ND	U	ND	U
PZ-116-SS	7/11/2013	40000		ND	U	ND	U	ND	U	ND	U	ND	U	29000		ND	U	0.19	J	ND	U
PZ-116-SS	10/11/2013	46000		ND	U	28		ND	U	ND	U	ND	U	31000		ND	U	ND	U	ND	U
PZ-200-SS	8/2/2012	200000		ND	U	ND	U	ND	U	7800		2.3	J	79000		3200		0.077	J	ND	U
PZ-200-SS	4/5/2013	230000		ND	U	7.6	J	ND	U	6000		4.9	J	93000		6500		ND	U	15	J
PZ-200-SS	7/19/2013	210000		ND	U	ND	U	ND	U	7300		3.9	J	98000		6800	J	ND	UJ-	ND	U
PZ-200-SS	10/2/2013	230000		ND	U	ND	U	ND	U	9500		ND	U	97000		5800		ND	U	ND	U
PZ-200-SS FD	8/2/2012	200000		ND	U	ND	U	ND	U	7400		1.8	J	76000		2600		ND	U	ND	U
PZ-201A-SS	8/1/2012	98000		ND	U	ND	U	5.1	J	220		1.7	J	50000		38		ND	UJ-	ND	U
PZ-201A-SS	4/8/2013	110000		ND	U	ND	U	ND	U	ND	U	ND	U	49000		ND	U	ND	U	ND	U
PZ-201A-SS	7/10/2013	100000		ND	U	ND	U	ND	U	ND	U	2.4	J	47000		4.5	J	ND	U	ND	U
PZ-201A-SS	10/9/2013	120000		ND	U	ND	U	ND	U	ND	U	ND	U	49000		ND	U	ND	U	ND	U
PZ-201A-SS FD	8/1/2012	97000		ND	U	ND	U	5.8	J	170		1.6	J	50000		38		ND	UJ-	ND	U
PZ-202-SS	8/2/2012	110000		ND	U	ND	U	ND	U	1700		2.4	J	40000		590		ND	U	ND	U
PZ-202-SS	4/12/2013	140000		ND	U	ND	U	ND	U	1800		ND	U	51000		610		ND	U	ND	U
PZ-202-SS	7/11/2013	200000		ND	U	6.3	J	ND	U	4900		2.9	J	76000		870		0.2		20	J
PZ-202-SS	10/11/2013	210000		ND	U	29		ND	U	11000		8.5	U	78000		1100		ND	U	ND	U
PZ-203-SS	8/1/2012	97000		ND	U	ND	U	ND	U	130		ND	U	42000		20	J+	ND	UJ-	ND	U
PZ-203-SS	4/5/2013	100000		ND	U	5	J	ND	U	210		ND	U	43000		25		ND	U	ND	U
PZ-203-SS	7/17/2013	100000		3.1	J	ND	U	ND	U	140		ND	U	39000		18		ND	U	ND	U
PZ-203-SS	10/2/2013	100000		ND	U	ND	U	ND	U	270		ND	U	40000		22		ND	U	ND	U
PZ-204A-SS	8/2/2012	170000		ND	U	ND	U	ND	U	2500		1.5	J	35000		1000		0.063	J	ND	U
PZ-204A-SS	4/8/2013	220000		ND	U	ND	U	ND	U	4000		ND	U	51000		2000		0.06	J	ND	U
PZ-204A-SS	7/16/2013	290000		4.5	J	8.3	J	ND	U	7000		2.6	J	69000		2100		ND	U	17	J
PZ-204A-SS	10/8/2013	310000		17		25	J+	ND	U	8600		ND	U	88000		2000		ND	U	ND	U
PZ-204-SS	8/3/2012	65000		ND	U	ND	U	ND	U	550		3.1	J	47000		90		ND	U	ND	U
PZ-204-SS	4/9/2013	73000		ND	U	ND	U	ND	U	720		ND	U	50000		100		ND	U	ND	U
PZ-204-SS	7/17/2013	81000		4	J	ND	U	ND	U	2500		2.8	J	49000		100		ND	U	ND	U
PZ-204-SS	10/8/2013	88000		ND	U	ND	U	ND	U	340		ND	U	53000		110		ND	U	ND	U
PZ-205-AS	8/3/2012	310000		ND	U	ND	U	ND	U	30000		5.4	J	80000		580		0.081	U	17	J
PZ-205-AS	4/8/2013	310000		ND	U	ND	U	ND	U	32000		11	J	80000		590		0.062	J	ND	U
PZ-205-AS	7/18/2013	290000		ND	U	5.5	J	ND	U	50000		3.4	J	76000		1600		ND	UJ-	24	J
PZ-205-AS	10/15/2013	310000		ND	U	ND	U	ND	U	45000		ND	U	80000		740		ND	U	ND	U
PZ-205-SS	8/3/2012	110000		ND	U	ND	U	ND	U	77	U	1.6	J	48000		ND	U	ND	U	ND	U
PZ-205-SS	4/8/2013	110000		ND	U	ND	U	ND	U	ND	U	ND	U	59000		ND	U	0.064	J	ND	U
PZ-205-SS	7/10/2013	110000		ND	U	ND	U	ND	U	ND	U	1.9	J	58000		ND	U	ND	U	ND	U
PZ-205-SS	10/9/2013	120000		ND	U	ND	U	ND	U	ND	U	9.5		58000		ND	U	ND	U	ND	U
PZ-206-SS	8/7/2012	110000		ND	U	ND	U	ND	U	200	J	ND	U	68000		51	J	ND	U	ND	U
PZ-206-SS	4/8/2013	110000		ND	U	ND	U	ND	U	180	J	ND	U	68000		33	J	ND	U	ND	U
PZ-206-SS	7/18/2013	110000		ND	U	ND	U	ND	U	ND	U	1.7	J	69000		19	J+	ND	UJ-	ND	U
PZ-206-SS	10/7/2013	130000		ND	U	ND	U	ND	U	ND	U	ND	U	73000		22		ND	U	ND	U
PZ-207-AS	8/8/2012	140000		ND	U	ND	U	ND	U	19000		ND	U	90000		66	J	ND	UJ-	200	
PZ-207-AS	4/3/2013	140000		ND	U	ND	U	ND	U	20000		ND	U	82000		100		0.099	J+	ND	U
PZ-207-AS	7/18/2013	130000		ND	U	6.5	J	ND	U	20000		3.5	J	78000		66		ND	UJ-	18	J
PZ-207-AS	10/4/2013	150000		ND	U	24		ND	U	22000		ND	U	83000		69		ND	U	ND	U
PZ-208-SS	8/2/2012	100000		ND	U	ND	U	ND	U	65	J	1.9	J	51000		28		ND	U	ND	U
PZ-208-SS	4/12/2013	100000		ND	U	ND	U	ND	U	ND	U	ND	U	48000		29	J	ND	U	ND	U
PZ-208-SS	7/16/2013	110000		3.7	J	ND	U	ND	U	720		2.4	J	45000		20		ND	U	ND	U
PZ-208-SS	10/8/2013	130000		ND	U	ND	U	ND	U	ND	U	12		51000		28		ND	U	ND	U

Sample ID	DATE	Calcium(Dis)	Calcium(Dis)	Chromium(Dis)	Chromium(Dis)	COBALT(Dis)	COBALT(Dis)	COPPER(Dis)	COPPER(Dis)	IRON(Dis)	IRON(Dis)	Lead(Dis)	Lead(Dis)	Magnesium(Dis)	Magnesium(Dis)	MANGANESE(Dis)	MANGANESE(Dis)	MERCURY(Dis)	MERCURY(Dis)	NICKEL(Dis)	NICKEL(Dis)
PZ-209-SD	11/7/2013	55000		ND	U	ND	U	ND	U	ND	U	ND	U	29000		39		ND	U	ND	U
PZ-209-SS	11/7/2013	110000		ND	U	ND	U	ND	U	ND	U	ND	U	51000		180		ND	U	ND	U
PZ-210-SD	11/6/2013	89000		23		30		ND	U	2100	J+	11		49000		51		ND	U	ND	U
PZ-210-SD FD	11/6/2013	93000		28		26		ND	U	5800	J+	25		52000		63		ND	U	ND	U
PZ-210-SS	11/7/2013	87000		ND	U	ND	U	ND	U	ND	U	8		37000		83		ND	U	ND	U
PZ-211-SD	11/6/2013	46000		19		39		ND	U	11000	J+	44		22000		59		ND	U	ND	U
PZ-211-SS	11/7/2013	76000		ND	U	ND	U	ND	U	ND	U	ND	U	40000		21		ND	U	ND	U
PZ-212-SD	11/7/2013	92000		ND	U	ND	U	ND	U	ND	U	ND	U	38000		280		ND	U	ND	U
PZ-212-SS	11/7/2013	110000		ND	U	ND	U	ND	U	ND	U	ND	U	48000		28		ND	U	ND	U
PZ-302-AI	8/9/2012	180000		ND	U	ND	U	ND	U	1700		ND	U	52000		210		ND	U	ND	U
PZ-302-AI	4/3/2013	210000		ND	U	ND	U	ND	U	2700		ND	U	58000		280		ND	U	ND	U
PZ-302-AI	7/16/2013	210000		ND	U	5.7	J	ND	U	1500		1.8	J	52000		210		ND	U	21	J
PZ-302-AI	10/3/2013	210000		ND	U	ND	U	ND	U	1700		9.5		54000		250		ND	U	ND	U
PZ-302-AS	7/16/2013	260000		ND	U	5.9	U	ND	U	130000		7.1	J	84000		13000		ND	U	19	J
PZ-302-AS	10/8/2013	280000		17		26		ND	U	77000		8.5		90000		4800		ND	U	ND	U
PZ-303-AS	8/10/2012	310000		ND	U	ND	U	ND	U	66000		8	J	67000		1700		ND	U	ND	U
PZ-303-AS	4/4/2013	300000		ND	U	ND	U	ND	U	66000		ND	U	74000		1100		ND	U	ND	U
PZ-303-AS	7/15/2013	370000		ND	U	7.5	J	ND	U	120000		5.4	J	80000		2400		ND	U	18	J
PZ-303-AS	10/4/2013	400000		ND	U	21		ND	U	88000		9		81000		3800		ND	U	ND	U
PZ-304-AI	8/10/2012	240000		ND	U	ND	U	ND	U	17000		ND	U	71000		1300		ND	U	ND	U
PZ-304-AI	4/4/2013	250000		ND	U	ND	U	ND	U	16000		ND	U	72000		1300		0.087	J+	ND	U
PZ-304-AI	7/16/2013	210000		ND	U	ND	U	ND	U	15000		2.6	J	59000		990		ND	U	22	J
PZ-304-AI	10/1/2013	210000		ND	U	ND	U	ND	U	19000		ND	U	63000		1000		ND	U	ND	U
PZ-304-AI FD	10/1/2013	210000		ND	U	ND	U	ND	U	19000		ND	U	64000		1000		ND	U	ND	U
PZ-304-AS	8/10/2012	100000		ND	U	ND	U	ND	U	24000		ND	U	66000		92		ND	U	ND	U
PZ-304-AS	4/4/2013	120000		ND	U	ND	U	ND	U	28000		ND	U	81000		120		0.1	J+	77	J
PZ-304-AS	7/16/2013	120000		3.2	J	4.9	J	ND	U	25000		3.1	J	71000		110		ND	U	54	
PZ-304-AS	10/1/2013	140000		ND	U	ND	U	ND	U	31000		ND	U	86000		130	J+	ND	U	ND	U
PZ-305-AI	8/8/2012	260000		ND	U	ND	U	ND	U	38000		ND	U	82000		4000		ND	UJ-	ND	U
PZ-305-AI	4/5/2013	290000		ND	U	ND	U	ND	U	34000		4.8	J	78000		3100		ND	U	ND	U
PZ-305-AI	7/22/2013	280000		ND	U	ND	U	ND	U	46000		4	J	78000		3500		ND	UJ-	ND	U
PZ-305-AI	10/2/2013	300000		ND	U	ND	U	ND	U	40000		8		77000		3300		ND	U	ND	U
PZ-305-AI FD	4/5/2013	290000		ND	U	4.1	J	ND	U	34000		5.2	J	77000		3100		ND	U	ND	U
USGS-B3	11/7/2013	110000		ND	U	ND	U	ND	U	4300		ND	U	21000		240		ND	U	ND	U
USGS-D1	11/20/2013	140000		ND	U	ND	U	31		ND	U	8		47000		ND	U	ND	U	ND	U
S-10	8/8/2012	320000		ND	U	ND	U	ND	U	61000		ND	U	150000		2800		ND	UJ-	ND	U
S-10	4/4/2013	250000		ND	U	ND	U	ND	U	130000		8.5	J	150000		7800		0.1	J+	ND	U
S-10	7/15/2013	280000		ND	U	ND	U	ND	U	64000		4	J	100000		2300		ND	U	14	J
S-10	10/1/2013	440000		ND	U	ND	U	ND	U	130000		10		220000		7900		ND	U	ND	U
S-5	8/14/2012	39000		ND	U	ND	U	ND	U	11000		ND	U	56000		110		ND	U	ND	U
S-5	4/11/2013	66000		ND	U	ND	U	ND	U	18000		9	J	59000		240		0.064	J	ND	U
S-5	7/9/2013	62000		8.9	J	12	J	ND	U	18000		2.5	J	65000		160		ND	U	39	J
S-5	10/7/2013	35000		ND	U	ND	U	ND	U	9900		ND	U	40000		90		ND	U	ND	U
S-53	4/12/2013	200000		ND	U	ND	U	ND	U	1500		ND	U	42000		6200		ND	U	ND	U
S-53	7/18/2013	200000		ND	U	7	J	ND	U	ND	U	2.7	J	46000		2300		ND	UJ-	ND	U
S-53	10/15/2013	150000		ND	U	ND	U	ND	U	ND	U	ND	U	35000		2000		ND	U	ND	U
S-61	8/7/2012	150000		ND	U	ND	U	ND	U	ND	U	9	J	30000		580		ND	U	ND	U
S-61	4/5/2013	160000		ND	U	5.8	J	ND	U	430		4.4	J	33000		670		ND	U	16	J
S-61	7/12/2013	180000		ND	U	4.1	J	ND	U	44	J	2.5	J	38000		680		0.13	U	14	J
S-61	10/3/2013	180000		ND	U	ND	U	ND	U	ND	U	ND	U	35000		570		ND	U	ND	U
S-8	8/9/2012	89000		ND	U	ND	U	ND	U	920		ND	U	15000		880		ND	U	ND	U
S-8	4/4/2013	130000		ND	U	ND	U	ND	U	480	J	ND	U	23000		1200		0.092	J+	ND	U
S-8	7/12/2013	97000		ND	U	ND	U	ND	U	220		1.8	J	15000		330		0.076	U	ND	U
S-8	10/1/2013	120000		ND	U	ND	U	ND	U	250	U	ND	U	16000		550		ND	U	ND	U
S-82	8/10/2012	170000		ND	U	ND	U	ND	U	32000		ND	U	64000		1800		ND	U	ND	U
S-82	4/9/2013	190000		ND	U	ND	U	ND	U	39000		9	J	80000		1700		0.068	J	ND	U
S-82	7/11/2013	200000		ND	U	9.9	J	ND	U	37000		3.3	J	81000		2100		0.23		25	J
S-82	10/8/2013	220000		18		25	J+	ND	U	38000		8		75000		1600		ND	U	ND	U
S-84	8/6/2012	140000		ND	U	28	J	ND	U	48000		ND	U	50000		1900		ND	UJ-	ND	U

Sample ID	DATE	Calcium(Dis)	Calcium(Dis)	Chromium(Dis)	Chromium(Dis)	COBALT(Dis)	COBALT(Dis)	COPPER(Dis)	COPPER(Dis)	IRON(Dis)	IRON(Dis)	Lead(Dis)	Lead(Dis)	Magnesium(Dis)	Magnesium(Dis)	MANGANESE(Dis)	MANGANESE(Dis)	MERCURY(Dis)	MERCURY(Dis)	NICKEL(Dis)	NICKEL(Dis)
S-84	4/11/2013	150000		ND	U	ND	U	ND	U	62000		11	J	51000		2000		ND	U	ND	U
S-84	7/10/2013	160000		ND	U	15	J	ND	U	66000		4.4	J	53000		1900		ND	U	25	J
S-84	10/9/2013	170000		ND	U	29		ND	U	72000		16		56000		1900		ND	U	ND	U
S-84 FD	10/9/2013	170000		ND	U	ND	U	ND	U	70000		16	U	55000		1900		ND	U	ND	U

Sample ID	DATE	Potassium(Dis)	Potassium(Dis)	SELENIUM(Dis)	SELENIUM(Dis)	Silver(Dis)	Silver(Dis)	Sodium(Dis)	Sodium(Dis)	STRONTIUM(Dis)	STRONTIUM(Dis)	THALLIUM(Dis)	THALLIUM(Dis)	VANADIUM(Dis)	VANADIUM(Dis)	Zinc(Dis)	Zinc(Dis)	Aluminum(Tot)	Aluminum(Tot)	ANTIMONY(Tot)	ANTIMONY(Tot)
D-12	8/8/2012	12000	J+	ND	U	ND	U	170000				ND	U	ND	U	ND	U	230	J+	ND	U
D-12	4/4/2013	14000	J	ND	U	ND	U	180000				ND	U	ND	U	26	J	880	J	ND	U
D-12	7/15/2013	14000		11	U	ND	U	180000				ND	U	5.8	J	ND	U	250		4.4	J
D-12	10/1/2013	13000	J+	ND	U	ND	U	180000		1300		ND	U	ND	U	ND	U	ND	U	ND	U
D-12 FD	4/4/2013	14000	J	ND	U	ND	U	180000				ND	U	ND	U	28	J	490	J	ND	U
D-12 FD	7/15/2013	14000		11	U	ND	U	180000				ND	U	4.7	J	ND	U	220		4.3	J
D-12 FD	10/7/2013																				
D-13	8/10/2012	ND	U	ND	U	ND	U	24000				ND	U	ND	U	ND	U	550	J	ND	U
D-13	4/4/2013	ND	U	ND	U	ND	U	34000				ND	U	ND	U	ND	U	2600		ND	U
D-13	7/18/2013	5500		ND	U	ND	U	35000				ND	U	ND	U	ND	U	190	J	5.2	J
D-13	10/7/2013	ND	U	ND	U	ND	U	55000		340		ND	U	ND	U	ND	U	510		ND	U
D-13 FD	8/10/2012	ND	U	ND	U	ND	U	24000				ND	U	ND	U	ND	U	940	J	ND	U
D-14	8/10/2012																				
D-14	4/12/2013	56000		ND	U	ND	U	250000				ND	U	ND	U	28	U	4700		ND	U
D-14	7/18/2013	71000		ND	U	ND	U	380000				ND	U	ND	U	7.3	U	2300		7.1	J
D-14	10/15/2013	65000	J+	ND	U	ND	U	390000		730		ND	U	ND	U	ND	U	800		ND	U
D-3	8/8/2012	18000	J+	ND	U	ND	U	280000				ND	U	ND	U	ND	U	ND	U	ND	U
D-3	4/11/2013	27000		ND	U	ND	U	380000				ND	U	27	J	28	U	ND	U	ND	U
D-3	7/9/2013	32000		ND	U	ND	U	390000				ND	U	ND	U	5.2	U	ND	U	5.2	J
D-3	10/7/2013	29000		ND	U	ND	U	410000		970		ND	U	ND	U	ND	U	ND	U	ND	U
D-3 FD	8/8/2012	20000	J+	ND	U	ND	U	310000				ND	U	ND	U	ND	U	ND	U	4.5	J
D-6	8/7/2012	10000	J	ND	U	ND	U	120000				ND	U	ND	U	ND	U	ND	U	ND	U
D-6	4/9/2013	13000	J	ND	U	ND	U	140000				ND	U	ND	U	29	J	740	J	ND	U
D-6	7/12/2013	13000		ND	U	ND	U	140000				ND	U	ND	U	ND	U	170	J	4.6	J
D-6	10/8/2013	15000		ND	U	ND	U	170000		820		ND	U	ND	U	ND	U	ND	U	ND	U
D-6 FD	8/7/2012	12000	J	ND	U	ND	U	140000				ND	U	22	J	ND	U	ND	U	ND	U
D-81	8/9/2012	ND	U	ND	U	ND	U	15000				ND	U	ND	U	ND	U	ND	U	ND	U
D-81	4/3/2013	ND	U	ND	U	ND	U	20000				ND	U	ND	U	30	J	ND	U	ND	U
D-81	7/17/2013	4200	J	ND	U	ND	U	33000				ND	U	ND	U	6.3	J	ND	U	4.4	J
D-81	10/3/2013	ND	U	ND	U	ND	U	30000		550		ND	U	ND	U	ND	U	ND	U	ND	U
D-81 FD	7/17/2013	4000	J	ND	U	ND	U	33000				ND	U	ND	U	ND	U	ND	U	ND	U
D-83	8/9/2012	32000	J+	ND	U	ND	U	43000				ND	U	ND	U	ND	U	ND	U	ND	U
D-83	4/9/2013	43000		ND	U	ND	U	85000				ND	U	ND	U	32	J	ND	U	ND	U
D-83	7/11/2013	44000		ND	U	ND	U	53000				ND	U	ND	U	ND	U	ND	U	5	J
D-83	10/8/2013	49000		ND	U	ND	U	73000		780		ND	U	ND	U	ND	U	ND	U	ND	U
D-83 FD	7/11/2013	44000		ND	U	ND	U	52000				ND	U	ND	U	6.4	J	ND	U	4.5	J
D-85	8/6/2012	9000	J+	ND	U	ND	U	140000				ND	U	ND	U	ND	U	51000	J+	ND	U
D-85	4/11/2013	8400	J	ND	U	ND	U	170000				ND	U	23	J	28	U	33000		ND	U
D-85	7/10/2013	8500		3.9	J	ND	U	170000				ND	U	ND	U	ND	U	19000		6.7	J
D-85	10/9/2013	8400	J+	ND	U	ND	U	170000		680		ND	U	ND	U	ND	U	15000		ND	U
D-87	8/1/2012	12000		ND	U	ND	U	180000				7	U	ND	U	6.9	U	140	J	4.6	J
D-87	4/9/2013	11000	J	ND	U	ND	U	180000				ND	U	ND	U	30	J	740	J	ND	U
D-87	7/17/2013	13000		4	U	ND	U	220000				ND	U	ND	U	5.5	J	720		4.4	J
D-87	10/2/2013	13000	J+	ND	U	ND	U	210000		750		ND	U	ND	U	ND	U	2300		ND	U
D-87 FD	10/2/2013	13000	J+	ND	U	ND	U	210000		740		ND	U	ND	U	ND	U	2200		ND	U
D-93	8/14/2012	17000	J+	ND	U	ND	U	260000	J-			ND	U	ND	U	ND	U	730	J	ND	U
D-93	4/9/2013	16000	J	ND	U	ND	U	210000				ND	U	ND	U	29	J	1100		ND	U
D-93	7/11/2013	17000		ND	U	ND	U	190000				ND	U	ND	U	5.4	J	200		4.3	J
D-93	10/8/2013	17000		ND	U	ND	U	220000		1100		ND	U	ND	U	ND	U	690		ND	U
USGS-E1	11/7/2013	ND	U	ND	U	ND	U	260000		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
USGS-B4-S	8/2/2013	5500		ND	U	ND	U	17000				ND	U	ND	U	110		ND	U	ND	U
USGS-B4-S	11/7/2013	ND	U	ND	U	ND	U	19000		800		ND	U	ND	U	53		ND	U	ND	U
USGS-B4-D	8/2/2013	4000		ND	U	ND	U	20000				ND	U	ND	U	13		ND	U	ND	U
USGS-A5	11/7/2013	ND	U	ND	U	ND	U	42000		4200		ND	U	ND	U	ND	U	ND	U	ND	U
I-11	8/8/2012	20000	J+	ND	U	ND	U	100000				ND	U	ND	U	ND	U	ND	U	ND	U
I-11	4/4/2013	26000		ND	U	ND	U	130000				ND	U	ND	U	30	U	ND	U	ND	U
I-11	7/15/2013	25000		2.8	U	ND	U	120000				ND	U	ND	U	ND	U	110	J	4.8	J
I-11	10/1/2013	26000	J+	ND	U	ND	U	140000		1400		ND	U	ND	U	ND	U	1600		ND	U
I-4	8/14/2012	69000	J+	ND	U	ND	U	250000	J-			ND	U	ND	U	ND	U	ND	U	ND	U

Sample ID	DATE	Potassium(Dis)	Potassium(Dis)	SELENIUM(Dis)	SELENIUM(Dis)	Silver(Dis)	Silver(Dis)	Sodium(Dis)	Sodium(Dis)	STRONTIUM(Dis)	STRONTIUM(Dis)	THALLIUM(Dis)	THALLIUM(Dis)	VANADIUM(Dis)	VANADIUM(Dis)	Zinc(Dis)	Zinc(Dis)	Aluminum(Tot)	Aluminum(Tot)	ANTIMONY(Tot)	ANTIMONY(Tot)
I-4	4/12/2013	110000		ND	U	ND	U	170000				ND	U	ND	U	28	U	ND	U	ND	U
I-4	7/9/2013	120000		ND	U	ND	U	230000				ND	U	ND	U	7.3	U	ND	U	4.2	J
I-4	10/7/2013	120000		ND	U	ND	U	400000		260		ND	U	ND	U	ND	U	ND	U	ND	U
I-4 FD	7/9/2013	120000		ND	U	ND	U	230000				ND	U	ND	U	12	U	ND	U	ND	U
I-62	8/9/2012	ND	U	ND	U	ND	U	16000				ND	U	ND	U	ND	U	2500		ND	U
I-62	4/4/2013	ND	U	ND	U	ND	U	22000				ND	U	ND	U	ND	U	770	J	ND	U
I-62	7/12/2013	6200		ND	U	ND	U	27000				ND	U	ND	U	6.4	U	170	J	ND	U
I-62	10/1/2013	ND	U	ND	U	ND	U	26000		510		ND	U	ND	U	ND	U	ND	U	ND	U
I-62 FD	4/4/2013	ND	U	ND	U	ND	U	22000				ND	U	ND	U	27	U	ND	U	ND	U
I-62 FD	7/12/2013	6100		ND	U	ND	U	25000				ND	U	ND	U	ND	U	180	J	5.1	J
I-65	8/6/2012	ND	U	ND	U	ND	U	50000				ND	U	ND	U	ND	U	1300	J+	ND	U
I-65	4/16/2013	4800	J	ND	U	ND	U	58000				ND	U	ND	U	5.7	U	1700		ND	U
I-65	7/18/2013	4900	J	ND	U	ND	U	58000				ND	U	ND	U	ND	U	410		ND	U
I-65	10/15/2013	ND	U	ND	U	ND	U	63000		250		ND	U	ND	U	ND	U	620		ND	U
I-65 FD	4/16/2013	4800	J	ND	U	ND	U	57000				ND	U	ND	U	5.6	U	2200		ND	U
I-65 FD	7/18/2013	5000		ND	U	ND	U	60000				ND	U	ND	U	ND	U	480		ND	U
I-66	8/10/2012	ND	U	ND	U	ND	U	42000				ND	U	ND	U	ND	U	ND	U	ND	U
I-66	4/5/2013	5100		2.9	U	ND	U	43000				ND	U	ND	U	7.1	U	500	J	ND	U
I-66	7/15/2013	4800	J	2.7	U	ND	U	41000				4.5	J	ND	U	8.7	J	270		ND	U
I-66	10/9/2013	ND	U	ND	U	ND	U	41000		900		ND	U	ND	U	ND	U	ND	U	ND	U
I-67	8/10/2012	8700	J	ND	U	ND	U	53000				ND	U	ND	U	ND	U	ND	U	ND	U
I-67	4/5/2013	10000		ND	U	ND	U	64000				ND	U	ND	U	11	U	950	J	ND	U
I-67	7/12/2013	9200		ND	U	ND	U	55000				ND	U	ND	U	ND	U	110	J	4	J
I-67	10/3/2013	9100		ND	U	ND	U	65000		1300		ND	U	ND	U	ND	U	ND	U	ND	U
I-67 FD	4/5/2013	9900		ND	U	ND	U	63000				ND	U	ND	U	ND	U	820	J	ND	U
I-67 FD	10/3/2013	8900		ND	U	ND	U	64000		1300		ND	U	ND	U	ND	U	ND	U	ND	U
I-68	8/6/2012	ND	U	ND	U	ND	U	330000				ND	U	ND	U	ND	U	35000	J+	5.4	J
I-68	4/9/2013	ND	U	ND	U	ND	U	360000				ND	U	ND	U	34	J	46000		ND	U
I-68	7/12/2013	6500		ND	U	ND	U	240000				ND	U	ND	U	18	U	14000		5.4	J
I-68	10/4/2013	ND	U	14		ND	U	290000		560		ND	U	ND	U	ND	U	8400		ND	U
I-73	8/4/2012	8900		ND	U	ND	U	160000				ND	U	ND	U	570		12000		ND	U
I-73	4/12/2013	12000	J	ND	U	ND	U	310000				ND	U	20	U	380		3300		ND	U
I-73	7/19/2013	ND	U	ND	U	ND	U	700000				ND	U	ND	U	1200		9800		ND	U
I-73	10/3/2013	25000		ND	U	ND	U	2600000		3500		ND	U	53		830		4800		ND	U
I-9	8/14/2012	14000	J+	ND	U	ND	U	220000	J-			ND	U	ND	U	ND	U	ND	U	ND	U
I-9	4/9/2013	20000	J	ND	U	ND	U	240000				ND	U	ND	U	32	J	ND	U	ND	U
I-9	7/11/2013	21000		ND	U	ND	U	220000				ND	U	ND	U	5.4	J	190	J	5.6	J
I-9	10/8/2013	23000		ND	U	ND	U	260000		1100		ND	U	ND	U	ND	U	ND	U	ND	U
I-9 FD	8/14/2012	14000	J+	ND	U	ND	U	220000	J-			ND	U	ND	U	ND	U	ND	U	ND	U
I-9 FD	4/9/2013	20000	J	ND	U	ND	U	250000				ND	U	ND	U	37	J	ND	U	ND	U
I-9 FD	10/8/2013	23000		ND	U	ND	U	260000		1200		ND	U	ND	U	ND	U	ND	U	ND	U
LR-100	8/13/2012	85000	J+	ND	U	ND	U	210000	J+			ND	U	ND	U	ND	U	1800		ND	U
LR-100	4/3/2013	91000		ND	U	ND	U	190000				ND	U	ND	U	27	J	ND	U	ND	U
LR-100	7/17/2013	87000		ND	U	ND	U	200000				ND	U	ND	U	6.1	J	ND	U	4	J
LR-100	10/4/2013	90000		ND	U	ND	U	210000		520		ND	U	ND	U	ND	U	ND	U	ND	U
LR-100 FD	10/4/2013	87000		ND	U	ND	U	210000		500		ND	U	ND	U	ND	U	ND	U	ND	U
LR-103	8/13/2012	ND	U	ND	U	ND	U	46000	J+			ND	U	ND	U	ND	U	1900		ND	U
LR-103	4/3/2013	8800	J	ND	U	ND	U	42000				ND	U	ND	U	ND	U	510	J	ND	U
LR-103	7/17/2013	8800		3.2	U	ND	U	51000				ND	U	ND	U	ND	U	120	J	5.5	J
LR-103	10/2/2013	8700	J+	ND	U	ND	U	61000		730		ND	U	ND	U	ND	U	ND	U	ND	U
LR-104	8/13/2012	ND	U	ND	U	ND	U	25000	J+			ND	U	ND	U	34	U	ND	U	ND	U
LR-104	4/4/2013	ND	U	ND	U	ND	U	21000				ND	U	ND	U	29	U	ND	U	ND	U
LR-104	7/22/2013	5000		ND	U	ND	U	21000				ND	U	ND	U	ND	U	140	J	5.1	J
LR-104	10/2/2013	ND	U	ND	U	ND	U	21000		730		ND	U	ND	U	ND	U	ND	U	ND	U
LR-104 FD	8/13/2012	ND	U	ND	U	ND	U	24000	J+			ND	U	ND	U	ND	U	ND	U	ND	U
LR-105	8/1/2012	210000		ND	U	ND	U	530000				6.6	U	ND	U	8.1	U	610		4.5	J
LR-105	4/3/2013	230000		ND	U	ND	U	680000				ND	U	ND	U	27	J	900	J	ND	U
MW-102	8/7/2012	ND	U	ND	U	ND	U	14000				24	J	ND	U	ND	U	450		ND	U
MW-102	7/15/2013	4800	J	3	U	ND	U	16000				ND	U	ND	U	7.3	J	680		ND	U

Sample ID	DATE	Potassium(Dis)	Potassium(Dis)	SELENIUM(Dis)	SELENIUM(Dis)	Silver(Dis)	Silver(Dis)	Sodium(Dis)	Sodium(Dis)	STRONTIUM(Dis)	STRONTIUM(Dis)	THALLIUM(Dis)	THALLIUM(Dis)	VANADIUM(Dis)	VANADIUM(Dis)	Zinc(Dis)	Zinc(Dis)	Aluminum(Tot)	Aluminum(Tot)	ANTIMONY(Tot)	ANTIMONY(Tot)
MW-102	10/3/2013	ND	U	ND	U	ND	U	22000		800		ND	U	ND	U	ND	U	6200		ND	U
MW-103	8/11/2012	ND	U	ND	U	ND	U	17000				ND	U	ND	U	ND	U	80000		ND	U
MW-103	4/5/2013	4800	J	12	U	ND	U	20000				ND	U	6.9	U	9.9	U	13000	J+	ND	U
MW-103	7/15/2013	4000	J	ND	U	ND	U	18000				ND	U	ND	U	5.8	J	18000		ND	U
MW-103	10/4/2013	ND	U	ND	U	ND	U	20000		550		ND	U	ND	U	ND	U	15000		ND	U
MW-104	8/9/2012	ND	U	ND	U	ND	U	13000				ND	U	ND	U	ND	U	15000		ND	U
MW-104	4/5/2013	4000	J	4	U	ND	U	12000				ND	U	ND	U	9.5	U	6900		ND	U
MW-104	7/16/2013	4300	J	2.9	U	ND	U	11000				ND	U	ND	U	16	J	33000		9.3	J
MW-104	10/3/2013	ND	U	ND	U	ND	U	13000		1200		ND	U	ND	U	ND	U	62000		ND	U
MW-1204	8/2/2012	2100	J	ND	U	ND	U	12000				5.2	U	ND	U	9.8	U	170	J+	ND	U
MW-1204	4/12/2013	ND	U	ND	U	ND	U	15000				ND	U	ND	U	ND	U	ND	U	ND	U
MW-1204	7/11/2013	6100		ND	U	ND	U	100000				ND	U	6.6	J	ND	U	160	J	ND	U
MW-1204	10/11/2013	55000	J	36	J	ND	UJ	560000	J	13000	J	ND	UJ	62	J	ND	UJ	2700	J	49	J
MW-1204 FD	4/12/2013	ND	U	ND	U	ND	U	16000				ND	U	ND	U	ND	U	ND	U	ND	U
PURGE TANK	8/16/2012																	ND	U	ND	U
PURGE TANK	4/16/2013	12000		ND	U	ND	U	150000				ND	U	ND	U	10	U	170	J	ND	U
PURGE TANK	7/23/2013																				
PURGE TANK	7/24/2013	12000		ND	U	ND	U	130000				ND	U	ND	U	7.1	J	ND	U	ND	U
PURGE TANK	11/8/2013	12000		ND	U	ND	U	160000		1200		ND	U	ND	U	ND	U	ND	U	ND	U
PZ-100-KS	8/16/2012	ND	U	ND	U	ND	U	220000	J-			ND	U	ND	U	44	J	ND	U	ND	U
PZ-100-KS	4/16/2013	5100		ND	U	ND	U	240000				ND	U	ND	U	8.1	U	ND	U	ND	U
PZ-100-KS	7/23/2013	4900	J	ND	U	ND	U	230000				ND	U	ND	U	10	J	ND	U	ND	U
PZ-100-KS	10/15/2013	ND	U	ND	U	ND	U	250000		3000		ND	U	ND	U	ND	U	ND	U	ND	U
PZ-100-SD	7/31/2012	2200	J	ND	U	ND	U	5500				ND	U	ND	U	11	J	ND	U	ND	U
PZ-100-SD	4/5/2013	2200	J	ND	U	ND	U	5900				ND	U	ND	U	5.3	U	ND	U	ND	U
PZ-100-SD	7/9/2013	2300	J	ND	U	ND	U	6200				ND	U	ND	U	21	J+	ND	U	ND	U
PZ-100-SD	10/8/2013	ND	U	ND	U	ND	U	7000		420		ND	U	ND	U	ND	U	ND	U	ND	U
PZ-100-SS	7/31/2012	2600	J	ND	U	ND	U	14000				ND	U	ND	U	18	J	87	J	4.2	J
PZ-100-SS	4/5/2013	2600	J	ND	U	ND	U	13000				ND	U	ND	U	12	U	ND	U	ND	U
PZ-100-SS	7/9/2013	2700	J	ND	U	ND	U	11000				ND	U	ND	U	13	U	ND	U	ND	U
PZ-100-SS	10/8/2013	ND	U	15	U	ND	U	12000		1600		ND	U	ND	U	ND	U	ND	U	ND	U
PZ-101-SS	8/7/2012	11000	J	ND	U	ND	U	77000				ND	U	ND	U	ND	U	ND	U	ND	U
PZ-101-SS	4/12/2013	15000	J	ND	U	ND	U	110000				ND	U	ND	U	26	U	2300		ND	U
PZ-101-SS	7/11/2013	15000		ND	U	ND	U	92000				ND	U	10	J	16	J	ND	U	ND	U
PZ-101-SS	10/8/2013	16000		ND	U	ND	U	130000		2600		ND	U	ND	U	ND	U	ND	U	ND	U
PZ-102R-SS	8/13/2012	ND	U	ND	U	ND	U	25000	J+			ND	U	ND	U	28	U	ND	U	ND	U
PZ-102R-SS	4/11/2013	ND	U	ND	U	ND	U	33000				ND	U	ND	U	60	U	3500		ND	U
PZ-102R-SS	7/19/2013	3500	J	ND	U	ND	U	26000				ND	U	ND	U	14	UJ	2400	J	ND	U
PZ-102R-SS	10/8/2013	ND	U	ND	U	ND	U	27000		1700		ND	U	ND	U	ND	U	420		ND	U
PZ-102-SS	8/13/2012	ND	U	ND	U	ND	U	60000	J+			ND	U	ND	U	27	U	2200		ND	U
PZ-102-SS	4/11/2013	ND	U	ND	U	ND	U	37000				ND	U	ND	U	28	U	26000		ND	U
PZ-102-SS	7/19/2013	3300	J	ND	U	ND	U	27000				ND	U	ND	U	ND	UJ	21000	J	5.9	J
PZ-102-SS	10/8/2013	ND	U	ND	U	ND	U	28000		880		ND	U	ND	U	ND	U	4600		ND	U
PZ-103-SS	8/7/2012	ND	U	ND	U	ND	U	33000				ND	U	ND	U	ND	U	17000		6.4	J
PZ-103-SS	4/8/2013	ND	U	15	U	ND	U	54000				ND	U	ND	U	31	J	8100		ND	U
PZ-103-SS	7/19/2013	4500	J	ND	U	ND	U	91000				ND	U	ND	U	ND	UJ	21000	J	5.7	J
PZ-103-SS	10/4/2013	ND	U	ND	U	ND	U	110000		6300		ND	U	ND	U	ND	U	2400		ND	U
PZ-104-KS	8/13/2012																				
PZ-104-KS	8/15/2012	ND	U	ND	U	ND	U	35000	J-			ND	U	ND	U	63	J	530	J	ND	U
PZ-104-KS	4/11/2013	ND	U	ND	U	ND	U	35000				ND	U	ND	U	30	J	790	J	ND	U
PZ-104-KS	7/18/2013	1800	J	ND	U	ND	U	35000				ND	U	ND	U	ND	U	300		ND	U
PZ-104-KS	10/4/2013	ND	U	ND	U	ND	U	39000		2700		ND	U	ND	U	ND	U	ND	U	ND	U
PZ-104-SD	8/1/2012	19000		3.7	U	ND	U	220000				5.9	U	16	J	18	U	ND	U	4.8	J
PZ-104-SD	4/11/2013	18000	J	ND	U	ND	U	120000				ND	U	ND	U	26	U	ND	U	ND	U
PZ-104-SD	7/11/2013	23000		ND	U	ND	U	170000				ND	U	16	J	ND	U	ND	U	4.4	J
PZ-104-SD	10/7/2013	17000		ND	U	ND	U	140000		900		ND	U	ND	U	ND	U	ND	U	ND	U
PZ-104-SS	8/1/2012	2500	J	ND	U	ND	U	12000				ND	U	ND	U	14	U	ND	U	4.7	J
PZ-104-SS	4/11/2013	ND	U	ND	U	ND	U	11000				ND	U	ND	U	ND	U	ND	U	ND	U
PZ-104-SS	7/11/2013	2200	J	ND	U	ND	U	12000				ND	U	ND	U	ND	U	ND	U	4	J

Sample ID	DATE	Potassium(Dis)	Potassium(Dis)	SELENIUM(Dis)	SELENIUM(Dis)	Silver(Dis)	Silver(Dis)	Sodium(Dis)	Sodium(Dis)	STRONTIUM(Dis)	STRONTIUM(Dis)	THALLIUM(Dis)	THALLIUM(Dis)	VANADIUM(Dis)	VANADIUM(Dis)	Zinc(Dis)	Zinc(Dis)	Aluminum(Tot)	Aluminum(Tot)	ANTIMONY(Tot)	ANTIMONY(Tot)
PZ-104-SS	10/9/2013	ND	U	ND	U	ND	U	12000		1100		ND	U	ND	U	ND	U	ND	U	ND	U
PZ-104-SS FD	4/11/2013	ND	U	ND	U	ND	U	11000				ND	U	ND	U	ND	U	ND	U	ND	U
PZ-105-SS	8/1/2012	2000	J	ND	U	ND	U	66000				ND	U	ND	U	26	J+	ND	U	ND	U
PZ-105-SS	4/4/2013	ND	U	ND	U	ND	U	65000				ND	U	ND	U	42	U	ND	U	ND	U
PZ-105-SS	7/12/2013	2100	J	ND	U	ND	U	61000				ND	U	ND	U	19	U	ND	U	ND	U
PZ-105-SS	10/9/2013	ND	U	ND	U	ND	U	60000		760		ND	U	ND	U	27		ND	U	ND	U
PZ-106-KS	8/14/2012	ND	U	ND	U	ND	U	65000	J-			ND	U	ND	U	ND	U	ND	U	ND	U
PZ-106-KS	4/15/2013	2000	J	ND	U	ND	U	63000				ND	U	ND	U	6.8	U	240		ND	U
PZ-106-KS	7/19/2013	2000	J	ND	U	ND	U	61000				ND	U	ND	U	ND	UJ	ND	UJ	ND	U
PZ-106-KS	10/11/2013	ND	U	ND	U	ND	U	64000		5400		ND	U	ND	U	ND	U	ND	U	ND	U
PZ-106-KS FD	10/11/2013	ND	R	ND	R	ND	R	14000	R	420	R	ND	R	ND	R	ND	R	ND	U	ND	U
PZ-106-SD	7/31/2012	2200	J	ND	U	ND	U	10000				ND	U	ND	U	8.7	J	2700		ND	U
PZ-106-SD	4/9/2013	ND	U	ND	U	ND	U	11000				ND	U	ND	U	38	J	3300		ND	U
PZ-106-SD	7/10/2013	2300	J	ND	U	ND	U	10000				ND	U	ND	U	ND	U	800		ND	U
PZ-106-SD	10/8/2013	ND	U	ND	U	ND	U	12000		1600		ND	U	ND	U	ND	U	710		ND	U
PZ-106-SS	7/31/2012	2100	J	ND	U	ND	U	14000				ND	U	ND	U	11	J	ND	U	5.4	J
PZ-106-SS	4/9/2013	ND	U	ND	U	ND	U	15000				ND	U	ND	U	34	J	ND	U	ND	U
PZ-106-SS	7/10/2013	2300	J	ND	U	ND	U	16000				ND	U	ND	U	ND	U	ND	U	ND	U
PZ-106-SS	10/7/2013	ND	U	ND	U	ND	U	17000		750		ND	U	ND	U	ND	U	ND	U	ND	U
PZ-107-SS	8/3/2012	3700	J	ND	U	ND	U	110000				ND	U	4.2	J	11	J	ND	U	ND	U
PZ-107-SS	8/4/2012																				
PZ-107-SS	4/12/2013	ND	U	ND	U	ND	U	130000				ND	U	ND	U	41	U	59000		ND	U
PZ-107-SS	7/19/2013	4100	J	ND	U	ND	U	120000				ND	U	4.5	J	11	UJ	15000	J	4.9	J
PZ-107-SS	10/3/2013	ND	U	ND	U	ND	U	190000		1500		ND	U	ND	U	26		3000		ND	U
PZ-107-SS FD	7/19/2013	4200	J	ND	U	ND	U	120000				ND	U	6.1	J	9.4	UJ	16000	J	4.4	J
PZ-109-SS	8/2/2012	3900	J	4	U	ND	U	15000				6.1	U	ND	U	24	J+	ND	U	ND	U
PZ-109-SS	4/11/2013	ND	U	ND	U	ND	U	18000				ND	U	ND	U	40	U	ND	U	ND	U
PZ-109-SS	7/10/2013	4000	J	ND	U	ND	U	18000				ND	U	ND	U	23	J+	ND	U	ND	U
PZ-109-SS	10/9/2013	ND	U	ND	U	ND	U	18000		3900		ND	U	ND	U	29		ND	U	ND	U
PZ-110-SS	8/2/2012	4300	J	ND	U	ND	U	94000				7.9	U	ND	U	12	U	ND	U	4.1	J
PZ-110-SS	4/4/2013	ND	U	ND	U	ND	U	88000				ND	U	ND	U	ND	U	ND	U	ND	U
PZ-110-SS	7/9/2013	4200	J	ND	U	ND	U	89000				ND	U	ND	U	8.9	U	ND	U	4	J
PZ-110-SS	10/8/2013	ND	U	13		ND	U	98000		1200		ND	U	ND	U	ND	U	ND	U	ND	U
PZ-111-KS	8/13/2012	ND	U	ND	U	ND	U	400000	J+			ND	U	ND	U	ND	U	ND	U	ND	U
PZ-111-KS	4/9/2013	ND	U	ND	U	ND	U	390000				ND	U	ND	U	31	J	1500		ND	U
PZ-111-KS	7/17/2013	7400		ND	U	ND	U	410000				ND	U	ND	U	8.2	J	130	J	ND	U
PZ-111-KS	10/3/2013	ND	U	ND	U	ND	U	420000		1800		ND	U	ND	U	ND	U	ND	U	ND	U
PZ-111-SD	8/1/2012	1900	J	ND	U	ND	U	20000				4.5	U	ND	U	13	U	ND	U	ND	U
PZ-111-SD	4/4/2013	ND	U	ND	U	ND	U	19000				ND	U	ND	U	28	U	ND	U	ND	U
PZ-111-SD	7/9/2013	1800	J	ND	U	ND	U	20000				ND	U	ND	U	7.2	U	ND	U	ND	U
PZ-111-SD	10/7/2013	ND	U	ND	U	ND	U	21000		1300		ND	U	ND	U	ND	U	ND	U	ND	U
PZ-112-AS	8/8/2012	39000	J+	ND	U	ND	U	98000				ND	U	ND	U	ND	U	300	J+	ND	U
PZ-112-AS	4/12/2013	63000		ND	U	ND	U	110000				ND	U	ND	U	ND	U	ND	U	ND	U
PZ-112-AS	7/9/2013	64000		3.3	J	ND	U	96000				ND	U	ND	U	7.4	U	130	J	4.2	J
PZ-112-AS	10/2/2013	58000	J+	ND	U	ND	U	110000		1200		ND	U	ND	U	ND	U	ND	U	ND	U
PZ-113-AD	8/3/2012	23000		ND	U	ND	U	290000	J			ND	U	ND	U	7.2	J	ND	U	ND	U
PZ-113-AD	4/11/2013	26000		ND	U	ND	U	350000				ND	U	ND	U	30	U	ND	U	ND	U
PZ-113-AD	7/10/2013	28000		ND	U	ND	U	340000				ND	U	ND	U	ND	U	ND	U	5.6	J
PZ-113-AD	10/7/2013	25000		ND	U	ND	U	380000		940		ND	U	ND	U	ND	U	ND	U	ND	U
PZ-113-AD FD	8/3/2012	8600		ND	U	ND	U	100000	J			ND	U	ND	U	8.4	J	970		4	J
PZ-113-AD FD	7/10/2013	29000		2.8	J	ND	U	360000				ND	U	ND	U	ND	U	ND	U	4.5	J
PZ-113-AD FD	10/7/2013	25000		ND	U	ND	U	390000		950		ND	U	ND	U	ND	U	ND	U	ND	U
PZ-113-AS	8/8/2012	ND	U	ND	U	ND	U	50000				20	J	ND	U	33	U	ND	U	4.9	J
PZ-113-AS	4/12/2013	ND	U	ND	U	ND	U	60000				ND	U	ND	U	ND	U	1000		ND	U
PZ-113-AS	7/10/2013	7600		ND	U	ND	U	77000				ND	U	ND	U	6.9	U	130	J	4.8	J
PZ-113-AS	10/2/2013	ND	U	ND	U	ND	U	65000		650		ND	U	ND	U	ND	U	ND	U	ND	U
PZ-113-SS	8/4/2012	ND	U	ND	U	ND	U	24000				ND	U	ND	U	13	J	5300		ND	U
PZ-113-SS	4/12/2013	ND	U	ND	U	ND	U	24000				ND	U	ND	U	26	U	6800		ND	U
PZ-113-SS	7/11/2013	1800	J	ND	U	ND	U	21000				ND	U	ND	U	6.4	J	8500		4.4	J

Sample ID	DATE	Potassium(Dis)	Potassium(Dis)	SELENIUM(Dis)	SELENIUM(Dis)	Silver(Dis)	Silver(Dis)	Sodium(Dis)	Sodium(Dis)	STRONTIUM(Dis)	STRONTIUM(Dis)	THALLIUM(Dis)	THALLIUM(Dis)	VANADIUM(Dis)	VANADIUM(Dis)	Zinc(Dis)	Zinc(Dis)	Aluminum(Tot)	Aluminum(Tot)	ANTIMONY(Tot)	ANTIMONY(Tot)
PZ-113-SS	10/3/2013	ND	U	ND	U	ND	U	24000		610		ND	U	ND	U	ND	U	5900		ND	U
PZ-114-AS	7/31/2012	5500		ND	U	ND	U	190000				6	J	6.2	J	7.1	J	ND	U	5.4	J
PZ-114-AS	4/8/2013	ND	U	ND	U	ND	U	110000				ND	U	ND	U	33	J	540	J	ND	U
PZ-114-AS	7/12/2013	5000		4.4	J	ND	U	100000				ND	U	ND	U	6.6	U	ND	U	7.1	J
PZ-114-AS	10/8/2013	ND	U	13	U	ND	U	110000		570		ND	U	ND	U	ND	U	ND	U	ND	U
PZ-115-SS	7/31/2012	2500	J	ND	U	ND	U	46000				ND	U	ND	U	12	J	ND	U	5.8	J
PZ-115-SS	4/5/2013	2600	J	ND	U	ND	U	50000				ND	U	ND	U	7.6	U	ND	U	ND	U
PZ-115-SS	7/11/2013	3000	J	ND	U	ND	U	60000				ND	U	ND	U	ND	U	ND	U	4.3	J
PZ-115-SS	10/8/2013	ND	U	ND	U	ND	U	68000		1800		ND	U	ND	U	ND	U	ND	U	ND	U
PZ-116-SS	8/3/2012	3100	J	ND	U	ND	U	62000				ND	U	4.1	J	28		ND	U	ND	U
PZ-116-SS	4/12/2013	ND	U	ND	U	ND	U	54000				ND	U	ND	U	41	U	ND	U	ND	U
PZ-116-SS	7/11/2013	3600	J	ND	U	ND	U	49000				ND	U	ND	U	24		ND	U	ND	U
PZ-116-SS	10/11/2013	ND	U	ND	U	ND	U	51000		3500		ND	U	ND	U	ND	U	ND	U	ND	U
PZ-200-SS	8/2/2012	2800	J	ND	U	ND	U	12000				4.4	U	5.1	J	8.3	U	1400	J+	ND	U
PZ-200-SS	4/5/2013	2400	J	5.7	U	ND	U	18000				5	J	6.2	J	7.9	U	660	J	ND	U
PZ-200-SS	7/19/2013	1900	J	5	J	ND	U	18000				5.9		ND	U	ND	UJ	830	J	5.2	J
PZ-200-SS	10/2/2013	ND	U	ND	U	ND	U	17000		610		ND	U	ND	U	ND	U	800		ND	U
PZ-200-SS FD	8/2/2012	2800	J	4.9	U	ND	U	12000				7.2	U	ND	U	8.6	U	490	J+	5.2	J
PZ-201A-SS	8/1/2012	2400	J	ND	U	ND	U	22000				ND	U	ND	U	59	J+	ND	U	ND	U
PZ-201A-SS	4/8/2013	ND	U	ND	U	ND	U	13000				ND	U	ND	U	57	J	ND	U	ND	U
PZ-201A-SS	7/10/2013	2200	J	ND	U	ND	U	12000				ND	U	ND	U	21	J+	ND	U	ND	U
PZ-201A-SS	10/9/2013	ND	U	ND	U	ND	U	13000		520		ND	U	ND	U	30		ND	U	ND	U
PZ-201A-SS FD	8/1/2012	2600	J	ND	U	ND	U	22000				ND	U	ND	U	57	J+	ND	U	5	J
PZ-202-SS	8/2/2012	2100	J	ND	U	ND	U	11000				4	U	ND	U	11	U	21000	J+	11	
PZ-202-SS	4/12/2013	ND	U	ND	U	ND	U	11000				ND	U	ND	U	27	U	1300		ND	U
PZ-202-SS	7/11/2013	3100	J	ND	U	ND	U	13000				ND	U	ND	U	6.1	J	98	J	ND	U
PZ-202-SS	10/11/2013	ND	U	ND	U	ND	U	14000		420		ND	U	ND	U	ND	U	ND	U	ND	U
PZ-203-SS	8/1/2012	2500	J	ND	U	ND	U	8000				5.4	U	ND	U	12	U	440		ND	U
PZ-203-SS	4/5/2013	2500	J	ND	U	ND	U	8000				ND	U	ND	U	5.4	U	ND	U	ND	U
PZ-203-SS	7/17/2013	2500	J	ND	U	ND	U	8000				ND	U	ND	U	5.8	J	230		4.1	J
PZ-203-SS	10/2/2013	ND	U	ND	U	ND	U	8100		660		ND	U	ND	U	ND	U	ND	U	ND	U
PZ-204A-SS	8/2/2012	14000		ND	U	ND	U	230000				4.7	U	ND	U	9.4	U	160	J+	ND	U
PZ-204A-SS	4/8/2013	15000	J	ND	U	ND	U	200000				ND	U	ND	U	33	J	4500	J+	ND	U
PZ-204A-SS	7/16/2013	19000		ND	U	ND	U	210000				ND	U	4.1	J	ND	U	2600		4.1	J
PZ-204A-SS	10/8/2013	18000		16	U	ND	U	220000		1200		ND	U	ND	U	ND	U	1400		ND	U
PZ-204-SS	8/3/2012	2200	J	ND	U	ND	U	32000				ND	U	4.8	J	8.1	J	370		ND	U
PZ-204-SS	4/9/2013	ND	U	ND	U	ND	U	29000				ND	U	ND	U	31	J	2000		ND	U
PZ-204-SS	7/17/2013	2100	J	ND	U	ND	U	29000				ND	U	ND	U	17	J	400		ND	U
PZ-204-SS	10/8/2013	ND	U	ND	U	ND	U	32000		1600		ND	U	ND	U	ND	U	ND	U	ND	U
PZ-205-AS	8/3/2012	8600		ND	U	ND	U	100000				ND	U	ND	U	ND	U	940		4.3	J
PZ-205-AS	4/8/2013	ND	U	ND	U	ND	U	88000				ND	U	ND	U	34	J	2100		ND	U
PZ-205-AS	7/18/2013	17000		4.6	J	ND	U	150000				ND	U	5.8	J	6.6	U	80000		12	
PZ-205-AS	10/15/2013	11000	J+	ND	U	ND	U	140000		1600		ND	U	ND	U	ND	U	23000		26	
PZ-205-SS	8/3/2012	ND	U	ND	U	ND	U	13000				ND	U	ND	U	15	J	80	J	ND	U
PZ-205-SS	4/8/2013	ND	U	ND	U	ND	U	13000				ND	U	ND	U	67	J	ND	U	ND	U
PZ-205-SS	7/10/2013	1800	J	ND	U	ND	U	14000				ND	U	ND	U	7.4	U	ND	U	ND	U
PZ-205-SS	10/9/2013	ND	U	ND	U	ND	U	14000		490		ND	U	ND	U	ND	U	ND	U	ND	U
PZ-206-SS	8/7/2012	ND	U	ND	U	ND	U	18000				ND	U	ND	U	34	J	2900		ND	U
PZ-206-SS	4/8/2013	ND	U	ND	U	ND	U	16000				ND	U	ND	U	50	J	1400		ND	U
PZ-206-SS	7/18/2013	3200	J	ND	U	ND	U	13000				ND	U	ND	U	ND	U	980		ND	U
PZ-206-SS	10/7/2013	ND	U	ND	U	ND	U	14000		4100		ND	U	ND	U	ND	U	1900		ND	U
PZ-207-AS	8/8/2012	74000	J+	ND	U	ND	U	290000				22	J	ND	U	ND	U	110	J+	ND	U
PZ-207-AS	4/3/2013	65000		ND	U	ND	U	250000				ND	U	ND	U	38	J	ND	U	ND	U
PZ-207-AS	7/18/2013	63000		ND	U	ND	U	240000				ND	U	ND	U	ND	U	ND	U	5.1	J
PZ-207-AS	10/4/2013	65000		ND	U	ND	U	260000		710		ND	U	ND	U	ND	U	ND	U	ND	U
PZ-208-SS	8/2/2012	ND	U	5.4	U	ND	U	48000				4.3	U	ND	U	13	U	3000	J+	ND	U
PZ-208-SS	4/12/2013	ND	U	17	U	ND	U	40000				ND	U	ND	U	35	U	ND	U	ND	U
PZ-208-SS	7/16/2013	1700	J	6.9	U	ND	U	43000				ND	U	ND	U	6.7	J	530		4	J
PZ-208-SS	10/8/2013	ND	U	22	U	ND	U	48000		480		ND	U	ND	U	ND	U	1800		ND	U

Sample ID	DATE	Potassium(Dis)	Potassium(Dis)	SELENIUM(Dis)	SELENIUM(Dis)	Silver(Dis)	Silver(Dis)	Sodium(Dis)	Sodium(Dis)	STRONTIUM(Dis)	STRONTIUM(Dis)	THALLIUM(Dis)	THALLIUM(Dis)	VANADIUM(Dis)	VANADIUM(Dis)	Zinc(Dis)	Zinc(Dis)	Aluminum(Tot)	Aluminum(Tot)	ANTIMONY(Tot)	ANTIMONY(Tot)
PZ-209-SD	11/7/2013	ND	U	ND	U	ND	U	120000		1000		ND	U	ND	U	ND	U	ND	U	ND	U
PZ-209-SS	11/7/2013	ND	U	ND	U	ND	U	28000		2700		ND	U	ND	U	ND	U	ND	U	ND	U
PZ-210-SD	11/6/2013	ND	U	ND	U	ND	U	180000		1700		ND	U	ND	U	46	U	75000		ND	U
PZ-210-SD FD	11/6/2013	ND	U	ND	U	ND	U	170000		1800		ND	U	ND	U	72	U	60000		ND	U
PZ-210-SS	11/7/2013	ND	U	ND	U	ND	U	25000		1200		ND	U	ND	U	ND	U	480		ND	U
PZ-211-SD	11/6/2013	13000	J+	ND	U	ND	U	210000		1000		ND	U	ND	U	50	U	160000		ND	U
PZ-211-SS	11/7/2013	ND	U	ND	U	ND	U	31000		3600		ND	U	ND	U	ND	U	ND	U	ND	U
PZ-212-SD	11/7/2013	ND	U	ND	U	ND	U	82000		440		ND	U	ND	U	ND	U	ND	U	ND	U
PZ-212-SS	11/7/2013	ND	U	ND	U	ND	U	27000		3200		ND	U	ND	U	ND	U	770		ND	U
PZ-302-AI	8/9/2012	ND	U	ND	U	ND	U	54000				ND	U	ND	U	ND	U	1500		ND	U
PZ-302-AI	4/3/2013	ND	U	14	UJ+	ND	U	65000				ND	U	ND	U	60	J	ND	U	ND	U
PZ-302-AI	7/16/2013	7600		ND	U	ND	U	70000				ND	U	ND	U	7.7	J	320		ND	U
PZ-302-AI	10/3/2013	ND	U	ND	U	ND	U	73000		720		ND	U	ND	U	ND	U	ND	U	ND	U
PZ-302-AS	7/16/2013	6800		ND	U	ND	U	60000				16	J	4.3	J	ND	U	1400		12	
PZ-302-AS	10/8/2013	ND	U	18	U	ND	U	45000		1400		ND	U	ND	U	ND	U	4300	J+	ND	U
PZ-303-AS	8/10/2012	ND	U	ND	U	ND	U	60000				ND	U	ND	U	ND	U	400	J	ND	U
PZ-303-AS	4/4/2013	ND	U	ND	U	ND	U	52000				ND	U	ND	U	26	J	750	J	ND	U
PZ-303-AS	7/15/2013	4900	J	7.1	U	ND	U	64000				ND	U	5.8	J	ND	U	ND	U	9.3	J
PZ-303-AS	10/4/2013	ND	U	ND	U	ND	U	72000		990		ND	U	ND	U	ND	U	ND	U	ND	U
PZ-304-AI	8/10/2012	14000	J	ND	U	ND	U	240000				ND	U	ND	U	ND	U	ND	U	ND	U
PZ-304-AI	4/4/2013	11000	J	ND	U	ND	U	170000				ND	U	ND	U	30	U	ND	U	ND	U
PZ-304-AI	7/16/2013	16000		2.7	U	ND	U	180000				ND	U	ND	U	ND	U	ND	U	4.8	J
PZ-304-AI	10/1/2013	21000	J+	ND	U	ND	U	180000		1200		ND	U	ND	U	ND	U	ND	U	ND	U
PZ-304-AI FD	10/1/2013	21000	J+	ND	U	ND	U	190000		1200		ND	U	ND	U	ND	U	ND	U	ND	U
PZ-304-AS	8/10/2012	63000		ND	U	ND	U	390000				ND	U	ND	U	ND	U	490	J	ND	U
PZ-304-AS	4/4/2013	78000		ND	U	ND	U	430000				ND	U	ND	U	ND	U	ND	U	ND	U
PZ-304-AS	7/16/2013	83000		ND	U	ND	U	410000				ND	U	ND	U	6.9	J	280		4.7	J
PZ-304-AS	10/1/2013	87000	J+	ND	U	ND	U	440000		1700		ND	U	ND	U	ND	U	ND	U	ND	U
PZ-305-AI	8/8/2012	ND	U	ND	U	ND	U	19000				ND	U	ND	U	ND	U	980	J+	ND	U
PZ-305-AI	4/5/2013	7100		ND	U	ND	U	19000				ND	U	5.6	U	12	U	6500	J	ND	U
PZ-305-AI	7/22/2013	6600		ND	U	ND	U	20000				ND	U	ND	U	11		490	J	5.8	J
PZ-305-AI	10/2/2013	ND	U	ND	U	ND	U	20000		1000		ND	U	ND	U	ND	U	ND	U	ND	U
PZ-305-AI FD	4/5/2013	7200		ND	U	ND	U	19000				ND	U	4.3	U	8.7	U	9800	J	ND	U
USGS-B3	11/7/2013	ND	U	ND	U	ND	U	27000		540		ND	U	ND	U	ND	U	ND	U	ND	U
USGS-D1	11/20/2013	ND	U	ND	U	ND	U	14000		920		ND	U	ND	U	110		ND	U	ND	U
S-10	8/8/2012	40000	J+	ND	U	ND	U	180000				ND	U	ND	U	ND	U	790	J+	ND	U
S-10	4/4/2013	39000		ND	U	ND	U	190000				ND	U	ND	U	ND	U	1000		ND	U
S-10	7/15/2013	33000		4.7	U	ND	U	160000				ND	U	ND	U	ND	U	350		6.5	J
S-10	10/1/2013	52000	J+	ND	U	ND	U	260000		1300		ND	U	ND	U	ND	U	760		ND	U
S-5	8/14/2012	250000	J+	ND	U	ND	U	930000	J-			ND	U	ND	U	ND	U	ND	U	ND	U
S-5	4/11/2013	190000		ND	U	ND	U	420000				ND	U	ND	U	31	U	ND	U	ND	U
S-5	7/9/2013	230000		ND	U	ND	U	480000				ND	U	ND	U	16	U	150	J	4	J
S-5	10/7/2013	190000		ND	U	ND	U	440000		220		ND	U	ND	U	ND	U	ND	U	ND	U
S-53	4/12/2013	11000	J	ND	U	ND	U	49000				ND	U	ND	U	28	U	62000		ND	U
S-53	7/18/2013	6200		ND	U	ND	U	64000				ND	U	ND	U	9.2	U	52000		10	
S-53	10/15/2013	ND	U	ND	U	ND	U	57000		370		ND	U	ND	U	ND	U	13000		20	
S-61	8/7/2012	ND	U	ND	U	ND	U	6200				20	J	ND	U	ND	U	1300		ND	U
S-61	4/5/2013	5300		ND	U	ND	U	7000				ND	U	4.4	J	6.1	U	700	J	ND	U
S-61	7/12/2013	6200		ND	U	ND	U	7600				ND	U	ND	U	ND	U	14000		6.6	J
S-61	10/3/2013	ND	U	ND	U	ND	U	7800		410		ND	U	ND	U	ND	U	8100		ND	U
S-8	8/9/2012	ND	U	ND	U	ND	U	20000				ND	U	ND	U	ND	U	ND	U	24	U
S-8	4/4/2013	ND	U	ND	U	ND	U	27000				ND	U	ND	U	ND	U	ND	U	ND	U
S-8	7/12/2013	7300		ND	U	ND	U	21000				ND	U	ND	U	6.7	U	ND	U	ND	U
S-8	10/1/2013	ND	U	ND	U	ND	U	24000		510		ND	U	ND	U	ND	U	ND	U	ND	U
S-82	8/10/2012	17000	J-	ND	U	ND	U	350000				ND	U	ND	U	28	U	3200		ND	U
S-82	4/9/2013	11000	J	ND	U	ND	U	430000				ND	U	ND	U	31	J	4300		ND	U
S-82	7/11/2013	12000		ND	U	ND	U	230000				ND	U	ND	U	ND	U	ND	U	4.8	J
S-82	10/8/2013	19000		13	U	ND	U	310000		1300		ND	U	ND	U	ND	U	ND	U	ND	U
S-84	8/6/2012	ND	U	ND	U	ND	U	64000				ND	U	ND	U	ND	U	11000	J+	ND	U

Sample ID	DATE	Potassium(Dis)	Potassium(Dis)	SELENIUM(Dis)	SELENIUM(Dis)	Silver(Dis)	Silver(Dis)	Sodium(Dis)	Sodium(Dis)	STRONTIUM(Dis)	STRONTIUM(Dis)	THALLIUM(Dis)	THALLIUM(Dis)	VANADIUM(Dis)	VANADIUM(Dis)	Zinc(Dis)	Zinc(Dis)	Aluminum(Tot)	Aluminum(Tot)	ANTIMONY(Tot)	ANTIMONY(Tot)
S-84	4/11/2013	ND	U	ND	U	ND	U	34000				ND	U	ND	U	ND	U	2500		ND	U
S-84	7/10/2013	4700	J	4.3	J	ND	U	47000				ND	U	ND	U	ND	U	20000		8.4	J
S-84	10/9/2013	ND	U	ND	U	ND	U	47000		570		ND	U	ND	U	ND	U	4700		ND	U
S-84 FD	10/9/2013	ND	U	ND	U	ND	U	45000		540		ND	U	ND	U	ND	U	10000		ND	U

Sample ID	DATE	ARSENIC(Tot)		Barium(Tot)		BERYLLIUM(Tot)		BORON(Tot)		CADMIUM(Tot)		CALCIUM(Tot)		Chromium(Tot)		Cobalt(Tot)		COPPER(Tot)		IRON(Tot)		LEAD(Tot)	
D-12	8/8/2012	ND	U	490		ND	U			ND	U	660000		ND	U	ND	U	ND	U	15000		2.3	J
D-12	4/4/2013	ND	U	500		ND	U			ND	U	640000		ND	U	ND	U	ND	U	19000		ND	U
D-12	7/15/2013	ND	U	440		ND	U			ND	U	650000		ND	U	ND	U	6.2	J	9700		ND	U
D-12	10/1/2013	ND	U	380		ND	U	1000		ND	U	610000		ND	U	ND	U	ND	U	9400		ND	U
D-12 FD	4/4/2013	ND	U	470		ND	U			ND	U	660000		ND	U	ND	U	ND	U	15000		ND	U
D-12 FD	7/15/2013	ND	U	440		ND	U			ND	U	670000		ND	U	ND	U	7.5	J	9600		ND	U
D-12 FD	10/7/2013																						
D-13	8/10/2012	ND	U	550		ND	U			ND	U	130000		ND	U	ND	U	ND	U	16000		ND	U
D-13	4/4/2013	ND	U	800		ND	U			ND	U	170000		16	J	ND	U	ND	U	31000		13	J
D-13	7/18/2013	ND	U	650	J-	ND	U			ND	U	160000		ND	U	ND	U	ND	U	14000		3.4	J
D-13	10/7/2013	ND	U	670		ND	U	210		ND	U	160000		ND	U	ND	U	ND	U	15000		8.5	
D-13 FD	8/10/2012	ND	U	600		ND	U			ND	U	140000		ND	U	ND	U	ND	U	21000		ND	U
D-14	8/10/2012																						
D-14	4/12/2013	15	U	600		ND	U			ND	U	170000		ND	U	ND	U	ND	U	18000		14	J
D-14	7/18/2013	10		760	J-	ND	U			ND	U	180000		9.3	J	4.2	J	ND	U	11000		9.9	J
D-14	10/15/2013	ND	U	700		ND	U	1800		ND	U	170000		ND	U	ND	U	ND	U	17000		ND	U
D-3	8/8/2012	ND	U	2100		ND	U			ND	U	260000		ND	U	4.9	J	ND	U	31000		1.7	J
D-3	4/11/2013	ND	U	2300		ND	U			ND	U	280000		ND	U	ND	U	ND	U	31000		8.5	U
D-3	7/9/2013	3.8	U	2600		ND	U			ND	U	27000		ND	U	6.1	J	ND	U	38000		3.2	J
D-3	10/7/2013	ND	U	2500		ND	U	1600		ND	U	290000		ND	U	ND	U	ND	U	35000		8	
D-3 FD	8/8/2012	ND	U	2100		ND	U			ND	U	270000		ND	U	4.6	J	ND	U	31000		ND	U
D-6	8/7/2012	ND	U	1100		ND	U			ND	U	220000		ND	U	ND	U	ND	U	15000		3	J
D-6	4/9/2013	ND	U	1300		ND	U			ND	U	230000		ND	U	ND	U	ND	U	18000		ND	U
D-6	7/12/2013	2.5	U	1300		ND	U			ND	U	240000		ND	U	ND	U	ND	U	19000		3.2	U
D-6	10/8/2013	ND	U	1400		ND	U	850		ND	U	240000	J	ND	U	ND	U	ND	U	18000	J	ND	U
D-6 FD	8/7/2012	ND	U	1100		ND	U			ND	U	200000		ND	U	ND	U	ND	U	15000		2.3	J
D-81	8/9/2012	10	U	400		ND	U			ND	U	230000		ND	U	ND	U	ND	U	18000		9	J
D-81	4/3/2013	ND	U	410		ND	U			ND	U	230000		ND	U	ND	U	ND	U	19000		ND	U
D-81	7/17/2013	8.6	J	350		ND	U			ND	U	200000		ND	U	4.4	U	ND	U	15000		2.9	J
D-81	10/3/2013	ND	U	350		ND	U	190		ND	U	200000		ND	U	ND	U	ND	U	15000		ND	U
D-81 FD	7/17/2013	8.3	J	350		ND	U			ND	U	200000		ND	U	4.6	U	ND	U	15000		3.1	J
D-83	8/9/2012	ND	U	960		ND	U			ND	U	67000		ND	U	ND	U	ND	U	9400		ND	U
D-83	4/9/2013	ND	U	1800		ND	U			ND	U	110000		ND	U	ND	U	ND	U	15000		ND	U
D-83	7/11/2013	2.8	J	1800		ND	U			ND	U	120000		ND	U	ND	U	ND	U	17000		2.8	J
D-83	10/8/2013	ND	U	1800		ND	U	700		ND	U	120000	J	ND	U	ND	U	ND	U	16000	J	ND	U
D-83 FD	7/11/2013	3.2	J	1700		ND	U			ND	U	110000		ND	U	ND	U	ND	U	16000		2.4	J
D-85	8/6/2012	82		6100		3.6	U			1.9	J	770000		100		88		97		340000		170	
D-85	4/11/2013	71		4100		3.5	U			ND	U	460000		59		57	J	110	J	180000		100	
D-85	7/10/2013	49		2600		1.7	J			ND	U	440000		ND	U	49	J	28		120000		56	
D-85	10/9/2013	51		2600		ND	U	310	J+	ND	U	360000		24		32		24		97000		63	
D-87	8/1/2012	ND	U	1100		ND	U			ND	U	240000		ND	U	ND	U	ND	U	29000		4.7	J
D-87	4/9/2013	ND	U	1400		ND	U			ND	U	300000		ND	U	ND	U	ND	U	33000		10	J
D-87	7/17/2013	ND	U	1500		ND	U			ND	U	300000		ND	U	ND	U	ND	U	35000		4.8	J
D-87	10/2/2013	ND	U	1500		ND	U	1500		ND	U	290000		ND	U	ND	U	ND	U	36000		14	
D-87 FD	10/2/2013	ND	U	1500		ND	U	1500		ND	U	300000		ND	U	ND	U	ND	U	37000		11	
D-93	8/14/2012	ND	U	1400		ND	U			ND	U	290000		ND	U	ND	U	ND	U	39000		12	J
D-93	4/9/2013	ND	U	1400		ND	U			ND	U	290000		ND	U	ND	U	ND	U	21000		9.5	J
D-93	7/11/2013	2.3	J	1400		ND	U			ND	U	290000		ND	U	ND	U	ND	U	21000		3.7	J
D-93	10/8/2013	ND	U	1100		ND	U	1000		ND	U	310000	J	ND	U	ND	U	ND	U	23000	J	11	
USGS-E1	11/7/2013	ND	U	ND	U	ND	U	ND	U	ND	U	880		ND	U	ND	U	ND	U	ND	U	ND	U
USGS-B4-S	8/2/2013	3.2		380		ND	U			ND	U	130000		ND	U	ND	U	28		5300		3.3	
USGS-B4-S	11/7/2013	ND	U	410		ND	U	95	U	ND	U	130000		ND	U	39		ND	U	5200		ND	U
USGS-B4-D	8/2/2013	ND	U	670		ND	U			ND	U	99000		ND	U	ND	U	ND	U	9400		2	
USGS-A5	11/7/2013	ND	U	130		ND	U	200	U	ND	U	79000		ND	U	ND	U	25		ND	U	ND	U
I-11	8/8/2012	15		860		ND	U			ND	U	210000		ND	U	ND	U	ND	U	25000		ND	U
I-11	4/4/2013	14	U	890		ND	U			ND	U	280000		ND	U	ND	U	ND	U	36000		ND	U
I-11	7/15/2013	17		820		ND	U			ND	U	230000		ND	U	ND	U	ND	U	30000		3	J
I-11	10/1/2013	29		670		ND	U	950		ND	U	270000		ND	U	ND	U	ND	U	43000		12	
I-4	8/14/2012	ND	U	1400		ND	U			ND	U	160000		ND	U	ND	U	ND	U	41000		ND	U

Sample ID	DATE	ARSENIC(Tot)		Barium(Tot)		BERYLLIUM(Tot)		BORON(Tot)		CADMIUM(Tot)		CALCIUM(Tot)		Chromium(Tot)		Cobalt(Tot)		COPPER(Tot)		IRON(Tot)		LEAD(Tot)	
I-4	4/12/2013	12	U	410		ND	U			ND	U	100000		ND	U	ND	U	ND	U	26000		12	J
I-4	7/9/2013	13		600		ND	U			ND	U	130000		3.9	J	10	J	ND	U	32000		4.3	J
I-4	10/7/2013	14		300		ND	U	2700		ND	U	79000		ND	U	ND	U	ND	U	19000		ND	U
I-4 FD	7/9/2013	14		600		ND	U			ND	U	130000		ND	U	11	J	ND	U	32000		4	U
I-62	8/9/2012	30	U	380		ND	U			ND	U	100000		ND	U	ND	U	ND	U	13000		12	J
I-62	4/4/2013	15	U	390		ND	U			ND	U	120000		ND	U	ND	U	ND	U	8900		ND	U
I-62	7/12/2013	12		380		ND	U			ND	U	130000		ND	U	ND	U	ND	U	7400		2.9	J
I-62	10/1/2013	12		440		ND	U	130		ND	U	140000		ND	U	ND	U	ND	U	8300		8	
I-62 FD	4/4/2013	13	U	370		ND	U			ND	U	120000		ND	U	ND	U	ND	U	7900		ND	U
I-62 FD	7/12/2013	13		380		ND	U			ND	U	120000		ND	U	ND	U	ND	U	7400		2.3	U
I-65	8/6/2012	ND	U	250		1	U			ND	U	160000		ND	U	7.9	J	ND	U	2100		4.9	J
I-65	4/16/2013	ND	U	280		ND	U			ND	U	140000		ND	U	11	J	ND	U	2500		8	J
I-65	7/18/2013	ND	U	190	J-	ND	U			ND	U	130000		3.9	J	ND	U	ND	U	620		3.9	J
I-65	10/15/2013	ND	U	210		ND	U	190	U	ND	U	130000		ND	U	ND	U	ND	U	870		ND	U
I-65 FD	4/16/2013	3	U	270		ND	U			ND	U	150000		ND	U	14	J	ND	U	3100		10	
I-65 FD	7/18/2013	ND	U	200	J-	ND	U			ND	U	120000		3.8	J	6.5	J	ND	U	710		2.8	J
I-66	8/10/2012	ND	U	120	J	ND	U			ND	U	140000		ND	U	ND	U	ND	U	4000		9.5	J
I-66	4/5/2013	ND	U	170	J	ND	U			ND	U	180000		ND	U	ND	U	ND	U	4100		ND	U
I-66	7/15/2013	7.3	J	140		ND	U			ND	U	160000		ND	U	5.4	J	ND	U	3200		4.7	J
I-66	10/9/2013	ND	U	150		ND	U	450		ND	U	170000		ND	U	ND	U	ND	U	2200		11	U
I-67	8/10/2012	ND	U	230	J	ND	U			ND	U	230000		ND	U	ND	U	ND	U	7300		ND	U
I-67	4/5/2013	ND	U	250		ND	U			ND	U	240000		ND	U	ND	U	ND	U	5100		ND	U
I-67	7/12/2013	4.6	U	280		ND	U			ND	U	230000		ND	U	ND	U	ND	U	8900		2.6	U
I-67	10/3/2013	ND	U	290		ND	U	250		ND	U	250000		ND	U	ND	U	ND	U	10000		ND	U
I-67 FD	4/5/2013	ND	U	260		ND	U			ND	U	240000		ND	U	ND	U	ND	U	5100		ND	U
I-67 FD	10/3/2013	ND	U	300		ND	U	250		ND	U	250000		ND	U	ND	U	ND	U	11000		9.5	
I-68	8/6/2012	11		730		1.5	U			4	J	310000		64		26	J	86		31000		100	
I-68	4/9/2013	19	U	1000		ND	U			11	J	320000		90		39	J	85	J	35000		140	
I-68	7/12/2013	10	J+	510		ND	U			2.1	U	190000		24		22	J	29		13000		35	
I-68	10/4/2013	ND	U	530		ND	U	150		ND	U	220000		30		29		ND	U	8000		28	
I-73	8/4/2012	58		820		ND	U			1.4	J	370000		18		11	J	54		61000		110	
I-73	4/12/2013	67		1200		ND	U			ND	U	460000		16	J	26	J	ND	U	57000		32	J
I-73	7/19/2013	110	J	3100	J-	ND	U			ND	U	1200000		100	J	190	J	ND	U	150000		88	J
I-73	10/3/2013	210		4900		ND	U	11000		ND	U	970000		150		200		ND	U	160000		84	
I-9	8/14/2012	ND	U	1100		ND	U			ND	U	280000		ND	U	ND	U	ND	U	20000		9.5	J
I-9	4/9/2013	26	U	1400		ND	U			ND	U	270000		ND	U	ND	U	ND	U	34000		ND	U
I-9	7/11/2013	26		1500		ND	U			ND	U	270000		ND	U	ND	U	ND	U	36000		4.1	J
I-9	10/8/2013	26		1500		ND	U	1400		ND	U	270000	J	ND	U	ND	U	ND	U	34000	J	ND	U
I-9 FD	8/14/2012	ND	U	1200		ND	U			ND	U	290000		ND	U	ND	U	ND	U	21000		ND	U
I-9 FD	4/9/2013	24	U	1400		ND	U			ND	U	270000		ND	U	ND	U	ND	U	34000		ND	U
I-9 FD	10/8/2013	21		1600		ND	U	1400		ND	U	270000	J	ND	U	ND	U	ND	U	34000	J	10	
LR-100	8/13/2012	ND	U	440		ND	U			ND	U	110000		ND	U	ND	U	39	J	23000		95	
LR-100	4/3/2013	ND	U	430		ND	U			ND	U	110000		ND	U	ND	U	ND	U	19000		8	J
LR-100	7/17/2013	ND	U	430		ND	U			ND	U	120000		4.7	J	ND	U	ND	U	22000		11	
LR-100	10/4/2013	ND	U	460		ND	U	2200		ND	U	130000		16		21		ND	U	23000		13	
LR-100 FD	10/4/2013	ND	U	460		ND	U	2200		ND	U	130000		ND	U	ND	U	ND	U	23000		9	
LR-103	8/13/2012	78		1000		ND	U			ND	U	250000		ND	U	ND	U	ND	U	39000		ND	U
LR-103	4/3/2013	46	J	1200		ND	U			ND	U	320000		ND	U	ND	U	ND	U	40000		ND	U
LR-103	7/17/2013	52		1100		ND	U			ND	U	270000		ND	U	ND	U	ND	U	36000		4.1	J
LR-103	10/2/2013	75		1100		ND	U	230		ND	U	290000		ND	U	ND	U	ND	U	40000		ND	U
LR-104	8/13/2012	ND	U	450		ND	U			ND	U	270000		ND	U	ND	U	ND	U	17000		7.5	J
LR-104	4/4/2013	ND	U	400		ND	U			ND	U	250000		ND	U	ND	U	ND	U	14000		ND	U
LR-104	7/22/2013	5	J	410	J-	ND	U			ND	U	260000		ND	U	ND	U	ND	U	13000		3.1	J
LR-104	10/2/2013	ND	U	390		ND	U	86		ND	U	260000		ND	U	ND	U	ND	U	14000		9.5	
LR-104 FD	8/13/2012	ND	U	430		ND	U			ND	U	240000		ND	U	ND	U	ND	U	16000		ND	U
LR-105	8/1/2012	4.8	J	720		1.1	U			1.1	J	73000		10		8.7	J	ND	U	15000		15	
LR-105	4/3/2013	ND	U	820		ND	U			ND	U	69000		ND	U	ND	U	ND	U	14000		18	J
MW-102	8/7/2012	10		490		ND	U			ND	U	290000		ND	U	4.7	J	ND	U	10000		6.4	J
MW-102	7/15/2013	18		170		ND	U			ND	U	270000		ND	U	8	J	ND	U	11000		5.2	J

Sample ID	DATE	ARSENIC(Tot)	ARSENIC(Tot)	Barium(Tot)	Barium(Tot)	BERYLLIUM(Tot)	BERYLLIUM(Tot)	BORON(Tot)	BORON(Tot)	CADMIUM(Tot)	CADMIUM(Tot)	CALCIUM(Tot)	CALCIUM(Tot)	Chromium(Tot)	Chromium(Tot)	Cobalt(Tot)	Cobalt(Tot)	COPPER(Tot)	COPPER(Tot)	IRON(Tot)	IRON(Tot)	LEAD(Tot)	LEAD(Tot)
MW-102	10/3/2013	130		550		ND	U	130		ND	U	410000		17		99		ND	U	45000		55	
MW-103	8/11/2012	30	J	1100		4	U			7	J	240000		100		52	J	160		98000		130	
MW-103	4/5/2013	ND	U	320		ND	U			ND	U	160000		20	J	ND	U	ND	U	11000		22	J
MW-103	7/15/2013	3.7	J	290		ND	U			ND	U	140000		20		7	J	20	J	13000		20	
MW-103	10/4/2013	ND	U	300		ND	U	100		ND	U	150000		28		21		ND	U	14000		31	
MW-104	8/9/2012	75	J+	850		ND	U			ND	U	290000		20	J	ND	U	ND	U	63000		39	J
MW-104	4/5/2013	30	J	480		ND	U			ND	U	240000		ND	U	ND	U	ND	U	26000		27	J
MW-104	7/16/2013	39		810		1.7	J			1.1	J	230000		37		20	U	45		58000		59	
MW-104	10/3/2013	55		1600		4		150		ND	U	350000		91		50		78		110000		130	
MW-1204	8/2/2012	ND	U	290		ND	U			ND	U	110000		ND	U	ND	U	ND	U	5700	J	2.7	J
MW-1204	4/12/2013	ND	U	300		ND	U			ND	U	110000		ND	U	ND	U	ND	U	4800		ND	U
MW-1204	7/11/2013	5.9	J	1300		ND	U			ND	U	330000		40		ND	U	ND	U	13000		2.4	J
MW-1204	10/11/2013	ND	UJ	3900	J	ND	UJ	4100	J	ND	UJ	1700000	J	220	J	ND	UJ	ND	UJ	140000	J	32	J
MW-1204 FD	4/12/2013	ND	U	300		ND	U			ND	U	110000		ND	U	ND	U	ND	U	4700		ND	U
PURGE TANK	8/16/2012	11	U	190	J	ND	U			ND	U	45000		ND	U	ND	U	ND	U	2000		10	J
PURGE TANK	4/16/2013	6.9	U	340		ND	U			ND	U	86000		ND	U	ND	U	ND	U	1100		1.6	J
PURGE TANK	7/23/2013																						
PURGE TANK	7/24/2013	4	J	260		ND	U			1.2	J	56000		4.5	J	5.5	J	ND	U	1000		ND	U
PURGE TANK	11/8/2013	ND	U	190		ND	U	610		ND	U	34000		ND	U	ND	U	ND	U	ND	U	ND	U
PZ-100-KS	8/16/2012	ND	U	ND	U	ND	U			ND	U	21000		ND	U	ND	U	ND	U	200	J	ND	U
PZ-100-KS	4/16/2013	ND	U	4.2	J	ND	U			ND	U	21000		ND	U	ND	U	ND	U	220		ND	U
PZ-100-KS	7/23/2013	ND	U	4.7	J	ND	U			ND	U	20000		5.3	J	ND	U	ND	U	240		ND	U
PZ-100-KS	10/15/2013	ND	U	ND	U	ND	U	630		ND	U	24000		ND	U	ND	U	ND	U	520		ND	U
PZ-100-SD	7/31/2012	2.9	U	320		0.8	U			ND	U	85000		ND	U	ND	U	ND	U	1500		2.4	J
PZ-100-SD	4/5/2013	ND	U	320		ND	U			ND	U	84000		ND	U	ND	U	ND	U	1600		ND	U
PZ-100-SD	7/9/2013	ND	U	330		ND	U			ND	U	88000		ND	U	ND	U	ND	U	850		1.8	J
PZ-100-SD	10/8/2013	ND	U	320		ND	U	ND	U	ND	U	87000	J	ND	U	ND	U	ND	U	640	J	ND	U
PZ-100-SS	7/31/2012	ND	U	69		ND	U			ND	U	100000		ND	U	ND	U	ND	U	54	U	2.5	J
PZ-100-SS	4/5/2013	ND	U	70	J	ND	U			ND	U	100000		ND	U	ND	U	ND	U	ND	U	ND	U
PZ-100-SS	7/9/2013	ND	U	67		ND	U			ND	U	100000		ND	U	ND	U	ND	U	ND	U	2.1	J
PZ-100-SS	10/8/2013	ND	U	68		ND	U	120	U	ND	U	100000	J	ND	U	ND	U	ND	U	ND	U	ND	U
PZ-101-SS	8/7/2012	6.5	J	500		ND	U			ND	U	180000		ND	U	ND	U	ND	U	1500		2.2	J
PZ-101-SS	4/12/2013	22	U	480		ND	U			ND	U	160000		ND	U	ND	U	ND	U	15000		9	J
PZ-101-SS	7/11/2013	3.4	U	530		ND	U			ND	U	160000		4.8	J	ND	U	ND	U	580	J	2.5	U
PZ-101-SS	10/8/2013	ND	U	580		ND	U	820		ND	U	180000	J	ND	U	ND	U	ND	U	1900	J	ND	U
PZ-102R-SS	8/13/2012	ND	U	88	J	ND	U			ND	U	130000		ND	U	ND	U	ND	U	2100		10	J
PZ-102R-SS	4/11/2013	ND	U	110	J	ND	U			ND	U	130000		ND	U	ND	U	ND	U	6700		9.5	U
PZ-102R-SS	7/19/2013	ND	U	76	J-	ND	U			ND	U	130000		4.1	J	4	J	ND	U	1800	J	3.7	J
PZ-102R-SS	10/8/2013	ND	U	72		ND	U	150	U	ND	U	130000	J	ND	U	ND	U	ND	U	230	J	ND	U
PZ-102-SS	8/13/2012	ND	U	570		ND	U			ND	U	100000		ND	U	ND	U	ND	U	8700		8.5	J
PZ-102-SS	4/11/2013	19	U	690		3.5	U			ND	U	150000		33	J	ND	U	29	J	34000		57	
PZ-102-SS	7/19/2013	14		790	J-	1.1	J			ND	U	170000		25		16	J	17	J	30000		23	
PZ-102-SS	10/8/2013	ND	U	340		ND	U	100	U	ND	U	120000	J	ND	U	ND	U	ND	U	4100	J	8.5	
PZ-103-SS	8/7/2012	25		1100		0.8	U			2.9	J	160000		37		12	J	21	J	42000		22	
PZ-103-SS	4/8/2013	13	U	620		ND	U			ND	U	150000		24	J	ND	U	ND	U	26000		14	J
PZ-103-SS	7/19/2013	12		610	J-	1.3	J			3.3	J	210000		40		15	J	21	J	39000		23	
PZ-103-SS	10/4/2013	ND	U	400		ND	U	330		ND	U	150000		18		ND	U	ND	U	18000		13	
PZ-104-KS	8/13/2012																						
PZ-104-KS	8/15/2012	ND	U	58	J	ND	U			ND	U	75000		ND	U	ND	U	ND	U	1100		ND	U
PZ-104-KS	4/11/2013	ND	U	63	J	ND	U			ND	U	77000		ND	U	ND	U	ND	U	1300		ND	U
PZ-104-KS	7/18/2013	ND	U	50	J-	ND	U			ND	U	79000		4.6	J	ND	U	ND	U	590		2	J
PZ-104-KS	10/4/2013	ND	U	51		ND	U	110		ND	U	80000		ND	U	ND	U	ND	U	560		ND	U
PZ-104-SD	8/1/2012	7.2	J	520		ND	U			ND	U	120000		5.1	J	ND	U	ND	U	13000		2.8	J
PZ-104-SD	4/11/2013	20	U	1600		ND	U			ND	U	150000		42	J	ND	U	ND	U	22000		ND	U
PZ-104-SD	7/11/2013	12	J+	800		ND	U			ND	U	130000		16		5	J	ND	U	9000		2	U
PZ-104-SD	10/7/2013	ND	U	480		ND	U	510		ND	U	110000		ND	U	ND	U	ND	U	6500		ND	U
PZ-104-SS	8/1/2012	2.5	J	98		ND	U			ND	U	88000		ND	U	ND	U	ND	U	2300		2.1	J
PZ-104-SS	4/11/2013	ND	U	99	J	ND	U			ND	U	94000		ND	U	ND	U	ND	U	2100		ND	U
PZ-104-SS	7/11/2013	2.6	U	100		ND	U			ND	U	97000		ND	U	ND	U	ND	U	1800		1.7	U

Sample ID	DATE	ARSENIC(Tot)		Barium(Tot)		BERYLLIUM(Tot)		BORON(Tot)		CADMIUM(Tot)		CALCIUM(Tot)		Chromium(Tot)		Cobalt(Tot)		COPPER(Tot)		IRON(Tot)		LEAD(Tot)	
PZ-104-SS	10/9/2013	ND	U	110		ND	U	140	U	ND	U	100000		ND	U	ND	U	ND	U	1500		ND	U
PZ-104-SS FD	4/11/2013	ND	U	98	J	ND	U			ND	U	93000		ND	U	ND	U	ND	U	2100		ND	U
PZ-105-SS	8/1/2012	ND	U	170		ND	U			ND	U	100000		ND	U	ND	U	ND	U	540		2.9	J
PZ-105-SS	4/4/2013	ND	U	180	J	ND	U			ND	U	100000		ND	U	ND	U	ND	U	520		ND	U
PZ-105-SS	7/12/2013	ND	U	170		ND	U			ND	U	97000		ND	U	ND	U	ND	U	270		1.5	J
PZ-105-SS	10/9/2013	ND	U	160		ND	U	58	U	ND	U	110000		ND	U	ND	U	ND	U	280		ND	U
PZ-106-KS	8/14/2012	ND	U	46	J	ND	U			ND	U	58000		ND	U	ND	U	ND	U	590		ND	U
PZ-106-KS	4/15/2013	2.1	U	46	J	ND	U			ND	U	60000		ND	U	ND	U	ND	U	540		1.5	J
PZ-106-KS	7/19/2013	ND	U	46	J-	ND	U			ND	U	62000		5.7	J	ND	U	ND	U	250	J	ND	U
PZ-106-KS	10/11/2013	ND	U	45		ND	U	180	U	ND	U	61000		ND	U	ND	U	ND	U	270		ND	U
PZ-106-KS FD	10/11/2013	ND	U	45		ND	U	170		ND	U	58000		ND	U	ND	U	ND	U	260		ND	U
PZ-106-SD	7/31/2012	3.4	U	130		ND	U			ND	U	110000		5.7	J	ND	U	ND	U	4300		6.1	J
PZ-106-SD	4/9/2013	ND	U	140	J	ND	U			ND	U	120000		ND	U	ND	U	ND	U	5000		11	J
PZ-106-SD	7/10/2013	2.8	J	130		ND	U			ND	U	100000		4.2	J	ND	U	ND	U	2200		3.9	J
PZ-106-SD	10/8/2013	ND	U	120		ND	U	69	U	ND	U	100000	J	ND	U	ND	U	ND	U	1900	J	ND	U
PZ-106-SS	7/31/2012	ND	U	140		ND	U			ND	U	110000		ND	U	ND	U	ND	U	460		1.6	J
PZ-106-SS	4/9/2013	12	U	150	J	ND	U			ND	U	110000		ND	U	ND	U	ND	U	1000		ND	U
PZ-106-SS	7/10/2013	2.2	J	150		ND	U			ND	U	110000		ND	U	ND	U	ND	U	570		ND	U
PZ-106-SS	10/7/2013	ND	U	150		ND	U	ND	U	ND	U	110000		ND	U	ND	U	ND	U	520		ND	U
PZ-107-SS	8/3/2012	4.9	U	620		ND	U			ND	U	220000		ND	U	ND	U	ND	U	5900		1.6	J
PZ-107-SS	8/4/2012																						
PZ-107-SS	4/12/2013	25	U	1100		4	U			ND	U	320000		67		ND	U	71	J	37000		100	
PZ-107-SS	7/19/2013	6.5	J	720	J-	1	J			ND	U	270000		15		4.1	J	9.3	J	11000		18	
PZ-107-SS	10/3/2013	ND	U	740		ND	U	500		ND	U	270000		21		ND	U	ND	U	4100		18	
PZ-107-SS FD	7/19/2013	6.2	J	730	J-	1	J			ND	U	260000		13		ND	U	8.1	J	11000		18	
PZ-109-SS	8/2/2012	ND	U	58		ND	U			ND	U	88000		ND	U	ND	U	ND	U	43	J	ND	U
PZ-109-SS	4/11/2013	ND	U	67	J	ND	U			ND	U	93000		ND	U	ND	U	ND	U	ND	U	10	J
PZ-109-SS	7/10/2013	ND	U	67		ND	U			ND	U	96000		ND	U	ND	U	ND	U	ND	U	ND	U
PZ-109-SS	10/9/2013	ND	U	63		ND	U	250	J+	ND	U	98000		ND	U	ND	U	ND	U	ND	U	7.5	U
PZ-110-SS	8/2/2012	ND	U	320		ND	U			ND	U	240000		ND	U	ND	U	ND	U	7100	J	2.6	J
PZ-110-SS	4/4/2013	ND	U	330		ND	U			ND	U	250000		ND	U	ND	U	ND	U	7600		ND	U
PZ-110-SS	7/9/2013	ND	U	320		ND	U			ND	U	250000		3.3	J	ND	U	ND	U	7200		2.2	J
PZ-110-SS	10/8/2013	ND	U	300		ND	U	230	U	ND	U	240000	J	ND	U	ND	U	ND	U	6500	J	ND	U
PZ-111-KS	8/13/2012	ND	U	ND	U	ND	U			ND	U	8700		ND	U	ND	U	ND	U	200	J	ND	U
PZ-111-KS	4/9/2013	13	U	ND	U	ND	U			ND	U	10000		ND	U	ND	U	ND	U	700		ND	U
PZ-111-KS	7/17/2013	ND	U	6.1	J	ND	U			ND	U	8800		4.5	J	ND	U	ND	U	170		ND	U
PZ-111-KS	10/3/2013	ND	U	ND	U	ND	U	1200		ND	U	10000		ND	U	ND	U	ND	U	150		ND	U
PZ-111-SD	8/1/2012	ND	U	110		ND	U			ND	U	98000		ND	U	ND	U	ND	U	230		ND	U
PZ-111-SD	4/4/2013	ND	U	120	J	ND	U			ND	U	98000		ND	U	ND	U	ND	U	ND	U	ND	U
PZ-111-SD	7/9/2013	ND	U	110		0.9	J			ND	U	100000		3.1	J	ND	U	ND	U	ND	U	ND	U
PZ-111-SD	10/7/2013	ND	U	110		ND	U	59		ND	U	98000		ND	U	ND	U	ND	U	ND	U	ND	U
PZ-112-AS	8/8/2012	190		2200		ND	U			ND	U	150000		3.2	J	ND	U	6.1	J	44000		4.4	J
PZ-112-AS	4/12/2013	180		2200		ND	U			ND	U	110000		ND	U	ND	U	ND	U	33000		ND	U
PZ-112-AS	7/9/2013	190		2400		0.7	J			ND	U	130000		ND	U	ND	U	ND	U	38000		4.4	U
PZ-112-AS	10/2/2013	190		2100		ND	U	920		ND	U	140000		ND	U	ND	U	ND	U	40000		11	
PZ-113-AD	8/3/2012	ND	U	2000	J	ND	U			ND	U	280000		ND	U	4.7	J	ND	U	31000		1.9	J
PZ-113-AD	4/11/2013	ND	U	2200		ND	U			ND	U	280000		ND	U	ND	U	ND	U	34000		7.5	U
PZ-113-AD	7/10/2013	4.7	J	2300		ND	U			ND	U	280000		ND	U	4.7	J	ND	U	35000		2.9	J
PZ-113-AD	10/7/2013	ND	U	2300		ND	U	1400		ND	U	290000		ND	U	ND	U	ND	U	36000		ND	U
PZ-113-AD FD	8/3/2012	18		1300	J	ND	U			ND	U	330000		ND	U	ND	U	5.2	J	33000		2.7	J
PZ-113-AD FD	7/10/2013	4.9	J	2300		ND	U			ND	U	280000		ND	U	4.7	J	ND	U	35000		3.1	J
PZ-113-AD FD	10/7/2013	ND	U	2300		ND	U	1400		ND	U	300000		ND	U	ND	U	ND	U	37000		7.5	
PZ-113-AS	8/8/2012	12		740		ND	U			ND	U	190000		ND	U	11	J	ND	U	7500		2.3	J
PZ-113-AS	4/12/2013	14	J	700		ND	U			ND	U	190000		ND	U	21	J	ND	U	7200		11	J
PZ-113-AS	7/10/2013	11		700		ND	U			ND	U	190000		ND	U	13	J	ND	U	5900		3.3	J
PZ-113-AS	10/2/2013	17		840		ND	U	300		ND	U	200000		ND	U	ND	U	ND	U	13000		8	
PZ-113-SS	8/4/2012	4.8	U	200		ND	U			ND	U	150000		13		ND	U	ND	U	4500		2.7	J
PZ-113-SS	4/12/2013	ND	U	210	J	ND	U			ND	U	230000		25	J	ND	U	ND	U	7800		7.5	J
PZ-113-SS	7/11/2013	7.2	U	220		ND	U			ND	U	150000		24		4.5	J	ND	U	7600		4.6	U

Sample ID	DATE	ARSENIC(Tot)		Barium(Tot)		BERYLLIUM(Tot)		BORON(Tot)		CADMIUM(Tot)		CALCIUM(Tot)		Chromium(Tot)		Cobalt(Tot)		COPPER(Tot)		IRON(Tot)		LEAD(Tot)	
PZ-113-SS	10/3/2013	ND	U	220		ND	U	ND	U	ND	U	130000		24		ND	U	ND	U	5300		10	
PZ-114-AS	7/31/2012	220		720		ND	U			ND	U	230000		ND	U	5.8	J	ND	U	81000		3.2	J
PZ-114-AS	4/8/2013	420		650		ND	U			ND	U	240000		ND	U	ND	U	ND	U	99000		9.5	J
PZ-114-AS	7/12/2013	260		470		ND	U			ND	U	150000		ND	U	ND	U	ND	U	73000		4.4	J
PZ-114-AS	10/8/2013	250		450		ND	U	170	U	ND	U	150000	J	ND	U	ND	U	ND	U	72000	J	12	
PZ-115-SS	7/31/2012	3.4	U	210		ND	U			ND	U	150000		ND	U	4	J	ND	U	1900		2.9	J
PZ-115-SS	4/5/2013	ND	U	290		ND	U			ND	U	170000		ND	U	ND	U	ND	U	1700		ND	U
PZ-115-SS	7/11/2013	6	J	330		ND	U			ND	U	180000		ND	U	15	J	ND	U	1500		2.8	J
PZ-115-SS	10/8/2013	ND	U	330		ND	U	180	U	ND	U	190000	J	ND	U	ND	U	ND	U	1200	J	ND	U
PZ-116-SS	8/3/2012	ND	U	63		ND	U			ND	U	39000		ND	U	ND	U	ND	U	69	J	ND	U
PZ-116-SS	4/12/2013	ND	U	66	J	ND	U			ND	U	43000		ND	U	ND	U	ND	U	ND	U	ND	U
PZ-116-SS	7/11/2013	ND	U	73		ND	U			ND	U	43000		ND	U	ND	U	5.3	J	ND	U	1.6	J
PZ-116-SS	10/11/2013	ND	U	76		ND	U	380		ND	U	49000		ND	U	ND	U	ND	U	ND	U	ND	U
PZ-200-SS	8/2/2012	12	J+	660		ND	U			ND	U	200000		5.4	U	ND	U	ND	U	17000	J	5.8	J
PZ-200-SS	4/5/2013	ND	U	980		ND	U			ND	U	220000		ND	U	ND	U	ND	U	9100		15	J
PZ-200-SS	7/19/2013	27		880	J-	ND	U			ND	U	230000		ND	U	29	J	13	J	32000		6	J
PZ-200-SS	10/2/2013	ND	U	800		ND	U	ND	U	ND	U	230000		ND	U	41		ND	U	12000		11	
PZ-200-SS FD	8/2/2012	3.5	U	630		ND	U			ND	U	200000		ND	U	ND	U	ND	U	9200	J	4.8	J
PZ-201A-SS	8/1/2012	ND	U	120		ND	U			ND	U	110000		ND	U	ND	U	ND	U	190		3.6	J
PZ-201A-SS	4/8/2013	11	U	130	J	ND	U			ND	U	110000		ND	U	ND	U	ND	U	520		ND	U
PZ-201A-SS	7/10/2013	ND	U	130		ND	U			ND	U	100000		ND	U	ND	U	ND	U	53	J	2.6	J
PZ-201A-SS	10/9/2013	10		140		ND	U	ND	U	ND	U	120000		ND	U	ND	U	ND	U	ND	U	11	U
PZ-201A-SS FD	8/1/2012	ND	U	120		ND	U			ND	U	110000		ND	U	ND	U	ND	U	180		3.4	J
PZ-202-SS	8/2/2012	17		660		3.1	U			ND	U	140000		51		23	J	52		21000	J	46	
PZ-202-SS	4/12/2013	ND	U	390		ND	U			ND	U	130000		ND	U	ND	U	ND	U	2800		9.5	J
PZ-202-SS	7/11/2013	7.4	J	580		ND	U			ND	U	200000		ND	U	6.9	J	ND	U	5000		2.1	J
PZ-202-SS	10/11/2013	ND	U	630		ND	U	ND	U	ND	U	220000		ND	U	36		ND	U	12000		13	
PZ-203-SS	8/1/2012	ND	U	89		ND	U			ND	U	100000		ND	U	ND	U	ND	U	320		2	J
PZ-203-SS	4/5/2013	ND	U	94	J	ND	U			ND	U	100000		ND	U	ND	U	ND	U	250	J	10	J
PZ-203-SS	7/17/2013	ND	U	91		ND	U			ND	U	100000		4.7	J	4.1	U	ND	U	280		ND	U
PZ-203-SS	10/2/2013	ND	U	89		ND	U	87		ND	U	100000		ND	U	ND	U	ND	U	350		ND	U
PZ-204A-SS	8/2/2012	21		340		ND	U			ND	U	160000		ND	U	ND	U	ND	U	5500	J	3.5	J
PZ-204A-SS	4/8/2013	23	U	510		4.5	U			5	J	240000		16	J	ND	U	ND	U	10000		18	J
PZ-204A-SS	7/16/2013	15		440		ND	U			ND	U	280000		4.3	J	8.4		ND	U	9900		5.6	J
PZ-204A-SS	10/8/2013	17		450		ND	U	300	J+	ND	U	310000	J	ND	U	26		ND	U	9800	J	15	
PZ-204-SS	8/3/2012	ND	U	200		ND	U			ND	U	70000		ND	U	ND	U	ND	U	2000		1.7	J
PZ-204-SS	4/9/2013	ND	U	200	J	ND	U			ND	U	80000		ND	U	ND	U	ND	U	4700		11	J
PZ-204-SS	7/17/2013	ND	U	180		ND	U			ND	U	78000		ND	U	ND	U	ND	U	1900		2.6	J
PZ-204-SS	10/8/2013	ND	U	140		ND	U	60	U	ND	U	79000	J	ND	U	ND	U	ND	U	810	J	12	
PZ-205-AS	8/3/2012	20		1400		ND	U			ND	U	320000		ND	U	ND	U	4.8	J	34000		3.8	J
PZ-205-AS	4/8/2013	32	U	1300		ND	U			ND	U	310000		ND	U	ND	U	ND	U	36000		11	J
PZ-205-AS	7/18/2013	95	J	1800	J-	3.4	U			1	J	370000		140		32	J	170		150000		94	
PZ-205-AS	10/15/2013	30		1900		ND	U	670		ND	U	340000		41		51		39		70000		48	
PZ-205-SS	8/3/2012	ND	U	140		ND	U			ND	U	110000		ND	U	ND	U	ND	U	120		ND	U
PZ-205-SS	4/8/2013	ND	U	140	J	ND	U			ND	U	110000		ND	U	ND	U	ND	U	300	J	ND	U
PZ-205-SS	7/10/2013	ND	U	150		ND	U			ND	U	120000		ND	U	ND	U	ND	U	ND	U	2	J
PZ-205-SS	10/9/2013	ND	U	150		ND	U	66	U	ND	U	120000		ND	U	ND	U	ND	U	ND	U	10	U
PZ-206-SS	8/7/2012	ND	U	110		ND	U			ND	U	130000		6.7	J	4.8	J	ND	U	5700		5.9	J
PZ-206-SS	4/8/2013	ND	U	82	J	ND	U			ND	U	120000		ND	U	ND	U	ND	U	2400		ND	U
PZ-206-SS	7/18/2013	ND	U	73	J-	ND	U			ND	U	130000		7.4	J	ND	U	ND	U	2200		3.6	J
PZ-206-SS	10/7/2013	ND	U	92		ND	U	130		ND	U	130000		ND	U	ND	U	ND	U	3100		7.5	
PZ-207-AS	8/8/2012	5.4	J	700		ND	U			ND	U	150000		3.4	J	5.9	J	6.3	J	22000		4.9	J
PZ-207-AS	4/3/2013	29	J	860		ND	U			ND	U	140000		ND	U	ND	U	ND	U	21000		ND	U
PZ-207-AS	7/18/2013	21		770	J-	ND	U			ND	U	120000		8	J	5.5	J	11	J	16000		5.1	J
PZ-207-AS	10/4/2013	ND	U	690		ND	U	1500		ND	U	150000		17		ND	U	ND	U	22000		10	
PZ-208-SS	8/2/2012	ND	U	180		ND	U			ND	U	96000		ND	U	ND	U	ND	U	4200	J	6.5	J
PZ-208-SS	4/12/2013	ND	U	150	J	ND	U			ND	U	100000		ND	U	ND	U	ND	U	1000		ND	U
PZ-208-SS	7/16/2013	ND	U	150		ND	U			ND	U	100000		ND	U	ND	U	ND	U	1000		2.6	J
PZ-208-SS	10/8/2013	ND	U	220		ND	U	ND	U	ND	U	170000	J	ND	U	ND	U	ND	U	2300	J	ND	U

Sample ID	DATE	ARSENIC(Tot)		ARSENIC(Tot)	Barium(Tot)		Barium(Tot)		BERYLLIUM(Tot)		BERYLLIUM(Tot)		BORON(Tot)		BORON(Tot)		CADMIUM(Tot)		CADMIUM(Tot)		CALCIUM(Tot)		CALCIUM(Tot)		Chromium(Tot)		Chromium(Tot)		Cobalt(Tot)		Cobalt(Tot)		COPPER(Tot)		COPPER(Tot)		IRON(Tot)		IRON(Tot)		LEAD(Tot)		LEAD(Tot)	
PZ-209-SD	11/7/2013	ND	U		38				ND	U			160	U			ND	U			60000				ND	U			ND	U			96				ND	U			ND	U		
PZ-209-SS	11/7/2013	ND	U		160				ND	U			190	U			ND	U			100000				ND	U			ND	U			ND	U			ND	U			ND	U		
PZ-210-SD	11/6/2013	21			630				6	U			590				ND	U			120000				27				ND	U			ND	U			20000				78			
PZ-210-SD FD	11/6/2013	14			500				4.5	U			550				ND	U			110000				28				ND	U			ND	U			16000				65			
PZ-210-SS	11/7/2013	ND	U		63				ND	U			120	U			ND	U			90000				ND	U			ND	U			ND	U			240				ND	U		
PZ-211-SD	11/6/2013	59			480				10	U			270				ND	U			100000				ND	U			ND	U			ND	U			42000				170			
PZ-211-SS	11/7/2013	ND	U		64				ND	U			380				ND	U			77000				ND	U			ND	U			ND	U			ND	U			ND	U		
PZ-212-SD	11/7/2013	ND	U		140				ND	U			84	U			ND	U			90000				ND	U			ND	U			ND	U			ND	U			ND	U		
PZ-212-SS	11/7/2013	ND	U		150				ND	U			120	U			ND	U			110000				ND	U			ND	U			ND	U			700				ND	U		
PZ-302-AI	8/9/2012	13	U		310				ND	U							ND	U			170000				ND	U			20	J			ND	U			4900				ND	U		
PZ-302-AI	4/3/2013	ND	U		360				ND	U							ND	U			200000				ND	U			ND	U			ND	U			1800				ND	U		
PZ-302-AI	7/16/2013	2.8	J		350				ND	U							ND	U			190000				4	J			6.7	U			ND	U			2000				2.4	J		
PZ-302-AI	10/3/2013	ND	U		350				ND	U			440				ND	U			210000				ND	U			26				ND	U			1800				ND	U		
PZ-302-AS	7/16/2013	390			550				ND	U							ND	U			250000				ND	U			21	U			5.6	J			150000				11			
PZ-302-AS	10/8/2013	200			800				ND	U			390				ND	U			270000	J			ND	U			ND	U			ND	U			83000	J			18			
PZ-303-AS	8/10/2012	88			770				ND	U							ND	U			310000				ND	U			ND	U			ND	U			78000				9.5	J		
PZ-303-AS	4/4/2013	110			790				ND	U							ND	U			310000				ND	U			ND	U			ND	U			76000				14	J		
PZ-303-AS	7/15/2013	150			830				ND	U							ND	U			360000				ND	U			9.6	J			ND	U			120000				10			
PZ-303-AS	10/4/2013	200			940				ND	U			290				ND	U			410000				24				ND	U			ND	U			92000				29			
PZ-304-AI	8/10/2012	ND	U		1700				ND	U							ND	U			250000				ND	U			ND	U			ND	U			22000				13	J		
PZ-304-AI	4/4/2013	ND	U		1200				ND	U							ND	U			240000				ND	U			ND	U			ND	U			16000				ND	U		
PZ-304-AI	7/16/2013	ND	U		1300				ND	U							ND	U			220000				ND	U			4	U			ND	U			16000				3.2	J		
PZ-304-AI	10/1/2013	ND	U		1600				ND	U			740				ND	U			210000				ND	U			ND	U			ND	U			19000				7.5			
PZ-304-AI FD	10/1/2013	ND	U		1600				ND	U			750				ND	U			210000				ND	U			ND	U			ND	U			19000				9.5			
PZ-304-AS	8/10/2012	210			1600				ND	U							ND	U			100000				ND	U			ND	U			ND	U			26000				ND	U		
PZ-304-AS	4/4/2013	230			1900				ND	U							ND	U			110000				ND	U			ND	U			ND	U			29000				ND	U		
PZ-304-AS	7/16/2013	220			2000				ND	U							ND	U			110000				4.9	J			6.3	U			ND	U			27000				6.6	J		
PZ-304-AS	10/1/2013	210			2300				ND	U			1900				ND	U			140000				ND	U			ND	U			ND	U			30000				13			
PZ-305-AI	8/8/2012	26			670				ND	U							ND	U			300000				ND	U			ND	U			5.6	J			44000				3.8	J		
PZ-305-AI	4/5/2013	11	J		820				ND	U							ND	U			290000				ND	U			ND	U			ND	U			42000				19	J		
PZ-305-AI	7/22/2013	24			630		J-		ND	U							ND	U			300000				ND	U			ND	U			ND	U			46000				3.4	J		
PZ-305-AI	10/2/2013	25			640				ND	U			69				ND	U			300000				ND	U			ND	U			ND	U			45000				13			
PZ-305-AI FD	4/5/2013	17	J		930				ND	U							ND	U			300000				23	J			ND	U			23	J			45000				27	J		
USGS-B3	11/7/2013	ND	U		620				ND	U			100	U			ND	U			110000				17				ND	U			ND	U			5800				ND	U		
USGS-D1	11/20/2013	ND	U		230				ND	U			75	U			ND	U			140000				ND	U			ND	U			28				ND	U			14			
S-10	8/8/2012	36			110				ND	U							ND	U			360000				ND	U			ND	U			ND	U			65000				1.8	J		
S-10	4/4/2013	54			180		J		ND	U							ND	U			230000				ND	U			ND	U			ND	U			130000				8.5	J		
S-10	7/15/2013	46			650				ND	U							ND	U			270000				ND	U			ND	U			ND	U			62000				4.4	J		
S-10	10/1/2013	28			85				ND	U			1200				ND	U			540000				ND	U			24				ND	U			150000				13			
S-5	8/14/2012	14	J		420				ND	U							ND	U			40000				16	J			ND	U			ND	U			13000				18	J		
S-5	4/11/2013	12	J		450				ND	U							ND	U			65000				ND	U			ND	U			ND	U			19000				8.5	J		
S-5	7/9/2013	16			550				ND	U							ND	U			62000				10				15	J			19	J			22000				25			
S-5	10/7/2013	20			620				ND	U			3300				ND	U			51000				ND	U			ND	U			ND	U			19000				14			
S-53	4/12/2013	42	U		1400				5.5	U							ND	U			230000				98				46	J			95	J			100000				140			
S-53	7/18/2013	31			1200		J-		2.7	U							4.4	J			240000				59				38	J			100				82000				73			
S-53	10/15/2013	ND	U		500				ND	U			260		J+		ND	U			170000				19				52				ND	U			17000				31			
S-61	8/7/2012	ND	U		250				ND	U							ND	U			180000				ND	U			6.6	J			ND	U			6400				27			
S-61	4/5/2013	ND	U		220		J		ND	U							ND	U			160000				ND	U			ND	U			ND	U			1500				280			
S-61	7/12/2013	9.4	U		540				ND	U							ND	U			210000				19				19	J			13	J			19000				81			
S-61	10/3/2013	ND	U		390				ND	U			ND	U			ND	U			200000				21				28				ND	U			11000				39			
S-8	8/9/2012	15	U		300				ND	U							ND	U			99000				ND	U			ND	U			ND	U			3000				ND	U		
S-8	4/4/2013	ND	U		400				ND	U							ND	U			130000				ND	U			ND	U			ND	U			1600				ND	U		
S-8	7/12/2013	3.4	J		290				ND	U							ND	U			95000				ND	U			ND	U			ND	U			750				1.8	J		
S-8	10/1/2013	ND	U		340				ND	U			91	U			ND	U			120000				ND	U			ND	U			ND	U			630				ND	U		
S-82	8/10/2012	230			1300				ND	U							ND	U			180000				ND	U			ND	U			ND	U			45000				51			
S-82	4/9/2013	230			1300				ND	U							6	J			240000				17	J			62	J			ND	U			59000				110			
S-82	7/11/2013	200			790				ND	U							ND	U			190000				ND	U			11	J			ND	U			36000				5.3	J		
S-82	10/8/2013	230			930				ND	U			2600				ND	U			210000	J			ND	U			36				ND	U			38000	J			ND	U		
S-84	8/6/2012	120			1100				ND	U							ND	U			150000				16				69				22	J			69000				25			

Sample ID	DATE	ARSENIC(Tot)		Barium(Tot)		BERYLLIUM(Tot)		BORON(Tot)		CADMIUM(Tot)		CALCIUM(Tot)		Chromium(Tot)		Cobalt(Tot)		COPPER(Tot)		IRON(Tot)		LEAD(Tot)	
S-84	4/11/2013	140		900		ND	U			ND	U	170000		ND	U	43	J	ND	U	73000		18	J
S-84	7/10/2013	130		1700		1.9	J			1	J	340000		ND	U	79		24	J	120000		49	
S-84	10/9/2013	170		1200		ND	U	410	J+	ND	U	240000		ND	U	38		ND	U	95000		36	U
S-84 FD	10/9/2013	170		1300		ND	U	400	J+	ND	U	230000		27		42		ND	U	97000		37	

Sample ID	DATE	MAGNESIUM(Tot)	MAGNESIUM(Tot)	Manganese(Tot)	Manganese(Tot)	MERCURY(Tot)	MERCURY(Tot)	NICKEL(Tot)	NICKEL(Tot)	Potassium(Tot)	Potassium(Tot)	SELENIUM(Tot)	SELENIUM(Tot)	SILVER(Tot)	SILVER(Tot)	SODIUM(Tot)	SODIUM(Tot)	STRONTIUM(Tot)	STRONTIUM(Tot)	THALLIUM(Tot)	THALLIUM(Tot)	VANADIUM(Tot)	VANADIUM(Tot)
D-12	8/8/2012	67000	J	1100		ND	UJ-	ND	U	13000		ND	U	ND	U	170000				ND	U	ND	U
D-12	4/4/2013	64000		1200		ND	U	ND	U	14000	J	ND	U	ND	U	180000				ND	U	ND	U
D-12	7/15/2013	67000		1000		ND	U	15	J	14000		8.1	U	ND	U	170000				ND	U	ND	U
D-12	10/1/2013	64000		1100		ND	U	ND	U	12000	J+	ND	U	ND	U	170000		1300		ND	U	ND	U
D-12 FD	4/4/2013	65000		1200		0.079	U	ND	U	14000	J	ND	U	ND	U	180000				ND	U	ND	U
D-12 FD	7/15/2013	67000		980		ND	U	15	J	13000		9.9	U	ND	U	170000				ND	U	4.8	J
D-12 FD	10/7/2013																						
D-13	8/10/2012	28000		340		ND	UJ-	ND	U	ND	U	ND	U	ND	U	25000				ND	U	ND	U
D-13	4/4/2013	39000		620		0.087	J	ND	U	ND	U	ND	U	ND	U	33000				ND	U	27	J
D-13	7/18/2013	34000		400	J-	ND	UJ-	ND	U	5500		ND	U	ND	U	36000				ND	U	ND	U
D-13	10/7/2013	34000		430		ND	U	ND	U	ND	U	ND	U	ND	U	54000		350		ND	U	ND	U
D-13 FD	8/10/2012	30000		390		ND	UJ-	ND	U	ND	U	ND	U	ND	U	27000				ND	U	ND	U
D-14	8/10/2012																						
D-14	4/12/2013	69000		1600		1.2		ND	U	56000		ND	U	ND	U	240000				ND	U	25	J
D-14	7/18/2013	75000		1400	J-	0.29	J-	25	J	71000		3.1	J	ND	U	400000				ND	U	6.6	J
D-14	10/15/2013	70000		1200		0.26		ND	U	67000	J+	ND	U	ND	U	400000		800		ND	U	ND	U
D-3	8/8/2012	83000	J	470		ND	UJ-	18	J	21000		ND	U	ND	U	290000				ND	U	ND	U
D-3	4/11/2013	85000		500		0.069	J	ND	U	28000		ND	U	ND	U	390000				ND	U	ND	U
D-3	7/9/2013	84000		600		0.071	J	19	J	32000		ND	U	ND	U	390000				ND	U	ND	U
D-3	10/7/2013	83000		570		ND	U	ND	U	28000		ND	U	ND	U	400000		960		ND	U	ND	U
D-3 FD	8/8/2012	80000	J	470		ND	UJ-	17	J	21000		ND	U	ND	U	290000				ND	U	5.1	J
D-6	8/7/2012	42000		490		ND	U	ND	U	12000		ND	U	ND	U	100000				ND	U	4.4	J
D-6	4/9/2013	61000		610		ND	U	ND	U	13000	J	ND	U	ND	U	140000				ND	U	ND	U
D-6	7/12/2013	64000		480		ND	U	13	J	13000		ND	U	ND	U	150000				ND	U	ND	U
D-6	10/8/2013	59000		530	J	ND	U	ND	U	14000		ND	U	ND	U	150000		770	J	ND	U	ND	U
D-6 FD	8/7/2012	49000		480		ND	U	ND	U	12000		ND	U	ND	U	120000				ND	U	ND	U
D-81	8/9/2012	57000	J+	1100		ND	UJ-	ND	U	ND	U	ND	U	ND	U	15000	J+			ND	U	ND	U
D-81	4/3/2013	56000		1100		ND	U	ND	U	ND	U	24	UJ+	ND	U	20000				ND	U	ND	U
D-81	7/17/2013	46000		850		ND	U	ND	U	4000	J	ND	U	ND	U	32000				ND	U	ND	U
D-81	10/3/2013	44000		830		ND	U	ND	U	ND	U	ND	U	ND	U	30000		540		ND	U	ND	U
D-81 FD	7/17/2013	45000		860		ND	U	ND	U	4000	J	ND	U	ND	U	32000				ND	U	ND	U
D-83	8/9/2012	22000	J+	240		ND	UJ-	ND	U	27000	J+	ND	U	ND	U	36000	J+			ND	U	ND	U
D-83	4/9/2013	35000		350		ND	U	ND	U	41000		ND	U	ND	U	76000				ND	U	ND	U
D-83	7/11/2013	42000		410		0.099	J	ND	U	45000		ND	U	ND	U	57000				ND	U	ND	U
D-83	10/8/2013	41000		430	J	ND	U	ND	U	46000		ND	U	ND	U	67000		740	J	ND	U	ND	U
D-83 FD	7/11/2013	41000		400		0.075	J	ND	U	43000		ND	U	ND	U	54000				ND	U	ND	U
D-85	8/6/2012	130000	J	9200		0.22	U	230		15000		ND	U	ND	U	140000				7.5	J	130	
D-85	4/11/2013	95000		5200		0.14	J+	460		13000	J	ND	U	ND	U	160000				ND	U	89	J
D-85	7/10/2013	120000		2600		0.079	J	130		9800		4.3	J	ND	U	160000				ND	U	58	
D-85	10/9/2013	88000		2200		ND	U	82		11000	J+	ND	U	ND	U	160000		780		ND	U	50	
D-87	8/1/2012	61000		520		ND	UJ-	ND	U	11000		ND	U	ND	U	170000				ND	U	4.3	J
D-87	4/9/2013	70000		620		ND	U	ND	U	12000	J	ND	U	ND	U	190000				ND	U	ND	U
D-87	7/17/2013	71000		620		ND	U	16	J	13000		ND	U	ND	U	220000				ND	U	ND	U
D-87	10/2/2013	68000		670		ND	U	ND	U	13000	J+	ND	U	ND	U	210000		750		ND	U	ND	U
D-87 FD	10/2/2013	70000		670		ND	U	ND	U	13000	J+	ND	U	ND	U	200000		750		ND	U	ND	U
D-93	8/14/2012	78000		900		ND	U	ND	U	16000	J+	ND	U	ND	U	250000				ND	U	ND	U
D-93	4/9/2013	81000		450		ND	U	ND	U	16000	J	ND	U	ND	U	220000				ND	U	ND	U
D-93	7/11/2013	81000		420		0.12	J	ND	U	17000		ND	U	ND	U	200000				ND	U	ND	U
D-93	10/8/2013	79000		580	J	ND	U	ND	U	19000		ND	U	ND	U	220000		1100	J	ND	U	ND	U
USGS-E1	11/7/2013	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	270000		ND	U	ND	U	ND	U
USGS-B4-S	8/2/2013	24000		680		ND	U	ND	U	5700		ND	U	ND	U	17000				ND	U	ND	U
USGS-B4-S	11/7/2013	24000		780		ND	U	ND	U	ND	U	ND	U	ND	U	19000		830		ND	U	ND	U
USGS-B4-D	8/2/2013	21000		440		ND	U	ND	U	4000		ND	U	ND	U	20000				ND	U	ND	U
USGS-A5	11/7/2013	39000		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	42000		4200		ND	U	ND	U
I-11	8/8/2012	76000	J	1300		ND	UJ-	13	J	22000		ND	U	ND	U	110000				ND	U	6.8	J
I-11	4/4/2013	99000		2100		0.088	J	ND	U	27000		21	UJ+	ND	U	130000				ND	U	ND	U
I-11	7/15/2013	79000		1800		ND	U	15	J	24000		ND	U	ND	U	120000				ND	U	ND	U
I-11	10/1/2013	94000		2300		ND	U	ND	U	25000	J+	ND	U	ND	U	130000		1400		ND	U	ND	U
I-4	8/14/2012	58000		980		ND	U	ND	U	73000	J+	ND	U	ND	U	260000				ND	U	ND	U

Sample ID	DATE	MAGNESIUM(Tot)	MAGNESIUM(Tot)	Manganese(Tot)	Manganese(Tot)	MERCURY(Tot)	MERCURY(Tot)	NICKEL(Tot)	NICKEL(Tot)	Potassium(Tot)	Potassium(Tot)	SELENIUM(Tot)	SELENIUM(Tot)	SILVER(Tot)	SILVER(Tot)	SODIUM(Tot)	SODIUM(Tot)	STRONTIUM(Tot)	STRONTIUM(Tot)	THALLIUM(Tot)	THALLIUM(Tot)	VANADIUM(Tot)	VANADIUM(Tot)
I-4	4/12/2013	65000		590		0.065	J	ND	U	120000		ND	U	ND	U	170000				ND	U	28	J
I-4	7/9/2013	70000		490		ND	U	18	J	120000		ND	U	ND	U	240000				ND	U	ND	U
I-4	10/7/2013	55000		360		ND	U	ND	U	160000		ND	U	ND	U	550000		360		ND	U	ND	U
I-4 FD	7/9/2013	70000		480		ND	U	18	J	120000		ND	U	ND	U	240000				ND	U	ND	U
I-62	8/9/2012	27000	J+	620		ND	UJ-	ND	U	ND	U	ND	U	ND	U	18000	J+			ND	U	ND	U
I-62	4/4/2013	28000		540		ND	U	ND	U	ND	U	30	UJ+	ND	U	21000				ND	U	ND	U
I-62	7/12/2013	29000		500		ND	U	ND	U	6000		ND	U	ND	U	26000				ND	U	ND	U
I-62	10/1/2013	31000		580		ND	U	ND	U	ND	U	ND	U	ND	U	27000		520		ND	U	ND	U
I-62 FD	4/4/2013	27000		520		ND	U	ND	U	ND	U	ND	U	ND	U	21000				ND	U	ND	U
I-62 FD	7/12/2013	29000		500		ND	U	ND	U	6100		ND	U	ND	U	25000				ND	U	ND	U
I-65	8/6/2012	23000	J	640		0.069	U	20	J	5300		ND	U	ND	U	50000				ND	U	6	J
I-65	4/16/2013	20000		750		ND	U	24	J	5100		ND	U	ND	U	56000				ND	U	ND	U
I-65	7/18/2013	17000		250	J-	ND	UJ-	ND	U	4800	J	ND	U	ND	U	58000				ND	U	ND	U
I-65	10/15/2013	18000		270		ND	U	ND	U	ND	U	ND	U	ND	U	69000		280		ND	U	ND	U
I-65 FD	4/16/2013	21000		850		ND	U	27	J	5200		ND	U	ND	U	56000				ND	U	ND	U
I-65 FD	7/18/2013	17000		270	J-	ND	UJ-	ND	U	5000		ND	U	ND	U	59000				ND	U	5	J
I-66	8/10/2012	15000		3600		ND	UJ-	ND	U	ND	U	ND	U	ND	U	43000				ND	U	ND	U
I-66	4/5/2013	19000		5000		ND	U	ND	U	ND	U	ND	U	ND	U	45000				ND	U	ND	U
I-66	7/15/2013	16000		4500		ND	U	ND	U	4800	J	3.5	U	ND	U	41000				6	J	ND	U
I-66	10/9/2013	18000		4900		ND	U	ND	U	ND	U	ND	U	ND	U	48000		1000		ND	U	ND	U
I-67	8/10/2012	35000		1200		ND	UJ-	ND	U	8700	J+	ND	U	ND	U	55000				ND	U	ND	U
I-67	4/5/2013	35000		1200		ND	U	ND	U	10000	J	ND	U	ND	U	63000				ND	U	ND	U
I-67	7/12/2013	38000		1300		ND	U	ND	U	9000		ND	U	ND	U	54000				ND	U	ND	U
I-67	10/3/2013	37000		1400		ND	U	ND	U	8500		ND	U	ND	U	57000		1300		ND	U	ND	U
I-67 FD	4/5/2013	35000		1200		ND	U	ND	U	10000	J	ND	U	ND	U	63000				ND	U	ND	U
I-67 FD	10/3/2013	38000		1400		ND	U	ND	U	8600		ND	U	ND	U	57000		1300		ND	U	ND	U
I-68	8/6/2012	72000	J	1600		0.38		91		12000		ND	U	ND	U	310000				ND	U	75	
I-68	4/9/2013	79000		2200		0.36		160	J	15000	J	ND	U	ND	U	360000				ND	U	110	U
I-68	7/12/2013	47000		1600		0.15	J	52		9000		3.2	J	ND	U	240000				ND	U	28	J
I-68	10/4/2013	52000		2100		0.077		ND	U	ND	U	ND	U	ND	U	290000		590		ND	U	21	
I-73	8/4/2012	81000		1500		ND	U	73		11000		ND	U	ND	U	140000				ND	U	24	J
I-73	4/12/2013	120000		1800		0.09	J	110	J	12000	J	ND	U	ND	U	300000				ND	U	23	J
I-73	7/19/2013	270000		3800	J-	ND	UJ-	420	J	ND	U	ND	U	ND	UJ-	690000				ND	U	ND	U
I-73	10/3/2013	290000		1800		ND	U	750		27000		ND	U	ND	U	2500000		3600		ND	U	89	
I-9	8/14/2012	77000		390		ND	U	ND	U	14000	J+	ND	U	ND	U	220000				ND	U	ND	U
I-9	4/9/2013	72000		1200		ND	U	ND	U	20000	J	ND	U	ND	U	250000				ND	U	ND	U
I-9	7/11/2013	74000		1300		0.1	J	14	J	21000		ND	U	ND	U	220000				ND	U	ND	U
I-9	10/8/2013	72000		1100	J	ND	U	ND	U	21000		ND	U	ND	U	230000		1000	J	ND	U	ND	U
I-9 FD	8/14/2012	81000		410		ND	U	ND	U	15000	J+	ND	U	ND	U	240000				ND	U	ND	U
I-9 FD	4/9/2013	71000		1100		ND	U	ND	U	20000	J	ND	U	ND	U	240000				ND	U	ND	U
I-9 FD	10/8/2013	71000		1100	J	ND	U	ND	U	21000		ND	U	ND	U	230000		1000	J	ND	U	ND	U
LR-100	8/13/2012	60000		220		0.13	J	ND	U	78000	J+	ND	U	ND	U	200000				ND	U	ND	U
LR-100	4/3/2013	61000		140		0.08	J	ND	U	89000		ND	U	ND	U	180000				ND	U	ND	U
LR-100	7/17/2013	63000		170		ND	U	23	J	83000		ND	U	ND	U	180000				ND	U	ND	U
LR-100	10/4/2013	61000		190		ND	U	ND	U	86000		ND	U	ND	U	200000		500		ND	U	ND	U
LR-100 FD	10/4/2013	62000		190		ND	U	ND	U	85000		ND	U	ND	U	200000		500		ND	U	ND	U
LR-103	8/13/2012	61000		1100		ND	U	ND	U	ND	U	ND	U	ND	U	46000				ND	U	ND	U
LR-103	4/3/2013	68000		1100		0.11	J	ND	U	9000	J	13	UJ+	ND	U	41000				ND	U	22	J
LR-103	7/17/2013	63000		1000		ND	U	13	J	8600		ND	U	ND	U	48000				ND	U	ND	U
LR-103	10/2/2013	64000		950		ND	U	ND	U	8800	J+	ND	U	ND	U	59000		720		ND	U	ND	U
LR-104	8/13/2012	63000		1200		ND	U	ND	U	ND	U	ND	U	ND	U	24000				ND	U	ND	U
LR-104	4/4/2013	57000		1100		ND	U	ND	U	ND	U	ND	U	ND	U	20000				ND	U	27	J
LR-104	7/22/2013	54000		1100	J-	ND	UJ-	ND	U	5000		ND	U	ND	UJ-	21000				ND	U	ND	U
LR-104	10/2/2013	54000		1200		ND	U	ND	U	ND	U	ND	U	ND	U	20000		710		ND	U	ND	U
LR-104 FD	8/13/2012	61000		1200		ND	U	ND	U	ND	U	ND	U	ND	U	24000				ND	U	ND	U
LR-105	8/1/2012	100000		70		0.065	J-	92		200000		ND	U	ND	U	680000				ND	U	4.1	U
LR-105	4/3/2013	100000		64	J	0.078	J	120	J	230000		19	UJ+	ND	U	720000				ND	U	24	J
MW-102	8/7/2012	86000		2000		ND	U	18	J	5400		ND	U	ND	U	17000				ND	U	5.3	J
MW-102	7/15/2013	82000		2800		ND	U	19	J	4800	J	ND	U	ND	U	16000				ND	U	ND	U

Sample ID	DATE	MAGNESIUM(Tot)	MAGNESIUM(Tot)	Manganese(Tot)	Manganese(Tot)	MERCURY(Tot)	MERCURY(Tot)	NICKEL(Tot)	NICKEL(Tot)	Potassium(Tot)	Potassium(Tot)	SELENIUM(Tot)	SELENIUM(Tot)	SILVER(Tot)	SILVER(Tot)	SODIUM(Tot)	SODIUM(Tot)	STRONTIUM(Tot)	STRONTIUM(Tot)	THALLIUM(Tot)	THALLIUM(Tot)	VANADIUM(Tot)	VANADIUM(Tot)
MW-102	10/3/2013	110000		2500		ND	U	220		ND	U	ND	U	ND	U	22000		860		ND	U	39	
MW-103	8/11/2012	99000		2700		0.26	J-	160	J	17000	J+	74	U	ND	U	19000				ND	U	200	J
MW-103	4/5/2013	47000		620		ND	U	ND	U	ND	U	34	U	ND	U	20000				ND	U	26	J
MW-103	7/15/2013	39000		1000		0.06	J	30	J	7200		7.3	U	ND	U	19000				ND	U	31	J
MW-103	10/4/2013	41000		1200		ND	U	ND	U	ND	U	ND	U	ND	U	19000		560		ND	U	29	
MW-104	8/9/2012	94000	J+	4500		ND	UJ-	ND	U	ND	U	ND	U	ND	U	13000	J+			ND	U	39	J
MW-104	4/5/2013	79000		3900		ND	U	ND	U	ND	U	ND	U	ND	U	13000				ND	U	ND	U
MW-104	7/16/2013	79000		3000		0.086	J	72		11000		6.2	J	ND	U	11000				ND	U	82	
MW-104	10/3/2013	120000		5300		0.13		150		17000		ND	U	ND	U	15000		1500		ND	U	180	
MW-1204	8/2/2012	53000		120	J+	ND	U	ND	U	2200	J	ND	U	ND	U	12000				ND	U	ND	U
MW-1204	4/12/2013	53000		100		ND	U	ND	U	ND	U	ND	U	ND	U	12000				ND	U	ND	U
MW-1204	7/11/2013	150000		120		0.11	J	ND	U	7300		ND	U	ND	U	120000				ND	U	7	J
MW-1204	10/11/2013	280000	J	7400	J	ND	U	ND	UJ	59000	J	ND	UJ	ND	UJ	560000	J	14000	J	ND	UJ	61	UJ
MW-1204 FD	4/12/2013	52000		100		ND	U	ND	U	ND	U	ND	U	ND	U	12000				ND	U	ND	U
PURGE TANK	8/16/2012	40000	J-	110		ND	U	ND	U	11000	J	ND	U	ND	U	130000	J-			ND	U	25	U
PURGE TANK	4/16/2013	49000		81		ND	U	15	J	12000		ND	U	ND	U	140000				ND	U	ND	U
PURGE TANK	7/23/2013																						
PURGE TANK	7/24/2013	43000		75		ND	U	13	J	12000		2.9	J	ND	U	140000				ND	U	ND	U
PURGE TANK	11/8/2013	52000		ND	U	ND	U	ND	U	13000		ND	U	ND	U	160000		1200		ND	U	ND	U
PZ-100-KS	8/16/2012	12000	J-	21	J	ND	U	ND	U	ND	U	ND	U	ND	U	230000	J-			ND	U	32	U
PZ-100-KS	4/16/2013	13000		17		ND	U	ND	U	5000		ND	U	ND	U	230000				ND	U	ND	U
PZ-100-KS	7/23/2013	13000		17		ND	UJ-	ND	U	4900	J	ND	U	ND	U	240000				ND	U	ND	U
PZ-100-KS	10/15/2013	13000		28		ND	U	ND	U	ND	U	ND	U	ND	U	250000		3100		ND	U	ND	U
PZ-100-SD	7/31/2012	38000		74		ND	U	ND	U	2200	J	ND	U	ND	U	5500				ND	U	ND	U
PZ-100-SD	4/5/2013	36000		70	J	ND	U	ND	U	ND	U	ND	U	ND	U	5700				ND	U	ND	U
PZ-100-SD	7/9/2013	36000		67		ND	U	ND	U	2400	J	ND	U	ND	U	6700				ND	U	ND	U
PZ-100-SD	10/8/2013	34000		63	J	ND	U	ND	U	ND	U	ND	U	ND	U	6800		380	J	ND	U	ND	U
PZ-100-SS	7/31/2012	56000		4.7	J	ND	U	17	J	2700	J	ND	U	ND	U	15000				ND	U	ND	U
PZ-100-SS	4/5/2013	55000		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	14000				ND	U	ND	U
PZ-100-SS	7/9/2013	55000		ND	U	ND	U	17	J	2800	J	ND	U	ND	U	12000				ND	U	ND	U
PZ-100-SS	10/8/2013	51000		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	11000		1600	J	ND	U	ND	U
PZ-101-SS	8/7/2012	77000		81		ND	U	18	J	14000		ND	U	ND	U	85000				ND	U	4.1	J
PZ-101-SS	4/12/2013	98000		130		0.067	J-	ND	U	14000	J	ND	U	ND	U	100000				ND	U	ND	U
PZ-101-SS	7/11/2013	97000		48		ND	U	15	J	16000		ND	U	ND	U	99000				ND	U	ND	U
PZ-101-SS	10/8/2013	96000		89	J	ND	U	ND	U	16000		ND	U	ND	U	130000		2400	J	ND	U	ND	U
PZ-102R-SS	8/13/2012	43000		37	J	ND	U	ND	U	ND	U	ND	U	ND	U	26000				ND	U	ND	U
PZ-102R-SS	4/11/2013	51000		36	J	0.11	J	ND	U	ND	U	ND	U	ND	U	26000				ND	U	ND	U
PZ-102R-SS	7/19/2013	41000		39	J-	ND	UJ-	ND	U	3600	J	ND	U	ND	UJ-	26000				ND	U	ND	U
PZ-102R-SS	10/8/2013	41000		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	24000		1500	J	ND	U	ND	U
PZ-102-SS	8/13/2012	40000		360		ND	U	ND	U	ND	U	ND	U	ND	U	54000				ND	U	ND	U
PZ-102-SS	4/11/2013	57000		1000		0.14	J	80	J	ND	U	ND	U	ND	U	38000				ND	U	65	J
PZ-102-SS	7/19/2013	58000		1200	J-	ND	UJ-	57		8100		3.4	J	ND	UJ-	29000				ND	U	47	J
PZ-102-SS	10/8/2013	41000		260	J	ND	U	ND	U	ND	U	ND	U	ND	U	25000		820	J	ND	U	ND	U
PZ-103-SS	8/7/2012	64000		250		0.16	J	55		7800		ND	U	ND	U	29000				ND	U	52	
PZ-103-SS	4/8/2013	72000		430		ND	U	ND	U	ND	U	ND	U	ND	U	56000				ND	U	35	U
PZ-103-SS	7/19/2013	57000		470	J-	0.067	J-	81		8300		ND	U	6.2	J-	77000				ND	U	72	
PZ-103-SS	10/4/2013	56000		350		ND	U	ND	U	ND	U	ND	U	ND	U	110000		6200		ND	U	ND	U
PZ-104-KS	8/13/2012																						
PZ-104-KS	8/15/2012	35000	J-	21	J	ND	U	ND	U	ND	U	ND	U	ND	U	35000	J-			ND	U	25	U
PZ-104-KS	4/11/2013	37000		25	J	ND	U	ND	U	ND	U	ND	U	ND	U	35000				ND	U	ND	U
PZ-104-KS	7/18/2013	35000		14	J-	ND	UJ-	ND	U	1800	J	ND	U	ND	U	36000				ND	U	ND	U
PZ-104-KS	10/4/2013	34000		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	38000		2600		ND	U	ND	U
PZ-104-SD	8/1/2012	64000		140		ND	UJ-	18	J	7700		ND	U	ND	U	99000				ND	U	7.8	J
PZ-104-SD	4/11/2013	91000		180		ND	U	ND	U	34000		ND	U	ND	U	260000				ND	U	34	J
PZ-104-SD	7/11/2013	66000		160		ND	U	31	J	20000		ND	U	ND	U	120000				ND	U	11	J
PZ-104-SD	10/7/2013	50000		130		ND	U	ND	U	13000		ND	U	ND	U	100000		670		ND	U	ND	U
PZ-104-SS	8/1/2012	52000		61		ND	UJ-	ND	U	2300	J	ND	U	ND	U	11000				ND	U	ND	U
PZ-104-SS	4/11/2013	53000		49	J	ND	U	ND	U	ND	U	ND	U	ND	U	11000				ND	U	ND	U
PZ-104-SS	7/11/2013	54000		40		ND	U	ND	U	2200	J	ND	U	ND	U	12000				ND	U	ND	U

Sample ID	DATE	MAGNESIUM(Tot)	MAGNESIUM(Tot)	Manganese(Tot)	Manganese(Tot)	MERCURY(Tot)	MERCURY(Tot)	NICKEL(Tot)	NICKEL(Tot)	Potassium(Tot)	Potassium(Tot)	SELENIUM(Tot)	SELENIUM(Tot)	SILVER(Tot)	SILVER(Tot)	SODIUM(Tot)	SODIUM(Tot)	STRONTIUM(Tot)	STRONTIUM(Tot)	THALLIUM(Tot)	THALLIUM(Tot)	VANADIUM(Tot)	VANADIUM(Tot)
PZ-104-SS	10/9/2013	52000		41		ND	U	ND	U	ND	U	ND	U	ND	U	13000		1100		ND	U	ND	U
PZ-104-SS FD	4/11/2013	53000		48	J	ND	U	ND	U	ND	U	ND	U	ND	U	11000				ND	U	ND	U
PZ-105-SS	8/1/2012	53000		14	J	ND	UJ-	ND	U	1900	J	ND	U	ND	U	63000				ND	U	ND	U
PZ-105-SS	4/4/2013	52000		ND	U	ND	U	ND	U	ND	U	14	UJ+	ND	U	64000				ND	U	ND	U
PZ-105-SS	7/12/2013	50000		7.6	J	ND	U	ND	U	2000	J	ND	U	ND	U	61000				ND	U	ND	U
PZ-105-SS	10/9/2013	51000		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	60000		770		ND	U	ND	U
PZ-106-KS	8/14/2012	37000		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	63000				ND	U	ND	U
PZ-106-KS	4/15/2013	36000		6.1	J	ND	U	15	J	2000	J	ND	U	ND	U	61000				ND	U	ND	U
PZ-106-KS	7/19/2013	37000		5	J-	ND	UJ-	ND	U	2100	J	ND	U	ND	UJ-	64000				ND	U	ND	U
PZ-106-KS	10/11/2013	36000		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	62000		5300		ND	U	ND	U
PZ-106-KS FD	10/11/2013	35000		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	63000		5300		ND	U	ND	U
PZ-106-SD	7/31/2012	52000		160		ND	U	ND	U	2800	J	3.6	U	ND	U	10000				ND	U	6.6	U
PZ-106-SD	4/9/2013	54000		170		ND	U	ND	U	ND	U	ND	U	ND	U	11000				ND	U	20	J
PZ-106-SD	7/10/2013	50000		78		ND	U	ND	U	2700	J	ND	U	ND	U	10000				ND	U	ND	U
PZ-106-SD	10/8/2013	47000		63	J	ND	U	ND	U	ND	U	ND	U	ND	U	11000		1500	J	ND	U	ND	U
PZ-106-SS	7/31/2012	49000		33		ND	U	ND	U	2100	J	ND	U	ND	U	15000				ND	U	ND	U
PZ-106-SS	4/9/2013	51000		32	J	ND	U	ND	U	ND	U	ND	U	ND	U	15000				ND	U	ND	U
PZ-106-SS	7/10/2013	50000		24		ND	U	ND	U	2300	J	ND	U	ND	U	16000				ND	U	ND	U
PZ-106-SS	10/7/2013	47000		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	17000		730		ND	U	ND	U
PZ-107-SS	8/3/2012	110000		100		0.077	U	44		3600	J	ND	U	ND	U	82000				ND	U	ND	U
PZ-107-SS	8/4/2012																						
PZ-107-SS	4/12/2013	140000		420		1.1		120	J	ND	U	ND	U	ND	U	93000				ND	U	61	J
PZ-107-SS	7/19/2013	120000		240	J-	0.11	J-	52		4900	J	2.7	J	ND	UJ-	110000				ND	U	18	J
PZ-107-SS	10/3/2013	120000		400		ND	U	ND	U	ND	U	ND	U	ND	U	190000		1500		ND	U	ND	U
PZ-107-SS FD	7/19/2013	120000		240	J-	0.078	J-	50		4900	J	2.8	J	ND	UJ-	110000				ND	U	18	J
PZ-109-SS	8/2/2012	52000		ND	U	0.099	J	ND	U	3600	J	ND	U	ND	U	14000				ND	U	ND	U
PZ-109-SS	4/11/2013	55000		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	19000				ND	U	ND	U
PZ-109-SS	7/10/2013	56000		ND	U	ND	U	ND	U	4000	J	ND	U	ND	U	18000				ND	U	ND	U
PZ-109-SS	10/9/2013	51000		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	16000		3600		ND	U	ND	U
PZ-110-SS	8/2/2012	91000		200	J+	0.088	J	19	J	4300	J	ND	U	ND	U	95000				ND	U	ND	U
PZ-110-SS	4/4/2013	91000		190		ND	U	ND	U	ND	U	14	UJ+	ND	U	89000				ND	U	ND	U
PZ-110-SS	7/9/2013	91000		200		0.063	J	17	J	4300	J	ND	U	ND	U	91000				ND	U	ND	U
PZ-110-SS	10/8/2013	82000		190	J	ND	U	ND	U	ND	U	ND	U	ND	U	90000		1100	J	ND	U	ND	U
PZ-111-KS	8/13/2012	5700		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	370000				ND	U	ND	U
PZ-111-KS	4/9/2013	6700		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	400000				ND	U	ND	U
PZ-111-KS	7/17/2013	6100		ND	U	ND	U	ND	U	7300		ND	U	ND	U	390000				ND	U	ND	U
PZ-111-KS	10/3/2013	6000		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	410000		1700		ND	U	ND	U
PZ-111-SD	8/1/2012	57000		ND	U	ND	UJ-	ND	U	1700	J	ND	U	ND	U	19000				ND	U	ND	U
PZ-111-SD	4/4/2013	55000		ND	U	ND	U	ND	U	ND	U	36	UJ+	ND	U	19000				ND	U	ND	U
PZ-111-SD	7/9/2013	55000		ND	U	ND	U	ND	U	1800	J	ND	U	ND	U	20000				ND	U	ND	U
PZ-111-SD	10/7/2013	51000		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	20000		1300		ND	U	ND	U
PZ-112-AS	8/8/2012	90000	J	280		ND	UJ-	16	J	46000		ND	U	ND	U	110000				ND	U	7.5	J
PZ-112-AS	4/12/2013	64000		170		ND	U	ND	U	65000		ND	U	ND	U	110000				ND	U	ND	U
PZ-112-AS	7/9/2013	70000		200		ND	U	14	J	65000		ND	U	ND	U	99000				ND	U	ND	U
PZ-112-AS	10/2/2013	67000		230		ND	U	ND	U	57000	J+	ND	U	ND	U	110000		1100		ND	U	ND	U
PZ-113-AD	8/3/2012	77000		630		0.093	U	17	J	22000		ND	U	ND	U	290000	J			ND	U	ND	U
PZ-113-AD	4/11/2013	85000		650		0.08	J	ND	U	26000		ND	U	ND	U	350000				ND	U	ND	U
PZ-113-AD	7/10/2013	86000		640		0.065	J	20	J	29000		ND	U	ND	U	340000				ND	U	ND	U
PZ-113-AD	10/7/2013	85000		670		ND	U	ND	U	25000		ND	U	ND	U	380000		940		ND	U	ND	U
PZ-113-AD FD	8/3/2012	77000		610		0.078	U	24	J	8500		ND	U	ND	U	98000	J			ND	U	4.7	J
PZ-113-AD FD	7/10/2013	86000		640		0.077	J	20	J	29000		2.7	J	ND	U	340000				ND	U	ND	U
PZ-113-AD FD	10/7/2013	89000		680		ND	U	ND	U	25000		ND	U	ND	U	370000		940		ND	U	ND	U
PZ-113-AS	8/8/2012	54000	J	6400		ND	UJ-	29	J	6800		3.9	U	ND	U	50000				5.8	J	ND	U
PZ-113-AS	4/12/2013	52000		5500		ND	U	ND	U	ND	U	ND	U	ND	U	60000				ND	U	ND	U
PZ-113-AS	7/10/2013	52000		5500		ND	U	29	J	7700		ND	U	ND	U	76000				6.5	J	ND	U
PZ-113-AS	10/2/2013	51000		6400		ND	U	ND	U	ND	U	ND	U	ND	U	65000		670		ND	U	ND	U
PZ-113-SS	8/4/2012	48000		83		0.074	U	14	J	3600	J	ND	U	ND	U	24000				ND	U	12	J
PZ-113-SS	4/12/2013	81000		120		0.073	J	ND	U	ND	U	ND	U	ND	U	24000				ND	U	36	J
PZ-113-SS	7/11/2013	61000		100		ND	U	21	J	5400		ND	U	ND	U	23000				ND	U	27	J

Sample ID	DATE	MAGNESIUM(Tot)	MAGNESIUM(Tot)	Manganese(Tot)	Manganese(Tot)	MERCURY(Tot)	MERCURY(Tot)	NICKEL(Tot)	NICKEL(Tot)	Potassium(Tot)	Potassium(Tot)	SELENIUM(Tot)	SELENIUM(Tot)	SILVER(Tot)	SILVER(Tot)	SODIUM(Tot)	SODIUM(Tot)	STRONTIUM(Tot)	STRONTIUM(Tot)	THALLIUM(Tot)	THALLIUM(Tot)	VANADIUM(Tot)	VANADIUM(Tot)
PZ-113-SS	10/3/2013	47000		94		ND	U	ND	U	ND	U	ND	U	ND	U	25000		670		ND	U	ND	U
PZ-114-AS	7/31/2012	83000		4200		ND	U	ND	U	5600		3.4	U	ND	U	210000				ND	U	7	J
PZ-114-AS	4/8/2013	74000		3400		ND	U	ND	U	ND	U	ND	U	ND	U	110000				ND	U	31	U
PZ-114-AS	7/12/2013	40000		1900		ND	U	ND	U	4900	J	ND	U	ND	U	110000				ND	U	ND	U
PZ-114-AS	10/8/2013	36000		1800	J	ND	U	ND	U	ND	U	ND	U	ND	U	110000		550	J	ND	U	ND	U
PZ-115-SS	7/31/2012	73000		55		ND	U	24	J	2600	J	ND	U	ND	U	47000				ND	U	ND	U
PZ-115-SS	4/5/2013	74000		44	J	ND	U	ND	U	ND	U	ND	U	ND	U	49000				ND	U	ND	U
PZ-115-SS	7/11/2013	84000		52		0.083	J	43		2800	J	ND	U	ND	U	62000				ND	U	ND	U
PZ-115-SS	10/8/2013	78000		48	J	ND	U	ND	U	ND	U	ND	U	ND	U	64000		1700	J	ND	U	ND	U
PZ-116-SS	8/3/2012	29000		16		ND	U	ND	U	3200	J	ND	U	ND	U	62000				ND	U	4.4	J
PZ-116-SS	4/12/2013	30000		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	56000				ND	U	ND	U
PZ-116-SS	7/11/2013	31000		3.8	J	0.13	J	ND	U	3800	J	ND	U	ND	U	53000				ND	U	ND	U
PZ-116-SS	10/11/2013	33000		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	54000		3700		ND	U	ND	U
PZ-200-SS	8/2/2012	72000		2900	J+	0.16	J	ND	U	2700	J	ND	U	ND	U	11000				ND	U	11	J
PZ-200-SS	4/5/2013	89000		6200		ND	U	ND	U	ND	U	ND	U	ND	U	18000				ND	U	ND	U
PZ-200-SS	7/19/2013	100000		7300	J-	ND	UJ-	140		2100	J	7.1	J	ND	UJ-	18000				7.3	J	9.5	J
PZ-200-SS	10/2/2013	99000		5900		ND	U	ND	U	ND	U	ND	U	ND	U	17000		590		ND	U	ND	U
PZ-200-SS FD	8/2/2012	72000		2600	J+	0.1	J	ND	U	2600	J	ND	U	ND	U	11000				ND	U	5.4	J
PZ-201A-SS	8/1/2012	49000		41		ND	UJ-	ND	U	2100	J	ND	U	ND	U	20000				ND	U	ND	U
PZ-201A-SS	4/8/2013	51000		87		ND	U	ND	U	ND	U	ND	U	ND	U	18000				ND	U	ND	U
PZ-201A-SS	7/10/2013	48000		18		ND	U	ND	U	2200	J	ND	U	ND	U	12000				ND	U	ND	U
PZ-201A-SS	10/9/2013	50000		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	13000		530		ND	U	ND	U
PZ-201A-SS FD	8/1/2012	50000		42		ND	UJ-	ND	U	2300	J	ND	U	ND	U	21000				ND	U	ND	U
PZ-202-SS	8/2/2012	45000		1200	J+	0.18	J	110		6400		ND	U	ND	U	11000				ND	U	52	
PZ-202-SS	4/12/2013	49000		620		ND	U	ND	U	ND	U	ND	U	ND	U	11000				ND	U	ND	U
PZ-202-SS	7/11/2013	79000		940		0.14	J	21	J	3100	J	ND	U	ND	U	14000				ND	U	ND	U
PZ-202-SS	10/11/2013	82000		1200		ND	U	ND	U	ND	U	ND	U	ND	U	15000		430		ND	U	ND	U
PZ-203-SS	8/1/2012	42000		21		ND	UJ-	ND	U	2500	J	ND	U	ND	U	7600				ND	U	ND	U
PZ-203-SS	4/5/2013	41000		24	J	ND	U	ND	U	ND	U	ND	U	ND	U	7900				ND	U	ND	U
PZ-203-SS	7/17/2013	42000		21		ND	U	ND	U	2600	J	ND	U	ND	U	8100				ND	U	ND	U
PZ-203-SS	10/2/2013	40000		23		ND	U	ND	U	ND	U	ND	U	ND	U	8100		650		ND	U	ND	U
PZ-204A-SS	8/2/2012	34000		1000	J+	0.089	J	ND	U	13000		ND	U	ND	U	210000				ND	U	5.9	J
PZ-204A-SS	4/8/2013	60000		2500		ND	U	ND	U	16000	J	ND	U	ND	U	210000				ND	U	ND	U
PZ-204A-SS	7/16/2013	73000		2300		ND	U	20	J	19000		ND	U	ND	U	200000				ND	U	6.4	J
PZ-204A-SS	10/8/2013	87000		2100	J	ND	U	ND	U	18000		ND	U	ND	U	210000		1100	J	ND	U	ND	U
PZ-204-SS	8/3/2012	50000		100		0.11	U	ND	U	2100	J	ND	U	ND	U	32000				ND	U	6.4	J
PZ-204-SS	4/9/2013	54000		120		ND	U	ND	U	ND	U	ND	U	ND	U	32000				ND	U	ND	U
PZ-204-SS	7/17/2013	51000		110		ND	U	ND	U	2200	J	ND	U	ND	U	29000				ND	U	ND	U
PZ-204-SS	10/8/2013	49000		100	J	ND	U	ND	U	ND	U	ND	U	ND	U	31000		1500	J	ND	U	ND	U
PZ-205-AS	8/3/2012	80000		630		0.096	U	23	J	8600		ND	U	ND	U	96000				ND	U	5.4	J
PZ-205-AS	4/8/2013	83000		650		ND	U	ND	U	8900	J	ND	U	ND	U	97000				ND	U	ND	U
PZ-205-AS	7/18/2013	110000		2500	J-	0.22	J-	150		24000		ND	U	ND	U	140000				ND	U	160	
PZ-205-AS	10/15/2013	93000		1000		0.086		ND	U	15000	J+	ND	U	ND	U	150000		1700		ND	U	42	
PZ-205-SS	8/3/2012	52000		ND	U	0.066	U	ND	U	ND	U	ND	U	ND	U	13000				ND	U	ND	U
PZ-205-SS	4/8/2013	60000		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	13000				ND	U	ND	U
PZ-205-SS	7/10/2013	61000		ND	U	ND	U	ND	U	1700	J	ND	U	ND	U	14000				ND	U	ND	U
PZ-205-SS	10/9/2013	61000		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	15000		510		ND	U	ND	U
PZ-206-SS	8/7/2012	72000		110		ND	U	15	J	4200	J	ND	U	ND	U	18000				ND	U	11	J
PZ-206-SS	4/8/2013	73000		60	J	ND	U	ND	U	ND	U	ND	U	ND	U	15000				ND	U	ND	U
PZ-206-SS	7/18/2013	72000		45	J-	ND	UJ-	ND	U	3500	J	ND	U	ND	U	13000				ND	U	ND	U
PZ-206-SS	10/7/2013	71000		65		ND	U	ND	U	ND	U	ND	U	ND	U	14000		3900		ND	U	ND	U
PZ-207-AS	8/8/2012	96000	J	71		0.16	UJ-	40		75000		ND	U	ND	U	290000				ND	U	4.7	J
PZ-207-AS	4/3/2013	81000		93		0.15	J	ND	U	67000		ND	U	ND	U	260000				ND	U	22	J
PZ-207-AS	7/18/2013	63000		65	J-	ND	UJ-	21	J	63000		ND	U	ND	U	200000				ND	U	4.2	J
PZ-207-AS	10/4/2013	80000		66		0.11		ND	U	62000		ND	U	ND	U	260000		680		ND	U	ND	U
PZ-208-SS	8/2/2012	51000		40	J+	ND	U	ND	U	1800	J	ND	U	ND	U	45000				ND	U	8	J
PZ-208-SS	4/12/2013	49000		33	J	ND	U	ND	U	ND	U	ND	U	ND	U	41000				ND	U	ND	U
PZ-208-SS	7/16/2013	46000		26		ND	U	ND	U	ND	U	6.4	J	ND	U	39000				ND	U	ND	U
PZ-208-SS	10/8/2013	59000		93	J	ND	U	ND	U	ND	U	ND	U	ND	U	49000		670	J	ND	U	ND	U

Sample ID	DATE	MAGNESIUM(Tot)	MAGNESIUM(Tot)	Manganese(Tot)	Manganese(Tot)	MERCURY(Tot)	MERCURY(Tot)	NICKEL(Tot)	NICKEL(Tot)	Potassium(Tot)	Potassium(Tot)	SELENIUM(Tot)	SELENIUM(Tot)	SILVER(Tot)	SILVER(Tot)	SODIUM(Tot)	SODIUM(Tot)	STRONTIUM(Tot)	STRONTIUM(Tot)	THALLIUM(Tot)	THALLIUM(Tot)	VANADIUM(Tot)	VANADIUM(Tot)
PZ-209-SD	11/7/2013	33000		46		ND	U	ND	U	ND	U	ND	U	ND	U	120000		1200		ND	U	ND	U
PZ-209-SS	11/7/2013	49000		160		ND	U	ND	U	ND	U	ND	U	ND	U	24000		2900		ND	U	ND	U
PZ-210-SD	11/6/2013	70000		130		ND	U	74		9700		ND	U	ND	U	170000		2400		ND	U	ND	U
PZ-210-SD FD	11/6/2013	66000		110		ND	U	68		8800		ND	U	ND	U	170000		2200		ND	U	ND	U
PZ-210-SS	11/7/2013	39000		90		ND	U	ND	U	ND	U	ND	U	ND	U	27000		1200		ND	U	ND	U
PZ-211-SD	11/6/2013	55000		240		0.062		ND	U	17000		ND	U	ND	U	180000		2400		ND	U	ND	U
PZ-211-SS	11/7/2013	40000		22		ND	U	ND	U	ND	U	ND	U	ND	U	29000		3700		ND	U	ND	U
PZ-212-SD	11/7/2013	36000		280		ND	U	ND	U	ND	U	ND	U	ND	U	79000		440		ND	U	ND	U
PZ-212-SS	11/7/2013	46000		78		ND	U	ND	U	ND	U	ND	U	ND	U	29000		3200		ND	U	ND	U
PZ-302-AI	8/9/2012	47000	J+	210		ND	UJ-	ND	U	ND	U	ND	U	ND	U	47000	J+			ND	U	ND	U
PZ-302-AI	4/3/2013	55000		260		ND	U	ND	U	ND	U	21	UJ+	ND	U	63000				ND	U	ND	U
PZ-302-AI	7/16/2013	53000		230		ND	U	22	J	7400		ND	U	ND	U	67000				ND	U	ND	U
PZ-302-AI	10/3/2013	52000		250		ND	U	ND	U	ND	U	ND	U	ND	U	73000		700		ND	U	ND	U
PZ-302-AS	7/16/2013	88000		14000		ND	U	72		6700		ND	U	ND	U	56000				17		7.9	J
PZ-302-AS	10/8/2013	92000		4900	J	ND	U	96		8900		ND	U	ND	U	44000		1400	J	ND	U	ND	U
PZ-303-AS	8/10/2012	74000		1800		ND	UJ-	ND	U	ND	U	ND	U	ND	U	66000				ND	U	ND	U
PZ-303-AS	4/4/2013	74000		1100		ND	U	ND	U	ND	U	15	UJ+	ND	U	51000				ND	U	ND	U
PZ-303-AS	7/15/2013	78000		2500		ND	U	20	J	5000		7.6	U	ND	U	64000				ND	U	5.6	J
PZ-303-AS	10/4/2013	81000		3600		ND	U	ND	U	ND	U	ND	U	ND	U	74000		990		ND	U	ND	U
PZ-304-AI	8/10/2012	77000		1500		ND	UJ-	ND	U	15000	J+	ND	U	ND	U	260000				ND	U	ND	U
PZ-304-AI	4/4/2013	68000		1200		0.11	J	ND	U	11000	J	ND	U	ND	U	170000				ND	U	ND	U
PZ-304-AI	7/16/2013	64000		1000		ND	U	22	J	15000		ND	U	ND	U	170000				ND	U	ND	U
PZ-304-AI	10/1/2013	64000		1000		ND	U	ND	U	21000	J+	ND	U	ND	U	180000		1200		ND	U	ND	U
PZ-304-AI FD	10/1/2013	64000		1000		ND	U	ND	U	21000	J+	ND	U	ND	U	180000		1200		ND	U	ND	U
PZ-304-AS	8/10/2012	64000		94		ND	UJ-	69	J	62000	J+	ND	U	ND	U	370000				ND	U	ND	U
PZ-304-AS	4/4/2013	79000		110		0.078	J	80	J	77000		13	J+	ND	U	420000				ND	U	ND	U
PZ-304-AS	7/16/2013	74000		130		ND	U	62		82000		ND	U	ND	U	390000				ND	U	ND	U
PZ-304-AS	10/1/2013	86000		120		ND	U	ND	U	85000	J+	ND	U	ND	U	430000		1600		ND	U	24	
PZ-305-AI	8/8/2012	87000	J	4100		ND	UJ-	ND	U	6900		ND	U	ND	U	19000				ND	U	8.5	J
PZ-305-AI	4/5/2013	78000		3200		ND	U	ND	U	9100	J	ND	U	ND	U	19000				ND	U	ND	U
PZ-305-AI	7/22/2013	80000		3400	J-	ND	UJ-	ND	U	6700		3.8	J	ND	UJ-	20000				ND	U	5.4	J
PZ-305-AI	10/2/2013	76000		3500		ND	U	ND	U	ND	U	ND	U	ND	U	20000		970		ND	U	ND	U
PZ-305-AI FD	4/5/2013	80000		3300		ND	U	ND	U	10000	J	ND	U	ND	U	19000				ND	U	34	J
USGS-B3	11/7/2013	21000		250		ND	U	ND	U	ND	U	ND	U	ND	U	28000		560		ND	U	ND	U
USGS-D1	11/20/2013	50000		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	14000		910		ND	U	ND	U
S-10	8/8/2012	170000	J	3100		ND	UJ-	18	J	44000		ND	U	ND	U	190000				ND	U	11	J
S-10	4/4/2013	140000		7300		0.11	J	ND	U	38000		ND	U	ND	U	180000				ND	U	ND	U
S-10	7/15/2013	98000		2400		ND	U	14	J	33000		4.9	U	ND	U	150000				ND	U	4.7	J
S-10	10/1/2013	270000		9500		ND	U	ND	U	57000	J+	ND	U	ND	U	280000		1400		ND	U	22	
S-5	8/14/2012	57000		130		ND	U	93	J	250000	J+	ND	U	ND	U	940000				ND	U	ND	U
S-5	4/11/2013	58000		240		0.071	J	75	J	180000		ND	U	ND	U	400000				ND	U	ND	U
S-5	7/9/2013	65000		190		0.13	J	87		230000		ND	U	ND	U	470000				ND	U	4.6	J
S-5	10/7/2013	63000		160		ND	U	82		260000		ND	U	ND	U	610000		330		ND	U	ND	U
S-53	4/12/2013	62000		8900		0.2		180	J	22000	J	ND	U	ND	U	48000				ND	U	160	J
S-53	7/18/2013	64000		4100	J-	0.13	J-	130		14000		11	J	ND	U	57000				ND	U	130	
S-53	10/15/2013	41000		2400		ND	U	ND	U	ND	U	ND	U	ND	U	60000		420		ND	U	24	
S-61	8/7/2012	36000		720		ND	U	21	J	6000		ND	U	ND	U	7500				ND	U	6.6	J
S-61	4/5/2013	32000		670		ND	U	ND	U	ND	U	ND	U	ND	U	7200				ND	U	ND	U
S-61	7/12/2013	46000		960		0.064	J	59		9400		2.8	J	ND	U	8500				ND	U	32	J
S-61	10/3/2013	41000		770		ND	U	ND	U	ND	U	ND	U	ND	U	10000		450		ND	U	ND	U
S-8	8/9/2012	17000	J+	1000		ND	UJ-	ND	U	ND	U	ND	U	ND	U	23000	J+			ND	U	ND	U
S-8	4/4/2013	23000		1200		0.086	J	ND	U	ND	U	15	U	ND	U	27000				ND	U	ND	U
S-8	7/12/2013	14000		320		0.06	J	ND	U	7000		ND	U	ND	U	21000				ND	U	ND	U
S-8	10/1/2013	17000		560		ND	U	ND	U	ND	U	ND	U	ND	U	24000		520		ND	U	ND	U
S-82	8/10/2012	68000		2000		ND	UJ-	ND	U	18000	J	ND	U	ND	U	350000				ND	U	ND	U
S-82	4/9/2013	89000		2600		ND	U	180	J	13000	J	ND	U	ND	U	410000				ND	U	44	J
S-82	7/11/2013	83000		2200		0.065	J	26	J	12000		2.7	J	ND	U	220000				ND	U	ND	U
S-82	10/8/2013	74000		1600	J	ND	U	ND	U	19000		ND	U	ND	U	310000		1300	J	ND	U	ND	U
S-84	8/6/2012	50000	J	2300		0.086	U	93		7300		ND	U	ND	U	61000				ND	U	32	J

Sample ID	DATE	MAGNESIUM(Tot)	MAGNESIUM(Tot)	Manganese(Tot)	Manganese(Tot)	MERCURY(Tot)	MERCURY(Tot)	NICKEL(Tot)	NICKEL(Tot)	Potassium(Tot)	Potassium(Tot)	SELENIUM(Tot)	SELENIUM(Tot)	SILVER(Tot)	SILVER(Tot)	SODIUM(Tot)	SODIUM(Tot)	STRONTIUM(Tot)	STRONTIUM(Tot)	THALLIUM(Tot)	THALLIUM(Tot)	VANADIUM(Tot)	VANADIUM(Tot)
S-84	4/11/2013	58000		2300		ND	U	67	J	ND	U	ND	U	ND	U	35000				ND	U	ND	U
S-84	7/10/2013	120000		3600		0.087	J	140		8400		6.8	J	ND	U	41000				ND	U	68	
S-84	10/9/2013	79000		2800		ND	U	ND	U	ND	U	ND	U	ND	U	53000		680		ND	U	24	
S-84 FD	10/9/2013	76000		2700		ND	U	67		ND	U	ND	U	ND	U	52000		690		ND	U	49	

Sample ID	DATE	ZINC(Tot)	ZINC(Tot)	Alkalinity	Alkalinity	BROMIDE	BROMIDE	Chloride	Chloride	Iodide	Iodide	Nitrate as N	Nitrate as N	Sulfate	Sulfate	Radium-226(Dis)	Radium-226(Dis)
D-12	8/8/2012	10	U	960		4.8	J-	250	J	0.2	J	ND	R	690	J	0.676364	
D-12	4/4/2013	28	J	940		3.9		240		0.2	J	ND	U	680		0.19	U
D-12	7/15/2013	ND	U	1000	J	4.2		250		0.37	J	0.0087	J	750		0.47	J
D-12	10/1/2013	ND	U	780		4.3		240		0.21		ND	UJ-	690		0.47	J
D-12 FD	4/4/2013	ND	U	890		3.9		240		0.2	J	ND	R	690		0.12	U
D-12 FD	7/15/2013	ND	U	1600	J	4.3		250		0.38	J	0.013	J	770		0.44	J
D-12 FD	10/7/2013															2.38	
D-13	8/10/2012	ND	U	350		ND	UJ-	70	J	ND	U	ND	R	36	J	1.207724	
D-13	4/4/2013	63	J	390		0.074	J	310		ND	U	0.0055	J	34		0.92	
D-13	7/18/2013	6.5	J-	390		0.091	J	100		ND	U	ND	U	35		1.09	J+
D-13	10/7/2013	ND	U	420		0.1		93		ND	U	ND	UJ-	35		0.9	J
D-13 FD	8/10/2012	26	U	370		ND	UJ-	82	J	ND	U	0.04	J	35	J	0.933061	J
D-14	8/10/2012																
D-14	4/12/2013	61	U	830		1.2		210		0.26	J	ND	UJ	21		0.79	
D-14	7/18/2013	25	J-	1400		3		570		0.37	J	0.13		5.7		1.21	J+
D-14	10/15/2013	26		1200		3.3		620		0.42		0.0096		0.53		0.85	
D-3	8/8/2012	5.5	U	1100		8.4	J-	240	J	0.28	J	ND	R	0.27	J	2.551309	
D-3	4/11/2013	ND	U	1300		17		490		0.49	J	ND	U	0.26	J	2.12	
D-3	7/9/2013	9	U	1300		14		470		0.42	J	ND	U	0.14	J	3.72	
D-3	10/7/2013	ND	U	1300		14		480		0.46		ND	UJ-	0.16		2.81	J
D-3 FD	8/8/2012	5.8	U	1100		8.1	J-	350	J	0.3	J	ND	R	0.26	J	3.056497	
D-6	8/7/2012	20	J+	740	J-	1.3	J-	150	J	0.11	J-	ND	R	4.9	J	2.53535	
D-6	4/9/2013	31	U	610		2.2		190		0.2	J	ND	U	9.9		1.75	
D-6	7/12/2013	ND	U	870		2.9		190		0.21	J	0.0056	J	3.3		2.88	
D-6	10/8/2013	ND	U	860		2.2		200		0.22		ND	U	13		2.96	
D-6 FD	8/7/2012	11	U	790	J-	1.3	J-	150	J	ND	UJ	ND	R	4.9	J	3.086404	J
D-81	8/9/2012	65	U	780		0.11	J-	12	J	ND	U	0.0089	J	33	J	0.616756	J
D-81	4/3/2013	ND	U	960		0.19	J	15		ND	U	0.018	R	40		0.18	U
D-81	7/17/2013	8.8	J	630		0.23	J	30		ND	UJ-	0.0064	J	70		0.84	
D-81	10/3/2013	ND	U	510		0.19		28		ND	U	0.019		70		0.26	J
D-81 FD	7/17/2013	7.1	J	630		0.23	J	31		ND	UJ-	0.0081	J	69		0.77	J+
D-83	8/9/2012	27	J	390		0.074	J-	58	J	ND	U	0.12	J	48	J	3.226702	
D-83	4/9/2013	35	U	730		1.1		75		ND	U	0.043		13		1.79	
D-83	7/11/2013	5.4	J	690		0.88		54		ND	U	ND	U	8.2		3.54	
D-83	10/8/2013	ND	U	740		0.98		61		ND	U	0.0061		3.6		2.86	
D-83 FD	7/11/2013	ND	U	710		0.87		55		ND	U	0.004	J	8.2		4.04	
D-85	8/6/2012	720		660		ND	U			ND	U					1.651104	
D-85	4/11/2013	370		700		0.35		360		0.18	J	ND	U	39		0.91	
D-85	7/10/2013	250		720		ND	U	4.1		0.18	J	0.34		65		1.56	J
D-85	10/9/2013	170		710		0.32		360		0.17		0.0041	UJ-	41		1.42	
D-87	8/1/2012	ND	U	870		4.2	J+	200	J	0.19	J+	ND	R	1.4	J	1.420894	J+
D-87	4/9/2013	31	U	960		4.7		270		0.27	J	0.007	J	1.5		0.75	
D-87	7/17/2013	11	J	1000		5		330		0.27	J-	0.014	J	0.21	J	2.26	J+
D-87	10/2/2013	ND	U	830		4.3		280		0.28		0.069		0.2		1.77	
D-87 FD	10/2/2013	26		780		4.4		280		0.28		ND	U	0.2		2.24	J
D-93	8/14/2012	ND	U	1000		4.2	J-	350	J	0.41	J	0.25	J	0.99	J	1.793182	
D-93	4/9/2013	31	U	210		4.4		350		0.37	J	ND	U	8.5		1.93	
D-93	7/11/2013	ND	U	1000		4.1		330		0.36	J	0.0072	J	12		2.05	
D-93	10/8/2013	ND	U	980		4.3		340		0.38		ND	U	15		3.08	
USGS-E1	11/7/2013	ND	U	270		0.062		150		ND	U	0.86	J	33		0.05	U
USGS-B4-S	8/2/2013	180		390		ND	U	20		ND	U	ND	U	4.7		0.33	J
USGS-B4-S	11/7/2013	65		370		0.036		69		ND	U	0.031	J	30		0.55	J
USGS-B4-D	8/2/2013	10		260		0.091		80		ND	U	ND	U	7.5		0.44	J
USGS-A5	11/7/2013	ND	U	320		0.068		33		ND	U	0.24	J	22		2.34	
I-11	8/8/2012	6.1	U	830		1.8	J-	180	J	0.21	J	ND	R	18	J	1.005038	
I-11	4/4/2013	ND	U	930		2.2		210		0.34	J	0.0048	J	150		1.24	
I-11	7/15/2013	5.7	J	890	J	2.4		220		0.31	J	0.0099	J	85		1.43	
I-11	10/1/2013	ND	U	780		2.2		200		0.36		ND	UJ-	200		0.8	
I-4	8/14/2012	ND	U	1200		4.3	J-	190	J	0.25	J	ND	R	0.42	J	1.942522	

Sample ID	DATE	ZINC(Tot)	ZINC(Tot)	Alkalinity	Alkalinity	BROMIDE	BROMIDE	Chloride	Chloride	Iodide	Iodide	Nitrate as N	Nitrate as N	Sulfate	Sulfate	Radium-226(Dis)	Radium-226(Dis)
I-4	4/12/2013	30	U	1200		1.2		90		0.11	J	ND	UJ	7.4		0.11	U
I-4	7/9/2013	11	U	1400		3.4		170		0.15	J	ND	U	0.16	J	0.96	J
I-4	10/7/2013	34		1900		4.5		220		ND	U	ND	UJ-	0.19		0.39	UJ
I-4 FD	7/9/2013	9.8	U	1400		3.2		170		0.15	J	0.13		0.14	J	1.56	J
I-62	8/9/2012	81	U	300		ND	UJ-	35	J	ND	U	0.0081	J	33	J	0.317405	J
I-62	4/4/2013	32	J	300		ND	U	48		ND	U	ND	U	30		0.4	J
I-62	7/12/2013	7.8	J	290		ND	U	53		ND	U	0.0066	J	25		0.44	J
I-62	10/1/2013	ND	U	340		ND	U	74		ND	U	ND	UJ-	34		0.56	J
I-62 FD	4/4/2013	ND	U	300		ND	U	46		ND	U	0.015	J	29		0.19	J
I-62 FD	7/12/2013	7.6	J	360		ND	U	54		ND	U	ND	U	25		0.2	U
I-65	8/6/2012	19	J+	310		ND	U			ND	U					0.215038	U
I-65	4/16/2013	25		270		ND	U	67		ND	U	0.0087	J	91		0.3	J
I-65	7/18/2013	10	J-	340		0.043	J	52		ND	U	0.006	J	83		0.29	J+
I-65	10/15/2013	ND	U	340		0.03		53		ND	U	0.012		87		0.14	U
I-65 FD	4/16/2013	29		300		ND	U	67		ND	U	0.0085	J	91		0.25	J
I-65 FD	7/18/2013	5.3	J-	320		0.05	J	53		ND	U	0.005	J	84		0.2	J
I-66	8/10/2012	ND	U	310		ND	UJ-	41	J	ND	U	0.04	J	110	J	0.118237	UJ
I-66	4/5/2013	ND	U	330		ND	U	80		ND	U	ND	R	130		0.2	J
I-66	7/15/2013	300		280	J	ND	U	82		ND	U	ND	U	130		0.33	J
I-66	10/9/2013	ND	U	300		ND	U	52		ND	U	ND	UJ-	120		0.39	J
I-67	8/10/2012	ND	U	490		ND	UJ-	170	J	ND	U	0.14	J	96	J	0.553391	J
I-67	4/5/2013	ND	U	620		0.11	J	130		ND	U	0.0062	J	63		0.46	
I-67	7/12/2013	ND	U	610		0.081	J	110		ND	U	ND	U	96		0.47	J
I-67	10/3/2013	ND	U	530		0.099		110		ND	U	ND	U	89		0.45	J
I-67 FD	4/5/2013	ND	U	610		0.097	J	130		ND	U	0.16	J	62		0.21	J
I-67 FD	10/3/2013	ND	U	560		0.087		120		ND	U	ND	R	88		0.38	J
I-68	8/6/2012	420		500		ND	U			ND	U					0.515913	J
I-68	4/9/2013	540		500		0.11	J	700		ND	U	ND	U	36		0.67	
I-68	7/12/2013	140		510		0.075	J	360		ND	U	ND	U	52		0.76	J
I-68	10/4/2013	100		520		0.096		510		ND	U	0.0078	R	46		0.81	J
I-73	8/4/2012	6300		980		2.2		270	J	0.51	J+	0.079	J	62	J-	0.714116	J
I-73	4/12/2013	2700		1300		4.1		580		2.9		ND	UJ	18		1.04	
I-73	7/19/2013	5100	J-	2500		11		1700		11		0.01	J	1.1		2.83	J
I-73	10/3/2013	3500		3300		18		3300		24		0.028		1.4		3.05	J
I-9	8/14/2012	ND	U	970		4.5	J-	330	J	0.31	J	ND	R	46	J	2.136509	
I-9	4/9/2013	31	U	1100		4		320		0.4	J	ND	UJ	0.26	J	0.67	
I-9	7/11/2013	6.2	J	1100		3.5		300		0.36	J	0.008	J	0.58		1.01	
I-9	10/8/2013	ND	U	960		3.6		310		0.37		ND	U	0.18		1.26	
I-9 FD	8/14/2012	ND	U	990		4.5	J-	320	J	0.32	J	ND	R	46	J	2.379791	
I-9 FD	4/9/2013	27	U	1000		4		310		0.4	J	2.1	J	0.31	J	0.85	
I-9 FD	10/8/2013	ND	U	980		3.6		300		0.37		0.015		0.17		1.83	
LR-100	8/13/2012	260		1200		2.3	J-	200	J	0.35	J	ND	R	0.74	J	0.831305	
LR-100	4/3/2013	31	J	1000		1.9		160		0.28	J	0.0049	R	30		0.14	U
LR-100	7/17/2013	25		1200		2.1		180		0.33	J-	0.0058	J	0.25	J	0.36	J
LR-100	10/4/2013	ND	U	1200		1.8		170		0.41		0.0072	R	0.14		0.56	J
LR-100 FD	10/4/2013	ND	U	1200		1.9		180		0.4		0.0053	R	0.14		0.43	J
LR-103	8/13/2012	42	J	790		0.88	J-	120	J	0.35	J	ND	R	0.89	J	1.103106	
LR-103	4/3/2013	27	J	870		1.1		140		0.42	J	ND	R	0.41	J	0.52	J
LR-103	7/17/2013	6.3	J	820		1.2		130		0.4	J-	0.013	J	0.22	J	1.05	
LR-103	10/2/2013	ND	U	690		1.1		150		0.39		0.029		0.21		1.1	
LR-104	8/13/2012	28	J	820		0.31	J-	36	J	0.33	J	ND	R	99	J	0.479024	J
LR-104	4/4/2013	ND	U	580		0.56		38		0.52	J	0.0063	J	53		0.39	
LR-104	7/22/2013	ND	UJ-	610		0.61		38		0.48	J	0.024		36		0.58	J
LR-104	10/2/2013	ND	U	650		0.53		40		0.49		0.017		38		0.52	J
LR-104 FD	8/13/2012	ND	U	910		0.38	J-	36	J	0.32	J	ND	R	97	J	0.707529	J
LR-105	8/1/2012	59		2100		9.4	J+	660	J	0.82	J+	ND	R	0.46	J	1.144467	J+
LR-105	4/3/2013	83	J	2100		16		930		0.7	J	ND	R	0.32	J	1.04	
MW-102	8/7/2012	23	J+	1000	J-	ND	UJ	8.1	J	ND	UJ	0.0052	J	250	J	0.859203	
MW-102	7/15/2013	22		700	J	ND	U	8.4		ND	U	ND	U	290		0.33	J

Sample ID	DATE	ZINC(Tot)	ZINC(Tot)	Alkalinity	Alkalinity	BROMIDE	BROMIDE	Chloride	Chloride	Iodide	Iodide	Nitrate as N	Nitrate as N	Sulfate	Sulfate	Radium-226(Dis)	Radium-226(Dis)
MW-102	10/3/2013	170		810		0.046		14		ND	U	0.062	R	360		0.15	UJ
MW-103	8/11/2012	630		650		0.16	J-	11	J	ND	U	0.17	J	26	J	0.269428	J
MW-103	4/5/2013	75	J	480		0.17	J	29		ND	U	0.053	J	68		0.24	J
MW-103	7/15/2013	74		410	J	0.086	J	33		ND	U	0.032		49		0.21	U
MW-103	10/4/2013	78		420		0.75		32		ND	U	0.13	R	42		0.32	J
MW-104	8/9/2012	180	J+	990		0.23	J-	5.4	J	0.16	J	ND	R	1.2	J	0.456573	J
MW-104	4/5/2013	88	J	910		0.16	J	3.6		0.11	J	0.019	J	8.4		0.25	J
MW-104	7/16/2013	230		760		0.12	J	3	J+	ND	U	ND	U	20		0.24	U
MW-104	10/3/2013	430		870		0.24		4.3		0.13		0.0045	R	4.4		0.5	J
MW-1204	8/2/2012	34	J+	480		ND	U	9.1	J	ND	U	ND	R	0.69	J	2.790197	J
MW-1204	4/12/2013	33	U	460		ND	U	15		ND	U	0.099	J	0.1	J	2.9	
MW-1204	7/11/2013	14	J	1100		1		280		0.2	J	ND	U	6.1		7.42	
MW-1204	10/11/2013	ND	UJ	2500		170		1400		0.56		ND	U	43		0.04	U
MW-1204 FD	4/12/2013	32	U	510		ND	U	17		ND	U	0.24	J	0.08	J	2.31	
PURGE TANK	8/16/2012	29	J	280		0.94	J-	120	J	ND	U	0.5	J	73	J		
PURGE TANK	4/16/2013	18	J	430		1.4		150		0.13	J	0.018	J	66		0.45	J
PURGE TANK	7/23/2013																
PURGE TANK	7/24/2013	17	J	340		1.4		130		0.13	J	0.39		57			
PURGE TANK	11/8/2013	ND	U	330		1.5		150		0.15		0.19		69			
PZ-100-KS	8/16/2012	37	J	470		0.81	J-	53	J	ND	U	ND	R	36	J	0.20953	U
PZ-100-KS	4/16/2013	13	J	520		0.26		52		ND	U	0.016	J	37		0.26	J
PZ-100-KS	7/23/2013	10	J	500		0.23	J	54		ND	U	0.008	J	36		0.21	U
PZ-100-KS	10/15/2013	ND	U	500		0.42		58		ND	U	0.012		37		0.33	J
PZ-100-SD	7/31/2012	7.6	U	350		ND	U	1.7	J	ND	U	ND	R	10	J	2.687026	
PZ-100-SD	4/5/2013	ND	U	360		ND	U	1.7		ND	U	0.017	J	10		2.41	
PZ-100-SD	7/9/2013	6.8	U	1800		ND	U	1.7		ND	U	ND	U	9.8		1.85	
PZ-100-SD	10/8/2013	ND	U	350		0.034		1.7		ND	U	ND	U	9.2		1.87	
PZ-100-SS	7/31/2012	13	U	430		0.095	J+	4.9	J	ND	U	0.089	J	50	J	3.948653	
PZ-100-SS	4/5/2013	ND	U	430		ND	U	4.1		ND	U	0.088	J	44		3.8	
PZ-100-SS	7/9/2013	18	U	440		ND	U	3.7		ND	U	0.044		40		3.19	
PZ-100-SS	10/8/2013	ND	U	420		ND	U	3.4		ND	U	0.083		37		2.6	
PZ-101-SS	8/7/2012	26	J+	730	J-	1.1	J-	180	J	0.74	J-	ND	R	5	J	28.87471	
PZ-101-SS	4/12/2013	99	U	760		0.87		150		0.86	J	ND	UJ	1.9		23.28	
PZ-101-SS	7/11/2013	8.6	J	760		1.5		160		1		0.03		6		27.91	
PZ-101-SS	10/8/2013	ND	U	750		1.4		190		0.97		0.0049		7.3		17.4	
PZ-102R-SS	8/13/2012	48	J	420		ND	UJ-	10	J	ND	U	ND	R	88	J	3.62419	
PZ-102R-SS	4/11/2013	120	J+	440		0.03	J	9.8		ND	U	0.014	J	77		1.88	
PZ-102R-SS	7/19/2013	29	J-	450		0.031	J	7.3		ND	U	0.1		65		1.98	
PZ-102R-SS	10/8/2013	ND	U	420		ND	U	6.9		ND	U	0.24		76		1.4	
PZ-102-SS	8/13/2012	45	J	520		0.052	J-	6.5	J	ND	U	ND	R	6.5	J	3.62713	J
PZ-102-SS	4/11/2013	170		510		ND	U	5		ND	U	ND	U	15		4.58	
PZ-102-SS	7/19/2013	100	J-	520		0.032	J	4.7		ND	U	0.031		20		3.12	J
PZ-102-SS	10/8/2013	ND	U	430		ND	U	4.3		ND	U	ND	U	23		2.96	
PZ-103-SS	8/7/2012	290		700	J-	ND	UJ	2.6	J	ND	UJ	ND	R	22	J	3.091053	
PZ-103-SS	4/8/2013	110	J+	3500		ND	U	5		ND	U	ND	R	16		3.89	J
PZ-103-SS	7/19/2013	340	J-	690		0.037	J	7.7		ND	U	ND	U	16		3.44	
PZ-103-SS	10/4/2013	44		570		0.062		12		ND	U	0.0056	R	11		2.41	J
PZ-104-KS	8/13/2012															0.282849	J
PZ-104-KS	8/15/2012	28	J	330		ND	UJ-	21	J	ND	U	ND	R	14	J		
PZ-104-KS	4/11/2013	40	J	350		0.041	J	23		ND	U	ND	U	16		0.07	U
PZ-104-KS	7/18/2013	ND	UJ-	350		0.063	J	25		ND	U	0.012	J	16		0.1	U
PZ-104-KS	10/4/2013	ND	U	340		0.16		27		ND	U	ND	R	17		0.22	J
PZ-104-SD	8/1/2012	15	J	480		0.49	J+	160	J	0.96	J+	ND	R	27	J	9.741184	J
PZ-104-SD	4/11/2013	ND	U	670		1.1		250		ND	U	0.031		88		3.76	
PZ-104-SD	7/11/2013	8.9	J	580		0.64		180		0.45	J	ND	U	39		7.39	
PZ-104-SD	10/7/2013	120		560		0.65		170		0.17		0.0042	J-	21		6.29	J
PZ-104-SS	8/1/2012	11	J	420		ND	U	3.6	J	ND	U	ND	R	17	J	1.598478	J
PZ-104-SS	4/11/2013	26	U	440		0.025	J	4.2		ND	U	0.022		0.96		0.81	
PZ-104-SS	7/11/2013	ND	U	440		ND	U	4.8		ND	U	ND	U	1		1.76	

Sample ID	DATE	ZINC(Tot)	ZINC(Tot)	Alkalinity	Alkalinity	BROMIDE	BROMIDE	Chloride	Chloride	Iodide	Iodide	Nitrate as N	Nitrate as N	Sulfate	Sulfate	Radium-226(Dis)	Radium-226(Dis)
PZ-104-SS	10/9/2013	ND	U	460		0.03		4.1		ND	U	0.0074	UJ-	1.3		1.76	
PZ-104-SS FD	4/11/2013	29	J	410		0.029	J	4.2		ND	U	0.012	J	0.92		1.1	
PZ-105-SS	8/1/2012	22		350		ND	U	88	J	ND	U	ND	R	98	J	1.924918	J+
PZ-105-SS	4/4/2013	32	U	350		0.061	J	94		ND	U	0.011	J	86		1.22	
PZ-105-SS	7/12/2013	20		350		ND	U	85		ND	U	ND	U	87		1.48	
PZ-105-SS	10/9/2013	29		330		0.033		80		ND	U	ND	UJ-	79		1.23	
PZ-106-KS	8/14/2012	37	J	370		ND	UJ-	14	J	ND	U	ND	R	12	J	0.271987	J
PZ-106-KS	4/15/2013	27		390		0.041	J	13		ND	U	0.0042	J	12		0.32	J
PZ-106-KS	7/19/2013	7.8	J-	410		0.056	J	14		ND	U	0.0092	J	12		0.35	J
PZ-106-KS	10/11/2013	ND	U	400		0.055		13		ND	U	0.0077		12		0.37	J
PZ-106-KS FD	10/11/2013	ND	U	400		0.063		13		ND	U	0.0064		12		0.24	J
PZ-106-SD	7/31/2012	24		380		0.22	J+	13	J	ND	U	ND	R	75	J	1.282385	
PZ-106-SD	4/9/2013	66	U	390		0.058	J	12		ND	U	0.0054	J	69		0.61	
PZ-106-SD	7/10/2013	13	J	390		ND	U	11		ND	U	0.0095	J	60		0.8	J
PZ-106-SD	10/8/2013	ND	U	360		0.041		11		ND	U	0.01		54		0.9	
PZ-106-SS	7/31/2012	ND	U	470		ND	U	20	J	ND	U	ND	R	49	J	2.903776	
PZ-106-SS	4/9/2013	28	U	400		0.08	J	23		ND	U	0.004	J	50		3.12	
PZ-106-SS	7/10/2013	ND	U	390		0.054	J	23		ND	U	0.0055	J	51		3.55	J
PZ-106-SS	10/7/2013	ND	U	380		0.082		21		ND	U	0.02	J-	50		1.04	J
PZ-107-SS	8/3/2012	10	U	730		1.4				0.69	J+						
PZ-107-SS	8/4/2012							260	J			ND	R	51	J-	5.021233	J
PZ-107-SS	4/12/2013	1000		790		1.4		260		0.71	J	ND	UJ	53		5.8	
PZ-107-SS	7/19/2013	130	J-	840		2.1		300		0.65	J	0.02		51		5.33	J
PZ-107-SS	10/3/2013	50		910		2.2		340		0.99		0.0085	R	51		10.01	J
PZ-107-SS FD	7/19/2013	120	J-	830		2.1		300		0.64	J	0.012	J	52		5.09	J
PZ-109-SS	8/2/2012	21	J+	420		ND	U	3.7	J	ND	U	0.035	J	34	J	2.350014	J
PZ-109-SS	4/11/2013	39	U	450		ND	U	3.8		ND	U	0.036		34		2.29	
PZ-109-SS	7/10/2013	19	J	440		ND	U	3.8		ND	U	0.033		34		2.15	
PZ-109-SS	10/9/2013	33		430		0.026		3.7		ND	U	0.06	J-	29		3.02	
PZ-110-SS	8/2/2012	10	U	790		3.2		200	J	0.3	J+	ND	R	49	J	5.011678	J
PZ-110-SS	4/4/2013	ND	U	780		2.4		190		0.28	J	0.031		46		3.76	
PZ-110-SS	7/9/2013	5.8	U	960		2.4		190		0.27	J	ND	U	52		3.43	
PZ-110-SS	10/8/2013	ND	U	700		2.3		180		0.26		ND	U	51		2.64	
PZ-111-KS	8/13/2012	ND	U	570		0.28	J-	130	J	ND	U	ND	R	72	J	0.319108	J
PZ-111-KS	4/9/2013	42	U	610		0.52		150		ND	U	0.0074	J	71		0.31	J
PZ-111-KS	7/17/2013	8	J	610		0.56		150		ND	UJ-	0.03		71		0.37	J
PZ-111-KS	10/3/2013	ND	U	510		0.44		150		ND	U	0.015	R	71		0.27	J
PZ-111-SD	8/1/2012	8.6	J	430		0.048	J+	10	J	ND	U	0.11	J	46	J	1.259609	J+
PZ-111-SD	4/4/2013	ND	U	410		0.072	J	10		ND	U	0.089		44		1.17	
PZ-111-SD	7/9/2013	13	U	430		0.052	J	9.1		ND	U	0.075		45		1.53	
PZ-111-SD	10/7/2013	ND	U	380		0.072		9.1	J+	ND	U	0.17	J-	44		1.52	J
PZ-112-AS	8/8/2012	14	J	1100		0.46	J-	110	J	ND	U	0.02	J	0.42	J	3.079445	
PZ-112-AS	4/12/2013	30	U	1100		0.46		120		0.14	J	0.0047	J	0.28	J	0.74	
PZ-112-AS	7/9/2013	10	U	1200		0.59		120		0.13	J	0.045		0.15	J	1.19	
PZ-112-AS	10/2/2013	ND	U	1100		0.67		120		0.14		0.011		0.24		0.99	
PZ-113-AD	8/3/2012	5.6	U	1100		9.7		450	J	0.47	J+	ND	R	0.31	J-	4.508301	J
PZ-113-AD	4/11/2013	27	U	1200		15		450		0.45	J	ND	U	0.45	J	1.59	
PZ-113-AD	7/10/2013	5.6	J	1200		12		470		0.42	J	ND	U	0.13	J	2.56	J
PZ-113-AD	10/7/2013	ND	U	1200		13		480		0.44		0.004	J-	0.19		2.3	
PZ-113-AD FD	8/3/2012	17	U	780		3.2		320	J	0.62	J+	ND	R	1.5	J-	1.2102	J
PZ-113-AD FD	7/10/2013	8	J	1200		12		470		0.42	J	ND	U	0.1	J	3.45	
PZ-113-AD FD	10/7/2013	ND	U	1200		13		490		0.44		0.012	J-	0.2			
PZ-113-AS	8/8/2012	9.9	U	650		0.98	J-	86	J	0.51	J	ND	R	4.3	J	0.730091	J
PZ-113-AS	4/12/2013	40	U	650		0.66		99		0.5	J	ND	UJ	8.4		0.49	J
PZ-113-AS	7/10/2013	7.7	J	630		0.83		110		0.37	J	0.016	J	7.1		0.43	J
PZ-113-AS	10/2/2013	ND	U	560		1		100		0.52		0.015		6.7		0.75	J
PZ-113-SS	8/4/2012	41	J+	260		ND	U	11	J	ND	U	ND	R	18	J-	1.940042	J
PZ-113-SS	4/12/2013	74	U	290		ND	U	9.2		ND	U	ND	UJ	19		2.48	
PZ-113-SS	7/11/2013	48		270		ND	U	9.7		ND	U	ND	U	20		1.99	

Sample ID	DATE	ZINC(Tot)	ZINC(Tot)	Alkalinity	Alkalinity	BROMIDE	BROMIDE	Chloride	Chloride	Iodide	Iodide	Nitrate as N	Nitrate as N	Sulfate	Sulfate	Radium-226(Dis)	Radium-226(Dis)
PZ-113-SS	10/3/2013	35		260		0.038		13		ND	U	0.004	R	19		2.22	J
PZ-114-AS	7/31/2012	ND	U	880		0.18	J+	370	J	0.11	J+	ND	R	0.14	J	0.715621	
PZ-114-AS	4/8/2013	42	U	740		0.54		280		0.17	J	0.038	J	0.84		0.18	UJ
PZ-114-AS	7/12/2013	ND	U	480		0.12	J	170		ND	U	ND	U	19		0.19	U
PZ-114-AS	10/8/2013	ND	U	490		0.12		160		ND	U	0.0047		5.1		0.28	J
PZ-115-SS	7/31/2012	5.7	U	500		1.4	J+	150	J	ND	U	ND	R	19	J	6.494025	
PZ-115-SS	4/5/2013	ND	U	490		1.6		200		0.12	J	0.0076	J	17		7.35	
PZ-115-SS	7/11/2013	7.1	J	560		1.2		220		0.13	J	ND	U	17		6.46	
PZ-115-SS	10/8/2013	ND	U	540		1.2		250		0.13		0.91		14		5.6	
PZ-116-SS	8/3/2012	31	J+	280		ND	U	4.1	J	ND	U	0.2	J	38	J-	0.192679	UJ
PZ-116-SS	4/12/2013	44	U	280		ND	U	4		ND	U	0.17	J	33		0.21	J
PZ-116-SS	7/11/2013	24		300		ND	U	3.5		ND	U	0.17		34		0.19	U
PZ-116-SS	10/11/2013	30		290		0.028		3.7		ND	U	0.34		33		0.36	J
PZ-200-SS	8/2/2012	48	J+	680		0.082	J	58	J	ND	U	0.0057	J	34	J	3.118821	J
PZ-200-SS	4/5/2013	ND	U	710		0.14	J	130		ND	U	ND	R	35		1.84	
PZ-200-SS	7/19/2013	24	J-	820		0.16	J	110		ND	U	ND	U	17		1.8	J
PZ-200-SS	10/2/2013	ND	U	850		0.088		100		ND	U	ND	U	18		2.86	
PZ-200-SS FD	8/2/2012	20	J+	660		0.045	J	54	J	ND	U	ND	R	34	J	4.49646	J
PZ-201A-SS	8/1/2012	34		420		ND	U	3.9	J	ND	U	0.31	J	67	J	0.45481	J+
PZ-201A-SS	4/8/2013	50	U	470		ND	U	4		ND	U	0.32	J	67		0.32	J
PZ-201A-SS	7/10/2013	23		400		ND	U	4.1		ND	U	0.33		65		0.37	J
PZ-201A-SS	10/9/2013	33		360		ND	U	3.6		ND	U	0.31	J-	62		0.2	U
PZ-201A-SS FD	8/1/2012	20		420		ND	U	4	J	ND	U	0.33	J	67	J	0.150399	UJ+
PZ-202-SS	8/2/2012	1600		380		ND	U	15	J	ND	U	0.03	J	38	J	0.674879	J
PZ-202-SS	4/12/2013	100	J+	470		ND	U	16		ND	U	ND	UJ	32		0.38	J
PZ-202-SS	7/11/2013	7	J	610		0.51		84		0.14	J	ND	U	58		1.13	
PZ-202-SS	10/11/2013	ND	U	630		0.74		110		0.18		0.0042		50		0.98	
PZ-203-SS	8/1/2012	10	J	370		ND	U	4.3	J	ND	U	ND	R	43	J	1.083557	J+
PZ-203-SS	4/5/2013	ND	U	380		ND	U	4.5		ND	U	ND	R	42		1.44	
PZ-203-SS	7/17/2013	8.6	J	380		ND	U	4.7		ND	UJ-	ND	U	43		1.36	J+
PZ-203-SS	10/2/2013	ND	U	320		ND	U	5.4		ND	U	0.0062		43		2	
PZ-204A-SS	8/2/2012	33	J+	230		0.14	J	390	J	ND	U	0.028	J	170	J	0.72113	J
PZ-204A-SS	4/8/2013	67	U	370		0.12	J	430		ND	U	ND	R	230		0.67	J
PZ-204A-SS	7/16/2013	20		510		0.87		410	J+	0.42	J	0.018	J	340		1.07	
PZ-204A-SS	10/8/2013	46		520		1.1		400		0.74		0.01		350		1.4	
PZ-204-SS	8/3/2012	20		400		ND	U	2.8	J	ND	U	0.016	J	18	J-	1.412031	
PZ-204-SS	4/9/2013	79	U	440		ND	U	2.9		ND	U	0.0067	J	22		0.87	
PZ-204-SS	7/17/2013	16	J	430		ND	U	3		ND	UJ-	0.014	J	23		0.58	J
PZ-204-SS	10/8/2013	ND	U	430		ND	U	3		ND	U	0.12		25		0.4	J
PZ-205-AS	8/3/2012	16	U	830		3.3		320	J	0.62	J+	ND	R	1.6	J-	1.327796	J
PZ-205-AS	4/8/2013	37	U	800		3.7		310		0.67	J	0.14	J	0.34	J	0.57	J
PZ-205-AS	7/18/2013	390	J-	810		4		350		0.55	J	0.007	J	4.6		1.31	J+
PZ-205-AS	10/15/2013	99		950		4.2		380		0.68		0.0092		0.29		1.16	
PZ-205-SS	8/3/2012	15	U	410		0.1	J	26	J	ND	U	0.029	J	51	J-	1.541302	J
PZ-205-SS	4/8/2013	37	U	420		0.22	J	33		ND	U	0.011	J	53		1.33	J
PZ-205-SS	7/10/2013	ND	U	430		0.19	J	35		ND	U	0.0069	J	56		0.93	
PZ-205-SS	10/9/2013	ND	U	390		0.2		34		ND	U	0.019	UJ-	54		1.01	
PZ-206-SS	8/7/2012	46		450	J-	0.14	J-	16	J	ND	UJ	ND	R	81	J	0.911534	
PZ-206-SS	4/8/2013	42	U	470		0.26		21		ND	U	ND	R	77		1.13	J
PZ-206-SS	7/18/2013	12	J-	470		0.28		25		ND	U	0.0082	J	76		1.04	
PZ-206-SS	10/7/2013	ND	U	460		0.33		38		ND	U	0.0044	J-	72		1.46	J
PZ-207-AS	8/8/2012	63		1300		3	J-	230	J	0.25	J	ND	R	0.28	J	0.727809	J
PZ-207-AS	4/3/2013	74	J	1200		2.9		210		0.24	J	0.0044	J	0.35	J	0.49	J
PZ-207-AS	7/18/2013	16	J-	1300		2.7		210		0.21	J	0.005	J	0.16	J	0.82	J
PZ-207-AS	10/4/2013	41		1300		2.8		230		0.25		ND	R	0.23		0.64	J
PZ-208-SS	8/2/2012	39	J+	380		ND	U	77	J	ND	U	0.41	J	34	J	0.516375	J+
PZ-208-SS	4/12/2013	64	U	380		ND	UJ-	77		ND	U	0.38	J-	32		1.06	
PZ-208-SS	7/16/2013	9.9	J	370		0.069	J	89	J+	ND	U	0.61		32		0.45	J
PZ-208-SS	10/8/2013	ND	U	520		0.054		93		ND	U	0.27		36		0.4	J

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PZ-209-SD	11/7/2013	ND	U	360		0.047		6.9		ND	U	0.068	J-	71		0.09	U
PZ-209-SS	11/7/2013	ND	U	400		0.078		9.8		ND	U	0.024	J-	95		1.05	
PZ-210-SD	11/6/2013	190		560		0.6		120		0.72		0.042		57		0.5	J
PZ-210-SD FD	11/6/2013	160		510		0.66		120		0.76		0.052		52		1.42	
PZ-210-SS	11/7/2013	30		310		0.18		13		ND	U	0.016	J-	37		0.52	J
PZ-211-SD	11/6/2013	190		350		0.11		38		ND	U	0.087		120		0.53	J
PZ-211-SS	11/7/2013	ND	U	340		0.045		5.7		ND	U	0.024	J-	49		0.57	J
PZ-212-SD	11/7/2013	ND	U	340		0.081		63		ND	U	0.23	J-	88		0.2	J
PZ-212-SS	11/7/2013	ND	U	290		0.12		91		ND	U	0.14	J-	73		0.05	UJ
PZ-302-AI	8/9/2012	54	U	670		0.22	J-	60	J	ND	U	0.011	J	73	J	0.474033	J
PZ-302-AI	4/3/2013	ND	U	700		0.36		63		0.11	J	0.022	R	56		0.39	J
PZ-302-AI	7/16/2013	8	J	680		0.39		71	J+	0.1	J	0.0085	J	71		0.69	J
PZ-302-AI	10/3/2013	ND	U	630		0.35		72		0.1		0.068	R	66		0.42	J
PZ-302-AS	7/16/2013	80	J	1200		0.95		53	J+	0.16	J	0.037		47		0.34	J
PZ-302-AS	10/8/2013	55		1100		0.75		49		0.13		0.027		2.5		0.26	J
PZ-303-AS	8/10/2012	ND	U	1000		0.68	J-	69	J	0.2	J	ND	R	2.3	J	0.362351	J
PZ-303-AS	4/4/2013	ND	U	920		1.1		110		0.28	J	0.011	J	1.3		0.44	J
PZ-303-AS	7/15/2013	9	J	1200	J	0.88		83		0.23	J	0.015	J	130		0.54	J
PZ-303-AS	10/4/2013	ND	U	240		0.85		93		0.25		0.014	R	24		0.69	J
PZ-304-AI	8/10/2012	ND	U	1100		2.5	J-	350	J	0.59	J	0.038	J	15	J	1.928943	J
PZ-304-AI	4/4/2013	ND	U	790		2.2		260		0.5	J	0.042		11		0.62	J
PZ-304-AI	7/16/2013	ND	U	840		2.3		270	J+	0.44	J	0.033		0.81		1.15	
PZ-304-AI	10/1/2013	ND	U	700		2.3		280		0.55		0.022	J-	0.47		1.23	
PZ-304-AI FD	10/1/2013	ND	U	810		2.4		280		0.57		0.018	J-	0.48		1.63	
PZ-304-AS	8/10/2012	ND	U	1200		3	J-	350	J	0.88	J	ND	R	1.2	J	1.60529	
PZ-304-AS	4/4/2013	26	J	1200		3.5		400		1		ND	U	0.3	J	0.47	J
PZ-304-AS	7/16/2013	8.6	J	1300		3.3		360	J+	0.83	J	ND	U	0.21	J	1.68	
PZ-304-AS	10/1/2013	ND	U	1300		3.6		410		0.89		0.028	J-	0.23		1.52	
PZ-305-AI	8/8/2012	22	U	990		0.49	J-	36	J	0.36	J	ND	R	1.3	J	0.70303	J
PZ-305-AI	4/5/2013	59	J	980		0.6		66		0.37	J	ND	R	1.8		0.27	J
PZ-305-AI	7/22/2013	10	J-	1000		0.54		70		0.36	J	0.0059	J	0.26	J	1.43	
PZ-305-AI	10/2/2013	ND	U	820		0.53		65		0.41		1.5		0.2		0.84	
PZ-305-AI FD	4/5/2013	93	J	950		0.58		65		0.41	J	0.0059	J	1.8		0.27	J
USGS-B3	11/7/2013	ND	U	240		ND	U	25		ND	U	0.0044	J	17		0.64	J
USGS-D1	11/20/2013	120		380		0.04		44		ND	U	1.8		25		0.48	J
S-10	8/8/2012	ND	U	800		2	J-	190	J	0.31	J	ND	R	920	J	0.05918	U
S-10	4/4/2013	ND	U	860		1.9		200		0.28	J	0.0045	J	590		0.01	UJ
S-10	7/15/2013	ND	U	1100	J	1.7		180		0.24	J	0.022		260		0.14	U
S-10	10/1/2013	ND	U	960		1.7		190		0.46		0.16	J-	2000		0.17	J
S-5	8/14/2012	100		2800		5.9	J-	400	J	0.15	J	ND	R	1.2	J	1.294615	J
S-5	4/11/2013	55	U	1900		3.5		210		0.13	J	0.0049	J	8.7		0.04	U
S-5	7/9/2013	130		2000		4.4		290		0.15	J	ND	U	0.44	J	0.83	J
S-5	10/7/2013	61		2300		5.8		340		ND	U	ND	UJ-	0.34		0.39	J
S-53	4/12/2013	680		500		3.2		32		0.29	J	ND	U	170		0.84	
S-53	7/18/2013	440	J-	560		1		36		0.28	J	0.014	J	180		0.22	UJ+
S-53	10/15/2013	110		450		0.63		25		ND	U	0.01		87		0.27	J
S-61	8/7/2012	33	J+	540	J-	ND	UJ	8	J	ND	UJ	0.024	J	60	J	0.348115	J
S-61	4/5/2013	ND	U	440		ND	U	7.2		ND	U	ND	R	73		0.37	J
S-61	7/12/2013	77		510		ND	U	10		ND	U	ND	U	93		0.31	J
S-61	10/3/2013	51		410		ND	U	9		ND	U	0.056		120		0.75	J
S-8	8/9/2012	35	U	300		ND	UJ-	31	J	ND	U	0.023	J	11	J	0.55597	J
S-8	4/4/2013	ND	U	360		0.033	J	48		ND	U	0.0054	J	20		0.45	J
S-8	7/12/2013	ND	U	270		ND	U	31		ND	U	ND	U	23		0.24	J
S-8	10/1/2013	ND	U	290		ND	U	38		ND	U	0.013	J-	28		0.3	J
S-82	8/10/2012	150	J+	1000		2.2	J-			0.35	J					1.318983	
S-82	4/9/2013	160		1200		4		320		0.46	J	0.017	J	16		0.64	
S-82	7/11/2013	7.1	J	960		2.9		220		0.3	J	0.0072	J	15		1.07	
S-82	10/8/2013	ND	U	710		3.2		270		0.37		0.0079		22		1.33	
S-84	8/6/2012	150		520		0.55	J			0.42	J					0.510833	J

Sample ID	DATE	ZINC(Tot)	ZINC(Tot)	Alkalinity	Alkalinity	BROMIDE	BROMIDE	Chloride	Chloride	Iodide	Iodide	Nitrate as N	Nitrate as N	Sulfate	Sulfate	Radium-226(Dis)	Radium-226(Dis)
S-84	4/11/2013	90	U	550		1.1		68		0.3	J	0.04		0.33	J	0.11	U
S-84	7/10/2013	270		640		2.1		59		0.23	J	ND	U	0.15	J	0.67	J
S-84	10/9/2013	92		630		0.82		57		0.2		0.018	UJ-	0.17		0.35	J
S-84 FD	10/9/2013	110		650		0.86		56		0.21		0.011	UJ-	0.21		0.27	J

Sample ID	DATE	Radium-228(Dis)	Radium-228(Dis)	Thorium-228(Dis)	Thorium-228(Dis)	Thorium-230(Dis)	Thorium-230(Dis)	Thorium-232(Dis)	Thorium-232(Dis)	Uranium-234(Dis)	Uranium-234(Dis)
D-12	8/8/2012	0.512982	UJ	-0.007493	UJ	0.341053	J	-0.007391	UJ	0.122499	U
D-12	4/4/2013	1.37	J+	0	U	0.26	J+	0	U	0.24	J
D-12	7/15/2013	1.74	J+	-0.03	UJ	0.54	J+	0.1	UJ	0.34	J+
D-12	10/1/2013	3		0.08	UJ	0.28	J	0.03	UJ	0.2	J
D-12 FD	4/4/2013	0.85	U	0.01	U	0.15	J	0	U	0.18	J
D-12 FD	7/15/2013	1.44	J+	-0.02	U	0.54	J+	-0.01	U	0.46	J+
D-12 FD	10/7/2013	8.44	J+	0.31	J	0.16	J	0.06	U	0.14	U
D-13	8/10/2012	2.1912	J+	0.070392	UJ	0.273477	J	0.030146	UJ	0.26636	J
D-13	4/4/2013	1.22	J+	-0.01	U	0.44	J+	0	U	0.17	J
D-13	7/18/2013	2.3		0.17	J	0.98	J+	0.22	J	0.44	J+
D-13	10/7/2013	1.68	J	-0.08	UJ	0.07	UJ	0.03	UJ	0.34	J
D-13 FD	8/10/2012	5.339229		0.029371	UJ	0.329182	J-	0.003028	UJ	0.106277	UJ
D-14	8/10/2012										
D-14	4/12/2013	1.39	J+	0.05	U	0.16	J+	0	U	0.27	UJ
D-14	7/18/2013	2.4		0.08	U	0.87	J+	0.09	J	0.99	J+
D-14	10/15/2013	1.89	UJ	0.34	J	0.96		0.1	U	0.4	J+
D-3	8/8/2012	5.061129	J	0.131252	U	0.065486	U	-0.028267	U	0.075027	UJ
D-3	4/11/2013	2.72	J+	0.01	UJ+	0.17	J	0.05	UJ	0.15	J
D-3	7/9/2013	6.18	J+	0.18	J	0.09	J+	0.03	U	0.19	J
D-3	10/7/2013	4.43	J	0.04	U	0.15	J	0.05	U	0.27	J
D-3 FD	8/8/2012	6.718749	J	0.093559	U	0.200027	J	0.030765	U	0.167438	UJ
D-6	8/7/2012	3.710214	J	0.215292	UJ	0.242904	UJ	0.100623	UJ	0.245126	U
D-6	4/9/2013	2.7	J+	0.02	UJ+	0.07	U	0.02	UJ	0.25	
D-6	7/12/2013	4.07		0.17	J	0.68	J+	0.06	UJ	0.32	J
D-6	10/8/2013	3.32	J+	0.11	U	0.3	J	0.1	U	0.23	J
D-6 FD	8/7/2012	3.814967		0.087675	U	0.196081	U	0.017583	U	0.332988	J
D-81	8/9/2012	2.04428	J+	0.020181	U	0.157837	J	0	U	1.667069	J
D-81	4/3/2013	0.86	U	0.29	J	0.1	UJ	-0.01	UJ	1.49	J
D-81	7/17/2013	1.15	J	0.07	UJ	0.3	J	0.04	UJ	2.1	J+
D-81	10/3/2013	3.14	J+	0.01	U	0.08	U	-0.01	U	1.72	J
D-81 FD	7/17/2013	1.44	J	0.1	U	0.53	J+	0.09	J	1.65	J+
D-83	8/9/2012	3.476248	J+	0.151643	UJ	0.027882	UJ	0.027832	UJ	0.04864	UJ
D-83	4/9/2013	3.78	J+	0.03	UJ+	0.21	J+	-0.02	U	0.04	UJ
D-83	7/11/2013	5.01	J+	0.11	J	0.14	J+	0.01	UJ	0.15	J
D-83	10/8/2013	2.81	J+	0.18	U	0.34	J	0.22	J	0.14	UJ
D-83 FD	7/11/2013	4.29		0.17	J	0.47	J+	0.04	U	0.73	J
D-85	8/6/2012	2.796253	J	-0.02177	UJ	0.11523	UJ	0.041483	UJ	0.156107	UJ
D-85	4/11/2013	1.26	J+	-0.01	UJ+	0.12	J	-0.01	U	0.37	
D-85	7/10/2013	4.8	J+	0.05	U	0.06	U	0.05	U	1.05	J+
D-85	10/9/2013	0.87	UJ+	0.05	U	0.03	U	0.05	U	0.37	J
D-87	8/1/2012	3.926638	J+	-0.047447	UJ	0.881134	J+	-0.007605	UJ	0.111884	UJ
D-87	4/9/2013	0.95	J	0.07	UJ	0.11	J	0.01	UJ	0.26	J
D-87	7/17/2013	3.26		0.06	UJ	0.89	J+	0.09	UJ	0.49	J+
D-87	10/2/2013	4.67	J+	0.15	U	0.15	U	0.15	U	0.31	J
D-87 FD	10/2/2013	3.62	J+	0.03	U	0.33	J	0.06	U	0.22	J
D-93	8/14/2012	3.44642		0.161384	U	0.455262	J+	0.025582	U	0.208082	UJ
D-93	4/9/2013	2.89		0.05	UJ	0.16	J	0.03	UJ	0.3	
D-93	7/11/2013	4.18	J+	0.12	U	0.17	J+	0.05	U	0.25	J
D-93	10/8/2013	3.15	J+	0.33	J	0.55	J	0.03	U	0.49	J
USGS-E1	11/7/2013	0.35	UJ-	-0.01	U	0.15	U	0.03	U	0.67	J+
USGS-B4-S	8/2/2013	1.31	U	-0.04	U	0.38	J	0.15	U	0.58	J+
USGS-B4-S	11/7/2013	1.25	UJ-	0.02	U	0.14	J	0	U	0.47	J+
USGS-B4-D	8/2/2013	1.45	J	-0.02	UJ	0.26	J	0.06	UJ	0.24	J+
USGS-A5	11/7/2013	0.65	UJ-	0.01	UJ	0.05	UJ	0.04	UJ	0.15	J+
I-11	8/8/2012	2.989114		-0.008972	U	0.215608	J	0.028523	U	0.578636	J
I-11	4/4/2013	0.88	UJ+	0.04	U	0.49	J+	0.03	U	1.24	J
I-11	7/15/2013	2.91		0.2	UJ	0.69	J+	0.01	UJ	1.26	
I-11	10/1/2013	3.47		0.06	UJ	0.25	J	0	UJ	1.45	J
I-4	8/14/2012	4.22616		0.226014	U	0.553204	J+	1.482414		0.122018	UJ

Sample ID	DATE	Radium-228(Dis)	Radium-228(Dis)	Thorium-228(Dis)	Thorium-228(Dis)	Thorium-230(Dis)	Thorium-230(Dis)	Thorium-232(Dis)	Thorium-232(Dis)	Uranium-234(Dis)	Uranium-234(Dis)
I-4	4/12/2013	0.43	UJ+	0.01	UJ+	0.21	J+	0.06	UJ	0.09	U
I-4	7/9/2013	5.89	J+	0.06	UJ	0.11	J+	0.04	UJ	1.47	J
I-4	10/7/2013	0.14	UJ	0.07	U	0.27	J	0.03	U	0.41	UJ
I-4 FD	7/9/2013	2.23	J+	0.05	UJ	0.2	J	0.02	UJ	0.78	R
I-62	8/9/2012	2.032703	J+	0.099793	UJ	0.108556	UJ	0.038575	UJ	0.309154	J
I-62	4/4/2013	1.01	U	0.01	UJ	0.21	J	0.02	UJ	0.18	J
I-62	7/12/2013	0.7	U	0	U	0.53	J+	0.06	U	0.58	J
I-62	10/1/2013	0.97	U	0.1	U	0.13	U	0	U	0.15	J
I-62 FD	4/4/2013	0.65	UJ	0.01	U	0.1	J	-0.04	U	0.2	J
I-62 FD	7/12/2013	1.2	U	0.03	UJ	0.29	J+	0.1	J	0.47	J
I-65	8/6/2012	0.964693	UJ	0.034676	U	0.028304	U	0.062293	U	0.816653	J
I-65	4/16/2013	0.81	UJ+	-0.03	UJ+	0.13	J+	0.01	UJ	0.64	J
I-65	7/18/2013	1.24	U	0.02	UJ	0.49	J+	0.01	UJ	1.09	J+
I-65	10/15/2013	0.06	UJ	0.03	U	0.38	J	0.09	U	1.04	J+
I-65 FD	4/16/2013	0.85	UJ+	0.01	UJ+	0.07	J+	0.02	UJ	0.6	J
I-65 FD	7/18/2013	0.53	U	0.03	UJ	0.21	J	0.07	UJ	1.16	J+
I-66	8/10/2012	0.459907	U	-0.043591	UJ	0.147182	UJ-	-0.014233	UJ	0.714472	J
I-66	4/5/2013	1.42		0.04	UJ	0.16	J+	0.04	UJ	0.76	
I-66	7/15/2013	0.85	U	0.06	UJ	0.26	J+	0.06	UJ	1.1	J
I-66	10/9/2013	0.96	UJ+	0.05	U	0.15	U	0.05	U	0.72	J
I-67	8/10/2012	0.642749	U	0.078105	U	0.200735	UJ-	0.15138	U	0.754567	J
I-67	4/5/2013	0.6	U	0.02	U	0.13	J+	0	U	0.51	J
I-67	7/12/2013	1.28	J	0.05	U	0.46	J+	0.1	J	0.67	J
I-67	10/3/2013	4.1	J+	0.03	U	0.15	J	0.05	U	1.03	
I-67 FD	4/5/2013	0.9	UJ	0.03	U	0.08	J	-0.01	U	0.97	J
I-67 FD	10/3/2013	1.85	J+	0.02	U	0.14	UJ	-0.02	U	0.86	
I-68	8/6/2012	3.462004		0.042613	U	0.358207	J	-0.055653	U	1.238224	
I-68	4/9/2013	1.37		0	U	0.11	J	0.03	U	2.58	
I-68	7/12/2013	1.65		0.03	U	0.23	J+	0.06	U	0.9	
I-68	10/4/2013	2.87	J+	0.12	UJ	0.25	J	0.07	UJ	0.59	J
I-73	8/4/2012	0.972985	UJ	0.027897	U	0.330365	J	0.027371	U	1.321011	
I-73	4/12/2013	1.03	J+	0.02	U	0.13	J+	0.01	U	0.99	J
I-73	7/19/2013	1.97	U	0.14	J	0.57	J	0.06	UJ	0.97	J+
I-73	10/3/2013	5.8	J+	0.04	U	0.08	U	0.17	J	-0.11	UJ
I-9	8/14/2012	4.205623	J	-0.002482	U	0.063742	UJ+	-0.041283	U	0.368936	J
I-9	4/9/2013	1.49	J	-0.01	UJ	0.15	UJ	0.1	UJ	0.2	J
I-9	7/11/2013	4.21	J+	0.06	U	0.29	J+	-0.01	U	0.37	J
I-9	10/8/2013	3.23	J+	0.03	U	0.1	U	0	U	0.28	J
I-9 FD	8/14/2012	5.061073	J	0.092199	U	0.26165	J+	-0.007708	U	0.323027	J
I-9 FD	4/9/2013	1.79	J+	0.06	UJ+	0.09	UJ+	0.01	U	0.14	J
I-9 FD	10/8/2013	2.58	J+	0.12	UJ	0.13	UJ	0.11	UJ	0.35	J
LR-100	8/13/2012	0.890019	UJ	0.057021	UJ	0.362647	J+	0.049117	UJ	0.096891	UJ
LR-100	4/3/2013	0.68	U	0.13	UJ	0.28	UJ	-0.02	UJ	0.08	J
LR-100	7/17/2013	0.51	U	0.05	U	0.41		0.04	U	0.38	J+
LR-100	10/4/2013	1.46	J+	0	UJ	0.04	UJ	0	UJ	0.17	J
LR-100 FD	10/4/2013	2.36	J+	0.03	U	0.15	J	0.02	U	0.33	J
LR-103	8/13/2012	1.624685	J	0.05332	U	0.266196	J+	0.022553	U	0.303017	J
LR-103	4/3/2013	1.62	J	0.35	J	0.54	J	0.02	UJ	0.22	J
LR-103	7/17/2013	1.99		0.02	U	0.55		0.09	U	0.18	J+
LR-103	10/2/2013	4.33	J+	0.02	UJ	0.19	J	0.06	UJ	0.23	J
LR-104	8/13/2012	1.618198	J	-0.023868	U	0.240401	J+	0.050279	U	2.141319	J
LR-104	4/4/2013	1	J	0.03	U	0.06	U	-0.01	U	2.72	J
LR-104	7/22/2013	0.94	U	0.05	U	0.09	J	0	U	2.35	R
LR-104	10/2/2013	3.43	J+	-0.03	U	0.26	J	0.01	U	2.98	J
LR-104 FD	8/13/2012	1.214651	UJ	-0.021664	U	0.259782	J+	0.057175	U	2.878674	J
LR-105	8/1/2012	1.808946	J+	0.233256	J	1.045708	J+	-0.01374	UJ	0.021805	UJ
LR-105	4/3/2013	0.95	U	-0.01	UJ	0.1	UJ	-0.01	UJ	0.31	J
MW-102	8/7/2012	0.679858	U	0.198094	UJ	0.243747	UJ	-0.032568	UJ	2.137969	J
MW-102	7/15/2013	1.57	J	0.1	UJ	0.25	J+	0.15	J+	5.63	

Sample ID	DATE	Radium-228(Dis)	Radium-228(Dis)	Thorium-228(Dis)	Thorium-228(Dis)	Thorium-230(Dis)	Thorium-230(Dis)	Thorium-232(Dis)	Thorium-232(Dis)	Uranium-234(Dis)	Uranium-234(Dis)
MW-102	10/3/2013	1.12	UJ+	-0.09	UJ	0.09	UJ	0.04	UJ	5.9	
MW-103	8/11/2012	4.321531		0.059056	U	0.29851	J-	0.051069	U	5.197377	
MW-103	4/5/2013	1.08	U	-0.02	U	0.12	J	0.07	U	3.17	
MW-103	7/15/2013	1.24	U	0.06	UJ	0.37	J+	0.03	UJ	2.48	
MW-103	10/4/2013	0.95	UJ+	-0.02	U	0.25	J	0.1	U	1.2	
MW-104	8/9/2012	0.700311	UJ+	-0.032504	U	0.270276	J	0.024411	U	0.455699	J
MW-104	4/5/2013	1.34	J	0.01	UJ	0.18	J+	0.02	UJ	1.42	J
MW-104	7/16/2013	0.85	UJ+	0	UJ	0.46	J+	0.05	UJ	2.21	J+
MW-104	10/3/2013	1.94	J+	0.15	UJ	0.28	J	0.09	UJ	2.31	
MW-1204	8/2/2012	1.835819		0.153634	UJ	0.230983	UJ-	0.035291	UJ	0.150483	UJ
MW-1204	4/12/2013	1.96	J+	0.06	UJ	0.14	J+	0.02	UJ	0.05	UJ
MW-1204	7/11/2013	3.46	J+	0.02	U	0.44	J+	0.05	U	0.18	UJ+
MW-1204	10/11/2013	-0.07	U	3.34	R	8.52	R	7.6	R	0.05	UJ
MW-1204 FD	4/12/2013	2.47	J+	-0.01	UJ	0.11	J+	-0.01	UJ	0.23	J
PURGE TANK	8/16/2012										
PURGE TANK	4/16/2013	0.98	UJ+	-0.03	UJ+	0.47	J+	0.34	J	1.97	
PURGE TANK	7/23/2013										
PURGE TANK	7/24/2013										
PURGE TANK	11/8/2013										
PZ-100-KS	8/16/2012	-0.036775	UJ	-0.013701	U	0.199516	J+	0	U	0.053863	UJ
PZ-100-KS	4/16/2013	0.96	J+	0.02	U	0.08	J+	0	U	0.07	J
PZ-100-KS	7/23/2013	1.11	U	-0.05	UJ	0.13	J	-0.01	UJ	0.05	J
PZ-100-KS	10/15/2013	1.05	UJ	0.11	U	0.32	J	0.12	U	0.19	J+
PZ-100-SD	7/31/2012	0.366703	U	0.116636	UJ	0.909618	J	-0.036787	UJ	0.271783	J
PZ-100-SD	4/5/2013	0.4	U	0	UJ	0.07	J+	0	UJ	0.36	J
PZ-100-SD	7/9/2013	0.67	UJ+	0.03	U	0.09	J+	0.02	U	0.44	
PZ-100-SD	10/8/2013	0.6	UJ+	-0.03	UJ	0.26	J	0.04	UJ	0.29	J
PZ-100-SS	7/31/2012	1.121499	U	0.083198	U	1.105093	J	0.012244	U	5.406504	
PZ-100-SS	4/5/2013	1.08	J	-0.01	U	0.1	J+	-0.02	U	6.01	J
PZ-100-SS	7/9/2013	0.74	UJ+	0.05	U	0.02	UJ+	0.05	U	4.82	
PZ-100-SS	10/8/2013	3.99	J+	0.07	U	0.34	J	-0.01	U	4.04	
PZ-101-SS	8/7/2012	3.13034	J	0.057814	U	0.342095	J	0.031044	U	1.330672	J
PZ-101-SS	4/12/2013	2.49	J+	0.01	U	0.15	J+	0	U	1.29	J
PZ-101-SS	7/11/2013	2.74		0.08	U	0.19	J	0.04	UJ+	0.53	J
PZ-101-SS	10/8/2013	0.99	UJ+	0.27	J	0.13	U	-0.01	U	0.71	J
PZ-102R-SS	8/13/2012	1.693228	J	0.119799	U	0.350503	J-	0.032246	U	4.605575	J
PZ-102R-SS	4/11/2013	1.5	UJ+	0.01	UJ+	0.06	J+	0.01	UJ	5.54	J
PZ-102R-SS	7/19/2013	2.25		0	UJ	0.14	J	0.05	UJ	3.47	J+
PZ-102R-SS	10/8/2013	0.9	UJ+	0.14	U	0.09	U	0.05	U	4.4	J
PZ-102-SS	8/13/2012	2.121944		0.047712	UJ	0.680663	J+	0.025612	UJ	3.348946	
PZ-102-SS	4/11/2013	2.35	J+	0.1	J+	0.12	J+	0.03	UJ	5.76	J
PZ-102-SS	7/19/2013	1.88		-0.01	UJ	0.19	J-	-0.02	U	5.84	J+
PZ-102-SS	10/8/2013	0.99	UJ+	0.14	U	0.21	J	0.03	U	4.07	J
PZ-103-SS	8/7/2012	1.955135	J	0.009851	U	0.149024	U	0	U	0.109137	UJ
PZ-103-SS	4/8/2013	1.53	J	0.06	UJ	0.09	J	0	UJ	1.05	J
PZ-103-SS	7/19/2013	1.14	U	0.06	U	0.04	UJ	0.06	U	0.33	J+
PZ-103-SS	10/4/2013	2.32	J+	0.06	U	0.17	UJ	0.02	U	0.29	J
PZ-104-KS	8/13/2012	0.347473	UJ	0.121191	U	0.207731	J+	0.022628	U	0.212517	J
PZ-104-KS	8/15/2012										
PZ-104-KS	4/11/2013	0.73	UJ+	0.04	UJ+	0.17	J	-0.01	UJ	0.49	
PZ-104-KS	7/18/2013	0.28	U	0	UJ	0.24	J	0.04	UJ	0.56	J+
PZ-104-KS	10/4/2013	0.78	UJ+	0.14	UJ	0.07	UJ	0.05	UJ	0.28	J
PZ-104-SD	8/1/2012	4.68124	J	0.047549	UJ	0.236791	J	0	UJ	1.024893	J
PZ-104-SD	4/11/2013	1.9	J+	0.02	UJ+	0.16	J+	0	U	0.26	UJ
PZ-104-SD	7/11/2013	2.5		0.03	U	0.12	J	0.08	J+	0.21	UJ
PZ-104-SD	10/7/2013	8.08	J	0.22	J	0.17	J	0.03	U	0.32	UJ
PZ-104-SS	8/1/2012	0.920391	UJ	0.155504	UJ	0.269884	UJ	0	UJ	0.910669	J
PZ-104-SS	4/11/2013	1.58	J+	0.03	UJ+	0.08	U	-0.02	UJ	0.13	J
PZ-104-SS	7/11/2013	1.15	U	0.02	U	0.05	U	0.04	UJ+	0.31	

Sample ID	DATE	Radium-228(Dis)	Radium-228(Dis)	Thorium-228(Dis)	Thorium-228(Dis)	Thorium-230(Dis)	Thorium-230(Dis)	Thorium-232(Dis)	Thorium-232(Dis)	Uranium-234(Dis)	Uranium-234(Dis)
PZ-104-SS	10/9/2013	1.63		0.05	U	0.22	J	0.11	U	0.25	J
PZ-104-SS FD	4/11/2013	1.03	J+	0.01	UJ+	0.22	J+	-0.01	UJ	0.41	J
PZ-105-SS	8/1/2012	1.137404	J+	0.130553	U	0.977419	J+	0.051208	U	3.064983	
PZ-105-SS	4/4/2013	1.03	J	0.01	U	0.24	J	0.03	U	2.58	J
PZ-105-SS	7/12/2013	1.89		0.06	U	0.45	J+	0.12	J	2.78	
PZ-105-SS	10/9/2013	4.12		0	U	0.16	U	0	U	2.12	J
PZ-106-KS	8/14/2012	0.461424	U	0.041578	U	0.24503	J+	0.04813	U	2.344499	
PZ-106-KS	4/15/2013	0.43	UJ+	0.04	U	0.16	J+	0.01	U	2.02	J
PZ-106-KS	7/19/2013	2.73		0.04	UJ	0.06	UJ-	0.05	UJ	2.02	J+
PZ-106-KS	10/11/2013	1.02	UJ	-0.02	UJ	0.29	J	0.05	UJ	1.62	J+
PZ-106-KS FD	10/11/2013	0.75	UJ	0.12	UJ	0.18	UJ	0.12	UJ	1.65	J+
PZ-106-SD	7/31/2012	1.078149	U	0.084478	UJ	0.067498	UJ	-0.008143	UJ	0.117048	UJ
PZ-106-SD	4/9/2013	0.89	U	0	UJ	0.34	J	-0.01	UJ	0.43	J
PZ-106-SD	7/10/2013	1.79	J+	-0.01	U	0.04	U	0.01	U	1.24	J+
PZ-106-SD	10/8/2013	0.81	UJ+	0	U	0.17	J	0.03	U	0.21	J
PZ-106-SS	7/31/2012	0.904065	U	0.022268	U	0.126811	UJ	0.021813	U	1.141243	J
PZ-106-SS	4/9/2013	0.51	UJ	0.01	U	0.15	J	0.01	U	0.61	J
PZ-106-SS	7/10/2013	1.08	UJ+	0.05	U	0.2	J	0.04	U	1.94	J+
PZ-106-SS	10/7/2013	3.56	J	0.07	UJ	0.17	UJ	0.13	UJ	0.85	J
PZ-107-SS	8/3/2012										
PZ-107-SS	8/4/2012	2.2764		0.136309	J	0.133982	J	0.078361	U	1.879834	
PZ-107-SS	4/12/2013	1.88	J+	0	U	0.11	J+	0	U	1.64	
PZ-107-SS	7/19/2013	2.38		-0.04	UJ	0.32	J-	0.04	UJ	1.85	J+
PZ-107-SS	10/3/2013	2.3	J+	0	U	0.47	J	0.06	U	1.54	J
PZ-107-SS FD	7/19/2013	2.68		0.16	J	0.25	J-	0.04	UJ	1.57	J+
PZ-109-SS	8/2/2012	2.06386		-0.065236	UJ	0.057821	UJ-	-0.025376	UJ	1.430691	J
PZ-109-SS	4/11/2013	0.6	UJ+	0.01	UJ+	0.1	J	0	UJ	1.38	J
PZ-109-SS	7/10/2013	1.88		0.05	U	0.13	j	0.02	UJ+	1.4	J
PZ-109-SS	10/9/2013	-0.21	UJ+	0.02	UJ	0.14	UJ	0.06	UJ	0.94	J
PZ-110-SS	8/2/2012	2.113992		-0.044183	UJ	0.108435	UJ-	0	UJ	0.177627	U
PZ-110-SS	4/4/2013	1.7	J	0	UJ	0.21	J+	0.08	UJ	0.08	U
PZ-110-SS	7/9/2013	5.2	J+	-0.01	UJ	0.1	J+	0.06	UJ	0.08	UJ
PZ-110-SS	10/8/2013	1.46	UJ+	0.07	U	0.14	J	-0.01	U	0.13	J
PZ-111-KS	8/13/2012	0.088047	UJ	-0.015471	U	0.256448	J+	0.031998	U	8.333546	
PZ-111-KS	4/9/2013	0.73	UJ+	-0.01	UJ+	0.14	J+	0.01	U	7.01	J
PZ-111-KS	7/17/2013	0.57	U	0	UJ	0.49	J	0	UJ	8.15	J+
PZ-111-KS	10/3/2013	0.96	UJ+	0.07	U	0.41	J	0.06	U	6.55	J
PZ-111-SD	8/1/2012	1.36936	UJ+	0.069822	U	0.329728	J+	0.026397	U	0.322089	J
PZ-111-SD	4/4/2013	0.93	J+	0.01	UJ	0.45	J+	0	UJ	0.43	J
PZ-111-SD	7/9/2013	4.77	J+	0.01	U	0.11	J+	-0.01	U	0.3	
PZ-111-SD	10/7/2013	1.43	J	-0.08	U	0.11	U	0.12	U	0.35	J
PZ-112-AS	8/8/2012	2.189815		0.034246	UJ	0.088263	UJ	-0.010401	UJ	0.034297	UJ
PZ-112-AS	4/12/2013	1.05	J+	0.01	U	0.2	J+	0.03	U	0.26	U
PZ-112-AS	7/9/2013	1.96	J+	0.07	U	0.13	J+	-0.04	U	0.25	J
PZ-112-AS	10/2/2013	2.97	J+	0.06	U	0.1	U	0.05	U	3.53	J
PZ-113-AD	8/3/2012	7.696536		0.145063	UJ	0.161882	J	0.008869	UJ	-0.030016	UJ
PZ-113-AD	4/11/2013	2.83	J+	0.04	UJ+	0.12	J	0.01	UJ	0.06	U
PZ-113-AD	7/10/2013	6.09	J+	0.08	U	0.12	J	-0.01	U	0.56	J+
PZ-113-AD	10/7/2013	6.2	J+	0.29	J	0.1	U	0	U	0.06	UJ
PZ-113-AD FD	8/3/2012	1.288027	UJ	0.018691	UJ	0.194103	J	-0.037751	UJ	1.361374	J
PZ-113-AD FD	7/10/2013	7.98		0.07	UJ	0.09	J	0	UJ+	0.33	J
PZ-113-AD FD	10/7/2013										
PZ-113-AS	8/8/2012	1.2393	U	0.107504	UJ	0.133941	J	-0.006627	UJ	1.022336	J
PZ-113-AS	4/12/2013	1.34	J+	0.01	UJ	0.16	J+	0.02	UJ	0.61	
PZ-113-AS	7/10/2013	1.39		0.09	J	0.1	J	0.04	UJ+	0.56	
PZ-113-AS	10/2/2013	1.17	J+	0.05	U	0.25	J	0.12	J	0.58	J
PZ-113-SS	8/4/2012	1.926171		0.014272	U	0.281426	J	0.028578	U	1.57373	J
PZ-113-SS	4/12/2013	1.6	J+	0.09	J	0.18	J+	0.03	U	1.83	J
PZ-113-SS	7/11/2013	1.79		0.05	U	0.12	J	0.03	UJ+	1.49	J

Sample ID	DATE	Radium-228(Dis)	Radium-228(Dis)	Thorium-228(Dis)	Thorium-228(Dis)	Thorium-230(Dis)	Thorium-230(Dis)	Thorium-232(Dis)	Thorium-232(Dis)	Uranium-234(Dis)	Uranium-234(Dis)
PZ-113-SS	10/3/2013	4.46	J+	0.02	U	0.18	U	0.06	U	1.2	J
PZ-114-AS	7/31/2012	1.589333	J	0.12052	U	0.517964	J	-0.020119	U	0.190191	UJ
PZ-114-AS	4/8/2013	0.17	UJ	-0.05	U	0.07	U	0.01	U	0.08	UJ
PZ-114-AS	7/12/2013	1.09	U	0.08	U	0.52	J+	0	U	0.29	J
PZ-114-AS	10/8/2013	0.92	UJ+	-0.01	U	0.29	J	-0.01	U	-0.01	U
PZ-115-SS	7/31/2012	0.922058	U	0.039088	UJ	0.427778	J	-0.032959	UJ	1.903414	
PZ-115-SS	4/5/2013	1.31		0.04	U	0.21	J+	0.07	J	2.3	J
PZ-115-SS	7/11/2013	0.99	UJ+	0.05	U	0.18	J+	0.04	U	3.41	
PZ-115-SS	10/8/2013	0.56	UJ+	-0.01	UJ	0.1	UJ	0	UJ	4.18	
PZ-116-SS	8/3/2012	-0.142346	U	0.008692	UJ	0.345851	J	-0.019323	UJ	6.404386	
PZ-116-SS	4/12/2013	1.29	J+	0.03	U	0.08	J+	0.02	U	5.29	J
PZ-116-SS	7/11/2013	5.19	J+	0.04	U	0.16	J+	0.01	U	5.24	J
PZ-116-SS	10/11/2013	1.76		0	UJ	0.3	J	0.15	UJ	5.77	J
PZ-200-SS	8/2/2012	3.026565		0.108356	U	0.426514	J-	0.056335	U	0.181372	U
PZ-200-SS	4/5/2013	1.37		0.03	U	0.1	J	-0.01	U	0.53	
PZ-200-SS	7/19/2013	1.77		0.07	UJ	0.14	J-	0.02	UJ	0.49	J+
PZ-200-SS	10/2/2013	2.03	J+	0	U	0.18	J	0.03	U	0.14	UJ
PZ-200-SS FD	8/2/2012	1.204126	UJ	-0.027542	U	0.181214	J-	-0.021098	U	0.690713	
PZ-201A-SS	8/1/2012	0.800592	UJ+	-0.053725	U	0.206762	J+	0	U	1.963094	J
PZ-201A-SS	4/8/2013	0.93	UJ	0.03	U	0.08	U	-0.01	U	2.22	J
PZ-201A-SS	7/10/2013	0.77	UJ+	-0.02	U	0.11	J	0.02	U	2.85	J+
PZ-201A-SS	10/9/2013	1.48		0.1	UJ	0.16	UJ	0	UJ	2.42	J
PZ-201A-SS FD	8/1/2012	1.570569	J+	0.091009	U	0.165467	J+	0.041647	U	2.04932	J
PZ-202-SS	8/2/2012	2.019934		0.003648	U	0.280648	J-	0.015275	U	1.150021	
PZ-202-SS	4/12/2013	0.86	J+	0.1	U	0.13	J+	0.01	U	1.62	J
PZ-202-SS	7/11/2013	2.32	J+	0.06	UJ	0.34	J+	0.05	UJ	1.51	J
PZ-202-SS	10/11/2013	0.43	UJ	-0.02	U	0.12	U	0	U	1.64	J+
PZ-203-SS	8/1/2012	0.949855	UJ+	0.012815	UJ	0.209631	J+	0.12544	UJ	3.373193	J
PZ-203-SS	4/5/2013	0.37	U	0.02	U	0.22	J+	0.04	U	3.16	
PZ-203-SS	7/17/2013	0.79	U	-0.02	U	0.74	J+	0.1	U	3.03	J+
PZ-203-SS	10/2/2013	3.73	J+	0.01	U	0.03	U	0.04	U	3.07	J
PZ-204A-SS	8/2/2012	1.479622	J	-0.044835	U	0.174993	UJ-	0.084252	U	1.977634	
PZ-204A-SS	4/8/2013	0.46	UJ	0.02	U	0.11	J	0.02	U	3.1	
PZ-204A-SS	7/16/2013	1.59	J+	0.04	U	0.42	J+	0.12	J	2.41	J+
PZ-204A-SS	10/8/2013	1.55	J+	0.09	UJ	0.42	J	0.05	UJ	1.36	J
PZ-204-SS	8/3/2012	1.022371	UJ	-0.054733	U	0.190369	J	-0.017652	U	3.884613	J
PZ-204-SS	4/9/2013	0.74	UJ	0.04	U	0.1	U	0.02	U	3.5	J
PZ-204-SS	7/17/2013	1.34	UJ	0.01	U	0.55		0.06	U	2.42	J+
PZ-204-SS	10/8/2013	0.14	UJ+	0.17	U	0.45	J	-0.01	U	2.97	
PZ-205-AS	8/3/2012	0.881289	U	-0.001582	U	0.802892		0.032198	U	0.676807	J
PZ-205-AS	4/8/2013	1.04	J	-0.02	U	0.1	J	-0.01	U	0.18	J
PZ-205-AS	7/18/2013	1.24	U	0.02	U	0.62	J+	0.11	J	0.99	J+
PZ-205-AS	10/15/2013	1.39	UJ	0.02	U	0.07	U	0.03	U	0.41	J+
PZ-205-SS	8/3/2012	1.460182	J	0.115133	UJ	1.232805	J-	0.027176	UJ	0.350908	J
PZ-205-SS	4/8/2013	1.13	J	0.03	U	0.06	U	0	U	0.44	
PZ-205-SS	7/10/2013	0.77	U	0.01	U	0.14	J	0.06	J+	0.47	
PZ-205-SS	10/9/2013	1.47		0.13	UJ	0.08	UJ	0.15	UJ	0.48	J
PZ-206-SS	8/7/2012	1.563456	J	-0.002293	U	0.099326	U	-0.038306	U	0.274407	J
PZ-206-SS	4/8/2013	0.72	UJ	0.05	UJ	0.1	J	0.01	UJ	0.2	J
PZ-206-SS	7/18/2013	0.63	UJ	0.07	J	0.13	J	0.03	U	0.28	J+
PZ-206-SS	10/7/2013	1.58	J	0.07	U	0.4	J	0.22	J	0.26	J
PZ-207-AS	8/8/2012	0.973218	U	0.053069	U	0.111473	U	-0.00698	U	0.060989	UJ
PZ-207-AS	4/3/2013	1.16	J	-0.01	UJ	0.15	J	0.02	UJ	0.32	J
PZ-207-AS	7/18/2013	1.3	U	0.05	U	0.24	J	0.05	U	0.21	J+
PZ-207-AS	10/4/2013	1.53	J+	0.05	U	0.05	U	0.03	U	0.26	J
PZ-208-SS	8/2/2012	1.899259	J+	-0.010794	UJ	0.37463	J+	0	UJ	1.880447	
PZ-208-SS	4/12/2013	1.19	J+	0.07	U	0.27	J+	-0.01	U	1.69	
PZ-208-SS	7/16/2013	1.1	UJ+	0.09	J	0.43	J+	0.09	J	1.58	J+
PZ-208-SS	10/8/2013	1.15	J+	0.02	U	0.25	J	0.03	U	1.26	J

Sample ID	DATE	Radium-228(Dis)	Radium-228(Dis)	Thorium-228(Dis)	Thorium-228(Dis)	Thorium-230(Dis)	Thorium-230(Dis)	Thorium-232(Dis)	Thorium-232(Dis)	Uranium-234(Dis)	Uranium-234(Dis)
PZ-209-SD	11/7/2013	1.18	UJ+	0.15	J	0.16	UJ	0.06	U	6.43	J
PZ-209-SS	11/7/2013	0.84	UJ+	0.05	U	0.32	J	0.05	U	3.5	J
PZ-210-SD	11/6/2013	0.85	UJ+	0.12	U	0.33	J	0.04	U	5.34	
PZ-210-SD FD	11/6/2013	1.7	UJ+	1.59	J	2.74	J	1.4	J	4.97	
PZ-210-SS	11/7/2013	0.49	UJ-	0.03	U	0.13	U	-0.01	U	1.76	J+
PZ-211-SD	11/6/2013	5.65	J+	0.57	J	0.95	J	0.85		14.08	J
PZ-211-SS	11/7/2013	0.12	UJ-	-0.02	UJ	0.01	UJ	0.04	UJ	2.77	J+
PZ-212-SD	11/7/2013	-0.33	UJ-	0.11	U	0.26	J	0.01	U	10.76	J+
PZ-212-SS	11/7/2013	0.43	UJ+	0.01	UJ	0.17	J	0.02	UJ	2.43	J
PZ-302-AI	8/9/2012	1.424859	J+	-0.036891	UJ	0.194081	J	0.007747	UJ	5.504342	J
PZ-302-AI	4/3/2013	0.86	U	0.08	UJ	0.26	J	0	UJ	4.02	J
PZ-302-AI	7/16/2013	1.34	UJ+	0	U	0.57	J+	0.07	J	5.18	J+
PZ-302-AI	10/3/2013	1.26	J+	0.09	U	0.27	J	0.09	U	4.6	
PZ-302-AS	7/16/2013	1.43	UJ	0.01	U	0.26		0.05	U	2.45	J+
PZ-302-AS	10/8/2013	6.71	J+	0.06	UJ	0.16	J	0	UJ	0.97	J
PZ-303-AS	8/10/2012	2.437684	J+	0.033369	UJ	0.340379	J	0.015556	UJ	-0.014338	UJ
PZ-303-AS	4/4/2013	0.78	UJ+	-0.01	UJ	0.19	UJ+	-0.04	UJ	0.38	
PZ-303-AS	7/15/2013	1.61	U	0.01	U	0.35	J+	0.01	U	1.05	J
PZ-303-AS	10/4/2013	2.34	J+	0.01	U	0.15	UJ	-0.01	U	0.51	J
PZ-304-AI	8/10/2012	2.756131		0.092606	U	0.37156	J-	0.113502	U	1.26854	J
PZ-304-AI	4/4/2013	1.23	J+	-0.03	U	0.16	J+	0	U	0.5	J
PZ-304-AI	7/16/2013	2.43	J+	0.07	U	0.25	J+	0.06	U	0.63	J+
PZ-304-AI	10/1/2013	3.22		0.04	U	0.33	J	0.03	U	0.35	J
PZ-304-AI FD	10/1/2013	2.89		0.2	J	0.16	J	0.07	U	0.18	U
PZ-304-AS	8/10/2012	2.462267	J	-0.00846	UJ	0.312977	J-	0.027101	UJ	0.068321	UJ
PZ-304-AS	4/4/2013	0.96	J+	0	U	0.29	J+	0.02	U	0.08	UJ
PZ-304-AS	7/16/2013	1.93	J+	0.09	UJ	0.64	J+	0.1	J	1.27	J+
PZ-304-AS	10/1/2013	1.91		-0.03	U	0.24	J	0	U	0.53	J
PZ-305-AI	8/8/2012	0.269368	UJ	-0.006225	U	0.759995	J	-0.006141	U	0.06636	U
PZ-305-AI	4/5/2013	0.72	UJ	0.01	U	0.13	J	0.06	U	0.44	
PZ-305-AI	7/22/2013	1.51		-0.03	U	0.04	U	-0.02	U	0.13	J
PZ-305-AI	10/2/2013	4.02	J+	-0.06	UJ	0.22	J	0.06	UJ	0.45	J
PZ-305-AI FD	4/5/2013	0.53	UJ	-0.01	U	0.05	U	0.05	U	0.31	
USGS-B3	11/7/2013	0.55	UJ-	-0.02	UJ	0.23	J	0.07	UJ	0.63	J+
USGS-D1	11/20/2013	0.58	UJ+	0.03	U	0.28	J	0.01	U	1.52	J
S-10	8/8/2012	0.665543	UJ	0.054819	U	0.2847	J	0.072589	U	0.729086	J
S-10	4/4/2013	0.37	U	0.05	U	0.1	UJ	0.01	UJ	0.13	J
S-10	7/15/2013	1.39	J	0.08	U	0.58	J+	0.05	U	0.38	J
S-10	10/1/2013	1.05	U	-0.02	UJ	0.2	J	0.08	UJ	0.32	J
S-5	8/14/2012	2.026622	UJ	0.064348	U	-0.043481	UJ+	-0.050636	U	0.287947	UJ
S-5	4/11/2013	0.45	UJ+	0.07	J+	0.1	J	0.01	UJ	0.01	UJ
S-5	7/9/2013	4.01	J+	0.07	U	0.01	UJ+	-0.01	UJ	0.17	J
S-5	10/7/2013	-0.1	UJ	-0.01	U	0.2	J	0.13	U	0	R
S-53	4/12/2013	1.46	J+	0.03	U	0.22	J+	0.11	J	5.9	J
S-53	7/18/2013	0.94	U	0	UJ	0.51	J+	0.12	J	5.19	J+
S-53	10/15/2013	2.72	J	0.2	UJ	0.14	UJ	0.07	UJ	4.44	J+
S-61	8/7/2012	1.26452	J	-0.026651	UJ	0.197897	J	-0.004608	UJ	1.316874	
S-61	4/5/2013	0.89	UJ	0.01	U	0.09	J+	0.03	U	0.85	
S-61	7/12/2013	1.53		0.01	UJ	0.65	J+	0.12	UJ	1.12	J+
S-61	10/3/2013	1.13	UJ+	0.02	U	0.16	U	-0.06	U	0.98	J
S-8	8/9/2012	2.023399	J+	-0.00764	U	0.087852	U	0.055965	U	0.787681	
S-8	4/4/2013	1	J+	0	UJ	0.99	J+	0.02	UJ	0.85	J
S-8	7/12/2013	1.03	U	0.03	U	0.28	J+	0.09	U	1.14	
S-8	10/1/2013	1.48	J	0.07	U	0.21	J	0	U	1.19	J
S-82	8/10/2012	6.080256	J	0.023731	U	0.175716	J-	0.084107	U	0.339449	J
S-82	4/9/2013	1.17	J	0	UJ	0.08	J	0	UJ	0.91	J
S-82	7/11/2013	1.84	J+	0.15	J	0.51	J+	0.05	UJ	0.42	J
S-82	10/8/2013	1.91	J+	0.03	U	0.09	U	0.04	U	1.25	J
S-84	8/6/2012	1.665692	UJ	0.012118	UJ	0.154482	J	0.074854	UJ	0.091476	U

Sample ID	DATE	Radium-228(Dis)	Radium-228(Dis)	Thorium-228(Dis)	Thorium-228(Dis)	Thorium-230(Dis)	Thorium-230(Dis)	Thorium-232(Dis)	Thorium-232(Dis)	Uranium-234(Dis)	Uranium-234(Dis)
S-84	4/11/2013	0.63	UJ+	-0.01	UJ+	0.17	J	0	U	0.05	UJ
S-84	7/10/2013	3.35	J+	0.1	J	0.16	J	0.04	U	1.69	J+
S-84	10/9/2013	1.88		0.08	UJ	0.24	UJ	-0.02	UJ	0.14	UJ
S-84 FD	10/9/2013	4.58		-0.02	U	0.45	J	-0.02	U	0.55	J

Sample ID	DATE	Uranium-235(Dis)		Uranium-238(Dis)		Radium-226(Tot)		Radium-228(Tot)		Thorium-228(Tot)	
D-12	8/8/2012	-0.024466	U	0.212581	J	0.801143		1.128848	J	0.09098	U
D-12	4/4/2013	0.08	UJ	0.09	UJ	0.96	J	0.56	UJ+	0.11	UJ
D-12	7/15/2013	0.22	J+	0.12	J+	0.29	J	1.13	UJ+	0.11	UJ
D-12	10/1/2013	0.28	J	0.19	J	0.31	J	2.59		0.04	UJ
D-12 FD	4/4/2013	0.12	J	0.13	J	0.45	J	1.61	J	0.1	U
D-12 FD	7/15/2013	0.28	J+	0.26	J+	0.36	J	0.97	UJ+	0.03	UJ
D-12 FD	10/7/2013	0.05	U	-0.03	U						
D-13	8/10/2012	0.104452	UJ	-0.009953	UJ	1.407125		4.488791	J+	0.340091	
D-13	4/4/2013	0.04	UJ	0.11	J	1.2	J	2.52	J+	0.39	
D-13	7/18/2013	0.27	J	0.2	J	0.78	J+	1.87		0.24	J
D-13	10/7/2013	0.03	U	0.16	J	0.91	J	2.94	J	0.27	J
D-13 FD	8/10/2012	0.079239	UJ	0.073842	UJ	0.626435	J	2.041532	J	0.52085	J
D-14	8/10/2012					2.180733	J	2.990973	J+	1.953171	
D-14	4/12/2013	0.21	UJ	0.71	UJ	1.97		1.74	J+	0.99	
D-14	7/18/2013	0.34	J	0.32	J	2.22	J+	3.13		0.66	
D-14	10/15/2013	0.09	UJ	0.14	UJ	0.9		2.26	J	0.15	U
D-3	8/8/2012	0.031974	UJ	0.135148	UJ	4.174316		6.049713		0.082381	U
D-3	4/11/2013	0.1	UJ	0.07	UJ	2.82	J	4.38	J+	0.07	UJ+
D-3	7/9/2013	0.14	U	0.04	U	3.53		4.81	J+	0.15	J
D-3	10/7/2013	0.28	UJ	0.15	UJ	1.77	J	5.36	J	-0.01	UJ
D-3 FD	8/8/2012	-0.007821	UJ	0.06795	UJ	2.521527	J	4.129945		0.105873	UJ
D-6	8/7/2012	0.033374	U	0.050611	U	3.393978		4.760542	J	0.224312	UJ
D-6	4/9/2013	0	U	0.25		1.91		5.89	J+	0.14	J+
D-6	7/12/2013	0.06	UJ	0.23	J	3.1		3.13		0.13	J
D-6	10/8/2013	0.24	J	0.15	U	2.4		4	J+	0.09	UJ
D-6 FD	8/7/2012	0.113535	U	0.142294	U	3.260483		3.242048		0.287926	UJ
D-81	8/9/2012	0.327428	J	1.219447	J	0.625929		3.407085	J+	0.045123	UJ
D-81	4/3/2013	0.2	J	1.27		0.87		1.59		0.04	UJ
D-81	7/17/2013	1.28	J	1.8	J	0.3	U	1.22	J	0.06	U
D-81	10/3/2013	0.15	UJ	1.13	J	0.73	J	5.4	J+	-0.02	U
D-81 FD	7/17/2013	0.43		1.45	J	0.39	J+	0.54	U	0.05	U
D-83	8/9/2012	0.146448	UJ	-0.083728	UJ	2.801277	J	3.211953	J+	0.216293	U
D-83	4/9/2013	0.02	UJ	0.05	UJ	3.17		5.53	J+	0.2	J+
D-83	7/11/2013	0.06	UJ	-0.04	UJ	3.04		4.3	J+	0.14	J
D-83	10/8/2013	0.18	UJ	0.07	UJ	3.26	J	3.14	J+	0.43	J
D-83 FD	7/11/2013	0.16	U	0.19	U	3.1		4.43		0.26	J
D-85	8/6/2012	0.066244	UJ	0.033598	UJ	6.836462	J	6.948971	J	4.492773	
D-85	4/11/2013	0.01	U	0.14	J	9.67	J	6.41	J+	3.15	J+
D-85	7/10/2013	0.36	J	0.4	Q	4.64	J	4.91	J+	2.68	J
D-85	10/9/2013	0.05	UJ	0.04	UJ	4.46	J	1.65	UJ+	3.01	J
D-87	8/1/2012	-0.009423	UJ+	0.081875	UJ	1.703675	J+	3.986081	J+	0.08955	U
D-87	4/9/2013	0.02	U	0.11	U	1.33		2.99		0.22	J
D-87	7/17/2013	0.31	J	0.32	J	2.52	J+	3.37		0.55	
D-87	10/2/2013	-0.05	U	0.17	J	2.4		3.71	J+	0.43	J
D-87 FD	10/2/2013	0.04	U	0.23	J	1.82	J	3.82	J+	0.37	J
D-93	8/14/2012	0.051339	UJ	0.155968	UJ	1.223002		1.808764	J	0.153715	UJ
D-93	4/9/2013	0.04	U	0.15	J	3.02		4.79	J	0.16	J
D-93	7/11/2013	0.06	U	0.12	J	2.37		1.35	UJ+	0.2	J
D-93	10/8/2013	0.17	U	0.3	J	3.28		4.26	J+	0.38	J
USGS-E1	11/7/2013	0.06	UJ	0.4	J	0.13	U	0.18	UJ-	-0.01	U
USGS-B4-S	8/2/2013	0.26	J+	0.49	J	0.59	J	0.5	U	-0.07	U
USGS-B4-S	11/7/2013	0	UJ	0.81	J	0.51	J	0.6	UJ-	0.03	U
USGS-B4-D	8/2/2013	0.08	UJ+	0.14	J	0.8	J	1.09	U	0.15	UJ
USGS-A5	11/7/2013	0.1	UJ	0.07	UJ	3.08		-0.33	UJ-	0	UJ
I-11	8/8/2012	0.036933	U	0.732251		1.305529		3.554879		0.194721	UJ
I-11	4/4/2013	0.07	UJ	1.08	J	1.02	J	2.37	J+	0.01	U
I-11	7/15/2013	0.2	J+	0.81		1.44		1.82		0.2	J+
I-11	10/1/2013	0.14	UJ	1.05	J	1.02		2.84		-0.08	UJ
I-4	8/14/2012	0	UJ	0	UJ	2.826587		3.679552	J	0.491637	J

Sample ID	DATE	Uranium-235(Dis)	Uranium-235(Dis)	Uranium-238(Dis)	Uranium-238(Dis)	Radium-226(Tot)	Radium-226(Tot)	Radium-228(Tot)	Radium-228(Tot)	Thorium-228(Tot)	Thorium-228(Tot)
I-4	4/12/2013	0.25	UJ	-0.08	UJ	0.65		1.15	J+	0.08	UJ+
I-4	7/9/2013	0.67	U	0.18	U	1.37		5.2	J+	0.01	U
I-4	10/7/2013	0.05	UJ	0.23	UJ	0.16	UJ	7.69	J	0.04	U
I-4 FD	7/9/2013	-0.05	R	0	U	1.18	J	2.38	J+	0.03	U
I-62	8/9/2012	0.132676	U	0.192443	J	0.831017	J	0.752772	UJ+	0.193015	UJ
I-62	4/4/2013	0.09	J	0.22		0.46	J	1.27	J	0.25	J
I-62	7/12/2013	0.16	J	0.31	J	0.66	J	1.38	J	0.12	U
I-62	10/1/2013	0.09	U	0.18	J	0.38	J	0.6	U	-0.02	U
I-62 FD	4/4/2013	0.03	U	0.14	J	0.32	J	0.89	J	0.08	U
I-62 FD	7/12/2013	0.14	J	0.35	J	0.27	J	1.85		0.06	U
I-65	8/6/2012	0.048999	UJ	0.710225	J	0.879121		2.73343	J	0.601701	J
I-65	4/16/2013	0.05	UJ	0.57	J	0.54		0.61	UJ+	0.25	J+
I-65	7/18/2013	0.17	J	0.93	J	1.4	J+	1.12	U	0.39	J
I-65	10/15/2013	-0.01	U	0.79		0.4	J	1.15	UJ	0.19	J
I-65 FD	4/16/2013	0.04	UJ	0.57	J	0.47		0.91	J+	0.3	J+
I-65 FD	7/18/2013	0.33		0.93	J	0.63		1.44	U	0.48	J
I-66	8/10/2012	0.055524	UJ	0.286892	J	0.257819	J	1.235843	UJ	0.093028	UJ
I-66	4/5/2013	0.1	J	0.6		0.23	J	0.27	UJ	0.04	U
I-66	7/15/2013	0.2	J+	0.4	J	0.33	J	1.59		0.24	J+
I-66	10/9/2013	0.03	UJ	0.45	J	0.28	J	0.95	UJ+	0.28	J
I-67	8/10/2012	0	UJ	0.815231	J	0.599929	J	0.457254	U	0.105917	UJ
I-67	4/5/2013	0.16	J	0.43		0.69	J	0.55	UJ	0.05	U
I-67	7/12/2013	0.28	J	0.43	J	0.49	J	1.19	U	0.03	UJ
I-67	10/3/2013	0.17	U	0.33	J	1.1	J	1.39	J+	0.11	U
I-67 FD	4/5/2013	0.1	U	0.79		0.73		0.73	UJ	0.16	J
I-67 FD	10/3/2013	0.34	J	0.73		0.9	J	1.44	J+	0.08	U
I-68	8/6/2012	0.192273	U	0.891274		2.116871		2.603291	J	2.075857	
I-68	4/9/2013	0.18	J	2.23		3.34	J	1.97	J	2.66	
I-68	7/12/2013	0.26	J	0.61		1.4		3.67		1.27	
I-68	10/4/2013	0.17	J	0.47	J	0.65	J	3.69	J+	0.86	
I-73	8/4/2012	0.019557	U	0.76221		0.953745		1.167742	U	0.08475	U
I-73	4/12/2013	0.36	J	0.65	J	1.79	J	2.55	J+	0.41	J
I-73	7/19/2013	0.1	UJ	0.87	J	1.9	J	1.07	U	0.34	
I-73	10/3/2013	-0.48	UJ	1.9	UJ	4.47	J	5.5	J+	0.11	U
I-9	8/14/2012	0	UJ	0	UJ	2.346669		4.481792		0.066063	U
I-9	4/9/2013	0.1	J	0.19	J	1.48		3.81	J	0.15	J
I-9	7/11/2013	0.07	UJ	0.13	J	1.14		2.41	J+	0.08	U
I-9	10/8/2013	0.21	U	0.17	U	2.11		3.27	J+	0.2	J
I-9 FD	8/14/2012	-0.036359	UJ	0.021863	UJ	2.216637		3.814792		-0.005176	UJ
I-9 FD	4/9/2013	0.06	UJ	0.13	J	1.27		2.45	J+	0.05	UJ+
I-9 FD	10/8/2013	0.16	UJ	0.13	UJ	2.22	J	2.79	J+	0.17	U
LR-100	8/13/2012	-0.027463	UJ	-0.04173	UJ	0.543746	J	1.057322	UJ	0.105505	UJ
LR-100	4/3/2013	0.12	J	0.17	J	0.44	J	0.37	UJ	-0.03	U
LR-100	7/17/2013	0.31	J	0.08	UJ	0.58	J	-0.17	U	0	U
LR-100	10/4/2013	0.02	U	0.14	J	0.38	J	0.87	UJ+	-0.01	U
LR-100 FD	10/4/2013	0	UJ	0	UJ	0.45	J	1.93	J+	0.03	U
LR-103	8/13/2012	0.097482	UJ	0.112757	UJ	1.437275		1.031857	UJ	0.149243	J
LR-103	4/3/2013	0.05	U	0.36		0.97		0.59	U	0.03	U
LR-103	7/17/2013	0.12	UJ	0.14	J	0.71	J	0.72	U	0.06	U
LR-103	10/2/2013	0.07	U	0.1	U	0.71	J	3.78	J+	0.15	UJ
LR-104	8/13/2012	0.836822	J	2.214616	J	0.530439	J	2.135223		0.097615	UJ
LR-104	4/4/2013	0.16	J	1.94		0.63		1.58	J	0.08	U
LR-104	7/22/2013	0.06	R	1.24	R	0.62	J	1.57		0.06	UJ
LR-104	10/2/2013	0.27	UJ	2.14	J	0.3	J	3.62	J+	-0.03	U
LR-104 FD	8/13/2012	0.484325	J	2.143694	J	0.516379	J	1.158507	U	0.061366	UJ
LR-105	8/1/2012	-0.05716	UJ+	-0.012891	UJ	0.913864	J+	0.755048	UJ+	0.067885	U
LR-105	4/3/2013	0.04	UJ	0.02	UJ	0.69		0.55	U	0.05	J
MW-102	8/7/2012	0.116668	U	1.849782		0.531367	J	1.30582	U	0.204042	UJ
MW-102	7/15/2013	0.95	J+	4.33		1.09		1.8	J	0.09	UJ

Sample ID	DATE	Uranium-235(Dis)	Uranium-235(Dis)	Uranium-238(Dis)	Uranium-238(Dis)	Radium-226(Tot)	Radium-226(Tot)	Radium-228(Tot)	Radium-228(Tot)	Thorium-228(Tot)	Thorium-228(Tot)
MW-102	10/3/2013	0.28	J	5.04		2.23	J	1.47	J+	1.26	
MW-103	8/11/2012	0.170976	U	3.123256		5.436181	J	5.356546	J	3.50068	
MW-103	4/5/2013	0.27	J	3		0.78		0.88	U	1.38	
MW-103	7/15/2013	0.39	J+	2.27		0.7	J	1.73		1.18	J+
MW-103	10/4/2013	0.2	U	1.55		0.97	J	2.08	J+	1.11	
MW-104	8/9/2012	0.119588	UJ	0.315416	J	1.586811	J	3.340872	J+	0.992972	J
MW-104	4/5/2013	0.16	J	1.18	J	0.37	J	1.33	J	0.21	J
MW-104	7/16/2013	0.36	J+	1.65	J+	0.98		1.72	J+	0.71	
MW-104	10/3/2013	0.4	J	1.37		3.14	J	4.15	J+	1.94	
MW-1204	8/2/2012	0.09626	UJ	0.111284	UJ	4.239546	J	2.443941		0.170673	U
MW-1204	4/12/2013	0.07	UJ	0.05	UJ	3.34	J	2.93	J+	0.08	UJ
MW-1204	7/11/2013	0.21	UJ	0.02	UJ	4.97		3.21	J+	0.09	U
MW-1204	10/11/2013	0.06	U	0.03	UJ	26.93		11.04		0.17	UJ
MW-1204 FD	4/12/2013	0.04	UJ	0.13	UJ	4.11	J	1.8	J+	0.1	J
PURGE TANK	8/16/2012					0.715601	J	0.935222	UJ	0.151923	UJ
PURGE TANK	4/16/2013	0.03	U	0.99		0.32	J	0.81	UJ+	0.02	UJ+
PURGE TANK	7/23/2013					0.54	J	1.56	U	0.03	U
PURGE TANK	7/24/2013										
PURGE TANK	11/8/2013					0.4	J	1.13	UJ-	0.01	U
PZ-100-KS	8/16/2012	-0.044597	UJ	0.026816	UJ	0.549341	J	0.69983	U	0.019822	U
PZ-100-KS	4/16/2013	0.01	UJ	0.1	J	0.16	J	0.84	UJ+	0.09	J
PZ-100-KS	7/23/2013	0.07	J	0.03	UJ	0.22	J	0.19	U	0.02	U
PZ-100-KS	10/15/2013	0.11	UJ	0.1	UJ	0.37	J	-0.32	UJ	0.23	UJ
PZ-100-SD	7/31/2012	0.032777	U	0.377079	J	2.741732		1.033186	U	-0.018699	UJ
PZ-100-SD	4/5/2013	0.01	UJ	0.36	J	2.4	J	1.2	J	0.02	U
PZ-100-SD	7/9/2013	0.03	U	0.34	J	1.87		1.35	J+	0.02	UJ
PZ-100-SD	10/8/2013	0.06	UJ	0.11	J	1.95		-0.29	UJ+	0.11	UJ
PZ-100-SS	7/31/2012	0.161687	U	2.049898		2.948507	J	1.282905	J	-0.02044	U
PZ-100-SS	4/5/2013	0.21	J	2.35	J	4.6	J	1.37	J	0.02	UJ
PZ-100-SS	7/9/2013	0.26	J	1.86		4.04		1.99	J+	0.04	U
PZ-100-SS	10/8/2013	0.16	U	1.33		2.58		3.94	J+	0.01	U
PZ-101-SS	8/7/2012	0.14357	UJ	1.348698	J	12.51785	J	3.675778		0.083203	U
PZ-101-SS	4/12/2013	0.13	UJ	0.44	J	21.89	J	2.12	J+	0.05	U
PZ-101-SS	7/11/2013	0	UJ	0.48	J	23.66		3.48		-0.01	U
PZ-101-SS	10/8/2013	-0.01	UJ	0.31	UJ	15.7		-0.52	UJ+	0.28	J
PZ-102R-SS	8/13/2012	0.326771	J	3.69439	J	2.650899	J	1.865012		-0.006642	UJ
PZ-102R-SS	4/11/2013	0.44	J	3.4	J	3.18	J	0.4	UJ+	0.25	J+
PZ-102R-SS	7/19/2013	0.72		2.25	J	3.25		1.32	U	0.4	J
PZ-102R-SS	10/8/2013	0.65	J	2.26	J	2.54		1.81	J+	0.13	UJ
PZ-102-SS	8/13/2012	0.487976	J	2.096713	J	5.955619	J	3.423934	J	0.635093	J
PZ-102-SS	4/11/2013	0.25	J	3.35	J	8.05	J	7.98	J+	3.24	J+
PZ-102-SS	7/19/2013	0.98		3.85		7.69	J	5.39	J	2.99	J
PZ-102-SS	10/8/2013	0.54	J	2.23	J	9.93		3.44	J+	3.03	
PZ-103-SS	8/7/2012	0.084859	UJ	0.092696	UJ	4.720072		1.336983	J	0.329186	J
PZ-103-SS	4/8/2013	0.07	J	0.74	J	16.68	J	5.28	J	2.96	J
PZ-103-SS	7/19/2013	0.14	J	0.14	J	3.87		7.01		0.62	U
PZ-103-SS	10/4/2013	0.06	U	0.13	U	2.29	J	1.73	J+	0.23	J
PZ-104-KS	8/13/2012	0.037452	U	0.113779	UJ	0.174897	U	0.293147	UJ	0.021322	UJ
PZ-104-KS	8/15/2012										
PZ-104-KS	4/11/2013	0.02	U	0.2		0.32	J	0.18	UJ+	0.1	J+
PZ-104-KS	7/18/2013	0.3		0.29	J	0.26	J	0.12	U	0.02	U
PZ-104-KS	10/4/2013	0.17	J	0.14	J	0.19	U	2.27	J+	0.06	U
PZ-104-SD	8/1/2012	-0.03915	UJ	0.154283	UJ	4.497367		0.516971	U	0.10928	U
PZ-104-SD	4/11/2013	0.05	UJ	0.23	J	5.72	J	2.72	J+	0.05	UJ+
PZ-104-SD	7/11/2013	-0.01	UJ	0.17	UJ	4.08		-0.15	U	-0.04	UJ
PZ-104-SD	10/7/2013	0.26	UJ	-0.01	UJ	2.84	J	8.05	J	0.12	U
PZ-104-SS	8/1/2012	0.07353	UJ	0.501798	J	1.62015		1.471018	J	-0.017417	U
PZ-104-SS	4/11/2013	0.02	UJ	0.17	J	1.19		0.8	UJ+	0.05	UJ+
PZ-104-SS	7/11/2013	0.02	U	0.12	J	1.99		1.23	U	0.05	UJ

Sample ID	DATE	Uranium-235(Dis)	Uranium-235(Dis)	Uranium-238(Dis)	Uranium-238(Dis)	Radium-226(Tot)	Radium-226(Tot)	Radium-228(Tot)	Radium-228(Tot)	Thorium-228(Tot)	Thorium-228(Tot)
PZ-104-SS	10/9/2013	0.03	UJ	0.07	UJ	1.67		1.89		0.1	U
PZ-104-SS FD	4/11/2013	0.09	UJ	0.27	J	1.53		0.86	J+	0.1	J+
PZ-105-SS	8/1/2012	0.189991	J+	1.88274		1.842729	J+	1.010338	UJ+	0.003437	U
PZ-105-SS	4/4/2013	0.08	UJ	1.42	J	1.79		0.87	UJ	0.04	U
PZ-105-SS	7/12/2013	0.55	J+	1.78		1.54		0.92	U	-0.03	U
PZ-105-SS	10/9/2013	0.08	UJ	1.59	J	1.68		2.24		-0.05	UJ
PZ-106-KS	8/14/2012	0.117053	U	0.83037		0.234854	U	1.455488	UJ	0.071142	UJ
PZ-106-KS	4/15/2013	0.09	J	0.73	J	0.38	J	0.31	UJ+	-0.01	U
PZ-106-KS	7/19/2013	0.22	J	0.78		0.33	J	0.22	U	-0.01	UJ
PZ-106-KS	10/11/2013	0.1	UJ	0.67	J	0.42	J	1.36	J	-0.02	UJ
PZ-106-KS FD	10/11/2013	0.25	J	0.63	J	0.44	J	2.31	J	0.06	U
PZ-106-SD	7/31/2012	0.023825	UJ	0.048367	UJ	1.058814		0.938514	U	0.168373	U
PZ-106-SD	4/9/2013	0.03	UJ	0.2	J	1.04		0.34	U	0.21	J
PZ-106-SD	7/10/2013	0.64	J	0.1	U	0.66	J	1.62	J+	-0.01	U
PZ-106-SD	10/8/2013	0.07	UJ	0.21	J	1.01		1.1	J+	0.1	U
PZ-106-SS	7/31/2012	0	UJ	0.574686	J	3.928165		1.27137	J	0.081875	U
PZ-106-SS	4/9/2013	0.12	J	0.34	J	2.8		0.71	U	0.04	UJ
PZ-106-SS	7/10/2013	0.62	J	0.54	Q	3.31	J	0.85	UJ+	0.04	UJ
PZ-106-SS	10/7/2013	0.19	J	0.17	J	3.35	J	3.63	J	0.04	U
PZ-107-SS	8/3/2012										
PZ-107-SS	8/4/2012	0.128161	U	1.372927		6.330914		2.62381	J	0.407198	J
PZ-107-SS	4/12/2013	0.19	J	1.05		7.72	J	3.36	J+	1.01	
PZ-107-SS	7/19/2013	0.16	UJ	0.83	J	6.39	J	3.03	J	1.13	J
PZ-107-SS	10/3/2013	0.05	UJ	1.43	J	7.73	J	11.1	UJ+	0.5	J
PZ-107-SS FD	7/19/2013	0.24	J	0.93	J	5.32	J	3.84		1.15	J
PZ-109-SS	8/2/2012	0.059505	UJ	0.960589	J	2.580134	J	2.720984	J	0.034123	UJ
PZ-109-SS	4/11/2013	0.04	UJ	0.66	J	2.15	J	0.84	UJ+	0.01	UJ+
PZ-109-SS	7/10/2013	0.13	J	0.61	J	1.46		1.34	J	0.06	U
PZ-109-SS	10/9/2013	0.06	UJ	0.58	J	1.96		0.91	UJ+	-0.04	U
PZ-110-SS	8/2/2012	-0.0149	U	-0.012027	U	4.375747	J	2.212983		-0.015848	UJ
PZ-110-SS	4/4/2013	0.04	U	0.08	U	4		1.15	J+	0.03	U
PZ-110-SS	7/9/2013	0.01	U	0.06	U	4.12		4.11	J+	0.05	UJ
PZ-110-SS	10/8/2013	0.13	U	0.05	U	3.89		1.15	UJ+	0	UJ
PZ-111-KS	8/13/2012	0.741722	J	2.797458	J	0.634861	J	0.95647	UJ	0.068485	UJ
PZ-111-KS	4/9/2013	0.26	J	2.79	J	0.35	J	1.08	J+	0.11	J+
PZ-111-KS	7/17/2013	0.99	J	3.47	J	0.21	U	0.52	U	0.02	U
PZ-111-KS	10/3/2013	0.4	J	2.3	J	0.33	J	0.85	UJ+	-0.06	U
PZ-111-SD	8/1/2012	0.064233	UJ+	0.344222	J	1.335226	J+	0.337	UJ+	0.101723	UJ
PZ-111-SD	4/4/2013	0.02	UJ	0.27	J	0.91	J	0.26	UJ+	0.05	U
PZ-111-SD	7/9/2013	0.05	U	0.18	J	1.05		3.72	J+	0.02	U
PZ-111-SD	10/7/2013	0.04	U	0.26	J	1.27	J	1.93	J	0.05	UJ
PZ-112-AS	8/8/2012	0.042309	U	-0.016126	U	2.764681	J	2.856374	J	0.210741	J
PZ-112-AS	4/12/2013	0	U	0.27	U	0.95		2.24	J+	0.11	U
PZ-112-AS	7/9/2013	0.15	U	-0.03	U	2.27		3.39	J+	0.06	U
PZ-112-AS	10/2/2013	0.3	J	0.24	J	1.94		2.5	J+	0.17	J
PZ-113-AD	8/3/2012	0.060263	UJ	-0.009963	UJ	3.412223	J	7.710054	J	0.068538	UJ
PZ-113-AD	4/11/2013	0.09	U	-0.02	U	2.27	J	7.01	J+	0.12	J+
PZ-113-AD	7/10/2013	0.35	UJ	0.2	U	2.85	J	5.11	J+	0.2	J
PZ-113-AD	10/7/2013	0.14	UJ	0.1	UJ	2.82		6.06	J+	0.09	UJ
PZ-113-AD FD	8/3/2012	0.61522	J	0.314799	J	1.045668	J	1.011197	U	0.205531	J
PZ-113-AD FD	7/10/2013	-0.04	UJ	0.33	J	2.78		7.16		0.19	J
PZ-113-AD FD	10/7/2013				J	2.74		6.35	J+	0.06	U
PZ-113-AS	8/8/2012	-0.032559	UJ	0.710323		0.637432		1.373643	U	0.058188	UJ
PZ-113-AS	4/12/2013	0.07	U	0.48	J	0.61	J	2.36	J+	0.1	J
PZ-113-AS	7/10/2013	0.18	J	0.22	J	0.65	J	0.53	U	0.06	UJ
PZ-113-AS	10/2/2013	0.12	UJ	0.49	J	0.83	J	1.68	J+	0.06	U
PZ-113-SS	8/4/2012	0.17599	UJ	0.841	J	1.912151		-0.320555	U	0.006138	UJ
PZ-113-SS	4/12/2013	0.1	J	1.21	J	4.92	J	2.04	J+	1.09	
PZ-113-SS	7/11/2013	0.12	J	0.83	J	2.12		1.31	U	0.2	J

Sample ID	DATE	Uranium-235(Dis)	Uranium-235(Dis)	Uranium-238(Dis)	Uranium-238(Dis)	Radium-226(Tot)	Radium-226(Tot)	Radium-228(Tot)	Radium-228(Tot)	Thorium-228(Tot)	Thorium-228(Tot)
PZ-113-SS	10/3/2013	0.14	UJ	0.48	UJ	3.67	J	3.21	J+	0.16	U
PZ-114-AS	7/31/2012	0.050349	UJ	0.073551	UJ	0.405895	J	0.819526	UJ	0	U
PZ-114-AS	4/8/2013	0.03	UJ	0.07	J	0.43	J	0.86	UJ	0.03	UJ
PZ-114-AS	7/12/2013	0.14	J+	0.16	U	0.54	J	1.34	U	0	UJ
PZ-114-AS	10/8/2013	0	U	-0.01		0.37	J	0.77	UJ+	0.1	U
PZ-115-SS	7/31/2012	0.100647	U	1.259166	J	6.200176		0.588584	U	0.181698	U
PZ-115-SS	4/5/2013	0.18	J	1.55		7.7	J	0.85	U	0.02	U
PZ-115-SS	7/11/2013	0.33	J+	2.19		6.27	J	1.44	J+	0.02	U
PZ-115-SS	10/8/2013	0.19	J	2.01		8.89		-0.17	UJ+	0.18	U
PZ-116-SS	8/3/2012	1.252379		2.19613	J	0.535472	J	0.832203	U	0.028549	UJ
PZ-116-SS	4/12/2013	0.4	J	1.78	J	0.83	J	0.76	UJ+	0.03	U
PZ-116-SS	7/11/2013	0.33	J	1.74	J	0.32	J	0.17	UJ+	0.03	U
PZ-116-SS	10/11/2013	0.24	J	1.58	J	0.33	J	0.48	U	0.03	U
PZ-200-SS	8/2/2012	0.012693	U	0.554599		4.93847	J	2.799232		0.139346	UJ
PZ-200-SS	4/5/2013	0.04	U	0.58	J	2.44	J	1.38	UJ	0	U
PZ-200-SS	7/19/2013	0.06	UJ	0.41	J	0.97	J	1.95		0.17	J
PZ-200-SS	10/2/2013	-0.02	U	0.34	J	1.89		5.17	J+	0.21	U
PZ-200-SS FD	8/2/2012	0.124813	U	0.218927	J	4.692111	J	1.95498		0.01246	UJ
PZ-201A-SS	8/1/2012	0.014154	UJ+	1.157926	J	0.307484	J+	0.870657	UJ+	0.133861	U
PZ-201A-SS	4/8/2013	0.15	J	1.58		0.32	J	1.11	UJ	0.04	U
PZ-201A-SS	7/10/2013	1.03	J	1.36	J	0.5	J	1.16	UJ+	0	U
PZ-201A-SS	10/9/2013	0.1	U	1.58	J	0.3	J	1.71		-0.02	U
PZ-201A-SS FD	8/1/2012	0.091151	UJ+	1.654987	J	0.289436	J+	1.404078	J+	0.059178	U
PZ-202-SS	8/2/2012	0.159504	J	0.568279	J	1.96798	J	2.614041		0.805795	
PZ-202-SS	4/12/2013	0.05	UJ	0.63	J	0.85		0.69	UJ+	0.16	J
PZ-202-SS	7/11/2013	0.18	J	0.82		1.03		1.04	UJ+	0.05	UJ
PZ-202-SS	10/11/2013	0.09	U	0.84	J	1.19		1.84	J	0.06	U
PZ-203-SS	8/1/2012	0.154204	J+	0.664716		0.94608	J+	1.892817	J+	0.169248	U
PZ-203-SS	4/5/2013	0.13	J	0.43	J	1.22	J	1.08	UJ	0.02	UJ
PZ-203-SS	7/17/2013	0.31		0.88		2.31	J+	1.19	J	-0.01	U
PZ-203-SS	10/2/2013	-0.02	U	0.58		1.32		2.35	J+	-0.03	UJ
PZ-204A-SS	8/2/2012	0.207344	U	1.663522		2.343129	J	0.185531	UJ	0.349799	J
PZ-204A-SS	4/8/2013	0.08	J	2.46	J+	1.46	J	1.3	J	0.37	J
PZ-204A-SS	7/16/2013	0.4	J+	1.86	J	1.82		0.57	UJ+	0.37	J
PZ-204A-SS	10/8/2013	0.11	UJ	1.09	J	1.65		3.53	J+	0.42	J
PZ-204-SS	8/3/2012	0.39223	J	2.946683	J	1.09832		0.625456	U	0.114374	UJ
PZ-204-SS	4/9/2013	0.13	J	1.76		1.26		1.16		0.22	J
PZ-204-SS	7/17/2013	0.28	J	1.5		0.88		0.2	U	0.09	J
PZ-204-SS	10/8/2013	0.07	U	1.18	UJ	1.35		0.45	UJ+	0.17	J
PZ-205-AS	8/3/2012	0.166985	UJ	0.111868	J	1.197449		1.507422	J	0.145943	UJ
PZ-205-AS	4/8/2013	0.08	U	0.15	J	1.15	J	1.81	J	0.31	
PZ-205-AS	7/18/2013	0.46	J	1.08	J	2.94	J+	0.92	U	0.9	
PZ-205-AS	10/15/2013	0.15	U	0.14	J	0.99		1.5	J	0.64	J
PZ-205-SS	8/3/2012	-0.022099	UJ	0.309793	J	1.734436	J	1.299265	UJ	0.182326	UJ
PZ-205-SS	4/8/2013	0.05	J	0.4		1.39	J	1.31	J	-0.01	U
PZ-205-SS	7/10/2013	0.11	J	0.42	J	1.06		1.21	J	0.03	U
PZ-205-SS	10/9/2013	0.15	UJ	0.41	UJ	1.38		2.38		0.22	U
PZ-206-SS	8/7/2012	0.036432	UJ	0.044926	J	1.443316		1.123276	U	0.139655	UJ
PZ-206-SS	4/8/2013	0.04	U	0.08	J	1.12	J	1.1	UJ	0.1	J
PZ-206-SS	7/18/2013	0.07	J	0.1	U	2.3		1.63		0.15	J
PZ-206-SS	10/7/2013	0.07	U	0.14	UJ	1.61	J	1.33	J	-0.01	U
PZ-207-AS	8/8/2012	0.036298	UJ	0.076707	UJ	0.664742	J	2.497536		0.079057	U
PZ-207-AS	4/3/2013	0.2	UJ	0.15	UJ	1.12		0.68	UJ	0.12	J
PZ-207-AS	7/18/2013	0.28	J	0.11	U	0.88		1.88		0.04	U
PZ-207-AS	10/4/2013	0.1	U	0.09		0.63	J	2.05	J+	0	U
PZ-208-SS	8/2/2012	0.146435	UJ+	0.815089		0.830065	J+	0.261826	UJ+	0.07487	U
PZ-208-SS	4/12/2013	0.09	J	1.23	J+	1.14	J	1.31	J+	0.34	J
PZ-208-SS	7/16/2013	0.48	J+	0.98	J	0.71		2.37	J+	0.21	J
PZ-208-SS	10/8/2013	0.15	UJ	0.67	J	1.07		1.13	J+	0.08	U

Sample ID	DATE	Uranium-235(Dis)	Uranium-235(Dis)	Uranium-238(Dis)	Uranium-238(Dis)	Radium-226(Tot)	Radium-226(Tot)	Radium-228(Tot)	Radium-228(Tot)	Thorium-228(Tot)	Thorium-228(Tot)
PZ-209-SD	11/7/2013	0.33	J	3.67	J	0.14	U	14.81	J+	0.24	J
PZ-209-SS	11/7/2013	0.12	UJ	1.77		1.08		1.37	UJ+	-0.03	UJ
PZ-210-SD	11/6/2013	0.04	U	1.84		0.58	J	0.07	UJ+	0.03	U
PZ-210-SD FD	11/6/2013	0.25	J	2.49	J	0.73	J	1.69	J+	0.03	U
PZ-210-SS	11/7/2013	0	UJ	0.81	J	0.61	J	-0.29	UJ-	0	U
PZ-211-SD	11/6/2013	0.36	J	4.56	J	22.71		25.8	J+	6.82	J
PZ-211-SS	11/7/2013	0.06	UJ	0.92		0.56	J	0.58	UJ-	-0.03	U
PZ-212-SD	11/7/2013	0.34	J	3.62	J	0.48	J	0.18	UJ-	0.23	UJ
PZ-212-SS	11/7/2013	0.14	UJ	1.31	J	0.04	U	-0.34	UJ+	0.36	J
PZ-302-AI	8/9/2012	0.08954	UJ	4.005693		1.082385		2.221699	J+	0.110389	U
PZ-302-AI	4/3/2013	0.11	J	2.69	J+	0.6	J	1.2		-0.04	UJ
PZ-302-AI	7/16/2013	0.84	J+	4.06		0.8		0.85	UJ+	0.12	J
PZ-302-AI	10/3/2013	0.32	J	3.44		0.5	J	1.18	UJ+	0.12	UJ
PZ-302-AS	7/16/2013	0.46	J	1.39	J	0.85	J	1.26	J	0.17	J
PZ-302-AS	10/8/2013	0.14	UJ	0.36	UJ	1.88		2.47	J+	1.06	
PZ-303-AS	8/10/2012	0.097963	UJ	-0.163631	J	0.634363	J	3.821961	J+	0.020124	U
PZ-303-AS	4/4/2013	0.06	U	0.2	J	1.38	J	1.61	J+	1.03	J
PZ-303-AS	7/15/2013	0.37	J+	1.02	J	1.01		1.54	J	0.07	U
PZ-303-AS	10/4/2013	0.12	UJ	0.48	J	0.47	J	2.69	J+	0.13	U
PZ-304-AI	8/10/2012	0	UJ	0.579625	J	1.518367		4.836604		0.18157	UJ
PZ-304-AI	4/4/2013	0.16	UJ	0.42	J+	1.23	J	1.96	J+	0.01	U
PZ-304-AI	7/16/2013	0.16	UJ+	0.33	UJ	1.64		2.52	J+	0.1	J
PZ-304-AI	10/1/2013	0.06	UJ	0.1	J	1.15		2.22		0.09	UJ
PZ-304-AI FD	10/1/2013	0	U	0.35	UJ	1.21		3.98		0	UJ
PZ-304-AS	8/10/2012	-0.136457	UJ	0.034014	UJ	2.185332		3.375976	J	0.130894	U
PZ-304-AS	4/4/2013	0.4	UJ	-0.05	UJ	1.34	J	1.76	J+	0.04	U
PZ-304-AS	7/16/2013	0.35	UJ	0.54	UJ	2		1.79	J+	0.03	UJ
PZ-304-AS	10/1/2013	0.09	UJ	0	U	1.73		2		0.16	U
PZ-305-AI	8/8/2012	0.19726	U	-0.007563		2.17905		2.100099	J	0.608753	J
PZ-305-AI	4/5/2013	0.15	J	0.59	U	1.13		3.02	J	0.24	J
PZ-305-AI	7/22/2013	0.04	U	0	UJ	0.95	J	1.19	U	-0.02	UJ
PZ-305-AI	10/2/2013	0.12	UJ	0.04		0.48	J	3.06	J+	0.17	UJ
PZ-305-AI FD	4/5/2013	0.08	U	0.32	J	0.79		1.98	J	0.29	
USGS-B3	11/7/2013	0.16	UJ	0.35	J	0.51	J	0.88	UJ-	0	U
USGS-D1	11/20/2013	0.2	J	0.71	J	0.95	J	0.95	J+	0.09	UJ
S-10	8/8/2012	0.16196	UJ	0.784349	U	0.138269	U	0.547661	UJ	0.062578	U
S-10	4/4/2013	0.02	U	0.09	J	0.03	U	0.06	UJ	0.03	U
S-10	7/15/2013	0.26	J+	0.25	U	0.43	J	2.55		0.05	U
S-10	10/1/2013	0.14	U	0.17	UJ	0.13	UJ	2.95		0.05	UJ
S-5	8/14/2012	0.088804	UJ	0.109508	UJ	0.67193	J	2.251242	UJ	0.130589	U
S-5	4/11/2013	0.18	UJ	0.03	J	1.1	J	5.03	J+	0.05	UJ+
S-5	7/9/2013	0.16	U	0.29	R	0.98	J	5.52	J+	0.15	UJ
S-5	10/7/2013	0	R	0.54	J	0.37	J	0.31	UJ	0.02	U
S-53	4/12/2013	0.4	J	4.74	J	0.14	UJ	-2.53	UJ+	19.95	J
S-53	7/18/2013	0.62		5.06		4.04	J+	2.66		2.02	J
S-53	10/15/2013	0.2	J	3.78		0.4	J	0.37	UJ	0.39	J
S-61	8/7/2012	0.222899	J	0.863452		0.549884	J	0.802867	U	0.02284	UJ
S-61	4/5/2013	0.13	J	0.71	J	1.93	J	1.21		0.08	J
S-61	7/12/2013	0.22	J+	0.63	J	1.29		1.27	J	0.73	
S-61	10/3/2013	0.16	UJ	0.79		1.05	J	1.28	UJ+	0.86	
S-8	8/9/2012	0.294886	J	0.735761		0.645393	J	1.6952	J+	0.477859	
S-8	4/4/2013	0.09	U	0.55		0.45	J	1.18	J+	0.09	U
S-8	7/12/2013	0.2	J	0.63	J	0.35	U	0.67	U	-0.02	U
S-8	10/1/2013	0.11	UJ	0.77	UJ	0.47	J	3.45		0.03	UJ
S-82	8/10/2012	0.039981	UJ	0.168996	J	3.112633		6.887333	J	0.862624	J
S-82	4/9/2013	0.02	UJ	0.81	J	1.63		2.04		0.12	J
S-82	7/11/2013	0.1	UJ	0.33	J	1.48		1.18	UJ+	0.02	UJ
S-82	10/8/2013	0.25	J	0.47	U	2		2.77	J+	0.08	UJ
S-84	8/6/2012	-0.013558	U	0.010299	UJ	1.285645		1.977247	J	0.181774	UJ

Sample ID	DATE	Uranium-235(Dis)	Uranium-235(Dis)	Uranium-238(Dis)	Uranium-238(Dis)	Radium-226(Tot)	Radium-226(Tot)	Radium-228(Tot)	Radium-228(Tot)	Thorium-228(Tot)	Thorium-228(Tot)
S-84	4/11/2013	0.02	UJ	0.06	U	0.24	J	1.92	J+	0.12	UJ+
S-84	7/10/2013	1	J	0.42	UJ	1.3	J+	2.88	J+	0.56	J
S-84	10/9/2013	-0.01	UJ	-0.02	UJ	0.53	J	2.22		0.87	
S-84 FD	10/9/2013	0.06	UJ	0.11		1.4		5.8		0.44	J

Sample ID	DATE	Thorium-230(Tot)	Thorium-230(Tot)	Thorium-232(Tot)	Thorium-232(Tot)	Uranium-234(Tot)	Uranium-234(Tot)	Uranium-235(Tot)	Uranium-235(Tot)	Uranium-238(Tot)	Uranium-238(Tot)
D-12	8/8/2012	0.269743	J	0.021595	U	0.052322	U	U	0.187281	0.124325	U
D-12	4/4/2013	0.34	J+	-0.02	UJ	0.13	UJ	UJ	0.07	0.07	UJ
D-12	7/15/2013	0.54	J+	0.12	J	0.58	J+	J+	0.38	0.4	J+
D-12	10/1/2013	0.57	J	0.01	U	0.19	J	U	0.03	0.11	U
D-12 FD	4/4/2013	0.17	J	0.07	UJ	0.16	J	U	0.01	0.1	U
D-12 FD	7/15/2013	0.54	J+	0.17	J	0.66	J+	J+	0.22	0.26	J+
D-12 FD	10/7/2013										
D-13	8/10/2012	0.437111	J	0.094481	U	0.16966	J	U	-0.008236	0.036367	U
D-13	4/4/2013	0.37	J+	0.07	U	0.23	J	U	0.02	0.25	J
D-13	7/18/2013	0.89	J+	0.09	UJ	0.29	J+	J	0.15	0.1	J
D-13	10/7/2013	0.15	U	-0.1	U	0.3	J	UJ	0.06	0.09	UJ
D-13 FD	8/10/2012	0.30074	UJ-	0.049574	UJ	0.117723	U	U	0.018899	0.103569	U
D-14	8/10/2012	2.194824		1.914684		1.355375	J	UJ	0	1.51454	J
D-14	4/12/2013	1.15	J+	1.17		0.75	J	UJ	-0.02	1.05	J
D-14	7/18/2013	0.97	J+	0.72		0.55	J+	J	0.3	0.68	J
D-14	10/15/2013	0.5	J	0.11	U	0.71	UJ+	UJ	-0.02	-0.18	UJ
D-3	8/8/2012	0.249676	J	0	U	0.193708	UJ	UJ	-0.036931	0.163069	UJ
D-3	4/11/2013	0.17	J	0.01	UJ	-0.02	UJ	UJ	0.11	0.02	UJ
D-3	7/9/2013	0.15	J+	0	UJ	0.18	UJ	U	0.1	0.09	U
D-3	10/7/2013	0.22	J	0.27	J	0.28	UJ	UJ	0.27	0.04	UJ
D-3 FD	8/8/2012	0.218553	J	0.05454	UJ	0.160991	UJ	UJ	0.177276	-0.202258	UJ
D-6	8/7/2012	0.109964	UJ	0.132249	UJ	0.194735	J	U	0.12733	0.068516	U
D-6	4/9/2013	0.13	J+	0.04	UJ	0.22	J	U	0.02	0.12	J
D-6	7/12/2013	0.36	J+	0.07	J	0.37	J+	UJ	0.01	0.05	UJ
D-6	10/8/2013	0.14	UJ	0.09	UJ	0.55		U	0.04	0.05	U
D-6 FD	8/7/2012	0.36678	J	0.108524	UJ	0.363258	J	U	-0.00829	0.170026	J
D-81	8/9/2012	0.332277	J	0.083247	UJ	1.917197		U	0.123195	1.358243	
D-81	4/3/2013	0.13	J	0.03	UJ	1.57	J	J	0.14	1.21	J
D-81	7/17/2013	0.37		0.04	U	1.66	J+	J	0.73	1.39	J
D-81	10/3/2013	0.18	U	0.06	U	1.44	J	J	0.17	1.34	J
D-81 FD	7/17/2013	0.43	J+	0.17	J	1.58	J+	J	0.25	1.35	J
D-83	8/9/2012	0.259867	J	0.017632	U	-0.065708	UJ	UJ	0.003179	0.059654	UJ
D-83	4/9/2013	0.47	J+	-0.01	UJ	0.03	UJ	UJ	-0.02	-0.05	UJ
D-83	7/11/2013	0.14	J+	0.06	U	0.12	UJ	UJ	0.03	0.12	UJ
D-83	10/8/2013	0.25	J	0.05	U	-0.01	UJ	UJ	0.14	0.15	UJ
D-83 FD	7/11/2013	0.41	J+	0	U	0.19	J	U	0.13	0.13	J
D-85	8/6/2012	7.837964		4.535598		3.681824	J	J	0.320153	4.504236	J
D-85	4/11/2013	5.81		2.79		1.73		J	0.24	2.62	
D-85	7/10/2013	4.26	J	2.5	J	2.95	J+	J	1.31	2.39	
D-85	10/9/2013	4.37	J	2.67	J	1.06	J	J	0.21	1.06	J
D-87	8/1/2012	0.174168	J+	0.097491	U	0.14399	U	UJ+	0.044407	0.280652	J
D-87	4/9/2013	0.4		0.06	U	0.4	J	UJ	0.03	0.1	UJ
D-87	7/17/2013	1.45	J+	0.51		1.05	J+	J	0.13	0.47	J
D-87	10/2/2013	1.63		0.71		1.14	J	UJ	0.05	0.63	J
D-87 FD	10/2/2013	0.81		0.22	J	0.63		U	0	0.25	J
D-93	8/14/2012	0.167332	J+	0.059842	UJ	0.783956	J	U	0.037084	0.200071	UJ
D-93	4/9/2013	0.09	J	0.01	U	0.39		U	0.03	0.16	J
D-93	7/11/2013	0.18	J+	0.07	U	0.22	J	U	0.04	0.15	J
D-93	10/8/2013	0.44	J	0.05	U	0.55		U	0.04	0.31	J
USGS-E1	11/7/2013	0.3	J	0.02	U	0.45	J+	UJ	0.06	0.24	J
USGS-B4-S	8/2/2013	0.84		0.03	U	0.85	J+	J+	0.25	0.5	J
USGS-B4-S	11/7/2013	0.22	J	0.04	U	0.55	J+	U	0.05	0.21	J
USGS-B4-D	8/2/2013	0.01	UJ	0.12	UJ	0.1	UJ+	UJ+	-0.03	0.12	UJ
USGS-A5	11/7/2013	0.12	UJ	0	UJ	0.47	J+	J	0.15	0.16	J
I-11	8/8/2012	0.205657	UJ	0.03654	UJ	1.191438	J	UJ	0.064566	0.938059	J
I-11	4/4/2013	0.19	J+	0.02	U	1.07	J	UJ	0.06	0.71	J
I-11	7/15/2013	0.76	J+	0.04	UJ	1.19		J+	0.19	0.63	
I-11	10/1/2013	0.48	J	0.15	UJ	1.34		J	0.36	1.4	
I-4	8/14/2012	0.834517	J+	0.0431	UJ	0.223482	UJ	UJ	0	0.111262	UJ

Sample ID	DATE	Thorium-230(Tot)	Thorium-230(Tot)	Thorium-232(Tot)	Thorium-232(Tot)	Uranium-234(Tot)	Uranium-234(Tot)	Uranium-235(Tot)	Uranium-235(Tot)	Uranium-238(Tot)	Uranium-238(Tot)
I-4	4/12/2013	0.29	J+	-0.01	U	1.05	J	U	0.27	0.14	U
I-4	7/9/2013	0.06	UJ+	0.01	U	0.6	J	U	0.32	0.17	U
I-4	10/7/2013	0.26	J	0.1	U	0.58	J	UJ	0.52	0.24	UJ
I-4 FD	7/9/2013	0.19	J	0	U	1.02	R	R	0.4	0.58	U
I-62	8/9/2012	0.222722	J	0.175653	UJ	0.365521	J	U	0.077282	0.311888	J
I-62	4/4/2013	0.21	J	0.05	UJ	0.22		UJ	0.05	0.22	
I-62	7/12/2013	0.4	J+	0.12	J	0.38		J	0.33	0.18	J
I-62	10/1/2013	0.22	J	0.06	U	0.38	J	U	0.09	0.21	J
I-62 FD	4/4/2013	0.19	J	0.05	U	0.26	J	UJ	0.01	0.12	J
I-62 FD	7/12/2013	0.33	J+	0.07	U	0.38	J	UJ	0.1	0.2	J
I-65	8/6/2012	0.197529	UJ	0.204367	J	1.344487	J	UJ	0.048619	1.097207	J
I-65	4/16/2013	0.09	UJ+	0.04	U	0.91		U	0	0.85	J
I-65	7/18/2013	0.44	J+	0.15	J	1.62	J+	J	0.6	1.28	J
I-65	10/15/2013	0.21	J	0.14	J	1.45	J+	J	0.31	1.06	
I-65 FD	4/16/2013	0.17	J+	0.03	U	0.67		U	0.08	0.51	J
I-65 FD	7/18/2013	0.41	J	0.14	J	1.38	J+		0.34	0.77	J
I-66	8/10/2012	0.344639	J-	0.013422	UJ	0.882247		U	0.028904	0.549728	
I-66	4/5/2013	0.12	J+	-0.01	U	0.76	J	J	0.26	0.58	J
I-66	7/15/2013	0.75	J+	0.03	UJ	0.72		J+	0.17	0.59	
I-66	10/9/2013	0.07	U	0.06	U	0.43	J	UJ	0.15	0.54	J
I-67	8/10/2012	1.530353	J-	-0.005636	UJ	0.845511		U	0.074987	0.74395	
I-67	4/5/2013	0.61	J+	0	U	0.86	J	U	0.05	0.6	
I-67	7/12/2013	0.87	J+	0.05	UJ	0.89	J	J	0.22	0.56	J
I-67	10/3/2013	1.34	J	0.08	U	0.89	J	J	0.23	0.81	J
I-67 FD	4/5/2013	1.47	J	0.06	UJ	0.59	J	U	0.05	0.82	
I-67 FD	10/3/2013	0.45	J	0.11	U	0.86	J	UJ	0.13	0.65	J
I-68	8/6/2012	1.823		0.69692		2.473683	J	UJ	-0.109996	3.044467	J
I-68	4/9/2013	4.14		0.8		2.73		J	0.24	2.42	J
I-68	7/12/2013	1.63	J+	0.95		1.54	J	J	0.5	1.67	J
I-68	10/4/2013	2.25	J	0.42	J	1.63		U	0.11	1.36	
I-73	8/4/2012	0.433112	J	0.145674	U	1.394819	J	UJ	0.124274	0.99251	J
I-73	4/12/2013	0.55	J+	0.45	J	1.5		J	0.29	1.64	
I-73	7/19/2013	0.49	J	0.08	J	1.56	J+	J	0.67	1.1	J
I-73	10/3/2013	0.33	J	0.12	U	-0.45	UJ	UJ	0.54	0.8	UJ
I-9	8/14/2012	0.116665	UJ+	-0.006881	U	0.204083	J	U	0.043679	0.105766	UJ
I-9	4/9/2013	0.11	J	-0.02	U	0.14	J	UJ	0	0.04	UJ
I-9	7/11/2013	0.19	J+	0.07	U	0.34	J	UJ	0.09	0.17	J
I-9	10/8/2013	0.46	J	0.02	U	0.14	UJ	UJ	0.18	0.2	J
I-9 FD	8/14/2012	0.107473	UJ+	0.042912	UJ	0.371211	J	U	-0.020542	0.107275	U
I-9 FD	4/9/2013	0.13	J+	0.03	UJ	0.29	J	UJ	0.1	0.21	J
I-9 FD	10/8/2013	0.19	U	0.02	U	0.27	J	U	0.04	0.19	J
LR-100	8/13/2012	0.288742	J+	0.11103	UJ	1.239319	J	UJ	0.086842	0.202901	UJ
LR-100	4/3/2013	0.14	J	0.03	U	0.14	UJ	UJ	0.09	0.06	UJ
LR-100	7/17/2013	0.55		-0.01	U	0.35	J+	UJ	0	0.12	UJ
LR-100	10/4/2013	0.16	U	0.04	U	0	UJ	UJ	0.06	-0.01	UJ
LR-100 FD	10/4/2013	0.09	U	0.07	U	0.13	UJ	UJ	-0.01	0.12	UJ
LR-103	8/13/2012	0.506696	J+	0.151735	J	0.765927	J	UJ	0.231277	0.643508	J
LR-103	4/3/2013	0.11	J	-0.04	U	0.07	UJ	UJ	0.02	0.19	J
LR-103	7/17/2013	0.52		0.06	U	0.83	J+	J	0.53	0.64	J
LR-103	10/2/2013	0.23	J	0.14	UJ	0.15	UJ	U	0.11	0.15	U
LR-104	8/13/2012	0.31394	J+	-0.088903	UJ	2.985595	J	J	0.454753	2.442832	J
LR-104	4/4/2013	0.16	J	0.05	U	2.6	J	J	0.16	2.11	
LR-104	7/22/2013	0.1	J	0.01	UJ	2.94		J	0.14	2.02	
LR-104	10/2/2013	0.22	J	0.05	U	2.93	J	J	0.19	1.94	J
LR-104 FD	8/13/2012	0.279435	J+	0.071133	UJ	2.881418		U	0.044432	2.537819	J
LR-105	8/1/2012	0.83195	J+	0.139318	U	0.01201	UJ	UJ+	0.048394	0	UJ
LR-105	4/3/2013	0.3	J	0.03	UJ	0.04	UJ	UJ	-0.1	-0.3	UJ
MW-102	8/7/2012	0.40453	J	0.116467	UJ	3.310168	J	U	0.243438	2.404802	
MW-102	7/15/2013	0.29	J+	0.12	UJ	5.58		J+	1.05	4.63	

Sample ID	DATE	Thorium-230(Tot)	Thorium-230(Tot)	Thorium-232(Tot)	Thorium-232(Tot)	Uranium-234(Tot)	Uranium-234(Tot)	Uranium-235(Tot)	Uranium-235(Tot)	Uranium-238(Tot)	Uranium-238(Tot)
MW-102	10/3/2013	0.7		0.55		6.14		J	0.55	5.2	
MW-103	8/11/2012	3.781326	J-	3.402055		6.963168		J	0.342289	6.208068	
MW-103	4/5/2013	1.22	J	1.19	J	4.07			0.37	3.72	
MW-103	7/15/2013	1.8	J+	0.91	J+	3		J+	0.67	2.79	
MW-103	10/4/2013	1.08	J	1.22		2.32		U	0.12	2.04	
MW-104	8/9/2012	0.887897	J	0.854077	J	1.343281	J	UJ	0.022696	1.086242	J
MW-104	4/5/2013	0.34	J+	0.18	J	1.45		J	0.14	1.13	
MW-104	7/16/2013	1.15	J+	0.6		2.89	J+	J+	0.74	2.39	J+
MW-104	10/3/2013	2.04		1.77		3.49		J	0.25	2.99	
MW-1204	8/2/2012	0	UJ-	-0.015655	U	0.138074	UJ	UJ	-0.047473	0.124709	UJ
MW-1204	4/12/2013	0.12	J+	0.01	UJ	0.06	U	U	0.01	0.06	U
MW-1204	7/11/2013	0.29	J+	0.05	U	0.19	J	UJ	0.04	0	UJ
MW-1204	10/11/2013	0.35	J	0	UJ	0.17	J	U	0.07	0.09	UJ
MW-1204 FD	4/12/2013	0.1	J+	0.01	UJ	0.16	UJ	UJ	-0.01	0.03	UJ
PURGE TANK	8/16/2012	0.882682	J	0.422611	J	2.623984	J	U	0.071583	0.85165	
PURGE TANK	4/16/2013	0.32	J+	0.04	UJ	1.85		J	0.11	0.78	J
PURGE TANK	7/23/2013	0.29	J	0.02	U	1.74	J	UJ	0.08	0.9	J
PURGE TANK	7/24/2013										
PURGE TANK	11/8/2013	0.09	U	-0.04	U	2.24	J+	U	0.04	1.13	
PZ-100-KS	8/16/2012	0.110689	UJ+	-0.017392	U	0.229734	J	UJ	0.066467	-0.012668	UJ
PZ-100-KS	4/16/2013	0.39	J+	0.03	U	0.16	J	U	0.03	0.06	J
PZ-100-KS	7/23/2013	0.04	U	0	U	0.05	UJ	UJ	0.05	-0.02	UJ
PZ-100-KS	10/15/2013	0.32	UJ	0.09	UJ	0.1	UJ+	UJ	0	0.19	UJ
PZ-100-SD	7/31/2012	1.050235	J	0.049603	UJ	0.585826	J	UJ	-0.024621	0.072476	UJ
PZ-100-SD	4/5/2013	0.15	J+	0.04	U	0.45	J	UJ	0.01	0.27	J
PZ-100-SD	7/9/2013	0.1	J+	0.01	UJ	0.42	J	U	0.05	0.34	
PZ-100-SD	10/8/2013	0.19	J	0.03	UJ	0.47	J	J	0.17	0.14	J
PZ-100-SS	7/31/2012	0.104881	UJ	0.023742	U	5.058659	J	UJ	0.055225	2.351099	J
PZ-100-SS	4/5/2013	0.1	J+	0.02	UJ	5.7	J	J	0.32	2.3	J
PZ-100-SS	7/9/2013	0.17	J+	0.03	U	4.99			0.4	2.22	
PZ-100-SS	10/8/2013	0.07	U	0.08	U	4.98		U	0.27	1.92	
PZ-101-SS	8/7/2012	0.125983	U	0	U	0.52604	J	UJ	0	-0.017583	UJ
PZ-101-SS	4/12/2013	0.33	J+	0.08	U	0.73	J	UJ	0.17	0.55	J
PZ-101-SS	7/11/2013	0.24	J	0.05	UJ+	0.55	J	UJ	0.09	0.28	UJ
PZ-101-SS	10/8/2013	0.23	J	0.13	U	0.28	J	UJ	0.22	0.24	UJ
PZ-102R-SS	8/13/2012	0.131898	J-	0.104023	UJ	2.102259	J	J	0.23113	1.212609	J
PZ-102R-SS	4/11/2013	0.27	J+	0.36		4.85	J	J	0.3	3.17	J
PZ-102R-SS	7/19/2013	0.49	J	0.53	J	4.13	J+		0.76	3.53	J
PZ-102R-SS	10/8/2013	0.31	J	0.36	J	4.31		U	0.19	2.59	
PZ-102-SS	8/13/2012	0.723882	J+	0.663659	J	1.23552		U	0.156325	1.001963	J
PZ-102-SS	4/11/2013	3.03	J+	4.35		5.7	J	J	0.33	4.73	J
PZ-102-SS	7/19/2013	2.88	J-	2.71		4.67	J+		0.64	4.43	
PZ-102-SS	10/8/2013	2.97		2.91		5.25	J	J	0.34	5.09	J
PZ-103-SS	8/7/2012	0.876197		0.20451		0.146451	J	UJ	0.05671	0.4002	J
PZ-103-SS	4/8/2013	6.03	J	2.47	J	4.47	J	J	0.36	4.77	J
PZ-103-SS	7/19/2013	1.3	J	0.31	U	0.63	J+	UJ	0.13	1.01	J
PZ-103-SS	10/4/2013	1	J	0.37	J	0.73	J	UJ	0.01	0.42	J
PZ-104-KS	8/13/2012	0.178463	J+	0.137965	UJ	0.557718	J	UJ	0.084151	0.368854	J
PZ-104-KS	8/15/2012										
PZ-104-KS	4/11/2013	0.18	J	0.08	UJ	0.43	J	UJ	-0.01	0.21	J
PZ-104-KS	7/18/2013	0.24	J	0.03	U	0.62	J+	J	0.27	0.18	J
PZ-104-KS	10/4/2013	0.24	J	0	U	0.22	J	U	0.08	0.13	J
PZ-104-SD	8/1/2012	0.189661	UJ	0.069291	U	0.533418	J	UJ	0.065804	0.575214	J
PZ-104-SD	4/11/2013	0.17	J+	0.02	U	0.18	UJ	UJ	0.46	0.2	UJ
PZ-104-SD	7/11/2013	0.09	UJ	-0.04	UJ+	0.1	UJ	UJ	0	0.22	UJ
PZ-104-SD	10/7/2013	0.21	J	0.05	U	0.44	J	UJ	0.06	0.1	UJ
PZ-104-SS	8/1/2012	0.296229	J	0.033488	U	0.8555	J	UJ	0.075012	0.634698	J
PZ-104-SS	4/11/2013	0.16	J+	-0.03	U	0.22	J	UJ	0.01	0.09	J
PZ-104-SS	7/11/2013	0.11	J	0.03	UJ+	0.52		J	0.11	0.22	

Sample ID	DATE	Thorium-230(Tot)	Thorium-230(Tot)	Thorium-232(Tot)	Thorium-232(Tot)	Uranium-234(Tot)	Uranium-234(Tot)	Uranium-235(Tot)	Uranium-235(Tot)	Uranium-238(Tot)	Uranium-238(Tot)
PZ-104-SS	10/9/2013	0.39	J	0.01	U	0.47	J	U	0.07	0.11	UJ
PZ-104-SS FD	4/11/2013	0.07	J+	0	UJ	0.77	J	UJ	0.26	0.18	UJ
PZ-105-SS	8/1/2012	0.203691	UJ+	0.045146	U	3.424609		UJ+	0.047402	1.835395	
PZ-105-SS	4/4/2013	0.08	J	0.01	UJ	2.62	J	J	0.11	1.64	J
PZ-105-SS	7/12/2013	0.45	J+	0.06	U	2.81		J+	0.25	1.54	
PZ-105-SS	10/9/2013	0.17	UJ	-0.01	UJ	2.24	J	J	0.21	1.49	J
PZ-106-KS	8/14/2012	0.207562	J+	-0.00211	UJ	2.409663		J	0.321597	0.902707	
PZ-106-KS	4/15/2013	0.09	J+	0.04	U	2.25	J	UJ	0.07	0.86	J
PZ-106-KS	7/19/2013	0.14	J-	0.03	U	2.04	J+	J	0.31	0.93	
PZ-106-KS	10/11/2013	0.22	J	0.05	UJ	1.98	J+	J	0.15	0.57	J
PZ-106-KS FD	10/11/2013	0.54	J	0.05	U	1.8	J+	UJ	0.08	0.32	J
PZ-106-SD	7/31/2012	1.392148	J	0.177424	J	0.539385	J	UJ	-0.020604	-0.001957	UJ
PZ-106-SD	4/9/2013	0.13	J	0.14	J	0.32	J	UJ	0.06	0.31	J
PZ-106-SD	7/10/2013	0.18	J	0.08		1.11	J+	J	0.62	0.77	Q
PZ-106-SD	10/8/2013	0.17	U	0.08	U	0.5	J	UJ	0.09	0.24	J
PZ-106-SS	7/31/2012	0.108739	UJ	0.051863	U	1.115341		U	0.034545	0.306706	J
PZ-106-SS	4/9/2013	0.16	J	0.02	UJ	0.59	J	UJ	0.05	0.38	J
PZ-106-SS	7/10/2013	0.07	UJ	0.06	UJ	1.18	J+	UJ	0.37	0.59	Q
PZ-106-SS	10/7/2013	0.09	U	0.03	U	0.93	J	J	0.11	0.41	J
PZ-107-SS	8/3/2012										
PZ-107-SS	8/4/2012	0.689224	J	1.060874	J	2.500458	J	J	0.530598	2.345788	J
PZ-107-SS	4/12/2013	0.78	J+	1.11		1.68		J	0.16	1.27	
PZ-107-SS	7/19/2013	1.66	J-	1.38		1.65	J+	J	0.18	1.42	
PZ-107-SS	10/3/2013	0.99		1		0.59		J	0.22	1.09	
PZ-107-SS FD	7/19/2013	1.33	J-	1.57		1.74	J+	J	0.31	1.51	J
PZ-109-SS	8/2/2012	0.134824	UJ-	0.030051	UJ	1.309067	J	UJ	0.058027	0.749379	J
PZ-109-SS	4/11/2013	0.17	J	0.01	UJ	1.18	J	J	0.12	0.52	J
PZ-109-SS	7/10/2013	0.05	U	0.04	UJ+	1.36		J	0.17	0.54	
PZ-109-SS	10/9/2013	0.13	U	0.04	U	1.51	J	UJ	0.11	0.16	UJ
PZ-110-SS	8/2/2012	0.294779	J-	0.091381	UJ	0.096994	UJ	UJ	-0.008169	0.076797	UJ
PZ-110-SS	4/4/2013	0.16	J	0.02	U	0.13	J	J	0.1	0.14	J
PZ-110-SS	7/9/2013	0.2	J+	0.02	UJ	0.1	U	J	0.11	0.02	U
PZ-110-SS	10/8/2013	0.25	J	0.1	UJ	0.23	J	U	0.09	0.14	U
PZ-111-KS	8/13/2012	0.291601	J+	-0.012496	UJ	6.947933	J	J	0.748515	2.938758	J
PZ-111-KS	4/9/2013	0.2	J+	0.13	J	7.07	J	J	0.3	3.1	J
PZ-111-KS	7/17/2013	0.42		-0.02	U	7.02	J+	J	0.82	2.41	
PZ-111-KS	10/3/2013	0.26	J	0.02	U	7.15	J	J	0.23	2.2	J
PZ-111-SD	8/1/2012	0.138296	J+	0.052304	UJ	0.384614	J	UJ+	0.046201	0.275306	J
PZ-111-SD	4/4/2013	0.13	J+	0	U	0.41	J	UJ	0.03	0.18	J
PZ-111-SD	7/9/2013	0.07	UJ+	0.02	U	0.35	J	U	0.06	0.26	
PZ-111-SD	10/7/2013	0.25	J	0.07	UJ	0.48		U	0.1	0.16	J
PZ-112-AS	8/8/2012	0.103725	UJ	0.028616	UJ	0.11708	UJ	UJ	0.052257	0.03222	UJ
PZ-112-AS	4/12/2013	0.19	J+	0.05	U	0.08	U	U	0.06	0.09	U
PZ-112-AS	7/9/2013	0.16	J+	0.02	U	0.19	J	U	0.05	0.09	U
PZ-112-AS	10/2/2013	0.21	J	0.1	U	0.09	UJ	U	-0.02	0.11	U
PZ-113-AD	8/3/2012	0.107096	UJ	0.024243	UJ	0.141243	UJ	UJ	0	-0.007969	UJ
PZ-113-AD	4/11/2013	0.14	J	0.06	J	0.29	UJ	UJ	-0.02	0.15	UJ
PZ-113-AD	7/10/2013	0.1	J	-0.04	U	1.92	R	R	0.15	0.16	U
PZ-113-AD	10/7/2013	0.16	J	0.04	UJ	0.17	UJ	UJ	0.14	0.08	UJ
PZ-113-AD FD	8/3/2012	0.669058	J	0.022325	UJ	0.579114		U	0.084389	0.126834	U
PZ-113-AD FD	7/10/2013	0.12		0.02	UJ+	0.31	UJ	UJ	0.07	0.05	UJ
PZ-113-AD FD	10/7/2013	0.25	J	0.05	U	0.26	J	UJ	0.02	0.03	UJ
PZ-113-AS	8/8/2012	0.068584	UJ	0.041378	UJ	0.767711	J	UJ	0	0.638055	J
PZ-113-AS	4/12/2013	0.23	J+	0.04	UJ	0.92		J	0.22	0.79	
PZ-113-AS	7/10/2013	0.21	J	0.12	J+	0.69	J	J	0.14	0.62	J
PZ-113-AS	10/2/2013	0.14	J	-0.02	U	0.75	J	UJ	0.16	0.35	J
PZ-113-SS	8/4/2012	0.154038	UJ	-0.061424	UJ	3.64737	J	J	1.845286	1.256879	J
PZ-113-SS	4/12/2013	2.37	J+	0.87		2.6	J	J	0.29	1.76	J
PZ-113-SS	7/11/2013	0.32	J	0.17	J+	1.72		J	0.19	0.99	

Sample ID	DATE	Thorium-230(Tot)	Thorium-230(Tot)	Thorium-232(Tot)	Thorium-232(Tot)	Uranium-234(Tot)	Uranium-234(Tot)	Uranium-235(Tot)	Uranium-235(Tot)	Uranium-238(Tot)	Uranium-238(Tot)
PZ-113-SS	10/3/2013	0.43	J	0.18	J	1.19	J	UJ	0.07	0.97	J
PZ-114-AS	7/31/2012	0.683472	J	0.055097	U	0.101113	UJ	UJ	0.1785	0.121943	UJ
PZ-114-AS	4/8/2013	0.13	J	0.02	UJ	0.2	J	U	0.06	0.1	U
PZ-114-AS	7/12/2013	0.35	J+	0.04	UJ	0.3	J	UJ+	0.01	0.14	UJ
PZ-114-AS	10/8/2013	0.34	J	0.02	U	0.13	U	U	0.12	0.15	U
PZ-115-SS	7/31/2012	0.752656	J	0.013243	U	1.927472	J	UJ	0.200928	0.668196	J
PZ-115-SS	4/5/2013	0.01	UJ+	-0.01	U	2.51	J	J	0.14	1.69	J
PZ-115-SS	7/11/2013	0.12	J+	0.03	U	3.67	J	J+	0.32	2.53	J
PZ-115-SS	10/8/2013	0.19	J	0.07	U	4.05		J	0.34	2.15	
PZ-116-SS	8/3/2012	0.015659	UJ	0.011849	UJ	5.92649	J	J	0.308128	1.759693	J
PZ-116-SS	4/12/2013	0.15	J+	0.03	U	5.69	J	J	0.41	1.62	J
PZ-116-SS	7/11/2013	0.22	J+	0.04	U	5.64		J+	0.37	1.68	
PZ-116-SS	10/11/2013	0.27	J	0.04	U	5.83	J	U	0.2	1.7	J
PZ-200-SS	8/2/2012	0.39635	J-	0.110963	UJ	0.541805	J	UJ	0.037132	0.594328	J
PZ-200-SS	4/5/2013	0.14	J	0.01	U	0.54		U	0.06	0.52	
PZ-200-SS	7/19/2013	0.46	J-	0.24	J	0.96	J+	J	0.17	0.8	
PZ-200-SS	10/2/2013	0.25	J	0.19	U	0.45	J	UJ	0.05	0.52	J
PZ-200-SS FD	8/2/2012	0.312379	J-	0.074494	UJ	0.319431	J	UJ	0.071738	0.336374	J
PZ-201A-SS	8/1/2012	0.179912	UJ+	-0.030656	U	2.093281	J	UJ+	0.076466	1.562007	J
PZ-201A-SS	4/8/2013	0.1	J	0.02	UJ	2.48		J	0.13	1.33	
PZ-201A-SS	7/10/2013	0.22	J	0.04	U	3.12	J+	J	0.64	1.91	
PZ-201A-SS	10/9/2013	0.3	J	0.06	U	2.11	J	J	0.41	1.49	J
PZ-201A-SS FD	8/1/2012	0.190604	J+	-0.005391	U	1.64372	J	UJ+	0.079023	1.582452	J
PZ-202-SS	8/2/2012	0.443126	J-	0.899063		1.179575	J	UJ	0.075978	0.881819	J
PZ-202-SS	4/12/2013	0.39	J+	0.1	J	1.69	J	J	0.13	0.78	J
PZ-202-SS	7/11/2013	0.09	J+	0.03	UJ	2.41	J+	J+	0.18	1.12	
PZ-202-SS	10/11/2013	0.11	U	0.05	U	1.58	J+	U	0.04	0.76	
PZ-203-SS	8/1/2012	0.201667	UJ+	0.045735	U	4.114051	J	UJ+	0.021606	0.553022	J
PZ-203-SS	4/5/2013	0.09	J+	0.03	UJ	3.29	J	J	0.13	0.47	J
PZ-203-SS	7/17/2013	0.58	J+	0.1	J	2.86	J+	J	0.22	0.4	J
PZ-203-SS	10/2/2013	0.17	J	-0.02	UJ	3.12	J	UJ	0.08	0.34	J
PZ-204A-SS	8/2/2012	0.42303	J-	0.064664	UJ	1.714256	J	UJ	0.159923	1.269358	J
PZ-204A-SS	4/8/2013	0.39		0.12	J	3.44			0.32	2.91	
PZ-204A-SS	7/16/2013	0.49	J+	0.18	J	1.98	J+	J+	0.38	1.27	J+
PZ-204A-SS	10/8/2013	0.29	J	0.02	U	1.21	J	UJ	-0.09	0.98	J
PZ-204-SS	8/3/2012	0.112902	UJ	0.127785	UJ	3.806348		J	0.260866	2.275815	
PZ-204-SS	4/9/2013	0.22	J	0.08	UJ	3.2	J	J	0.14	2.47	J
PZ-204-SS	7/17/2013	0.29	J	0.03	UJ	2.85	J+	J	0.44	1.73	
PZ-204-SS	10/8/2013	0.35	J	0.22	J	3.04		J	0.2	1.53	
PZ-205-AS	8/3/2012	0.153301	J	0.074282	UJ	0.166	J	U	0.03096	0.11531	U
PZ-205-AS	4/8/2013	0.36		0.1	J	0.3	J	U	0.05	0.06	U
PZ-205-AS	7/18/2013	1.44	J+	0.79		0.79	J+	UJ	0.11	0.88	J
PZ-205-AS	10/15/2013	0.81	J	0.45	J	0.71	J+	U	0.07	0.47	J
PZ-205-SS	8/3/2012	2.763918	J-	-0.008713	UJ	0.443264	J	U	-0.022953	0.344735	J
PZ-205-SS	4/8/2013	0.09	J	0.05	UJ	0.7		J	0.16	0.48	J
PZ-205-SS	7/10/2013	0.04	U	0	UJ+	0.54	J	J	0.16	0.45	J
PZ-205-SS	10/9/2013	0.33	J	0.03	U	0.44	J	U	0.16	0.24	J
PZ-206-SS	8/7/2012	0.41094	J	0.070859	UJ	0.250722	J	UJ	0.03507	0.214656	J
PZ-206-SS	4/8/2013	0.13	J	0.01	UJ	0.2	J	U	0.02	0.05	U
PZ-206-SS	7/18/2013	0.17	J	0.1	J	0.53	J+	J	0.23	0.49	J
PZ-206-SS	10/7/2013	0.18	U	0.06	U	0.12	U	U	0.01	0.18	J
PZ-207-AS	8/8/2012	0.229261	U	0.004199	U	0.160067	UJ	UJ	0.068211	0.15938	UJ
PZ-207-AS	4/3/2013	0.13	J	0.01	U	0.18	J	UJ	0.07	0.07	UJ
PZ-207-AS	7/18/2013	0.22	J	0	U	0.1	UJ+	UJ	0.1	-0.03	UJ
PZ-207-AS	10/4/2013	0.07	U	0.08	U	-0.02	U	U	-0.02	0.03	U
PZ-208-SS	8/2/2012	0.46805	J+	0.059028	U	2.040156		J+	0.368354	1.635231	
PZ-208-SS	4/12/2013	0.36	J+	0.36	J	1.94	J	J	0.11	1.36	J
PZ-208-SS	7/16/2013	0.7	J+	0.25	J	1.81	J+	J+	0.32	1.43	J+
PZ-208-SS	10/8/2013	0.28	J	0.29	J	1.52	J	UJ	0.13	1.13	J

Sample ID	DATE	Thorium-230(Tot)	Thorium-230(Tot)	Thorium-232(Tot)	Thorium-232(Tot)	Uranium-234(Tot)	Uranium-234(Tot)	Uranium-235(Tot)	Uranium-235(Tot)	Uranium-238(Tot)	Uranium-238(Tot)
PZ-209-SD	11/7/2013	0.3	J	0.09	UJ	8.49	J	J	0.18	4.36	J
PZ-209-SS	11/7/2013	0.28	UJ	0.15	UJ	4.34		J	0.27	1.65	
PZ-210-SD	11/6/2013	0.16	J	-0.04	U	6.2		J	0.24	2.79	
PZ-210-SD FD	11/6/2013	0.25	J	-0.01	U	5.79	J	UJ	0.3	3.08	J
PZ-210-SS	11/7/2013	0.25	J	0.02	U	1.97	J+	U	0.04	0.55	
PZ-211-SD	11/6/2013	7.98	J	7.11	J	26.42	J	J	1.99	23.27	J
PZ-211-SS	11/7/2013	0.14	U	0.02	U	3.17	J+	UJ	0.16	1.27	J
PZ-212-SD	11/7/2013	0.28	UJ	0.01	UJ	11.25	J+	J	0.35	3.73	
PZ-212-SS	11/7/2013	0.25	J	0	UJ	2.63	J	UJ	0.08	1.74	J
PZ-302-AI	8/9/2012	0.28952	J	0.057412	U	5.022108		J	0.318107	3.574025	
PZ-302-AI	4/3/2013	0.25	J	0.06	UJ	4.18		J	0.35	3.21	
PZ-302-AI	7/16/2013	0.59	J+	0.15	J	3.6	J+	J+	0.73	3.1	J+
PZ-302-AI	10/3/2013	0.17	J	0.13	UJ	4.47	J	J	0.42	3.38	J
PZ-302-AS	7/16/2013	0.43	J	0.22	J	2.35	J+	J	0.62	1.44	J
PZ-302-AS	10/8/2013	0.94		0.73		6.22		U	0.2	4.59	
PZ-303-AS	8/10/2012	0.436793	J	0.187197	J	0.475449	J	UJ	-0.061422	0.123456	UJ
PZ-303-AS	4/4/2013	1.7	J+	0.69	J	0.91		U	0.05	0.8	
PZ-303-AS	7/15/2013	0.66	J+	0.13	J	0.84	J	J+	0.37	0.53	J
PZ-303-AS	10/4/2013	0.32	J	0.16	U	0.87	J	UJ	0.05	0.89	J
PZ-304-AI	8/10/2012	0.382289	J-	-0.011431	UJ	2.707243	J	UJ	0.407873	1.546343	J
PZ-304-AI	4/4/2013	0.41	J+	0.01	U	0.21	UJ	UJ	-0.05	0.29	J
PZ-304-AI	7/16/2013	0.62	J+	0.05	U	0.72	J+	J+	0.49	0.8	J+
PZ-304-AI	10/1/2013	0.4	J	0.05	UJ	0.26	U	U	0.05	-0.04	U
PZ-304-AI FD	10/1/2013	0.09	UJ	0.01	UJ	0.15	UJ	UJ	-0.04	0.16	UJ
PZ-304-AS	8/10/2012	0.212284	J-	-0.012423	U	0.025588	UJ	UJ	0.190898	-0.020625	UJ
PZ-304-AS	4/4/2013	0.17	J+	0.03	U	0.85	J	UJ	0.16	-0.04	UJ
PZ-304-AS	7/16/2013	0.64	J+	0.15	J	0.46	UJ+	UJ	0.72	0.45	UJ
PZ-304-AS	10/1/2013	0.21	J	-0.04	U	-0.04	UJ	UJ	0.1	0.15	UJ
PZ-305-AI	8/8/2012	0.707652	J	0.625918	J	0.878093	J	UJ	0.070368	0.809353	J
PZ-305-AI	4/5/2013	0.26	J	0.19	J	0.69		U	0.09	0.79	
PZ-305-AI	7/22/2013	0.05	UJ	-0.02	UJ	0.09	U	U	0.02	0.05	U
PZ-305-AI	10/2/2013	0.22	J	0.06	UJ	0.05	UJ	J	0.17	0.09	U
PZ-305-AI FD	4/5/2013	0.33		0.28		0.28	J	UJ	0.11	0.36	J
USGS-B3	11/7/2013	0.08	U	-0.02	U	0.47	J+	UJ	0.12	0.45	J
USGS-D1	11/20/2013	0.41	J	0.04	UJ	1.79	J	J	0.23	1.05	J
S-10	8/8/2012	0.528639	J	-0.082132	U	1.001226	J	UJ	0.201386	0.834383	J
S-10	4/4/2013	0.26	J	0.12	J	0.23	J	U	0.03	0.24	
S-10	7/15/2013	0.41	J+	0.18	J	0.62	J	J+	0.38	0.37	J
S-10	10/1/2013	0.19	UJ	0.04	UJ	0.63	J	U	0.15	0.82	
S-5	8/14/2012	0.445801	J+	0.127806	U	0.990951	J	UJ	0	0.193381	UJ
S-5	4/11/2013	0.18	J	-0.01	U	-0.06	UJ	UJ	0.13	-0.11	UJ
S-5	7/9/2013	0.1	UJ+	0.18	J	1.1	R	U	0.17	-0.06	U
S-5	10/7/2013	0.35	J	0.09	U	0.58	R	R	0	0	R
S-53	4/12/2013	19.58	J+	19.05	J	45.3	J	J	11.37	53.49	J
S-53	7/18/2013	2.52	J+	1.9	J	5.9	J+	J	1.31	5.18	J
S-53	10/15/2013	0.49		0.4	J	6.83	J+	J	0.5	5.84	
S-61	8/7/2012	2.108014	J	0.103332	UJ	1.474303		U	0.037117	1.283132	
S-61	4/5/2013	0.31	J+	0.02	U	0.76		U	0.03	0.74	
S-61	7/12/2013	5.72	J+	0.74		1.26		J	0.24	0.79	
S-61	10/3/2013	6.97		0.64		0.91		J	0.16	0.82	
S-8	8/9/2012	0.196011	J	0.070654	U	1.788358	J	UJ	0.062845	2.357339	J
S-8	4/4/2013	0.24	J+	0	U	0.84		J	0.09	0.94	
S-8	7/12/2013	0.4	J+	0.08	U	1	J	J	0.37	0.72	J
S-8	10/1/2013	0.25	J	0.04	UJ	1.16	J	J	0.22	1.18	J
S-82	8/10/2012	0.294716	J-	0.243146	J	1.205765	J	UJ	0.061233	0.976811	J
S-82	4/9/2013	0.24	J	0.11	J	1.26	J	UJ	0.12	1.09	J
S-82	7/11/2013	0.11	J+	0.02	UJ	0.67	J	J	0.11	0.31	J
S-82	10/8/2013	0.06	UJ	-0.03	UJ	0.62		J	0.18	0.23	J
S-84	8/6/2012	1.329428	J	0.355542	J	0.565734	J	UJ	0.064389	0.325079	J

Sample ID	DATE	Thorium-230(Tot)	Thorium-230(Tot)	Thorium-232(Tot)	Thorium-232(Tot)	Uranium-234(Tot)	Uranium-234(Tot)	Uranium-235(Tot)	Uranium-235(Tot)	Uranium-238(Tot)	Uranium-238(Tot)
S-84	4/11/2013	0.1	J	0.06	U	0.24	J	UJ	-0.01	0.19	J
S-84	7/10/2013	0.7	J	0.62	J	1.33	J+	UJ	0.39	1.32	Q
S-84	10/9/2013	0.8		0.75		0.56	J	U	-0.04	0.44	J
S-84 FD	10/9/2013	0.46	J	0.45	J	0.33	UJ	UJ	-0.03	0.18	UJ

F-4: EPA and MDNR Groundwater Split Sample Results

F-5: Offsite Private Well Sample Results

Table F-5-1: Summary of Offsite Radium Isotope Results - November 2013 Groundwater Sampling Event

Sample ID	Sample Date	Radium-226				Radium-228				Combined Radium 226 + 228		Combined Radium relative to 5 pCi/L MCL
		Result	CSU	MDA	FINAL Q	Result	CSU	MDA	FINAL Q			
USGS-E1 DIS	11/7/2013	0.05	0.11	0.22	U	0.35	0.54	1.1	UJ-	Non-Detect		Less Than MCL
USGS-E1 TOT	11/7/2013	0.13	0.15	0.19	U	0.18	0.8	1.69	UJ-	Non-Detect		Less Than MCL
USGS-B4-S DIS	11/7/2013	0.55	0.29	0.16	J	1.25	0.97	1.85	UJ-	0.55	*	Less Than MCL
USGS-B4-S TOT	11/7/2013	0.51	0.29	0.14	J	0.6	0.7	1.39	UJ-	0.51	*	Less Than MCL
USGS-A5 DIS	11/7/2013	2.34	0.78	0.29		0.65	0.59	1.14	UJ-	2.34	*	Less Than MCL
USGS-A5 TOT	11/7/2013	3.08	0.94	0.26		-0.33	0.64	1.4	UJ-	3.08	*	Less Than MCL
USGS-B3 DIS	11/7/2013	0.64	0.38	0.32	J	0.55	0.63	1.25	UJ-	0.64	*	Less Than MCL
USGS-B3 TOT	11/7/2013	0.51	0.3	0.24	J	0.88	0.69	1.31	UJ-	0.51	*	Less Than MCL
USGS-D1 DIS	11/20/2013	0.48	0.26	0.17	J	0.58	0.44	0.84	UJ+	0.48	*	Less Than MCL
USGS-D1 TOT	11/20/2013	0.95	0.44	0.29	J	0.95	0.52	0.89	J+	1.90		Less Than MCL

Notes:

EPA determined that well E-1 was affected by a water softener and those results were not used due to the presence of the water softener.

All values are in units of picoCuries per liter (pCi/L)

DIS = dissolved (filtered) sample; TOT = total (unfiltered) sample

CSU = Combined Standard Uncertainty (2-sigma); MDA = Minimum Detectable Activity

Data Validation Qualifiers (Final Q) include: U = Non-detect at the reported value, UJ = Non-Detect at the estimated reported value,

UJ+ = Non-Detect at the estimated reported value which may be biased high;

UJ- = Non-Detect at the estimated reported value which may be biased low;

J = estimated result; J+ = estimated result which may be biased high.

Combined Radium-226 plus Radium-228 = the sum of the Ra-226 and Ra-228 results unless one of results was non-detect, in which case is only the detected result shown and the value is flagged with a *.

Non-Detect = neither Radium-226 nor Radium-228 were detected in the sample

MCL = Maximum Contaminant Level for drinking water systems of 5 pCi/L for combined Radium-226 plus Radium-228

FB - Field blank

FD - Field duplicate sample

Table F-5-2. Summary of field and analytical data from potential background domestic wells in the vicinity of the West Lake landfill sampled by the U.S. Environmental Protection Agency (EPA) and U.S. Geological Survey (USGS) during 2013. Also included are results from samples collected during the 1990s from offsite monitoring wells located about 2,000 feet south of the West Lake site that were abandoned because of property development.

[est, estimated; BED, bedrock; ALL, alluvium; mg/L, milligrams per liter; uS/cm microsiemens per centimeter; E, estimated concentration below reporting limit; CaCO3, calcium carbonate; P, phosphorus; ug/, micrograms per liter; pCi/L, picocuries per liter
; --, no data; USGS, U.S. Geological Survey; USEPA, U.S. Environmental Protection Agency; PRP, West Lake Landfill Potentially Responsible Party group; Ra, radium; Th, thorium; U, uranium]

Station name	USGS-E1 [A]	USGS-A5	USGS-D1 [B]	USGS-B4-S	USGS-B3	C1	C2	C3	C4	C5	C7	PZ-300-AS	PZ-300-AD	GW-S-80	GW-I-50	MW-107	PZ-300-SS	PZ-301-SS	PZ-301-SS	Maximum EPA - USGS bedrock value	Maximum EPA - USGS Alluvium value
Date	11/7/2013	11/7/2013	11/20/2013	11/7/2013	11/7/2013	Jul-13	Jul-13	Jul-13	Jul-13	Jul-13	Jul-13	Dec-95	Dec-95	Dec-95	Dec-95	Dec-95	Dec-95	Feb-97	May-97	--	--
Sample start time	1015	1300	1215	1605	1420	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Collector	USGS	**USGS**	**USGS**	**USGS**	**USGS**	**USEPA**	**USEPA**	**USEPA**	**USEPA**	**USEPA**	**USEPA**	**PRP**	**PRP**	**PRP**	**PRP**	**PRP**	**PRP**	**PRP**	**PRP**		
Geology	BED	BED	BED	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	BED	BED	BED	--	--
USGS Local aquifer code	338KKKB (est)	338KKKB (est)	338SALM	111ALVM	111ALVM	111ALVM	111ALVM	111ALVM	111ALVM	111ALVM	111ALVM	111ALVM	111ALVM	111ALVM	111ALVM	111ALVM	333STLS	333STLS	333STLS	--	--
Well depth (feet)	unknown	unknown	300	25	80	--	--	--	--	--	--	19.7	41.9	--	--	--	93.7	161	161	--	--
Casing depth (feet)	unknown	unknown	80	sand point	unknown	--	--	--	--	--	--	9.9	37.1	--	--	--	83.9	146.5	146.5	--	--
Station number	384247090411301	384438090313601	384316090275201	384337090294301	384344090283701	EPA-C1	EPA-C2	EPA-C3	EPA-C4	EPA-C5	EPA-C7	--	--	--	--	--	PZ-300-SS	PZ-301-SS	PZ-301-SS	--	--
Dissolved oxygen mg/l	0.93	1	2	0.2	0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.0	0.2
Hydrogen sulfide, odor	no	no	no	yes	yes	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
pH std units	6.82	6.97	6.65	6.85	6.99	--	--	--	--	--	--	--	--	--	--	--	--	--	--	6.97	6.99
Specific cond at 25C uS/cm @25C	1,136	793	963	817	774	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1,140	817
Temperature, water deg C	15.2	14.6	13.6	15.6	15.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	15.2	15.6
Landsurface altitude ft	572	520	574	444	447	--	--	--	--	--	--	--	--	--	--	--	--	--	--	574	447
Depth of well ft	--	--	300	25	80	--	--	--	--	--	--	--	--	--	--	--	--	--	--	300	80
Diss solids, calc mg/l	660	454	571	502	460	--	--	--	--	--	--	--	--	--	--	--	--	469	432	660	502
Hardness, water mg/l CaCO3	9.47	358.4	535.7	416	352.4	--	--	--	--	--	--	--	--	--	--	--	--	350	360	536	416
Calcium, dissolved mg/l	1.777	74.9	135	125	104	--	--	--	--	--	--	--	--	--	--	--	--	61.8	66.9	135	125
Calcium, total mg/l	E0.87	81.0	150	130	100	--	--	--	--	--	--	142	176	151	159	131	73.9	67.7	75.4	150	130
Magnesium, dissolved mg/l	1.2	40.5	48.1	24.9	22.6	--	--	--	--	--	--	--	--	--	--	--	--	37.6	37.5	48.1	24.9
Magnesium, total mg/l	E0.27	43.0	56.0	26.0	23.0	--	--	--	--	--	--	41.6	61.1	51.5	57.9	52.6	56.4	37.7	38.2	56	26
Potassium, dissolved mg/l	2.1	2.1	1.1	5.8	4.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.11	5.79
Potassium, total mg/l	0.4	2.2	1.6	6.1	4.4	--	--	--	--	--	--	<5	6.1	5.4	<5	<5	<5	--	--	2.2	6.1
Sodium Adsrptn Ratio None	35.83	0.939	0.286	0.418	0.636	--	--	--	--	--	--	--	--	--	--	--	--	--	--	35.8	0.64
Sodium fraction of cations %	97.8	19.9	5.8	9.2	14.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	97.8	14.3
Sodium, dissolved mg/l	253	40.6	15.2	19.6	27.4	--	--	--	--	--	--	--	--	--	--	--	--	32.7	30.1	253	27.4
Sodium, total mg/l	290	44	16	19	27	--	--	--	--	--	--	73	38.6	66.1	35.4	35.8	10.7	32.4	28.1	290	27
Alkalinity, total, mg/L	319	365	444	403	280	--	--	--	--	--	--	280	460	330	460	400	500	--	--	444	403
Bicarbonate, total, mg/l	390	445	541	492	342	--	--	--	--	--	--	--	--	--	--	--	--	--	--	541	492
Bromide, dissolved mg/l	0.255	0.076	0.069	<.06	0.083	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.26	0.08
Chloride, dissolved mg/l	163	35.4	44.9	26.5	69.6	--	--	--	--	--	--	210	150	250	160	130	6	7	7	163	69.6
Fluoride, dissolved mg/l	0.13	2.75	0.37	0.31	0.30	--	--	--	--	--	--	--	--	--	--	--	--	1.5	1.8	2.75	0.31
Iodide, dissolved mg/l	0.007	0.007	0.004	0.008	0.022	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.01	0.02
Silica, dissolved mg/l	9.75	10.9	24.5	33.2	25.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	24.5	33.2
Sulfate, dissolved mg/l	33.3	22.9	25.8	15.7	30.8	--	--	--	--	--	--	110	100	67	26	70	20	67	73	33.3	30.8
Ammonia, dissolved mg/l as N	0.01	0.05	<.010	0.54	0.47	--	--	--	--	--	--	--	--	--	--	--	--	0.2	0.2	0.05	0.54
NO3+NO2, dissolved mg/l as N	0.91	0.22	1.95	0.084	<.04	--	--	--	--	--	--	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	1.95	0.08
Nitrate, dissolved mg/l as N	0.91	0.22	1.94	0.083	<.0371	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.942	0.083
Nitrite, dissolved mg/l	0.004	<.0033	0.016	0.005	0.009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.016	0.009
Nitrite, dissolved mg/l as N	0.001	<.0010	0.005	0.002	0.003	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.005	0.003
Organic nitrogen, dissolved mg/l	0.115	0.03	<.105	0.121	<.204	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.115	0.121
Orthophosphate, dissolved mg/l	0.019	<.0123	0.051	1.068	0.415	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.051	1.068
Orthophosphate, dissolved mg/l as P	0.0062	<.004	0.017	0.348	0.135	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.017	0.348
Phosphorus, total mg/L as P	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.04	0.04	--	--
Total nitrogen, dissolved mg/l	1.035	0.301	2.052	0.741	0.673	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.05	0.74
Aluminum, total ug/l	E2.9	E4.2	E13	E2.2	E4.3	--	--	--	--	--	--	--	--	--	--	--	--	<3	--	13	4.3
Antimony, dissolved ug/l	0.23	<.027	0.10	0.03	<.027	--	--	--	--	--	--	--	--	--	--	--	--	<3	<3	0.23	0.03
Antimony, total ug/l	<2.5	<2.5	E.9	<2.5	<2.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	--	--	--	--	--	--	--	<3	<2.5	<2.5
Arsenic, dissolved ug/l	0.21	<.10	0.24	4.08	2.59	--	--	--	--	--	--	--	--	--	--	--	--	<2	<2	0.24	4.08

Station name	USGS-E1 [A]	USGS-A5	USGS-D1 [B]	USGS-B4-S	USGS-B3	C1	C2	C3	C4	C5	C7	PZ-300-AS	PZ-300-AD	GW-S-80	GW-I-50	MW-107	PZ-300-SS	PZ-301-SS	PZ-301-SS	Maximum EPA - USGS bedrock value	Maximum EPA - USGS Alluvium value
Date	11/7/2013	11/7/2013	11/20/2013	11/7/2013	11/7/2013	Jul-13	Jul-13	Jul-13	Jul-13	Jul-13	Jul-13	Dec-95	Dec-95	Dec-95	Dec-95	Dec-95	Dec-95	Feb-97	May-97	--	--
Sample start time	1015	1300	1215	1605	1420	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Collector	USGS	**USGS**	**USGS**	**USGS**	**USGS**	**USEPA**	**USEPA**	**USEPA**	**USEPA**	**USEPA**	**USEPA**	**PRP**	**PRP**	**PRP**	**PRP**	**PRP**	**PRP**	**PRP**	**PRP**		
Geology	BED	BED	BED	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	BED	BED	BED	--	--
USGS Local aquifer code	338KKKB (est)	338KKKB (est)	338SALM	111ALVM	111ALVM	111ALVM	111ALVM	111ALVM	111ALVM	111ALVM	111ALVM	111ALVM	111ALVM	111ALVM	111ALVM	111ALVM	333STLS	333STLS	333STLS	--	--
Well depth (feet)	unknown	unknown	300	25	80	--	--	--	--	--	--	19.7	41.9	--	--	--	93.7	161	161	--	--
Casing depth (feet)	unknown	unknown	80	sand point	unknown	--	--	--	--	--	--	9.9	37.1	--	--	--	83.9	146.5	146.5	--	--
Station number	384247090411301	384438090313601	384316090275201	384337090294301	384344090283701	EPA-C1	EPA-C2	EPA-C3	EPA-C4	EPA-C5	EPA-C7	--	--	--	--	--	PZ-300-SS	PZ-301-SS	PZ-301-SS	--	--
Arsenic, total ug/l	<1.5	<3	<1.5	4.20	E2.5	3.1	4.5	<1.0	3.7	1.6	1.7	--	--	--	--	--	--	2	2	<3	4.5
Barium, dissolved ug/l	2.80	117	225	377	571	--	--	--	--	--	--	--	--	--	--	--	--	79	76	225	571
Barium, total ug/l	E1.9	130	220	430	610	469	979	222	514	305	364	--	--	--	--	--	--	100	72	220	979
Beryllium, dissolved ug/l	<.19	<.19	<.19	<.19	<.19	--	--	--	--	--	--	--	--	--	--	--	--	<1	<1	<0.19	<0.19
Beryllium, total ug/l	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	--	--	--	--	--	--	<1	<1	<1	<1
Boron, dissolved ug/l	10.1	181	25.5	78.5	77.6	--	--	--	--	--	--	--	--	--	--	--	--	636	600	181	78.5
Boron, total ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	615	800	--	--
Cadmium, dissolved ug/l	E.34	E.52	0.09	<1	<1	--	--	--	--	--	--	--	--	--	--	--	--	<5	<5	0.52	<1
Cadmium, total ug/l	E .33	E .52	E.33	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	--	--	--	--	--	--	<5	<5	0.52	<1.0
Chromium, dissolved ug/l	<.3	<.3	1.16	<.3	<.3	--	--	--	--	--	--	--	--	--	--	--	--	<10	<10	1.16	<0.3
Chromium, total ug/l	E3.9	E4.2	E.86	E2.7	E3.2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	--	--	--	--	--	--	<10	<10	4.2	3.2
Cobalt, dissolved ug/l	0.09	0.07	0.34	1.44	0.23	--	--	--	--	--	--	--	--	--	--	--	--	<20	<20	0.34	1.44
Cobalt, total ug/l	E.18	E.34	E.84	E1.9	E.34	<1.0	2.6	1.1	<1.0	4.7	2.2	--	--	--	--	--	--	<20	<20	0.84	4.7
Copper, dissolved ug/l	3.44	0.85	36.61	<.8	<.8	--	--	--	--	--	--	--	--	--	--	--	--	<20	<20	36.6	<0.8
Copper, total ug/l	6.30	E1.8	62.00	E1.3	E1	<2.0	2.4	6.3	33.9	7.4	<2.0	--	--	--	--	--	--	<20	<20	62	33.9
Iron, dissolved ug/l	<4.0	<4.0	103	4,583	5,139	--	--	--	--	--	--	--	--	--	--	--	--	<40	665	103	5,140
Iron, total ug/l	<200	E50	E170	5,700	6,200	--	--	--	--	--	--	--	--	--	--	--	--	632	1,020	170	6,200
Lead, dissolved ug/l	0.27	0.07	2.46	<.04	<.04	--	--	--	--	--	--	--	--	--	--	--	--	<2	<2	2.46	<0.04
Lead, total ug/l	E.43	E.45	5.10	<1	<1	<1.0	<1.0	<1.0	7.3	2	<1.0	--	--	--	--	--	--	<2	<2	5.1	7.3
Lithium, dissolved ug/l	5.89	35.04	26.62	39.70	36.48	--	--	--	--	--	--	--	--	--	--	--	--	--	--	35	39.7
Manganese, dissolved ug/l	<.40	<.40	4.70	697.0	226.9	--	--	--	--	--	--	--	--	--	--	--	--	49	63	4.7	697
Manganese, total ug/l	E.44	E1.5	10	810	260	605	645	168	469	1310	702	--	--	--	--	--	--	63	62	10	1310
Mercury, dissolved ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.2	<0.2	--	--
Mercury, total ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.2	<0.2	--	--
Molybdenum, dissolved ug/l	2.23	11.09	6.06	1.33	2.16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	11.1	2.16
Nickel, dissolved ug/l	1.18	0.91	3.98	4.35	1.20	--	--	--	--	--	--	--	--	--	--	--	--	<40	<40	3.98	4.35
Nickel, total ug/l	E1	E3	E9.4	E8.3	E3.4	3.2	15.5	5.4	3.2	15.7	14.5	--	--	--	--	--	--	<40	<40	9.4	15.7
Selenium, dissolved ug/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<2	<2	--	--
Selenium, total ug/l	6.20	<10	<5	E3.4	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--	<2	<2	6.2	3.4
Silver, dissolved ug/l	<.02	<.02	<.02	<.02	<.02	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	--	--	--	--	--	--	<10	<10	<0.02	<1.0
Silver, total ug/l	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<10	<10	--	--
Strontium, dissolved ug/l	2.07	3,865	898	803	543	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3,870	803
Thallium, dissolved ug/l	<.03	<.03	<.03	<.03	<.03	--	--	--	--	--	--	--	--	--	--	--	--	<2	<2	<0.03	<0.03
Thallium, total ug/l	--	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	--	--	--	--	--	--	<2	<2	--	<1.0
Vanadium, dissolved ug/l	<.6	<.6	<.6	<.6	<.6	--	--	--	--	--	--	--	--	--	--	--	--	<10	<10	<0.6	<0.6
Vanadium, total, recov ug/l	--	--	--	--	--	<1.0	1.7	<1.0	<1.0	1.3	1.1	--	--	--	--	--	--	<10	<10	--	1.7
Zinc, dissolved ug/l	2.61	4.35	84.0	35.0	2.10	--	--	--	--	--	--	--	--	--	--	--	--	<30	<30	84	35
Zinc, total ug/l	E3	E7.4	120	E50	100	<2.0	<2.0	<2.0	14.3	31.3	20.5	--	--	--	--	--	--	46	133	120	100
Gross alpha, dissolved pCi/L						--	--	--	--	--	--	<4.18	<4.05	<7.02	<4.06	<3.03	3.32	7.97	7.07	--	--
Gross alpha, total pCi/L	--	--	--	--	--	--	--	--	--	--	--	<3.53	5.49	56.1	<4.32	<4.64	3.51	4.06	12.8	--	--
Gross beta, dissolved pCi/L						--	--	--	--	--	--	4.08	<4.07	<3.94	6.02	<3.96	<3.72	7.74	7.8	--	--
Gross beta, total pCi/L	--	--	--	--	--	--	--	--	--	--	--	9.34	8.47	53.1	5.12	4.38	4.37	7.5	12.9	--	--
Ra-226, dissolved pCi/L	0.31	3.29	0.58	0.285	0.56	--	--	--	--	--	--	0.2	<0.41	0.19	0.29	0.069	0.6	2	1.42	3.29	0.56
Ra-226, total, pCi/L	<.02	2.92	0.38	0.33	0.54	0.511	0.744	0.197	0.383	0.346	0.391	0.31	1	0.44	0.42	<0.066	0.78	3.21	3.33	2.92	0.744
Ra-228, dissolved pCi/L	<.23	0.3	0.43	1.22	1.42	--	--	--	--	--	--	<0.32	<0.41	<0.42	<0.48	<0.039	<0.43	--	--	0.43	1.42
Ra-228, total pCi/L	<.21	0.42	0.8	0.96	2.69	0.725	1.3	<0.0724	0.672	0.347	0.489	<0.55	1	<0.65	<0.4	<0.068	0.39	--	--	0.8	2.69
Th-228, dissolved pCi/L	<.019	0.06	0.08	0.10	0.10	--	--	--	--	--	--	<0.20	<0.10	<0.13	<0.11	<0.11	<0.15	--	--	0.08	0.103
Th-228, total pCi/L	0.19	0.14	0.16	0.22	0.28	<-0.0542	<-0.026	0.186	<0.0102	<0	<0.0137	<0.14	0.18	0.85	<0.12	0.26	<0.13	--	--	0.189	0.281

Station name	USGS-E1 [A]	USGS-A5	USGS-D1 [B]	USGS-B4-S	USGS-B3	C1	C2	C3	C4	C5	C7	PZ-300-AS	PZ-300-AD	GW-S-80	GW-I-50	MW-107	PZ-300-SS	PZ-301-SS	PZ-301-SS	Maximum EPA - USGS bedrock value	Maximum EPA - USGS Alluvium value
Date	11/7/2013	11/7/2013	11/20/2013	11/7/2013	11/7/2013	Jul-13	Jul-13	Jul-13	Jul-13	Jul-13	Jul-13	Dec-95	Dec-95	Dec-95	Dec-95	Dec-95	Dec-95	Feb-97	May-97	--	--
Sample start time	1015	1300	1215	1605	1420	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Collector	USGS	**USGS**	**USGS**	**USGS**	**USGS**	**USEPA**	**USEPA**	**USEPA**	**USEPA**	**USEPA**	**USEPA**	**PRP**	**PRP**	**PRP**	**PRP**	**PRP**	**PRP**	**PRP**	**PRP**		
Geology	BED	BED	BED	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	BED	BED	BED	--	--
USGS Local aquifer code	338KKKB (est)	338KKKB (est)	338SALM	111ALVM	111ALVM	111ALVM	111ALVM	111ALVM	111ALVM	111ALVM	111ALVM	111ALVM	111ALVM	111ALVM	111ALVM	111ALVM	333STLS	333STLS	333STLS	--	--
Well depth (feet)	unknown	unknown	300	25	80	--	--	--	--	--	--	19.7	41.9	--	--	--	93.7	161	161	--	--
Casing depth (feet)	unknown	unknown	80	sand point	unknown	--	--	--	--	--	--	9.9	37.1	--	--	--	83.9	146.5	146.5	--	--
Station number	384247090411301	384438090313601	384316090275201	384337090294301	384344090283701	EPA-C1	EPA-C2	EPA-C3	EPA-C4	EPA-C5	EPA-C7	--	--	--	--	--	PZ-300-SS	PZ-301-SS	PZ-301-SS	--	--
Th-230, dissolved pCi/L	0.027	<.003	0.012	0.053	<-.010	--	--	--	--	--	--	0.26	0.5	0.31	0.93	0.27	0.29	<0.909	<0.591	0.027	0.053
Th-230, total pCi/L	0.083	<.016	0.037	<.014	0.045	0.18	0.117	<0.115	0.159	0.674	0.18	0.51	0.83	1.48	1	0.29	0.84	<1.37	1.29	0.083	0.674
Th-232, dissolved pCi/L	<0	<-.005	<0	<0	<-.003	--	--	--	--	--	--	<0.21	0.12	<0.11	0.21	<0.085	<0.11	--	--	<0	<0
Th-232, total pCi/L	<0	<-.006	<.016	<-.003	<-.006	<0	<0.0461	<0.0156	<0.0272	0.0779	<0.035	0.22	0.13	0.86	0.17	0.33	<0.092	--	--	<.016	0.078
U-234, dissolved pCi/L	0.79	0.24	1.35	0.522	0.67	--	--	--	--	--	--	0.58	0.4	0.88	0.25	0.39	0.89	3.44	3.04	1.35	0.67
U-234, total pCi/L	0.79	0.296	1.66	0.476	0.87	0.296	1.64	1.38	0.191	2.66	2.97	0.74	0.32	0.99	0.43	0.43	0.8	3.41	3.08	1.66	2.97
U-235, dissolved pCi/L	<.020	0.028	<0	0.026	<.014	--	--	--	--	--	--	--	--	--	--	--	--	<0.141	<0.356	0.03	0.03
U-235, total pCi/L	<.021	<-.012	<.002	<-.003	<-.007	0.0902	<0.0773	<0	<0.02	<0.107	0.282	--	--	--	--	--	--	<0.169	<0.27	<.021	0.28
U-238, dissolved pCi/L	0.43	0.085	0.96	0.329	0.36	--	--	--	--	--	--	0.55	0.17	0.63	<0.097	0.36	0.5	1.61	1.93	0.96	0.36
U-238, total pCi/L	0.463	0.067	0.91	0.322	0.51	<0.137	0.909	0.89	<0.109	1.57	1.9	0.57	0.26	1.19	0.15	0.26	0.25	2.44	1.47	0.91	1.9

(A) Sampled from outside tap on back of house. The low concentrations of calcium and magnesium and large concentrations of sodium and chloride in the sample seem to indicate tap is downstream of a water softener and probably not representative. EPA determined that well E-1 was affected by a water softener and those results were not used due to the presence of the water softener.

(B) Well was out of service and replaced old domestic pump. Well yielded about 0.3 gallon per minute and was pumped dry two days before sampling. Sample collected before purging 1 well volume and some trace metals may be affected by plumbing materials based on increased concentrations of copper and zinc.

F-6: Bridgeton Landfill Groundwater Monitoring Results (radionuclides)

Summary of Radium, Thorium and Uranium Isotope Results (Bridgeton Landfill 4Q15, 1Q16 and 2Q16 Groundwater Monitoring Events)

Sample ID	Radium-226					Radium-228					Combined Radium 226 + 228		Combined Radium Relative to 5 pCi/L MCL	Thorium-230					Thorium-232					Uranium-234					Uranium-235					Uranium-238					Total U-234 + U-235 + U-238		Total Uranium µg/L
	Result	CSU	CV	MDA	Final Q	Result	CSU	CV	MDA	Final Q				Result	CSU	CV	MDA	Final Q	Result	CSU	CV	MDA	Final Q	Result	CSU	CV	MDA	Final Q	Result	CSU	CV	MDA	Final Q	Result	CSU	CV	MDA	Final Q			
2015 Q4 Sample Results																																									
MW-1204-F	3.42	1.33	0.01	0.45		2.04	0.71	0.69	0.96	J	5.46		Exceeds MCL																													
MW-1204-U	26.90	6.64	0.10	0.89	J	3.07	0.94	0.84	1.05	J	29.97		Exceeds MCL	0.75	0.55	0.50	0.40	J	0.65	0.51	0.02	0.40	J	0.21	0.32	0.12	0.52	J	0.15	0.33	0.07	0.64	J	0.32	0.37	0.10	0.48	J	0.68		1.01
PZ-100-SD-F	1.95	0.80	0.07	0.54		1.28	0.56	0.75	0.89	J	3.23		Less than MCL																													
PZ-100-SD-U	2.39	0.92	0.02	0.35	J	0.92	0.60	0.88	1.10	J	3.31		Less than MCL	0.20	0.17	0.18	0.14	J	-0.01	0.07	0.01	0.16	U	0.64	0.27	0.05	0.17		-0.02	0.06	0.02	0.17	U	0.21	0.18	0.12	0.25	J	0.84	*	1.25
PZ-100-SS-F	3.59	1.22	0.02	0.36		1.10	0.63	0.87	1.12	J	4.69		Less than MCL																													
PZ-100-SS-U	3.05	1.04	0.01	0.31	J	1.55	0.87	1.13	1.54	J	4.60		Less than MCL	0.00	0.07	0.20	0.20	U	0.02	0.06	0.01	0.15	J	5.18	1.01	0.06	0.20		0.35	0.22	0.02	0.18	J	1.95	0.52	0.04	0.16	J	7.48		11.07
PZ-103-SS-F	1.39	0.58	0.02	0.32		0.75	0.51	0.75	0.94	U	1.76	*	Less than MCL																													
PZ-103-SS-U	2.28	0.93	0.03	0.44	J	1.31	0.87	1.12	1.60	J	3.59		Less than MCL	0.95	0.35	0.13	0.12	J	0.11	0.11	0.00	0.14	J	0.85	0.32	0.02	0.16		0.10	0.12	0.01	0.14	J	0.73	0.29	0.03	0.13	J	1.67		2.48
PZ-104-SD-F	2.22	0.77	0.03	0.33		0.80	0.43	0.67	0.75	J	3.02		Less than MCL																													
PZ-104-SD-FDUP-F	2.00	0.72	0.02	0.30		1.33	0.51	0.65	0.73	J	3.33		Less than MCL																													
PZ-104-SD-FDUP-U	3.24	1.11	0.02	0.37	J	1.34	0.80	1.01	1.43	J	4.58		Less than MCL	0.29	0.20	0.17	0.14	J	0.05	0.09	0.02	0.17	J	0.06	0.18	0.08	0.42	U	0.00	0.30	0.01	0.66	U	-0.03	0.18	0.09	0.42	U	Non-Detect		
PZ-104-SD-U	2.17	0.79	0.01	0.27	J	0.96	0.50	0.74	0.85	J	3.13		Less than MCL	0.17	0.16	0.18	0.15	U	0.10	0.12	0.01	0.14	J	-0.02	0.18	0.15	0.56	U	-0.04	0.21	0.04	0.50	U	0.14	0.24	0.08	0.40	J	0.14	*	0.21
PZ-104-SS-F	1.46	0.62	0.08	0.48		0.58	0.40	0.65	0.73	U	1.75	*	Less than MCL																													
PZ-104-SS-U	2.85	1.03	0.01	0.33	J	1.20	0.62	0.99	1.04	J	4.05		Less than MCL	0.11	0.12	0.15	0.15	U	0.05	0.07	0.01	0.11	J	1.16	0.36	0.03	0.13	J	0.13	0.14	0.02	0.18	J	0.70	0.27	0.02	0.12	J	1.99		2.94
PZ-105-SS-F	1.43	0.59	0.01	0.22	J	0.60	0.43	0.65	0.80	U	1.73	*	Less than MCL																													
PZ-105-SS-U	1.40	0.61	0.04	0.41	J	0.99	0.65	0.88	1.21	J	2.39		Less than MCL	0.06	0.09	0.17	0.13	U	0.09	0.11	0.01	0.13	J	1.61	0.49	0.04	0.17		0.16	0.17	0.02	0.21	J	1.13	0.39	0.03	0.16	J	2.89		4.28
PZ-106-SD-F	2.58	0.96	0.02	0.37	J	4.51	1.37	1.25	1.47		7.09		Exceeds MCL																													
PZ-106-SD-U	13.70	3.30	0.03	0.33	J	3.33	0.94	0.66	0.90		17.03		Exceeds MCL	0.18	0.15	0.15	0.13	J	0.01	0.06	0.02	0.16	U	0.23	0.26	0.04	0.35	J	0.06	0.14	0.02	0.30	J	0.10	0.16	0.06	0.28	J	0.39		0.58
PZ-106-SS-F	3.49	1.09	0.03	0.34	J	0.76	0.49	0.73	0.90	J	4.25		Less than MCL																													
PZ-106-SS-U	2.96	0.97	0.01	0.25	J	0.74	0.47	0.67	0.86	J	3.70		Less than MCL	0.16	0.15	0.18	0.18	U	-0.01	0.06	0.01	0.13	U	0.66	0.28	0.04	0.15	J	0.18	0.16	0.02	0.19	J	0.45	0.23	0.03	0.13	J	1.30		1.92
PZ-109-SS-F	1.76	0.69	0.01	0.25	J	0.93	0.44	0.63	0.72		2.69		Less than MCL																													
PZ-109-SS-U	1.03	0.47	0.01	0.25	J	0.60	0.41	0.70	0.77	U	1.33	*	Less than MCL	0.18	0.16	0.18	0.19	U	-0.02	0.06	0.02	0.17	U	0.67	0.28	0.09	0.22	J	0.06	0.13	0.05	0.24	J	0.17	0.15	0.07	0.20	J	0.90		1.33
PZ-110-SS-F	3.77	1.17	0.01	0.28	J	0.12	0.49	0.79	1.03	U	3.83	*	Less than MCL																													
PZ-110-SS-U	2.96	0.96	0.07	0.45	J	0.69	0.52	0.71	0.99	U	3.30	*	Less than MCL	0.12	0.13	0.18	0.18	U	0.11	0.13	0.04	0.19	J	0.06	0.11	0.06	0.20	J	-0.02	0.08	0.02	0.20	U	0.06	0.15	0.14	0.30	U	0.09	*	0.13
PZ-111-SD-F	0.91	0.48	0.07	0.48	J	1.01	0.45	0.65	0.71		1.92		Less than MCL																													
PZ-111-SD-U	1.90	0.73	0.01	0.27		1.51	0.59	0.75	0.86		3.41		Less than MCL	0.30	0.19	0.16	0.16	J	0.03	0.07	0.00	0.16	J	0.93	0.39	0.03	0.17	J	0.35	0.25	0.01	0.19	J	0.32	0.23	0.07	0.24	J	1.59		2.36
PZ-114-AS-F	0.02	0.10	0.01	0.25	J	0.35	0.48	0.72	0.98	U	0.20	*	Less than MCL																													
PZ-114-AS-U	0.40	0.29	0.02	0.30	J	1.03	0.48	0.70	0.78		1.43		Less than MCL	0.13	0.13	0.17	0.15	U	-0.04	0.07	0.05	0.21	U	0.15	0.15	0.03	0.16	J	0.12	0.16	0.00	0.25	J	0.12	0.13	0.03	0.16	J	0.40		0.59
PZ-115-SS-F	7.32	1.96	0.09	0.53	J	0.67	0.48	0.80	0.89	U	7.65	*	Exceeds MCL																													
PZ-115-SS-U	5.59	1.58	0.01	0.26	J	0.59	0.44	0.74	0.83	U	5.89	*	Exceeds MCL	0.10	0.13	0.21	0.18	U	-0.03	0.08	0.04	0.23	U	3.61	0.87	0.04	0.18		0.30	0.24	0.00	0.26	J	2.68	0.71	0.02	0.21	J	6.59		9.76
PZ-116-SS-F	0.25	0.24	0.02	0.31	J	0.48	0.43	0.64	0.83	U	0.49	*	Less than MCL																													
PZ-116-SS-U	0.17	0.23	0.04	0.38	J	0.63	0.45	0.78	0.84	U	0.49	*	Less than MCL	0.19	0.16	0.17	0.18	J	0.08	0.10	0.02	0.15	J	6.42	1.22	0.04	0.17	J	0.30	0.22	0.02	0.21	J	1.99	0.55	0.03	0.15	J	8.71		12.89
PZ-201A-SS-F	0.51	0.33	0.01	0.25	J	0.20	0.43	0.64	0.88	U	0.60	*	Less than MCL																													
PZ-201A-SS-U	0.15	0.19	0.02	0.30	J	0.30	0.42	0.73	0.85	U	0.29	*	Less than MCL	0.19	0.16	0.16	0.14	J	0.10	0.12	0.02	0.16	J	2.17	0.55	0.04	0.16		0.19	0.17	0.00	0.19	J	1.48	0.43	0.02	0.16	J	3.85		5.70
PZ-202-SS-F	1.50	0.64	0.04	0.39	J	1.60	0.73	0.92	1.19	J	3.10		Less than MCL																													
PZ-202-SS-U	1.91	0.70	0.01	0.24	J	1.44	0.53	0.66	0.72		3.35		Less than MCL	0.04	0.13	0.24	0.26	U	0.04	0.09	0.02	0.17	J	0.14	0.33	0.26	0.64	U	0.00	0.27	0.16	0.69	U	0.13	0.30	0.20	0.57	U	Non-Detect		
PZ-203-SS-F	1.19	0.56	0.02	0.35		0.58	0.58	0.83	1.13	U	1.48	*	Less than MCL																													
PZ-203-SS-U	1.10	0.49	0.00	0.19	J	1.05	0.54	0.77	0.91	J	2.15		Less than MCL	0.36	0.21	0.15	0.12	J	0.13	0.13	0.02	0.15	J	1.72	0.51	0.05	0.20		0.13	0.15	0.02	0.19	J	0.21	0.20	0.13	0.29	J	2.06		3.05
PZ-204-SS-F	0.76	0.39	0.00	0.18	J	0.65	0.45	0.67	0.85	U	1.08	*	Less than MCL																													
PZ-204-SS-U	0.55	0.33	0.01	0.25	J	0.78	0.43	0.63	0.75	J	1.33		Less than MCL	0.18	0.21	0.29	0.27	U	0.03	0.11	0.02	0.25	J	2.57	0.70	0.05	0.22	J	0.16	0.19	0.03	0.27	J	1.36	0.48	0.04	0.18	J	4.08		6.05
PZ-205-SS-F	0.77	0.41	0.03	0.33	J	0.25	0.44	0.76	0.90	U	0.89	*	Less than MCL																													
PZ-205-SS-U	0.62	0.35	0.01	0.24	J	0.26	0.39	0.67	0.80	U	0.74	*	Less than MCL	0.37	0.23	0.20	0.22	J	0.03	0.08	0.03	0.17	J	0.55	0.25	0.09	0.21	J	0.03	0.11	0.05	0.23	U	0.45	0.22	0.07	0.19	J	1.01	*	1.49
PZ-209-SD-F	0.52	0.33	0.01	0.23	J	1.08	0.47	0.68	0.72		1.60		Less than MCL																													
PZ-209-SD-U	0.20	0.21	0.02	0.28	J	0.70	0.47	0.67	0.88	J	0.90		Less than MCL	0.22	0.20	0.21	0.19	J	0.00	0.11	0.00	0.23	U	3.78	0.87	0.05	0.21	J	0.41	0.27	0.03	0.24	J	1.98	0.57	0.02	0.19	J	6.16		9.12
PZ-209-SS-F	0.58	0.35	0.03	0.33	J	1.12	0.50	0.69	0.79		1.70		Less than MCL																													
PZ-209-SS-U	1.14	0.56	0.00	0.33		1.81	0.75	0.89	1.16		2.95		Less than MCL	0.11	0.11	0.15	0.12	U	0.05	0.08	0.01	0.13	J	1.88	0.54	0.02	0.13	J	0.08	0.13	0.00	0.23	J	1.10	0.39	0.02	0.13	J	3.06		4.53
PZ-210-SD-F	0.50	0.34	0.02	0.32	J	0.63	0.46	0.77	0.86	U	0.81	*	Less than MCL																													
PZ-210-SD-U	0.63	0.35	0.00	0.18	J	0.00	0.49	0.75	1.03	U	0.63	*	Less than MCL	0.21	0.19	0.21	0.22	U	0.11	0.14	0.03	0.19	J	2.24	0.63	0.06	0.22		0.14	0.17	0.02	0.22	J	0.94	0.40	0.15	0.33	J	3.33		4.92
PZ-210-SS-F	0.44	0.30	0.02	0.30	J	0.29	0.49	0.84	1.00	U	0.58	*	Less than MCL																													
PZ-210-SS-U	0.27	0.25	0.02	0.29	J	0.11	0.45	0.78	0.95	U	0.33	*	Less than MCL	0.13	0.13	0.17	0.18	U	0.08	0.09	0.01	0.11	J	0.74	0.30	0.02	0.17		0.13	0.13	0.01	0.14	J	0.40	0.22	0.03	0.13	J	1.28		1.89
PZ-211-SD-F	0.23	0.24	0.02	0.33	J	0.65	0.55	0.77	1.05	U	0.55	*	Less than MCL																													
PZ-211-SD-U	0.26	0.22	0.00	0.19	J	0.67	0.50	0.78	0.94	U	0.59	*	Less than MCL	0.44	0.22	0.13	0.10	J	0.09	0.10	0.01	0.10	J	9.69	1.86	0.04	0.20	J	0.28	0.25	0.00	0.28	J	5.18	1.16	0.02	0.23	J	15.15		22.42
PZ-211-SS-F	1.05	0.51	0.01	0.24	J	0.69	0.55	0.76	1.05	U	1.39	*	Less than MCL																													
PZ-211-SS-U	1.21	0.58	0.05	0.45		1.30	0.61	0.83	1.00		2.51		Less than MCL	0.44	0.24	0.16	0.16	J	0.28	0.18	0.01	0.12	J	1.86	0.48	0.09	0.21	J	0.09	0.13	0.05	0.23	J	0.84	0.31	0.07	0.19	J	2.79		4.13
PZ-212-SD-F	0.77	0.56	0.02	0.48	J	1.26	0.86	1.36	1.59	U	1.40	*	Less than MCL																													
PZ-212-SD-U	0.60	0.36	0.02	0.32	J	1.20	0.52	0.80	0.79	J	1.80		Less than MCL	0.38	0.22	0.15	0.15	J	0.20	0.15	0.01	0.13	J	4.38	0.84	0.02	0.11	J	0.20	0.16	0.00	0.18	J	2.54	0.58	0.02	0.11	J	7.13		10.55
PZ-212-SS-F	0.23	0.30	0.09	0.50	J	0.43	0.48	0.81	0.96	U	0.45	*	Less than MCL																													
PZ-212-SS-U	0.35	0.29	0.01	0.28	J	0.61	0.45	0.77	0.84	U	0.65	*	Less than MCL	0.29	0.18	0.14	0.11	J	0.14	0.13	0.02	0.14	J	5.81	1.15	0.03	0.16	J	0.34	0.24	0.00	0.23	J	3.79	0.85	0.02	0.18	J	9.94		14.72

Summary of Radium, Thorium and Uranium Isotope Results (Bridgeton Landfill 4Q15, 1Q16 and 2Q16 Groundwater Monitoring Events)

Sample ID	Radium-226					Radium-228					Combined Radium 226 + 228	Combined Radium Relative to 5 pCi/L MCL	Thorium-230					Thorium-232					Uranium-234					Uranium-235					Uranium-238					Total U-234 + U-235 + U-238		Total Uranium µg/L
	Result	CSU	CV	MDA	Final Q	Result	CSU	CV	MDA	Final Q			Result	CSU	CV	MDA	Final Q	Result	CSU	CV	MDA	Final Q	Result	CSU	CV	MDA	Final Q	Result	CSU	CV	MDA	Final Q	Result	CSU	CV	MDA	Final Q			
2016 Q1 Sample Results																																								
MW-1204-F	68.40	17.20	0.08	1.76	J	8.65	3.89	0.63	6.28	J	77.05	Exceeds MCL	0.47	0.36	0.37	0.37	J	0.04	0.12	0.03	0.28	J	0.47	0.52	0.12	0.62	J	0.16	0.44	0.02	0.96	J	1.01	0.74	0.10	0.54	J	1.64		2.43
MW-1204-FDUP-F	37.60	9.59	0.02	0.78	J	5.83	2.10	0.35	2.79	J	43.43	Exceeds MCL	0.27	0.28	0.36	0.37	U	0.24	0.25	0.04	0.32	J	0.69	0.64	0.11	0.60	J	0.26	0.50	0.09	0.93	J	0.09	0.29	0.14	0.68	U	1.00	*	1.48
MW-1204-FDUP-U	41.30	10.30	0.04	0.99	J	4.13	1.93	0.34	3.16	J	45.43	Exceeds MCL	0.29	0.29	0.36	0.37	U	0.26	0.26	0.03	0.30	J	0.61	0.46	0.24	0.57	J	0.21	0.31	0.09	0.53	J	0.37	0.33	0.10	0.39	J	1.19		1.77
MW-1204-U	34.60	8.80	0.02	0.82	J	7.45	2.35	0.35	2.59	J	42.05	Exceeds MCL	0.19	0.25	0.39	0.39	U	0.00	0.13	0.07	0.39	U	0.92	0.65	0.15	0.60	J	0.33	0.50	0.15	0.85	J	0.48	0.50	0.18	0.66	J	1.73		2.56
PZ-101-SS-F	13.80	3.32	0.02	0.31	J	1.95	0.70	0.10	0.96	J	15.75	Exceeds MCL	0.32	0.21	0.17	0.14	J	0.11	0.12	0.01	0.14	J	1.28	0.51	0.04	0.21	J	0.04	0.11	0.02	0.26	J	0.61	0.34	0.04	0.19	J	1.93		2.86
PZ-101-SS-U	12.00	2.95	0.01	0.21		3.00	0.94	0.10	1.13	J	15.00	Exceeds MCL	0.57	0.30	0.20	0.19	J	-0.02	0.07	0.03	0.19	U	1.00	0.44	0.08	0.28	J	0.04	0.15	0.06	0.34	U	0.97	0.44	0.11	0.32	J	1.99	*	2.94
PZ-102R-SS-F	1.47	0.61	0.01	0.22	J	1.67	0.54	0.09	0.61	J	3.14	Less than MCL	0.31	0.19	0.15	0.15	J	0.02	0.07	0.00	0.14	J	3.50	0.76	0.03	0.13	J	0.26	0.20	0.00	0.20	J	2.05	0.53	0.03	0.14	J	5.81		8.60
PZ-102R-SS-U	1.69	0.66	0.00	0.19		1.07	0.56	0.11	0.95	J	2.76	Less than MCL	0.61	0.27	0.14	0.13	J	0.11	0.11	0.01	0.11	J	3.77	0.78	0.05	0.17	J	0.16	0.15	0.02	0.19	J	2.48	0.60	0.09	0.22	J	6.41		9.49
PZ-103-SS-F	1.79	0.88	0.02	0.50	J	1.34	0.90	0.17	1.67	J	3.13	Less than MCL	0.24	0.24	0.30	0.28	U	0.03	0.11	0.02	0.25	J	0.64	0.40	0.11	0.38	J	0.04	0.20	0.08	0.46	U	0.58	0.40	0.17	0.45	J	1.24	*	1.83
PZ-103-SS-U	6.32	2.14	0.06	0.78	J	1.72	1.19	0.22	2.21	J	8.04	Exceeds MCL	1.46	0.58	0.25	0.19	J	0.34	0.26	0.03	0.24	J	1.79	0.64	0.05	0.25	J	0.45	0.36	0.01	0.38	J	1.06	0.48	0.05	0.25	J	3.30		4.88
PZ-104-SD-F	2.60	0.87	0.03	0.33	J	0.63	0.49	0.10	0.94	J	3.23	Less than MCL	0.45	0.20	0.12	0.13	J	0.09	0.08	0.00	0.08	J	1.20	0.70	0.10	0.47	J	0.11	0.30	0.01	0.66	J	0.97	0.64	0.15	0.56	J	2.28		3.37
PZ-104-SD-U	7.58	2.21	0.02	0.44	J	1.65	0.94	0.18	1.68	J	9.23	Exceeds MCL	0.46	0.25	0.18	0.19	J	0.07	0.09	0.02	0.14	J	-0.15	0.62	0.60	2.00	U	0.22	1.02	0.42	2.38	U	-0.38	0.62	0.56	1.92	U	Non-Detect		
PZ-104-SS-F	1.39	0.57	0.02	0.32	J	1.03	0.45	0.08	0.70		2.42	Less than MCL	0.19	0.14	0.14	0.12	J	-0.01	0.05	0.01	0.12	U	2.26	0.59	0.04	0.16	J	0.17	0.16	0.01	0.15	J	1.55	0.46	0.03	0.14	J	3.98		5.89
PZ-104-SS-U	1.62	0.63	0.01	0.21	J	0.64	0.42	0.09	0.77	J	2.26	Less than MCL	0.29	0.22	0.21	0.20	J	-0.02	0.07	0.03	0.20	U	2.02	0.54	0.05	0.18	J	-0.01	0.07	0.01	0.16	U	1.75	0.49	0.04	0.16	J	3.77	*	5.58
PZ-105-SS-F	1.61	0.65	0.01	0.27	J	1.10	0.50	0.09	0.81		2.71	Less than MCL	0.68	0.30	0.17	0.18	J	0.11	0.12	0.02	0.15	J	2.08	0.53	0.02	0.15	J	0.31	0.20	0.01	0.15	J	1.37	0.41	0.03	0.13	J	3.76		5.56
PZ-105-SS-U	1.46	0.60	0.03	0.36	J	0.91	0.46	0.09	0.78	J	2.37	Less than MCL	0.40	0.23	0.17	0.17	J	-0.03	0.06	0.03	0.18	U	2.41	0.58	0.03	0.13	J	0.13	0.14	0.02	0.19	J	1.42	0.42	0.03	0.14	J	3.96		5.86
PZ-106-SD-F	9.73	2.43	0.02	0.31	J	4.05	1.06	0.08	0.74		13.78	Exceeds MCL	0.27	0.19	0.19	0.19	J	0.15	0.15	0.00	0.18	J	1.27	1.15	0.26	1.22	J	0.57	0.98	0.03	1.71	J	0.42	0.65	0.18	0.96	J	2.26		3.35
PZ-106-SD-FDUP-F	10.30	2.60	0.01	0.22	J	3.80	0.99	0.09	0.63		14.10	Exceeds MCL	0.41	0.23	0.16	0.15	J	0.05	0.09	0.00	0.16	J	0.36	0.68	0.27	1.25	J	-0.05	0.59	0.07	1.23	U	0.40	0.68	0.23	1.14	J	0.75	*	1.11
PZ-106-SD-FDUP-U	11.00	2.80	0.00	0.22	J	4.51	1.22	0.11	1.01	J	15.51	Exceeds MCL	0.55	0.28	0.18	0.17	J	0.01	0.06	0.02	0.16	U	1.01	0.54	0.09	0.38	J	0.18	0.27	0.05	0.44	J	1.32	0.62	0.09	0.37	J	2.51		3.71
PZ-106-SD-U	10.20	2.66	0.01	0.28	J	3.38	1.02	0.13	1.09	J	13.58	Exceeds MCL	0.33	0.18	0.13	0.12	J	-0.01	0.05	0.01	0.11	U	1.06	1.11	0.32	1.39	J	0.61	1.04	0.03	1.82	J	1.92	1.42	0.20	1.02	J	3.59		5.31
PZ-106-SS-F	2.75	0.92	0.00	0.28	J	0.66	0.38	0.08	0.66	J	3.41	Less than MCL	0.44	0.24	0.16	0.13	J	-0.01	0.06	0.01	0.13	U	1.39	0.46	0.03	0.15	J	0.11	0.13	0.01	0.16	J	0.96	0.37	0.04	0.17	J	2.46		3.65
PZ-106-SS-U	2.68	0.89	0.02	0.29	J	0.54	0.36	0.08	0.67	J	3.22	Less than MCL	0.33	0.23	0.22	0.23	J	0.09	0.14	0.07	0.25	J	1.58	0.51	0.03	0.16	J	0.01	0.09	0.03	0.24	U	1.13	0.42	0.04	0.18	J	2.72	*	4.02
PZ-107-SS-F	3.96	1.24	0.01	0.30	J	1.53	0.58	0.09	0.83	J	5.49	Exceeds MCL	0.36	0.21	0.16	0.15	J	0.05	0.09	0.00	0.16	J	0.76	0.34	0.03	0.15	J	0.17	0.19	0.00	0.26	J	0.71	0.33	0.04	0.18	J	1.64		2.42
PZ-107-SS-U	15.70	4.54	0.07	1.01	J	5.27	2.10	0.34	3.11	J	20.97	Exceeds MCL	0.49	0.26	0.17	0.16	J	0.10	0.11	0.02	0.15	J	0.91	0.33	0.04	0.17	J	0.04	0.09	0.02	0.19	J	0.81	0.31	0.03	0.15	J	1.76		2.60
PZ-116-SS-F	0.17	0.21	0.03	0.33	J	0.97	0.54	0.10	0.96	J	1.13	Less than MCL	0.39	0.23	0.17	0.15	J	0.04	0.08	0.02	0.15	J	6.70	1.22	0.06	0.20	J	0.18	0.16	0.02	0.18	J	1.87	0.51	0.04	0.15	J	8.75		12.96
PZ-116-SS-U	0.26	0.25	0.01	0.28	J	0.97	0.58	0.11	1.05	J	1.23	Less than MCL	0.31	0.22	0.20	0.21	J	0.00	0.07	0.03	0.19	U	6.46	1.16	0.02	0.12	J	0.44	0.24	0.01	0.15	J	2.48	0.59	0.02	0.12	J	9.38		13.88
PZ-200-SS-F	0.33	0.41	0.04	0.62	J	0.77	0.87	0.19	1.73	J	1.10	Less than MCL	0.19	0.23	0.33	0.34	U	-0.01	0.15	0.12	0.41	U	0.71	0.40	0.09	0.34	J	0.19	0.25	0.06	0.40	J	0.19	0.28	0.20	0.46	U	0.99	*	1.46
PZ-200-SS-FF	0.79	0.65	0.05	0.75	J	-0.09	0.92	0.18	1.95	U	0.74	* Less than MCL	0.56	0.36	0.29	0.25	J	0.13	0.18	0.03	0.27	J	0.42	0.30	0.06	0.28	J	0.05	0.12	0.02	0.26	J	0.22	0.22	0.06	0.26	J	0.69		1.02
PZ-200-SS-U	0.71	0.54	0.01	0.45	J	0.01	0.08	0.02	0.18	U	0.72	* Less than MCL	0.16	0.20	0.30	0.30	U	0.03	0.10	0.02	0.24	J	0.73	0.40	0.05	0.25	J	0.59	0.41	0.01	0.39	J	0.25	0.24	0.05	0.25	J	1.56		2.31
PZ-201A-SS-F	0.35	0.28	0.01	0.27	J	1.10	0.65	0.11	1.18	J	1.45	Less than MCL	0.19	0.17	0.20	0.20	U	-0.03	0.07	0.03	0.19	U	2.86	0.65	0.02	0.12	J	0.12	0.12	0.01	0.13	J	2.40	0.57	0.02	0.11	J	5.38		7.96
PZ-201A-SS-U	0.23	0.25	0.03	0.36	J	0.16	0.46	0.09	0.96	J	0.39	Less than MCL	0.21	0.16	0.15	0.13	J	0.03	0.08	0.03	0.16	J	2.81	0.64	0.03	0.13	J	0.21	0.17	0.01	0.15	J	1.95	0.51	0.02	0.15	J	4.97		7.35
PZ-202-SS-F	1.41	0.78	0.02	0.52	J	0.34	0.76	0.17	1.58	J	1.75	Less than MCL	1.06	0.57	0.33	0.38	J	-0.01	0.12	0.02	0.26	U	3.18	1.36	0.18	0.73	J	0.35	0.52	0.10	0.85	J	1.11	0.78	0.18	0.73	J	4.64		6.86
PZ-202-SS-U	2.66	1.25	0.10	0.91	J	2.10	1.01	0.20	1.67	J	4.76	Less than MCL	1.48	0.66	0.35	0.36	J	0.40	0.33	0.06	0.36	J	1.68	0.86	0.23	0.70	J	0.28	0.40	0.06	0.60	J	1.70	0.83	0.11	0.48	J	3.66		5.42
PZ-203-SS-F	1.16	0.52	0.03	0.34	J	0.56	0.40	0.09	0.75	J	1.72	Less than MCL	0.16	0.14	0.15	0.14	J	0.02	0.05	0.01	0.12	J	2.06	0.53	0.03	0.14	J	0.12	0.13	0.01	0.14	J	0.47	0.23	0.02	0.11	J	2.65		3.92
PZ-203-SS-U	0.76	0.39	0.01	0.21	J	0.76	0.41	0.09	0.70	J	1.52	Less than MCL	0.08	0.10	0.15	0.16	U	0.11	0.11	0.03	0.15	J	3.04	0.70	0.04	0.17	J	0.23	0.18	0.01	0.14	J	0.52	0.25	0.02	0.12	J	3.79		5.61
PZ-205-SS-F	1.07	0.53	0.01	0.30	J	0.42	0.42	0.09	0.82	J	1.49	Less than MCL	0.39	0.22	0.15	0.12	J	-0.02	0.06	0.03	0.17	U	1.17	0.39	0.03	0.13	J	0.09	0.12	0.01	0.17	J	0.86	0.33	0.03	0.13	J	2.12		3.14
PZ-205-SS-U	1.15	0.52	0.03	0.33	J	0.77	0.39	0.09	0.65	J	1.92	Less than MCL	0.38	0.22	0.17	0.18	J	0.01	0.09	0.07	0.22	U	1.04	0.38	0.05	0.18	J	0.07	0.10	0.01	0.15	J	0.88	0.34	0.04	0.16	J	1.98		2.93
PZ-206-SS-F	1.16	0.52	0.01	0.26	J	0.57	0.54	0.11	1.06	J	1.73	Less than MCL	0.14	0.13	0.16	0.12	U	0.00	0.06	0.01	0.12	U	0.72	0.35	0.03	0.16	J	0.33	0.27	0.01	0.28	J	0.51	0.29	0.05	0.22	J	1.56		2.31
PZ-206-SS-U	0.86	0.51	0.05	0.49	J	0.97	0.52	0.10	0.91	J	1.82	Less than MCL	0.21	0.15	0.15	0.16	J	0.01	0.07	0.04	0.17	U	0.29	0.25	0.09	0.30	J	-0.03	0.11	0.03	0.28	U	0.17	0.17	0.03	0.18	J	0.45	*	0.67
PZ-212-SD-F	0.20	0.21	0.01	0.26	J	0.58	0.43	0.09	0.80	J	0.78	Less than MCL	0.55	0.26	0.15	0.13		-0.01	0.05	0.01	0.13	U	7.73	1.34	0.03	0.14	J	0.52	0.27	0.03	0.19	J	4.21	0.85	0.03	0.15	J	12.46		18.43
PZ-212-SD-U	0.35	0.34	0.04	0.46		0.01	0.49	0.10	1.04	U	0.36	* Less than MCL	0.40	0.23	0.18	0.19	J	0.00	0.08	0.06	0.20	U	8.66	1.50	0.02	0.11	J	0.26	0.19	0.01	0.16	J	5.10	1.00	0.03	0.14	J	14.02		20.75
PZ-212-SS-F	0.23	0.27	0.03	0.39	J	0.46	0.45	0.09	0.88	J	0.70	Less than MCL	0.51	0.25	0.14	0.11		-0.02	0.06	0.03	0.16	U	3.96	0.85	0.05	0.19	J	0.28	0.20	0.01	0.15	J	2.12	0.56	0.03	0.14	J	6.36		9.41
PZ-212-SS-U	0.56	0.38	0.01	0.28	J	0.73	0.50	0.11	0.93	J	1.29	Less than MCL	0.43	0.23	0.16	0.17	J	0.06	0.11	0.07	0.21	U	4.25	0.84	0.02	0.15	J	0.30	0.19	0.01	0.15	J	2.06	0.52	0.03	0.13	J	6.61		9.78

Summary of Radium, Thorium and Uranium Isotope Results (Bridgeton Landfill 4Q15, 1Q16 and 2Q16 Groundwater Monitoring Events)

Sample ID	Radium-226					Radium-228					Combined Radium 226 + 228		Combined Radium Relative to 5 pCi/L MCL	Thorium-230					Thorium-232					Uranium-234					Uranium-235					Uranium-238					Total U-234 + U-235 + U-238		Total Uranium µg/L
	Result	CSU	CV	MDA	Final Q	Result	CSU	CV	MDA	Final Q				Result	CSU	CV	MDA	Final Q	Result	CSU	CV	MDA	Final Q	Result	CSU	CV	MDA	Final Q	Result	CSU	CV	MDA	Final Q	Result	CSU	CV	MDA	Final Q			
2016 Q2 Sample Results																																									
LR-100-F	0.28	0.25	0.01	0.27	J	0.39	0.47	0.70	0.94	U	0.47	*	Less than MCL											0.34	0.25	0.03	0.18	J	0.22	0.24	0.01	0.33	J	0.08	0.12	0.03	0.18	J	0.64		0.95
LR-100-U	0.74	0.41	0.00	0.21	J	0.35	0.48	0.78	0.98	U	0.91	*	Less than MCL	0.25	0.16	0.14	0.11	J																								
MW-1204-F	23.30	5.79	0.01	0.46		3.05	0.84	0.64	0.70	J	26.35		Exceeds MCL																													
MW-1204-FDUP-F	21.80	5.39	0.07	0.72		3.15	0.89	0.67	0.83	J	24.95		Exceeds MCL																													
MW-1204-FDUP-U	22.70	5.70	0.03	0.63	J	2.10	0.68	0.62	0.83	J	24.80		Exceeds MCL	0.21	0.13	0.10	0.08	J						0.68	0.60	0.16	0.66	J	0.32	0.48	0.09	0.77	J	-0.17	0.25	0.24	0.78	U	1.00	*	1.48
MW-1204-U	18.20	4.61	0.02	0.45	J	3.31	0.95	0.73	0.91	J	21.51		Exceeds MCL	0.16	0.23	0.35	0.38	U						0.02	0.16	0.10	0.43	U	0.03	0.19	0.06	0.53	U	0.13	0.21	0.07	0.36	J	0.15	*	0.22
PZ-101-SS-F	15.20	3.62	0.04	0.40		1.91	0.64	0.65	0.81	J	17.11		Exceeds MCL																													
PZ-101-SS-U	15.80	3.74	0.01	0.23	J	1.72	0.60	0.67	0.79	J	17.52		Exceeds MCL	0.24	0.17	0.15	0.15	J						0.63	0.38	0.05	0.26	J	0.13	0.23	0.01	0.40	J	0.27	0.26	0.03	0.32	J	1.02		1.52
PZ-103-SS-F	2.69	1.06	0.03	0.48		3.22	0.91	0.66	0.84	J	5.91		Exceeds MCL																													
PZ-103-SS-U	5.41	1.60	0.01	0.31	J	1.04	0.71	0.96	1.31	J	6.45		Exceeds MCL	1.41	0.52	0.18	0.17							1.09	0.36	0.03	0.15	J	0.21	0.17	0.02	0.17	J	1.13	0.38	0.11	0.25	J	2.43		3.59
PZ-104-SD-F	3.22	1.04	0.01	0.23	J	0.55	0.49	0.68	0.96	U	3.50	*	Less than MCL																													
PZ-104-SD-FDUP-F	2.79	0.92	0.03	0.36		1.35	0.51	0.64	0.71	J	4.14		Less than MCL																													
PZ-104-SD-FDUP-U	2.54	0.90	0.02	0.33	J	0.67	0.53	0.79	1.02	U	2.87	*	Less than MCL	0.30	0.20	0.17	0.15	J						0.70	0.31	0.03	0.15	J	0.13	0.15	0.02	0.20	J	0.16	0.15	0.04	0.17	J	0.99		1.47
PZ-104-SD-U	3.42	1.13	0.01	0.29	J	0.97	0.62	0.91	1.13	J	4.39		Less than MCL	0.13	0.15	0.20	0.22	U						0.89	0.47	0.07	0.31	J	0.07	0.19	0.01	0.41	J	0.05	0.11	0.04	0.23	J	1.01		1.49
PZ-104-SS-F	1.31	0.55	0.01	0.23		0.55	0.44	0.67	0.84	U	1.59	*	Less than MCL																													
PZ-104-SS-U	1.43	0.58	0.03	0.32	J	1.28	0.58	0.73	0.93	J	2.71		Less than MCL	0.36	0.23	0.18	0.16	J						1.66	0.51	0.04	0.17	J	0.28	0.22	0.00	0.24	J	0.90	0.36	0.03	0.13	J	2.83		4.19
PZ-106-SD-F	9.37	2.48	0.03	0.40	J	2.93	0.83	0.67	0.77	J	12.30		Exceeds MCL																													
PZ-106-SD-U	10.30	2.63	0.02	0.33	J	2.24	0.73	0.68	0.91		12.54		Exceeds MCL	0.34	0.21	0.17	0.16	J						0.52	0.47	0.14	0.55	J	0.20	0.30	0.03	0.45	J	0.13	0.31	0.19	0.62	U	0.78	*	1.16
PZ-106-SS-F	2.88	0.97	0.04	0.40	J	0.46	0.39	0.65	0.74	U	3.11	*	Less than MCL																													
PZ-106-SS-U	2.93	0.99	0.02	0.32	J	0.79	0.47	0.78	0.83	J	3.72		Less than MCL	0.06	0.10	0.16	0.17	U						1.22	0.40	0.03	0.15	J	0.03	0.10	0.03	0.22	J	0.25	0.18	0.05	0.19	J	1.50		2.22
PZ-107-SS-F	6.82	1.88	0.02	0.33		2.46	0.73	0.64	0.76	J	9.28		Exceeds MCL																													
PZ-107-SS-U	7.19	1.91	0.03	0.34	J	2.69	0.78	0.65	0.78	J	9.88		Exceeds MCL	0.28	0.18	0.15	0.14	J						0.39	0.24	0.07	0.22	J	0.00	0.11	0.00	0.23	J	0.24	0.18	0.03	0.15	J	0.63		0.93
PZ-109 SS-F	0.93	0.53	0.07	0.47	J	1.02	0.76	1.21	1.43	U	1.44	*	Less than MCL																													
PZ-109-SS-U	1.28	0.56	0.01	0.24	J	6.04	1.70	1.20	1.61	J	7.32		Exceeds MCL	0.11	0.12	0.15	0.15	U						0.75	0.32	0.07	0.22	J	0.02	0.07	0.02	0.19	U	0.30	0.20	0.04	0.18	J	1.05	*	1.56
PZ-110-SS-F	3.09	0.99	0.01	0.26		1.55	0.59	0.67	0.85	J	4.64		Less than MCL																													
PZ-110-SS-U	3.50	1.10	0.01	0.28	J	0.96	0.47	0.72	0.78	J	4.46		Less than MCL	0.08	0.10	0.16	0.14	U						0.30	0.31	0.21	0.46	J	-0.02	0.13	0.07	0.41	U	0.03	0.14	0.10	0.33	U	0.32	*	0.47
PZ-116-SS-F	0.15	0.19	0.01	0.28	J	0.88	0.49	0.65	0.86	J	1.03		Less than MCL																													
PZ-116-SS-U	-0.02	0.14	0.04	0.37	U	-0.15	0.41	0.72	0.88	U	Non-Detect			0.15	0.16	0.22	0.24	U						4.97	1.01	0.06	0.20	J	0.09	0.13	0.02	0.19	J	1.70	0.50	0.03	0.15	J	6.76		10.00
PZ-200-SS-F	0.91	0.45	0.01	0.24		0.12	0.39	0.66	0.81	U	0.97	*	Less than MCL																													
PZ-200-SS-FF	0.77	0.42	0.04	0.37	J	0.44	0.41	0.64	0.81	U	0.99	*	Less than MCL																													
PZ-200-SS-U	1.13	0.53	0.01	0.27	J	0.77	0.54	0.81	1.00	U	1.51	*	Less than MCL	0.27	0.19	0.17	0.17	J						0.61	0.29	0.03	0.15	J	0.11	0.13	0.01	0.16	J	0.23	0.18	0.04	0.18	J	0.95		1.40
PZ-202-SS-F	1.29	0.54	0.01	0.24		0.12	0.45	0.73	0.94	U	1.35	*	Less than MCL																													
PZ-202-SS-U	2.07	0.75	0.02	0.29	J	2.30	0.77	0.78	0.98	J	4.37		Less than MCL	0.15	0.15	0.19	0.17	U						1.01	0.34	0.02	0.11	J	0.15	0.14	0.01	0.15	J	0.20	0.15	0.04	0.16	J	1.36		2.01
PZ-205-AS-F	2.39	1.35	0.10	1.12	J	2.73	1.13	1.35	1.74	J	5.12		Exceeds MCL																													
PZ-205-AS-U	5.09	1.78	0.03	0.60	J	5.66	1.76	1.67	1.98	J	10.75		Exceeds MCL	1.92	0.71	0.31	0.32	J						1.66	0.91	0.11	0.54	J	0.51	0.56	0.05	0.67	J	1.22	0.76	0.09	0.47	J	3.39		5.02
PZ-206-SS-F	1.75	0.68	0.02	0.30		0.17	0.38	0.63	0.79	U	1.83	*	Less than MCL																													
PZ-206-SS-U	1.33	0.51	0.01	0.20	J	0.62	0.39	0.69	0.69	U	1.64	*	Less than MCL	0.35	0.27	0.28	0.30	J						0.69	0.38	0.05	0.25	J	-0.01	0.12	0.01	0.24	U	0.07	0.13	0.05	0.25	J	0.76	*	1.12
PZ-209-SD-F	0.34	0.27	0.03	0.32	J	0.15	0.40	0.65	0.84	U	0.41	*	Less than MCL																													
PZ-209-SD-U	0.55	0.33	0.00	0.18	J	0.35	0.45	0.69	0.91	U	0.73	*	Less than MCL	0.12	0.15	0.22	0.24	U						2.91	0.66	0.02	0.11	J	0.21	0.17	0.01	0.15	J	1.03	0.35	0.04	0.16	J	4.15		6.14
PZ-210-SD-F	0.44	0.30	0.01	0.24	J	0.30	0.40	0.67	0.81	U	0.59	*	Less than MCL																													
PZ-210-SD-U	0.48	0.31	0.01	0.24	J	2.92	0.83	0.66	0.78		3.40		Less than MCL	0.06	0.09	0.16	0.16	U						2.59	0.82	0.20	0.45	J	0.04	0.17	0.07	0.40	U	0.87	0.43	0.09	0.32	J	3.48	*	5.15
PZ-211-SD-F	0.03	0.12	0.02	0.28	J	0.53	0.45	0.69	0.86	U	0.30	*	Less than MCL																													
PZ-211-SD-U	0.38	0.29	0.01	0.26	J	-0.05	0.52	0.80	1.10	U	0.35	*	Less than MCL	0.37	0.24	0.19	0.19	J						5.66	1.11	0.07	0.21	J	0.16	0.16	0.02	0.19	J	2.08	0.56	0.04	0.17	J	7.90		11.69
PZ-212-SD-F	0.28	0.26	0.01	0.30	J	0.69	0.45	0.68	0.83	J	0.97		Less than MCL																													
PZ-212-SD-U	0.06	0.13	0.01	0.26	J	0.69	0.44	0.75	0.79	U	0.40	*	Less than MCL	0.21	0.16	0.16	0.13	J						6.28	1.16	0.06	0.19	J	0.40	0.24	0.00	0.20	J	3.64	0.78	0.03	0.13	J	10.32		15.28
PZ-212-SS-F	0.01	0.14	0.03	0.34	U	0.53	0.44	0.70	0.83	U	Non-Detect																													
PZ-212-SS-U	0.16	0.27	0.05	0.48	J	0.41	0.41	0.65	0.80	U	0.36	*	Less than MCL	0.07	0.11	0.17	0.18	U						2.19	0.59	0.03	0.16	J	0.15	0.17	0.00	0.23	J	1.72	0.51	0.03	0.16	J	4.06		6.01

Notes:
All values expressed as pCi/L, unless noted.
Green and yellow-shaded values indicated that MCL is exceeded.

F-7: Bridgeton Landfill Leachate Monitoring Results (radionuclides)

Table 1-Historical Untreated Leachate Bridgeton Landfill

	Parameter	Gross Alpha (radiation)	Gross Beta (radiation)	Gross Gamma (radiation)	Radium 226	Radium 228	Uranium 234	Uranium 235	Uranium 238	Tritium	Total Uranium
Location	Units	pCi/l	pCi/l	pCi/l	pCi/l	pCi/l	pCi/l	pCi/l	pCi/l	pCi/l	ug/L
	Date										
013	1/17/2017	66.1 +/- 55.4 U	233 +/- 74	186 +/- 61	0.83 +/- 0.57	0.415 +/- 0.764 U	0.439 +/- 0.391 U	0.000 +/- 0.251 U	0.328 +/- 0.327 U	55,182 +/- 3,208	-0.537 U
013	10/25/2016	50 +/- 31	193 +/- 48	229 +/- 58	0.32 +/- 0.28	0.386 +/- 0.432 U	2.18 +/- 0.72	0.12 +/- 0.21 U	0.45 +/- 0.30	45,637 +/- 2,672	0.939 U
013	7/12/2016	-31.0 +/- 59.1 U	180 +/- 78	186 +/- 64	0.148 +/- 0.264 U	0.913 +/- 0.663 U	0.359 +/- 0.342 U	0.0859 +/- 0.2385 U	0.218 +/- 0.278 U	--	0.77
013	5/11/2016	-9.44 +/- 16.11 U	130 +/- 25	202 +/- 63	0.431 +/- 0.482 U	0.841 +/- 0.838 U	0.55 +/- 0.34	-0.00214 +/- 0.16046 U	0.193 +/- 0.213 U	--	0.805 U
014	2/18/2016	59.0 +/- 141.7 U	326 +/- 178 U	269 +/- 62	0.282 +/- 0.425 U	0.522 +/- 1.275 U	1.71 +/- 0.85	0.326 +/- 0.469 U	0.86 +/- 0.60	--	0.833 U
013	1/27/2016	-52.8 +/- 60.0 U	220 +/- 89	215 +/- 52	0.48 +/- 0.39	0.532 +/- 0.505 U	0.49 +/- 0.37	0.0524 +/- 0.1602 U	0.37 +/- 0.31	--	1.12
014	11/03/2015	13.4 +/- 29.1 U	212 +/- 62.5	391 +/- 159	0.249 +/- 0.305 U	-0.0734 +/- 0.8589 U	0.51 +/- 0.38	0.0784 +/- 0.2176 U	0.190 +/- 0.249 U	--	-0.338 U
013	11/03/2015	-32.7 +/- 42.1 U	166 +/- 74.0	319 +/- 158	0.102 +/- 0.222 U	0.502 +/- 0.772 U	0.52 +/- 0.48	-0.0226 +/- 0.2646 U	0.500 +/- 0.481 U	--	-0.643 U
014	9/09/2015	16.1 +/- 19.0 U	240 +/- 40.4	168 +/- 66.7	2.08 +/- 0.95	1.76 +/- 0.89	0.291 +/- 0.303 U	0.232 +/- 0.280 U	0.197 +/- 0.225 U	--	0.468 U
013	9/09/2015	7.68 +/- 28.16 U	207 +/- 42.7	234 +/- 64.1	0.378 +/- 0.529 U	1.69 +/- 1.71 U	0.37 +/- 0.31	0.132 +/- 0.224 U	0.288 +/- 0.287 U	--	1.73
014	6/02/2015	49.1 +/- 38.4 U	272 +/- 40.1	331 +/- 61	-0.108 +/- 0.640 U	1.59 +/- 1.34 U	0.255 +/- 0.435 U	-0.065 +/- 0.382 U	1.07 +/- 0.87	--	0.00224 U
013	6/02/2015	128 +/- 53	278 +/- 61.4	211 +/- 54.8	-0.139 +/- 0.337 U	7.61 +/- 1.85	0.462 +/- 0.475 U	-0.0182 +/- 0.206 U	0.128 +/- 0.218 U	--	0.0538 U
013	3/19/2015	10.3 +/- 24.8 U	312 +/- 58.5	297 +/- 73.2	0.271 +/- 0.358 U	1.51 +/- 1.18 U	0.0376 +/- 0.157 U	0.173 +/- 0.265 U	0.292 +/- 0.303 U	--	-0.560 U
014	1/21/2015	-11.4 +/- 41.7 U	295 +/- 74.6	313 +/- 61.8	0.355 +/- 0.535 U	1.56 +/- 2.10 U	0.786 +/- 0.557	0.0644 +/- 0.295 U	0.539 +/- 0.469 U	--	0.182 U
013	12/16/2014	13.1 +/- 25.7 U	177 +/- 44.0	300 +/- 71.8	1.05 +/- 0.73	0.446 +/- 1.42 U	--	--	--	--	0.213 U
014 TANK 4	11/21/2014	17.2 +/- 33.7 U	281 +/- 66.8	395 +/- 76.4	5.95 +/- 11.38 U	6.29 +/- 3.68 U	--	--	--	--	-0.0372 U
TANK 1	9/10/2014	33.9 +/- 61.1 U	515 +/- 98.4	471 +/- 73.9	0.300 +/- 0.4190 U	0.428 +/- 1.644 U	--	--	--	--	-0.402 U
TANK 2	5/29/2014	101 +/- 85 U	441 +/- 169	509 +/- 63.9	-0.00971 +/- 0.0296 U	0.621 +/- 0.495 U	--	--	--	--	-0.216 U
BATCH 320-MSD	3/18/2014	33.6 +/- 34.9 U	303 +/- 75.9	507 +/- 78.5	-1.93 +/- 2.36 U	2.26 +/- 1.07	2.53 +/- 1.03	0.980 +/- 0.685	0.589 +/- 0.494	--	--
Outfall 008	12/30/2013	56.2 +/- 69.0 U	349 +/- 161	-1.09 +/- 2.34 U	0.346 +/- 0.534 U	0.491 +/- 1.09 U	4.91 +/- 1.85	1.02 +/- 0.91	4.12 +/- 1.65	--	--
Outfall 008	9/13/2013	216 +/- 106	819 +/- 169	589 +/- 79.2	0.142 +/- 0.240 U	2.09 +/- 1.33 U	1.82 +/- 1.00	0.943 +/- 0.824 U	2.47 +/- 1.16	--	--
Outfall 008	6/18/2013	46.6 +/- 57.1 U	429 +/- 102	1.54 +/- 1.67 U	0.0752 +/- 0.163 U	2.64 +/- 0.904	0.955 +/- 0.532	0.0549 +/- 0.168 U	0.380 +/- 0.328	--	--
Outfall 008	12/13/2012	17.7 +/- 69.1 U	379 +/- 80.4	1.35 +/- 6.79 U	14.0 +/- 3.19	9.69 +/- 3.81	--	--	--	--	< 2.8 U
Outfall008	9/19/2012	6 +/- 78 U	331 +/- 74	0.5 +/- 5.6 U	13.1 +/- 2.7	7.3 +/- 2.7	--	--	--	--	< 2.0 U
Outfall008	5/15/2012	29 +/- 30 U	160 +/- 33	-1.4 +/- 6.6 U	8.6 +/- 2.6	3.7 +/- 3.3 U	--	--	--	--	< 10.0 U
Outfall008	3/06/2012	38 +/- 30 U	183 +/- 33	-0.5 +/- 7.3 U	9.0 +/- 3.8	7.0 +/- 4.9 U	--	--	--	--	< 4.0 U
Outfall008	11/29/2011	21 +/- 15	72 +/- 14	-1.1 +/- 6.8 U	5.16 +/- 0.77	1.13 +/- 0.51	--	--	--	--	< 5.0 U
Outfall008	8/18/2011	31 +/- 19	59 +/- 12	-0.3 +/- 6.2 U	3.3 +/- 1.0	2.5 +/- 1.1	--	--	--	--	< 1.0 U
Outfall008	5/11/2011	8 +/- 18 U	47 +/- 11	-2.5 +/- 8.4 U	3.22 +/- 0.38	2.04 +/- 0.43	--	--	--	--	< 1.0 U
Outfall008	3/16/2011	3 +/- 13 U	84 +/- 14	0.3 +/- 6.0 U	4.6 +/- 1.1	1.8 +/- 1.4 U	--	--	--	--	16.8 U
Outfall008	11/17/2010	15 +/- 10	48.2 +/- 9.7	2.6 +/- 7.0 U	4.31 +/- 0.76	1.02 +/- 0.47	--	--	--	--	13.9 U
Outfall008	9/08/2010	9 +/- 13 U	58 +/- 13	0.6 +/- 7.9 U	2.81 +/- 0.50	1.46 +/- 0.68	--	--	--	--	16.0
Outfall008	5/25/2010	5.21 +/- 2.0 U	114 +/- 9.0	0.757 +/- 5.5 U	3.24 +/- 0.34	2.18 +/- 0.26	--	--	--	--	0.705
Outfall008	2/25/2010	10 +/- 10 U	56.3 +/- 9.4	3.5 +/- 8.4 U	3.60 +/- 0.53	1.26 +/- 0.46	--	--	--	--	9.8
Outfall008	11/04/2009	8 +/- 10 U	73 +/- 13	-0.06 +/- 5.8 U	3.71 +/- 0.50	1.24 +/- 0.53	--	--	--	--	3.03 U
Outfall008	8/06/2009	18 +/- 10	50.8 +/- 9.7	-0.7 +/- 9.2 U	3.51 +/- 0.42	1.59 +/- 0.37	--	--	--	--	2.57 U
Outfall008	5/07/2009	11.0 +/- 9.9 U	68 +/- 11	0.0 +/- 9.4 U	4.28 +/- 0.58	1.36 +/- 0.34	--	--	--	--	6.09
Outfall008	2/12/2009	-4.4 +/- 8.2 U	73 +/- 13	0.1 +/- 5.9 U	4.24 +/- 0.58	1.61 +/- 0.43	--	--	--	--	-0.96 U
Outfall008	11/04/2008	20 +/- 12	66 +/- 11	0.8 +/- 7.0 U	4.19 +/- 0.54	1.80 +/- 0.39	--	--	--	--	7.09 U
Outfall008	7/16/2008	7.3 +/- 7.8 U	46.4 +/- 8.3	-0.07 +/- 7.8 U	3.29 +/- 0.46	1.44 +/- 0.36	--	--	--	--	--
Outfall008	5/06/2008	-0.2 +/- 7.7 U	83 +/- 15	0.5 +/- 6.7 U	4.98 +/- 0.60	2.01 +/- 0.41	--	--	--	--	0.542 U
Outfall008	3/13/2008	20 +/- 16 U	70 +/- 13	0.3 +/- 8.4 U	5.10 +/- 0.81	1.66 +/- 0.74	--	--	--	--	0.687 U
Outfall008	11/29/2007	11.0 +/- 9.97 U	71 +/- 16	1 +/- 9.1 U	3.94 +/- 0.68	2.00 +/- 0.68	--	--	--	--	1.07 U
Outfall006	8/21/2007	12 +/- 12 U	71 +/- 14	2.8 +/- 8.9 U	4.66 +/- 0.80	1.3 +/- 1.1 U	--	--	--	--	-20.0 U
Outfall006	5/22/2007	18 +/- 13 U	68 +/- 13	1.9 +/- 7.4 U	4.34 +/- 0.64	1.40 +/- 0.54	--	--	--	--	1.9 U
Outfall006	3/08/2007	14 +/- 17 U	88 +/- 16	7.2 +/- 8.0 U	6.26 +/- 0.88	2.12 +/- 0.59	--	--	--	--	0.424 U
Outfall006	12/21/2006	15 +/- 15 U	81 +/- 17	-3 +/- 10 U	4.42 +/- 0.72	3.4 +/- 1.4	--	--	--	--	6.88