

Monday May 12, 2008

399-2-9; C6186

Work was initiated at 399-2-9 and started with the POD. Crew completed some final inspections/training. The split spoon was advanced to 28.7 and the casing was advanced to 30 ft bgs. Sixteen samples were collected and are listed below. The upper spindle just below the drive head sheared off near the end of the day. Crew working to repair in order to resume tomorrow.

RCT coverage was provided on an AM/PM basis. The RCT reported readings at or below background.

Sampling Performed

Sample ID	Depth (ft bgs)
2-9-C-0.0-0.5	0.0-0.5
2-9-C-0.5-1.5	0.5-1.5
2-9-C-1.5-2.5	1.5-2.5
2-9-C-9.4-10.4	9.4-10.4
2-9-C-10.4-11.4	10.4-11.4
2-9-C-11.4-12.4	11.4-12.4
2-9-C-12.4-13.4	12.4-13.4
2-9-C-13.4-14.4	13.4-14.4
2-9-C-15.9-16.4	15.9-16.4
2-9-C-16.4-17.4	16.4-17.4
2-9-C-17.4-18.4	17.4-18.4
2-9-C-18.4-19.4	18.4-19.4
2-9-C-20.0-21.9	20.0-21.9
2-9-C-23.7-24.7	23.7-24.7
2-9-C-24.7-25.7	24.7-25.7
2-9-C-25.7-26.7	25.7-26.7

Current Depths (ft bgs)

Borehole = 30.0

7 5/8" single wall temporary casing 30.0

Expected total depth = ~ 58

Borehole Log Summary (ft bgs)

0 – 0.7 gravel drill pad

0.7 – 26.7 sandy gravel

Plan

Complete repair on rig and resume drilling on Tuesday 5/13/08.

Tuesday May 13, 2008

399-2-9; C6186

Attended POD. Rig repaired and ready to proceed. A combination of split spoon and drive barrel was used to advance from 28.7 to 65 ft bgs. The casing was advanced from 30 to 62.8 ft bgs. Borehole has reached total depth. Twenty-one samples were collected and are listed below. Note that the C and G in the Sample ID indicate core (in lexan liners) or grab samples.

RCT coverage was provided on an AM/PM basis. The RCT reported readings at or below background.

Sampling Performed

Sample ID	Depth (ft bgs)
2-9-C-29.4-30.2	29.4-30.2
2-9-C-30.2-31.2	30.2-31.2
2-9-C-31.2-32.2	31.2-32.2
2-9-C-35.0-35.3	35.0-35.3
2-9-C-35.3-36.3	35.3-36.3
2-9-C-36.3-37.3	36.3-37.3
2-9-C-37.3-38.3	37.3-38.3
2-9-C-39.7-40.2	39.7-40.2
2-9-C-40.2-41.2	40.2-41.2
2-9-C-41.2-42.2	41.2-42.2
2-9-C-42-43	42-43
2-9-G-45-50	45-50
2-9-C-50.0-50.5	50.0-50.5
2-9-C-50.5-51.5	50.5-51.5
2-9-C-51.5-52.5	51.5-52.5
2-9-G-56-57	56-57
2-9-C-58-59	58-59
2-9-C-59-60	59-60
2-9-C-60-61	60-61
2-9-C-61-62	61-62
2-9-C-62-63	62-63

Current Depths (ft bgs)

Borehole = 65.0
7 5/8" single wall temporary casing 62.8
Expected total depth = ~ 58

Borehole Log Summary (ft bgs)

0 – 0.7 gravel drill pad
0.7 – 54.0 sandy gravel
54.0-54.8 silt
54.8-58.0 sandy gravel
58.0-59.5 sand
59.5-65.0 silt

Plan

Geophysical logging will be performed Wednesday, May 14. Mobilize the rig to the next borehole and resume drilling.

Wednesday May 14, 2008

399-3-26; C6203

Attended POD. Rig set-up on new borehole. A combination of split spoon and drive barrel was used to advance from surface to 35 ft bgs. The casing was advanced from surface to 35 ft bgs, and subsequently pulled back to 29 ft bgs. Seventeen samples were collected and are listed below. Note that the C and G in the Sample ID indicate core (in lexan liners) or grab samples.

The rig was shut-down and removed from site for repairs due to a lack of hydraulic fluid circulation in the drive head.

RCT coverage was provided on an AM/PM basis. The RCT reported readings at or below background. IH provided an am check and readings were less than detect.

399-2-9 (C6186) – geophysical logging is being performed today.

Sampling Performed

Sample ID	Depth (ft bgs)
3-26-C-1.5-2	1.5-2
3-26-C-2-3	2-3
3-26-C-3-4	3-4
3-26-C-4-5	4-5
3-26-G-5-10	5-10
3-26-G-10-12.5	10-12.5
3-26-G-12.5-15	12.5-15
3-26-C-15.2-16	15.2-16
3-26-C-16-17	16-17
3-26-C-17-18	17-18
3-26-C-17-19	17-19
3-26-C-19-20	19-20
3-26-C-20-21	20-21
3-26-C-25-25.8	25-25.8
3-26-C-25.8-26.8	25.8-26.8
3-26-C-30-31	30-31
3-26-C-31-32	31-32

Current Depths (ft bgs)

Borehole = 35

7 5/8" single wall temporary casing 29

Expected total depth = ~ 58

Borehole Log Summary (ft bgs)

0 – 0.5	gravel drill pad
0.5 – 20.5	sandy gravel
20.5 – 23 (est)	clayey silt
23 – 35	sandy gravel

Plan

Repair rig and resume drilling.

Thursday May 15, 2008

399-3-26; C6203

Reviewed POD. Rig repaired and set-up on borehole. A split spoon was used to advance from 35 to 60 ft bgs. The casing was advanced from 35 to 57 ft bgs. The borehole reached total depth. Seventeen samples were collected and are listed below. Note that the C and G in the Sample ID indicate core (in lexan liners) or grab samples.

The rig was shut-down and removed from site for repairs due to a reappearance of the hydraulic fluid circulation problem.

RCT coverage was provided on an AM/PM basis. The RCT reported readings at or below background. IH provided an am check and readings were less than detect.

399-2-9 (C6186) – geophysical logging is being completed today.

Sampling Performed

Sample ID	Depth (ft bgs)
3-26-C-35-35.8	35-35.8
3-26-C-35.8-36.8	35.8-36.8
3-26-C-40-41	40-41
3-26-C-41-42	41-42
3-26-C-42-43	42-43
3-26-C-45-45.4	45-45.4
3-26-C-45.4-46.4	45.4-46.4
3-26-C-46.4-47.4	46.4-47.4
3-26-C-50-51	50-51
3-26-C-51-52	51-52
3-26-C-52-53	52-53
3-26-C-53-54	53-54
3-26-C-54-55	54-55
3-26-C-55-56	55-56
3-26-C-56-57	56-57
3-26-C-57-58	57-58
3-26-C-58-59	58-59

Current Depths (ft bgs)

Borehole = 66

7 5/8" single wall temporary casing 57

Expected total depth = ~ 58

Borehole Log Summary (ft bgs)

0 – 0.5	gravel drill pad
0.5 – 20.5	sandy gravel
20.5 – 26	clayey silt
26 – 42	sandy gravel
42 – 52	gravelly sand
52 – 66	silt

Plan

Repair rig and mobilize to C6197. Log C6203.

Friday May 16, 2008

399-3-26; C6203

Site Activities

No site activities performed today – waiting on parts to repair rig.

Sampling Performed

None.

Current Depths (ft bgs)

Borehole = 66

7 5/8" single wall temporary casing 57

Expected total depth = ~ 58

Borehole Log Summary (ft bgs)

0 – 0.5	gravel drill pad
0.5 – 20.5	sandy gravel
20.5 – 26	clayey silt
26 – 42	sandy gravel
42 – 52	gravelly sand
52 – 66	silt

Plan

Repair rig and mobilize to C6197. Log C6203.

Monday May 19, 2008

399-2-19; C6197

Site Activities

Rig was repaired and placed at the next location, C6197 (399-2-19).

Logging occurring at C6203.

Sampling Performed

None.

Current Depths (ft bgs)

Borehole

7 5/8" single wall temporary casing

Expected total depth = ~ 58

Borehole Log Summary (ft bgs)

Plan

Initiate drilling at C6197.

Tuesday May 20, 2008

399-2-19I; C6197

Site Activities

Attended POD. Drilling began and was completed at C6197. The borehole was advanced from surface to 60.8 ft bgs. The casing was advanced from surface to 60 ft bgs. The borehole reached total depth. Forty-one samples were collected – all via split spoon.

The rig and equipment was mobilized to C6190 (399-2-13).

RCT and IH coverage was provided on an AM/PM basis. The RCT reported readings at or below background. IH indicated readings were less than detect.

Logging complete at C6203.

Sampling Performed

Forty-one samples were taken. A summary table will follow.

Current Depths (ft bgs)

Borehole 60.8
7 5/8" single wall temporary casing 60
Expected total depth = ~ 58

Borehole Log Summary (ft bgs)

0-0.6	gravel drill pad
0.6-27	sandy gravel
27-31.5	gravelly sand
31.5-33	silt
33-45	sandy gravel
45-54	gravelly sand
54-55	silt
55-57	gravelly sand
57-60.8	silt

Plan

No site activities on May 21 due to safety meetings. Initiate drilling at C6190 on May 22.

Thursday May 22, 2008

399-2-13

C6190

Site Activities

Attended POD. Drilling began and was completed at C6190. The borehole was advanced from surface to 62.6 ft bgs. The casing was advanced from surface to 57 ft bgs. The borehole reached total depth. Thirty-one samples were collected – 28 via split spoon (lexan liners) and 3 grabs.

The rig and equipment was mobilized to C6208 (399-2-24).

RCT and IH coverage was provided on an AM/PM basis. The RCT reported readings at or below background. IH indicated readings were less than detect.

Sampling Performed

Thirty-one samples were taken. A summary table will be sent out Friday.

Current Depths (ft bgs)

Borehole 62.6
7 5/8" single wall temporary casing 57
Expected total depth = ~ 58

Borehole Log Summary (ft bgs)

0-0.5	gravel drill pad
0.5-10.5	sandy gravel
10.5-15	gravelly sand
15-40	gravelly sand
40-44	silt
44-54	sandy gravel
54-62.6	silt

Plan

Initiate drilling at C6208 May 23.

Thursday May 22, 2008

399-2-9

C6186

Well completion activities were resumed today. 10-20 silica sand was added from 32.4 ft bgs to 30.65 ft bgs. 40-140 sand was added to the borehole from 30.65 ft bgs to 9.75 ft bgs. Granular bentonite was added from 9.75 to 3.4 ft bgs.

Current Depths (ft bgs)

Bentonite pellets: 63.7 – 58.75
10-20 mesh silica sand: 58.75 – 30.65
40-140 mesh silica sand: 30.65 – 9.75
Granular bentonite: 9.75 – 3.4 (current)

25 ft pvc screen (0.020") and end cap: 58.75 – 33.47
4" ID pvc casing: 33.47 – 6.3 ft ags

Borehole: 3.4
~~7 5/8" single wall temporary casing: 0~~

Plan

Tomorrow morning the cement grout will be added to the borehole in preparation for the concrete pad. The drillers will be leaving early in preparation for the long weekend.

Thursday May 22, 2008

399-3-26

C6203

Well completion activities were started and completed today. Coated bentonite pellets were added from 64.0 ft to 53.9 ft bgs. The 4" ID pvc permanent casing was tripped into the hole. The ERTs and thermistor cables were taped to the outside of the permanent casing from 33.5 ft bgs to surface. 10-20 silica sand was added from 53.7 to 30.0 ft bgs. 40-140 sand was added from 30.0 ft bgs to 9.6 ft bgs. Granular bentonite was added to the hole from 9.6 ft to 3.0 ft bgs. All temporary casing was removed from the borehole.

Current Depths (ft bgs)

Bentonite pellets: 64.0 – 53.9
10-20 mesh silica sand: 53.7 – 30.0
40-140 mesh silica sand: 30.0 – 9.6
Granular bentonite: 9.6 – 3.0

20 ft pvc screen (0.020") and end cap: 52.31 – 32.0
4" ID pvc casing: 32.0 – 5.5 ft ags

Borehole: 0
~~7 5/8" single wall temporary casing: 0~~

Plan

Tomorrow morning the cement grout will be poured into the hole in preparation for a concrete pad and final surface completion. The drillers will be leaving the site early following the pouring of the grout in preparation of the long weekend.

Friday May 23, 2008

399-2-9

C6186

Well completion activities were resumed today. Portland neat cement was added from 3.4 to 1.5 ft bgs.

Current Depths (ft bgs)

Bentonite pellets: 63.7 – 58.75

10-20 mesh silica sand: 58.75 – 30.65

40-140 mesh silica sand: 30.65 – 9.75

Granular bentonite: 9.75 – 3.4

Portland neat cement: 3.4-1.5

25 ft pvc screen (0.020") and end cap: 58.75 – 33.47

4" ID pvc casing: 33.47 – 6.3 ft ags

Borehole: 3.4

~~7 5/8" single wall temporary casing: 0~~

Plan

Work on well completion is planned to resume Tuesday, May 27.

Friday May 23, 2008

399-3-26

C6203

Well completion activities were resumed today. Portland neat cement was added from 3.0 to 1.5 ft bgs.

Current Depths (ft bgs)

Bentonite pellets: 64.0 – 53.9

10-20 mesh silica sand: 53.7 – 30.0

40-140 mesh silica sand: 30.0 – 9.6

Granular bentonite: 9.6 – 3.0

Portland neat cement: 3.0-1.5

20 ft pvc screen (0.020") and end cap: 52.31 – 32.0

4" ID pvc casing: 32.0 – 5.5 ft ags

Borehole: 0

~~7 5/8" single wall temporary casing: 0~~

Plan

Work on well completion is planned to resume Tuesday, May 27.

Friday May 23, 2008

399-2-24

C6208

Site Activities

Attended POD. Completed setting up on the location and began drilling. The borehole was advanced from surface to 10 ft bgs using a split spoon. Eight samples were collected- all via split spoon (lexan liners). A weld on the rig broke and work was stopped immediately. The rig was mobilized to the contractor's yard for repair.

RCT and IH coverage was provided in the AM. The RCT reported readings at or below background. IH indicated readings were less than detect.

Sampling Performed

Eight samples were taken. A sample summary table is attached.

Current Depths (ft bgs)

Borehole 10.0
7 5/8" single wall temporary casing 0
Expected total depth = ~ 58

Borehole Log Summary (ft bgs)

0-0.5	gravel drill pad
0.5-7	sandy gravel
7- 10	gravelly sand

Plan

Resume drilling at C6208 the afternoon of May 27.

Wednesday May 28, 2008

399-2-24

C6208

Site Activities

Attended POD. Resumed drilling and advanced the casing from surface to 20 ft bgs. Collected 5 samples via split spoon (lexan liners). Encountered difficulty clearing the borehole with the drive barrel and this resulted in a total depth of 10 ft bgs. Crew will fabricate a bit to aid in recovery.

RCT and IH coverage was provided in the AM/PM. The RCT reported readings at or below background. IH indicated readings were less than detect.

Sampling Performed

See updated table.

Well Installation

None performed today. Anticipate resuming tomorrow following repair to casing jack.

Current Depths (ft bgs)

Borehole 10.0
7 5/8" single wall temporary casing 20
Expected total depth = ~ 58

Borehole Log Summary (ft bgs)

0-0.5	gravel drill pad
0.5-7	sandy gravel
7- 10	gravelly sand
10-15	sandy gravel

Plan

Resume drilling at C6208 May 29. Well installation will also resume.

Thursday May 29, 2008

399-2-24

C6208

Site Activities

Attended POD. Resumed drilling and advanced the casing from 20 to 30 ft bgs. Advanced the borehole from 10 to 30 ft bgs. Collected 2 samples via split spoon (lexan liners) and 2 grab samples via drive barrel. Continue to encounter difficulty clearing the borehole with the drive barrel or split spoon. A preliminary depth to water was taken at 26.7 ft bgs.

RCT and IH coverage was provided in the AM/PM. The RCT reported readings at or below background. IH indicated readings were less than detect.

Sampling Performed

See updated table.

Well Installation

None performed today. Anticipate resuming tomorrow.

Current Depths (ft bgs)

Borehole 30
7 5/8" single wall temporary casing 30
Depth to water 26.7
Expected total depth = ~ 58

Borehole Log Summary (ft bgs)

0-0.5	gravel drill pad
0.5-7	sandy gravel
7- 10	gravelly sand
10-18	sandy gravel
18-26	silty sandy gravel
26-30	gravel

Plan

Resume drilling at C6208 May 30. Well installation will also resume.

Friday May 30, 2008

399-2-19

C6197

Well completion activities were started today. Bentonite was added to the hole to a depth of 56.3 ft bgs. The permanent 4" pvc casing and 20-slot screen was added to the hole, along with the ERTs and thermistors for PNNL. Centralizers were set at the bottom and top of the 25 ft screen. ERTs and thermistors were set at 33.5 ft bgs. Sand was added to a depth of approximately 48 ft bgs. While trying to take a tag of the sand depth, the tagline tangled in the top centralizer and was lost in the borehole. The project manager was immediately notified. Drillers attempted to "fish" the tag weight from the borehole, but could not remove it. Because the tag weight was not stainless steel, and because any metal in the well will affect the sensors for PNNL, it was decided to pull the permanent casing from the borehole so that the borehole could be redrilled to total depth. The permanent casing was pulled successfully from the borehole, the well was covered, and the drillers moved on to the next well to be developed.

Current Depths (ft bgs)

Bentonite pellets: 60.0 – 56.3

10-20 mesh silica sand: 58.75 – ~48

Borehole: ~48

7 5/8" single wall temporary casing: 45.4

Plan

Tomorrow no work will be done at this borehole. The drillers will be completing well C6190. When the sonic drill team hits TD on the current hole they are on, the sonic rig will be moved to the borehole and will redrill the hole to TD.

Friday May 30, 2008

399-2-13

C6190

Well completion activities were started today. Bentonite pellets were added to the borehole to a depth of 56.6 ft bgs. The ERTs and thermistors for PNNL could not be acquired today, so the screen and permanent casing will be added to the well on Monday (06/02).

Current Depths (ft bgs)

Bentonite pellets: 62.3 – 56.6

Borehole: 56.6

7 5/8" single wall temporary casing: 55.7

Plan

Monday morning completion activities will resume at this borehole.

Friday May 30, 2008

399-2-24

C6208

Site Activities

Attended POD. Resumed drilling and advanced the casing from 30 to 46 ft bgs. Advanced the borehole from 30 to 47 ft bgs. Collected 6 samples via split spoon (lexan liners) and 11 grab samples via drive barrel. Depth to water was 26.8 ft bgs. Lost and recovered a steel tagger weight.

RCT and IH coverage was provided in the AM/PM. The RCT reported readings at or below background. IH indicated readings were less than detect.

Sampling Performed

See updated table.

Current Depths (ft bgs)

Borehole 47
7 5/8" single wall temporary casing 46
Depth to water 26.8
Expected total depth = ~ 58

Borehole Log Summary (ft bgs)

0-0.5	gravel drill pad
0.5-7	sandy gravel
7- 10	gravelly sand
10-18	sandy gravel
18-26	silty sandy gravel
26-36	gravel
36-40	sandy gravel
40-41	sand
41-42	sandy gravel
42-47	sand

Plan

Resume drilling at C6208 June 2.