

KAFB-0213 to KAFB-0221

DM-02 designated KAFB-0213 by USGS



SCIENCE APPLICATIONS, INC.
505 Marquette Avenue N.W.
Albuquerque, New Mexico 87102

BORING No. DM-02
DEPTH DRILLED 450 ft, BGS
SCREENED FORMATION(S) QTsf

CLIENT Kirtland AFB
LOCATION Albuquerque, NM
PROJECT No. 1-220-06-351-33
SURVEY DATA (Coord.) 409389.02 ft E; 1465447.12 ft N
TOP of PIPE ELEV. 5284.27 GROUND ELEV. 5282.42
(ft,MSL) (ft, MSL)
DRILLING
DRILLER Rodgers & Co RIG TYPE Gardner Denver 1000
START 3 January 1984 END 10 January 1984
BIT SCHEDULE 8 3/4" Retipped Soft Formation Tricone
Bit. 0-480 ft, BGS.
DRILLING FLUIDS Baroid "Quik Gel"™ bentonite drilling
mud.

WATER ENCOUNTERED AT _____
Not discernable during drilling

CONSTRUCTION
CASING SCHEDULE All casing flush threaded sch 40 PVC.
0-378 ft, solid; 378-428 ft, 0.020 "slot screen; 428-
438 ft, solid; threaded end cap.

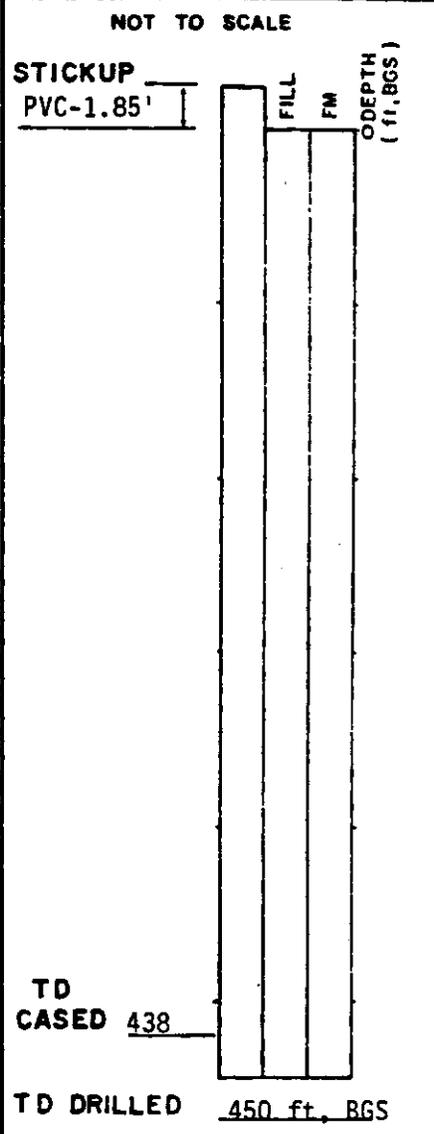
BACKFILL SCHEDULE 0-367(?)ft, natural material back-
fill; 367(?) -370 ft, Bentonite pellet seal (201b) 370-
450 10-20 Silica sand (22001b)

GEOPHYSICAL LOGS _____
None.

COMMENTS Locking steel cap set in concrete at well
head. See Lt. Col. Robinson (1606th ABW/, SGPBE, KAFB)
ft, BGS=feet below ground surface

STATIC W.L. _____
378.5 ft BGS; 10 Feb 84

DEVELOPMENT _____
Bailed 2.5 hrs. On 13
Jan 84 Pumped 5.0 hrs.
@2gpm



WELL CONSTRUCTION SUMMARY

E-12

ARIS

SAMPLE TYPE SYMBOL	DEPTH	DESCRIPTION	COMMENTS
P	0	SILTY SAND - moderate yellow brown. 10YR 5/4 (dry color), gravel 10%	0-5 ft. logged from mud pit excavation
P	2.0	SANDY SILT - moderate yellow brown 10YR 6/4 (dry color) sand is coarse.	
P	3.0	SILTY SAND - very pale orange. 10YR 8/2 (dry color), sand is coarse	
P	3.2	SANDY SILT - moderate yellow brown 10YR 6/4 (dry color)	
	4.8	SILTY SAND - very pale orange 10YR 8/2	
C	10	SANDY SILT with interbeds of silty sand with gravel moderate yellow brown 10YR 5/4	
C	20	SILTY SAND light brown 5YR 5/6 poorly sorted sand is f to v.c. with gravel.	
C	30	To moderate yellow brown 10YR 5/3	
			41' Cuttings become micaceous
C	43	CLAYEY SILT stringers grade to	
C	47	SANDY SILT light brown 5YR 5/6 with clay, sand is f. grained.	
C	70	Color to moderate yellow brown 10YR 5/4	
CLIENT <u>Kirtland AFB</u>			SAI by <u>Culver</u>
LOCATION <u>Albuquerque, NM</u>			SHEET <u>1</u> of <u>4</u>
PROJECT No. <u>1-220-06-351-33</u>			BORING No. <u>DM-02</u>

CESA-04-81

FIELD LOG

E-13

KAFB-0213 to KAFB-0221
February 2009
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SAMPLE TYPE SYMBOL	DEPTH	DESCRIPTION	COMMENTS
C	75	SILTY SAND - moderate yellow brown 10YR 5/4, well graded, sand is quartzose	
C	81	SANDY SILT - moderate yellow brown 1-YR 6/4 sand is m.-f. grained.	
			98' increase induration
			101' decrease induration
C	119	SAND - moderate yellow brown (?), sand is V.C. to f grained, tr. silt, subarkosic (?), micaceous	
C	140	Gradational Change from 130 ft. to SANDY SILT with stringers of silty sand moderate yellow brown (?)	hole washing at 140 ft. show gravel fractions with ~10% limestone fragments.
C	150	SANDY SILT - sand fraction to ~10%	
			167' gravel 1 ft thick
C	175	SANDY CLAY - light brown 5YR 5/6 micaceous	
C	180	SANDY SILT - moderate yellow brown 10YR 5/4 (?)	
			200'-drilling mud thickening in the borehole.
C	210	SANDY CLAY - moderate yellow brown 10YR 5/2	
CLIENT <u>Kirtland AFB</u>			SAI by <u>Culver</u>
LOCATION <u>Albuquerque, NM</u>			SHEET <u>2</u> of <u>4</u>
PROJECT No. <u>1-220-06-351-33</u>			BORING No. <u>DM-02</u>

CESA-DL-81

FIELD LOG

E-14

KAFB-0213 to KAFB-0221
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SAMPLE TYPE SYMBOL	DEPTH	DESCRIPTION	COMMENTS
C	220	Interbedded with m. grained sand. Sand is 10% of 10 ft. section.	
C	230	SANDY CLAY dark yellow brown 10YR 4/2 with 25-30% interbeds of SILTY SAND dark yellow brown 10YR 2/2	darker color due to 1015% micritic limestone and basalt sand
C	260	SANDY SILT - pale yellow brown 1-YR 6/2 with interbeds of SILTY SAND, -well graded, quartzose with 5-10% limestone. Sandy interbeds are ½ to 2 ft thick and 20-30% of section.	
			270 - Gravel-6"thick.
			280-285ft-stringers of SILTY CLAY-Light olive gray 5YR 6/1
C	310	SILTY SAND - dark yellow brown 10YR 4/2 well graded from silt to gravel, sandy fraction is quartzose with subordinate limestone	
C	360	SILTY GRAVEL/SAND dark yellow brown 10YR 4/2 with interbeds of SANDY SILT	
	376	SANDY SILT/CLAY - no color recorded	
	378	SILTY GRAVEL as at 360 ft.	
CLIENT <u>Kirtland AFB</u>			SAI by <u>Culver</u>
LOCATION <u>Albuquerque, NM</u>			SHEET <u>3</u> of <u>4</u>
PROJECT No. <u>1-220-06-351-33</u>			BORING No. <u>DM-02</u>

CESA-DL-81

FIELD LOG

SAMPLE TYPE SYMBOL	DEPTH	DESCRIPTION	COMMENTS
C	379	SANDY SILT - moderate yellow brown 10YR 5/3, well graded, interbedded with SILTY SAND.	
C	392	SANDY SILT with gravelly interbeds 1 to 2 inches thick at 3 inch to 1-foot intervals	410 Gravel bedding not discernable
C	428	SILTY GRAVEL	
C	430	SILTY SAND - moderate yellow brown 10YR 5/2 with interbeds of SANDY SILT/CLAY	
C	450	SILTY SAND - pale yellow brown 10YR 6/2 sand is m-f grained.	TD=450 ft, BGS; Cuttings settled to 438 ft. BGS

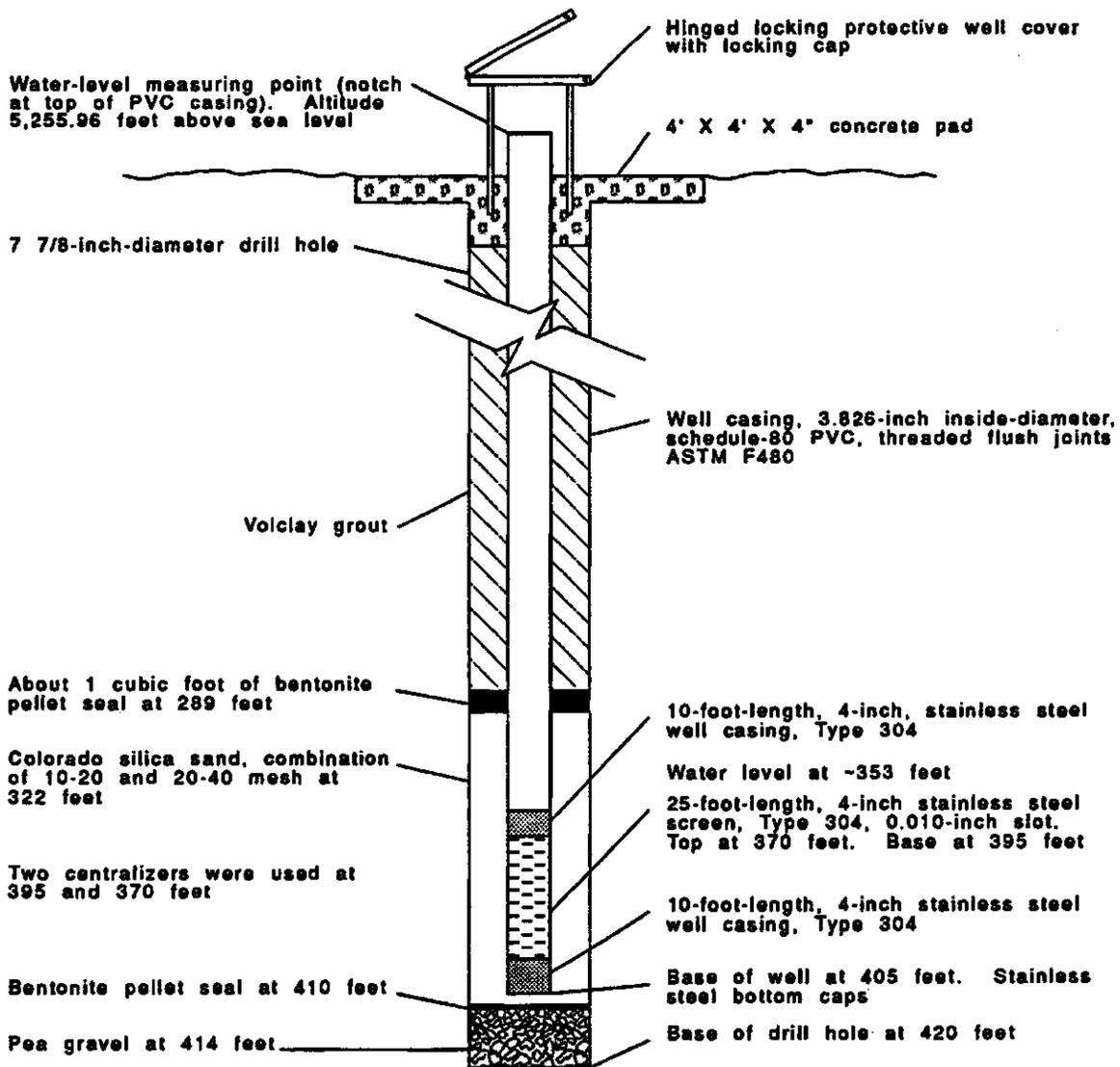
CLIENT Kirtland AFB
LOCATION Albuquerque, NM
PROJECT No. I-220-06-351-33



SAI by Culver
SHEET 4 of 4
BORING No. DM-02

CESA-DL-81

FIELD LOG
E-16



NOT TO SCALE

Well-completion diagram for monitoring well KAFB 0214. Drilled and completed by U.S. Geological Survey, Coal Branch, Denver, Colo. Started on 09-28-92, completed on 10-02-92. Well drilled using mud rotary method with Wyoming sodium bentonite drilling fluid. All depths are feet below land surface.

KAFB-0214

AR 1710

**Borehole Log
KAFB 0214**

Project name: Kirtland Air Force Base - Phase II, Stage 2A	Sheet 1 of 7
Project number: 463536001	Site: KAFB0214
Drilling Company: USGS	Location: Below trestle site
Date Started drilling: 16 Sep 91	Surface Elevation:
Drilling Method: Mud rotary	Drilling Crew: Dan Sweney, John Palmer
Borehole diameter: 77/8	Date completed drilling: 25 Sep 91
Drilling equipment: Gardner-Denver17w	Total Depth: 460
Logged by: Roybal, Gebhardt	Drilling Fluid: Air 0-4 ft., Mud 4-4 ft.
	Sample type:

<u>Date</u>	<u>Time</u>	<u>Depth(ft)</u>	<u>Drilling Speed (Min/ft)</u>	<u>Lithology and Remarks</u>
16-Sep-91		95-100		Primarily silt and silty clay (light chocolate brown color), some granules and small pebbles interspersed throughout trace of v coarse sand.
		100-105	Sample taken	Silty clay as before, more "bigger chunks" of clay. More granules and (smaller) pebbles than previous intervals. Particles are a variegated mix of color and mineral composition.
		105-110		Same as above.
		110-115		Same as above (shaving of white plastic found in sample)(surface casing).
		115-120	Sample taken	Clay - (not as silty as previously), light brown as before. Only a trace of any hard particles in this sample.
		120-125		Clay (as in previous interval). Small amount of coarse and v. course sand.
17-Sep-91		125-130		Light brown clay as before (several relatively large chunks). Slightly more silt (same color as clay), trace of v. coarse sand and granules. Trace of a distinct darker brown silt.
		130-135	Sample taken	Very similar to previous interval; although no dark brown silt and perhaps slightly more light brown silt.
		135-140		Almost entirely light brown clay as before. Small amount of light brown silt, trace of granules.
		140-145		Clay as in previous interval (but more silt), slightly more v. coarse sand and granules.

AR 1710

**Borehole Log
KAFB 0214**

Project name: Kirtland Air Force Base - Phase II, Stage 2A	Sheet 2 of 7
Project number: 463536001	Site: KAFB0214
Drilling Company: USGS	Location: Below trestle site
Date Started drilling: 16 Sep 91	Surface Elevation:
Drilling Method: Mud rotary	Drilling Crew: Dan Sweney, John Palmer
Borehole diameter: 7 7/8	Date completed drilling: 25 Sep 91
Drilling equipment: Gardner-Denver17w	Total Depth: 460
Logged by: Roybal, Gebhardt	Drilling Fluid: Air 0-4 ft., Mud 4-4 ft.
	Sample type:

<u>Date</u>	<u>Time</u>	<u>Depth(ft)</u>	<u>Drilling Speed (Min/ft)</u>	<u>Lithology and Remarks</u>
17-Sep-91		145-150		Light brown silty clay (as is previous interval). Sample how has about 50% particulates (med - v coarse sand, granules, and very small pebbles).
		150-155	Sample taken	Predominately granules and v. coarse sand. Still has significant amounts of brown silty clay (mostly silt), med - coarse sand, and small pebbles. Particles are a variegated mix of color and mineral composition and are surrounded to subangular.
		155-160		Granules and small pebbles (typically up to 8mm dim), overall slightly more coarse than previous interval(s). Some v. coarse sand, trace of silt, virtually no clay.
		160-165		Very similar to previous interval, only more silt and several clay balls.
		165-170	Sample taken	Same as above (previous interval)
		170-175		Predominately granules. Many small pebbles and v. coarse sand. Traces of silt and clay (still a few small clay balls).
		175-180		Same as previous interval.
		180-185	Sample taken	Granules, some v. coarse sand, some small pebbles (very similar to previous interval). Trace of silt, clay balls virtually absent.
		185-190	Same as above	Same as above (possibly slightly more silt).
		190-195		Granules, small pebbles, v. coarse sand similar to previous interval). Now has small amount of very light brown silt and several small pieces of brown clay.

**Borehole Log
KAFB 0214**

Project name: Kirtland Air Force Base - Phase II, Stage 2A	Sheet 3 of 7
Project number: 463536001	Site: KAFB0214
Drilling Company: USGS	Location: Below trestle site
Date Started drilling: 16 Sep 91	Surface Elevation:
Drilling Method: Mud rotary	Drilling Crew: Dan Sweney, John Palmer
Borehole diameter: 7 7/8	Date completed drilling: 25 Sep 91
Drilling equipment: Gardner-Denver17w	Total Depth: 460
Logged by: Roybal, Gebhardt	Drilling Fluid: Air 0-4 ft., Mud 4-4 ft.
	Sample type:

<u>Date</u>	<u>Time</u>	<u>Depth(ft)</u>	<u>Drilling Speed (Min/ft)</u>	<u>Lithology and Remarks</u>
17-Sep-91		195-200	Sample taken	Very light brown clay. Small pebbles (up to 10mm diam.), granules, some v. coarse sand, some silt (v. light brown).
		200-205		Very light brown clay and silt (as in previous interval) only now more silt than clay. Still fairly large amount of granules, small pebbles and v. coarse sand.
		205-210		Same as above, although there is a decrease in sand.
		210-215		Silty-clay light brown. Increase in clay from previous sample, decrease in sand, now medium grain sand with very few granule size grains.
	1326	215-220		Silty-clay, an increase of silt, sand size and amount has also increased, mostly limestone and felspar. Subangular to subrounded.
		220-225		Silty-clay, slight increase of clay content. Sand is slightly finer than previous sample.
		225-230	Sample taken	Silty-sand, very few balls of clay, sample composed mostly of coarse sand to pebbles 51 cm. Pebble-fragments, limestone, felspar and quartz make up majority of grains subrounded to subangular.
		230-235		Coarse sand and pebbles. Very little silt or clay in this sample. Same basic grain types and shape as previous sample, although over all size has increased \leq 18 mm.

Borehole Log
KAFB 0214

Project name: Kirtland Air Force Base - Phase II, Stage 2A Sheet 4 of 7
 Project number: 463536001 Site: KAFB0214
 Drilling Company: USGS Location: Below trestle site Surface Elevation:
 Date Started drilling: 16 Sep 91 Drilling Crew: Dan Sweney, John Palmer
 Drilling Method: Mud rotary Date completed drilling: 25 Sep 91 Total Depth: 460
 Borehole diameter: 7 7/8 Drilling Fluid: Air 0-4 ft., Mud 4-4 ft.
 Drilling equipment: Gardner-Denver17w Sample type:
 Logged by: Roybal, Gebhardt

<u>Date</u>	<u>Time</u>	<u>Depth(ft)</u>	<u>Drilling Speed (Min/ft)</u>	<u>Lithology and Remarks</u>
17-Sep-91	1410	235-240		Coarse sand to pebbles. Large pebbles ≤ 2 cm. are fragments. Types are the same size as increase. Shape changing from rounded to subangular. Some clay - believe it is from previous samples.
		240-245		Same as above.
	1434	245-250	Sample taken	Clay with coarse sand pebbles. Average size of pebbles decreasing, but still some large pieces ≤ 2 cm. Subrounded - subangular.
		250-255		Same as above, except for size has decreased, coarse sand and granules ≤ 3 mm.
		255-260		Predominately coarse sand and granules. Grains are a variegated mix of color and mineral composition, basically the same as described earlier, sub-round to subangular. Clay balls and an increase in silt is also present.
		260-265	Sample taken	Mostly silt with clay and coarse sand and pebbles. Grain composition basically the same as above, although grains are larger ≤ 15 mm. Numerous balls of grainy silt.
		265-270		Sandy-silt. Coarse sand with granules. Same mix of color and mineral composition. Few clay balls mixed in.
		270-275		Silty-sand. Same as above with the majority of substance being coarse sand to granules.

Borehole Log
KAFB 0214

Project name: Kirtland Air Force Base - Phase II, Stage 2A	Sheet 5 of 7
Project number: 463536001	Site: KAFB0214
Drilling Company: USGS	Location: Below trestle site
Date Started drilling: 16 Sep 91	Surface Elevation:
Drilling Method: Mud rotary	Drilling Crew: Dan Sweney, John Palmer
Borehole diameter: 7 7/8	Date completed drilling: 25 Sep 91
Drilling equipment: Gardner-Denver17w	Total Depth: 460
Logged by: Roybal, Gebhardt	Drilling Fluid: Air 0-4 ft., Mud 4-4 ft.
	Sample type:

<u>Date</u>	<u>Time</u>	<u>Depth(ft)</u>	<u>Drilling Speed (Min/ft)</u>	<u>Lithology and Remarks</u>
17-Sep-91		275-280		Silty-sand majority is granules (2-4 mm) and coarse sand. Grain composition is mostly limestone, felspar, and quartz. Large percentage of grains are fragments. Subrounded - subangular.
		280-285		Same as above, but less silt.
		285-290		Predominantly very coarse sand and granules. Large amount of pebbles \leq 1 cm. Variegated mix of color and mineral composition.
		290-295	Sample taken	Very large sample. Majority is granules (2-4 mm) with coarse sand and pebbles \leq 15 mm. Same grain composition as previous samples very little silt, very few clay balls.
	1729	295-300		Same as above.
		300-305		Almost identical to previous interval(s) only now virtually no silt or clay (only particulates.
		305-310		Same as previous interval.
		310-315		Very similar to previous interval only now a small amount of brown silt and silty clay.
		315-320	Sample taken	(Large recovery) Similar to previous intervals (v coarse sand, granules, and small pebbles (\leq 10 mm diam.), trace of silt, no clay.
		320-325		Same as previous interval.

Borehole Log
KAFB 0214

Sheet 6 of 7

Project name: Kirtland Air Force Base - Phase II, Stage 2A

Project number: 463536001

Drilling Company: USCS

Date Started drilling: 16 Sep 91

Drilling Method: Mud rotary

Borehole diameter: 7 7/8

Drilling equipment: Gardner-Denver17w

Logged by: Koybal, Gebhardt

Site: KAFB0214

Location: Below trestle site

Surface Elevation:

Drilling Crew: Dan Sweney, John Palmer

Date completed drilling: 25 Sep 91

Total Depth: 460

Drilling Fluid: Air 0-4 ft., Mud 4-4 ft.

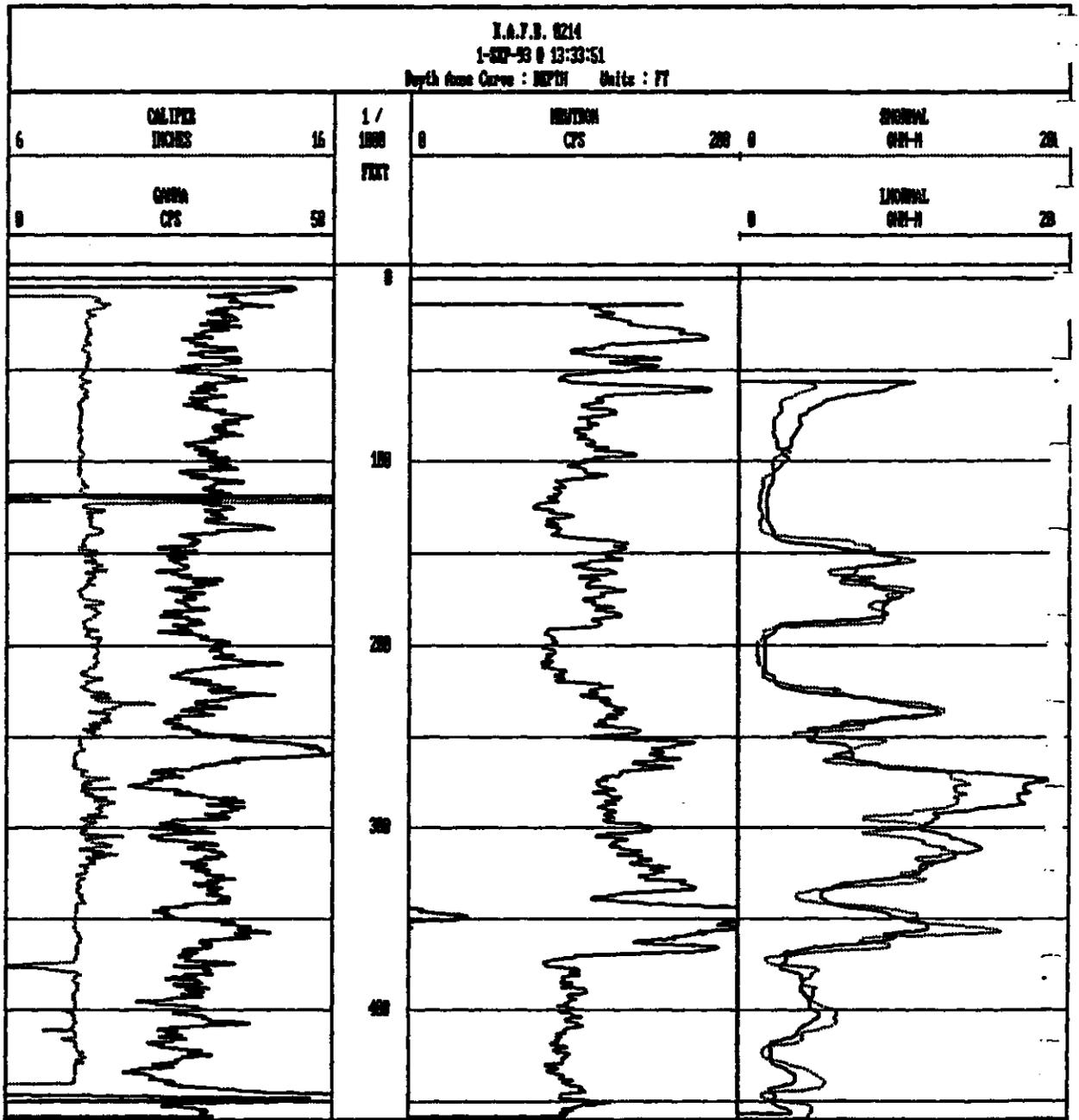
Sample type:

Date	Time	Depth(ft)	Drilling Speed (Min/ft)	Lithology and Remarks
25-Sep-91		325-330		Predominantly granules and small pebbles (< 10 mm diam.), very similar to previous interval(s). Some v coarse sand (all poorly sorted, subrounded to subangular, variegated color and mineral composition). Small amount of silt.
		330-335	Sample taken	Same as above.
		335-349		Same as above.
		340-345	Sample taken	Similar to above, only now additionally has large amount of sandy (v fine - med grained) silty clay (more silt than clay).
		345-350		Poorly sorted mix of sand, silt, granules, and small pebbles. (Fewer and smaller pebbles than last several intervals). Trace of clay.
		350-355		Silt, poorly sorted sand, granules. Trace of small pebbles. No clay.
		355-360		Granules and silt. Small amount of poorly sorted sand (mostly v coarse grained), trace of small pebbles, no clay.
		360-365	Sample taken	Granules, silt, and small pebbles, some sand (mostly v coarse), small amount of clay.
		365-370		Granules, silt, v coarse sand. Small amount of v fine - coarse sand. Trace of small pebbles. Slight trace of silty clay.
		370-375		Small as previous interval.
		375-380		Very similar to previous interval only slightly more silt and finer-grained sand. (Overall appearance is less coarse than previous interval).
		380-385	Sample taken	Granules, silt, v coarse sand, trace of small pebbles, trace of fine-med sand. No clay>
		385-390		Same as previous interval.
		390-395		Same as previous interval.
		395-400		Same as previous interval.
		400-405	Sample taken.	Same as previous interval.

**Borehole Log
KAFB 0214**

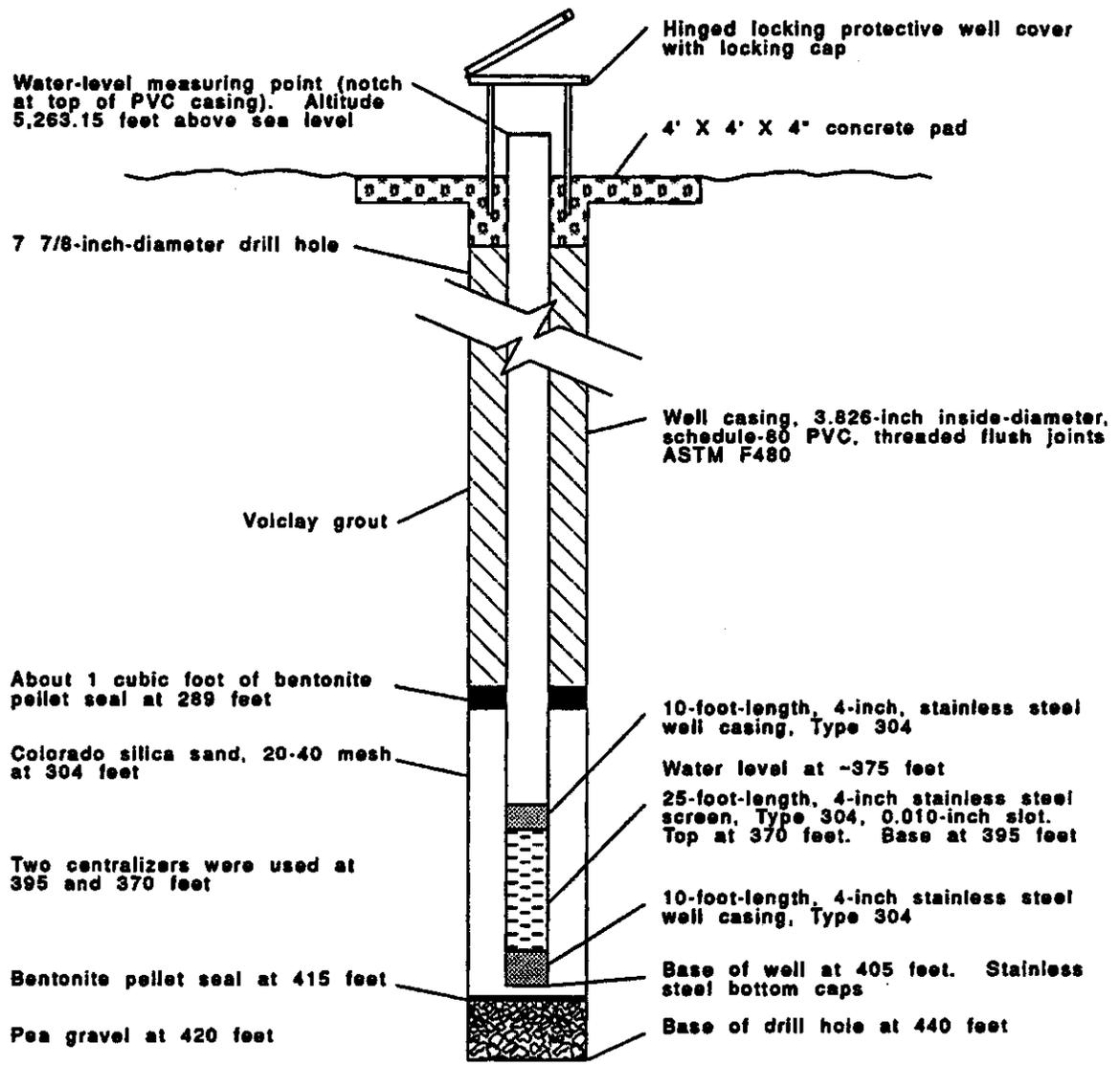
Project name: Kirtland Air Force Base - Phase II, Stage 2A	Sheet 7 of 7
Project number: 463536001	Site: KAFB0214
Drilling Company: USGS	Location: Below trestle site
Date Started drilling: 16 Sep 91	Surface Elevation:
Drilling Method: Mud rotary	Drilling Crew: Dan Sweney, John Palmer
Borehole diameter: 77/8	Date completed drilling: 25 Sep 91
Drilling equipment: Gardner-Denver17w	Total Depth: 460
Logged by: Roybal, Gebhardt	Drilling Fluid: Air 0-4 ft., Mud 4-4 ft.
	Sample type:

<u>Date</u>	<u>Time</u>	<u>Depth(ft)</u>	<u>Drilling Speed (Min/ft)</u>	<u>Lithology and Remarks</u>
25-Sep-91		405-410		Predominantly coarse sand and granules, with some silt. Subrounded to subangular. Variegated color and mineral composition (mostly limestone, felspar, quartz).
		410-415		Basically same as above, however, there is less amount of silt.
		415-420		Same as above.
		420-425		Same as above.
		425-430		Similar to above, it appears there is an increase of silt.
		430-435	Sample taken	Same color and mineral composition of coarse sand and granules, however, they are on the decrease. Increase in silt and a few small clay balls. There also appears to be some small amounts of ash balls ≈ 1 cm. in diameter before being crushed.
		435-440		Same as above, but no ash balls in this sample.
		440-445		Same as above (no ash balls)
		445-450		Granules, very coarse sand, small pebbles, some silt, no clay.
		450-455		Same as above.
		455-460		Similar to above only with more pebbles. (Typically 4-6 mm. diam.)



KAFB-0214

AR 1710



NOT TO SCALE

Well-completion diagram for monitoring well KAFB 0215. Drilled and completed by U.S. Geological Survey, Coal Branch, Denver, Colo. Started on 10-10-92, completed on 10-13-92. Well drilled using mud rotary method with Wyoming sodium bentonite drilling fluid. All depths are feet below land surface.

KAFB-0215

AR 1710

Borehole Log
KAFB0215

Project name: Kirtland Air Force Base - Phase II, Stage 2A Sheet 1 of 5
 Project number: 463536001 Site: KAFB0215
 Drilling Company: USGS Location: Surface Elevation:
 Date Started drilling: 10 Oct 91 Drilling Crew: Art Clark, Dan Sweney
 Drilling Method: Hollow stem
 augering/mud rotary
 Borehole diameter: 7 7/8 Date completed drilling: 12 Oct 91 Total Depth: 440
 Drilling equipment: Gardner-Denver17w Drilling Fluid: Bentonite
 Logged by: Gebhardt, Roybal Sample type:

<u>Date</u>	<u>Time</u>	<u>Depth(ft)</u>	<u>Drilling Speed (Min/ft)</u>	<u>Lithology and Remarks</u>
10-Oct-91		15-20	Sample taken	Gravel - pebbles - very coarse sand \leq 13 mm. Predominately gravel. Clay silt dark in color. Grains are a variegated mix of color and minerals - mainly limestone, felspar, and quartz. Numerous fragments of pebbles. Angular to subrounded. Poorly sorted.
		20-25		Same as above, however there is an average decrease in grain size \leq 10 mm.
		25-30	Sample taken	Silt. Majority of all sample is silt. There are very few amounts of clay balls. The amount of grains dropped considerably, the size also decreased \leq 6 mm, same basic mineral types and colors. Predominately gravel 2-4 mm.
		30-40		Same as above.
		40-45	Sample taken	Basically same as above silt with few clay balls. However there is fragmented subrounded pebbles \leq 20 mm, with a slight increase of gravel.
		45-75		Silt. Majority of this sample is silt. Few clay balls. Grain sizes vary from coarse sand - gravel - pebbles \leq 6 mm. There are very few grains.
		75-80	Sample taken	Same as above.

AR 1710

**Borehole Log
KAFB0215**

Project name: Kirtland Air Force Base - Phase II, Stage 2A	Sheet 2 of 5	
Project number: 463536001	Site: KAFB0215	
Drilling Company: USGS	Location:	Surface Elevation:
Date Started drilling: 10 Oct 91	Drilling Crew: Art Clark, Dan Sweney	
Drilling Method: Hollow stem augering/mud rotary		
Borehole diameter: 7 7/8	Date completed drilling: 12 Oct 91	Total Depth: 440
Drilling equipment: Gardner-Denver17w	Drilling Fluid: Bentonite	
Logged by: Gebhardt, Roybal	Sample type:	

<u>Date</u>	<u>Time</u>	<u>Depth(ft)</u>	<u>Drilling Speed (Min/ft)</u>	<u>Lithology and Remarks</u>
10-Oct-91		80-85		Same as above.
		85-100		Silt. Still the majority of sample is silt, with a slight decrease in the amount of clay. There is an increase in coarse sand and gravel \leq 4 mm, with very few pieces of grains larger than 4 mm. The same basic minerals make up of grains - limestone, feldspar, and quartz.
		100-105	Sample taken.	Gravel - coarse sand and fragment pebbles \leq 16 mm. Majority of this sample is coarse grains subangular to subrounded, poorly sorted. Same minerals as previous samples. There are small amounts of silt and a few clay balls.
		105-110		Silt and gravel. This sample is about 50% silt and 50% coarse grains. Coarse sand to gravel \leq 4 mm. There are a few clay balls.
		110-115	Sample taken	Silty-clay. Increase in clay content. Grains decreased in number and size. Medium to coarse sand, however the same mineral content.
		115-120		Same as above.

**Borehole Log
KAFB0215**

Project name: Kirtland Air Force Base - Phase II, Stage 2A	Sheet 3 of 5
Project number: 463536001	Site: KAFB0215
Drilling Company: USGS	Location:
Date Started drilling: 11 Oct 91	Surface Elevation:
Drilling Method: Hollow stem augering/mud rotary	Drilling Crew: Art Clark, Dan Sweney
Borehole diameter: 77/8	Date completed drilling: 12 Oct 91 Total Depth: 440
Drilling equipment: Gardner-Denver17w	Drilling Fluid: Bentonite
Logged by: Gebhardt, Roybal	Sample type:

<u>Date</u>	<u>Time</u>	<u>Depth(ft)</u>	<u>Drilling Speed (Min/ft)</u>	<u>Lithology and Remarks</u>
11-Oct-91		120-180 140-145	Sample taken	Predominately silt with some clay balls (clay content varies slightly with varying depth). Only slight trace of particles in samples but a significant amount of very fine-medium grained sand noticed in effluent from de-sander unit.
		180-185		Silt with clay as above, however sample now has large amount of granule-sized particles and a small amount of small pebbles.
		185-195		Granules as above (granules are surrounded-subangular mix of color and mineral composition). Small amount of small pebbles, small amount of silt. No clay.
		195-210		Granules (as above), some small pebbles, trace of silt, several clay balls.
		210-220		Granules (as above), small pebbles, trace of silt, trace of clay balls.
		220-240 220-225	Sample taken	Silt and clay. Primarily brown silt (as previously) with several clay balls (same color as silt). Traces of sand and granules.
		240-245	Sample taken	Granules, pebbles (\leq 10 mm diam.), very coarse sand, several "pieces" of clay. Trace of silt.

Borehole Log
KAFB0215

Project name: Kirtland Air Force Base - Phase II, Stage 2A
 Project number: 463536001
 Drilling Company: USGS
 Date Started drilling: 11 Oct 91
 Drilling Method: Hollow stem augering/mud rotary
 Borehole diameter: 7 7/8
 Drilling equipment: Gardner-Denver17w
 Logged by: Gebhardt, Roybal

Site: KAFB0215
 Location:
 Drilling Crew: Art Clark, Dan Sweney

Surface Elevation:
 Date completed drilling: 12 Oct 91
 Drilling Fluid: Bentonite
 Total Depth: 440
 Sample type:

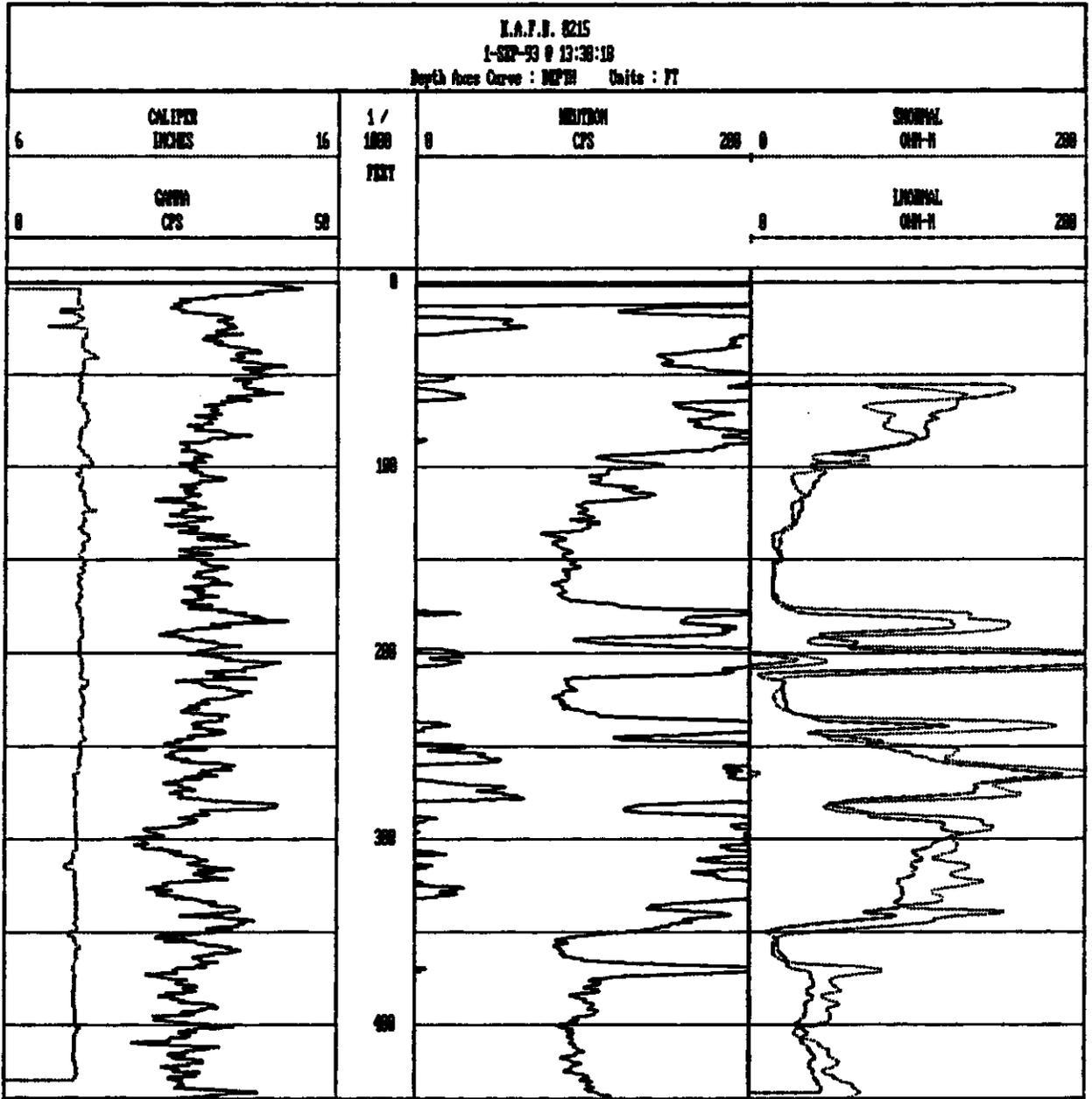
Sheet 4 of 5

<u>Date</u>	<u>Time</u>	<u>Depth(ft)</u>	<u>Drilling Speed (Min/ft)</u>	<u>Lithology and Remarks</u>
11-Oct-91		245-265		Granules, small pebbles, very coarse sand (a lot of very fine - coarse sand noticed in discharge from de-sanding unit). Lots of silt, trace of clay.
		265-290 270-275	Sample taken	Granules, small pebbles, very coarse sand (and other finer sand grains seen in discharge from de-sanding unit). Virtually no silt. Small amount of clay
		290-295		Same as above only much more clay.
		295-300		Same as above only virtually no clay.
		300-310		Same as above only more clay.
		310-320		Same as above only very little clay, more silt.
12-Oct-91		320-325 320-325	Sample taken	Same as above (granules, small pebbles, very coarse sand), some clay, some silt.
		335-340		Same as above only now has large amount of silt.
		340-355 350-355	Sample taken	Generally more coarse than before. Small pebbles and granules make up most of sample. Some very coarse sand. Small amount of silt. No clay.
		355-360		Granules, pebbles, very coarse sand. Large amount of silt, no clay (fine-very coarse sand in discharge from desander) (fewer pebbles than previous intervals).
		360-365		Granules, very coarse sand, lot of clay, few pebbles. Some silt.

**Borehole Log
KAFB0215**

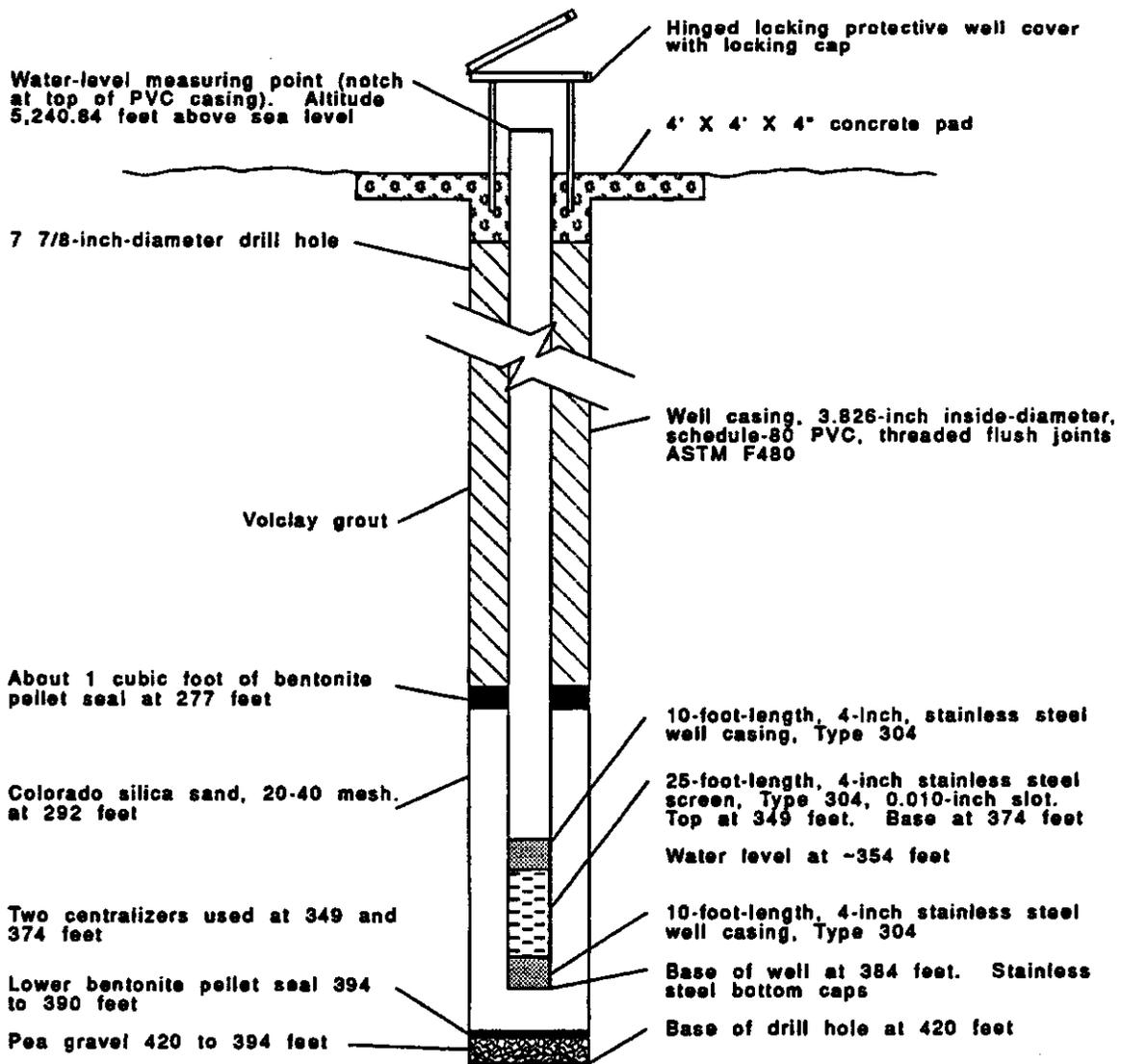
Project name: Kirtland Air Force Base - Phase II, Stage 2A		Sheet 5 of 5
Project number: 463536001	Site: KAFB0215	
Drilling Company: USGS	Location:	Surface Elevation:
Date Started drilling: 11 Oct 91	Drilling Crew: Art Clark, Dan Sweney	
Drilling Method: Hollow stem augering/mud rotary		
Borehole diameter: 7 7/8	Date completed drilling: 12 Oct 91	Total Depth: 440
Drilling equipment: Gardner-Denver17w	Drilling Fluid: Bentonite	
Logged by: Gebhardt, Roybal	Sample type: Drill cuttings	

<u>Date</u>	<u>Time</u>	<u>Depth(ft)</u>	<u>Drilling Speed (Min/ft)</u>	<u>Lithology and Remarks</u>
12-Oct-91		365-385		Silt and sand (all sizes of granules, very poorly sorted). Trace of granules, no clay. Sample was primarily silt at 365' and gradually graded into primarily sand (with some silt) by 385'. No pebbles.
		385-425		Coarse and very coarse sand, some granules (very similar to above intervals). Some silt, small amount of clay. No pebbles (no gravel). Fine - very coarse-grained sand in discharge from de-sander unit.
		425-440		Same as above.



KAFB-0215

AR 1710



NOT TO SCALE

Well-completion diagram for monitoring well KAFB 0216. Drilled and completed by U.S. Geological Survey, Coal Branch, Denver, Colo. Started on 07-10-92, completed on 07-14-92. Well drilled using mud rotary method with Wyoming sodium bentonite drilling fluid.

KAFB-0216

AR1710

Borehole Log
KAFB0216

Project name: Kirtland Air Force Base - Phase II, Stage 2A Sheet 1 of 1
 Project number: 463536001 Site: KAFB0216
 Drilling Company: USGS Location: Kirtland AFB Surface Elevation:
 Date Started drilling: 1 Feb 92 Drilling Crew: Dan Sweney, Dean Bohn
 Drilling Method: Hollow stem auguring/Mud rotary Date completed drilling: Total Depth:
 Borehole diameter: 7 7/8 Drilling Fluid: Bentonite
 Drilling equipment: Gardner-Denver 17w Sample type:
 Logged by: F. Gebhardt

<u>Date</u>	<u>Time</u>	<u>Depth(ft)</u>	<u>Recovery</u>	<u>Lithology and Remarks</u>
1-Feb-92		3-4	1.2'	Silty - sand. Sand fine - med. Moderate brown 5 YR 4/4. In the root zone. A few pieces of gravel \leq 5 mm limestone.
		5.5-9.5	3.7'	The upper .7' is fine - coarse sand subangular -subrounded poorly sorted. Light brown 5 YR 5/6. Mixed with limestone gravel \leq 2 cm. The rest of sample are layers of clay and silt alternating approximately 2 - .3 of a foot. Clay moderate brown 5 YR 4/4. Silt 5 YR 5/6. No gravel mixed with either clay or silt.
		23-26	3.3'	Coarse sand and gravel. Subrounded - subangular. Gravel \leq 3 mm. Mineral limestone felspar and quartz. There are a few pieces of gravel up to 3 cm - limestone.
		48-52	4.5'	Upper 1.6' is silty - fine sand mixed caliche nodules an limestone gravel \geq 3 mm, few gravel \geq 2 cm. the next 2.2' was silt. Moderate Yellowish brown, with caliche nodules. The last .7' was layers of silt and clay with a little caliche.
1-Feb-92		98-100	2.6'	Majority of sample is silt 5 YR 5/6. Mixed in the silt is limestone gravel \leq 6 mm. there are also caliche nodules \leq 20 mm. At 98.5 there is a layer of clay.

AR 1710

Borehole Log
KAFB0216

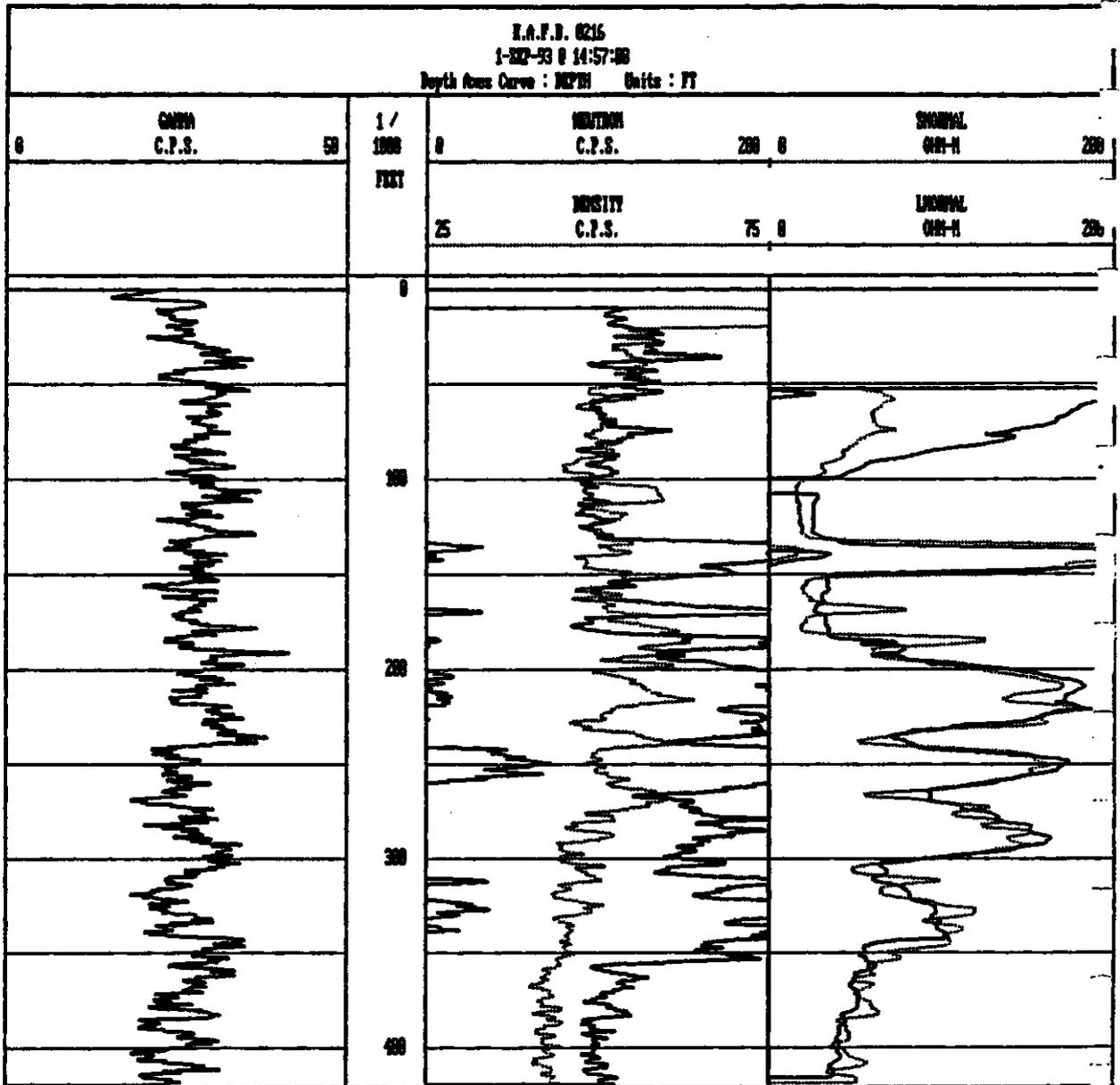
Project name: Kirtland Air Force Base - Phase II, Stage 2A Sheet 1 of 2
 Project number: 463536001 Site: KAFB0216
 Drilling Company: USGS Location: Surface Elevation:
 Date Started drilling: 11 Jul 92 Drilling Crew: Dan Sweney, Todd Hunter, Dean Bohn
 Drilling Method: Mud rotary
 Borehole diameter: 7 7/8 Date completed drilling: 17 Jul 92 Total Depth: 420
 Drilling equipment: Gardner-Denver17w Drilling Fluid: Bentonite
 Logged by: Gebhardt, Roybal Sample type:

<u>Date</u>	<u>Time</u>	<u>Depth(ft)</u>	<u>Drilling Speed (Min/ft)</u>	<u>Lithology and Remarks</u>
7-11-92		0-100		Not sampled - This interval already logged during 100-foot augering.
		100-130		Predominately clay - appears to be two types: a soft milk-chocolate-colored type, and a much harder (almost brittle) type that has slightly lighter coloration. Small amount of gravel up to about 15 mm diam. ranging from angular to subrounded. Small amount of granules - very coarse sand.
		130-140		Soft brown clay, trace of granules, small amount of very small gravel (≤ 10 mm diam.) at bottom of interval.
		140-165		Gravel and granules. Gravel generally ≤ 15 mm diam. subrounded to subangular. Small amount of brown clay at bottom of this interval.
		165-175		Brown clay - again two types - a soft greyish brown and a slightly harder stickier, more brownish type. Small amount of granules and small gravel (≤ 10 mm diam.).
		175-195		Predominately brown, and greyish-brown clays as before, but now much higher percentage of small gravel - very coarse sand (estimated at 30-40%).
		195-210		Granules, small gravel, coarse sand. Still has about 20-25% clay content (majority of particles are subrounded to subangular.

**Borehole Log
KAFB0216**

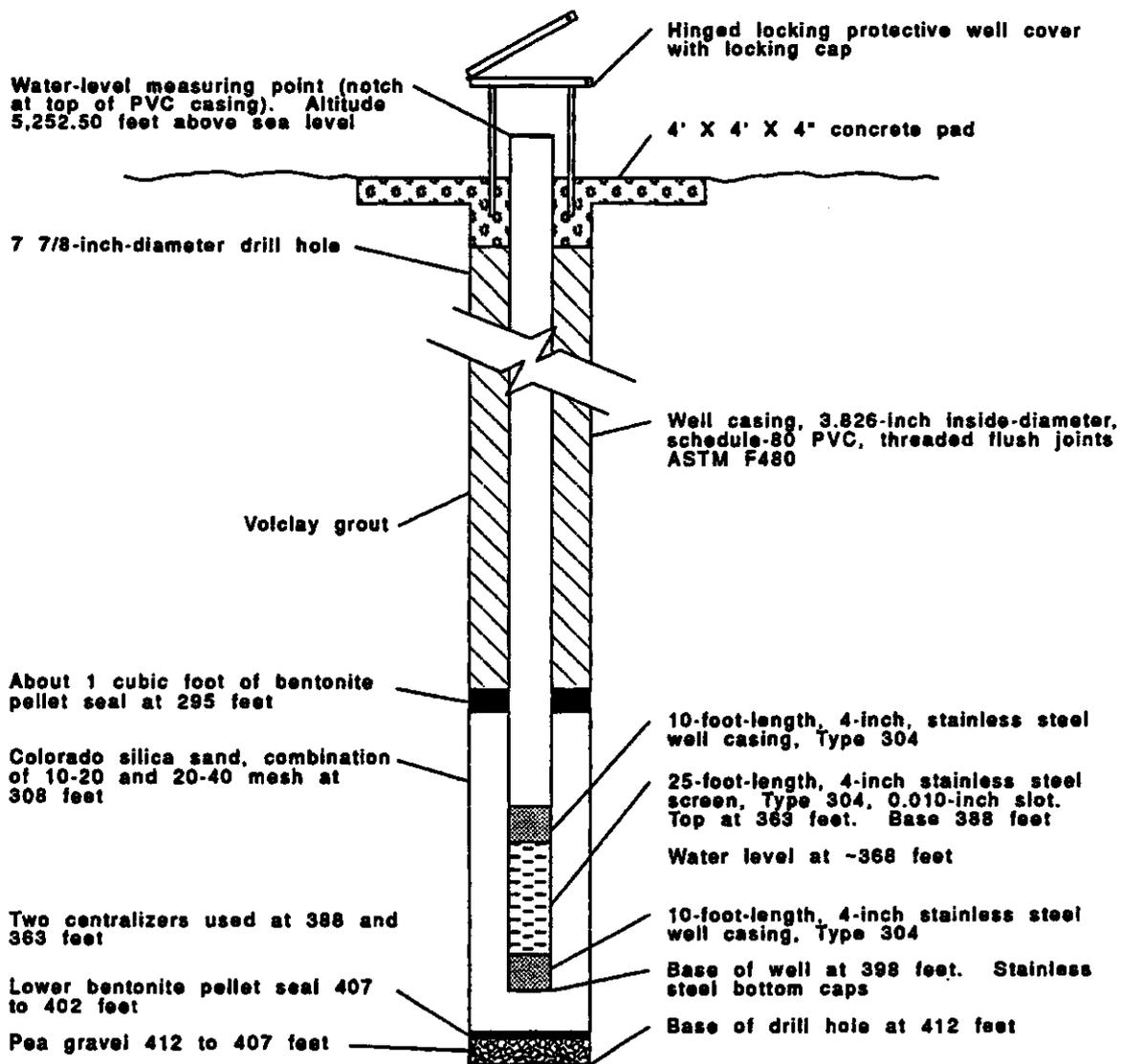
Project name: Kirtland Air Force Base - Phase II, Stage 2A	Sheet 2 of 2	
Project number: 463536001	Site: KAFB0216	
Drilling Company: USGS	Location:	Surface Elevation:
Date Started drilling: 11 Jul 92	Drilling Crew: Dan Sweney, Todd Hunter, Dean Bohn	
Drilling Method: Mud rotary	Date completed drilling: 17 Jul 92	Total Depth: 420
Borehole diameter: 77/8	Drilling Fluid: Bentonite	Sample type:
Drilling equipment: Gardner-Denver17w	Logged by: Gebhardt, Roybal	

<u>Date</u>	<u>Time</u>	<u>Depth(ft)</u>	<u>Drilling Speed (Min/ft)</u>	<u>Lithology and Remarks</u>
7-11-92		210-250		Small gravel (\leq 15 mm diam.) and coarse sand primarily granule-sized. Small amount of brown clay.
		250-260		Small gravel and coarse sand (as in previous interval) but now above 50% brown clay.
		260-310		Small gravel (\leq 15 mm diam.) and coarse sand. Majority of particles are granule-sized, as in previous intervals. Majority of particles are well-rounded to subangular.
		310-335		Same as interval above, only now also has about 20% brown clay.
		335-355		Very small gravel (generally \leq 10 mm diam.) and coarse sand. Estimate that over 80% of particles are granule-sized. Trace amounts of clay noted at top and bottom of this interval.
		355-360		Same as previous interval only more clay.
		360-380		Same as interval 335-355 above.
		380-420		Same as intervals just above, but now about 20% soft brown clay in all samples.



KAFB-0216

AR 1710



NOT TO SCALE

Well-completion diagram for monitoring well KAFB 0217. Drilled and completed by U.S. Geological Survey, Coal Branch, Denver, Colo. Started on 07-16-92, completed on 07-20-92. Well drilled using mud rotary method with Wyoming sodium bentonite drilling fluid. All depths are in feet below land surface.

KAFB-0217

AR 1710

Borehole Log
KAFB0217

Project name: Kirtland Air Force Base - Phase II, Stage 2A Sheet 1 of 1
 Project number: 463536001 Site: KAFB0217
 Drilling Company: USGS Location: Kirtland AFB Surface Elevation:
 Date Started drilling: 2 Feb 92 Drilling Crew: Dan Sweney, Dean Bohn
 Drilling Method: Hollow stem auguring/Mud rotary Date completed drilling: Total Depth:
 Borehole diameter: 7 7/8 Drilling Fluid: Bentonite
 Drilling equipment: Gardner-Denver 17w Sample type:
 Logged by: F. Gebhardt

<u>Date</u>	<u>Time</u>	<u>Depth(ft)</u>	<u>Recovery</u>	<u>Lithology and Remarks</u>
2-Feb-92		3-8	4.8' Sample taken at 5 feet	Upper 2.5' is a hard packed silt - moderate brown 5 YR 4/4, end the root zone. The next 1.7' is also silt, the majority of this section is less packed than upper but there are layers of extremely had pack, the color is also different Dark Yellowish brown 10 YR 4/2. The lower .6' is silt light brown 5 YR 5/6 mixed with gravel ≤1 cm. Mineral appear to be limestone and quartz. Majority of gravel is less than 2 mm coarse sand.
		23- 27.5	4.3' Sample taken at 25 feet	The majority of this sample is the same as the lower .6' of previous sample, except a few pieces of gravel were layer 3 cm. At 25 feet was a small layer of coarse sand and gravel ≤3 mm, mixed with the silt. The last .8' was entire silt with very small amounts of limestone coarse sand.
2-Feb-92		48-50.5	3.3'	Upper 2.1' is has packed silt. Light brown 5 YR 6/5. The lower 1.2' is a mixture of hard packed silt and clary color is darker, moderate brown 5 YR 4/4. Throughout entire sample is a small amount of caliche modules.
3-Feb-92		98-101	3.1'	Same as above, with exception of no clay. Darker silt 98' - 100.2' lower section is the lighter silt 5 YR 6/5.

AR 1710

**Borehole Log
KAFB0217**

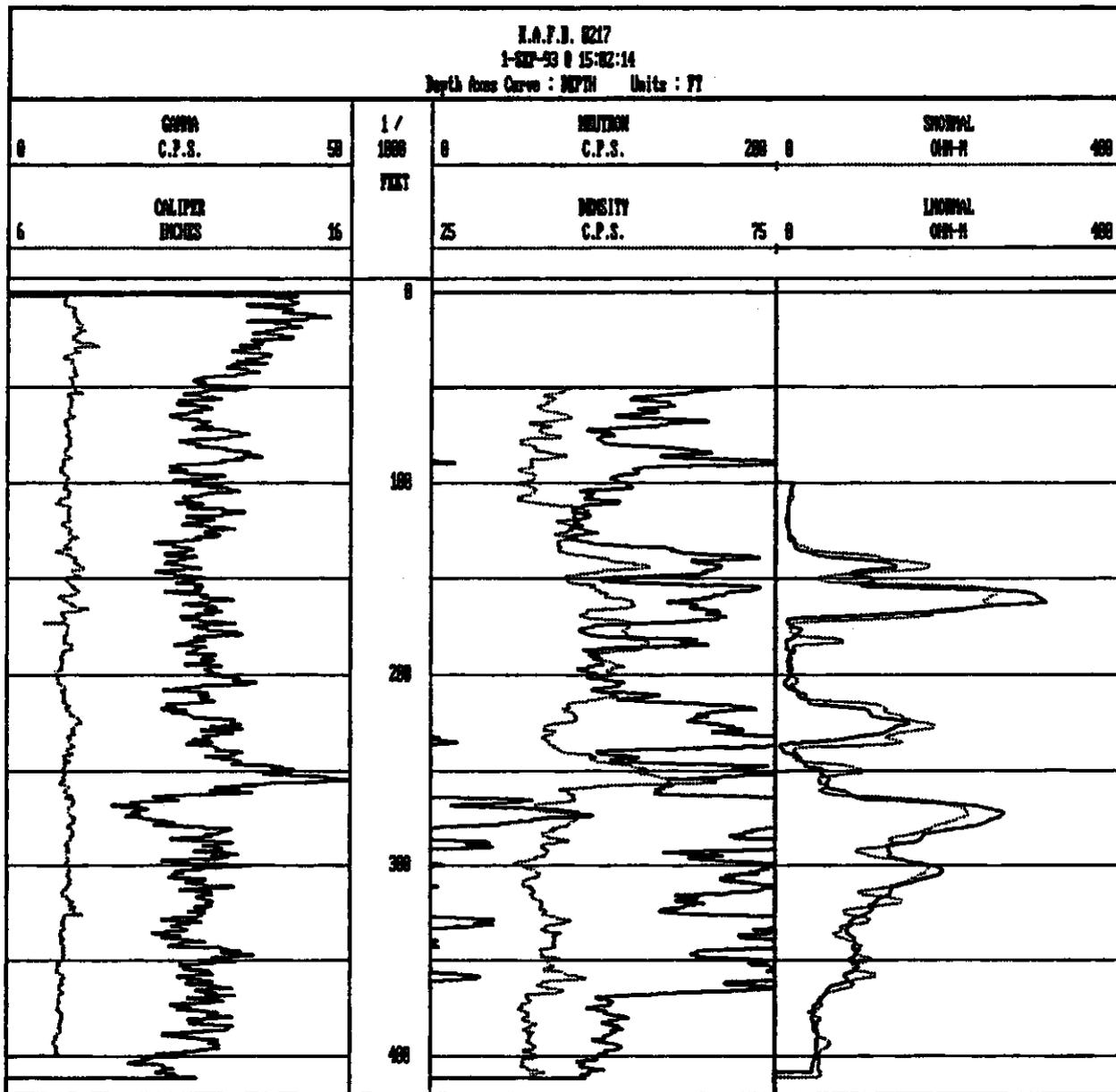
Project name: Kirtland Air Force Base - Phase II, Stage 2A	Sheet 1 of 3
Project number: 463536001	Site: KAFB0217
Drilling Company: USGS	Location:
Date Started drilling: 16 Jul 92	Surface Elevation:
Drilling Method: Mud rotary	Drilling Crew: Dan Sweney, Todd Hunter, Dean Bohn
Borehole diameter: 7 7/8	Date completed drilling: 17 Jul 92 Total Depth: 410
Drilling equipment: Gardner-Denver17w	Drilling Fluid: Bentonite
Logged by: Gebhardt, Roybal	Sample type:

<u>Date</u>	<u>Time</u>	<u>Depth(ft)</u>	<u>Drilling Speed (Min/ft)</u>	<u>Lithology and Remarks</u>
7-11-92		100-120		Brown silt. Small amount of granule-sized particles with trace of coarse sand and small (≤ 10 mm diam.). Gravel.
		120-140		Brown clay - very sticky when wet. Some silt and granules intermixed.
7-17-92		140-145		Granules, particle sizes range from coarse sand - small gravel (≤ 10 mm diam.), but primarily granule-sized. Small amount of brown clay, trace of brown silt.
		145-155		Coarse sand - small gravel (≤ 10 mm diam.). Majority of particles are granules (widely ranging color and mineral composition; subrounded to subangular).
		155-160		Same as previous interval but also now has about 50% brown clay/brown silt.
		160-170		Same as previous interval, but now about 20% clay/silt.
		170-180		Granules, coarse sand, small gravel (see description for 145-155)
		180-190		Approximately 50% granules (and similarly-sized particles) and 50% brown clay.
		190-210		Sticky brown clay. Small amount of coarse sand - very small gravel (primarily granule-sized, as before).

KAFB0217

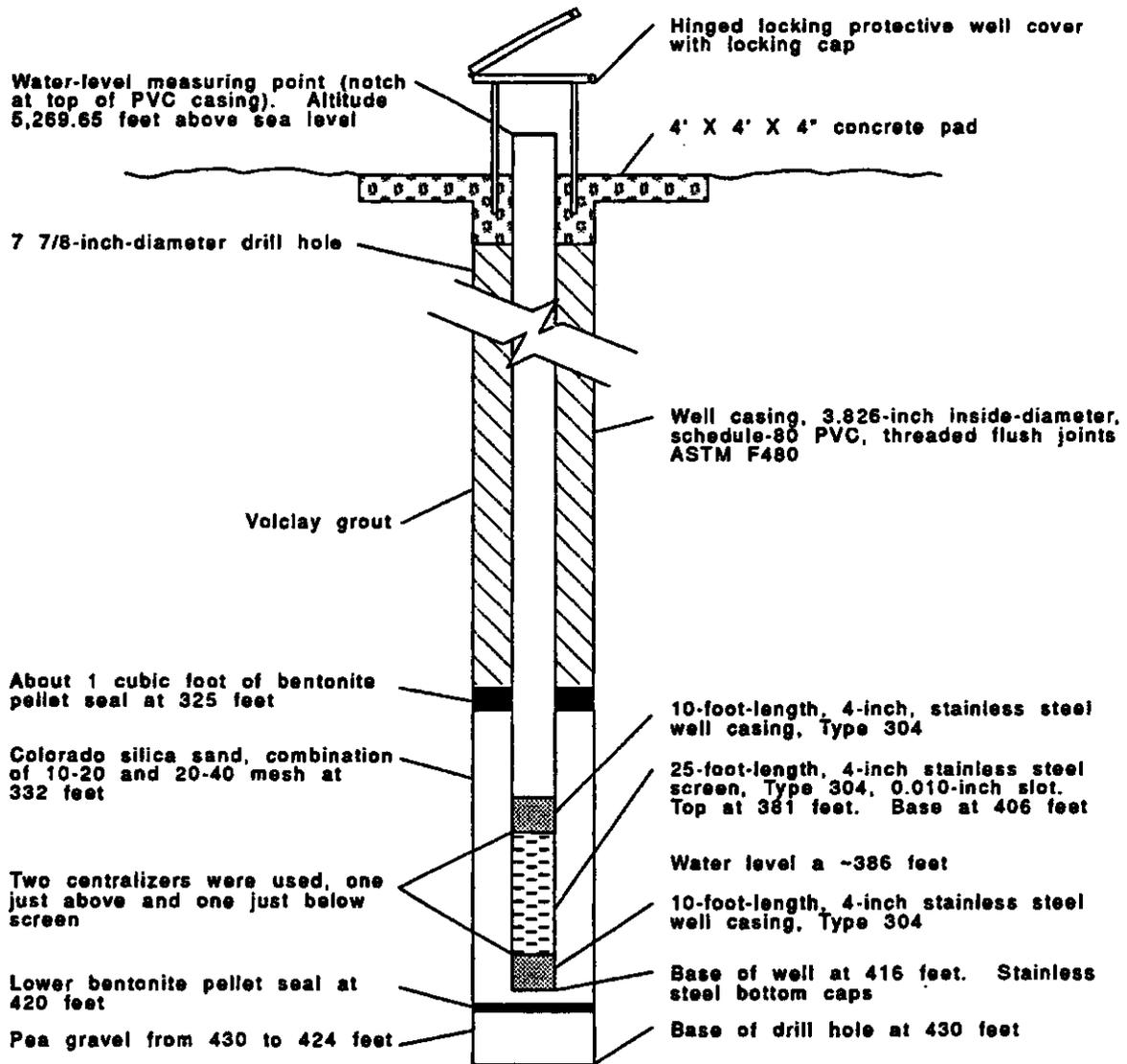
Project name: Kirtland Air Force Base - Phase II, Stage 2A Sheet 3 of 3
 Project number: 463536001 Site: KAFB0217
 Drilling Company: USGS Location: Surface Elevation:
 Date Started drilling: 16 Jul 92 Drilling Crew: Dan Sweney, Todd Hunter, Dean Bohn
 Drilling Method: Mud rotary Date completed drilling: 17 Jul 92 Total Depth: 410
 Borehole diameter: 7 7/8 Drilling Fluid: Bentonite
 Drilling equipment: Gardner-Denver17w Sample type:
 Logged by: Gebhardt, Roybal

<u>Date</u>	<u>Time</u>	<u>Depth(ft)</u>	<u>Drilling Speed (Min/ft)</u>	<u>Lithology and Remarks</u>
7-17-92		345-365		About 50% brown clay, 50% particles, primarily granule-sized but ranging from coarse sand - small gravel (≤ 10 mm diam.).
		365-370		Brown clay, small amount of granules.
		370-410		Granules (coarse sand - small gravel). Small amount of clay in most of the samples.



KAFB-0217

AR 1710



NOT TO SCALE

Well-completion diagram for monitoring well KAFB 0218. Drilled and completed by U.S. Geological Survey, Coal Branch, Denver, Colo. Started on 06-09-92, completed on 06-12-92. Well drilled using mud rotary method with Wyoming sodium bentonite drilling fluid. All depths are in feet below land surface.

KAFB-0218

AR1710

Borehole Log
KAFB0218

Project name: Kirtland Air Force Base - Phase II, Stage 2A Sheet 1 of 4
 Project number: 463536001 Site: KAFB0218
 Drilling Company: USGS Location: Landfill 1 Surface Elevation:
 Date Started drilling: 14 Feb 92 Drilling Crew: Dan Sweney, John Palmer, Dean bohn
 Drilling Method: Hollow stem auguring Date completed drilling: Total Depth:
 Borehole diameter: 7 7/8 Drilling Fluid: Air 0-4 ft., Mud 4-4 ft.
 Drilling equipment: Gardner-Denver17w Sample type:
 Logged by: G. Robyal, F. Gebhardt

<u>Date</u>	<u>Time</u>	<u>Depth(ft)</u>	<u>Drilling Speed (Min/ft)</u>	<u>Lithology and Remarks</u>
14-Feb-92	0850	3-8	37" (3.1")	Light brown silt and v. fine sand. Small amount of gravel throughout. Three small lenses with very high percentage of gravel (up to 30 mm diam.).
	0902	8-10	50" (4.1")	Light brown silt and v. fine sand. Several small lenses of gravel. (Some gravel throughout).
	0910	13-18	57" (4.8")	Silt and v. fine sand similar to above, but now slight amount of clay intermixed and no gravel (in upper 40 inches). More tightly packed than before. Small amount of caliche.
	0930	18-23	57" (4.8")	Silt and v. fine sand. Trace of gravel. Trace of caliche. Several small gravel lenses.
	0947	23-28	63" (5.2")	Silt and v. fine - fine sand similar to above. Trace of gravel in some places. Small amount of caliche near bottom.
	1006	28-33	61" (5.1")	Silt and v. fine - fine sand as above. Some caliche throughout sample but particularly near top. Tightly packed silty sand (v. fine - fine) from 29 - 31. Trace of small gravel in lower 12-15 inches.
	1025	33-34.5	18" (1.5")	V. fine - fine sand, small amount of silt. Trace of coarse sand, small amount of gravel throughout. Shoe had several large pieces of (very angular) limestone.

AR 1710

Borehole Log
KAFB0218

Project name: Kirtland Air Force Base - Phase II, Stage 2A	Sheet 2 of 4
Project number: 463536001	Site: KAFB0218
Drilling Company: USGS	Location: Landfill 1
Date Started drilling: 14 Feb 92	Drilling Crew: Dan Sweney, John Palmer, Dean bohn
Drilling Method: Hollow stem auguring	Date completed drilling: Total Depth:
Borehole diameter: 77/8	Drilling Fluid: Air 0-4 ft., Mud 4-4 ft.
Drilling equipment: Gardner-Denver17w	Sample type:
Logged by: G. Robyal, F. Gebhardt	

<u>Date</u>	<u>Time</u>	<u>Depth(ft)</u>	<u>Drilling Speed (Min/ft)</u>	<u>Lithology and Remarks</u>
1050		34.5 -36 36-39		Fine - v. fine grained sand. Trace of caliche, trace of gravel, same as above.
1125		39-43	48" (4.0")	Same as above.
14 Feb 92	1130	43-46	(3.3")	V. fine - fine sand, trace of silt, small amount of caliche. Gravel lens from about 45' - 45.5'.
	1145	46-49	(3.1')	Upper 22 inches are poorly-sorted mixture of sand and gravel, remainder is v. fine sand. Some caliche throughout.
	1205	49-52	(3.3')	Upper 14 inches is v. fine sand, trace of caliche. Remainder is poorly-sorted sand and gravel. (Gravel up to 20 mm diam.).
	1309	52-56	(4.3)	Entire interval is v. fine - fine sand. Trace of silt throughout. Small amount of gravel throughout, especially near bottom.
	1400	56-61	(2.5'?)	V. fine - fine sand, no gravel, no caliche, trace of silt throughout.
	1420	61-64	(5.0')	V. fine - fine sand, no caliche, trace of silt. No gravel in upper 18 inches, small amount of small (up to 15 mm diam.) gravel in lower 3.5 feet.
	1435	64-68	(4.2')	V. fine - fine sand. No silt, no caliche, trace of gravel throughout. Sand is very tightly packed at bottom of sample.

Borehole Log
KAFB0218

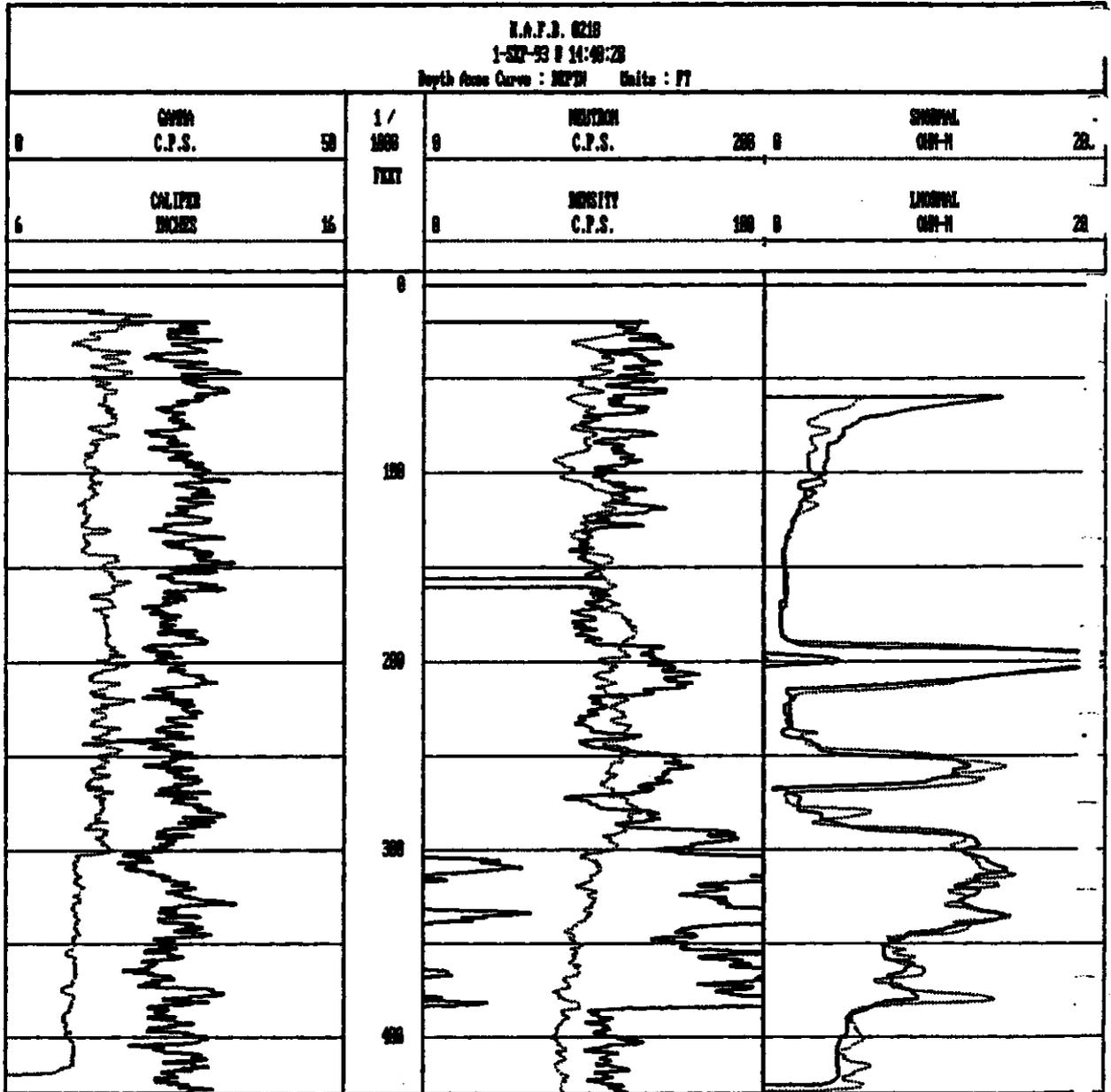
Project name: Kirtland Air Force Base - Phase II, Stage 2A	Sheet 3 of 4
Project number: 463536001	Site: KAFB0218
Drilling Company: USGS	Location: Landfill 1
Date Started drilling: 14 Feb 92	Drilling Crew: Dan Sweney, John Palmer, Dean bohn
Drilling Method: Hollow stem auguring	Date completed drilling: Total Depth:
Borehole diameter: 7 7/8	Drilling Fluid: Air 0-4 ft., Mud 4-4 ft.
Drilling equipment: Gardner-Denver17w	Sample type:
Logged by: G. Robyal, F. Gebhardt	

<u>Date</u>	<u>Time</u>	<u>Depth(ft)</u>	<u>Drilling Speed (Min/ft)</u>	<u>Lithology and Remarks</u>
	1455	68-72	(4.3')	Upper 24 inches are v. fine - fine "clean" well-sorted sand (similar to previous interval), remainder to bottom is a "clean" silty sand (v. fine) with trace of clay intermixed. No gravel, slight traces of caliche.
	1515	72-76	(5.4')	Silty, sandy clay (similar to bottom half of previous interval). Trace of gravel near bottom.
	1542	76-80	(0.5')	Silty sand with some clay. No caliche, no gravel.
		80-84	(5.4')	Upper 3 feet same as previous interval. Remainder to bottom is very similar only has small amount of gravel.
14 Feb 92	1618	84-88	(4.5')	Moderate brown fairly-well-sorted v. fine - fine sand with trace of silt throughout. Very slight traces of gravel and caliche at various spots (Gravel ≤ 15 mm diam.).
15 Feb 92	1425	88-92	(4.7')	Same as above. Slightly more caliche in bottom six inches of sample.
	1450	92-96	(3.9')	Upper 12 inches well-sorted v. fine - fine sand (as in previous interval). Next 20 inches are very similar, but has more silt and slight amount of clay. Remainder to bottom is poorly-sorted sand mixed with small gravel (up to 15 mm diam.).

**Borehole Log
KAFB0218**

Project name: Kirtland Air Force Base - Phase II, Stage 2A		Sheet 4 of 4
Project number: 463536001	Site: KAFB0218	
Drilling Company: USGS	Location: Landfill 1	Surface Elevation:
Date Started drilling: 14 Feb 92	Drilling Crew: Dan Sweney, John Palmer, Dean bohn	
Drilling Method: Hollow stem auguring	Date completed drilling:	Total Depth:
Borehole diameter: 7 7/8	Drilling Fluid: Air 0-4 ft., Mud 4-4 ft.	
Drilling equipment: Gardner-Denver17w	Sample type:	
Logged by: G. Robyal, F. Gebhardt		

<u>Date</u>	<u>Time</u>	<u>Depth(ft)</u>	<u>Drilling Speed (Min/ft)</u>	<u>Lithology and Remarks</u>
	1515	96-101		Entire sample is sand, generally v. fine - fine, but several lenses occur (typically 0.1' 0 0.2' thick) where grain size varies considerably. Small amount of (small) gravel occurs in some of these narrow lenses. Trace of caliche in lower 18 inches.



KAFB-0218

AR 1710

WELL DATABASE SUMMARY SHEET

Project Name: MONITOR WELL REPLACE	Geo Location: KAFB LANDFILL #2
ER ADS #:	Well Completion Date: 08-JUN-2006
Well Name: KAFB-0219	Completion Zone: FINE,MEDIUM SAND WITH GRAVEL
Owner Name: KAFB	Formation of Completion:
Date Drilling Started: 06-JUN-2006	Well Comment: CASING HAS STAINLESS STEEL END CAP. BOREHOLE DIAMETER IS 11.75 INCHES FROM 0-280 FEET AND 9.75 INCHES FROM 280-436 FEET.
Drilling Contractor: WATER DEVELOPMENT CORP.	
Drilling Method: ARCH STAR 50K	
Borehole Depth: 436	
Casing Depth: 428.5	

<div style="background-color: black; color: white; padding: 2px; margin-bottom: 5px;">Survey Data</div> <p>Survey Date:</p> <p>Surveyed By:</p> <div style="background-color: black; color: white; padding: 2px; margin-bottom: 5px;">[Redacted]</div> <p>(X) Easting: 408545.906</p> <p>(Y) Northing: 1464050.625</p> <div style="background-color: black; color: white; padding: 2px; margin-bottom: 5px;">Surveyed Elevations (FAMSL)</div> <p>Protective Casing:</p> <p>Top of Inner Well Casing: 5263.7</p> <p>Concrete Pad:</p> <p>Ground Surface: 5260</p> <div style="background-color: black; color: white; padding: 2px; margin-bottom: 5px;">Calculated Depths and Elevations</div> <p>Initial Water Elevation: 4866 (FAMSL)</p> <p>Initial Depth To Water: 397.7 (FBGS)</p> <p>Last measured water level was 4861.78 FASL measured on 25-JUN-2008</p> <p>Date Updated: 05-FEB-08 Date Printed: 14-NOV-2008</p>	<p style="font-size: small;">A vertical well diagram showing a casing pipe and an inner borehole. The casing is labeled with a depth of 428.5 feet. The borehole extends to 436 feet. The diagram is centered between the survey data on the left and the completion data on the right.</p>	<div style="background-color: black; color: white; padding: 2px; margin-bottom: 5px;">Completion Data Measured Depths (FBGS)</div> <p>Casing Stickup: 3.7</p> <table border="0" style="width: 100%;"> <tr> <td style="text-align: center;">Interval</td> <td style="text-align: center;">Start</td> <td style="text-align: center;">Stop</td> </tr> <tr> <td>GROUT/BACKFILL 1</td> <td style="text-align: right;">0'</td> <td style="text-align: right;">1'</td> </tr> <tr> <td>CONCRETE</td> <td></td> <td></td> </tr> <tr> <td colspan="3"> </td> </tr> <tr> <td style="text-align: center;">Interval</td> <td style="text-align: center;">Start</td> <td style="text-align: center;">Stop</td> </tr> <tr> <td>CASING</td> <td style="text-align: right;">0'</td> <td style="text-align: right;">428.5'</td> </tr> <tr> <td>SCHEDULE 80 PVC</td> <td style="text-align: right;">I.D. 4"</td> <td style="text-align: right;">O.D. 4.5"</td> </tr> <tr> <td colspan="3"> </td> </tr> <tr> <td style="text-align: center;">Interval</td> <td style="text-align: center;">Start</td> <td style="text-align: center;">Stop</td> </tr> <tr> <td>BOREHOLE</td> <td style="text-align: right;">0'</td> <td style="text-align: right;">436'</td> </tr> <tr> <td></td> <td style="text-align: right;">I.D. 9.75"</td> <td style="text-align: right;">O.D. 11.75"</td> </tr> <tr> <td colspan="3"> </td> </tr> <tr> <td style="text-align: center;">Interval</td> <td style="text-align: center;">Start</td> <td style="text-align: center;">Stop</td> </tr> <tr> <td>GROUT/BACKFILL 2</td> <td style="text-align: right;">1'</td> <td style="text-align: right;">5'</td> </tr> <tr> <td>CEMENT/BENTONITE</td> <td></td> <td></td> </tr> <tr> <td colspan="3"> </td> </tr> <tr> <td style="text-align: center;">Interval</td> <td style="text-align: center;">Start</td> <td style="text-align: center;">Stop</td> </tr> <tr> <td>SEAL 1</td> <td style="text-align: right;">5'</td> <td style="text-align: right;">47'</td> </tr> <tr> <td>BENTONITE SLURRY</td> <td></td> <td></td> </tr> <tr> <td colspan="3"> </td> </tr> <tr> <td style="text-align: center;">Interval</td> <td style="text-align: center;">Start</td> <td style="text-align: center;">Stop</td> </tr> <tr> <td>SEAL 2</td> <td style="text-align: right;">47'</td> <td style="text-align: right;">338'</td> </tr> <tr> <td>3/8" BENTONITE CHIP</td> <td></td> <td></td> </tr> <tr> <td colspan="3"> </td> </tr> <tr> <td style="text-align: center;">Interval</td> <td style="text-align: center;">Start</td> <td style="text-align: center;">Stop</td> </tr> <tr> <td>SECONDARY PACK</td> <td style="text-align: right;">338'</td> <td style="text-align: right;">386'</td> </tr> <tr> <td>SUGAR SAND</td> <td></td> <td></td> </tr> <tr> <td colspan="3"> </td> </tr> <tr> <td style="text-align: center;">Interval</td> <td style="text-align: center;">Start</td> <td style="text-align: center;">Stop</td> </tr> <tr> <td>PRIMARY PACK</td> <td style="text-align: right;">386'</td> <td style="text-align: right;">436'</td> </tr> <tr> <td>10/20 SILICA SAND</td> <td></td> <td></td> </tr> <tr> <td colspan="3"> </td> </tr> <tr> <td style="text-align: center;">Interval</td> <td style="text-align: center;">Start</td> <td style="text-align: center;">Stop</td> </tr> <tr> <td>SCREEN</td> <td style="text-align: right;">396'</td> <td style="text-align: right;">426'</td> </tr> <tr> <td>SCHEDULE 80 PVC</td> <td></td> <td></td> </tr> <tr> <td></td> <td style="text-align: right;">Slot Size</td> <td style="text-align: right;">.01"</td> </tr> </table>	Interval	Start	Stop	GROUT/BACKFILL 1	0'	1'	CONCRETE						Interval	Start	Stop	CASING	0'	428.5'	SCHEDULE 80 PVC	I.D. 4"	O.D. 4.5"				Interval	Start	Stop	BOREHOLE	0'	436'		I.D. 9.75"	O.D. 11.75"				Interval	Start	Stop	GROUT/BACKFILL 2	1'	5'	CEMENT/BENTONITE						Interval	Start	Stop	SEAL 1	5'	47'	BENTONITE SLURRY						Interval	Start	Stop	SEAL 2	47'	338'	3/8" BENTONITE CHIP						Interval	Start	Stop	SECONDARY PACK	338'	386'	SUGAR SAND						Interval	Start	Stop	PRIMARY PACK	386'	436'	10/20 SILICA SAND						Interval	Start	Stop	SCREEN	396'	426'	SCHEDULE 80 PVC				Slot Size	.01"
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WELL DATABASE SUMMARY SHEET

Project Name: MONITOR WELL REPLACE	Geo Location: KAFB LANDFILL #2
ER ADS #:	Well Completion Date: 08-JUN-2006
Well Name: KAFB-0219	Completion Zone: FINE,MEDIUM SAND WITH GRAVEL
Owner Name: KAFB	Formation of Completion:
Date Drilling Started: 06-JUN-2006	Well Comment: CASING HAS STAINLESS STEEL END CAP. BOREHOLE, E DIAMTER IS 11.75 INCHES FROM 0-280 FEET AND 9.75 INCHES FROM 280-436 FEET.
Drilling Contractor: WATER DEVELOPMENT CORP.	
Drilling Method: ARCH STAR 50K	
Borehole Depth: 436	
Casing Depth: 428.5	

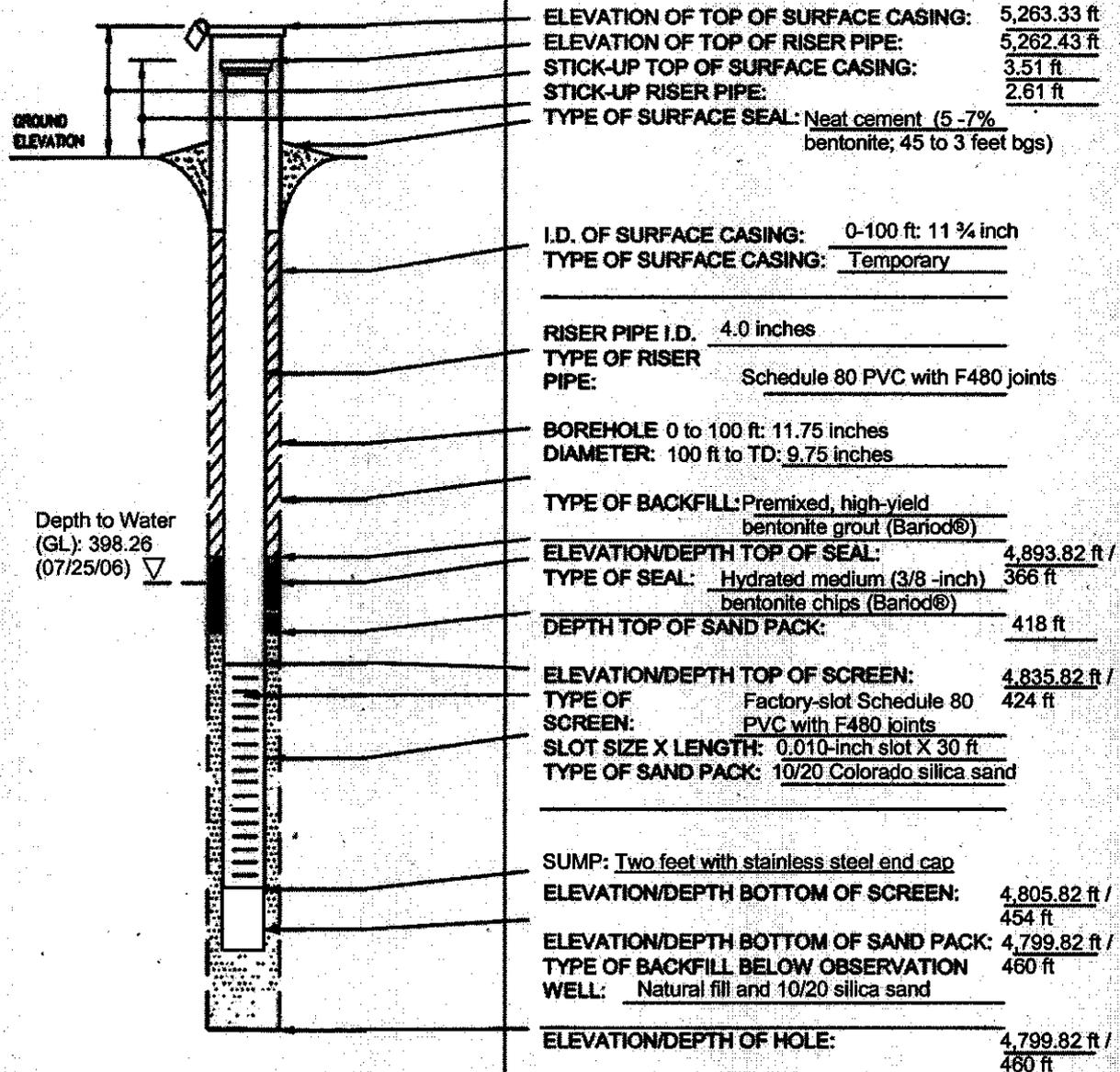


Interval	Start	Stop
SUMP	426'	428.5'
Interval	Start	Stop
PLUG BACK	428.5'	436'
10/20 SILICA SAND		

**OVERBURDEN
MONITORING WELL
CONSTRUCTION DIAGRAM**

WELL NO. KAFB-0220

PROJECT	Monitoring Well Replacement at LF-002	DRILLER	M. Green, WDC Exploration
PROJECT NO.	DCA45-03-D-0025 Task 10	DRILLING METHOD	Air rotary-casing hammer (ARCH)
DATE	July 11-15, 2006	BORING NO.:	KAFB-0220
ELEVATION	5,259.82 feet (Ground)	DEVELOPMENT METHOD	Bailing and submersible pump
FIELD GEOLOGIST	P. Goetze, Tetra Tech EMI		

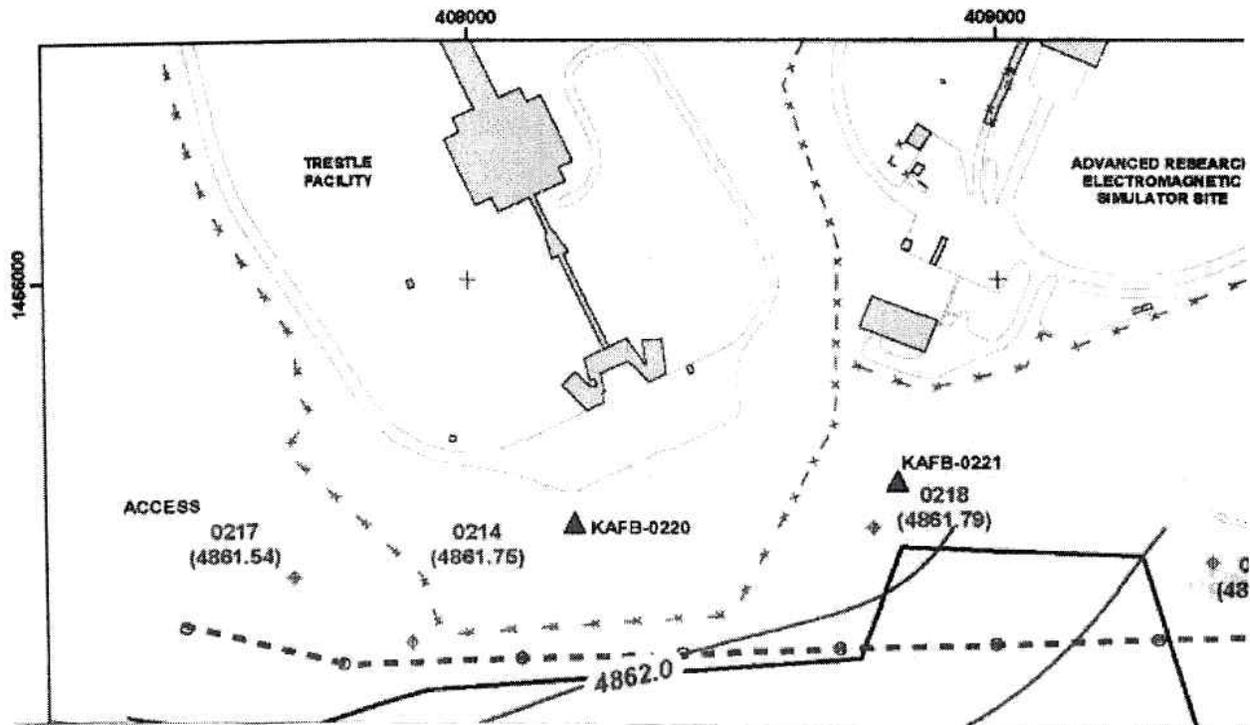


Notes:

Centralizers: top of centralizers at approximately 24 ft below ground surface (bgs), 64 ft bgs, 104 ft bgs, 144 ft bgs, 184 ft bgs, 224 ft bgs, 264 ft bgs, 304 ft bgs, 344 ft bgs, 384 ft bgs, 423 ft bgs (top of screen), and 454 ft bgs (bottom of screen).
Surface completion: 4 ft X 4 ft concrete pad with bollards at corners; 9.75 conductor casing for surface vault.

HTRW DRILLING LOG		DISTRICT Omaha		SAMPLE LOCATION KAFB-0220	
1. COMPANY NAME Tetra Tech EC		2. DRILLING SUBCONTRACTOR WDC Exploration		SHEET 1 OF 24	
3. SITE Solid Waste Management Unit 6-2		4. LOCATION LF-002			
5. NAME OF DRILLER M. GREEN		6. MANUFACTURERS DESIGNATION OF DRILL GEFCO Star 50K-CH Air Rotary			
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT 11 3/4 IN BOREHOLE TO 100 FT 8 3/4 IN BOREHOLE 100 FT TO TD		8. HOLE LOCATION (DESCRIPTION) Center of northern boundary of Landfill 002			
		9. SURFACE ELEVATION 5,259.82 FT		11. DATE COMPLETED 7/15/06	
12. OVERBURDEN THICKNESS 460 FT		15. DEPTH GROUNDWATER ENCOUNTERED 420 FT			
13. DEPTH DRILLED INTO ROCK 0 FT		16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED 398.2 FT, 13 days			
14. TOTAL DEPTH OF HOLE 460 FT		17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)			
18. GEOTECHNICAL SAMPLES none		DISTURBED N/A	UNDISTURBED N/A	19. TOTAL NUMBER OF CORE BOXES: N/A	
20. SAMPLES FOR CHEMICAL ANALYSIS		VOC	METALS	OTHERS (SPECIFY)	OTHERS (SPECIFY)
					OTHERS (SPECIFY)
22. DISPOSITION OF HOLE		BACKFILLED	MONITORING WELL	OTHERS (SPECIFY)	21. TOTAL CORE REC. % NA
			X		23. SIGNATURE OF INSPECTOR

LOCATION SKETCH/COMMENTS:



HTRW DRILLING LOG		DISTRICT Omaha		SAMPLE LOCATION KAFB-0220	
1. COMPANY NAME Tetra Tech EC		2. DRILLING SUBCONTRACTOR WDC Exploration		SHEET 1 OF 24	
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5. NAME OF DRILLER M. GREEN		6. MANUFACTURERS DESIGNATION OF DRILL GEFCO Star 50K-CH Air Rotary			
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	9. SURFACE ELEVATION 5,258.82 FT				
	10. DATE STARTED 7/11/06		11. DATE COMPLETED 7/15/06		
12. OVERBURDEN THICKNESS 460 FT		15. DEPTH GROUNDWATER ENCOUNTERED 420 FT			
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		X			
LOCATION SKETCH/COMMENTS:					

PROJECT #: Monitoring Well Replacement		SITE: SWMU 6-2		SAMPLE LOCATION: KAFB-0220	
HTRW DRILLING LOG		DISTRICT OMAHA			LOCATION: LF-002
1. PROJECT # see above		2. INSPECTOR			SHEET <u>2</u> OF 24
ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS	MATERIAL DESCRIPTION	COMMENTS
5249.82	2 4 6 8 10 12 14 16 18		ML	Silt with sand 0-36 ft. Brown (7.5YR5/4), 15% sand, very fine grained, subangular to subrounded, no dry strength to silt, dry	Surface consists of undisturbed, vegetated soils

PROJECT #: Monitoring Well Replacement		SITE: SWMU 6-2		SAMPLE LOCATION: KAFB-0220	
HTRW DRILLING LOG		DISTRICT OMAHA			LOCATION: LF-002
1. PROJECT # see above		2. INSPECTOR			SHEET 3 OF 24
ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS	MATERIAL DESCRIPTION	COMMENTS
	22				
	24				
	26				
	28				
5229.82	30				
	32				
	34				
	36		SM	Silty Sand 36-68 ft. Strong brown (7.5YR5/4), no dry strength to silt, very fine to med grained sand, subangular to subrounded, some thin gravel intervals 45 to 50 ft., dry, poorly graded	
	38				

PROJECT #: Monitoring Well Replacement		SITE: SWMU 6-2		SAMPLE LOCATION: KAFB-0220	
HTRW DRILLING LOG		DISTRICT OMAHA			LOCATION: LF-002
1. PROJECT # see above		2. INSPECTOR			SHEET 4 OF 24
ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS	MATERIAL DESCRIPTION	COMMENTS
5209.82	42				
	44				
	46				
	48				
	50				
	52				
	54				
	56				
	58				

PROJECT #: Monitoring Well Replacement		SITE: SWMU 6-2		SAMPLE LOCATION: KAFB-0220	
HTRW DRILLING LOG			DISTRICT OMAHA		LOCATION: LF-002
1. PROJECT # see above		2. INSPECTOR			SHEET <u>5</u> OF 24
ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS	MATERIAL DESCRIPTION	COMMENTS
5189.82	62				
	64				
	66				
	68		CL	Clay 68-76 ft. Reddish brown (5YR4/3) to brown (7.5YR4/4), med dry strength, no dilatancy, low toughness, dry to moist	
	70				
	72				
	74				
	76				
78			SP	Poorly Graded Sand 76 to 80 ft. Red (2.5YR5/6) to reddish brown (5YR4/4), very fine to med grained, subangular to subrounded, less than 5% silt, dry to moist	

PROJECT #: Monitoring Well Replacement			SITE: SWMU 6-2		SAMPLE LOCATION: KAFB-0220	
HTRW DRILLING LOG			DISTRICT OMAHA			LOCATION: LF-002
1. PROJECT # see above			2. INSPECTOR			SHEET 6 OF 24
ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS	MATERIAL DESCRIPTION		COMMENTS
5169.82	82 84 86 88 90 92 94 96 98		SM	Silty Sand 80-100 ft. Yellowish red (5YR5/6) to brown (7.5YR5/4), very fine to med grained, subangular to subrounded, 10 to 15% silt, some clay intervals (small, < 1 ft. thick) from 90 to 95 ft., dry		

PROJECT #: Monitoring Well Replacement		SITE: SWMU 6-2		SAMPLE LOCATION: KAFB-0220	
HTRW DRILLING LOG			DISTRICT OMAHA		LOCATION: LF-002
1. PROJECT # see above		2. INSPECTOR			SHEET <u>7</u> OF 24
ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS	MATERIAL DESCRIPTION	COMMENTS
5149.82	102		SC	Clayey Sand 100-120 ft. Reddish yellow (7.5YR6/6), very fine to fine grained, subangular to subrounded, poorly graded, dry	
	104				
	106				
	108				
	110				
	112				
	114				
	116				
	118				

PROJECT #: Monitoring Well Replacement		SITE: SWMU 6-2		SAMPLE LOCATION: KAFB-0220	
HTRW DRILLING LOG			DISTRICT OMAHA		LOCATION: LF-002
1. PROJECT # see above		2. INSPECTOR			SHEET 8 OF 24
ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS	MATERIAL DESCRIPTION	COMMENTS
5129.82	122 124 126 128 130 132 134 136 138		CL-ML	Silty clay and silt 120-176 ft. Reddish brown (5YR5/4) to brown (7.5YR4/4), lesser sand content than above, medium dry strength, medium toughness, sand is very fine grained, subrounded, dry to moist	

PROJECT #: Monitoring Well Replacement		SITE: SWMU 6-2		SAMPLE LOCATION: KAFB-0220	
HTRW DRILLING LOG			DISTRICT OMAHA		LOCATION: LF-002
1. PROJECT # see above		2. INSPECTOR			SHEET 9 OF 24
ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS	MATERIAL DESCRIPTION	COMMENTS
	142				
	144				
	146				
	148				
5109.82	150				
	152				
	154				
	156				
	158				

PROJECT #: Monitoring Well Replacement		SITE: SWMU 6-2		SAMPLE LOCATION: KAFB-0220	
HTRW DRILLING LOG		DISTRICT OMAHA			LOCATION: LF-002
1. PROJECT # see above		2. INSPECTOR			SHEET 10 OF 24
ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS	MATERIAL DESCRIPTION	COMMENTS
	162				
	164				
	166				
	168				
5089.82	170				
	172				
	174				
	176		SP	Sand 176-209 ft. Light brown (7.5YR6/4), very fine to med grained, subangular to subrounded, poorly graded, less than 5% silt content, dry	
	178				

PROJECT #: Monitoring Well Replacement		SITE: SWMU 6-2		SAMPLE LOCATION: KAFB-0220	
HTRW DRILLING LOG			DISTRICT OMAHA		LOCATION: LF-002
1. PROJECT # see above		2. INSPECTOR			SHEET <u>11</u> OF 24
ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS	MATERIAL DESCRIPTION	COMMENTS
	182				
	184				
	186				
	188				
5089.82	190				
	192				
	194				
	196				
	198				

PROJECT #: Monitoring Well Replacement		SITE: SWMU 6-2		SAMPLE LOCATION: KAFB-0220	
HTRW DRILLING LOG			DISTRICT OMAHA		LOCATION: LF-002
1. PROJECT # see above		2. INSPECTOR			SHEET <u>12</u> OF 24
ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS	MATERIAL DESCRIPTION	COMMENTS
5049.82	202				
	204				
	206				
	208				
	210		SM	Silty Sand 209-215 ft. Silt content of 10 to 15%, very fine to med grained, subangular to subrounded sand, poorly graded, dry	
	212				
	214				
	216		ML	Silt with Sand 215-232 ft. Brown (7.5YR5/4), very fine grained sand, low dry strength, low toughness, dry to moist	
218					

PROJECT #: Monitoring Well Replacement		SITE: SWMU 6-2		SAMPLE LOCATION: KAFB-0220	
HTRW DRILLING LOG			DISTRICT OMAHA		LOCATION: LF-002
1. PROJECT # see above		2. INSPECTOR			SHEET <u>13</u> OF 24
ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS	MATERIAL DESCRIPTION	COMMENTS
	222				
	224				
	226				
	228				
5029.82	230				
	232		SM	Silty Sand with Gravel 232-255 ft. Silt content 10-15%, gravel 10-20%, well graded, very fine to med grained, subangular to subrounded sand, gravels subangular to subrounded, 40 mm, dry	
	234				
	236				
	238				

PROJECT #: Monitoring Well Replacement		SITE: SWMU 6-2		SAMPLE LOCATION: KAFB-0220	
HTRW DRILLING LOG		DISTRICT OMAHA		LOCATION: LF-002	
1. PROJECT # see above		2. INSPECTOR		SHEET <u>14</u> OF 24	
ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS	MATERIAL DESCRIPTION	COMMENTS
	242				
	244				
	246				
	248				
5009.82	250				
	252				
	254				
	256		SC	Clayey Sand 255-260 ft. Dark brown (7.5YR3/3), very fine grained, subangular to subrounded sand, clay content > 15% > silt content, dry to moist	
	258				

PROJECT #: Monitoring Well Replacement		SITE: SWMU 6-2		SAMPLE LOCATION: KAFB-0220	
HTRW DRILLING LOG			DISTRICT OMAHA		LOCATION: LF-002
1. PROJECT # see above			2. INSPECTOR		SHEET <u>15</u> OF 24
ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS	MATERIAL DESCRIPTION	COMMENTS
	262		SP-SM	Poorly Graded Sand with Silt 260-266 ft. Light brown (7.5YR6/4), 5 to 10% silt content, very fine to med grained, subangular to subrounded sand, poorly graded, dry	
	264				
	266				
	268		SP	Poorly Graded Sand with Gravel 266-300 ft. Very pale brown (10YR7/4) to pale yellow (2.5Y7/3), very fine to coarse grained, subangular to subrounded sand, gravel subangular to subrounded, <10mm, dry	
4989.82	270				
	272				
	274				
	276				
	278				

PROJECT #: Monitoring Well Replacement		SITE: SWMU 6-2		SAMPLE LOCATION: KAFB-0220	
HTRW DRILLING LOG		DISTRICT OMAHA			LOCATION: LF-002
1. PROJECT # see above		2. INSPECTOR			SHEET <u>16</u> OF 24
ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS	MATERIAL DESCRIPTION	COMMENTS
	282				
	284				
	286				
	288				
4969.82	290				
	292				
	294				
	296				
	298				

PROJECT #: Monitoring Well Replacement		SITE: SWMU 6-2		SAMPLE LOCATION: KAFB-0220			
HTRW DRILLING LOG			DISTRICT OMAHA		LOCATION: LF-002		
1. PROJECT # see above		2. INSPECTOR			SHEET <u>17</u> OF 24		
ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS	MATERIAL DESCRIPTION	COMMENTS		
4949.82	302		GP-GM	Gravel with Sand/Silt 300-315 ft. Light gray (2.5Y7/2) to very pale brown (10YR8/4), 10-20% sand content, 1mm to 20 mm subrounded to rounded lithic fragments (volcanics and limestone fragments), dry			
	304						
	306						
	308						
	310						
	312						
	314						
	316				SM	Silty Sand 315-320 ft. Very pale brown (10YR7/4) to reddish yellow (7.5YR7/4), fine to coarse grained, subangular to subrounded sand, silt 10 to 20%, well graded, dry	
	318						

PROJECT #: Monitoring Well Replacement		SITE: SWMU 6-2		SAMPLE LOCATION: KAFB-0220	
HTRW DRILLING LOG		DISTRICT OMAHA		LOCATION: LF-002	
1. PROJECT # see above		2. INSPECTOR		SHEET <u>18</u> OF 24	
ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS	MATERIAL DESCRIPTION	COMMENTS
4929.82	322		GM	Silty Gravel with Sand 320-348 ft. Light reddish brown (5YR6/4) to light brown (7.5YR6/4), subangular (small gravels) to rounded (large gravels), ≤1 mm to 40 mm gravels, lithic volcanics/limestone sand is very fine to coarse, subangular to subrounded, dry	
	324				
	326				
	328				
	330				
	332				
	334				
	336				
	338				

PROJECT #: Monitoring Well Replacement		SITE: SWMU 6-2		SAMPLE LOCATION: KAFB-0220	
HTRW DRILLING LOG		DISTRICT OMAHA			LOCATION: LF-002
1. PROJECT # see above		2. INSPECTOR			SHEET <u>19</u> OF 24
ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS	MATERIAL DESCRIPTION	COMMENTS
	342				
	344				
	346				
	348				
4909.82	350		SW-SM	Well Graded Sand with Silt and Gravel 348-420 ft. Pale brown (10YR6/3) to light brown (7.5YR6/4), gravel ≥15%, silt 10 to 15%, well graded between occurrences of gravel/sand intervals, very fine grained, subangular to coarse subrounded sand (mostly quartz); gravels: from <10 mm to 50 mm (3.5 inch), mostly 20 mm or less, subrounded to rounded lithic fragments (volcanics, limestone, sandstone), gravels prominent 390 to 400 ft., moist at 408 ft., wet at 420 ft.	
	352				
	354				
	356				
	358				

PROJECT #: Monitoring Well Replacement		SITE: SWMU 6-2		SAMPLE LOCATION: KAFB-0220	
HTRW DRILLING LOG		DISTRICT OMAHA		LOCATION: LF-002	
1. PROJECT # see above		2. INSPECTOR		SHEET <u>20</u> OF 24	
ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS	MATERIAL DESCRIPTION	COMMENTS
	362				
	364				
	366				
	368				
4889.82	370				
	372				
	374				
	376				
	378				

PROJECT #: Monitoring Well Replacement		SITE: SWMU 6-2		SAMPLE LOCATION: KAFB-0220	
HTRW DRILLING LOG			DISTRICT OMAHA		LOCATION: LF-002
1. PROJECT # see above		2. INSPECTOR			SHEET <u>21</u> OF 24
ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS	MATERIAL DESCRIPTION	COMMENTS
	382				
	384				
	386				
	388				
4869.82	390				
	392				
	394				
	396				
	398				

PROJECT #: Monitoring Well Replacement		SITE: SWMU 6-2		SAMPLE LOCATION: KAFB-0220	
HTRW DRILLING LOG			DISTRICT OMAHA		LOCATION: LF-002
1. PROJECT # see above		2. INSPECTOR			SHEET <u>22</u> OF 24
ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS	MATERIAL DESCRIPTION	COMMENTS
	402				
	404				
	406				
	408				
4849.82	410				
	412				
	414				
	416				
	418				

PROJECT #: Monitoring Well Replacement		SITE: SWMU 6-2		SAMPLE LOCATION: KAFB-0220	
HTRW DRILLING LOG			DISTRICT OMAHA		LOCATION: LF-002
1. PROJECT # see above		2. INSPECTOR			SHEET 23 OF 24
ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS	MATERIAL DESCRIPTION	COMMENTS
	422		SM	Silty Sand with Gravel 420-440 ft. Yellowish brown (10YR7/4) to strong brown (7.5YR4/9), subangular to subrounded, fine to coarse grained sand, round gravels, saturated	
	424				
	426				
	428				
4829.82	430				
	432				
	434				
	436				
	438				

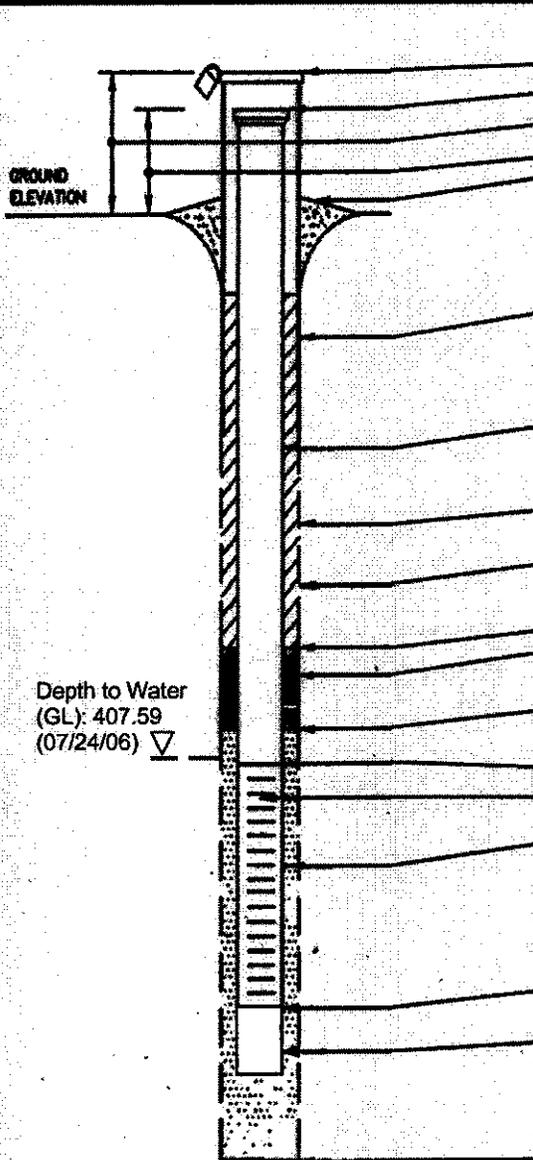
PROJECT #: Monitoring Well Replacement		SITE: SWMU 6-2		SAMPLE LOCATION: KAFB-0220	
HTRW DRILLING LOG		DISTRICT OMAHA			LOCATION: LF-002
1. PROJECT # see above		2. INSPECTOR			SHEET <u>24</u> OF 24
ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS	MATERIAL DESCRIPTION	COMMENTS
	442		SP-SM	Poorly Graded Sand with Silt 440-455 ft. Yellowish brown (10YR5/4), silt 10 to 15%, clay <5%, subangular to subrounded, very fine to med grained sand, saturated, intermittent returns	
	444				
	446				
	448				
4809.82	450				
	452				
	454				
	456		SP	Poorly Graded Sand 455-460 ft. Very pale brown (10YR8/4), very fine to fine grained, subangular to subrounded, <5% silt, free flowing - saturated	
	458				
				Total Depth 460 ft.	

**OVERBURDEN
MONITORING WELL
CONSTRUCTION DIAGRAM**

WELL NO. KAFB-0221

PROJECT Monitoring Well Replacement at LF-002
 PROJECT NO. DCA45-03-D-0025 Task 10
 DATE July 7-10, 2006 BORING NO.: KAFB-0221
 ELEVATION 5,268.83 feet (Ground)
 FIELD GEOLOGIST P. Goetze, Tetra Tech EMI

DRILLER M. Green, WDC Exploration
 DRILLING METHOD Air rotary-casing hammer (ARCH)
 DEVELOPMENT METHOD Bailing and submersible pump



ELEVATION OF TOP OF SURFACE CASING: 5,272.47 ft
 ELEVATION OF TOP OF RISER PIPE: 5,271.69 ft
 STICK-UP TOP OF SURFACE CASING: 3.64 ft
 STICK-UP RISER PIPE: 2.86 ft
 TYPE OF SURFACE SEAL: Neat cement (5 -7% bentonite; 51 to 3 feet bgs)

I.D. OF SURFACE CASING: 0-220 ft: 11 3/4 inch
 TYPE OF SURFACE CASING: Temporary

RISER PIPE I.D. 4.0 inches
 TYPE OF RISER PIPE: Schedule 80 PVC with F480 joints

BOREHOLE 0 to 220 ft: 11.75 inches
 DIAMETER: 220 ft to TD: 9.75 inches

TYPE OF BACKFILL: Premixed, high-yield bentonite grout (Bariod®)

ELEVATION/DEPTH TOP OF SEAL: 4,908.83 ft / 360 ft
 TYPE OF SEAL: Hydrated 1/4-inch bentonite pellets and medium (3/8-inch) bentonite chips (Bariod®)

DEPTH TOP OF SAND PACK: 406 ft

ELEVATION/DEPTH TOP OF SCREEN: 4,858.33 ft / 410.5 ft
 TYPE OF SCREEN: Factory-slot Schedule 80 PVC with F480 joints
 SLOT SIZE X LENGTH: 0.010-inch slot X 30 ft
 TYPE OF SAND PACK: 10/20 Colorado silica sand

SUMP: Two feet with stainless steel end cap

ELEVATION/DEPTH BOTTOM OF SCREEN: 4,828.33 ft / 440.5 ft

ELEVATION/DEPTH BOTTOM OF SAND PACK: 4,825.33 ft / 443.5 ft
 TYPE OF BACKFILL BELOW OBSERVATION WELL: Natural fill and 10/20 silica sand

ELEVATION/DEPTH OF HOLE: 4,804.83 ft / Drilled 455 ft

Depth to Water (GL): 407.59 (07/24/06) ▽

NOT TO SCALE

ELEVATIONS SHOULD BE LOWER THAN DATA FROM LOGS.

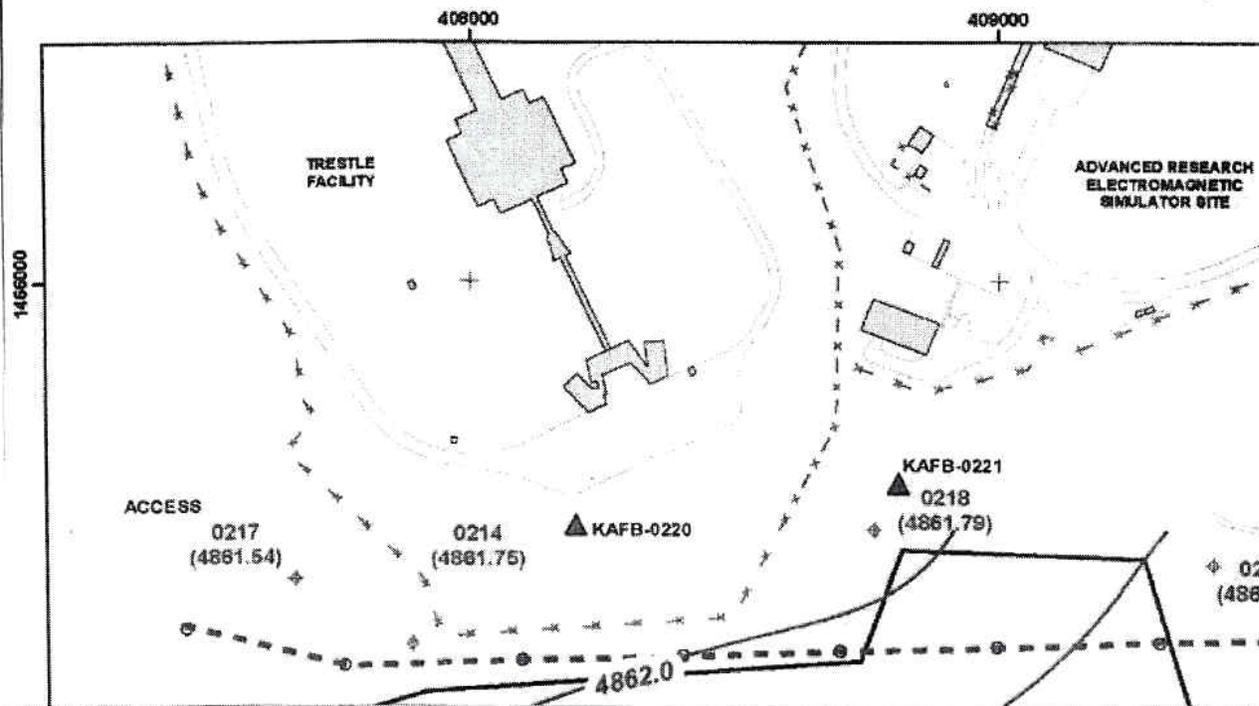
Notes:

Centralizers: top of centralizers at approximately 51.5 ft below ground surface (bgs), 91.5 ft bgs, 131.5 ft bgs, 171.5 ft bgs, 211.5 ft bgs, 251.5 ft bgs, 291.5 ft bgs, 331.5 ft bgs, 371.5 ft bgs, 409 ft bgs (top of screen), and 441 ft bgs (bottom of screen).

Surface completion: 4 ft X 4 ft concrete pad with bollards at corners; 9.75 conductor casing for surface vault.

HTRW DRILLING LOG		DISTRICT Omaha		SAMPLE LOCATION KAFB-0221	
1. COMPANY NAME Tetra Tech EC		2. DRILLING SUBCONTRACTOR WDC Exploration		SHEET 1 OF 24	
3. SITE Solid Waste Management Unit 6-2		4. LOCATION LF-002			
5. NAME OF DRILLER M. GREEN		6. MANUFACTURERS DESIGNATION OF DRILL GEFCO Star 50K-CH Air Rotary			
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT 11 1/4 IN BOREHOLE TO 220 FT 9 3/4 IN BOREHOLE 220 FT TO TD		8. HOLE LOCATION (DESCRIPTION) Along the northeast perimeter of Landfill 002			
		9. SURFACE ELEVATION 5,268.83 FT			
		10. DATE STARTED 7/7/06		11. DATE COMPLETED 7/10/06	
12. OVERBURDEN THICKNESS 455 FT		15. DEPTH GROUNDWATER ENCOUNTERED 410 FT			
13. DEPTH DRILLED INTO ROCK 0 FT		16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED 407.59 FT, 14 days			
14. TOTAL DEPTH OF HOLE 455 FT		17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)			
18. GEOTECHNICAL SAMPLES none		DISTURBED N/A	UNDISTURBED N/A	19. TOTAL NUMBER OF CORE BOXES: N/A	
20. SAMPLES FOR CHEMICAL ANALYSIS		VOC	METALS	OTHERS (SPECIFY)	OTHERS (SPECIFY)
					OTHERS (SPECIFY)
					21. TOTAL CORE REC. % NA
22. DISPOSITION OF HOLE		BACKFILLED	MONITORING WELL	OTHERS (SPECIFY)	23. SIGNATURE OF INSPECTOR
			X		

LOCATION SKETCH/COMMENTS:



HTRW DRILLING LOG		DISTRICT Omaha		SAMPLE LOCATION KAFB-0221	
1. COMPANY NAME Tetra Tech EC		2. DRILLING SUBCONTRACTOR WDC Exploration		SHEET 1 OF 24	
3. SITE Solid Waste Management Unit 6-2		4. LOCATION LF-002			
5. NAME OF DRILLER M. GREEN		6. MANUFACTURERS DESIGNATION OF DRILL GEFCO Star 50K-CH Air Rotary			
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT 11 ¼ IN BOREHOLE TO 220 FT 9 ¾ IN BOREHOLE 220 FT TO TD	8. HOLE LOCATION (DESCRIPTION) Along the northeast perimeter of Landfill 002				
	9. SURFACE ELEVATION 5,288.83 FT				
	10. DATE STARTED 7/7/06		11. DATE COMPLETED 7/10/06		
12. OVERBURDEN THICKNESS 455 FT		15. DEPTH GROUNDWATER ENCOUNTERED 410 FT			
13. DEPTH DRILLED INTO ROCK 0 FT		16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED 407.59 FT, 14 days			
14. TOTAL DEPTH OF HOLE 455 FT		17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY)			
18. GEOTECHNICAL SAMPLES none	DISTURBED N/A		UNDISTURBED N/A		19. TOTAL NUMBER OF CORE BOXES: N/A
20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHERS (SPECIFY)	OTHERS (SPECIFY)	21. TOTAL CORE REC. % NA
22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHERS (SPECIFY)	23. SIGNATURE OF INSPECTOR	
		X			
LOCATION SKETCH/COMMENTS:					

PROJECT #: Monitoring Well Replacement			SITE: SWMU 6-2		SAMPLE LOCATION: KAFB-0221	
HTRW DRILLING LOG			DISTRICT OMAHA			LOCATION: LF-002
1. PROJECT # see above			2. INSPECTOR			SHEET 2 OF 24
ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS	MATERIAL DESCRIPTION		COMMENTS
5258.83	2		ML	Silty Sand 0-15 ft. Interval includes compacted fill material and reworked material of cell cover		
	4					
	6					
	8					
	10					
	12					
	14					
	16					
	18					

PROJECT #: Monitoring Well Replacement		SITE: SWMU 6-2		SAMPLE LOCATION: KAFB-0221	
HTRW DRILLING LOG			DISTRICT OMAHA		LOCATION: LF-002
1. PROJECT # see above		2. INSPECTOR			SHEET <u>3</u> OF 24
ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS	MATERIAL DESCRIPTION	COMMENTS
5238.83	22 24 26 28 30 32 34 36 38			Poorly Graded Sand with Silt 38-50 ft. Light red (10R6/8) to red (2.5YR5/8), very fine to med grained, subangular to subrounded sand, 10-15% silt, poorly graded, dry	

PROJECT #: Monitoring Well Replacement		SITE: SWMU 6-2		SAMPLE LOCATION: KAFB-0221	
HTRW DRILLING LOG			DISTRICT OMAHA		LOCATION: LF-002
1. PROJECT # see above		2. INSPECTOR			SHEET <u>4</u> OF 24
ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS	MATERIAL DESCRIPTION	COMMENTS
5218.83	42 44 46 48 50 52 54 56 58		GP	Poorly Graded Gravel with Sand 50-63 ft. Light reddish brown (2.5YR7/4) to light reddish gray (2.5YR7/1), fine to coarse-grained sand, subangular to subrounded grains (quartz), subangular to subrounded gravels (0.5mm to 5 mm), dry	

PROJECT #: Monitoring Well Replacement		SITE: SWMU 6-2		SAMPLE LOCATION: KAFB-0221	
HTRW DRILLING LOG			DISTRICT OMAHA		LOCATION: LF-002
1. PROJECT # see above		2. INSPECTOR			SHEET <u>5</u> OF 24
ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS	MATERIAL DESCRIPTION	COMMENTS
	62				
	64		SP-SM	Poorly Graded Sand with Silt 63-70 ft. Reddish brown (5YR5/3), subangular to subrounded, very fine to med sand (quartz), 5 to 10% silt, poorly graded, dry	
	66				
	68				
5198.83	70		SM	Silty Sand 70-80 ft. Light red (2.5YR6/6), greater than 15% silt content, very fine to med grained, subangular to subrounded sand (quartz), dry	
	72				
	74				
	76				
	78				

PROJECT #: Monitoring Well Replacement		SITE: SWMU 6-2		SAMPLE LOCATION: KAFB-0221	
HTRW DRILLING LOG		DISTRICT OMAHA			LOCATION: LF-002
1. PROJECT # see above		2. INSPECTOR			SHEET <u>6</u> OF 24
ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS	MATERIAL DESCRIPTION	COMMENTS
	82		CL	Clay 80-83 ft. Red (10R5/6), silt content <10%, med dry strength, no dilatancy, medium toughness, dry to moist	
	84		CL-ML	Silty Clay to Silt 83-90 ft. Light reddish brown (2.5YR6/4) to reddish yellow (5YR5/4), low dry strength, no dilatancy, low toughness, dry to moist	
	86				
	88				
5178.83	90		SM	Silty Sand 90-120 ft. Reddish brown (5YR5/4) to light reddish brown (2.5YR5/3), silt content 10 to 20%, some clay content, fine to very coarse grained, subangular to subrounded	
	92				
	94				
	96				
	98				

PROJECT #: Monitoring Well Replacement		SITE: SWMU 6-2		SAMPLE LOCATION: KAFB-0221	
HTRW DRILLING LOG			DISTRICT OMAHA		LOCATION: LF-002
1. PROJECT # see above		2. INSPECTOR			SHEET 7 OF 24
ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS	MATERIAL DESCRIPTION	COMMENTS
	102				
	104				
	106				
	108				
5158.83	110				
	112				
	114				
	116				
	118				

PROJECT #: Monitoring Well Replacement			SITE: SWMU 6-2		SAMPLE LOCATION: KAFB-0221	
HTRW DRILLING LOG			DISTRICT OMAHA			LOCATION: LF-002
1. PROJECT # see above			2. INSPECTOR			SHEET 8 OF 24
ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS	MATERIAL DESCRIPTION		COMMENTS
5138.83	122		SM	Silty Sand 120-140 ft. Reddish brown (5YR5/3) to light brown (7.5YR6/4), 10 to 20% silt, very fine to med grained, subangular to subrounded grains (primarily quartz), some gravel at 135-140 ft. interval, dry to moist		
	124					
	126					
	128					
	130					
	132					
	134					
	136					
	138					

PROJECT #: Monitoring Well Replacement		SITE: SWMU 6-2		SAMPLE LOCATION: KAFB-0221	
HTRW DRILLING LOG			DISTRICT OMAHA		LOCATION: LF-002
1. PROJECT # see above		2. INSPECTOR			SHEET 9 OF 24
ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS	MATERIAL DESCRIPTION	COMMENTS
	142		CL	Sandy Clay 140-150 ft. Transitional from 120-140 ft. interval	
	144				
	146				
	148				
5118.83	150		CL-ML	Silty Clay 150-200 ft. Reddish brown (2.5YR5/2) to light reddish brown (5YR6/4), medium to high dry strength, no dilatancy, med to low toughness, dry to moist	
	152				
	154				
	156				
	158				

PROJECT #: Monitoring Well Replacement		SITE: SWMU 6-2		SAMPLE LOCATION: KAFB-0221	
HTRW DRILLING LOG			DISTRICT OMAHA		LOCATION: LF-002
1. PROJECT # see above		2. INSPECTOR			SHEET <u>10</u> OF 24

ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS	MATERIAL DESCRIPTION	COMMENTS
5098.83	162				
	164				
	166				
	168				
	170				
	172				
	174				
	176				
	178				

PROJECT #: Monitoring Well Replacement		SITE: SWMU 6-2		SAMPLE LOCATION: KAFB-0221	
HTRW DRILLING LOG			DISTRICT OMAHA		LOCATION: LF-002
1. PROJECT # see above		2. INSPECTOR			SHEET <u>11</u> OF 24
ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS	MATERIAL DESCRIPTION	COMMENTS
	182				
	184				
	186				
	188				
5078.83	190				
	192				
	194				
	196				
	198				

PROJECT #: Monitoring Well Replacement		SITE: SWMU 6-2		SAMPLE LOCATION: KAFB-0221	
HTRW DRILLING LOG			DISTRICT OMAHA		LOCATION: LF-002
1. PROJECT # see above		2. INSPECTOR			SHEET 12 OF 24
ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS	MATERIAL DESCRIPTION	COMMENTS
	202			No Recovery 200-210 ft.	Cyclone discharge plugged
	204				
	206				
	208				
5058.83	210		SC	Clayey Sand 210-240 ft. Reddish brown (5YR5/2) to reddish gray (5YR5/2), very fine to med grained, subangular to subrounded sand, well graded, dry to moist	
	212				
	214				
	216				
	218				

PROJECT #: Monitoring Well Replacement		SITE: SWMU 6-2		SAMPLE LOCATION: KAFB-0221	
HTRW DRILLING LOG			DISTRICT OMAHA		LOCATION: LF-002
1. PROJECT # see above		2. INSPECTOR			SHEET <u>13</u> OF 24
ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS	MATERIAL DESCRIPTION	COMMENTS
	222				
	224				
	226				
	228				
5038.83	230				
	232				
	234				
	236				
	238				

PROJECT #: Monitoring Well Replacement		SITE: SWMU 6-2		SAMPLE LOCATION: KAFB-0221	
HTRW DRILLING LOG			DISTRICT OMAHA		LOCATION: LF-002
1. PROJECT # see above		2. INSPECTOR			SHEET 14 OF 24
ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS	MATERIAL DESCRIPTION	COMMENTS
5018.83	242		SP-SM	Poorly Graded Sand with Silt 240-275 ft. Very pale brown (10YR8/3) to pale yellow (2.5Y8/4), silt content 10 to 15%, very fine to med grained sand, subangular to subrounded (mostly quartz), poorly graded, dry	
	244				
	246				
	248				
	250				
	252				
	254				
	256				
	258				

PROJECT #: Monitoring Well Replacement		SITE: SWMU 6-2		SAMPLE LOCATION: KAFB-0221	
HTRW DRILLING LOG			DISTRICT OMAHA		LOCATION: LF-002
1. PROJECT # see above		2. INSPECTOR			SHEET <u>15</u> OF 24
ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS	MATERIAL DESCRIPTION	COMMENTS
	262				
	264				
	266				
	268				
4998.83	270				
	272				
	274				
	276		ML	Clayey Silt 275-280 ft. Very pale brown (10YR7/4), med dry strength, low toughness, slow dilatancy, moist	
	278				

PROJECT #: Monitoring Well Replacement		SITE: SWMU 6-2		SAMPLE LOCATION: KAFB-0221	
HTRW DRILLING LOG		DISTRICT OMAHA		LOCATION: LF-002	
1. PROJECT # see above		2. INSPECTOR		SHEET <u>16</u> OF 24	
ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS	MATERIAL DESCRIPTION	COMMENTS
	282		SW	Well Graded Sand with Gravel 280-320 ft. Very pale brown (10YR7/3), silts/fines <5%, very fine to med sand, subangular to subrounded, gravels: rounded volcanics/quartz, 5 to 10 mm, dry	
	284				
	286				
	288				
4978.83	290				
	292				
	294				
	296				
	298				

PROJECT #: Monitoring Well Replacement		SITE: SWMU 6-2		SAMPLE LOCATION: KAFB-0221	
HTRW DRILLING LOG			DISTRICT OMAHA		LOCATION: LF-002
1. PROJECT # see above		2. INSPECTOR			SHEET <u>17</u> OF 24
ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS	MATERIAL DESCRIPTION	COMMENTS
	302				
	304				
	306				
	308				
4958.83	310				
	312				
	314				
	316				
	318				

PROJECT #: Monitoring Well Replacement		SITE: SWMU 6-2		SAMPLE LOCATION: KAFB-0221		
HTRW DRILLING LOG			DISTRICT OMAHA		LOCATION: LF-002	
1. PROJECT # see above		2. INSPECTOR			SHEET <u>18</u> OF 24	
ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS	MATERIAL DESCRIPTION	COMMENTS	
4938.83	322		GM	Silty Gravel 320-338 ft. Light brown (7.5YR6/4) to yellowish brown (7.5YR6/4), silt content >15%, gravels subrounded to rounded, quartz, volcanic, preCambrian fragments, <5 mm to 20 mm diameter, dry		
	324					
	326					
	328					
	330					
	332					
	334					
	336					
	338					
						SP

PROJECT #: Monitoring Well Replacement		SITE: SWMU 6-2		SAMPLE LOCATION: KAFB-0221	
HTRW DRILLING LOG			DISTRICT OMAHA		LOCATION: LF-002
1. PROJECT # see above		2. INSPECTOR			SHEET <u>19</u> OF 24
ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS	MATERIAL DESCRIPTION	COMMENTS
	342				
	344				
	346		SW	Well Graded Sand with Gravel 346-386 ft. Light brown (7.5YR6/4), very fine to med grained, subrounded to subangular sand, well graded, rounded gravels, dry	
	348				
4918.83	350				
	352				
	354				
	356				
	358				

PROJECT #: Monitoring Well Replacement		SITE: SWMU 6-2		SAMPLE LOCATION: KAFB-0221	
HTRW DRILLING LOG			DISTRICT OMAHA		LOCATION: LF-002
1. PROJECT # see above		2. INSPECTOR			SHEET <u>20</u> OF 24

ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS	MATERIAL DESCRIPTION	COMMENTS
	362				
	364				
	366				
	368				
4898.83	370				
	372				
	374				
	376				
	378				

PROJECT #: Monitoring Well Replacement		SITE: SWMU 6-2		SAMPLE LOCATION: KAFB-0221	
HTRW DRILLING LOG			DISTRICT OMAHA		LOCATION: LF-002
1. PROJECT # see above		2. INSPECTOR			SHEET 21 OF 24
ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS	MATERIAL DESCRIPTION	COMMENTS
	382				
	384				
	386				
	388		SW-SM	Well Graded Sand with Silt and Gravel 386-445 ft. Light gray (10YR7/2) to light brown (7.5YR6/3), subangular to subrounded, very fine to coarse sand, gravels: subrounded quartz, volcanics, preCambrian metasediments, moist to saturated	
4878.83	390				
	392				
	394				
	396				
	398				

PROJECT #: Monitoring Well Replacement		SITE: SWMU 6-2		SAMPLE LOCATION: KAFB-0221	
HTRW DRILLING LOG			DISTRICT OMAHA		LOCATION: LF-002
1. PROJECT # see above		2. INSPECTOR			SHEET 22 OF 24

ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS	MATERIAL DESCRIPTION	COMMENTS
	402				
	404				
	406				
	408				
4858.83	410				
	412				
	414				
	416				
	418				

PROJECT #: Monitoring Well Replacement		SITE: SWMU 6-2		SAMPLE LOCATION: KAFB-0221	
HTRW DRILLING LOG			DISTRICT OMAHA		LOCATION: LF-002
1. PROJECT # see above		2. INSPECTOR			SHEET 23 OF 24
ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS	MATERIAL DESCRIPTION	COMMENTS
	422				
	424				
	426				
	428				
4838.83	430				
	432				
	434				
	436				
	438				

PROJECT #: Monitoring Well Replacement		SITE: SWMU 6-2		SAMPLE LOCATION: KAFB-0221	
HTRW DRILLING LOG			DISTRICT OMAHA		LOCATION: LF-002
1. PROJECT # see above		2. INSPECTOR			SHEET <u>24</u> OF 24
ELEV.	DEPTH (feet)	FIELD SCREEN RESULTS	USCS CLASS	MATERIAL DESCRIPTION	COMMENTS
	442				
	444				
	446				Interval of 445-455 drilled to prevent sand heaving during completion, no samples obtained
	448				
4818.83	450				
	452				
	454				
	456			Total Depth 455 Feet	
	458				