PNM PUBLIC SERVICE COMPANY OF NEW MEXICO
ALVARADO SQUARE ALBUQUERQUE, NEW MEXICO 87158

July 24, 1984

RECEIVED
JUL 25 1984
GROUND WATER/HAZARDOUS WASTE BUREAU

Mr. Joel Hubbell
Water Resource Specialist
New Mexico Environmental
Improvement Disivion
Post Office Box 968
Santa Fe, NM 87504

Dear Mr. Hubbell:

Subject: Person Generating Station
Core Samples - Drilling Logs

As requested July 19, 1984, I am enclosing copies of the subject information for your review.

Very truly yours,

H.L. Plum
Regulatory Coordinator

HLP:cam
Enclosures:

October 24

Steam cleaned split spoon, bit &
pipe wrenches
steam cleaner set @ 90%
ie 90% of time the burner
is on. 202° F

0' 8310240945 NO SMELL - EARTHY
brown SANDY med grained

2.5'-1.0 0950 as above some clay gall
NO smell

5'-6.5 1000 NO ODOR MED-C SAND SOME
3 cm pebbles @ base
slight moisture

7.5-9 10:05 as above w/ pebbles

10'-11.5 10:10 as above

12.5- 10:15 as above

15 1020 as above

17.5 1025 "

NO DRILLING
BREAKS - APPEAR
TO BE UNIFORM

	PS-1	SAMP IN MRSN CARS ONLY IF SMELLS
20.0%	1030	as above - med-coarse sand some 3cm pebbles NO ODOR SOIL MOISTURE SAMPLE
22.5'	1050	SLIGHT ODOR OF SOMETHING @ 23.0 took vial from ~~[illegible]~~ 23.0. DID NOT SMELL LIKE ORGANIC SOLVENTS
25'	1055	as above - no odor
27.5	11[illegible]	coarser grained - more 1-3cm pebbles throughout core. dropped sample
30 ☆	1115	SOIL MOISTURE SAMPLE BOTOM of core smelled slightly sweet all else like damp sand - NOT AN "organic" smell (solvent)
32.5	11.25	more clay in samples - holding together better slightly more moisture earthy smell

PS-1

35.0 1130 med-c sand w/ some gravel 1-3 cm NOT AS MOIST AS BEFORE — KENT SAYS ABOUT THE SAME.

37.5 1140 fine-m sand w/ some clay - more competent samples / no odor

40.0 ☆ 1145 Soil Moisture SAMPLE SAND MED-COARSE w/ SOME 1-3 cm pebbles NO ODOR little clay if any

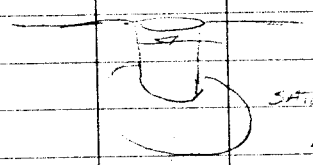
42.5 1150 SAND - COARSE - MED SOME PEBBLES AS ABOVE - DRYER THAN BEFORE

45.0 1200 AS ABOVE

47.2 1210 as above

50.0 1220 "DRY" GRAVEL w/ some med-coarse sand.

AFTER LUNCH THE HOLE STANK OF SOLVENT



SATURATED BULB BELOW PIPE

LET US ASSUME $dh/dl = 1$

$K = K_{SAT}$

$d = 90'$

$Q = KA - h/dl$

$\frac{300'/day}{ft^2}$ too absurd

how much fluid could be retained?

SAY 15%

$r = 2.0$ $r^2 = 4.0$ $2.49 = 12.5$

PS 2

831024 1500

0.5 1500 No odor - coarse grained sand some clay lenses as much as 6" thick in core

2.5 1530 c-m sand no clay in core

@ 2.5' let holes stand for 20 min to see if odor would develop hole 1 - no odor - some sweet smell no solvent smell in hole

5.0 1540 Brown sand c-med grained sweet smell - maybe like filed metal? - not solvent smell (gone) Few pebbles of 1-2 cm as before

7.5 1545 good clean cutting smell not too moisture c-m sand as before (photo)

10'	1550	as above		no odor	
		smells like		clay	soil
	BA				

Thurs 6½ 9^30 - 4^00

PNN FRI - 2 hours 3-5

MON 7 hours 8-12^30

2^00 - 4^30

Tue 8^15 -

ACOMA 500 - 300

730 815

October 25

831025

12.5' 0900 V. MOIST SAND BROWN MED GRAINED NO SMELL V. few pebbles

15 0905 C grained gravel @ 16.5 M - coarser sand no odor

17.5 0910 MOIST' Med sand some pebbles @ base warm from coring no odor

20.0 0915 V. little return - no soil moisture sample No odor - soil is moist

27.5	0920	V. COARSE GRAVEL 2-4cm w/ c sand - MOIST NO ODOR
25.0	0925	m-c sand w/ some pebbles - NO ODOR
27.5	0930	m-c sand and 1-3cm gravel NO odor MOIST!
30.	0950	MED SAND SOME PEBBLES NO ODOR
32.5	0955	AS ABOVE
35.0	1000	V. MOIST MED SAND AS ABOVE NO ODOR WARM MOIST!
37.5	1005	as above NO ODOR
40.0	1015	NO ODOR coarser grained sample w/ more 1-3cm pebbles

42.5 1020 @ above

45.0 1030 ~~as above~~ med-grained
1 gravel clast sand
brown warm moist!

47.5 1035 gravel @ base - dry
moist med sand @ top
picture

50' 1040 finer grained some clay
or silt - moist
NO odor

Pronounced solvent odor from
hole @ 1250 pm

PS #3 W of pit
Start 1230

0'	1230	C-M sand clay lense No ODOR
2.5	1235	as above w/ clay
5.0	1240	oily smell @ 5.0' dry sand m grained w/ no odor below the darker stained oil smelling sample no clay earthy smell below oil smell.
7.5	1245	definite odor to sample. volitile solvent smell - NOT oil med - c sand some gravel brown moist.

10.0	1250	Soil Moisture definite odor of solvents v. little course material mostly med sand darker coloration in areas of odor
12.5	1255	Definite odor - some large clasts mostly med sand brown some moisture.
15.0	1300	Odor same pine oil turpentine smell Kerosine? Coarse grained sand but mostly gravel 1-3 cm
17.5	1305	Odor as above v. coarse gravel some sand.

20'	1310	Odor med grain little gravel.
22.5	1315	[illegible] (photo) 2 gravel lenses smells like pine oil — not too moist
25.0	1320	Less odor! c. grained gravel large clasts some sand.
27.5	1400	less odor. med gr. sand very little gravel (Piney sweet smell)
30.0	1405	Still smells sand as above

32.5 1415 Some granules
mostly fine-med sand

Smells more like TCE
Solvent than other samples
this one reeks bad!

35.0 1420 Smells more sweet
less like solvent
layered C grained gravel
and med-grained sand
brown some moisture

37 - NO SAMPLE

40 1520 Smells like solvent
to AC - less bad to
body
fine-med sand some
gravel. brown low
moisture.

42.5 1510 EARTHY Smell with
Solvent MIXED in - getting
better!
photo more moisture - MED SA
WITH SOME GRAVEL

45.0	1520	less earthy smell more piney - solvent med sand & few pebbles some granules brown - not too moist			
47.5	1530	Some earthy smell sandy silt-c grained sand gravel & granules not too moist definite piney smell			
50.0	1535	over small - little earthy smell m. grained sand some granules NOT MOIST			
55'	1540	earthy and solvent smell. Silt-med sand more granules than before very little gravel & clay lens and brown			

1545

60' Soil moisture some gravel, med sand earthy odor w/ some solvent. Not too bad odor

PS #1 2 SACKS GRANULAR EARTH
1 SACK GELL
EARTH TO 30'
1 SACK GELL
EARTH TO 15'
Bentonite to surface

PS #2 1 sack granules
3 shovels
1 SACK gell
3 shovels
open hole

PS #3 1 SACK granule
earth
1 SACK gel
30'
earth
1 sack granule
earth / 1 SACK GEL

October 26 1983
PNM Person Station

PS-4 5' N of casing

0'	0900	smells of kerosine etc c-med sand brown some granules fairly dry
@ 2'		cuttings change to dark brown orange - "~~[illegible]~~" coated with organics Respirators
2.5'	0915	smells bad dark color due to organic staining med sand no cobbles No granules
5.0	0920	coarse-med sand stained smells - fairly moist Soil Moisture

7.5	0925	as above ~~Soil Moist~~
10.0	0930	some granules very moist w/ "organics" Soil / Moisture
12.5	0935	very wet from "org" stinks some pebbles small gravel lens c grained - warm sample
15'	0940	Soil Moisture SATURATED w/ solvent + H_2O (left over from steam? I doubt - cool ~~dry~~ sample)
17.5	0945	fine-med looks saturated brown - stinks
20.0		Soil Moisture as/above

22.5		all grains coated less moisture than above C-med grained sand			
25.0		Soil Moisture med-c grained not as moist w/ oily coating smells still definite dryer.			
27.5		as above	little finer.		
30'	1015	as above some few granules - still smells -			
32.5	1030	bit darker color sweet smell has sheen on grains finer grained few pebbles!			

35' 1045 C-M sand as above smelled less than others.

37.5 1100 C-M sand as above Kerosine odor - less moisture.

40' 1115 Soil Moisture some pebbles larger than 5 cm. less smell more like pine oil.

42.5 1130 no pebbles looks as above but some large gravels dryer as above w/ smell.

45.0 very coarse gravels here smells bad c-med sand matrix moist harder than before

47.5 1300 Coarse-grained large pebbles + c-med sand still smells - brown

50'	1310	V. coarse gravel med sand still smells many granules
55'	1320	lenses of gravel in a fine-med sand matrix. smells still
60	1350	c grained sand several granule lenses not too moist dried quickly, smell.
65'	1410	definite earthy smell others can't smell any solvent in this sample coarse grained lens c-med sand.

Painting finished boiler 3-4 years ago
took painters ~~[illegible]~~ ~~[illegible]~~
of the year. Most likely
cleaned brushes etc. at
the pit.

paint is "gray" plug in
bottom of latex?

70' 1420 Soil Moisture
Silty sand at top of core
gravel at base
some floating pebbles
in the finer-grained
finer grained smells
coarser-grained does
not smell - smells
earthy

bit is being backed out
a little

75' fine at top wetter & smells
bottom of core is very coarse
and no smell - CAVE IN
SAMPLED FROM COARSE

Driller confirmed cave in on last few samples.

80'	1530	6" cave in hole m-c sand drier - no odor.
85'	1615	6" slop in hole no smell m-c sand gravel lens, finer grained - compacted sample no odor fairly dry
P5 #4		3 buckets pellets down large pull = 1 sack granular 2 b. pell pull = 1 sac gran to 95' sack gel

OCTOBER 27

PS-5

10' casing void space

12.5' 0945 w/ some cave-in
1ST SAMPLE
NO RETURNS - SIDE OF
BARREL SOAKING WET.

15.0 0950 POOR RETURNS - gravel &
course sand saturated?
smells better than other
samples from other holes

17.5 1005 NO RETURN
LOOKED SATURATED

20.0 101 GOOD RETURNS - does not
look SATURATED -
smells like dog dirt +
solvent. course sand
pebbles 1-3cm common.
soil moisture sample

22.7					
25'	1030	Med sand fair amount moisture bad smell as above some cave in			
27.5	1050	C sand many granules photo good core smells as above dog dirt + solvent			
30.0	1100	C-med sand some granules moist smells bad as above dries quickly - not too moist			

32.5	1110	as above
35.0	1120	Soil moisture fas above little less smell c-med sand
37.5	1130	med sand smell as above no granules or pebbles
40	1140	as above
42.5	1150	med sand some granules moist smell as above
45.0	1200	as above same odor maybe less odor
47.5	1210	granules and pebbles common - photo - smells - med sand w/ moisture dries quick - brown

50'	1220	Soil Moisture mod sand smells more like solvent now - some granules no pebbles paint thinner smell
55'	1330	no soil moisture very strong solvent odor some large gravel + pebbles medium - coarse gr sand ver
60'	1340	soil moisture * moist medium sand w/ some clay in paint solvent odor no gravel in most sample
65'	1355	very moist uniform medium sand some silt + clay and very moist slight solvent odor

70' 1415 medium sand w/
some pebbles moist
slightly drier than above
Trace odor of solvent
soil moisture x

75' 1439 medium sand w/some
pebbles, moist slightly
drier than above
trace odor

80' 1455 medium sand, drier than
above w/ no odor
soil moisture x

85' medium - fine grained qz sand
1500 w/ some feldspar, slight
moisture w/no odor

90' 1530 more moist than above
medium - fine qz sand
w/ slight solvent odor

backfill hole

40# volclay

1 bag premium gel

DAN STEVENS II 87

Need:

Role of unsat zone in Rad & HAZ waste disposal

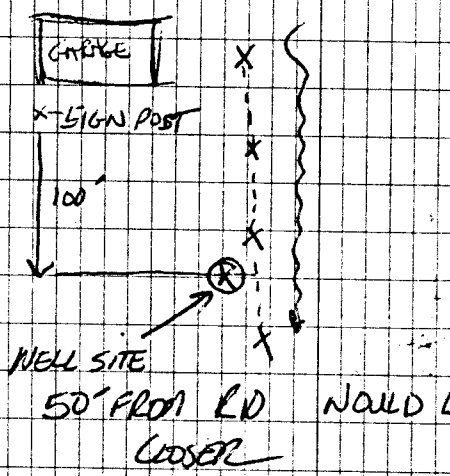
Mercer, Rao, Marine

ANN ARBOR SCIENCE

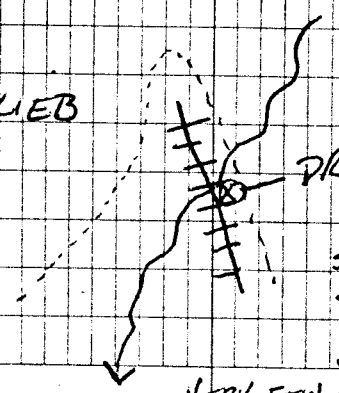
FRANK GARCIA

OK TO DRILL

CENTRAL AUTO SERVICE



BOTTLIEB



VERY FEW SITES ABOVE
HORACE SPRINGS

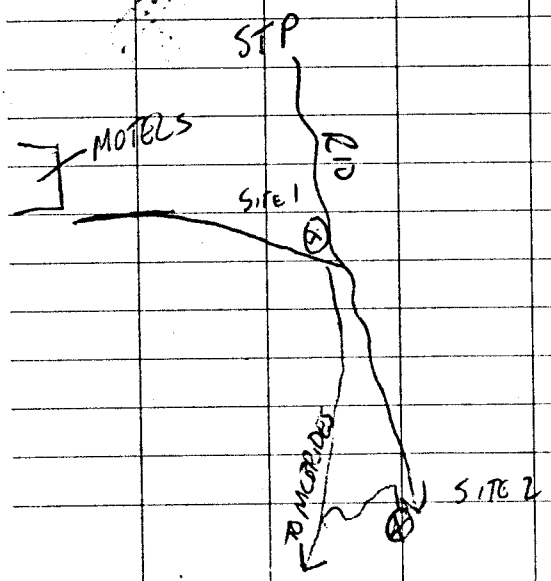
M'BRIDE

SITE #1

Near Ford
SE SESE SECTION 6

SITE 2
SW SECTION 5

BOTH GOOD SITES



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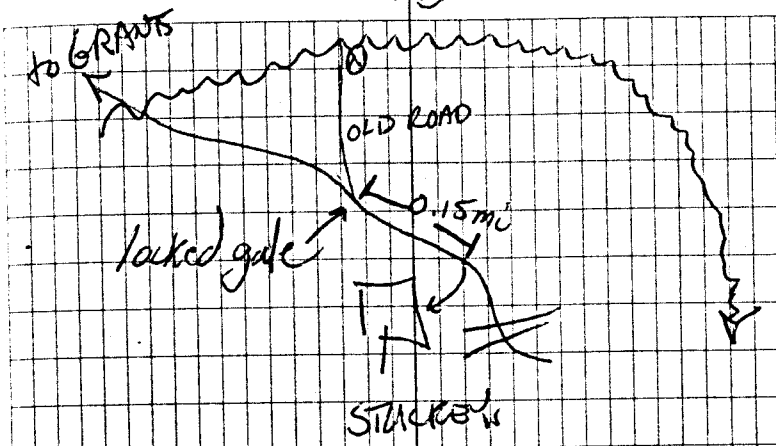


OK TO DRILL

12-12-83

CENTRAL AUTO SERVICE YARD

RIO SAN JOSE RSJ #1

START DRILL 12:00
HOLLOW STEM AUGER (ATC)
NO FLUIDS

0-2.5 brown-red clay - moist
2.5-5 RED CLAY AS ABOVE CLAY BALLS
5-7.5 putty red clay - prob sat.
7.5-10 brown clay thick shaks
10-20 as above

10' screen 17-7
2 sacks blast sand

12 12 83 2:00 pm

15' 5 of RSJ on McBride land about 1 mi from STP

2 sites here 15' from River RSJ 2
30' RSJ 3
60' RSJ 4

0-2.5 Red brown clay
2.5-5.0 putty brown clay
5-10 as above
water @ 11.0' (?)
poor returns

3:00 DT
2:50

17½' from top of casing to bottom of hole

250 - Sundown
DOWNTIME ON RIG

① NEED BAILER 1½" PVC w/ [illegible]
② SPAGHETTI LOCKS W/
ADJUSTABLE COMBO

MATERIALS

5	2x5	tube	
5	2x10	tube	
5	2x5	screen	25
3	2x10	screen	30
			55

332 Jefferson NE Apt D
255-6684
2 blks east Washington

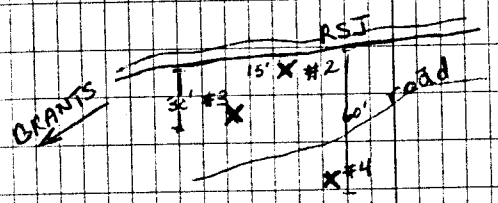
Leather gloves

7 liters ± / bore volume

RSJ #4 ~60' from River

12/~~14~~ 13/83 12:30

0-5.0' brown-red clay-moist
5-10' brown to red, putty-like clay
10-15' brown clay- thick shake
15'-20' brown-clay-soupy consistancy



this hole was bailed for 20 minutes

10' screen 19'-
3 sacs sand

12-13-83 RJS # 3 3:00

0-5' brown-red moist, clay balls
5-10' brown-red putty-like
10-15'
15-20' brown-gray shake, soupy clay

RSJ #5 near RR

brown red soup @ 3.5' putty
3.5-10 lots of clay

15' gray mud - off auger
brown red mud

looks like red bedrock

CLAY TO 16' BASALT OR
GRAVEL STRINGER AT
16-17'

NOT IN ALLUVIUM
BASALT GRAVEL IN BAIER

DOHERTY 2472 - 2636

STUCKEYS

DRILLING

11:30 leave Stuckeys for 1st site
3:00 pm break down

12:30 start drill
:30 Lunch break
5:00 STOP DRILL

7 1/2 hours drill, mob & demob

Start drill about 8:00 8:30 am
@ RSJ -5

3 bags sand

10' screen
20' TD

RSJ # 9

0- 2½' BASALT GRAVEL

BOULDER @ 2½

~~[illegible]~~ Red wet [illegible]

5'-10' Basalt boulders

10' TD in Basalt

1½ bag sand

RSJ # 5
Blowsand Red 0-4
Red mud 4-10 16'

16-20 gravel stringers
in mud
large cobble
in auger

good water
completed 17' @ BOC
3 bags sand

RSJ #6 - Good lith. log

0-4 red blow sand
4-8 red balls of clay
8-12 red thick shake putty
12-15 brown thick shake

Dec 19 1984

PS 6 START 1315

0-2.5 clean smell MED-FINE
1315 SAND SOME ASPHALT
CHIPS, TRACE CLAY, BROWN
SAND

2.5-5.0 GOOD FAIR SORT BROWN SAND
FINE TRACE CLAY
1325 SOME GRANULE
CLEAN SMELL EARTHY

10-11.5 MED-COARSE GRAINED BROWN
SAND SOME PEBBLES
FAIR WELL SORT EARTHY
SMELL

15-16.5 AS ABOVE EARTHY
SMELL
1335 PEBBLES MORE COMMON

20 - 21.5 AS ABOVE
SOIL MOISTURE

25 - 26.5 COARSER GRAINED
GRAVEL LENS + CG SAND
1345 BROWN throughout
NO SMELL
STEAMS IN COLD DRY
AIR

30 - 31.5 Lt. Brown / Blonde sand
smells of solvent - pine oil
C-M grained some
pebbles

35 - 36.5 smell not as bad
photo but it still smells
med grained well
sorted ~~dark~~ brown
moist

40-41.5 Soil Moist
smell just barely
there
MED GRAINED SOME
PEBBLES BROWN

45-46.5 turpentine / solvent smell
AS ABOVE
BROWN MED SS SOME
PEBBLES

50-51.5 AS ABOVE
? 5

52.5-54.0 LARGE pebbles IN A
MED SAND MATRIX
SMELLS LIKE WET SAND

55. - 56.5 SMELLS CLEAN —
MIGHT BE SOME ODOR
BUT VERY SLIGHT
LITH AS ABOVE NO PEBBLES

57.5-58.0 (1435) Much finer grained SILT & CLAY OVERLAIN BY COARSER PEBBLES IN FINE-M SAND MATRIX NO ODOR

60-61.5 BROWN/blonde M-C grained fair few pebbles & cobbles SMELLS EARTHY

62.5-63.0 PITUTO finer grained zone wetter than coarser grained around it MED-C around vf. sand FAIRLY DRY! NO ODOR

65-66.5 ~~[illegible]~~ IMAGINE AN ODOR? MED-C grain dry dry SOME PEBBLES

67.5 - 68.0	C-M sand w/ large pebbles overlays silty sand - brown
70-71.5	~~As A~~ M-C sand some pebbles - brown some fine grained sand.
80'-81.5	C-grained sand blonde/brown some ~~gran~~ pebbles
90-91.5	Fine grained silty sand overlain by C-M sand all brown

85-90 - 2 bkts

80-85 1 bkt

hole staying open
SOUNDED TO 82'
w/ 40' AUGER IN HOLE

4 SACS MUD GEL TO 42'

3 SACS 40-0

BACKFILLED w/ CUTTINGS

83 1220 0

PS 7

0-1.5 CLAY-RICH on top
C sand + asphalt too
wet brown
no odor

5-6.5 earthy smell well sort
Med sand no pebbles
brown

10-11.5 slight odor PINEY
SOME pebbles MED-C
grained good sort
brown

15-16.5 ~~m-f~~ coarse under fine-m
STINKS OF SOLVENT &
PINE
C grained section has
pebbles and granules
m-f is well sorted
all brown

pebbles 3 cm

20-21.5 poor returns
stinks of pine sol
v. coarse grained
but some fine silt/clay
in matrix of galls

25-26.5 worst smell - dead pine sol
med-fine sand brown
moist
trace clay smear
some blonde/brown
no pebbles

30-31.5 REEKS! CLAY LENSE
IN MIDDLE OF SPOON CORE
pebbles also - 3 cm
med c sand
all brown

35-36.5 0900	CLAY LENS 4cm thick IN MIDDLE OF CORE brown c-med grained drives quick				
40-41.5	fine silty sand c-m sand brown some pebbles 1-2cm				
45-46.5	V coarse gravel 4cm mud sand MATRIX brown STINKS				
50-51.5 0940	MED - C grained sand brown stinks s!				

52.5-54.0 CLAY lens near
top steaming
0945 C pebbles above clay
med sand @ base

55-56.5 m sand good sort
brown some odor
s

57.5-59 M sand good sort
smells
as above

60-61.5 2 clay lens 3cm thick
C-med sand
still smells
brown - blonde/brown
Soil Moisture Sample hand
some fine grained
silty sand.

62.5-64.0
1005

C grained many
granule-sized one
pebble 3cm
slight odor
blonde brown

65-66.5
1010

C grained some
3-4 cm pebbles in
fine sand matrix
very very slight odor
blonde brown

67.5-69

some large pebbles in
fine matrix (photo)
fine-med SS some
silt MATRIX
pine sol odor persists
darker brown

70-71.5 EARTHY SMELL
FINE GRAINED ZONES
SOME 2 cm pebbles in
med sand matrix
moist.

72.5-74 large pebbles (photo) 3cm
c grained sand
brown
Some fine-grained zones
earthy smell.

80-81.5 C grained lots of
pebbles as above
NO odor

90-91.5 2 votes for slight
1110 odor
2 votes no odor
whole area smells
c grained as above
some med sand
brown

Bentonite PS 7

7 sacks 90-26'

4 Sacks total

PS 8

5-7.5 mostly med gr sand
10cm layer of pebbles in middle
brown
earthy odor

10' C grained large pebbles
dry zone
fined zone (m-f sand)
more moist
earthy smell

15' Coarse zones-very dry
large pebbles 2-4cm
smells of solvent esp.
in finer zones
fine-med sand "~~wet~~" moist
zone 5cm thick

20' med sand well sort
smells, blonde/brown
some granules

25 med-course grained many
~~some~~ granules, some
1330 small pebbles-bed 10cm
fine-med sand also
surrounding it.
smells bad

30 gray brown med course
good sort
no pebbles
some odor

35' less smell med
1340 grained few
pebbles ~~brown~~
brown good sort
dries quick

40

45

50 brown
1 vote no smell
1 vote slight smell
fine-med sand
some pebbles

52.5 pattern of dryness
wet (photo) corresponds
1400 with coarse vs med-fine
NO ODOR 2 votes
dries quick

55 C-Med sand
some 3cm
pebbles NO ODOR
some coarse gr
bed 10cm

57.5 C-med sand brown
1410 pebbles 1cm
good sort
No odor

60 V coarse gravel zone
1445 about pebbles 2cm
Med sand
brown NO ODOR

62.5 C-med sand as above
1430 NO ODOR

65' gray brown some coarse-
grained lens w/ 2 cm
1440 pebbles NO ODOR
AS ABOVE

67.5 large pebble 5 cm
c grained
as above

70' some silty sand seems
1450 consolidated, fairly dry
NO ODOR
trace pebbles
C-med sand mostly

80' fairly dry coarse grained
abnt small (1cm) pebbles
lots of granule size
brown
NO ODOR
DRY!

90 Moist fine-med grained
~~some~~ pebble lens 2cm
good sort
NO ODOR

95 fine grained sand some
silt sized wetter
coarse grained zones
still dry.
No odor
brown/choc brown

100 Lots of moisture
finer grained when rolled
into "tube" will retain
shape in hand
fine-med sand trace
pebbles - brown
NO ODOR

105 GETTING PRETTY WET
FAIRLY FINE SAND
NO PEBBLES
BROWN / CHOC BROWN
NO ODOR

107.5 Free water in
screws of split spoon
& muddy outside
of split spoon
Still very damp
no smell fine - coarse
grained no pebbles

Dec 21 1983

8:10 AM clear 29F

Pulling auger out of hole # PS-8

8:20 Begin hole PS-9 10' SE of pit

OF PIT

1st sample at surface under concrete

11" thick concrete

PS9 Surface coarse med sand 833

w/ some gravel

PS9 5' 836

coarse - med sand some

some unbelish staining earthy sand

PS9 10' 840

SM coarse - med sand some gravel

some moisture no odor

PS-9 15' 845

coarse - med sand some pea

gravel solvent odor moisture

detectable

SM PS-9 20' 880

med-coarse gravel sand medium

odor

PS9 25' 847

med-coarse gr sand w/ some gravel

med odor

PS9 30' med-coarse gr moist
SM sand w/odor & dispersed
pea gravel '08:50 AM

PS9 35' med gr sand moist some
odor

PS9 40' med-coarse gr uniform sand
SM some moisture slight odor

PS9 45' med-coarse gr sand
some moisture odor med

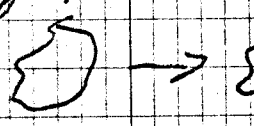
PS9 50' med-coarse gr sand
SM uniform some moisture odor med

PS9 52.5' med-coarse gr uniform sand
less moist some odor

PS9 55' med coarse gr sand less
moisture earthy odor

PS9 57.5' med gr sand uniform
less moisture earthy odor

PS9 60' 9:55 AM
SM med-coarse gr sand w/
slight moisture no odor

PS9 62.5' 10 AM
med-coarse gr sand some
dispersed gravel no odor
PS9 65' 10:05
med-coarse sand w/ some
dispersed gravel no odor
PS9 67.5'
med-coarse gr sand no odor
no gravel slightly moister
PS9 70.0'
SM coarse sand & considerable dispersed
gravel


no odor

70-80'
Some gravel returns mainly
med-coarse sand
PS9 80' Hollow auto for sample
SM med-coarse gr sand no odor

PS9 90' 10.45 AM
SM 87 Blowcounts to take 18" sample
material more consolidated
med - coarse gr sand v slight
increase in moisture

PS9 95'
11 oclock
found basalt fragment 1" long
SM in core slight moisture
no smell

PS9 100' 11.15 108 blowcounts for 18"
fairly dry medium - coarse sample
SM gravel sand w/ some
volcanic gravel no odor

PS9 102.5 dry ~~fine gr~~ coarse - med
gr sand w dispersed gravel
no odor

PS9 107.5 11.50
135 blowcounts for 18" sample
SM bottom ½ of sample very moist slightly
driven from 107.5-109 finer gr sand w/ some slight
gravel - in the capillary zone

SM

SM

SM

PS-10 begin after lunch 2pm

PS 10 Surface
med-coarse gr sand few concrete/gravel chunks moist no odor some clay streaks

PS 10 5'
med-coarse gr uniform sand moist no odor

PS10 10'
SM med-coarse gr sand driven w/ one piece of gravel slight odor

PS10 15' med-coarse gr uniform sand strong solvent odor slightly moist

PS10 20'
SM uniform fine-coarse gr rel dry sand w very strong odor

PS10 25'
uniform med-coarse gr sand slightly moist w/ very strong odor

PS 10 30'
SM moist med-coarse gr sand w some small pea gravel and v strong odor

PS10 35 uniform med sand w some moisture and strong odor

PS10 40'
SM uniform med-coarse gr moist sand w strong odor

PS10 45'
uniform med-coarse gr moist sand med odor

PS10 50'
SM med-coarse gr slightly moist sand w trace odor

PS10 52.5' med-coarse gr slightly moist uniform sand w/slight odor

PS10 55' med-coarse gr uniform sand nearly dry w earthy odor

PS10 57.5' med-coarse gr uniform sand some pebbles and slight musty no odor

PS10 60'
SM slight moisture med-coarse gr sand no odor w/some pebbles

PS10 62.5'
med-coarse gr moist sandy/some pebbles no odor

PS10 65'
med-coarse gr moist sand/a few pebbles no odor

PS10 67.5' med-coarse gr. moist sand
with some pebbles no odor

PS10 70' med-coarse gr moist sand
SM w/some gravel no odor

PS10 80' med-coarse gr. moist sand
SM w/some gravel no odor
- hole is getting little bit tight

PS 90' 80 blowcounts - silty sand
SM with some pebbles + gravel
no odor

PS 95' med-coarse gr. moist sand
SM w/some gravel no odor

100 as above

105 fairly dry brown fine
sand good cmT
no clay no cobbles

110 consolidated
compact - not too moist
med sand trace pebbles 1/2cm
no clay NO ODOR

112.5 hit saturation - capilary zone
WATER EXTRACTION INTO

coarse grained granules and pebbles common
fairly dry in sampler

definite saturation in AREAS

brown

IMMEDIATELY PUT DOWN BENTONITE

110-111.5 hit in CAP ZONE
NO FLUID WAS IN END OF CORE

112.5-114 10" pore water squeezed into 4" core

PS 11

0-2.5 NO RETURN

5-7.5 fine grained brown
SAND and med sand
trace pebbles low
moist NO ODOR

10.0-11.5 m-c sand dry
pebbles - 2 cm bent
lens of m-f sand
slight odor

15.0-16.5 as above
slight odor - not
too bad odor

20-21.5 lite brown m-f
sand dry - no odor
some pebbles 2cm
in a 8cm lens

25.0-26.5 c grained sand
under 1 m sand
moister - brown
NO ODOR

30'-31.5
slightly moist

2 large 3cm pebbles in
n-c MATRIX brown
NO ODOR
~~some~~ c granule 1cm
4cm thick

35.-36.5 M grained sand
good sort some
pebbles 1cm
NO ODOR

40-41.5 Coarse grained
pebbles ~~abt~~
brown NO odor

45.0 46.5 fine sand - med
under c sand w
2 cm pebbles no
odor brown
dries quick

50-51.5 c grained good sat
some 3 cm pebbles
dries quick
NO ODOR

52.8-54 c grained sand under
fine shows moisture
plate effects of grain size
NO ODOR
BROWN

55-56.5 c grained lens
w pebbles (2 cm thick)
fine sand above.
NO ODOR

57.5 C grain sand NO ODOR
well sorted BROWN

60.0 fine-med sand
some parts moist?
NO ODOR

62.5 well sort med sand
moist
some coarse grains
No ODOR

65 fine sand moist
coarse sand dry
NO ODOR
some pebbles 2cm
fine sand lens 1cm

67.5 C grained sand
over fine grained
MORE MOIST
some 2 cm pebbles
NO ODOR
AS BEFORE

70 AS ABOVE

80 AS ABOVE - EXACTLY!

90 C grained sand
good soil
pebble lens 4 cm thick
pebbles 2 cm
NO ODOR

PS 12 start 1510

0-2.5 very dry brown sand
med good sort
NO ODOR

5-6.5 m-c sand dry
brown some
pebbles NO ODOR

10.-11.5 c grained some
pebbles dry
NO ODOR
Brown

15" entire core is coarse
w/ pebbles 1-3cm
smells of solvent
dry

20 smells of solvent
C grained less under
more sand brown
some pebbles 1 cm

25 ODOR
C. grained all through
large 3 cm pebbles
dry

10cm
30 C grained usually
med grained sand
ODOR not too moist

35 less odor
m grained C grained
at top
brown
moist

40' med grain well sort
brown moist
very slight odor
tr. pebbles
dries quick

45 as above
some fine

50 c-med grained
no odor

52.5' medium grained sand - moist
with trace pebbles - brown
no odor fairly well sorted

55' med-coarse grained brown sand
top 1/3 moister than bottom 2/3.
top 1/3 fine to med. grained,
bottom medium-coarse grained
with some pebbles (~ 3cm)
no odor

57.5' med-coarse grained
brown sand, moist,
trace pebbles dr. squickly no odor
(up to 3cm)

60' med-Coarse Grained brown sand
poorly sorted abundance of pebbles
(~3-6cm) slightly moist to fairly
dry.

62.5' med-coarse grained brown
0845 sand top 1/2 has trace of pebbles
slightly moist bottom 1/2 has
pebbles & fairly dry. no odor

65.0 C-M grained throughout good sort
some pebbles 1-2cm NO CLAY
NO ODOR SLIGHTLY MOIST

67.5' med-coarse grained on both ends
with some pebbles (up to 5cm)
fine grained clayey sand
in center section with some
pebbles. Fine grained section
very moist, coarse grained are
very dry No odor

70' fine clay sandy lense
moist
med grained estuarine
some 3 cm pebbles
no odor
brown

80' fine grained sandy lense
moist in center
ends are med-coarse grained
with a few pebbles (~2 cm)
+ are fairly dry
brown, no odor

90' brown moist Med-fine sand
trace pebbles 2-3cm
well sorted
NO ODOR

Dec 27, 1983

45°F Cloudy + drizzle
State - Denver Journal

PS 13 surface 8:20 AM
SM med - coarse gr sand slight moisture
slight odor ⊘BC

PS13 5' no return

PS13 10' med - coarse gr sand some
SM pebbles strong odor very dry ⊘BC

PS13 15' c-med grained brown stinks of
solvent pebbles ½ cm moist
⊘BC

PS13 20' med grained + one pebble
SM good sort strong odor
⊘BC

PS 13 25'
med - coarse gr sand
strong odor some pebble
⊘BC

PS 13 30'
SM med - coarse gr sand
strong odor

PS13 35' med sand brown odor
trace pebbles BC

PS13 40' as above trace odor
BC

PS13 45' some c-med sand fairly
dry - fine-med sand more moist
very faint odor
PS13 50' c grained abnt pebbly BC
earthy but trace (hint)
SM odor moist 10-10-11 BC

PS13 52.5' fairly dry c-med sand 14-14-11
abnt pebbles 1-2 cm BC
no odor
PS13 55' fairly dry c-med gr sand 5-9-10
few pebbles no odor BC

PS13 57.5' med-coarse gr uniform sand / pebbles
very slight odor 14-14-7 BC

PS13 60' med grained no odor 8-11-10
SM some pebbles 1-2 cm BC
brown-moist.

PS13
62.5 coarse med grained sand NO odor abnt. ~~some~~ pebbles
PS13 dry no odor pebbles 2cm
65' med sand gravel lens
pebbles 2cm NO ODOR 15 18 18 BC

PS13 67.5' med sand brown
moist - no odor 10 11 15
tn. pebbles

PS13 70' c grained some 11 10 17
SM pebbles good sort

~~PS13 75'~~ 17/24-22

PS13 80' as above good
consolidation

PS13 90' moist c grained 20 26 30
some pebbles brown
trace clay smear

1/30/84 PNM Phase III

Clear 40° PS 17 Dulley

1050 AM PS 17

surface molding clay w/some sand
consolidated, very slight moisture
some sand occasional pebbles

SM 10' 6" layer of clay w/10" sand
recovered med sand no odor

SM 20' med-fine gr moist sand
w/sharp PCE odor, no clay

25' med-coarse gr moist sand
+ pebbles PCE odor

SM 30' 2" clay lens @ 31.5'
f-m sand [illegible]
slight smell of solvent
more like clean earth

35' med-fine gr moist sand
slight odor

SM 40' med gr uniform sand dry
PCE odor

45'

35'
Med-Fine sand @ base of sampler
wet
c-sand dry @ top
v. slight smell of solvent

45 C-M grained sand some
pebbles 2 cm good soil
[illegible] moisture

50' med-coarse gr sand w/ some
pebbles some moisture
no odor

55' med grained uniform sand
w/ no odor slightly moist

60' uniform med sand slightly
moist - no odor some
Jemez obsidian flakes

B17

65'

med - coarse gr slightly moist
sand w/ rare odor

70' SM

med - coarse gr sand w/
some pebbles slightly
moist no odor

80' SM

med - coarse gr sand w/ ~~slight~~
pea pebbles no odor
slightly moist

90' SM

med - coarse gr slightly
moist sand w/ some pebbles
no odor

Backfilled

		2 at base
	4 buckets bentonite	40', 17'
	36 bags	50, 70, 10'

2 at

PS 16

surface 15' west of PS14

3:05 pm slightly moist clay
medium gr sand with no odor

10' SM
4" clay 14" med-coarse gr
sand slight moisture moderate
PCE odor

20' SM
med-coarse gr sand slight
moisture moderate PCE odor

25' med-coarse gr sand w/some
pea gravel strong PCE odor
slightly moist

30' SM med grained uniform slightly
moist sand w moderate PCE odor

35' med-coarse gr sand slightly moist
strong PCE odor

40' SM uniform slightly moist
medium-coarse gr sand
slight PCE odor

45' med - coarse gr uniform sand
slight moisture no odor

50' SM
med - coarse gr uniform sand
w/ slight moisture no odor

55' med gr slightly moist uniform
sand some pebbles trace odor
PCE

Last hole of day

1/31/84 clear 31°

60 SM medium - coarse gr sand
slightly moist abundant
small pebbles no PCE odor

65' med - coarse gr sand w/
gravel 1/4 - 3/8" dia
slightly moist no PCE odor

70' SM
coarse sand + gravel (pea size)
slightly moist no PCE odor

80' SM
med-coarse gr slightly moist
sand w/ occasional pebbles
no PLE odor

90' SM
Coarse gr slightly moist
Sand w/ one large piece of
gravel 1.8' dia no odor

PB/AS

TRANSBAS

DAVE

TERRY

DON -LAB

JEANENE -LAB

LLOYD - PhD

Herm

JANET

GENE - Plant

NW Pipe A1

~~[illegible]~~ DEVEL

John -

PAUL - ~~[illegible]~~

1/31/84

PNM Person Station

Phase III Drilling and Sampling

PS-17, PS-16 in previous Leitz Notebook

PS-15 11:AM

surface asphalt 2.5" thick
9" sandy clay 1" sand recovered
poor recovery slightly moist
no PCE odor

10' SM soon touched asphalt

11" hard slightly moist dense clay and 6" coarse sand w/ some pebbles
no PCE odor

20' SM
uniform med - coarse gr slightly moist sand w/ strong PCE odor

25' med - coarse gr sand w/ abundant 1.5 - .50" gravel w/ very strong PCE odor

30' SM fine - med uniform moist sand w/ slight silt & strong PCE odor

PS15

35' uniform medium gr moist sand w/ strong PCE odor, occasional gravel

40' SM medium gr uniform ~~[illegible]~~ moist sand w/ moderate PCE odor

45' med-coarse gr sand w/ some pebbles/gravel slight moisture moderate PCE odor

50' SM

uniform medium grained slightly moist sand slight PCE odor

55' med sand brown moist some pebbles 2 cm no odor in parts slight piney PCE odor

60' c grained brown moist no odor some pebbles 2cm lens clay rich sand no odor

PS 15

65' Fine-med @ 66.5 moist
c @ 65 dry
some pebbles 2cm - 4cm
very slight odor of PCE

70' Some clay-rich c-med sand
brown moist no odor
earthy smell
abnt pebbles throughout

80' Finer grained for SMoist
MOIST SAMPLE
FAINT PINEY SMELL - FROM SITE?
BROWN C-M GRAINED PEBBLES
1cm common
other part of core has earthy smell

90' May be some cross contamination
plug in 4" sampler smelled
of PCE
c-grained abnt 3cm pebbles
dry blonde-brown

PS 14

0	good sort med sand no pebbles brown no smell
5'	clay @ top brown w/ sand m. sand @ base good sort 1 4cm pebble slight odor ??
0'	strong PCE pine odor / (pinely) med-c grained brown moist some pebbles
15'	Strong pine oil PCE odor "musty" med sand brown no pebbles good sort
30	Pine sol odor large pebbles in sand fairly dry

PS 14

35'	Earthy pine smell med-c quartz good sort no pebbles fairly dry
40	v slight smell pine sol m-c sand quartz
45'	strong PCE odor core in? at top and middle base of core smells cleaner m sand brown some pebbles
50'	Slight odor as above
55'	~~[illegible]~~ earthy smell med sand as above no pebbles Fairly dry

PS14

0'	Med sand w/ pebbles under clayey sand moist no odor earthy smell
.5	Fine sand moist some clay rich some pebbles 1-2 cm no odor
0	no odor moist brown some pebbles 1cm med sand good sort
10'	Fine sand - med some 1/2cm pebbles no odor - moist
10'	GRAVEL W ~~some~~ MED SAND MATRIX no odor

PS 19

Surf	clay rich brown moist some pebbles earthy smell
10'	8" clay lens brown v. slight odor? med sand good sort at base of core no odor
20'	Cuttings have very slight odor core has no odor good sort med sand brown pebbles
25'	cuttings and core smell earthy med-fine sand brown some moisture no pebbles
30	Slight odor in cuttings? Gloves? no odor in core med sand no pebbles brown dry
35'	cuttings smell slight - shovel? very earthy nose too as above

PS 19

'	earthy smell med-fine sand some pebbles < 1/2 cm brown - looks dry cuttings smell like they are below standards
	core smells earthy cuttings do to as above
'	med-fine sand some clay no pebbles brown moist no odor in core - earthy smell cuttings too
5'	Some gravel / fine sand / and med sand earthy smell, moist in fine grained zones
)	med sand some pebbles moist earthy smell some clay brown cuttings smell earthy
—	as above

PS-19

70	clay rich portions of sand m-f no pebbles earthy smell cuttings smell earthy
0	fine grained clay rich sand 6" thick med sand few pebbles brown no odor in core
0	Large cobble in big spoon no odor brown med sand moist

PS 18

Surface	clay @ 1.5' brown sand med moist. no odor
10'	clay zone @ 10.5' c sand bread it w/ some pebbles smells like good earth cuttings smell fine
20'	c sand pebbles 2cm, no odor dry
25	f-c sand moist no odor brown no pebbles cuttings are earthy smell
30	c sand dry no odor to cuttings or core some pebbles 2cm

	PS 18
35	F-M sand brown moist no odor no pebbles
40	M sand large pebble 5cm moist ~~some~~ coarse grained sand no odor
45	SOME COARSE GRAINED SAND MOSTLY MED SAND NO ODOR GOOD SORT PEBBLES 1 CM CUTTINGS SMELL EARTHY
50	MED SAND MOIST NO ODOR SOME PEBBLES 2 CM
55	SMELLS CLEAN MED SAND NO PEBBLES MOIST DRIES QUICK

60	Very dry COARSE GRAINED NO ODOR SOME PEBBLES 2CM BROWN
65	C-M SAND BROWN PEBBLES 2 CM NO ODOR DRY
70'	FINE GRAINED CLAYEY SAND AT 71.5 MOIST MED SAND DRY NO ODOR
80	MED-C SAND NO ODOR MOIST
90	FINE SAND NO ODOR MOIST NO PEBBLES

2/6/84

PNM PERSON STATION MONITORING WELL
INSTALLATION

Arrive on site 8:05 AM meet GR/Metty
on site
clear
39°
setup on hole PSMW-1 50' E of tank
will drill 95-105' & drive piezometer
such that screen is 2-3' above
H_2O table

PSMW-1

surface med-coarse gr uniform sand
w/ no odor of PCE

SM 10' uniform med-coarse gr slightly
moist sand no PCE odor

SM 20' uniform med-coarse gr sand slightly
moist no PCE odor occasional pebble

SM 30' med-coarse gr slightly moist
uniform sand w/ no PCE odor

SM 40' med-coarse gr slightly moist sand
w/ no PCE odor

SM 50' med-coarse gr slightly moist
sand no PCE odor

SM 60' med-coarse gr slightly moist uniform
sand w/ no PCE odor

SM 70' med-coarse gr sand w/some pebbles slightly moist w/ no trace of PCE odor

SM 80' uniform fine-coarse slightly moist sand w/no odor of PCE

SM 90' uniform med-coarse gr slightly moist sand no pce odor

SM 100' coarse gr slightly moist sand w/ no odor of PCE

98' 8" when driving begins

131' 1 3/4" bottom of screen to top of coupling

131.15
112.34

18.81

112.34' LS → WL water level from GL

98' from ground level of open hole when auger is pulled

Hole completion 3 500# sacks sand then 50# gel / 100# sand / 50# gel

PS MW2 8#020714

10 1415	C grained dry quick no odor large pebbles 2-4cm common f-med sand @ top
1410	SURFACE SAMPLE ADJACENT TO HOLE Fine-med sand moist from steam spray - other hole, cleaning the augers etc. clay common NO ODOR
20' 1425	Fine med brown sand one large 5 cm pebble smells like good earth. looks fairly moist but dries quickly
30 1440	F-M sand no odor no pebbles dries quick GOOD SORTING

PSMW2

F-M sand few cobbles
No odor in core or cuttings
as above.

F-M SAND MOIST DRIES QUICK
NO PEBBLES
NO ODOR
as above

as above

Fine brown sand moist no odor
no pebbles
as above

C-M sand some moist clay-rich
fine sand
C grained is dry!
no odor

PSMW 2

0' c grained @ top fine clayey

0208 sand at base
0900 no odor
no pebbles

0 v coarse sand some large pebbles
no fine sand
moist - saturated
no odor

1' + for well 0.083'^2

0.007 π 20

0.439'^3

3.2 gal per casing vol

WATER LEVEL ON PSMW1

8402081115

112.35 TOP of coupling
- 0.55
111.80

WATER LEVEL ON PSMW 2

8402081140 109.45 − 1.60
LS → WL 107.85

131.5 pipe bottom/screen to coupling
126
05

128.85
18.81
128.26

LS.
127.6

107.85
18.81
126.66

131.05
126.66
4.34

PSMW 3

Surface : clay at 1.5 c grained
lens 3" thick
med-fine brown sand
no odor

10' some clay and a coarse grained
pebbly lens
hard no odor
no odor in cuttings

20' c-m sand no pebbles no odor
moist good sort
cuttings small clay

30' med fine sand good sort
no odor
no clay
no pebbles

40' f-m sand brown moist
no pebbles good sort
no odor

WL IN PSMW 2
108.70
FROM TOMP MP

PSMW 3

1.1
107.6

50' m sand good sort
fairly dry
no odor
no pebbles
no odor to cuttings

60' some pebbles 2cm
c sand brown
moist
no odor good sort matrix

70 f-c sand
fine grained clayey lens
some small pebbles 1cm
no odor
no odor to cuttings

80 as above

90 c pebbles 1cm in fine matrix
some c-m good sort sand
trace clay matrix
no odor

110 fairly dry c grained some med
grained no odor, some pebbles

PSMW 3 884 0950

120.10 1/4" top of coupling
bottom of screen
9 3 ground

PSMW 3

131.1
127.5
3.6
stick up

110.62 MP to GW
1.9
108.72 BLS
18.8
127.52 bottom of screen to LS

WATER LEVELS

PSMW 1	111.8	BLS
PSMW 2	107.6	BLS
PSMW 3	108.72	BLS

2/13/84 Groundwater Sampling

PSMW-2

9:10 AM

108.02 depth to water from MP

127.00 depth to bottom of pipe below screen

9:45 AM

PSMW-1

109.28 depth to water from MP

127.60 TD from MP

9:52 AM

112.25 depth to water from MP

130.4 TD from Meas point

PRODUCTION OF WELLS

PSMW-2 WORST PRODUCER OF 3

3 full bails — 1 casing volume

took ± 40 min for 2nd casing volume - let it rest and recover for 15 min still no full bailer

produced some sand

water was cloudy

830213

PSMW-1

BEST PRODUCER WHEN IT WAS DEVELOPED 830210

WATER IS CLEARER
MORE WATER BAILED/MINUTE
STILL A POOR PRODUCER - AFTER 5 gal bails come up w/ only 1 liter ±

PSMW-3 12:15

bailed nearly 3 full bailers then only ≈ 1 qt
well water coming up is fairly turbid no odor
not a good producer
bailed 6 1/2 gal in 26 minutes

TO VIEW THE MAP AND/OR MAPS WITH THIS DOCUMENT, PLEASE CALL THE HAZARDOUS WASTE BUREAU AT 505-476-6000 TO MAKE AN APPOINTMENT