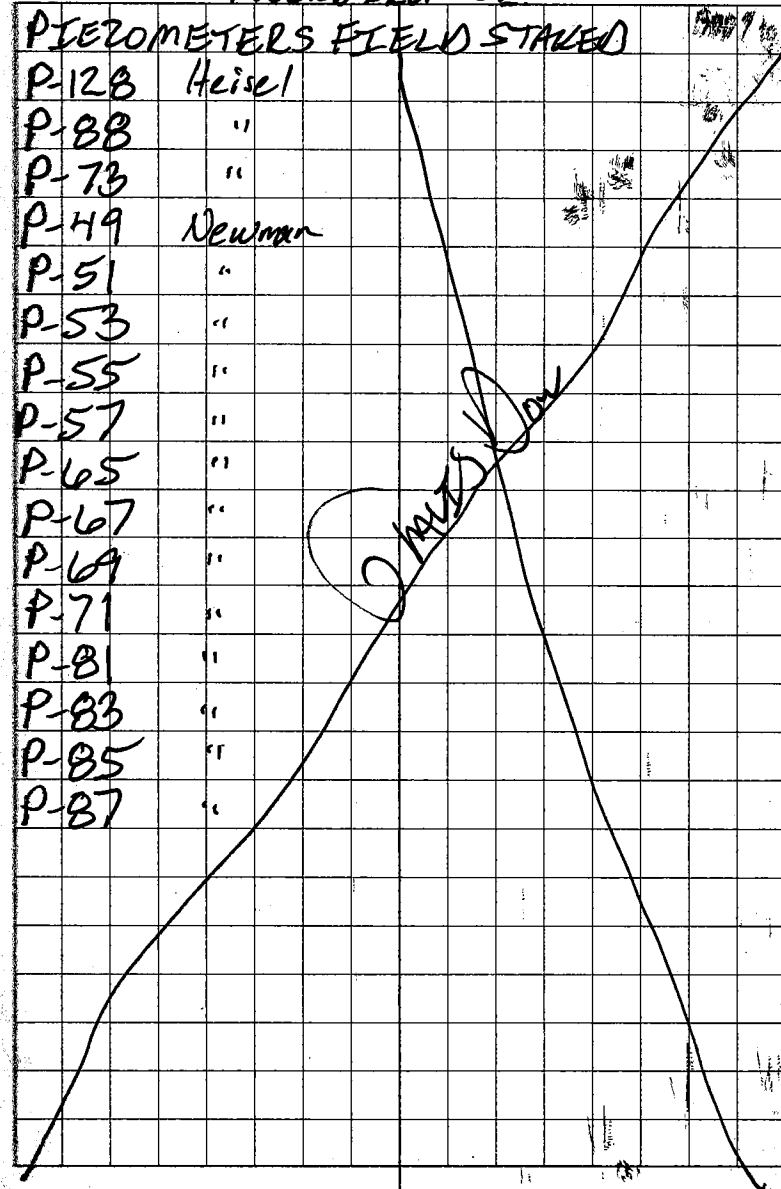


Location Ameiue-Labadie Date 10/05/09
 Project / Client Reitz & Jens

Location Ameiue-Labadie Date 10/05/09 27
 Project / Client Reitz & Jens

WEATHER: WARM, 45°F CLEAR SKIES, MILD,
 5-10 MPH WIND FROM SE



Well Construction Notes: P-104
 "Sch 40 PVC, set base at 34.8' 20-slot
 20 P. Sand to 21.25' use 425 lb
 40 S. Sand to 19.8' use 75 lb
 Int. Slurry to GS use 90 g
 (Calc. Vol. = 69 g) $O_i = 14.5" O_f = 20.5"$
 $U = 39g$

335- Finished drilling, sand, and grouting P-104.
 340 - Max uses drill rig to pull support track
 from P-104, back to farm access road.
 Drill rig clutch is not working effectively
 requiring the rig to be shut down,
 placed in gear, and then restarting.
 However, the battery and/or starter is
 preventing the rig from starting continuously.

313 Setup on P-167.
 323 Begin drilling on P-167.
 340 Clutch going out on rig, which is not allowing
 the rotary table to engage/turn. Max's
 begins to adjust/troubleshoot the clutch.
 305 Begin field staking while Max's dis-
 assembles the clutch/broken pressure plate.
 Guss Jon

Location AmerenUE - Labadie Date 10/05/09
Project / Client Reitz & Jens

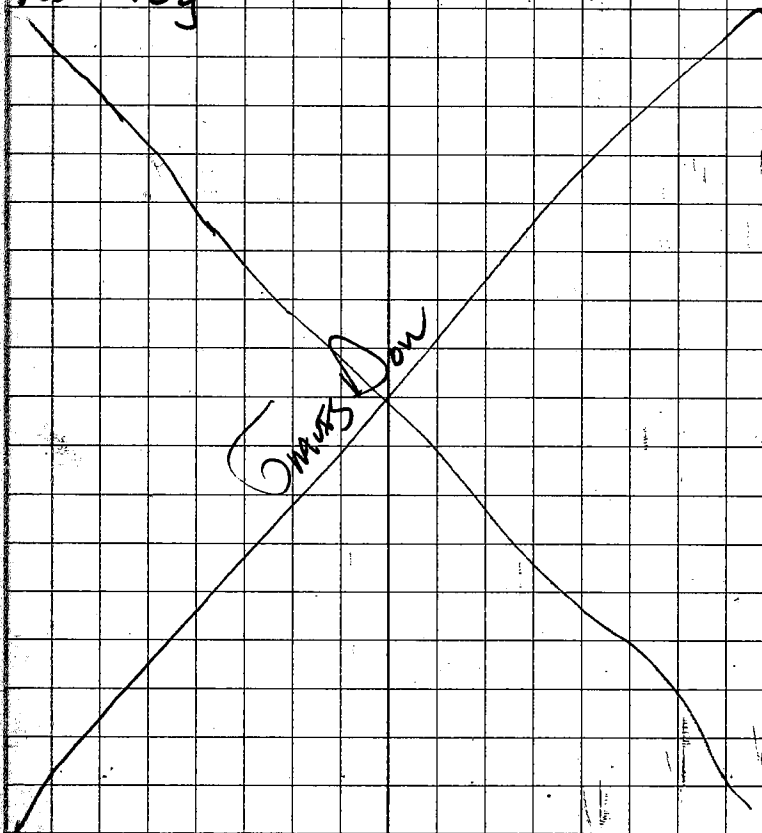
Location AmerenUE - Labadie Date 10/05/09
Project / Client Reitz & Jens

29

- 227 - Max's Enterprises offsite to find replacement parts for drill rig.
00 - John Emer onsite. Informed him of drill rig breaking down.
05 - John Emer offsite.
146 - Max's Enterprises onsite.
05 - CF Mike Carlson. Informed him Max's just returned and that I was still field staking. Told him I will call him once I get an idea of the repair estimated time.
19 - Finished field staking
20 - CF John Emer. Stated MCI called him and stated we have clearance from them for drilling.
22 - Max's repaired the broken pressure plate on the clutch.
25 - Resume drilling on P-167.
12 - Sand heaving into augers during the tremieing of sand.
143 - Finished drilling sand and grouting P-167.
100 - CF Mike Carlson to give status. Offsite.
105 - CF John Emer informed him were offsite

Construction

Well Construction Notes: P-167
2" Sch 40 PVC 10-Slot, set base at 35'
29/10 P. Sand to 21.8', use 140 lb
30/10 S. Sand to 20.2', use 40 lb
Bent. Slurry to GS, use 90-42 g
(Calc. Vol. = 5170 g) $D_i = 7$ $D_f = 13$
PW = 48 g



30 Location AmerenUE-Labadie Date 10/06/09
Project / Client Reitz & Jens

WEATHER: COOL, OVERCAST, HEAVY RAIN AND
LIGHTNING

- 0645- Arrive onsite for OSI Fieldwork.
0705- Max's Enterprises onsite. Doug &
Ryan Hunziker, Robert Hixon.
0724- CF Mike Carlson. Informed him of heavy
rain and lightning. He stated Max's
Enterprises will not be sent back to
Ft. Scott today, so if they need to
head back to the hotel they can
to wait out the weather.
0745- Recon. the site. P-42 may be able
to be drilled later today. The
Newman wells along Labadie
Bottom Road are ~30' off the
road and the corn stubble fields
feel soft and are holding water
between the rows. Doug Hunziker
stated they will rot up the fields
if entered.
0755- Max's Enterprises offsite until further
notice to wait out rain/lightning.
1758- VMT Mike Carlson. Informed him of
plan for the day. Offsite.
150- Arrive onsite to monitor weather/site
conditions.

Gmrs Don

31 Location AmerenUE-Labadie Date 10/06/09
Project / Client Reitz & Jens

WEATHER: WARM 70°F OVERCAST, INTER-
MITTENT LIGHT RAIN, SOME WIND FROM SW

- 1148- CF Paul Reitz. He stated not to
enter the Newman property until
further notice. Informed him that
I fieldstaked a portion of the
property yesterday but did not
create ruts in the soil. He also
stated to not be conversive with
the public about our activities and
to refer the public to Geneva
Bowser.
1155- CF Mike Carlson. Informed him
of our plan to begin drilling on
P-42, and about Paul Reitz's
phone conversation. He stated
that Mike Scott King will not be
onsite today.
1203- CF Chris Dickerther, MWR, and he
was considering mobilizing to the
site today or tomorrow.
1210- Max's Enterprises onsite.
1230- Setup on A-42. Move to S. of LBR.
PHOTO LOG
1) EAST ruts in ditch near P-40 from joy riders.
2) WEST ruts in ditch near P-40 from joy riders.

Gmrs Don

Location Americus E-Labadie Date 10/06/09Project / Client Leitz & Jens

WEATHER: WARM, 70°F OVERCAST, GUSTY WINDS FROM SW 25 MPH, HUMID

- 1255- Conduct tailgate safety meeting.
- 1258- Begin drilling P-42. Moved the staked location of the well to the south side of Labadie Bottom Rd. to stay in west-east trend w/ P-38 and P-40. Well location placed 30' from center of Labadie Bottom Rd. to stay out of assumed R.O.W.
- 1426- Finished drilling/sampling P-42 w/ 8.25" HSAs. Convert to 10.25" HSAs. Move back to equip. storage location to change to 10.25" HSAs, trailer, fill water and get well materials.
- 1510- Resumed drilling w/ 10.25" HSAs on P-42.
- 1525- Chris Vierwether, MDNR, on site.

Well Construction Notes: P-42

1" Sch. 40 PVC 20 slot set base at 34.8'

to P. Sand to 21.3', use 425 lb

to S. Sand to 20', use 62 lb

ent. Slurry to GS, use 105 g

(Calc. Vol. = 69 g $D_1 = 4"$ $D_F = 11"$)

W = 48g

GAMES DON

Location Americus E-Labadie Date 10/06/09Project / Client Leitz & Jens

- 1709- Finished drilling, sand, and grouting P-42
- 1725- Move trailer back to equipment storage area and begin disconn. of both sets of augers. Park the drill rig on farm access road since fields are too wet and P-40 is along the road (Labadie Bottom Road).
- 1730- Chris Vierwether off site.
- 1745- Max's Enterprises and I off site.
- 1746- CT John Eimer about departure.

GAMES DON

Location AmericanE-Labadie Date 10/07/09

Project / Client Reitz & Jens

WEATHER: COLD, 45°F, CLEAR SKIES, CALM

- 653- Arrive onsite for DSI Fieldwork.
- 655- Max's Enterprises onsite. Doug & Ryan Hunziker, Robert Hixon.
- 703- Conduct tailgate safety meeting.
- 715- Place temporary protective casing and j-plug on P-107. Place j-plug on P-104, P-104 and P-42.
- 745- CT Mike Carlson. Informed him we are setting up on P-22, but we will be orienting the drill rig N-S due to the ditch and wet ground conditions. He mentioned that we may be installing additional grout and cement pads around the temporary protective casings this afternoon.
- 815- Begin drilling on P-22.
- 834- Chris Virether, MOW2, onsite.
- 115- Risk w/ Mo Natural Gas onsite to discuss locate clearance.
- 939- Finished drilling w/ 8.25" HSA and sampling on P-22.
- 43- Max's back to equipment storage area to get 10.25" HSA trailer.
- 110- Max's back to P-22 w/ HSA.
GROSS Don

Location AmericanE-Labadie Date 10/07/09 35

Project / Client Reitz & Jens

WEATHER: WARM, 65°F, CLEAR SKIES, CALM, (MID)

Well Construction Notes: P-22

4" Sch 40 PVC 20-Slot, set base at 35'

1st 20' P. Sand to 21.5', use 375 lb

2nd 10' S. Sand to 19.8', use 75 lb

Bent. Slurry to GS use 75 g

(Calc. Vol. = 69 g) $D_i = 12"$ $D_o = 17"$

PH = 3.6g

- 1019- Begin leaning P-22 w/ 10.25" HSA to 35' bgs
- 1020- Scott King onsite to gauge well. Assist Scott w/ measuring P-22 w.l. & T.D. while drillers auger/ream P-22.
- 1032- Back from P-22.
- 1104- Mike Carlson onsite.
- 1142- Finished drilling, sand, and grouting P-22. Go back to storage area to unload trailer and begin prep. to complete well heads.
- ~1200- Chris Virether offsite.
- 1225- Mike Carlson & Robert Hixon offsite to buy concrete/lunch in Washington.
- 1245- CT John Eimer about people shooting
GROSS Don

Location AmericanE-Labadie Date 10/07/09
 Project / Client Reitz & Jens

Location AmericanE-Labadie Date 10/07/09
 Project / Client Reitz & Jens

37

145 Cont. - guns at targets on old Heisel land.

	PZ	Growth Add	Comments
302	P-167	9g	Concrete, j-plug & lock
330	P-155	6g	"
345	P-130	5g	"
400	P-118	10g	"
415	P-116	10g	"
440	P-102	6g	"
149	P-104	26g	Growth Added ONLY, NO PC
159	P-90	8g	Concrete, j-plug & lock
516	P-77	10g	"
552	P-75	19g	"
609	P-63	9g	"
621	P-59	11g	"
640	P-47	17g	"
655	P-45	20g	"
672	P-43	16g	"
712	P-42	20g	Growth Added ONLY NO PC
720	P-20	15g	Concrete, j-plug & lock
730	P-22	15g	Growth Added ONLY, NO PC
735	P-38	21g	Concrete, j-plug & lock

~~Trans Don~~

1430 - John Emerson site. Gave him copies of the daily safety records and tailgate safety meetings from 10/05-10/06/09.

1432 - John Emerson offsite.

1445 - Chris Vierlither on site.

1460 - Mike Carlson offsite.

1710 - Chris Vierlither offsite.

1744 - Finished well completions.

1819 - Unload trailers / truck and offsite.

1821 - CT John Emerson about departure.

~~Trans Don~~

Location AmerenUE-Labadie Date 10/08/09

Project / Client Reitz & Jens

WEATHER: COOL 55°F OVERCAST, LIGHT RAIN & THUNDERSTORMS IN AREA, RAINING, LIGHTNING

152 - Arrive onsite to cont. OSI fieldwork.

Max's Enterprises onsite: Doug & Ryan Hurricker Robert Hixon.

100 - Survey the field conditions from the overnight rain. Standing water present in fields and Labadie Bottom Road is soft to drive on.

Observed a rain gauge on Survey Marker AUELBE 004, which has 5-inches of rain, but did not have a starting point to gauge.

21 - CT Mike Carlson. Informed him that the site is very wet due to heavy rains overnight. I estimated ~ 1" rain based on water accumulated in empty bucket overnight. Mike stated to send Max's Enterprises home and for me to head to the office to end the week.

49 - CT Fred at M & M Carts to postpone delivery of Club Cart until Monday 10/12/09 @ 1100 hours. He asked us to call first thing Monday morning if we need to cancel. (636) 379-8243

Gross Dow

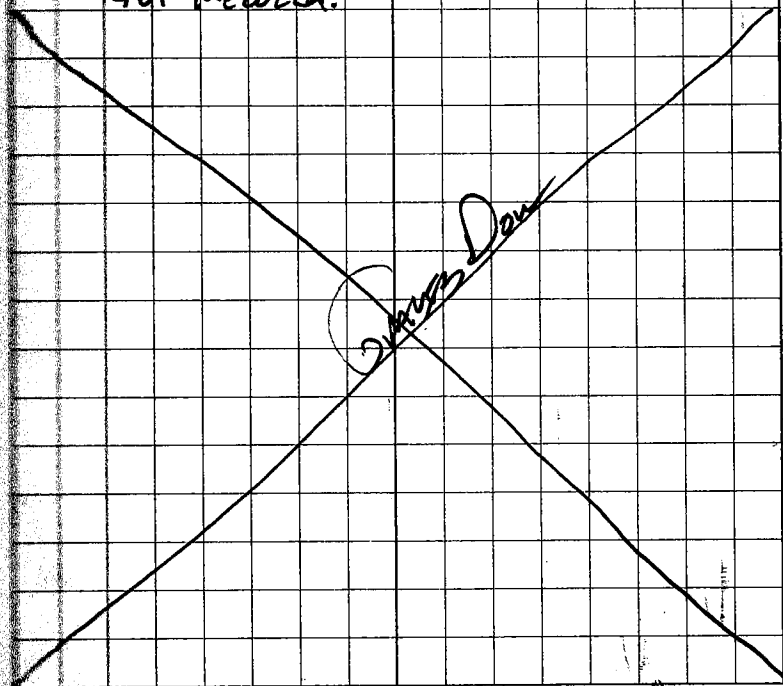
Location AmerenUE-Labadie Date 10/08/09 39

Project / Client Reitz & Jens

0800 - Move gas powered generator outside mobile office due to excessive gas fumes in office. Locked generator w/ cable lock to mobile office and covered w/ plastic and sheet metal lean-to.

0810 - Max's Enterprises and I offsite.

0811 - CT John Eimer about departure for the week.



AmerenUE - Labadie

10/12/09

Reitz & Jens

WEATHER: COOL, 50°F OVERCAST, MILD, 5 MPH
WIND FROM EAST

1255- Arrive onsite for OSI fieldwork and to relieve Mike Carlson. Scott King onsite at construction trailer. Assist Scott w/ pump troubleshooting and fuse issues w/ club cart.

1320- Locate Mike and Mar's Enterprises setup on P-31. Doug & Ryan Hunziker, Robert Hixon onsite.

Well Construction Notes: P-31

4" Sch 40 PVC 10-slot, set base 35'

20/40 P. Sand to 21.2', use 350 lb

30/70 S. Sand to 20', use 100 lb

Bent. Slurry to GS, use 28 ³⁵ g

(Calc. Vol. = 51 g) $D_i = 10"$ $D_o = 15"$

PW = 50g

1436- Mike Carlson offsite. Scott King is developing wells.

1510- Finished drilling, sand and grouting P-31

1544- CT/RCF Mike Carlson. Informed him that P-9 & P-19 4" piezometers w. 11 likely require 20-slot screen which we don't have in supply; therefore we are going Gravel Down

AmerenUE - Labadie

10/12/09

Reitz & Jens

1544- Cont. - to move down to P-189 since it is a 2" piezometer and the Explorer pipeline has been marked.

1600- Setup on P-189. Road and ground are very wet. Support truck is requiring towing by drill rig down farm access Rd.

1628- Drill rig and support truck arrive at P-189.

1632- Begin drilling on P-189

Well Construction Notes: P-189

2" Sch 40 PVC 10-slot, set base at 34.8'

20/40 A. Sand to 21', use 100 ~~lb~~ lb

30/70 S. Sand to 19', use 25 lb

Bent. Slurry to GS, use 28 g

(Calc. Vol. = 48 g) $D_i = 14"$ $D_o = 18"$

PW = 25g

1825- Sands heaving into HSA's while adding primary filter pack & secondary filter pack.

1900- Finished drilling, sand & grouting P-189
Gravel Down

Location AmeriUE-Labadie Date 10/12/09
People / Crew Reitz & Jens

- 1900- Cont. - Leave support truck and drill rig at P-189 due to the fact it would take at least 30 minutes to pull back to Labadie Bottom Road and it is dark. Have Max's Enterprises ride in Gredevl vehicle for evening / tomorrow morning.
- 1915- Finished securing site/unloading. Max's Enterprises, Scott King and I offsite.
- 1918- CT John Elmer to inform him of departure.

~~Crossed Out~~

AmeriUE-Labadie 10/13/09
Reitz & Jens
WEATHER: COLD, 45°F, OVERCAST, BREEZY.

- 0655- Arrive onsite for DSI Fieldwork along with Max's Enterprises: Doug & Ryan Humziker, Robert Hixon
- 0700- Conduct tailgate safety meeting.
- 0705- Arrive at P-189 to pull support truck with drill rig back to Labadie Bottom Road.
- 0725- CT Mike Carlson. Informed him the farm access road between Hedsel & Newman former properties is becoming very difficult to traverse with drill rig & support truck due to deep mud/ruts; especially at the wetland crossing near P-189. Recommended we move to Newman property until road can be graded/ruts smoothed. He stated we have access to Newman's and said we can start on the P-65 row. He is also going to find out if we can access the P-49 row from Labadie Bottom Road. Informed him a Shelby tube was not collected on P-189.

AmerenUE-Labadie

10/13/09

Reitz & Jens

0725-Cont. - since significant thickness of clay was not observed.

0814- Setup on P-65

0843- Begin drilling on P-65

Well Construction Notes: P-65

2" Sch 40 PVC 10-slot set base at 34.9'

20/40 P. Sand to 21.7', use 260 lb

30/70 S. Sand to 20.3', use 50 lb

Bent. Slurry to GS, use 77 g

(Calc. Vol. = 52 g) $D_i = 3.5"$ $D_F = 14.5"$

PW = 40g

1125- Finished drilling, sand and grouting P-65
Light rain beginning to fall.

1130- Support truck became stuck on P-65
trying to turn around to get water
for next piezometer/drilling. Drilling
rig used to pull support truck back to
Labadie Bottom Rd.

1200- Setup on P-67

1220- Begin drilling on P-67.

~~James Don~~

AmerenUE-Labadie

10/13/09

Reitz & Jens.

WEATHER: CLOUD, 45°F, OVERCAST, RAINING,
LIGHT WIND

Well Construction Notes: P-67

2" Sch 40 PVC 10-slot, set base at 35'

20/40 P. Sand to 21.4', use 150 lb

30/70 S. Sand to 20.25', use 50 lb

Bent. Slurry to GS, use 49 g

(Calc. Vol. = 52 g) $D_i = 10"$ $D_F = 17"$

PW = 40g

1457- Finished drilling, sand, and grouting
P-67.

1519- Setup on P-69.

1525- Begin drilling on P-69

Well Construction Notes: P-69

2" Sch 40 PVC 10-slot, set base at 35'

20/40 P. Sand to 21.3', use 250 lb

30/70 S. Sand to 20.3', use 50 lb

Bent. Slurry to GS, use 39 g

(Calc. Vol. = 52 g) $D_i = 12.5"$ $D_F = 18"$

PW = 40g

1607- CF Scott King. Stated he was done
developing wells for the day and
leaving the site.

James Don

Location AmerenUE-Labadie

Date 10/13/09

Project / Client Reitz & Jens

1737 - Finished drilling, sand, and grouting
A-69.

1835 - Secure site/unload and depart
for day.

1838 - CT John Eimer about departure.

~~CRANKS DOWN~~

Location AmerenUE-Labadie

Date 10/14/09

Project / Client Reitz & Jens

WEATHER: COLD 40°F, OVERCAST, LIGHTS RAIN,
CALM

0650 - Arrive onsite for DSI Fieldwork.
Max's Enterprises onsite: Robert
Hixon, Doug & Ryan Hunziker.

0700 - Recon. site w/ Doug to survey
effect of overnight rain. Water
standing in fields and draining
over Labadie Bottom Rd in 3
locations. Piezometers P-49 and
P-51 may be able to be accessed
from Labadie Bottom Rd, but not
from Farm access Rd.

0711 - CT Mike Carlson. Asked him if we have
approval to enter the Newman
property from Labadie Bottom
Rd for the P-49 row of piezometers.
He said yes we have approval and
we can move the staked locations
15' from edge of Labadie Bottom Rd,
but to record distance moved.

0725 - Conduct tailgate safety meeting.

0731 - Setup on P-51. Moved stake 3'
north.

0813 - Begin drilling on P-51.

CRANKS DOWN

Location AmerenUE-Labadie

Date 10/14/09

Project / Client Reitz & Sons

Well Construction Notes: P-51

2" Sch 40 PVC 10-Slot, set base at 35'20/40 P. Sand to 21.6', use 150 lb30/70 S. Sand to *18.7', use 50 lbBent. Slurry to GS use 35 g(Calc. Vol. = 48 g) $D_i = 7"$ $D_F = 12"$

PW = 40g

1000 - CT Mike Carlson. Gave him status of drilling activities on P-51. Informed him we can likely install 3 piezometer today, but that would complete the 2" accessible wells from Labadie Bottom Road. Mike stated he should be onsite this afternoon for the weekly safety meeting.

1005 - Scott King onsite.

1020* Secondary filter pack sand could not fall out of HSA's fast enough during tremoring. Notard sand was collapsing in the borehole as HSA's were being removed.

1045 - Finished drilling, sand and grouting P-51.

1100 - Setup on P-55. Move stake 7' north.

Gm 4th Don

Location AmerenUE-Labadie

Date 10/14/09

Project / Client Reitz & Sons

WEATHER: COLD 45°F OVERCAST INTERMITTENT LIGHT RAIN, 10-15 MPH WIND FROM NE

1105 - Support truck became stuck on P-55 during setup. Attempt putting truck w/ drill rig and Gredell truck but unsuccessful.

1120 - Begin drilling on P-55

Well Construction Notes: P-55

2" Sch 40 PVC 10-Slot set base @ 34.8'20/40 P. Sand to 21.5', use 275 lb30/70 S. Sand to 19.7', use 50 lbBent. Slurry to GS use 60 g(Calc. Vol. = 50 g) $D_i = 11"$ $D_F = 19.5"$

PW = 40g

1325 - Finished drilling, sand, & grouting P-55.

1332 - Setup on P-49. Max's Enterprises offsite for lunch & fuel. Moved stake location 25' north. Go to Construction office.

1335 - Mike Carlson onsite.

1420 - Mike Carlson leaves for safety mtg.

1428 - Max's Enterprises onsite.

1508 - Begin drilling on P-49.

~1520 - Mike Carlson, John Eimer and Jeff

Gm 4th Don

Location AmerenUE-Labadie

Date 10/14/09

Project / Client Reitz & Jens

1520-Cont. - Fouse onsite.

1530- John Eimer and Scott Fouse offsite.

1610- Mike Carlson offsite to home office.

Well Construction Notes: P-49

2" Sch 40 PVC 10-slot, set base @ 35'20/40 P. Sand to 21.3', use 275 lb30/70 S. Sand to 19.5', use 50 lbBent. Slurry to GS, use 49 g(Calc. Vol. = 50 g) $D_i = 3"$ $D_F = 10"$

PW = 38g

1708- Finished drilling, sand & grouting P-49.

1742- Finished unloading, decon. augers and offsite. Scott & King unloading and will check/clock out in a few minutes.

1748- CT John Eimer about departure.

~~Garrett Don~~

Location AmerenUE-Labadie

Date 10/15/09

Project / Client Reitz & Jens

WEATHER: COLD, 45°F, OVERCAST, DRIZZLE.

0653- Arrive onsite for DSI Fieldwork.

Max's Enterprises onsite: Robert Hixon, Doug & Ryan Hunziker.

0714- Conduct tailgate safety meeting.

0734- Stake P-132 & setup. Support truck is stuck down to the hitch.

0800- Begin drilling on P-132

Well Construction Notes: P-132

2" Sch 40 PVC 10 slot, set base @ 35'20/40 P. Sand to 21.3', use 260 lb30/70 S. Sand to 20', use 45 lbBent. Slurry to GS, use 35 g(Calc. Vol. = 51 g) $D_i = 6"$ $D_F = 11"$

PW = 56g

0915- Observe Scott King onsite developing wells.

0930- CF Mike Carlson. Due to the wetness of the fields, Mike stated to try drilling P-53 or P-57 along LBR next, and use the 10-slot screen in these piezometers.

1006- Finished drilling, sand & grouting P-132.
Garrett Don

- 1025 - John Emmer & Rich Hill on site driving LBR taking pictures of disturbed soil areas around piezometers.
- 1045 - Max's Enterprises pulled support truck back to LBR. Back to equipment storage to get materials, water, and 10.25" HSAs for drilling 4" piezometers.
- 1103 - Setup on P-57. Move stake 7' South to be 30' from LBR center R.O.W.
- 1125 - Begin drilling on P-57.
- 1230 - Scott King stated he was leaving the site for the day.

SHELBY TUBE SAMPLE → P-57, 1-3'

- 1240 - Last split spoon on P-57, 35-36.5' became stuck w/ in HSAs. Tried pulling drill string/sample string out but HSAs came/moved with it. Beg. backing out of hole while removing HSAs to free the split spoon/drill string.

Jim & Don

Well Construction Notes: P-57

4" Sch 40 PVC 10-slot, set base @ 34.8'

20' P. Sand to 21.4', use 400 lb

30' S. Sand to 19.4', use 100 lb

Bent. Slurry to GS, use 70 g

(Calc. Vol. = 67 g) $D_i = 13"$ $D_F = 23"$

DW = 69 g

- 1451 - Finished drilling, sand & grouting P-57.
- 1507 - Take Robert Hixon to Labadie Market to get lunch while Doug & Ryan get water & materials, then setup on P-53. Move stake 8' North.
- 1528 - Back on site at P-53.
- 1550 - Begin drilling on P-53.
- 1658 - Finished drilling w/ 8.25" HSAs on P-53. Protect open borehole w/ 10.25" HSA by connecting to drill string. Go back to construction trailer to unload, prepare water & clean HSAs for tomorrow.
- 1659 - CT Mike Carlson. Gave him status of activity and asked him for plan of action for tomorrow. He said
- Grus Don

Location Americus-LabadieDate 10/15/09Project / Client Reitz & Sons

1659-Cont.- we should complete P-53 tomorrow install another 4-inch piezometer picking from P-9, P-19 and P-61 due to the saturated soil conditions elsewhere in the OSI boundary. He would also like for us to complete as many accessible 2" wells that we can to finish up the week.

1751 - Finished loading water and mixing bentonite. Offsite.

1756 - CT Sohn Eimer about departure.

~~OMG'S Down~~

Location Americus-LabadieDate 10/16/09Project / Client Reitz & Sons

WEATHER: COLD, 45°F OVERCAST, HUMID, DRIZZLE, LIGHT WIND

0652 - Arrive onsite for OSI Fieldwork.

Max's Enterprises onsite: Robert Hixon, Doug & Ryan Hunziker.

0715 - Setup on P-53 to begin reaming of hole w/ 10.25" HSA.

0717 - Conduct tailgate safety meeting.

0728 - Begin reaming out hole on P-53.

Well Construction Notes: P-53

4" Sch 40 PVC 10-Slot, set base @ 35'

20/40 P. Sand to 21.2', use 350 lb

20/70 S. Sand to 20', use 50 lb

Bent. Slurry to GS, use 63 g

(Calc. Vol. = 69 g) $D_i = 5"$ $D_f = 14"$

PW = 53g

0818 - Sohn Eimer onsite. Gave him tailgate safety meeting checklists and Daily Safety Records from 10/14-10/16.

0830 - Sohn Eimer offsite.

0852 - Man in LP1DD-154, White Ford Truck stopped by and asked what we were drilling for. Informed him that we were doing a geological investigation for
OMG'S Down

Location Amerique-Labadie Date 10/16/09
Project / Client Reitz & Jens

0852-CONT.- Ameren. He asked if Ameren owned all this land we were on. I informed him the land we are drilling on is owned by Ameren.

0900- Kyle Kocher, Reitz & Jens, onsite to look at farm access roads. He stated they are considering placing fabric and rock down in the low areas of the road.

0902- Finished drilling, sand & grouting on P-53

0912- Setup on P-19

0920- Begin drilling on P-19.

1000- Mr. Turnstall onsite w/a contracted company for Ameren to look at the farm roads for estimate for gravel.

Well Construction Notes: P-19

4" Sch. 40 PVC 10-Slot, set base @ 34.8'

20/40 P. Sand to 21.1', use 390 lb

20/70 S. Sand to 19.9', use 50 lb

Bent. Slurry to GS, use 70 g

(Calc Vol. = 69 g) $O_i = 13"$ $O_f = 23"$

PW = 53g

Miss Don

Location Amerique-Labadie Date 10/16/09
Project / Client Reitz & Jens

WEATHER: COLD, 45°F, OVERCAST, INTERMITTENT
LIGHT RAIN, 10 MPH WIND FROM NORTH

1155- Finished drilling, sand, and grouting
P-19

1215- Leave P-19 and Max's Enterprises prepares for 3- 2" protective casing completions and grouting installed wells from this week along Labadie Bottom Road.

	PZ	Grout Add	Comments
1234	P-40	18g	Add Prot. Casing, Conc, Lock, Plug
1247	P-42	17g	GROUT ADD ONLY
1249	P-49	20g	Add Prot. Casing, Conc, Lock, Plug No concrete pack added too wet on ground
1257	P-51	8g	Add Prot. Casing, Conc, Lock, Plug
1308	P-53	11g	GROUT ADD ONLY
1315	P-55	23g	Add Prot. Casing, Conc, Lock, Plug
1322	P-57	24g	GROUT ADD ONLY

1400- Finished unloading trucks and secure site. Max's Enterprises offsite.

1406- CT John Eimer informing him that I was and Max's, are offsite.

Miss Don

Location AmerenUE-Labadie Date 10/19/09Project / Client Reitz & JensWEATHER: COOL, 50°F, CLEAR SKIES, CALM,
MILD

0835- Arrive onsite for OSI Fieldwork.

0845- Scott King onsite.

0859- CF Mike Carlson. Informed him that I was planning on starting with P-9 and then P-10 to finish up the gaps on the Heisel property. Then hopefully start the piezometers between the wetland and the transmission lines on the west side of the Heisel property. I also informed him that I would attempt performing completions on the already installed piezometers by 10/20/09 due to the forecast of rain on 10/21/09.

0930- Max's Enterprises onsite: Doug & Ryan Hunziker.

0932- CT Mike Carlson. Informed him that Max's were onsite; however, they are without an employee to help w/ drilling; therefore, they would like to construct pads/completions today so that they can have/wait until a 3rd employee arrives tomorrow morning. Mike stated he was not privy of this information from Max's, but that it should be OK as long as we are making progress.

Gross Don

Location AmerenUE-Labadie Date 10/19/09Project / Client Reitz & Jens

0935- M & M Bolt Cart onsite to pick up Reitz & Jens Club Cart.

0945- Conduct tailgate safety meeting.

1030- Finished helping Max's unload sand and bentonite from support truck to stockpile.

1035- John Elmer & Kenny Kintz (his replacement) onsite. I asked John what the recommended setback is from the overhead transmission lines on the Heisel-West location. John stated 20-40' minimum, but he recommended 40'. John also stated that we could use Ameren stockpile next time we needed to unload pallets of sand.

1040- John & Kenny off site.

1058- Max's finished loading support truck w/ H₂O and starting drilling to use for mixing grout.

1108- Begin surface completions of piezometers

1125- Borrow socket set from Ameren w/ John Elmer signout for Max's 4" inside the pipe PVC cutter.

Gross Don

Location AmerenUE - Labadie Date 10/14/09
 Project / Client Reitz & Jens

Location AmerenUE - Labadie Date 10/14/09 61
 Project / Client Reitz & Jens

WEATHER: WARM 70°F CLEAR SKIES, MILK
 WIND FROM SOUTH 10-15 MPH

1210 - Provide Max's Enterprises w/ table
 to record time, piezometer, grout
 depth, and comments to complete
 while I drive to Gray Summit to
 pickup bags of concrete for them.

1216 - Off site to Gray Summit.

1251 - Arrive onsite from Gray Summit.

1400 - Begin Field Staking, after getting stuck.

PIEZOMETERS FIELD STAKED

P-93 - Newman P-138 - Newman ^{very soft} Soil Surface

P-95 - " " P-187 - In standing H₂O

P-97 - " " P-146 - Fallow

P-99 - " " P-148 - Fallow

P-106 - " " P-156 - "

P-108 - " " P-169 - "

P-110 - " " P-171 - "

P-112 - " "

P-114 - " "

P-120 - " "

P-122 - " "

P-124 - Soil Surface Soft

P-126 - Newman

P-134 - " Fallow "

P-136 - Newman - CS

OB	PZ	Grout Add	Comments
108	P-31	24g	6" PVC Casing, Cap, Plug, Lock, Conc.
156	P-22	10g	"
227	P-19	30g	GROUT ADDED, Lock & j-plug
243	P-42	0g	6" PVC Casing, Cap, Plug, Lock, Conc.
302	P-53	8g	Completed, has broken j-plug
315	P-57	8g	6" PVC Casing, Cap, Plug, Lock, Conc.
335	P-49	0g	4" Steel casing, Conc., Lock, J-plug
550	P-144	12g	6" PVC Casing, Cap, Plug, Lock, Conc.
616	P-189	0g	Completed, needs lock
651	P-132	12g	4" Steel Casing, Cap, Conc, J-plug ^{NO} Lock
712	P-65	12g	Grout Added, j-plug

~~Summit Down~~

~~Summit Down~~

Location Ameron UE - Labadie Date 10/14/09
Project / Client Reitz & Jens

- 129 - CF Doug Hunziker. He stated the oil plug is missing from the drill rig. They are going to leave the site to go buy a new oil plug at an auto parts store.
- 132 - Max's Enterprises onsite.
- 130 - Drill rig cannot pull support truck through the wetland crossing on farm access rd. near P-189. Connect Bredell GMC to drill rig, which is connected to support truck, to remove support truck from the road.
- 45 - Finished field staking for the day.
- 200 - Unload concrete from truck and equipment.
- 325 - Max's Enterprises, Scott King and I onsite.
- 29 - CT John Elmer about departure.

~~Gravis Dow~~

Location Ameron UE - Labadie Date 10/20/09 63
Project / Client Reitz & Jens

WEATHER: COOL, 50°F, PARTLY CLOUDY,
MILD, CALM

- 0642 - Arrive onsite for OSI Fieldwork.
- 0655 - Max's Enterprises onsite: Doug & Ryan Hunziker.
- 0706 - Conduct tailgate safety meeting.
- 0715 - Setup on P-9. Crew working on the farm access road south of LBR. The drill rig was left overnight along the farm access road.
- 0750 - Max's Enterprises arrives at P-9. They had to wait for bulldozer to finish clearing farm access road in order to exit.
- 0802 - Begin drilling on P-9.
- 0810 - Scott King onsite to fuel UTV.

Well Construction Notes: P-9

4" Sch 40 PVC 20-Slot, set base @ 34.8'

10/20 A. Sand to 21.25', use 375 lb

30/70 S. Sand to 19.3', use 90 lb

Bent. Slurry to GS, use 77 g

(Calc. Vol. = 67 g) $\bar{O}_i = 25\% F = 13.5'$

PW = 56g

1120 - Dave Hunziker onsite.

Gravis Dow

Location Americus - Labadie Date 10/19/09
10/20/09
 Project / Client Reitz & Jens

WEATHER: WARM, 65°F MOSTLY SUNNY MILD.
 WIND FROM E-SE @ 10-15 MPH

~~1424 CF Doughtanziker. He stated the oil
 plug is missing from the drill rig. They
 are going to leave the site to go buy
 a new oil plug at an auto parts
 store. SEE PAGE 62~~

122 - Finished drilling, sand & grouting P-9.

155 - Setup on P-93. Observe Mike Carlson,
 Paul Reitz & Jeff Fouse on site.

228 - Max's Enterprises arrive at P-9.

Doug, Dave & Ryan Hunziker, Ryan Northcutt
 and Bill Dubois.

235 - Begin drilling on P-93.

320 - Mike Carlson off site.

331 - John Eimer & Kenny Kintz on site. Took pictures.

335 - John & Kenny off site.

Well Construction Notes: P-93

2" Sch 40 PVC 10-Slot, set base @ 35'

1/40 P. Sand to 21.75', use 250 lb

1/70 S. Sand to 20.5', use 50 lb

Bent. Slurry to GS, use 32 g

(Calc. Vol. = 52 g) $D_i = 5.5"$ $D_F = 10"$

PW = 69g

Gruiss Dow

Location Americus - Labadie Date 10/20/09
 Project / Client Reitz & Jens

WEATHER: WARM, 75°F PARTLY SUNNY MILD,
 WIND FROM SOUTH @ 15-25 MPH

1500 - Finished drilling, sand & grouting P-93.

1510 - Setup on P-95, while Max's washes
 H5As and refills the water tank.

1517 - Dave Hunziker off site.

1537 - Begin drilling on P-95.

1640 - Hammer blow rod adapter broke at
 36.5' on P-95. No spare adapter
 to obtain last 12" of SPT.

Well Construction Notes: P-95

2" Sch 40 PVC 10-Slot set base @ 34.9'

20/40 P. Sand to 21.6', use 250 lb

30/70 S. Sand to 20.3', use 60 lb

Bent. Slurry to GS, use 28 g

(Calc. Vol. = 52 g) $D_i = 10.5"$ $D_F = 14.5"$

PW = 60g

1740 - Scott King off site. GeoSquirt pump is
 not working for him to develop wells.

1745 - Finished drilling, sand & grouting P-95

1815 - Max's Enterprises, Scott King and
 I off site.

1821 - CT John Eimer about departure.

Gruiss Dow

Location AmericanUE-Labadie Date 10/21/09Project / Client Reitz & JensWEATHER: WARM 55°F, PARTLY CLOUDY, CALM,
MILD

- 1045- Arrive onsite for DSI Fieldwork.
Max's Enterprises onsite: Doug & Ryan
Hunziker, Bill Dubois, and Ryan Northcutt.
- 700- Max's changes tire on support trailer.
- 715- Conduct tailgate safety meeting.
- 725- Shaun Shanahan, Charah, onsite and
stated he would like to see their
product for the rock fill on the
farm access road. Informed him that
I will inform our client.
- 735- Jeff Fouse onsite at farm access road
w/ Pace Construction. They are filling
in the low areas w/ fabric & rock on the
road. Informed Jeff about Charah
wanting to see their product @ \$4/ton
- 745- Setup on P-97.
- 800- Begin drilling on P-97.
- 918- CF Mike Carlson. Stated he is onsite for
the weekly safety meeting.
- 1040- Finished drilling, sand & grouting P-97.
- 1045- Setup on P-99.
- 1053- Begin drilling on P-99.
- 1055- Chris Vierrether, MDNR, onsite.
- 121- SPT hammer/support/guide broke on
5 mrg Don

Location AmericanUE-Labadie Date 10/21/09Project / Client Reitz & Jens

- Well Construction Notes: P-97 *34.8'
2" Sch 40 PVC 10-Slot, set base @ 35.1'
20/40 P. Sand to 21.5', use 250 lb
30/60 S. Sand to 20', use 50 lb
Bent. Slurry to GS, use 53 g
(Calc. Vol. = 51 g) $D_i = 8"$ $D_r = 11.5"$
PW = 66 g
*Well raised 0.3' while treming sand/removing
HSA's
- 1121- CONT. - drill rig.
- 1134- Max's will use manual hammer by
using winch until piece can be repaired.
- 1136- Dave Hunziker onsite.
- 1145- Dave Hunziker offsite to get the
broken guide for the SPT hammer
and have it repaired.
- 1216- Mike Carlson onsite @ P-99.
- 1315- Chris Vierrether offsite.
- 1350- Finished drilling, sand and grouting P-99.
- 1420- Mike Carlson offsite.
- 1425- Setup on P-71.
- 1444- Chris Vierrether onsite.
- 1448- Begin drilling on P-71.
6 mrgs Don

Location AmerenUE-Labadie Date 10/21/09

Project / Client Reitz & Sons

WEATHER: WARM 70°F OVERCAST, 10-15 MPH
WIND FROM SOUTH, MILD

Well Construction Notes: P-99 #34.1'

2" Sch 40 PVC 10-Slot, set base @ 35' g

10 P. Sand to 20.6', use 75 lb

10 S. Sand to 19.1', use 50 lb

ent. Slurry to GS, use 38 g

Calc. Vol. = 49 g) $D_i = 18.5"$ $D_f = 16"$

PW = 60 g

Well raised 0.9' during HSK removal trying
to flush bearing sands from HSKs. Natural
filter pack to 23.5' bgs.

143- Dave Hunziker onsite w/ repaired SPT
Hammer, guide

50- Doug & Dave Hunziker leave to go complete
surface completions and add grout.
Gave Dave a table to record amount
of grout added and wells completed.

154- Finished drilling, sand & grouting P-71.

00- Chris Vierthaler offsite

08- Leave P-71 and mob. to const. trailer.

PZ	Grout Add	Comments
P-67	4g	Completed 11/11/09
P-69	12g	Completed 11/11/09
Gmcs Done		

Location AmerenUE-Labadie Date 10/21/09 69

Project / Client Reitz & Sons

Well Construction Notes: P-71

2" Sch 40 PVC 10-Slot, set base @ 34.9'

20/40 P. Sand to 21.7', use 250 lb

30/60 S. Sand to 20.1', use 50 lb

Bent. Slurry to GS, use 52 g

(Calc. Vol. = 51 g) $D_i = 15"$ $D_f = 18.5"$

PW = 48 g

1745- Mark's finished unloading support
trucks and fixing SPT hammer.

1802- Mark's Enterprises and I offsite

1806- CT John Eimer about departure

~~Shut Down~~

Location Amerence-Labadie Date 10/22/09

Project / Client Reitz & Jens

WEATHER: WARM, 55°F OVERCAST, HUMID, CALM, HEAVY RAIN IN FORECAST BY 0830

052 - Arrive onsite to continue OSI field-work. Max's Enterprises onsite. Doug & Ryan Hunziker, Bill Dubois, and Ryan Northeutt, Dave Hunziker onsite.

711 - Conduct tailgate safety meeting.

713 - Due to the extreme likelihood of rain and thunderstorms w/in the next 2 hours, the plan is to perform surface completions and add grout to existing piezometers.

757 Begin grouting and completions after mixing grout.

PZ Grout added Comments

757	P-9	30g	Grout only
810	P-19	8g	Completed, needs lock
825	P-71	12g	Grout, Casing, J-plug
831	P-65	0g	Completed, needs lock
838	P-93	0g	Casing, J-Plug
842	P-95	8g	Casing, J-Plug
846	P-97	8g	Casing, J-Plug
850	P-99	4g	Casing, J-Plug

Grants Don

Location Amerence-Labadie Date 10/22/09

Project / Client Reitz & Jens

0900 - Kyle Kocher and Jason Pruett are onsite w/ Reitz & Jens, and Terra Drill is onsite drilling on C-37

0925 - Light to moderate rain is falling, but no lightning. We are going to try drilling on P-120. Chris Viereither. NOPE onsite.

0937 - CT Mike Carlson. Informed him the rain has let up a little and we are going to try drilling. Also informed him that Reitz & Jens is onsite drilling w/ Terra Drill

1007 - Begin drilling on P-120.

1123 - Chris Viereither onsite at P-120

1154 - Chris Viereither offsite.

Well Construction Notes: P-120

4" SCH 40 PRC 20-Slot, set base @ 34.9'

10/20 P. Sand to 21.3', use 375 lb

30/10 S. Sand to 19.7', use 75 lb

Bent. Slurry to GS, use 75 g

(Calc. Vol. = 68 g) D_i = 13" D_F = 17"

PW = 54g

Grants Don

Location Ameronville-Labadie Date 10/22/09

Project / Client Reitz & Jens

WEATHER: COOL, 60°F, RAIN, WIND FROM EAST AT 10-15 MPH

305 - Finished drilling, sand & grouting P-120

348- Due to rain drilling activities were stopped. Max's Enterprises finished unloading support truck.

350- Max Enterprises offsite and demobilizing back to Ft. Scott, KS.

350 - Offsite for the day.

70 - CT John Elmer. Informed him that drilling activities have ceased for the week due to rain.

~~2nd round~~

Location _____ Date _____

Project / Client _____

This image shows a full page of blank graph paper. The grid consists of small squares formed by thin black lines. A single vertical line runs down the center of the page, dividing it into two equal halves. There are no margins, text, or other markings on the paper.

Location Americus- Labadie Date 10/22/09

Project / Client Reitz & Jens

WEATHER: COOL 60°F RAIN, WIND FROM EAST AT 10-15 MPH

- 05- Finished drilling, sand & grouting P-120
- 18- Due to rain drilling activities were stopped. Max's Enterprises finished unloading support truck.
- 50- Max's Enterprises offsite and demobilizing back to Ft. Scott, KS.
- 50- Offsite for the day.
- 0 - CT John Elmer. Informed him that drilling activities have ceased for the week due to rain.

~~James Dan~~

Location Americus- Labadie Date 10/26/09 73

Project / Client Reitz & Jens

WEATHER: COOL, 55°F, OVERCAST, LIGHT RAIN, CALM

- 0920- Arrive onsite for OSI fieldwork. Scott King onsite. Max's Enterprises onsite: Doug & Ryan Hunziker, Bill Dubois. Observed TerraDrill Mud Rotary rig onsite.
- 0925- Asked Bill Dubois if he completed his 10-hour OSHA training. He stated he did but does not have the certificate w/him.
- 1000- CT Dave Hunziker. Informed him to fax OSHA certificate for Bill Dubois to Mike Carlson.
- 1010- Setup on P-601
- 1030- Conduct tailgate safety meeting.
- 1035- Begin drilling on P-601

Well Construction Notes: P-601

4" Sch 40 PVC 20-Slot, set base @	34.7'
10/20 P. Sand to	21.2' , use 350 lb
30/70 S. Sand to	20' , use 75 lb
Bent. Slurry to GS, use	68 g
(Calc. Vol. =	69 g) $D_i = 10"$ $D_F = 14.5"$
PW =	50g

James Dan

Location AmeriCUE-Labadie Date 10/26/09

Project / Client Reitz & Jens

Location AmeriCUE-Labadie Date 10/19

Project / Client Reitz & Jens

Date 10/19
10/26/09

75

343 - Finished drilling sand & grouting P-61.
The wet ground conditions are requiring the drill rig to pull the support truck down the farm access road and to the piezometer locations.

15 - Setup on P-122. Move back to equipment storage area to fill water tanks, switch trailers, decom HSA's and load 2" well materials.

15 - Drilling and support truck unable to make it to P-122 because the support truck transmission is overheating from assisting the drill rig during pulling.

14 - CT Mike Carlson to ask if we could get the bull dozer from PACE Const. to pull the support truck to the piezometer locations. He said we have approval to request PACE to pull the rig/truck if we are getting stuck, but only if they are on-site. Informed Mike that the bulldozer is on-site, but I am unaware if PACE personnel are on-site. I asked Mike if we can setup on P-87 and P-14D from the Davis Rd.
Gunnar's Don

1519 - CONT. - R.O.W. He stated yes but that we must sample there since we have not received approval from Reitz & Jens to log the holes from the cuttings. Informed Mike that we will attempt pulling away from P-122 and try setting up on P-87.

1615 - Begin drilling on P-87.

1655 - Scott King on-site stated his new GeoSquirt pump stopped working. Said he is off-site for the day.

Well Construction Notes: P-87

2" Sch 40 PVC 10-Slot, set base @ 35'

20/40 P. Sand to 21.4', use 310 lb

30/70 S. Sand to 19.6', use 50 lb

Bent. Slurry to GS use 42 g

(Calc. Vol. = 50g g) $O_2 = 3" OF = 9"$

PW = 50g

1828 - Finished drilling sand & grouting P-87.

1858 - Unload trucks and off-site.

Gunnar's Don

Location AmerenUE-Labadie Date 10/27/09

Project / Client Reitz & Jens

WEATHER: COOL, 45°F, OVERCAST, RAINING

- 015 - Max's Enterprises support truck has flat tire on front left. They begin to air the tire with their portable compressor.
- 045 - Follow Max's to tire repair shop.
- 122 - Arrive onsite w/ Max's Enterprises: Ryan Hunziker and Dubois, Bill. Doug Hunziker getting tire fixed on support truck in St. Clair.
- 135 - Ryan Hunziker spoke w/ Doug Hunziker about support truck and the service repair station indicated the wheel bearings on the front need replaced due to the "shaking" of the wheels when on the lift. This will require the truck to be in the repair shop most of the day.
- 155 - Doug Hunziker called and indicated that upon further inspection of the truck it will not require repair of the wheel bearings, only tightening of the wheel lock nut.
- 134 - Setup on P-140 w/ drilling pulling the support trailer.
- 336 - Conduct tailgate safety meeting.
Gauss Doc

Location AmerenUE-Labadie

Date 10/27/09

77

Project / Client Reitz & Jens

0900 - Doug Hunziker onsite w/ support truck.
0908 - Begin drilling on P-140.

Well Construction Notes: P-140

2" sch 40 PVC 10-slot set base @ 34.7'

20/40 P. Sand to 21.25', use 240 lb

30/40 S. Sand to 20.1', use 50 lb

Bent. Slurry to GS, use 28 g

(Calc. Vol. = 51 g) $D_i = 9.5"$ $D_f = 13.5"$
PW = 44 g

1146 - Finished drilling, sand & grouting P-140

1202 - Finished pulling out drilling & trailer w/ Greder GMC that is being pulled by support truck from Davis Rd.

1212 - CT Mike Carlson informed him the rain is causing the field conditions to be too wet to drill and that we are leaving the site.

1232 - CT Kenny Kitz, Ameren Safety, to inform him we are leaving the site for the day.

1240 - Max's Enterprises and I offsite.

Gauss Doc

Location AmerenUE-Labadie Date 10/28/09

Project / Client Reitz & Jens

WEATHER: COOL, 50°F, OVERCAST, DRIZZLE,
CALM

058 - Arrive onsite for DSI Fieldwork. Max's
Enterprises onsite: Doug & Ryan Hunziker,
Bill Dubois.

715 - Finished recon. of potential drilling
locations. The fields are saturated
with areas of standing water. P-187
has standing water but is located
off Davis Rd and appears to be
the best option.

750 - Setup on P-187. Wait for Max's to
arrive at location w/ drill rig.

815 - Drill rig would not start. Ignition wire
began smoking. Max's rewired ignition
and then jump started drill rig.

338 - Re-setup on P-187. Observe Terra Drill
and Reitz & Jens onsite, Kyle Kocher
and Jason Haett.

709 - Begin drilling on P-187. Conduct
tailgate safety meeting.

41 - Finished drilling, sand & grouting P-187.

30 - Observe Mike Carlson & Chris Vreether
onsite. Frank Phillips onsite.

300 - Back from taking Ryan Hunziker to Labadie
to buy lunch for the crew.
GROSS DON

Location AmerenUE-Labadie Date 10/29/09 79

Project / Client Reitz & Jens

WEATHER: COOL, 60°F, OVERCAST, 5-10 MPH
WIND FROM SOUTH

Well Construction Notes: P-187
2" Sch. 40 PVC 10-Slot, set base @ 35.1'
20/40 P. Sand to 21.8', use 300 lb
30/40 S. Sand to 20.7', use 50 lb
Bent. Slurry to GS, use 32 g
(Calc. Vol. = 53 g) $D_i = 3"$ $D_r = 7.5"$
PW = 60g

1315 - Setup on P-79. Mike Carlson
stated to continuously sample to
10 feet and then HSA down to
35 feet without split spoon
samples.

1339 - Max's now to location by using drill rig
to pull support trailer. Very muddy and
slow pulling.

1350 - Begin drilling on P-79.

~1400 - Blake Smotherman, Chris Vreether & Larry
Pierce onsite. All w/ MONE

1440 - MD102 leaves P-79.

1513 - Finished drilling, sand & grouting P-79.

1543 - Setup on P-~~8581~~.

1550 - Begin drilling on P-~~8581~~.

MARKS DON

Location Americus NE - Labadie Date 10/28/09Project / Client Reitz & SonsWell Completion Notes: P-792" Sch. 40 PVC 10-Slot, set base @ 35' $\frac{1}{4}$ P. Sand to 21.6', use 265 lb $\frac{1}{10}$ S. Sand to 20.25', use 50 lbBent. Slurry to GS, use 42 g(Calc. Vol. = 52 g) $D_i = 7"$ $D_f = 13"$ PW = 56gWell Construction Notes: P-811" Sch. 40 PVC 20-Slot, set base @ 34.8' $\frac{1}{20}$ P. Sand to 21.25', use 360 lb $\frac{1}{10}$ S. Sand to 20', use 50 lbBent. Slurry to GS, use 63 g(Calc. Vol. = 69 g) $D_i = 13"$ $D_f = 22"$ PW = 53g

1028 - Finished drilling, sand & grouting P-81.

908 - Finished unloading trucks and offsite.

~~Grass Down~~Location Americus NE - LabadieDate 10/29/09Project / Client Reitz & SonsWEATHER: COOL, 50°F, OVERCAST, WIND FROM
THE NE at 10-15 MPH

0652 - Arrive onsite for D&E Fieldwork.

Mike Carlson onsite. Max's Enterprises

onsite: Doug & Ryan Hunsicker,

Bill Dubois

0719 - Conduct tailgate safety meeting.

0815 - Setup on P-106. Connect trailer
to GMC Bredel truck. Drill rig
required to pull/assist GMC to
P-106 location.

SHELBY TUBE - P-106 1-3'

Well Construction Notes: P-1062" Sch. 40 PVC 10-Slot, set base @ 35' $\frac{2}{40}$ P. Sand to 21.7', use 2600 lb $\frac{3}{10}$ S. Sand to 20.1', use 50 lbBent. Slurry to GS, use 39 g(Calc. Vol. = 51 g) $D_i = 4"$ $D_f = 9.5"$ PW = 50

1010 - Finished drilling, sand & grouting P-106.

Rained out!

Leave Site @ 11:20

~~Grass Down~~

Location Amieau-E-Labadie Date 11/03/09

Project / Client Reitz & Jens

WEATHER: COOL, 50°F, CLEAR SKIES, MILD

905- Arrive onsite for DST Fieldwork.
Mex's Enterprises onsite performing well head completions: Doug Hunziker, Bill Dubois & Ryan Northcutt. Scott King onsite. Doug stated the fields are still very wet and causing the support truck and rig to become stuck, which is slowing progress. He recommended we begin drilling and allow the fields a couple of days to dry and then perform well head completions.

10- Attempt setting up on P-146; however, we could not make it to the hole location. Drinwater tank and attempt being pulled out to farm access road.

52- Finished filling up w/ water and setup on P-108.

05- Conduct tailgate safety meeting.

07- Begin drilling on P-108.

08- Chris Viereither onsite.

135- Spoke w/ Larry "Boat" Pierce via Chris Viereither's cell phone and he stated that we must continuously sample to total depth; therefore, requiring split spoons
Ginger Don

Location Amieau-E-Labadie Date 11/03/09 83

Project / Client WEATHER: WARM, 60°F, CLEAR SKIES,

CALM, MILD

1235- CONT. - every 18 inches. I then instructed the drill crew to stop drilling until we can get this resolved.

1238- CT Mike Carlson. Left message for him to return my call.

1300- CT Gredell Central office to speak w/ Mike Carlson. Mike said to stop drilling until further notice.

1310- Chris Viereither offsite for lunch.

1345- Support trailer has flat tire. Remove tire from trailer to have repaired.

1410- Chris Viereither called to say he was back onsite. Informed him that we were done drilling until further notice.

1444- Back to P-108 w/ second support trailer to begin mixing grout for well head completions.

1505- Begin adding grout, j-plugs and locks to uncompleted wells.

1535- Spoke w/ Larry "Boat" Pierce via Chris Viereither's cell phone and he stated to follow work plan as previously followed as we have been doing
Ginger Don

Location AmerenUE-Labadie Date 11/03/09

Project / Client Reitz & Jens

	P2	Grout Add.	Comments
	P-9	0g	Completed
05	P-106	4g	Add lock, j-plug and grout
30	P-93	0g	Completed
48	P-95	3g	Completed
01	P-97	5g	Completed
10	P-99	5g	Completed
022	P-104	0g	Completed, walked to P2

James Don

Location AmerenUE-Labadie Date 11/03/09 85

Project / Client Reitz & Jens

1535-CONT.- but that we must sample every piezometer via continuously sampling until non-cohesive material is encountered, then split-spoon sample at 5' intervals. He stated the CAT drilling crew will bore next to the 3 piezometers that were not sampled via split spoons.

1539- CF Mike Carlson. Verified and confirmed Larry Pierce's comments documented above.

1645- Finished well completions. Unload truck & trailer, take trash to dumpster.

1715- Offsite for day and w/Max's to Union to get tire repaired for support trailer.

James Don

Location AmerenUE-Labadie Date 11/04/09

Project / Client Reitz & Jens

WEATHER: COOL, 50°F, CLEAR SKIES, MILD, 5 MPH WIND FROM THE SOUTH

- 010- Arrive onsite for OSI Fieldwork w/ Max's Enterprises: Doug Hunziker, Bin Bubois, Ryan Northcutt
- 029- Setup on P-108 to cont. drilling.
- 030- Conduct tailgate safety meeting.
- 048- Finished jump starting drill rig. Max's observed a leak in an antifreeze hose. Turn off drill rig to attempt repairing hose.
- 050- Chris Vierrether, MNDR, onsite.
- 701- Hose for anti-freeze repaired.
- 705- Resume drilling on P-108
- 756- Chris Vierrether leaves location to go observe CPT drilling.

Well Construction Notes: P-108
2" Sch 40 PVC 10 slot, set base @ 35'
20' P. Sand to 21.6', use 250 lb
10' S. Sand to 19.6', use 50 lb
Bent. Slurry to GS, use 25 g
(Calc. Vol. = 51 g) $D_i = 9.5"$ $D_f = 13"$
PW = 44g

1905- Finished drilling, sand & grouting P-108.
Graves Don

Location AmerenUE-Labadie Date 11/04/09 87

Project / Client Reitz & Jens

WEATHER: COOL, 60°F, CLEAR SKIES, 15-20 MPH GUSTING WINDS FROM EAST, MILD

- 0920- Go to equipment storage area to get supplies, 2nd trailer, and water for next 2 wells.
- 0925- Mike Carlson onsite.
- 1008- Setup on P-110.
- 1015- Begin drilling on P-110.
- Well Construction Notes: P-110
2" Sch 40 PVC 10-slot, set base @ 35.2'
20/40 P. Sand to 21.75', use 260 lb
30/70 S. Sand to 20.25', use 50 lb
Bent. Slurry to GS, use 25 g
(Calc. Vol. = 52 g) $D_i = 13"$ $D_f = 16.5"$
PW = 38g
- 1225- Tremie pipe unscrewed inside HSA's during the addition of sand.
- 1245- Max is able to reconnect tremie pipe and start the addition of sand.
- 1332- Finished drilling, sand & grouting P-110
- 1355- Begin drilling on P-112.
- 1526- Chris Vierrether onsite at P-112.
- 1600- Mike Carlson onsite at P-112.
- 1650- Mike Carlson leaves P-112.
Graves Don

Location AmeriUE-Labadie Date 11/04/09

Project / Client Reitz & Jens

Well Construction Notes: P-112

"Sch. 40 PVC 10-Slot Set base @ 35.3'

10 P. Sand to 22.4', use 250 g lb.

20 S. Sand to 20', use 50 lb

nt. Slurry to GS, use 18 g

Calc. Vol. = 51 g) $V_i = 17"$ $V_F = 19.5"$

$V = 31$ g

710 - During the addition of secondary sand, sand would not fall out of the HSAs before natural sands infiltrated filter pack, therefore, the secondary sand height is 2.4 feet.

17 - Chris Vioether leaves P-112.

27 - Finished drilling, sand & grouting P-112.

310 - Finished unloading trailer and guiding drill rig back to equipment storage area. Offsite.

~~Grades Done~~

Location AmeriUE-Labadie Date 11/05/09 89

Project / Client Reitz & Jens

WEATHER: COOL, 35°F FOGGY, CALM, MILD

0605 - Arrive onsite for DST Fieldwork.

Mike Carlson onsite. Max's

Enterprises onsite: Dave, Doug &

Ryan Hunziker, Bill Dubois, and

Ryan Norheatt.

0627 - Conduct tailgate safety meeting.

0710 - CME 750 Drill rig will not start.

Remove starter and prepare to leave site w/ Ryan Hunziker to Washington to purchase new starter, buy part for support truck.

0715 - Offsite to Washington.

0845 - Back from Washington. Starter will not be available until 1:30 pm today at O'Reilly's Auto Parts in Washington.

Truck brake dust flange will not be available for pickup until 10:00 am on 11/04/09 at Ford in Washington.

0945 - Finished preparing supplies and trades to do well completions.

0958 - Ryan Hunziker and I begin well completions.

Grades Done

Location AmericanUE-Labadie Date 11/05/09

Project / Client Reitz & Sons

WEATHER: WARM, 60°F, CLEAR SKIES, CALM, MILD

	PZ	Grout Add	Comments
00	P-118	0g	Repair: Add concrete to 3"
09	P-106	0g	Completed
24	P-108	5g	Completed
38	P-110 x	6g	Add j-plug
48	P-112 +	7g	Add j-plug
57	P-79*	7g	Add j-plug
24	P-81	8g	Completed, No Lock
29	P-61	8g	Add Pro. Cong., Conc., J-Plug
09	P-70	0g	Conc. pad, No Lock
25	P-79*	0g	Completed, No Lock
45	P-110 x	0g	Completed, No Lock
52	P-112 +	0g	Completed, No Lock

110 - Finished with well head completions. Ryan Hunziker and I offsite to Washington to pick up the starter for the drill rig.

25 - Back from Washington. Starter at O'Reillys did not have correct mounting position. Return to site w/ old starter.

57 - Begin notching wells for surveys.

15 - Meeting w/ Paul Reitz, Jo Ann Tree, Chris Cook, & Mike Carlson about minimizing

Grout Don

Location AmericanUE-Labadie Date 11/05/09 91

Project / Client Reitz & Sons

Notching of Piezometers	
P-12	P-69
P-9	P-67
P-19	P-65
P-17	P-47 J-plug "Pop-off" Pressure
P-15	P-45
P-20	P-43
P-22	P-59
P-24	P-61 No Lock
P-27	P-63
P-29 J-plug "Pop-off" Pressure	P-77
P-36	P-75
P-31 No Lock	
P-33	
P-35	
P-38	
P-40	
P-42	
P-49	
P-51	
P-53	
P-55	
P-57	
P-71 No Lock	

Grout Don

Location AmerenUE-LabadieDate 11/06/09Project / Client Reitz & JensWEATHER: 65°F WARM, MOSTLY SUNNY, 10-15 MPH
WIND FROM SOUTH, MILD

Notching of Piezometers - Cont. From 11/05/09

P-79 Add Lock

P-81

P-87

P-99 Pad collapsed

P-97

P-95

P-93

1120 - Drill rig, CME 750, still inoperable. Assist Ryan Hunziker with mixing grout and attempting to unhook trailer from GMC; however, ground is too soft and trailer hitch is too low from weight. Begin assisting Ryan w/ assembly of clutch.

1335 - Cannot repair clutch. More parts needed. Walk to P-142 location to observe drilling.

1452 - Finished drilling, sand & grouting P-142.

1549 - CME 750 operating. Begin drilling on P-128.

1739 - Finished drilling w/ 8.25" HSA's to 35' for day.

Gruens Don

Location AmerenUE-LabadieDate 11/06/09Project / Client Reitz & Jens

Well Construction Notes: P-142

2" Sch 40 PVC 10-Slot, set base at 35.1'

20/40 P. Sand to 22.1', use 300 lb

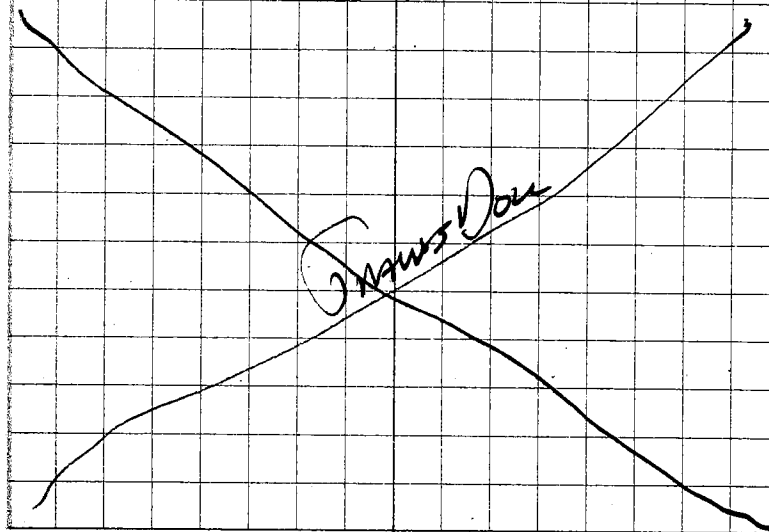
30/50 S. Sand to 20.1', use 50 lb

Bent. Slurry to GS, use 21 g

(Calc. Vol. = 51 g) Di = 7" Df = 10"

PW = 63g

1825 - Finished unloading trailer, supplies and assist w/ repair of support truck. Support truck operating. Mike Carlson, Max's Enterprises and I affix it.



Location AmericanUE-Labadie Date 11/07/09Project / Client Reitz & Sons

WEATHER: WARM, WOOF, CLEAR SKIES, MILD

0615- Arrive onsite for OSI Fieldwork.
 Mike Carlson; Max's Enterprises
 onsite: Dave, Doug & Ryan Hanziker,
 Bill Dubois, & Ryan Northcutt

0630- Conduct tailgate safety meeting.

0640- Ryan Hanziker and I setup on
 P-128. Begin installing rebuilt
 starter.

0705- Resume drilling on P-128.

Well Construction Notes: P-128

4" Sch. 40 PVC 20-Slot, set base @ 34.7'

0/20 P. Sand to 21.3', use 400 lb

10/50 S. Sand to 19.5', use 75 lb

Bent. Slurry to GS, use 60 g

(Calc. Vol. = 68 g) $O_i = X 2" O_f = 6"$

PW = 72g

0830- Mike Carlson offsite to SC Office.

Ground too soft for B-53 to drill.

0847- Finished drilling sand & grouting P-128.

SHELBY TUBE SAMPLE → P-128 0.7'-2.7'

3' South of Borehole 15" Rec

Grout Done

Location AmericanUE-Labadie Date 11/07/09Project / Client Reitz & Sons

X	PZ	Grout Add	Comments
0915	P-142	12g	
0924	P-88	5g	
0927	P-73	10g	

0941- Max's Enterprises and I finished
 unhooking trailers and unloading
 supplies. Off site.

Grout Done

Location Americus-LabadieDate 11/09/09Project/Client Reitz & Jens

WEATHER: WARM, 45° OF, OVERCAST, MILD, CALM

- 1110 - Arrive onsite for USI Fieldwork. Mike Carlson and Max's Enterprises already onsite. GMC truck, Gredell, wheel bearing began grinding on way to site early this morning. Returned to Jefferson City to drop off truck for repairs and brought personal vehicle to site.
- 1130 - Setup on P-156. Begin drilling.

Well Construction Notes: P-156

2" Sch. 40 PVC 10.5107 set base at 34.8'

2 1/4" P. Sand to 21.5', use 250 lb

3 1/4" S. Sand to 20.3', use 50 lb

Bent. Slurry to GS, use 44 g

(Calc. Vol. = 52 g) $O_i = 8.5" D_r = 15.5"$

PW = 44 g

1415 - Max's portable generator pull cord broke. Dismantle and repair.

1517 - Finished drilling, sand & grouting P-156.

1600 - Max's (Dave & Bill) back from filling water, getting materials & decom. of HSAs.

1621 - Setup on P-83

1634 - Begin drilling on P-83.

Grants Done

Location Americus-LabadieDate 11/09/09Project/Client Reitz & Jens

1720 - Finished drilling for day on P-83 to 15'

1745 - Max's Enterprises and Mike Carlson and I at site.

Grants Done

Location: Amerence-Labadie Date: 11/10/09

Project / Client: Reitz & Jens

WEATHER: COOL 50°F FOGGY, HUMID,
MOSTLY CLOUDY

- 1010- Arrive onsite for DSI Fieldwork. Mike Carlson and Max's Enterprises; Dave, Doug & Ryan Hunziker; Bill Dubois; and Ryan Northcutt onsite.
- 1020- Conduct tailgate safety meeting.
- 1034- Return to P-83 to resume drilling.
- 1054- Resumed drilling on P-83.
- 0810- Sand and gravel inside HSAs and sand catch could not be opened to set well. Pull out HSAs, plug bit, and ream out hole to 35'.

Well Construction Notes: P-83

"Sch. 40 PVC 10-310, set base at 34.8'

40 P. Sand to 21.5', use 250 lb

50 S. Sand to 20', use 50 lb

ent. Slurry to GS, use 32 g

(Calc. Vol. = 51 g) $D_i = 9.5"$ $D_p = 14"$

W = 30g

- 0837- Blake Smotherman, MWDZ, onsite.
- 0940- Finished drilling, sand & grouting P-83.
- 0949- Blake Smotherman leaves P-83 location.
- 1005- Made back to equipment storage area.

Location: Amerence-Labadie

Date: 11/10/09

101

Project / Client: Reitz & Jens

WEATHER: COOL 55°F CLOUDY, WIND FROM
NORTH 10-15 mph

1034 - Complete photographs of below:
PHOTO LOG

- 1) SOUTH, ruts made by combine on farm access road east of P-1167. on 11/02/09
- 2) Same as previous
- 3) NORTH, ruts made by combine on farm access road east of P-1167.
- 4) SOUTH, ruts made by combine on farm access road southeast of P-1167.
- 5) SOUTH, wetland crossing on farm access road.
- 6) NORTHWEST, ducks in wetland.

1036 - Setup on P-85

1050 - Max's arrives at P-85 after filling water tank, decon. of HSAs, and loading of 10.25" HSAs / piezometer materials.

1108- Blake Smotherman arrives at P-85

1109- Begin drilling on P-85

1245- Blake asked to take photographs of my drilling log. Informed him that he is welcome to. He is also taking photographs of soil samples.

1433- Resume drilling w/ 10.25" HSAs to 35'

Location Americus, LA Date 11/10/09
 Project / Client Reitz & Jens

433-CONT: after Max's cut wood plugs
 for the HSA. Also, had to retrieve
 auger puller and retrieve from core
 750 drill rig.

Well Construction Notes: P-85

"Sch. 40 PVC 10-Slot, set base at 34'

40 P. Sand to 20.5', use 350 lb

50 S. Sand to 18.7', use 50 lb

ent. Slurry to BS, use 49 g

(Calc. Vol. = 65 g) $D_1 = 10"$ $D_2 = 17"$

W = 50g

547- Blake Smotherman offsite for day.

601- Girth hose plugged. Clearout plug
 and begin grouting

628- Finished drilling, sand & grouting P-85.

145- Unload supplies and materials. Max's,
 Scott King, Mike Carlson and I offsite

~~Grout Done~~

Location Americus, LA Date 11/11/09 103
 Project / Client Reitz & Jens

WEATHER: COOL, 45°F, CLOUDS, MILD,
 CALM

0615- Arrive onsite for OSI Fieldwork.

Mike Carlson, Scott King and
 Max's Enterprises (Dave, Doug &
 Ryan Hunziker, Bill Dubois & Ryan
 Northcutt) onsite.

0635- Dave Hunziker & Bill Dubois offsite to
 Ft. Scott, KS. Bill's uncle had a serious
 stroke and outlook is grim.

0640- Conduct tailgate safety meeting.

0650- Take Doug Hunziker to Mobile B-53
 rig at P-85 location to move to
 next location P-124

0705- Put B-53 on P-124 location and
 leave on standby until full drill crew
 returns.

0715- Setup on P-136 and resume
 drilling w/ 10.25" HSAs.

0751- Leave P-136 to get field staking
 supplies.

0816- Begin field staking by walking to
 locations.

0951- Finished field staking at P-160. Setup
 on P-124. Mike Carlson leaves to
 meet w/ Kenny Kintz for safety meeting.

Location Ameren UE - Labadie Date 11/11/09
Project / Client Reitz & Jens

Project / Client **Reitz & Jens**

Piezometers Field Staked

P-191	Fallow, ground very soft
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P-193	Fallow	ground soft
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P. 181 Follow, ground soft

P. 179 Fallow, ground very soft

P-150 Corn Stubble, ground very soft

P-152 Corn Stubble, ground soft. C-151
under standing water

under standing water

P-164 Corn stubble, ground soft.

P-162 Corn, stubble, around soft. C-163

under standing water & Fallow/crops.

P. 1600 Corn stubble, ground soft

1046 - Begin drilling on A-124.

Well Construction Notes: P-124

2" Sch. 40 PVC 10-Slot, set base at 35.3'

29/40 P. Sand to 22', use 250 lb

30/50 S. Sand to	<u>20.1'</u>	, use	<u>50</u>	lb
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Bent. Slurry to GS, use 45 g

(Calc. Vol. = $\frac{51}{\text{g}}$) $D_i = 4''$ $D_o = 7''$

PW = 48g

1352- Finished drilling, sand & grouting A. 124.
Gravels Now

Graves Hall

Location: Americus-LELsedie Date: 11/11/09

Project / Client **Reitz & Jens**

WEATHER: WARM, LOS OF CLEAR SKIES, 5-10
mph WIND FROM NORTH, MILD

MPH WIND FROM NORTH, MILD

1406-Setup on P-126

1418 - Begin drilling on P-126.

1020- During the installation of the 4" PVC piezometer for P-126, fine sands infiltrated HSA and would not allow the well/piezometer to be installed at 35'

Well Construction Notes: P-126

4" Sch 40 PVC 10-slot, set base at 34.2'

$\frac{20}{40}$ P. Sand to 20.3, use 440 lb

30/50 S. Sand to 19 use 50 lb

Bent. Slurry to GS, use 45 g

(Calc. Vol. = 66 g) $D_1 = 7''$ $D_2 = 10''$

PLU = 42

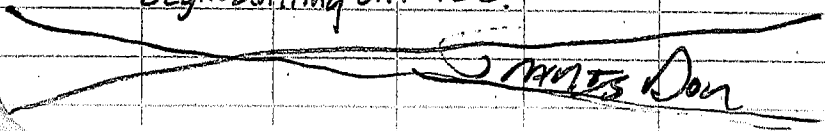
1715- Enriched clothing, sand & grouting P. 126

1745- Office along w/ Mike Carlson, Scott King, & Max's Enterprises

Summary

Location AmericanUE-Labadie Date 11/12/09Project / Client Reitz & JensWEATHER: COLD, 35°F, CLEAR SKIES, CALM,
FROST

- 0610- Arrive onsite for DSI Fieldwork.
Mike Carlson and Max's Enterprises
(Doug & Ryan Hunziker; Ryan Northcutt)
Onsite.
- 0630- Conduct tailgate safety meeting.
- 0650- Setup on P-114 while Max's fuels
CME 750 and mobilizes to P-114.
- 0745- Max's sets up on P-114. Power washer
was frozen and HSAs could not be
decontaminated until power washer
unthawed.
- 0757- Begin drilling on P-114.
- 0930- White convertible Sebring? w/ tan top
observing our drilling activities from Davis
Road.
- 0945- Dave Hunziker onsite. He is going to
setup on P-138 w/ Mobile B-53 rig.
- 1209- Finished drilling, sand & grouting P-114.
- 1310- Use CME 750 to pull KOG off/out
of location near B-153.
- 1330- Setup on P-152.
- 1335- Begin drilling on P-152.


 JAMES DON
Location AmericanUE-Labadie Date 11/12/09Project / Client Reitz & JensWEATHER: WARM, 60°F, MOSTLY SUNNY, 5MPH
WIND FROM SOUTH EAST

Well Construction Notes: P-114
4" Sch 40 PVC 10-Slot, set base at 34.8'
20/40 P. Sand to 21.6', use 450 lb
30/50 S. Sand to 26.1', use 75 lb
Bent. Slurry to GS, use 53 g
(Calc. Vol. = 70 g) $O_1 = 10.5"$ $O_2 = 14"$
PWD = 78g

Well Construction Notes: P-152
2" Sch 40 PVC 10-Slot, set base at 34.8'
20/40 P. Sand to 21.5', use 225 lb
30/50 S. Sand to 19.5', use 50 lb
Bent. Slurry to GS, use 45 g
(Calc. Vol. = 50 g) $O_1 = 14"$ $O_2 = 17"$
PWD = 48g

- 1610- Finished drilling, sand & grouting P-152.
- 1630- CME 750 required to pull support
truck from P-152. Then mobilize to
P-138 and pull support truck and
Mobile B-53 to Davis Rd. Chris
Vierthier onsite. Stated he has been
onsite since 1100 hours.
- 1645- Chris Vierthier offsite. ALLOFFSITE 1710.
- JAMES DON

Location America NE - Labadie Date 11/13/09Project / Client Reitz & Jens

WEATHER: COLD, 40°F, MOSTLY CLOUDY, CALM, MILD

0620 - Arrive onsite for USI Fieldwork.
 Mike Carlson and Max's Enterprises
 (Dave, Doug & Ryan Hunsiker; Ryan
 Northcutt) onsite.

0650 - Conduct tailgate safety meeting.

0735 - Setup on P-165.

0748 - Begin drilling on P-165.

Well Construction Notes: P-165 ⁴
 4" Sch 40 PVC 20-Slot, set base at 34.9'
 10/20 P. Sand to 21.25', use 400 lb
 30/50 S. Sand to 19.8', use 50 lb
 Bent. Slurry to GS, use 53 g
 (Calc. Vol. = 69 g) $D_i = 6.5"$ $D_o = 10"$
 PW = 600g

1100 - Finished drilling, sand & grouting P-165.

1110 - PZ Grant Add. Comments
 P-128 12g

1130 - Max's begins decor. of ITSA's

1220 - Setup on P-158.

1230 - Begin drilling on P-158

~~Graves Done~~

Location America NE - Labadie Date 11/13/09Project / Client Reitz & Jens

WEATHER: 60°F, WARM, MOSTLY SUNNY, 5 MAH WINDS FROM SOUTH, MILD

Well Construction Notes: P-158
 2" Sch 40 PVC 10-Slot, set base at 34.9'
 20/40 P. Sand to 21.4', use 250 lb
 30/50 S. Sand to 20.25', use 50 lb
 Bent. Slurry to GS, use 38 g
 (Calc. Vol. = 52 g) $D_i = 11.5"$ $D_o = 14"$
 PW = 40g

1450 - Finished drilling, sand & grouting P-158.

1552 - Begin field staking. Walk to locations.

* Piezometers Field Staked *

P-185 Corn stubble, ground soft to firm

P-173 Corn stubble, ground soft, in low

P-183 Corn stubble, ground very soft/wet

P-195 Unharvested corn, 6" of water

P-197 Corn stubble, ground soft, wet

areas surrounding location

P-175 Corn stubble, ground soft/wet

1700 - Finished field staking.

1725 - Mike Carlson, Max's Enterprises
 and I offsite.

~~Graves Done~~

Location Americus - Labadie Date 11/14/09Project/Client Reitz & JensWEATHER: COOL, MOSTLY CLOUDY, 45°F, CALM.
MELD

0612 - Arrive onsite for DST Fieldwork.
Mike Carlson and Max's Enterprises
(Dane, Doug & Ryan Hunziker, Ryan
Worthen) onsite.

0632 - Conduct tailgate safety meeting.

0706 - Setup on P-150. CME 750 unable
to pull support truck to the staked
location. Move location 40' to the
west.

0720 - Begin drilling on P-150.

Well Construction Notes: P-150

2" Sch 40 PVC 10-Slot, Set base at 35.1'

20% P Sand to 22', use 275 lb

30% S. Sand to 20', use 50 lb

Bent. Slurry to GS, use 60 g

(Calc. Vol. = 51 g) $D_i = 11"$ $D_f = 15"$

PW = 36g

1000 - Finished drilling, sand & grouting P-150.

1027 - Use CME 750 to pull support truck #2
out of field, unsuccessful.

1100 - Combine harvesting beans from the SW
part of the Newman property.

Location Americus - Labadie Date 11/14/09Project/Client Reitz & Jens

1105 - Mobile B-53 became stuck trying to
pull out the CME-750. Use personal
truck to pull out support truck #2.

1115 - Mike Carlson offsite

1120 - Take Ryan Hunziker down to farmers
harvesting beans and ask them to
pull drill rigs out. They said they
would; there for, we drove a farmer
to get his tractor ~ 1 mile away.

1140 - Farmer w/ tractor onsite and begins
pulling out drill rigs.

1229 - Begin well completions

PZ	Grout Add	Comments
1230 - P-120	0g	Completed, NO LOCK
1238 P-122	0g	Completed, NO LOCK
1257 P-134	10g	Add temp casing, NO LOCK
1302 P-146	4g	Completed, NO LOCK
1312 P-158	3g	Completed, NO LOCK

1357 - Finished unloading trucks and securing
site. Max's Enterprises and I
offsite.

Location Reitz - AmmenUE-Labadie Date 11/20/09
 Project / Client Reitz & Sons Fri.

316-CONT: are too wet for the drill rig to setup on any location. P-199 location access points are extremely soft & wet. Explained to him that Max's is trying to complete wells but water is infiltrating boreholes/pads. Informed Mike that Scott is developing P-88 currently, and I will give him a call in a couple of hours w/status.

330- Go to Labadie Market for lunch.

343- Back from Labadie Market.

350- Doug and Ryan Northcutt go to equipment storage area to decon. HSAs from last week and prepare the Mobile B-53 rig for transport back to Ft. Scott.

512- CT Mike Carlson. Informed him Max's is finished winterizing equipment and ready to depart to Ft. Scott. Max's performed 2 out of 12 completions (P-156 & P-114); however, the other piezometers were too wet to complete. Max's added temp. casings to the other 10.

1535- Max's, Scott King & I offsite.
 Grubs Don

Location AmmenUE-Labadie Date 11/20/09
 Project / Client Reitz & Sons Mon.

WEATHER: COOL, 50°F CLEAR SKIES, 5-10 MPH WIND FROM THE SW.

1055- Arrive onsite for OSI Fieldbook.

1100- Scott King onsite.

@ 1005 during mobilization to the site, Dave Hanziker called and indicated the support truck w/drill crew broke down in Lebanon, MO and will likely not be here until tomorrow.

1009- CT Mike Carlson to inform him of drill crew arrival time. He stated to go to the site and check site conditions.

1120- Recon. site. Speak w/ Jason Pruitt w/R & S. Jason is fieldstakey today and indicated they will be drilling sometime this week.

1155- Finished loading samples in R & S truck and prepare to develop wells.

1205- Setup on P-120 to develop w/ ^{Scott} King.

1240- Finished w/P-120.

1244- Setup on P-126, to develop.

1320- Finished w/P-126.

1323- Setup on P-114 to develop.

1356- Finished w/P-114.

1406- Setup on P-85 to develop.

1439- Finished w/P-85.

Grubs Don

Location Americus - Labadie Date 11/30/09
 Project / Client Reitz & Jens Mon.

- 450 - Setup on P-136 to develop.
 523 - Finished w/P-136
 531 - Setup on P-165 to develop
 608 - Finished w/P-165.
 655 - Finished unloading supplies and securing site while Scott performed paperwork for development records
 700 - Scott King and I off site.

~~Grants Done~~

Location Americus - Labadie Date 12/01/09
 Project / Client Reitz & Jens Tues.

WEATHER: COLD 30°F, CLEAR SKIES, SNEAKY WINDY FROM SOUTH

- 0625 - Arrive onsite for DST Fieldwork.
 Mark's Enterprises (Dag & Ryan Hunziker, Ryan Northcutt) onsite.
 0700 - Conduct tailgate safety meeting.
 Mark's finished unloading well construction materials from support trailer.
 0750 - Setup on P-201 after filling water tank, fueling CME-750, and transport to location.
 0810 - Begin drilling on P-201.

Well Construction Notes: P-201

2" Sch 40 PVC 10-Slot set base at 35'.
 20/40 P. Sand to 21.3', use 225 lb
 30/50 S. Sand to 20', use 75 lb
 Bent Slurry to GS, use 259 g
 (Calc. Vol. = 51 g) $D_i = 7"$ $D_F = 10.5"$
 PW = 38g

- 1100 - Finished drilling, sand & grouting P-201.
 1108 - Off site to Labadie Market to take Ryan Hunziker to get lunch.
 1130 - Back onsite. Setup on P-199.

~~Grants Done~~

Location AmerenUE-Labadie Date 12/01/09
Tues.

Project / Client Reitz & Jens

WEATHER: COOL, 55°F MOSTLY SUNNY, 15-20
MPH WIND FROM SW

55- Began drilling on P-199.

Well Construction Notes: P-199

"Sch 40 PVC 10-Slot, set base at 34.9'

10 P. Sand to 21.6', use 450 lb

50 S. Sand to 19.8', use 90 lb

ent. Slurry to GS, use 49 g

Calc. Vol. = 69 g) $D_i = 10"$ $D_p = 17"$

$W = 56$ g

47- Finished drilling, sand & grouting P-199

00- Check locations for ground conditions.

P-169 & P-171 maybe able to be
accessed in the morning if no rain.

28- Max's prepares R & S min Club Car
to begin well completions, as Scott
Kibby is onsite using other Club Car.

00- Finished scouting access conditions to
P-164. The ground between Davis Rd. &
P-164 is a drainage low and soft. Scouted
access from B-153 to P-164; however ground
still soft. The best access point to the
piezometers P-160, P-173, P-183, P-185, P-195
P-175 may be off of Davis Rd. directly
Graves Down

Location AmerenUE-Labadie

Date 12/01/09

121

Project / Client Reitz & Jens

Tues.

1600- CONT: South of P-187,

1630- Scouted P-171 and it should most
likely be accessed from C-1168 to
the north since the first 100 feet
from the farm access road is extremely
soft.

1639- Scouted P-191. Able to drive to the
location w/ Breddell 1/2 ton GMC,
but ground is very soft.

Wells Completed by Ryan Hunziker & Ryan Nohr

P-124 - Completed

P-126 - Completed

P-134 - Completed

P-138 - Needs grout

P-148 - Completed

P-150 - Under standing water

P-152 - Needs Grout

P-177 - Completed

P-136 - Completed

P-165 - Completed

P-122 - Patched concrete pad due to collapse.

1735- Unload supplies. All off site.
Graves Down

Location Ammon NE - Labadie Date 12/02/09Project / Client Reitz & JensWEATHER: COLD, 35°F, OVERCAST, CALM

025 - Arrive onsite for OSI fieldwork. Max's Enterprises (Doug & Ryan Hunsiker, Ryan Northcutt) onsite.

735 - Setup on P-1109. Pull support truck with CME-750 rig to location.

738 - Conduct tailgate safety meeting.

745 - Begin drilling on P-1109.

910 - Finished sampling P-1109 and begin reaming hole w/ 10.25" HSA's. Observed flat tire on Gredell GMC Truck, front left. Begin changing tire.

114 - Finished changing tire. We had much difficulty due to the jack and truck sinking in the soft soil.

Well Construction Notes: P-1109

"Sch 40 PVC 10-Slot, set base at 35'

40 P. Sand to 21.5', use 400 lb

50 S. Sand to 19.5', use 90 lb

Bent. Slurry to GS, use 39 g

(Calc. Vol. = 68 g) $D_i = 5"$ $D_F = 10.5"$

PW = 60g

1144 - Finished drilling, sand & grouting P-1109.

Location Ammon NE - LabadieDate 12/02/09Project / Client Reitz & JensWEATHER: COLD, 40°F OVERCAST, 10-20 MPH WINDS FROM THE NORTH

1155 - Setup on P-171

1205 - Begin drilling on P-171

Well Construction Notes: P-171

2" Sch. 40 PVC 10-Slot, set base at 35'

20/40 P. Sand to 21.6', use 275 lb

30/50 S. Sand to 20', use 50 lb

Bent. Slurry to GS, use 46 g

(Calc. Vol. = 51 g) $D_i = 10.5"$ $D_F = 17"$

PW = 40g

1422 - Finished drilling, sand & grouting P-171.

1445 - Park drill rig on farm access road near P-1109. Due to the flat tire needing repair, we are going to leave the site to make it to St. Clair, Mo by 4:30 pm today to have the tire repaired and placed back on the truck. Take Ryan Hunsiker to Labadie Market to get lunch.

1500 - Back onsite and it's beginning to rain.

Max's preparing supplies and equipment for tomorrow.

1538 - Max's Enterprises off site.

GROSS DOU

Location Ameren UE - Labadie Date 12/02/09
wed.

Project / Client Reitz & Sens

WEATHER: COLD 40°F, RAINING, 10-20 MPH WIND
 FROM NORTH

555- Finished securing site. Scott King and
 I offsite. Head to St. Clair to have
 GMC Truck tire fixed/mounted.

700- Finished getting the front left tire
 repaired and mounted. I had the
 spare tire installed on the main wheel
 and the repaired/plugged tire made
 into the spare. A 3/4" hole w/rock
 observed on inner wall of tire.

~~Grimm's Data~~

Location Ameren UE - Labadie

Date 12/03/09 125
Thurs.

Project / Client Reitz & Sens

WEATHER: COLD, 30°F, OVERCAST, CALM

0631- Arrive onsite for DSI Fieldwork.

0635- Max's Enterprises onsite (Doug & Ryan
 Hunziker, Ryan Northcutt)

0700- Recon. the field conditions w/ Ryan
 Hunziker due to yesterday's afternoon
 rain/snow mix. It appears ~ 1/4"
 of precipitation fell. P-179 appears
 to be accessible so we will attempt
 setting up at that location.

0725- Conduct tailgate safety meeting

0741- Max's begins airing CME-750 tire
 and support trailer tires.

0824- Setup on P-179.

0832- Begin drilling on P-179.

Well Construction Notes: P-179

2" SCH 40 PVC 10-Slot set base at 34.9'

20/40 P. Sand to *20.7', use 250 lb

20/50 S. Sand to 19.3', use 50 lb

Bert. Slurry to GS, use 32 g

(Calc. Vol. = 49 g) $D_i = 1.5$ $D_o = 6"$

PW = 47g

* P. Sand would not fall out of HSA's

~~Grimm's Data~~

Location AmerenUE-Labadie Date 12/03/09Project / Client Reitz & Jens

WEATHER: COLD 35°F, 10-15 MPH WIND FROM SW, MOSTLY SUNNY

1104- Finished drilling, sand & grouting P-179.

1126- Setup on P-181

1131- Begin drilling on P-181.

1229- PVC tremie head broke during flushing of HSA's at 35'. Pull 10 feet of HSA's to retrieve tremie riser pipe then redrill to 35'.

Well Construction Notes: P-~~179~~ 181

2" Sch. 40 PVC 10-slot set base at 34.7'

20/40 P. Sand to 21.5', use 225 lb

20/50 S. Sand to 20', use 50 lb

Bent. Slurry to GS, use 28 g

(Calc. Vol. = 51 g) $D_i = 6"$ $D_r = 10"$

PW = 44g

SMELBY TUBE P-181 1-3' 12" Rec.

1414- Finished drilling, sand & grouting P-181.

1445- Setup on P-191.

1500- Begin drilling on P-191.

1707- Finished drilling, sand & grouting P-191

1735- Scott King offsite.

Graves Done

Location AmerenUE-LabadieProject / Client Reitz & JensDate 12/03/09 127

Thurs.

Well Construction Notes: P-191

2" Sch. 40 PVC 10-slot set base at 34.8'

20/40 P. Sand to 21.3', use 225 lb

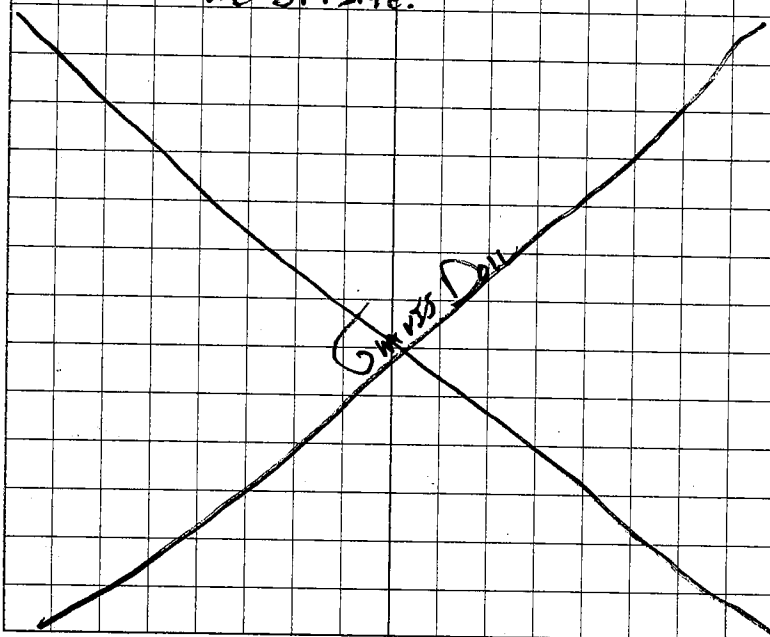
20/50 S. Sand to 19.6', use 50 lb

Bent. Slurry to GS, use 32 g

(Calc. Vol. = 50 g) $D_i = 10"$ $D_r = 14.5"$

PW = 44g

1805- Finished securing site and winterizing equipment. Max's Enterprises and I are offsite.



Location America UE - Labadie Date 12/04/09Project / Client Reitz & Jens Fri.WEATHER: COLD, 20°F, CLEAR SKIES, CALM

0625- Arrive onsite for DSI Fieldwork.
 Max's Enterprises onsite (Doug
 & Ryan Hunziker, Ryan Northcutt).

0640- Conduct tailgate safety meeting.

0734- Setup on P-193.

0804- Begin drilling on P-193.

Well Construction Notes: P-193

4" Sch 40 PVC-20-slot, set base at 34.9'

10/20 P. Sand to 21.4', use 490 lb

90/50 S. Sand to 19.4', use 100 lb

Bent. Slurry to GS, use 49 g

(Calc. Vol. = 67 g) $O_i = 2"$ $O_r = 9"$

OW = 53g

Use 20-Slot screen per Mike Carlson.

1129- Finished drilling, sand & grouting P-193.

1157- Ryan Hunziker and I leave site to go
 purchase a board for plugs in the
 10.25" HSA's. Nearest hardware store
 w/ lumber was in Pac. Sic, MO. Buy
 lunch in Labadie.

1300- Back onsite.

1317- Setup on P-164.

Graves Doug

Location America UE - LabadieDate 12/04/09Project / Client Reitz & JensFri.WEATHER: COLD, 30°F, MOSTLY SUNNY, 10 MPH
WIND FROM WEST

1332- Begin drilling on P-164.

Well Construction Notes: P-164

4" Sch 40 PVC 20-slot, set base at 34.8'

10/20 P. Sand to 21.3', use 375 lb

90/50 S. Sand to 19.3', use 100 lb

Bent. Slurry to GS, use 42 g

(Calc. Vol. = 67 g) $O_i = 9.5"$ $O_r = 15.5"$

PW = 50g

1618- Finished drilling, sand & grouting
 P-164.

1736- Finished setting up drill rig on
 P-197 location, unloading supplies
 and securing site. Max's and
 I offsite.

Graves Doug

Location Amerienvue-Labadie Date 12/05/09
Sat.Project / Client Reitz & Jens

WEATHER: CLOUD, 20°F, CLEAR SKIES, CALM

- 0620 Arrive onsite for OSI Fieldwork.
Max's Enterprises (Doug, Ryan
Hunziker, Ryan Northcutt) onsite.
- 0706 - Setup on P-197.
- 0710 - Conduct tailgate safety meeting.
- 0724 - CME 750 difficulty starting, but did
with the aid of a jump start, generator
assist and starter fluid.
- 0742 - Begin drilling on P-197

Well Construction Notes: P-197

1" Sch 40 PVC 20-Slot, set base @ 34.7'

20P. Sand to 21.2', use 375 lb

1/50 S. Sand to 19.3', use 100 lb

3 cent. Slurry to GS, use 42 g

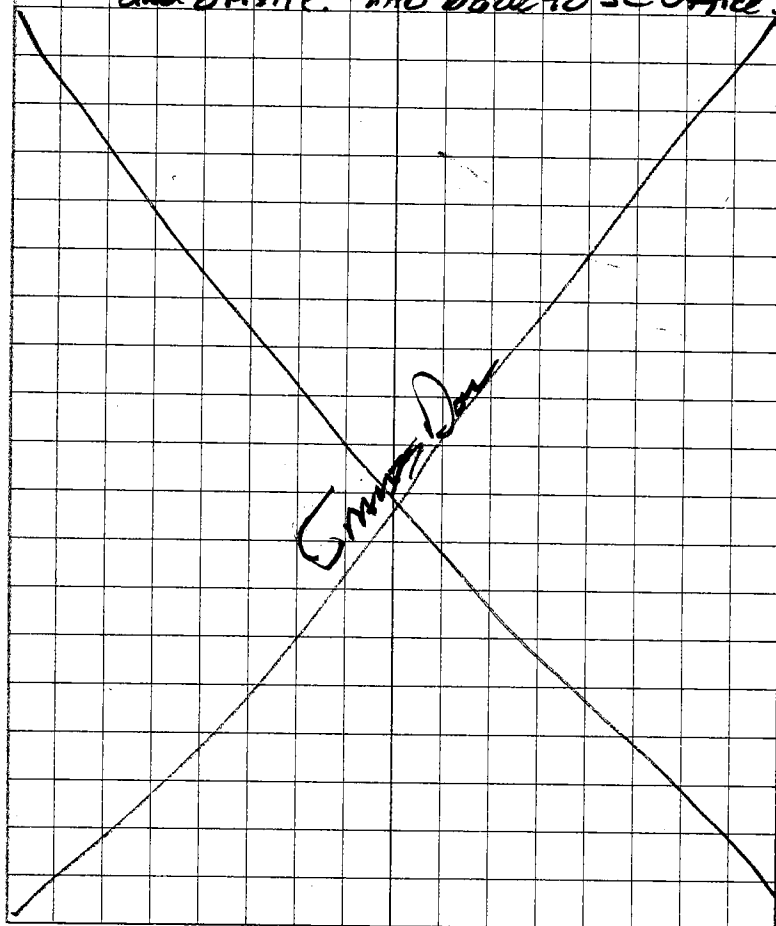
(Calc. Vol. = 67 g) $D_i = 9.5"$ $D_F = 15.5"$

OW = 52g

- 0000 - Scout remaining locations of P2, A11
were accessed by vehicle. P-1162 should
be moved 75' to the south across
wetland. P-195 should be moved 100'
north out of low, and P-173 may
need to be moved east or west.

Griffen DanLocation Amerienvue-LabadieDate 12/05/09
Sat.Project / Client Reitz & Jens

- 1108 - Finished drilling, sand & grouting P-197.
- 1242 - Finished unloading supplies, Max's
loads a trailer and prepares the
B-53 rig to travel back to Ft. Scott,
and offsite. TAD back to SC office.



Location Americus-Labadie Date 12/09/09Project / Client Reitz & Jens Wed.WEATHER: COLD 25°F OVERCAST VERY WINDY,
30-45 MPH WIND gusts from

736- Arrive onsite to continue DSI Fieldwork.

Max's Enterprises onsite (Doug Hunziker,
Bill Dubois, Ryan Northcutt).740- Doug indicated the generator pull
cord broke and they must repair it
in order to decon & treat water.816- Doug Hunziker and I offsite to
Washington, MO to get new generator.923- Doug & I return w/ generator. Ryan &
Bill prepared supplies, treat water, etc.
while we were away.

928- Scott King onsite.

940- Conduct tailgate safety meeting.

1000- CME 750 drill rig not starting due to cold.
Connect generator to oil "warm" plug. Also,
direct contractor blower/heater towards
engine block.

134- Rig started.

136- Scott King back from trying to develop
wells. He stated the pump hoses are
freezing.140- CT Mike Carlson. Informed him Scott
cannot develop the wells due to the
freezing conditions. Mike stated
GROSS DONLocation Americus-LabadieProject / Client Reitz & JensDate 12/09/09Wed.1040- CONT: to send Scott home. Also
informed Mike that drill rig just
started but we are still planning
on setting up on P-162.1120- Drill rig / support become stuck/unable
to pull to P-162. Ground is still soft
from yesterday's rain, but not yet frozen.1141- Unhook rig from support truck and
pull support truck/trailer back to
Davis Rd. Support trailer now has
a flat tire.1210- Park drill rig off of Davis Rd. Drive
support truck w/ flat tire on trailer
back to construction staging area.
Dump water tank to lighten the load
on the trailer.1230- CT Mike Carlson. Informed him about
attempt to access P-162 w/out success
and that trailer was flat, and that we
are going to unload water, remove tire and
take it to get repaired. He stated to
leave site for the day & try again tomorrow.1309- Leave site for day. Max's Enterprises
offsite.

GROSS DON

Location American UE - Labadie Date 12/10/09Project / Client Reitz & Jens

WEATHER: COLD, 10°F, CLEAR SKIES, 5MPH WIND FROM WEST

0615 - Arrive onsite for OSI Fieldwork. Max's Enterprises onsite (Doug Hunziker, Bill Dubois, Ryan Northcutt).

0625 - Max's begins installing new tire onto trailer.

0640 - Conduct tailgate safety meeting.

0655 - Setup at drill rig in the field near P. 187 and plug into oil "warm-up" plug and direct heater/blower towards engine block.

0742 - CME 750 drill rig started.

0753 - Setup on P-162. Move location ~ 75 feet south of wetland to place on higher elevation out of topographic low that holds water.

0825 - Begin drilling on P-162.

Well Construction Notes: P-162

1" Sch 40 PVC 10-Slot, set base at 34.6'

40' S. Sand to 21.25', use 425 lb

50' S. Sand to 19.5', use 75 lb

ent. Slurry to GS, use 56 g

Calc. Vol. = 68 g) $D_i = 5"$ $D_o = 13"$

W = 69 g

GRAVES DON

Location American UE - LabadieDate 12/10/09 135Project / Client Reitz & Jens

WEATHER: COLD, 25°F, CLEAR SKIES, 10-15 MPH WIND FROM WEST

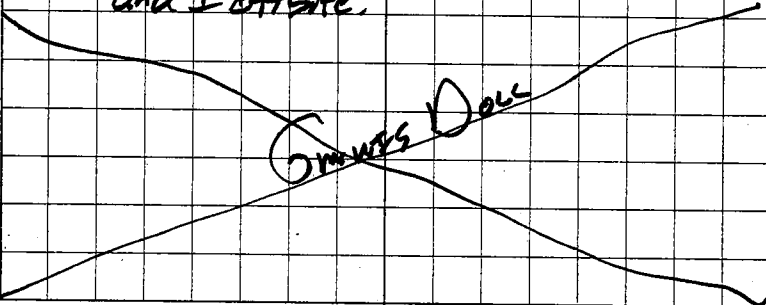
1418 - Finished sanding, drilling and grouting P-162. Much difficulty with threads freezing on drill string, bolts for 1456s and tremie pipes. Also, tremie pipe became disconnected and fell into 1456s, which required retrieval. The generator ran out of gas, which required refueling, and the grout had to be mixed. Grout hose became clogged during the mixing of grout that required disconnecting and freeing clog. The clutch on the rig also had to be bled.

1435 - Setup on P-160.

1455 - Begin drilling on P-160.

1653 - Finished drilling to 25' on P-160 for the day.

1725 - Finished unloading supplies. Max's and I offsite.



Location Amenue-Labadie Date 12/11/09
Fri.

Project / Client Reitz & Sons

WEATHER: COLD, 15°F, PARTLY CLOUDY, CALM

015- Arrive onsite for OSI Fieldwork.

Max's Enterprises onsite (Doug
Hunziker, Bill Dubois, Ryan Northcutt)

100- Conduct tailgate safety meeting.

Setup on P-160

728- Resume drilling on P-160.

Well Construction Notes: P-160

2" Sch 40 PVC 10-Slot set base at 35'

20/40 P. Sand to 21.5', use 275 lb

150 S. Sand to 20', use 40 lb

Bent. Slurry to GS, use 28 g

(Calc. Vol. = 51 g) $O_i = 3"$ $O_r = 7"$

PW = 50g

740- Finished drilling sand & grouting P-160.

710- Setup on P-183

25- Begin drilling on P-183

14- Finished drilling, sand & grouting P-183

15- Finished getting lunch and filling water tank
on support trailer. Setup on P-195. Move
the stacked location ~ 50 north to stay
out of topographic low that holds water.

445- Begin drilling on P-195.

Graves Done

Location Amenue-Labadie Date 12/11/09 137
Fri.

Project / Client Reitz & Sons

WEATHER: COLD 40°F MOSTLY SUNNY, 5-10
MPH WIND FROM WEST

Well Construction Notes: P-183

2" Sch. 40 PVC 10-Slot, set base at 35-2'

20/40 P. Sand to 21.6', use 175 lb

30/50 S. Sand to 19.8', use 45 lb

Bent. Slurry to GS, use 21 g

(Calc. Vol. = 51 g) $O_i = 7"$ $O_r = 10"$

PW = 40g

* Natural sands heaving inside HSTs during the
tremie of sand.

Well Construction Notes: P-195

2" Sch. 40 PVC 10-Slot, set base at 35.1'

20/40 P. Sand to 21.7', use 350 lb

30/50 S. Sand to 20.5', use 50 lb

Bent. Slurry to GS, use 42 g

(Calc. Vol. = 52 g) $O_i = 11"$ $O_r = 17"$

PW = 50g

SHELBY TUBE P-195 2-4'

1750- Finished drilling, sand & grouting P-195.

1834- Finished power washing HSTs,
unloading trailer, and securing
site. Offsite w/Max's.

Graves Done

Location Americus - Labadie Date 12/14/09
 Project / Client Reitz & Sons Mon.

WEATHER: COOL 55°F MOSTLY CLOUDY BREEZY
 TEMP. DROPPING TO 35°F BY 1400 HOURS

- 123 - Arrive onsite for DSI fieldwork. Mike Carlson & Frank Phillips already onsite performing aquifer tests.
- 140 - Max's Enterprises onsite (Doug Hunziker, Bin Dubois & Ryan Northcutt)
- 05 - Max's begins grouting wells w/ buckets using the Club Car for transportation, and decon. of the HSA's

PZ	Gpwt	Add	Comments
P-199	10g		None
P-201	5g		" "

- 145 - Max's stated the ground is too soft for them to grant any more wells. Therefore, they begin drilling weep holes in the protective casing. Also, empty grout tank to remove pieces of ice that are clogging the pump on the drill rig.

- 130 - Max's Enterprises offsite for day.
- 05 - Mike Carlson, Frank Phillips and I are offsite.

NAME - Dave

Location Americus - Labadie Date 12/15/09 139
 Project / Client Reitz & Sons Tue.

WEATHER: COLD 20°F PARTLY CLOUDY, 5-10 MPH WIND FROM THE NORTH

- 0628 - Arrive onsite for DSI fieldwork. Mike Carlson & Max's Enterprises (Doug Hunziker, Bill Dubois, & Ryan Northcutt) onsite.

- 0700 - Conduct tailgate safety meeting.
- 0828 - After fueling rig, starting rig, and pulling support truck & trailer, we are setup on P-175. Moved the stacked location 18' south due to a topographic low with standing water at the location.

- 0854 - Begin drilling on P-175.

Well Construction Notes: P-175.

2" Sch. 40 PVC 10-slot set base at 35'

2 1/4" P. Sand to 20.3', use 250 lb

3 1/2" S. Sand to 19.3', use 40 lb

Best. Slurry to GS, use 32 g

(Calc. Vol. = 49 g) $D_i = 12"$ $D_f = 14.5"$

PW = 56 g

* Heavily sands infiltrated HSA's during the tremie of the filter pack.

SHELBY TUBT P-175 1-3' 26" Rec.

GRUNTS DOW

Location Amerieu-E-Labadie Date 12/15/09
 Project / Client Reitz & Sons Tues.

- 140- Finished drilling, sand & grouting P-175
 138- Setup on P-185. Use Gredell Truck-
 GMC to load/haul water. Pick up
 lunch in Labadie while getting water
 58- Begin drilling on P-185.

Well Construction Notes: P-185
 Sch 40 PVC 10-Slot set base at 35.1'
 40 P. Sand to 21.75', use 275 lb
 150 S. Sand to 20.6', use 40 lb
 vent. Slurry to GS, use 35 g
 Calc Vol. = 53 g) $D_i = 16"$ $D_o = 21"$
 We 50 g

- 140- Mike Carlson & Frank Phillips offsite.
 134- Finished drilling, sand & grouting P-185.
 130- Finish pulling support truck/trailer out
 of field and move drill rig to Farm
 access road. Max's Enterprises
 and I offsite.

~~Graves Done~~

Location Amerieu-E-Labadie Date 12/16/09 141
 Project / Client Reitz & Sons Wed.
 WEATHER: COLD, 15°F, CLEAR SKIES, CALM

0635- Arrive onsite for DSI Fieldwork
 Max's Enterprises (Doug Horvick,
 Bill Dubois, & Ryan Northcott)
 onsite.

0700- Max's Enterprises prepares to mix
 grout and grout wells.

0710- Frank Phillips onsite. We prepare
 to develop / aquifer test wells.

Aquifer Testing

PZ	Time _s	Time _e	Depth _s	Depth _e	Comments
P-199	0924	0929	6.98	5.85	
P-193	1037	1042	6.87	4.88	
P-169	1116	1121	8.22		Subsided
P-197	1319	1324	12.09	9.92	" "
P-162	1407	1412	10.45	8.96	" "
P-164	1451	1456	12.39	11.95	" "

1600- Frank Phillips offsite.

~~Graves Done~~

Location Americus - Labadie Date 12/16/09
 Project / Client Reitz & Sons Wed

WEATHER: COOL, 40°F CLEAR SKIES, 5MPH FROM SOUTH

Piezometers & Grout Amount

P-150	5g
P-160	5g
P-162	25g
P-164	15g
P-169	5g
P-171	10g
P-173	5g
P-175	10g
P-179	12g
P-181	5g
P-183	5g
P-185	10g
P-191	10g
P-193	15g
P-195	10g
P-197	15g
P-199	25g
P-201	15g

622- Finished securing site. Max's Enterprises and I offsite.

Grout Down

Location Americus - Labadie Date 12/17/09
 Project / Client Reitz & Sons Thurs.

WEATHER: COLD, 25°F, PARTLY CLOUDY, CALM
 PM: COOL, 55°F, MOSTLY SUNNY, 5-10 WIND SW

0625- Arrive onsite for DST Fieldwork.
 Max's Enterprises (Doug Hunsicker,
 Bill Dubois, & Ryan Northcutt)
 onsite.

0705- Max's begins well completions
 and I begin well development.

Wells Completed

P-150, P-160, P-162, P-164, P-169,
 P-171, P-173, P-175, P-179, P-181,
 P-183, P-185, P-191, P-193, P-195,
 P-197, P-199, P-201. <sup>1 bag of
 bent chips added</sup>
 * 12/22/09-TAD- P-138 & P-152 Completed *

Wells Developed

P-171, P-179, P-181, P-191, P-201

1630- Max's Enterprises stated the
 CV joint on the R & S m/m
 Rental Club Car broke.

1710- Secure site. Max's Enterprises
 and I offsite.

Grout Down

Location Americus-Labadie Date 12/21/09
 Project / Client Reitz & Jens Mon.

WEATHER: COLD, 30°F OVERCAST HUMID
 5 MPH WIND FROM NW, 1-2" SNOW ON GROUND

- 0800- Arrive onsite for DST Fieldwork.
 Frank Phillips onsite.
 0830- Scott King onsite.
 0900- Frank, Scott and I begin collecting
 water levels.
 230- Completed round of water levels from
 100 piezometers
 300- Chris Cook w/ R & J onsite. Stated
 they are going to try drilling today.
 Gave Chris 4 boxes of soil
 samples & 2 Shelby tubes.
 305- Frank Phillips off site.
 325- Scott King & I begin developing wells.

Wells Developed
 P-138, P-152, P-183, P-185, P-195

- 1755- Finish unloading equipment and
 securing site. Scott and I
 off site.

~~Graves Done~~

Location Americus-Labadie Date 12/22/09
 Project / Client Reitz & Jens Tues.

WEATHER: COLD, 30°F, OVERCAST, FOGGY

- 0655- Arrive onsite to continue DST
 Fieldwork. Terra Drill CPT crew
 onsite. They stated their other
 drilling crew for the temporary
 borings will not be onsite
 until tomorrow.

0724- Begin developing wells.

0813- Observe Scott King onsite.

Wells Developed

P-150, P-148, P-160, P-173, P-175

1145- Finished developing wells.

1415- Scott finished developing P-177.

I cleaned out the construction
 trailer and loaded all of our
 equipment into truck.

1445- Scott King and I off site.

~~Graves Done~~

Appendix 4

Piezometer Boring Logs and Temporary Boring Descriptions

Detailed Site Investigation
Proposed Utility Waste Disposal Area
Ameren Labadie Power Plant

Prepared by: GREDELL Engineering Resources, Inc.



KEY TO SYMBOLS

Symbol Description




Strata symbols

	Silt
	Very Fine to Fine Sand
	Coarse to Very Coarse Sand
	Medium Sand
	Clay
	Silty Clay
	"Gley" Facies (Except for 100% Sand)
	Large Gravel (Pebbles and Cobbles)
	Small Gravel (Granules)


Misc. Symbols

	Boring continues
	Water table during drilling






Soil Samplers

	Bulk/Grab sample
	Standard penetration test
	Bulk sample taken from 6 in. auger

Monitor Well Details

	capped riser with locking cover
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Symbol Description

	protective casing set in concrete
	bentonite slurry
	silica sand, blank PVC
	slotted pipe w/ sand
	endcap on pipe packed in sand

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-9

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-NW, N of LBR, W of farm access Rd.
G.S. ELEVATION: 469.90' **T.O.C. ELEVATION:** 473.26'
NORTHING: 996108.40 **EASTING:** 726981.78

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
0	470						0.0-1.1 ft; Sandy Silt, brown, 10YR 4/3, damp, loose.	FB										
						100	1.1-2.0 ft; Silty Sand, dark brown, 10YR 3/3, damp, soft, mottles (10YR 4/6).											
							2.0-2.4 ft; Fine Sand, with very fine sand, brown, 10YR 4/3, damp, loose.											
5	465					60	2.4-5.0 ft; Clayey Silt, trace very fine sand below 3.1 ft, dark brown and brown, 10YR 3/3 and 4/3, slightly plastic, damp, soft.	FP/ Lev										
							5.0-7.0 ft; Poor recovery, probable Clayey Silt slough.											
10	460					100	7.0-15.5 ft; Fine Sand grading to Silty Sand, thin beds, dark brown, 10YR 3/3; dark grayish brown, 10YR 4/2, and herringbone laminated at 7.9 ft; mottles (10YR 4/6), trace clay and wet below 10.0 ft.											
15	455					67												
							15.5-31.3 ft; Fine Sand, with very fine sand, brown, 10YR 4/3, wet, soft, trace coarse sand (<1%) at 20.2 ft.											
20	450					100												
25	445					100												

DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Ryan Hunziker

LOGGED BY: T. Doll

DATE DRILLED: 10/20/09

START TIME: 8:02AM

END TIME: 11:22AM

BOREHOLE DIA.: 10.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES: S. King (Gredell) onsite
developing piezometers.

WATER LEVELS:

DURING DRILLING 10 FEET

AFTER DRILLING: FEET

DATE: _____

PIEZOMETER:

INSTALLED AT +/- 34.8 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cool, 50°F, Partly Cloudy, Mild, Calm.

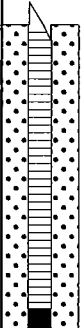
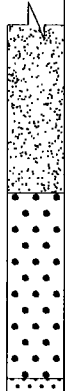
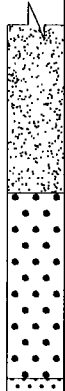
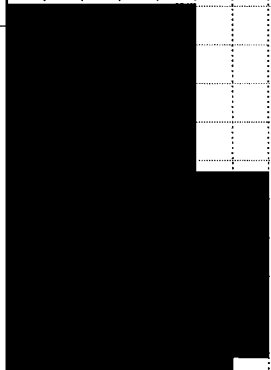
Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-9

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-NW, N of LBR, W of farm access Rd.
G.S. ELEVATION: 469.90' **T.O.C. ELEVATION:** 473.26'
NORTHING: 996108.40 **EASTING:** 726981.78

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
30	440					94	31.3-36.1 ft; Coarse Sand, with medium sand and fine sand, dark grayish brown 10YR 4/2, wet, soft to loose.	C										
35	435					100	36.1-36.5 ft; Medium to Coarse Sand, dark gray 10YR 4/1, trace fine gravel, 15 mm clasts, subrounded quartz and feldspars, (fine sand slough probable in top of 35.0 ft S.S.).											
40	430						BORING TERMINATED IN MEDIUM TO COARSE SAND @36.5 FT											
45	425																	
50	420																	
55	415																	

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 10/20/09
START TIME: 8:02AM
END TIME: 11:22AM
BOREHOLE DIA.: 10.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: S. King (Gredell) onsite developing piezometers.

WATER LEVELS: DURING DRILLING 10 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 34.8 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cool, 50°F, Partly Cloudy, Mild, Calm.

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-12

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-NW, N of LBR, E of farm access Rd.
G.S. ELEVATION: 468.95' **T.O.C. ELEVATION:** 472.14'
NORTHING: 996215.71 **EASTING:** 728171.12

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
0	470						0.0-0.8 ft; Clayey Silt grading to silt.	FB										
							0.8-1.3 ft; Clay, very dark gray, 10YR 3/1, highly plastic, firm, damp, trace roots, mottles (10YR 4/6).											
							1.3-3.5 ft; Clayey Silt, dark grayish brown, 10YR 4/2, with clay laminae, damp, plastic.											
							3.5-4.8 ft; Clayey Silty Sand, yellowish brown, grading moist.											
							4.8-5.9 ft; Silty Clay, brown, plastic, damp.											
							5.9-6.7 ft; Clay, dark brown, plastic.											
							6.7-10.0 ft; Silt grading to Clay grading to Very Fine Sand, interlaminated, light brown.											
10	460						10.0-33.3 ft; Fine Sand grading to Medium Sand, dark gray to brown, 10YR 4/1 to 4/3, (Gley) 1 3/4 in 25 ft S.S., wet below 15 ft, some clay below 20 ft, (clay slough probable in 30.0 ft S.S.).	FP/ Lev										
15	455							CO/ BS										
20	450																	
25	445																	

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Dave Hunziker
LOGGED BY: M. Carlson
DATE DRILLED: 09/16/09
START TIME: 1:40PM
END TIME: 4:15PM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES: Chris Vierrether, MDNR,
onsite observing drilling
activities.

WATER LEVELS: DURING DRILLING 15 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 33.8 FEET

VERTICAL DATUM: NAVD 88
HORIZONTAL DATUM: NAD 83
WEATHER: Clear, 70s°F, Dry.

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-12

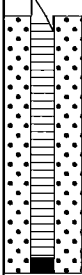



**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-NW, N of LBR, E of farm access Rd.

G.S. ELEVATION: 468.95' **T.O.C. ELEVATION:** 472.14'

NORTHING: 996215.71

EASTING: 728171.12

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
30	440					61	10.0-32.5 ft; Fine Sand grading to Medium Sand, dark gray to brown, 10YR 4/1 to 4/3, (Gley) 1 3/N in 25 ft S.S., wet below 15 ft, some clay below 20 ft, (clay slough probable in 30.0 ft S.S.).	FP/ Lev										
35	435					100	32.5-36.5 ft; Medium to Coarse Sand, gray, 10YR 5/1, wet, medium consistency.	C										
40	430						BORING TERMINATED IN MEDIUM TO COARSE SAND @36.5 FT											
45	425																	
50	420																	
55	415																	

DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Dave Hunziker

LOGGED BY: M. Carlson

DATE DRILLED: 09/16/09

START TIME: 1:40PM

END TIME: 4:15PM

BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES: Chris Vierrether, MDNR,
onsite observing drilling
activities.

WATER LEVELS: DURING DRILLING 15 FEET
AFTER DRILLING: FEET

DATE:

PIEZOMETER: INSTALLED AT +/- 33.8 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Clear, 70s°F, Dry.

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-15

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-NW, W of farm access Rd.

G.S. ELEVATION: 469.35' **T.O.C. ELEVATION:** 472.40'

NORTHING: 995802.44

EASTING: 727271.36

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
0	470						0.0-1.5 ft; Fine Sand, light brown.	FB										
							1.5-1.8 ft; Very Fine Sand grading to silt, laminated.											
							1.8-3.4 ft; Clayey Silt, thinly bedded, olive gray.											
5	465						3.4-4.2 ft; Clay, dark brown, plastic, firm.											
							4.2-5.0 ft; Silty Clay, medium brown.											
							5.0-10.0 ft; Silt, Clay, and Very Fine Sand, interlaminated.											
10	460					100	10.0-13.3 ft; Silt and Very Fine Sand, interlaminated, with clay laminae.	FP/ Lev										
15	455					44	13.3-28.3 ft; Fine Sand grading to Silty Sand grading to Medium Sand; fine sand bed to 18.3 ft, clay seams; silty sand bed to 23.3 ft, clay laminae; medium sand bed below 25.0 ft, clay balls; olive gray.											
20	450					44												
25	445					61												

DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Dave Hunziker

LOGGED BY: M. Carlson

DATE DRILLED: 09/16/09

START TIME: 4:40PM

END TIME: 8:50AM 9/17

BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: Chris Vierrether, MDNR, onsite observing drilling activities.

WATER LEVELS: DURING DRILLING 10.5 FEET
AFTER DRILLING: FEET

DATE: _____

PIEZOMETER: INSTALLED AT +/- 35.0 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Clear, 70s°F, Dry.

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-15

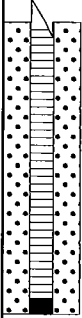
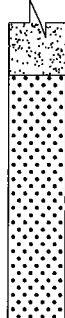
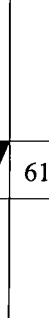
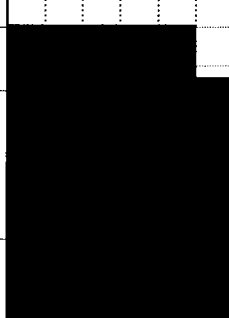
**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-NW, W of farm access Rd.

G.S. ELEVATION: 469.35' **T.O.C. ELEVATION:** 472.40'

NORTHING: 995802.44

EASTING: 727271.36

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
30	440					61	28.3-36.5 ft; Medium to Coarse Sand, with trace gravel, clean below 35.0 ft.	FP/ Lev C										
35	435					100		CM/ Sp										
40	430						BORING TERMINATED IN MEDIUM SAND @36.5 FT											
45	425																	
50	420																	
55	415																	

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Dave Hunziker
LOGGED BY: M. Carlson
DATE DRILLED: 09/16/09
START TIME: 4:40PM
END TIME: 8:50AM 9/17
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: Chris Vierrether, MDNR, onsite observing drilling activities.

WATER LEVELS: DURING DRILLING 10.5 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 35.0 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Clear, 70s°F, Dry.

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-17

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-NE- E of farm access Rd, N of LBR
G.S. ELEVATION: 469.30' **T.O.C. ELEVATION:** 472.19'
NORTHING: 995789.75 **EASTING:** 727851.61

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
0	470						0.0-0.9 ft; Clayey Silt grading to Silt.	FB										
							0.9-1.8 ft; Silt and Very Fine Sand, interlaminated, clay laminae, light to medium brown.											
							1.8-3.1 ft; Silty Clay, dark brown, plastic.											
5	465						3.1-4.6 ft; Silt grading to Silty Clay, laminated.	FP/ Lev										
							4.6-5.0 ft; Very Fine Sand grading to Fine Sand, light brown.											
							5.0-10.0 ft; Very Fine Sand, wet at base.											
10	460						10.0-15.0 ft; Fine Sand, light gray, dry, clean.											
15	455						15.0-28.3 ft; Very Fine Sand to Fine Sand, thin beds, trace clay, silty sand laminae at 21.0 ft.											
20	450																	
25	445																	

DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Dave Hunziker

LOGGED BY: M. Carlson

DATE DRILLED: 09/16/09

START TIME: 11:00AM

END TIME: 1:15PM

BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: Chris Vierrether, MDNR, onsite observing drilling activities.

WATER LEVELS: DURING DRILLING 15 FEET
AFTER DRILLING: FEET

DATE: _____

PIEZOMETER: INSTALLED AT +/- 35.0 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Clear, 70s°F, Dry.

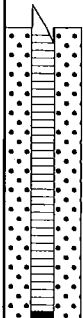


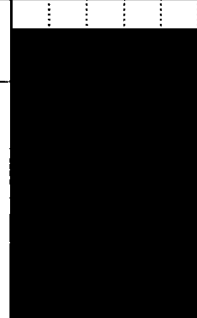
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**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-17

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-NE- E of farm access Rd, N of LBR
G.S. ELEVATION: 469.30' **T.O.C. ELEVATION:** 472.19'
NORTHING: 995789.75 **EASTING:** 727851.61

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY															
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL						
30	440					100	28.3-36.5 ft; Fine Sand, trace coarse sand at 31.5 ft, brown, firm, dense.	FP/ Lev																
35	435					100																		
40	430	BORING TERMINATED IN FINE SAND @36.5 FT																						
45	425																							
50	420																							
55	415																							

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Dave Hunziker
LOGGED BY: M. Carlson
DATE DRILLED: 09/16/09
START TIME: 11:00AM
END TIME: 1:15PM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: Chris Vierrether, MDNR, onsite observing drilling activities.

WATER LEVELS: DURING DRILLING 15 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 35.0 FEET

VERTICAL DATUM: NAVD 88
HORIZONTAL DATUM: NAD 83
WEATHER: Clear, 70s°F, Dry.

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-19

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-NE, N of LBR, E of farm access Rd.

G.S. ELEVATION: 467.90' **T.O.C. ELEVATION:** 470.84'

NORTHING: 995768.95

EASTING: 728438.40

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
470																		
0							0.0-0.5 ft; Clayey Sandy Silt, dark brown, 10YR 3/3, wet, soft.	FB										
465						100	0.5-1.5 ft; Silty Sand, dark yellowish brown, 10YR 4/4, moist, loose.											
5							1.5-3.2 ft; Silty Clay grading to Fine Sand, trace very fine sand, thin beds; silty clay, very dark grayish brown, 10YR 3/2, plastic, moist, stiff, mottles (10YR 4/6); fine sand, dark yellowish brown, 10YR 4/4, moist, loose.											
460						75	3.2-6.3 ft; Clayey Silt, dark brown, 10YR 3/3, medium plasticity, moist, stiff.	FP/ Lev										
10						94	6.3-7.1 ft; Clayey Silty Sand, dark brown, 10YR 3/3, moist, soft.											
455							7.1-9.6 ft; Fine Sand, clean, brown, 10YR 4/3, laminated, damp, soft.											
15						78	9.6-30.8 ft; Fine Sand, with medium sand, trace very fine sand, brown, 10YR 4/3, wet, soft (clay slough probable in top of 10.0 and 15.0 ft S.S.).											
450																		
20						0												
445																		
25						6												

DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Ryan Hunziker

LOGGED BY: T. Doll

DATE DRILLED: 10/16/09

START TIME: 9:20AM

END TIME: 11:55AM

BOREHOLE DIA.: 10.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES: Mr. Turnstall onsite to bid/
observe needed repairs of farm
access road.

WATER LEVELS: DURING DRILLING 10 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 34.8 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cold, 45°F, Overcast, Intermittent Lt. Rain, 10 MPH Wind from N.

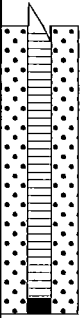


Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-19

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-NE, N of LBR, E of farm access Rd.
G.S. ELEVATION: 467.90' **T.O.C. ELEVATION:** 470.84'
NORTHING: 995768.95 **EASTING:** 728438.40

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
30	440					72	9.6-30.8 ft; Fine Sand, with medium sand, trace very fine sand, brown, 10YR 4/3, wet, soft (clay slough probable in top of 10.0 and 15.0 ft S.S.).	FP/ Lev										
35	435						30.8-36.5 ft; Medium to Coarse Sand grading to Gravelly Sand, dark gray, 10YR 4/1, 25 mm subrounded clasts, loose, wet.	C										
40	430					100	BORING TERMINATED IN GRAVELLY SAND @36.5 FT											
45	425																	
50	420																	
55	415																	

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 10/16/09
START TIME: 9:20AM
END TIME: 11:55AM
BOREHOLE DIA.: 10.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: Mr. Turnstall onsite to bid/observe needed repairs of farm access road.

WATER LEVELS: DURING DRILLING 10 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 34.8 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cold, 45°F, Overcast, Intermittent Lt. Rain, 10 MPH Wind from N.

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-20

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-NW, N of LBR, W of farm access Rd.
G.S. ELEVATION: 469.35' **T.O.C. ELEVATION:** 472.28'
NORTHING: 995510.59 **EASTING:** 726856.24

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
0	470					57	0.0-1.0 ft; Silt grading to Clayey Silt.	FB										
							1.0-2.0 ft; Very Fine Sand grading to Fine Sand, light brown, dry.											
							2.0-5.0 ft; Clayey Silt with Very Fine Sand.											
5	465					18	5.0-10.0 ft; Very Fine Sand grading to Silt grading to Clay, very thinly bedded, ripple laminations.	FP/ Lev										
10	460					100	10.0-13.3 ft; Silty Clay, interlaminated with silt and clay thin beds, moist.											
15	455					56	13.3-18.3 ft; Silty Clay grading to Very Fine Sand, grading to Fine Sand at 16.2 ft, wet.											
20	450					67	18.3-28.3 ft; Clayey Silt grading to Very Fine and Fine Sand, (No sample recovery from 25.0-26.5 ft).											
25	445					0												

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Dave Hunziker
LOGGED BY: M. Carlson
DATE DRILLED: 09/17/09
START TIME: 9:30AM
END TIME: 11:30AM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES: Chris Vierrether, MDNR,
onsite observing drilling
activities.

WATER LEVELS: DURING DRILLING 15 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 34.8 FEET

VERTICAL DATUM: NAVD 88
HORIZONTAL DATUM: NAD 83
WEATHER: Not recorded.

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-20

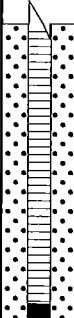
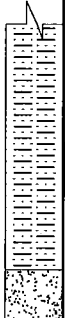
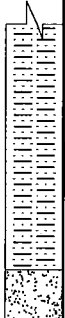
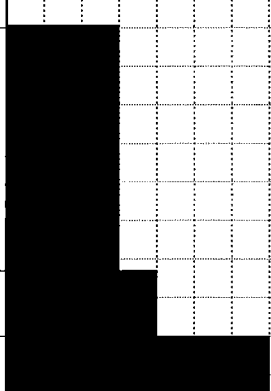
**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-NW, N of LBR, W of farm access Rd.

G.S. ELEVATION: 469.35' **T.O.C. ELEVATION:** 472.28'

NORTHING: 995510.59

EASTING: 726856.24

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
30	440					100	18.3-28.3 ft; Clayey Silt grading to Very Fine and Fine Sand, (No sample recovery from 25.0-26.5 ft).	FP/ Lev										
35	435					100	33.3-36.5 ft; Very Fine Sand grading to Fine Sand, grading to Coarse Sand at 36.2 ft.	FP/ Lev C										
40	430						BORING TERMINATED IN COARSE SAND @36.5 FT											
45	425																	
50	420																	
55	415																	

DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Dave Hunziker

LOGGED BY: M. Carlson

DATE DRILLED: 09/17/09

START TIME: 9:30AM

END TIME: 11:30AM

BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: Chris Vierrether, MDNR, onsite observing drilling activities.

WATER LEVELS: DURING DRILLING 15 FEET
AFTER DRILLING: FEET

DATE: _____

PIEZOMETER: INSTALLED AT +/- 34.8 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Not recorded.

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-22

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-NW, N of LBR, W of farm access Rd.
G.S. ELEVATION: 468.40' **T.O.C. ELEVATION:** 471.27'
NORTHING: 995503.03 **EASTING:** 727579.54

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
470																		
0							0.0-1.3 ft; Silty Sand, brown, 10YR 4/3, moist, soft, stiff below 1.9 ft.	FB										
						100	1.3-2.5 ft; Clayey Sandy Silt, very dark grayish brown, 10YR 3/2, moist, stiff.											
							2.5-3.0 ft; Fine Sand, with very fine sand, brown, 10YR 4/3, moist, soft.											
5							3.0-5.0 ft; Sandy Silty Clay, dark brown, 10YR 3/3, slightly plastic, stiff.											
						65	5.0-6.0 ft; Clayey Sandy Silt grading to Silty Sand, thin beds, dark brown, 10YR 3/3, moist, soft.	FP/ Lev										
							6.0-7.9 ft; Silty Clay, very dark grayish brown, 10YR 3/2, plastic, stiff, moist, mottles (10YR 4/6).											
						65	7.9-13.2 ft; Silty Sand and Fine Sand, thin beds, grayish brown and brown, 10YR 5/2 and 4/3, wet below 10.0 ft, laminated below 10.8 ft, stiff below 13.0 ft.	CO/ BS										
15						100	13.2-28.3 ft; Sandy Silt, alternating thin beds of Clayey Silt and Fine Sand, very dark gray (Gley) 1 3/N to 20.7 ft, wet, soft, laminated from 13.2-13.3 ft and 15.3-16.5 ft, dark gray, 10YR 4/1, below 20.7 ft, trace coarse sand below 25.8 ft, (clayey silt and fine sand slough probable in top of 20.0-30.0 ft S.S.).											
						89		FP/ Lev										
20																		
25						61												

DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Ryan Hunziker

LOGGED BY: T. Doll

DATE DRILLED: 10/07/09

START TIME: 8:15AM

END TIME: 11:42AM

BOREHOLE DIA.: 10.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: Chris Vierrether (MDNR), M. Carlson & S. King (Gredell) onsite observing drilling activities. MO Gas onsite.

WATER LEVELS: DURING DRILLING 10 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 35.0 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cold, 45°F, Clear Skies, Calm.

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-22

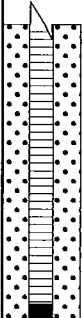

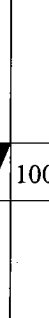
**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-NW, N of LBR, W of farm access Rd.

G.S. ELEVATION: 468.40' **T.O.C. ELEVATION:** 471.27'

NORTHING: 995503.03

EASTING: 727579.54

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
30	440					100	28.3-36.5 ft; Medium to Coarse Sand, trace fine sand and gravel, dark gray, 10YR 4/1, 20 mm subrounded clasts, wet, (fine sand and clay slough probable in top of 35.0 ft S.S.).	FP/ Lev										
								CM/ Sp										
35	435					100	BORING TERMINATED IN COARSE SAND @36.5 FT	C										
40	430																	
45	425																	
50	420																	
55	415																	

DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Ryan Hunziker

LOGGED BY: T. Doll

DATE DRILLED: 10/07/09

START TIME: 8:15AM

END TIME: 11:42AM

BOREHOLE DIA.: 10.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES: Chris Vierrether (MDNR), M.
Carlson & S. King (Gredell)
onsite observing drilling
activities. MO Gas onsite.

WATER LEVELS: DURING DRILLING 10 FEET
AFTER DRILLING: FEET

DATE:

PIEZOMETER: INSTALLED AT +/- 35.0 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cold, 45°F, Clear Skies, Calm.

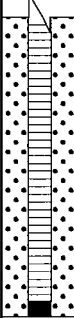


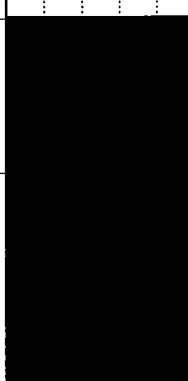
Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-24

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-Northeast. East of farm access Rd.
G.S. ELEVATION: 468.50' **T.O.C. ELEVATION:** 471.44'
NORTHING: 995476.21 **EASTING:** 728133.29

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
30	440					44	15.0-31.0 ft; Fine Sand, grayish orange, 10YR 7/4, laminated, well sorted, trace clay (slough), grading to medium sand.	FP/ Lev										
35	435					100	31.0-36.5 ft; Fine to Medium Sand, grayish orange, 10YR 7/4, well sorted, sparse coarse-very coarse sand toward base.	FP/ Lev										
40	430						BORING TERMINATED IN COARSE TO VERY COARSE SAND AT 36.5 FT											
45	425																	
50	420																	
55	415																	

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Dave Hunziker
LOGGED BY: M. Carlson
DATE DRILLED: 09/16/09
START TIME: 7:25AM
END TIME: 10:20AM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: Chris Vierrether, MDNR, onsite observing drilling activities.

WATER LEVELS: DURING DRILLING 13 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 35.0 FEET

VERTICAL DATUM: NAVD 88
HORIZONTAL DATUM: NAD 83
WEATHER: Clear, 70s°F, Dry.

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-27

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-NW, W of farm access Rd

G.S. ELEVATION: 469.07' **T.O.C. ELEVATION:** 471.99'

NORTHING: 995206.06

EASTING: 727247.55

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
0	470					100	0.0-0.6 ft; Silt	FB										
							0.6-1.0 ft; Very Fine Sand											
							1.0-2.0 ft; Silt and Very Fine Sand, interlaminated.											
							2.0-10.0 ft; Clay grading to Silty Clay, with 1-2 inch silt and very fine sand seams, dark brown.											
5	465					28												
10	460					94	10.0-23.3 ft; Very Fine Sand grading to Fine Sand, cross-laminated to 11.5 ft, clay balls from 15.0-16.5 ft, clay seam at 20.7 ft.	FP/ Lev										
15	455					22												
20	450					61												
25	445					67	23.3-28.3 ft; Fine Sand with clay balls, lignite and coarse sand at 26.0 ft; grading to fine sand, clean.											

DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Dave Hunziker

LOGGED BY: M. Carlson

DATE DRILLED: 09/17/09

START TIME: 12:20AM

END TIME: 2:25PM

BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: Chris Vierrether (MDNR), Dan Binz (R&J), John Eimer (Ameren) & T. Doll (Gredell) onsite observing drilling.

WATER LEVELS:

DURING DRILLING 10 FEET

AFTER DRILLING: FEET

DATE: _____

PIEZOMETER:

INSTALLED AT +/- 35.2 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Not recorded.

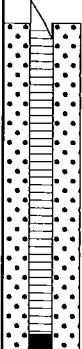

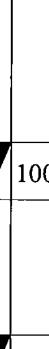
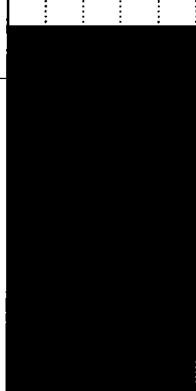
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**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-27

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-NW, W of farm access Rd
G.S. ELEVATION: 469.07' **T.O.C. ELEVATION:** 471.99'
NORTHING: 995206.06 **EASTING:** 727247.55

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
30	440					100	28.3-36.5 ft; Fine Sand, clean, grayish green at base.	FP/ Lev										
35	435					100												
40	430						BORING TERMINATED IN FINE SAND @36.5 FT											
45	425																	
50	420																	
55	415																	

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Dave Hunziker
LOGGED BY: M. Carlson
DATE DRILLED: 09/17/09
START TIME: 12:20AM
END TIME: 2:25PM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES: Chris Vierrether (MDNR),
Dan Binz (R&I), John Eimer
(Ameren) & T. Doll (Gredell)
onsite observing drilling.

WATER LEVELS: DURING DRILLING 10 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 35.2 FEET

VERTICAL DATUM: NAVD 88
HORIZONTAL DATUM: NAD 83
WEATHER: Not recorded.

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-29

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-NW- N of LBR, W of farm access Rd.
G.S. ELEVATION: 467.73' **T.O.C. ELEVATION:** 470.83'
NORTHING: 995188.03 **EASTING:** 727844.69

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
470																		
0							0.0-1.3 ft; Clayey Silt grading to Silt, medium brown grading to light brown, cross-laminated below 0.9 ft.	FB										
465						100	1.3-3.6 ft; Clay, olive gray, plastic.											
5							3.6-5.9 ft; Silty Clay, olive gray.											
460						45	5.9-10.2 ft; Silt and Clay, alternating thin beds, laminated, wet at 6.9 ft.											
10							10.2-13.0 ft; Clay, very dark gray, (Gley), iron concretions.	CO/ BS										
455						52	13.0-15.0 ft; Very Fine Sand grading to Silt grading to Clay, thin beds, medium brown.	FP/ Lev										
15						22												
450																		
20						61	20.6-28.3 ft; Fine Sand grading to Medium and Coarse Sand, clay seam at 26.5 ft.											
445																		
25						67												

DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Dave Hunziker

LOGGED BY: M. Carlson

DATE DRILLED: 09/15/09

START TIME: 10:56AM

END TIME: 2:15PM

BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES: T. Doll (Gredell) onsite
observing drilling activities.

WATER LEVELS: DURING DRILLING 6.9 FEET
AFTER DRILLING: FEET

DATE:

PIEZOMETER: INSTALLED AT +/- 35.2 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Clear, 70s°F, Dry.

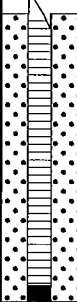
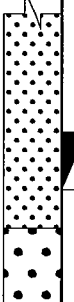
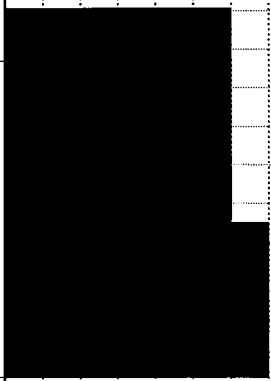
Date Printed: 11/17/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-29

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-NW- N of LBR, W of farm access Rd.
G.S. ELEVATION: 467.73' **T.O.C. ELEVATION:** 470.83'
NORTHING: 995188.03 **EASTING:** 727844.69

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
440							28.3-36.5 ft; Medium to Coarse Sand, trace clay at contact, trace gravel, gray, 10YR 5/1 clasts.	CM/ Sp										
30						100												
435																		
35						100												
430							BORING TERMINATED IN MEDIUM TO COARSE SAND @36.5 FT											
40							SHELBY TUBE SAMPLE COLLECTED AT 2.0-4.0 FT DEPTH AT COMPLETION OF DRILLING.											
425																		
45																		
420																		
50																		
415																		
55																		

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Dave Hunziker
LOGGED BY: M. Carlson
DATE DRILLED: 09/15/09
START TIME: 10:56AM
END TIME: 2:15PM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: T. Doll (Gredell) onsite observing drilling activities.

WATER LEVELS: DURING DRILLING 6.9 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 35.2 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Clear, 70s°F, Dry.

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-31

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-Northeast. East of farm access Rd.
G.S. ELEVATION: 467.67' **T.O.C. ELEVATION:** 470.22'
NORTHING: 994921.76 **EASTING:** 726950.89

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
470																		
0							0-0.9 ft; Clayey Silt, dark brown.	FB										
							0.9-1.4 ft; Silt and Very Fine Sand, light brown, laminated.											
465						100	1.4-4.4 ft; Clay, light olive gray, 5Y 6/1, scattered very thin beds of silt, plastic, firm.											
5							4.4-9.2 ft; Silty Clay, light olive gray, 5Y 6/1, plastic, moist.											
460						100												
10							9.2-12.0 ft; Very Fine Sand, Silt and Clay, highly interlaminated, pale yellowish brown, 10YR 6/2.	FP/ Lev										
455						100	12.0-21.0 ft; Fine Sand, grayish orange, 10YR 7/4, well sorted, carbonaceous fragments at 14.3 ft, saturated, sharp lower contact.											
15						67												
450																		
20						89												
445							21.0-32.5 ft; Silty Sand, distinct very dark gray (Gley) 1 3/N, scattered plastic clay layers up to 0.5 ft thick, interbedded with fine sand noted above (fine sand slough probable in top S.S.).	CO/ BS										
25						100												

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: M. Carlson
DATE DRILLED: 10/12/09
START TIME: 12:00AM
END TIME: 3:10PM
BOREHOLE DIA.: 10.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: T. Doll (Gredell) onsite to relieve M. Carlson. S. King (Gredell) onsite developing piezometers.

WATER LEVELS: DURING DRILLING 12 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 34.5 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cool, 50°F, Overcast, Mild, 5 MPH Wind from E.

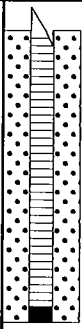


Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-31

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-Northeast. East of farm access Rd.
G.S. ELEVATION: 467.67' **T.O.C. ELEVATION:** 470.22'
NORTHING: 994921.76 **EASTING:** 726950.89

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
30	440					100	21.0-32.5 ft; Silty Sand, distinct very dark gray (Gley) 1 3/N, scattered plastic clay layers up to 0.5 ft thick, interbedded with fine sand noted above (fine sand slough probable in top S.S.).	CO/ BS										
35	435						32.5-36.5 ft; Medium to Coarse Sand, grayish orange, 10YR 7/4, trace gravel, (fine sand slough in top S.S.).	CM/ Sp										
40	430						BORING TERMINATED IN MEDIUM SAND @36.5 FT											
45	425																	
50	420																	
55	415																	

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: M. Carlson
DATE DRILLED: 10/12/09
START TIME: 12:00AM
END TIME: 3:10PM
BOREHOLE DIA.: 10.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: T. Doll (Gredell) onsite to relieve M. Carlson. S. King (Gredell) onsite developing piezometers.

WATER LEVELS: DURING DRILLING 12 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 34.5 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cool, 50°F, Overcast, Mild, 5 MPH Wind from E.

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-33

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-Northeast. East of farm access Rd.
G.S. ELEVATION: 468.44' **T.O.C. ELEVATION:** 471.18'
NORTHING: 994910.34 **EASTING:** 727559.71

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
470																		
0							0-1.4 ft; Clayey Silt, light brown.	FB										
						100	1.4-2.3 ft; Silt, light olive gray, 5Y 6/1, laminated, sparse clay lamina, friable.											
465							2.3-6.8 ft; Clay to Silty Clay, very thin to thin bedded, light olive gray, 5Y 6/1, scattered silt lamina, contorted beds-scour contact at 6.0 ft, lower contact scoured, erosional.											
5																		
						100	6.8-8.2 ft; Clay, laminated, olive gray, 5Y 4/1, trace silt, plastic.											
460							8.2-11.6 ft; Silt and Clay, highly interlaminated, pale yellowish brown, 10YR 6/2, saturated.											
10																		
						50	11.6-26.0 ft; Fine Sand, grayish orange, 10YR 7/4, trace clay and silt, sharp lower contact.	FP/ Lev										
455																		
15						94												
450																		
20						56												
445																		
25						39												
							26.0-30.0 ft; Coarse Sand, grayish orange,	C										

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Doug Hunziker
LOGGED BY: M. Carlson
DATE DRILLED: 09/14/09
START TIME: 9:42AM
END TIME: 3:50PM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES: Chris Vierrether, MDNR,
onsite observing drilling
activities.

WATER LEVELS: DURING DRILLING 8.2 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 34.8 FEET

VERTICAL DATUM: NAVD 88
HORIZONTAL DATUM: NAD 83
WEATHER: Clear, Sunny, 70s°F, Dry.

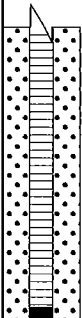
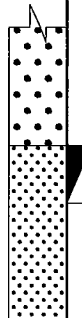
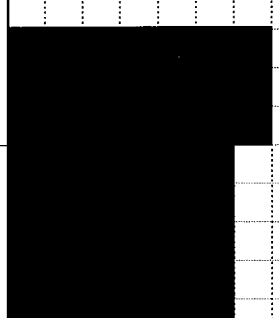
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**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-33

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-Northeast. East of farm access Rd.
G.S. ELEVATION: 468.44' **T.O.C. ELEVATION:** 471.18'
NORTHING: 994910.34 **EASTING:** 727559.71

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
440							10YR 7/4, common lignite fragments.											
30						72	30.0-36.5 ft; Medium to Coarse Sand, grayish orange, 10YR 7/4, gravelly with 2-10 mm clasts (granules-small pebbles), (fine sand slough in last S.S.).	C										
435																		
35						44												
430							BORING TERMINATED IN MEDIUM SAND @36.5 FT											
40																		
425																		
45																		
420																		
50																		
415																		
55																		

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Doug Hunziker
LOGGED BY: M. Carlson
DATE DRILLED: 09/14/09
START TIME: 9:42AM
END TIME: 3:50PM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES: Chris Vierrether, MDNR,
onsite observing drilling
activities.

WATER LEVELS: DURING DRILLING 8.2 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 34.8 FEET

VERTICAL DATUM: NAVD 88
HORIZONTAL DATUM: NAD 83
WEATHER: Clear, Sunny, 70s°F, Dry.

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-35

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-NE-E of farm access Rd, N of LBR
G.S. ELEVATION: 467.61' **T.O.C. ELEVATION:** 470.61'
NORTHING: 994886.38 **EASTING:** 728125.58

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
470																		
0							0.0-1.3 ft; Silt and Clayey Silt, thin beds, light gray.	FB										
						100	1.3-3.2 ft; Clay, plastic, olive gray.											
							3.2-4.3 ft; Silty Clay and Clay, olive gray.											
							4.3-4.8 ft; Silt, light gray											
							4.8-6.2 ft; Clay, olive gray, plastic, firm.											
5						47	6.2-10.2 ft; Silt and Clay, alternating thin beds, wet below 8.5 ft.											
							10.2-15.0 ft; Clayey Silt, wet.											
10						30												
15						50	15.0-18.3 ft; Fine Sand, with clay laminae, olive gray, clean.	FP/ Lev										
							18.3-28.3 ft; Fine Sand grading to Medium-Coarse Sand, with clay laminae.											
20						67												
25						100		C										

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Doug Hunziker
LOGGED BY: M. Carlson
DATE DRILLED: 9/15/09
START TIME: 4:20PM 9/14
END TIME: 10:25AM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES: T. Doll (Gredell) onsite
observing drilling activities.

WATER LEVELS: DURING DRILLING 8.5 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 33.0 FEET

VERTICAL DATUM: NAVD 88
HORIZONTAL DATUM: NAD 83
WEATHER: Clear, Sunny, 70s°F, Dry.

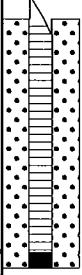


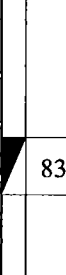
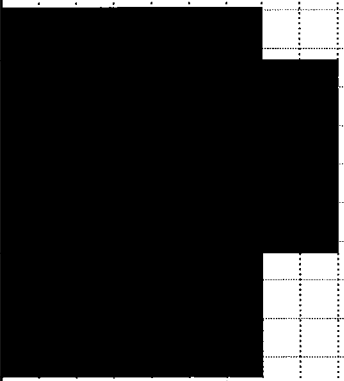
Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-35

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-NE-E of farm access Rd, N of LBR
G.S. ELEVATION: 467.61' **T.O.C. ELEVATION:** 470.61'
NORTHING: 994886.38 **EASTING:** 728125.58

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
30	440					83	28.3-33.3 ft; Medium-Coarse Sand grading to Very Coarse-Gravelly Sand, medium gray.	C										
35	435					44	33.3-36.5 ft; Medium-Coarse Sand	C										
40	430						BORING TERMINATED IN COARSE SAND @36.5 FT											
45	425																	
50	420																	
55	415																	

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Doug Hunziker
LOGGED BY: M. Carlson
DATE DRILLED: 9/15/09
START TIME: 4:20PM 9/14
END TIME: 10:25AM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: T. Doll (Gredell) onsite observing drilling activities.

WATER LEVELS: DURING DRILLING 8.5 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 33.0 FEET

VERTICAL DATUM: NAVD 88
HORIZONTAL DATUM: NAD 83
WEATHER: Clear, Sunny, 70s°F, Dry.

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-36

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-NE-E of farm access Rd, N of LBR
G.S. ELEVATION: 468.20' **T.O.C. ELEVATION:** 471.23'
NORTHING: 995058.28 **EASTING:** 728509.44

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
470																		
0							0.0-1.0 ft; Clayey Silt, dark grayish brown, 10YR 4/2, firm, dry.	FB										
						100	1.0-1.6 ft; Clay, dark brown, plastic, firm.											
							1.6-2.6 ft; Silty Clay, dark brown.											
465							2.6-6.6 ft; Silt and Clayey Silt, laminated, yellowish brown.											
5																		
						40	6.6-10.0 ft; grading to Clay and Silt, laminated, wet.											
460																		
10							10.0-32.5 ft; Very Fine Sand grading to Fine Sand, thin beds, trace clay, wet.	FP/ Lev										
455						10												
15						100												
450																		
20						39												
445																		
25						61												

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Dave Hunziker
LOGGED BY: M. Carlson
DATE DRILLED: 9/15/09
START TIME: 3:11AM
END TIME: 5:00PM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES: T. Doll (Gredell) onsite
observing drilling activities.

WATER LEVELS: DURING DRILLING 6.6 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 35.3 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cloudy, Spotty Rain, 70s°F, Dry.

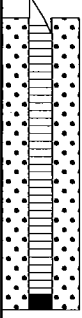


Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-36

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-NE-E of farm access Rd, N of LBR
G.S. ELEVATION: 468.20' **T.O.C. ELEVATION:** 471.23'
NORTHING: 995058.28 **EASTING:** 728509.44

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
440							10.0-32.5 ft; Very Fine Sand grading to Fine Sand, thin beds, trace clay, wet.	FP/ Lev										
30						39												
435							32.5-36.5 ft; Fine Sand grading to Medium Sand, greenish gray clayey sand at base.	CO/ BS										
35						72												
430							BORING TERMINATED IN CLAYEY SAND @36.5 FT											
40																		
425																		
45																		
420																		
50																		
415																		
55																		

DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Dave Hunziker

LOGGED BY: M. Carlson

DATE DRILLED: 9/15/09

START TIME: 3:11AM

END TIME: 5:00PM

BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES: T. Doll (Gredell) onsite
observing drilling activities.

WATER LEVELS: DURING DRILLING 6.6 FEET
AFTER DRILLING: FEET

DATE:

PIEZOMETER: INSTALLED AT +/- 35.3 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cloudy, Spotty Rain, 70s°F, Dry.

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-38

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-West-S. in ROW of Labadie Bottom Rd
G.S. ELEVATION: 467.15' **T.O.C. ELEVATION:** 470.11'
NORTHING: 994618.74 **EASTING:** 727238.62

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
470																		
0							0-0.5 ft; Silt, dark grayish brown, 10YR 4/2, wet, soft.	FB										
465						100	0.5-1.0 ft; Very fine sand, brown, 10YR 4/3, dry, soft.											
5							1.0-4.1 ft; Clay, very dark grayish brown, 10YR 3/2, moist, plastic, very firm, mottles (10YR 4/6).											
460						100	4.1-5.0 ft; Clayey Silt, dark grayish brown, 10YR 4/2, moist, soft.											
10							5.0-6.3 ft; Poor recovery, probable Clay slough.											
455						90	6.3-9.1 ft; Clay and Sandy Silt, alternating thin beds, dark grayish brown, 10YR 4/2; clay beds highly plastic, very firm, mottles 10YR 4/6; sandy silt beds moist, soft.											
15							9.1-12.5 ft; Fine Sand, brown, 10YR 4/3, ripple laminated grading to laminated, wood fragments below 12 ft, iron oxide staining (10YR 5/6), moist grading to wet, very soft.	CO/ BS										
450						100	12.5-28.3 ft; Fine Sand, very dark gray (Gley) 1 3/N, trace very fine sand, grading to medium sand below 25.6 ft, saturated, non-cohesive (fine sand and clay slough probable in top of S.S.).											
20						61												
445																		
25						89												

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Doug Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 9/22/09
START TIME: 7:35AM
END TIME: 10:35AM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: Chris Vierrether (MDNR) and John Eimer & Rich Hill (Ameren) onsite observing drilling activities.

WATER LEVELS: DURING DRILLING 10 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 34.6 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

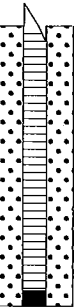
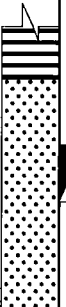
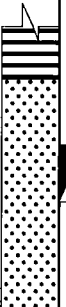

WEATHER: Warm, 65°F, Mostly Cloudy, Humid, Calm, Rained Last Evening.

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-38

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-West-S. in ROW of Labadie Bottom Rd
G.S. ELEVATION: 467.15' **T.O.C. ELEVATION:** 470.11'
NORTHING: 994618.74 **EASTING:** 727238.62

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
30	440					100	28.3-36.5 ft; Medium Sand grading to Coarse Sand, very dark to dark gray (Gley) 1 3/N and 4/N, (fine sand noted at total depth based on cuttings sample collected from auger bit).	CO/ BS										
35	435					100												
430	430						BORING TERMINATED IN FINE SAND @36.5 ft											
40																		
425																		
45																		
420																		
50																		
415																		
55																		

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Doug Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 9/22/09
START TIME: 7:35AM
END TIME: 10:35AM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: Chris Vierrether (MDNR) and John Eimer & Rich Hill (Ameren) onsite observing drilling activities.

WATER LEVELS: DURING DRILLING 10 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 34.6 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Warm, 65°F, Mostly Cloudy, Humid, Calm, Rained Last Evening.

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-40

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-South. Edge of LBR
G.S. ELEVATION: 467.05' **T.O.C. ELEVATION:** 469.93'
NORTHING: 994582.15 **EASTING:** 727832.47

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
470																		
0							0-1.2 ft; Silty Clay and Silt, alternating thin beds, olive gray, 5Y 4/1, moist, slightly plastic.	FB										
465						90	1.2-2.2 ft; Silty Clay, olive gray, 5Y 4/1, moist, plastic.											
							2.2-4.0 ft; Clay, olive gray, 5Y 4/1, plastic, firm.											
5							4.0-6.1 ft; Silty Clay, olive gray, 5Y 4/1, plastic.											
460						80	6.1-6.5 ft; Clayey Silt, olive gray, 5Y 4/1.											
							6.5-6.9 ft; Silt, light brown, laminated.											
10							6.9-8.8 ft; Clay and Silt, alternating thin beds, grayish orange, 10YR 7/4, laminated, moist, soft.	CO/ BS										
455						57	8.8-14.5 ft; As above except for distinct color change across sharp contact to very dark gray (Gley) 1 3/N.											
15						100	14.5-21.0 ft; Fine Sand to Medium Sand, grayish orange, 10YR 7/4, trace clay (slough), saturated, non-cohesive, sharp contact with below.	FP/ Lev										
450																		
20						67												
445							21.0-27.5 ft; Medium to Coarse Sand, grayish orange, 10YR 7/4, sparse gravel.	CM/ Sp										
25						44												

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Doug Hunziker
LOGGED BY: M. Carlson
DATE DRILLED: 10/12/09
START TIME: 7:57AM
END TIME: 10:59AM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: S. King (Gredell) onsite developing piezometers.

WATER LEVELS: DURING DRILLING 8 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 34.8 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cool, 40s°F, Partly Cloudy, Muddy.

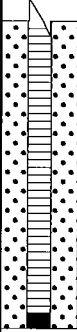
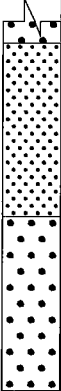
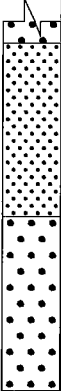
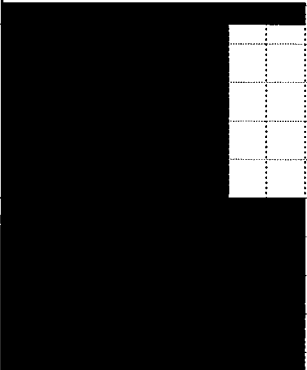
Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-40

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-South. Edge of LBR
G.S. ELEVATION: 467.05' **T.O.C. ELEVATION:** 469.93'
NORTHING: 994582.15 **EASTING:** 727832.47

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
30	440					28	27.5-32.0 ft; Fine to Medium Sand, grayish orange, 10YR 7/4, trace gravel and coarse sand.	CM/Sp										
35	435					100	32.0-36.5 ft; Coarse to Very Coarse Sand, grayish orange, 10YR 7/4, gravelly.	C										
430							BORING TERMINATED IN VERY COARSE SAND @36.5 FT											
40																		
425																		
45																		
420																		
50																		
415																		
55																		

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Doug Hunziker
LOGGED BY: M. Carlson
DATE DRILLED: 10/12/09
START TIME: 7:57AM
END TIME: 10:59AM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: S. King (Gredell) onsite developing piezometers.

WATER LEVELS: DURING DRILLING 8 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 34.8 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cool, 40s°F, Partly Cloudy, Muddy.

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-42

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-West-S of LBR, W of farm access Rd.
G.S. ELEVATION: 467.74' **T.O.C. ELEVATION:** 470.60'
NORTHING: 994538.42 **EASTING:** 728420.83

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY											
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL		
470																				
0							0.0-0.5 ft; Clayey Silt, dark brown, 10YR 3/3, wet, soft.	FB												
465						80	0.5-1.5 ft; Silty Sand, dark grayish brown, 10YR 4/2, moist, soft.													
5							1.5-3.0 ft; Silty Clay, very dark grayish brown, 10YR 3/2, plastic, stiff.													
460						65	3.0-7.1 ft; Silty Clay and Clayey Silt, thin beds, dark grayish brown to brown, 10YR 4/2 and 4/3, slightly plastic, wet below 5.9 ft, soft, (clay slough probable in top of 5.0 ft C.S.).	FP/ Lev												
10							7.1-7.8 ft; Silty Sand, dark grayish brown, 10YR 4/2, laminated, wet, soft.													
455						40	7.8-11.3 ft; Fine Sand grading to with very fine sand, grayish brown, 10YR 5/2, laminated above 10.0 ft, dry to 8.3 ft; wet below 8.3 ft, loose to soft.													
15							11.3-15.0 ft; grading to Fine Sand, with medium sand.													
450						72	15.0-20.2 ft; Fine Sand, with very fine sand, brown, 10YR 4/3, wet, soft.													
20																				
445						61	20.2-36.5 ft; Medium to Coarse Sand, with fine sand, alternating thin beds, dark yellowish brown and brown, 10YR 4/4 and 4/3, wet, soft to loose, interbedded layers of fine sand, subrounded quartz and feldspar clasts, becoming dark gray, 10YR 4/1, below 35.6 ft.	C												
25						100														

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 10/06/09
START TIME: 12:58AM
END TIME: 5:09PM
BOREHOLE DIA.: 10.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES: Chris Vierrether, MDNR,
onsite observing drilling
activities.

WATER LEVELS: DURING DRILLING 10 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 34.8 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Warm, 70°F, Overcast, 25 MPH Gusting Wind from SW, Humid.

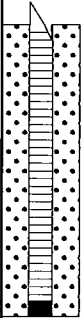
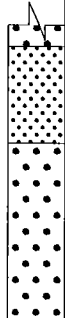
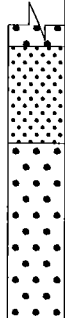
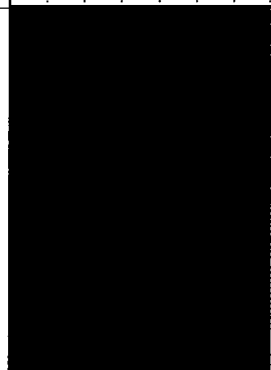
Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-42

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-West-S of LBR, W of farm access Rd.
G.S. ELEVATION: 467.74' **T.O.C. ELEVATION:** 470.60'
NORTHING: 994538.42 **EASTING:** 728420.83

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
30	440					61	20.2-36.5 ft; Medium to Coarse Sand, with fine sand, alternating thin beds, dark yellowish brown and brown, 10YR 4/4 and 4/3, wet, soft to loose, interbedded layers of fine sand, subrounded quartz and feldspar clasts, becoming dark gray, 10YR 4/1, below 35.6 ft.	C										
35	435					56												
40	430						BORING TERMINATED IN MEDIUM SAND @36.5 FT											
45	425																	
50	420																	
55	415																	

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 10/06/09
START TIME: 12:58AM
END TIME: 5:09PM
BOREHOLE DIA.: 10.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: Chris Vierrether, MDNR, onsite observing drilling activities.

WATER LEVELS: DURING DRILLING 10 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 34.8 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Warm, 70°F, Overcast, 25 MPH Gusting Wind from SW, Humid.

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-43

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-West-S of LBR, W of farm access Rd
G.S. ELEVATION: 466.07' **T.O.C. ELEVATION:** 469.20'
NORTHING: 994333.02 **EASTING:** 726945.21

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
0	465				53		0.0-1.0 ft; Silt, brown.	FB																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Dave Hunziker
LOGGED BY: M. Carlson
DATE DRILLED: 9/17/09
START TIME: 3:05PM
END TIME: 5:20PM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: Chris Vierrether (MDNR) and Dan Binz (R&I) onsite observing drilling activities.

WATER LEVELS: DURING DRILLING 11.5 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 34.8 FEET

VERTICAL DATUM: NAVD 88
HORIZONTAL DATUM: NAD 83
WEATHER: Not recorded.

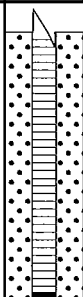
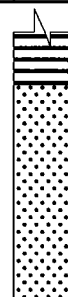
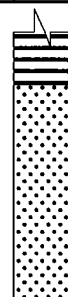
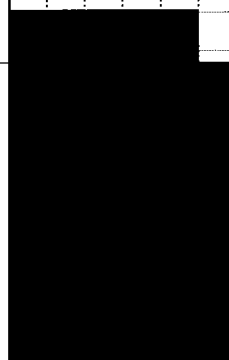
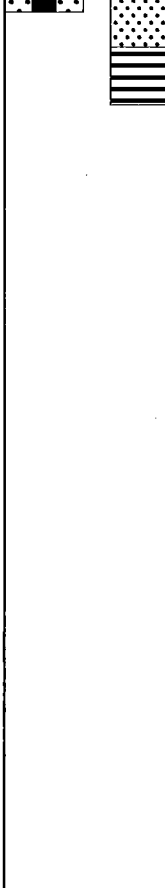
Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-43

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-West-S of LBR, W of farm access Rd
G.S. ELEVATION: 466.07' **T.O.C. ELEVATION:** 469.20'
NORTHING: 994333.02 **EASTING:** 726945.21

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY												
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL			
30	435					89	28.3-36.5 ft; Medium Sand grading to Coarse Sand, some gravel, (Gley-colored fine sand at total depth based on cuttings sample collected from auger bit).	CO/ BS													
35	430					100															
40	425							BORING TERMINATED IN FINE SAND @36.5 FT													
45	420																				
50	415																				
55	410																				

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Dave Hunziker
LOGGED BY: M. Carlson
DATE DRILLED: 9/17/09
START TIME: 3:05PM
END TIME: 5:20PM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES: Chris Vierrether (MDNR) and
Dan Binz (R&J) onsite
observing drilling activities.

WATER LEVELS: DURING DRILLING 11.5 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 34.8 FEET

VERTICAL DATUM: NAVD 88
HORIZONTAL DATUM: NAD 83
WEATHER: Not recorded.

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-45

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-West-S and adj to LBR

G.S. ELEVATION: 467.12' **T.O.C. ELEVATION:** 470.07'

NORTHING: 994324.97

EASTING: 727532.26

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
470																		
0							0.0-1.2 ft; Silt grading to Very Fine Sand, cross-laminated, light brown.	FB										
465						100	1.2-10.0 ft; Clay, Silty Clay, and Clayey Silt, alternating thin beds, dark brown, wet at 9.0 ft.											
5																		
460						88												
10																		
455						78	10.0-18.3 ft; Silty Sand, medium brown, laminated, wet, (clay slough noted in top of 15.0 ft S.S.).	FP/ Lev										
15																		
450						61												
20																		
445						67	18.3-33.3 ft; Silty Sand grading to Fine Sand at 21.0 ft, gray; Gley-colored from 21.0-24.0 ft; clay seam at 30.0 ft, medium brown.	CO/ BS										
25																		
						78		FP/ Lev										

DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Doug Hunziker

LOGGED BY: M. Carlson

DATE DRILLED: 9/18/09

START TIME: 7:35AM

END TIME: 10:10AM

BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: JoAnn Thee (Ameren) and T. Doll (Gredell) onsite observing drilling activities.

WATER LEVELS: DURING DRILLING 9 FEET

AFTER DRILLING: FEET

DATE:

PIEZOMETER: INSTALLED AT +/- 34.8 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Clear, 70s°F, Dry.

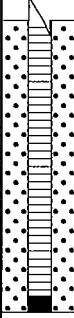


Date Printed: 11/17/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-45

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-West-S and adj to LBR
G.S. ELEVATION: 467.12' **T.O.C. ELEVATION:** 470.07'
NORTHING: 994324.97 **EASTING:** 727532.26

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
30	440					100	18.3-33.3 ft; Silty Sand grading to Fine Sand at 21.0 ft, gray; Gley-colored from 21.0-24.0 ft; clay seam at 30.0 ft, medium brown.	FP/Lev										
35	435						33.3-36.5 ft; Fine to Medium Sand, grading to Fine Sand and Clay at 36.0 ft, alternating thin beds; coarse to very coarse sand at base.											
40	430					100	BORING TERMINATED IN COARSE SAND @36.5 FT SHELBY TUBE SAMPLE COLLECTED AT 3.0-5.0 FT DEPTH AT COMPLETION OF DRILLING.	C										
45	425																	
50	420																	
55	415																	

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Doug Hunziker
LOGGED BY: M. Carlson
DATE DRILLED: 9/18/09
START TIME: 7:35AM
END TIME: 10:10AM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: JoAnn Thee (Ameren) and T. Doll (Gredell) onsite observing drilling activities.

WATER LEVELS: DURING DRILLING 9 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 34.8 FEET

VERTICAL DATUM: NAVD 88
HORIZONTAL DATUM: NAD 83
WEATHER: Clear, 70s°F, Dry.

Date Printed: 11/17/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-47

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-West-W of farm access Rd, S of LBR
G.S. ELEVATION: 467.10' **T.O.C. ELEVATION:** 469.86'
NORTHING: 994320.66 **EASTING:** 728124.52

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
470																		
0							0.0-1.3 ft; Silt, light brown.	FB										
465						100	1.3-2.2 ft; Silty Clay, olive gray. 2.2-4.2 ft; Clay, dark brown, lean, stiff.											
5							4.2-5.0 ft; Sandy Silt, light brown. 5.0-7.2 ft; Clay grading to Silty Clay, dark brown.											
460						53	7.2-10.0 ft; Very Fine Sand, light brown, dry.	FP/ Lev										
10						61	10.0-21.0 ft; Silty Sand, Sandy Silt, and Very Fine Sand, alternating thin beds; clay seams to 11.5 ft; gray, sharp lower contact.											
455																		
15						56												
450																		
20						72	21.0-28.3 ft; Fine Sand to Coarse Sand, trace gravel, alternating thin beds, sharp contact with above.											
445																		
25						61												

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Doug Hunziker
LOGGED BY: M. Carlson
DATE DRILLED: 9/18/09
START TIME: 10:30AM
END TIME: 1:15PM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: Dan Binz (R&I) and T. Doll (Gredell) onsite observing drilling activities.

WATER LEVELS: DURING DRILLING 6.5 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 34.9 FEET

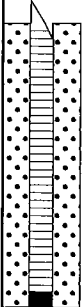
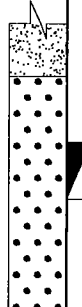
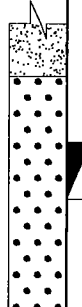
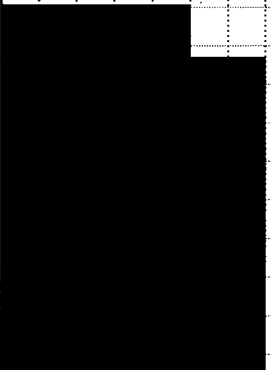
VERTICAL DATUM: NAVD 88
HORIZONTAL DATUM: NAD 83
WEATHER: Clear, 70s°F, Dry.

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-47

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-West-W of farm access Rd, S of LBR
G.S. ELEVATION: 467.10' **T.O.C. ELEVATION:** 469.86'
NORTHING: 994320.66 **EASTING:** 728124.52

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
440						67	28.3-36.5 ft; Coarse Sand, gravelly	C										
30																		
435																		
35																		
430						39	BORING TERMINATED IN COARSE SAND @36.5 FT											
40																		
425																		
45																		
420																		
50																		
415																		
55																		

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Doug Hunziker
LOGGED BY: M. Carlson
DATE DRILLED: 9/18/09
START TIME: 10:30AM
END TIME: 1:15PM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES: Dan Binz (R&J) and T. Doll
(Gredell) onsite observing
drilling activities.

WATER LEVELS: DURING DRILLING 6.5 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 34.9 FEET

VERTICAL DATUM: NAVD 88
HORIZONTAL DATUM: NAD 83
WEATHER: Clear, 70s°F, Dry.

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-49

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-NW-Adj. to LBR and farm access Rd.
G.S. ELEVATION: 467.58' **T.O.C. ELEVATION:** 470.56'
NORTHING: 994499.84 **EASTING:** 728938.97

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
470																		
0							0.0-0.5 ft; Clayey Silt, dark brown, 10YR 3/3, wet, soft.	FB										
465						100	0.5-1.5 ft; Clayey Silt, very dark grayish brown, 10YR 3/2, moist, stiff											
5							1.5-6.3 ft; Silty Sand, Clayey Sandy Silt, and Clayey Silt, alternating thin beds, dark grayish brown, 10YR 4/2, moist, loose grading to soft, herringbone cross-bedding and brown (10YR 4/3) below 3.8 ft, clayey silt below 5.9 ft.	FP/ Lev										
460						50	6.3-8.8 ft; Fine Sand, trace very fine sand, dark yellowish brown, 10YR 4/4, herringbone cross-bedding, interbedded silt layers 1 mm thick and dark grayish brown (10YR 4/2) below 6.9 ft.	CO/ BS										
10						100	8.8-15.3 ft; Silty Clay, dark to very dark gray, (Gley) 1 4/N to 3/N, iron concretions to 10.8 ft, plastic, firm, trace very fine sand from 10.8 to 11.5 ft, soft below 10.8 ft, (clay slough probable in top of 15.0 ft S.S.).											
455																		
15						100	15.3-23.3 ft; Fine Sand, trace very fine sand, dark grayish brown, 10YR 4/2, wet, soft, (clay slough probable in top of 20.0 ft S.S.).	FP/ Lev										
450																		
20						83												
445																		
25						28	23.3-28.3 ft; Fine Sand, trace medium to coarse sand and gravel, brown, 10YR 4/2, wet, loose.											

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 10/14/09
START TIME: 3:08PM
END TIME: 5:08PM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: M. Carlson (Gredell), John Eimer (Ameren) and Jeff Fouse (R&J) onsite observing drilling activities. S. King.

WATER LEVELS: DURING DRILLING 10 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 35.0 FEET

VERTICAL DATUM: NAVD 88
HORIZONTAL DATUM: NAD 83

WEATHER: Cold, 45°F, Overcast, Intermittent Lt. Rain, 10-15 MPH NE Wind.

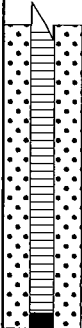
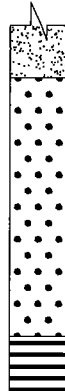
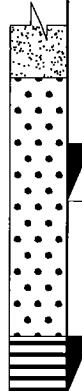
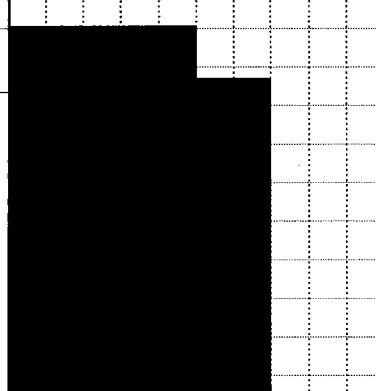
Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-49

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-NW-Adj. to LBR and farm access Rd.
G.S. ELEVATION: 467.58' **T.O.C. ELEVATION:** 470.56'
NORTHING: 994499.84 **EASTING:** 728938.97

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
440						50	28.3-36.5 ft; Coarse Sand, with medium sand, trace gravel, subrounded 12 mm clasts, very dark gray (Gley) 1 3/N below 35.6 ft.	FP/ Lev C										
30																		
435																		
35																		
430						61	BORING TERMINATED IN FINE SAND @36.5 FT											
40																		
425																		
45																		
420																		
50																		
415																		
55																		

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 10/14/09
START TIME: 3:08PM
END TIME: 5:08PM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES: M. Carlson (Gredell), John
Eimer (Ameren) and Jeff
Fouse (R&J) onsite observing
drilling activities. S. King.

WATER LEVELS: DURING DRILLING 10 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 35.0 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cold, 45°F, Overcast, Intermittent Lt. Rain, 10-15 MPH NE Wind.

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-51

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-N-Adj. to LBR near AUELBE-004
G.S. ELEVATION: 466.25' **T.O.C. ELEVATION:** 469.06'
NORTHING: 994463.37 **EASTING:** 729490.00

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY															
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL						
0	465					80	0.0-1.0 ft; Clayey Silt, dark brown, 10YR 3/3, slightly plastic, wet, soft.	FB																
							1.0-3.3 ft; Silty Clay, very dark grayish brown, 10YR 3/2, plastic, moist, stiff, mottles (10YR 4/6).																	
5	460						3.3-4.5 ft; Silty Sand, brown, 10YR 4/3, damp, soft.																	
							4.5-6.0 ft; Poor recovery, probable Silty Clay slough.	FP/ Lev																
							6.0-8.4 ft; Clayey Silty Sand grading to Fine Sand, thin beds, brown, 10YR 4/3, soft, laminated to 7.5 ft, wet below 6.0 ft.																	
10	455											8.4-20.8 ft; Sandy Silt and Fine Sand, thin beds, brown, 10YR 4/3, wet, soft, laminated to 9.0 ft, (clay slough probable in top of 10.0 to 20.0 ft S.S.)												
15	450																							
20	445																							
25	440											20.8-28.3 ft; Fine Sand, trace very fine sand and coarse sand, dark gray, 10YR 4/1, wet, soft, (clay slough probable in top of 25.0 and 30.0 ft S.S.).												

DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Ryan Hunziker

LOGGED BY: T. Doll

DATE DRILLED: 10/14/09

START TIME: 8:13AM

END TIME: 10:45AM

BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES: S. King (Gredell) onsite.

WATER LEVELS: DURING DRILLING 6 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 35.0 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cold, 40°F, Overcast, Light Rain, Calm.

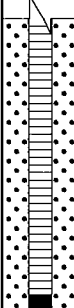


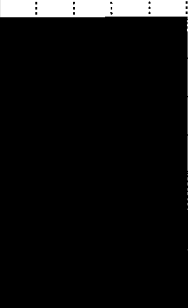



Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-51

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-N-Adj. to LBR near AUELBE-004
G.S. ELEVATION: 466.25' **T.O.C. ELEVATION:** 469.06'
NORTHING: 994463.37 **EASTING:** 729490.00

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
30	435					100	28.3-36.5 ft; Fine Sand, trace medium sand and coarse sand, trace fine gravel, dark gray matrix, 10YR 4/1, wet, loose to soft, subrounded clasts, (fine sand and clay slough probable in top of 30.0 and 35.0 ft S.S.)	FP/ Lev										
35	430					100												
40	425						BORING TERMINATED IN FINE SAND @36.5 FT											
45	420																	
50	415																	
55	410																	

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 10/14/09
START TIME: 8:13AM
END TIME: 10:45AM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: S. King (Gredell) onsite.

WATER LEVELS: DURING DRILLING 6 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 35.0 FEET

VERTICAL DATUM: NAVD 88
HORIZONTAL DATUM: NAD 83
WEATHER: Cold, 40°F, Overcast, Light Rain, Calm.

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-53

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-N-Adj. to LBR

G.S. ELEVATION: 466.46' **T.O.C. ELEVATION:** 469.10'

NORTHING: 994428.21

EASTING: 730049.96

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
0	465					100	0.0-0.5 ft; Clayey Silt, dark brown, 10YR 3/3, slightly plastic, wet, soft.	FB										
							0.5-1.4 ft; Fine Sand, with very fine sand, dark grayish brown, 10YR 4/2, moist, soft, grading with clay and stiff below 1.4 ft.											
5	460					50	1.4-5.8 ft; Silty Clay and Sandy Silt, alternating thin beds, very dark grayish brown to dark brown, 10YR 3/2 to 3/3; sandy silt, soft; silty clay, plastic, stiff, mottled (10YR 4/6), moist.	FP/ Lev										
							5.8-6.3 ft; Clayey Silty Sand, dark yellowish brown, 10YR 3/4, moist, soft.											
10	455					72	6.3-20.8 ft; Fine Sand, trace very fine sand, dark yellowish brown, 10YR 4/4, moist, loose, trace coarse sand below 20.0 ft, (clay slough probable in top of 10.0 ft S.S.).											
15	450					100												
20	445					67												
25	440					67	20.8-35.9 ft; Very Fine Sand to Fine Sand, thin beds, trace medium sand and coarse sand, very dark gray, (Gley) 1 3/N, wet, soft; dark gray, 10YR 4/1, below 30.0 ft.	CO/ BS										

DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Ryan Hunziker

LOGGED BY: T. Doll

DATE DRILLED: 10/15/09

START TIME: 3:50PM

END TIME: 9:02AM 10/16

BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: John Eimer (Ameren) and Kyle Kocher (R&J) onsite 10/16 to observe drilling activities.

WATER LEVELS: DURING DRILLING 10 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 35.0 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cold, 45°F, Overcast, Drizzle.

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-53

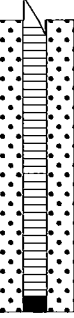



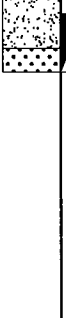
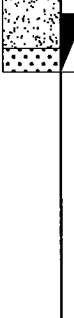

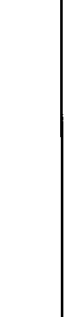


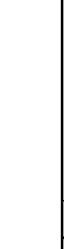
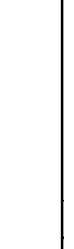
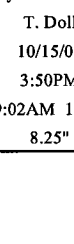
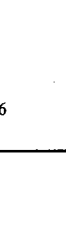
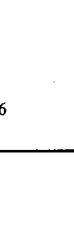
**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-N-Adj. to LBR

G.S. ELEVATION: 466.46' **T.O.C. ELEVATION:** 469.10'

NORTHING: 994428.21

EASTING: 730049.96

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES ID.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
30	435					100	20.8-35.9 ft; Very Fine Sand to Fine Sand, thin beds, trace medium sand and coarse sand, very dark gray, (Gley) 1 3/N, wet, soft; dark gray, 10YR 4/1, below 30.0 ft.	CO/ BS										
								FP										
35	430					67	35.9-36.5 ft; Medium to Coarse Sand, dark gray matrix, 10YR 4/1, gravelly, 5 mm subrounded clasts, wet, soft.	C										
40	425						BORING TERMINATED IN MEDIUM TO COARSE SAND @36.5 FT											
45	420																	
50	415																	
55	410																	

DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Ryan Hunziker

LOGGED BY: T. Doll

DATE DRILLED: 10/15/09

START TIME: 3:50PM

END TIME: 9:02AM 10/16

BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: John Eimer (Ameren) and Kyle Kocher (R&I) onsite 10/16 to observe drilling activities.

WATER LEVELS: DURING DRILLING 10 FEET
AFTER DRILLING: FEET

DATE:

PIEZOMETER: INSTALLED AT +/- 35.0 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cold, 45°F, Overcast, Drizzle.

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-55

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-N-Adj. to LBR

G.S. ELEVATION: 467.33' **T.O.C. ELEVATION:** 470.02'

NORTHING: 994395.43

EASTING: 730584.11

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY										
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL	
470																			
0							0.0-0.5 ft; Clayey Silt, dark brown, 10YR 3/3, wet, soft.	FB											
465						80	0.5-2.3 ft; Silty Clay, very dark grayish brown, plastic, stiff, moist, mottles (10YR 4/6).												
							2.3-2.7 ft; Sandy Silt, dark grayish brown, 10YR 4/2, moist, soft.												
5							2.7-4.5 ft; Fine Sand, trace very fine sand, brown, 10YR 5/3, laminated, damp, loose.												
460						60	4.5-6.8 ft; Poor recovery, probable Silty Clay and Fine Sand slough.	FP/ Lev											
10						100	6.8-33.3 ft; Fine Sand, trace very fine sand, brown, 10YR 5/3, damp, loose; laminated to 25.3 ft; wet and brown, 10YR 4/3, below 10.0 ft; trace coarse sand below 30.8 ft, (No sample recovery from 20.0-21.5 ft), (clay slough probable in top of 25.0 and 30.0 ft S.S.).												
455																			
15						100													
450																			
20						0													
445																			
25						89													

DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Ryan Hunziker

LOGGED BY: T. Doll

DATE DRILLED: 10/14/09

START TIME: 11:20AM

END TIME: 1:25PM

BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES: M. Carlson and S. King
(Gredell) onsite.

WATER LEVELS: DURING DRILLING 10 FEET
AFTER DRILLING: FEET

DATE:

PIEZOMETER: INSTALLED AT +/- 34.8 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cold, 45°F, Overcast, Intermittent Lt. Rain, 10-15 MPH NE Wind.

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-55

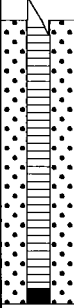


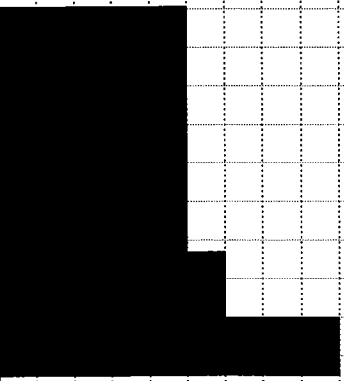
**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-N-Adj. to LBR

G.S. ELEVATION: 467.33' **T.O.C. ELEVATION:** 470.02'

NORTHING: 994395.43

EASTING: 730584.11

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
30	440					61	6.8-33.3 ft; Fine Sand, trace very fine sand, brown, 10YR 5/3, damp, loose; laminated to 25.3 ft; wet and brown, 10YR 4/3, below 10.0 ft; trace coarse sand below 30.8 ft, (No sample recovery from 20.0-21.5 ft), (clay slough probable in top of 25.0 and 30.0 ft S.S.).	FP/ Lev										
35	435						33.3-36.5 ft; Medium Sand, with fine sand, trace coarse sand, dark grayish brown, 10YR 4/2, wet, soft, (gravelly sand noted at total depth based on cuttings sample collected from auger bit).	CM/ Sp										
40	430					100	BORING TERMINATED IN GRAVELLY SAND @36.5 FT	C										
45																		
50																		
55																		

DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Ryan Hunziker

LOGGED BY: T. Doll

DATE DRILLED: 10/14/09

START TIME: 11:20AM

END TIME: 1:25PM

BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: M. Carlson and S. King (Gredell) onsite.

WATER LEVELS: DURING DRILLING 10 FEET

AFTER DRILLING: FEET

DATE:

PIEZOMETER: INSTALLED AT +/- 34.8 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cold, 45°F, Overcast, Intermittent Lt. Rain, 10-15 MPH NE Wind.

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-57

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-NE-Adj. to LBR
G.S. ELEVATION: 465.99' **T.O.C. ELEVATION:** 468.87'
NORTHING: 994356.77 **EASTING:** 731212.53

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
0	465					80	0.0-0.5 ft; Clayey Silt, dark brown, 10YR 3/3, wet, soft.	FB										
							0.5-2.0 ft; Silty Clay, very dark grayish brown, 10YR 3/2, plastic, moist, stiff, mottles (10YR 4/6).											
							2.0-2.4 ft; Sandy Silt, dark grayish brown, 10YR 4/2, moist, soft.											
5	460						2.4-4.5 ft; Fine Sand, trace very fine sand, brown, 10YR 4/3, damp, loose.	FP/ Lev										
							4.5-6.5 ft; Poor recovery, probable Silty Clay slough.											
							6.5-15.9 ft; Fine Sand, trace very fine sand, brown, 10YR 4/3, damp, loose; clay interbeds < 1 inch thick to 7.1 ft; wet below 10.0 ft, (sand and clay slough probable in top of 10.0 and 15.0 ft S.S.).											
10	455					89		CM/ Sp										
15	450					61	15.9-21.1 ft; Fine to Coarse Sand, trace very fine sand, alternating thin beds, dark gray, 10YR 4/1, wet, soft; dark yellowish brown, 10YR 4/6, below 20.6 ft.	C										
20	445					94		C										
25	440					94	21.1-36.5 ft; Medium to Coarse Sand, with very fine sand and gravel, alternating thin beds, dark gray to dark grayish brown, 10YR 4/1 to 4/2, wet, loose, 20 mm quartz and feldspar subrounded clasts, sporadic clay balls.	C										

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 10/15/09
START TIME: 11:25AM
END TIME: 2:51PM
BOREHOLE DIA.: 10.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: S. King (Gredell) onsite.

WATER LEVELS: DURING DRILLING 10 FEET
AFTER DRILLING: FEET
DATE:
PIEZOMETER: INSTALLED AT +/- 34.8 FEET

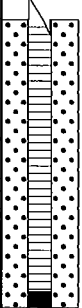
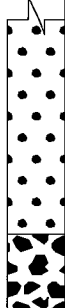
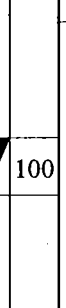
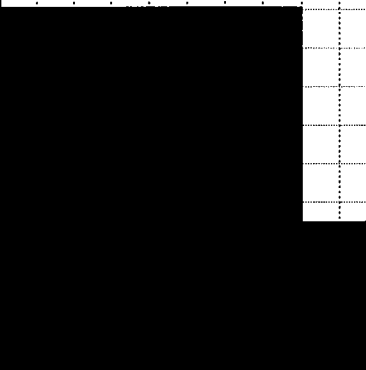
VERTICAL DATUM: NAVD 88
HORIZONTAL DATUM: NAD 83
WEATHER: Cold, 45°F, Overcast, Drizzle.

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-57

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-NE-Adj. to LBR
G.S. ELEVATION: 465.99' **T.O.C. ELEVATION:** 468.87'
NORTHING: 994356.77 **EASTING:** 731212.53

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES ID.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
30	435					100	21.1-36.5 ft; Medium to Coarse Sand, with very fine sand and gravel, alternating thin beds, dark gray to dark grayish brown, 10YR 4/1 to 4/2, wet, loose, 20 mm quartz and feldspar subrounded clasts, sporadic clay balls.	C										
35	430					100												
40	425						BORING TERMINATED IN GRAVELLY SAND @36.5 FT											
45	420						SHELBY TUBE SAMPLE COLLECTED AT 1.0-3.0 FT DEPTH AT COMPLETION OF DRILLING.											
50	415																	
55	410																	

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 10/15/09
START TIME: 11:25AM
END TIME: 2:51PM
BOREHOLE DIA.: 10.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: S. King (Gredell) onsite.

WATER LEVELS: DURING DRILLING 10 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 34.8 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cold, 45°F, Overcast, Drizzle.

Date Printed: 11/17/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-59

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-West-S. of LBR & W. of farm Rd
G.S. ELEVATION: 465.36' **T.O.C. ELEVATION:** 467.94'
NORTHING: 994039.34 **EASTING:** 727225.40

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
0	465					100	0-0.3 ft; Silt, dark grayish brown, 10YR 4/2, dry, soft.	FB										
							0.3-0.6 ft; Very Fine Sand, brown, 10YR 4/3, dry, soft.											
							0.6-4.1 ft; Clay, very dark grayish brown, 10YR 3/2, moist, highly plastic, firm, mottles 10YR 4/6.											
							4.1-5.0 ft; Clayey Silt, dark gray, 10YR 4/1, moist, soft.											
5	460					100	5.0-5.9 ft; Poor recovery, probable Clay slough.	FP/ Lev										
							5.9-10.0 ft; Fine Sand, Silty Clay, Sandy Silt, Clay and Clayey Silty Sand, alternating thin beds, very dark gray and dark grayish brown, 10YR 3/1 and 4/2, moist; clay beds highly plastic, firm; sandy silt and clayey silty sand beds soft.											
10	455						10.0-18.3 ft; Fine Sand, trace very fine sand, dark grayish brown and dark gray, 10YR 4/2 and 4/1, wet, soft, laminated and iron staining to 12.5 ft.											
							18.3-20.6 ft; Silty Clayey Sand, dark grayish brown, 10YR 4/2, wet, very soft.											
20	445					94	20.6-25.3 ft; Fine Sand, very dark gray, (Gley) 1 3/N, wet, soft.	CO/ BS										
							25.3-30.3 ft; Silty Very Fine to Fine Sand and Medium to Coarse Sand, trace gravel,											
25	440					67		CO/ BS										

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Doug Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 9/21/09
START TIME: 3:00PM
END TIME: 5:27PM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES: Chris Vierrether, MDNR,
onsite observing drilling
activities.

WATER LEVELS: DURING DRILLING 8.4 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 35.3 FEET

VERTICAL DATUM: NAVD 88
HORIZONTAL DATUM: NAD 83
WEATHER: Warm, 80°F, Mostly Sunny, Humid, 5 MPH Wind from E.

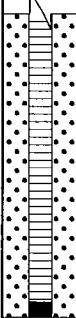
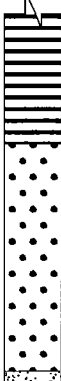
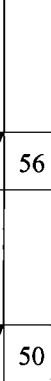
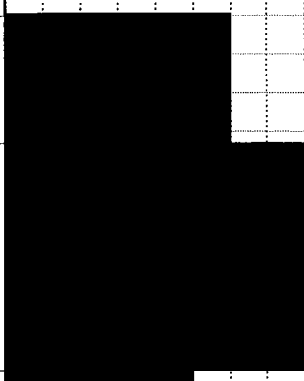
Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-59

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-West-S. of LBR & W. of farm Rd
G.S. ELEVATION: 465.36' **T.O.C. ELEVATION:** 467.94'
NORTHING: 994039.34 **EASTING:** 727225.40

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY												
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL			
30	435					56	alternating thin beds, dark gray, (Gley) 1 4/N, mottles yellowish brown (10YR 5/8).	CO/ BS													
35	430					50	30.3-36.2 ft; Coarse Sand, with medium sand and gravel, trace fine sand, thin beds, dark gray, 10YR 4/1, wet, soft grading to loose, (fine sand noted at total depth based on cuttings sample collected from auger bit).	C													
							36.2-36.5 ft; Fine Sand BORING TERMINATED IN FINE SAND @36.5 FT	FP/ Lev													
40	425																				
45	420																				
50	415																				
55	410																				

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Doug Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 9/21/09
START TIME: 3:00PM
END TIME: 5:27PM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: Chris Vierrether, MDNR, onsite observing drilling activities.

WATER LEVELS: DURING DRILLING 8.4 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 35.3 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Warm, 80°F, Mostly Sunny, Humid, 5 MPH Wind from E.

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-61

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-West-S. of LBR & W. of farm Rd
G.S. ELEVATION: 465.92' **T.O.C. ELEVATION:** 468.87'
NORTHING: 994020.22 **EASTING:** 727813.31

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
0	465						0.0-0.9 ft; Clayey Silt, dark brown, 10YR 3/3, slightly plastic, roots, moist grading to wet, soft.	FB										
						100	0.9-1.2 ft; Silty Sand, brown, 10YR 4/3, moist, loose.											
5	460					100	1.2-2.3 ft; Silty Clay, very dark grayish brown, 10YR 3/2, plastic, very stiff, mottles (10YR 4/6), sandy silt thin bed at 2.2 ft.											
						100	2.3-6.4 ft; Silty Clay, very dark grayish brown, 10YR 3/2, plastic, moist, very stiff, mottles (10YR 4/6), very fine sand thin bed below 6.3 ft.											
10	455					85	6.4-7.0 ft; Silty Clay, very dark grayish brown, 10YR 3/2, plastic, moist, very stiff.	CO/ BS										
						85	7.0-8.1 ft; Clayey Silt, brown, 10YR 4/3, wet, soft.											
15	450					94	8.1-8.6 ft; Silty Clay, dark grayish brown, 10YR 4/2, plastic, moist, soft, mottles (10YR 3/2).											
						94	8.6-10.5 ft; Sandy Clayey Silt, dark grayish brown, 10YR 4/2, laminated, wet, soft; grading with clay below 10.3 ft.	CM/ Sp										
20	445					100	10.5-11.1 ft; Silty Sand, Clayey Silt, and Sandy Clayey Silt, alternating thin beds, wet, soft; silty sand, brown, 10YR 4/3; clayey silt and sandy clayey silt, dark gray, 10YR 4/1.											
						100	11.1-21.3 ft; Silty Clay, Silty Sand, Clayey Silt, Sandy Clayey Silt, Sandy Silt and Fine Sand, alternating thin beds, dark gray, (Gley) 1 4/N, wet, soft; laminated fine organic debris to 20.5 ft; fine sand below 20.5 ft, (clay slough probable in top of 15.0 and 20.0 ft S.S.).											
25	440					100	21.3-28.3 ft, Medium Sand grading to Coarse											

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 10/26/09
START TIME: 10:35AM
END TIME: 1:43PM
BOREHOLE DIA.: 10.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES: S. King (Gredell) onsite.

WATER LEVELS: DURING DRILLING 6 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 34.7 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cool, 55°F, Overcast, Light Rain, Calm.

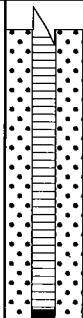
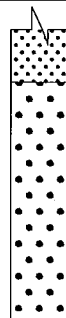
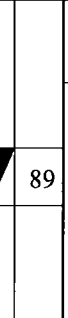
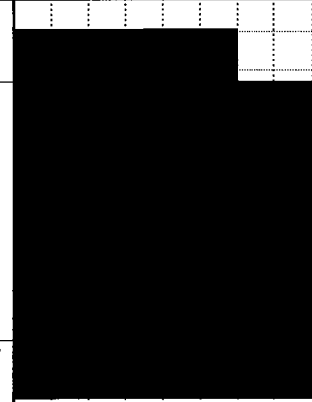
Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-61

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-West-S. of LBR & W. of farm Rd
G.S. ELEVATION: 465.92' **T.O.C. ELEVATION:** 468.87'
NORTHING: 994020.22 **EASTING:** 727813.31

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY											
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL		
30	435					89	Sand, with fine sand, trace very fine sand, thin beds, dark gray matrix, 10YR 4/1, 30 mm black coalified wood matter (clay slough probable in 25.0 ft S.S.). 28.3-36.5 ft; Medium to Coarse Sand, trace fine sand, and fine to coarse gravel, dark gray matrix, 10YR 4/1, clay ball (plastic), (fine sand slough probable in top of 30.0 and 35.0 ft S.S.).	C												
35	430					100	CM/ Sp													
40	425	BORING TERMINATED IN MEDIUM SAND @36.5 FT																		
45	420																			
50	415																			
55	410																			

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 10/26/09
START TIME: 10:35AM
END TIME: 1:43PM
BOREHOLE DIA.: 10.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES: S. King (Gredell) onsite.

WATER LEVELS: DURING DRILLING 6 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 34.7 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cool, 55°F, Overcast, Light Rain, Calm.

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-63

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-West-S. of LBR & W. of farm Rd
G.S. ELEVATION: 466.20' **T.O.C. ELEVATION:** 469.10'
NORTHING: 994004.98 **EASTING:** 728407.71

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY												
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL			
0	465					100	0.0-1.1 ft; Sandy Clayey Silt, dark brown, 10YR 3/3, moist, soft.	FB													
							1.1-4.1 ft; Very Fine Sand, grayish brown, 10YR 5/2, damp, loose.														
							4.1-4.5 ft; Silty Clay, very dark grayish brown, 10YR 3/2, plastic, firm, moist.														
5	460					57	4.5-5.0 ft; Silt, dark grayish brown, 10YR 4/2, soft, wet.	FP/ Lev													
						5.0-6.4 ft; Poor recovery, probable Silty Clay slough.															
10	455					57	6.4-11.8 ft; Sandy Silt, Clay and Clayey Silty Sand, alternating thin beds, very dark grayish brown to brown, 10YR 3/2 and 4/3, moist to wet; clay beds highly plastic, firm; sandy silt and clayey silty sand beds soft, iron oxide staining below 10.0 ft.														
						11.8-16.0 ft; Fine Sand, very dark gray, (Gley) 1 3/N, wet, soft, (clay, fine sand and silt slough probable in top of 15.0 ft S.S.).	CO/ BS														
15	450					67		16.0-18.3 ft; Very Fine Sand, very dark gray, (Gley) 1 3/N, wet, soft.													
						18.3-25.8 ft; Medium to Coarse Sand, dark gray, (Gley) 1 3/N, wet, soft to firm (clay, fine sand and silt slough noted in top of 15.0 ft S.S.).															
20	445					78		CO/ BS/C													
25	440					100	25.8-36.5 ft; Coarse Sand, with gravel,	C													

DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Doug Hunziker

LOGGED BY: T. Doll

DATE DRILLED: 9/21/09

START TIME: 11:31AM

END TIME: 2:22PM

BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: John Eimer (Ameren) onsite observing drilling activities.

WATER LEVELS:

DURING DRILLING 8 FEET

AFTER DRILLING: FEET

DATE: _____

PIEZOMETER:

INSTALLED AT +/- 34.9 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Warm, 70°F, Heavy Fog, Calm, Humid.

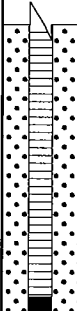
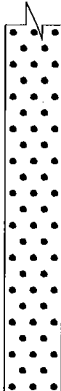
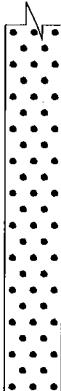
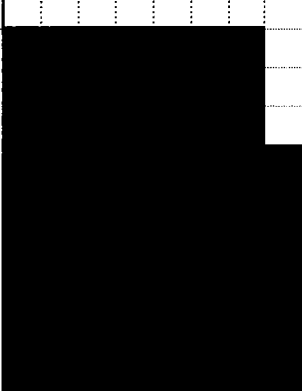
Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-63

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-West-S. of LBR & W. of farm Rd
G.S. ELEVATION: 466.20' **T.O.C. ELEVATION:** 469.10'
NORTHING: 994004.98 **EASTING:** 728407.71

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY											
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL		
30	435					89	alternating thin beds, dark gray to dark grayish brown, 10YR 4/1 and 4/2, wet, soft.	C												
35	430					67														
40	425	BORING TERMINATED IN COARSE SAND @36.5 FT																		
45	420																			
50	415																			
55	410																			

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Doug Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 9/21/09
START TIME: 11:31AM
END TIME: 2:22PM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: John Eimer (Ameren) onsite observing drilling activities.

WATER LEVELS: DURING DRILLING 8 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 34.9 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Warm, 70°F, Heavy Fog, Calm, Humid.

Date Printed: 11/8/2010

BORING LOG P-65

LOCATION: Newman-West-S. of LBR & E. of farm Rd
G.S. ELEVATION: 468.06' **T.O.C. ELEVATION:** 471.31'
NORTHING: 993990.81 **EASTING:** 729165.61

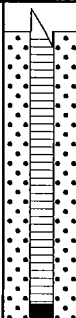


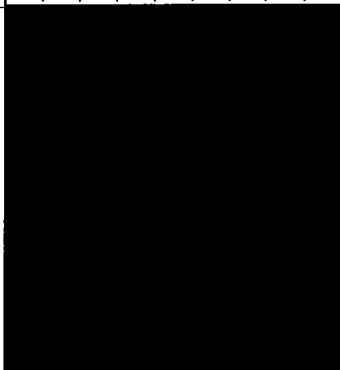
DRILLING CO.: Max's Enterprises, Inc.	STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.	WATER LEVELS:	DURING DRILLING <u>12.5</u> FEET
DRILLER: Ryan Hunziker			AFTER DRILLING: _____ FEET
LOGGED BY: T. Doll			DATE: _____
DATE DRILLED: 10/13/09		PIEZOMETER:	INSTALLED AT +/- <u>34.9</u> FEET
START TIME: 8:43AM		VERTICAL DATUM: NAVD 88	
END TIME: 11:25AM	NOTES: S. King (Gredell) onsite developing piezometers.	HORIZONTAL DATUM: NAD 83	
BOREHOLE DIA.: 8.25"		WEATHER: Cold, 45°F, Overcast, Breezy.	

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-65

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-West-S. of LBR & E. of farm Rd
G.S. ELEVATION: 468.06' **T.O.C. ELEVATION:** 471.31'
NORTHING: 993990.81 **EASTING:** 729165.61

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY												
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL			
440						39	with medium sand, trace fine sand, alternating thin beds, dark gray, 10YR 4/1, subrounded quartz and feldspar clasts, coalified wood fragments below 30.3 ft, wet, loose.	C													
30																					
435																					
35						6															
430		BORING TERMINATED IN COARSE SAND @36.5 FT																			
40																					
425																					
45																					
420																					
50																					
415																					
55																					

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 10/13/09
START TIME: 8:43AM
END TIME: 11:25AM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: S. King (Gredell) onsite developing piezometers.

WATER LEVELS: DURING DRILLING 12.5 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 34.9 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cold, 45°F, Overcast, Breezy.

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-67

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-West-S. of LBR & E. of farm Rd
G.S. ELEVATION: 465.52' **T.O.C. ELEVATION:** 468.28'
NORTHING: 993985.65 **EASTING:** 729758.28

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
0	465						0.0-0.5 ft; Clayey Silt, dark brown, 10YR 3/3, moist, soft.	FB										
	0.5-0.8 ft; Silty Sand, dark yellowish brown, 10YR 4/4, moist, loose.																	
	0.8-2.3 ft; Clayey Silt, very dark grayish brown, 10YR 3/2, slightly plastic, firm, moist, mottles (10YR 4/6) .																	
5	460						2.3-3.6 ft; Silty Clay, very dark grayish brown, 10YR 3/2, plastic, firm, moist.	FP/ Lev										
	3.6-3.8 ft; Silty Sand, dark yellowish brown, 10YR 4/4, moist, loose.																	
	3.8-5.0 ft; Silty Clay, very dark grayish brown, 10YR 3/2, plastic, moist, stiff, mottles (10YR 4/6).																	
10	455						5.0-6.8 ft; Poor recovery, probable Silty Clay slough.	CO/ BS										
	6.8-7.3 ft; Silty Clayey Sand, dark gray to dark grayish brown, 10YR 4/1 and 4/2, moist, soft.																	
	7.3-12.3 ft; Fine Sand, with very fine sand, brown, 10YR 4/3, iron staining (10YR 4/6), wet, soft.																	
15	450						12.3-13.1 ft; Clayey Silt, Silty Clay and Fine Sand, alternating thin beds; dark gray, 10YR 4/1, wet, soft; silty clay bed, plastic; fine sand below 12.8 ft, brown, 10YR 4/3, loose.	FP/ Lev										
	13.1-15.7 ft; Silty Clay and Very Fine Sand, thin beds, (Gley) 1 4/N; silty clay to 13.3 ft, plastic, firm; very fine sand below 13.3 ft, laminated, wet, soft.																	
	15.7-25.6 ft; Fine Sand, with very fine sand, dark gray, 10YR 4/1, wet, soft, (clay slough probable in top of 15.0 though 25.0 ft S.S.).																	
20	445						25.6-36.5 ft; Medium Sand, with fine and	CM/										
25	440																	

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 10/13/09
START TIME: 12:20PM
END TIME: 2:57PM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: S. King (Gredell) onsite developing piezometers.

WATER LEVELS: DURING DRILLING 7 FEET
AFTER DRILLING: FEET
DATE:
PIEZOMETER: INSTALLED AT +/- 35.0 FEET

VERTICAL DATUM: NAVD 88
HORIZONTAL DATUM: NAD 83
WEATHER: Cold, 45°F, Overcast, Raining, Lt. Wind.

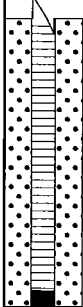
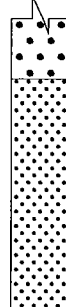
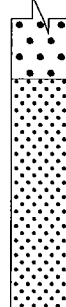
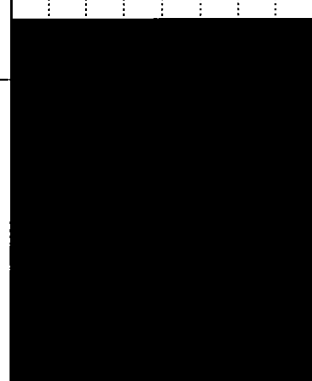
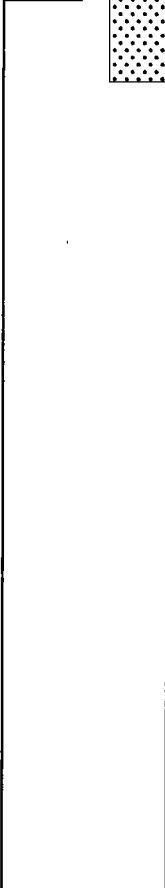
Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-67

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-West-S. of LBR & E. of farm Rd
G.S. ELEVATION: 465.52' **T.O.C. ELEVATION:** 468.28'
NORTHING: 993985.65 **EASTING:** 729758.28

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY												
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL			
30	435					100	coarse sand, alternating thin beds, dark gray matrix, 10YR 4/1, wet, loose, (clay slough probable in 30.0 and 35.0 ft S.S.).	Sp													
35	430					56		CM/ Sp													
40	425							BORING TERMINATED IN MEDIUM SAND @36.5 FT													
45	420																				
50	415																				
55	410																				

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 10/13/09
START TIME: 12:20PM
END TIME: 2:57PM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: S. King (Gredell) onsite developing piezometers.

WATER LEVELS: DURING DRILLING 7 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 35.0 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cold, 45°F, Overcast, Raining, Lt. Wind.

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-69

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-East-S. of LBR & E. of farm Rd
G.S. ELEVATION: 465.05' **T.O.C. ELEVATION:** 467.73'
NORTHING: 993965.46 **EASTING:** 730346.87

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY															
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL						
0	465					0.0-0.5 ft; Clayey Silt, dark brown, 10YR 3/3, slightly plastic, wet, soft.	FB																	
						0.5-1.8 ft; Silty Clay, very dark grayish brown, 10YR 3/2, plastic, stiff, moist, mottles (10YR 4/6).																		
5	460					1.8-2.2 ft; Clayey Silt, dark gray, 10YR 4/1, slightly plastic, stiff, moist, mottles (10YR 4/6).																		
						2.2-4.5 ft; Silty Clay, very dark grayish brown, 10YR 3/2, plastic, stiff, moist, mottles (10YR 4/6).		FP/ Lev																
10	455					4.5-5.0 ft; Clayey Silt, brown, 10YR 4/3, laminated, wet, soft.																		
						5.0-7.5 ft; Poor recovery, probable Silty Clay slough.																		
15	450					7.5-30.5 ft; Fine Sand, trace very fine sand and medium sand, dark grayish brown, 10YR 4/2, wet, loose to soft; iron staining to 15.0 ft; dark gray, 10YR 4/1, below 20.3 ft, (clay slough probable in 10.0 and 25.0 ft S.S.).																		
20	445																							
25	440																							

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 10/13/09
START TIME: 3:25PM
END TIME: 5:37PM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES: S. King (Gredell) onsite
developing piezometers.

WATER LEVELS: DURING DRILLING 7.5 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 35.0 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cold, 45°F, Overcast, Raining, Lt. Wind.

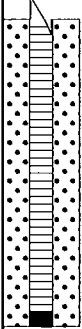


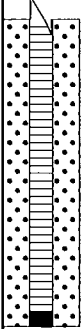


Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-69

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-East-S. of LBR & E. of farm Rd
G.S. ELEVATION: 465.05' **T.O.C. ELEVATION:** 467.73'
NORTHING: 993965.46 **EASTING:** 730346.87

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES ID.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
30	435					72	30.5-36.5 ft; Coarse Sand and Fine Sand, with medium sand, trace gravel, dark gray, 10YR 4/1, 5 mm subangular clasts, wet, loose, (clay slough probable in 30.0 ft S.S.).	FP/ Lev										
35	430					100		C										
40	425						BORING TERMINATED IN COARSE SAND @36.5 FT											
45	420																	
50	415																	
55	410																	

DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Ryan Hunziker

LOGGED BY: T. Doll

DATE DRILLED: 10/13/09

START TIME: 3:25PM

END TIME: 5:37PM

BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES: S. King (Gredell) onsite
developing piezometers.

WATER LEVELS: DURING DRILLING 7.5 FEET

AFTER DRILLING: FEET

DATE:

PIEZOMETER: INSTALLED AT +/- 35.0 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cold, 45°F, Overcast, Raining, Lt. Wind.

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-71

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-East-S. of LBR & E. of farm Rd
G.S. ELEVATION: 467.42' **T.O.C. ELEVATION:** 470.70'
NORTHING: 993948.36 **EASTING:** 730927.90

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY										
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL	
470																			
0							0.0-0.5 ft; Clayey Silt, very dark grayish brown, 10YR 3/2, slightly plastic, moist, soft.	FB											
465						80	0.5-1.8 ft; Silty Clay, very dark grayish brown, 10YR 3/2, plastic, very stiff, moist, mottles (10YR 4/6).												
5							1.8-2.0 ft; Sandy Clayey Silt, dark brown, 10YR 3/3, moist, soft.												
460						35	2.0-2.6 ft; Silty Clay, very dark grayish brown, 10YR 3/2, plastic, very stiff, moist.	FP/ Lev											
10							2.6-4.5 ft; Very Fine Sand, trace fine sand, brown, 10YR 4/3, laminated, damp, loose.												
						83	4.5-6.2 ft; Poor recovery, probable Silty Clay slough.	FB											
455							6.2-10.3 ft; Fine Sand, trace very fine sand, brown, 10YR 4/3, laminated, damp, loose.												
15						72	10.3-16.0 ft; Silty Clay, Clayey Silt and Sandy Silt, alternating thin beds; silty clay to 10.6 ft, dark gray to dark grayish brown, 10YR 4/1 and 4/2, slightly plastic, soft, wet; sandy silt below 10.6 ft, alternating beds <1 inch thick of dark gray and brown, 10YR 4/1 and 4/3, and strong brown, 7.5YR 4/6, black finely laminated plant debris below 10.6 ft; silty clay below 15.0 ft, dark gray, 10YR 4/1, laminated, plastic, moist, soft; sandy silt below 15.2 ft, brown, 10YR 4/3, laminated, wet, soft.	CO/ BS											
450						89													
20							16.0-36.5 ft; Sandy Silt and Fine Sand, with very fine sand, thin beds, very dark gray, (Gley) 1 3/N, laminated to 21.3 ft, wet, soft, black plant debris at 26.4 ft, (clay slough probable in top of 25.0 ft S. S.).												
445																			
25						83													

DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Ryan Hunziker

LOGGED BY: T. Doll

DATE DRILLED: 10/21/09

START TIME: 2:48PM

END TIME: 4:54PM

BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES: Chris Vierrether, MDNR,
onsite observing drilling
activities.

WATER LEVELS: DURING DRILLING 10 FEET
AFTER DRILLING: FEET

PIEZOMETER: INSTALLED AT +/- 34.9 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Warm, 70°F, Overcast, 10-15 MPH Wind from S., Mild.

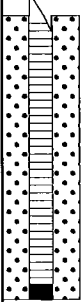


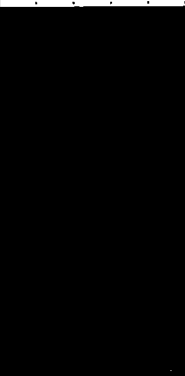
Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-71

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-East-S. of LBR & E. of farm Rd
G.S. ELEVATION: 467.42' **T.O.C. ELEVATION:** 470.70'
NORTHING: 993948.36 **EASTING:** 730927.90

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
30	440					50	16.0-36.5 ft; Sandy Silt and Fine Sand, with very fine sand, thin beds, very dark gray, (Gley) 1 3/N, laminated to 21.3 ft, wet, soft, black plant debris at 26.4 ft, (clay slough probable in top of 25.0 ft S. S.).	CO/ BS										
35	435					100												
40	430						BORING TERMINATED IN FINE SAND @36.5 FT											
45	425																	
50	420																	
55	415																	

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 10/21/09
START TIME: 2:48PM
END TIME: 4:54PM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: Chris Vierrether, MDNR, onsite observing drilling activities.

WATER LEVELS: DURING DRILLING 10 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 34.9 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Warm, 70°F, Overcast, 10-15 MPH Wind from S., Mild.

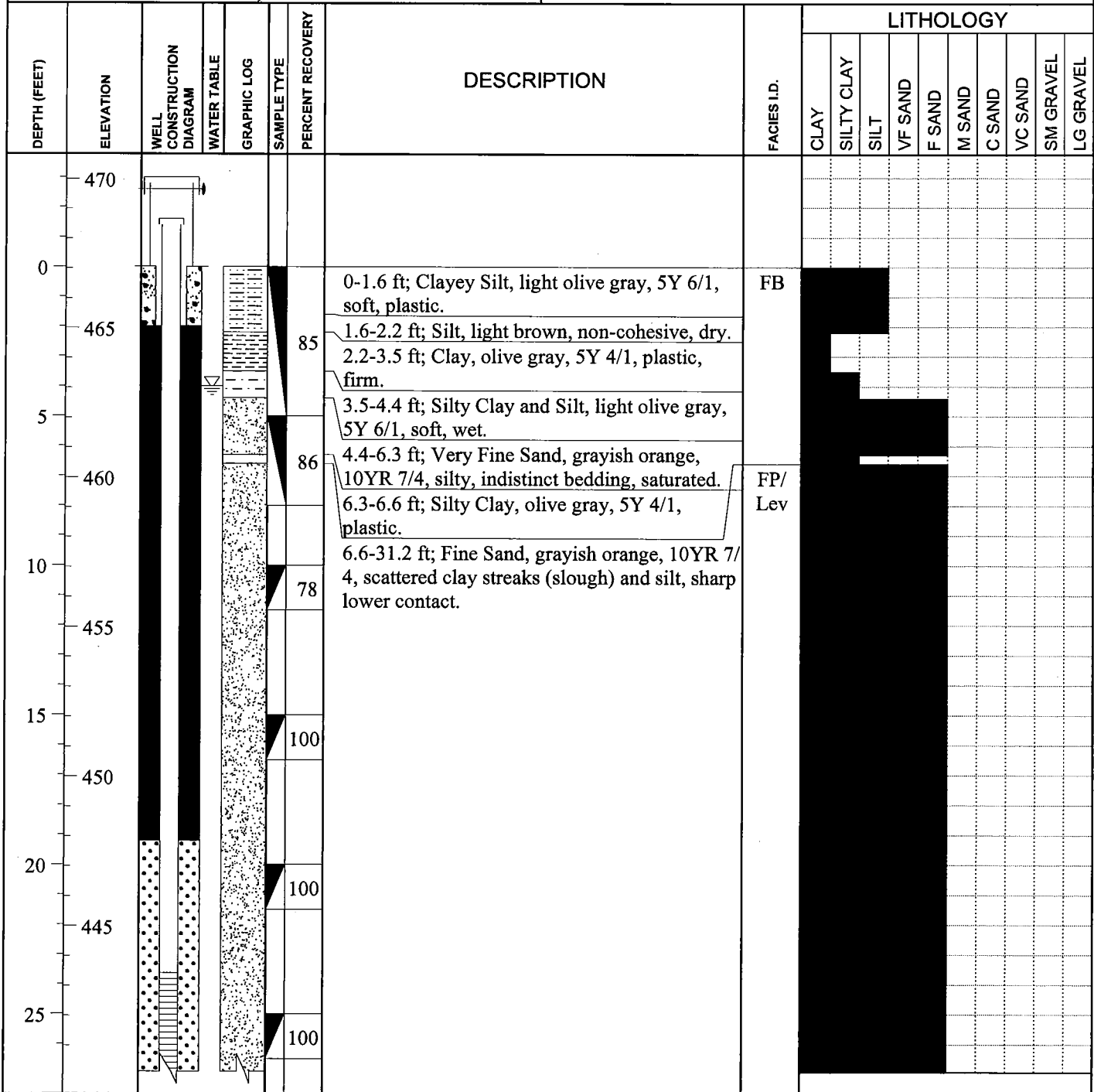
Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-73

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Bean Field-West Margin Project Area
G.S. ELEVATION: 467.06' **T.O.C. ELEVATION:** 469.94'
NORTHING: 993742.59 **EASTING:** 726924.60



DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Doug Hunziker
LOGGED BY: M. Carlson
DATE DRILLED: 11/06/09
START TIME: 7:54AM
END TIME: 2:04PM
BOREHOLE DIA.: 10.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: Chris Vierrether and Blake Smotherman (MDNR) onsite observing drilling activities. T. Doll (Gredell) onsite.

WATER LEVELS: DURING DRILLING 4 FEET
AFTER DRILLING: FEET

DATE:

PIEZOMETER: INSTALLED AT +/- 34.0 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Sunny, 50s°F, Lt. Wind.

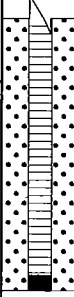


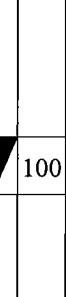
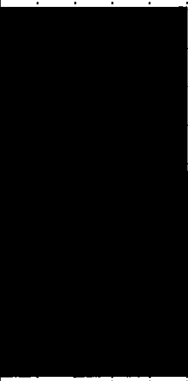




Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-73

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Bean Field-West Margin Project Area
G.S. ELEVATION: 467.06' **T.O.C. ELEVATION:** 469.94'
NORTHING: 993742.59 **EASTING:** 726924.60

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES ID.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
30	440					100	6.6-31.2 ft; Fine Sand, grayish orange, 10YR 7/4, scattered clay streaks (slough) and silt, sharp lower contact.	FP/Lev										
35	435					100	31.2-36.5 ft; Medium to Coarse Sand, grayish orange, 10YR 7/4, common granules and black carbonaceous fragments, (very coarse sand noted at total depth based on cuttings sample collected from auger bit) (fine sand slough in top S.S.).	C										
40	430						BORING TERMINATED IN VERY COARSE SAND @ 36.5 FT											
45	425																	
50	420																	
55	415																	

DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Doug Hunziker

LOGGED BY: M. Carlson

DATE DRILLED: 11/06/09

START TIME: 7:54AM

END TIME: 2:04PM

BOREHOLE DIA.: 10.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES: Chris Vierrether and Blake
Smotherman (MDNR) onsite
observing drilling activities. T.
Doll (Gredell) onsite.

WATER LEVELS: DURING DRILLING 4 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 34.0 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Sunny, 50s°F, Lt. Wind.

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-75

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-Bean Field-West Margin Project Area
G.S. ELEVATION: 466.12' **T.O.C. ELEVATION:** 468.75'
NORTHING: 993730.50 **EASTING:** 727511.13

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
0	465						0.0-0.6 ft; Silt, very dark grayish brown, 10YR 3/2, damp, soft.	FB										
						100	0.6-1.0 ft; Silty Sand, dark grayish brown, 10YR 4/2, soft, damp.											
5	460						1.0-6.0 ft; Clay, very dark grayish brown, 10YR 3/2, highly plastic, very firm, moist, mottles (10YR 4/6).											
						100	6.0-9.1 ft; Silty Sand, Silty Clay, Sandy Silt and Clay, alternating thin beds, dark gray to dark yellowish brown, 10YR 4/1 to 4/4, damp grading to moist, wet below 6.9 ft; clay below 8.8 ft, highly plastic, firm, mottled (10YR 4/6).	FP/ Lev										
10	455					45	9.1-28.3 ft; Fine Sand, dark grayish brown, 10YR 4/2, wet, soft, wood fragments at 11.7 and 25.7 ft; very dark gray, (Gley) 1 3/N, below 15.3 ft, (clay slough probable in top of 15.0- 30.0 S.S.).											
15	450					56		CO/ BS										
20	445					78												
25	440					78												

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Doug Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 09/28/09
START TIME: 7:50AM
END TIME: 10:35AM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES:

WATER LEVELS: DURING DRILLING 7.3 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 34.8 FEET

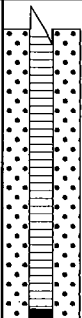
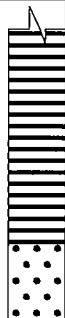
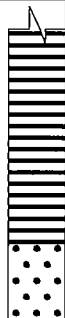
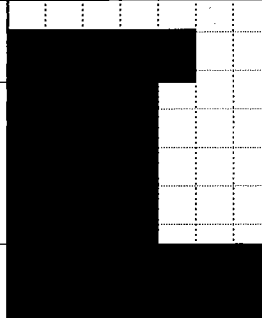
VERTICAL DATUM: NAVD 88
HORIZONTAL DATUM: NAD 83
WEATHER: Cool, 55°F, Overcast, Light Rain, Calm.

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-75

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-Bean Field-West Margin Project Area
G.S. ELEVATION: 466.12' **T.O.C. ELEVATION:** 468.75'
NORTHING: 993730.50 **EASTING:** 727511.13

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
30	435					56	28.3-32.5 ft; Fine to Medium Sand, very dark gray, (Gley) 1 3/N, wet, soft, (clay slough probable in top of 35.0 ft S.S.).	CO/ BS										
35	430					100	32.5-36.5 ft; Coarse Sand, with medium sand, trace fine sand and gravel, dark gray, 10YR 4/1, subrounded clasts, wet, soft.	C										
40	425						BORING TERMINATED IN COARSE SAND @36.5 FT											
45	420																	
50	415																	
55	410																	

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Doug Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 09/28/09
START TIME: 7:50AM
END TIME: 10:35AM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES:

WATER LEVELS: DURING DRILLING 7.3 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 34.8 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cool, 55°F, Overcast, Light Rain, Calm.

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-77

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-West-S of LBR, W of farm access Rd.
G.S. ELEVATION: 465.41' **T.O.C. ELEVATION:** 468.05'
NORTHING: 993714.81 **EASTING:** 728102.38

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
0	465						0.0-1.0 ft; Clayey Silt, very dark grayish brown, 10YR 3/2, moist, soft.	FB																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Doug Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 09/28/09
START TIME: 11:10AM
END TIME: 1:45PM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: Chris Vierrether, MDNR, onsite observing drilling activities.

WATER LEVELS: DURING DRILLING 8.5 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 35.0 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

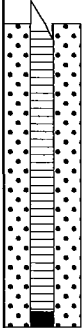

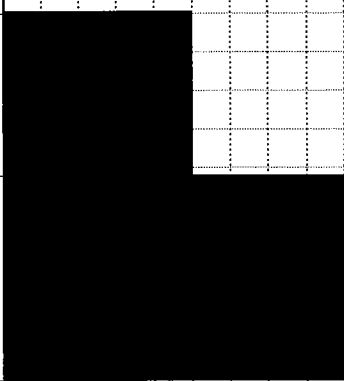
WEATHER: Warm, 60°F, Clear Skies, Mild, 30 MPH Gusting Wind.

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-77

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-West-S of LBR, W of farm access Rd.
G.S. ELEVATION: 465.41' **T.O.C. ELEVATION:** 468.05'
NORTHING: 993714.81 **EASTING:** 728102.38

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
30	435					100	20.3-31.2 ft; Fine Sand grading to Medium Sand grading to Coarse Sand, thin beds, trace gravel below 20.7 ft, dark gray and gray, 10YR 4/1 and 5/1, wet, alternating soft and loose consistency; subrounded clasts; clayey silty sand below 31.1 ft.	CM/Sp																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				

DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Doug Hunziker

LOGGED BY: T. Doll

DATE DRILLED: 09/28/09

START TIME: 11:10AM

END TIME: 1:45PM

BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: Chris Vierrether, MDNR, onsite observing drilling activities.

WATER LEVELS: DURING DRILLING 8.5 FEET

AFTER DRILLING: FEET

DATE:

PIEZOMETER: INSTALLED AT +/- 35.0 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Warm, 60°F, Clear Skies, Mild, 30 MPH Gusting Wind.

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-79

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-West-S of LBR, Adj. farm access Rd.
G.S. ELEVATION: 467.01' **T.O.C. ELEVATION:** 469.84'
NORTHING: 993695.02 **EASTING:** 728850.48

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
470																		
0							0.0-0.9 ft, Clayey Silt, dark brown, 10YR 3/3, wet, soft, roots, trace very fine sand below 0.5 ft.	FB										
465						100	0.9-2.7 ft; Silty Clay, very dark grayish brown, 10YR 3/2, plastic, very stiff, moist, mottles (10YR 4/6).											
5							2.7-3.9 ft; Clayey Silt and Silty Clay, thin beds, dark yellowish brown to dark brown, 10YR 3/4 to 3/3, moist; silty clay bed, plastic, very stiff.											
460						80	3.9-5.5 ft, Clayey Sandy Silt, dark grayish brown, 10YR 4/2, laminated, wet, soft.	FP/ Lev										
10						100	5.5-6.8 ft, Silty Clay, dark brown, 10YR 3/2, plastic, very stiff, moist.											
455							6.8-7.4 ft; Clayey Silt, dark brown, 10YR 3/3, laminated, moist, soft.											
15						100	7.4-12.5 ft; Sandy Silt, dark grayish brown, 10YR 4/2, herringbone laminae, wet, soft.											
450							12.5-28.3 ft; Sandy Silt, dark brown, 10YR 3/3, wet.											
20						100												
445																		
25						100												

DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Ryan Hunziker

LOGGED BY: T. Doll

DATE DRILLED: 10/28/09

START TIME: 1:50PM

END TIME: 3:13PM

BOREHOLE DIA.: 10.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES: Chris Vierrether, Blake
Smotherman, & Larry Pierce
(MDNR) onsite observing
drilling activities.

WATER LEVELS: DURING DRILLING 7.5 FEET

AFTER DRILLING: FEET

DATE:

PIEZOMETER: INSTALLED AT +/- 35.0 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cool, 60°F, Overcast, 5-10 MPH Wind from S.

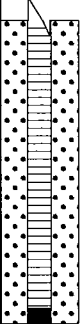


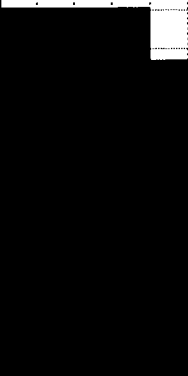
Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-79

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-West-S of LBR, Adj. farm access Rd.
G.S. ELEVATION: 467.01' **T.O.C. ELEVATION:** 469.84'
NORTHING: 993695.02 **EASTING:** 728850.48

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
30	440				X	100	28.3-36.5 ft; Fine Sand, trace medium sand, coarse sand and gravel, dark gray matrix, 10YR 4/1, 10 mm subrounded clasts.	FP/ Lev										
35	435					100												
430	430						BORING TERMINATED IN FINE SAND @36.5 FT											
40	425																	
45	420																	
50	415																	
55																		

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 10/28/09
START TIME: 1:50PM
END TIME: 3:13PM
BOREHOLE DIA.: 10.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: Chris Vierrether, Blake Smotherman, & Larry Pierce (MDNR) onsite observing drilling activities.

WATER LEVELS: DURING DRILLING 7.5 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 35.0 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cool, 60°F, Overcast, 5-10 MPH Wind from S.

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-81

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-NE-Central-S of LBR

G.S. ELEVATION: 467.64' **T.O.C. ELEVATION:** 470.31'

NORTHING: 993679.30

EASTING: 729444.97

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
470																		
0							0.0-0.9 ft, Clayey Silt, dark brown, 10YR 3/3, wet, soft, roots, with very fine sand below 0.8 ft, moist.	FB										
465						90	0.9-2.1 ft; Silty Clay, dark brown, 10YR 3/2, plastic, very stiff, moist, mottles (10YR 4/6).											
5							2.1-2.9 ft; Silty Sand, brown, 10YR 4/3, moist, soft.											
460						45	2.9-4.8 ft; Sandy Silt, Sandy Clayey Silt, and Silty Clay, alternating thin beds, moist; sandy silt, brown to dark yellowish brown, 10YR 4/3 and 4/4; sandy clayey silt and silty clay, dark gray and dark grayish brown, 10YR 4/1 and 4/2, mottles (10YR 4/6) below 2.9 ft; clayey silt, laminated at 2.9 ft; silty clay plastic and stiff.	FP/ Lev										
10							4.8-6.1 ft; Silty Sand, brown, 10YR 4/3, laminated, wet, soft.											
455						100	6.1-8.7 ft; Sandy Silty Clay grading to Silty Clayey Sand, thin beds, dark brown, 10YR 3/3; sandy silty clay, plastic, stiff, moist; silty clayey sand, laminated, wet.											
15						100	8.7-13.1 ft; Silty Sand, dark brown, 10YR 3/3, wet, soft.											
450							13.1-13.9 ft; Clayey Silt, Silty Sand and Silty Clay, alternating thin beds, wet; clayey silt, dark gray, 10YR 4/1, slightly plastic, soft, laminated, sharp contact with below; silty sand, dark yellowish brown, 10YR 4/6, iron concretions, wet, stiff; silty clay below 13.7 ft, dark gray, (Gley) 1 4/N, plastic, moist, soft.											
20						100	13.9-18.3 ft; Very Fine Sand, trace fine sand, dark yellowish brown, 10YR 4/4, iron staining, wet, loose.											
445							18.3-28.3 ft; Very Fine Sand to Fine Sand,											
25						100												

DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Ryan Hunziker

LOGGED BY: T. Doll

DATE DRILLED: 10/28/09

START TIME: 3:50PM

END TIME: 6:28PM

BOREHOLE DIA.: 10.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES: M. Carlson and F. Phillips
(Gredell) onsite performing
pilot aquifer test.

WATER LEVELS:

DURING DRILLING 6.5 FEET

AFTER DRILLING: FEET

DATE:

PIEZOMETER:

INSTALLED AT +/- 34.8 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cool, 60°F, Overcast, 5-10 MPH Wind from S.

Date Printed: 11/9/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-81

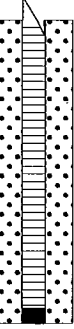
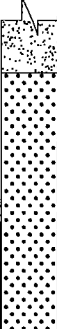
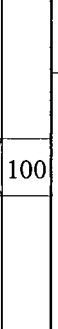









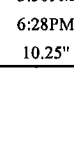
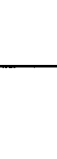
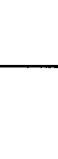
**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-NE-Central-S of LBR

G.S. ELEVATION: 467.64' **T.O.C. ELEVATION:** 470.31'

NORTHING: 993679.30

EASTING: 729444.97

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
440					X	100	trace coarse sand, alternating thin beds, dark grayish brown and dark gray, 10YR 4/2 and 4/1, wet.	C										
30							28.3-36.5 ft; Medium Sand, with fine sand and coarse sand, dark gray, 10YR 4/1, wet.											
435					X	100												
35																		
430							BORING TERMINATED IN MEDIUM SAND @36.5 FT											
40																		
425																		
45																		
420																		
50																		
415																		
55																		

DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Ryan Hunziker

LOGGED BY: T. Doll

DATE DRILLED: 10/28/09

START TIME: 3:50PM

END TIME: 6:28PM

BOREHOLE DIA.: 10.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: M. Carlson and F. Phillips (Gredell) onsite performing pilot aquifer test.

WATER LEVELS: DURING DRILLING 6.5 FEET

AFTER DRILLING: FEET

DATE: _____

PIEZOMETER: INSTALLED AT +/- 34.8 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cool, 60°F, Overcast, 5-10 MPH Wind from S.

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-83

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-N-Central-S of LBR, W of David Rd
G.S. ELEVATION: 464.74' **T.O.C. ELEVATION:** 467.55'
NORTHING: 993664.23 **EASTING:** 730089.18

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
0	465					100	0.0-0.7 ft; Clayey Silt, very dark grayish brown and dark brown, 10YR 3/2 and 3/3, slightly plastic, soft, moist, roots.	FB										
							0.7-1.8 ft; Sandy Clayey Silt, dark brown, 10YR 3/3, slightly plastic, stiff, moist.											
5	460						1.8-4.3 ft; Silty Clay, very dark grayish brown, 10YR 3/2, plastic, very stiff, moist, mottles (10YR 4/6); dark grayish brown, 10YR 4/2, below 3.4 ft.											
10	455					90	4.3-15.8 ft; Sandy Clayey Silt, Silty Clay and Very Fine Sand, alternating thin beds, dark gray and dark grayish brown, 10YR 4/1 and 4/2, moist to 5.7 ft; sandy clayey silt beds, laminated; silty clay beds generally mottled (10YR 4/6); iron staining and iron concretions in sandy clayey silt and silty clay beds from 6.8 to 8.5 ft and again below 9.3 ft; silty clay beds, plastic; very fine sand beds below 8.5 ft, brown, 10YR 4/3, (clay slough probable in top of 15.0 ft S.S.).	FP/ Lev										
15	450					42	15.8-25.7 ft; Very Fine Sand and Fine Sand, alternating thin beds, dark gray to brown, 10YR 4/1 to 4/3, wet, trace coarse sand below 21.2 ft, soft grading to loose consistency.											
20	445					89		CM/										
25	440					61	25.7-36.5 ft; Medium to Coarse Sand, with											

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Dave Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 11/10/09
START TIME: 4:34PM 11/9
END TIME: 9:40AM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: Blake Smotherman, MDNR, onsite observing drilling activities.

WATER LEVELS: DURING DRILLING 5.6 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 34.8 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cool, 50°F, Foggy, Mostly Cloudy, Humid.

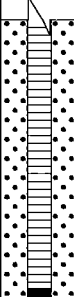
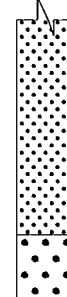

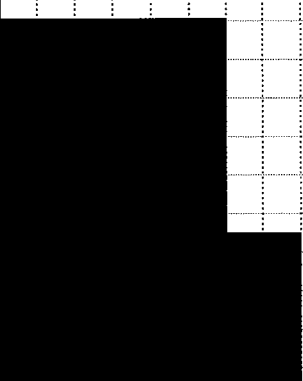
Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-83

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-N-Central-S of LBR, W of David Rd
G.S. ELEVATION: 464.74' **T.O.C. ELEVATION:** 467.55'
NORTHING: 993664.23 **EASTING:** 730089.18

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
30	435					44	very fine to fine sand, alternating thin beds, trace clay, dark grayish brown and dark gray, 10YR 4/2 and 4/1, 5-20 mm subrounded clasts, medium sand from 30.6 to 30.8 ft is dark gray, (Gley) 1 4/N, (fine sand noted at total depth based on cuttings sample collected from auger bit).	Sp										
35	430					61		C										
40	425						BORING TERMINATED IN FINE SAND @36.5 FT	FP/ Lev										
45	420																	
50	415																	
55	410																	

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Dave Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 11/10/09
START TIME: 4:34PM 11/9
END TIME: 9:40AM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: Blake Smotherman, MDNR, onsite observing drilling activities.

WATER LEVELS: DURING DRILLING 5.6 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 34.8 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cool, 50°F, Foggy, Mostly Cloudy, Humid.

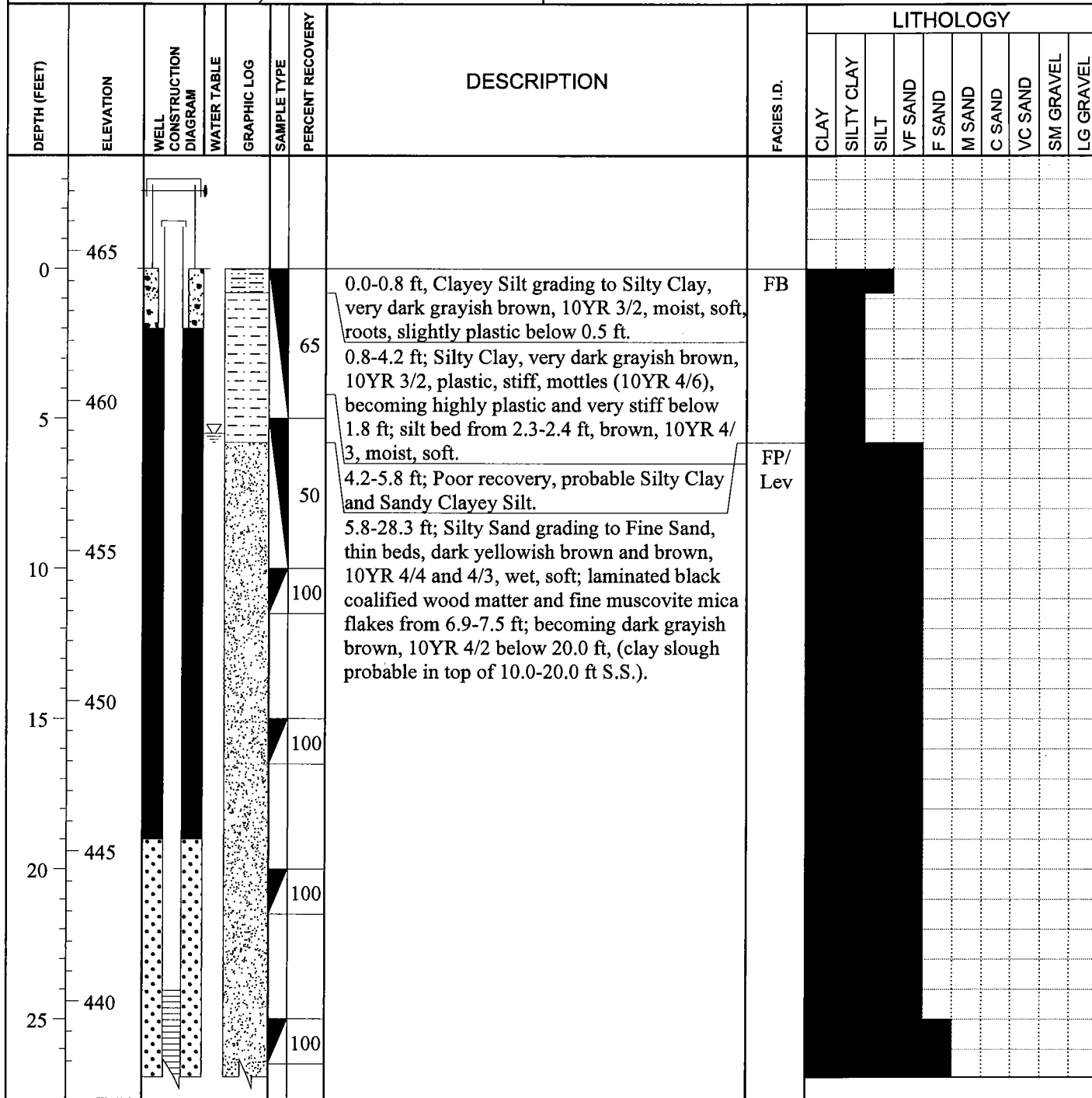
Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-85

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-N-Central-S of LBR, W of David Rd
G.S. ELEVATION: 464.41' **T.O.C. ELEVATION:** 466.75'
NORTHING: 993647.31 **EASTING:** 730619.20



DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Dave Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 11/10/09
START TIME: 11:09AM
END TIME: 4:28PM
BOREHOLE DIA.: 10.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: Blake Smotherman, MDNR, onsite observing drilling activities.

WATER LEVELS: DURING DRILLING 5.5 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 34.0 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

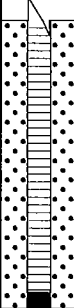
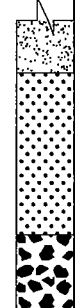

WEATHER: Cool, 55°F, Cloudy, 10-15 MPH Wind from N.

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-85

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-N-Central-S of LBR, W of David Rd
G.S. ELEVATION: 464.41' **T.O.C. ELEVATION:** 466.75'
NORTHING: 993647.31 **EASTING:** 730619.20

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
30	435					61	28.3-36.5 ft; Medium Sand grading to Sandy Gravel, thin beds, trace gravel, dark gray matrix, 10YR 4/1, wet, 10-15 mm subrounded clasts to 30.9 ft, 5-30 mm subangular clasts below 35.3 ft, (fine sand and clay slough probable in top of 30.0 and 35.0 ft S.S.).	C										
35	430					67												
40	425						BORING TERMINATED IN SANDY GRAVEL SAND @36.5 FT											
45	420																	
50	415																	
55	410																	

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Dave Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 11/10/09
START TIME: 11:09AM
END TIME: 4:28PM
BOREHOLE DIA.: 10.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: Blake Smotherman, MDNR, onsite observing drilling activities.

WATER LEVELS: DURING DRILLING 5.5 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 34.0 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cool, 55°F, Cloudy, 10-15 MPH Wind from N.

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-87

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-East-S of LBR, Adj to Davis Rd

G.S. ELEVATION: 466.69' **T.O.C. ELEVATION:** 469.64'

NORTHING: 993693.54

EASTING: 731420.88

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
0	465						0.0-0.8 ft; Clayey Silt, dark brown, 10YR 3/3, slightly plastic, soft, moist to wet, roots.	FB										
						75	0.8-3.2 ft; Silty Clay, very dark grayish brown, 10YR 3/2, plastic, very stiff, moist, mottles (10YR 4/6).											
5							3.2-4.4 ft; Silty Sand, dark yellowish brown, 10YR 4/4, moist, loose.											
	460					75	4.4-6.7 ft; Poor recovery, probable Silty Clay slough.											
10							6.7-13.3 ft; Sandy Silt, Clayey Sandy Silt, Sandy Silty Clay, Fine Sand and Very Fine Sand, alternating thin beds, wet; sandy silt and silty sand beds, brown to dark grayish brown, 10YR 3/4, 4/2, 4/3; sandy silty clay beds, dark gray, 10YR 4/1, plastic, soft; sandy silt and clayey sandy silt beds, laminated; very fine sand bed laminated below 12.0 ft; iron staining in clayey sandy silt bed from 11.1-11.7 ft.	CO/ BS										
	455					70												
15							13.3-20.6 ft; Sandy Silt grading to Clayey Sandy Silt, thin beds, dark gray, (Gley) 1 4/N, wet, soft; laminated to 16.5 ft; slightly plastic below 20.5 ft, (clay slough probable in top of 20.0 ft S.S.).	CM/ Sp										
	450					100												
20							20.6-36.5 ft; Medium Sand, with fine and coarse sand; alternating thin beds, dark gray, 10YR 4/1, wet, loose to soft, trace gravel, 5 mm subrounded clasts to 21.0 ft; 20 mm subrounded clasts below 36.1 ft, (fine sand noted at total depth based on cuttings sample collected from auger bit).											
	445					67												
25																		
	440					56												

DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Ryan Hunziker

LOGGED BY: T. Doll

DATE DRILLED: 10/26/09

START TIME: 4:15PM

END TIME: 6:28PM

BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES: S. King (Gredell) onsite
developing piezometers.

WATER LEVELS: DURING DRILLING 7.0 FEET
AFTER DRILLING: FEET

PIEZOMETER: INSTALLED AT +/- 35.0 FEET
DATE:

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cool, 55°F, Overcast, Lt. Rain, Calm.

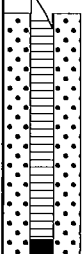


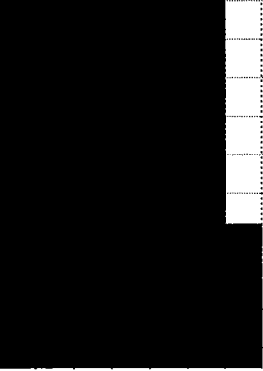
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**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-87

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-East-S of LBR, Adj to Davis Rd
G.S. ELEVATION: 466.69' **T.O.C. ELEVATION:** 469.64'
NORTHING: 993693.54 **EASTING:** 731420.88

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
30	435					67	20.6-36.5 ft; Medium Sand, with fine and coarse sand; alternating thin beds, dark gray, 10YR 4/1, wet, loose to soft, trace gravel, 5 mm subrounded clasts to 21.0 ft; 20 mm subrounded clasts below 36.1 ft, (fine sand noted at total depth based on cuttings sample collected from auger bit).	CM/ Sp										
35	430					83		FP/ Lev										
40	425						BORING TERMINATED IN FINE SAND @36.5 FT											
45	420																	
50	415																	
55	410																	

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 10/26/09
START TIME: 4:15PM
END TIME: 6:28PM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES: S. King (Gredell) onsite
developing piezometers.

WATER LEVELS: DURING DRILLING 7.0 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 35.0 FEET

VERTICAL DATUM: NAVD 88
HORIZONTAL DATUM: NAD 83

WEATHER: Cool, 55°F, Overcast, Lt. Rain, Calm.

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-88





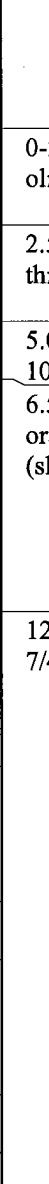




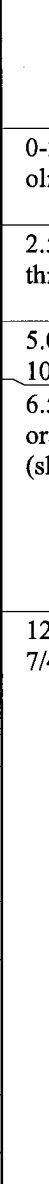
**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Bean Field-West Margin Project Area

G.S. ELEVATION: 466.25' **T.O.C. ELEVATION:** 469.13'

NORTHING: 993401.94

EASTING: 727072.92

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
0	465						0-2.5 ft; Silty Clay, light olive gray, 5Y 6/1 to olive gray, 5Y 4/1, soft, slightly plastic.	FB										
							2.5-5.0 ft; Silt and Very Fine Sand, alternating thin beds, yellowish gray, 5Y 8/1.											
5	460						5.0-6.5 ft; Very Fine Sand, grayish orange, 10YR 7/4, saturated.	FP/ Lev										
							6.5-12.5 ft; Very Fine to Fine Sand, grayish orange, 10YR 7/4, scattered 2-inch clay seams (slough).											
10	455																	
15	450						12.5-31.2 ft; Fine Sand, grayish orange, 10YR 7/4, clean, well sorted, sharp lower contact.											
20	445																	
25	440																	

DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Dave Hunziker

LOGGED BY: M. Carlson

DATE DRILLED: 11/06/09

START TIME: 3:00PM

END TIME:

BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: Paul Reitz, Jason Pruett, Chris Cook (R&J), T.Doll (Gredell) and JoAnn Thee (Ameren) onsite.

WATER LEVELS: DURING DRILLING 5 FEET
AFTER DRILLING: FEET

DATE:

PIEZOMETER: INSTALLED AT +/- 34.8 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Warm, 60°F, Clear Skies, Calm.

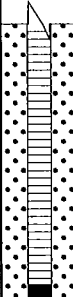
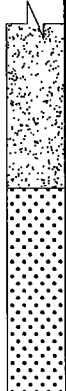
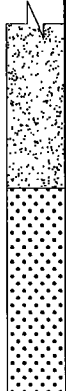
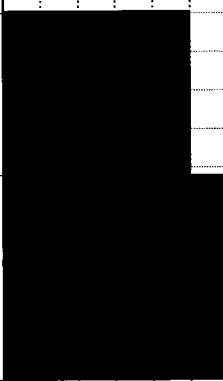
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**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-88

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Bean Field-West Margin Project Area
G.S. ELEVATION: 466.25' **T.O.C. ELEVATION:** 469.13'
NORTHING: 993401.94 **EASTING:** 727072.92

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY														
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL					
30	435					89	12.5-31.2 ft; Fine Sand, grayish orange, 10YR 7/4, clean, well sorted, sharp lower contact.	FP/ Lev															
35	430					67	31.2-36.5 ft; Medium to Coarse Sand, pale yellowish orange, 10YR 6/2, gravelly (fine sand slough in top of S.S.).	C															
40	425					BORING TERMINATED IN MEDIUM TO COARSE SAND @36.5 FT																	
45	420																						
50	415																						
55	410																						

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Dave Hunziker
LOGGED BY: M. Carlson
DATE DRILLED: 11/06/09
START TIME: 3:00PM
END TIME:
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: Paul Reitz, Jason Pruett, Chris Cook (R&J), T.Doll (Gredell) and JoAnn Thee (Ameren) onsite.

WATER LEVELS: DURING DRILLING 5 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 34.8 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Warm, 60°F, Clear Skies, Calm.

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-90

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-West, W of farm access Rd, S of LBR
G.S. ELEVATION: 465.38' **T.O.C. ELEVATION:** 468.10'
NORTHING: 993427.80 **EASTING:** 727804.04

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
0	465					100	0.0-0.5 ft; Clayey Silt, dark brown, 10YR 3/3, damp, soft.	FB										
							0.5-1.3 ft; Fine Sand and Silty Sand, thin beds, dark grayish brown, 10YR 4/2, damp, soft.											
							1.3-5.0 ft; Clay, very dark grayish brown, 10YR 3/2, highly plastic, very firm, moist, mottles (10YR 4/6), interbeds of silt <1 inch thick.											
5	460						5.0-10.0 ft; Silty Clay and Clayey Silt, dark brown and dark grayish brown, 10YR 3/3 and 4/2, soft; moist to 7.3 ft; wet below 8.0 ft; silty clay, plastic; firm to very firm below 6.6 ft.											
10	455					40	10-13.5 ft; Medium Sand, trace fine sand and clay, dark yellowish brown, 10YR 3/6, wet, soft; clay, very dark gray, (Gley) 1 3/N, plastic, moist grading to wet.	CO/ BS										
							13.5-31.3 ft; Very Fine to Fine Sand, thin beds, dark gray, 10YR 4/1, wet, soft, (fine sand and clay slough probable in top of 15.0-30.0 ft S.S.).											
15	450																	
20	445																	
25	440					100		FP/ Lev										

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Doug Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 09/28/09
START TIME: 2:20PM
END TIME: 5:00PM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: Chris Vierrether, MDNR, onsite observing drilling activities.

WATER LEVELS: DURING DRILLING 8 FEET
AFTER DRILLING: FEET
DATE:
PIEZOMETER: INSTALLED AT +/- 35.0 FEET

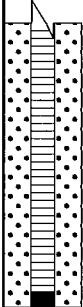


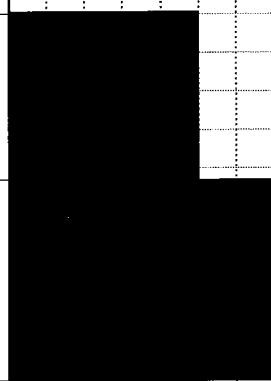
VERTICAL DATUM: NAVD 88
HORIZONTAL DATUM: NAD 83
WEATHER: Warm, 60°F, Clear Skies, Mild, 30 MPH Gusting Wind.

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-90

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-West, W of farm access Rd, S of LBR
G.S. ELEVATION: 465.38' **T.O.C. ELEVATION:** 468.10'
NORTHING: 993427.80 **EASTING:** 727804.04

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY													
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL				
30	435					100	13.5-31.3 ft; Very Fine to Fine Sand, thin beds, dark gray, 10YR 4/1, wet, soft, (fine sand and clay slough probable in top of 15.0-30.0 ft S.S.).	FP/ Lev														
35	430					100	31.3-36.5 ft; Medium to Coarse Sand, thin beds, with fine sand, trace very fine sand and gravel, dark gray, 10YR 4/1, subrounded clasts, wet; loose to 35.0 ft; firm below 35.0 ft, (fine sand and clay slough probable in top of 30.0 ft S.S.).	CM/ Sp														
40	425											BORING TERMINATED IN MEDIUM SAND @36.5 FT										
45	420																					
50	415																					
55	410																					

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Doug Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 09/28/09
START TIME: 2:20PM
END TIME: 5:00PM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: Chris Vierrether, MDNR, onsite observing drilling activities.

WATER LEVELS: DURING DRILLING 8 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 35.0 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Warm, 60°F, Clear Skies, Mild, 30 MPH Gusting Wind.

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-93

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-West, E of farm access Rd
G.S. ELEVATION: 465.91' **T.O.C. ELEVATION:** 468.82'
NORTHING: 993388.35 **EASTING:** 729062.32

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
0	465						0.0-0.9 ft; Clayey Silt, dark brown, 10YR 3/3, moist, soft; silty sand below 0.8 ft, brown, 10YR 4/3, damp, loose.	FB										
						100	0.9-6.8 ft; Silty Clay, very dark grayish brown, 10YR 3/2, plastic, stiff, moist, mottles (10YR 4/6); very stiff below 3.9 ft; dark brown, 10YR 3/3, stiff below 6.1 ft.											
5	460					100	6.8-8.0 ft; Clayey Silt grading to Silty Clay; dark grayish brown, 10YR 4/2, wet grading to moist; silty clay, highly plastic.											
10	455					89	8.0-16.3 ft; Silty Sand and Fine Sand, thin beds, dark grayish brown and dark gray, 10YR 4/2 and 4/1, wet, soft, mottles (10YR 4/6) to 8.8 ft; laminated to 11.3 ft; laminations from 10.3-11.3 ft are very dark gray (10YR 3/1), (fine sand and clay slough probable in top of 10.0 and 15.0 ft S.S.).	FP/ Lev										
15	450					94												
20	445					61	16.3-23.3 ft, Fine Sand and Coarse Sand, alternating thin beds, dark gray, 10YR 4/1, wet, soft, (clay slough probable in top of 25.0 ft S.S.).	CM/ Sp										
25	440					94	23.3-36.5 ft; Coarse Sand, with fine and medium sand, thin beds, trace gravel, dark gray, 10YR 4/1, 10-15 mm rounded to subrounded clasts, wet, soft grading to loose,	C										

DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Ryan Hunziker

LOGGED BY: T. Doll

DATE DRILLED: 10/20/09

START TIME: 12:35PM

END TIME: 3:00PM

BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: M. Carlson (Gredell), John Eimer and Kenny Kintz (Ameren) onsite observing drilling activities.

WATER LEVELS: DURING DRILLING 10 FEET
AFTER DRILLING: FEET

DATE:

PIEZOMETER: INSTALLED AT +/- 35.0 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Warm, 65°F, Mostly Sunny, Mild, 10-15 MPH Wind from E-SE.

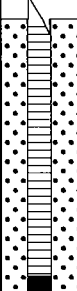
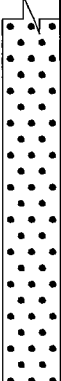
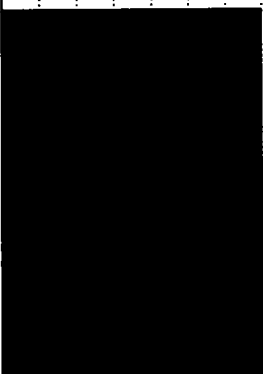
Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-93

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-West, E of farm access Rd
G.S. ELEVATION: 465.91' **T.O.C. ELEVATION:** 468.82'
NORTHING: 993388.35 **EASTING:** 729062.32

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY											
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL		
30	435					100	(fine sand and clay slough in top of 35.0 ft S.S.). 23.3-36.5 ft; Coarse Sand, with fine and medium sand, thin beds, trace gravel, dark gray, 10YR 4/1, 10-15 mm rounded to subrounded clasts, wet, soft grading to loose, (fine sand and clay slough in top of 35.0 ft S.S.).	C												
35	430					61														
40	425	BORING TERMINATED IN COARSE SAND @36.5 FT																		
45	420																			
50	415																			
55	410																			

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 10/20/09
START TIME: 12:35PM
END TIME: 3:00PM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: M. Carlson (Gredell), John Eimer and Kenny Kintz (Ameren) onsite observing drilling activities.

WATER LEVELS: DURING DRILLING 10 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 35.0 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Warm, 65°F, Mostly Sunny, Mild, 10-15 MPH Wind from E-SE.

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-95

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-Central, E of farm access Rd
G.S. ELEVATION: 467.22' **T.O.C. ELEVATION:** 469.92'
NORTHING: 993368.45 **EASTING:** 729725.06

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
470																		
0							0.0-0.8 ft; Clayey Silt, dark brown, 10YR 3/3, non-plastic, soft, moist, trace clay below 0.6 ft.	FB										
465						80	0.8-1.9 ft; Silty Clay, very dark grayish brown, 10YR 3/2, plastic, stiff, moist, mottles (10YR 4/6).											
5							1.9-10.7 ft; Silty Sand, Clayey Silty Sand, and Silty Clay, alternating thin beds, dark grayish brown to brown, 10YR 4/3 and 4/2, wet; silty sand bed from 3.5-4.0 ft, laminated; silty clay bed, plastic, dark brown, 10YR 3/3; silty sand below 10.0 ft, iron staining (10YR 4/6).											
460						70												
10																		
455						80	10.7-20.0 ft; Sandy Silt, Silty Clay, and Very Fine Sand, alternating thin beds, very dark gray, (Gley) 1 3/N, wet, soft; silty clay bed from 11.4-12.7 ft, black mottles (Gley 1 2.5/N); (fine sand and clay slough probable in top of 15.0 S.S.).	CO/ BS										
15						89												
450																		
20						89	20.0-30.8 ft; Fine sand, with medium sand, trace coarse sand, very dark gray, (Gley) 1 3/N; with coarse sand below 23.3 ft, (clay slough probable in top of 25.0 ft S.S.)											
445																		
25						89												

DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Ryan Hunziker

LOGGED BY: T. Doll

DATE DRILLED: 10/20/09

START TIME: 3:37PM

END TIME: 5:45PM

BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES: S. King (Gredell) onsite
developing piezometers.

WATER LEVELS: DURING DRILLING 8 FEET
AFTER DRILLING: FEET

DATE:

PIEZOMETER: INSTALLED AT +/- 34.9 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Warm, 75°F, Partly Sunny, Mild, 15-25 MPH Wind from S.

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-95

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-Central, E of farm access Rd
G.S. ELEVATION: 467.22' **T.O.C. ELEVATION:** 469.92'
NORTHING: 993368.45 **EASTING:** 729725.06

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
30	440					89	20.0-30.8 ft; Fine sand, with medium sand, trace coarse sand, very dark gray, (Gley) 1 3/N; with coarse sand below 23.3 ft, (clay slough probable in top of 25.0 ft S.S.)	CO/ BS										
						78	30.8-36.5 ft; Medium Sand to Coarse Sand, alternating thin beds, trace very fine sand and gravel, dark gray, 10YR 4/1, wet, loose, 10 mm subrounded clasts.	C										
35	435					33												
430							BORING TERMINATED IN COARSE SAND @36.5 FT											
40																		
425																		
45																		
420																		
50																		
415																		
55																		

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 10/20/09
START TIME: 3:37PM
END TIME: 5:45PM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: S. King (Gredell) onsite developing piezometers.

WATER LEVELS: DURING DRILLING 8 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 34.9 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Warm, 75°F, Partly Sunny, Mild, 15-25 MPH Wind from S.

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-97

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-Central, E of farm access Rd

G.S. ELEVATION: 467.05' **T.O.C. ELEVATION:** 469.67'

NORTHING: 993349.44

EASTING: 730302.43

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
470																		
0							0.0-0.9 ft; Clayey Silt, dark brown, 10YR 3/3, non-plastic, moist, soft.	FB										
465						100	0.9-1.8 ft; Silty Clay, very dark grayish brown, 10YR 3/2, slightly plastic, stiff, moist, mottles (10YR 4/6).											
5							1.8-3.7 ft; Silty Sand, brown, 10YR 4/3, moist, soft; silty sand below 3.0 ft, wet, mottles (10YR 4/6).											
460						55	3.7-4.5 ft; Silty Clay, dark brown, 10YR 3/3, moist, stiff, mottles (10YR 4/6).											
10							4.5-10.3 ft; Silty Sand and Clayey Silt, thin beds; silty sand, dark yellowish brown and brown, 10YR 4/4 and 4/3, loose grading to stiff, moist; laminated, mottles (10YR 4/6) and wet below 7.1 ft; clayey silt, dark brown, 10YR 3/3, slightly plastic, moist, soft.	CO/ BS										
455						75	10.3-15.9 ft; Silty Clay and Silty Sand, thin beds, very dark gray, (Gley) 1 3/N, moist, soft; silty clay to 11.4 ft, highly plastic, moist, iron concretions (10YR 4/6); silty clay to 11.9 ft, plant detritus, coalified wood; silty sand to 13.8 ft, laminations of fibrous plant detritus; silty sand to 15.0 ft; wet below 11.9 ft; (clay slough probable in top of 15.0 ft S.S.).											
450						72	15.9-30.5 ft; Fine to Coarse Sand, alternating thin beds, dark gray, 10YR 4/1, wet, alternating loose and soft beds, (clay slough probable in top of 20.0 ft S.S.).	FP/ Lev										
20						72												
445																		
25						61												

DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Ryan Hunziker

LOGGED BY: T. Doll

DATE DRILLED: 10/21/09

START TIME: 7:45AM

END TIME: 10:40AM

BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES: Chris Vierrether, MDNR,
onsite observing drilling
activities.

WATER LEVELS: DURING DRILLING 7 FEET
AFTER DRILLING: FEET

DATE:

PIEZOMETER: INSTALLED AT +/- 34.8 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Warm, 55°F, Partly Cloudy, Mild, Calm.

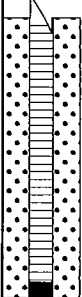
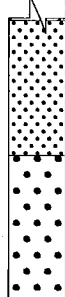
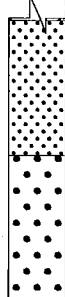
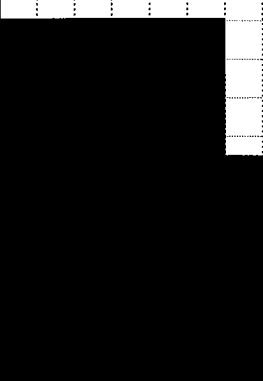
Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-97

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-Central, E of farm access Rd
G.S. ELEVATION: 467.05' **T.O.C. ELEVATION:** 469.67'
NORTHING: 993349.44 **EASTING:** 730302.43

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
30	440						15.9-30.5 ft; Fine to Coarse Sand, alternating thin beds, dark gray, 10YR 4/1, wet, alternating loose and soft beds, (clay slough probable in top of 20.0 ft S.S.).	FP/ Lev										
35	435					56	30.5-36.5 ft; Coarse Sand, with medium sand, trace fine sand and gravel, dark gray, 10YR 4/1, wet, soft, 5 mm subrounded clasts, (clay slough probable in top of 35.0 ft S.S.).	C										
40	430					61	BORING TERMINATED IN COARSE SAND @36.5 FT											
45	425																	
50	420																	
55	415																	

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 10/21/09
START TIME: 7:45AM
END TIME: 10:40AM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: Chris Vierrether, MDNR, onsite observing drilling activities.

WATER LEVELS: DURING DRILLING 7 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 34.8 FEET

VERTICAL DATUM: NAVD 88
HORIZONTAL DATUM: NAD 83
WEATHER: Warm, 55°F, Partly Cloudy, Mild, Calm.

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-99

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-East, Adj to Davis Rd
G.S. ELEVATION: 464.38' **T.O.C. ELEVATION:** 467.21'
NORTHING: 993336.45 **EASTING:** 730887.27

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
0	465					75	0.0-0.7 ft; Clayey Silt, dark brown, 10YR 3/3, moist, soft.	FB										
							0.7-2.3 ft; Silty Clay, very dark grayish brown, 10YR 3/2, plastic, very firm, moist, mottles (10YR 4/6).											
							2.3-2.8 ft; Clayey Silt, dark yellowish brown, 10YR 3/4, slightly plastic, moist, soft.											
5	460						2.8-3.9 ft; Silty Clay, very dark grayish brown, 10YR 3/2, plastic, very stiff, moist.	FP/ Lev										
							3.9-6.1 ft; Poor recovery, Silty Clay slough probable.											
							6.1-13.3 ft; Clayey Silt grading to Fine Sand; clayey silt to 6.2 ft, dark grayish brown, 10YR 4/2, slightly plastic, laminated, moist, soft; fine sand, dark yellowish brown, 10YR 4/4, wet, loose, (clay slough probable in top of 10.0 ft S.S.).											
10	455					72												
							13.3-18.3 ft, Fine Sand, with very fine sand, trace medium sand and coarse sand, dark gray, 10YR 4/1, wet, soft, trace clay ball.											
15	450																	
						100												
							18.3-23.3 ft; Fine Sand and Clayey Sand, alternating thin beds, trace medium sand, dark gray, 10YR 4/1, wet, soft, trace clay balls.											
20	445					100												
							23.3-36.5 ft; Coarse Sand, with fine sand and gravel, trace medium sand, alternating thin beds, dark gray, 10YR 4/1, wet, loose, 10-20 mm subangular clasts, (fine sand and clay											
25	440					100		C										

DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Ryan Hunziker

LOGGED BY: T. Doll

DATE DRILLED: 10/21/09

START TIME: 10:53AM

END TIME: 1:50PM

BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES: Chris Vierrether (MDNR) and
M. Carlson (Gredell) onsite
observing drilling activities.

WATER LEVELS: DURING DRILLING 6 FEET
AFTER DRILLING: FEET

DATE:

PIEZOMETER: INSTALLED AT +/- 34.1 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Warm, 70°F, Overcast, Mild, 10-15 MPH Wind from S.

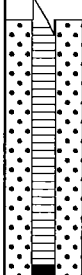
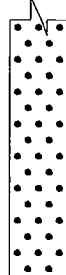
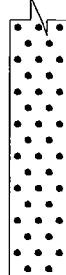

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-99

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-East, Adj to Davis Rd
G.S. ELEVATION: 464.38' **T.O.C. ELEVATION:** 467.21'
NORTHING: 993336.45 **EASTING:** 730887.27

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY											
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL		
30	435					100	slough probable in top of 25.0 ft S.S.). 23.3-36.5 ft; Coarse Sand, with fine sand and gravel, trace medium sand, alternating thin beds, dark gray, 10YR 4/1, wet, loose, 10-20 mm subangular clasts, (fine sand and clay slough probable in top of 25.0 ft S.S.).	C												
35	430					100														
40	425	BORING TERMINATED IN COARSE SAND @36.5 FT																		
45	420																			
50	415																			
55	410																			

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 10/21/09
START TIME: 10:53AM
END TIME: 1:50PM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: Chris Vierrether (MDNR) and M. Carlson (Gredell) onsite observing drilling activities.

WATER LEVELS: DURING DRILLING 6 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 34.1 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Warm, 70°F, Overcast, Mild, 10-15 MPH Wind from S.

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-102

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-West, S of LBR, W of farm access Rd
G.S. ELEVATION: 464.29' **T.O.C. ELEVATION:** 467.27'
NORTHING: 993140.49 **EASTING:** 727503.68

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY											
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL		
0	465						0.0-1.6 ft; Clayey Silt, dark brown, 10YR 3/3, moist, soft; silt below 1.5 ft, dark grayish brown, 10YR 4/2, moist, soft.	FB												
5	460					90	1.6-4.8 ft; Clay and Silty Clay, thin beds, very dark grayish brown, 10YR 3/2, plastic, firm, moist; mottles (10YR 4/6) below 2.5 ft; interbeds of silt from 2.5-4.0 ft; clay bed, 4.0-5.0 ft, dark brown, 10YR 3/3, highly plastic.													
						100	4.8-7.2 ft; Poor recovery, probable Clay slough.													
10	455						7.2-9.0 ft; Very Fine Sand and Silty Clay, thin beds, dark grayish brown, 10YR 4/2, wet, soft, clay interbeds <1 inch thick, silty clay below 8.3 ft, plastic.	CO/ BS												
						60	9.0-10.0 ft; Silty Clay, very dark gray, (Gley) 1 3/N, highly plastic, wet, soft.	FP/ Lev												
15	450					67	10.0-13.3 ft; Fine Sand, trace very fine sand, dark yellowish brown, 10YR 4/4, wet, soft.	CO/ BS												
							13.3-18.3 ft; Silty Clay, very dark gray, (Gley) 1 3/N, highly plastic, soft, wet, (clay slough probable in top of 15.0 and 20.0 ft S.S.).													
20	445					72	18.3-28.3 ft; Fine to Medium Sand, thin beds, trace coarse sand below 25.3 ft, dark gray, 10YR 4/1, wet, soft, (clay slough probable in top of 25.0 ft S.S.).	CM/ Sp												
25	440					44														

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 09/29/09
START TIME: 5:15PM 9/28
END TIME: 9:45AM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: Chris Vierrether, MDNR, onsite observing drilling activities.

WATER LEVELS: DURING DRILLING 8 FEET
AFTER DRILLING: FEET

DATE:

PIEZOMETER: INSTALLED AT +/- 34.7 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cool, 50°F, Clear Skies, Mild, Breezy.

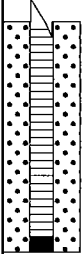
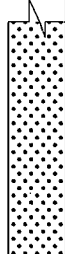
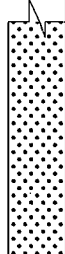

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-102

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-West, S of LBR, W of farm access Rd
G.S. ELEVATION: 464.29' **T.O.C. ELEVATION:** 467.27'
NORTHING: 993140.49 **EASTING:** 727503.68

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
30	435					61	28.3-36.5 ft; Medium Sand, trace gravel, dark gray, 10YR 4/1, clasts subrounded, (fine sand and clay slough probable in 35.0 ft S.S.).	CM/ Sp										
35	430					100												
40	425						BORING TERMINATED IN MEDIUM SAND @36.5 FT											
45	420																	
50	415																	
55	410																	

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 09/29/09
START TIME: 5:15PM 9/28
END TIME: 9:45AM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: Chris Vierrether, MDNR, onsite observing drilling activities.

WATER LEVELS: DURING DRILLING 8 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 34.7 FEET

VERTICAL DATUM: NAVD 88
HORIZONTAL DATUM: NAD 83
WEATHER: Cool, 50°F, Clear Skies, Mild, Breezy.

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-104

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-West, S of LBR, W of farm access Rd
G.S. ELEVATION: 465.00' **T.O.C. ELEVATION:** 467.78'
NORTHING: 993125.75 **EASTING:** 728085.40

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY												
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL			
0	465					95	0.0-1.0 ft; Clayey Silt, dark brown, 10YR 3/3, plastic, stiff, moist.	FB													
							1.0-3.5 ft; Clay, very dark grayish brown, 10YR 3/2, plastic, stiff, moist.														
							3.5-4.9 ft; Silty Clay, dark grayish brown, 10YR 4/2, low plasticity, soft, moist, mottles (10YR 4/6).														
							4.9-8.2 ft; Poor recovery, probable Silty Clay slough.														
5	460					28	8.2-11.3 ft; Silty Sand, dark grayish brown, 10YR 4/2, wet, soft, mottles (10YR 4/6).	FP/ Lev													
						55	11.3-11.8 ft, Silty Clay, dark gray, 10YR 4/1, plastic, soft, wet.														
							11.8-13.9 ft; Silty Sand, dark gray, 10YR 4/1, laminations of black coalified wood matter, wet, soft.														
						67	13.9-33.3 ft; Fine Sand, dark gray, 10YR 4/1, wet, soft; with very fine sand below 25.3 ft, (fine sand and clay slough probable at top of 20.0-30.0 ft S.S.).														
10	455																				
15	450																				
20	445																				
25	440																				

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Dave Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 10/05/09
START TIME: 5:00PM 9/30
END TIME: 9:35AM 10/5
BOREHOLE DIA.: 10.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: Chris Vierrether (MDNR) and M. Carlson (Gredell) onsite observing drilling activities.

WATER LEVELS: DURING DRILLING 10 FEET
AFTER DRILLING: FEET
DATE:
PIEZOMETER: INSTALLED AT +/- 34.8 FEET

VERTICAL DATUM: NAVD 88
HORIZONTAL DATUM: NAD 83
WEATHER: Warm, 70°F, Mostly Sunny, Mild, 5 MPH Wind from SE.

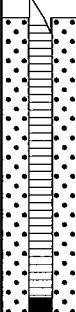


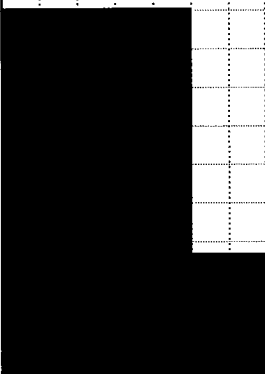

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-104

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-West, S of LBR, W of farm access Rd
G.S. ELEVATION: 465.00' **T.O.C. ELEVATION:** 467.78'
NORTHING: 993125.75 **EASTING:** 728085.40

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY															
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL						
30	435					78	13.9-33.3 ft; Fine Sand, dark gray, 10YR 4/1, wet, soft; with very fine sand below 25.3 ft, (fine sand and clay slough probable at top of 20.0-30.0 ft S.S.).	FP/ Lev																
35	430					78	33.3-36.5 ft; Fine Sand to Coarse Sand, trace medium sand, dark gray, 10YR 4/1, wet, loose.																	
40	425							BORING TERMINATED IN COARSE SAND @36.5 FT																
45	420																							
50	415																							
55	410																							

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Dave Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 10/05/09
START TIME: 5:00PM 9/30
END TIME: 9:35AM 10/5
BOREHOLE DIA.: 10.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: Chris Vierrether (MDNR) and M. Carlson (Gredell) onsite observing drilling activities.

WATER LEVELS: DURING DRILLING 10 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 34.8 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Warm, 70°F, Mostly Sunny, Mild, 5 MPH Wind from SE.



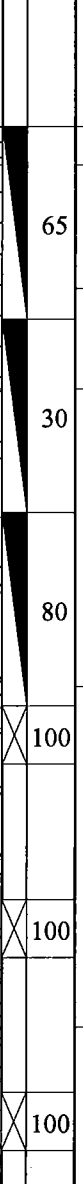


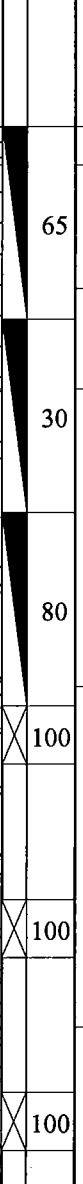


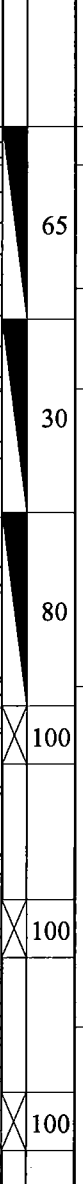
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**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-106

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-West, S of LBR, W of farm access Rd
G.S. ELEVATION: 465.11' **T.O.C. ELEVATION:** 468.10'
NORTHING: 993103.56 **EASTING:** 728837.82

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
0	465					65	0.0-1.0 ft; Clayey Silt grading to Clayey Sandy Silt, thin beds, dark brown and dark yellowish brown, 10YR 3/3 and 4/4, slightly plastic, moist, soft.	FB										
							1.0-4.2 ft; Silty Clay, very dark grayish brown, 10YR 3/2, plastic, very stiff, moist, mottles (10YR 4/6).											
5	460						4.2-6.8 ft; Poor recovery, probable Silty Clay slough.											
							6.8-14.5 ft; Silty Sand, dark grayish brown and brown, 10YR 4/2 and 4/3, herringbone laminae to 9.0 ft, wet, soft grading to loose.											
10	455					80		FP/ Lev										
15	450						14.5-23.3 ft, Very Fine Sand, trace fine sand and coarse sand, dark grayish brown, 10YR 4/2, wet.											
20	445					100		FP/ Lev										
25	440						23.3-28.3 ft; Fine Sand, trace medium sand and coarse sand, dark gray, 10YR 4/1, wet.											

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 10/29/09
START TIME: 8:15AM
END TIME: 10:10AM
BOREHOLE DIA.: 10.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: M. Carlson (Gredell) onsite aquifer testing piezometers.

WATER LEVELS: DURING DRILLING 6.8 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 35.0 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cool, 50°F, Overcast, 10-15 MPH Wind from NE.

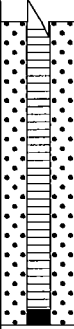
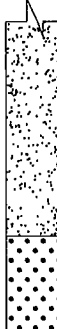
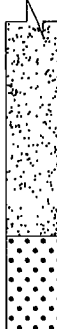
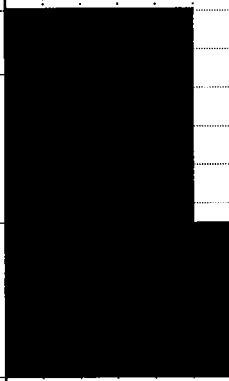
Date Printed: 11/17/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-106

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-West, S of LBR, W of farm access Rd
G.S. ELEVATION: 465.11' **T.O.C. ELEVATION:** 468.10'
NORTHING: 993103.56 **EASTING:** 728837.82

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
30	435				X	100	28.3-36.5 ft; Fine Sand to Medium Sand, trace coarse sand and gravel, dark gray, 10YR 4/1, wet, 10 mm subrounded clasts.	FP/ Lev CM/ Sp										
35	430					100		C										
40	425						BORING TERMINATED IN MEDIUM SAND @36.5 FT SHELBY TUBE SAMPLE COLLECTED AT 1.0-3.0 FT DEPTH AT COMPLETION OF DRILLING.											
45	420																	
50	415																	
55	410																	

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 10/29/09
START TIME: 8:15AM
END TIME: 10:10AM
BOREHOLE DIA.: 10.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: M. Carlson (Gredell) onsite aquifer testing piezometers.

WATER LEVELS: DURING DRILLING 6.8 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 35.0 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cool, 50°F, Overcast, 10-15 MPH Wind from NE.

Date Printed: 11/17/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-108

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-Central, S of LBR, E of farm access
G.S. ELEVATION: 465.71' **T.O.C. ELEVATION:** 468.55'
NORTHING: 993084.09 **EASTING:** 729427.93

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
0	465						0.0-0.8 ft; Clayey Silt, dark brown, 10YR 3/3, moist, soft, roots.	FB										
						90	0.8-2.3 ft; Silty Clay, very dark grayish brown, 10YR 3/2, plastic, stiff, moist, mottles (10YR 4/6), becoming very stiff below 1.4 ft.											
							2.3-2.8 ft; Clayey Silt, dark brown, 10YR 3/3, slightly plastic, soft, moist, mottles (10YR 4/6).											
5	460					0	2.8-3.5 ft; Silty Clay, dark brown, 10YR 3/3, plastic, soft, moist, mottles (10YR 4/6).											
							3.5-4.1 ft; Clayey Silt grading to Silty Clay, thin beds, dark brown, 10YR 3/3, moist, soft, plastic below 3.8 ft.	FP/ Lev										
10	455					85	4.1-7.5 ft; Clayey Silt, dark gray and dark grayish brown, 10YR 4/1 and 4/2, moist, soft, laminated, mottles (10YR 4/6), (No recovery from 5.0-10.0 ft).											
							7.5-15.7 ft; Silty Sand, Clayey Silty Sand and Sandy Silt, alternating thin beds, brown, 10YR 4/3, wet, soft grading to very soft, laminations common; clayey silty sand from 12.3-12.6 ft, dark gray, 10YR 4/1; dark gray below 14.1 ft, 10YR 4/1; mottles (10YR 4/6) from 12.6-13.3 ft.											
15	450					61												
							15.7-18.3 ft; Very Fine Sand grading to Medium Sand, thin beds, trace coarse sand and gravel, dark gray, 10YR 4/1, wet, soft to stiff, trace fine wood fragments, 5-50 mm coalified wood fragments, 10 mm subrounded clast.											
20	445					100	18.3-26.0 ft; Very Fine Sand and Sandy Silty Clay, thin beds, dark gray, 10YR 4/1, trace coarse sand and fine sand, wet; sandy silty clay, plastic.											
25	440					100	26.0-36.5 ft; Very Fine Sand to Medium Sand,	CM/										

DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Ryan Hunziker

LOGGED BY: T. Doll

DATE DRILLED: 11/04/09

START TIME: 11:07AM 11/3

END TIME: 9:05AM

BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES: Chris Vierrether, MDNR,
onsite observing drilling
activities. S. King onsite
developing piezometers.

WATER LEVELS: DURING DRILLING 10 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 35.0 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

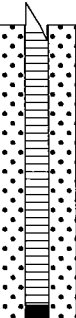
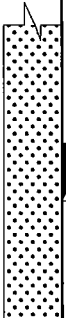
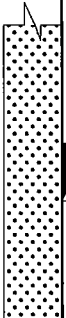
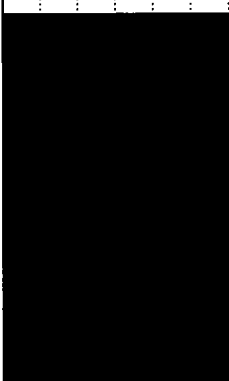

WEATHER: Cool, 50°F, Clear Skies, Mild, 5 MPH Wind from S.

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-108

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-Central, S of LBR, E of farm access
G.S. ELEVATION: 465.71' **T.O.C. ELEVATION:** 468.55'
NORTHING: 993084.09 **EASTING:** 729427.93

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY												
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL			
30	435					100	alternating thin beds, trace coarse sand and gravel, dark gray, 10YR 4/1; 5-18 mm subrounded grading to subangular clasts; 5-50 mm coalified wood matter below 31.1 ft; clay balls below 35.8 ft, dark grayish brown, 10YR 4/2, plastic.	Sp													
35	430					100															
40	425							BORING TERMINATED IN MEDIUM SAND @36.5 FT													
45	420																				
50	415																				
55	410																				

DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Ryan Hunziker

LOGGED BY: T. Doll

DATE DRILLED: 11/04/09

START TIME: 11:07AM 11/3

END TIME: 9:05AM

BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: Chris Vierrether, MDNR, onsite observing drilling activities. S. King onsite developing piezometers.

WATER LEVELS: DURING DRILLING 10 FEET

AFTER DRILLING: FEET

DATE:

PIEZOMETER: INSTALLED AT +/- 35.0 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cool, 50°F, Clear Skies, Mild, 5 MPH Wind from S.

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-110

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-E Central, S of LBR, W of Davis Rd
G.S. ELEVATION: 466.14' **T.O.C. ELEVATION:** 468.99'
NORTHING: 993066.85 **EASTING:** 730012.30

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
0	465						0.0-1.3 ft; Clayey Silt, dark brown, 10YR 3/3, moist, soft, roots.	FB										
						100	1.3-2.0 ft; becoming stiff, slightly plastic, damp, mottles (10YR 4/6); trace clay below 1.7 ft, dark yellowish brown, 10YR 3/4, non-plastic soft, moist.											
5	460					100	2.0-2.5 ft; Silty Clay, very dark grayish brown, 10YR 3/2, plastic, stiff, damp, mottles (10YR 4/6).											
							2.5-3.6 ft; Silt and Clay, trace very fine sand, interbedded, dark grayish brown and dark yellowish brown, 10YR 3/2 and 3/4; silt, soft; clay, stiff, plastic, moist to wet.											
10	455					75	3.6-4.5 ft; Silty Clay, dark brown, 10YR 3/3, stiff, plastic, moist, mottles (10YR 4/6).	CO/ BS										
							4.5-5.0 ft; Sandy Silt, brown, 10YR 4/3, laminated, wet, mottles (10YR 4/6).											
15	450					78	5.0-8.1 ft; Poor recovery, probable Silty Clay slough.											
							8.1-8.6 ft; Sandy Silt, dark gray and brown, 10YR 4/1 and 4/3, laminated, wet, soft.	FP/ Lev										
							8.6-9.3 ft; Silty Clay, dark gray, 10YR 4/1, plastic, soft, laminated, iron concretions, mottles (10YR 4/6).											
20	445					61	9.3-10.2 ft; Silty Sand, dark gray and brown, 10YR 4/1 and 4/3, laminated, wet, soft.											
							10.2-15.4 ft; Silty Clay, Clayey Silt, Sandy Silt and Silty Sand, alternating thin beds, dark gray, (Gley) 1 4/N, laminations common; silty clay beds, highly plastic, very dark gray (Gley 1 3/N) mottles, laminated; black organic fibrous (bog) material from 12.3 to 12.4 ft.											
25	440					78	15.4-18.3 ft; Very Fine Sand, dark gray, 10YR											

DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Doug Hunziker

LOGGED BY: T. Doll

DATE DRILLED: 11/04/09

START TIME: 10:15AM

END TIME: 1:32PM

BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES: M. Carlson (Gredell) onsite to
observe drilling activities.

WATER LEVELS: DURING DRILLING 4.5 FEET

AFTER DRILLING: FEET

DATE:

PIEZOMETER: INSTALLED AT +/- 35.2 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cool, 60°F, Clear Skies, Mild, 15-20 MPH Gusting Wind from E.

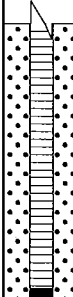

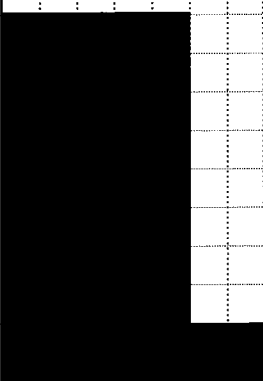
Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-110

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-E Central, S of LBR, W of Davis Rd
G.S. ELEVATION: 466.14' **T.O.C. ELEVATION:** 468.99'
NORTHING: 993066.85 **EASTING:** 730012.30

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY													
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL				
30	435					100	4/1, wet, soft, (clay slough probable in top of 15.0 ft S.S.). 18.3-36.5 ft; Very Fine to Fine Sand, trace clay, medium sand, alternating thin beds, dark gray and dark grayish brown, 10YR 4/1 and 4/2, 8 mm subrounded clasts, 10 mm pieces coalified wood matter, wet, loose grading to stiff, (coarse sand noted at total depth based on cuttings sample collected from auger bit), (clay slough probable in top of 20.0-30.0 ft S.S.).	FP/ Lev														
35	430					100		C														
40	425	BORING TERMINATED IN COARSE SAND @36.5 FT																				
45	420																					
50	415																					
55	410																					

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Doug Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 11/04/09
START TIME: 10:15AM
END TIME: 1:32PM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: M. Carlson (Gredell) onsite to observe drilling activities.

WATER LEVELS: DURING DRILLING 4.5 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 35.2 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cool, 60°F, Clear Skies, Mild, 15-20 MPH Gusting Wind from E.

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-112

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-E Central, S of LBR, W of Davis Rd
G.S. ELEVATION: 465.92' **T.O.C. ELEVATION:** 468.92'
NORTHING: 993051.48 **EASTING:** 730620.74

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
0	465					90	0.0-1.2 ft; Clayey Silt, dark brown, 10YR 3/3, moist, soft, roots; with clay below 0.8 ft, brown, 10YR 4/3, laminated, moist, soft, mottles (10YR 4/6).	FB										
							1.2-1.9 ft; Sandy Silt, dark brown, 10YR 3/3, laminated, moist, soft, faint mottles (10YR 4/6).											
5	460						1.9-2.5 ft; Silty Sand, brown, 10YR 4/3, laminated, moist, soft.											
							2.5-4.1 ft; Silty Clay, dark brown, 10YR 3/3, plastic, iron concretions, mottles (10YR 4/6), moist, soft; stiff with blocky structure below 4.1 ft.											
10	455					100	4.1-4.8 ft; Clayey Sandy Silt, brown, 10YR 4/3, laminated, moist, soft.	CO/ BS										
							4.8-8.8 ft; Poor recovery, probable Silty Clay slough.											
15	450					72	8.8-9.5 ft; Silty Clay, dark brown, 10YR 3/3, plastic, soft, moist.	FP/ Lev										
							9.5-10.6 ft; Silty Sand, brown, 10YR 4/3, laminated, moist grading to wet, soft.											
20	445						10.6-15.9 ft; Clayey Silt, Silty Clay and Silty Sand, alternating thin beds, dark gray, (Gley) 1 4/N, wet, soft, laminations common; silty clay beds, highly plastic, mottles (Gley 1 3/N).											
25	440					100	15.9-33.3 ft; Very Fine to Fine Sand, thin beds, trace medium sand, dark gray, 10YR 4/1, wet, soft.											

DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Doug Hunziker

LOGGED BY: T. Doll

DATE DRILLED: 11/04/09

START TIME: 1:55PM

END TIME: 5:27PM

BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: Chris Vierrether (MDNR) and M. Carlson (Gredell) onsite observing drilling activities.

WATER LEVELS: DURING DRILLING 5 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 35.3 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cool, 60°F, Clear Skies, Mild, 15-20 MPH Gusting Wind from E.

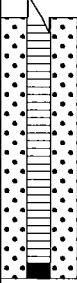


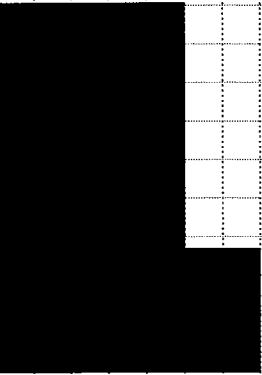
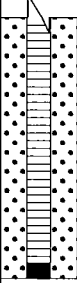


Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-112

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-E Central, S of LBR, W of Davis Rd
G.S. ELEVATION: 465.92' **T.O.C. ELEVATION:** 468.92'
NORTHING: 993051.48 **EASTING:** 730620.74

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
30	435					89	15.9-33.3 ft; Very Fine to Fine Sand, thin beds, trace medium sand, dark gray, 10YR 4/1, wet, soft.	FP/ Lev										
35	430					100	33.3-36.5 ft; Very Fine to Coarse Sand, thin beds, dark gray, 10YR 4/1, 5-20 mm subrounded and subangular clasts, wet, soft.	C										
40	425						BORING TERMINATED IN COARSE SAND @36.5 FT											
45	420																	
50	415																	
55	410																	

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Doug Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 11/04/09
START TIME: 1:55PM
END TIME: 5:27PM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: Chris Vierrether (MDNR) and M. Carlson (Gredell) onsite observing drilling activities.

WATER LEVELS: DURING DRILLING 5 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 35.3 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cool, 60°F, Clear Skies, Mild, 15-20 MPH Gusting Wind from E.

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-114

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-East, S of LBR, Adj to Davis Rd
G.S. ELEVATION: 463.94' **T.O.C. ELEVATION:** 466.78'
NORTHING: 993026.22 **EASTING:** 731203.72

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
0	465						0.0-0.7 ft; Clayey Silt, very dark grayish brown, 10YR 3/2, moist, soft, roots.	FB										
						85	0.7-2.3 ft; Silty Clay, very dark grayish brown, 10YR 3/2, plastic, stiff, moist, mottles (10YR 4/6), white 2 mm gastropod (snail).											
5	460						2.3-4.0 ft; Sandy Silty Clay, dark grayish brown, 10YR 4/2, moist, soft, mottles (10YR 4/6); clay from 3.1-3.2 ft, slightly plastic, stiff.											
						45	4.0-4.7 ft; Silty Sand, brown, 10YR 4/3, moist, soft.	FP/ Lev										
10	455					89	4.7-15.8 ft; Sandy Silt, Clayey Silt, Sandy Clayey Silt, Silty Clay, Very Fine Sand and Fine Sand, alternating thin beds, wet, soft; laminations common to 6.9 ft; dark brown, 10YR 3/3 to 5.4 ft; dark grayish brown, 10YR 4/2, from 5.4- 6.9 ft; dark gray, 10YR 4/1, and dark grayish brown, 10YR 4/2, below 6.9 ft; very fine sand, 7.0-7.3 ft dark reddish brown, 2.5YR 3/4, iron concretions; iron staining and mottles (10YR 4/6) common from 5.0-6.0 ft and 6.9-7.0 ft; silty clay from 10.6-11.2 ft, plastic, stiff.											
15	450					61												
20	445					39	15.8-25.7 ft; Silty Clay, Very Fine Sand and Fine Sand, alternating thin beds, trace coarse sand, dark gray and brown, 10YR 4/1 and 4/3, wet, soft grading to loose; silty clay bed, plastic, stiff, (fine sand and clay slough probable in top of 20.0 ft S.S.).											
25	440					100	25.7-36.5 ft; Gravelly Sand, with very fine to	C										

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 11/12/09
START TIME: 7:57AM
END TIME: 12:09PM
BOREHOLE DIA.: 10.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES:

WATER LEVELS: DURING DRILLING 5 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 34.8 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

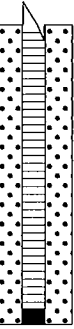


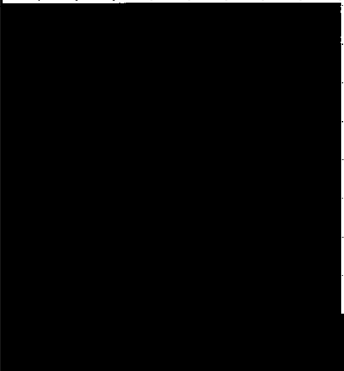
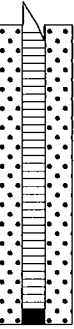


WEATHER: Cold, 35°F, Clear Skies, Calm, Frost.

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-114

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-East, S of LBR, Adj to Davis Rd
G.S. ELEVATION: 463.94' **T.O.C. ELEVATION:** 466.78'
NORTHING: 993026.22 **EASTING:** 731203.72

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
30	435					94	medium sand, alternating thin beds, trace gravel, dark gray, 10YR 4/1, wet, loose grading to soft, 5-20 mm subangular and subrounded clasts, coarse black (glossy) coalified wood matter, (3-inch well-rounded, prolate cobbles retrieved from base of auger), (clay slough in 35.0 ft S.S.).	C										
35	430					72												
40	425						BORING TERMINATED IN GRAVELLY SAND @36.5 FT											
45	420																	
50	415																	
55	410																	

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 11/12/09
START TIME: 7:57AM
END TIME: 12:09PM
BOREHOLE DIA.: 10.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES:

WATER LEVELS: DURING DRILLING 5 FEET
AFTER DRILLING: FEET
DATE:
PIEZOMETER: INSTALLED AT +/- 34.8 FEET

VERTICAL DATUM: NAVD 88
HORIZONTAL DATUM: NAD 83
WEATHER: Cold, 35°F, Clear Skies, Calm, Frost.

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-116

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-West-S of LBR, W of farm access Rd
G.S. ELEVATION: 464.82' **T.O.C. ELEVATION:** 467.55'
NORTHING: 992841.30 **EASTING:** 727788.60

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
0	465						0.0-0.8 ft; Clayey Silt, 10YR 3/3, damp, soft.	FB										
							0.8-4.8 ft; Clay, very dark grayish brown, 10YR 3/2, plastic, firm, moist, mottles (10YR 4/6), silt interbeds <1 inch thick.											
5	460						4.8-5.0 ft; Clayey Silt, grayish brown, 10YR 5/2, moist, soft.	FP/ Lev										
							5.0-6.8 ft; Poor recovery, probable Clay slough.											
							6.8-7.3 ft; Clayey Silt and Silty Clay, thin beds, dark grayish brown, 10YR 4/2, moist; clayey silt to 7.0 ft, soft; silty clay below 7.0 ft, plastic, firm, moist, gray mottles (10YR 5/1).											
10	455						7.3-11.8 ft; Silty Sand, dark yellowish brown, 10YR 4/4, wet, soft, becoming dark gray below 10.0 ft, 10YR 4/1, <1-inch thick silty clay bed at 11.0 ft.	CO/ BS										
							11.8-12.4 ft; grading to very dark gray, (Gley) 1 3/N, wet.											
15	450						12.4-13.0 ft; Silty Clay, very dark gray, (Gley) 1 3/N, plastic, soft, wet.	FP/ Lev										
							13.0-15.0 ft; Sandy Silt, very dark gray, (Gley) 1 3/N, laminated, plant detritus laminae, wet, soft.											
20	445						15.5-23.3 ft; Fine Sand, trace very fine sand, dark gray, (Gley) 1 3/N, wet, soft, small wood fragments, (clay slough probable in top of 15.0 ft S.S.).											
25	440						23.3-28.3 ft; Fine to Medium Sand, trace gravel, alternating thin beds, dark gray, 10YR 4/1, wet, soft, (clay slough probable in top of 25.0 ft S.S.).	FP/ Lev										

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Doug Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 09/29/09
START TIME: 10:38AM
END TIME: 1:25PM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: Chris Vierrether, MDNR, onsite observing drilling activities.

WATER LEVELS: DURING DRILLING 7.3 FEET
AFTER DRILLING: FEET
DATE:
PIEZOMETER: INSTALLED AT +/- 35.0 FEET

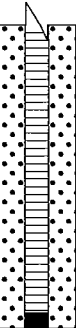
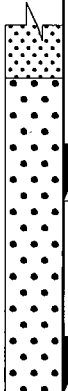

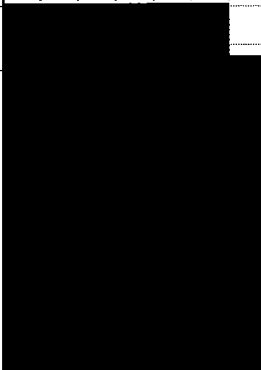
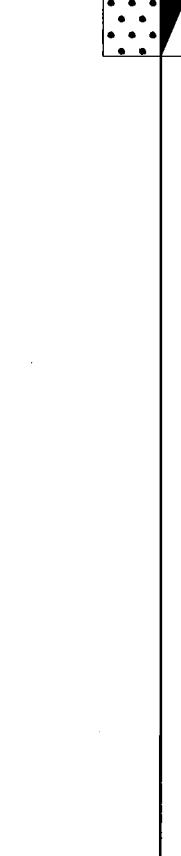
VERTICAL DATUM: NAVD 88
HORIZONTAL DATUM: NAD 83
WEATHER: Cool, 65°F, Clear Skies, Mild, 15-20 MPH NW Gusting Wind.

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-116

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-West-S of LBR, W of farm access Rd
G.S. ELEVATION: 464.82' **T.O.C. ELEVATION:** 467.55'
NORTHING: 992841.30 **EASTING:** 727788.60

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY												
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL			
30	435					67	28.3-36.5 ft; Coarse Sand, with gravel, dark gray, 10YR 4/1, trace clay balls and pockets of silt, wet.	FP/ Lev C													
35	430					78															
40	425																				
45	420																				
50	415																				
55	410																				
BORING TERMINATED IN COARSE SAND @36.5 FT																					

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Doug Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 09/29/09
START TIME: 10:38AM
END TIME: 1:25PM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: Chris Vierrether, MDNR, onsite observing drilling activities.

WATER LEVELS: DURING DRILLING 7.3 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 35.0 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cool, 65°F, Clear Skies, Mild, 15-20 MPH NW Gusting Wind.

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-118

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-West-S of LBR, W of farm access Rd
G.S. ELEVATION: 464.81' **T.O.C. ELEVATION:** 467.70'
NORTHING: 992825.03 **EASTING:** 728377.28

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
0	465						0.0-0.7 ft; Clayey Silt, dark brown, 10YR 3/3, damp, soft; without clay below 0.5 ft, dark yellowish brown, 10YR 3/4, very soft.	FB										
						100	0.7-5.0 ft; Silty Clay, dark brown, plastic, firm, mottles (10YR 4/6), silt interbeds <1-inch thick at 1.8 ft; becoming dark grayish brown below 4.3 ft, 10YR 4/2.											
5	460						5.0-6.2 ft; Poor recovery, probable Silty Clay slough.											
						100	6.2-9.8 ft; Clayey Silt, Silty Clay and Sandy Silt, alternating thin beds; clayey silt to 7.1 ft, dark grayish brown, 10YR 4/2, moist to wet, soft, clay and silt interbeds <1-inch thick; clay below 7.1 ft, dark grayish brown and dark gray, 10YR 4/1 and 4/2, highly plastic, soft, moist; sandy silt below 7.8 ft, brown, 10YR 4/2, wet, soft, clay and silt interbeds <1-inch thick; becoming dark gray below 8.3 ft, 10YR 4/1, iron/manganese concretions.	CO/ BS										
10	455					85												
15	450					94	9.8-14.7 ft; Sandy Silt, Clayey Silt, and Silty Clay, alternating thin beds, very dark gray, (Gley) 1 3/N, wet, soft; clayey silt from 10.0-11.5 ft, dark gray and dark grayish brown, 10YR 4/1 and 4/2, iron/manganese concretions, iron staining; silty clay, plastic, soft; laminated below 12.5 ft in clayey silt and sandy silt beds.	FP/ Lev										
20	445					94	14.7-28.3 ft; Fine Sand, trace very fine sand, dark gray, 10YR 4/1, wet, soft, (fine sand and clay slough probable in top of 15.0 and 20.0 ft S.S.).											
25	440					78												

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Doug Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 09/29/09
START TIME: 2:05PM
END TIME: 4:38PM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: Chris Vierrether (MDNR) and John Eimer (Ameren) onsite observing drilling activities.

WATER LEVELS: DURING DRILLING 7.8 FEET
AFTER DRILLING: FEET
DATE:
PIEZOMETER: INSTALLED AT +/- 35.2 FEET

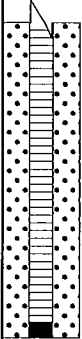


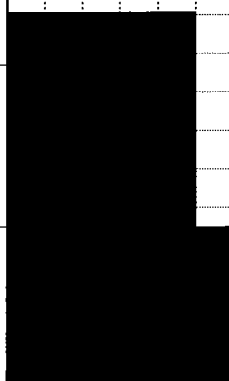
VERTICAL DATUM: NAVD 88
HORIZONTAL DATUM: NAD 83
WEATHER: Cool, 65°F, Clear Skies, Mild, 15-20 MPH NW Gusting Wind.

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-118

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-West-S of LBR, W of farm access Rd
G.S. ELEVATION: 464.81' **T.O.C. ELEVATION:** 467.70'
NORTHING: 992825.03 **EASTING:** 728377.28

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
30	435					72	28.3-36.5 ft; Fine to Medium Sand, thin beds, trace very fine sand, coarse sand and gravel, dark gray, 10YR 4/1, wet, soft, (fine sand and clay slough probable in top of 30.0 and 35.0 ft S.S.).	FP/ Lev										
35	430					100		CM/ Sp										
40	425						BORING TERMINATED IN MEDIUM SAND @36.5 FT											
45	420																	
50	415																	
55	410																	

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Doug Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 09/29/09
START TIME: 2:05PM
END TIME: 4:38PM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: Chris Vierrether (MDNR) and John Eimer (Ameren) onsite observing drilling activities.

WATER LEVELS: DURING DRILLING 7.8 FEET
AFTER DRILLING: FEET
DATE:
PIEZOMETER: INSTALLED AT +/- 35.2 FEET

VERTICAL DATUM: NAVD 88
HORIZONTAL DATUM: NAD 83
WEATHER: Cool, 65°F, Clear Skies, Mild, 15-20 MPH NW Gusting Wind.

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-120

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-West-S of LBR, E of farm access Rd
G.S. ELEVATION: 464.75' **T.O.C. ELEVATION:** 467.65'
NORTHING: 992787.68 **EASTING:** 729145.90

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
0	465					70	0.0-0.9 ft; Clayey Silt, dark brown, 10YR 3/3, slightly plastic, moist, soft.	FB										
							0.9-4.4 ft; Silty Clay, very dark grayish brown, plastic, very stiff, moist, mottles (10YR 4/6).											
5	460						4.4-6.8 ft; Poor recovery, probable Silty Clay slough.											
						100	6.8-8.0 ft; Sandy Silt, brown, 10YR 4/3, moist, soft, becoming wet below 7.2 ft with laminations.	FP/ Lev										
10	455						8.0-8.8 ft; Sandy Clayey Silt, dark grayish brown, 10YR 4/2, slightly plastic, soft, laminated, mottles (10YR 4/6).											
15	450					83	8.8-28.3 ft; Fine Sand, with very fine sand, brown, 10YR 4/3, wet, soft; trace coarse sand (<1%) below 10.7 ft; becoming dark gray, 10YR 4/1, below 15.0 ft, (clay slough probable in top of 10.0-20.0 ft S.S.).											
20	445					94												
25	440					94												

DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Ryan Hunziker

LOGGED BY: T. Doll

DATE DRILLED: 10/22/09

START TIME: 10:07AM

END TIME: 1:05PM

BOREHOLE DIA.: 10.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: Chris Vierrether, MDNR, onsite observing drilling activities.

WATER LEVELS: DURING DRILLING 8.8 FEET

AFTER DRILLING: FEET

DATE:

PIEZOMETER: INSTALLED AT +/- 34.9 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cool, 65°F, Clear Skies, Mild, 15-20 MPH NW Gusting Wind.

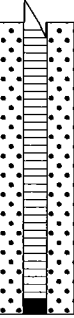
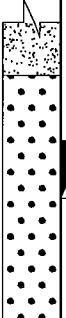
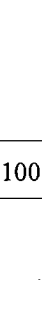
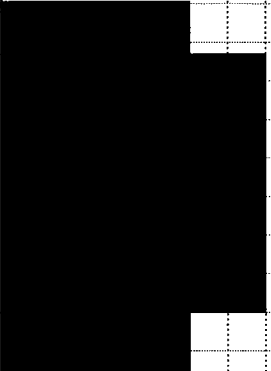
Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-120

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-West-S of LBR, E of farm access Rd
G.S. ELEVATION: 464.75' **T.O.C. ELEVATION:** 467.65'
NORTHING: 992787.68 **EASTING:** 729145.90

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
30	435					100	28.3-35.0 ft; Coarse Sand, grading to fine sand, with medium sand, very fine sand and gravel, dark gray matrix, 10YR 4/1, wet, loose to soft, 5 mm subrounded clasts, trace clay balls, (clay slough and fine sand slough probable in top of 35.0 ft S.S.).	CM/ Sp										
35	430						35.0-36.5 ft; Fine Sand, with very fine to medium sand, dark gray, 10YR 4/1, wet, soft, (clay slough and fine sand slough probable in top of 35.0 ft S.S.).	FP/ Lev										
40	425						BORING TERMINATED IN FINE SAND @36.5 FT											
45	420																	
50	415																	
55	410																	

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 10/22/09
START TIME: 10:07AM
END TIME: 1:05PM
BOREHOLE DIA.: 10.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: Chris Vierrether, MDNR, onsite observing drilling activities.

WATER LEVELS: DURING DRILLING 8.8 FEET
AFTER DRILLING: FEET
DATE:
PIEZOMETER: INSTALLED AT +/- 34.9 FEET

VERTICAL DATUM: NAVD 88
HORIZONTAL DATUM: NAD 83
WEATHER: Cool, 65°F, Clear Skies, Mild, 15-20 MPH NW Gusting Wind.

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-122





**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Bean Field-Newman Central

G.S. ELEVATION: 464.74' **T.O.C. ELEVATION:** 467.71'

NORTHING: 992758.84

EASTING: 729781.01

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
0	465					100	0-1.2 ft; Clayey Silt, dark brown, soft.	FB																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																

DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Ryan Hunziker

LOGGED BY: M. Carlson

DATE DRILLED: 11/10/09

START TIME: 11:22AM

END TIME: 2:16PM

BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES:

WATER LEVELS: DURING DRILLING 5 FEET
AFTER DRILLING: FEET

DATE:

PIEZOMETER: INSTALLED AT +/- 35.2 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cool, 55°F, Cloudy, Mild, 10-15 MPH Wind from N.

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-122

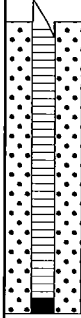

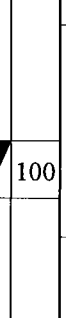
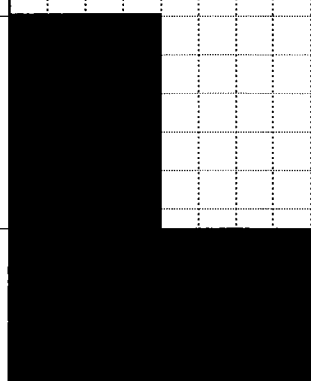
**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Bean Field-Newman Central

G.S. ELEVATION: 464.74' **T.O.C. ELEVATION:** 467.71'

NORTHING: 992758.84

EASTING: 729781.01

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
30	435					100	17.5-32.5 ft; Very Fine to Fine Sand, grayish orange, 10YR 7/4, becoming coarser toward base.	FP/ Lev																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: M. Carlson
DATE DRILLED: 11/10/09
START TIME: 11:22AM
END TIME: 2:16PM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES:

WATER LEVELS: DURING DRILLING 5 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 35.2 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cool, 55°F, Cloudy, Mild, 10-15 MPH Wind from N.

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-124

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-East Central-S of LBR W of Davis Rd
G.S. ELEVATION: 464.92' **T.O.C. ELEVATION:** 467.99'
NORTHING: 992775.57 **EASTING:** 730303.49

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
0	465						0.0-0.6 ft; Clayey Silt, very dark grayish brown, 10YR 3/2, moist, soft, roots.	FB										
							0.6-1.7 ft; Silty Clay, very dark grayish brown, 10YR 3/2, plastic, very stiff, moist, faint mottles (10YR 4/6).											
							1.7-2.8 ft; Clayey Silt, dark grayish brown, 10YR 4/2, moist, soft, mottles (10YR 4/6).											
							2.8-3.6 ft; Silty Clay, very dark grayish brown, 10YR 3/2, plastic, stiff, moist.											
5	460						3.6-4.4 ft; Clayey Silt, dark grayish brown, 10YR 4/2, moist, soft, mottles (10YR 4/6).	CO/ BS										
							4.4-7.6 ft; Poor recovery, probable Silty Clay slough noted.											
							7.6-8.5 ft; Silty Clay, dark gray and dark grayish brown, 10YR 4/1 and 4/2, plastic, soft, moist, iron concretions (10YR 4/6).											
							8.5-9.7 ft; Clayey Sandy Silt and Silty Sand, thin beds, soft; clayey sandy silt, dark gray and dark grayish brown, 10YR 4/1 and 4/2, moist, mottles (10YR 4/6); silty sand, brown, 10YR 4/3, wet, laminated.											
10	455						9.7-20.5 ft; Clayey Silt, Silty Clay, Sandy Silt, Sandy Clayey Silt, Clayey Silty Sand, Fine Sand and Very Fine Sand, alternating thin beds, very dark gray, (Gley) 1 3/N, moist to wet; silty clay, plastic; black mottles (Gley 1 2.5/N) in clay bed from 10.5-11.3 ft; laminations common in "silt" and very fine sand beds below 12.8 ft.	FP/ Lev										
20	445						20.5-25.6 ft; Very Fine Sand, with clay and silt, dark yellowish brown laminations, 10YR 4/6, wet, stiff, becoming dark gray, 10YR 4/1 below 25.0 ft.											
25	440					72		C										

DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Ryan Hunziker

LOGGED BY: T. Doll

DATE DRILLED: 11/11/09

START TIME: 10:46AM

END TIME: 1:52PM

BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES: M. Carlson and S. King
(Gredell) onsite.

WATER LEVELS:

DURING DRILLING 8.8 FEET

AFTER DRILLING: FEET

DATE:

PIEZOMETER:

INSTALLED AT +/- 35.3 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cool, 45°F, Clear Skies, Mild, Calm.

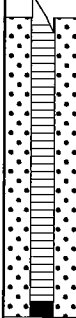
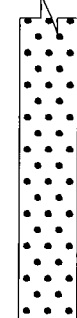
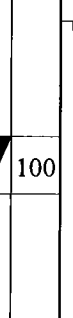
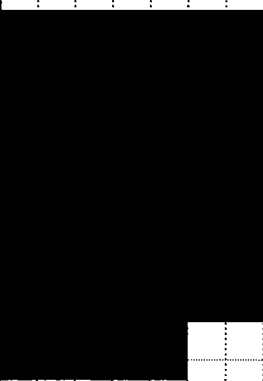
Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-124

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-East Central-S of LBR W of Davis Rd
G.S. ELEVATION: 464.92' **T.O.C. ELEVATION:** 467.99'
NORTHING: 992775.57 **EASTING:** 730303.49

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY										
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL	
30	435					100	25.6-35.0 ft; Coarse Sand, with fine to medium sand, alternating thin beds, trace fine gravel, possibly fine sand toward base, dark gray, 10YR 4/1, 5-20 mm subrounded clasts, wet, loose to soft, (fine sand noted at total depth based on cuttings sample collected from auger bit).	C											
35	430					100	25.6-35.0 ft; Coarse Sand, with fine to medium sand, alternating thin beds, trace fine gravel, possibly fine sand toward base, dark gray, 10YR 4/1, 5-20 mm subrounded clasts, wet, loose to soft, (fine sand noted at total depth based on cuttings sample collected from auger bit).	FP/ Lev											
40	425						35.0-36.5 ft; Fine Sand, with very fine to coarse sand, trace gravel, 5-30 mm subangular clasts, dark gray, 10YR 4 1. BORING TERMINATED IN FINE SAND @36.5 FT												
45	420																		
50	415																		
55	410																		

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 11/11/09
START TIME: 10:46AM
END TIME: 1:52PM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: M. Carlson and S. King (Gredell) onsite.

WATER LEVELS: DURING DRILLING 8.8 FEET
AFTER DRILLING: FEET
DATE:
PIEZOMETER: INSTALLED AT +/- 35.3 FEET

VERTICAL DATUM: NAVD 88
HORIZONTAL DATUM: NAD 83
WEATHER: Cool, 45°F, Clear Skies, Mild, Calm.

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-126

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-East Central-S of LBR Adj Davis Rd
G.S. ELEVATION: 465.77' **T.O.C. ELEVATION:** 468.83'
NORTHING: 992667.51 **EASTING:** 730879.77

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
0	465					50	0.0-0.8 ft; Clayey Silt grading to Silty Clay, thin beds; silty clay, dark brown, 10YR 3/3, moist, soft, roots; silty clay below 0.6 ft, very dark grayish brown, 10YR 3/2, plastic, stiff, moist, mottles (10YR 4/6).	FB										
5	460					50	0.8-3.8 ft; Clayey Silt, dark brown, 10YR 3/3, moist, soft, mottles (10YR 4/6), roots, becoming stiff below 1.7 ft.											
							3.8-5.4 ft; Poor recovery, probable Silty Clay slough.											
10	455					100	5.4-8.8 ft; Silty Sand, brown, 10YR 4/3, wet, soft, stiff from 7.1-7.3 ft, without silt below 7.3 ft.	CO/ BS										
							8.8-13.3 ft; Clayey Sandy Silt, very dark gray, (Gley) 1 3/N, laminated, wet, soft, with clay below 10.5 ft, trace clay below 10.9 ft.											
15	450					100	13.3-22.5 ft; Silty Sand, very dark gray, (Gley) 1 3/N, laminated, wet, soft; stiff below 16.1 ft; trace fine sand below 20.0 ft, dark gray, (Gley) 1 4/N.											
20	445					94												
25	440					78	22.5-28.3 ft; Very Fine Sand, trace very fine sand, dark gray, 10YR 4/1, wet, soft, (clay slough probable in 25.0 ft S.S.).	FP/ Lev										

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 11/11/09
START TIME: 2:18PM
END TIME: 5:15PM
BOREHOLE DIA.: 10.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES: M. Carlson and S. King
(Gredell) onsite.

WATER LEVELS: DURING DRILLING 5 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 34.2 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

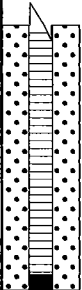
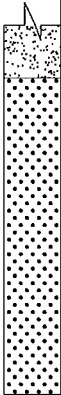
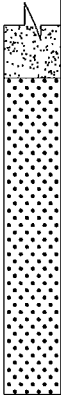
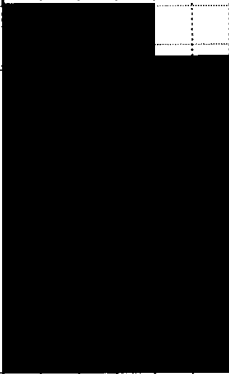
WEATHER: Warm, 65°F, Clear Skies, Mild, 5-10 MPH Wind from N.

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-126

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-East Central-S of LBR Adj Davis Rd
G.S. ELEVATION: 465.77' **T.O.C. ELEVATION:** 468.83'
NORTHING: 992667.51 **EASTING:** 730879.77

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
30	435					100	28.3-36.5 ft; Medium Sand, thin beds, trace fine sand, coarse sand and gravel, dark gray, 10YR 4/1, 5-12 mm subangular clasts, wet, soft.	FP/ Lev CM/ Sp										
35	430					100												
40	425						BORING TERMINATED IN MEDIUM SAND @36.5 FT											
45	420																	
50	415																	
55	410																	

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 11/11/09
START TIME: 2:18PM
END TIME: 5:15PM
BOREHOLE DIA.: 10.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: M. Carlson and S. King (Gredell) onsite.

WATER LEVELS: DURING DRILLING 5 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 34.2 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Warm, 65°F, Clear Skies, Mild, 5-10 MPH Wind from N.

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-128

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-W Central-Adj to Ameren Power Lines
G.S. ELEVATION: 465.74' **T.O.C. ELEVATION:** 468.60'
NORTHING: 992561.87 **EASTING:** 727385.52

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
0	465					65	0.0-0.6 ft; Clayey Silt, dark brown, 10YR 3/3, moist, soft, roots, becoming dark yellowish brown, 10YR 3/4, below 0.5 ft.	FB										
							0.6-2.7 ft; Silty Clay, very dark grayish brown, 10YR 3/2, plastic, stiff, moist.											
5	460						2.7-4.2 ft; Clayey Silt, brown, 10YR 4/3, moist, soft, mottles (10YR 4/6).											
							4.2-6.8 ft; Poor recovery, probable Silty Clay slough noted.											
						65	6.8-15.7 ft; Very Fine to Fine Sand, thin beds, brown and dark grayish brown, 10YR 4/3 and 4/2, wet below 6.8 ft, loose grading to soft; trace clay below 11.3 ft.	FP/ Lev										
10	455																	
15	450						15.7-20.8 ft; Silty Sand, dark gray, 10YR 4/1, wet, soft, (very fine sand and clay slough probable in top of 20.0 S.S.).											
						100		CM/ Sp										
20	445																	
25	440						20.8-31.3 ft; Very Fine to Medium Sand, alternating thin beds, trace coarse sand, dark gray, 10YR 4/1, (very fine sand and clay slough probable in top of 25.0 ft S.S.).											

DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Ryan Hunziker

LOGGED BY: T. Doll

DATE DRILLED: 11/07/09

START TIME: 3:49PM 11/6

END TIME: 8:47AM

BOREHOLE DIA.: 10.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES: M. Carlson (Gredell) onsite.

WATER LEVELS: DURING DRILLING 4 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 34.7 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Warm, 60°F, Clear Skies, Mild.

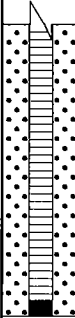


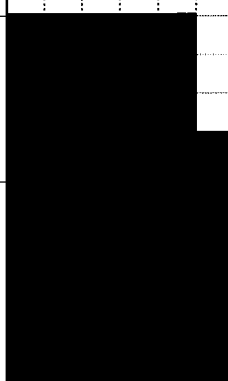
Date Printed: 11/17/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-128

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-W Central-Adj to Ameren Power Lines
G.S. ELEVATION: 465.74' **T.O.C. ELEVATION:** 468.60'
NORTHING: 992561.87 **EASTING:** 727385.52

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY												
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL			
30	435					100	20.8-31.3 ft; Very Fine to Medium Sand, alternating thin beds, trace coarse sand, dark gray, 10YR 4/1, (very fine sand and clay slough probable in top of 25.0 ft S.S.).	CM/ Sp													
35	430					100	31.3-36.5 ft; Very Fine to Fine Sand grading to Medium Sand, dark gray and dark grayish brown, 10YR 4/1 and 4/2, 20-35 mm subrounded clasts, brown and black wood detritus thin bed from 36.1-36.2 ft, 20 mm wood piece below 36.2 ft, wet, soft grading to loose.	C													
40	425									BORING TERMINATED IN MEDIUM SAND @36.5 FT											
							SHELBY TUBE SAMPLE COLLECTED AT 0.7-2.7 FT DEPTH AT COMPLETION OF DRILLING.														
45	420																				
50	415																				
55	410																				

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 11/07/09
START TIME: 3:49PM 11/6
END TIME: 8:47AM
BOREHOLE DIA.: 10.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: M. Carlson (Gredell) onsite.

WATER LEVELS: DURING DRILLING 4 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 34.7 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Warm, 60°F, Clear Skies, Mild.

Date Printed: 11/17/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-130

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-West-S of LBR, W of farm access Rd
G.S. ELEVATION: 465.15' **T.O.C. ELEVATION:** 468.13'
NORTHING: 992537.68 **EASTING:** 728075.04

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY													
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL				
0	465					0.0-0.8 ft; Clayey Silt, dark brown, 10YR 3/3, damp, soft.	FB															
	100					0.8-2.6 ft; Silty Clay, very dark grayish brown, 10YR 3/2, plastic, firm, damp.																
						2.6-5.0 ft; becoming with silt, mottles (10YR 4/6).																
5	460					5.0-6.5 ft; Poor recovery, probable Silty Clay slough.																
						6.5-7.5 ft; Clayey Silt, dark gray, 10YR 4/1, wet, soft.																
						7.5-8.0 ft; Silty Clay, dark gray, 10YR 4/1, plastic, moist, soft.	FP/ Lev															
10	455					8.0-9.4 ft; Clayey Silt, dark gray, 10YR 4/1, mottles and iron concretions (10YR 4/6), wet, soft.																
						9.4-13.3 ft; Fine Sand, dark grayish brown, 10YR 4/2, wet, soft.																
15	450					13.3-15.6 ft; Sandy Silty Clay, dark grayish brown, 10YR 4 2, low plasticity, wet, soft./																
						15.6-25.8 ft; Fine Sand, with very fine sand, dark gray, 10YR 4/1, with coalified wood matter laminae from 20.9- 25.3 ft, wet, soft; trace very fine sand below 20.9 ft, (clay and fine sand slough probable in top of 20.0 and 25.0 ft S.S.).																
20	445						CM/															
25	440					25.8-30.6 ft; Coarse Sand, thin beds, with fine																

DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Doug Hunziker

LOGGED BY: T. Doll

DATE DRILLED: 09/30/09

START TIME: 10:18AM

END TIME: 12:50PM

BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES: Chris Vierrether, MDNR,
onsite observing drilling
activities.

WATER LEVELS: DURING DRILLING 8 FEET
AFTER DRILLING: FEET

DATE: _____

PIEZOMETER: INSTALLED AT +/- 34.9 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cool, 50°F, Heavy Fog, Humid, Calm.

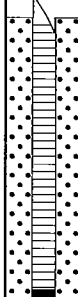
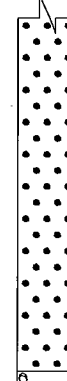
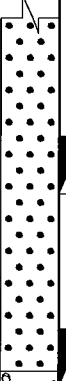
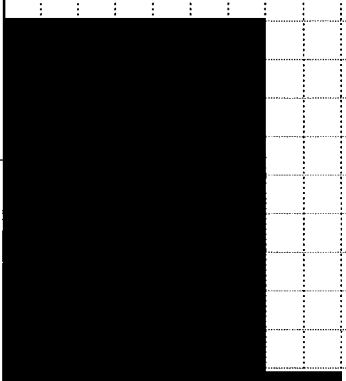
Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-130

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-West-S of LBR, W of farm access Rd
G.S. ELEVATION: 465.15' **T.O.C. ELEVATION:** 468.13'
NORTHING: 992537.68 **EASTING:** 728075.04

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY												
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL			
30	435					78	to medium sand, trace very fine sand, dark gray, 10YR 4/1, wet, loose to soft.	Sp													
35	430					94	30.6-36.5 ft; Medium to Coarse Sand, with fine sand, grading to gravelly sand, alternating thin beds, dark gray, 10YR 4/1, subrounded clasts, wet, loose to soft, (fine sand and clay slough in top of 35.0 ft S.S.).	C													
40	425						BORING TERMINATED IN GRAVELLY SAND @36.5 FT														
45	420																				
50	415																				
55	410																				

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Doug Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 09/30/09
START TIME: 10:18AM
END TIME: 12:50PM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: Chris Vierrether, MDNR, onsite observing drilling activities.

WATER LEVELS: DURING DRILLING 8 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 34.9 FEET

VERTICAL DATUM: NAVD 88
HORIZONTAL DATUM: NAD 83
WEATHER: Cool, 50°F, Heavy Fog, Humid, Calm.

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-132

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-Central West-Adj to farm access Rd
G.S. ELEVATION: 465.36' **T.O.C. ELEVATION:** 468.47'
NORTHING: 992536.17 **EASTING:** 728817.00

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
0	465						0.0-0.7 ft; Clayey Silt, dark brown, 10YR 3/3, wet, soft.	FB										
							0.7-2.5 ft; Silty Clay, very dark grayish brown, 10YR 3/2, plastic, stiff, mottles (10YR 4/6), moist.											
5	460						2.5-5.0 ft; Sandy Clayey Silt grading to Fine Sand, thin beds, dark grayish brown, 10YR 4/2, moist, stiff, wet and soft below 3.3 ft, laminated below 4.3 ft.											
							5.0-7.3 ft; Silty Clay, very dark grayish brown, 10YR 3/2, highly plastic, stiff, moist, silt interbeds <2 mm.	FP/ Lev										
10	455						7.3-11.0 ft; Sandy Clayey Silt grading to Fine Sand, thin beds, dark gray to brown, 10YR 4/1 to 4/3, moist, wet below 8.8 ft; sandy clayey silt, slightly plastic; iron concretions and staining (10YR 4/6) from 8.3-8.8 ft; laminations from 8.8-9.3 ft, (fine sand and clay slough probable in top of 10.0 ft S.S.)											
15	450						11.0-13.3 ft; Fine Sand, trace coarse sand and gravel, dark grayish brown, 10YR 4/2, subrounded clasts.											
20	445						13.3-16.3 ft; Fine Sand, trace very fine sand, dark grayish brown, 10YR 4/2, wet, soft grading to firm, (fine sand slough probable in top of 15.0 ft S.S.).											
							16.3-18.3 ft; Coarse Sand, trace very fine to fine sand, dark grayish brown, 10YR 4/2, wet.											
25	440						18.3-28.3 ft; Fine Sand, trace very fine to coarse sand, dark grayish brown, 10YR 4/2, wet, soft grading to firm, trace clay balls, (fine sand and clay slough probable in top of 20.0 ft S.S.).											

DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Ryan Hunziker

LOGGED BY: T. Doll

DATE DRILLED: 10/15/09

START TIME: 8:00AM

END TIME: 10:06AM

BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES: S. King (Gredell) onsite
developing piezometers.

WATER LEVELS:

DURING DRILLING 8.8 FEET

AFTER DRILLING: FEET

DATE:

PIEZOMETER:

INSTALLED AT +/- 35.0 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cold, 45°F, Overcast, Drizzle.

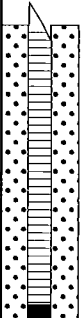

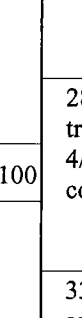
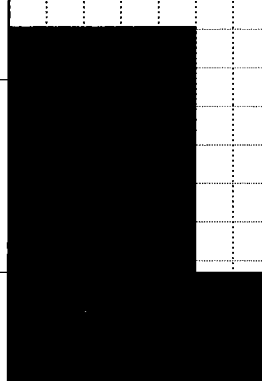
Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-132

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-Central West-Adj to farm access Rd
G.S. ELEVATION: 465.36' **T.O.C. ELEVATION:** 468.47'
NORTHING: 992536.17 **EASTING:** 728817.00

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
30	435					100	28.3-33.3 ft; Fine to Medium Sand, thin beds, trace very fine sand, dark grayish brown, 10YR 4/2, 5-10 mm subrounded clasts, 10 mm black coalified wood matter piece, wet, soft.	FP/ Lev										
35	430					100	33.3-36.5 ft; Coarse Sand, with fine to medium sand and gravel, dark grayish brown, 10YR 4/2, 5-30 mm subangular clasts.	C										
40	425						BORING TERMINATED IN COARSE SAND @36.5 FT											
45	420																	
50	415																	
55	410																	

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 10/15/09
START TIME: 8:00AM
END TIME: 10:06AM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: S. King (Gredell) onsite developing piezometers.

WATER LEVELS: DURING DRILLING 8.8 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 35.0 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cold, 45°F, Overcast, Drizzle.

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-134

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Bean Field-Newman Central

G.S. ELEVATION: 464.10' **T.O.C. ELEVATION:** 466.82'

NORTHING: 992491.31

EASTING: 729438.21

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
0	465						0-1.0 ft; Clayey Silt, olive gray, 5Y 4/1, soft.	FB										
							1.0-2.8 ft; Clay, olive gray, 5Y 4/1, plastic, stiff.											
							2.8-3.5 ft; Silty Clay, olive gray, 5Y 4/1, slightly plastic, soft.											
5	460						3.5-6.8 ft; Clay, light olive gray, 5Y 6/1, plastic.											
							6.8-7.8 ft; Very Fine Sand, Silt and Clay, interlaminated, pale yellowish brown, 10YR 6/2, saturated.	FP/ Lev										
10	455						7.8-20.7 ft; Very Fine to Fine Sand, grayish orange, 10YR 7/4, clean, gradational lower contact.											
15	450																	
20	445						20.7-26.0 ft; Very Coarse Sand, grayish orange, 10YR 7/4.	C										
25	440						26.0-36.5 ft; Gravelly Sand to Sandy Gravel,											

DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Ryan Hunziker

LOGGED BY: M. Carlson

DATE DRILLED: 11/10/09

START TIME: 8:30AM

END TIME: 10:35AM

BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES: Blake Smotherman, MDNR,
onsite observing drilling
activities.

WATER LEVELS:

DURING DRILLING 7 FEET

AFTER DRILLING: FEET

DATE:

PIEZOMETER:

INSTALLED AT +/- 34.9 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cool, 55°F, Cloudy, Mild, 20-25 MPH Wind from W.

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-134

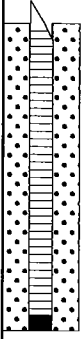

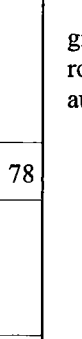

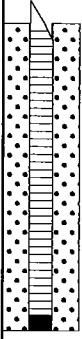

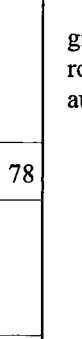
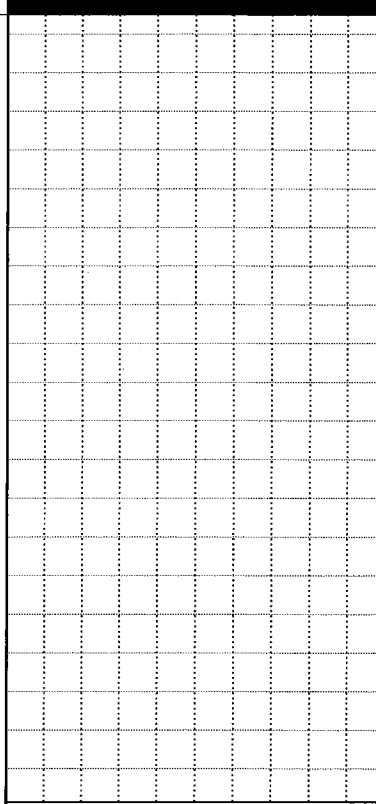
**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Bean Field-Newman Central

G.S. ELEVATION: 464.10' **T.O.C. ELEVATION:** 466.82'

NORTHING: 992491.31

EASTING: 729438.21

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
30	435					78	grayish orange, 10YR 7/4, (3-inch well-rounded, prolate cobbles retrieved from base of auger), (fine sand slough in top of S.S.).	C										
35	430					100												
40	425						BORING TERMINATED IN GRAVELLY SAND @36.5 FT											
45	420																	
50	415																	
55	410																	

DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Ryan Hunziker

LOGGED BY: M. Carlson

DATE DRILLED: 11/10/09

START TIME: 8:30AM

END TIME: 10:35AM

BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: Blake Smotherman, MDNR, onsite observing drilling activities.

WATER LEVELS:

DURING DRILLING 7 FEET

AFTER DRILLING: FEET

DATE:

PIEZOMETER:

INSTALLED AT +/- 34.9 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cool, 55°F, Cloudy, Mild, 20-25 MPH Wind from W.

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-136

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Bean Field-Newman Central

G.S. ELEVATION: 463.71' **T.O.C. ELEVATION:** 466.73'

NORTHING: 992488.64

EASTING: 730004.49

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
0	465						0.0-1.5 ft; Clay, olive gray, 5Y 4/1, plastic, stiff.	FB										
5	460					100	1.5-6.7 ft; Silt and Clay, alternating very thinly bedded, clayey silt in places, light olive gray (5Y 6/1) to pale yellowish brown (10YR 6/2), soft, saturated below 5 ft.											
10	455					100	6.7-9.2 ft; Very Fine to Fine Sand, Silt and Clay, interlaminated to very thinly bedded, light olive gray (5Y 6/1) to pale yellowish brown (10YR 6/2), common rust-colored mottles and nodules, sharp contact w/below.	FP/ Lev										
15	450					70	9.2-12.2 ft; Silt and Clay, interlaminated, very dark gray (Gley) 1 3/N, clay highly plastic.	CO/ BS										
20	445					89	12.2-13.5 ft; Very Fine Sand, laminated, silty, gley-colored as above.											
25	440					100	13.5-18.3 ft; Very Fine to Fine Sand, dark gray (Gley) 1 3/N.											
							18.3-27.5 ft; Medium to Coarse Sand, gley-colored as above, trace granules and small pebbles.											

DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Ryan Hunziker

LOGGED BY: M. Carlson

DATE DRILLED: 11/11/09

START TIME: 3:48PM 11/10

END TIME: 9:06AM

BOREHOLE DIA.: 10.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES: T. Doll (Gredell) onsite field
staking piezometer locations.

WATER LEVELS: DURING DRILLING 5 FEET
AFTER DRILLING: FEET

DATE:

PIEZOMETER: INSTALLED AT +/- 35.0 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

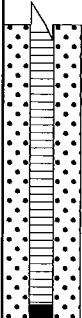
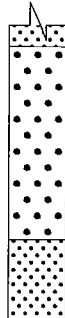
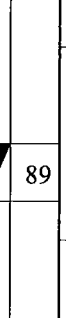
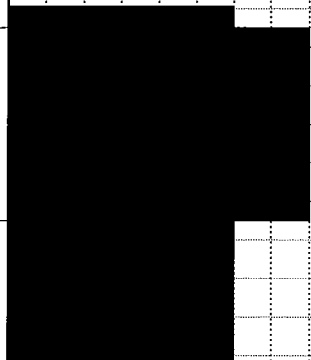
WEATHER: Cool, 55°F, Cloudy, Mild, 10-15 MPH Wind from N.

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-136

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Bean Field-Newman Central
G.S. ELEVATION: 463.71' **T.O.C. ELEVATION:** 466.73'
NORTHING: 992488.64 **EASTING:** 730004.49

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
30	435					89	27.5-32.5 ft; Very Coarse Sand, grayish orange, 10YR 7/4, common granule to small pebble-sized clasts up to 5 mm dia (fine sand slough in top of S.S.).	C										
35	430					100	32.5-36.5 ft; Medium Sand, grayish orange, 10YR 7/4, based marked by 15 mm gravel fragment, (fine sand noted at total depth based on cuttings sampled collected from auger bit).	CM/ Sp										
40	425						BORING TERMINATED IN FINE SAND @36.5 FT											
45	420																	
50	415																	
55	410																	

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: M. Carlson
DATE DRILLED: 11/11/09
START TIME: 3:48PM 11/10
END TIME: 9:06AM
BOREHOLE DIA.: 10.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: T. Doll (Gredell) onsite field staking piezometer locations.

WATER LEVELS: DURING DRILLING 5 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 35.0 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cool, 55°F, Cloudy, Mild, 10-15 MPH Wind from N.

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-138

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Bean Field-Newman-East Central

G.S. ELEVATION: 464.10' **T.O.C. ELEVATION:** 466.99'

NORTHING: 992469.33

EASTING: 730675.26

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
0	465						0-6.5 ft; Clay, olive gray, 5Y 4/1, sparse streaks silty clay, plastic, stiff.	FB										
5	460						6.5-8.4 ft; Silt and Clay, alternating very thinly bedded to laminated, some silty clay, light olive gray (5Y 6/1) to pale yellowish brown (10YR 6/2), saturated below 6 ft, sharp contact w/ below.	CO/ BS										
10	455						8.4-11.0 ft; Clay, very dark gray (Gley) 1 3/N, sparse silt laminae, highly plastic.											
15	450						11.0-17.5 ft; Very Fine Sand, silty, gley-colored as above.											
20	445						17.5-36.0 ft; Very Fine to Fine Sand, very dark gray (Gley) 1 3/N, abundant black carbonaceous matter throughout, some clay rip-ups, sparse silty laminae above 25 ft, sharp contact with below.											
25	440																	

DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Dave Hunziker

LOGGED BY: M. Carlson

DATE DRILLED: 11/12/09

START TIME: 11:10AM

END TIME: 4:00PM

BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: Chris Vierrether, MDNR, onsite observing drilling activities.

WATER LEVELS: DURING DRILLING 6 FEET

AFTER DRILLING: FEET

DATE:

PIEZOMETER: INSTALLED AT +/- 35.0 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Warm, 60°F, Mostly Sunny, 5 MPH Wind from SE.

Date Printed: 11/18/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-138

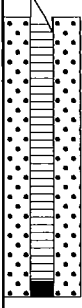



**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Bean Field-Newman-East Central

G.S. ELEVATION: 464.10' **T.O.C. ELEVATION:** 466.99'

NORTHING: 992469.33

EASTING: 730675.26

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
30	435					72	17.5-36.0 ft; Very Fine to Fine Sand, very dark gray (Gley) 1 3/N, abundant black carbonaceous matter throughout, some clay rip-ups, sparse silty laminae above 25 ft, sharp contact with below.	CO/ BS										
35	430					61	36.0-36.5 ft; Medium to Coarse Sand, gley-colored as above, trace granules and small pebbles less than 5 mm dia., (coarse sand noted at total depth based on cuttings sample collected from auger bit).	C										
40	425						BORING TERMINATED IN COARSE SAND @36.5 FT											
45	420																	
50	415																	
55	410																	

DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Dave Hunziker

LOGGED BY: M. Carlson

DATE DRILLED: 11/12/09

START TIME: 11:10AM

END TIME: 4:00PM

BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: Chris Vierrether, MDNR, onsite observing drilling activities.

WATER LEVELS: DURING DRILLING 6 FEET
AFTER DRILLING: FEET

DATE:

PIEZOMETER: INSTALLED AT +/- 35.0 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Warm, 60°F, Mostly Sunny, 5 MPH Wind from SE.

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-140

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-East-S of LBR, Adj to Davis Rd
G.S. ELEVATION: 465.72' **T.O.C. ELEVATION:** 468.57'
NORTHING: 992404.70 **EASTING:** 731394.93

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
0	465						0.0-0.8 ft; Clayey Silt, dark brown, 10YR 3/3, slightly plastic, moist, soft.	FB										
							0.8-2.0 ft; Silty Clay, very dark grayish brown, 10YR 3/2, plastic, stiff, mottles (10YR 4/6), moist.											
5	460						2.0-3.4 ft; Clayey Silt, dark grayish brown and brown, 10YR 4/2 and 4/3, slightly plastic, moist, soft, trace very fine sand and wet 2.3-3.2 ft.											
							3.4-7.1 ft; Silty Clay, dark grayish brown, 10YR 4/2, plastic, soft, moist; stiff from 3.8-4.5 ft; trace very fine sand below 6.9 ft.											
10	455						7.1-8.4 ft; Clayey Silt, brown, 10YR 4/3, laminated, moist, soft; trace very fine and mottles (10YR 4/6) below 7.3 ft; with clay below 8.2 ft.	CO/ BS										
15	450						8.4-20.7 ft; Very Fine Sand, Silty Sand, Silty Clay and Clayey Silty Sand, alternating thin beds, wet, soft; brown to 9.0 ft, 10YR 4/3, iron staining (10YR 4/6); dark gray from 10.0-10.9 ft and 15.2-15.9 ft, (Gley) 1 4/N; silty clay bed from 10.7-10.9 ft, plastic; dark yellowish brown from 10.9-12.0 ft, 10YR 4/4; dark grayish brown below 20.0 ft, 10YR 4/2.											
20	445						20.7-26.0 ft; Very Fine Sand, trace fine to medium sand, dark gray, 10YR 4/1, wet, soft.	FP/ Lev										
25	440						26.0-30.8 ft; Medium to Coarse Sand, with fine											
								CM/										

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 10/27/09
START TIME: 9:08AM
END TIME: 11:46AM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES:

WATER LEVELS: DURING DRILLING 8.5 FEET
AFTER DRILLING: FEET
DATE: _____
PIEZOMETER: INSTALLED AT +/- 34.7 FEET

VERTICAL DATUM: NAVD 88
HORIZONTAL DATUM: NAD 83
WEATHER: Cool, 45°F, Overcast, Raining.

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-140

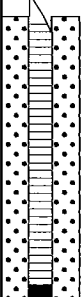
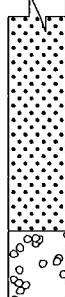
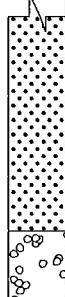
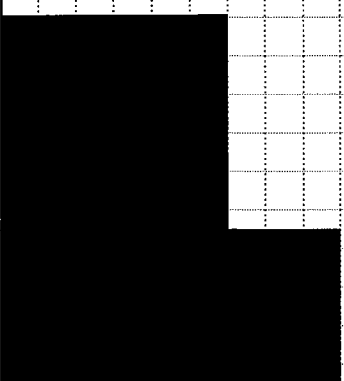
**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-East-S of LBR, Adj to Davis Rd

G.S. ELEVATION: 465.72' **T.O.C. ELEVATION:** 468.57'

NORTHING: 992404.70

EASTING: 731394.93

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
30	435					100	sand, dark gray, 10YR 4/1, wet, soft to stiff.	Sp										
35	430					61	30.8-36.5 ft; Very Fine to Medium Sand grading to Gravelly Sand, alternating thin beds, 4 mm subrounded and subangular quartz and feldspar clasts, 40 mm single wood fragment, wet.	C										
40	425						BORING TERMINATED IN GRAVELLY SAND @36.5 FT											
45	420																	
50	415																	
55	410																	

DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Ryan Hunziker

LOGGED BY: T. Doll

DATE DRILLED: 10/27/09

START TIME: 9:08AM

END TIME: 11:46AM

BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES:

WATER LEVELS: DURING DRILLING 8.5 FEET
AFTER DRILLING: FEET

DATE:

PIEZOMETER: INSTALLED AT +/- 34.7 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cool, 45°F, Overcast, Raining.

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-142

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Bean Field-West Margin Project Area

G.S. ELEVATION: 464.83' **T.O.C. ELEVATION:** 467.66'

NORTHING: 992250.72

EASTING: 727764.69

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
0	465						0-0.7 ft; Silty Clay, olive gray, 5Y 4/1, slightly plastic.	FB										
							0.7-2.3 ft; Clay, olive gray, 5Y 4/1, trace silt, plastic.											
							2.3-3.2 ft; Silty Clay and Clayey Silt, alternating very thin beds, Clay, olive gray, 5Y 4/1, mottled, soft.											
5	460						3.2-5.9 ft; Clay, olive gray, 5Y 4/1, orangish overtones below 4.5 ft, plastic.	CO/ BS										
							5.9-8.3 ft; Silt and Clay, alternating very thin to thin beds, silt laminated, marked by VF sand interlaminae and thicker layers "gley"-colored clay, clay beds highly plastic, light olive gray 5Y 6/1, contacts between silt and clay beds sharp.											
10	455						8.3-26.5 ft; Fine Sand, grayish orange, 10YR 7/4, saturated, clean, 2-inch clay seam noted at 11.3 ft (possible slough), base marked by large (15 mm) pebble, sharp contact w/below.	FP/ Lev										
15	450																	
20	445																	
25	440																	

DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Doug Hunziker

LOGGED BY: M. Carlson

DATE DRILLED: 11/06/09

START TIME: 10:56AM

END TIME: 3:00PM

BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: T. Doll (Gredell) onsite field staking piezometer locations and observing drilling activities.

WATER LEVELS: DURING DRILLING 5 FEET
AFTER DRILLING: FEET

DATE:

PIEZOMETER: INSTALLED AT +/- 35.1 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Warm, 65°F, Mostly Sunny, Mild, 10-15 MPH Wind from S.

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-142

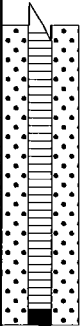
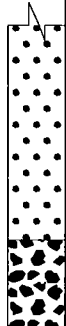
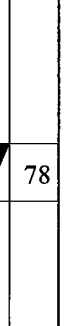
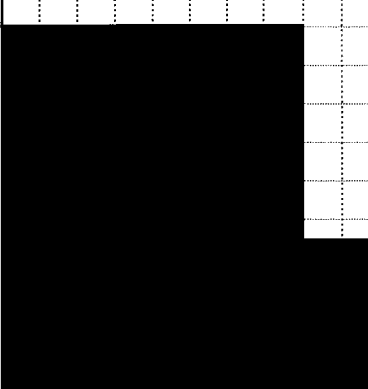


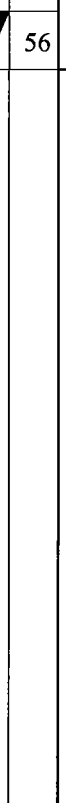
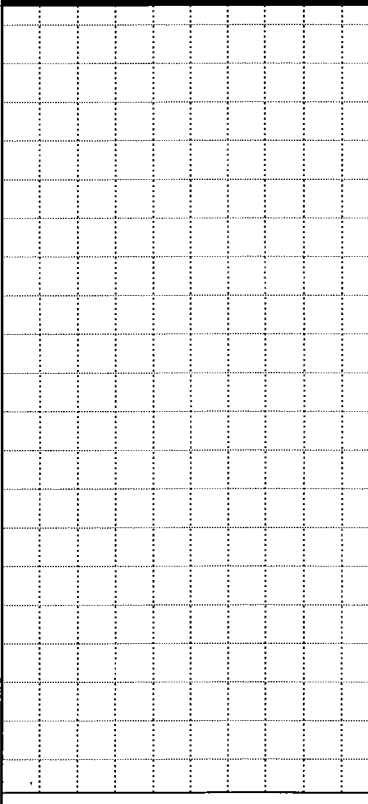
**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Bean Field-West Margin Project Area

G.S. ELEVATION: 464.83' **T.O.C. ELEVATION:** 467.66'

NORTHING: 992250.72

EASTING: 727764.69

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
30	435					78	26.5-36.5 ft; Medium to Coarse Sand, grayish orange, 10YR 7/4, gravelly w/abundant granule to small pebble-sized felsitic clasts, (gravelly sand consisting of 2-inch well-rounded to subangular clasts noted at total depth based on cuttings sample collected from auger bit), (fine sand slough in top of S.S.).	C										
35	430					56												
40	425						BORING TERMINATED IN SANDY GRAVEL @36.5 FT											
45	420																	
50	415																	
55	410																	

DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Doug Hunziker

LOGGED BY: M. Carlson

DATE DRILLED: 11/06/09

START TIME: 10:56AM

END TIME: 3:00PM

BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES: T. Doll (Gredell) onsite field
staking piezometer locations
and observing drilling
activities.

WATER LEVELS: DURING DRILLING 5 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 35.1 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Warm, 65°F, Mostly Sunny, Mild, 10-15 MPH Wind from S.

Date Printed: 11/9/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-144

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-West-S of LBR, W of farm access Rd
G.S. ELEVATION: 464.56' **T.O.C. ELEVATION:** 467.74'
NORTHING: 992236.95 **EASTING:** 728361.22

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY																										
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL																	
0	465					80	0.0-1.0 ft; Clayey Silt, dark brown, 10YR 3/3, damp, soft.	FB																											
	1.0-4.5 ft; Silty Clay, very dark grayish brown, 10YR 3/2, plastic, stiff, moist, mottles (10YR 4/6) from 3.0 to 4.0 ft.																																		
5	460						4.5-6.0 ft; Poor recovery, probable Silty Clay slough.																												
	60					6.0-10.8 ft; Silty Clay and Clayey Silt; dark grayish brown to 6.8 ft, 10YR 4/2, moist, soft; dark gray below 6.8 ft, 10YR 4/1, iron/ manganese concretions and staining.	FP/ Lev																												
10						455		10.8-18.3 ft; Fine Sand and Silty Clay, trace very fine sand, alternating thin beds, dark yellowish brown to 12.0 ft, 10YR 4/4; dark gray below 12.0 ft, 10YR 4/1; silty clay bed from 12.0-12.4 ft, slightly plastic, (clay slough probable in top of 15.0-25.0 ft S.S.).																											
15	450										100	18.3-31.0 ft; Very Fine to Fine Sand, alternating thin beds, very dark gray, (Gley) 1 3/N, and dark gray, 10YR 4/1, black and brown fine wood fragments, wet, soft, (fine sand and clay slough probable in top of 30.0 ft S.S.).	CO/ BS																						
											89																								
20	445										28																								
25	440										72																								

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Dave Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 09/30/09
START TIME: 1:30PM
END TIME: 4:40PM
BOREHOLE DIA.: 10.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES: Chris Vierrether (MDNR) and
M. Carlson (Gredell) onsite
observing drilling activities.

WATER LEVELS: DURING DRILLING 8 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 34.7 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

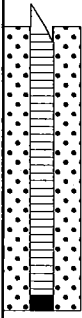
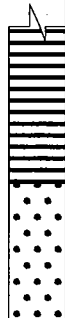
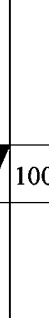
WEATHER: Weather, 70°F, Mostly Sunny, Mild, 5 MPH Wind from SE.

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-144

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-West-S of LBR, W of farm access Rd
G.S. ELEVATION: 464.56' **T.O.C. ELEVATION:** 467.74'
NORTHING: 992236.95 **EASTING:** 728361.22

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
30	435					100	18.3-31.0 ft; Very Fine to Fine Sand, alternating thin beds, very dark gray, (Gley) 1 3/N, and dark gray, 10YR 4/1, black and brown fine wood fragments, wet, soft, (fine sand and clay slough probable in top of 30.0 ft S.S.).	CO/ BS										
35	430					72	31.0-36.5 ft; Coarse Sand, alternating thin beds, with fine and medium sand, trace very fine sand and gravel, dark gray, 10YR 4/1, subrounded clasts, 20 mm wood piece, clay ball.	C										
40	425						BORING TERMINATED IN COARSE SAND @36.5 FT											
45	420																	
50	415																	
55	410																	

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Dave Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 09/30/09
START TIME: 1:30PM
END TIME: 4:40PM
BOREHOLE DIA.: 10.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: Chris Vierrether (MDNR) and M. Carlson (Gredell) onsite observing drilling activities.

WATER LEVELS: DURING DRILLING 8 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 34.7 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Weather, 70°F, Mostly Sunny, Mild, 5 MPH Wind from SE.

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-146

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Bean Field-Newman-Central Project Area
G.S. ELEVATION: 464.80' **T.O.C. ELEVATION:** 467.48'
NORTHING: 992265.54 **EASTING:** 729102.62

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
0	465					80	0-2.8 ft; Clay, light olive gray, 5Y 6/1, plastic, stiff.	FB										
							2.8-4.3 ft; Clayey Silt, light olive gray, 5Y 6/1, slightly plastic, soft, wet at base.	FP/ Lev										
5	460						4.3-10.4 ft; Very Fine Sand, grayish orange, 10YR 7/4, silty, faint laminae, common black carbonaceous fragments, clean, saturated.											
10	455						10.4-15.0 ft; Very Fine Sand, Silt and Clay, interlaminated, very dark greenish gray (Gley) 1 3/1, gradational contact with below.	CO/ BS										
15	450						15.0-21.0 ft; Very Fine to Fine Sand, pale yellowish brown, 10YR 6/2, with some Gley-colored overtones, clean.	FP/ Lev										
20	445					89	21.0-25.0 ft; Medium to Coarse Sand, pale yellowish brown, 10YR 6/2, gravelly with clasts up to 5 mm dia, common black carbonaceous fragments (fine sand slough in top of S.S.).	C										
25	440						25.0-36.5 ft; Coarse Sand, pale yellowish brown, 10YR 6/2, pebble sized clasts up to 20											
						100												

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: M. Carlson
DATE DRILLED: 11/09/09
START TIME: 11:13AM
END TIME: 1:28PM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES:

WATER LEVELS: DURING DRILLING 4.5 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 34.8 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Warm, 65°F, Overcast, Mild, Calm.

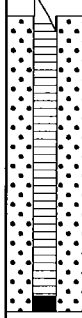
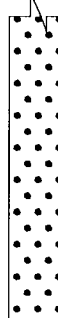
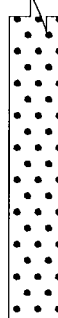
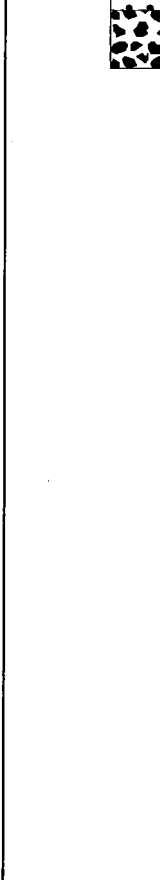
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**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-146

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Bean Field-Newman-Central Project Area
G.S. ELEVATION: 464.80' **T.O.C. ELEVATION:** 467.48'
NORTHING: 992265.54 **EASTING:** 729102.62

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY													
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL				
30	435					100	mm dia, poorly sorted, common fine sand, (3-inch well-rounded, prolate cobbles retrieved from base of auger), (fine sand slough in top of S.S.).	C														
35	430					100																
40	425				BORING TERMINATED IN SANDY GRAVEL @36.5 FT																	
45	420																					
50	415																					
55	410																					

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: M. Carlson
DATE DRILLED: 11/09/09
START TIME: 11:13AM
END TIME: 1:28PM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES:

WATER LEVELS: DURING DRILLING 4.5 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 34.8 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Warm, 65°F, Overcast, Mild, Calm.

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-148

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Bean Field-Newman-Central Project Area

G.S. ELEVATION: 463.86' **T.O.C. ELEVATION:** 466.84'

NORTHING: 992252.64

EASTING: 729630.10

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
0	465					100	0-3.5 ft; Clay, olive gray, 5Y 4/1, plastic, stiff.	FB										
5	460						3.5-4.8 ft; Silty Clay and Clayey Silt, alternating very thin beds grading downward into more silt and sparse very fine sand with faint laminations, greenish gray grading downward to dark yellowish orange, 10YR 6/6, soft.	FP/Lev										
10	455						4.8-7.0 ft; Very Fine Sand, grayish orange, 10YR 7/4, silty, saturated.											
15	450						7.0-15.4 ft; Very Fine to Fine Sand, grayish orange, 10YR 7/4, sparse granules, saturated, sharp contact with below.											
20	445						15.4-22.5 ft; As above, but with sharp color change to very dark gray (Gley) 1 3/1, silty toward base (some fine sand slough noted in top of S.S.).	CO/BS										
25	440					72	22.5-36.5 ft; Gravelly Sand, pale yellowish brown, 10YR 6/2, w/abundant granule to small pebble-sized clasts up to 20 mm dia (fine sand slough in top of S.S.).	C										

Date Printed: 11/8/2010

DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Ryan Hunziker

LOGGED BY: M. Carlson

DATE DRILLED: 11/09/09

START TIME: 3:00PM

END TIME: 5:15PM

BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES:

WATER LEVELS: DURING DRILLING 5 FEET

AFTER DRILLING: FEET

DATE:

PIEZOMETER: INSTALLED AT +/- 34.7 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

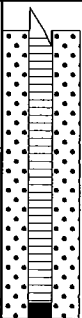
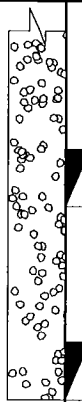
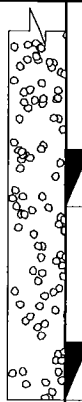
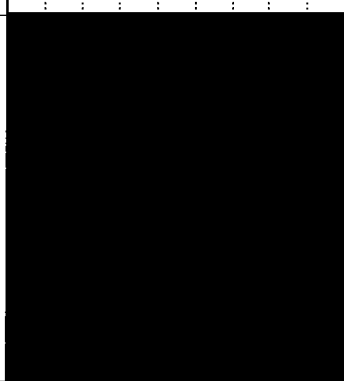
WEATHER: Weather, 65°F, Overcast, Mild, Calm.

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-148

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Bean Field-Newman-Central Project Area
G.S. ELEVATION: 463.86' **T.O.C. ELEVATION:** 466.84'
NORTHING: 992252.64 **EASTING:** 729630.10

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
30	435					72	22.5-36.5 ft; Gravelly Sand, pale yellowish brown, 10YR 6/2, w/abundant granule to small pebble-sized clasts up to 20 mm dia (fine sand slough in top of S.S.).	C										
35	430					100												
40	425																	
45	420						BORING TERMINATED IN GRAVELLY SAND @36.5 FT											
50	415																	
55	410																	

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: M. Carlson
DATE DRILLED: 11/09/09
START TIME: 3:00PM
END TIME: 5:15PM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES:

WATER LEVELS: DURING DRILLING 5 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 34.7 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Weather, 65°F, Overcast, Mild, Calm.

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-150

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-Central-S of LBR, W of Davis Rd
G.S. ELEVATION: 463.22' **T.O.C. ELEVATION:** 465.91'
NORTHING: 992189.21 **EASTING:** 730256.27

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
465																		
0							0.0-0.7 ft; Clayey Silt, very dark grayish brown, 10YR 3/2, slightly plastic, soft, moist, roots.	FB										
460						60	0.7-5.1 ft; Silty Clay, very dark grayish brown, 10YR 3/2, plastic, stiff, moist, faint mottles (10YR 4/6), roots, grading soft to stiff below 2.6 ft with mottles (10YR 4/6); becoming dark grayish brown below 5.0 ft, 10YR 4/2, laminated, soft.											
5							5.1-8.3 ft; Sandy Silt and Silty Sand, thin beds, dark gray and dark grayish brown, 10YR 4/1 and 4/2, laminated, iron staining in channels (10YR 4/6) and herringbone laminae below 5.5 ft.	CO/ BS										
455						30	8.3-20.8 ft, Clayey Silt, Silty Clay, Sandy Silt and Very Fine to Fine Sand, alternating thin beds, dark gray, (Gley) 1 4/N, wet, soft; silty clay beds, plastic; very fine sand bed at 11.8 ft, dark yellowish brown, 10YR 4/4; fibrous plant detritus at 13.5 ft, 2 mm thick; fine sand bed at 20.0 ft with medium sand.											
10						80												
450						100												
15						100												
445						100												
20						100	20.8-32.5 ft; Medium Sand, with very fine sand, trace medium to coarse sand and gravel, alternating thin beds, dark gray, 10YR 4/1, 5-10 mm subrounded clasts, wet, soft grading to loose.	CM										
440																		
25						100												

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 11/14/09
START TIME: 7:20AM
END TIME: 10:00AM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES:

WATER LEVELS: DURING DRILLING 5.1 FEET
AFTER DRILLING: FEET
DATE:
PIEZOMETER: INSTALLED AT +/- 35.1 FEET

VERTICAL DATUM: NAVD 88
HORIZONTAL DATUM: NAD 83
WEATHER: Cool, 45°F, Mostly Cloudy, Calm, Mild.

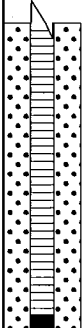


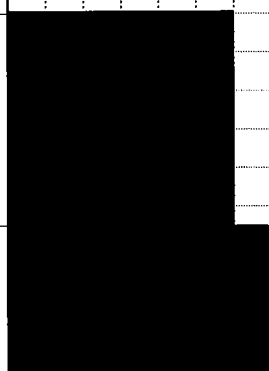
Date Printed: 11/17/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-150

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-Central-S of LBR, W of Davis Rd
G.S. ELEVATION: 463.22' **T.O.C. ELEVATION:** 465.91'
NORTHING: 992189.21 **EASTING:** 730256.27

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY												
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL			
30	435					100	20.8-32.5 ft; Medium Sand, with very fine sand, trace medium to coarse sand and gravel, alternating thin beds, dark gray, 10YR 4/1, 5-10 mm subrounded clasts, wet, soft grading to loose.	CM													
35	430					100	32.5-36.5 ft; Coarse Sand, trace medium sand and gravel, dark gray, 10YR 4/1, 5-15 mm subrounded clasts, wet, loose.	C													
40	425	BORING TERMINATED IN COARSE SAND @36.5 FT																			
45	420	SHELBY TUBE SAMPLE COLLECTED AT 1.0-3.0 FT DEPTH AT COMPLETION OF DRILLING.																			
50	415																				
55	410																				

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 11/14/09
START TIME: 7:20AM
END TIME: 10:00AM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES:

WATER LEVELS: DURING DRILLING 5.1 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 35.1 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cool, 45°F, Mostly Cloudy, Calm, Mild.

Date Printed: 11/17/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-152

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-SE- S of LBR, W of Davis Rd
G.S. ELEVATION: 463.55' **T.O.C. ELEVATION:** 466.31'
NORTHING: 992168.58 **EASTING:** 730889.93

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
0	465						0.0-0.6 ft; Clayey Silt, very dark grayish brown, 10YR 3/2, moist, soft, roots.	FB																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								

DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Ryan Hunziker

LOGGED BY: T. Doll

DATE DRILLED: 11/12/09

START TIME: 1:35PM

END TIME: 4:10PM

BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES: Chris Vierrether, MDNR,
onsite observing drilling
activities.

WATER LEVELS: DURING DRILLING 2.9 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 34.8 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Warm, 60°F, Mostly Sunny, 5 MPH Wind from SE.

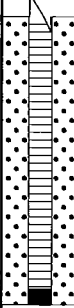
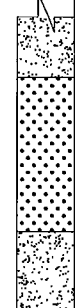
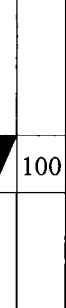

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-152

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-SE- S of LBR, W of Davis Rd
G.S. ELEVATION: 463.55' **T.O.C. ELEVATION:** 466.31'
NORTHING: 992168.58 **EASTING:** 730889.93

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
30	435					100	matter below 35.9 ft, wet, soft grading to stiff. 23.3-36.5 ft; Fine Sand to Medium Sand, alternating thin beds, with very fine sand, trace coarse sand and gravel, dark gray, 10YR 4/1, 10 mm subrounded clasts, black coalified wood matter below 35.9 ft, wet, soft grading to stiff.	CM/ Sp										
35	430					100		FP/ Lev										
40	425						BORING TERMINATED IN FINE SAND @36.5 FT											
45	420																	
50	415																	
55	410																	

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 11/12/09
START TIME: 1:35PM
END TIME: 4:10PM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES: Chris Vierrether, MDNR,
onsite observing drilling
activities.

WATER LEVELS: DURING DRILLING 2.9 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 34.8 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Warm, 60°F, Mostly Sunny, 5 MPH Wind from SE.

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-155

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-West-S of LBR, W of farm access Rd
G.S. ELEVATION: 463.44' **T.O.C. ELEVATION:** 466.27'
NORTHING: 991943.98 **EASTING:** 728065.97

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
465																		
0							0.0-0.5 ft; Clayey Silt, dark brown, 10YR 3/3, damp, soft.	FB										
						60	0.5-4.0 ft; Silty Clay, very dark grayish brown, 10YR 3/2, highly plastic, firm, moist, silt interbed at 1.8 ft <1 inch thick, mottles (10YR 4/6) below 2.7 ft.											
5							4.0-6.9 ft; Poor recovery, probable Silty Clay slough.											
						100	6.9-9.2 ft; Clayey Silt grading to Silty Clay, dark gray, 10YR 4/1, highly plastic, soft, moist, iron staining, iron staining more prominent below 8.6 ft.	CO/ BS										
10						100	9.2-9.8 ft; Silty Sand, dark gray, 10YR 4/1, wet, soft.											
							9.8-10.3 ft; Silty Clay, dark gray, 10YR 4/1, highly plastic, soft, moist to wet.											
15						33	10.3-12.0 ft; Clayey Sandy Silt and Silty Clay, thin beds, very dark gray, (Gley) 1 3/N, wet, soft; laminated to 11.6 ft; silty clay, highly plastic.											
						33	12.0-23.2 ft; Fine Sand, with very fine sand, very dark gray, (Gley) 1 3/N, wet, soft; dark gray below 25.3 ft, 10YR 4/1, (clay slough probable in top of 15.0-25.0 ft S.S.).	CM/ Sp										
20																		
						72	23.2-33.3 ft; Medium Sand, with coarse sand, trace fine sand, dark gray, 10YR 4/1, wet, soft.											
25																		

DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Doug Hunziker

LOGGED BY: T. Doll

DATE DRILLED: 09/30/09

START TIME: 5:04PM 9/29

END TIME: 9:41AM

BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES: Chris Vierrether (MDNR),
Jeff Fouse (R&J) and M.
Carlson (Gredell) onsite
observing drilling activities.

WATER LEVELS:

DURING DRILLING 9.2 FEET

AFTER DRILLING: _____ FEET

DATE: _____

PIEZOMETER:

INSTALLED AT +/- 34.8 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cool, 50°F, Heavy Fog, Humid, Calm.

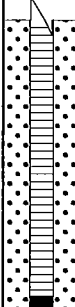

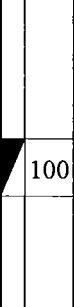
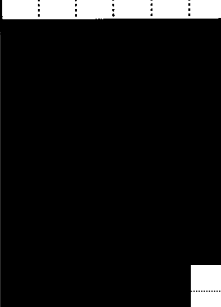
Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-155

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-West-S of LBR, W of farm access Rd
G.S. ELEVATION: 463.44' **T.O.C. ELEVATION:** 466.27'
NORTHING: 991943.98 **EASTING:** 728065.97

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY														
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL					
435						100	23.2-33.3 ft; Medium Sand, with coarse sand, trace fine sand, dark gray, 10YR 4/1, wet, soft.	CM/ Sp															
430						83	33.3-36.5 ft; Fine sand, with medium sand, trace coarse sand and gravel, subrounded clasts, trace clay balls, wet, soft.																
425																							
40							BORING TERMINATED IN FINE SAND @36.5 FT																
420																							
45																							
415																							
50																							
410																							
55																							

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Doug Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 09/30/09
START TIME: 5:04PM 9/29
END TIME: 9:41AM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: Chris Vierrether (MDNR), Jeff Fouse (R&J) and M. Carlson (Gredell) onsite observing drilling activities.

WATER LEVELS: DURING DRILLING 9.2 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 34.8 FEET

VERTICAL DATUM: NAVD 88
HORIZONTAL DATUM: NAD 83
WEATHER: Cool, 50°F, Heavy Fog, Humid, Calm.

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-156

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-W Central-Adj to farm access Rd
G.S. ELEVATION: 464.89' **T.O.C. ELEVATION:** 467.70'
NORTHING: 991964.30 **EASTING:** 728791.30

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
0	465					70	0.0-1.0 ft; Clayey Silt, very dark grayish brown, 10YR 3/2, slightly plastic, soft, moist, roots.	FB										
							1.0-2.3 ft; Silty Clay, very dark grayish brown, 10YR 3/2, plastic, stiff, moist, faint mottles (10YR 4/6).											
5	460						2.3-5.6 ft; Clayey Silt, dark grayish brown, 10YR 4/2, moist, soft, mottles (10YR 4/6) to 3.5 ft; wet, loose and with clay below 5.0 ft.	FP/ Lev										
							5.6-13.3 ft; Silty Sand, dark grayish brown, 10YR 4/2, laminated, wet, soft.											
10	455					33												
							13.3-20.8 ft; Sandy Silt, dark gray, (Gley) 1 4/ N, laminated, wet, soft; becoming dark gray and dark grayish brown, 10YR 4/1 and 4/2 below 20.7 ft, (sand and clay slough probable in top of 15.0 and 20.0 ft S.S.).	CO/ BS										
15	450					72												
							20.8-25.9 ft; Very Fine to Fine Sand, thin beds, dark gray and dark grayish brown, 10YR 4/1 and 4/2, wet, alternating loose to soft consistency, (fine sand and clay slough probable in top of 25.0 ft S.S.).	FP/ Lev										
20	445					78												
25	440					100												
							25.9-36.5 ft; Coarse Sand grading to Gravelly	CM/										

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Dave Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 11/09/09
START TIME: 11:30AM
END TIME: 3:17PM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES:

WATER LEVELS: DURING DRILLING 5 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 34.8 FEET
VERTICAL DATUM: NAVD 88
HORIZONTAL DATUM: NAD 83
WEATHER: Warm, 65°F, Overcast, Mild, Calm.

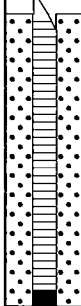
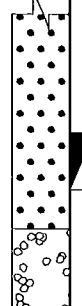
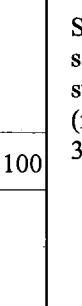
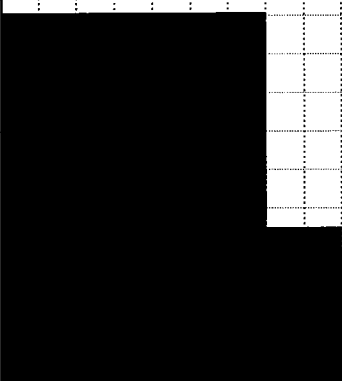

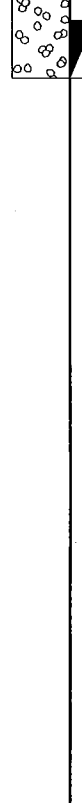

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-156

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-W Central-Adj to farm access Rd
G.S. ELEVATION: 464.89' **T.O.C. ELEVATION:** 467.70'
NORTHING: 991964.30 **EASTING:** 728791.30

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY											
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL		
30	435					100	Sand, with medium sand, trace gravel and fine sand, dark gray, 10YR 4/1, 5-40 mm subangular and subrounded clasts, wet, loose, (fine sand and clay slough probable in top of 30.0 and 35.0 ft S.S.).	Sp												
35	430					56		C												
40	425						BORING TERMINATED IN GRAVELLY SAND @36.5 FT													
45	420																			
50	415																			
55	410																			

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Dave Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 11/09/09
START TIME: 11:30AM
END TIME: 3:17PM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES:

WATER LEVELS: DURING DRILLING 5 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 34.8 FEET
VERTICAL DATUM: NAVD 88
HORIZONTAL DATUM: NAD 83
WEATHER: Warm, 65°F, Overcast, Mild, Calm.

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-158

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-SW-E of farm access Rd, S of LBR
G.S. ELEVATION: 464.72' **T.O.C. ELEVATION:** 467.63'
NORTHING: 991945.43 **EASTING:** 729368.05

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
0	465						0.0-0.8 ft; Clayey Silt, very dark grayish brown, 10YR 3/2, moist, soft, roots.	FB										
							0.8-2.4 ft; Silty Clay, very dark grayish brown, 10YR 3/2, plastic, stiff, moist, roots, becoming soft with mottles (10YR 4/6) below 2.0 ft.	FP/ Lev										
							2.4-3.8 ft; Clayey Silt, dark gray and dark grayish brown, 10YR 4/1 and 4/2, moist, soft, mottles (10YR 4/6).											
5	460						3.8-10.5 ft; Silty Sand, brown, 10YR 4/3, laminated, iron staining in layers (10YR 4/6), muscovite mica flakes, wet, soft.											
10	455						10.5-12.3 ft; Sandy Silt and Silty Sand, thin beds, wet, soft; dark gray, 10YR 4/1, to 11.1 ft, black coalified wood matter and plant detritus; black, (Gley) 1 2.5/N from 11.1-11.2 ft; dark grayish brown below 11.2 ft, 10YR 4/2, laminated, iron staining in layers (10YR 4/6); dark yellowish brown, 10YR 4/4, below 12.0 ft.	CO/ BS										
15	450						12.3-15.0 ft; Fine Sand, with very fine sand, trace coarse sand, dark grayish brown, 10YR 4/2, laminated, wet; dark gray below 12.8 ft, 10YR 4/1, trace brown wood fragments.											
20	445						15.0-23.3 ft; Fine Sand, with very fine sand, trace coarse sand and gravel, dark gray, (Gley) 1 2.5/N, wet, 20 mm x 40 mm wood fragments (sticks).											
25	440						23.3-33.3 ft; Very Fine Sand, trace fine sand, dark gray, (Gley) 1 4/N, muscovite mica flakes, wet, soft.											

DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Ryan Hunziker

LOGGED BY: T. Doll

DATE DRILLED: 11/13/09

START TIME: 12:30PM

END TIME: 2:50PM

BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES:

WATER LEVELS:

DURING DRILLING 5 FEET

AFTER DRILLING: FEET

DATE:

PIEZOMETER:

INSTALLED AT +/- 34.9 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Warm, 60°F, Mostly Sunny, Mild, 5 MPH Wind from S.

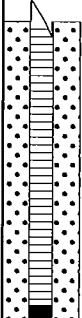

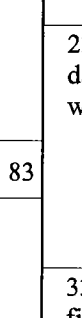

Date Printed: 11/18/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-158

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-SW-E of farm access Rd, S of LBR
G.S. ELEVATION: 464.72' **T.O.C. ELEVATION:** 467.63'
NORTHING: 991945.43 **EASTING:** 729368.05

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
30	435					83	23.3-33.3 ft; Very Fine Sand, trace fine sand, dark gray, (Gley) 1 4/N, muscovite mica flakes, wet, soft.	CO/ BS										
35	430					0	33.3-36.5 ft; FROM BIT: Coarse Sand, with fine sand, trace medium sand and gravel, very dark gray, (Gley) 1 3/N, 5-40 mm subrounded clasts, 40 mm wood fragment, wet.	CM/ Sp										
40	425						BORING TERMINATED IN COARSE SAND @36.5 FT											
45	420																	
50	415																	
55	410																	

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 11/13/09
START TIME: 12:30PM
END TIME: 2:50PM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES:

WATER LEVELS: DURING DRILLING 5 FEET
AFTER DRILLING: FEET
DATE: _____
PIEZOMETER: INSTALLED AT +/- 34.9 FEET

VERTICAL DATUM: NAVD 88
HORIZONTAL DATUM: NAD 83
WEATHER: Warm, 60°F, Mostly Sunny, Mild, 5 MPH Wind from S.

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-160

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-SE-W of Davis Rd, S of LBR
G.S. ELEVATION: 463.70' **T.O.C. ELEVATION:** 466.42'
NORTHING: 991884.45 **EASTING:** 729979.25

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
0	465					80	0.0-0.5 ft; Clayey Silt, dark brown, 10YR 3/3, non-plastic, moist, soft, roots.	FB										
							0.5-2.4 ft; Silty Clay, very dark grayish brown, 10YR 3/2, plastic, stiff, few faint mottles (10YR 4/6), moist, roots.											
							2.4-3.5 ft; Clayey Silt, brown, 10YR 4/3, non-plastic, moist, soft, many mottles (10YR 4/6).											
5	460						3.5-6.1 ft; Silty Clay, very dark grayish brown, 10YR 3/2, plastic, stiff, moist, few mottles (10YR 4/6).	FP/ Lev										
							6.1-13.3 ft; Very Fine Sand, brown, 10YR 4/3, laminated, trace brown wood fragments, wet, loose, trace fine sand below 10.0 ft with 5 mm black coalified wood matter.											
10	455					100		CM/ Sp										
15	450					6	13.3-26.4 ft; Very Fine to Medium Sand, alternating thin beds, with coarse sand, trace gravel, dark gray to brown, 10YR 4/1 to 4/3, 5-10 mm subangular clasts, wet, loose.											
20	445					100												
25	440					100												

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Doug Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 12/11/09
START TIME: 2:55PM 12/10
END TIME: 9:48AM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES:

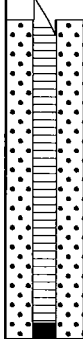
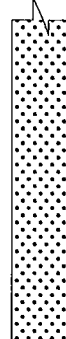
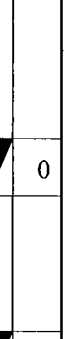
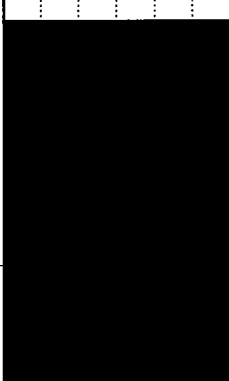
WATER LEVELS: DURING DRILLING 5 FEET
AFTER DRILLING: FEET
DATE:
PIEZOMETER: INSTALLED AT +/- 35.0 FEET
VERTICAL DATUM: NAVD 88
HORIZONTAL DATUM: NAD 83
WEATHER: Cold, 15°F, Partly Cloudy, Calm.

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-160

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-SE-W of Davis Rd, S of LBR
G.S. ELEVATION: 463.70' **T.O.C. ELEVATION:** 466.42'
NORTHING: 991884.45 **EASTING:** 729979.25

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY										
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL	
30	435					0	26.4-36.5 ft; Medium Sand, with fine to coarse sand, trace very fine sand and gravel, alternating thin beds, dark gray, 10YR 4/1, 5-15 mm subrounded and subangular clasts, soft grading to loose, wet, black organic residue below 36.2 ft.	CM/ Sp											
35	430					100		C											
40	425						BORING TERMINATED IN MEDIUM SAND @36.5 FT												
45	420																		
50	415																		
55	410																		

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Doug Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 12/11/09
START TIME: 2:55PM 12/10
END TIME: 9:48AM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES:

WATER LEVELS: DURING DRILLING 5 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 35.0 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cold, 15°F, Partly Cloudy, Calm.

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-162

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-SE-W of Davis Rd, S of LBR
G.S. ELEVATION: 463.28' **T.O.C. ELEVATION:** 465.98'
NORTHING: 991801.20 **EASTING:** 730561.78

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
0	465					55	0.0-0.5 ft; Clayey Silt, very dark grayish brown, 10YR 3/2, slightly plastic, soft, moist, roots.	FB										
5	460						0.5-7.1 ft; Silty Clay, very dark grayish brown, 10YR 3/2, plastic, stiff, moist, many mottles (10YR 4/6) below 2.3 ft, with silt and iron concretions below 5.0 ft.											
10	455					70	6.1-9.3 ft; Clayey Silt, Silty Sand, and Silty Clay, alternating thin beds, wet, soft; clayey silt, dark grayish brown, 10YR 4/2, slightly plastic, iron concretions (10YR 4/6); silty sand, dark brown, 10YR 3/3, iron staining; dark yellowish brown (10YR 4/3) from 7.1-7.2 ft; dark gray, (Gley) 1 4/N below 7.2 ft, plastic; mottles (10YR 4/6) from 7.2-7.5 ft.	CO/ BS										
15	450						9.3-23.3 ft; Fine Sand, with very fine sand, brown, 10YR 4/3, wet, loose; silty clay thin bed from 13.4-13.5 ft, very dark gray, (Gley) 1 3/N, plastic, (clay slough probable in top of 15.0 ft S.S.).	FP/ Lev										
20	445					94												
25	440					100												
						100	23.3-33.2 ft; Very Fine to Medium Sand, alternating thin beds, with coarse sand, trace fine gravel, brown, 10YR 4/3; black coalified matter laminated at 26.4 ft; 10 mm angular											

DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Doug Hunziker

LOGGED BY: T. Doll

DATE DRILLED: 12/10/09

START TIME: 8:25AM

END TIME: 2:18PM

BOREHOLE DIA.: 10.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES:

WATER LEVELS: DURING DRILLING 6.1 FEET
AFTER DRILLING: FEET

DATE:

PIEZOMETER: INSTALLED AT +/- 34.6 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cold, 10°F, Clear Skies, 5 MPH Wind from W.

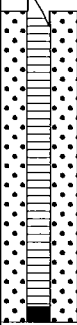


Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-162

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-SE-W of Davis Rd, S of LBR
G.S. ELEVATION: 463.28' **T.O.C. ELEVATION:** 465.98'
NORTHING: 991801.20 **EASTING:** 730561.78

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
30	435					83	clasts below 25.0 ft. 23.3-33.2 ft; Very Fine to Medium Sand, alternating thin beds, with coarse sand, trace fine gravel, brown, 10YR 4/3; black coalified matter laminated at 26.4 ft; 10 mm angular clasts below 25.0 ft.	FP/ Lev										
35	430					100	33.2-36.5 ft; Medium Sand, with coarse sand and gravel, dark gray 10YR 4/1, 5-30 mm subrounded and subangular clasts, wet.	C										
40	425						BORING TERMINATED IN MEDIUM SAND @36.5 FT											
45	420																	
50	415																	
55	410																	

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Doug Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 12/10/09
START TIME: 8:25AM
END TIME: 2:18PM
BOREHOLE DIA.: 10.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES:

WATER LEVELS: DURING DRILLING 6.1 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 34.6 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cold, 10°F, Clear Skies, 5 MPH Wind from W.

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-164

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-SE-W of Davis Rd, S of LBR
G.S. ELEVATION: 463.42' **T.O.C. ELEVATION:** 465.83'
NORTHING: 991871.12 **EASTING:** 731169.33

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
0	465						0.0-0.5 ft; Clayey Silt, very dark grayish brown, 10YR 3/2, slightly plastic, soft, moist, roots.	FB										
5	460					100	0.5-2.3 ft; Silty Clay, very dark grayish brown, 10YR 3/2, plastic, stiff, moist, few faint mottles (10YR 4/6).											
							2.3-3.2 ft; Clayey Silt and Silty Sand, thin beds, brown, 10YR 4/3, moist, soft; silty clay bed below 2.9 ft, plastic, wet.	FP/ Lev										
10	455					40	3.2-5.2 ft; Clayey Silt, brown, 10YR 4/3, slightly plastic, moist, soft, laminated and many mottles (10YR 4/6) below 3.5 ft.											
						72	5.2-13.3 ft; Fine Sand, with very fine sand, dark grayish brown, 10YR 4/2, laminated, iron staining (10YR 4/6), 10 mm thin bed of silty clay at 6.1 ft with prominent iron staining, wet, (fine sand slough in top of 15.0 ft S.S.).											
15	450						13.3-28.3 ft; Silty Sand, dark gray, (Gley) 1 4/ N, laminations of brown wood and black coalified wood matter repeating sequence every 10-22 mm; black (Gley 1 2.5/N) fibrous plant detritus with muscovite mica flakes from 20.5-20.8 ft and 25.6-25.9 ft; very dark gray from 20.8-21.3 and 25.9-26.4 ft, (Gley 1 3/N), laminated, (very fine sand slough probable in top of 20.0 ft S.S.).	CO/ BS										
20	445					89												
						89												
25	440																	
						94												

DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Ryan Hunziker

LOGGED BY: T. Doll

DATE DRILLED: 12/04/09

START TIME: 1:32PM

END TIME: 4:18PM

BOREHOLE DIA.: 10.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES:

WATER LEVELS: DURING DRILLING 5.2 FEET
AFTER DRILLING: FEET

DATE:

PIEZOMETER: INSTALLED AT +/- 34.8 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cold, 30°F, Mostly Sunny, 10 MPH Wind from W.

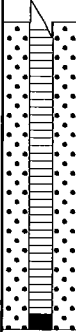
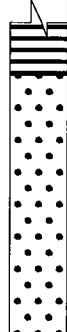
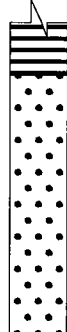

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-164

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-SE-W of Davis Rd, S of LBR
G.S. ELEVATION: 463.42' **T.O.C. ELEVATION:** 465.83'
NORTHING: 991871.12 **EASTING:** 731169.33

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY																								
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL															
30	435					39	28.3-36.5 ft; Medium to Gravelly Sand, alternating thin beds, dark gray (Gley) 1 4/N and 10YR 4/1, 5-30 mm rounded and well-rounded clasts consisting of basalt, quartz and feldspar, wet, loose, (fine sand slough in top of 35.0 ft S.S.).	CO/ BS C																									
35	430					67																											
40	425	BORING TERMINATED IN GRAVELLY SAND @36.5 FT																															
45	420																																
50	415																																
55	410																																

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 12/04/09
START TIME: 1:32PM
END TIME: 4:18PM
BOREHOLE DIA.: 10.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES:

WATER LEVELS: DURING DRILLING 5.2 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 34.8 FEET

VERTICAL DATUM: NAVD 88
HORIZONTAL DATUM: NAD 83

WEATHER: Cold, 30°F, Mostly Sunny, 10 MPH Wind from W.

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-165

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-SW- Adj to Power Lines, S of LBR
G.S. ELEVATION: 464.05' **T.O.C. ELEVATION:** 466.80'
NORTHING: 991660.67 **EASTING:** 727734.64

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
0	465						0.0-0.5 ft; Clayey Silt, very dark gray, 10YR 3/1, slightly plastic, soft, moist.	FB										
						40	0.5-1.8 ft; Silty Clay, very dark gray, 10YR 3/1, plastic, stiff, moist, roots.											
5	460						1.8-5.4 ft; Clayey Silt, dark gray and dark grayish brown, 10YR 4/1 and 4/2, moist, soft, mottles (10YR 4/6).											
						35	5.4-8.4 ft; Sandy Silt, brown, 10YR 4/3, herringbone laminae, muscovite mica flakes, moist, soft, wet below 5.8 ft.											
10	455					67	8.4-20.8 ft; Very Fine Sand, with fine sand, alternating color changes, brown and dark gray, 10YR 4/3 and 4/1; very dark gray (Gley) 1 3/N, 20-30 mm brown wood fragments below 15.4 ft, wet, soft.	FP/ Lev										
15	450					67		CO/ BS										
20	445					78												
							20.8-25.9 ft; Fine to Medium Sand, alternating thin beds, dark gray, 10YR 4/1, 15 mm subangular clasts, wet, alternating loose and soft consistency.	FP/ Lev										
25	440					83												
							25.9-28.3 ft; Coarse Sand, trace medium sand	C										

DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Ryan Hunziker

LOGGED BY: T. Doll

DATE DRILLED: 11/13/09

START TIME: 7:48AM

END TIME: 11:00AM

BOREHOLE DIA.: 10.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES:

WATER LEVELS: DURING DRILLING 5.8 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 34.9 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cold, 40°F, Mostly Cloudy, Mild, Calm.

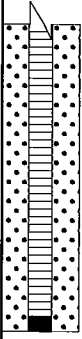

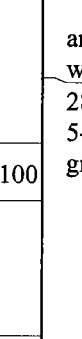
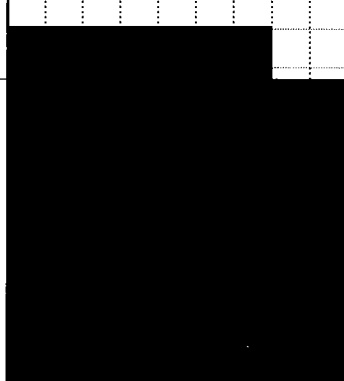
Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-165

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-SW- Adj to Power Lines, S of LBR
G.S. ELEVATION: 464.05' **T.O.C. ELEVATION:** 466.80'
NORTHING: 991660.67 **EASTING:** 727734.64

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
30	435					100	and gravel, 10 mm clasts, dark gray, 10YR 4/1, wet. 28.3-36.5 ft; Gravelly Sand, with medium sand, 5-40 mm subrounded clasts, dark gray and gray, 10YR 4/1 and 5/1, wet.	C										
35	430					78												
40	425						BORING TERMINATED IN GRAVELLY SAND @36.5 FT											
45	420																	
50	415																	
55	410																	

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 11/13/09
START TIME: 7:48AM
END TIME: 11:00AM
BOREHOLE DIA.: 10.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES:

WATER LEVELS: DURING DRILLING 5.8 FEET
AFTER DRILLING: FEET
DATE:
PIEZOMETER: INSTALLED AT +/- 34.9 FEET

VERTICAL DATUM: NAVD 88
HORIZONTAL DATUM: NAD 83
WEATHER: Cold, 40°F, Mostly Cloudy, Mild, Calm.


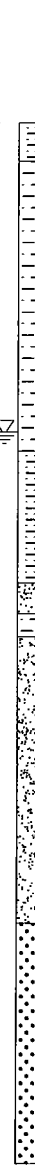
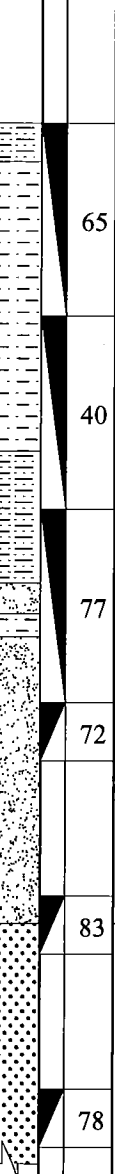
Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-167

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-South-S of LBR, W farm access Rd
G.S. ELEVATION: 463.60' **T.O.C. ELEVATION:** 466.56'
NORTHING: 991646.82 **EASTING:** 728350.01

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
0	465						0.0-1.0 ft; Clayey Silt, dark brown, 10YR 3/3, damp, firm.	FB										
5	460						1.0-4.2 ft; Silty Clay, very dark grayish brown, 10YR 3/2, plastic, stiff, moist; mottles (10YR 4/6) below 2.0 ft; dark yellowish brown, 10YR 3/4, below 3.0 ft.											
							4.2-8.5 ft; Poor recovery, probable Silty Clay slough.											
10	455						8.5-11.9 ft; Clayey Silt, dark gray, 10YR 4/1, wet, soft.	FP/ Lev										
15	450						11.9-12.7 ft; Silty Sand, dark gray, 10YR 4/1, black plant detritus laminated, wet, soft.											
							12.7-13.3 ft; Silty Clay, dark gray, 10YR 4/1, plastic, soft, wet.											
							13.3-18.3 ft; Silty Sand, dark gray, 10YR 4/1, wet, soft, (clay slough probable in top of 15.0 and 20.0 ft S.S.) .											
20	445						20.7-28.3 ft; Medium Sand, trace fine sand and coarse sand, dark gray, 10YR 4/1, wet, loose, coalified wood matter, (fine sand and clay slough probable in top of 25.0 and 30.0 ft S.S.).											
25	440																	

DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Ryan Hunziker

LOGGED BY: T. Doll

DATE DRILLED: 10/05/09

START TIME: 10:23AM 10/5

END TIME: 6:43PM

BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: John Eimer (Ameren) onsite observing field activities.

WATER LEVELS: DURING DRILLING 8 FEET
AFTER DRILLING: FEET

DATE:

PIEZOMETER: INSTALLED AT +/- 35.0 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Warm, 65°F, Clear Skies, Mild, 5-10 MPH Wind from SE.

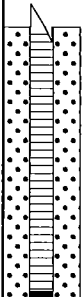
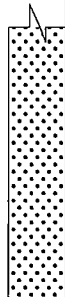
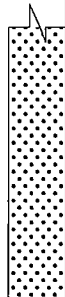
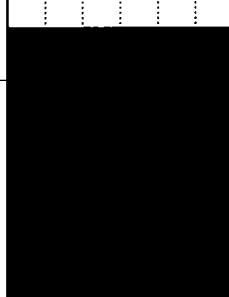
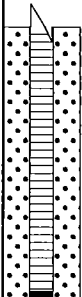
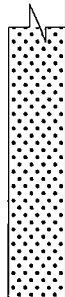
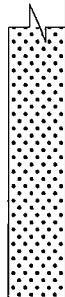
Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-167

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-South-S of LBR, W farm access Rd
G.S. ELEVATION: 463.60' **T.O.C. ELEVATION:** 466.56'
NORTHING: 991646.82 **EASTING:** 728350.01

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
30	435					61	28.3-36.5 ft; Medium Sand grading to Coarse Sand, trace fine sand and gravel, dark gray, 10YR 4/1, clasts subangular to angular, wet, loose, (fine sand and clay slough probable in top of 35.0 ft S.S.).	CM/ Sp										
35	430					83		C										
40	425						BORING TERMINATED IN COARSE SAND @36.5 FT											
45	420																	
50	415																	
55	410																	

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 10/05/09
START TIME: 10:23AM 10/5
END TIME: 6:43PM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES: John Eimer (Ameren) onsite
observing field activities.

WATER LEVELS: DURING DRILLING 8 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 35.0 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Warm, 65°F, Clear Skies, Mild, 5-10 MPH Wind from SE.

Date Printed: 11/9/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-169

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-SE-S of LBR, E of farm access Rd
G.S. ELEVATION: 464.75' **T.O.C. ELEVATION:** 467.42'
NORTHING: 991653.97 **EASTING:** 729053.82

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
0	465					60	0.0-0.8 ft; Silty Clay, very dark grayish brown, 10YR 3/2, slightly plastic, soft, moist, roots.	FB										
							0.8-4.0 ft; Silty Clay, very dark grayish brown, 10YR 3/2, plastic, stiff, moist, few faint mottles (10YR 4/6), becoming stiff and many mottles below 2.1 ft.											
5	460						4.0-10.5 ft; Clayey Silty Sand, brown, 10YR 4/3, laminated, wet, soft; with clay and mottles (10YR 4/6) from 5.3-5.6 ft; herringbone laminae from 5.6-6.3 ft; muscovite mica flakes below 5.6 ft.											
10	455					100	10.5-13.3 ft; Sandy Silt, dark gray, (Gley) 1 4/ N, laminated, muscovite mica flakes, fibrous plant detritus to 11.0 ft, wet, soft.	CO/ BS										
15	450					100	13.3-20.9 ft; Fine Sand, with very fine sand, dark gray, 10YR 4/1, wet, soft.	FP/ Lev										
20	445					100	20.9-23.3 ft; Fine Sand grading to Coarse Sand, with medium sand and very fine sand, trace gravel, thin beds, dark gray, 10YR 4/1, 20 mm subangular clast, wet.											
25	440					100	23.3-33.3 ft; Fine Sand, with very fine sand and medium sand, dark gray, (Gley) 1 4/N and 10YR 4/1, 5-10 mm pieces of coalified wood											

DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Ryan Hunziker

LOGGED BY: T. Doll

DATE DRILLED: 12/02/09

START TIME: 7:45AM

END TIME: 11:44AM

BOREHOLE DIA.: 10.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES:

WATER LEVELS: DURING DRILLING 5 FEET
AFTER DRILLING: FEET

DATE:

PIEZOMETER: INSTALLED AT +/- 35.0 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cold, 35°F, Overcast, Calm.

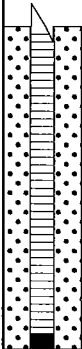

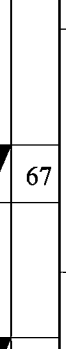
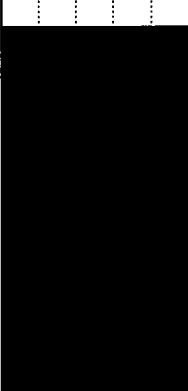
Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-169

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-SE-S of LBR, E of farm access Rd
G.S. ELEVATION: 464.75' **T.O.C. ELEVATION:** 467.42'
NORTHING: 991653.97 **EASTING:** 729053.82

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
30	435					67	matter below 30.3 ft with 5 mm bed of coalified wood matter at 30. 6 ft. 23.3-33.3 ft; Fine Sand, with very fine sand and medium sand, dark gray, (Gley) 1 4/N and 10YR 4/1, 5-10 mm pieces of coalified wood matter below 30.3 ft with 5 mm bed of coalified wood matter at 30. 6 ft.	FP/ Lev										
35	430					72	33.3-36.5 ft; Fine Sand, with very fine sand, trace coarse sand and gravel, 22 mm subangular clast, wet, soft.											
40	425						BORING TERMINATED IN FINE SAND @36.5 FT											
45	420																	
50	415																	
55	410																	

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 12/02/09
START TIME: 7:45AM
END TIME: 11:44AM
BOREHOLE DIA.: 10.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES:

WATER LEVELS: DURING DRILLING 5 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 35.0 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cold, 35°F, Overcast, Calm.

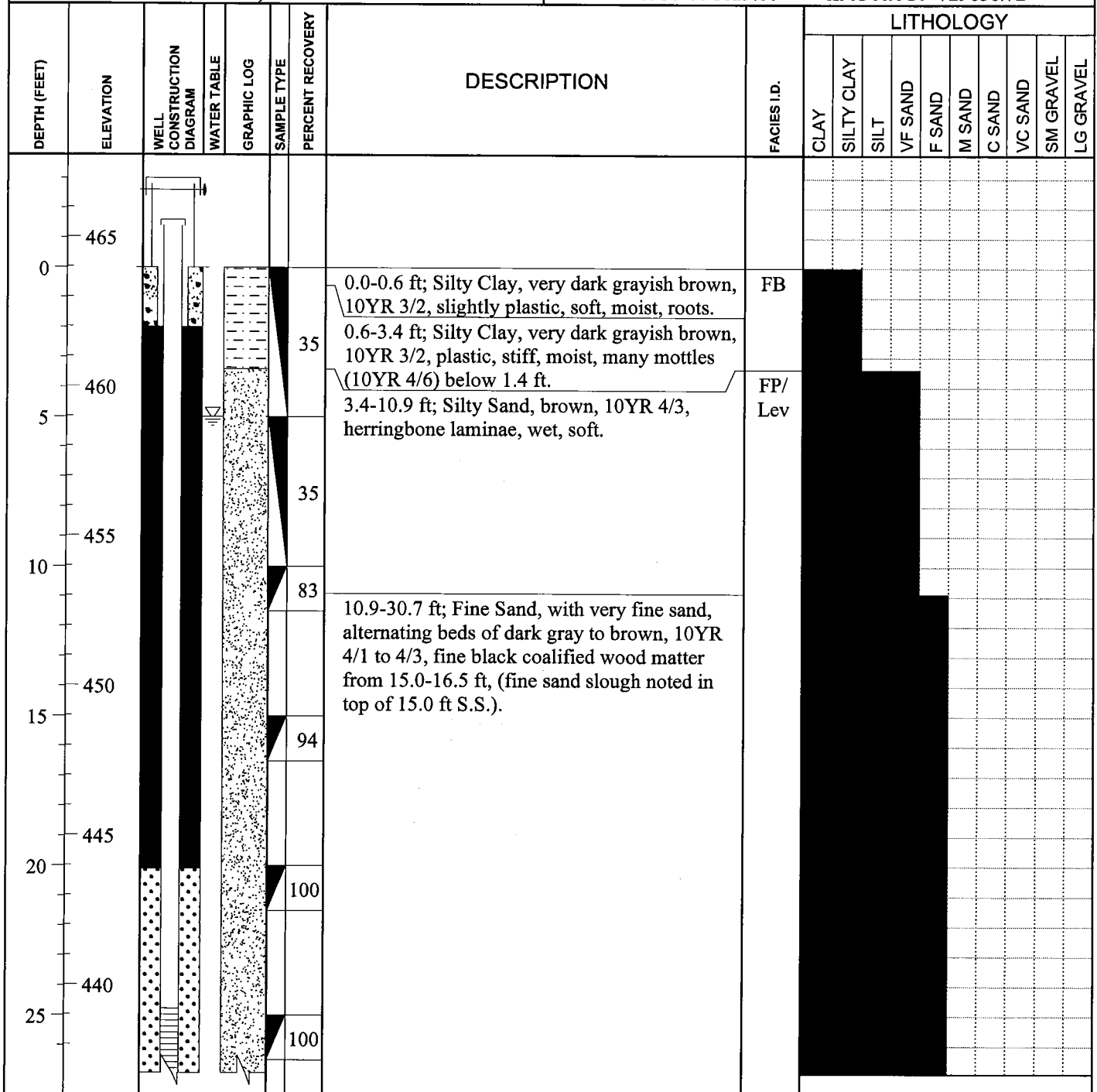
Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-171

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-South Central-E of farm access Rd
G.S. ELEVATION: 463.97' **T.O.C. ELEVATION:** 466.87'
NORTHING: 991629.80 **EASTING:** 729636.72



Date Printed: 11/8/2010

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 12/02/09
START TIME: 12:05PM
END TIME: 2:22PM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES:

WATER LEVELS: DURING DRILLING 5 FEET
AFTER DRILLING: FEET
DATE:
PIEZOMETER: INSTALLED AT +/- 35.0 FEET

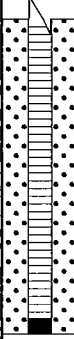
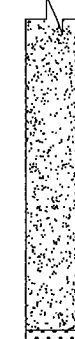

VERTICAL DATUM: NAVD 88
HORIZONTAL DATUM: NAD 83
WEATHER: Cold, 40°F, Overcast, 10-20 MPH Wind from N.

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-171

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-South Central-E of farm access Rd
G.S. ELEVATION: 463.97' **T.O.C. ELEVATION:** 466.87'
NORTHING: 991629.80 **EASTING:** 729636.72

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
30	435					61	10.9-30.7 ft; Fine Sand, with very fine sand, alternating beds of dark gray to brown, 10YR 4/1 to 4/3, fine black coalified wood matter from 15.0-16.5 ft, (fine sand slough noted in top of 15.0 ft S.S.).	FP/ Lev										
35	430						30.7-35.8 ft; Fine to Medium Sand, trace coarse sand, dark gray, 10YR 4/1, wet, soft, black coalified wood matter from 30.7-30.9 ft.											
40	425					78	35.8-36.5 ft; Coarse Sand, with medium sand, trace fine sand and gravel, dark gray, 10YR 4/1, 5 mm subrounded and subangular clasts, wet, loose.	C										
45	420						BORING TERMINATED IN COARSE SAND @36.5 FT											
50	415																	
55	410																	

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 12/02/09
START TIME: 12:05PM
END TIME: 2:22PM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES:

WATER LEVELS: DURING DRILLING 5 FEET
AFTER DRILLING: FEET
DATE:
PIEZOMETER: INSTALLED AT +/- 35.0 FEET
VERTICAL DATUM: NAVD 88
HORIZONTAL DATUM: NAD 83
WEATHER: Cold, 40°F, Overcast, 10-20 MPH Wind from N.

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-173

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Corn Field-Newman-SE Project Area
G.S. ELEVATION: 463.40' **T.O.C. ELEVATION:** 466.33'
NORTHING: 991592.90 **EASTING:** 730278.01

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
0	465						0-3.0 ft; Poor sample recovery, possible clay and silty clay.	FB										
3	460					40	3.0-3.9 ft; Clay, dark brown, plastic, stiff.											
4							3.9-4.2 ft; Silt, light olive gray, 5Y 6/1.											
5							4.2-7.4 ft; Silty Clay and Clayey Silt, alternating thin beds grading downward into clay, pale yellowish brown, moist.											
7						52	7.4-9.7 ft; Very Fine Sand, Silt and Clay, alternating very thin beds, pale yellowish brown, 10YR 6/2, saturated below 7.8 ft, sharp contact with below.											
10						67	9.7-10.0 ft; As above, but very dark gray (Gley) 1 3/N with common black carbonaceous fragments.	FP/ Lev										
13							10.0-15.8 ft; Fine Sand, grayish orange, 10YR 7/4, moderately sorted with sparse to common medium to coarse sand and granules, sharp contact with below.											
16						100	15.8-17.5 ft; Very Fine to Fine Sand, very dark gray (Gley) 1 3/1.											
19							17.5-27.5 ft; Fine to Medium Sand, very dark gray (Gley) 1 3/N, common small gravel (granules) (fine sand slough in top of S.S.).	CO/ BS										
22						100												
25						100												

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Doug Hunziker
LOGGED BY: M. Carlson
DATE DRILLED: 12/12/09
START TIME: 7:30AM
END TIME: 11:27AM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES:

WATER LEVELS: DURING DRILLING 7.8 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 35.0 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cold, 30°F, Partly Cloudy.

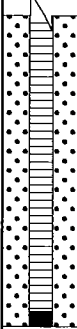

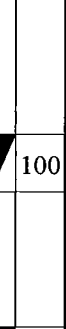
Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-173

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Corn Field-Newman-SE Project Area
G.S. ELEVATION: 463.40' **T.O.C. ELEVATION:** 466.33'
NORTHING: 991592.90 **EASTING:** 730278.01

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
30	435					100	27.5-32.5 ft; Very Fine to Fine Sand, dark gray (Gley) 1 3/N, trace carbonized wood fragments.	CO/ BS										
35	430					100	32.5-36.5 ft; Fine to Medium Sand, dark gray (Gley) 1 3/N, base marked by large (>30 mm) angular limestone fragment (fine sand slough in top of S.S.).											
40	425						BORING TERMINATED IN MEDIUM SAND @36.5 FT											
45	420																	
50	415																	
55	410																	

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Doug Hunziker
LOGGED BY: M. Carlson
DATE DRILLED: 12/12/09
START TIME: 7:30AM
END TIME: 11:27AM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES:

WATER LEVELS: DURING DRILLING 7.8 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 35.0 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cold, 30°F, Partly Cloudy.

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-175

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-Southeast- W of Davis Rd, S of LBR
G.S. ELEVATION: 463.57' **T.O.C. ELEVATION:** 466.06'
NORTHING: 991556.51 **EASTING:** 730873.59

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
0	465					35	0.0-0.8 ft; Clayey Silt, very dark grayish brown, 10YR 3/2, slightly plastic, soft, moist, roots.	FB																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Doug Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 12/15/09
START TIME: 8:54AM
END TIME: 1:40PM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: M. Carlson and F. Phillips (Gredell) onsite aquifer testing piezometers.

WATER LEVELS: DURING DRILLING 5 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 35.0 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

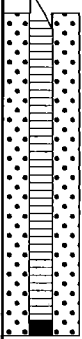


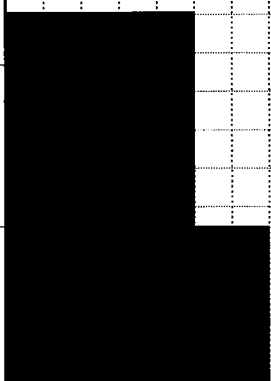
WEATHER: Cold, 20°F, Partly Cloudy, 5-10 MPH Wind from N.

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-175

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-Southeast- W of Davis Rd, S of LBR
G.S. ELEVATION: 463.57' **T.O.C. ELEVATION:** 466.06'
NORTHING: 991556.51 **EASTING:** 730873.59

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES ID.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
30	435					78	28.3-35.9 ft; Fine Sand, with very fine sand, trace medium and coarse sand, dark grayish brown, 10YR 4/2, wet, soft.	FP/ Lev										
35	430					83	35.9-36.5 ft; Coarse Sand, with medium sand, trace gravel, dark gray, 10YR 4/1, 5-25 mm subrounded and subangular clasts, clay balls (plastic, dark brown, 10YR 3/3).	C										
40	425						BORING TERMINATED IN COARSE SAND @36.5 FT											
45	420						SHELBY TUBE SAMPLE COLLECTED AT 1.0-3.0 FT DEPTH AT COMPLETION OF DRILLING.											
50	415																	
55	410																	

DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Doug Hunziker

LOGGED BY: T. Doll

DATE DRILLED: 12/15/09

START TIME: 8:54AM

END TIME: 1:40PM

BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: M. Carlson and F. Phillips (Gredell) onsite aquifer testing piezometers.

WATER LEVELS: DURING DRILLING 5 FEET
AFTER DRILLING: FEET

DATE:

PIEZOMETER: INSTALLED AT +/- 35.0 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cold, 20°F, Partly Cloudy, 5-10 MPH Wind from N.

Date Printed: 11/17/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-177

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Bean Field-Heisel-SW Project Area

G.S. ELEVATION: 464.07' **T.O.C. ELEVATION:** 466.87'

NORTHING: 991336.76

EASTING: 728049.81

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
0	465					100	0-3.3 ft; Clay, olive gray, 5Y 4/1, plastic, stiff.	FB										
5	460						3.3-5.1 ft; Silty Clay, light olive gray, 5Y 6/1, slightly plastic, soft, saturated below 4 feet.											
10	455						5.1-8.1 ft; Silt, Clayey Silt, and Clay, alternating very thin beds to laminated, pale yellowish brown, 10YR 6/2, gradational contact with below.											
15	450						8.1-12.5 ft; Silt and Clay, alternating thin beds, very dark gray (Gley) 1 3/N, clay very plastic, sharp contact with below.											
20	445						12.5-13.5 ft; Very Fine Sand, very dark gray (Gley) 1 3/N, silty, faint laminae.											
25	440						13.5-22.5 ft; Very Fine to Fine Sand, very dark gray (Gley) 1 3/N, well sorted.											
						83	22.5-27.5 ft; Medium Sand, grayish orange, 10YR 7/4, common gravel 2-10 mm dia. (fine sand slough in top of S.S.).	CM/ Sp										
						83												

DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Doug Hunziker

LOGGED BY: M. Carlson

DATE DRILLED: 11/13/09

START TIME: 1:05PM

END TIME: 4:30PM

BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES:

WATER LEVELS:

DURING DRILLING 4 FEET

AFTER DRILLING: FEET

DATE:

PIEZOMETER:

INSTALLED AT +/- 34.6 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Warm, 60°F, Mostly Sunny, Mild, 5 MPH Wind from S.

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-177

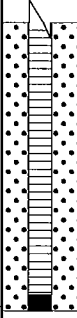


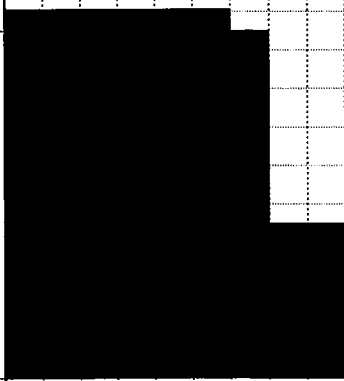
**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Bean Field-Heisel-SW Project Area

G.S. ELEVATION: 464.07' **T.O.C. ELEVATION:** 466.87'

NORTHING: 991336.76

EASTING: 728049.81

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
30	435					100	27.5-36.5 ft; Coarse Sand grading to Gravelly Sand, grayish orange, 10YR 7/4, pebbles up to 20 mm dia, (fine sand slough in top of S.S.).	C										
35	430					100												
40	425						BORING TERMINATED IN GRAVELLY SAND @36.5 FT											
45	420						SHELBY TUBE SAMPLE COLLECTED AT 2.0-4.0 FT DEPTH AT COMPLETION OF DRILLING.											
50	415																	
55	410																	

DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Doug Hunziker

LOGGED BY: M. Carlson

DATE DRILLED: 11/13/09

START TIME: 1:05PM

END TIME: 4:30PM

BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES:

WATER LEVELS: DURING DRILLING 4 FEET

AFTER DRILLING: FEET

DATE:

PIEZOMETER: INSTALLED AT +/- 34.6 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Warm, 60°F, Mostly Sunny, Mild, 5 MPH Wind from S.

Date Printed: 11/17/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-179

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-Southwest-Adj to farm access Rd
G.S. ELEVATION: 464.19' **T.O.C. ELEVATION:** 466.93'
NORTHING: 991350.86 **EASTING:** 728780.92

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
0	465						0.0-0.7 ft; Silty Clay, very dark grayish brown, 10YR 3/2, slightly plastic, soft, moist, roots.	FB										
						75	0.7-4.4 ft; Silty Clay, very dark grayish brown, 10YR 3/2, plastic, stiff, moist, few faint mottles, (10YR 4/6); brown, 10YR 4/3, and many mottles below 2.9 ft.											
5	460						4.4-7.9 ft; Poor recovery, probable Silty Clay slough.											
						95	7.9-9.8 ft; Clayey Silt and Clayey Sandy Silt; thin beds, dark grayish brown and dark gray, 10YR 4/1 and 4/2, many mottles (10YR 4/6), laminated, herringbone laminae and iron staining below 8.2 ft	FP/ Lev										
10	455						9.8-21.5 ft; Very Fine to Fine Sand, thin beds, wet; brown, 10YR 4/3 to 11.7 ft, loose; with clay below 12.2 ft, dark gray, (Gley) 1 4/N, plastic, soft, herringbone laminae, soft; without clay below 12.2 ft; dark gray (Gley) 1 4/N to 14.0 ft; dark gray, 10YR 4/1 below 15.0 ft.	CO/ BS										
15	450					100		FP/ Lev										
20	445					100												
25	440					100	21.5-31.1 ft; Fine Sand, with medium to coarse sand and gravel, alternating thin beds, dark gray, 10YR 4/1, alternating thin beds of coalified wood matter from 25.6-26.5 ft; clay balls (dark gray, Gley 1 4/N, plastic) from 30.8-31.1 ft, wet, loose to soft.											

Date Printed: 11/8/2010

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 12/03/09
START TIME: 8:32AM
END TIME: 11:04AM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES: S. King (Gredell) onsite
developing piezometers.

WATER LEVELS: DURING DRILLING 8.2 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 34.9 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

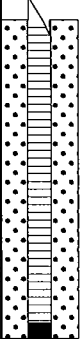


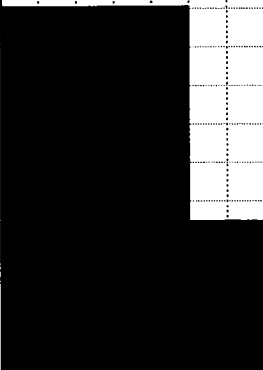
WEATHER: Cold, 30°F, Overcast, Calm.

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-179

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-Southwest-Adj to farm access Rd
G.S. ELEVATION: 464.19' **T.O.C. ELEVATION:** 466.93'
NORTHING: 991350.86 **EASTING:** 728780.92

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
30	435					100	21.5-31.1 ft; Fine Sand, with medium to coarse sand and gravel, alternating thin beds, dark gray, 10YR 4/1, alternating thin beds of coalified wood matter from 25.6-26.5 ft; clay balls (dark gray, Gley 1 4/N, plastic) from 30.8-31.1 ft, wet, loose to soft.	FP/Lev										
35	430					100	31.1-36.5 ft; Coarse Sand, with fine to medium sand and gravel, trace very fine sand, dark gray, 10YR 4/1 wet, loose, 20-30 mm subrounded quartz clasts.	C										
40	425						BORING TERMINATED IN COARSE SAND @36.5 FT											
45	420																	
50	415																	
55	410																	

DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Ryan Hunziker

LOGGED BY: T. Doll

DATE DRILLED: 12/03/09

START TIME: 8:32AM

END TIME: 11:04AM

BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES: S. King (Gredell) onsite
developing piezometers.

WATER LEVELS: DURING DRILLING 8.2 FEET
AFTER DRILLING: FEET

DATE:

PIEZOMETER: INSTALLED AT +/- 34.9 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cold, 30°F, Overcast, Calm.

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-181

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-Southwest-E of farm access Rd
G.S. ELEVATION: 464.42' **T.O.C. ELEVATION:** 467.35'
NORTHING: 991334.49 **EASTING:** 729380.23

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
0	465					60	0.0-0.6 ft; Clayey Silt, very dark grayish brown, 10YR 3/2, slightly plastic, soft, moist, roots.	FB										
							0.6-4.0 ft; Silty Clay, very dark grayish brown, 10YR 3/2, plastic, stiff, moist, few faint mottles (10YR 4/6), dark brown, 10YR 3/3, below 2.6 ft, soft grading to stiff, many mottles.											
5	460						4.0-6.7 ft; Sandy Clayey Silt and Sandy Silt, thin beds, brown, 10YR 4/3, wet, soft, non-plastic, laminated below 5.3 ft.											
						50	6.7-18.3 ft; Silty Sand, dark grayish brown, 10YR 4/2, laminated, wet, soft; black fibrous plant detritus from 10.6-10.8 ft; black coalified wood matter and muscovite mica flakes from 10.8-11.8 ft; dark gray below 11.8 ft, (Gley) 1 4/N, interbeds of black coalified wood matter and muscovite mica flakes.	FP/ Lev										
10	455																	
						95		CO/ BS										
15	450																	
20	445					100	18.3-35.8 ft; Very Fine Sand, Fine Sand, Medium Sand, and Coarse Sand, alternating thin beds, with gravel, very dark gray and dark gray, (Gley 1 3/N) and 10YR 4/1, fine coalified wood matter and wood fragments, 5-20 mm subrounded and subangular clasts, wet, loose grading to soft, clay balls (brown, 10YR 3/3, plastic) at 35.5 ft.											
25	440																	
						94		C										

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 12/03/09
START TIME: 11:31AM
END TIME: 2:14PM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: S. King (Gredell) onsite developing piezometers.

WATER LEVELS: DURING DRILLING 5 FEET
AFTER DRILLING: FEET
DATE:
PIEZOMETER: INSTALLED AT +/- 34.7 FEET

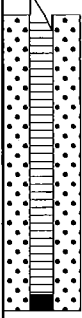

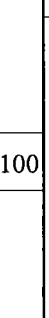
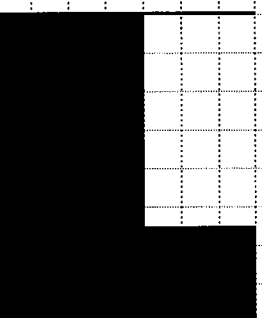
VERTICAL DATUM: NAVD 88
HORIZONTAL DATUM: NAD 83
WEATHER: Cold, 35°F, Mostly Sunny, 10-15 MPH Wind from SW.

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-181

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-Southwest-E of farm access Rd
G.S. ELEVATION: 464.42' **T.O.C. ELEVATION:** 467.35'
NORTHING: 991334.49 **EASTING:** 729380.23

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
30	435					100	18.3-35.8 ft; Very Fine Sand, Fine Sand, Medium Sand, and Coarse Sand, alternating thin beds, with gravel, very dark gray and dark gray, (Gley 1 3/N) and 10YR 4/1, fine coalified wood matter and wood fragments, 5-20 mm subrounded and subangular clasts, wet, loose grading to soft, clay balls (brown, 10YR 3/3, plastic) at 35.5 ft.	CM/ Sp										
35	430							C										
40	425					78	35.8-36.5 ft; Fine Sand, with very fine sand, trace medium sand, black organic material (Gley 1 2.5/N) and muscovite mica flakes below 35.8 ft. BORING TERMINATED IN FINE SAND @36.5 FT SHELBY TUBE SAMPLE COLLECTED AT 1.0-3.0 FT DEPTH AT COMPLETION OF DRILLING.	CO/ BS										
45	420																	
50	415																	
55	410																	

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 12/03/09
START TIME: 11:31AM
END TIME: 2:14PM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: S. King (Gredell) onsite developing piezometers.

WATER LEVELS: DURING DRILLING 5 FEET
AFTER DRILLING: FEET
DATE:
PIEZOMETER: INSTALLED AT +/- 34.7 FEET

VERTICAL DATUM: NAVD 88
HORIZONTAL DATUM: NAD 83
WEATHER: Cold, 35°F, Mostly Sunny, 10-15 MPH Wind from SW.

Date Printed: 11/17/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-183

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-Southeast-W of Davis Rd, S of LBR
G.S. ELEVATION: 463.40' **T.O.C. ELEVATION:** 465.96'
NORTHING: 991309.56 **EASTING:** 729980.89

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
0	465						0.0-0.5 ft; Clayey Silt, very dark grayish brown, 10YR 3/2, slightly plastic, soft, moist, roots.	FB										
5	460					75	0.5-2.5 ft; Silty Clay, very dark grayish brown, 10YR 3/2, plastic, stiff, moist, roots, few faint mottles (10YR 4/6), many mottles below 1.8 ft.											
							2.5-3.8 ft; Silty Clay, very dark grayish brown, 10YR 3/2, highly plastic, stiff, moist.											
						80	3.8-6.7 ft; Silty Clay, dark grayish brown, 10YR 4/2, plastic, stiff, moist, many mottles (10YR 4/6), iron concretions (10YR 4/6) below 5.3 ft.	FP/ Lev										
10	455						6.7-7.8 ft; Clayey Silt and Silty Clay, thin beds, dark gray and dark grayish brown, 10YR 4/2, moist, soft; slightly plastic, common mottles (10YR 4/6) and muscovite mica flakes to 7.2 ft; plastic and iron concretions (10YR 4/6) below 7.2 ft.											
						85												
15	450						7.8-26.2 ft; Very Fine to Fine Sand, thin beds, trace medium and coarse sand, dark gray to dark yellowish brown, 10YR 4/1 to 4/4, wet, loose grading to soft, trace fine black coalified wood matter.											
						17												
20	445																	
						100												
25	440						26.2-36.5 ft; Very Fine Sand, Fine Sand, and											
						100												

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 12/11/09
START TIME: 10:25AM
END TIME: 1:14PM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES:

WATER LEVELS: DURING DRILLING 7.8 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 35.2 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cold, 15°F, Partly Cloudy, Calm.

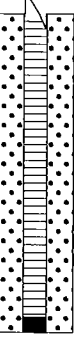


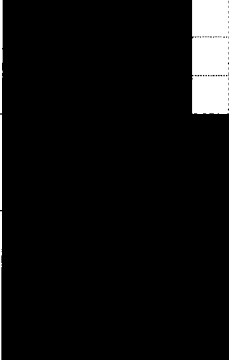
Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-183

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-Southeast-W of Davis Rd, S of LBR
G.S. ELEVATION: 463.40' **T.O.C. ELEVATION:** 465.96'
NORTHING: 991309.56 **EASTING:** 729980.89

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
30	435					100	Medium Sand, alternating thin beds, with coarse sand, trace gravel, dark gray, 10YR 4/1, 5-20 mm subangular clasts, black coalified wood matter and trace clay balls (brown, 10YR 3/3, plastic), wet, soft.	FP/ Lev										
								CM/ Sp										
35	430					100		FP/ Lev										
40	425						BORING TERMINATED IN FINE SAND @36.5 FT											
45	420																	
50	415																	
55	410																	

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 12/11/09
START TIME: 10:25AM
END TIME: 1:14PM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES:

WATER LEVELS: DURING DRILLING 7.8 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 35.2 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cold, 15°F, Partly Cloudy, Calm.

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-185

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-Southeast-W of Davis Rd, S of LBR
G.S. ELEVATION: 463.75' **T.O.C. ELEVATION:** 466.26'
NORTHING: 991289.70 **EASTING:** 730564.03

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
0	463						0.0-0.5 ft; Silty Clay, dark brown, 10YR 3/3, plastic, soft, moist.	FB										
						40	0.5-3.5 ft; Silty Clay, dark brown, 10YR 3/3, plastic, stiff, moist, mottles common (10YR 4/6).											
5	460						3.5-5.9 ft; Poor recovery, probable Silty Clay slough.											
						65	5.9-6.6 ft; Sandy Silt, brown, 10YR 4/3, laminated, wet, soft.	FP/										
10	455					100	6.6-36.5 ft; Very Fine Sand, with fine sand, laminated, wet, soft; brown to 15.7 ft, 10YR 4/3; dark gray and dark grayish brown, 10YR 4/1 and 4/2, below 15.7 ft; trace clay and coarse sand from 11.0-11.1 ft; 35 mm rounded coalified wood fragment at 15.6 ft; trace medium sand and coarse sand from 20.0-21.5 ft.	Lev										
15	450					94												
20	445					100												
25	440					94												

Date Printed: 11/8/2010

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Doug Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 12/15/09
START TIME: 2:58PM
END TIME: 5:34PM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: Chris Vierrether, MDNR, onsite observing drilling activities.

WATER LEVELS: DURING DRILLING 5.9 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 35.1 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

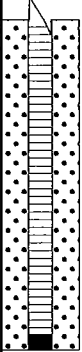


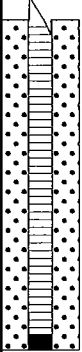


WEATHER: Cold, 20°F, Partly Cloudy, 5-10 MPH Wind from N.

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-185

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-Southeast-W of Davis Rd, S of LBR
G.S. ELEVATION: 463.75' **T.O.C. ELEVATION:** 466.26'
NORTHING: 991289.70 **EASTING:** 730564.03

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES ID.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
30	435					72	6.6-36.5 ft; Very Fine Sand, with fine sand, laminated, wet, soft; brown to 15.7 ft, 10YR 4/3; dark gray and dark grayish brown, 10YR 4/1 and 4/2, below 15.7 ft; trace clay and coarse sand from 11.0-11.1 ft; 35 mm rounded coalified wood fragment at 15.6 ft; trace medium sand and coarse sand from 20.0-21.5 ft.	FP/ Lev										
35	430					100												
40	425						BORING TERMINATED IN VERY FINE SAND @36.5 FT											
45	420																	
50	415																	
55	410																	

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Doug Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 12/15/09
START TIME: 2:58PM
END TIME: 5:34PM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES: Chris Vierrether, MDNR,
onsite observing drilling
activities.

WATER LEVELS: DURING DRILLING 5.9 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 35.1 FEET

VERTICAL DATUM: NAVD 88
HORIZONTAL DATUM: NAD 83
WEATHER: Cold, 20°F, Partly Cloudy, 5-10 MPH Wind from N.

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-187

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-SE-Adj to Davis Rd, S of LBR
G.S. ELEVATION: 462.85' **T.O.C. ELEVATION:** 465.67'
NORTHING: 991308.51 **EASTING:** 731386.11

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
465																		
0							0.0-0.5 ft; Silty Sand, dark brown, 10YR 3/3, wet, soft.	FB										
460						40	0.5-3.5 ft; Silty Clay, very dark grayish brown, 10YR 3/2, plastic, stiff, moist, mixture of dark grayish brown (10YR 4/2) below 5.0 ft.											
5							3.5-7.5; Poor recovery, probable Silty Clay and Fine Sand slough.											
455						100	7.5-10.0 ft; Silty Clay, thin beds, dark gray and dark grayish brown, 10YR 4/1 and 4/2, mottles (10YR 4/6) to 8.3 ft, highly plastic; laminated from 8.3-8.6 ft; iron concretions and vertical staining (10YR 4/6) below 8.6 ft; dark gray, (Gley) 1 4/N, below 9.1 ft.	CO/ BS										
10						80	10.0-15.4 ft; Clayey Silt, Clayey Sandy Silt and Silty Clay, alternating thin beds, dark gray, (Gley) 1 4/N, wet, soft, laminated below 10.5 ft; clayey silt, slightly plastic, (clay slough probable in top of 15.0 ft S.S.).											
450						50	15.4-36.5 ft; Very Fine to Fine Sand, alternating thin beds, dark gray, (Gley) 1 4/N, wet, loose to soft, 30 mm x 15 mm wood fragments, (clay slough in top of 30.0 and 35.0 ft S.S.).											
15																		
445						67												
20																		
440																		
25						78												

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 10/28/09
START TIME: 9:09AM
END TIME: 11:41AM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: Chris Vierrether (MDNR), M. Carlson and F. Phillips (Gredell) onsite.

WATER LEVELS: DURING DRILLING 10 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 35.1 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cold, 50°F, Overcast, Drizzle, Calm.

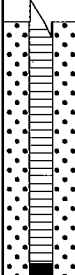


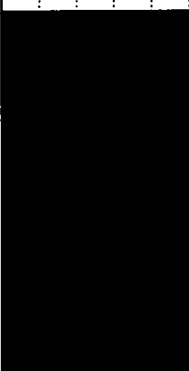
Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-187

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-SE-Adj to Davis Rd, S of LBR
G.S. ELEVATION: 462.85' **T.O.C. ELEVATION:** 465.67'
NORTHING: 991308.51 **EASTING:** 731386.11

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY											
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL		
30	435					56	15.4-36.5 ft; Very Fine to Fine Sand, alternating thin beds, dark gray, (Gley) 1 4/N, wet, loose to soft, 30 mm x 15 mm wood fragments, (clay slough in top of 30.0 and 35.0 ft S.S.).	CO/ BS												
35	430					100														
40	425																			
45	420						BORING TERMINATED IN VERY FINE SAND @36.5 FT													
50	415																			
55	410																			

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 10/28/09
START TIME: 9:09AM
END TIME: 11:41AM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: Chris Vierrether (MDNR), M. Carlson and F. Phillips (Gredell) onsite.

WATER LEVELS: DURING DRILLING 10 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 35.1 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cold, 50°F, Overcast, Drizzle, Calm.

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-189

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-SW-S of LBR, W of farm access Rd

G.S. ELEVATION: 464.91' **T.O.C. ELEVATION:** 467.93'

NORTHING: 991059.00

EASTING: 728325.94

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
0	465						0.0-0.5 ft; Clayey Silt, dark brown, 10YR 3/3, wet, soft.	FB										
							0.5-1.0 ft; Silty Clay, very dark grayish brown, 10YR 3/3, plastic, soft, wet.											
							1.0-1.3 ft; Clayey Silt, dark grayish brown, 10YR 4/2, wet, soft, mottles (10YR 4/6 and 4/1).											
							1.3-2.8 ft; Clayey Silty Sand, dark grayish brown, 10YR 4/2, silt and clay interbeds <1 inch thick, wet, soft.											
5	460						2.8-6.5 ft; Sandy Silt, dark grayish brown, 10YR 4/2, laminated, wet, soft, mottles (10YR 4/6); thin clay bed below 6.3 ft, plastic.	CO/ BS										
10	455						6.5-11.4 ft; Sandy Silt, dark grayish brown, 10YR 4/2, laminated, wet, soft; dark gray, 10YR 4/1, below 7.5 ft; very dark gray, (Gley) 1 3/N, below 10.0 ft.											
15	450						11.4-13.0 ft; Clayey Silt, very dark gray, (Gley) 1 3/N, slightly plastic, laminated, clay and silt interbeds <1 inch thick, wet, soft.											
							13.0-14.2 ft; Silty Clay and Silty Sand, thin beds, very dark gray, (Gley) 1 3/N, wet, soft; silty clay beds, highly plastic, black mottles (Gley 1 2.5/N) below 13.8.	FP/ Lev										
20	445						14.2-26.2 ft; Fine Sand, trace very fine sand, very dark gray, (Gley) 1 3/N, wet, soft; dark gray, 10YR 4/1, below 16.5 ft.											
25	440						26.2-36.5 ft; Medium Sand and Coarse Sand,	C										

DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Ryan Hunziker

LOGGED BY: T. Doll

DATE DRILLED: 10/12/09

START TIME: 4:32AM

END TIME: 7:00PM

BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: S. King (Gredell) onsite developing piezometers.

WATER LEVELS:

DURING DRILLING 5 FEET

AFTER DRILLING: FEET

DATE:

PIEZOMETER:

INSTALLED AT +/- 34.8 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cool, 50°F, Overcast, Mild, 5 MPH Wind from E.

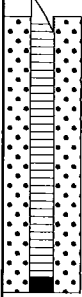
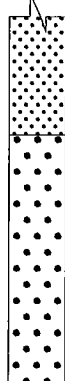
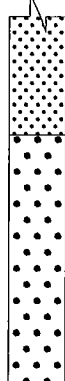
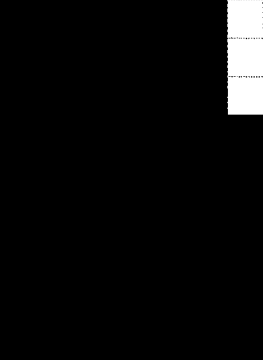
Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-189

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Heisel-SW-S of LBR, W of farm access Rd
G.S. ELEVATION: 464.91' **T.O.C. ELEVATION:** 467.93'
NORTHING: 991059.00 **EASTING:** 728325.94

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
30	435					100	thin beds, trace fine sand and gravel, dark gray, 10YR 4/1, subrounded clasts, wet, loose, (fine sand and clay slough probable in top of 30.0 and 35.0 ft S.S.).	C										
35	430					100												
40	425						BORING TERMINATED IN COARSE SAND @36.5 FT											
45	420																	
50	415																	
55	410																	

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 10/12/09
START TIME: 4:32AM
END TIME: 7:00PM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: S. King (Gredell) onsite developing piezometers.

WATER LEVELS: DURING DRILLING 5 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 34.8 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cool, 50°F, Overcast, Mild, 5 MPH Wind from E.

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-191

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-SW-E of farm access Rd, S of LBR
G.S. ELEVATION: 464.41 **T.O.C. ELEVATION:** 467.10'
NORTHING: 991032.57 **EASTING:** 729099.94

NORTHING: 951052.97										EASTING: 129099.94										
DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY											
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL		
0	465						0.0-0.8 ft; Clayey Silt, very dark grayish brown, 10YR 3/2, moist, soft, roots.	FB												
						65	0.8-4.2 ft; Silty Clay, very dark grayish brown, 10YR 3/2, stiff, moist, few faint mottles (10YR 4/6); dark grayish brown, 10YR 4/2, below 2.6 ft, soft grading to stiff, many mottles; highly plastic below 6.8 ft, very stiff, few mottles.													
5	460						4.2-7.8 ft; Poor recovery, probable Silty Clay slough.													
						60	7.8-9.0 ft; Sandy Clayey Silt, dark gray, 10YR 4/1, laminated, iron staining (10YR 4/6), wet, soft.	FP/ Lev												
10	455						9.0-13.5 ft; Silty Sand and Fine Sand, dark gray and dark grayish brown, 10YR 4/1 and 4/2, iron staining (10YR 4/6), wet, loose, iron concretions below 12.9 ft.													
						100	13.5-15.0 ft; Silty Clay, Sandy Silt, and Silty Sand, alternating thin beds, dark gray, (Gley) 1 4/N, wet, soft; silty clay bed, plastic, mottles (Gley 1 2.5/N); sandy silt bed, laminated; silty sand bed, black coalified wood matter and wood fragments.	CO/ BS												
15	450						15.0-20.4 ft; Fine Sand, trace very fine sand, dark gray, 10YR 4/1, wet, soft.	FP/ Lev												
						100	20.4-28.3 ft; Medium to Coarse Sand, alternating thin beds, trace gravel, dark gray, 10YR 4/1, wet, loose to soft, 5-20 mm subangular and subrounded clasts, (clay slough probable in top of 25.0 ft S.S.).	C												
20	445																			
						100														
25	440																			
						100														

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 12/03/09
START TIME: 3:00PM
END TIME: 5:07PM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: S. King (Gredell) onsite developing piezometers.

WATER LEVELS: DURING DRILLING 7.8 FEET
AFTER DRILLING: FEET
DATE:
PIEZOMETER: INSTALLED AT +/- 34.8 FEET

VERTICAL DATUM: NAVD 88
HORIZONTAL DATUM: NAD 83
WEATHER: Cold, 35°F, Mostly Sunny, 10-15 MPH Wind from SW.

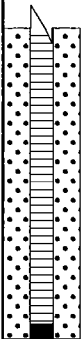
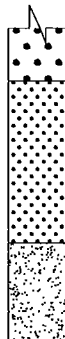
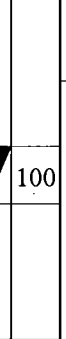
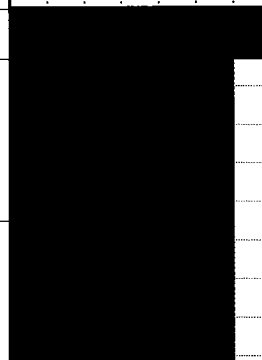
Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-191

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-SW-E of farm access Rd, S of LBR
G.S. ELEVATION: 464.41 **T.O.C. ELEVATION:** 467.10'
NORTHING: 991032.57 **EASTING:** 729099.94

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
30	435					100	28.3-36.5 ft; Fine to Medium Sand, alternating thin beds, trace coarse sand and gravel, dark gray, 10YR 4/1, wet, loose to soft, 5-20 mm subrounded clasts, 10 mm coalified wood matter below 30.9 ft.	C										
35	430					100		CM/ Sp FP/ Lev										
40	425						BORING TERMINATED IN FINE SAND @36.5 FT											
45	420																	
50	415																	
55	410																	

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 12/03/09
START TIME: 3:00PM
END TIME: 5:07PM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES: S. King (Gredell) onsite
developing piezometers.

WATER LEVELS: DURING DRILLING 7.8 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 34.8 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cold, 35°F, Mostly Sunny, 10-15 MPH Wind from SW.

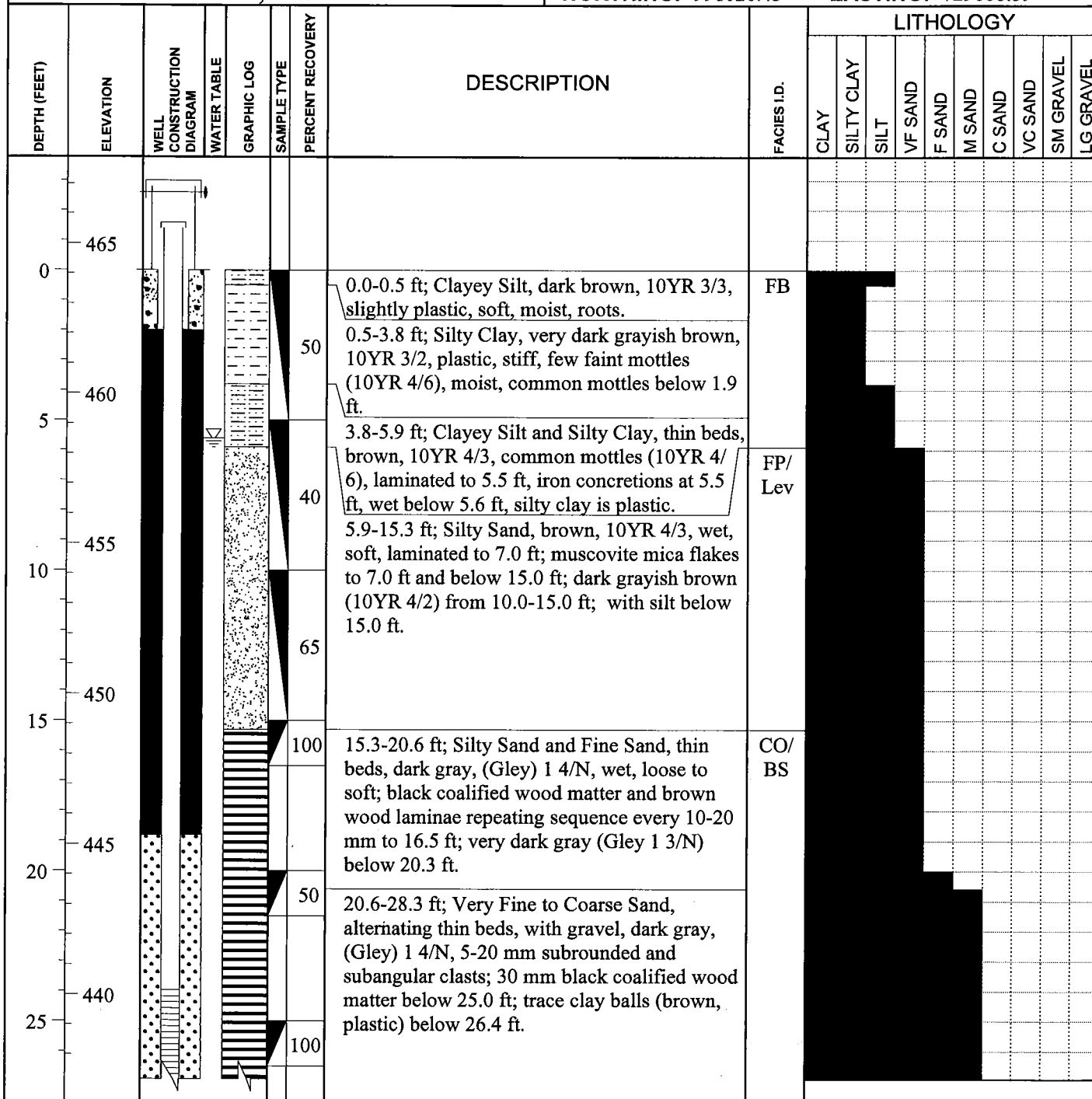
Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-193

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-South Central-E of farm access Rd
G.S. ELEVATION: 464.11 **T.O.C. ELEVATION:** 467.00'
NORTHING: 991026.43 **EASTING:** 729688.59



DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Ryan Hunziker

LOGGED BY: T. Doll

DATE DRILLED: 12/04/09

START TIME: 8:04AM

END TIME: 11:29AM

BOREHOLE DIA.: 10.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES:

WATER LEVELS:

DURING DRILLING 5.6 FEET

AFTER DRILLING: FEET

DATE:

PIEZOMETER:

INSTALLED AT +/- 34.9 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

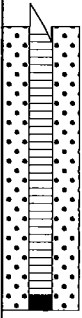
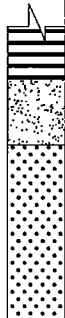
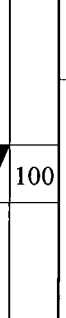
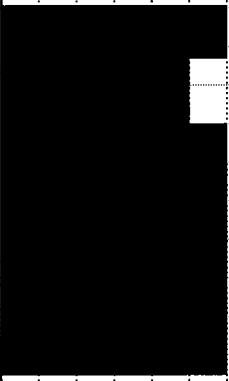
WEATHER: Cold, 20°F, Clear Skies, Calm.

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-193

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-South Central-E of farm access Rd
G.S. ELEVATION: 464.11 **T.O.C. ELEVATION:** 467.00'
NORTHING: 991026.43 **EASTING:** 729688.59

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
30	435					100	28.3-36.5 ft; Fine to Medium Sand, alternating thin beds, trace very fine and coarse sand, trace gravel, dark gray, 10YR 4/1, 5-20 mm subrounded and subangular clasts; trace clay balls (brown, plastic) below 26.4 ft; dark gray, 10YR 4/1, below 30.0 ft, (fine sand noted at total depth based on cuttings sample collected from auger bit).	CO/ BS CM/ Sp										
35	430					100		FP/ Lev										
40	425						BORING TERMINATED IN FINE SAND @36.5 FT											
45	420																	
50	415																	
55	410																	

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 12/04/09
START TIME: 8:04AM
END TIME: 11:29AM
BOREHOLE DIA.: 10.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES:

WATER LEVELS: DURING DRILLING 5.6 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 34.9 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cold, 20°F, Clear Skies, Calm.

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-195

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-SE-W of Davis Rd, S of LBR
G.S. ELEVATION: 463.44 **T.O.C. ELEVATION:** 466.07'
NORTHING: 991065.81 **EASTING:** 730256.04

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
0	465						0.0-0.6 ft; Silty Sand, very dark grayish brown, 10YR 3/2, moist, soft.	FB										
5	460					80	0.6-4.5 ft; Silty Clay, very dark grayish brown, 10YR 3/2, plastic, stiff, moist, common mottles (10YR 4/6), roots; soft to stiff from 2.2-2.9 ft and many mottles; stiff below 2.9 ft; highly plastic below 3.3 ft and common mottles.											
10	455					30	4.5-6.0 ft; Clayey Silt, brown, 10YR 4/3, non-plastic, soft, moist; with clay below 5.3 ft, common mottles (10YR 4/6), iron concretions.	FP/ Lev										
15	450					83	6.0-10.8 ft; Silty Sand, brown, 10YR 4/3, wet, loose, dark yellowish brown (10YR 4/4) below 10.0 ft; trace fine sand at 10.8 ft, 10YR 4/6.											
20	445					100	10.8-20.9 ft; Very Fine Sand, with fine sand, very dark gray, (Gley) 1 3/N, wet, loose to soft, sharp contact with above; black very fine coalified wood matter and muscovite mica flakes to 15.0 ft; dark gray and dark grayish brown, 10YR 4/1 and 4/2, from 15.0-16.1 ft and 20.0-20.9 ft; dark gray (Gley 1 4/N) from 16.1-20.0 ft, (clay slough probable in 20.0 ft S.S.).	CO/ BS										
25	440					83	20.9-36.5 ft; Very Fine to Fine Sand, thin beds, trace medium and coarse sand, dark gray and very dark gray (Gley) 1 3/N and 4/N, wet, soft; laminated black coalified wood matter and muscovite mica flakes below 30.9 ft, (very fine sand and clay slough probable in top of 25.0-35.0 ft S.S.).											
						100												

DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Doug Hunziker

LOGGED BY: T. Doll

DATE DRILLED: 12/11/09

START TIME: 2:45PM

END TIME: 5:50PM

BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES:

WATER LEVELS: DURING DRILLING 6 FEET
AFTER DRILLING: FEET

DATE:

PIEZOMETER: INSTALLED AT +/- 35.1 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cold, 40°F, Mostly Sunny, 5-10 MPH Wind from W.

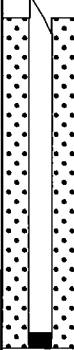
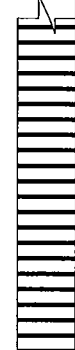
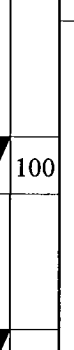
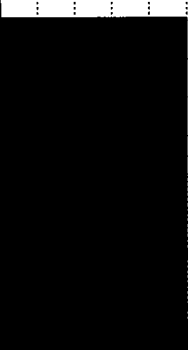


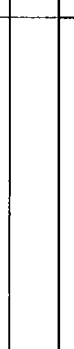
Date Printed: 11/17/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-195

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-SE-W of Davis Rd, S of LBR
G.S. ELEVATION: 463.44 **T.O.C. ELEVATION:** 466.07'
NORTHING: 991065.81 **EASTING:** 730256.04

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
30	435					100	20.9-36.5 ft; Very Fine to Fine Sand, thin beds, trace medium and coarse sand, dark gray and very dark gray (Gley) 1 3/N and 4/N, wet, soft; laminated black coalified wood matter and muscovite mica flakes below 30.9 ft, (very fine sand and clay slough probable in top of 25.0-35.0 ft S.S.).	CO/ BS										
35	430					100												
40	425						BORING TERMINATED IN VERY FINE SAND @36.5 FT											
45	420						SHELBY TUBE SAMPLE COLLECTED AT 2.0-4.0 FT DEPTH AT COMPLETION OF DRILLING.											
50	415																	
55	410																	

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Doug Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 12/11/09
START TIME: 2:45PM
END TIME: 5:50PM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES:

WATER LEVELS: DURING DRILLING 6 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 35.1 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cold, 40°F, Mostly Sunny, 5-10 MPH Wind from W.

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-197

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-SE-W of Davis Rd, S of LBR
G.S. ELEVATION: 463.54 **T.O.C. ELEVATION:** 466.10'
NORTHING: 990891.95 **EASTING:** 730883.14

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
0	465						0.0-0.5 ft; Sandy Silt, dark grayish brown, 10YR 4/2, non-plastic, soft, moist, roots.	FB										
						60	0.5-1.3 ft; Silty Clay and Clayey Silt, thin beds, dark brown and brown, 10YR 3/3 and 4/3, stiff, moist, plastic to 0.9 ft, many mottles (10YR 4/6) below 0.9 ft.											
5	460						1.3-4.0 ft; Silty Clay, very dark grayish brown, 10YR 3/2, plastic, stiff, moist, common mottles (10YR 4/6).	FP/ Lev										
						40	4.0-5.8 ft; Clayey Silt, dark grayish brown, 10YR 4/2, laminated, wet, soft.											
10	455					83	5.8-8.5 ft; Silty Sand, dark grayish brown, 10YR 4/2, herringbone laminae, wet, soft; trace clay 5 mm thin bed at 6.4 ft.											
15	450					78	8.5-18.3 ft; Fine Sand, with very fine sand, brown, 10YR 4/3, wet, soft; dark gray, 10YR 4/1, below 15.3 ft.											
20	445					100	18.3-23.3 ft; Fine Sand, with very fine sand, trace medium and coarse sand, dark gray, 10YR 4/1, wet, loose, (fine sand slough noted in top of 20.0 ft S.S.).											
25	440					61	23.3-28.3 ft; Fine Sand, with medium sand, trace coarse sand and gravel, dark gray, 10YR 4/1, 10-15 mm subangular clasts, one piece of black coalified wood matter.											

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 12/05/09
START TIME: 7:42AM
END TIME: 11:08AM
BOREHOLE DIA.: 10.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES:

WATER LEVELS: DURING DRILLING 5 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 34.7 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

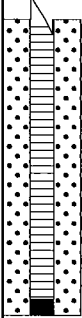
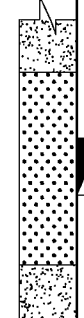

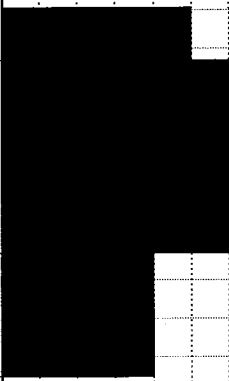
WEATHER: Cold, 20°F, Clear Skies, Calm.

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-197

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-SE-W of Davis Rd, S of LBR
G.S. ELEVATION: 463.54 **T.O.C. ELEVATION:** 466.10'
NORTHING: 990891.95 **EASTING:** 730883.14

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
30	435					83	28.3-33.3 ft; Fine to Medium Sand, with coarse sand, trace gravel, dark gray, 10YR 4/1, 10-15 mm subangular clasts, wet, 10-20 mm flat pieces of black coalified wood matter.	CM/ Sp										
35	430					100	33.3-36.5 ft; Very Fine Sand, with fine sand, dark gray, 10YR 4/1, wet, soft to stiff, 15-30 mm black angular and rounded coalified wood matter	FP/ Lev										
40	425						BORING TERMINATED IN VERY FINE SAND @36.5 FT											
45	420																	
50	415																	
55	410																	

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 12/05/09
START TIME: 7:42AM
END TIME: 11:08AM
BOREHOLE DIA.: 10.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES:

WATER LEVELS: DURING DRILLING 5 FEET
AFTER DRILLING: FEET
DATE:
PIEZOMETER: INSTALLED AT +/- 34.7 FEET
VERTICAL DATUM: NAVD 88
HORIZONTAL DATUM: NAD 83
WEATHER: Cold, 20°F, Clear Skies, Calm.

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-199

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-SW-E of farm access Rd, S of LBR
G.S. ELEVATION: 465.28 **T.O.C. ELEVATION:** 468.13'
NORTHING: 990738.72 **EASTING:** 728782.05

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
0	465					55	0.0-3.9 ft; Silty Clay, very dark grayish brown, 10YR 3/2, plastic, soft, moist, roots, stiff below 0.5 ft, very stiff and few mottles (10YR 4/6) below 1.8 ft.	FB										
5	460						3.9-6.3 ft; Poor recovery, probable Silty Clay slough.											
						60	6.3-7.5 ft; Clayey Silt, brown, 10YR 4/3, muscovite mica flakes, wet, soft, few mottles (10YR 4/6); trace clay below 6.8 ft; with clay and laminated below 7.3 ft.	FP/ Lev										
10	455					67	7.5-18.3 ft; Very Fine Sand, trace fine sand, dark grayish brown, 10YR 4/2, wet, loose; clayey silt thin bed at 6.3 ft, dark gray, (Gley) 1 4/N, laminated, sharp contact; brown, 10YR 4/3, below 10.3 ft; dark gray, 10YR 4/1, below 15.3 ft, (clay slough probable in top of 15.0 ft S.S.).											
15	450					100												
20	445					100	18.3-28.0 ft; Fine Sand, with very fine sand, dark gray and dark grayish brown, 10YR 4/1 and 4/2, wet, soft; silty clay and very fine sand thin beds below 25.7 ft, dark gray, (Gley) 1 4/N.											
25	440					89		CO/ BS										

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 12/01/09
START TIME: 11:55AM
END TIME: 2:47PM
BOREHOLE DIA.: 10.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES: S. King (Gredell) onsite
developing piezometers.

WATER LEVELS: DURING DRILLING 6.3 FEET
AFTER DRILLING: FEET
DATE:
PIEZOMETER: INSTALLED AT +/- 34.9 FEET

VERTICAL DATUM: NAVD 88
HORIZONTAL DATUM: NAD 83
WEATHER: Cool, 55°F, Mostly Sunny, 15-20 MPH Wind from SW.

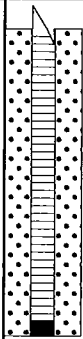
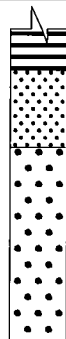
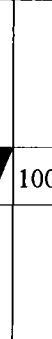
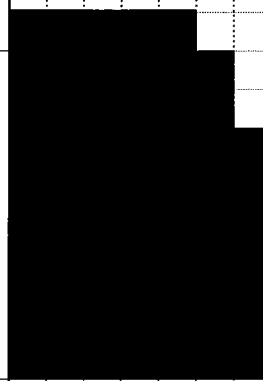
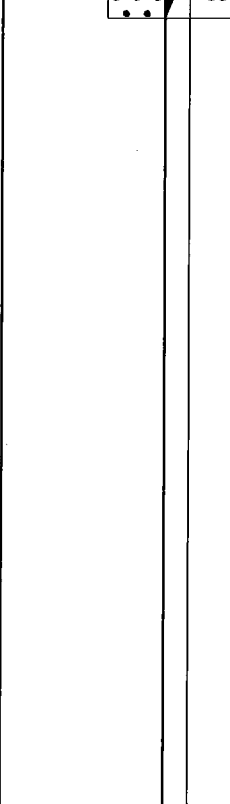
Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-199

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-SW-E of farm access Rd, S of LBR
G.S. ELEVATION: 465.28 **T.O.C. ELEVATION:** 468.13'
NORTHING: 990738.72 **EASTING:** 728782.05

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY												
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL			
30	435					100	28.0-36.5 ft; Medium to Coarse Sand, with very fine to fine sand, alternating thin beds, trace gravel, dark gray and dark grayish brown, 10YR 4/1 and 10YR 4/2, 5-20 mm subangular and subrounded clasts, wet, loose.	C													
35	430					83															
40	425							BORING TERMINATED IN COARSE SAND @36.5 FT													
45	420																				
50	415																				
55	410																				

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 12/01/09
START TIME: 11:55AM
END TIME: 2:47PM
BOREHOLE DIA.: 10.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: S. King (Gredell) onsite developing piezometers.

WATER LEVELS: DURING DRILLING 6.3 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 34.9 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cool, 55°F, Mostly Sunny, 15-20 MPH Wind from SW.

Date Printed: 11/8/2010

**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-201

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-SW-E of farm access Rd, S of LBR
G.S. ELEVATION: 464.65 **T.O.C. ELEVATION:** 467.08'
NORTHING: 990567.70 **EASTING:** 729279.14

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY											
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL		
0	465					60	0.0-4.0 ft; Silty Clay, very dark grayish brown, 10YR 3/2, plastic, soft, moist, roots, stiff below 0.5 ft, very stiff and mottles (10YR 4/6) below 2.5 ft.	FB												
5	460						4.0-6.3 ft; Poor recovery, probable Silty Clay slough.													
10	455					80	6.3-11.9 ft; Clayey Silt, Silty Clay, and Sandy Clayey Silt, alternating thin beds, wet, mottles (10YR 4/6) to 10.5 ft; clayey silt to 6.9 ft, brown, 10YR 4/3, slightly plastic, soft to stiff, muscovite mica flakes; dark grayish brown and dark gray, 10YR 4/2 and 4/1, below 7.7 ft; trace very fine sand and iron concretions from 8.8-10.5 ft; silty clay below 10.5 ft, dark gray, (Gley) 1 4/N, plastic, soft, laminated, silt interbeds with muscovite mica flakes <1 inch thick, iron staining.	CO/ BS												
15	450					70	11.9-18.3 ft; Silty Sand, dark gray, (Gley) 1 4/N, laminated, iron staining, muscovite mica flakes, wet, soft, (clay slough noted in 15.0 and 20.0 ft S.S.).													
20	445					39	18.3-31.3 ft; Very Fine to Fine Sand, thin beds, with medium sand, trace clay and coarse sand, dark gray (Gley) 1 4/N and 10YR 4/1, wet, soft.													
25	440					100		FP/ Lev												

DRILLING CO.: Max's Enterprises, Inc.

DRILLER: Ryan Hunziker

LOGGED BY: T. Doll

DATE DRILLED: 12/01/09

START TIME: 8:10AM

END TIME: 11:00PM

BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE
APPROXIMATE LITHOLOGIC BOUNDARIES
ONLY; ACTUAL CHANGES MAY BE
GRADUAL OR MAY OCCUR BETWEEN
SAMPLES.

NOTES: S. King (Gredell) onsite
developing piezometers.

WATER LEVELS: DURING DRILLING 6.3 FEET
AFTER DRILLING: FEET

DATE:

PIEZOMETER: INSTALLED AT +/- 35.0 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cold, 30°F, Clear Skies, 5 MPH Wind from S.




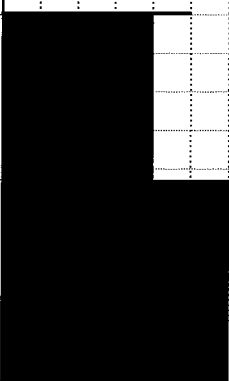
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**GREDELL
ENGINEERING RESOURCES, INC.**

BORING LOG P-201

**Ameren Missouri Labadie Power Plant
Proposed Utility Waste Disposal Area
Detailed Site Investigation
CLIENT: Reitz & Jens, Inc.**

LOCATION: Newman-SW-E of farm access Rd, S of LBR
G.S. ELEVATION: 464.65 **T.O.C. ELEVATION:** 467.08'
NORTHING: 990567.70 **EASTING:** 729279.14

DEPTH (FEET)	ELEVATION	WELL CONSTRUCTION DIAGRAM	WATER TABLE	GRAPHIC LOG	SAMPLE TYPE	PERCENT RECOVERY	DESCRIPTION	FACIES I.D.	LITHOLOGY									
									CLAY	SILTY CLAY	SILT	VF SAND	F SAND	M SAND	C SAND	VC SAND	SM GRAVEL	LG GRAVEL
30	435					100	18.3-31.3 ft; Very Fine to Fine Sand, thin beds, with medium sand, trace clay and coarse sand, dark gray (Gley) 1 4/N and 10YR 4/1, wet, soft.	FP/ Lev										
35	430					78	31.3-36.5 ft; Fine to Medium Sand, thin beds, trace gravel, dark gray, 10YR 4/1, 10 mm subrounded and subangular clasts, wet.	CM/ Sp										
40	425						BORING TERMINATED IN MEDIUM SAND @36.5 FT											
45	420																	
50	415																	
55	410																	

DRILLING CO.: Max's Enterprises, Inc.
DRILLER: Ryan Hunziker
LOGGED BY: T. Doll
DATE DRILLED: 12/01/09
START TIME: 8:10AM
END TIME: 11:00PM
BOREHOLE DIA.: 8.25"

STRATIFICATION LINES ARE APPROXIMATE LITHOLOGIC BOUNDARIES ONLY; ACTUAL CHANGES MAY BE GRADUAL OR MAY OCCUR BETWEEN SAMPLES.

NOTES: S. King (Gredell) onsite developing piezometers.

WATER LEVELS: DURING DRILLING 6.3 FEET
AFTER DRILLING: FEET
DATE:

PIEZOMETER: INSTALLED AT +/- 35.0 FEET

VERTICAL DATUM: NAVD 88

HORIZONTAL DATUM: NAD 83

WEATHER: Cold, 30°F, Clear Skies, 5 MPH Wind from S.

Date Printed: 11/8/2010

**Detailed Site Investigation
Proposed Utility Waste Disposal Area
Ameren Missouri Labadie Power Plant
Franklin County, Missouri**

**GREDELL Engineering Resources, Inc.
Geologic Descriptions of Temporary Borings**

Log Description for B-10

0-4.8 ft; Clay to Silty Clay, pale yellowish brown, 10YR 6/2, w/light brown mottles, sparse silt layers (Facies I.D. – Flood Basin).

4.8-9.3 ft; Silt to Clayey Silt, pale yellowish brown, 10YR 6/2 (Facies I.D. – Flood Basin).

9.3-16.8 ft; Very Fine Sand, grayish orange, 10YR 7/4, common clay and silt layers above 12 ft, slightly silty below (Facies I.D. – Floodplain/Levee).

16.8-26.8 ft; Very Fine to Fine Sand, grayish orange, 10YR 7/4, clean, well sorted (Facies I.D. – Floodplain/Levee).

26.8-35.0 ft; Gravelly Sand, grayish orange, 10YR 7/4, common granules and rounded pebbles up to 10 mm dia (Facies I.D. – Channel).

**Detailed Site Investigation
Proposed Utility Waste Disposal Area
Ameren Missouri Labadie Power Plant
Franklin County, Missouri**

**GREDELL Engineering Resources, Inc.
Geologic Descriptions of Temporary Borings**

Log Description for B-13

0-13.5 ft; Sample not available.

13.5-27.8 ft; Fine Sand, grayish orange, 10YR 7/4, clean, well sorted (Facies I.D. – Floodplain/Levee).

27.8-31.8 ft; Coarse to Very Coarse Sand, grayish orange, 10YR 7/4, gravelly w/common granules to fine pebbles up to 5 mm dia (Facies I.D. – Channel).

31.8-36.8 ft; Gravel, mostly 5-10 mm (poor sample recovery) (Facies I.D. – Channel).

36.8-41.8 ft; Coarse Sand, pale yellowish brown, 10YR 6/2, sparse granules and fine pebbles up to 5 mm dia (Facies I.D. – Channel).

41.8-50.0 ft; Gravel, angular limestone fragments to rounded pebbles up to 15 mm dia, very poorly sorted, poor sample recovery below 45 ft (Facies I.D. – Channel).

**Detailed Site Investigation
Proposed Utility Waste Disposal Area
Ameren Missouri Labadie Power Plant
Franklin County, Missouri**

**GREDELL Engineering Resources, Inc.
Geologic Descriptions of Temporary Borings**

Log Description for B-14

0-3.3 ft; Fine Sand interbedded with clay and silt, moderate yellowish brown, 10YR 5/4 (Facies I.D. – Flood Basin).

3.3-6.5 ft; Very Fine to Fine Sand, moderate yellowish brown, 10YR 5/4, silty (Facies I.D. – Flood Basin).

6.5-9.3 ft; Silt, pale yellowish brown, 10YR 6/2, sparse very fine sand (Facies I.D. – Flood Basin).

9.3-12.5 ft; Very Fine Sand, Silt and Clay, alternating very thin beds, pale yellowish brown, 10YR 6/2 (Facies I.D. – Flood Basin).

12.5-16.8 ft; Very Fine Sand, pale yellowish brown, 10YR 6/2, silty, trace fine sand (Facies I.D. – Floodplain/Levee).

16.8-26.8 ft; Very Fine to Fine Sand, pale yellowish brown, 10YR 6/2, clean, well sorted, slight downward increase in grain size (Facies I.D. – Floodplain/Levee).

26.8-35.0 ft; Gravelly Sand, grayish orange (10YR 7/4) to dark yellowish orange (10YR 6/6), abundant granules and pebbles up to 25 mm dia (Facies I.D. – Floodplain/Levee).

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**GREDELL Engineering Resources, Inc.
Geologic Descriptions of Temporary Borings**

Log Description for B-26

0-4.8 ft; Clayey Silt to Silt, pale yellowish brown, 10YR 6/2 (Facies I.D. – Flood Basin).

4.8-9.3 ft; Silt, pale yellowish brown, 10YR 6/2, trace clay (Facies I.D. – Flood Basin).

9.3-12.5 ft; Very Fine Sand, pale yellowish brown, 10YR 6/2, trace silt (Facies I.D. – Floodplain/Levee).

12.5-26.8 ft; Very Fine to Fine Sand, pale yellowish brown (10YR 6/2) to grayish orange (10YR 7/4) (Facies I.D. – Floodplain/Levee).

26.8-41.8 ft; Coarse to Very Coarse Sand, grayish orange, 10YR 7/4, common granules and pebbles up to 10 mm dia (Facies I.D. – Channel).

41.8-45.0 ft; Gravel, pale yellowish brown, 10YR 6/2, angular to well-rounded pebbles up to 30 mm dia (Facies I.D. – Channel).

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**GREDELL Engineering Resources, Inc.
Geologic Descriptions of Temporary Borings**

Log Description for B-50

0-5.8 ft; Very Fine Sand, pale yellowish brown, 10YR 6/2, slightly silty (Facies I.D. – Flood Basin).

5.8-12.0 ft; Silt and Very Fine Sand, alternating thin beds, pale yellowish brown, 10YR 6/2 (Facies I.D. – Flood Basin).

12.0-16.8 ft; Very Fine Sand, grayish orange, 10 YR 7/4, slightly silty (Facies I.D. – Floodplain/Levee).

16.8-21.8 ft; Fine Sand, pale yellowish brown, 10YR 6/2, sparse silt and very fine sand (Facies I.D. – Floodplain/Levee).

21.8-37.5 ft; Medium to Coarse Sand, dark yellowish brown (10YR 4/2) to grayish orange (10YR 7/4), abundant black coalified wood fragments up to 30 mm dia above 25 ft, sparse elsewhere, sparse to common granules (Facies I.D. – Channel, Channel Margin/Splay).

37.5-50.0 ft; Coarse Sand, pale yellowish brown, 10YR 6/2, gravelly, very poorly sorted, common granules and pebbles up to 10 mm dia (Facies I.D. – Channel).

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**GREDELL Engineering Resources, Inc.
Geologic Descriptions of Temporary Borings**

Log Description for B-52

0-4.8 ft; Clay to Silty Clay, pale yellowish brown, 10YR 6/2 (Facies I.D. - Flood Basin).

4.8-12.5 ft; Fine Sand, grayish orange, 10 YR 7/4, scattered clay layers above 9 ft, clean, well sorted below (Facies I.D. - Floodplain/Levee).

12.5-16.8 ft; Very Fine to Fine Sand, pale yellowish brown (10YR 6/2) to dark yellowish brown (10YR 4/2), scattered layers silt and clay (Facies I.D. - Floodplain/Levee).

16.8-21.8 ft; Fine Sand, grayish orange, 10 YR 7/4, well sorted to moderately well sorted, common medium sand, clean (Facies I.D. - Floodplain/Levee).

21.8-26.8 ft; Coarse to Very Coarse Sand, grayish orange, 10 YR 7/4, gravelly w/common granules and pebbles up to 10 mm dia (Facies I.D. - Channel).

26.8-35.0 ft; Medium Sand, pale yellowish brown, 10YR 6/2, trace granules, well sorted toward base (Facies I.D. – Channel Margin/Splay).

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**GREDELL Engineering Resources, Inc.
Geologic Descriptions of Temporary Borings**

Log Description for B-54

0-4.0 ft; No sample available.

4.0-6.3 ft; Fine Sand, grayish orange, 10YR 7/4, clean, well sorted (Facies I.D. – Floodplain/Levee).

6.3-12.5 ft; Very Fine Sand, Silt and Clay, alternating very thin beds, dark yellowish orange, 10YR 6/6, becoming more sandy, pale yellowish brown, 10YR 6/2 below 10 ft (Facies I.D. – Flood Basin).

12.5-16.8 ft; Very Fine Sand, very dark greenish gray (Gley) 1 3/1, silty, saturated (Facies I.D. – Cut-Off/Backswamp).

16.8-21.8 ft; Very Fine Sand, Silt and Clay, alternating very thin beds, pale yellowish brown, 10YR 6/2, no obvious gley coloration (Facies I.D. – Floodplain/Levee).

21.8-35.0 ft; Medium Sand, grayish orange, 10YR 7/4, clean, well sorted, trace black carbonaceous matter at base (Facies I.D. – Floodplain/Levee).

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**GREDELL Engineering Resources, Inc.
Geologic Descriptions of Temporary Borings**

Log Description for B-56

0-4.8 ft; Silty Clay to Clayey Silt, dark yellowish brown, 10YR 4/2 (Facies I.D. – Flood Basin).

4.8-16.8 ft; Very Fine to Fine Sand, pale yellowish brown, 10YR 6/2, slightly silty, saturated (Facies I.D. – Floodplain/Levee).

16.8-21.8 ft; Medium Sand, grayish orange, 10YR 7/4, moderately sorted, common fine and coarse-sized sand, sparse very coarse sand and granules (Facies I.D. – Channel Margin/Splay).

21.8-26.8 ft; Very Fine to Fine Sand, very dark greenish gray (Gley) 1 3/1, silty, common black carbonaceous matter (Facies I.D. – Cutoff/Back Swamp).

26.8-41.8 ft; Medium Sand, grayish orange (10YR 7/4) to pale yellowish brown (10YR 6/2), well sorted, grading to moderately sorted, base marked by coarse wood fragments and pebbles up to 30 mm dia., probable scour contact (Facies I.D. – Floodplain/Levee).

41.8-46.8 ft; Coarse Sand, grayish orange, 10YR 7/4, common granules and fine pebbles up to 5 mm dia (Facies I.D. – Channel).

46.8-50.0 ft; Coarse to Very Coarse Sand, pale yellowish brown (10YR 6/2), common granules and pebbles up to 10 mm dia (Facies I.D. – Channel).

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**GREDELL Engineering Resources, Inc.
Geologic Descriptions of Temporary Borings**

Log Description for B-58

0-7.8 ft; Clay to Silty Clay, light olive gray, 5Y 6/1 (Facies I.D. – Flood Basin).

7.8-12.5 ft; Clay, Silt, and Very Fine Sand, alternating very thin beds, pale yellowish brown, 10YR 6/2 (Facies I.D. – Flood Basin).

12.5-26.8 ft; Fine to Medium Sand, pale yellowish brown, 10YR 6/2, well sorted grading to moderately sorted w/common granules and pebbles up to 10 mm dia (Facies I.D. – Floodplain/Levee, Channel Margin/Splay).

26.8-35.0 ft; Medium to Coarse Sand, grayish orange, 10YR 7/4, sparse gravel grading to gravelly w/common rounded to angular pebbles up to 30 mm dia (Facies I.D. – Channel).

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**GREDELL Engineering Resources, Inc.
Geologic Descriptions of Temporary Borings**

Log Description for B-72

0-4.8 ft; Silt to Clayey Silt, dark brown, 10YR 3/2, slightly plastic, stiff, damp (Facies I.D. – Flood Basin).

4.8-12.5 ft; Silt to Very Fine Sand, alternating very thin beds to laminated, light brown, 10YR 4/3, clay layers above 10 ft, moist to wet (Facies I.D. – Flood Basin).

12.5-16.8 ft; Silt to Very Fine Sand, as above except Gley colored (1 4/N) (Facies I.D. – Cutoff/Back Swamp).

16.8-26.8 ft; Fine to Medium Sand, brownish gray, 10YR 4/1 to 10YR 4/3, trace coarse sand and fine pebbles up to 5 mm dia (Facies I.D. – Floodplain/Levee).

26.8-31.8 ft; Very Fine Sand, light brown to gray (10YR 4/2) to Gley colored (1 4/N), saturated (Facies I.D. – Cutoff/Back Swamp).

31.8-35.0 ft; Very Fine to Fine Sand, brown and gray (10YR 4/1 and 10YR 4/2), no Gley coloration, trace medium to coarse sand (Facies I.D. – Floodplain/Levee).

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**GREDELL Engineering Resources, Inc.
Geologic Descriptions of Temporary Borings**

Log Description for B-92

0-4.5 ft; Silt and Clay, brown, 10YR 3/3, plastic, stiff, damp (Facies I.D. – Flood Basin).

4.5-8.3 ft; Silt, light brown, 10YR 4/2, sandy, wet (Facies I.D. – Flood Basin).

8.3-31.8 ft; Very Fine to Fine Sand, light brown to gray, 10YR 4/1 to 10YR 4/2, silty above 10 ft, trace medium to coarse sand and fine pebbles at 20 ft and 30 ft, wood fragments noted at 30 ft (Facies I.D. – Floodplain/Levee).

31.8-45.0 ft; Medium to Coarse Sand, gray, 10YR 4/1, gravelly w/sparse to abundant subangular to subrounded pebbles up to 40 mm dia (Facies I.D. – Channel).

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**GREDELL Engineering Resources, Inc.
Geologic Descriptions of Temporary Borings**

Log Description for B-100

0-5.0 ft; Silt and Clay, brownish gray (Facies I.D. – Flood Basin).

5.0-29.0 ft; Very Fine to Fine Sand, light brown, 10YR 4/2, silty above 12 ft, trace medium to coarse sand below (Facies I.D. – Floodplain/Levee).

29.0-37.5 ft; Medium to Coarse Sand, gray, 10YR 4/1, trace to common gravel consisting of subrounded to angular pebbles up to 35 mm dia (Facies I.D. – Channel).

37.5-100.0 ft; Gravelly Sand to Gravel, gray, 10YR 4/1, varying proportions of subrounded to angular pebbles of quartz, feldspathic and basaltic rock fragments, and limestone up to 30 mm dia, mostly in medium to coarse sand matrix (Facies I.D. – Channel).

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**GREDELL Engineering Resources, Inc.
Geologic Descriptions of Temporary Borings**

Log Description for B-101

0-4.8 ft; Silty Clay to Clay, light olive gray, 5Y 6/1 (Facies I.D. – Flood Basin).

4.8-16.8 ft; Very Fine to Fine Sand, grayish orange (10YR 7/4) to pale yellowish brown (10YR 6/2), clean w/fine sized black carbonaceous matter grading to poorly sorted w/ silt and medium sand, grading to clean, well sorted at base (Facies I.D. – Floodplain/Levee).

16.8-21.8 ft; Medium to Coarse Sand, grayish orange, 10YR 7/4, grading to very fine to fine sand (Facies I.D. – Channel Margin/Splay).

21.8-31.8 ft; Gravelly Sand, grayish orange, 10YR 7/4, abundant granules and pebbles up to 10 mm dia., in poorly sorted matrix of fine to very coarse sand (Facies I.D. – Channel).

31.8-36.8 ft; Coarse Sand, dark yellowish brown, 10YR 4/2, common black carbonized wood fragments up to 20 mm dia., trace granules and pebbles (Facies I.D. – Channel).

36.8-46.8 ft; Gravelly Sand, grayish orange, 10YR 7/4, abundant pebbles up to 30 mm dia. in coarse sand matrix (Facies I.D. – Channel).

46.8-50.0 ft; Medium to Coarse Sand, pale yellowish brown (10YR 6/2), sparse granules and pebbles up to 10 mm dia (Facies I.D. – Channel Margin/Splay).

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**GREDELL Engineering Resources, Inc.
Geologic Descriptions of Temporary Borings**

Log Description for B-115

0-8.5 ft; Clay, olive gray, 5Y 4/1 (Facies I.D. – Flood Basin).

8.5-15.0 ft; Clay and Silt, interlaminated, dark yellowish orange, 10YR 6/6 (Facies I.D. – Flood Basin).

15.0-26.8 ft; Fine to Medium Sand, grayish orange, 10YR 7/4, moderately sorted, trace granules (Facies I.D. – Floodplain/Levee).

26.8-31.8 ft; Fine Sand, grayish orange, 10YR 7/4, trace very fine sand and silt laminae (Facies I.D. – Floodplain/Levee).

31.8-45.0 ft; Gravelly Sand, dark yellowish brown (10YR 4/2) to pale yellowish brown (10YR 6/2), abundant granules and fine pebbles up to 5 mm dia. with pebble size increasing to 40 mm toward base (Facies I.D. – Channel).

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**GREDELL Engineering Resources, Inc.
Geologic Descriptions of Temporary Borings**

Log Description for B-127

0-6.3 ft; Clay, brown 10YR 3/3, silty, mottles, 10YR 4/6, plastic, stiff, moist (Facies I.D. – Flood Basin).

6.3-9.5 ft; Silt, gray to brown, 10YR 4/1 and 4/2, trace clay, mottled, 10YR 4/6, wet (Facies I.D. – Flood Basin).

9.5-21.8 ft; Very Fine Sand, light brown to gray, 10YR 4/2 and 4/1, trace fine sand and carbonized wood fragments, wet (Facies I.D. – Floodplain/Levee).

21.8-35.0 ft; Medium to Coarse Sand, gray, 10YR 4/1, common granules and subrounded pebbles of limestone, feldspathic rock fragments, and quartz up to 10 mm dia, trace larger pebbles up to 30 mm dia (Facies I.D. – Channel).

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**GREDELL Engineering Resources, Inc.
Geologic Descriptions of Temporary Borings**

Log Description for B-141

0-4.8 ft; Silty Clay to Clay, pale yellowish brown, 10YR 6/2 (Facies I.D. – Flood Basin).

4.8-16.8 ft; Very Fine to Fine Sand, grayish orange (10YR 7/4) to pale yellowish brown (10YR 6/2), silty at top, grading to clean w/common medium sand and black carbonaceous fragments at base, saturated (Facies I.D. – Floodplain/Levee).

16.8-21.8 ft; Fine to Medium Sand, grayish orange, 10YR 7/4, trace silt, moderately sorted to poorly sorted (Facies I.D. – Floodplain/Levee).

21.8-26.8 ft; Medium to Coarse Sand, pale yellowish brown, 10YR 6/2, sparse granules and small pebbles up to 10 mm dia (Facies I.D. – Channel).

26.8-35.0 ft; Gravelly Sand, grayish orange 10YR 7/4, abundant granules and small pebbles up to 10 mm dia. in medium to very coarse sand matrix, poorly sorted (Facies I.D. – Channel).

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**GREDELL Engineering Resources, Inc.
Geologic Descriptions of Temporary Borings**

Log Description for B-153

0-4.8 ft; Clay, dark brown, 10YR 3/2, trace silt, plastic, stiff, damp (Facies I.D. – Flood Basin).

4.8-11.0 ft; Silt, light brown, 10YR 4/2, trace clay, mottles, 10YR 4/6, non cohesive, moist (Facies I.D. – Flood Basin).

11.0-26.8 ft; Very Fine Sand, light brown, 10YR 4/2, grading to gray, 10YR 4/1, trace fine sand (Facies I.D. – Floodplain/Levee).

26.8-36.8 ft; Gravel, granule to cobble-sized, angular to subrounded clasts of quartz, feldspathic and basaltic rock fragments, and limestone up to 30 mm dia in fine to coarse sand matrix (Facies I.D. – Channel).

36.8-41.8 ft; Medium to Coarse Sand, gray, 10YR 4/1, common gravel, subrounded to subangular granules and pebbles up to 10 mm dia., trace cobbles (Facies I.D. – Channel).

41.8-45.0 ft; Gravel, light brown, 10YR 4/2, subrounded to subangular granules and pebbles up to 10 mm dia in coarse sand matrix (Facies I.D. – Channel).

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**GREDELL Engineering Resources, Inc.
Geologic Descriptions of Temporary Borings**

Log Description for B-154

0-4.8 ft; Clay, dark brown, 10YR 3/2, silty, plastic, stiff, moist (Facies I.D. – Flood Basin).

4.8-16.8 ft; Very Fine Sand, light brown, 10YR 4/2, grading to grayish, 10YR 4/1 toward base, trace silt and clay, common black carbonaceous material toward base, saturated (Facies I.D. – Floodplain/Levee).

16.8-21.8 ft; Fine Sand, light brown, 10YR 4/1 and 4/2, moderately sorted w/common very fine sand and trace coarse sand and fine gravel, saturated (Facies I.D. – Floodplain/Levee).

21.8-36.8 ft; Medium to Coarse Sand, light brown, 10YR 4/1, common granules and fine pebbles up to 5 mm dia (Facies I.D. – Channel).

36.8-40.0 ft; Gravelly Sand, dark brown, 10YR 3/1, common granules and fine pebbles up to 5 mm dia., trace larger pebbles up to 30 mm dia (Facies I.D. – Channel).

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**GREDELL Engineering Resources, Inc.
Geologic Descriptions of Temporary Borings**

Log Description for B-176

0-3.3 ft; Clay, olive black, 5Y 2/1, plastic, moist (Facies I.D. – Flood Basin).

3.3-7.8 ft; Clay to Silty Clay, dark yellowish brown, 10YR 4/2, plastic, mottled (Facies I.D. – Flood Basin).

7.8-15.0 ft; Clay, dark yellowish brown, 10YR 4/2, plastic (Facies I.D. – Flood Basin).

15.0-36.8 ft; Fine Sand, grayish orange, 10YR 7/4, clean, trace black carbonaceous matter 28 feet, becoming abundant below (Facies I.D. – Floodplain/Levee).

36.8-41.8 ft; Gravel, pale yellowish brown, 10YR 6/2, poorly sorted, subrounded to angular pebbles up to 20 mm dia. in coarse sand matrix, possible scoured contact w/below (Facies I.D. – Channel).

41.8-46.8 ft; Clay, very dark greenish gray (Gley) 1 3/1, silty, trace very fine sand, no obvious bedding (Facies I.D. – Cutoff/Back Swamp).

46.8-50.0 ft; Very Fine Sand, light olive gray, 5Y 6/1, possible Gley-colored, common black carbonaceous matter (Facies I.D. – Cutoff/Back Swamp).

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**GREDELL Engineering Resources, Inc.
Geologic Descriptions of Temporary Borings**

Log Description for B-188

0-7.8 ft; Silt, light brown, 10YR 4/3, trace clay, moist, non cohesive, soft (Facies I.D. – Flood Basin).

7.8-12.5 ft; Very Fine Sand, light brown, 10YR 4/2, saturated (Facies I.D. – Floodplain/Levee).

12.5-16.8 ft; As above, except color change to Gley, 1 4/N (Facies I.D. – Cutoff/Back Swamp).

16.8-26.8 ft; Very Fine to Fine Sand, light brown, 10YR 4/2, trace medium to coarse sand (Facies I.D. – Floodplain/Levee).

26.8-31.8 ft; Medium to Coarse Sand, gray, 10YR 4/1, common granules and subrounded pebbles up to 15 mm dia (Facies I.D. – Channel).

31.8-35.0 ft; Gravelly Sand, gray, 10YR 4/1, mostly subrounded pebbles of quartz, feldspathic and basaltic rock fragments up to 10 mm dia, in medium to coarse sand matrix, trace coarser pebbles up to 25 mm dia (Facies I.D. – Channel).

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**GREDELL Engineering Resources, Inc.
Geologic Descriptions of Temporary Borings**

Log Description for B-200

0-4.5 ft; Silty Clay, olive black, 5Y 2/1, slightly plastic, stiff (Facies I.D. – Flood Basin).

4.5-7.8 ft; Silt, pale yellowish orange, 10YR 8/6, laminated, non cohesive (Facies I.D. – Flood Basin).

7.8-11.5 ft; Clay, very dark greenish gray (Gley) 1 3/1, light brown mottles, 5YR 5/6, plastic, soft (Facies I.D. – Cutoff/Back Swamp).

11.5-26.8 ft; Very Fine to Fine Sand, pale yellowish brown, 10YR 6/2, well sorted, clean, possibly Gley coloration toward base (Facies I.D. – Floodplain/Levee).

26.8-36.8 ft; Coarse Sand, grayish orange (10YR 7/4) to dark yellowish orange (10YR 6/6), common subangular to subrounded pebbles up to 20 mm dia, becoming more abundant toward base (Facies I.D. – Channel).

36.8-46.8 ft; Fine Sand, grayish orange, 10YR 7/4, moderately well sorted, trace granules (Facies I.D. – Floodplain/Levee).

46.8-54.3 ft; Gravelly Sand, grayish orange (10YR 7/4) to dark yellowish orange (10YR 6/6), poorly sorted, rounded to subangular pebbles up to 20 mm dia (Facies I.D. – Channel).

54.3-60.0 ft; Medium Sand, grayish orange, 10YR 7/4, trace granules (Facies I.D. – Channel Margin/Splay).

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**GREDELL Engineering Resources, Inc.
Geologic Descriptions of Temporary Borings**

Log Description for B-202

0-4.8 ft; Clay to Silty Clay, dark yellowish brown, 10YR 4/2, plastic, firm (Facies I.D. – Flood Basin).

4.8-11.5 ft; Clay, pale yellowish brown, 10YR 6/2, plastic, soft (Facies I.D. – Flood Basin).

11.5-21.8 ft; Very Fine to Fine Sand, grayish orange, 10YR 7/4, well sorted, clean, grading to fine sand w/ trace black carbonaceous fragments toward base (Facies I.D. – Floodplain/Levee).

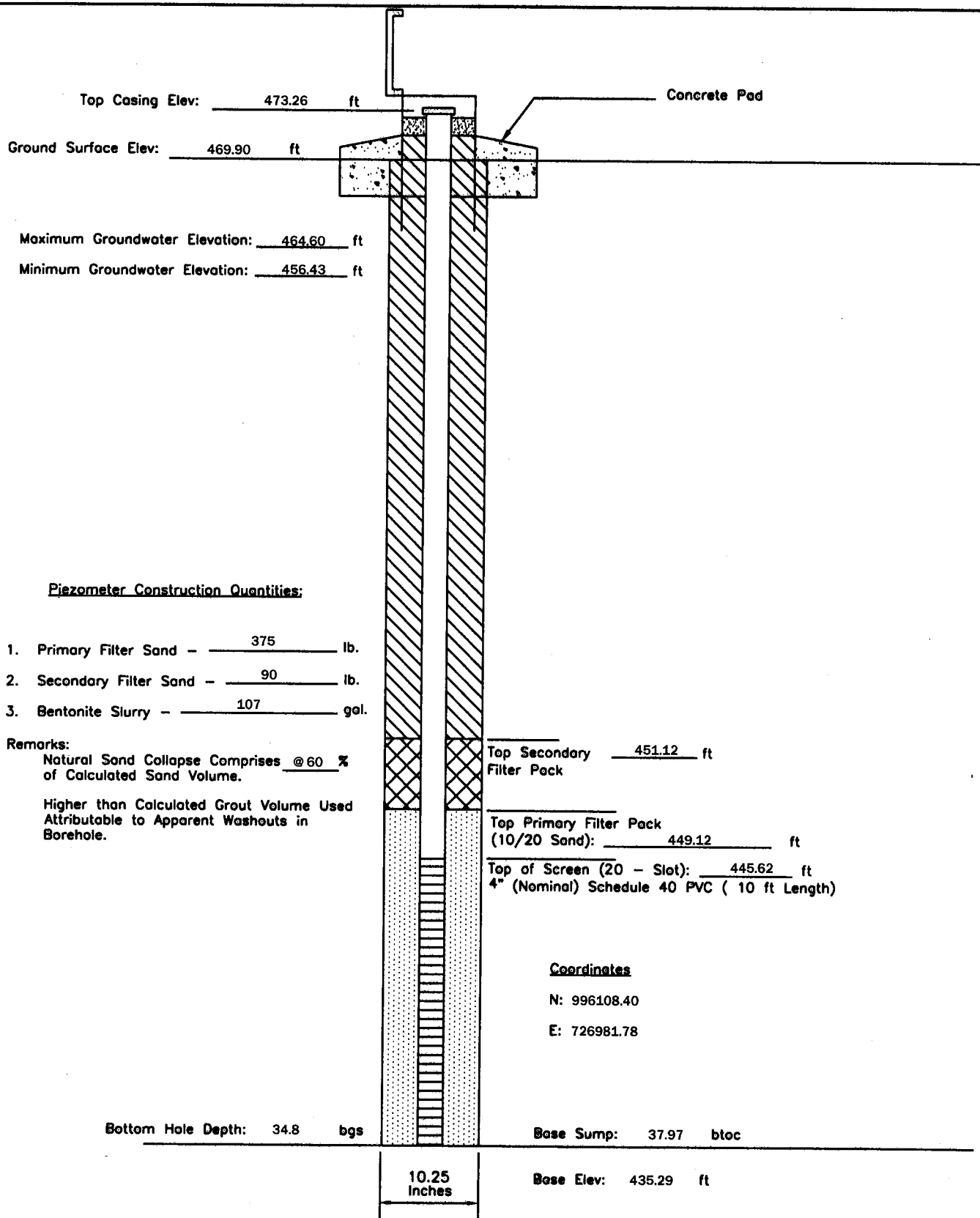
21.8-35.0 ft; Fine to Medium Sand, grayish orange, 10YR 7/4, possible Gley coloration at top, trace granules and fine pebbles up to 5 mm dia (Facies I.D. – Channel Margin/Splay).

Appendix 5

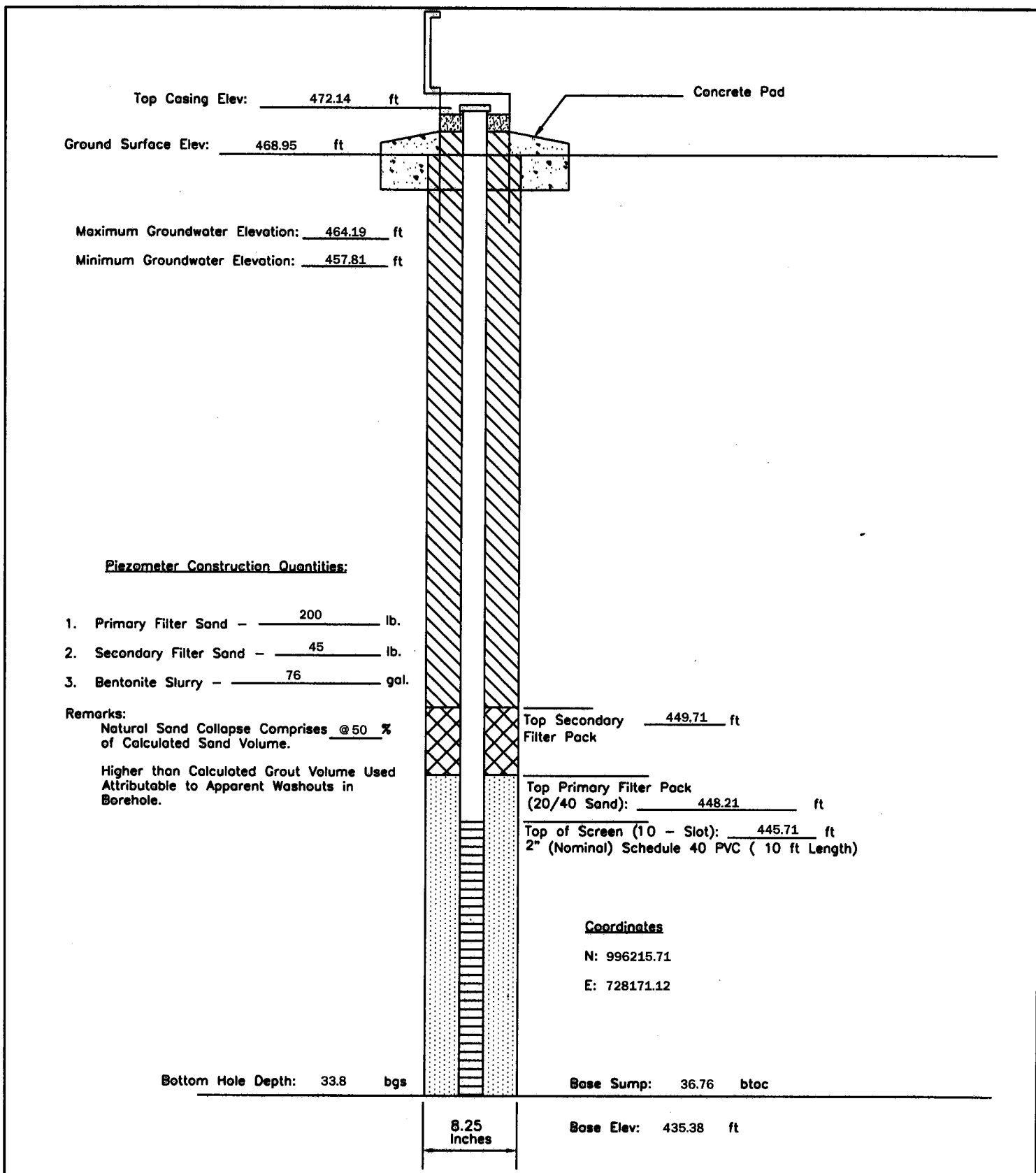
Piezometer Construction Details

Detailed Site Investigation
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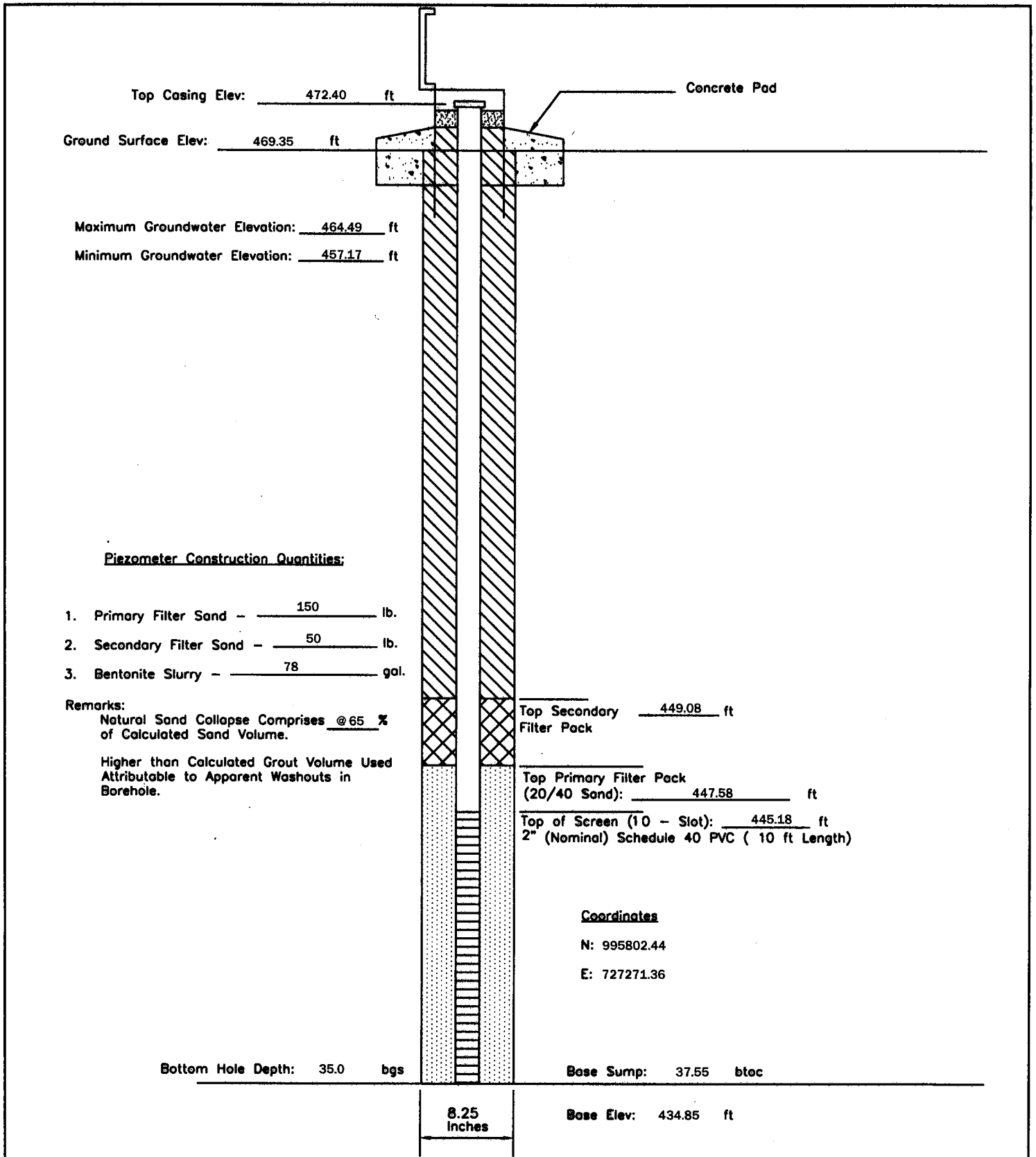
Prepared by: GREDELL Engineering Resources, Inc.



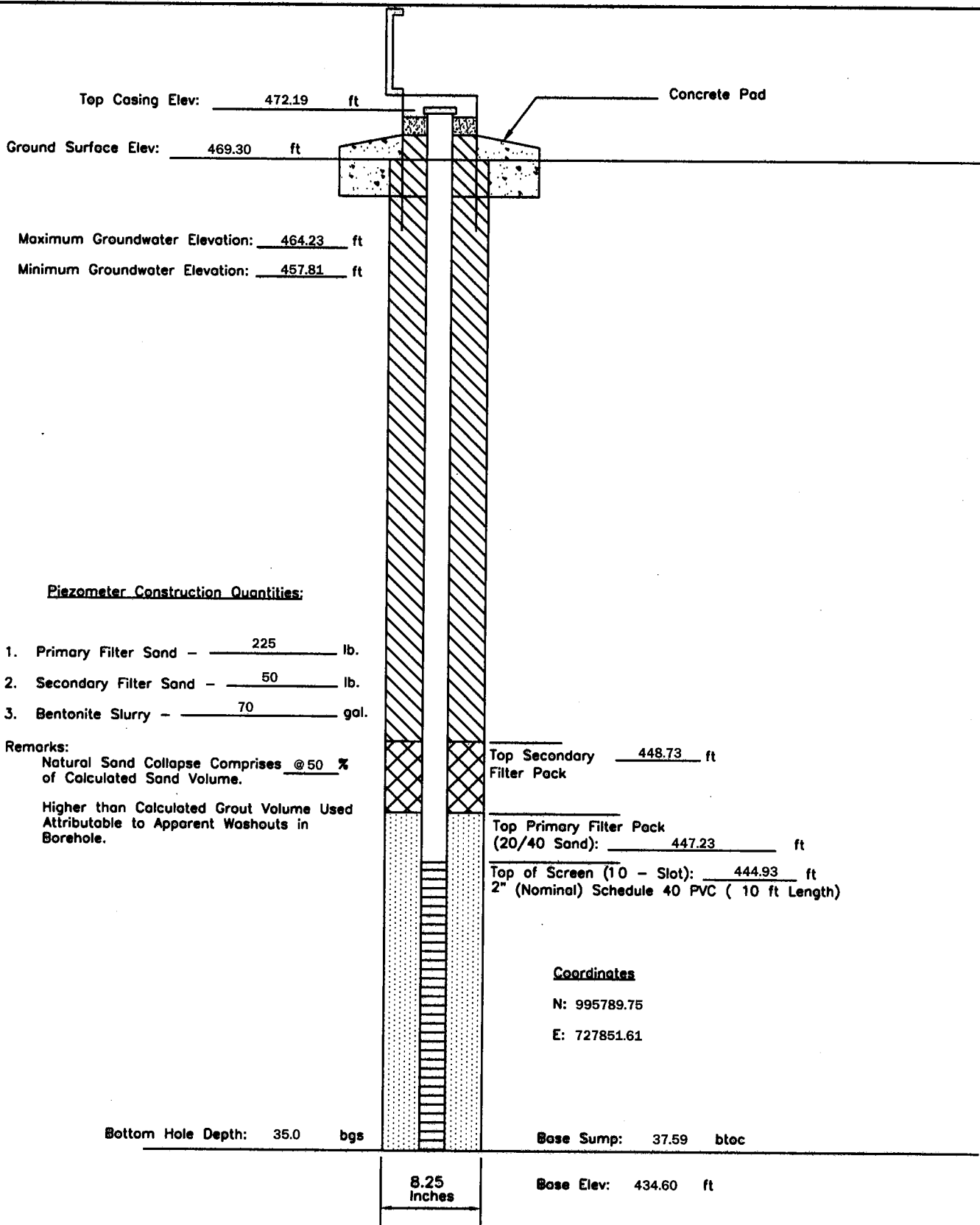
P - 9	PIEZOMETER CONSTRUCTION DIAGRAM	GREDELL Engineering Resources, Inc. ENVIRONMENTAL ENGINEERING LAND AIR WATER			
Date Piezometer Completed: 10/20/09	AMEREN MISSOURI	1505 East High Street Jefferson City, Missouri 65101		Telephone: (573) 659-9078 Facsimile: (573) 659-9079	
	LABADIE POWER PLANT	DATE 1/2010	SCALE N.T.S.	DRAWN BY: BED	APPROVED BY: MCC



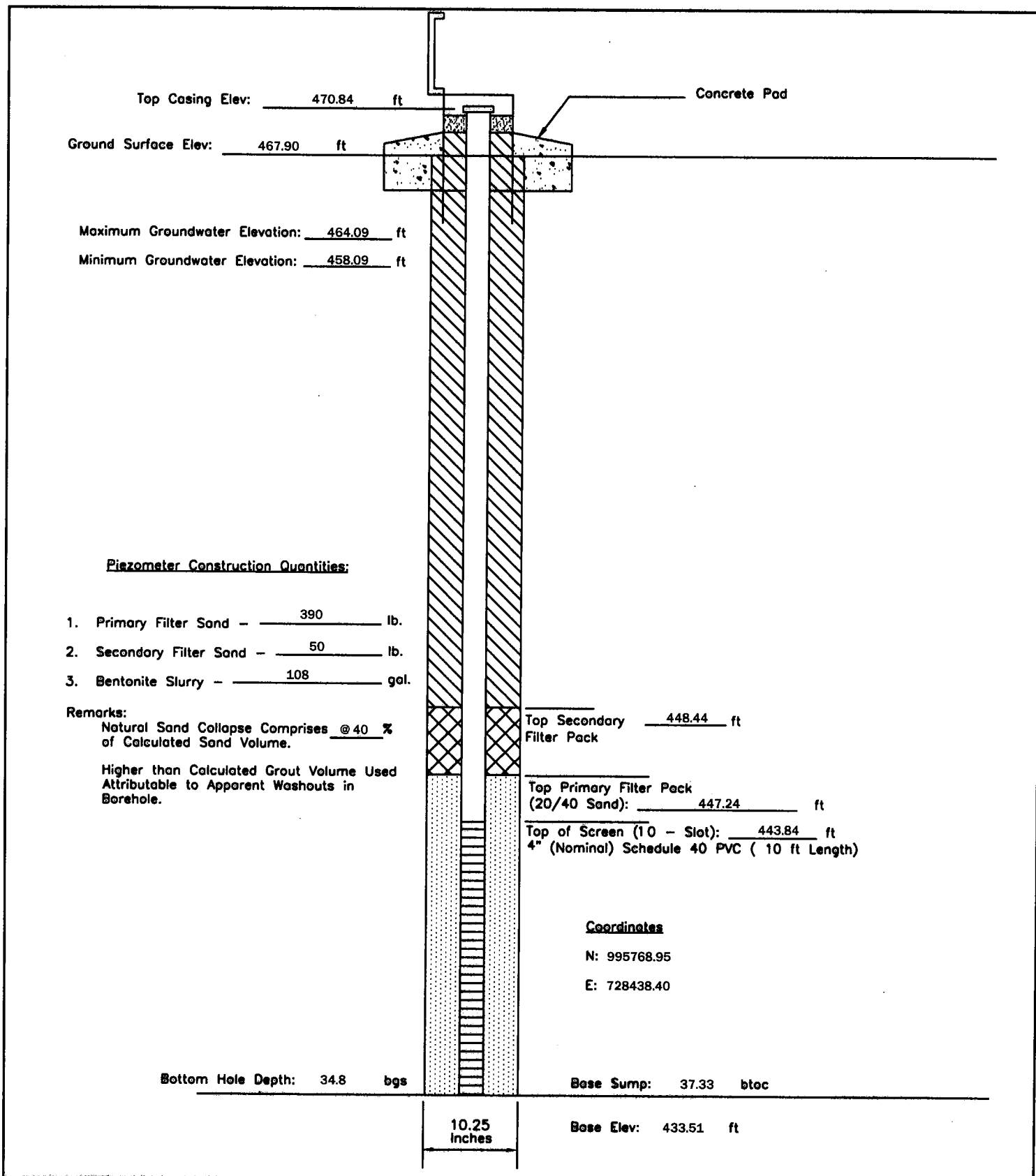
P - 12	PIEZOMETER CONSTRUCTION DIAGRAM	GREDELL Engineering Resources, Inc. ENVIRONMENTAL ENGINEERING LAND AIR WATER			
Date Piezometer Completed: 9/16/09	AMEREN MISSOURI LABADIE POWER PLANT	1505 East High Street Jefferson City, Missouri 65101 DATE 1/2010	SCALE N.T.S.	DRAWN BY: BED	Telephone: (573) 659-9078 Facsimile: (573) 659-9079 APPROVED BY: MCC



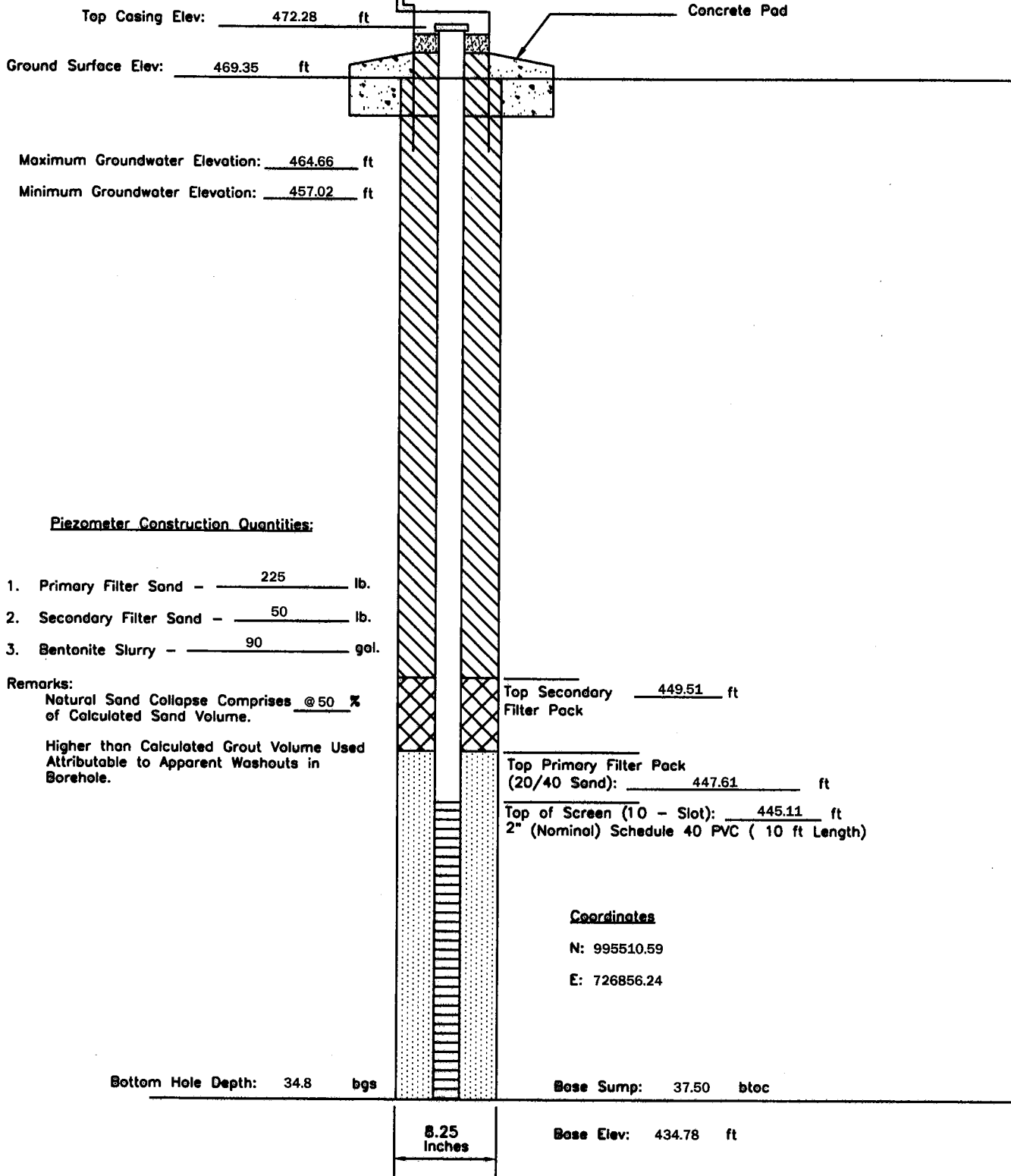
P - 15	PIEZOMETER CONSTRUCTION DIAGRAM	GREDELL Engineering Resources, Inc. ENVIRONMENTAL ENGINEERING LAND AIR WATER			
Date Piezometer Completed: 9/17/09	AMEREN MISSOURI	1505 East High Street Jefferson City, Missouri 65101		Telephone: (573) 659-9078 Facsimile: (573) 659-9079	
	LABADIE POWER PLANT	DATE 1/2010	SCALE N.T.S.	DRAWN BY: BED	APPROVED BY: MCC



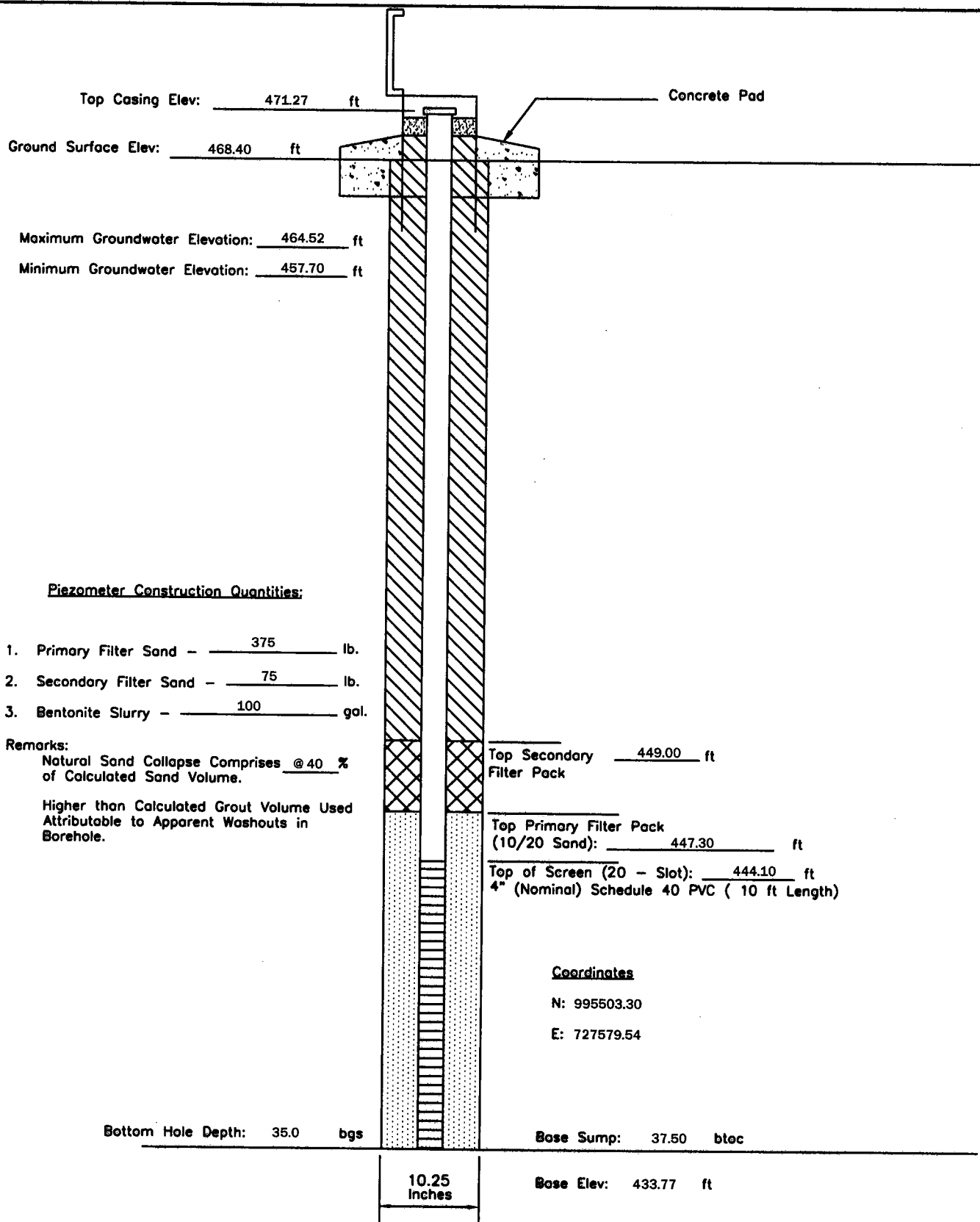
P - 17	PIEZOMETER CONSTRUCTION DIAGRAM		GREDELL Engineering Resources, Inc.			
	AMEREN MISSOURI		ENVIRONMENTAL ENGINEERING			
Date Piezometer Completed: 9/16/09	LABADIE POWER PLANT		LAND	AIR	WATER	
			1505 East High Street Jefferson City, Missouri 65101		Telephone: (573) 659-9078 Facsimile: (573) 659-9079	
			DATE 1/2010	SCALE N.T.S.	DRAWN BY: BED	APPROVED BY: MCC



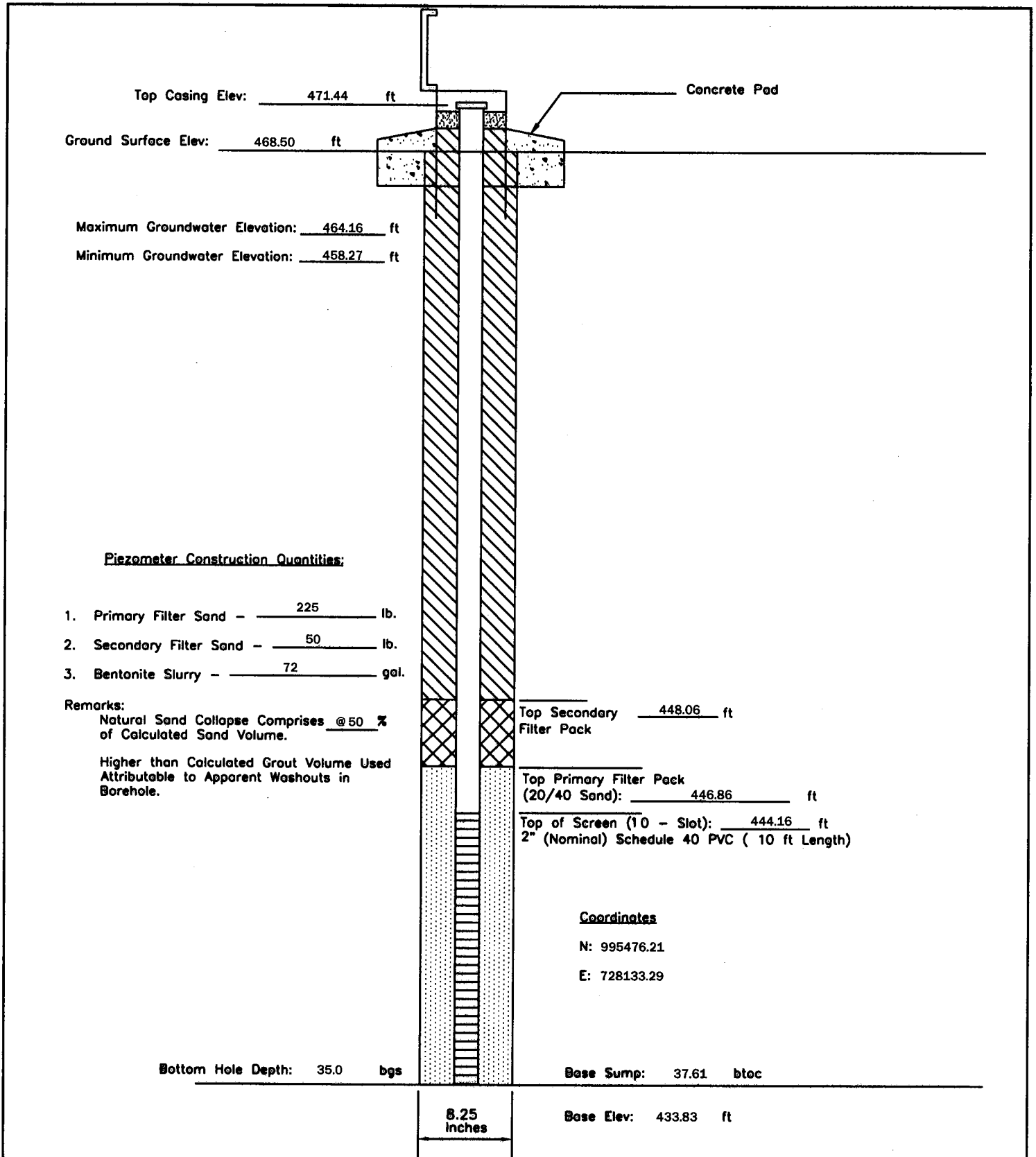
P - 19	PIEZOMETER CONSTRUCTION DIAGRAM	GREDELL Engineering Resources, Inc. ENVIRONMENTAL ENGINEERING LAND AIR WATER			
Date Piezometer Completed: 10/16/09	AMEREN MISSOURI	1505 East High Street Jefferson City, Missouri 65101		Telephone: (573) 659-9078 Facsimile: (573) 659-9079	
	LABADIE POWER PLANT	DATE 1/2010	SCALE N.T.S.	DRAWN BY: BED	APPROVED BY: MCC



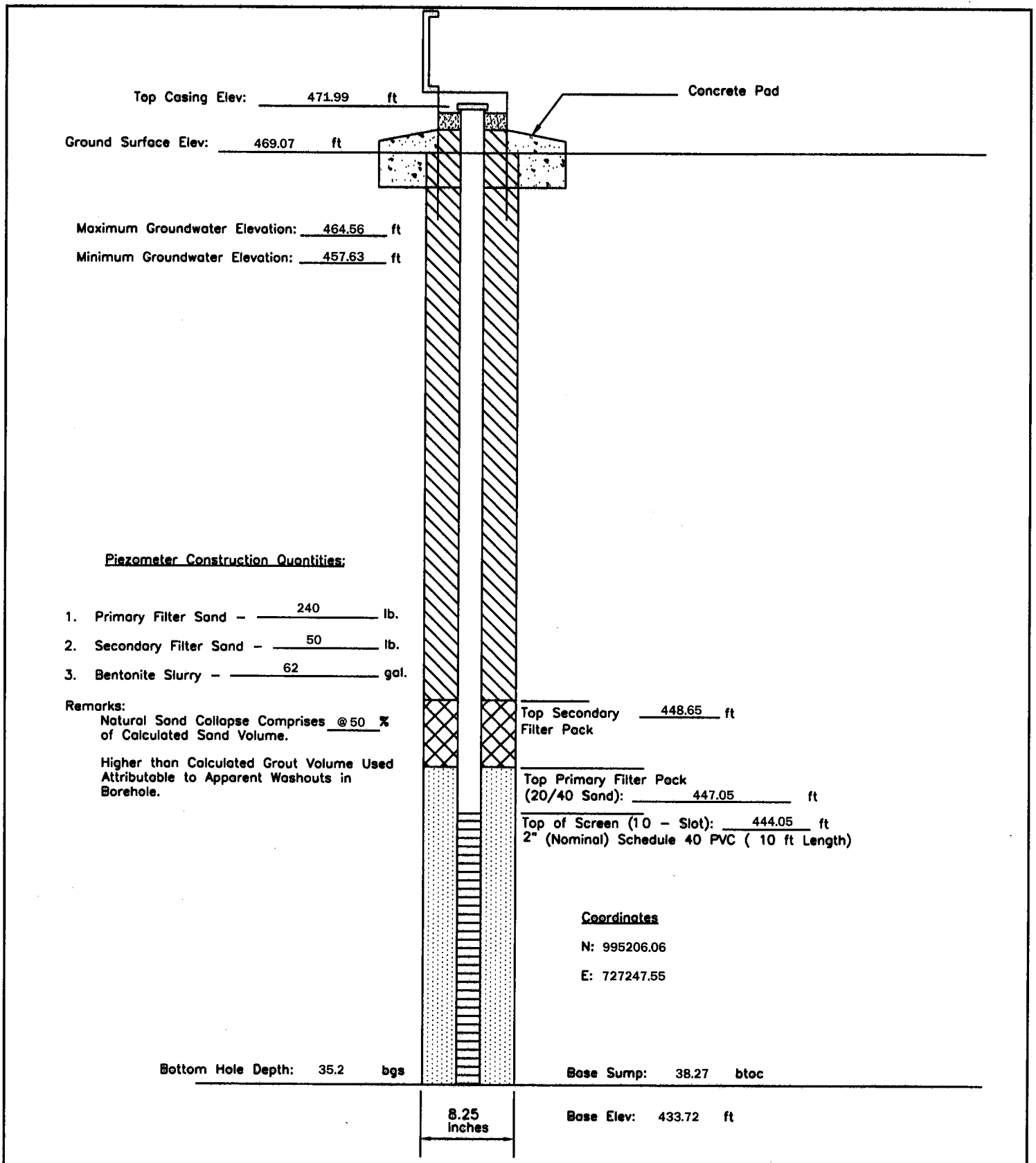
P - 20	PIEZOMETER CONSTRUCTION DIAGRAM	GREDELL Engineering Resources, Inc. ENVIRONMENTAL ENGINEERING		
	AMEREN MISSOURI	LAND	AIR	WATER
Date Piezometer Completed: 9/17/09	LABADIE POWER PLANT	1505 East High Street Jefferson City, Missouri 65101 DATE 1/2010	SCALE N.T.S.	Telephone: (573) 659-9078 Facsimile: (573) 659-9079 DRAWN BY: BED APPROVED BY: MCC



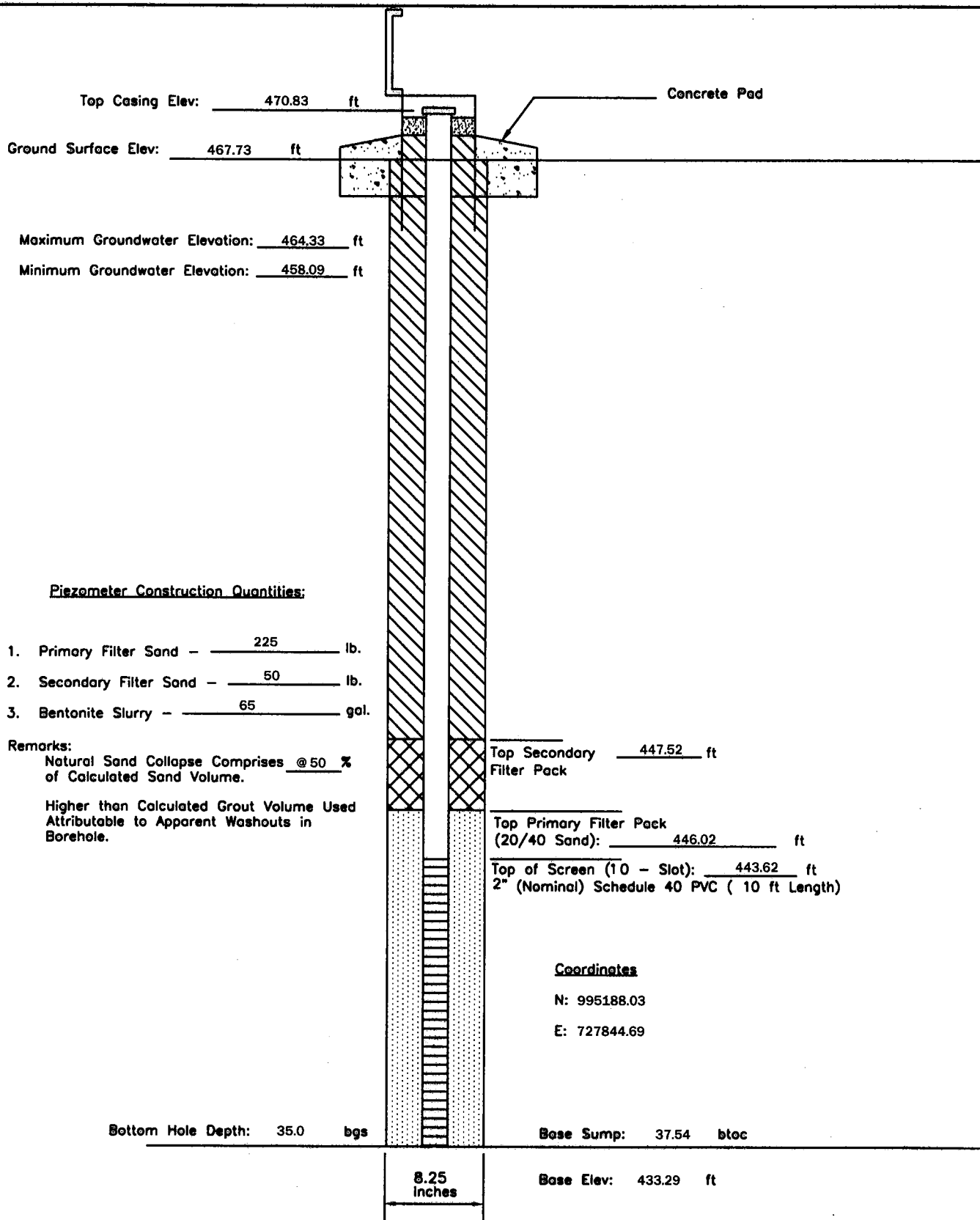
P - 22	PIEZOMETER CONSTRUCTION DIAGRAM	GREDELL Engineering Resources, Inc. ENVIRONMENTAL ENGINEERING			
Date Piezometer Completed: 10/07/09	AMEREN MISSOURI	LAND		AIR	
	LABADIE POWER PLANT	WATER		1505 East High Street Jefferson City, Missouri 65101	
		DATE 1/2010	SCALE N.T.S.	DRAWN BY: BED	Telephone: (573) 659-9078 Facsimile: (573) 659-9079 APPROVED BY: MCC



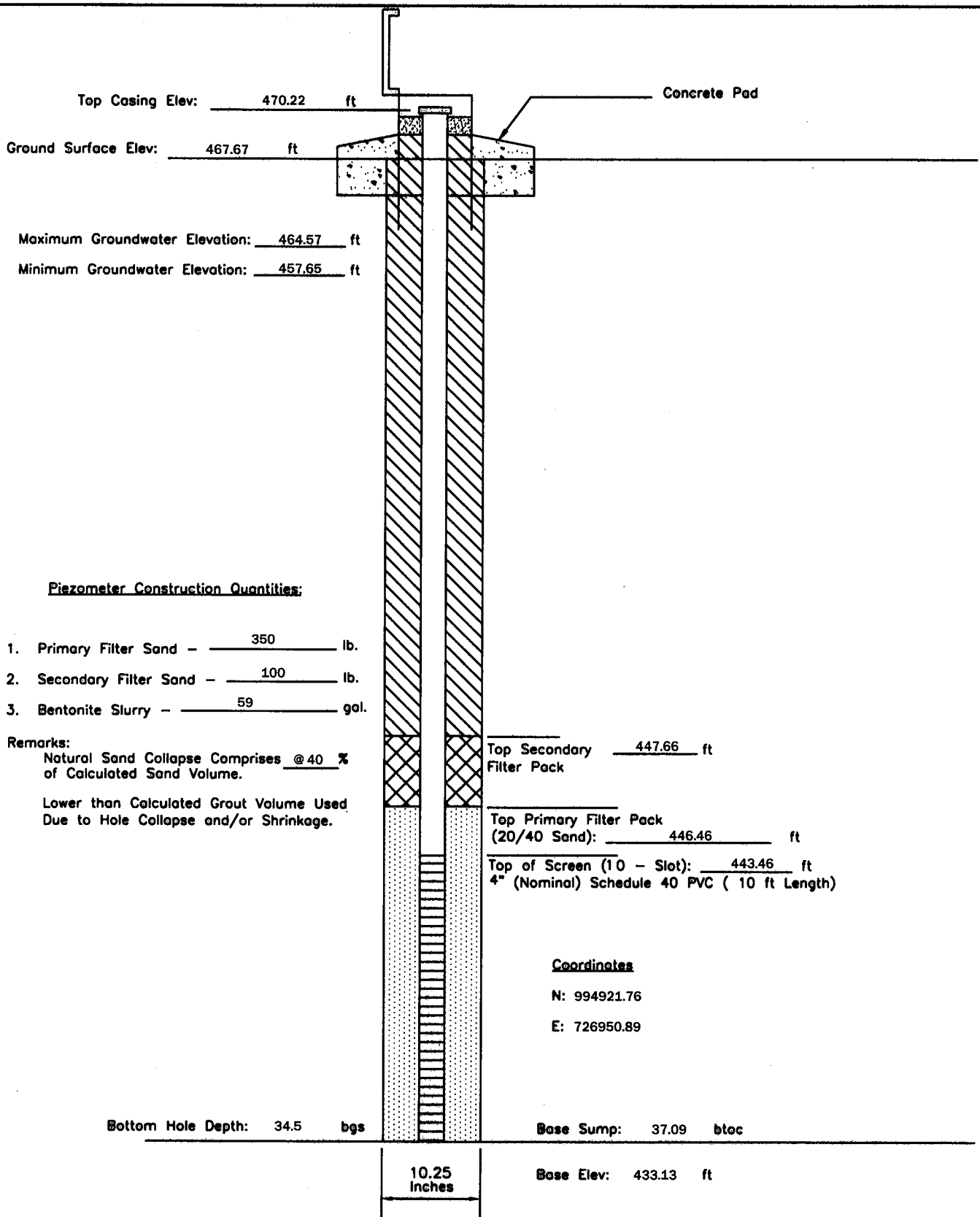
P - 24	PIEZOMETER CONSTRUCTION DIAGRAM	GREDELL Engineering Resources, Inc. ENVIRONMENTAL ENGINEERING LAND AIR WATER		
Date Piezometer Completed: 9/16/09	AMEREN MISSOURI	1505 East High Street Jefferson City, Missouri 65101		Telephone: (573) 659-9078 Facsimile: (573) 659-9079
	LABADIE POWER PLANT	DATE 1/2010	SCALE N.T.S.	DRAWN BY: BED APPROVED BY: MCC



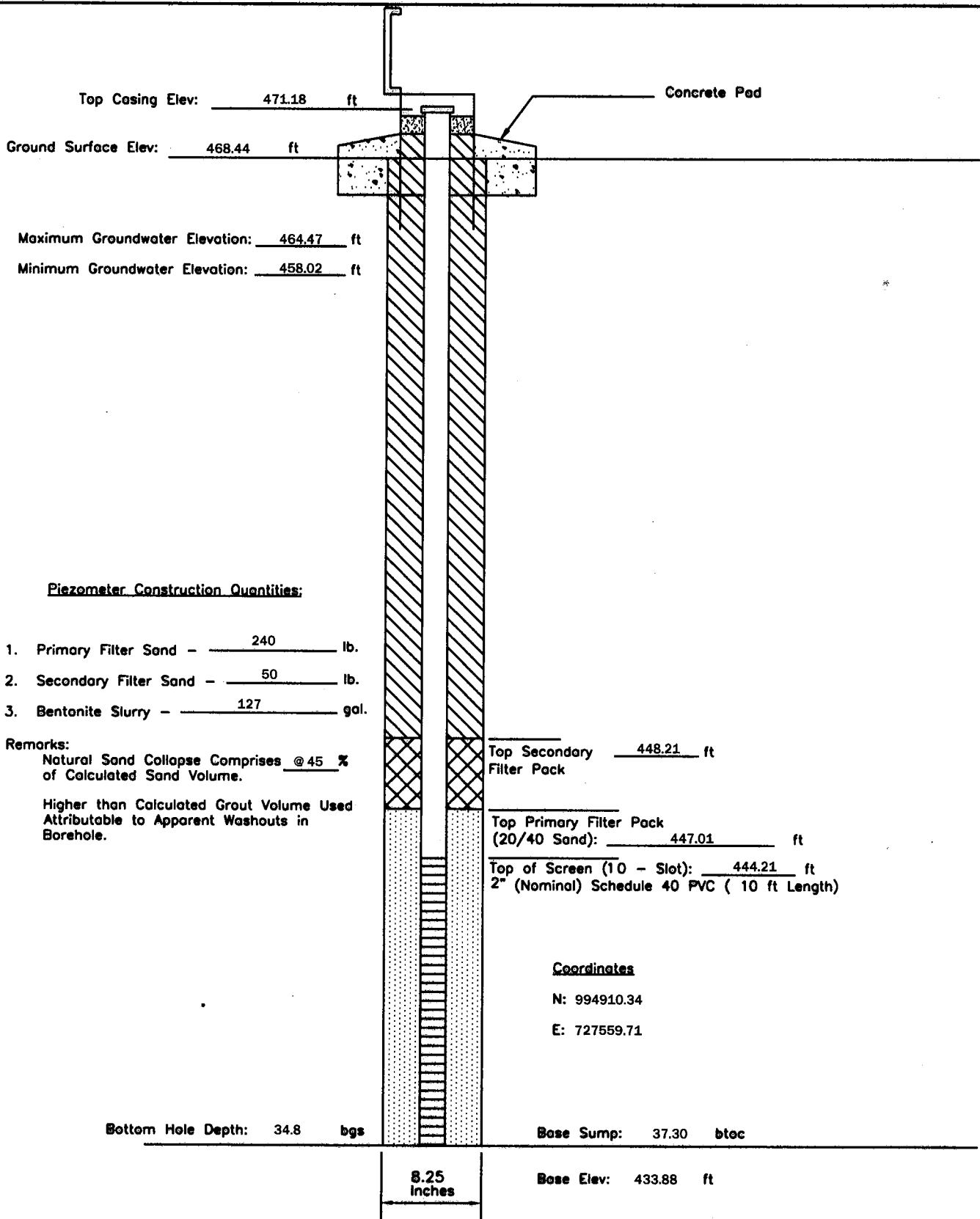
P - 27	PIEZOMETER CONSTRUCTION DIAGRAM	GREDELL Engineering Resources, Inc. ENVIRONMENTAL ENGINEERING			
Date Piezometer Completed: 9/17/09	AMEREN MISSOURI	LAND		AIR	
	LABADIE POWER PLANT	1505 East High Street Jefferson City, Missouri 65101		WATER	
		DATE 1/2010	SCALE N.T.S.	DRAWN BY: BED	Telephone: (573) 659-9078 Facsimile: (573) 659-9079 APPROVED BY: MCC



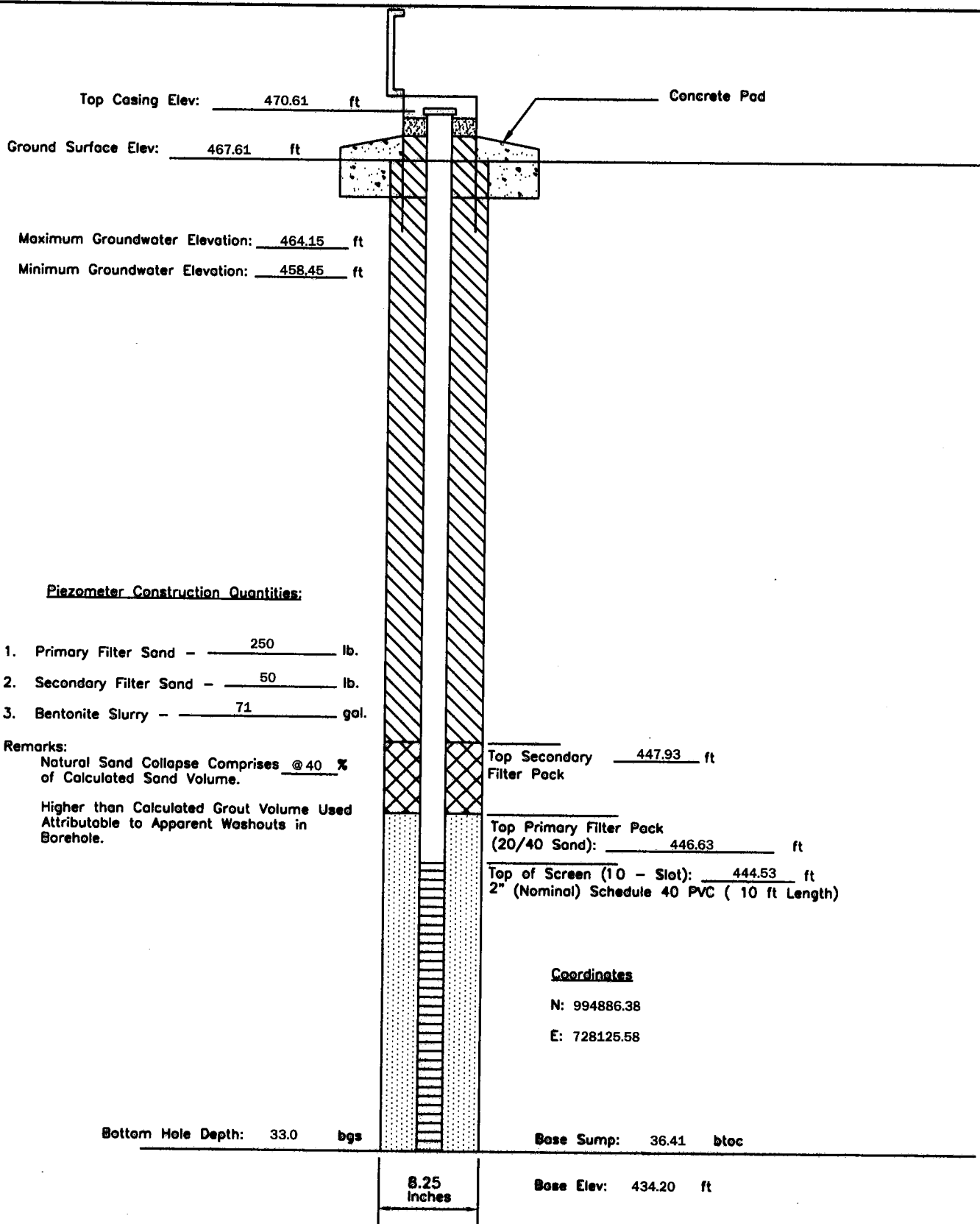
P - 29	PIEZOMETER CONSTRUCTION DIAGRAM	GREDELL Engineering Resources, Inc. ENVIRONMENTAL ENGINEERING				
		LAND	AIR	WATER		
Date Piezometer Completed:	AMEREN MISSOURI	1505 East High Street Jefferson City, Missouri 65101		Telephone: (573) 659-9078 Facsimile: (573) 659-9079		
9/15/09	LABADIE POWER PLANT	DATE 1/2010	SCALE N.T.S.	DRAWN BY: BED	APPROVED BY: MCC	



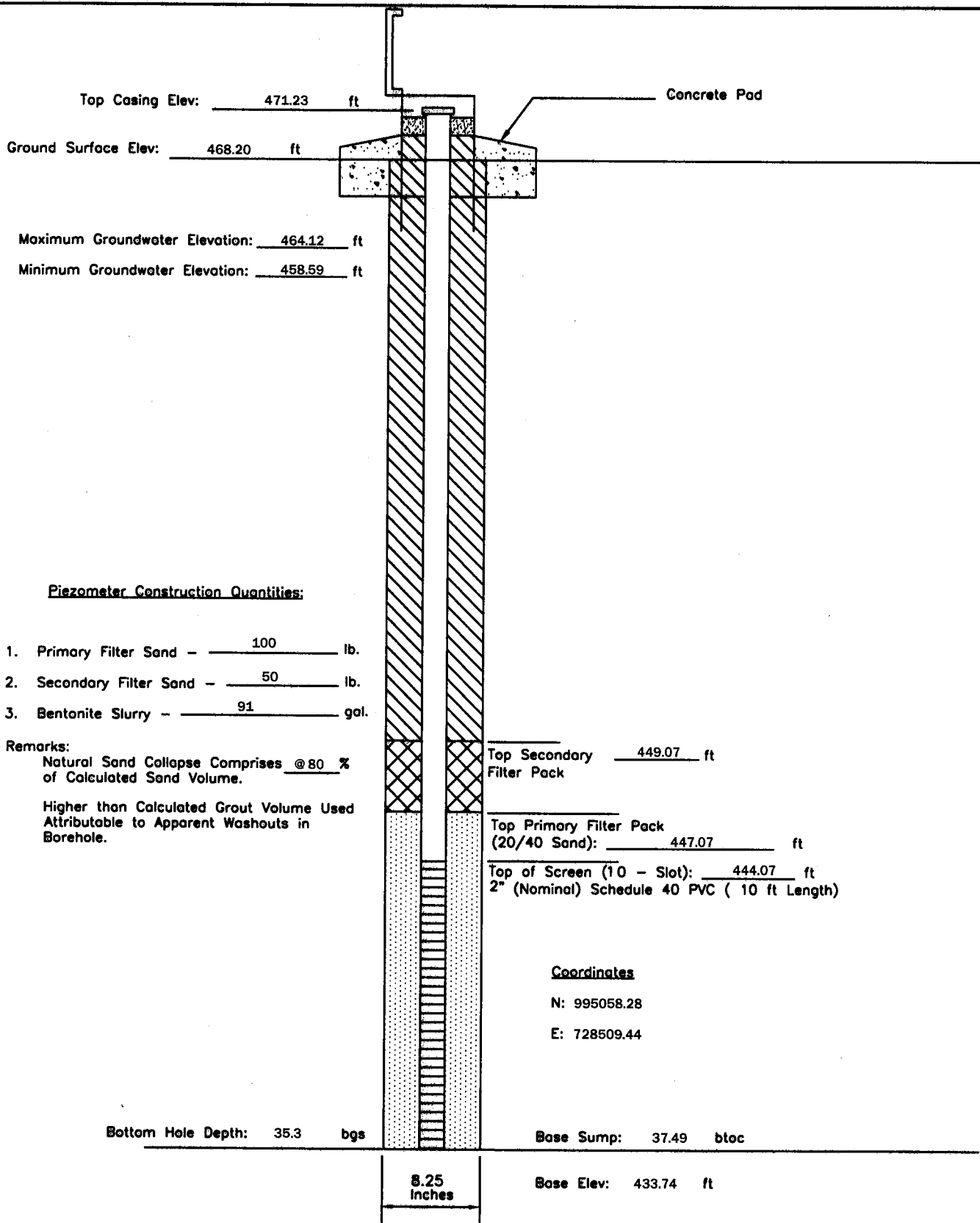
P - 31	PIEZOMETER CONSTRUCTION DIAGRAM		GREDELL Engineering Resources, Inc.			
	AMEREN MISSOURI		ENVIRONMENTAL ENGINEERING			
Date Piezometer Completed: 10/12/09	LABADIE POWER PLANT		LAND	AIR	WATER	
			1505 East High Street Jefferson City, Missouri 65101	Telephone: (573) 659-9078 Facsimile: (573) 659-9079		
			DATE 1/2010	SCALE N.T.S.	DRAWN BY: BED	APPROVED BY: MCC



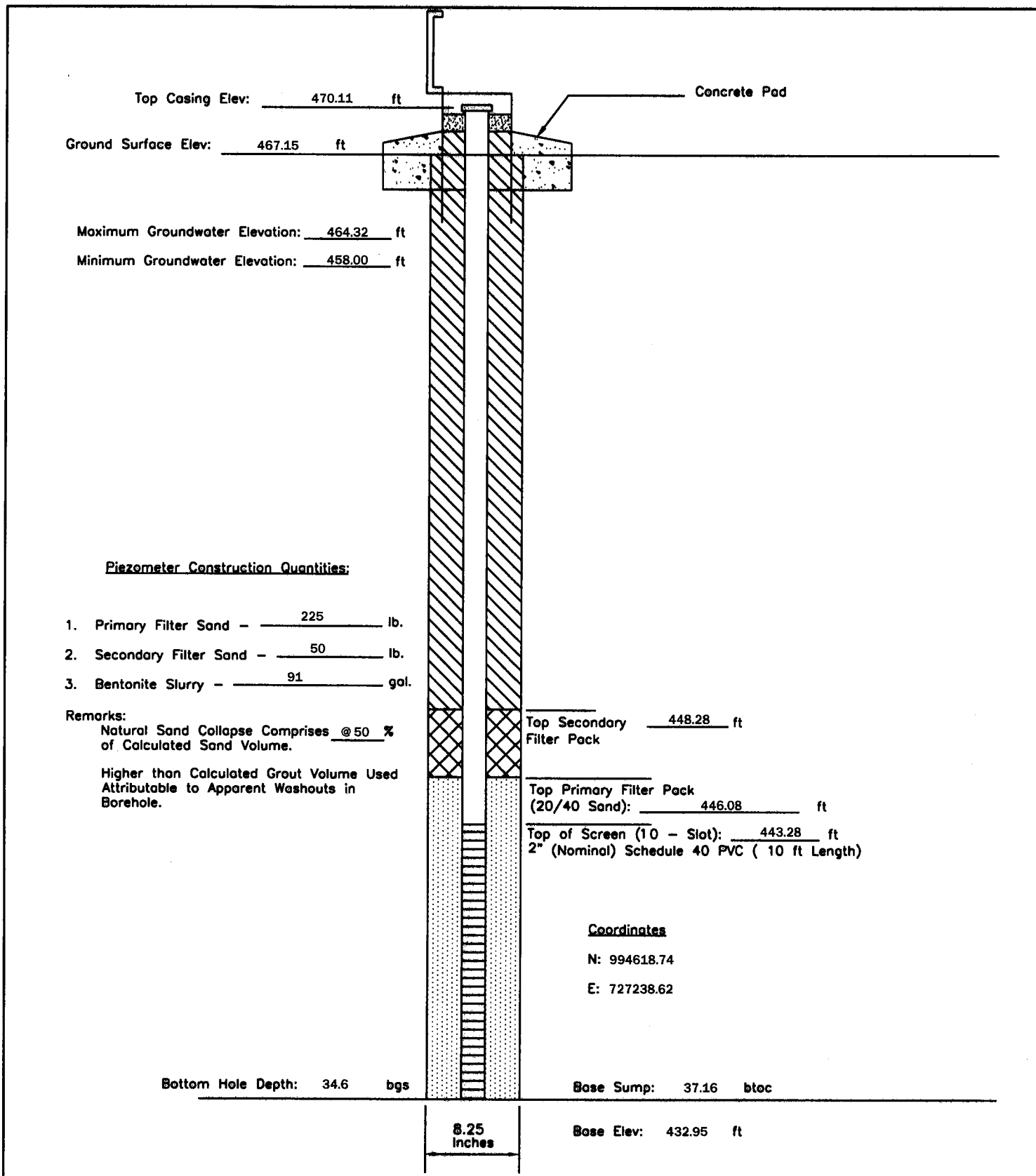
P - 33	PIEZOMETER CONSTRUCTION DIAGRAM		GREDELL Engineering Resources, Inc.			
	AMEREN MISSOURI		ENVIRONMENTAL ENGINEERING			
Date Piezometer Completed: 9/14/09	LABADIE POWER PLANT		LAND	AIR	WATER	
			1505 East High Street Jefferson City, Missouri 65101	Telephone: (573) 659-9078 Facsimile: (573) 659-9079		
		DATE 1/2010	SCALE N.T.S.	DRAWN BY: BED	APPROVED BY: MCC	



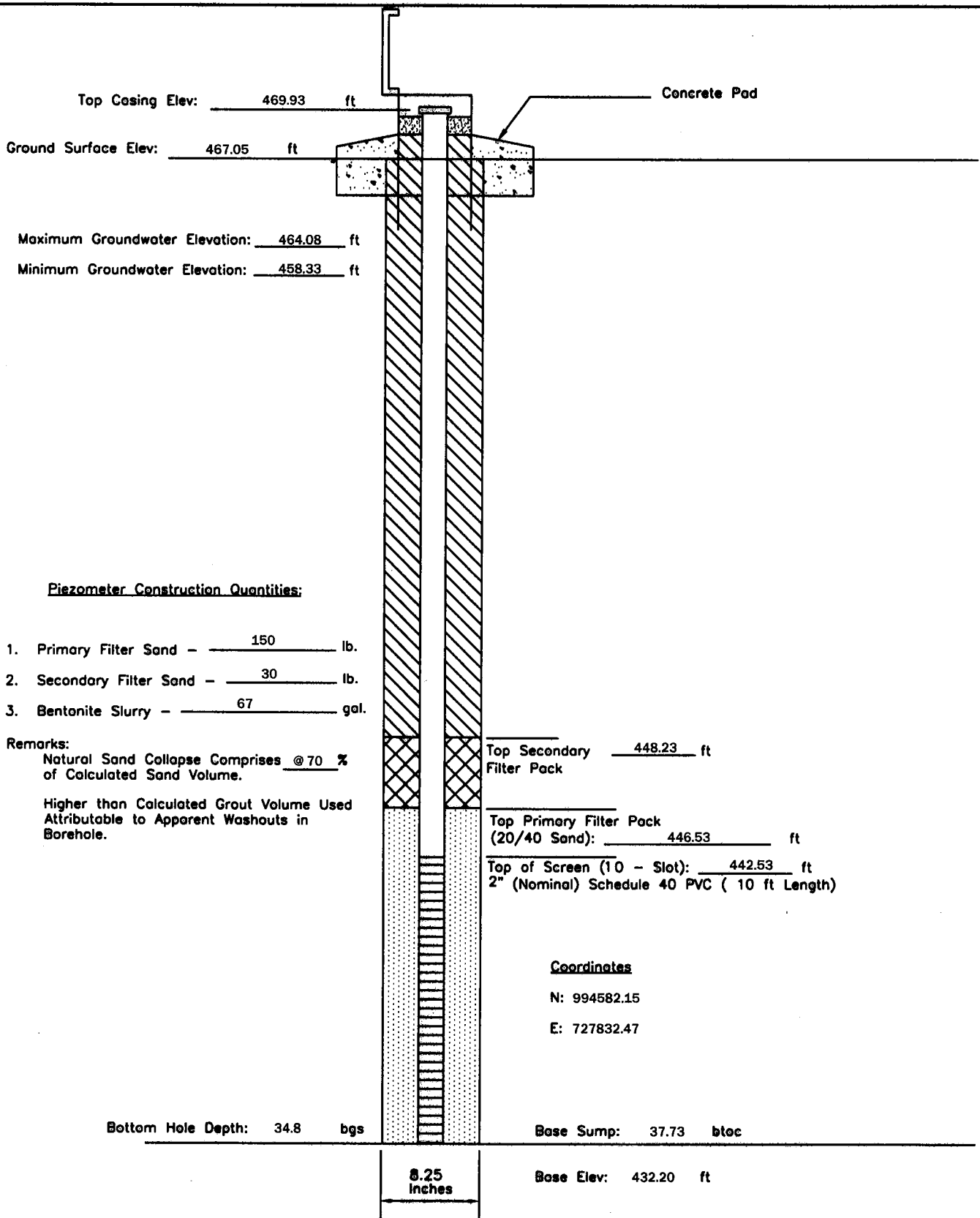
P - 35	PIEZOMETER CONSTRUCTION DIAGRAM	GREDELL Engineering Resources, Inc. ENVIRONMENTAL ENGINEERING			
Date Piezometer Completed: 9/15/09	AMEREN MISSOURI	LAND	AIR	WATER	Telephone: (573) 659-9078 Facsimile: (573) 659-9079
	LABADIE POWER PLANT	1505 East High Street Jefferson City, Missouri 65101	DATE 1/2010	SCALE N.T.S.	
			DRAWN BY: BED	APPROVED BY: MCC	



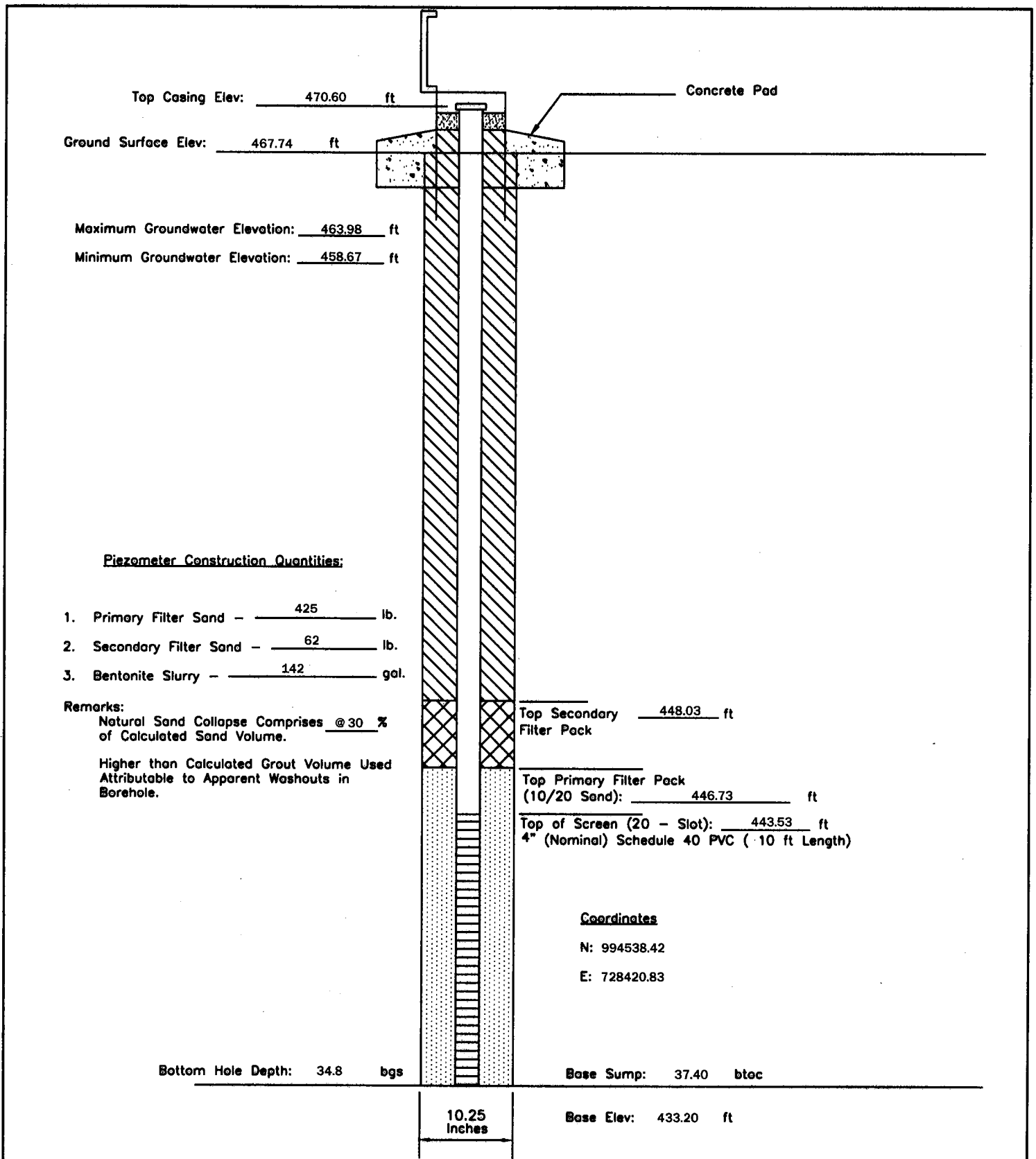
P - 36	PIEZOMETER CONSTRUCTION DIAGRAM		GREDELL Engineering Resources, Inc.		
	AMEREN MISSOURI		ENVIRONMENTAL ENGINEERING		
Date Piezometer Completed: 9/15/09	LABADIE POWER PLANT		LAND	AIR	WATER
			1505 East High Street Jefferson City, Missouri 65101	Telephone: (573) 659-9078 Facsimile: (573) 659-9079	
		DATE 1/2010	SCALE N.T.S.	DRAWN BY: BED	APPROVED BY: MCC



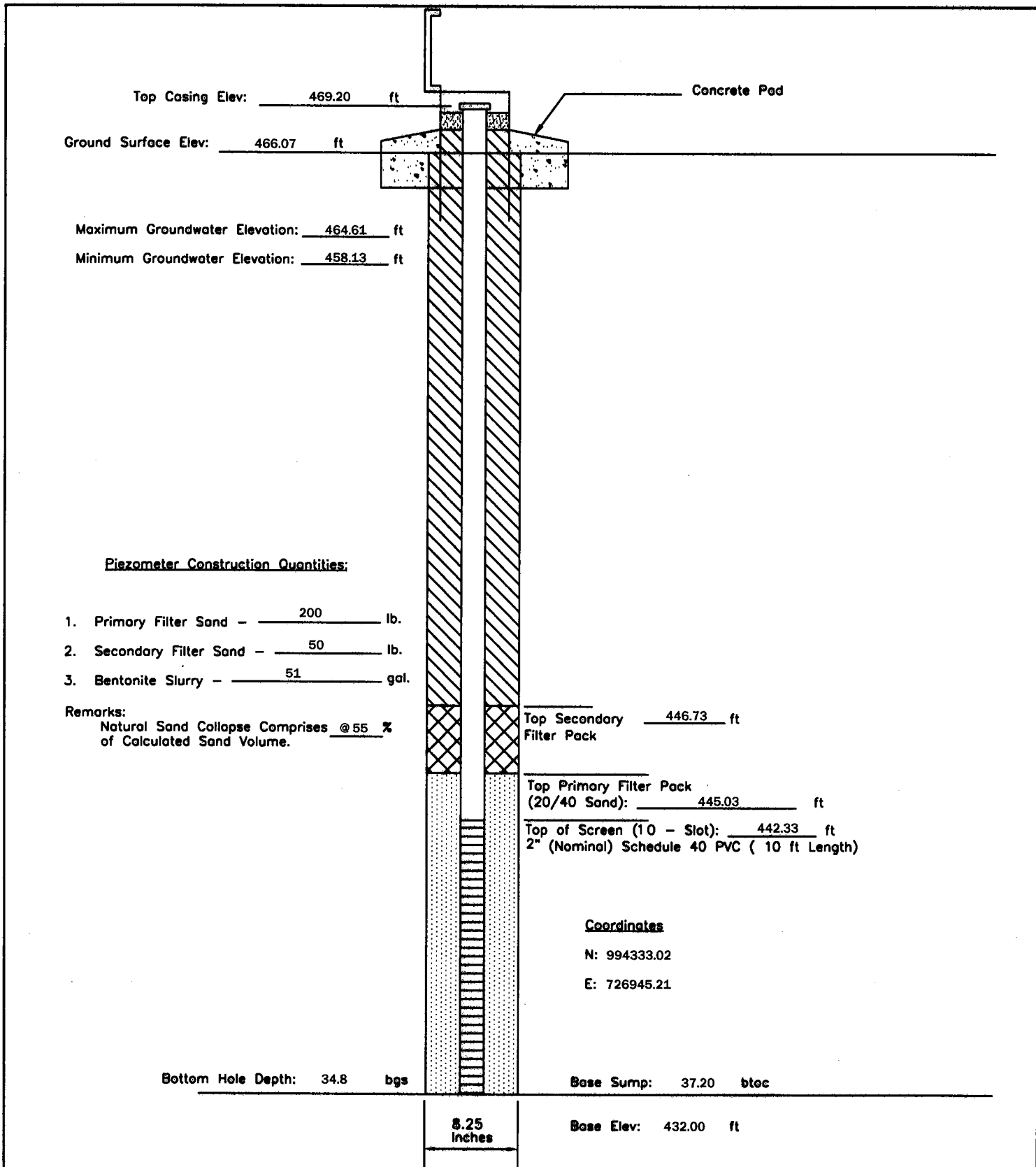
P - 38	PIEZOMETER CONSTRUCTION DIAGRAM		GREDELL Engineering Resources, Inc.		
	AMEREN MISSOURI		ENVIRONMENTAL ENGINEERING		
Date Piezometer Completed: 9/22/09	LABADIE POWER PLANT		LAND	AIR	WATER
			1505 East High Street Jefferson City, Missouri 65101	Telephone: (573) 659-9078 Facsimile: (573) 659-9079	
			DATE 1/2010	SCALE N.T.S.	DRAWN BY: BED APPROVED BY: MCC



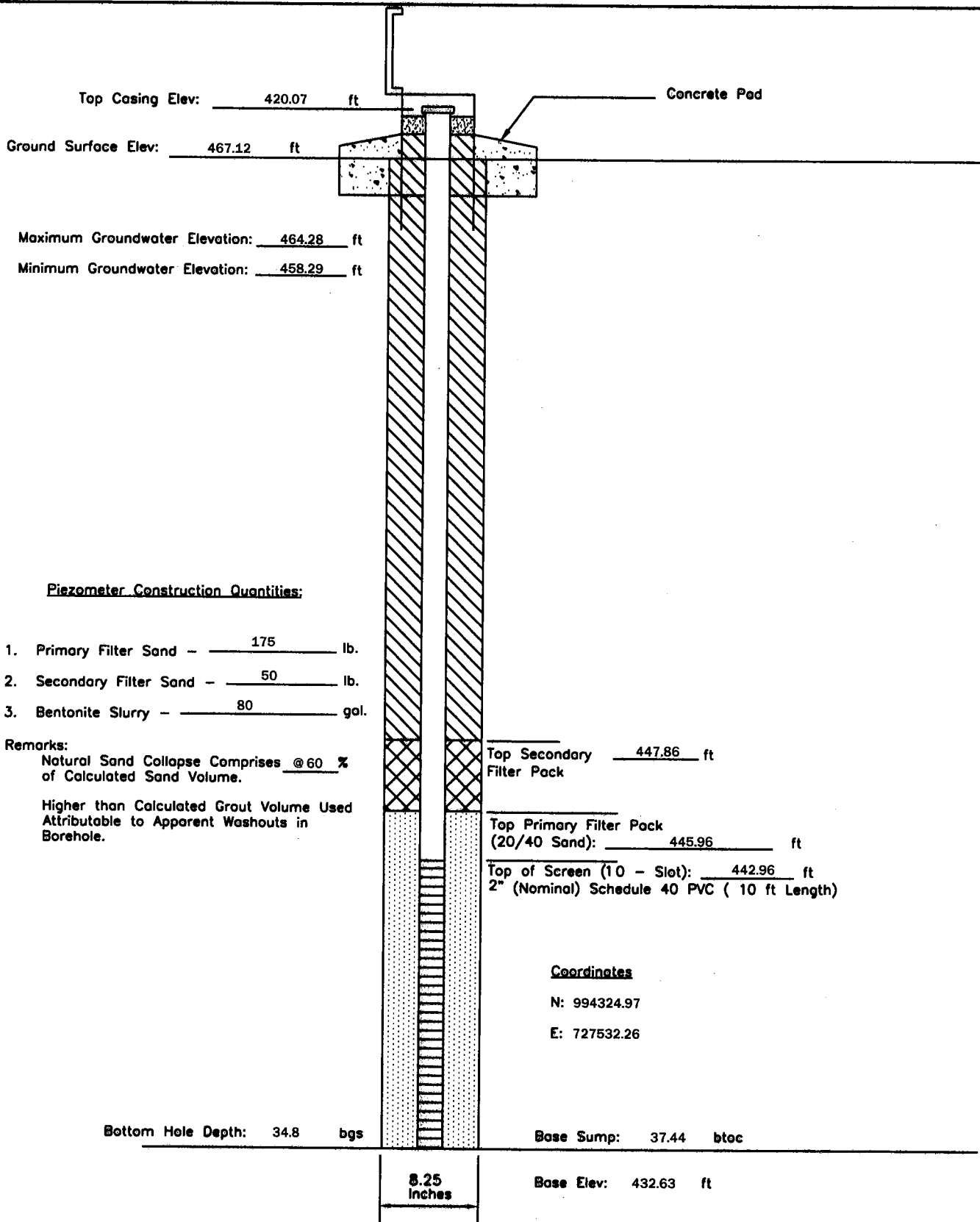
P - 40	PIEZOMETER CONSTRUCTION DIAGRAM	GREDELL Engineering Resources, Inc.			
		ENVIRONMENTAL ENGINEERING			
Date Piezometer Completed: 10/12/09	AMEREN MISSOURI	LAND	AIR	WATER	
	LABADIE POWER PLANT	1505 East High Street Jefferson City, Missouri 65101	Telephone: (573) 659-9078 Facsimile: (573) 659-9079	DATE 1/2010	SCALE N.T.S.
		DRAWN BY: BED	APPROVED BY: MCC		



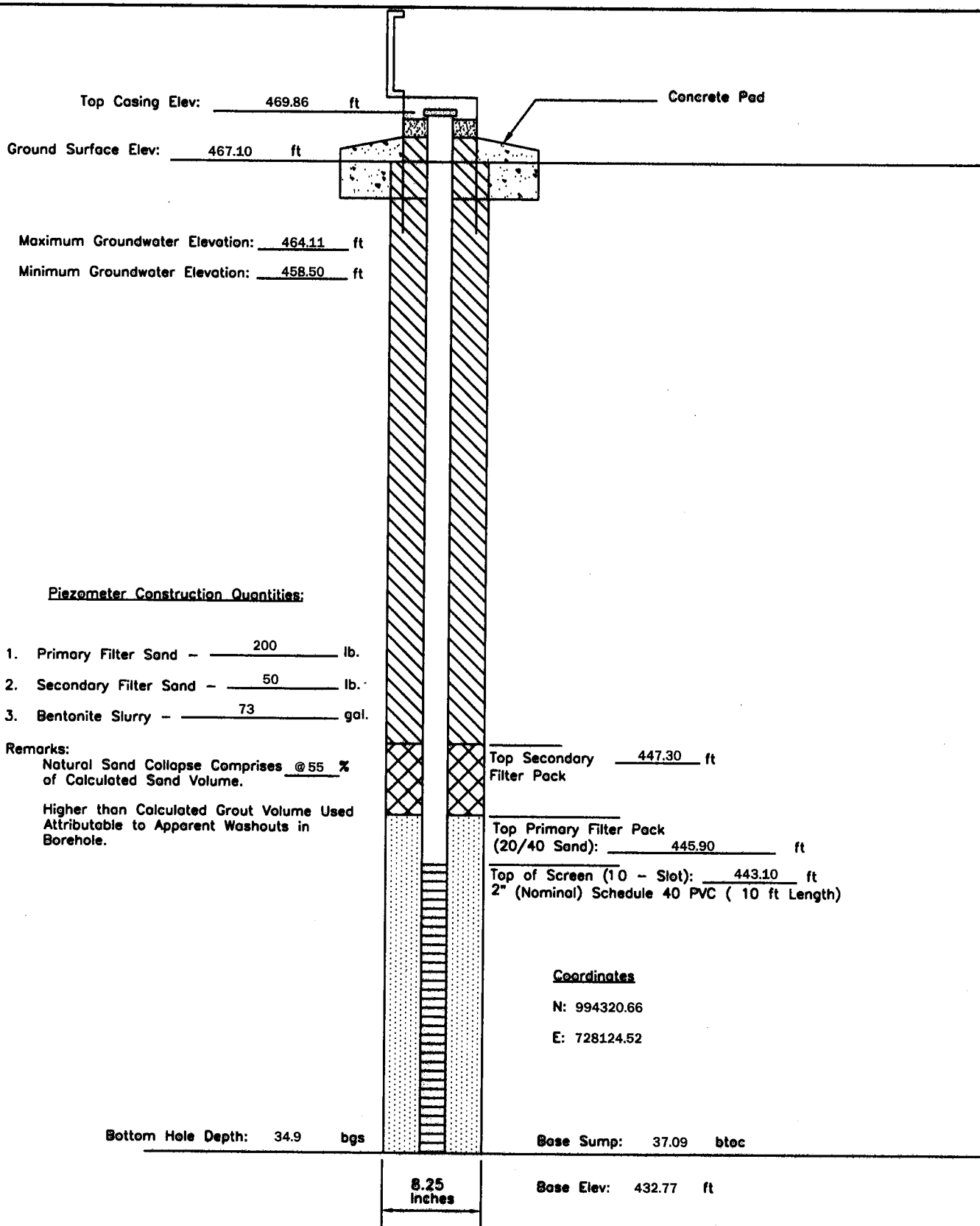
P - 42	PIEZOMETER CONSTRUCTION DIAGRAM		GREDELL Engineering Resources, Inc.		
	AMEREN MISSOURI		ENVIRONMENTAL ENGINEERING		
Date Piezometer Completed: 10/06/09	LABADIE POWER PLANT		LAND	AIR	WATER
			1505 East High Street Jefferson City, Missouri 65101	Telephone: (573) 659-9078 Facsimile: (573) 659-9079	
		DATE 1/2010	SCALE N.T.S.	DRAWN BY: BED	APPROVED BY: MCC



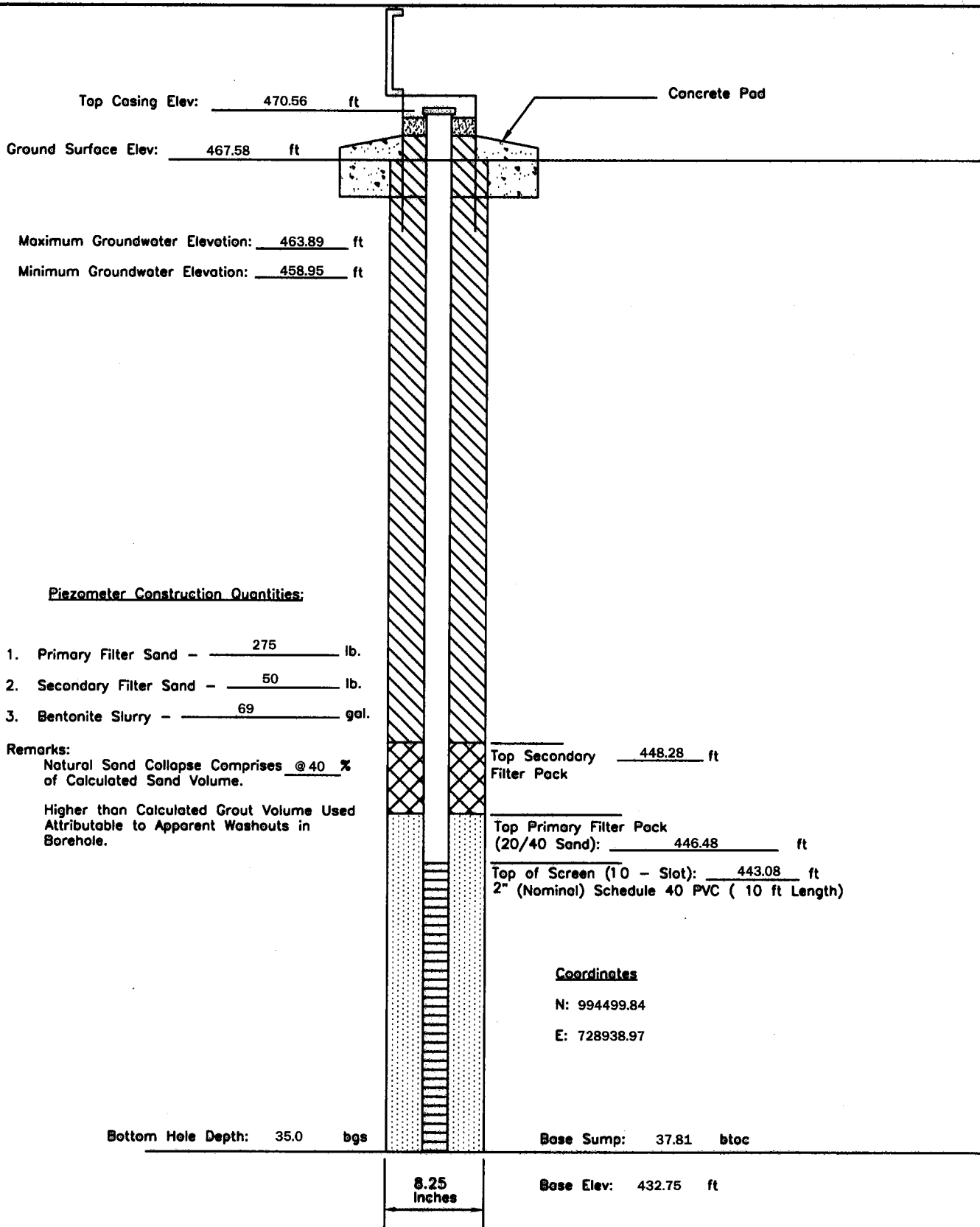
P - 43	PIEZOMETER CONSTRUCTION DIAGRAM	GREDELL Engineering Resources, Inc. ENVIRONMENTAL ENGINEERING				
		LAND	AIR	WATER		
Date Piezometer Completed: 9/17/09	AMEREN MISSOURI	1505 East High Street Jefferson City, Missouri 65101		Telephone: (573) 659-9078 Facsimile: (573) 659-9079		
	LABADIE POWER PLANT	DATE 1/2010	SCALE N.T.S.	DRAWN BY: BED	APPROVED BY: MCC	



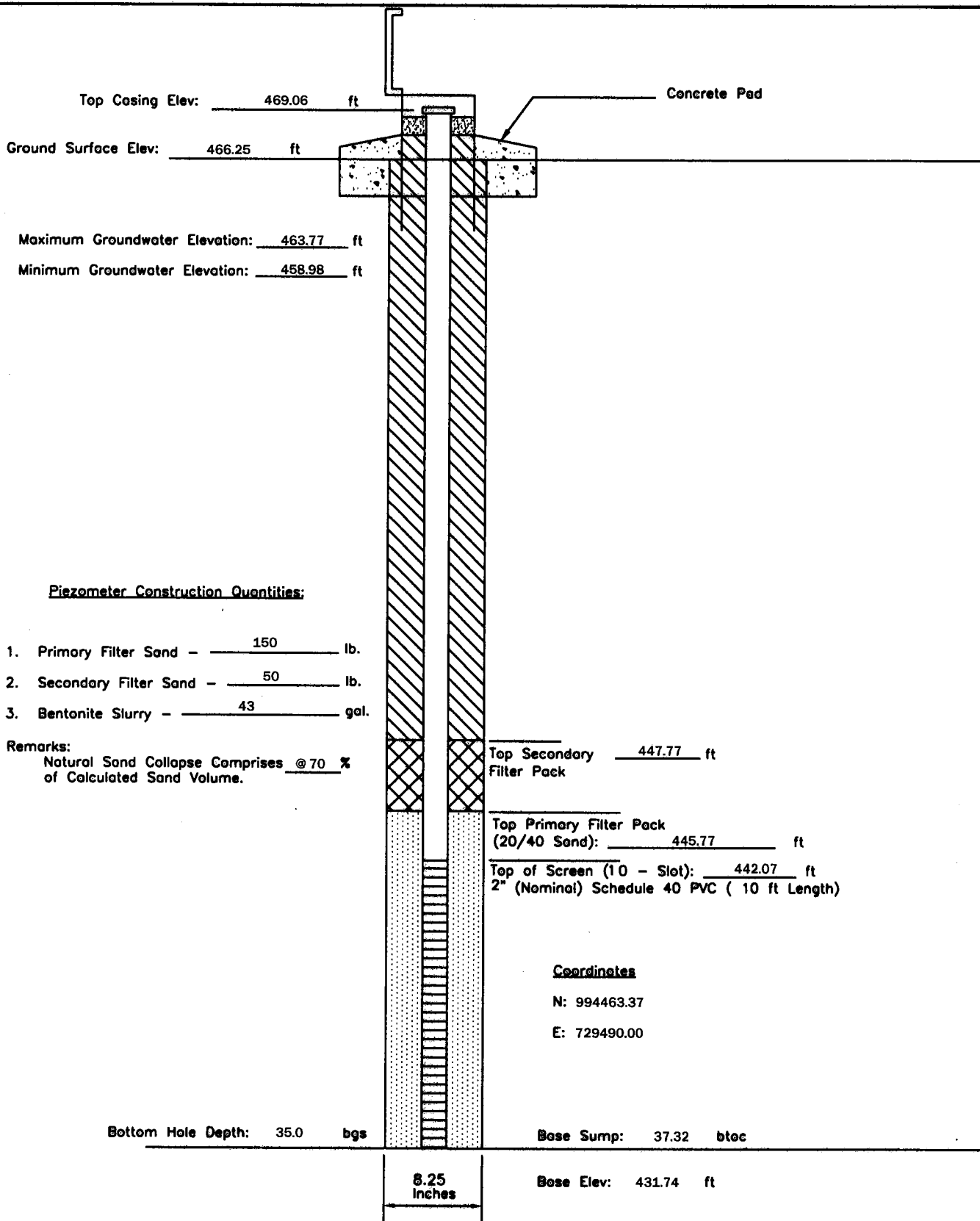
P - 45	PIEZOMETER CONSTRUCTION DIAGRAM	GREDELL Engineering Resources, Inc.			
	AMEREN MISSOURI	ENVIRONMENTAL ENGINEERING			
Date Piezometer Completed: 9/18/09	LABADIE POWER PLANT	LAND	AIR	WATER	
		1505 East High Street Jefferson City, Missouri 65101	Telephone: (573) 659-9078 Facsimile: (573) 659-9079		
		DATE 1/2010	SCALE N.T.S.	DRAWN BY: BED	APPROVED BY: MCC



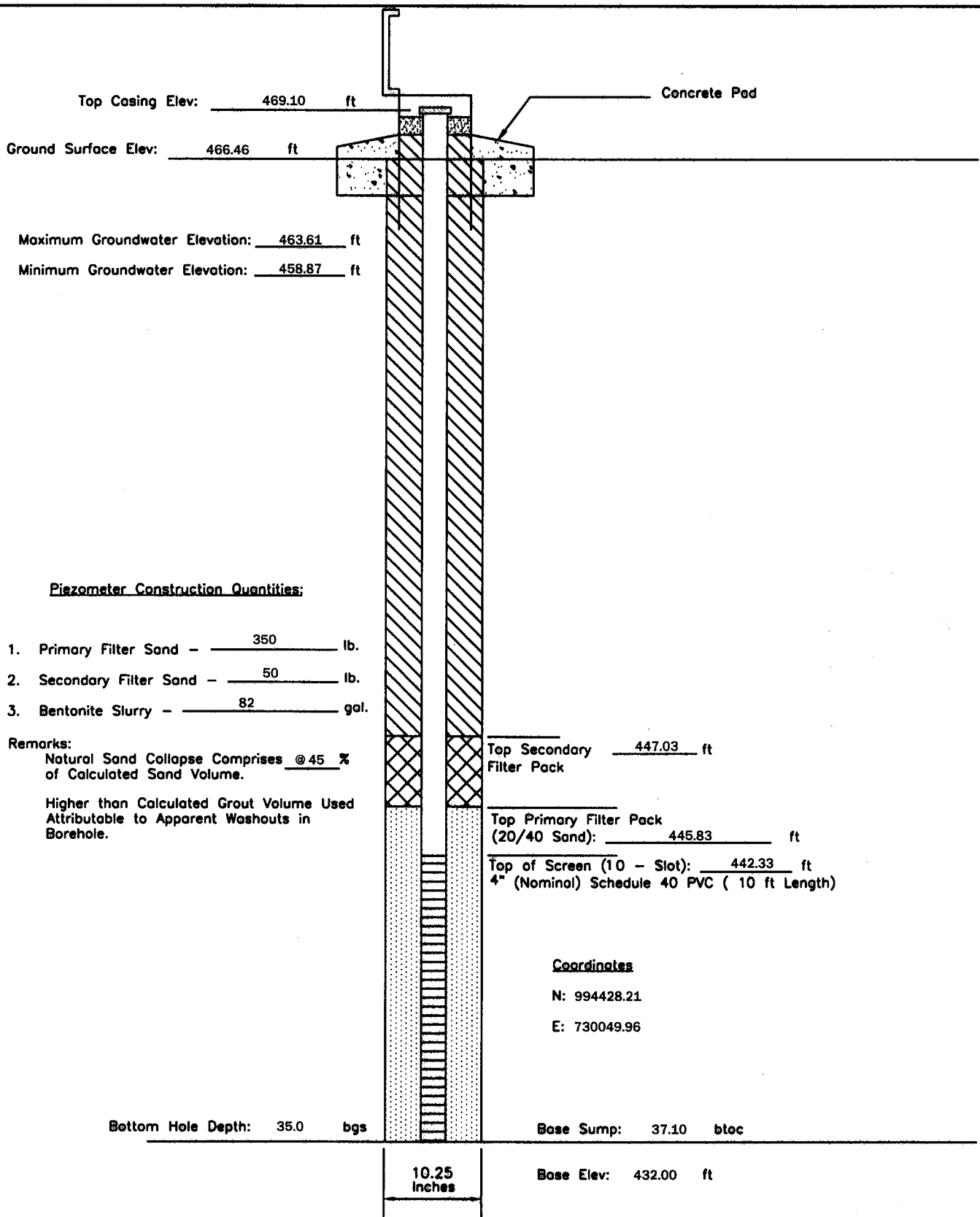
P - 47	PIEZOMETER CONSTRUCTION DIAGRAM		GREDELL Engineering Resources, Inc.		
	AMEREN MISSOURI		ENVIRONMENTAL ENGINEERING		
Date Piezometer Completed: 9/18/09	LABADIE POWER PLANT		LAND	AIR	WATER
			1505 East High Street Jefferson City, Missouri 65101	Telephone: (573) 659-9078 Facsimile: (573) 659-9079	
		DATE 1/2010	SCALE N.T.S.	DRAWN BY: BED	APPROVED BY: MCC



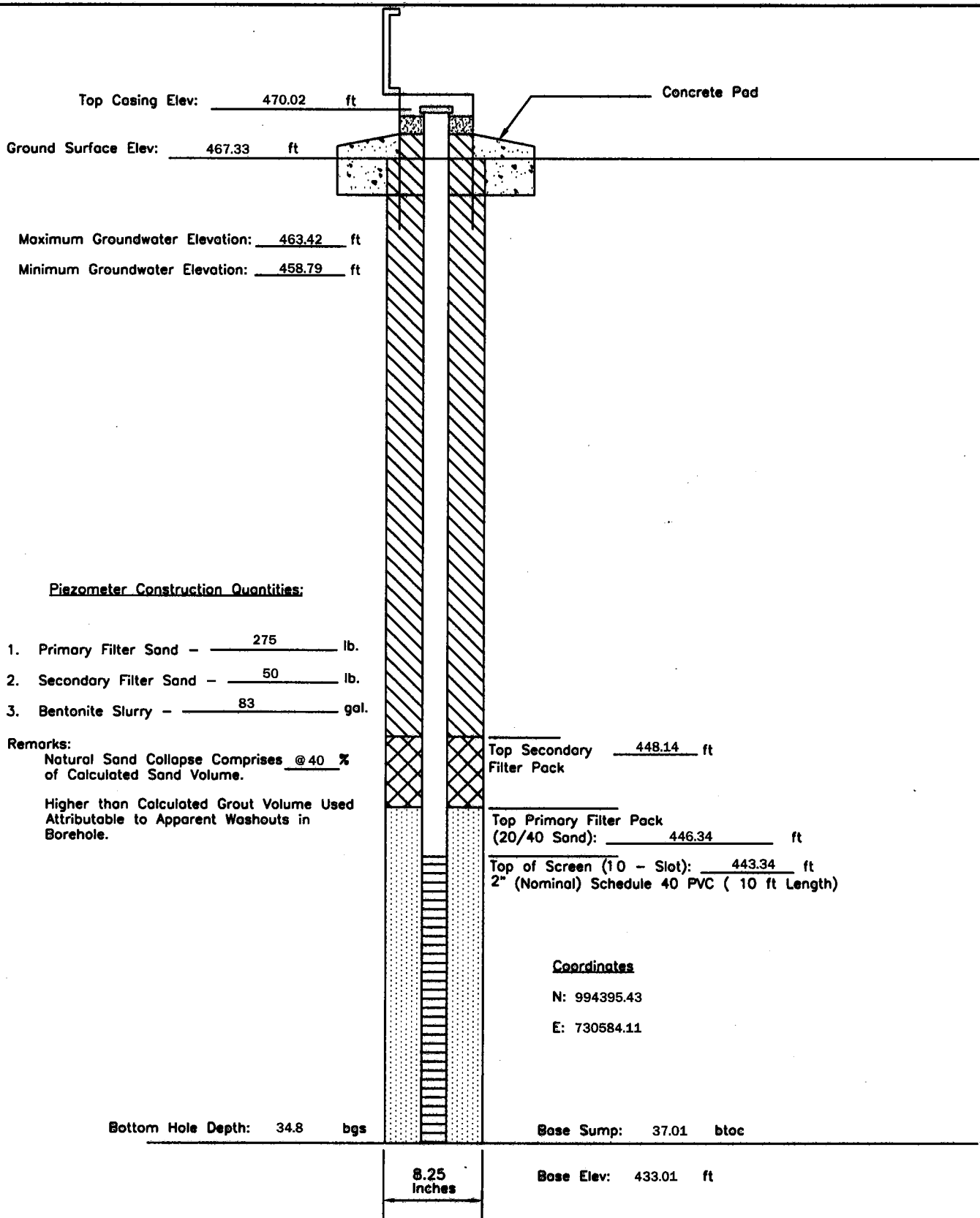
P - 49	PIEZOMETER CONSTRUCTION DIAGRAM	GREDELL Engineering Resources, Inc.			
		ENVIRONMENTAL ENGINEERING			
Date Piezometer Completed: 10/14/09	AMEREN MISSOURI	LAND	AIR	WATER	
	LABADIE POWER PLANT	1505 East High Street Jefferson City, Missouri 65101	Telephone: (573) 659-9078 Facsimile: (573) 659-9079	DATE 1/2010	SCALE N.T.S.
		DRAWN BY: BED	APPROVED BY: MCC		



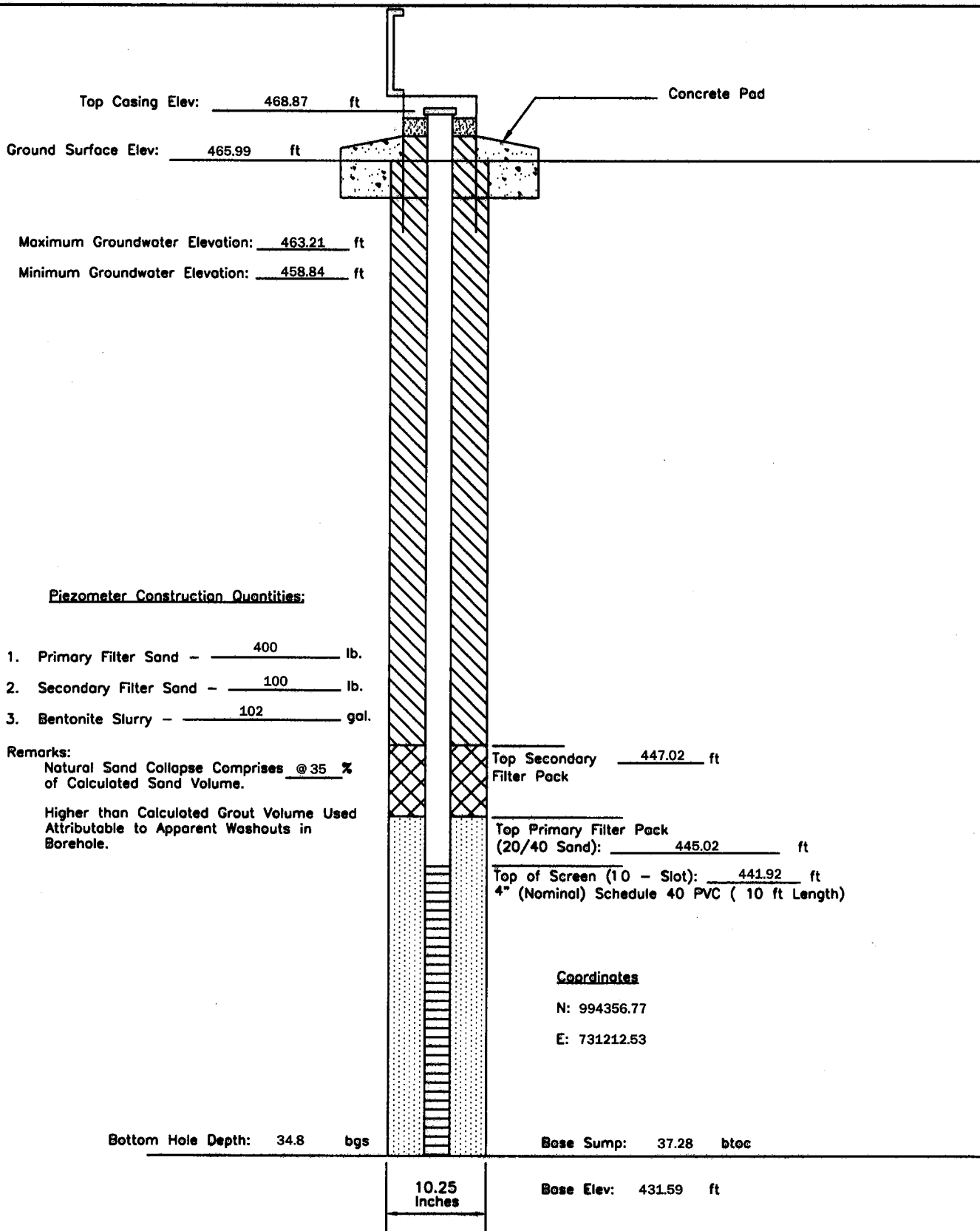
P - 51	PIEZOMETER CONSTRUCTION DIAGRAM	GREDELL Engineering Resources, Inc. ENVIRONMENTAL ENGINEERING LAND AIR WATER			
Date Piezometer Completed: 10/14/09	AMEREN MISSOURI	1505 East High Street Jefferson City, Missouri 65101		Telephone: (573) 659-9078 Facsimile: (573) 659-9079	
	LABADIE POWER PLANT	DATE 1/2010	SCALE N.T.S.	DRAWN BY: BED	APPROVED BY: MCC



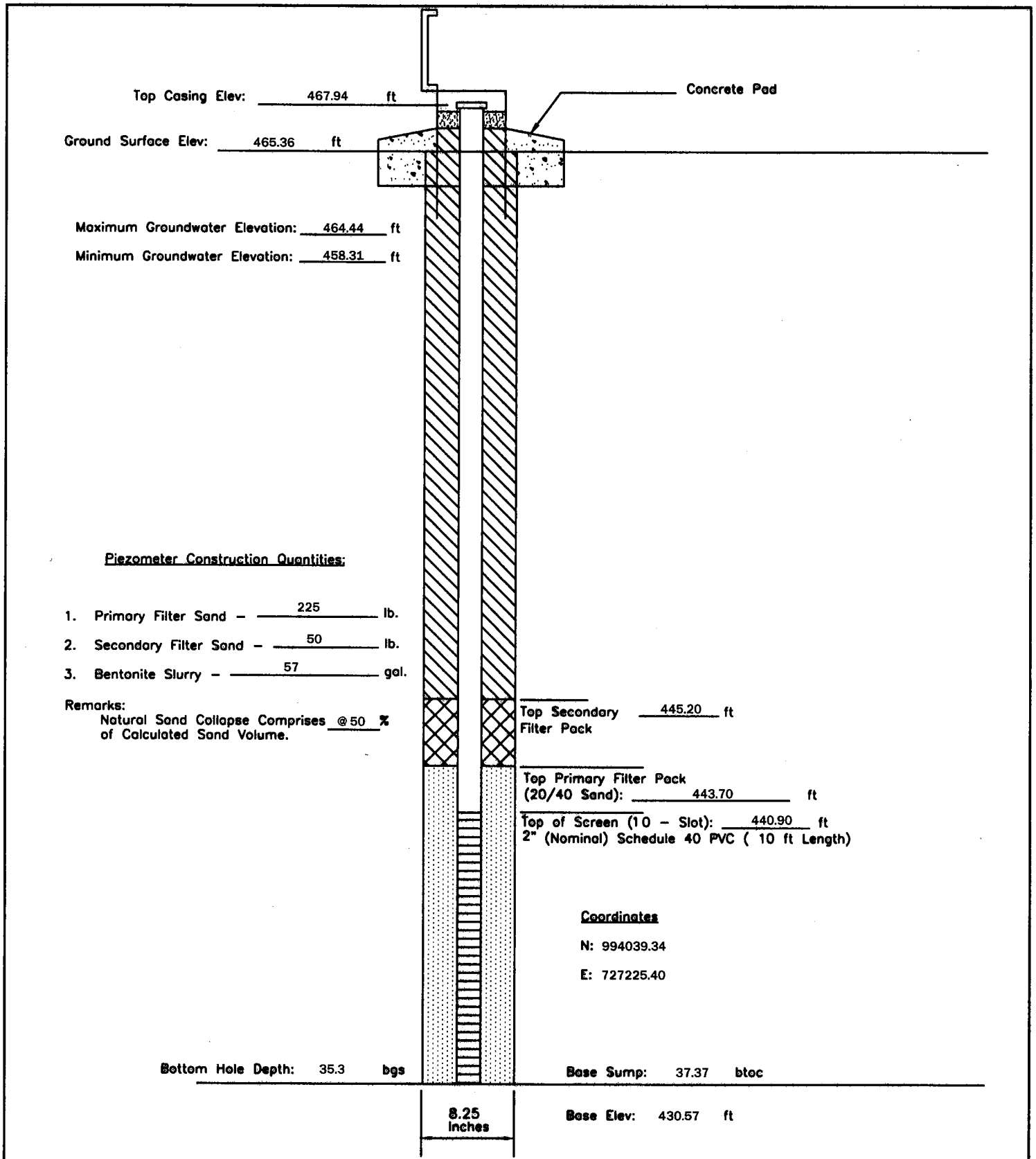
P - 53	PIEZOMETER CONSTRUCTION DIAGRAM	GREDELL Engineering Resources, Inc. ENVIRONMENTAL ENGINEERING				
		LAND	AIR	WATER		
Date Piezometer Completed:	AMEREN MISSOURI	1505 East High Street Jefferson City, Missouri 65101		Telephone: (573) 659-9078 Facsimile: (573) 659-9079		
10/15/09	LABADIE POWER PLANT	DATE 1/2010	SCALE N.T.S.	DRAWN BY: BED	APPROVED BY: MCC	



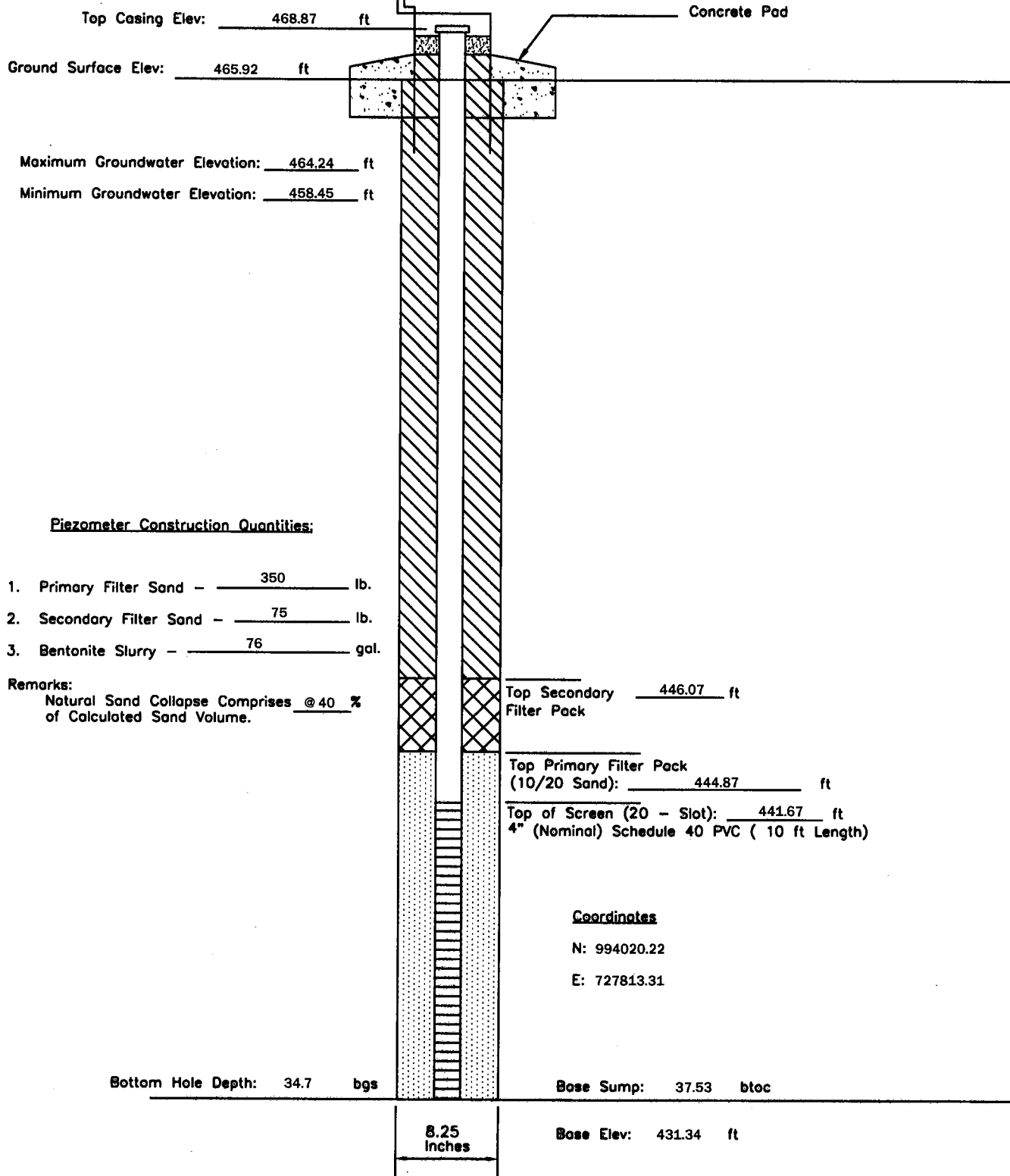
P - 55	PIEZOMETER CONSTRUCTION DIAGRAM	GREDELL Engineering Resources, Inc. ENVIRONMENTAL ENGINEERING			
	AMEREN MISSOURI	LAND	AIR	WATER	
Date Piezometer Completed:	LABADIE POWER PLANT	1505 East High Street Jefferson City, Missouri 65101	DATE 1/2010	SCALE N.T.S.	Telephone: (573) 659-9078 Facsimile: (573) 659-9079
10/14/09		DRAWN BY: BED	APPROVED BY: MCC		



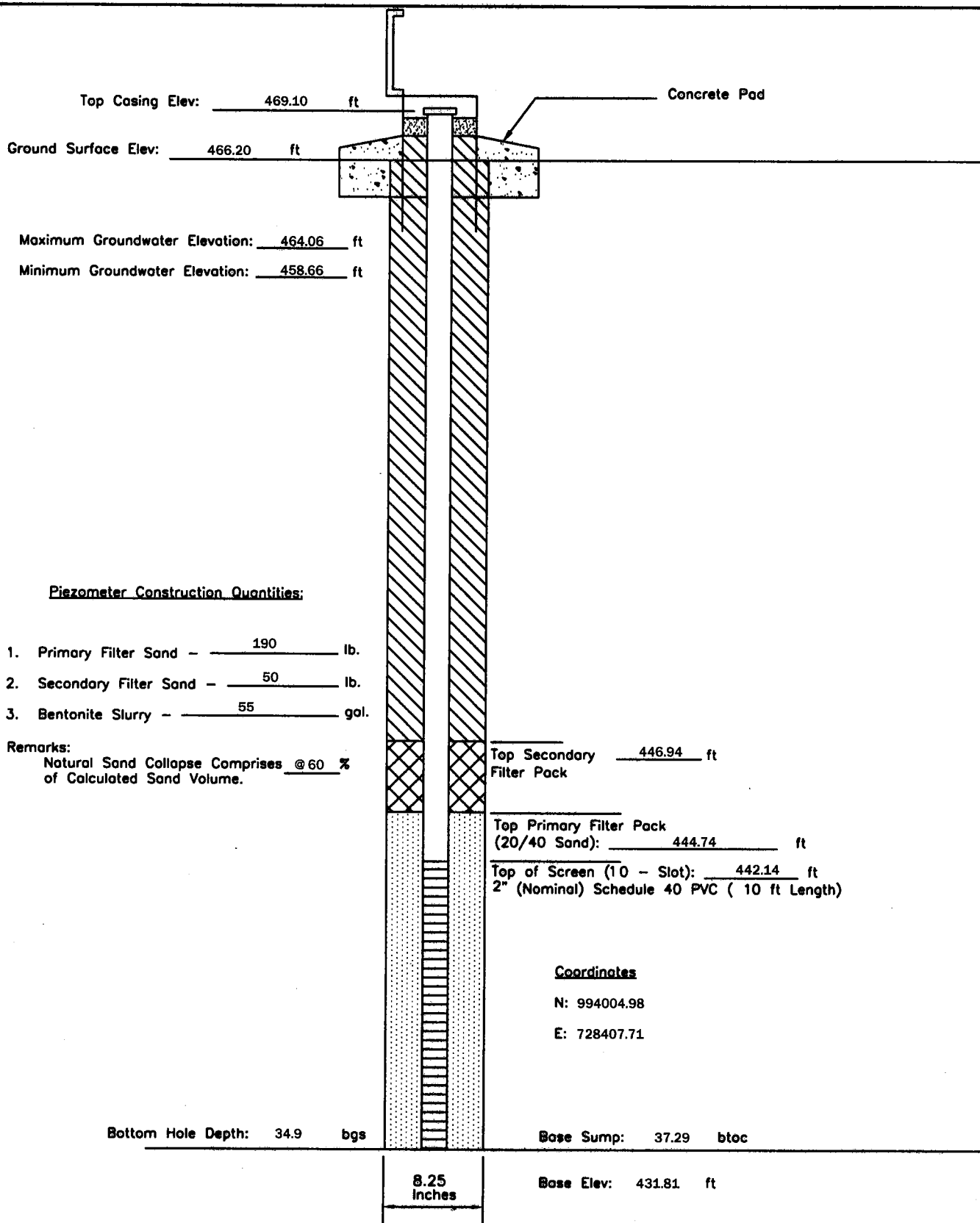
P - 57	PIEZOMETER CONSTRUCTION DIAGRAM		GREDELL Engineering Resources, Inc.			
	AMEREN MISSOURI		ENVIRONMENTAL ENGINEERING			
Date Piezometer Completed: 10/15/09	LABADIE POWER PLANT		LAND	AIR	WATER	
			1505 East High Street Jefferson City, Missouri 65101	Telephone: (573) 659-9078 Facsimile: (573) 659-9079		
		DATE 1/2010	SCALE N.T.S.	DRAWN BY: BED	APPROVED BY: MCC	



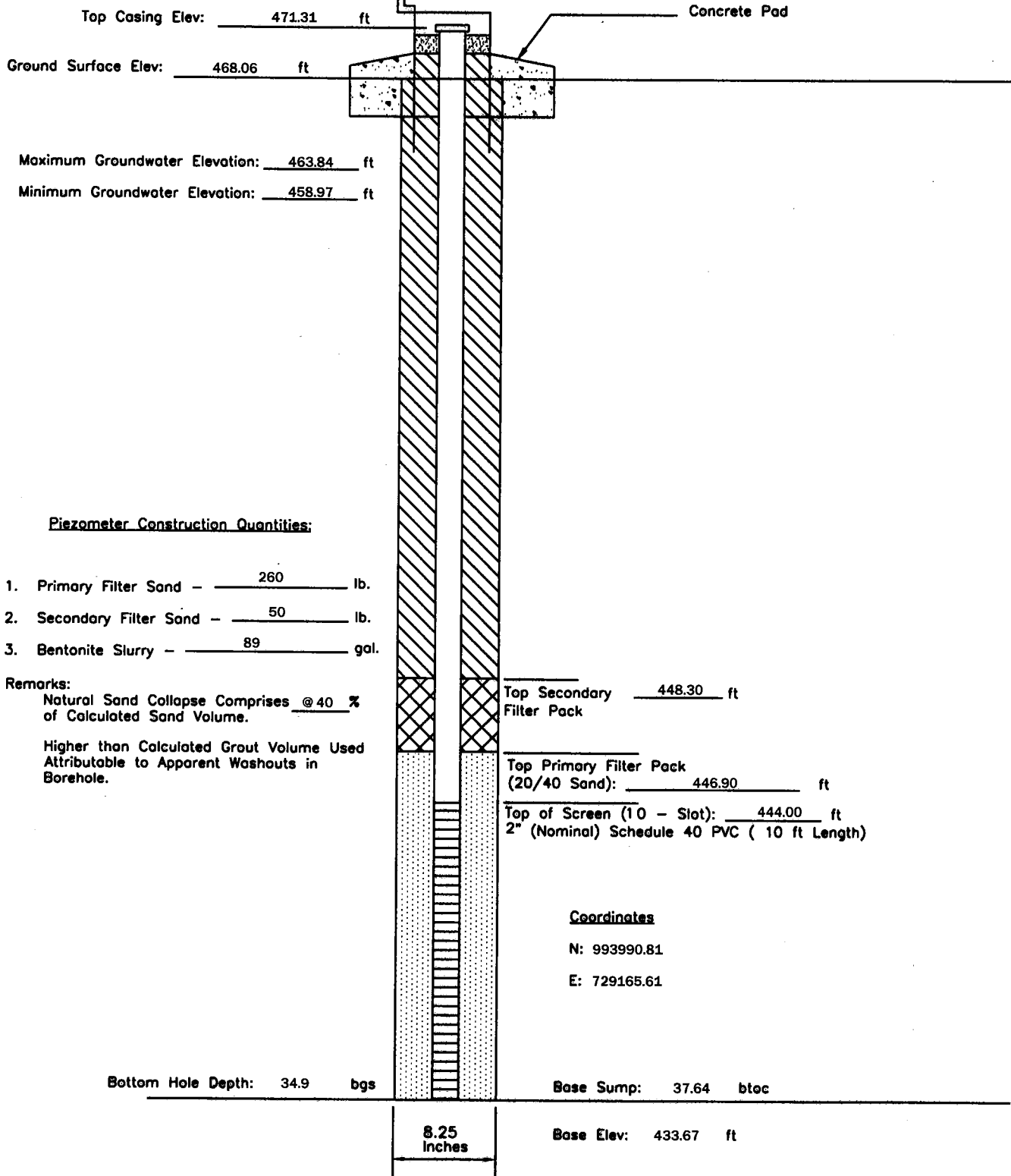
P - 59	PIEZOMETER CONSTRUCTION DIAGRAM	GREDELL Engineering Resources, Inc. ENVIRONMENTAL ENGINEERING LAND AIR WATER			
Date Piezometer Completed: 9/21/09	AMEREN MISSOURI	1505 East High Street Jefferson City, Missouri 65101		Telephone: (573) 659-9078 Facsimile: (573) 659-9079	
	LABADIE POWER PLANT	DATE 1/2010	SCALE N.T.S.	DRAWN BY: BED	APPROVED BY: MCC



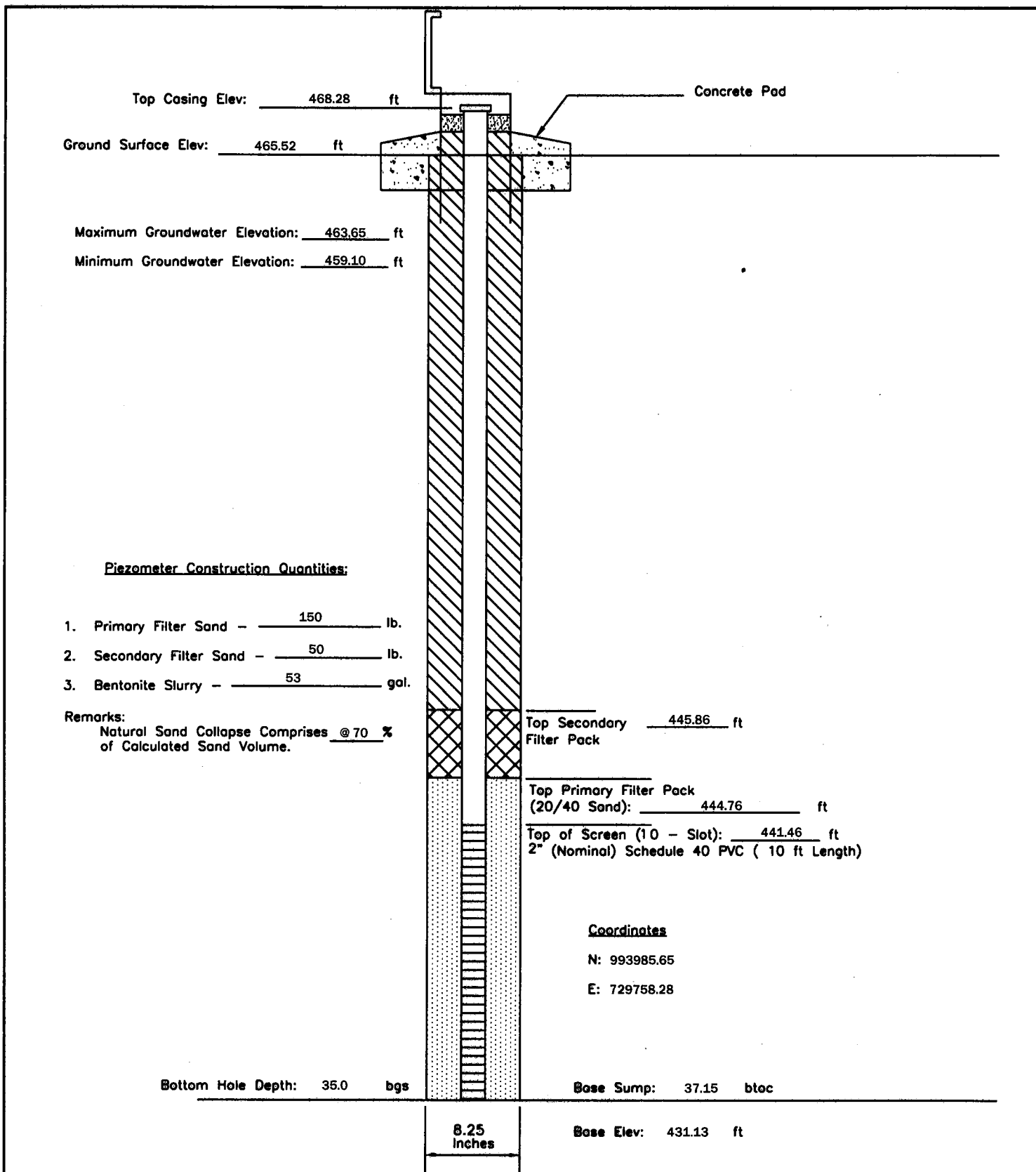
P - 61	PIEZOMETER CONSTRUCTION DIAGRAM	GREDELL Engineering Resources, Inc. ENVIRONMENTAL ENGINEERING		
	AMEREN MISSOURI	LAND	AIR	WATER
Date Piezometer Completed: 10/26/09	LABADIE POWER PLANT	1505 East High Street Jefferson City, Missouri 65101	Telephone: (573) 659-9078 Facsimile: (573) 659-9079	
		DATE 1/2010	SCALE N.T.S.	DRAWN BY: BED APPROVED BY: MCC



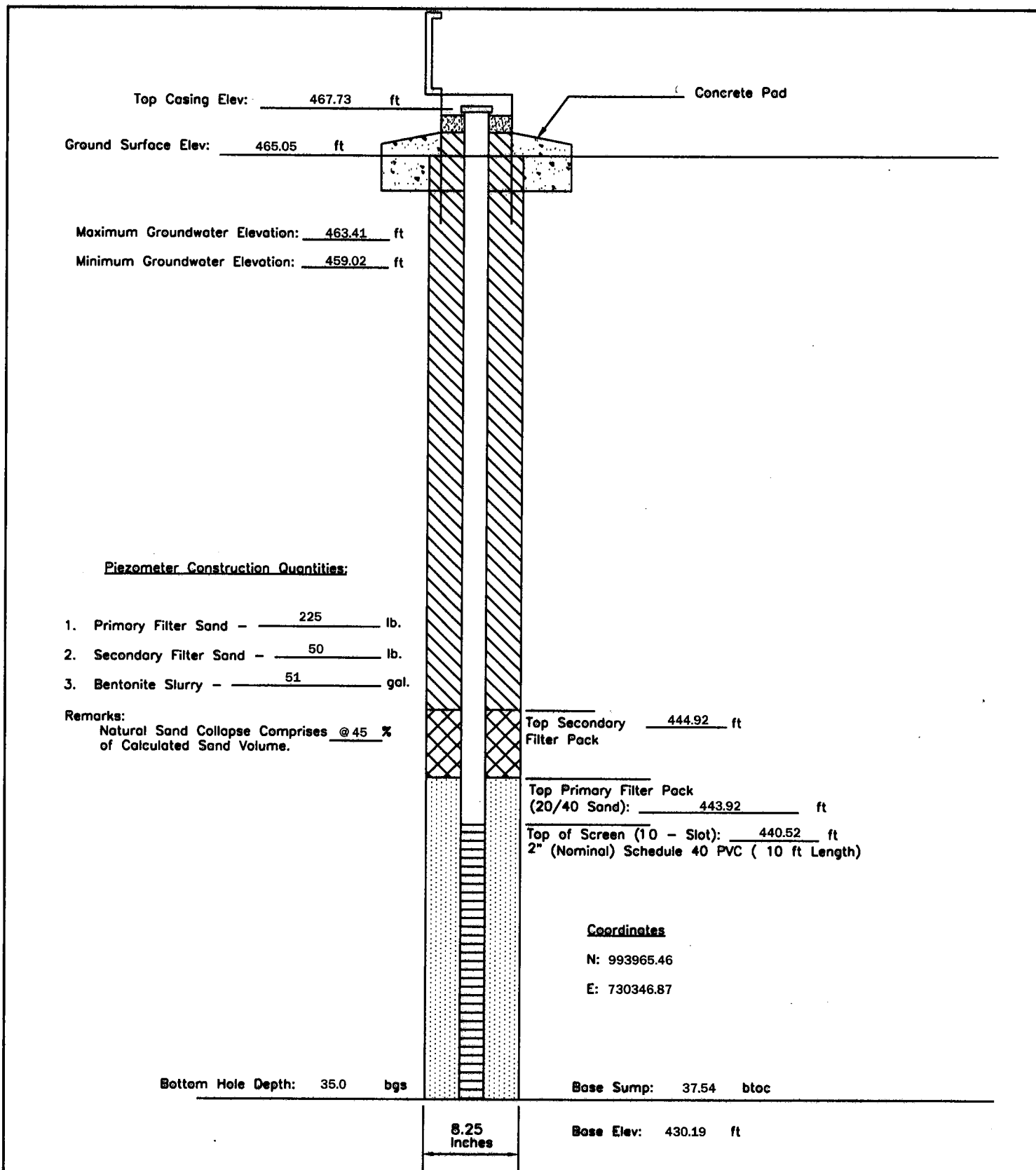
P - 63	PIEZOMETER CONSTRUCTION DIAGRAM	GREDELL Engineering Resources, Inc. ENVIRONMENTAL ENGINEERING LAND AIR WATER		
Date Piezometer Completed: 9/21/09	AMEREN MISSOURI	1505 East High Street Jefferson City, Missouri 65101		Telephone: (573) 659-9078 Facsimile: (573) 659-9079
	LABADIE POWER PLANT	DATE 1/2010	SCALE N.T.S.	DRAWN BY: BED APPROVED BY: MCC



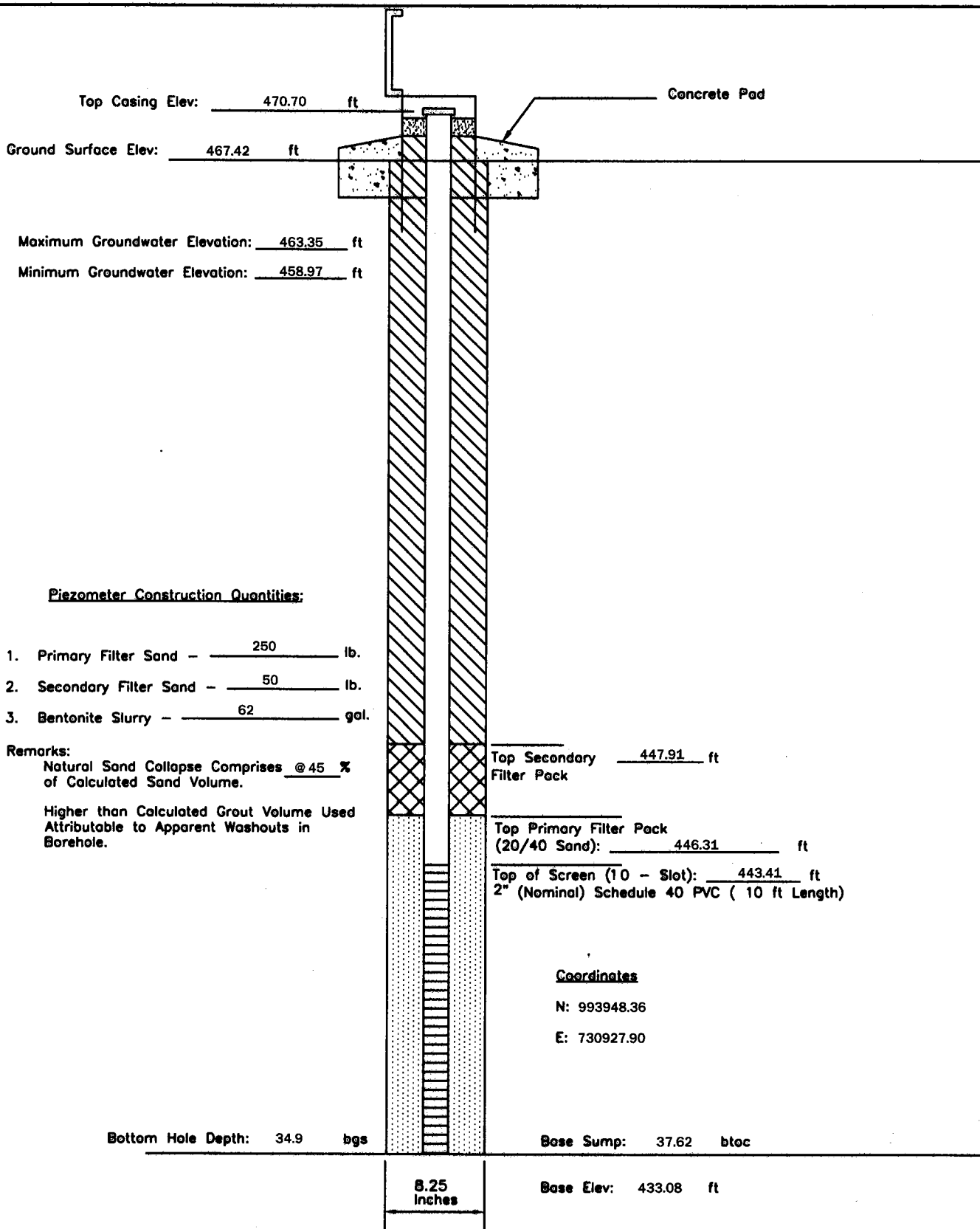
P - 65	PIEZOMETER CONSTRUCTION DIAGRAM	GREDELL Engineering Resources, Inc.		
		ENVIRONMENTAL ENGINEERING		
Date Piezometer Completed: 10/13/09	AMEREN MISSOURI	LAND	AIR	WATER
	LABADIE POWER PLANT	1505 East High Street Jefferson City, Missouri 65101	Telephone: (573) 659-9078 Facsimile: (573) 659-9079	
		DATE 1/2010	SCALE N.T.S.	DRAWN BY: BED APPROVED BY: MCC



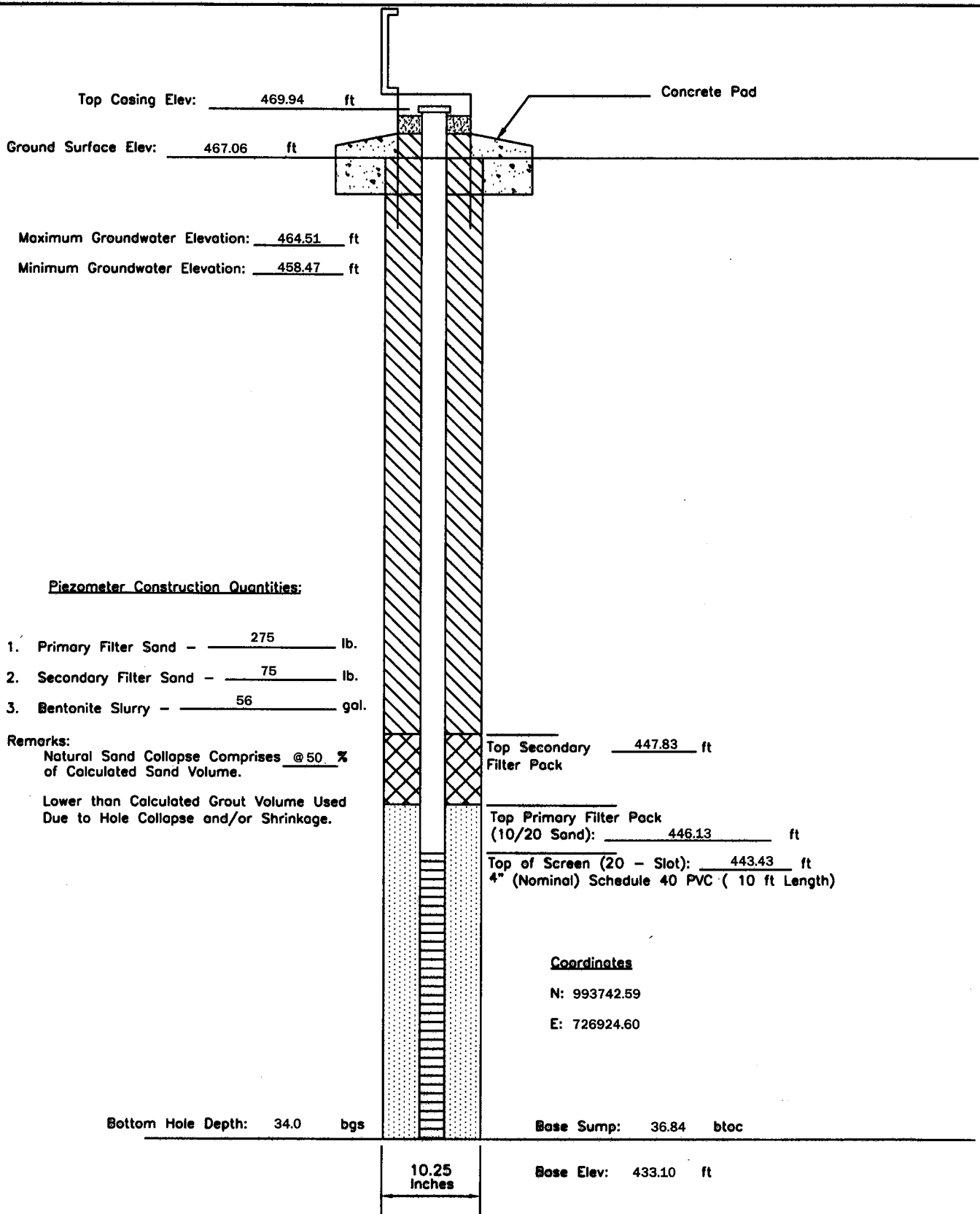
P - 67	PIEZOMETER CONSTRUCTION DIAGRAM	GREDELL Engineering Resources, Inc. ENVIRONMENTAL ENGINEERING LAND AIR WATER		
Date Piezometer Completed: 10/13/09	AMEREN MISSOURI LABADIE POWER PLANT	1505 East High Street Jefferson City, Missouri 65101 DATE 1/2010	SCALE N.T.S. DRAWN BY: BED	Telephone: (573) 659-9078 Facsimile: (573) 659-9079 APPROVED BY: MCC



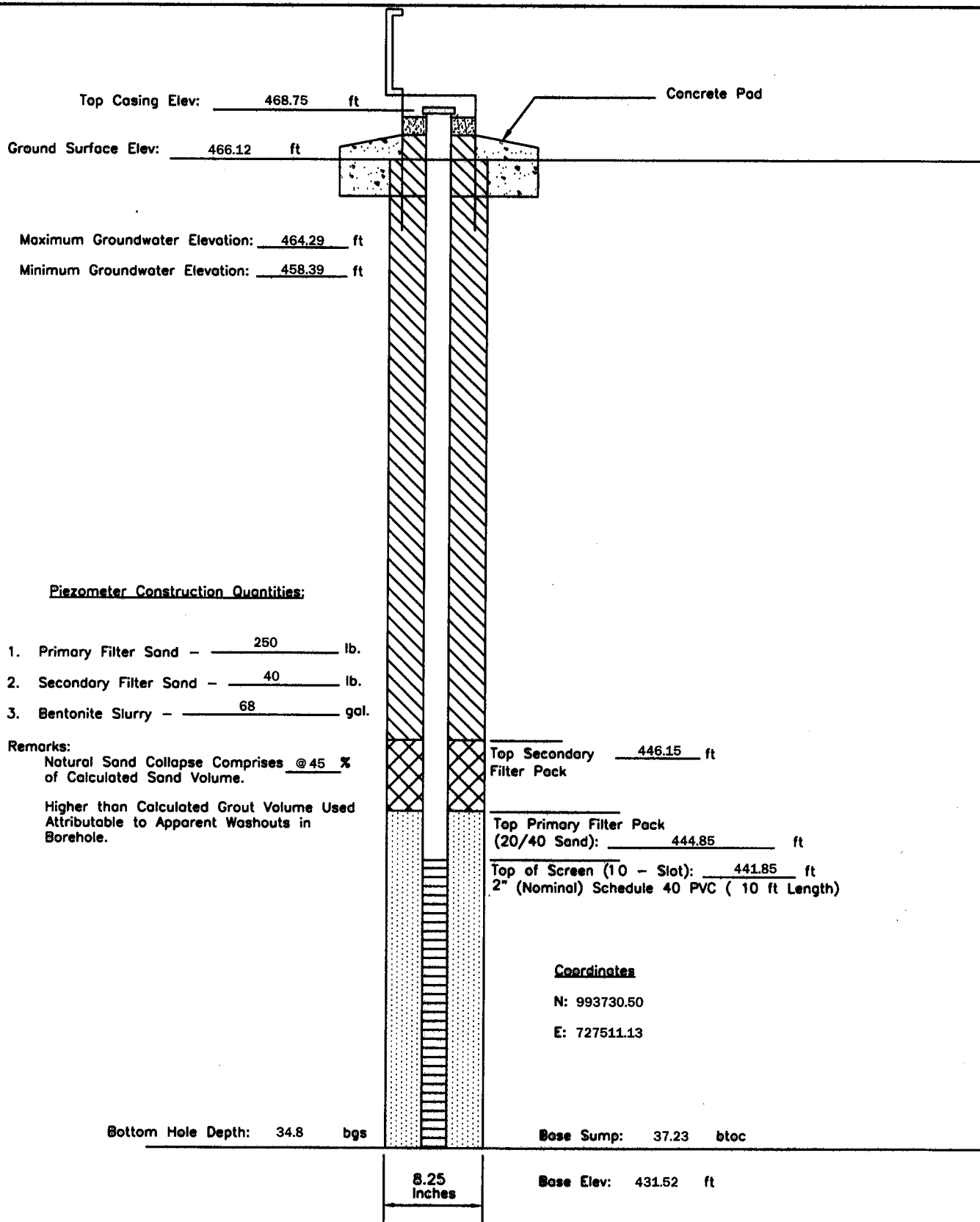
P - 69	PIEZOMETER CONSTRUCTION DIAGRAM	GREDELL Engineering Resources, Inc. ENVIRONMENTAL ENGINEERING LAND AIR WATER 1505 East High Street Jefferson City, Missouri 65101 Telephone: (573) 659-9078 Facsimile: (573) 659-9079			
Date Piezometer Completed: 10/13/09	AMEREN MISSOURI LABADIE POWER PLANT	DATE 1/2010	SCALE N.T.S.	DRAWN BY: BED	APPROVED BY: MCC



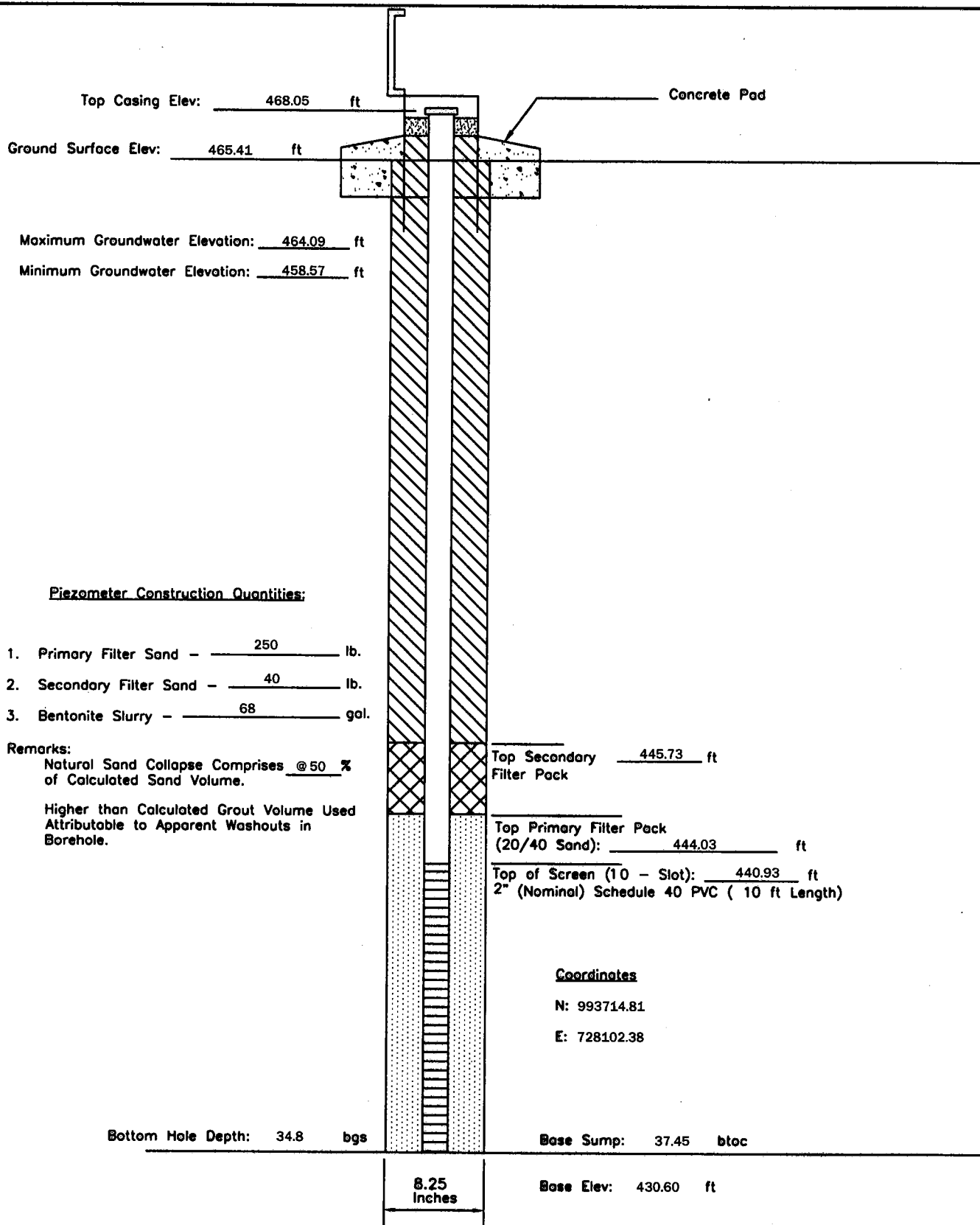
P - 71	PIEZOMETER CONSTRUCTION DIAGRAM	GREDELL Engineering Resources, Inc.			
		ENVIRONMENTAL ENGINEERING			
Date Piezometer Completed: 10/21/09	AMEREN MISSOURI	LAND	AIR	WATER	
	LABADIE POWER PLANT	1505 East High Street Jefferson City, Missouri 65101	Telephone: (573) 659-9078 Facsimile: (573) 659-9079		
		DATE 1/2010	SCALE N.T.S.	DRAWN BY: BED	APPROVED BY: MCC



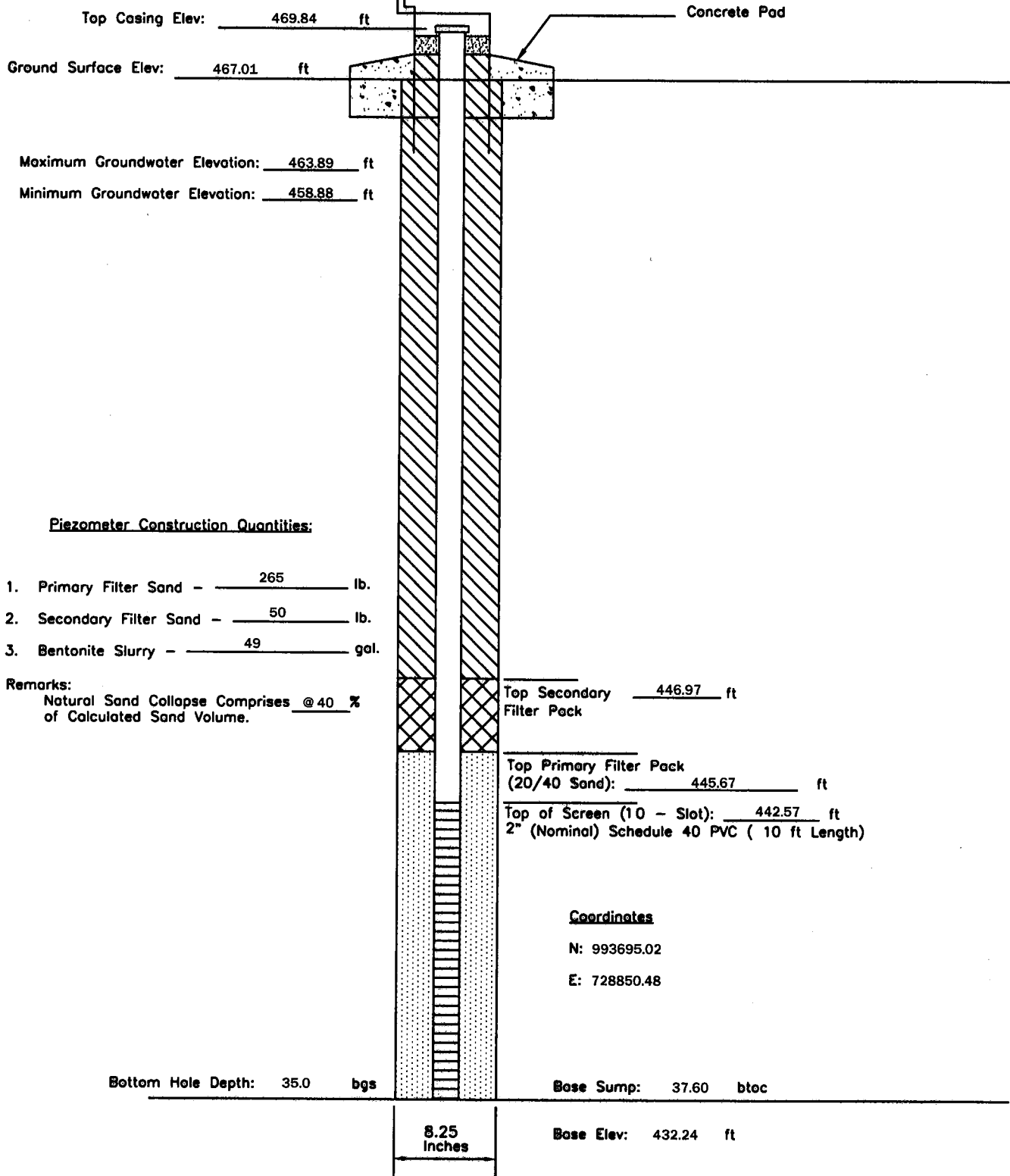
P - 73	PIEZOMETER CONSTRUCTION DIAGRAM	GREDELL Engineering Resources, Inc. ENVIRONMENTAL ENGINEERING LAND AIR WATER 1505 East High Street Jefferson City, Missouri 65101 Telephone: (573) 659-9078 Facsimile: (573) 659-9079			
Date Piezometer Completed: 11/06/09	AMEREN MISSOURI LABADIE POWER PLANT	DATE 1/2010	SCALE N.T.S.	DRAWN BY: BED	APPROVED BY: MCC



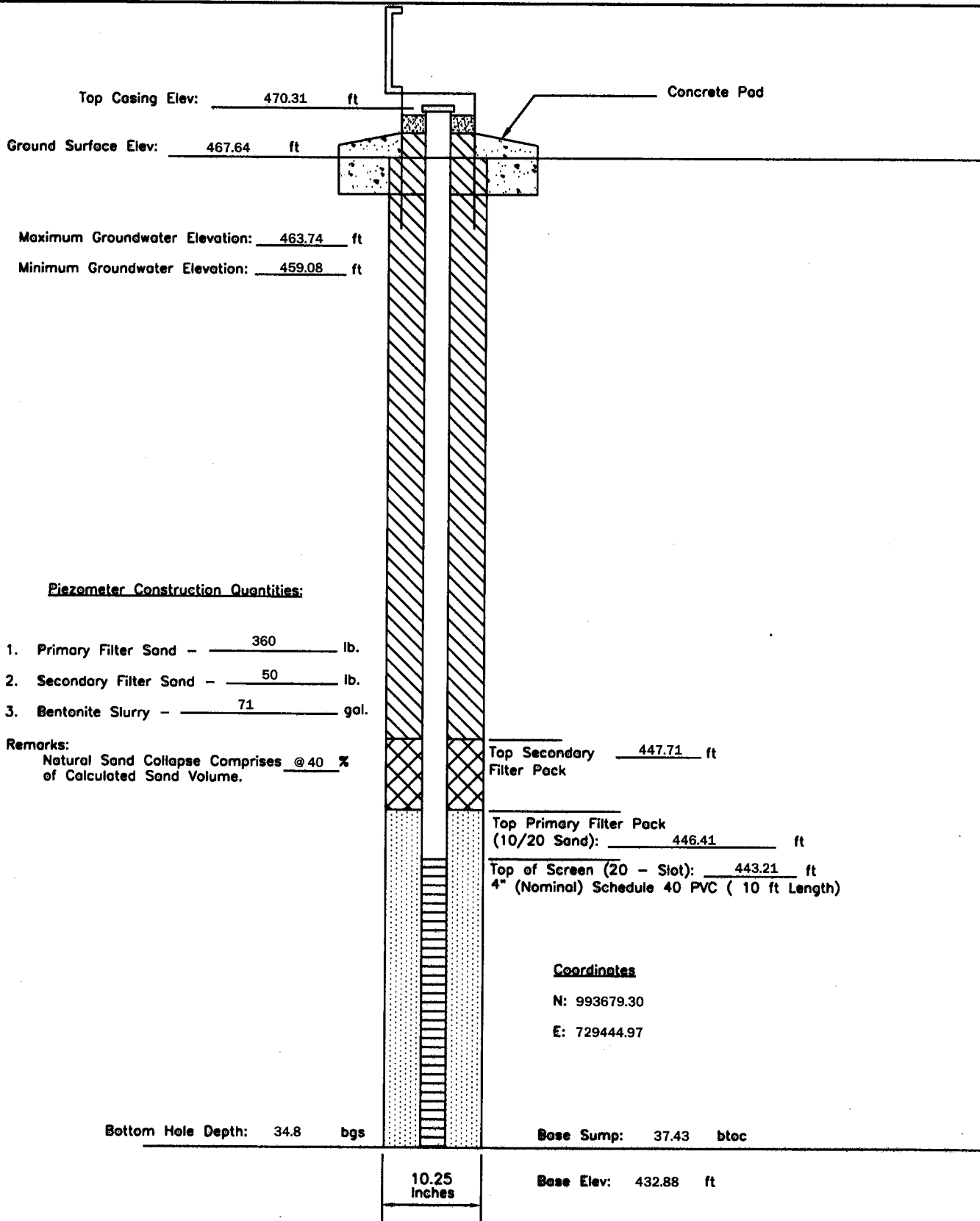
P - 75	PIEZOMETER CONSTRUCTION DIAGRAM	GREDELL Engineering Resources, Inc. ENVIRONMENTAL ENGINEERING LAND AIR WATER			
Date Piezometer Completed: 9/28/09	AMEREN MISSOURI	1505 East High Street Jefferson City, Missouri 65101		Telephone: (573) 659-9078 Facsimile: (573) 659-9079	
	LABADIE POWER PLANT	DATE 1/2010	SCALE N.T.S.	DRAWN BY: BED	APPROVED BY: MCC



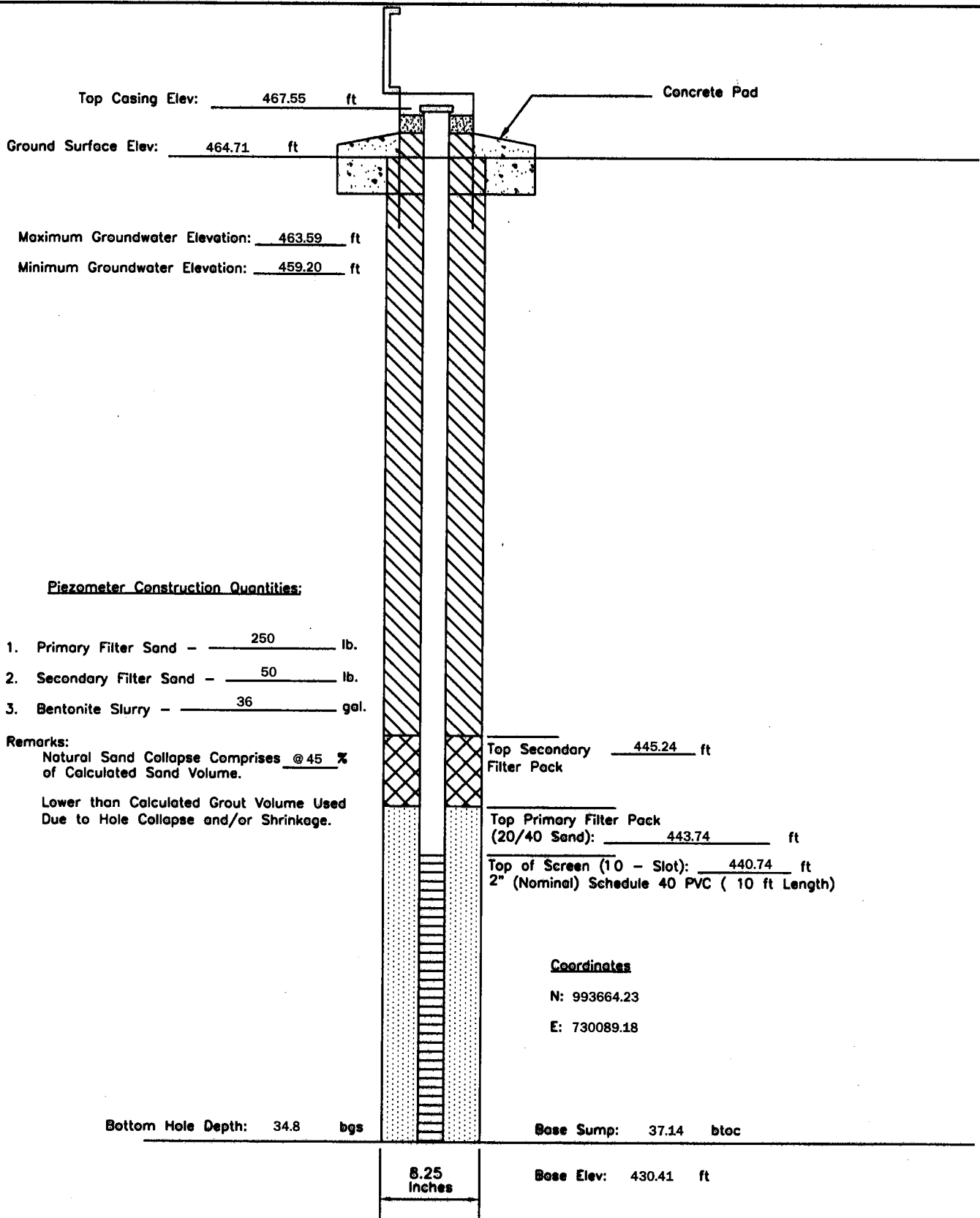
P - 77	PIEZOMETER CONSTRUCTION DIAGRAM		GREDELL Engineering Resources, Inc.		
	AMEREN MISSOURI		ENVIRONMENTAL ENGINEERING		
Date Piezometer Completed: 9/28/09	LABADIE POWER PLANT		LAND	AIR	WATER
			1505 East High Street Jefferson City, Missouri 65101	Telephone: (573) 659-9078 Facsimile: (573) 659-9079	
		DATE 1/2010	SCALE N.T.S.	DRAWN BY: BED	APPROVED BY: MCC



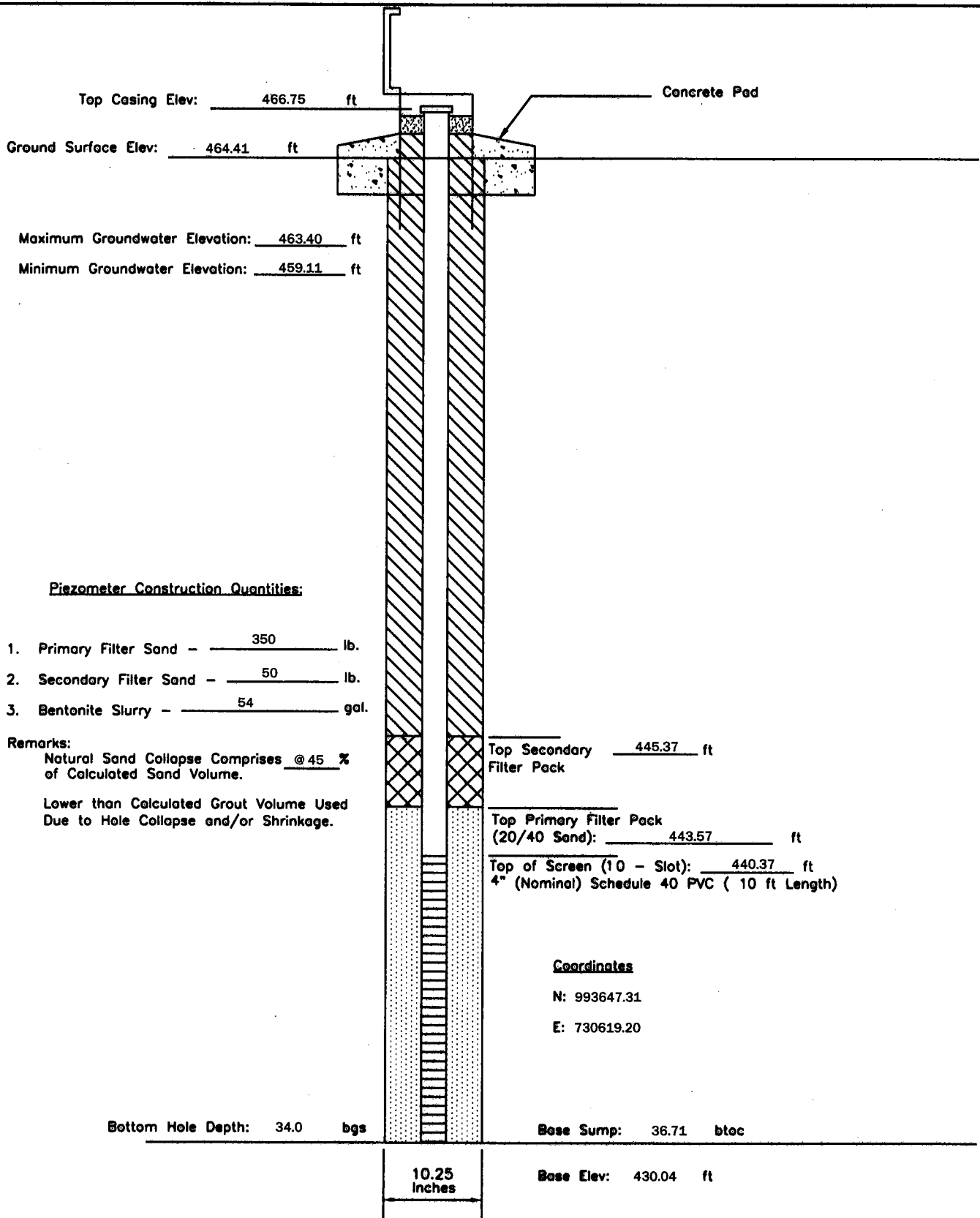
P - 79	PIEZOMETER CONSTRUCTION DIAGRAM		GREDELL Engineering Resources, Inc.		
	AMEREN MISSOURI		ENVIRONMENTAL ENGINEERING		
Date Piezometer Completed: 10/28/09	LABADIE POWER PLANT		LAND	AIR	WATER
			1505 East High Street Jefferson City, Missouri 65101	Telephone: (573) 659-9078 Facsimile: (573) 659-9079	
		DATE 1/2010	SCALE N.T.S.	DRAWN BY: BED	APPROVED BY: MCC



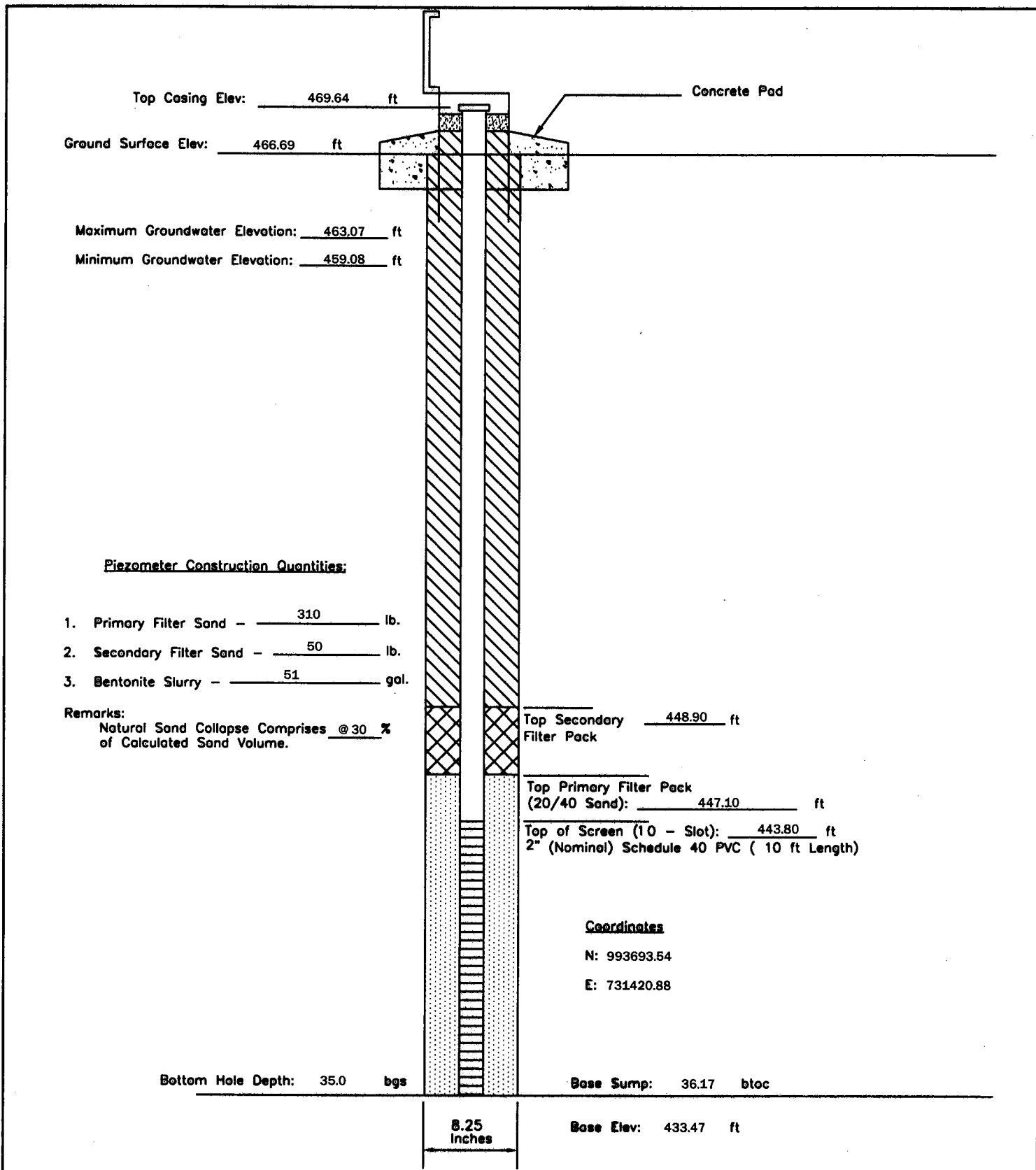
P - 81	PIEZOMETER CONSTRUCTION DIAGRAM	GREDELL Engineering Resources, Inc. ENVIRONMENTAL ENGINEERING LAND AIR WATER			
Date Piezometer Completed: 10/28/09	AMEREN MISSOURI	1505 East High Street Jefferson City, Missouri 65101		Telephone: (573) 659-9078 Facsimile: (573) 659-9079	
	LABADIE POWER PLANT	DATE 1/2010	SCALE N.T.S.	DRAWN BY: BED	APPROVED BY: MCC



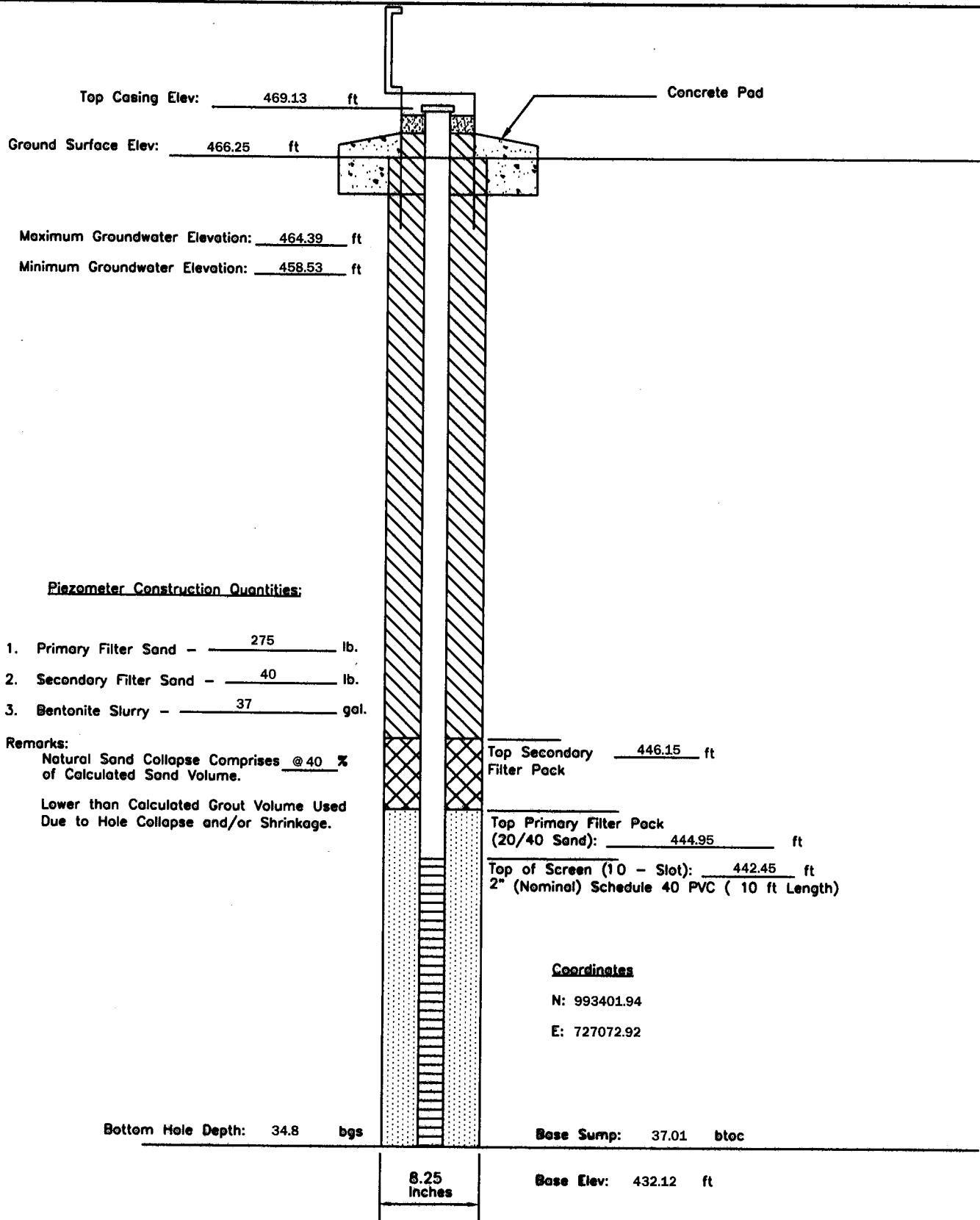
P - 83	PIEZOMETER CONSTRUCTION DIAGRAM	GREDELL Engineering Resources, Inc. ENVIRONMENTAL ENGINEERING LAND AIR WATER			
Date Piezometer Completed: 11/10/09	AMEREN MISSOURI	1505 East High Street Jefferson City, Missouri 65101		Telephone: (573) 659-9078 Facsimile: (573) 659-9079	
	LABADIE POWER PLANT	DATE 1/2010	SCALE N.T.S.	DRAWN BY: BED	APPROVED BY: MCC



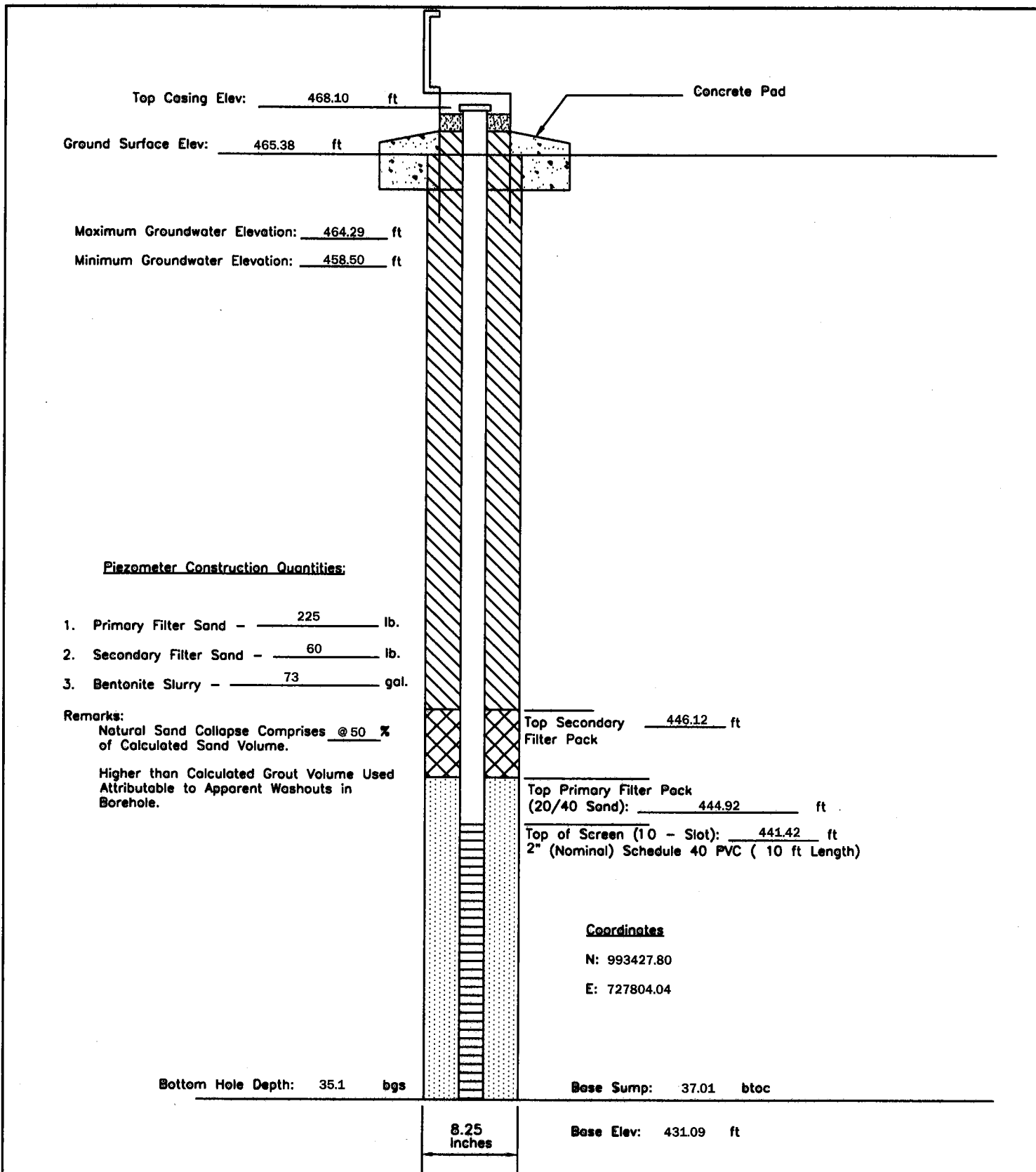
P - 85	PIEZOMETER CONSTRUCTION DIAGRAM	GREDELL Engineering Resources, Inc. ENVIRONMENTAL ENGINEERING LAND AIR WATER 1505 East High Street Jefferson City, Missouri 65101 Telephone: (573) 659-9078 Facsimile: (573) 659-9079			
Date Piezometer Completed: 11/10/09	AMEREN MISSOURI LABADIE POWER PLANT	DATE 1/2010	SCALE N.T.S.	DRAWN BY: BED	APPROVED BY: MCC



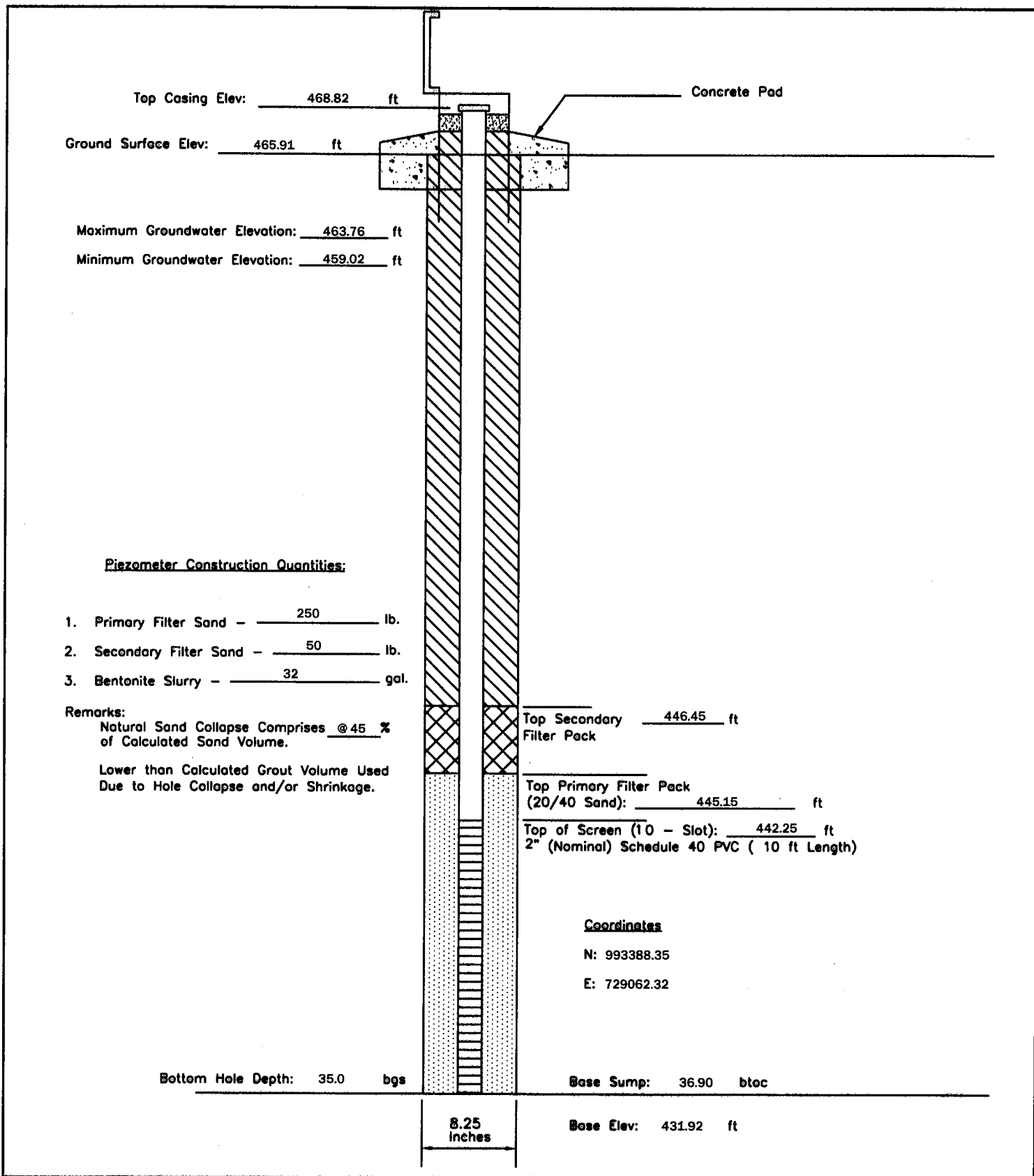
P - 87	PIEZOMETER CONSTRUCTION DIAGRAM	GREDELL Engineering Resources, Inc. ENVIRONMENTAL ENGINEERING LAND AIR WATER			
Date Piezometer Completed: 10/26/09	AMEREN MISSOURI	1505 East High Street Jefferson City, Missouri 65101		Telephone: (573) 659-9078 Facsimile: (573) 659-9079	
	LABADIE POWER PLANT	DATE 1/2010	SCALE N.T.S.	DRAWN BY: BED	APPROVED BY: MCC



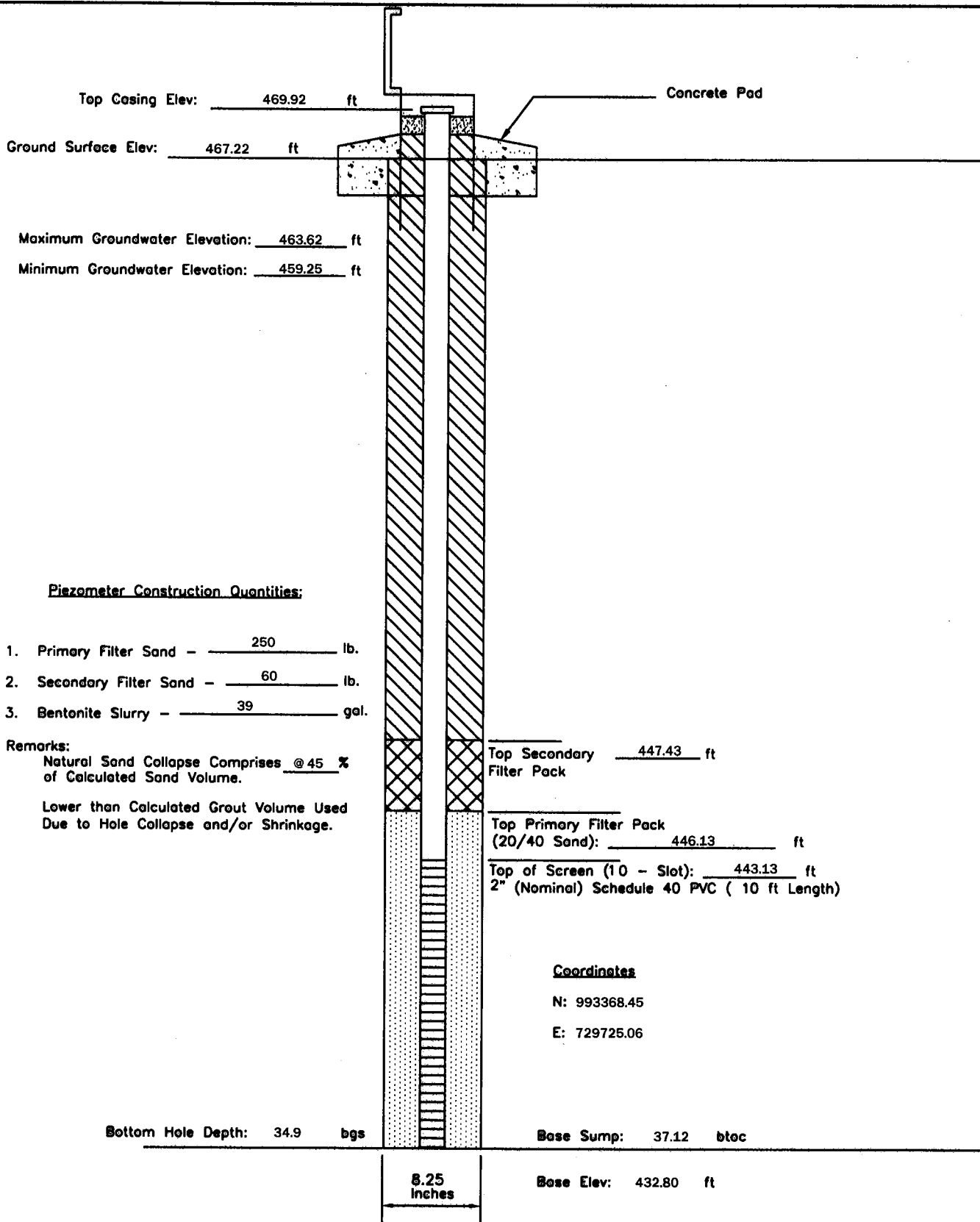
P - 88	PIEZOMETER CONSTRUCTION DIAGRAM	GREDELL Engineering Resources, Inc.		
	AMEREN MISSOURI	ENVIRONMENTAL ENGINEERING		
Date Piezometer Completed: 11/06/09	LABADIE POWER PLANT	LAND	AIR	WATER
		1505 East High Street Jefferson City, Missouri 65101	Telephone: (573) 659-9078 Facsimile: (573) 659-9079	
		DATE 1/2010	SCALE N.T.S.	DRAWN BY: BED APPROVED BY: MCC



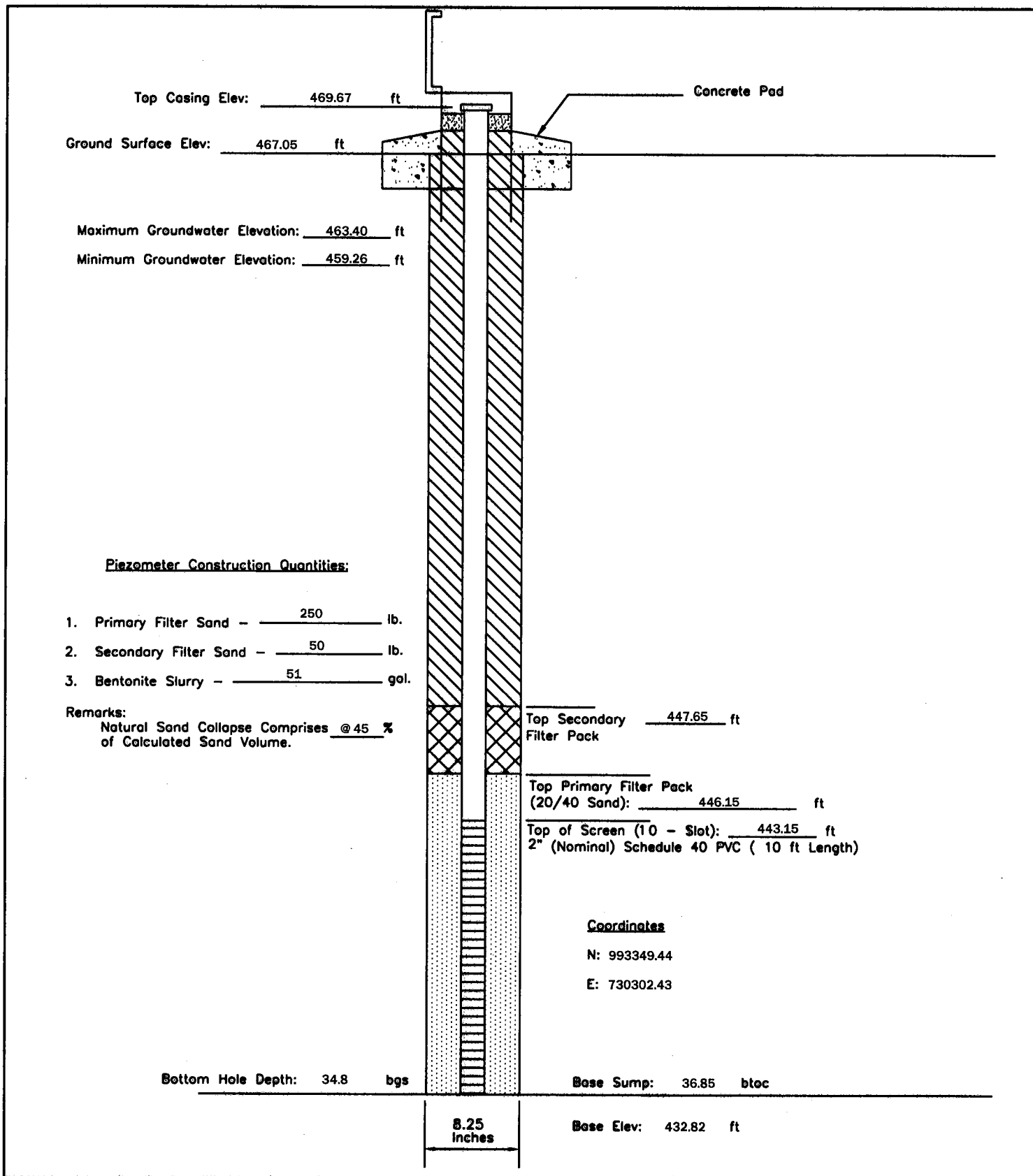
P - 90	PIEZOMETER CONSTRUCTION DIAGRAM	GREDELL Engineering Resources, Inc. ENVIRONMENTAL ENGINEERING LAND AIR WATER			
Date Piezometer Completed: 9/28/09	AMEREN MISSOURI	1505 East High Street Jefferson City, Missouri 65101		Telephone: (573) 659-9078 Facsimile: (573) 659-9079	
	LABADIE POWER PLANT	DATE 1/2010	SCALE N.T.S.	DRAWN BY: BED	APPROVED BY: MCC



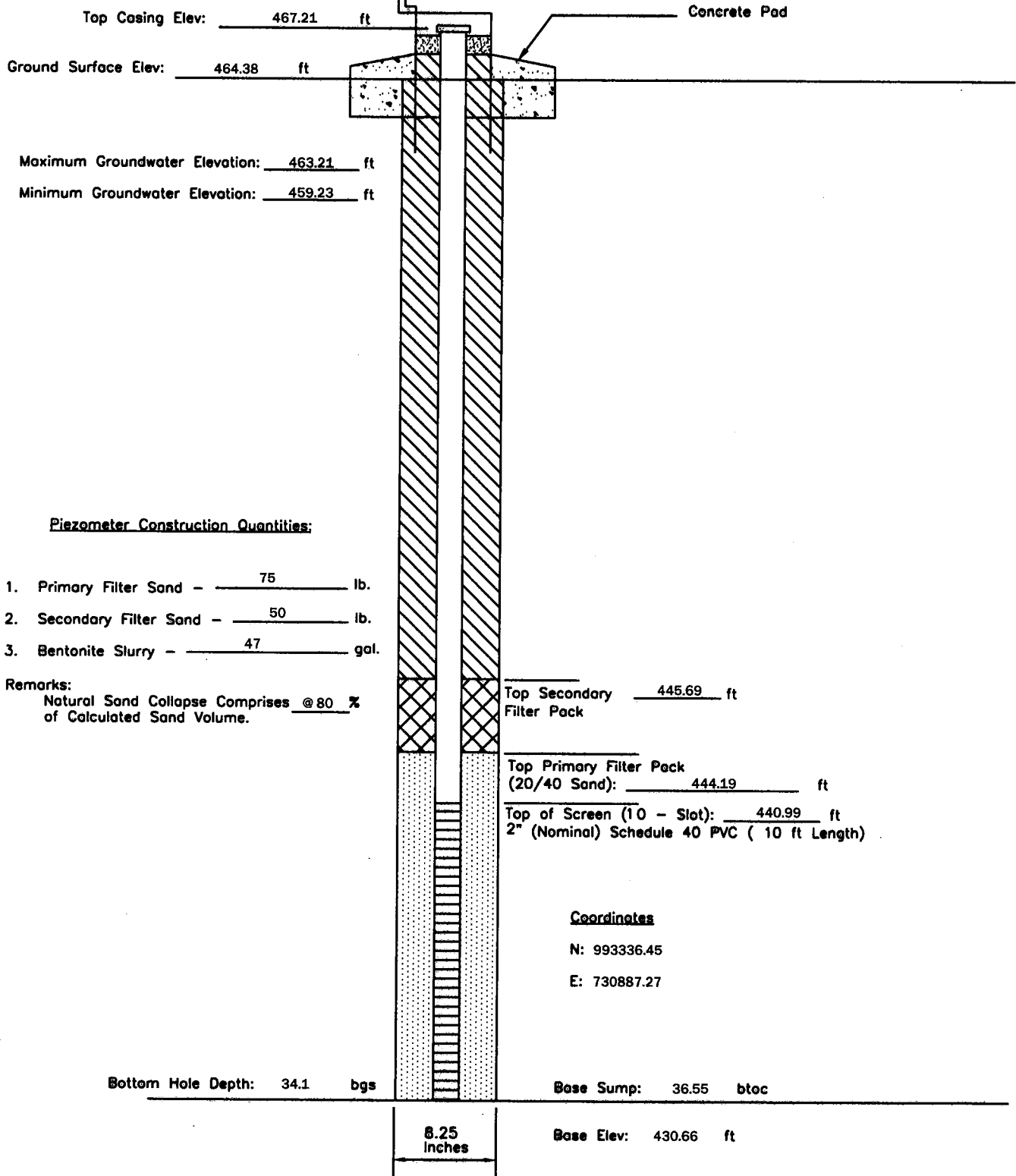
P - 93	PIEZOMETER CONSTRUCTION DIAGRAM	GREDELL Engineering Resources, Inc.		
		ENVIRONMENTAL ENGINEERING		
Date Piezometer Completed: 10/20/09	AMEREN MISSOURI	LAND	AIR	WATER
	LABADIE POWER PLANT	1505 East High Street Jefferson City, Missouri 65101	Telephone: (573) 659-9078 Facsimile: (573) 659-9079	
		DATE 1/2010	SCALE N.T.S.	DRAWN BY: BED APPROVED BY: MCC



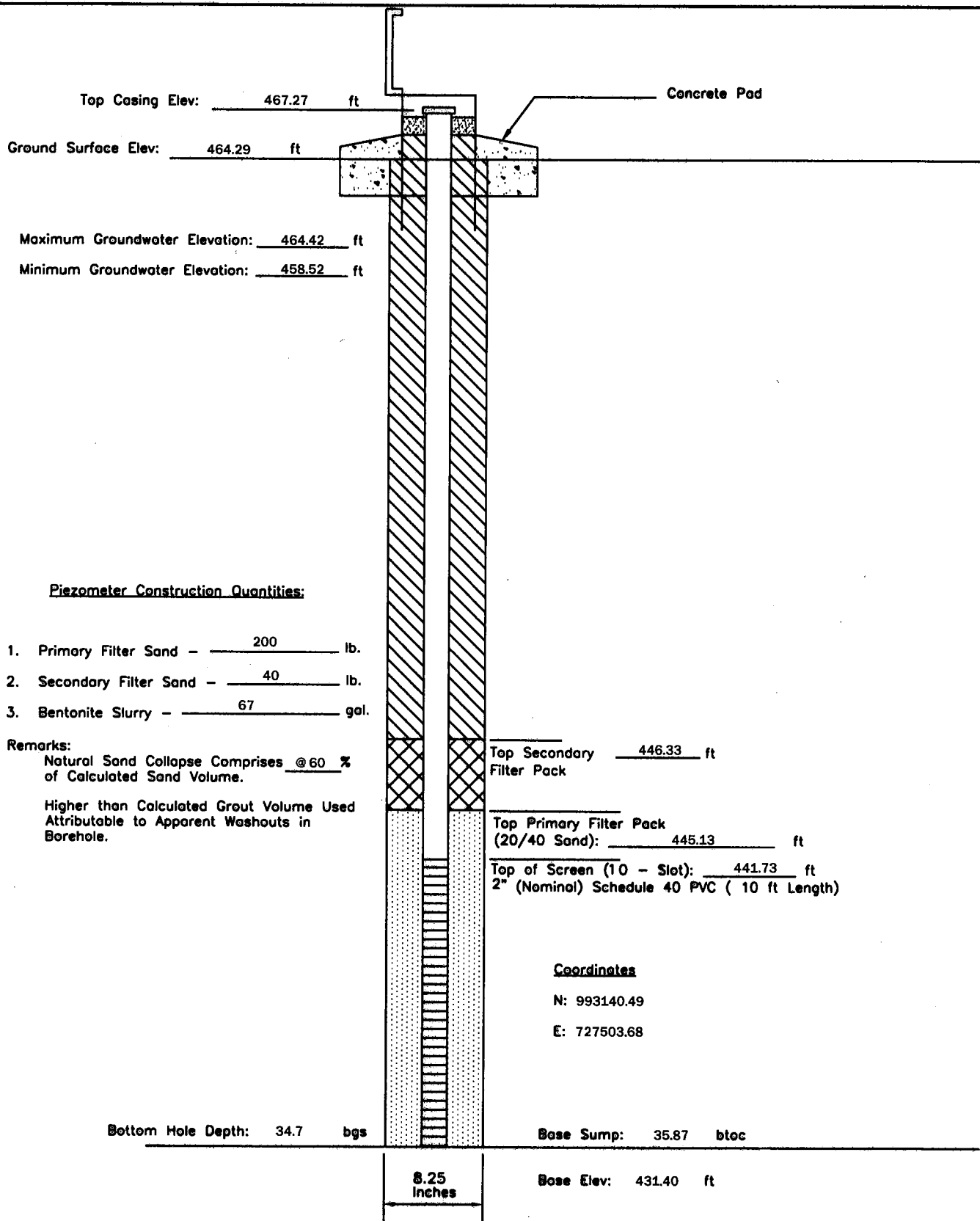
P - 95	PIEZOMETER CONSTRUCTION DIAGRAM	GREDELL Engineering Resources, Inc. ENVIRONMENTAL ENGINEERING LAND AIR WATER			
Date Piezometer Completed: 10/20/09	AMEREN MISSOURI	1505 East High Street Jefferson City, Missouri 65101		Telephone: (573) 659-9078 Facsimile: (573) 659-9079	
	LABADIE POWER PLANT	DATE 1/2010	SCALE N.T.S.	DRAWN BY: BED	APPROVED BY: MCC



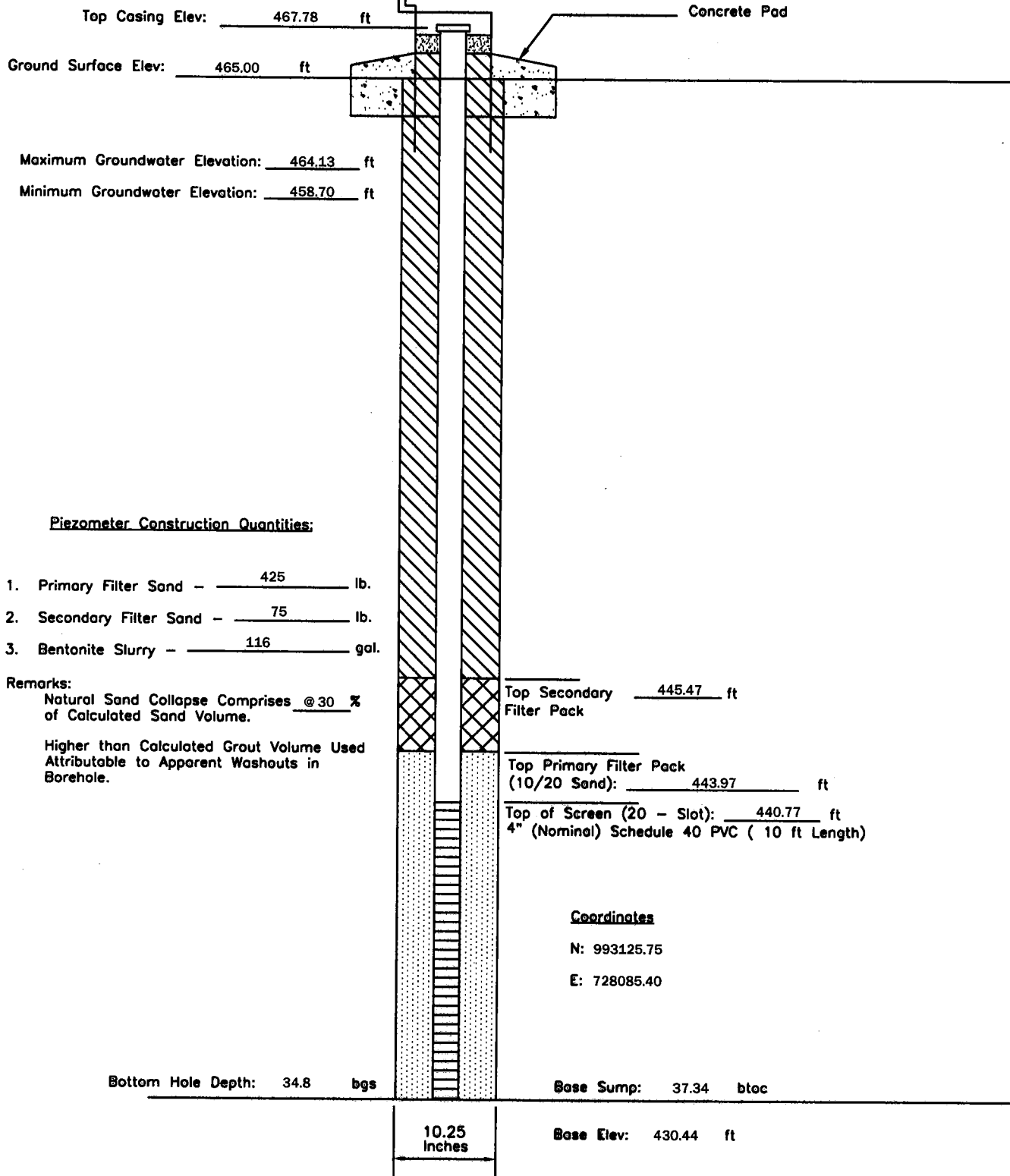
P - 97	PIEZOMETER CONSTRUCTION DIAGRAM	GREDELL Engineering Resources, Inc. ENVIRONMENTAL ENGINEERING LAND AIR WATER			
Date Piezometer Completed: 10/21/09	AMEREN MISSOURI	1505 East High Street Jefferson City, Missouri 65101		Telephone: (573) 659-9078 Facsimile: (573) 659-9079	
	LABADIE POWER PLANT	DATE 1/2010	SCALE N.T.S.	DRAWN BY: BED	APPROVED BY: MCC



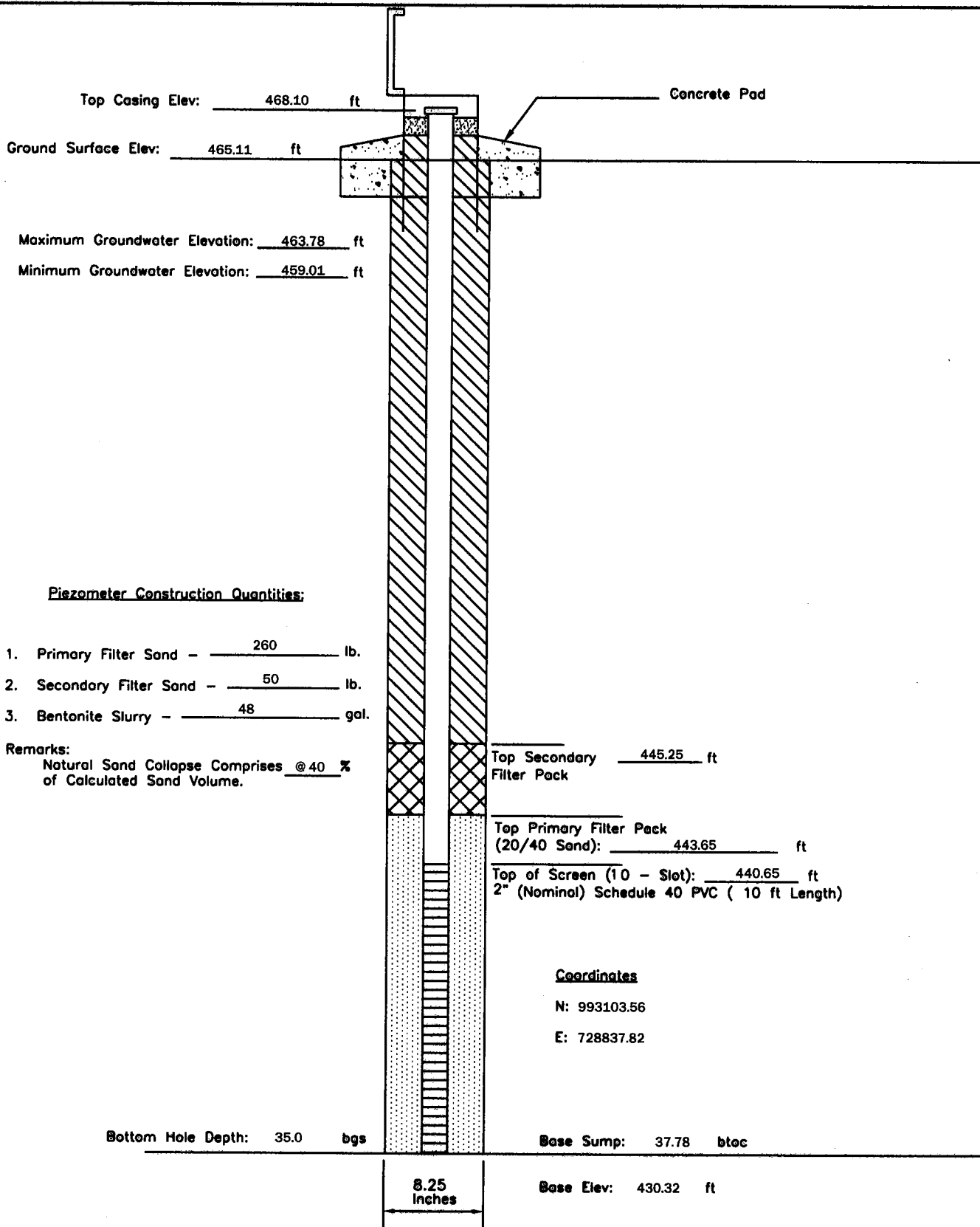
P - 99	PIEZOMETER CONSTRUCTION DIAGRAM	GREDELL Engineering Resources, Inc.		
		ENVIRONMENTAL ENGINEERING		
Date Piezometer Completed: 10/21/09	AMEREN MISSOURI	LAND	AIR	WATER
	LABADIE POWER PLANT	1505 East High Street Jefferson City, Missouri 65101	Telephone: (573) 659-9078 Facsimile: (573) 659-9079	
		DATE 1/2010	SCALE N.T.S.	DRAWN BY: BED APPROVED BY: MCC



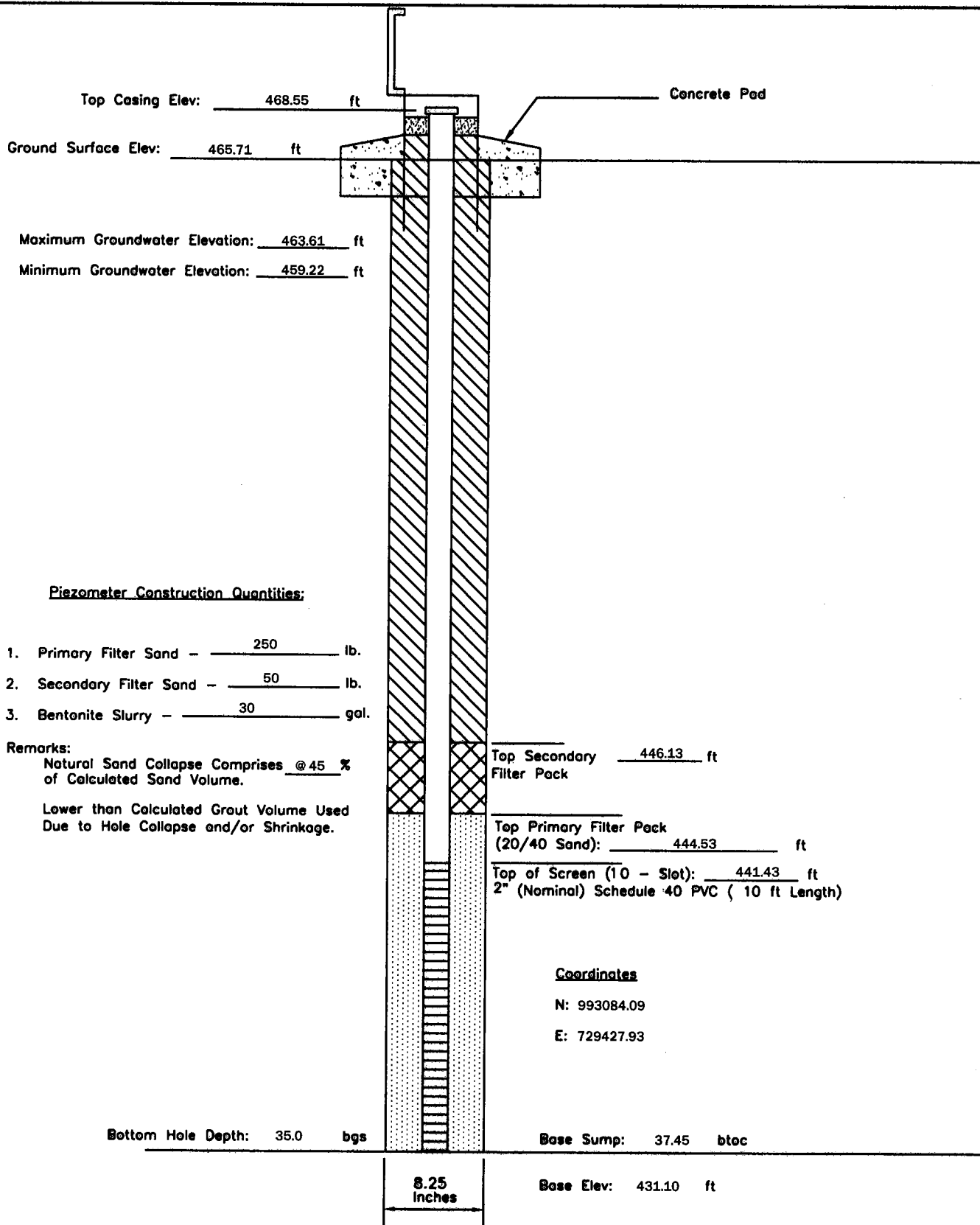
P - 102	PIEZOMETER CONSTRUCTION DIAGRAM	GREDELL Engineering Resources, Inc. ENVIRONMENTAL ENGINEERING LAND AIR WATER			
Date Piezometer Completed: 9/29/09	AMEREN MISSOURI	1505 East High Street Jefferson City, Missouri 65101		Telephone: (573) 659-9078 Facsimile: (573) 659-9079	
	LABADIE POWER PLANT	DATE 1/2010	SCALE N.T.S.	DRAWN BY: BED	APPROVED BY: MCC



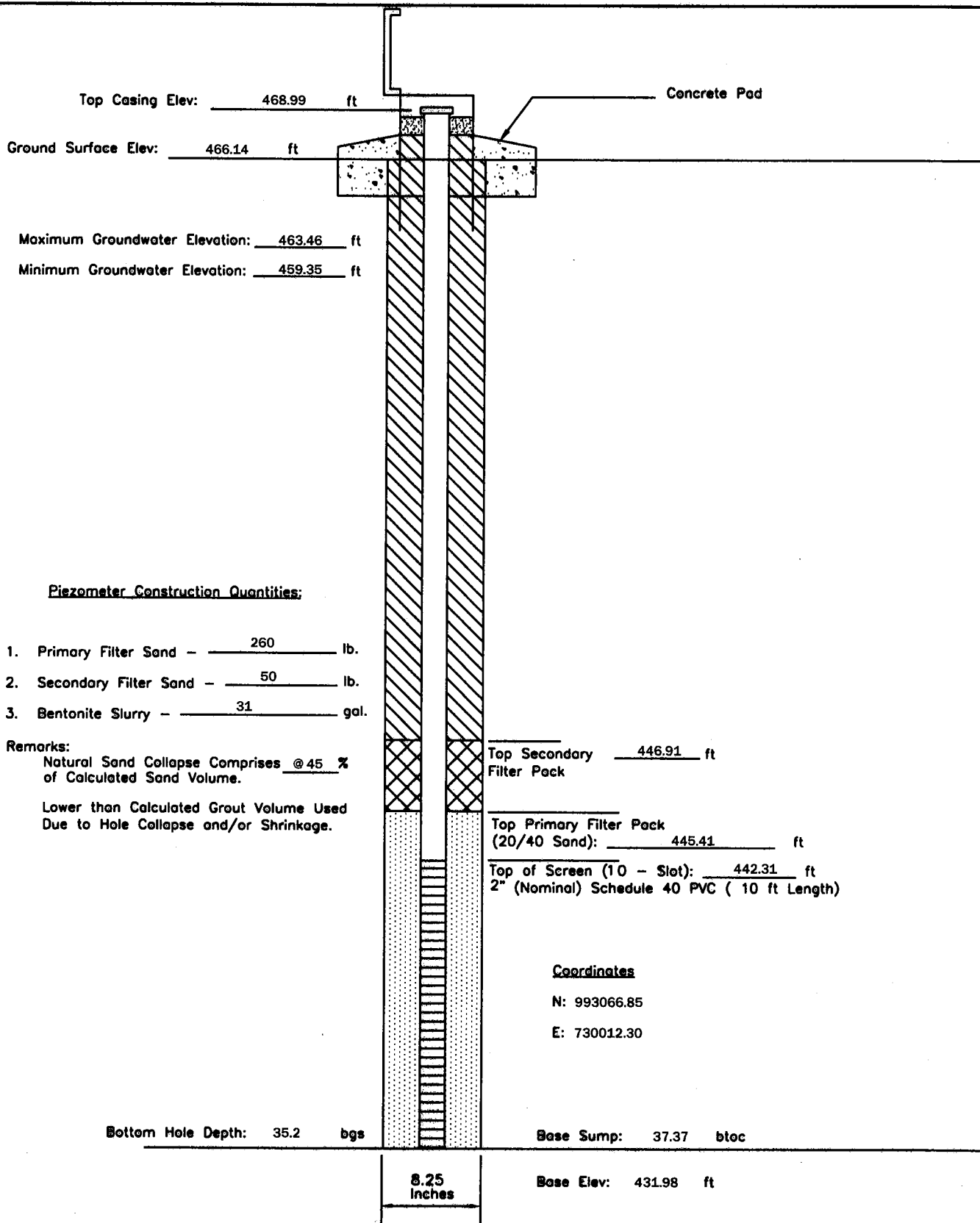
P - 104	PIEZOMETER CONSTRUCTION DIAGRAM	GREDELL Engineering Resources, Inc.		
		ENVIRONMENTAL ENGINEERING		
Date Piezometer Completed: 10/05/09	AMEREN MISSOURI	LAND	AIR	WATER
	LABADIE POWER PLANT	1505 East High Street Jefferson City, Missouri 65101	Telephone: (573) 659-9078 Facsimile: (573) 659-9079	
		DATE 1/2010	SCALE N.T.S.	DRAWN BY: BED APPROVED BY: MCC



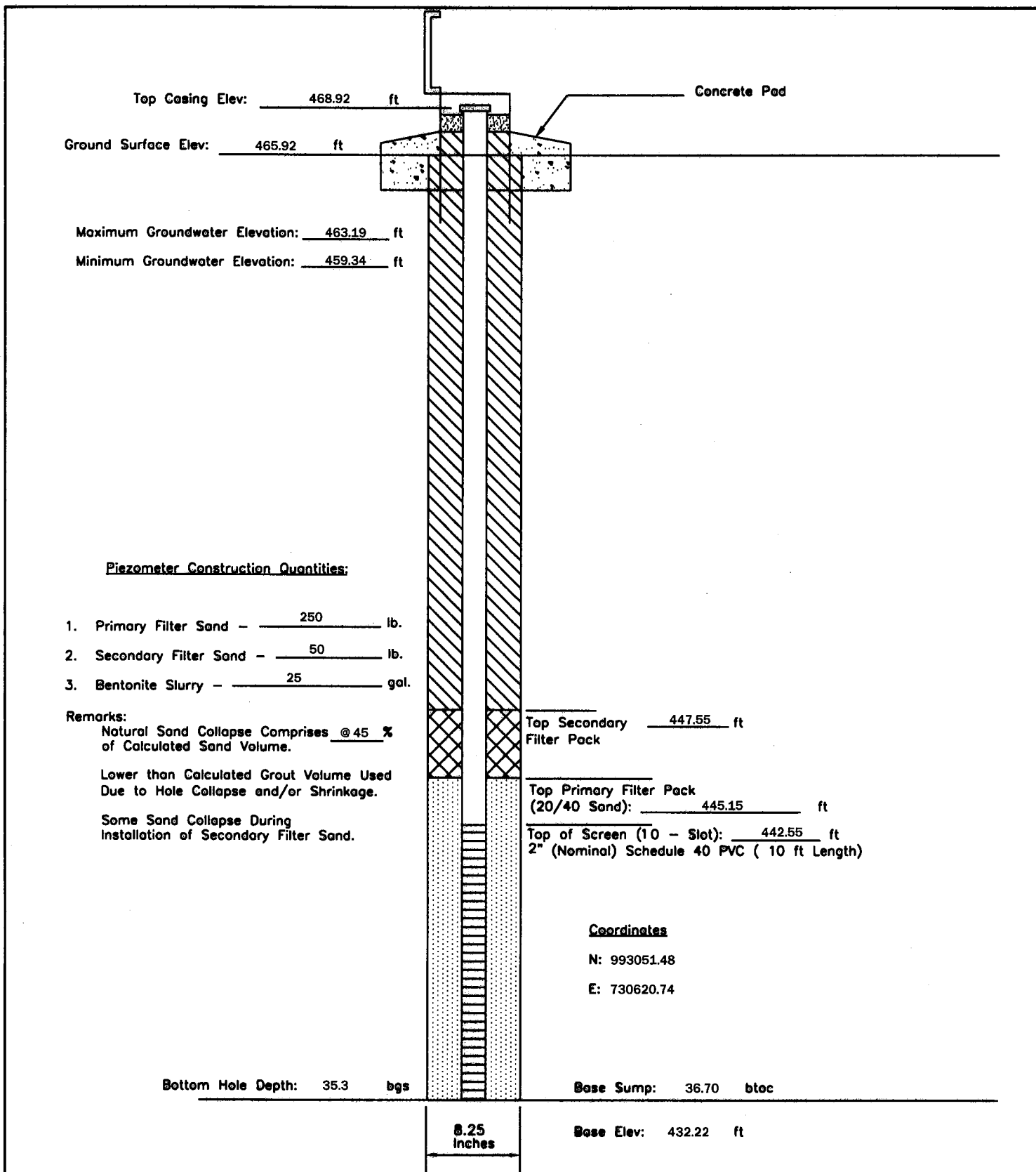
P - 106	PIEZOMETER CONSTRUCTION DIAGRAM	GREDELL Engineering Resources, Inc. ENVIRONMENTAL ENGINEERING LAND AIR WATER			
Date Piezometer Completed: 10/29/09	AMEREN MISSOURI	1505 East High Street Jefferson City, Missouri 65101		Telephone: (573) 659-9078 Facsimile: (573) 659-9079	
	LABADIE POWER PLANT	DATE 1/2010	SCALE N.T.S.	DRAWN BY: BED	APPROVED BY: MCC



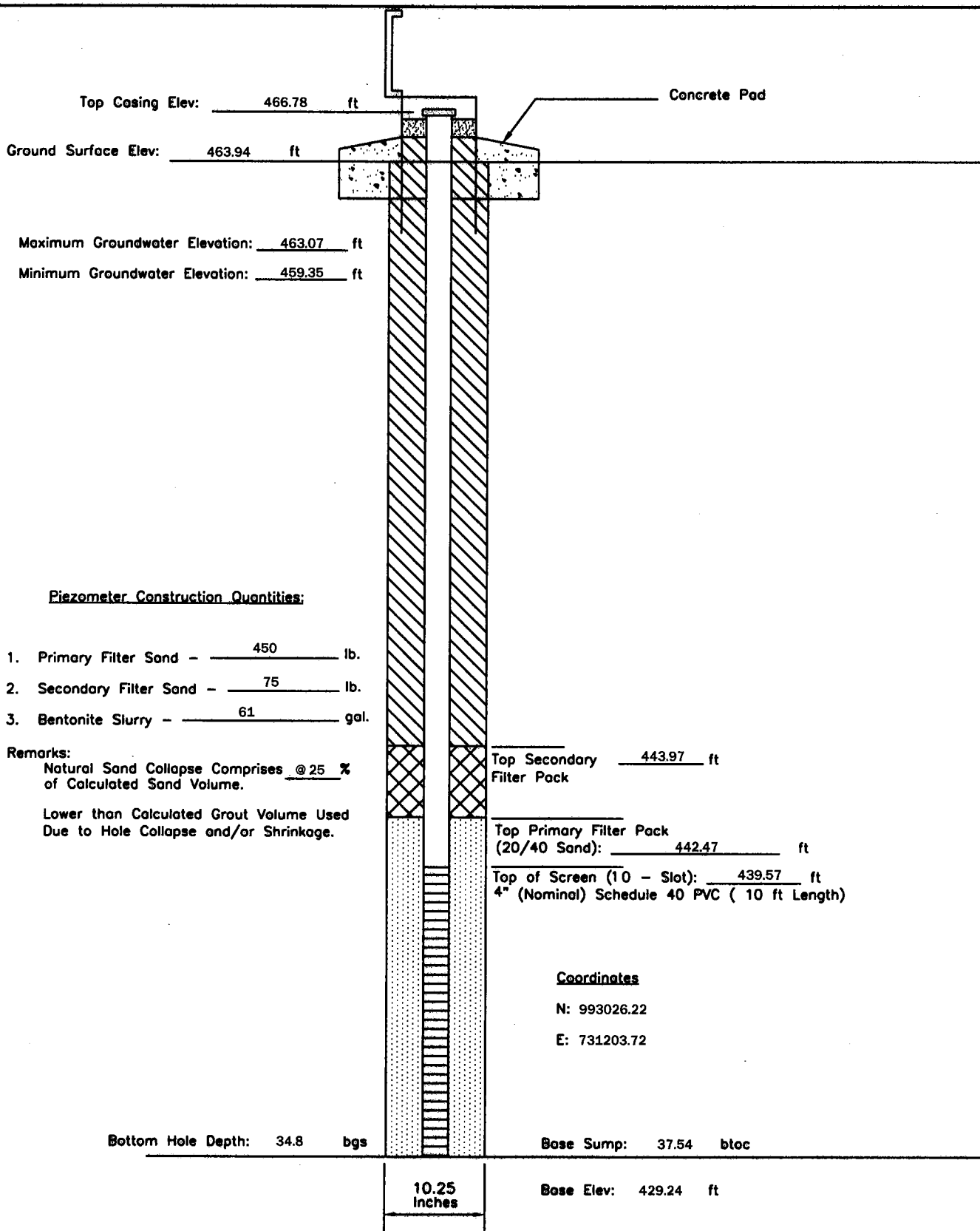
P - 108	PIEZOMETER CONSTRUCTION DIAGRAM	GREDELL Engineering Resources, Inc. ENVIRONMENTAL ENGINEERING LAND AIR WATER			
Date Piezometer Completed: 11/04/09	AMEREN MISSOURI	1505 East High Street Jefferson City, Missouri 65101		Telephone: (573) 659-9078 Facsimile: (573) 659-9079	
	LABADIE POWER PLANT	DATE 1/2010	SCALE N.T.S.	DRAWN BY: BED	APPROVED BY: MCC



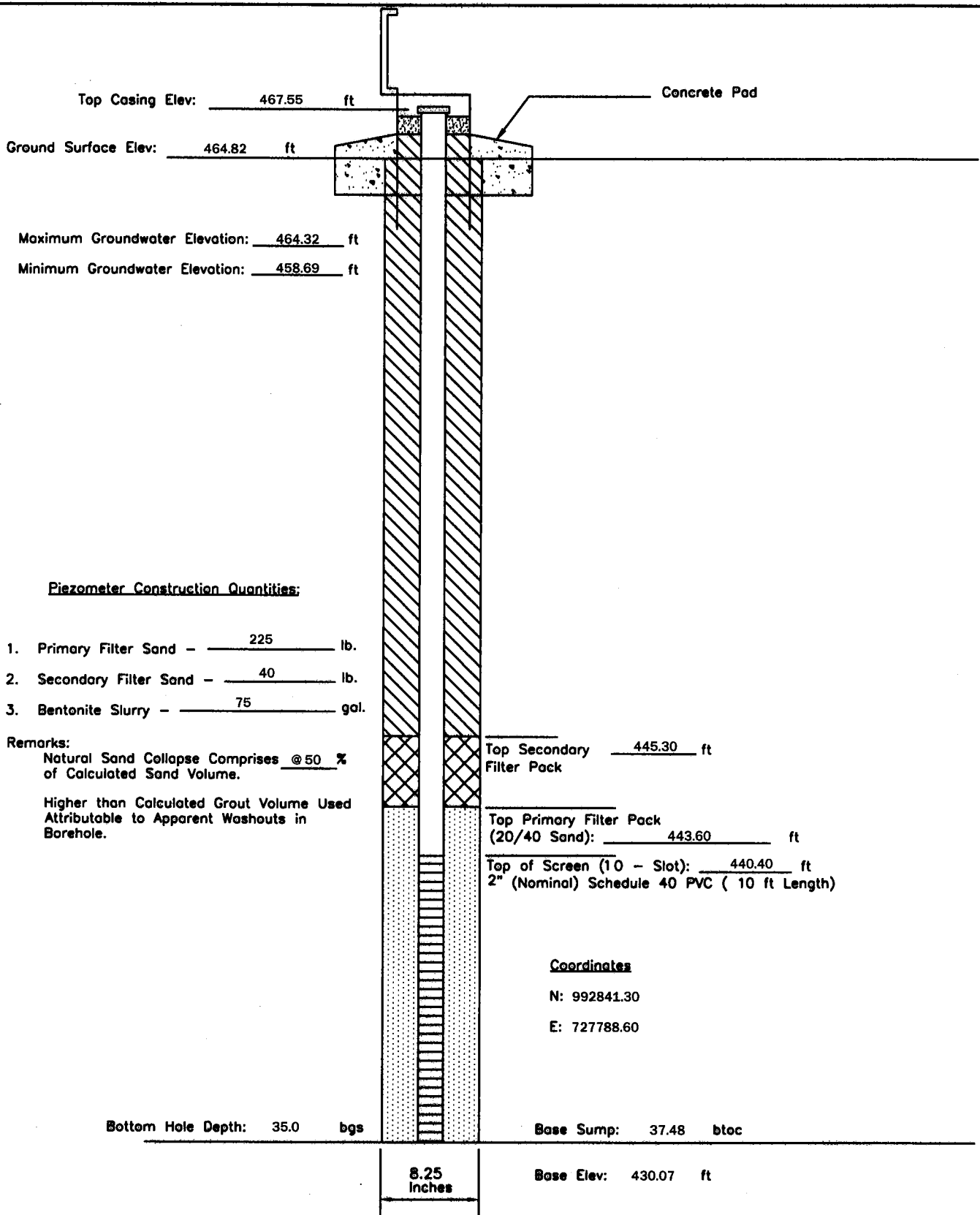
P - 110	PIEZOMETER CONSTRUCTION DIAGRAM	GREDELL Engineering Resources, Inc. ENVIRONMENTAL ENGINEERING LAND AIR WATER			
Date Piezometer Completed: 11/04/09	AMEREN MISSOURI	1505 East High Street Jefferson City, Missouri 65101		Telephone: (573) 659-9078 Facsimile: (573) 659-9079	
	LABADIE POWER PLANT	DATE 1/2010	SCALE N.T.S.	DRAWN BY: BED	APPROVED BY: MCC



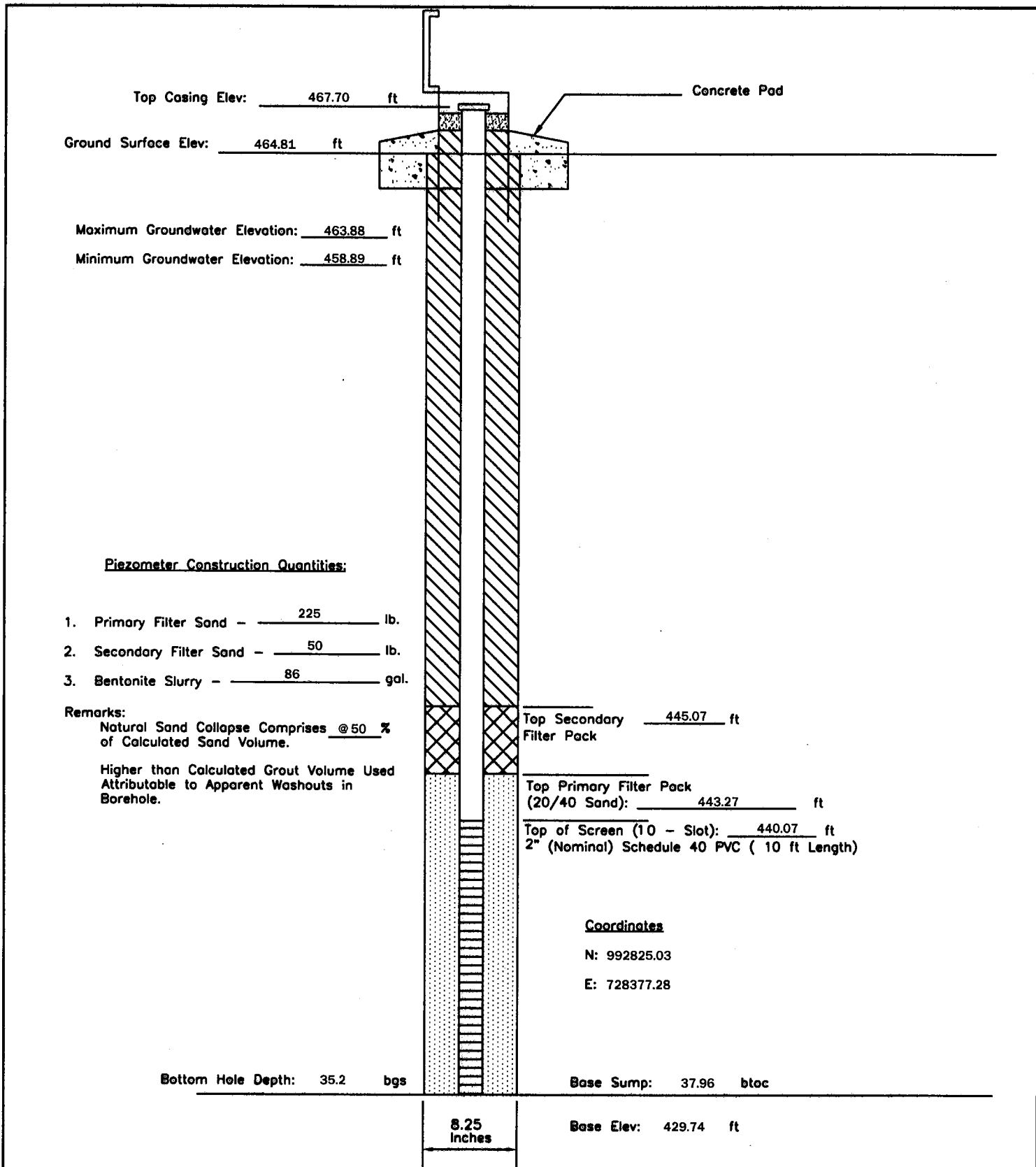
P - 112	PIEZOMETER CONSTRUCTION DIAGRAM	GREDELL Engineering Resources, Inc. ENVIRONMENTAL ENGINEERING LAND AIR WATER			
Date Piezometer Completed: 11/04/09	AMEREN MISSOURI	1505 East High Street Jefferson City, Missouri 65101		Telephone: (573) 659-9078 Facsimile: (573) 659-9079	
	LABADIE POWER PLANT	DATE 1/2010	SCALE N.T.S.	DRAWN BY: BED	APPROVED BY: MCC



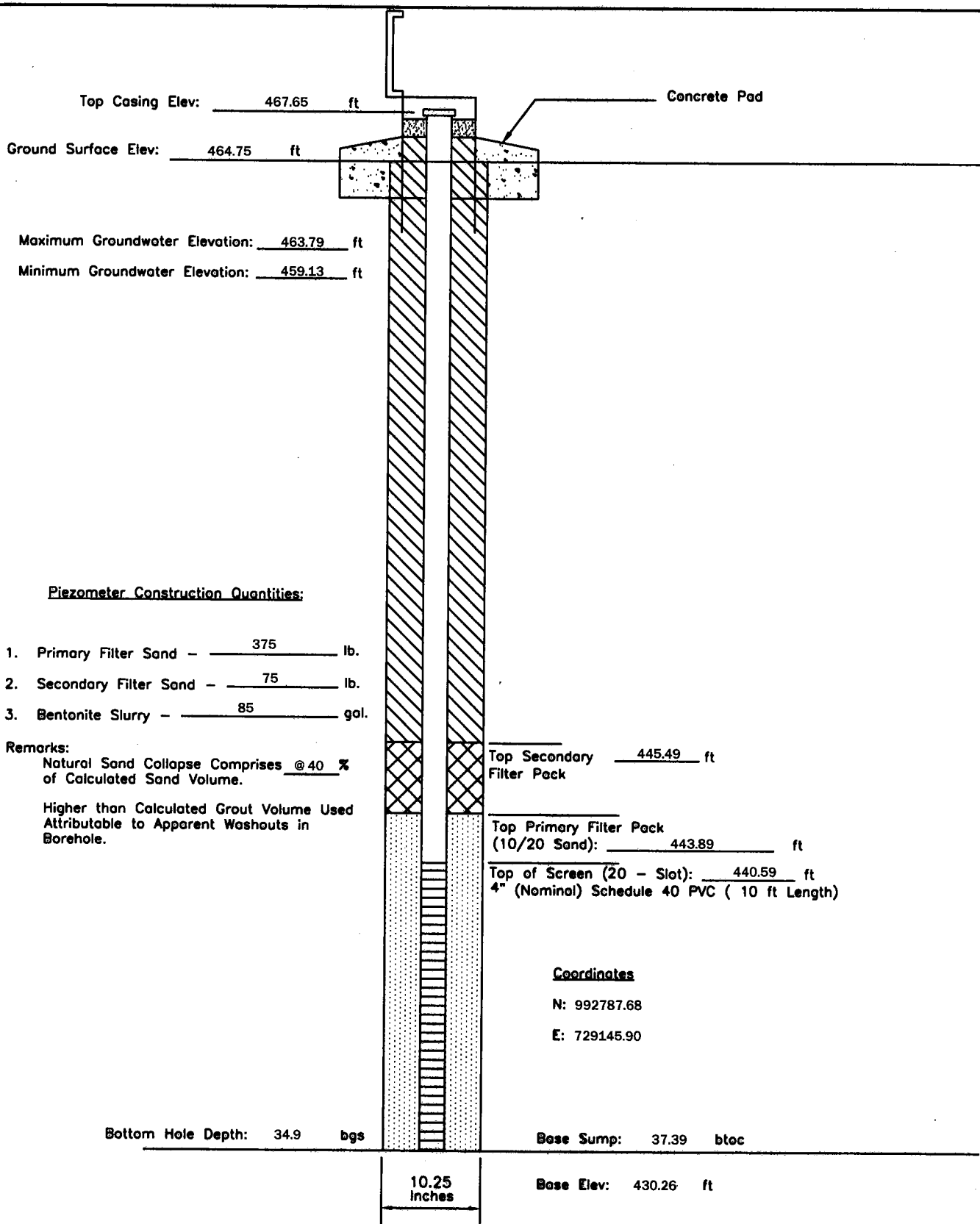
P - 114	PIEZOMETER CONSTRUCTION DIAGRAM		GREDELL Engineering Resources, Inc.			
	AMEREN MISSOURI		ENVIRONMENTAL ENGINEERING			
Date Piezometer Completed:	LABADIE POWER PLANT		LAND	AIR	WATER	
11/12/09			1505 East High Street	Telephone: (573) 659-9078		
			Jefferson City, Missouri 65101	Facsimile: (573) 659-9079		
			DATE 1/2010	SCALE N.T.S.	DRAWN BY: BED	APPROVED BY: MCC



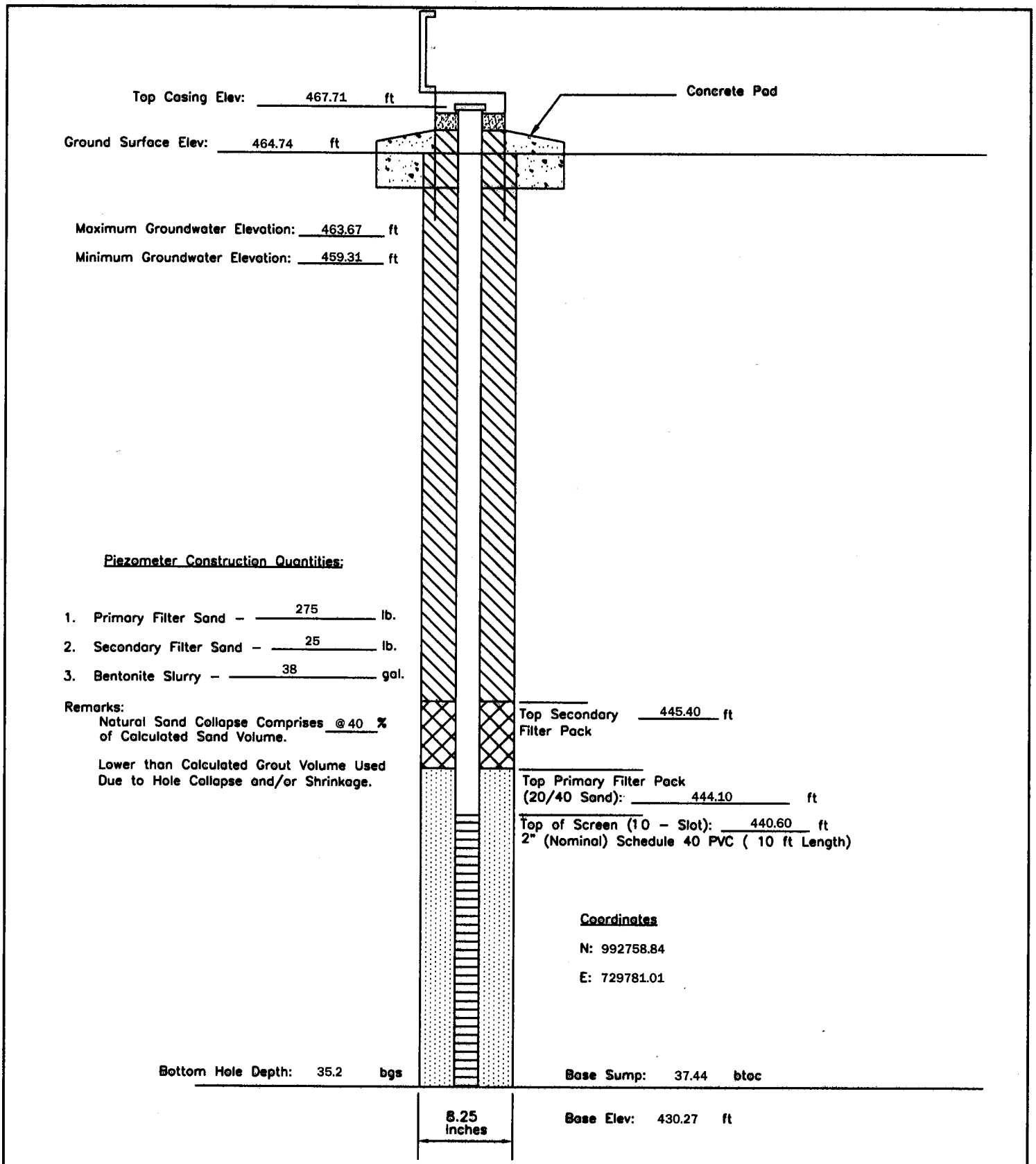
P - 116	PIEZOMETER CONSTRUCTION DIAGRAM	GREDELL Engineering Resources, Inc. ENVIRONMENTAL ENGINEERING LAND AIR WATER			
Date Piezometer Completed: 9/29/09	AMEREN MISSOURI	1505 East High Street Jefferson City, Missouri 65101		Telephone: (573) 659-9078 Facsimile: (573) 659-9079	
	LABADIE POWER PLANT	DATE 1/2010	SCALE N.T.S.	DRAWN BY: BED	APPROVED BY: MCC



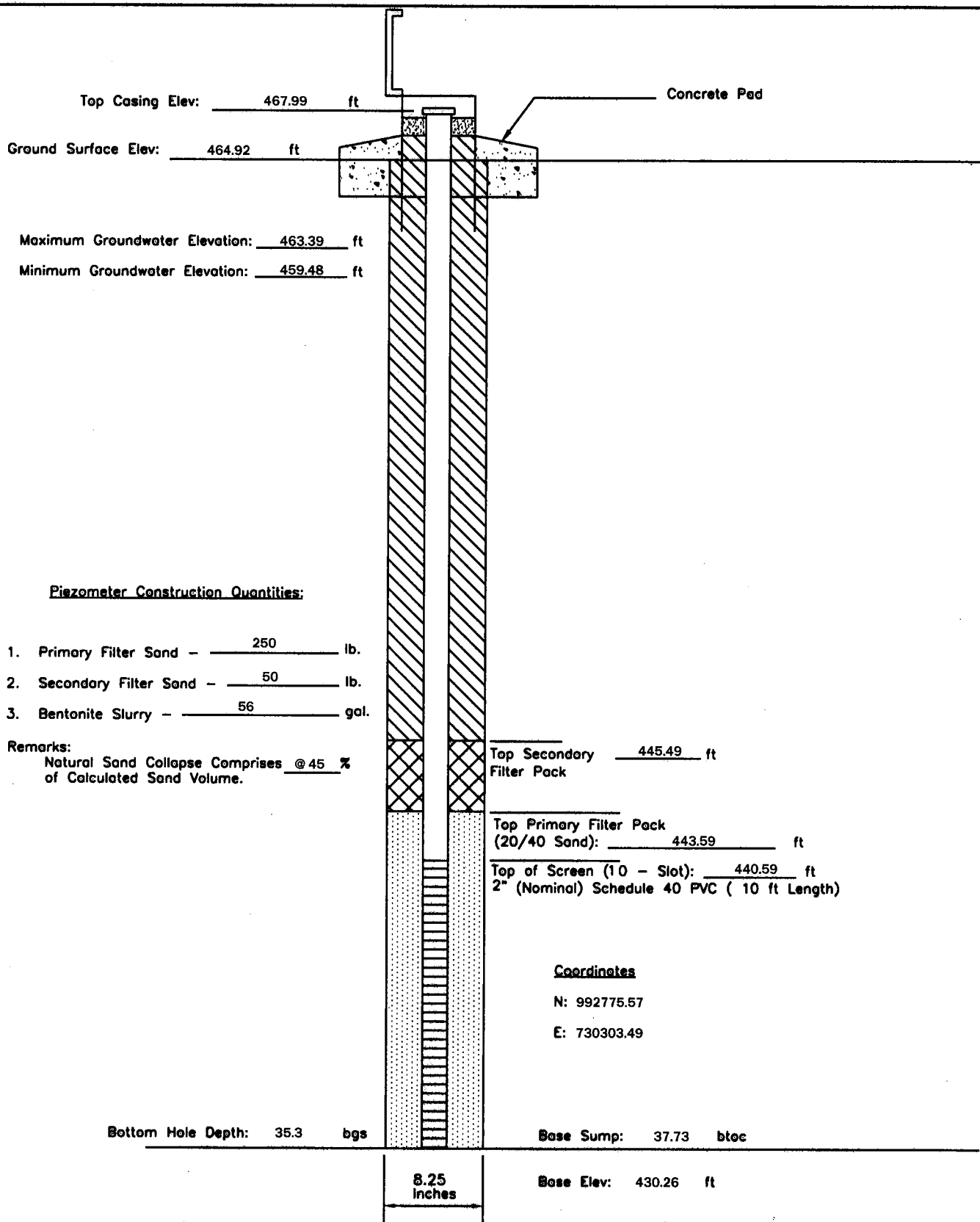
P - 118	PIEZOMETER CONSTRUCTION DIAGRAM	GREDELL Engineering Resources, Inc. ENVIRONMENTAL ENGINEERING LAND AIR WATER			
Date Piezometer Completed: 9/29/09	AMEREN MISSOURI LABADIE POWER PLANT	1505 East High Street Jefferson City, Missouri 65101 DATE 1/2010	SCALE N.T.S.	DRAWN BY: BED	Telephone: (573) 659-9078 Facsimile: (573) 659-9079 APPROVED BY: MCC



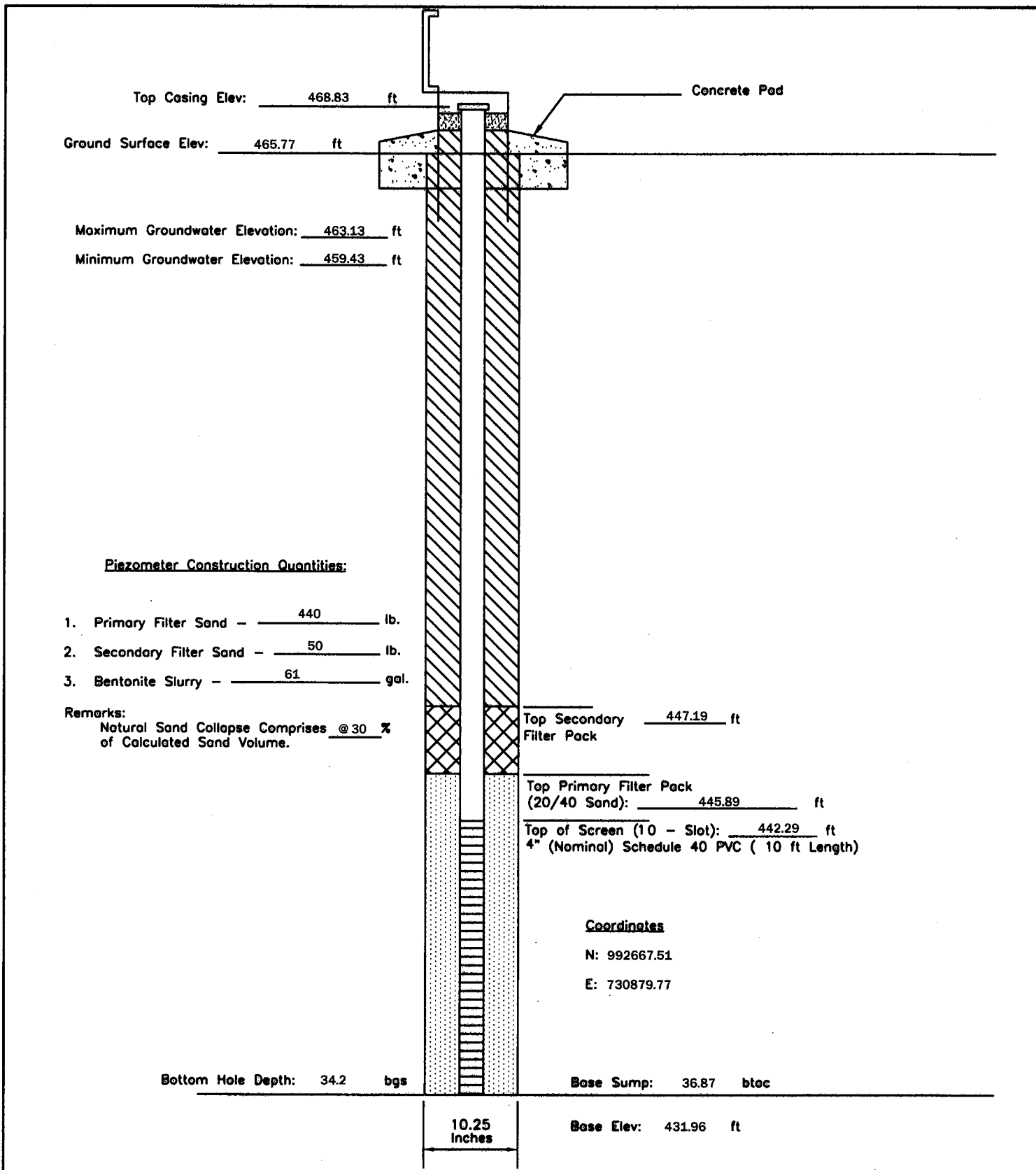
P - 120	PIEZOMETER CONSTRUCTION DIAGRAM		GREDELL Engineering Resources, Inc.			
	AMEREN MISSOURI		ENVIRONMENTAL ENGINEERING			
Date Piezometer Completed: 10/22/09	LABADIE POWER PLANT		LAND	AIR	WATER	
			1505 East High Street Jefferson City, Missouri 65101		Telephone: (573) 659-9078 Facsimile: (573) 659-9079	
		DATE 1/2010	SCALE N.T.S.	DRAWN BY: BED	APPROVED BY: MCC	



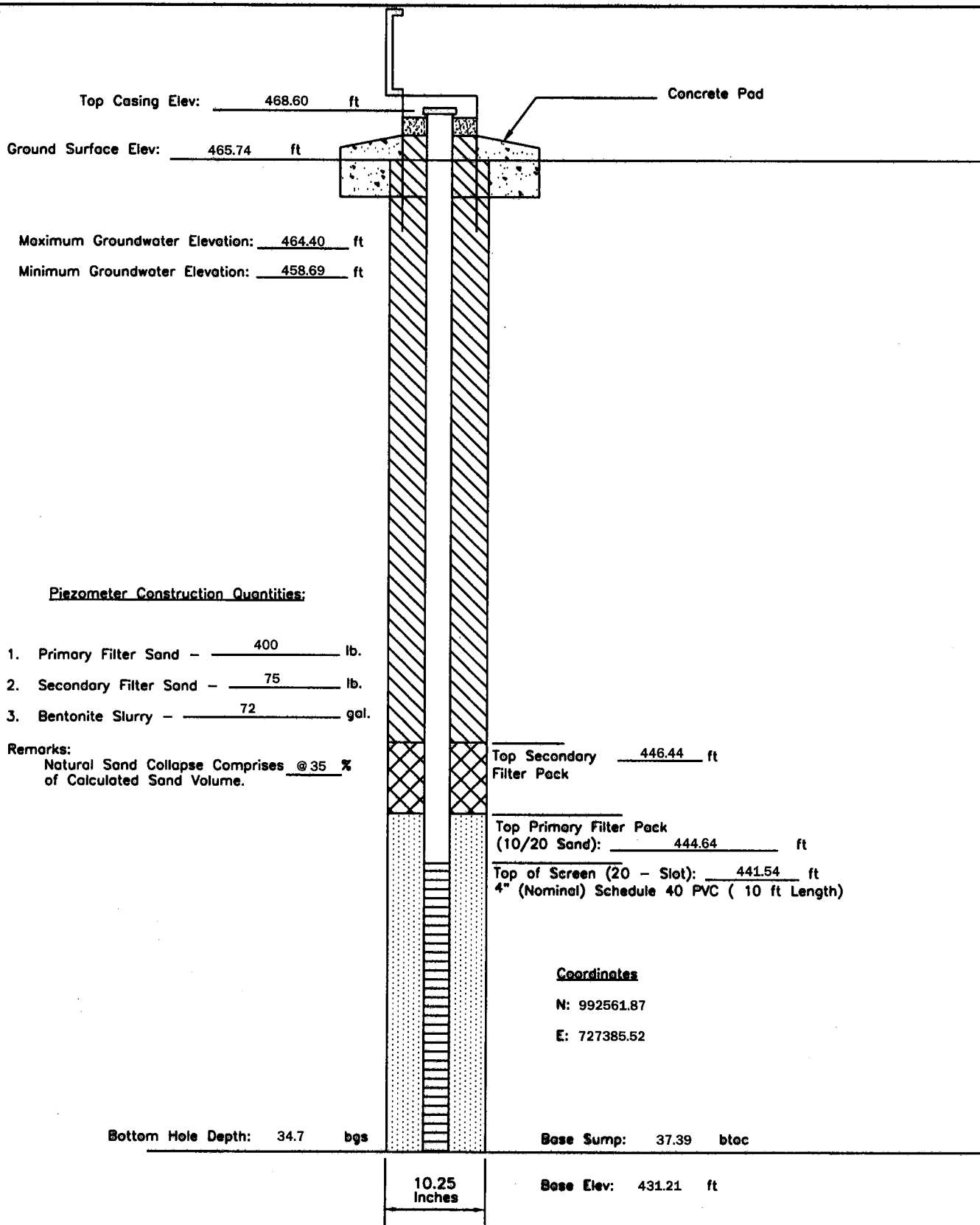
P - 122	PIEZOMETER CONSTRUCTION DIAGRAM	GREDELL Engineering Resources, Inc. ENVIRONMENTAL ENGINEERING LAND AIR WATER			
Date Piezometer Completed: 11/10/09	AMEREN MISSOURI	1505 East High Street Jefferson City, Missouri 65101		Telephone: (573) 659-9078 Facsimile: (573) 659-9079	
	LABADIE POWER PLANT	DATE 1/2010	SCALE N.T.S.	DRAWN BY: BED	APPROVED BY: MCC



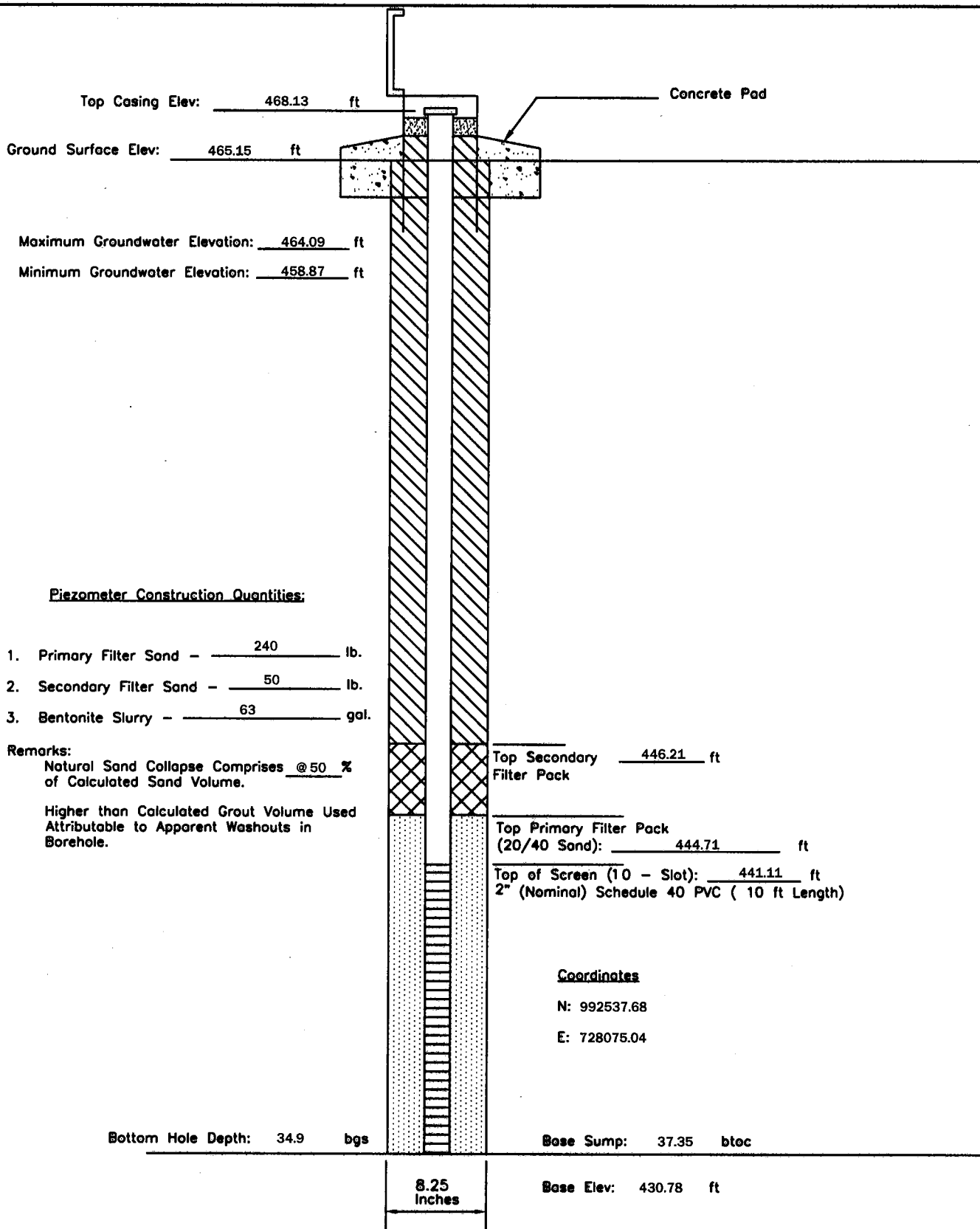
P - 124	PIEZOMETER CONSTRUCTION DIAGRAM	GREDELL Engineering Resources, Inc. ENVIRONMENTAL ENGINEERING LAND AIR WATER		
Date Piezometer Completed: 11/11/09	AMEREN MISSOURI	1505 East High Street Jefferson City, Missouri 65101		Telephone: (573) 659-9078 Facsimile: (573) 659-9079
	LABADIE POWER PLANT	DATE 1/2010	SCALE N.T.S.	DRAWN BY: BED APPROVED BY: MCC



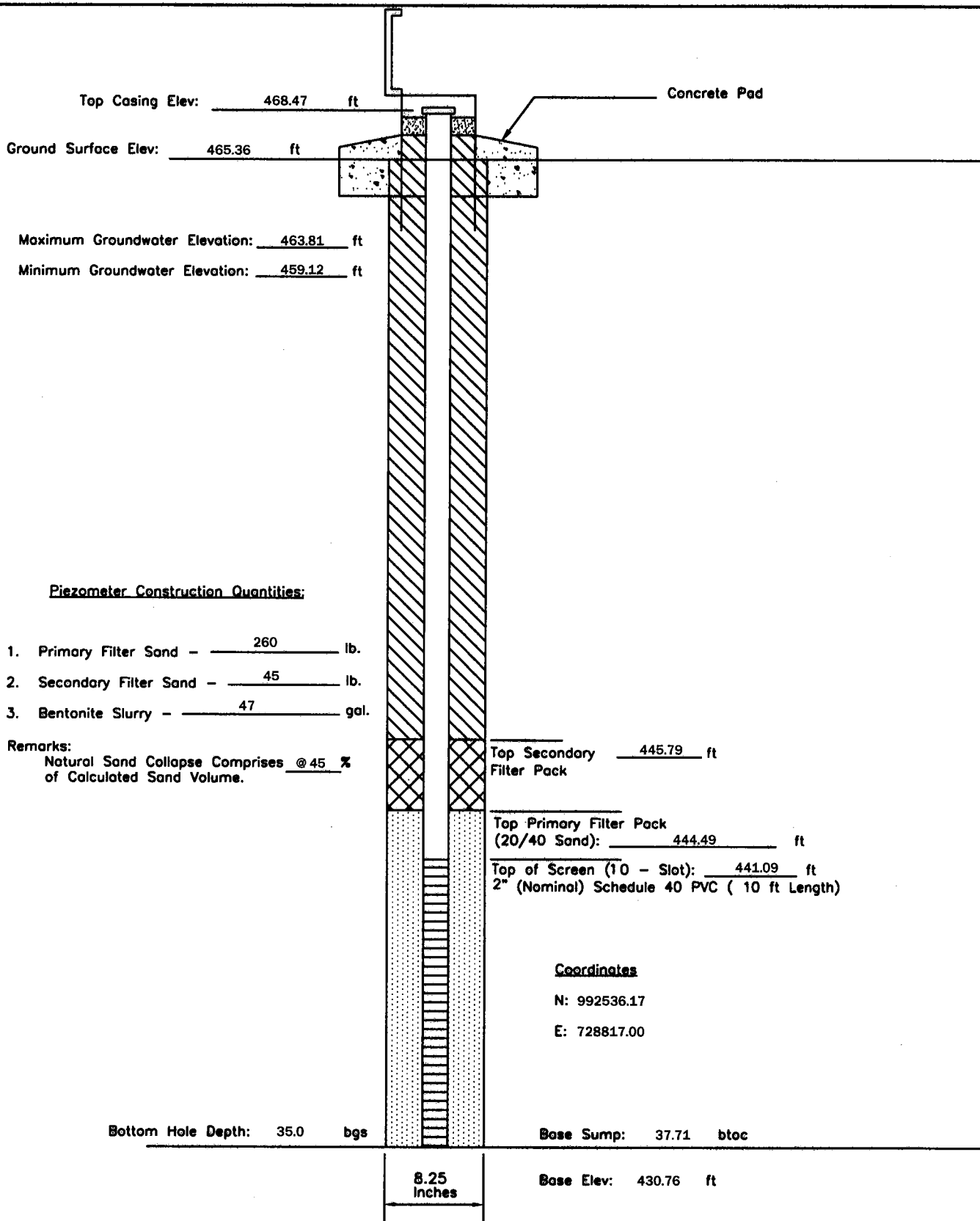
P - 126	PIEZOMETER CONSTRUCTION DIAGRAM	GREDELL Engineering Resources, Inc. ENVIRONMENTAL ENGINEERING LAND AIR WATER			
Date Piezometer Completed: 11/11/09	AMEREN MISSOURI	1505 East High Street Jefferson City, Missouri 65101		Telephone: (573) 659-9078 Facsimile: (573) 659-9079	
	LABADIE POWER PLANT	DATE 1/2010	SCALE N.T.S.	DRAWN BY: BED	APPROVED BY: MCC



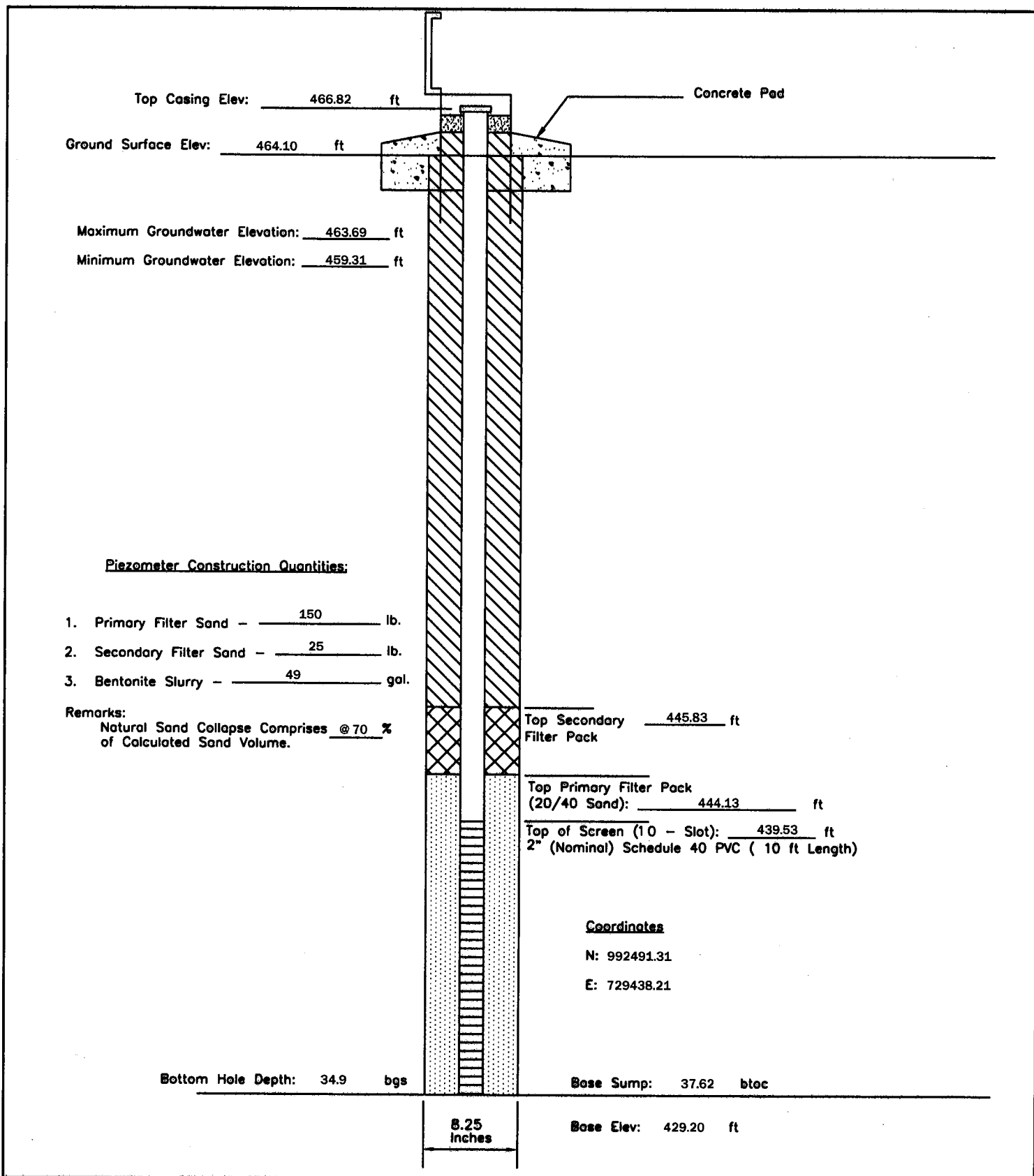
P - 128	PIEZOMETER CONSTRUCTION DIAGRAM		GREDELL Engineering Resources, Inc.		
	AMEREN MISSOURI		ENVIRONMENTAL ENGINEERING		
Date Piezometer Completed: 11/07/09	LABADIE POWER PLANT		LAND	AIR	WATER
			1505 East High Street Jefferson City, Missouri 65101	Telephone: (573) 659-9078 Facsimile: (573) 659-9079	
			DATE 1/2010	SCALE N.T.S.	DRAWN BY: BED APPROVED BY: MCC



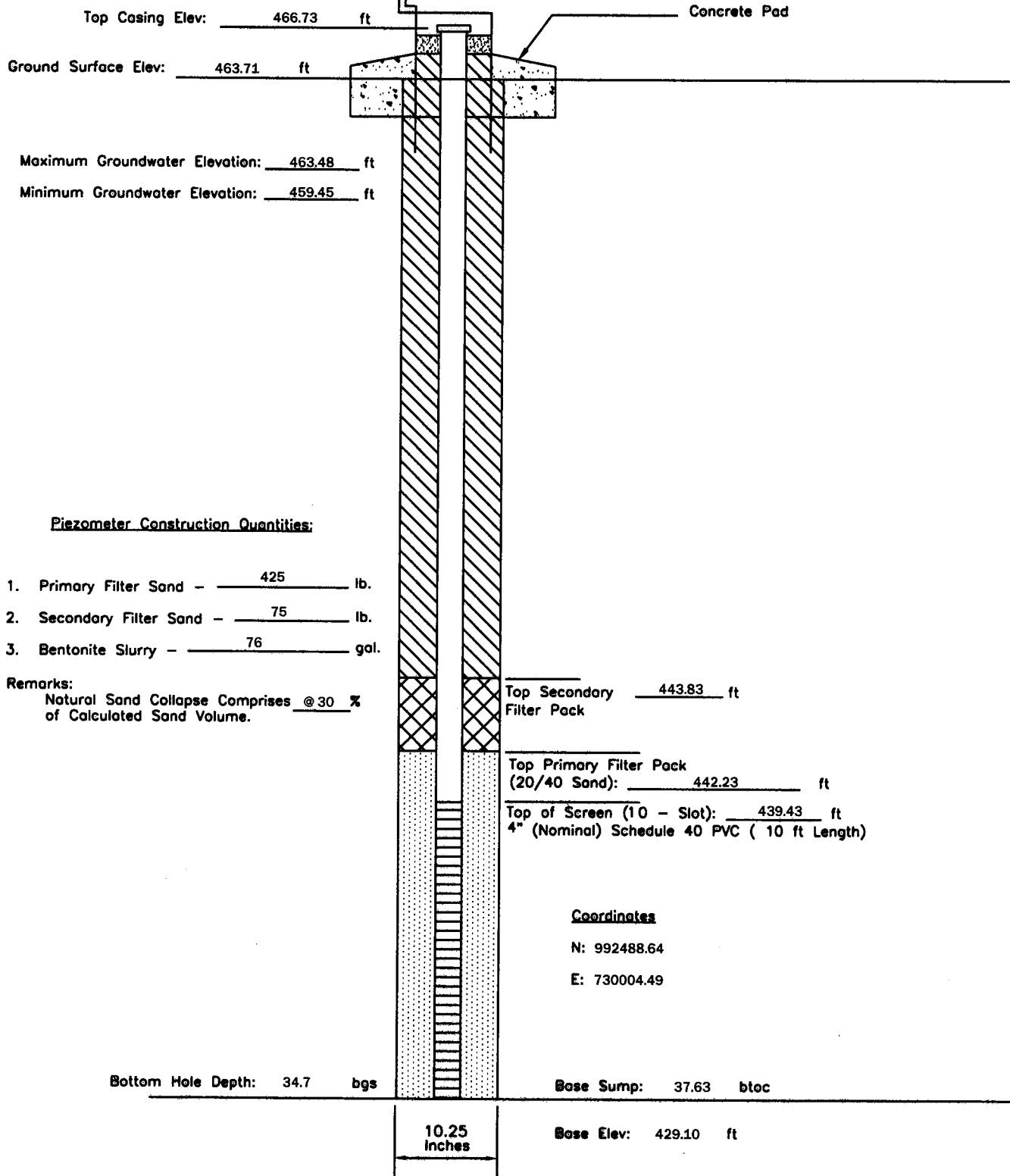
P - 130	PIEZOMETER CONSTRUCTION DIAGRAM		GREDELL Engineering Resources, Inc.			
	AMEREN MISSOURI		ENVIRONMENTAL ENGINEERING			
Date Piezometer Completed: 9/30/09	LABADIE POWER PLANT		LAND	AIR	WATER	
			1505 East High Street Jefferson City, Missouri 65101	Telephone: (573) 659-9078 Facsimile: (573) 659-9079		
		DATE 1/2010	SCALE N.T.S.	DRAWN BY: BED	APPROVED BY: MCC	



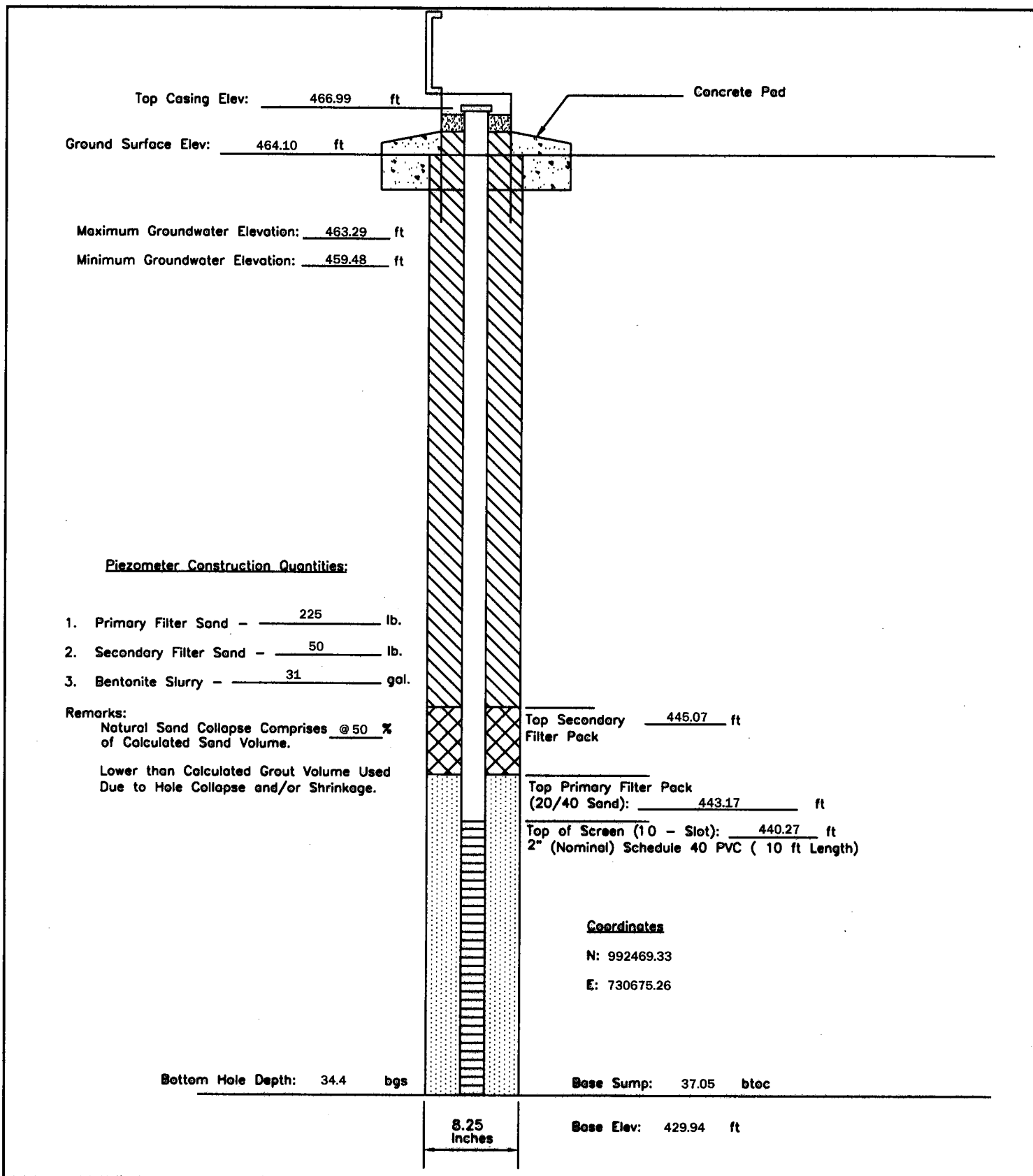
P - 132	PIEZOMETER CONSTRUCTION DIAGRAM	GREDELL Engineering Resources, Inc. ENVIRONMENTAL ENGINEERING LAND AIR WATER		
Date Piezometer Completed: 10/15/09	AMEREN MISSOURI LABADIE POWER PLANT	1505 East High Street Jefferson City, Missouri 65101		Telephone: (573) 659-9078 Facsimile: (573) 659-9079
		DATE 1/2010	SCALE N.T.S.	DRAWN BY: BED APPROVED BY: MCC



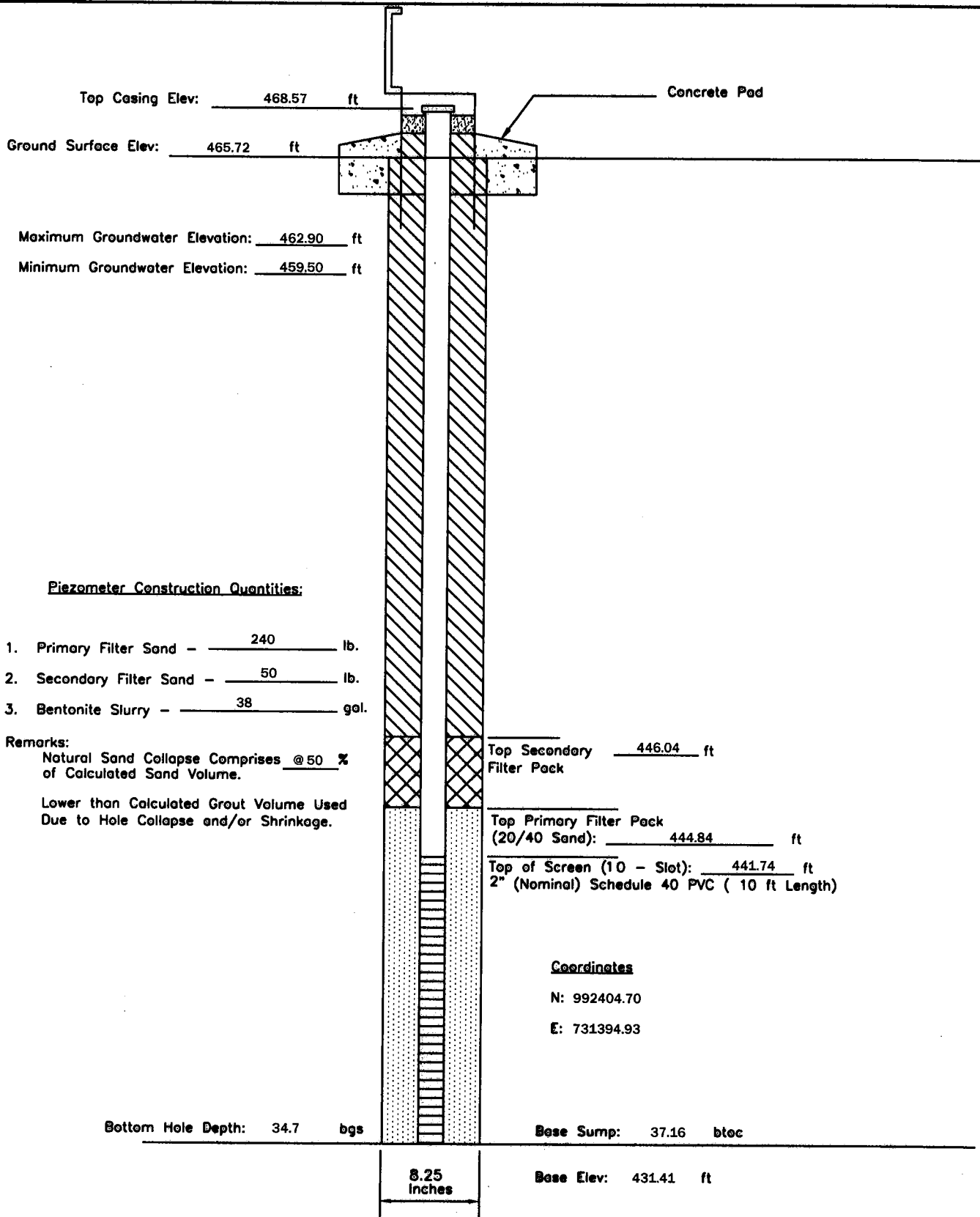
P - 134	PIEZOMETER CONSTRUCTION DIAGRAM	GREDELL Engineering Resources, Inc. ENVIRONMENTAL ENGINEERING LAND AIR WATER		
Date Piezometer Completed: 11/10/09	AMEREN MISSOURI LABADIE POWER PLANT	1505 East High Street Jefferson City, Missouri 65101 DATE 1/2010		Telephone: (573) 659-9078 Facsimile: (573) 659-9079 SCALE N.T.S. DRAWN BY: BED APPROVED BY: MCC



P - 136	PIEZOMETER CONSTRUCTION DIAGRAM	GREDELL Engineering Resources, Inc. ENVIRONMENTAL ENGINEERING		
	AMEREN MISSOURI	LAND	AIR	WATER
Date Piezometer Completed: 11/11/09	LABADIE POWER PLANT	1505 East High Street Jefferson City, Missouri 65101	Telephone: (573) 659-9078 Facsimile: (573) 659-9079	
		DATE 1/2010	SCALE N.T.S.	DRAWN BY: BED APPROVED BY: MCC



P - 138	PIEZOMETER CONSTRUCTION DIAGRAM	GREDELL Engineering Resources, Inc. ENVIRONMENTAL ENGINEERING LAND AIR WATER			
Date Piezometer Completed: 11/12/09	AMEREN MISSOURI LABADIE POWER PLANT	1505 East High Street Jefferson City, Missouri 65101		Telephone: (573) 659-9078 Facsimile: (573) 659-9079	
		DATE 1/2010	SCALE N.T.S.	DRAWN BY: BED	APPROVED BY: MCC



P - 140	PIEZOMETER CONSTRUCTION DIAGRAM	GREDELL Engineering Resources, Inc. ENVIRONMENTAL ENGINEERING LAND AIR WATER 1505 East High Street Jefferson City, Missouri 65101 Telephone: (573) 659-9078 Facsimile: (573) 659-9079			
Date Piezometer Completed: 10/27/09	AMEREN MISSOURI LABADIE POWER PLANT	DATE 1/2010	SCALE N.T.S.	DRAWN BY: BED	APPROVED BY: MCC

Top Casing Elev: 467.66 ft

Ground Surface Elev: 464.83 ft

Concrete Pad

Maximum Groundwater Elevation: 464.20 ft

Minimum Groundwater Elevation: 458.87 ft

Piezometer Construction Quantities:

1. Primary Filter Sand - 300 lb.
2. Secondary Filter Sand - 50 lb.
3. Bentonite Slurry - 33 gal.

Remarks:

Natural Sand Collapse Comprises @ 30 % of Calculated Sand Volume.

Lower than Calculated Grout Volume Used Due to Hole Collapse and/or Shrinkage.

Top Secondary Filter Pack 445.13 ft

Top Primary Filter Pack (20/40 Sand): 443.13 ft

Top of Screen (10 - Slot): 440.43 ft
2" (Nominal) Schedule 40 PVC (10 ft Length)

Coordinates

N: 992250.72

E: 727764.69

Bottom Hole Depth: 35.1 bgs

Base Sump: 37.56 btoc

Base Elev: 430.10 ft

8.25
Inches

P - 142

**PIEZOMETER
CONSTRUCTION
DIAGRAM**

GREDELL Engineering Resources, Inc.
ENVIRONMENTAL ENGINEERING

Date Piezometer
Completed:

11/06/09

AMEREN MISSOURI

LABADIE POWER PLANT

1505 East High Street
Jefferson City, Missouri 65101

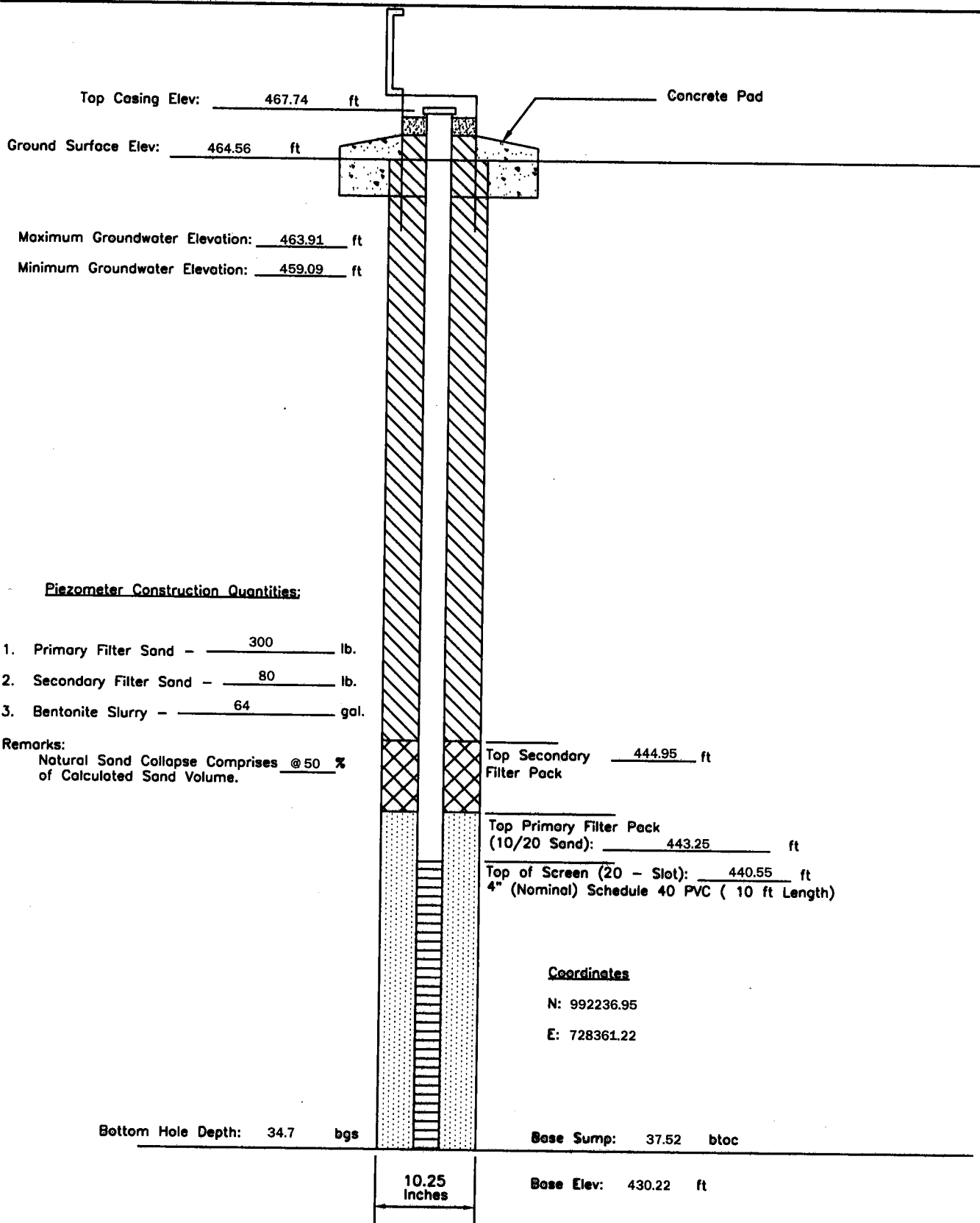
DATE
1/2010

SCALE
N.T.S.

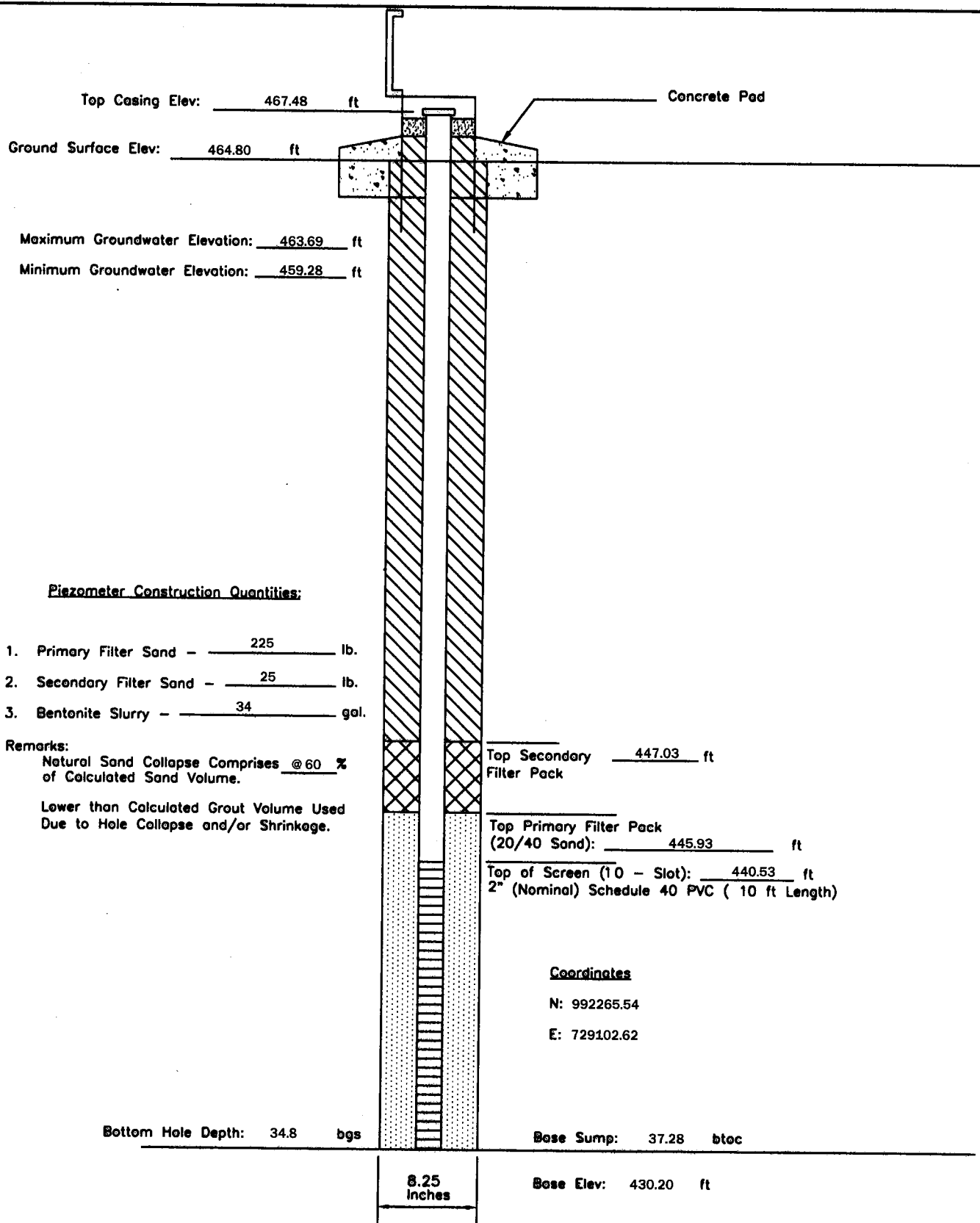
DRAWN BY: BED

Telephone: (573) 659-9078
Facsimile: (573) 659-9079

APPROVED BY: MCC

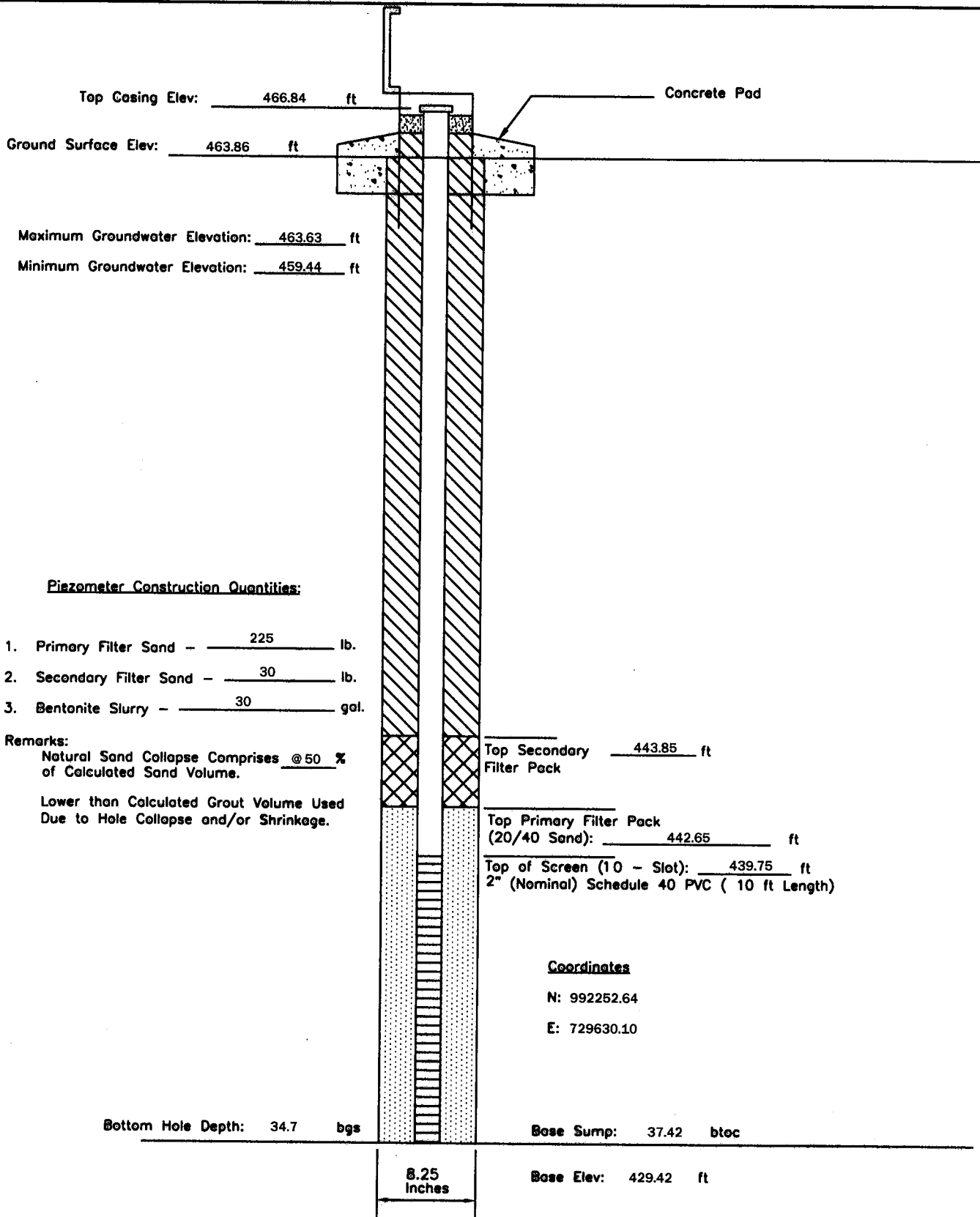


P - 144	PIEZOMETER CONSTRUCTION DIAGRAM	GREDELL Engineering Resources, Inc.			
	AMEREN MISSOURI	ENVIRONMENTAL ENGINEERING			
Date Piezometer Completed: 9/30/09	LABADIE POWER PLANT	LAND	AIR	WATER	
		1505 East High Street Jefferson City, Missouri 65101		Telephone: (573) 659-9078 Facsimile: (573) 659-9079	
		DATE 1/2010	SCALE N.T.S.	DRAWN BY: BED	APPROVED BY: MCC

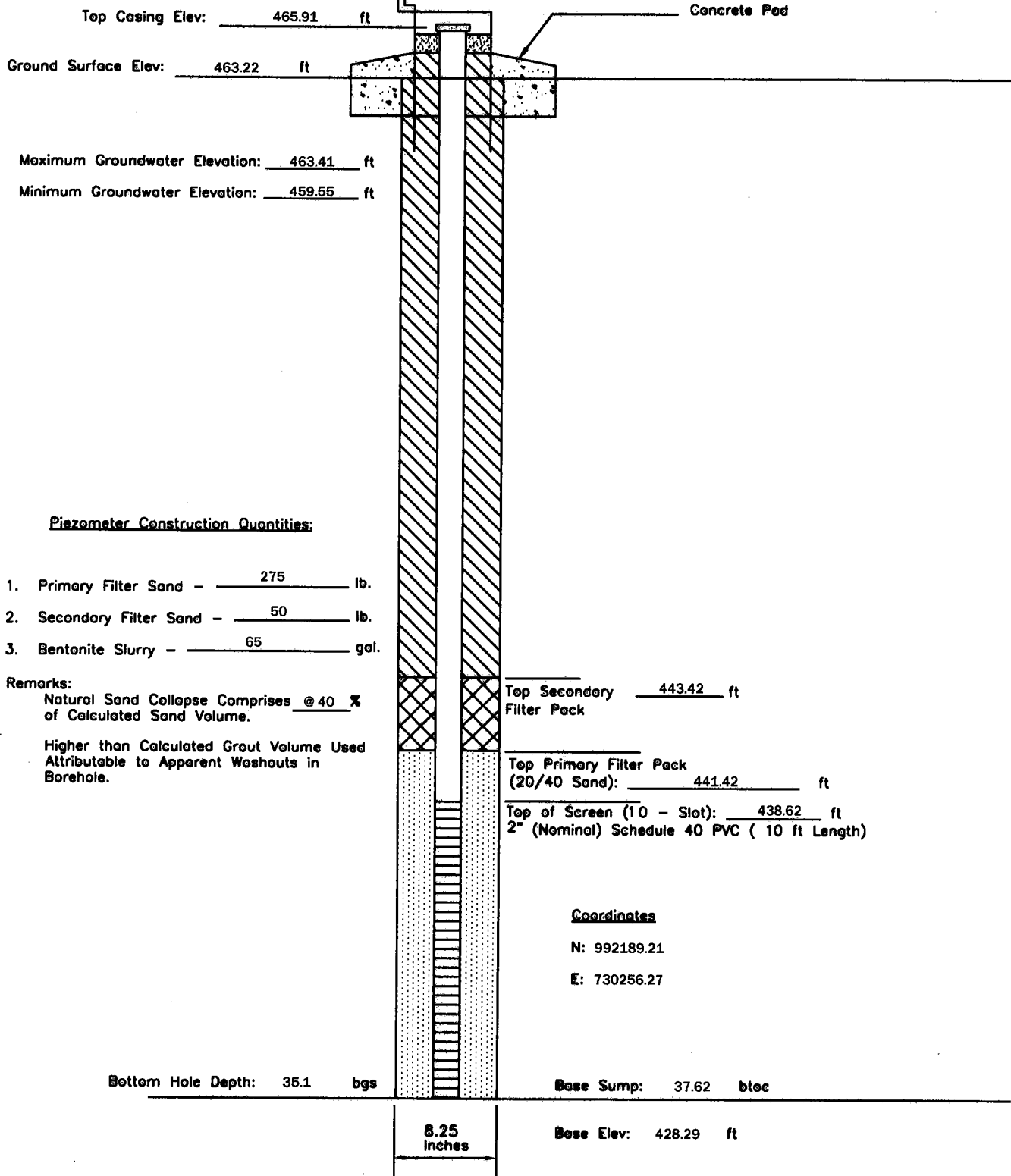


P - 146	PIEZOMETER CONSTRUCTION DIAGRAM	GREDELL Engineering Resources, Inc. ENVIRONMENTAL ENGINEERING			
Date Piezometer Completed: 11/09/09	AMEREN MISSOURI LABADIE POWER PLANT	LAND		AIR	
		WATER		1505 East High Street Jefferson City, Missouri 65101	
		DATE 1/2010	SCALE N.T.S.	DRAWN BY: BED	APPROVED BY: MCC

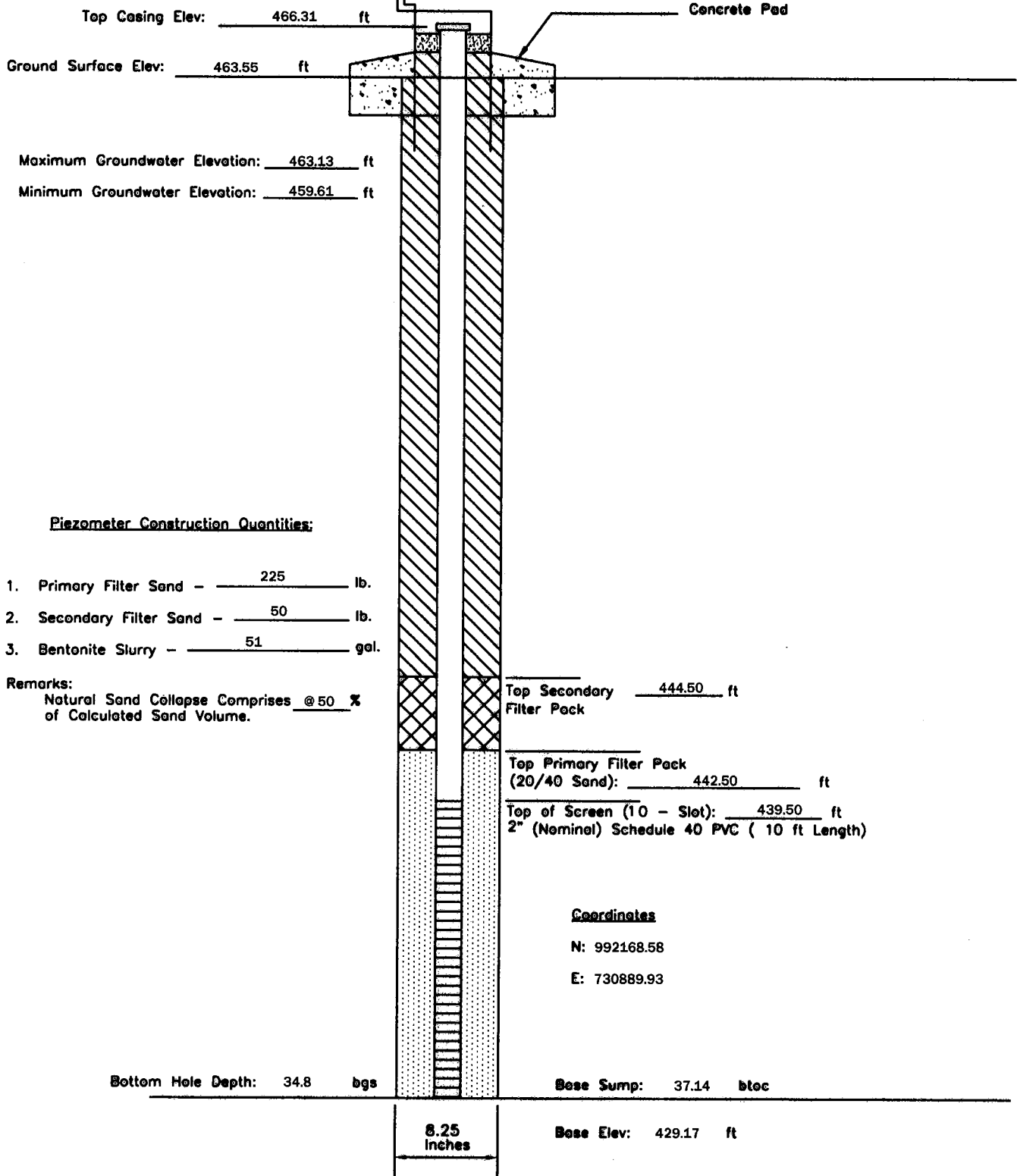
Telephone: (573) 659-9078
 Facsimile: (573) 659-9079



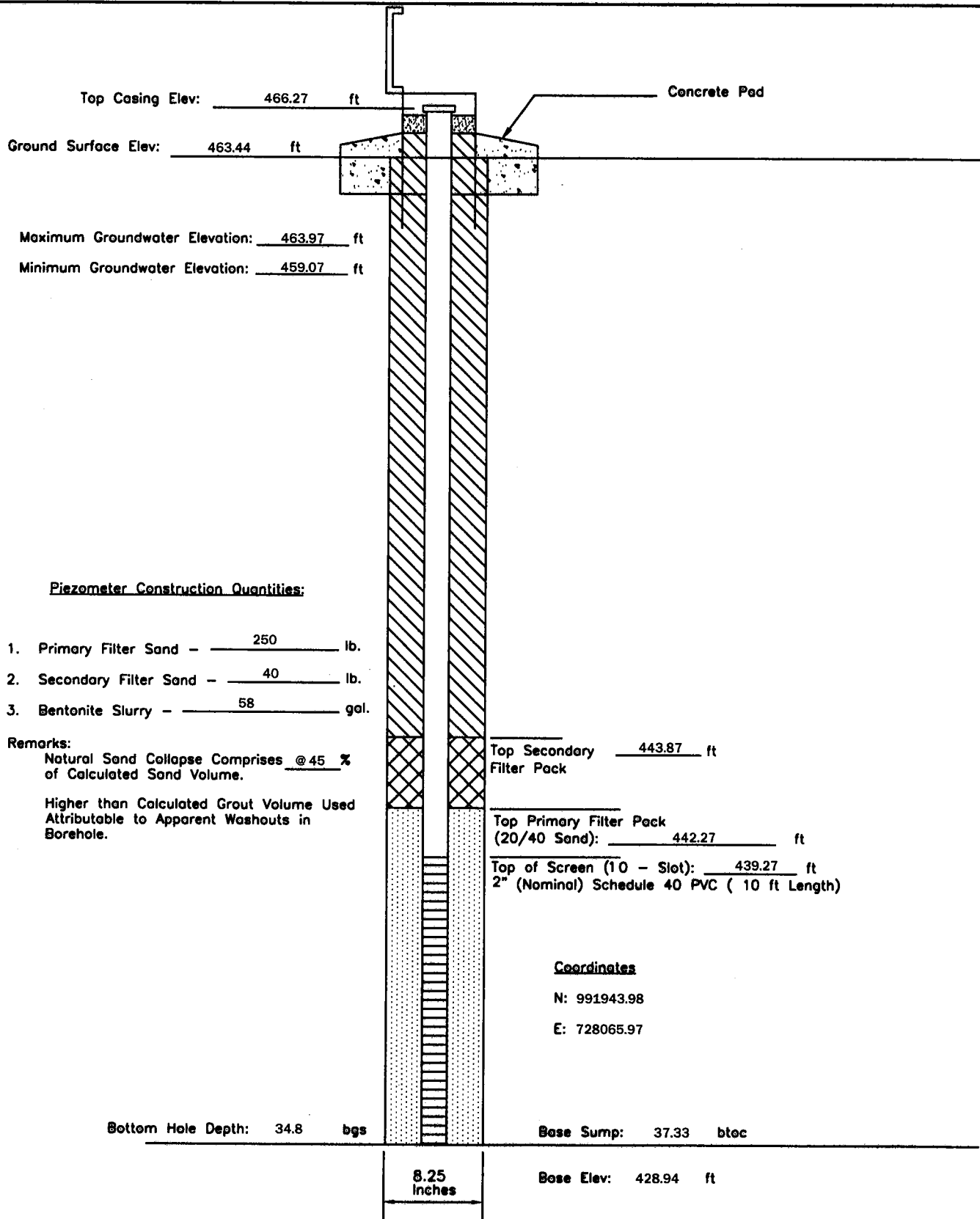
P - 148	PIEZOMETER CONSTRUCTION DIAGRAM	GREDELL Engineering Resources, Inc. ENVIRONMENTAL ENGINEERING				
		LAND	AIR		WATER	
Date Piezometer Completed:	AMEREN MISSOURI	1505 East High Street Jefferson City, Missouri 65101		Telephone: (573) 659-9078 Facsimile: (573) 659-9079		
11/09/09	LABADIE POWER PLANT	DATE 1/2010	SCALE N.T.S.	DRAWN BY:	BED	APPROVED BY: MCC



P - 150	PIEZOMETER CONSTRUCTION DIAGRAM	GREDELL Engineering Resources, Inc. ENVIRONMENTAL ENGINEERING LAND AIR WATER			
Date Piezometer Completed: 11/14/09	AMEREN MISSOURI LABADIE POWER PLANT	1505 East High Street Jefferson City, Missouri 65101	DATE 1/2010	SCALE N.T.S.	Telephone: (573) 659-9078 Facsimile: (573) 659-9079 DRAWN BY: BED APPROVED BY: MCC



P - 152	PIEZOMETER CONSTRUCTION DIAGRAM	GREDELL Engineering Resources, Inc. ENVIRONMENTAL ENGINEERING LAND AIR WATER			
Date Piezometer Completed: 11/12/09	AMEREN MISSOURI LABADIE POWER PLANT	1505 East High Street Jefferson City, Missouri 65101		DATE 1/2010	Telephone: (573) 659-9078 Facsimile: (573) 659-9079 APPROVED BY: MCC
		SCALE N.T.S.	DRAWN BY: BED		



P - 155	PIEZOMETER CONSTRUCTION DIAGRAM	GREDELL Engineering Resources, Inc.		
		ENVIRONMENTAL ENGINEERING		
Date Piezometer Completed: 9/30/09	AMEREN MISSOURI	LAND	AIR	WATER
	LABADIE POWER PLANT	1505 East High Street Jefferson City, Missouri 65101	Telephone: (573) 659-9078 Facsimile: (573) 659-9079	
		DATE 1/2010	SCALE N.T.S.	DRAWN BY: BED APPROVED BY: MCC