Appendix 18.E

Monitoring Well and Vibrating Wire Piezometer Completion Diagrams

NORWEST
Applied Hydrology

KF2007-01

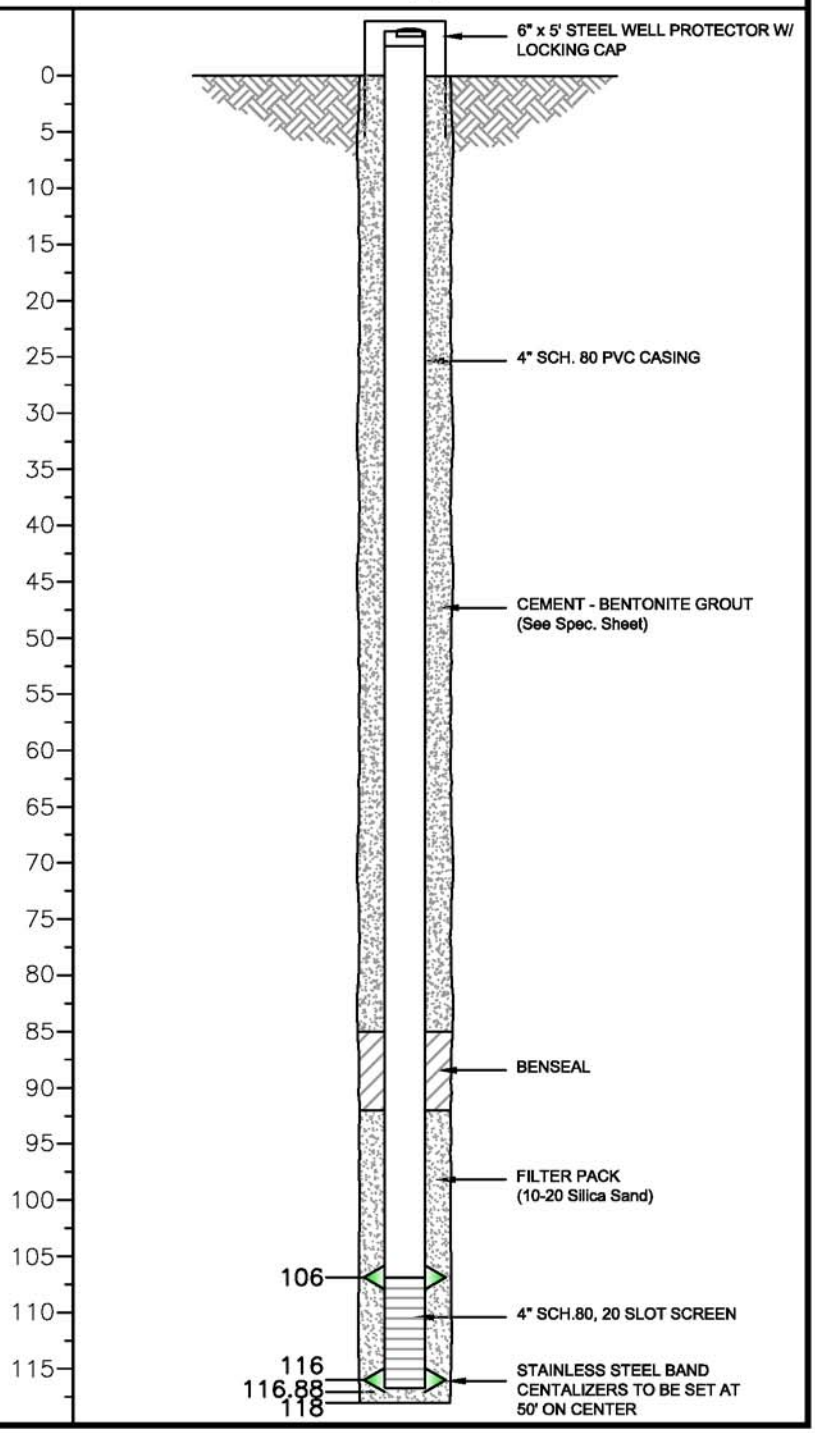
COMPLETION DIAGRAM & LITHOLOGIC LOG

PROJECT: NAVAJO MINE EXTENSION
DRILLING CO: MO-TE
DRILLER: BOB
CLIENT SUPERVISER: COLLETTE BROWN
GEOLOGIST/SUPERVISOR: JOEL SOBOL
AHA JOB#: 4010-00060-10
DRILLING METHOD: AIR ROTARY
BORING STARTED: 7/28/07

WELL TYPE: MONITOR WELL
WELLHEAD TYPE: PROTECTIVE HEAD COVER
WELL COMPLETED: 7/28/07
WELL DEVELOPED: 7/28/07
DATE SURVEYED: 8/29/07
SCREEN SLOT SIZE: 0.02" MILL SLOT
SCREEN TYPE: 4" SCH 80 PVC
FILTER PACK: 10-20 SILICA SAND

CASING DIAMETER: 4"
CASING MATERIAL: SCH 80 PVC
BORING DIAMETER: 8-3/4"
TOP OF CASING ELEV. (FT): 5459.96
GROUND ELEVATION (FT): 5457.22
LOCATION: AREA 4 SOUTH
NORTHING (FT): 1984390.9290
EASTING (FT): 307986.0078

LITHOLOGY LOG



NORWEST
Applied Hydrology

KF98-02

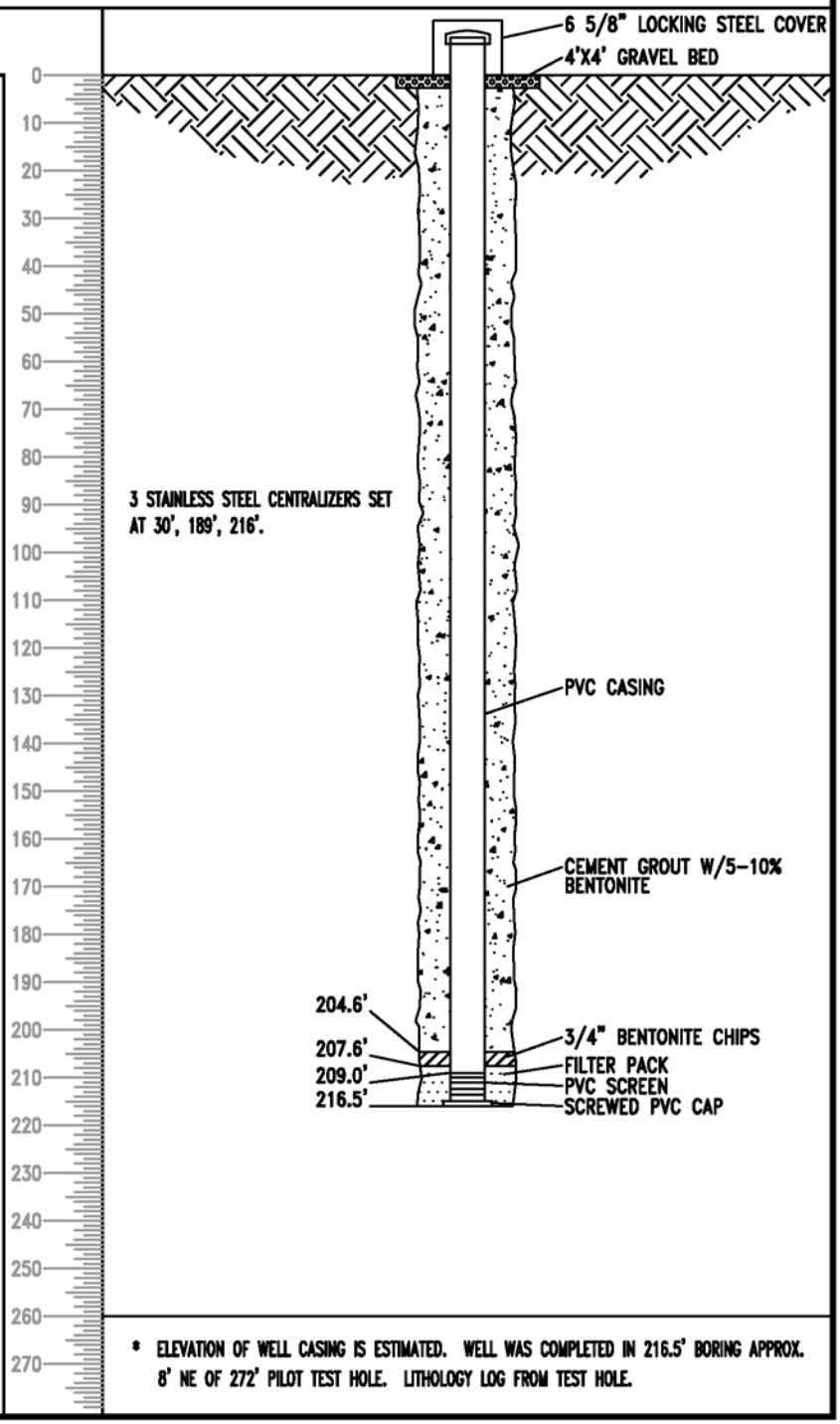
COMPLETION DIAGRAM & LITHOLOGIC LOG

PROJECT: NO NAME
DRILLING CO: SHARPE DRILLING
DRILLER: RUSS SHARPE
CLIENT SUPERVISER: RON VANVALKENBURG
GEOLOGIST/SUPERVISOR: IAN PEARSON
AHA JOB#: 43-4B
DRILLING METHOD: AIR ROTARY
BORING STARTED: 3/22/98

WELL TYPE: MONITORING
WELLHEAD TYPE: STICKUP (1.5')
WELL COMPLETED: 3/23/98
WELL DEVELOPED: 3/28/98
DATE SURVEYED:
SCREEN SLOT SIZE: 0.02" MILL SLOT
SCREEN TYPE: SCH 80 PVC
FILTER PACK: 30-60 SAND

CASING DIAMETER: 4"
CASING MATERIAL: SCH 80 PVC
BORING DIAMETER: 7 7/8"
TOP OF CASING ELEV. (FT): 5507.04
GROUND ELEVATION (FT): 5505.89
LOCATION: AREA 4 SOUTH
NORTHING (FT): 1,974,600.26
EASTING (FT): 303,887.43

LITHOLOGY LOG



* ELEVATION OF WELL CASING IS ESTIMATED. WELL WAS COMPLETED IN 216.5' BORING APPROX. 8' NE OF 272' PILOT TEST HOLE. LITHOLOGY LOG FROM TEST HOLE.

NORWEST
Applied Hydrology

KF98-03

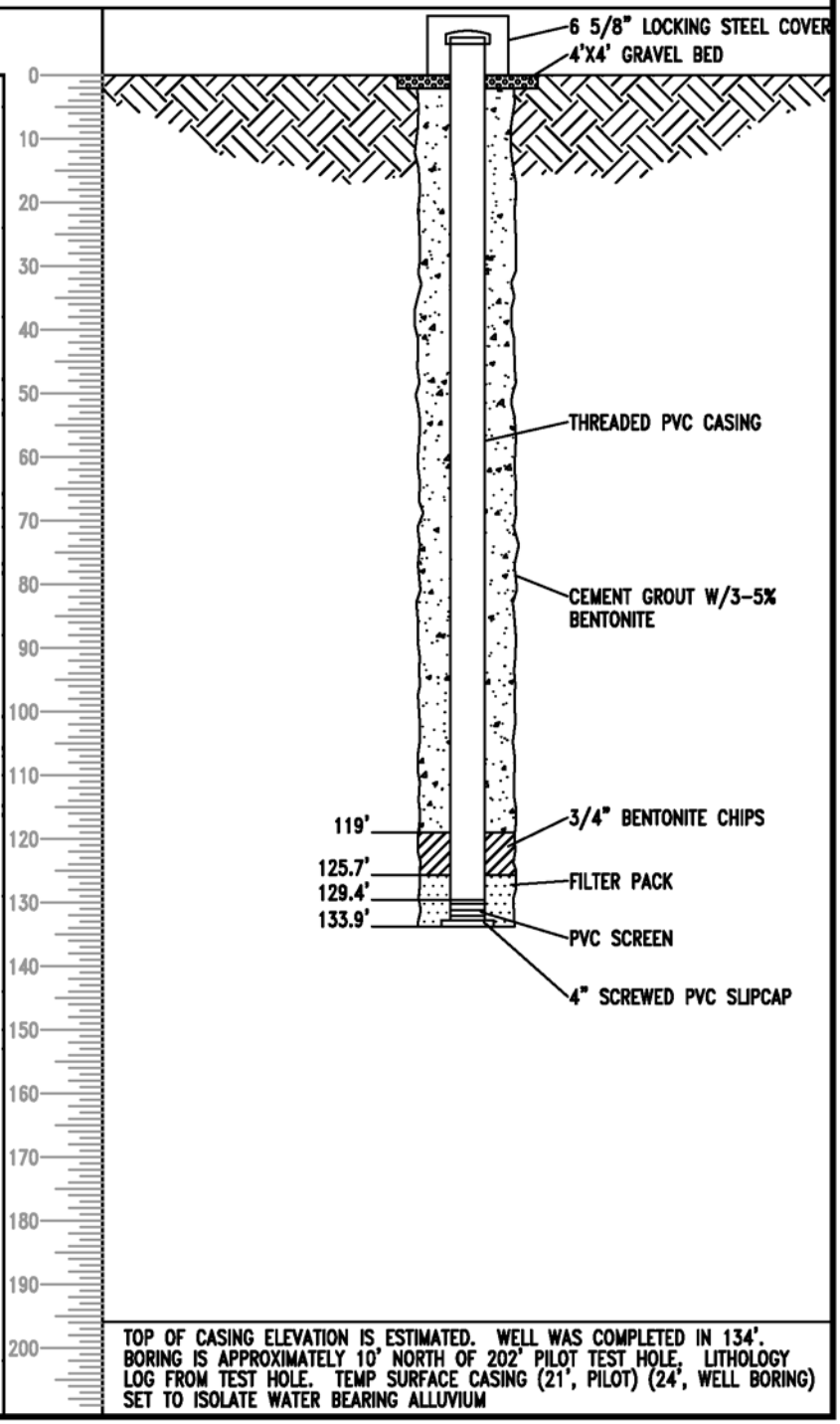
COMPLETION DIAGRAM & LITHOLOGIC LOG

PROJECT: NO NAME
DRILLING CO: SHARPE DRILLING
DRILLER: RUSS SHARPE
CLIENT SUPERVISER: RON VANVALKENBURG
GEOLOGIST/SUPERVISOR: IAN PEARSON
AHA JOB#: 43-4B
DRILLING METHOD: AIR ROTARY
BORING STARTED: 3/25/98

WELL TYPE: MONITORING
WELLHEAD TYPE: STICKUP (2.3')
WELL COMPLETED: 3/27/98
WELL DEVELOPED: 3/28/98
DATE SURVEYED:
SCREEN SLOT SIZE: 0.02" MILL SLOT
SCREEN TYPE: SCH 80 PVC
FILTER PACK: 10-20 SILICA SAND

CASING DIAMETER: 4"
CASING MATERIAL: SCH 80 PVC
BORING DIAMETER: 7 7/8"
TOP OF CASING ELEV. (FT): 5425.53
GROUND ELEVATION (FT): 5423.45
LOCATION: AREA 4 SOUTH
NORTHING (FT): 1,984,271.05
EASTING (FT): 304,599.17

LITHOLOGY LOG



TOP OF CASING ELEVATION IS ESTIMATED. WELL WAS COMPLETED IN 134'. BORING IS APPROXIMATELY 10' NORTH OF 202' PILOT TEST HOLE. LITHOLOGY LOG FROM TEST HOLE. TEMP SURFACE CASING (21', PILOT) (24', WELL BORING) SET TO ISOLATE WATER BEARING ALLUVIUM

NORWEST
Applied Hydrology

KF98-04

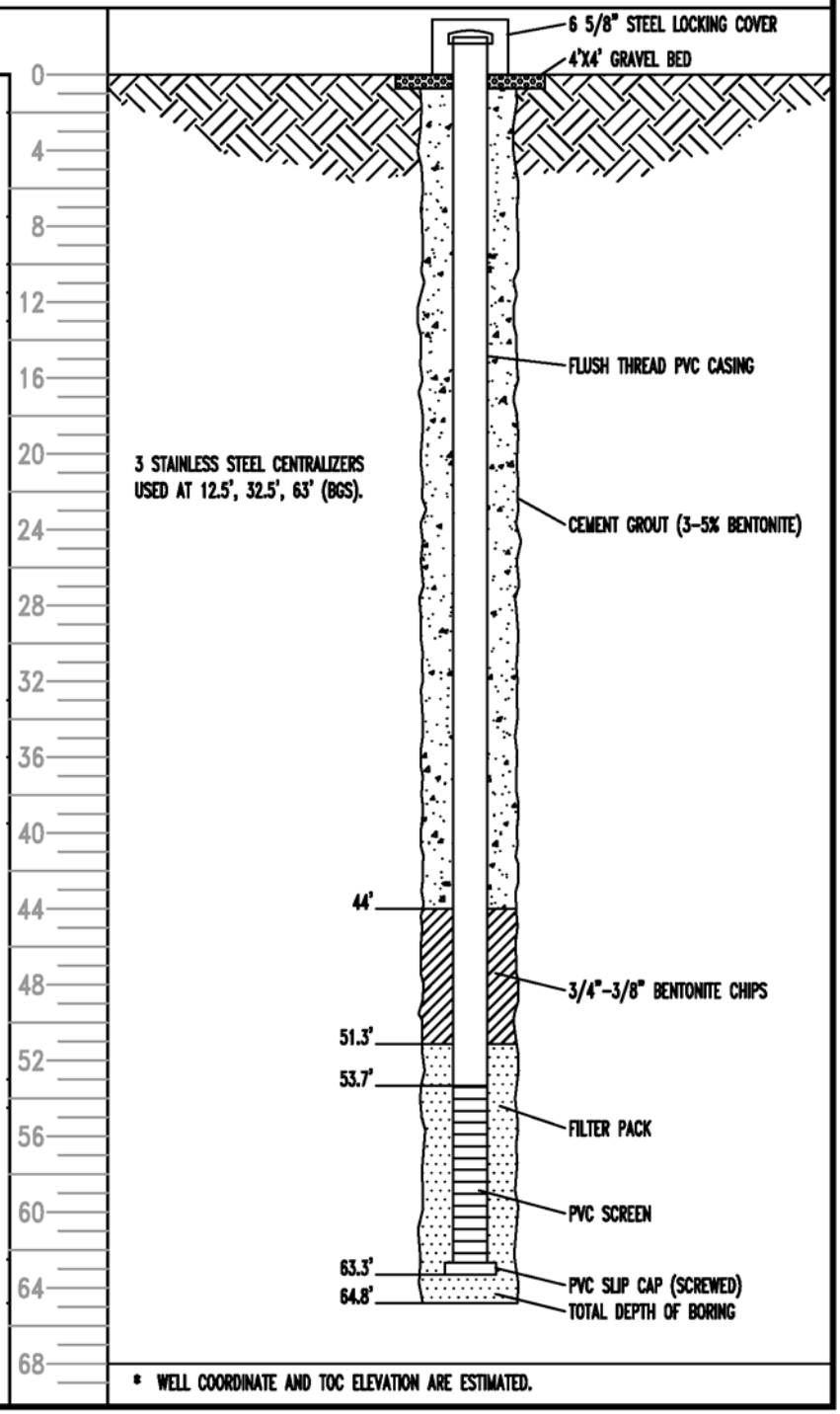
COMPLETION DIAGRAM & LITHOLOGIC LOG

PROJECT: NO NAME
DRILLING CO: SHARPE DRILLING
DRILLER: RUSS SHARPE
CLIENT SUPERVISER: RON VANVALKENBURG
GEOLOGIST/SUPERVISOR: IAN PEARSON
AHA JOB#: 43-4B
DRILLING METHOD: AIR ROTARY
BORING STARTED: 3/27/98

WELL TYPE: MONITORING
WELLHEAD TYPE: STICKUP (1.7')
WELL COMPLETED: 3/28/98
WELL DEVELOPED: 3/28/98
DATE SURVEYED:
SCREEN SLOT SIZE: 0.02" MILL SLOT
SCREEN TYPE: SCH 80 PVC
FILTER PACK: 10-20 SILICA SAND

CASING DIAMETER: 4"
CASING MATERIAL: SCH 80 PVC
BORING DIAMETER: 7 7/8"
TOP OF CASING ELEV. (FT): 5353.38
GROUND ELEVATION (FT): 5351.81
LOCATION: AREA 4 SOUTH
NORTHING (FT): 1,990,163.70
EASTING (FT): 300,368.91

LITHOLOGY LOG



* WELL COORDINATE AND TOC ELEVATION ARE ESTIMATED.

NORWEST
Applied Hydrology

KPC-98-01

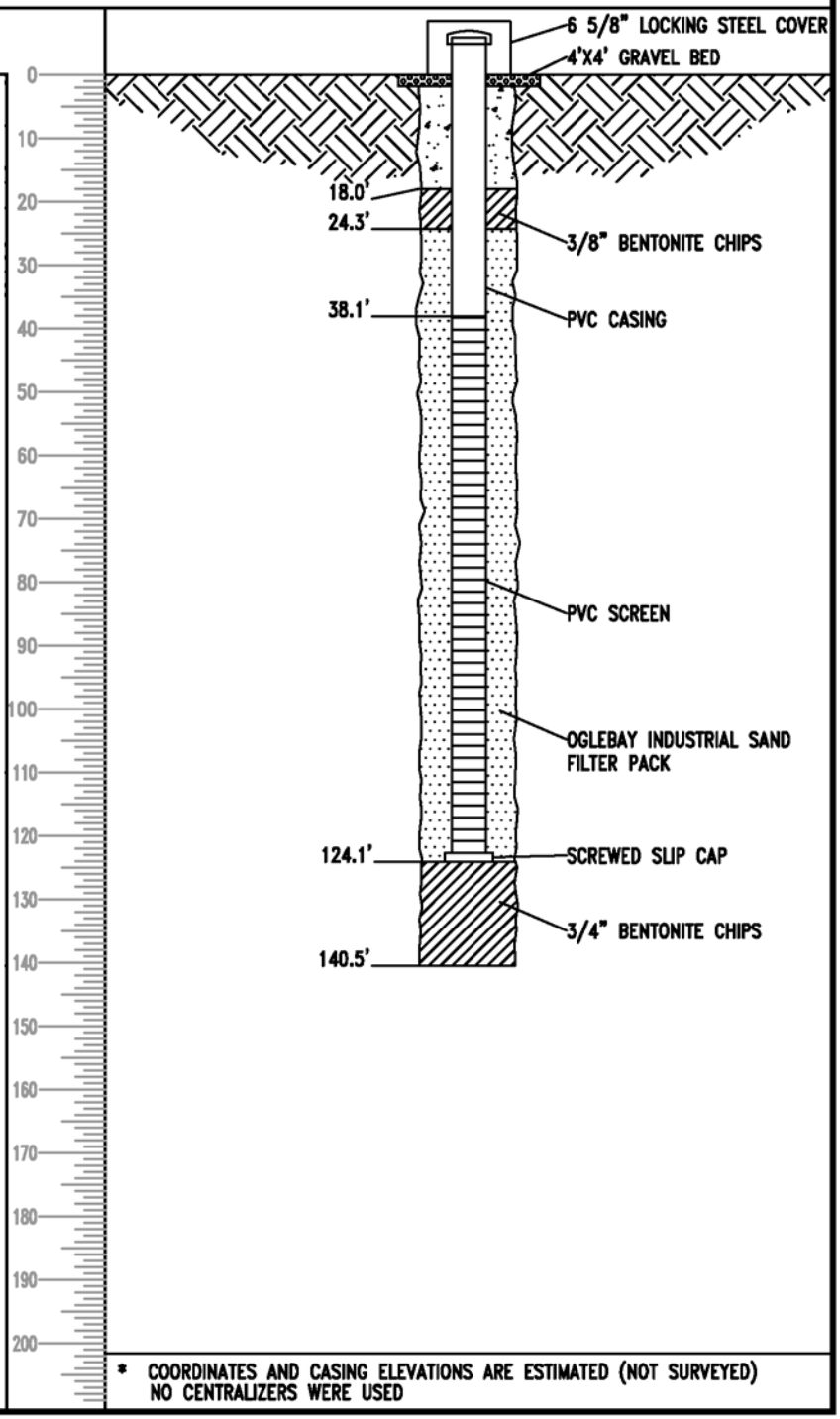
COMPLETION DIAGRAM & LITHOLOGIC LOG

PROJECT: NO NAME
DRILLING CO: SHARPE DRILLING
DRILLER: RUSS SHARPE
CLIENT SUPERVISER: RON VALVALKENBURG
GEOLOGIST/SUPERVISOR: IAN PEARSON
AHA JOB#: 43-4B
DRILLING METHOD: AIR ROTARY
BORING STARTED: 3/20/98

WELL TYPE: MONITORING
WELLHEAD TYPE: STICKUP (1.6')
WELL COMPLETED: 3/21/98
WELL DEVELOPED: 3/28/98
DATE SURVEYED:
SCREEN SLOT SIZE: 0.02" MILL SLOT
SCREEN TYPE: SCH 80 PVC
FILTER PACK: 30-60 SAND

CASING DIAMETER: 4"
CASING MATERIAL: SCH 80 PVC
BORING DIAMETER: 7 7/8"
TOP OF CASING ELEV. (FT): 5366.46
GROUND ELEVATION (FT): 5365.20
LOCATION: AREA 4 SOUTH
NORTHING (FT): 1,993,801.95
EASTING (FT): 290,787.30

LITHOLOGY LOG



* COORDINATES AND CASING ELEVATIONS ARE ESTIMATED (NOT SURVEYED)
NO CENTRALIZERS WERE USED

NORWEST
Applied Hydrology

KPC2007-01

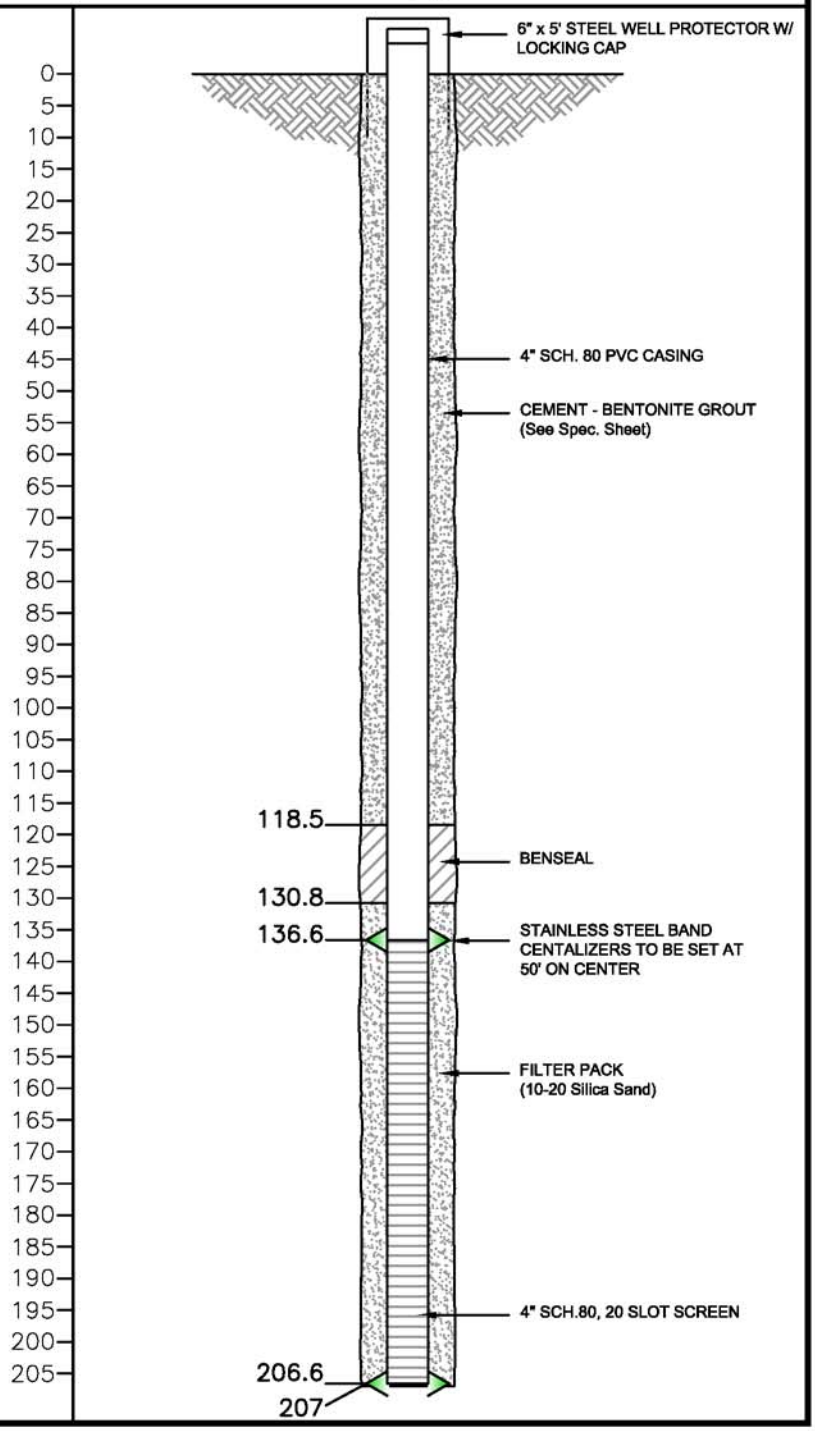
COMPLETION DIAGRAM & LITHOLOGIC LOG

PROJECT: NAVAJO MINE EXTENSION
DRILLING CO: MO-TE
DRILLER: BOB
CLIENT SUPERVISER: COLLETTE BROWN
GEOLOGIST/SUPERVISOR: JOEL SOBOL
AHA JOB#: 4010-00060-10
DRILLING METHOD: AIR ROTARY
BORING STARTED: 7/29/07

WELL TYPE: MONITORING WELL
WELLHEAD TYPE: PROTECTIVE HEAD COVER
WELL COMPLETED: 7/29/07
WELL DEVELOPED: 7/29/07
DATE SURVEYED: 8/29/07
SCREEN SLOT SIZE: 0.02"
SCREEN TYPE: 4" SCH 80 PVC MILL SLOT
FILTER PACK: 10-20 SILICA SAND

CASING DIAMETER: 4"
CASING MATERIAL: 4" SCH 80 PVC
BORING DIAMETER: 8-3/4"
TOP OF CASING ELEV. (FT): 5355.71'
GROUND ELEVATION (FT): 5352.97
LOCATION: AREA 4 SOUTH
NORTHING (FT): 1995102.5555
EASTING (FT): 302595.6035

LITHOLOGY LOG



NORWEST
Applied Hydrology

KPC2007-02

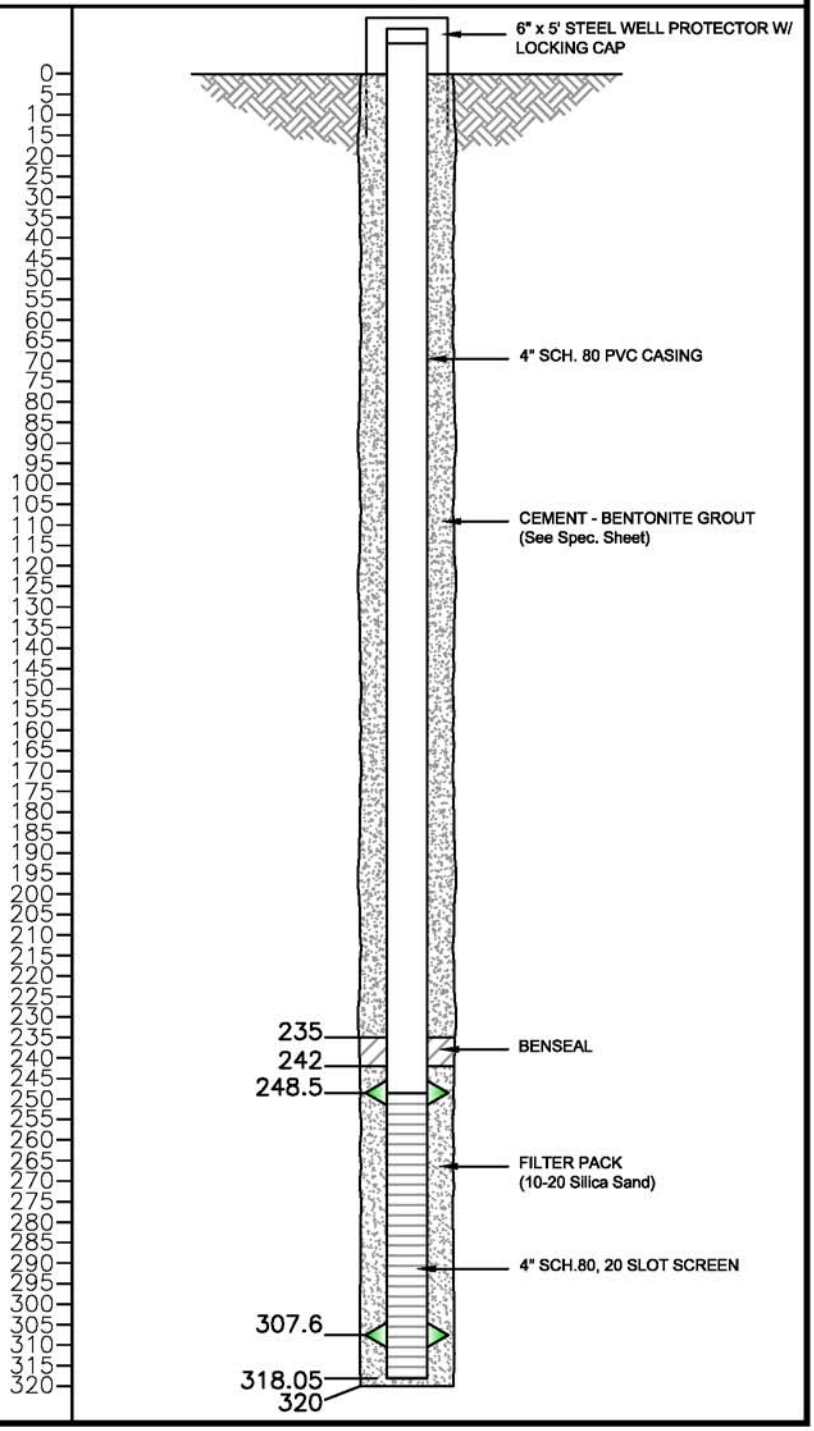
COMPLETION DIAGRAM & LITHOLOGIC LOG

PROJECT: NAVAJO MINE EXTENSION
DRILLING CO: MO-TE
DRILLER: BOB
CLIENT SUPERVISER: COLLETTE BROWN
GEOLOGIST/SUPERVISOR: JOEL SOBOL
AHA JOB#: 4010-00060-10
DRILLING METHOD: AIR ROTARY
BORING STARTED: 7/26/07

WELL TYPE: MONITORING WELL
WELLHEAD TYPE: PROTECTIVE HEAD COVER
WELL COMPLETED: 7/28/07
WELL DEVELOPED: 7/28/07
DATE SURVEYED: 8/29/07
SCREEN SLOT SIZE: 0.02"
SCREEN TYPE: 4" SCH 80 PVC MILL SLOT
FILTER PACK: 10-20 SILICA SAND

CASING DIAMETER: 4"
CASING MATERIAL: 4" SCH 80 PVC
BORING DIAMETER: 8-3/4"
TOP OF CASING ELEV. (FT): 5515.06
GROUND ELEVATION (FT): 5512.18
LOCATION: AREA 4 SOUTH
NORTHING (FT): 1975118.7726
EASTING (FT): 303891.1349

LITHOLOGY LOG



NORWEST
Applied Hydrology

KPC2007-03

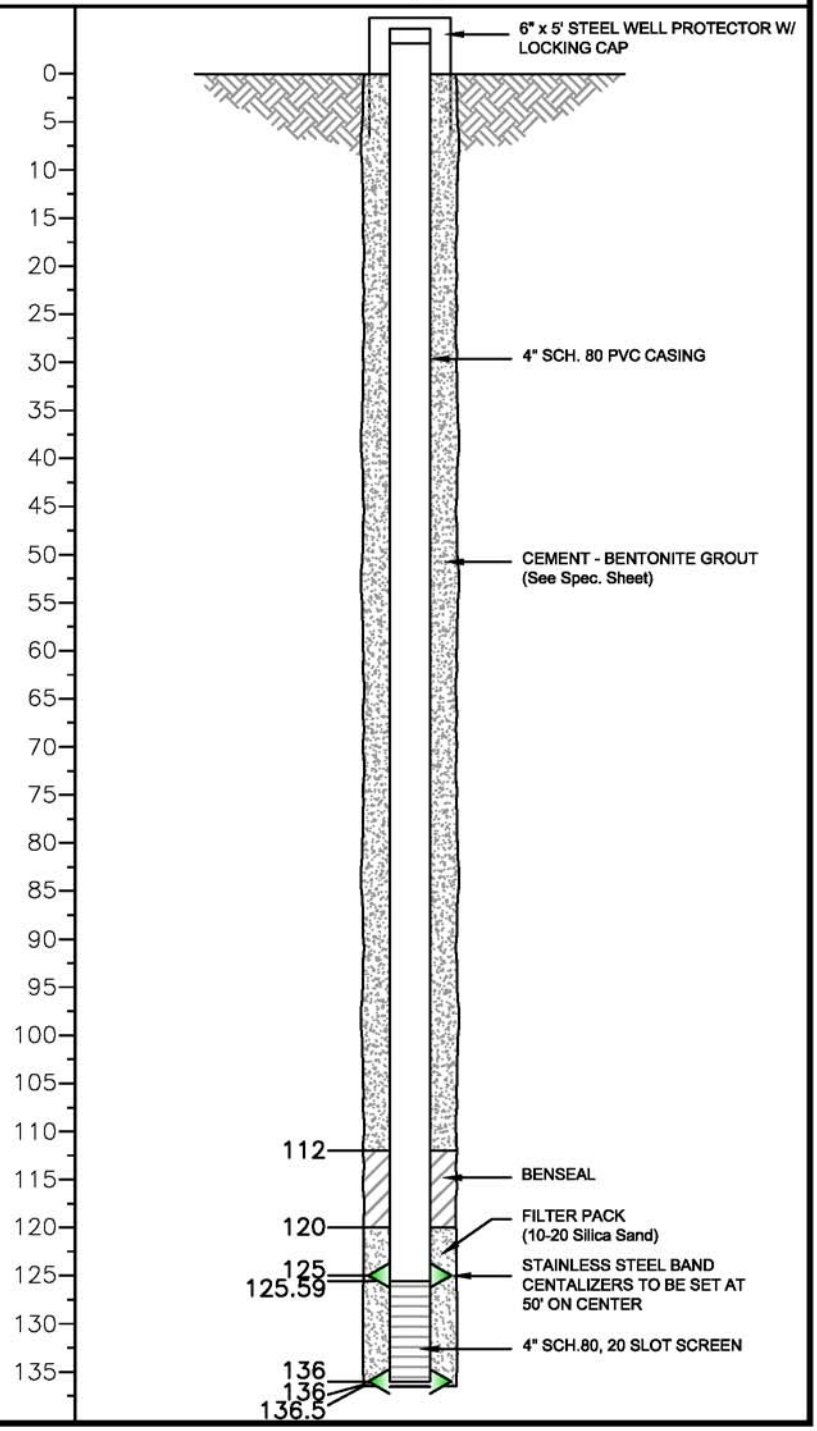
COMPLETION DIAGRAM & LITHOLOGIC LOG

PROJECT: NAVAJO MINE EXTENSION
DRILLING CO: MO-TE
DRILLER: BOB
CLIENT SUPERVISER: COLLETTE BROWN
GEOLOGIST/SUPERVISOR: JOEL SOBOL
AHA JOB#: 4010-00060-10
DRILLING METHOD: AIR ROTARY
BORING STARTED: 7/24/07

WELL TYPE: MONITORING WELL
WELLHEAD TYPE: PROTECTIVE HEAD COVER
WELL COMPLETED: 8/2/07
WELL DEVELOPED: 8/2/07
DATE SURVEYED: 8/29/07
SCREEN SLOT SIZE: 0.02"
SCREEN TYPE: 4" SCH 80 PVC MILL SLOT
FILTER PACK: 10-20 SILICA SAND

CASING DIAMETER: 4"
CASING MATERIAL: 4" SCH 80 PVC
BORING DIAMETER: 8-3/4"
TOP OF CASING ELEV. (FT): 5470.23
GROUND ELEVATION (FT): 5467.83
LOCATION: AREA 4 SOUTH
NORTHING (FT): 1982884.7045
EASTING (FT): 295091.1864

LITHOLOGY LOG



NORWEST
Applied Hydrology

NNA-1

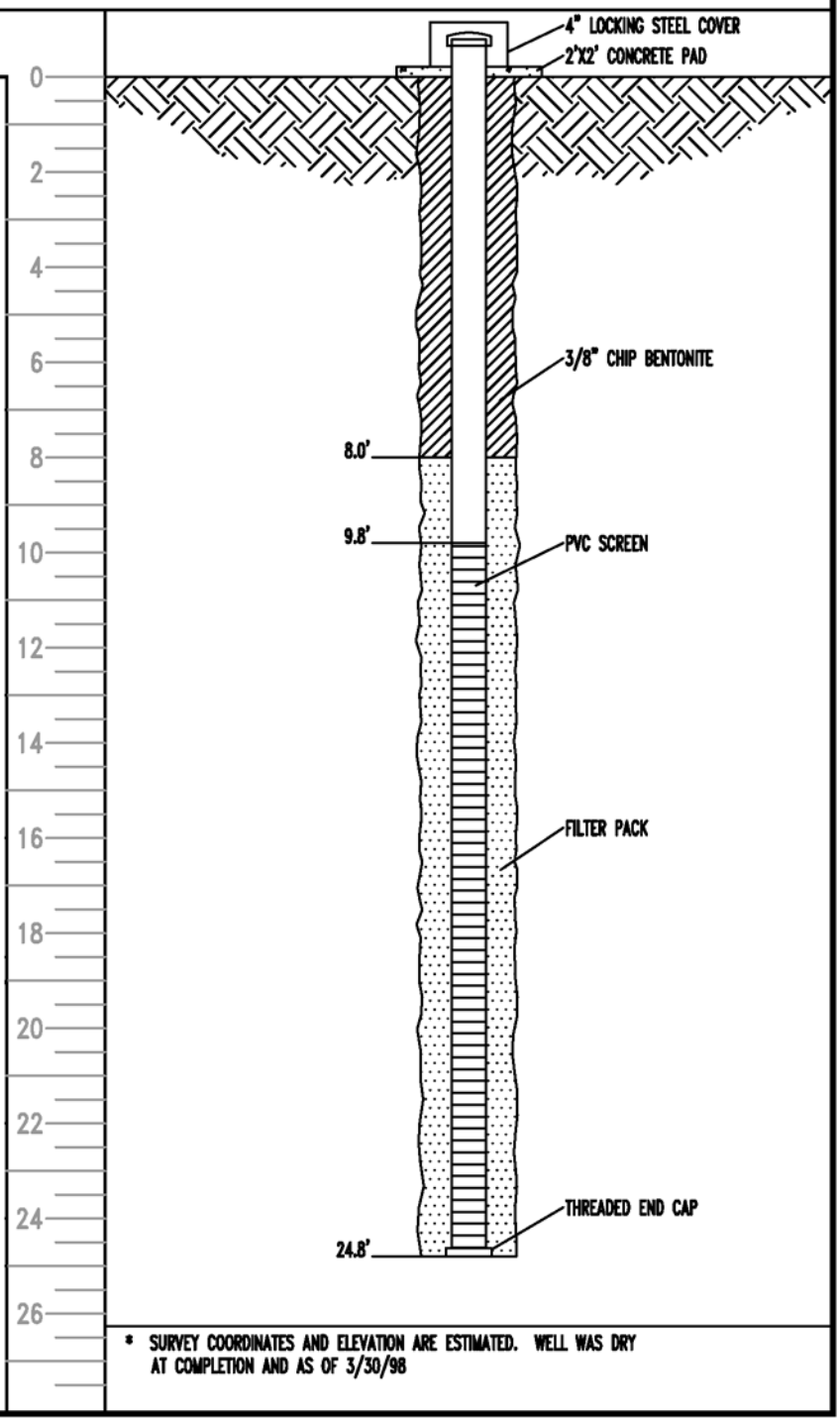
COMPLETION DIAGRAM & LITHOLOGIC LOG

PROJECT: NO NAME
DRILLING CO: PHILIP SERVICES CORP
DRILLER: KELLY PADILLA
CLIENT SUPERVISER: RON VANVALKENBURG
GEOLOGIST/SUPERVISOR: IAN PEARSON
AHA JOB#: 43-4B
DRILLING METHOD: HOLLOW STEM AUGER
BORING STARTED: 3/25/98

WELL TYPE: MONITORING
WELLHEAD TYPE: STICKUP (1.6')
WELL COMPLETED: 3/25/98
WELL DEVELOPED: WELL DRY
DATE SURVEYED:
SCREEN SLOT SIZE: 0.02" MILL SLOT
SCREEN TYPE: SCH 40 PVC
FILTER PACK: 10-20 SILICA SAND

CASING DIAMETER: 2"
CASING MATERIAL: SCH 40 PVC
BORING DIAMETER: 7 1/2"
TOP OF CASING ELEV. (FT): 5431.63
GROUND ELEVATION (FT): 5430.46
LOCATION: AREA 4 SOUTH
NORTHING (FT): 1,976,857.28
EASTING (FT): 296,773.43

LITHOLOGY LOG



* SURVEY COORDINATES AND ELEVATION ARE ESTIMATED. WELL WAS DRY AT COMPLETION AND AS OF 3/30/98

NORWEST
Applied Hydrology

NNA-2

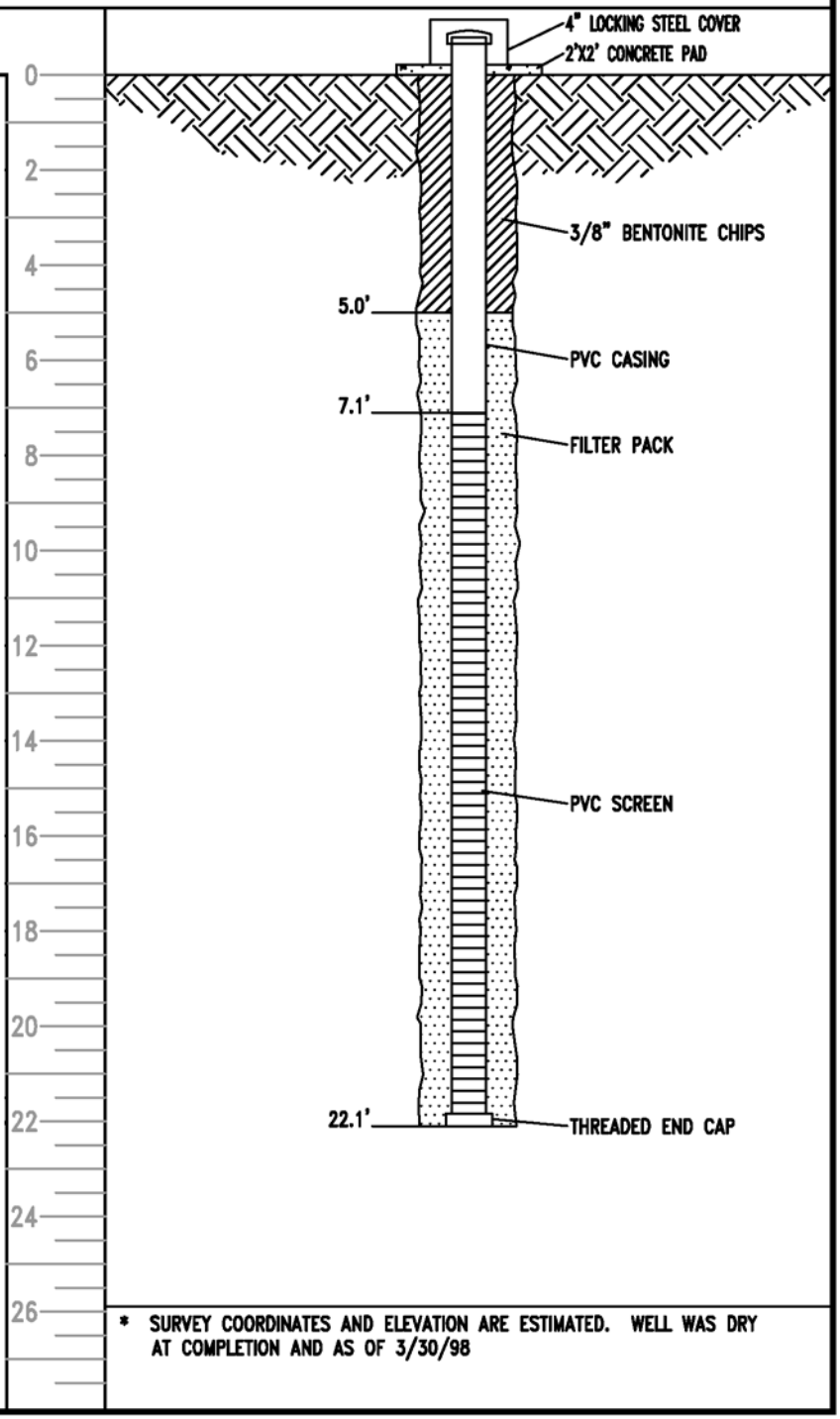
COMPLETION DIAGRAM & LITHOLOGIC LOG

PROJECT: NO NAME
DRILLING CO: PHILIP SERVICES CORP
DRILLER: KELLY PADILLA
CLIENT SUPERVISER: RON VANVALKENBURG
GEOLOGIST/SUPERVISOR: IAN PEARSON
AHA JOB#: 43-4B
DRILLING METHOD: HOLLOW STEM AUGER
BORING STARTED: 3/25/98

WELL TYPE: MONITORING
WELLHEAD TYPE: STICKUP (1.5')
WELL COMPLETED: 3/25/98
WELL DEVELOPED: WELL DRY
DATE SURVEYED:
SCREEN SLOT SIZE: 0.02" MILL SLOT
SCREEN TYPE: SCH 40 PVC
FILTER PACK: 10-20 SILICA SAND

CASING DIAMETER: 2"
CASING MATERIAL: SCH 40 PVC
BORING DIAMETER: 7 1/2"
TOP OF CASING ELEV. (FT): 5455.97
GROUND ELEVATION (FT): 5454.68
LOCATION: AREA 4 SOUTH
NORTHING (FT): 1,975,404.71
EASTING (FT): 299,547.33

LITHOLOGY LOG



* SURVEY COORDINATES AND ELEVATION ARE ESTIMATED. WELL WAS DRY AT COMPLETION AND AS OF 3/30/98

NORWEST
Applied Hydrology

PA-1

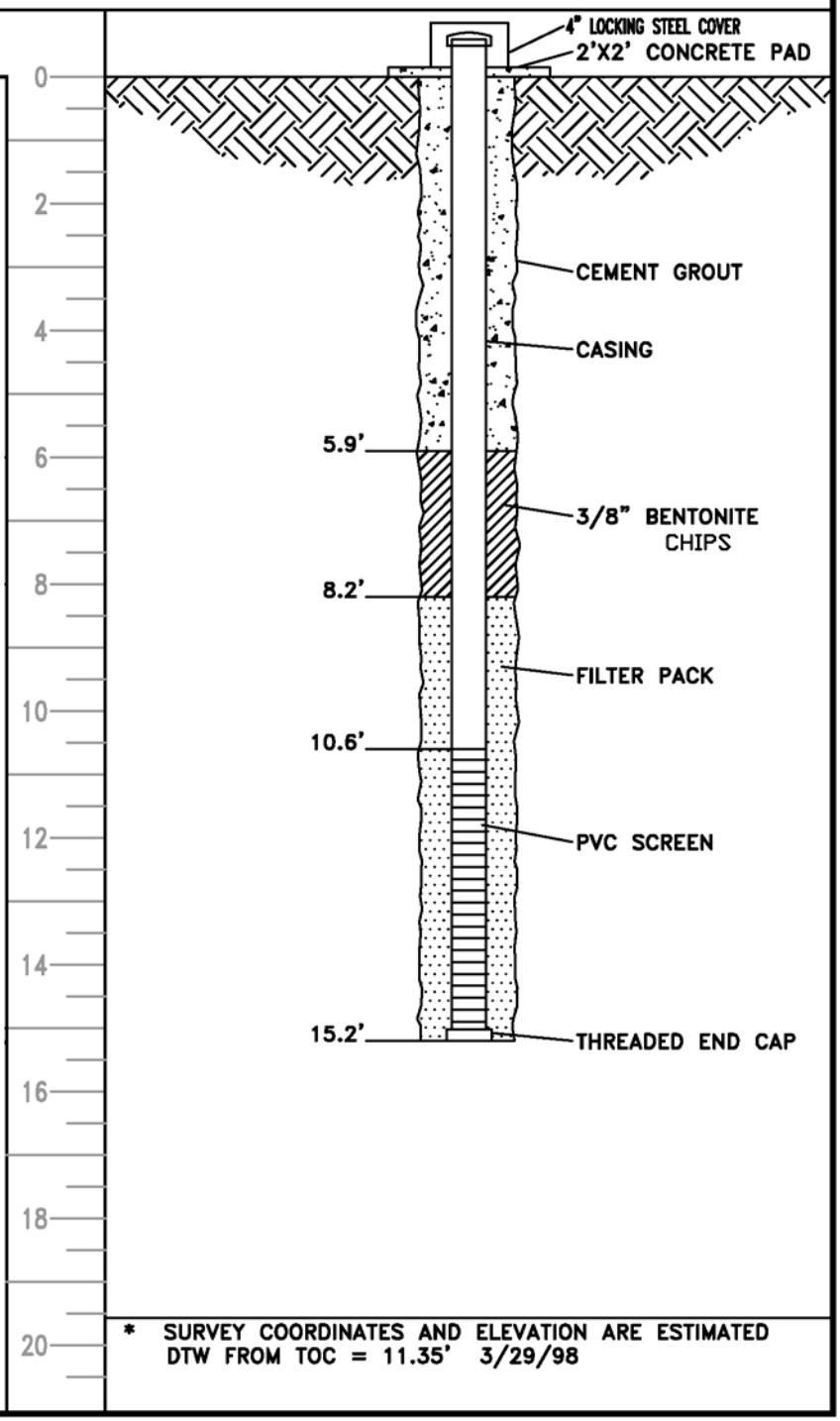
COMPLETION DIAGRAM & LITHOLOGIC LOG

PROJECT: NO NAME
DRILLING CO: PHILIP SERVICES
DRILLER: KELLY PADILLA
CLIENT SUPERVISER: RON VANVALKENBURG
GEOLOGIST/SUPERVISOR: IAN PEARSON
AHA JOB#: 43-4B
DRILLING METHOD: HOLLOW STEM AUGER
BORING STARTED: 3/25/98

WELL TYPE: MONITORING
WELLHEAD TYPE: STICKUP (1.7')
WELL COMPLETED: 3/25/98
WELL DEVELOPED: 3/28/98
DATE SURVEYED:
SCREEN SLOT SIZE: 0.02" MILL SLOT
SCREEN TYPE: SCH 40 PVC
FILTER PACK: 10-20 SILICA SAND

CASING DIAMETER: 2"
CASING MATERIAL: SCH 40 PVC
BORING DIAMETER: 7 1/2"
TOP OF CASING ELEV. (FT): 5352.90
GROUND ELEVATION (FT): 5351.24
LOCATION: AREA 4 SOUTH
NORTHING (FT): 1,990,260.27
EASTING (FT): 300,409.16

LITHOLOGY LOG



* SURVEY COORDINATES AND ELEVATION ARE ESTIMATED
DTW FROM TOC = 11.35' 3/29/98

NORWEST
Applied Hydrology

PA-2

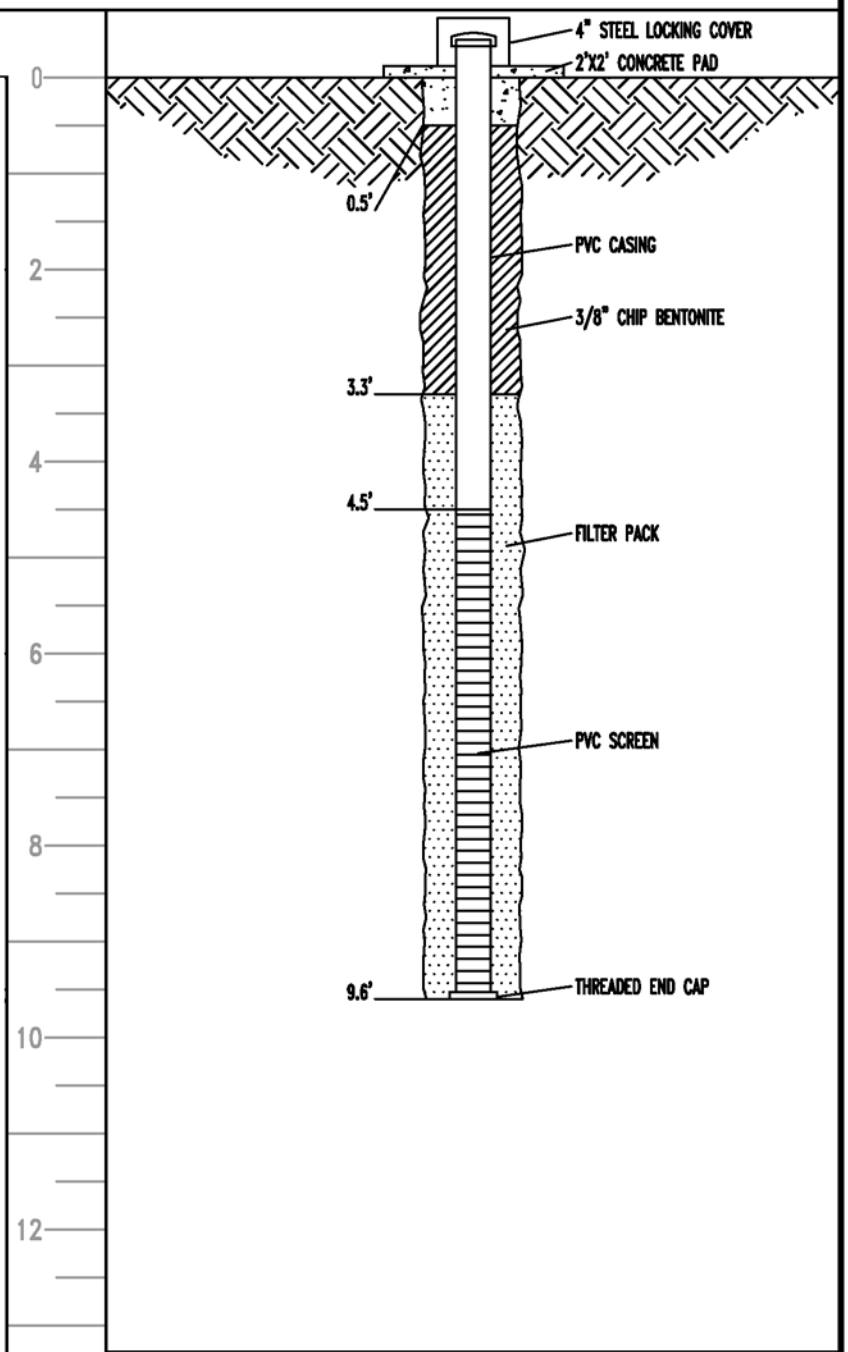
COMPLETION DIAGRAM & LITHOLOGIC LOG

PROJECT: NO NAME
DRILLING CO: PHILIP SERVICES CORP
DRILLER: KELLY PADILLA
CLIENT SUPERVISER: RON VANVALKENBURG
GEOLOGIST/SUPERVISOR: IAN PEARSON
AHA JOB#: 43-4B
DRILLING METHOD: HOLLOW STEM AUGER
BORING STARTED: 3/25/98

WELL TYPE: MONITORING
WELLHEAD TYPE: STICKUP (2.15')
WELL COMPLETED: 3/25/98
WELL DEVELOPED: 3/28/98
DATE SURVEYED:
SCREEN SLOT SIZE: 0.02" MILL SLOT
SCREEN TYPE: SCH 40 PVC
FILTER PACK: 10-20 SILICA SAND

CASING DIAMETER: 2"
CASING MATERIAL: SCH 40 PVC
BORING DIAMETER: 7 1/2"
TOP OF CASING ELEV. (FT): 5431.43
GROUND ELEVATION (FT): 5429.60
LOCATION: AREA 4 SOUTH
NORTHING (FT): 1,980,957.17
EASTING (FT): 306,702.95

LITHOLOGY LOG



* SURVEY COORDINATES AND ELEVATION ARE ESTIMATED
DTW FROM TOC = 7.69' 3/30/98