TA18

Los Alamos
NATIONAL LABORATORY
EST. 1943

Environmental Programs
P.O. Box 1663, MS M991
Los Alamos, New Mexico 87545
(505) 606-2337/FAX (505) 665-1812

ENTERED

National Nuclear Security Administration
Los Alamos Site Office, MS A316
Environmental Restoration Program
Los Alamos, New Mexico 87544
(505) 667-4255/FAX (505) 606-2132

Date: MAR 10 2010
Refer To: EP2010-0118

James Bearzi, Bureau Chief
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505-6303

RECEIVED
MAR 2010
NMED Hazardous Waste Bureau

Subject: Submittal of the Well Completion Summary Fact Sheets for R-51

Dear Mr. Bearzi:

Enclosed please find two hard copies with electronic files of the Well Completion Summary Fact Sheets for Well R-51. This submittal is in accordance with the Consent Order Schedule of Deliverables (Table XII-4).

If you have any questions, please contact Ted Ball at (505) 665-3996 (tedball@lanl.gov) or Ed Worth at (505) 606-0398 (eworth@doeal.gov).

Sincerely,

for

Bruce Schappell, Executive Director
Environmental Programs – Recovery Act Projects
Los Alamos National Laboratory

Sincerely,

for L. A. Trujillo

Everett Trollinger, Federal Project Director
Environmental Projects – ARRA
Los Alamos Site Office

33222

MG/DG/DM/ME:sm

Enclosures: Two hard copies with electronic files – Well Summary Data Sheet R-51 Borehole Stratigraphy and R-51 As-Built Well Construction Diagram (LA-UR-10-0997)

Cy: (w/enc.)
Neil Weber, San Ildefonso Pueblo
Tom Whitacre, DOE-LASO, MS A316
Ed Worth, DOE-LASO, MS A316
Mark Everett, EP-ET-DO, MS M992
RPF, MS M707 (with two CDs)
Public Reading Room, MS M992

Cy: (Letter and CD only)
Laurie King, EPA Region 6, Dallas, TX
Steve Yanicak, NMED-DOE-OB, MS M894
Heather Smith, North Wind, Los Alamos, NM
Kristine Smeltz, EP-WES, MS M992

Cy: (w/o enc.)
Tom Skibitski, NMED-OB, Santa Fe, NM
Annette Russell, DOE-LASO (date-stamped letter emailed)
Ted Ball, EP-ARRA Project, MS M992
Michael J. Graham, ADEP, MS M991
IRM-RMMSO, MS A150 (date-stamped letter emailed)

TOTAL LENGTH
CASING AND SCREEN (ft) 1048.55

DEPTH TO WATER
FOLLOWING INSTALLATION (ft bgs) 890.62 (02/17/2010)

DIAMETER OF BOREHOLE
24.00 (in) FROM 0 TO 101.25 (ft bgs)
17.00 (in) FROM 101.25 TO 793.92 (ft bgs)
13.50 (in) FROM 793.92 TO 836.33 (ft bgs)
24.00 (in) FROM 836.33 TO 1054.50 (ft bgs)

SURFACE SEAL 3.00 TO 110.70 (ft bgs)

HYDRATED BENTONITE CHIPS 110.70 TO 279.23 (ft bgs)

NEAT CEMENT GROUT SEAL AROUND 12-in ID CASING 279.23 TO 537.60 (ft bgs)

12-in ID STEEL CASING 335.00 TO 560.00 (ft bgs)*

SURFACE COMPLETION INFORMATION
PROTECTIVE CASING
TYPE STEEL SIZE 16.75 (in) OD
PAD AND PROTECTIVE POSTS INSTALLED TBD
SURFACE SEAL AND PAD
CHECK FOR SETTLEMENT TBD
PAD MATERIAL REINFORCED CONCRETE ~3500 psi
REINFORCED REBAR WITH 1/8-in WIRE MESH
PAD DIMENSIONS (ft) 10.0 (L) 10.0 (W) 0.5 (H)

STATIC WATER LEVEL POST INSTALLATION 890.62 (ft bgs)

HYDRATED BENTONITE CHIPS 537.6 TO 903.32 (ft bgs)

FINE SAND COLLAR 903.32 TO 905.64 (ft bgs)

FILTER PACK 905.64 TO 931.07 (ft bgs)

SCREENED INTERVAL 914.96 TO 925.24 (ft bgs)

HYDRATED BENTONITE CHIPS 931.07 TO 1022.26 (ft bgs)

FINE SAND COLLAR 1022.26 TO 1024.84 (ft bgs)

FILTER PACK 1024.84 TO 1045.59 (ft bgs)

SCREENED INTERVAL 1030.96 TO 1041.00 (ft bgs)

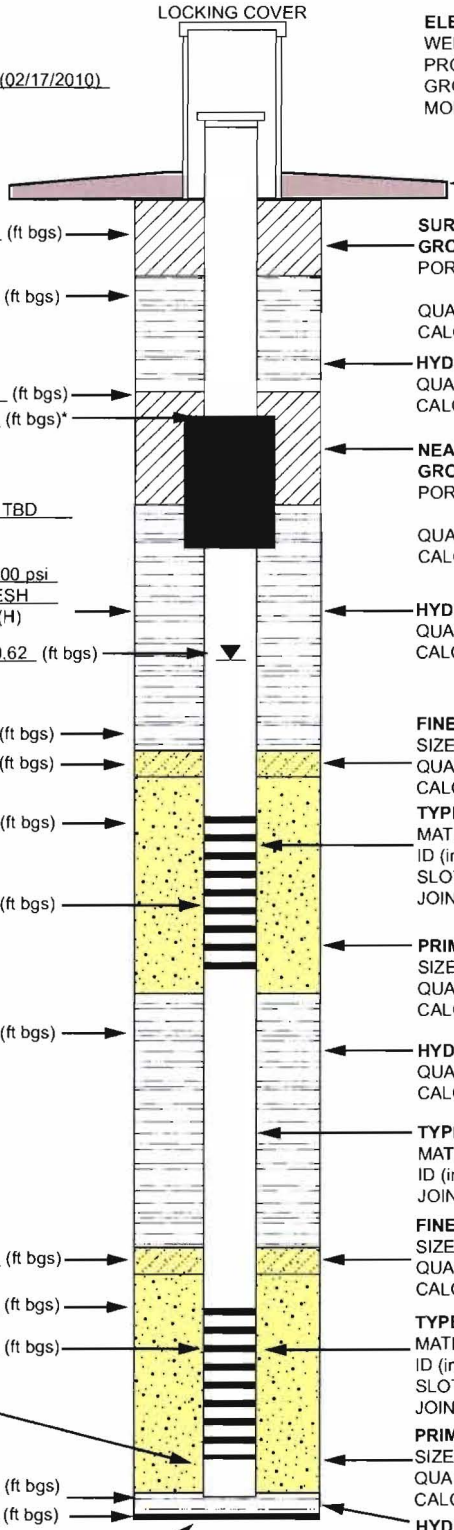
BOTTOM OF WELL CASING 1046.05 (ft bgs)

HYDRATED BENTONITE CHIPS 1045.59 TO 1051.16 (ft bgs)

SLOUGH 1051.16 TO 1054.34 (ft bgs)

STAINLESS STEEL CENTRALIZERS USED
☒ YES UPPER SCREEN AT 913.46 & 927.49 (ft bgs)
LOWER SCREEN AT 1028.96 & 1043.70 (ft bgs)

BOTTOM OF BORING 1054.34 (ft bgs)



ELEVATIONS (ft amsl)
WELL CASING TBD
PROTECTIVE CASING TBD
GROUND SURFACE TBD
MONUMENT MARKER TBD

SLOPED CONCRETE SURFACE COMPLETION PAD

SURFACE SEAL GROUT FORMULA (wt %)
PORTLAND CEMENT (1) 94 LB BAG MIXED WITH 5.2 GALLONS WATER/BAG
QUANTITY USED 249.60 ft^3
CALCULATED VOLUME 314.53 ft^3

HYDRATED 0.375-in BENTONITE CHIP SEAL
QUANTITY USED 457.68 ft^3
CALCULATED VOLUME 237.63 ft^3

NEAT CEMENT GROUT FORMULA (wt %)
PORTLAND CEMENT (1) 94 LB BAG MIXED WITH 5.2 GALLONS WATER/BAG
QUANTITY USED 455.00 ft^3
CALCULATED VOLUME 344.05 ft^3

HYDRATED 0.375-in BENTONITE CHIP SEAL
QUANTITY USED 508.21 ft^3
CALCULATED VOLUME 446.96 ft^3

FINE TRANSITION SAND COLLAR
SIZE/TYPE 20/40
QUANTITY USED 2.00 ft^3
CALCULATED VOLUME 2.18 ft^3

TYPE OF SCREEN(S)
MATERIAL A304 STAINLESS STEEL
ID (in) 5.047 OD (in) 5.563
SLOT SIZE 0.020
JOINT TYPE BEVELED AND WELDED

PRIMARY FILTER PACK SAND
SIZE/TYPE 10/20
QUANTITY USED 68.50 ft^3
CALCULATED VOLUME 23.90 ft^3

HYDRATED 0.375-in BENTONITE CHIP SEAL
QUANTITY USED 107.18 ft^3
CALCULATED VOLUME 85.72 ft^3

TYPE OF WELL CASING
MATERIAL PASSIVATED A304 STAINLESS STEEL
ID (in) 5.047 OD (in) 5.563
JOINT TYPE BEVELED AND WELDED

FINE TRANSITION SAND COLLAR
SIZE/TYPE 20/40
QUANTITY USED 2.63 ft^3
CALCULATED VOLUME 2.43 ft^3

TYPE OF SCREEN(S)
MATERIAL A304 STAINLESS STEEL
ID (in) 5.047 OD (in) 5.563
SLOT SIZE 0.020
JOINT TYPE BEVELED AND WELDED

PRIMARY FILTER PACK SAND
SIZE/TYPE 10/20
QUANTITY USED 21.75 ft^3
CALCULATED VOLUME 19.51 ft^3

HYDRATED 0.375-in BENTONITE CHIP SEAL
QUANTITY USED 6.18 ft^3
CALCULATED VOLUME 6.02 ft^3

WELL DEVELOPMENT BEGAN

	Upper	Lower
Date	3/05/10	2/11/10
Time	0900	0755

WELL DEVELOPMENT FINISHED

	Upper	Lower
Date	3/08/10	2/22/10
Time	0800	0900

DEVELOPMENT METHOD
☒ Swabbing ☒ Bailing
☒ Pumping
Total Purge Volume
Upper 6,580.1 gal
Lower 45,002.2 gal

PARAMETER MEASUREMENTS

	Upper	Lower
pH	7.06	9.52
Temperature (°C)	18.06	20.51
Specific Conductance (µS/cm)	169	134
Turbidity (NTU)	1.10	19.00

WELL COMPLETION BEGAN
Date 1/16/10 Time 2010
WELL COMPLETION FINISHED
Date 2/08/10 Time 1309

*12-in steel casing depths inferred from LANL Gamma Log run on 2/2/2010

EP2010-0118
LA-UR-10-0997
North Wind

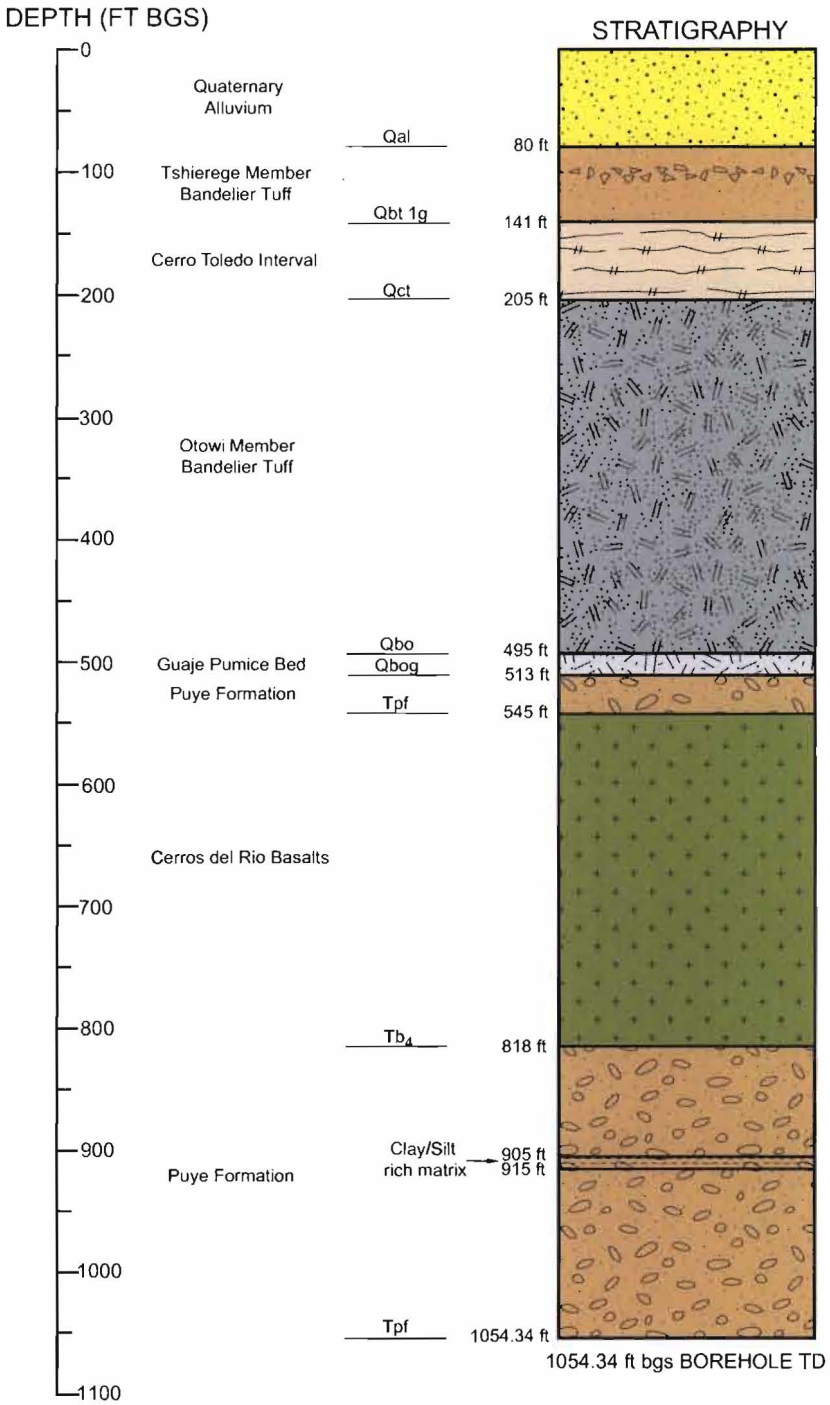
Drafted by: North Wind, Inc.
Project Number: 10005.003.09
Date: March 09, 2010
Filename: R51_WellSchematic(AsBuilt)030910DS.ai

R- 51 WELL CONSTRUCTION DIAGRAM (AS BUILT)

March 2010

TA-18
Los Alamos National Laboratory
Los Alamos, New Mexico

FACT SHEET
NOT TO SCALE



DRILLING INFORMATION

DRILLING COMPANY/PERSONNEL:
Layne Christensen Company
H. Waddell, R. Wall

DRILL RIG: Schramm T130XD

DRILLING METHOD:
☒ AIR ROTARY
☒ DUAL ROTARY

DRILLING FLUID TYPE

0.0 - 776.0 ft bgs	776.0 - 1054.34 ft bgs
☒ WATER	☒ WATER
☒ AIR	☒ AIR
☒ AQF-2 FOAM™	

DRILLING START/FINISH:
DATE: 12/03/09 TIME: 0905
DATE: 01/14/10 TIME: 0250

▼ 890.62 ft bgs (02/17/10)
(post well installation)

EP2010-0118
LA-UR-10-0997

North Wind

Drafted by: North Wind, Inc.
Project Number: 10005.003.09
Date: March 9, 2010
Filename: R51_Lithology_0_1054.34_030910ds.ai

R-51 WELL SUMMARY DATA SHEET
Borehole Stratigraphy
TA-18
Los Alamos National Laboratory
Los Alamos, New Mexico
March 2010

FACT SHEET
NOT TO SCALE