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: November 16, 2008
Refer To: EP2008-0611

RECEIVED
NOV 2008
NMED Hazardous Waste Bureau

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

Subject: Submittal of the Well Completion Summary Fact Sheets for R-43

Dear Mr. Bearzi:

In accordance with the March 1, 2005, Compliance Order on Consent Schedule of Deliverables (Table XII-4), the U. S. Department of Energy and Los Alamos National Laboratory are submitting the attached Well Completion Summary Fact Sheets for Regional Well R-43 along with electronic files.

If you have any questions, please contact Mark Everett at (505) 667-5931 (meverett@lanl.gov) or Nancy Werdel at (505) 665-3619 (nwerdel@doeal.gov).

Sincerely,

Michael J. Graham, Associate Director
Environmental Programs
Los Alamos National Laboratory

Sincerely,

David R. Gregory, Project Director
Environmental Operations
Los Alamos Site Office

30129

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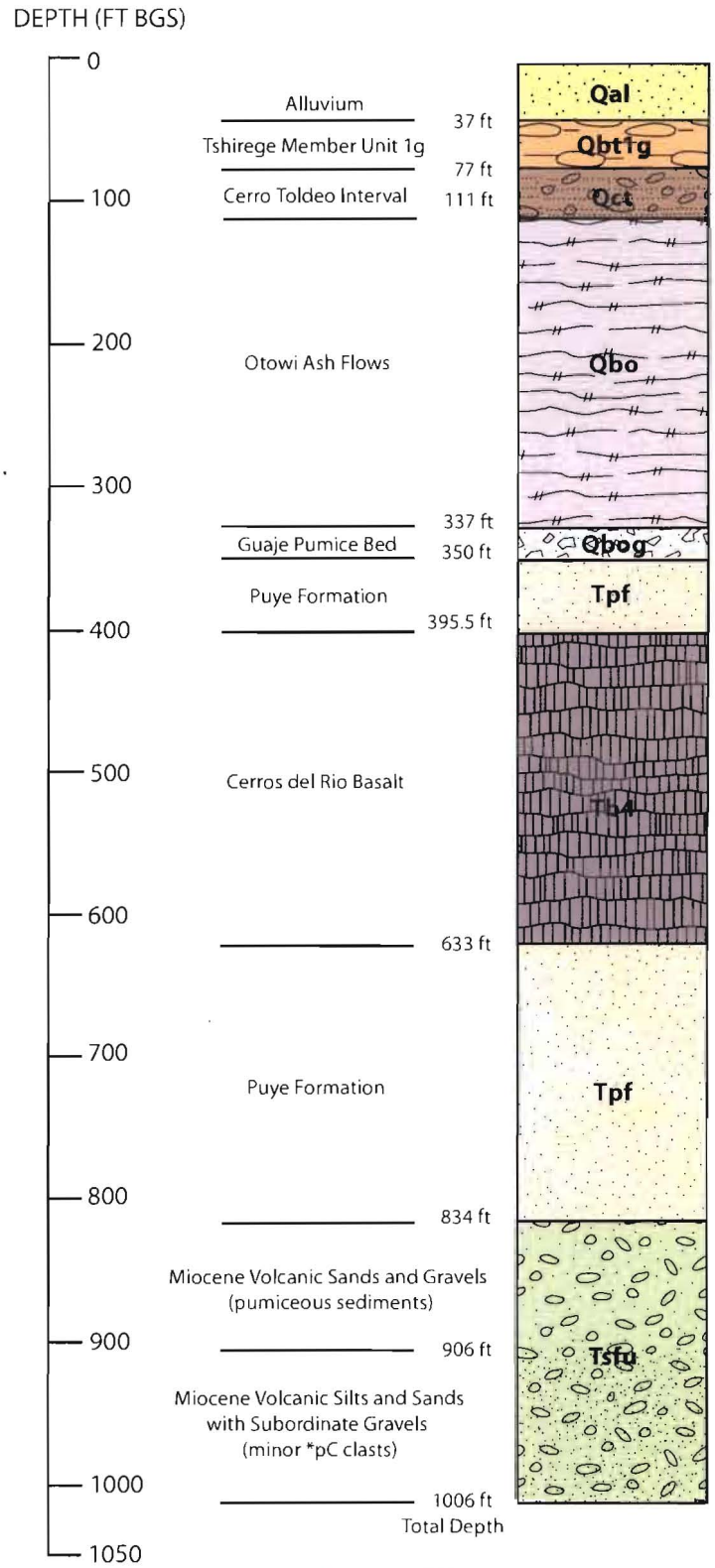
MG/DG/PH/ME:sm

Enclosure: Two hard copies with electronic files – Well Summary Data Sheet R-43 Borehole Stratigraphy and R-43 As-Built Well Construction Diagram (LA-UR-08-7370)

Cy: (w/enc.)
Neil Weber, San Ildefonso Pueblo
Mark Everett, EP-LWSP, 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-OB, White Rock, NM
Nancy Werdel, DOE-LASO, MS A316
Pattie Baucom, TerranearPMC, Los Alamos, NM
Kristine Smeltz, WES-DO, MS M992
EP-LWSP File, MS M992

Cy: (w/o enc.)
Tom Skibitski, NMED-OB, Santa Fe, NM
Alison Bennett, DOE-LASO (date-stamped letter emailed)
Michael J. Graham, ADEP, MS M991
Alison M. Dorries, WES-DO, MS M992
Paul Huber, EP-LWSP, MS M992
IRM-RMMSO, MS A150 (date-stamped letter emailed)



DRILLING INFORMATION

DRILLING COMPANY/PERSONNEL:
Boart Longyear
J. Staloch, J.Bowen

DRILL RIG: Foremost DR-24HD

DRILLING METHOD:
☒ DUAL ROTARY

DRILLING FLUID TYPE:

0-795 ft bgs	795-1006 ft bgs
☒ WATER	☒ WATER
☒ AIR	☒ AIR

☒ AQF-2 FOAMING AGENT

DRILLING START/FINISH:
DATE: 8/12/2008 TIME: 1420
DATE: 9/10/2008 TIME: 1515

▼ 892.9 ft bgs (10/22/08)
(post well construction;
composite 2-screen water level)

*Note: pC = Precambrian

TerranearPMC

Drafted By: TPMC
Project Number: 86500

Date: November 13, 2008
Filename: Well Summary_FACT SHEET

WELL SUMMARY DATA SHEET
R-43 Borehole Stratigraphy
Sandia Canyon
Los Alamos National Laboratory
Los Alamos, New Mexico

FACT SHEET
NOT TO SCALE

TOTAL LENGTH OF CASING AND SCREEN (FT) 993.2

DEPTH TO WATER FOLLOWING INSTALLATION (FT BGS) (COMPOSITE 2-SCREEN WATER LEVEL) 892.95

DIAMETER OF BOREHOLE

16.75" FROM 0 FT TO 418 FT BGS
15.0" FROM 418 FT TO 795 FT BGS
12.75" FROM 795 FT TO 1006 FT BGS

SURFACE COMPLETION INFORMATION
TYPE OF PROTECTIVE CASING
☒ STEEL SIZE 10"
☒ PROTECTIVE POSTS INSTALLED

SURFACE SEAL AND PAD COMPLETION
☐ CHECKED FOR SETTLEMENT
☒ MATERIAL USED CONCRETE
REINFORCED: ☐ NO ☒ YES WIREMESH
PAD DIMENSIONS 10 FT (L) x 10 FT (W) x 0.5 FT (H)

SURFACE SEAL 3 TO 400.1 (FT BGS)

HYDRATED BENTONITE CHIPS 400.1 TO 629.8 (FT BGS)

HIGH SOLIDS BENTONITE GROUT 629.8 TO 868.8 (FT BGS)

BENTONITE SEAL 868.8 TO 897.6 (FT BGS)

FINE SAND COLLAR 897.6 TO 899.9 (FT BGS)

FILTER PACK 899.9 TO 928.4 (FT BGS)

STAINLESS-STEEL CENTRALIZERS USED
☒ YES AT 2.0' ABOVE AND BELOW SCREENS

SCREENED INTERVAL 1 (S1) 903.9 TO 924.6 (FT BGS)

BENTONITE SEAL 928.4 TO 962.5 (FT BGS)

FINE SAND COLLAR 962.5 TO 964.8 (FT BGS)

FILTER PACK 964.8 TO 985.1 (FT BGS)

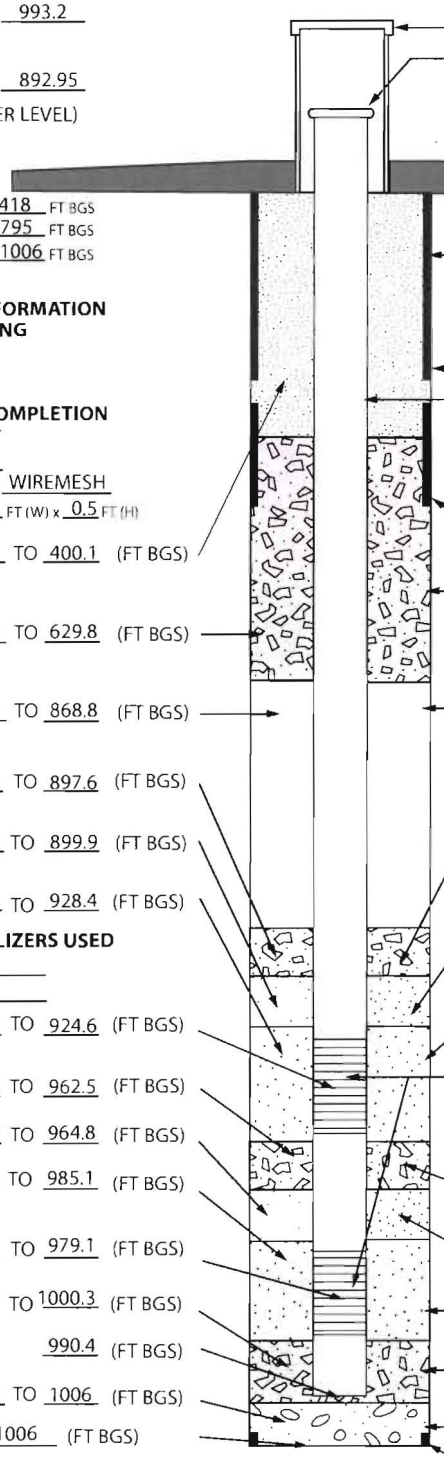
SCREENED INTERVAL 2 (S2) 969.1 TO 979.1 (FT BGS)

BENTONITE SEAL 985.1 TO 1000.3 (FT BGS)

BOTTOM OF CASING 990.4 (FT BGS)

BACKFILL MATERIAL 1000.3 TO 1006 (FT BGS)

BOTTOM OF BORING 1006 (FT BGS)



LOCKING COVER

ELEVATION OF WELL CAP (FT AMSL) TBD
ELEVATION OF PROTECTIVE CASING (FT AMSL) TBD
GROUND SURFACE ELEVATION (FT AMSL) TBD
MONUMENT MARKER ELEVATION (FT AMSL) TBD

SLOPED CONCRETE PAD/SURFACE

SURFACE SEAL
GROUT FORMULA (PROPORTION OF EACH)
CEMENT 97% BENTONITE 3%
QUANTITY USED 391.3 ft³
CALCULATED VOLUME 444.6 ft³

16" CASING STRING 0.0 TO 286.2 (FT BGS)
TYPE OF CASING
☒ STAINLESS STEEL, THREADED/COUPLED
CASING DIAMETER
INSIDE 5"
OUTSIDE 5 9/16"

16" CASING AND SHOE 300.0 TO 417.7 (FT BGS)

HYDRATED BENTONITE CHIP SEAL
☒ CHIPS
QUANTITY USED 191.5 ft³
CALCULATED VOLUME 243.8 ft³

HIGH SOLIDS BENTONITE GROUT
QUANTITY USED 279.4 ft³
CALCULATED VOLUME 228.6 ft³

BENTONITE SEAL
☒ BENTONITE CHIPS
QUANTITY USED 18.43 ft³
CALCULATED VOLUME 20.45 ft³

FINE SAND COLLAR
SIZE / TYPE 20/40
QUANTITY USED 2.0 ft³
CALCULATED VOLUME 1.66 ft³

FILTER PACK
SAND SIZE 10/20 QUANTITY USED 31.0 ft³
CALCULATED VOLUME 20.17 ft³

TYPE OF SCREENS
☒ STAINLESS STEEL
SCREEN DIAMETER
INSIDE 5.0" SLOT SIZE 0.020
OUTSIDE 5 9/16" JOINT TYPE THREADED/COUPLED

BENTONITE SEAL QUANTITY USED 13.4 ft³
☒ BENTONITE CHIPS CALCULATED VOLUME 24.23 ft³

FINE SAND COLLAR SIZE / TYPE 20/40
QUANTITY USED 2.0 ft³ CALCULATED VOLUME 1.66 ft³

FILTER PACK SAND SIZE 10/20
QUANTITY USED 13.5 ft³ CALCULATED VOLUME 14.46 ft³

BENTONITE SEAL QUANTITY USED 11.1 ft³
☒ BENTONITE CHIPS CALCULATED VOLUME 12.22 ft³

BACKFILL MATERIAL
☒ SLOUGH

12" CASING AND SHOE 997 TO 1006 (FT BGS)

WELL DEVELOPMENT INFORMATION

WELL COMPLETION BEGAN
DATE 9/14/08 TIME 0700
WELL COMPLETION FINISHED
DATE 10/17/08 TIME 1445

WELL DEVELOPMENT BEGAN
DATE 10/22/08 TIME 0800
WELL DEVELOPMENT FINISHED
DATE 10/30/08 TIME 1810

DEVELOPMENT METHOD
☒ SWABBING ☒ BAILING ☒ PUMPING
DEVELOPMENT PURGE VOLUME 6321.7 GAL
TOTAL PURGE VOLUME 32,052.9 GAL

FINAL PARAMETERS S1/S2
pH 8.55/8.50
TEMPERATURE 19.29/20.73 °C
SPECIFIC CONDUCTANCE 0.194/0.194 µS/cm
TURBIDITY 0.7/3.0 NTU

TerranearPMC

Drafted By: P. Baucom
Project Number: 86500

Date: November 04, 2008
Filename: Well Construction

R-43 AS-BUILT WELL CONSTRUCTION DIAGRAM
Sandia Canyon
Los Alamos National Laboratory
Los Alamos, New Mexico

FACT SHEET
NOT TO SCALE