MONTGOMERY & ASSOCIATES
Water Resource Consultants

Resolution Copper Mining

July 11, 2016

HYDROGRAPH SET FOR CURRENT HYDROGEOLOGIC MONITORING NETWORK

RESOLUTION COPPER MINING LLC

Superior, Arizona

MAPS

R. 9 E. | R. 10 E. | R. 11 E. | R. 12 E. | R. 13 E. | R. 14 E. | R. 15 E. | R. 15.5 E. | R. 16 E. | R. 17 E.

T. 2 N. | T. 1 N. | T. 1 S. | T. 2 S. | T. 3 S. | T. 4 S. | T. 5 S.

Figure 2 Extent

Figure 3 Extent

Upper Queen Creek Basin

Devil's Canyon Sub-Basin

Mineral Creek Basin

Pinto Creek

Queen Valley

SUPERIOR

GLOBE

KEARNY

FLORENCE

Queen Creek

Arnett Creek

Devil's Canyon

Mineral Creek

Dripping Spring Wash

Gila River

Kings Ranch

Florence Junction

628140

USGS09478500

Whitlow Ranch Dam

624605

610435

615236

615235

SR79 at Unnamed Wash

Magma Ranch

610703

619399

612176

Magma FRS

USGS094985005

MiamiNWS 025512

623061

Globe 2NWS 023500

GlobeNWS 023498

GlobeNWS 023505

526251

Globe USFSNWS 020601

Pinal RanchNWS 026561

SuperiorNWS 028348

Superior 2 ENENWS 028349

624276

607669

USGS09474000

KelvinNWS 024594

Gila River at Kelvin

KearnyNWS 024590

Ashurst Hayden DamNWS 020498

USGS09475500

617454

621947

605530

Florence Dam North

627609

605530

FlorenceNWS 023027

Florence Dam South

603850

88 | 60 | 70 | 77 | 79 | 177 | 287



EXPLANATION

Watershed Boundary

GWSI Index Wells and 55 Registration Number

526251

Precipitation Gage (Table 1)

ALERT Station and Identifier

Magma Ranch

NOAA Station and Identifier

Kearny [NWS 0245900]

Surface Water Gage

Surface Water Gaging Station and Identifier

USGS 0947400

0 5 Miles

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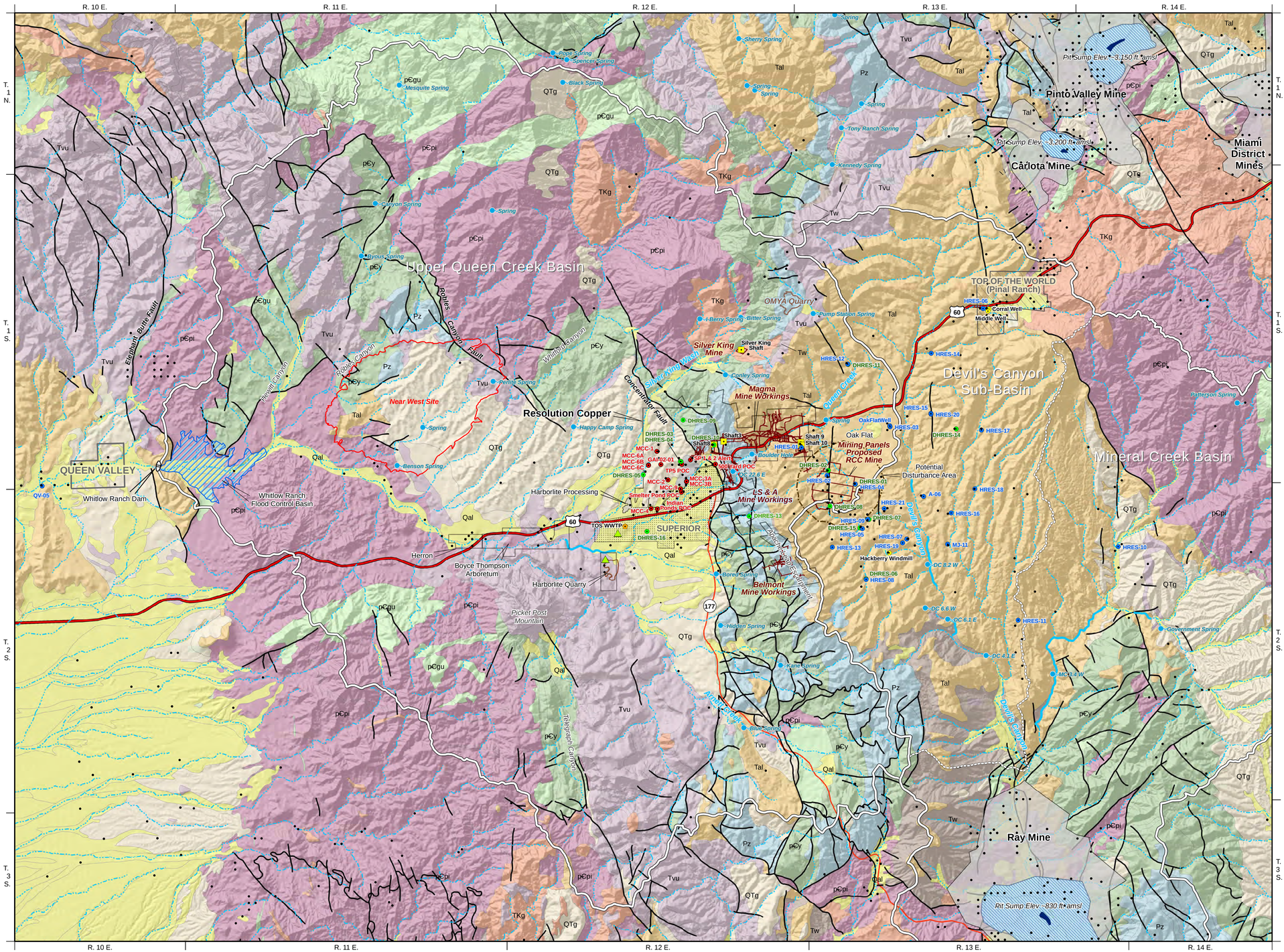
REGIONAL LOCATION MAP

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2015

FIGURE 1

GIS-Tuc\605.1502\RegionalLocationMapSP83\13Oct2015



EXPLANATION

- Middle Well — Shallow Alluvium Monitor Well and Identifier
- DHRES-11 — Deep Groundwater System Monitor Well and Identifier
- HRES-1,2 — Apache Leap Tuff Monitor Well and Identifier
- MCC-1 — West Plant Site Monitor Well and Identifier
- Point of Discharge
- Shaft 3 — Shaft and Identifier
- Town of Superior Waste Water Treatment Plant (TOS WWTP)
- ADWR 55-Well Registry
- Perennial Stream
- Ephemeral Intermittent Stream
- Fault
- Watershed Boundary
- Open Pit Mine

GEOLOGIC UNITS

- d — Disturbed Surficial Deposits
- Qal — Quaternary Alluvial Deposits
- QTg — Quaternary-Tertiary Basin-Fill Deposits
- Tal — Tertiary Apache Leap Tuff
- Tvu — Tertiary Volcanic Rocks, undifferentiated
- Tw — Tertiary Whitetail Conglomerate
- TKg — Cretaceous and Tertiary Intrusive Rocks
- Pz — Paleozoic Sedimentary Rocks
- pCy — Younger Precambrian Sedimentary Rocks, Basalt, and Diabase
- pCgu — Undifferentiated Precambrian Intrusive Rocks
- pCpi — Older Precambrian Pinal Schist

0 2,000 4,000 6,000 8,000
Feet

DRAFT

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REGIONAL GEOLOGY MAP

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FIGURE 2

GIS\605.1502\RegionalGeologySP83ft\23Oct2015

R. 12 E. R. 13 E. R. 14 E.

T. 1 N. T. 1 S. T. 2 S. T. 3 S.

TOP OF THE WORLD (Pinal Ranch)

SUPERIOR

Silver King Shaft
Silver King Mine
Magma Mine Workings
Belmont Mine Workings
LS & A Mine Workings
OMYA Quarry
Potential Disturbance Area
Mining Panels Proposed RCC Mine
Hackberry Windmill
Corral Well
Middle Well
OakFlatWell
Shaft 9
Shaft 10
Shaft8
Shaft3
Pump Station Spring
Tony Ranch Spring
Kennedy Spring
I-Berry Spring
Bitter Spring
Conley Spring
Bored Spring
Hidden Spring
Kane Spring
Blue Spring
Upper Carbonate
Boulder Hole
Smelter Pond POC
500 Yard POC
Indian Ponds POC
Rancho Rio
Upper Mineral
Lower Mineral
Government Spring
Tillmans Spring
Grayback-1
HRES-01 HRES-02 HRES-03 HRES-04 HRES-05 HRES-06 HRES-07 HRES-08 HRES-09 HRES-10 HRES-11 HRES-12 HRES-13 HRES-14 HRES-15 HRES-16 HRES-17 HRES-18 HRES-19 HRES-20 HRES-21
DHRES-01 DHRES-02 DHRES-03 DHRES-04 DHRES-05 DHRES-06 DHRES-07 DHRES-08 DHRES-09 DHRES-10 DHRES-11 DHRES-13 DHRES-14 DHRES-15 DHRES-16
PHRES-01 PHRES-02 PHRES-03 PHRES-04
MCC-1 MCC-2 MCC-3A MCC-3B MCC-3C MCC-4 MCC-5 MCC-6A MCC-6B MCC-6C
GAI-02-01 TP 5 ROC SP 1 ROC
DC SW1 DC 13.5 DC 10.9 DC 8.8 DC 8.2 W DC 8.1 DC 7.1 DC 6.6 W DC 6.1 E DC 5.5 DC 4.1 E DC 3.4 W DC 2.2 E
NCJV-01 NCJV-02 NCJV-03 KCC-01
Fortuna Pk Kings Crown Peak Point Mountain Hutton Pk Government Mtn Hot Tamale Peak Sleeping Beauty Mountain

EXPLANATION

- Middle Well — Shallow Alluvium Monitor Well and Identiifier
- DHRES-11 — Deep Groundwater System Monitor Well and Identifier
- HRES-1,2 — Apache Leap Tuff Monitor Well and Identifier
- PHRES-04 — Apache Leap Tuff Aquifer Piezometer and Identifier
- MCC-1 — West Plant Site Monitor Well and Identifier
- Shaft 3 — Shaft and Identifier
- A-08 — Superior District Exploration Borehole and Identifier
- RES-30 — Resolution Copper Exploration Borehole and Identifier
- ADWR 55-Well Registry
- DC SW1 — Stream Gage - Permanent Installation
- DC 5.5 — Stream Gage - Data Sonde
- Perennial Stream
- Ephemeral Intermittent Stream
- Fault
- Watershed Boundary
- OMYA Standing Water

GEOLOGIC UNITS

d	Disturbed Surficial Deposits
Qal	Quaternary Alluvial Deposits
QTg	Quaternary-Tertiary Basin-Fill Deposits
Tal	Tertiary Apache Leap Tuff
Tvu	Tertiary Volcanic Rocks, undifferentiated
Tw	Tertiary Whitetail Conglomerate
TKg	Cretaceous and Tertiary Intrusive Rocks
Pz	Paleozoic Sedimentary Rocks
pCy	Younger Precambrian Sedimentary Rocks, Basalt, and Diabase
pCgu	Undifferentiated Precambrian Intrusive Rocks
pCpi	Older Precambrian Pinal Schist

0 1,000 2,000 3,000 4,000 Feet

N

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WELL LOCATION MAP

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FIGURE 1

GIS\605.1502\Wells_GeologySP83ft\13July2016

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Water Resource Consultants

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SHAFT No. 9 / 10 DEWATERING

605 - Resolution_HydroCharacterization\DATA_HYDROGRAPHS\Shafts\Shaft9_3_10_Q_1998_Current.grf

EXPLANATION

Elevation of Land Surface at Shaft No. 9 Collar: 4,167 feet above mean sea level

- Shaft No. 3 Water Level Elevation
- Shaft No. 9 Water Level Elevation
- Elevation of Shaft No. 10 Bench Level During Sinking
- Shaft No. 9/10 Dewatering Pumping Rate (*PROVISIONAL)*

Shaft No.9 Pumps Shut Down (May 6, 1998)

3600 Level (-15 feet msl) East-West Workings Divide

Bottom of Shaft 9 (-656 feet msl)

TPL-1 Level (-688 feet msl) Transition Pump Level

TPL-2 Level (-2,611 feet msl) Transition Pump Level

Bottom of Shaft 10 (-2,774 feet msl)

ELEVATION, IN FEET ABOVE/BELOW MEAN SEA LEVEL

3,500 3,000 2,500 2,000 1,500 1,000 500 0 -500 -1,000 -1,500 -2,000 -2,500 -3,000 -3,500

DEWATERING RATE (GPM)

3000 2500 2000 1500 1000 500 0

1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016

YEAR

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HYDROGRAPH OF WATER LEVEL FOR SHAFT No. 3 AND No. 9, AND SHAFT No. 10 BENCH LEVEL DURING SINKING

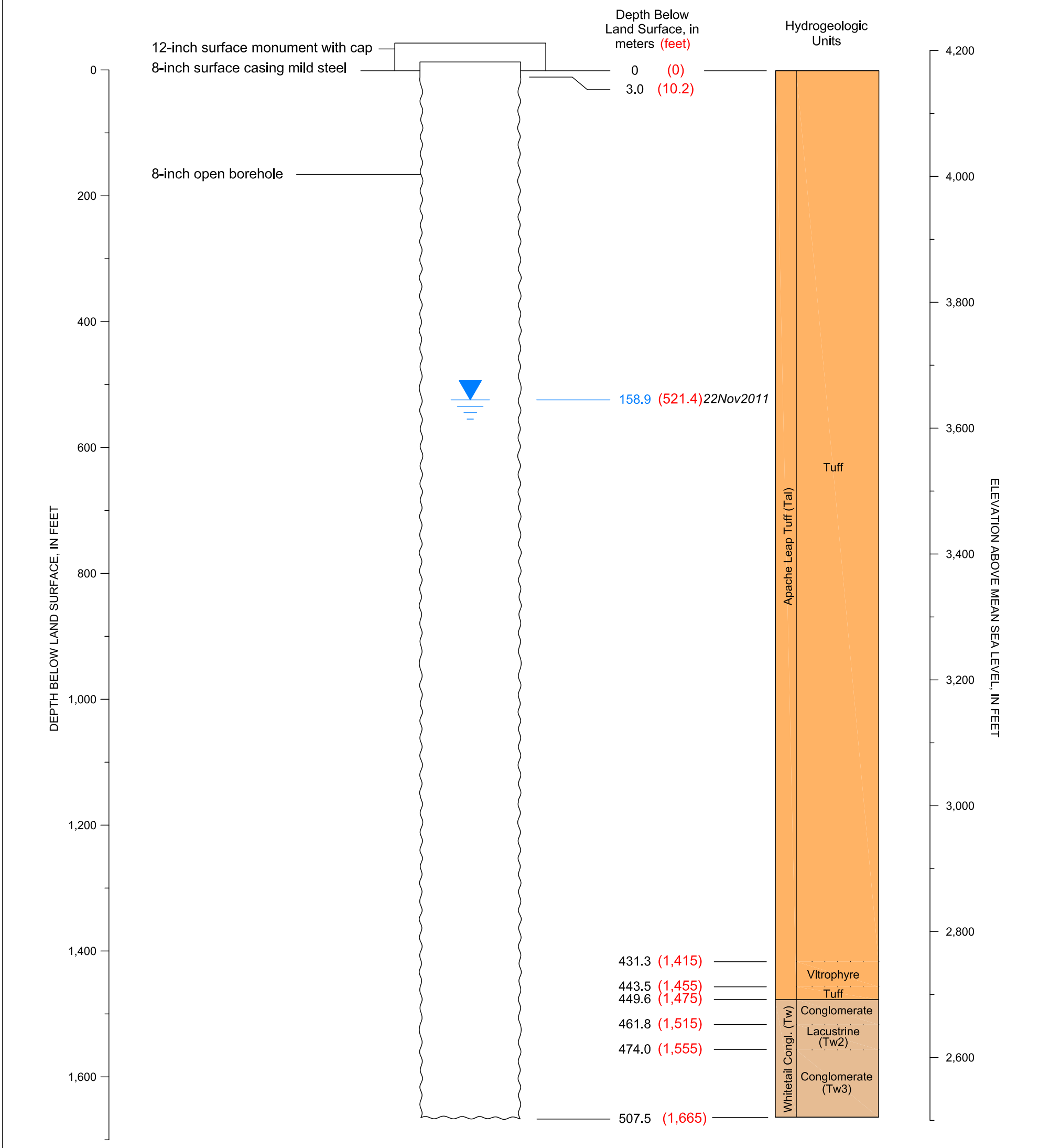
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APACHE LEAP TUFF AND

SHALLOW ALLUVIUM



CADASTRAL: (D-2-13) 04bbd	ADWR NO: 55-615241
NORTHING: 834171.542	EASTING: 971257.978
LAND SURFACE ELEVATION: 4167.82 FEET AMSL	
DATUM: U.S. State Plane Coordinate System of 1983 Epoch 2011 (NAD83 NA2011) Arizona Central Zone (0202) North American Datum 1983 North American Vertical Datum of 1983	

EXPLANATION

Shallow non-pumping Water Level

Deep non-pumping Water Level

Resolution Copper Mining

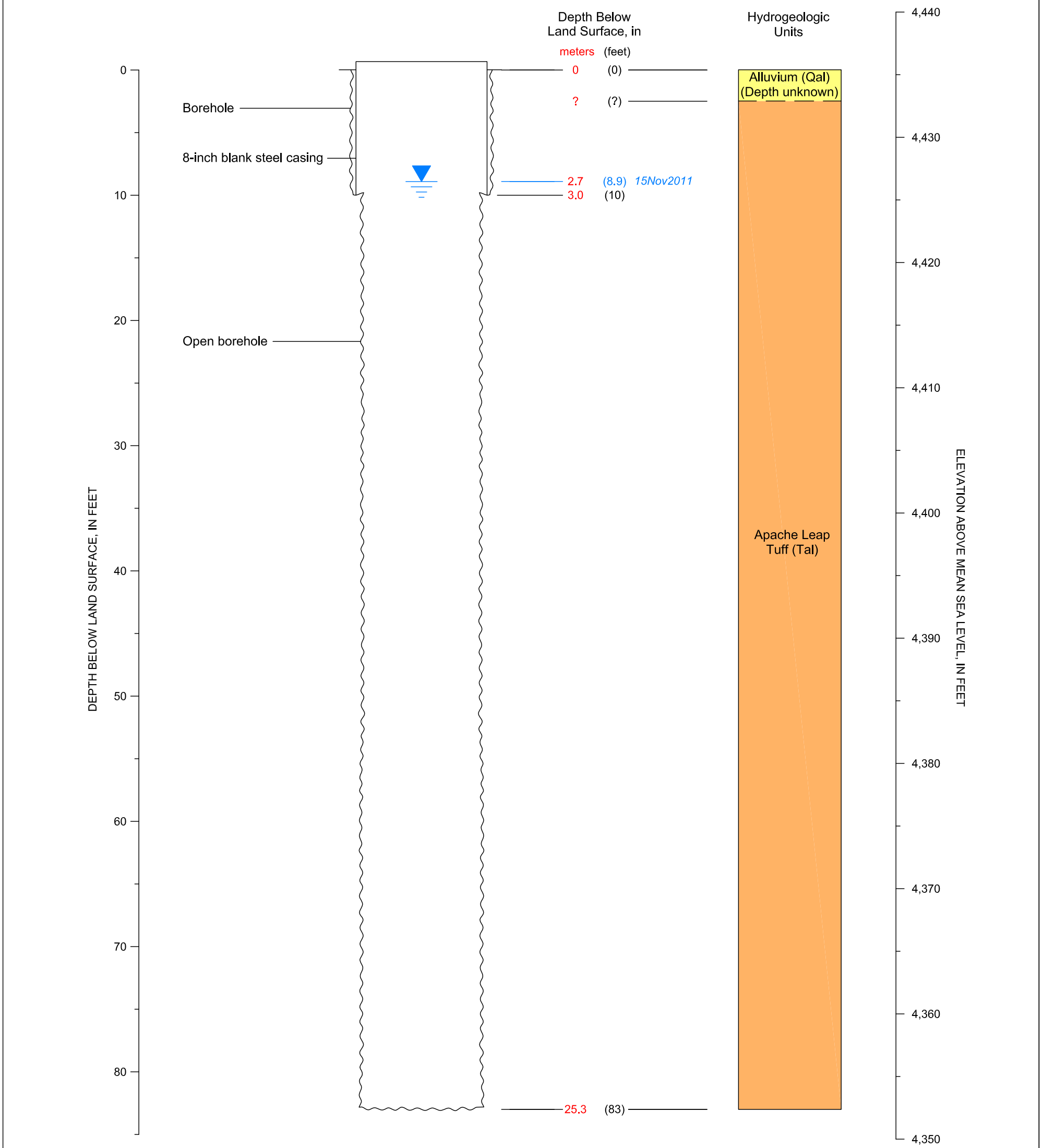
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A-06
DIAGRAM OF WELL CONSTRUCTION

Version: October 2015

FIGURE A-1

Drafting\605\WellSchematics_2015\HRESwells_SP83\A-06_WS_SP83\22October2015



CADASTRAL: (D-1-13) 14dbd	ADWR NO: 55-609685
NORTHING: 852639.865	EASTING: 977697.153
LAND SURFACE ELEVATION: 4435.39 FEET AMSL	
DATUM: U.S. State Plane Coordinate System of 1983 Epoch 2011 (NAD83 NA2011) Arizona Central Zone (0202) North American Datum 1983 North American Vertical Datum of 1983	

EXPLANATION

Non-pumping Water Level

Resolution Copper Mining

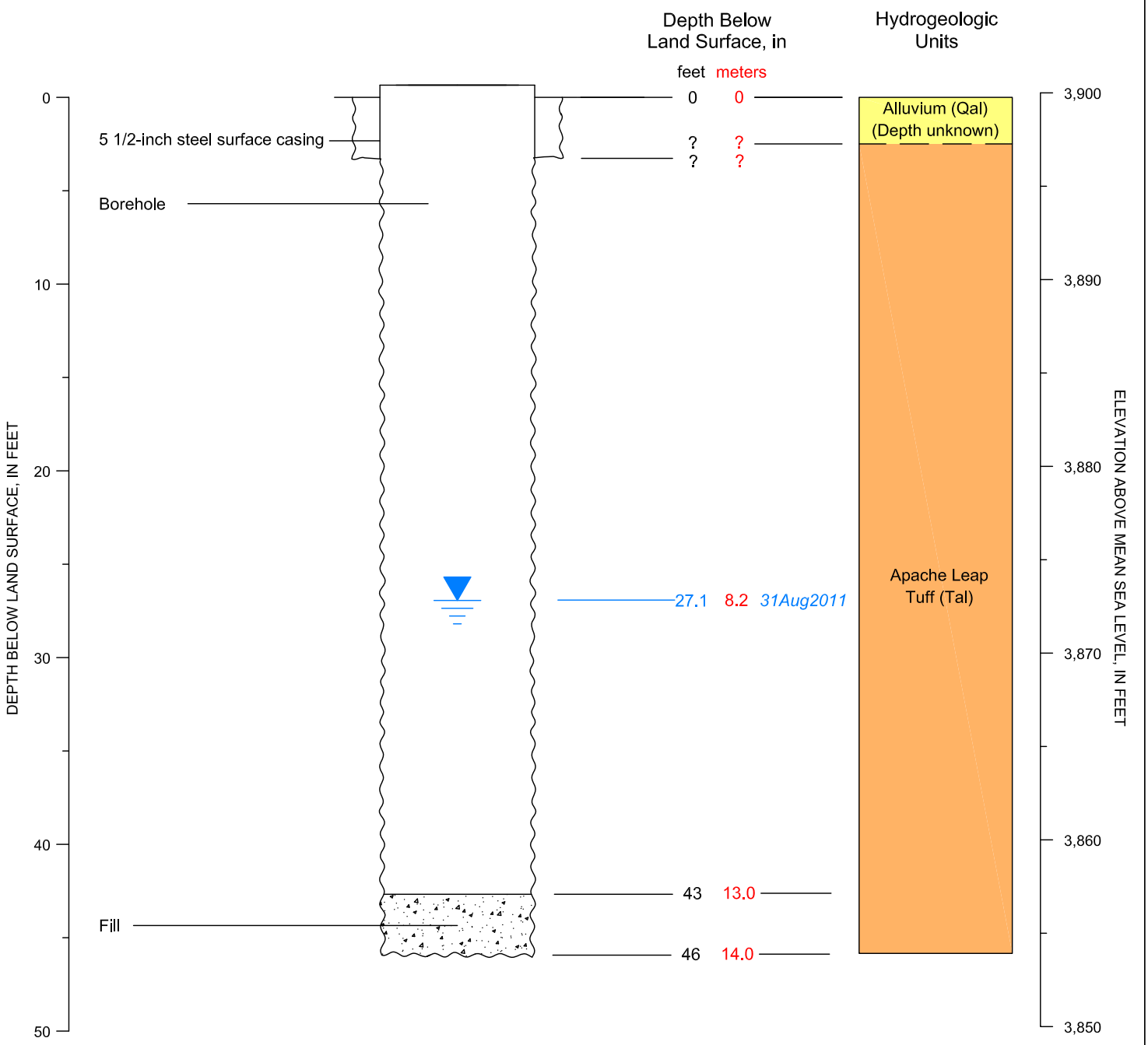
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Water Resource Consultants

CORRAL WELL
DIAGRAM OF WELL CONSTRUCTION

Version: October 2015

FIGURE A-2

Drafting\605\WellSchematics_2015\HRESwells_SP83\CORRAL-WS_SP83\21October2015



CADASTRAL: (D-2-13) 8acb	ADWR NO: 55-615244
NORTHING: 828601.598	EASTING: 967894.073
LAND SURFACE ELEVATION: 3899.76 FEET AMSL	
DATUM: U.S. State Plane Coordinate System of 1983 Epoch 2011 (NAD83 NA2011) Arizona Central Zone (0202) North American Datum 1983 North American Vertical Datum of 1983	

EXPLANATION

Non-pumping Water Level

Resolution Copper Mining

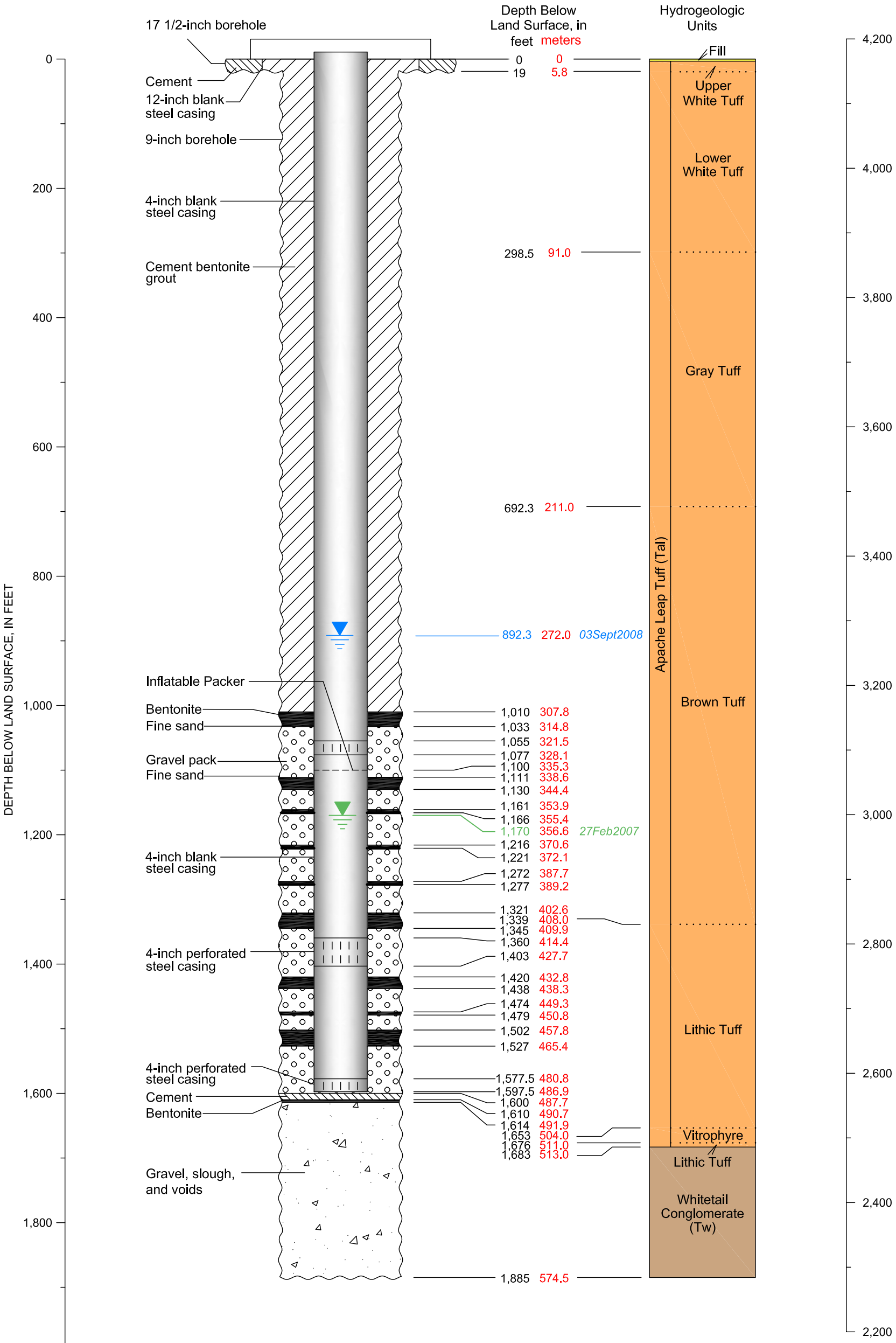
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HACKBERRY WINDMILL
DIAGRAM OF WELL CONSTRUCTION

Version: October 2015

FIGURE A-3

Drafting\605\WellSchematics_2015\HRESwells_SP83\HackberryWindmill_WS_SP83\22October2015



CADASTRAL: (D-1-13) 32bca	ADWR NO: 55-201852
NORTHING: 839000.266	EASTING: 959223.381
LAND SURFACE ELEVATION: 4168.92 FEET AMSL	
DATUM: U.S. State Plane Coordinate System of 1983 Epoch 2011 (NAD83 NA2011) Arizona Central Zone (0202) North American Datum 1983 North American Vertical Datum of 1983	

EXPLANATION

Shallow non-pumping Water Level

Deep non-pumping Water Level

Resolution Copper Mining

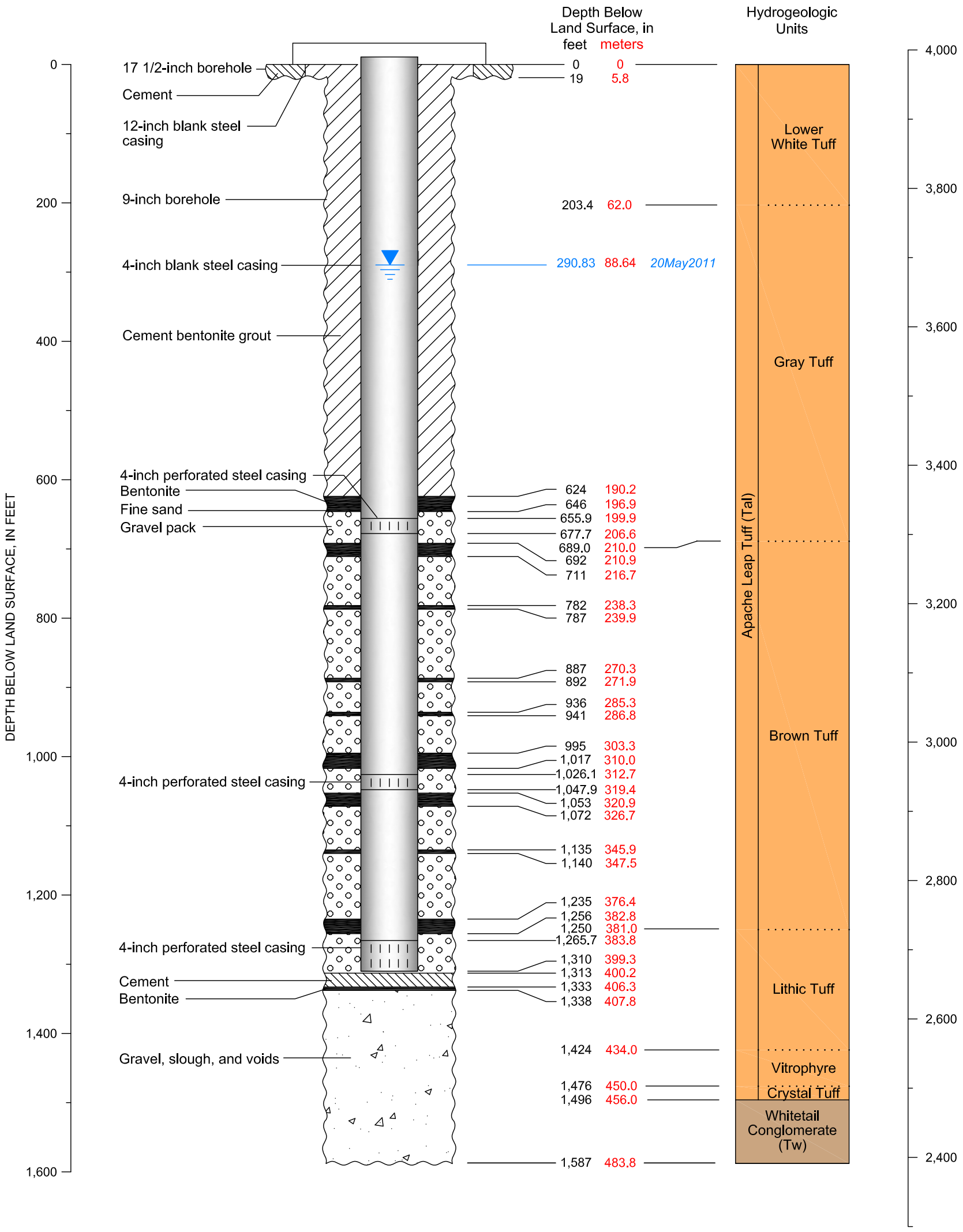
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HRES-01
DIAGRAM OF WELL CONSTRUCTION

Version: October 2015

FIGURE A-4

Drafting\605\WellSchematics_2015\HRESwells_SP83\HRES-1-WS_SP83\22October2015



CADASTRAL: (D-1-13) 32dca	ADWR NO: 55-201850
NORTHING: 836245.400	EASTING: 961757.156
LAND SURFACE ELEVATION: 3979.08 FEET AMSL	
DATUM: U.S. State Plane Coordinate System of 1983 Epoch 2011 (NAD83 NA2011) Arizona Central Zone (0202) North American Datum 1983 North American Vertical Datum of 1983	

EXPLANATION

Non-pumping Water Level

Resolution Copper Mining

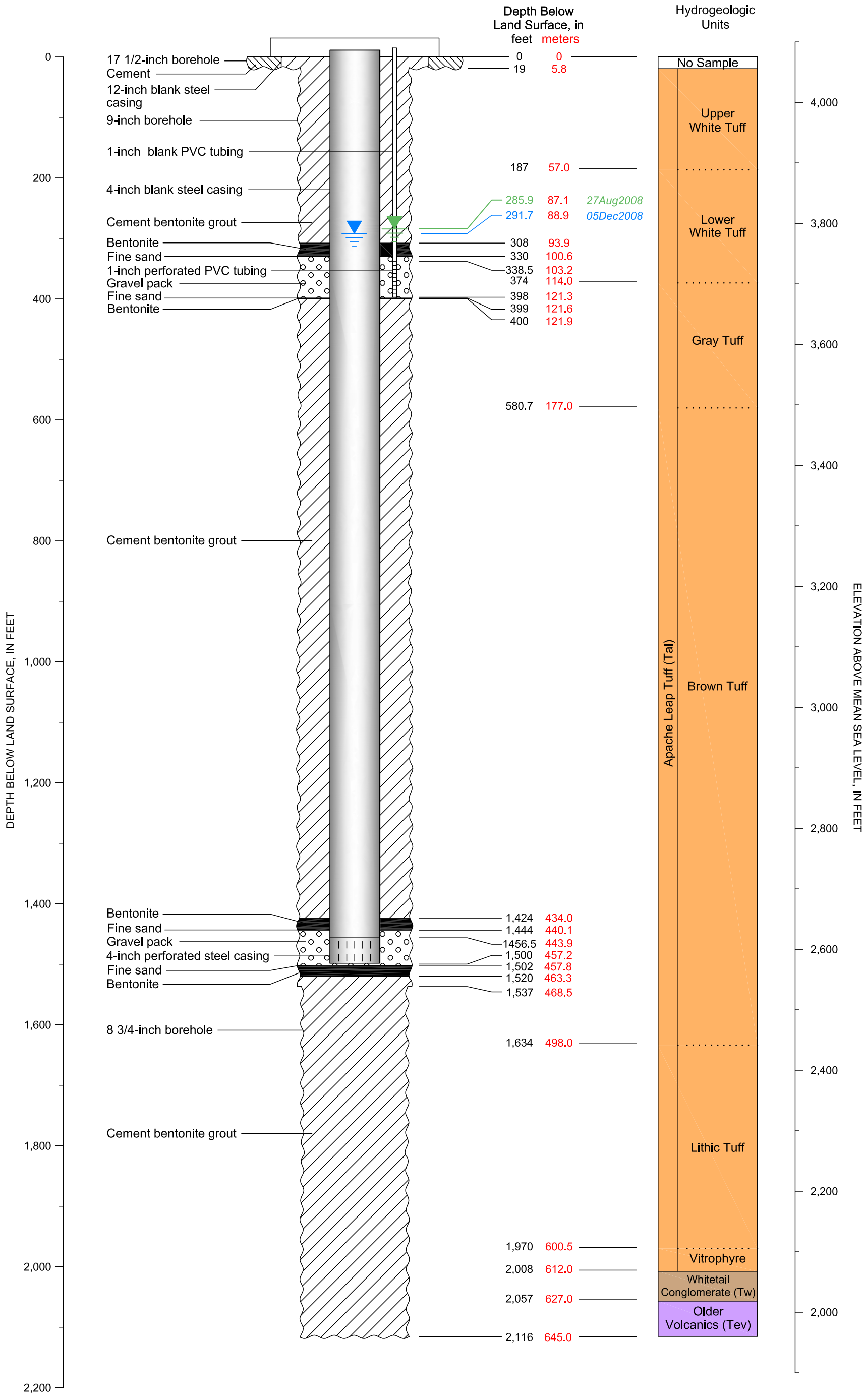
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HRES-02
DIAGRAM OF WELL CONSTRUCTION

Version: October 2015

FIGURE A-5

Drafting\605\WellSchematics_2015\HRESwells_SP83\HRES-2-WS_SP83\22October2015



CADASTRAL: (D-1-13) 28ddb	ADWR NO: 55-201851
NORTHING: 841033.155	EASTING: 967959.749
LAND SURFACE ELEVATION: 4075.56 FEET AMSL	
DATUM: U.S. State Plane Coordinate System of 1983 Epoch 2011 (NAD83 NA2011) Arizona Central Zone (0202) North American Datum 1983 North American Vertical Datum of 1983	

EXPLANATION

Shallow non-pumping Water Level

Deep non-pumping Water Level

Resolution Copper Mining

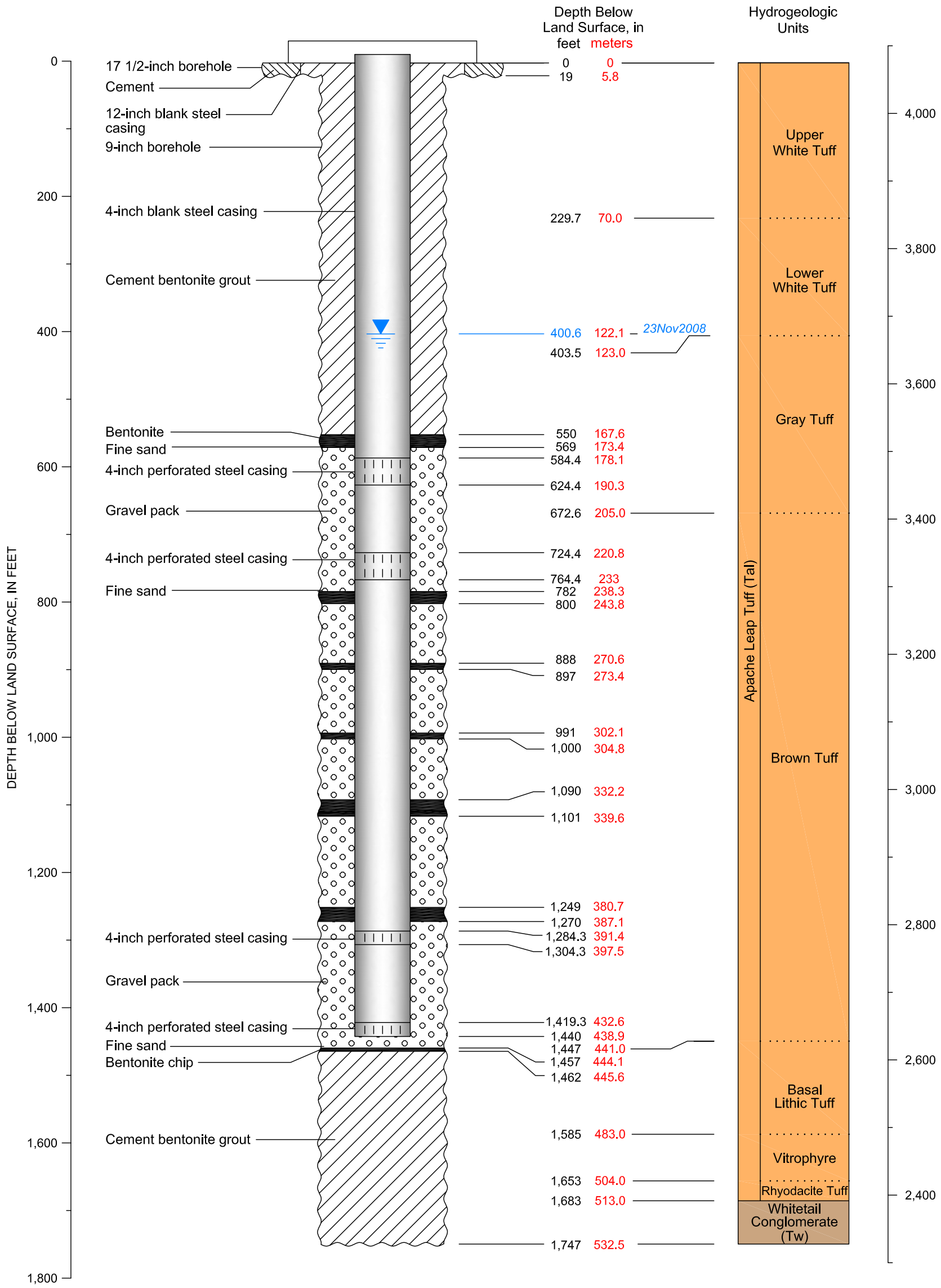
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HRES-03
DIAGRAM OF WELL CONSTRUCTION

Version: October 2015

FIGURE A-6

Drafting\605\WellSchematics_2015\HRESwells_SP83\HRES-3-WS_SP83\22October2015



CADASTRAL: (D-1-13) 33ccd	ADWR NO: 55-201849
NORTHING: 835383.253	EASTING: 964531.555
LAND SURFACE ELEVATION: 4074.71 FEET AMSL	
DATUM: U.S. State Plane Coordinate System of 1983 Epoch 2011 (NAD83 NA2011) Arizona Central Zone (0202) North American Datum 1983 North American Vertical Datum of 1983	

EXPLANATION

Non-pumping Water Level

Resolution Copper Mining

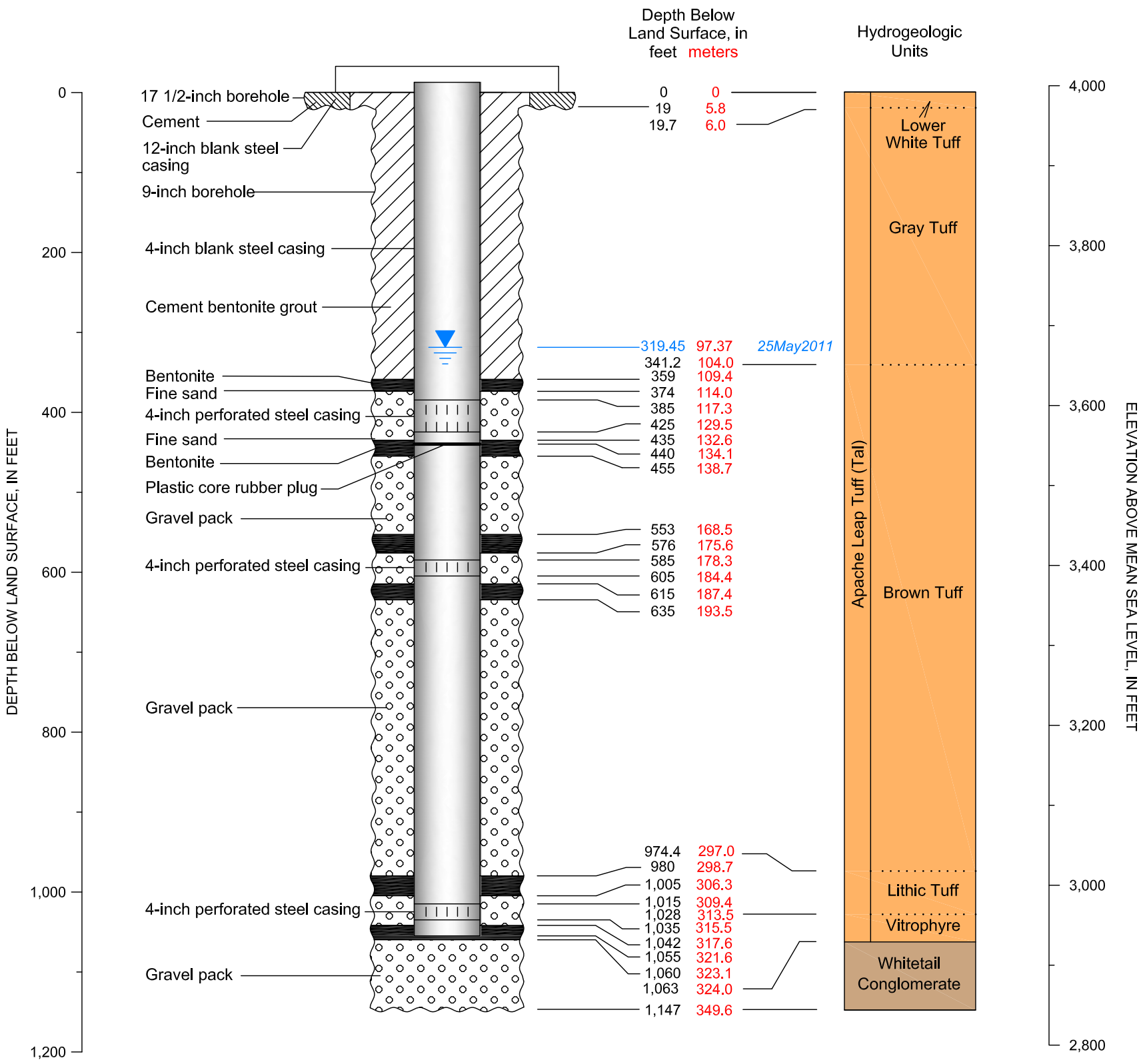
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HRES-04
DIAGRAM OF WELL CONSTRUCTION

Version: October 2015

FIGURE A-7

Drafting\605\WellSchematics_2015\HREStwells_SP83\HRES-4-WS_SP83\22October2015



CADASTRAL: (D-2-13) 05ccb	ADWR NO: 55-201848
NORTHING: 830986.161	EASTING: 965229.746
LAND SURFACE ELEVATION: 3992.14 FEET AMSL	
DATUM: U.S. State Plane Coordinate System of 1983 Epoch 2011 (NAD83 NA2011) Arizona Central Zone (0202) North American Datum 1983 North American Vertical Datum of 1983	

EXPLANATION

Shallow non-pumping Water Level

Deep non-pumping Water Level

Resolution Copper Mining

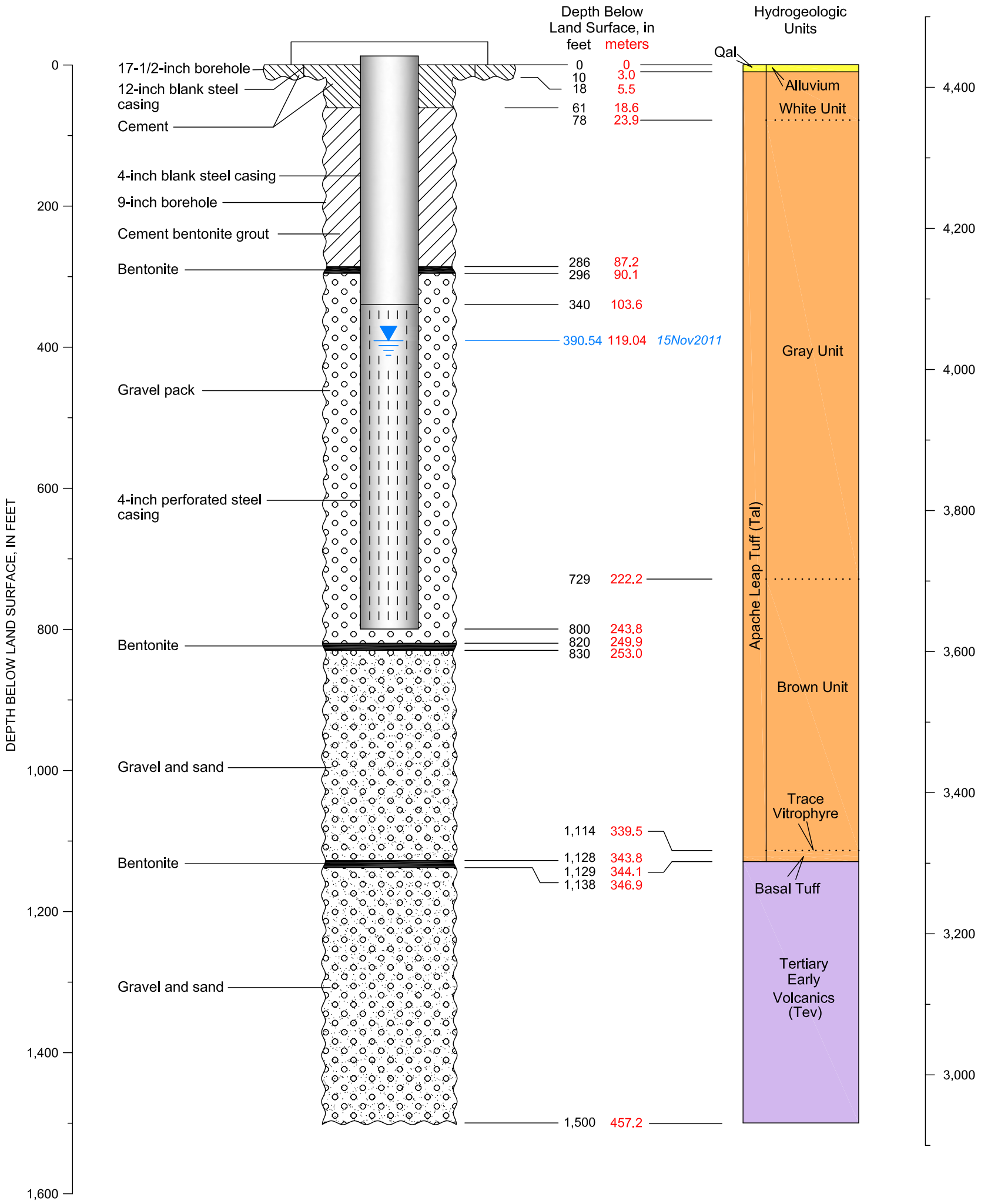
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HRES-05
DIAGRAM OF WELL CONSTRUCTION

Version: October 2015

FIGURE A-8

Drafting\605\WellSchematics_2015\HRESwells_SP83\HRES-5-WS_SP83\22October2015



CADASTRAL: (D-1-13) 14dbc	ADWR NO: 55-214967
NORTHING: 852681.669	EASTING: 977111.797
LAND SURFACE ELEVATION: 4431.86 FEET AMSL	
DATUM: U.S. State Plane Coordinate System of 1983 Epoch 2011 (NAD83 NA2011) Arizona Central Zone (0202) North American Datum 1983 North American Vertical Datum of 1983	

EXPLANATION

Non-pumping Water Level

Resolution Copper Mining

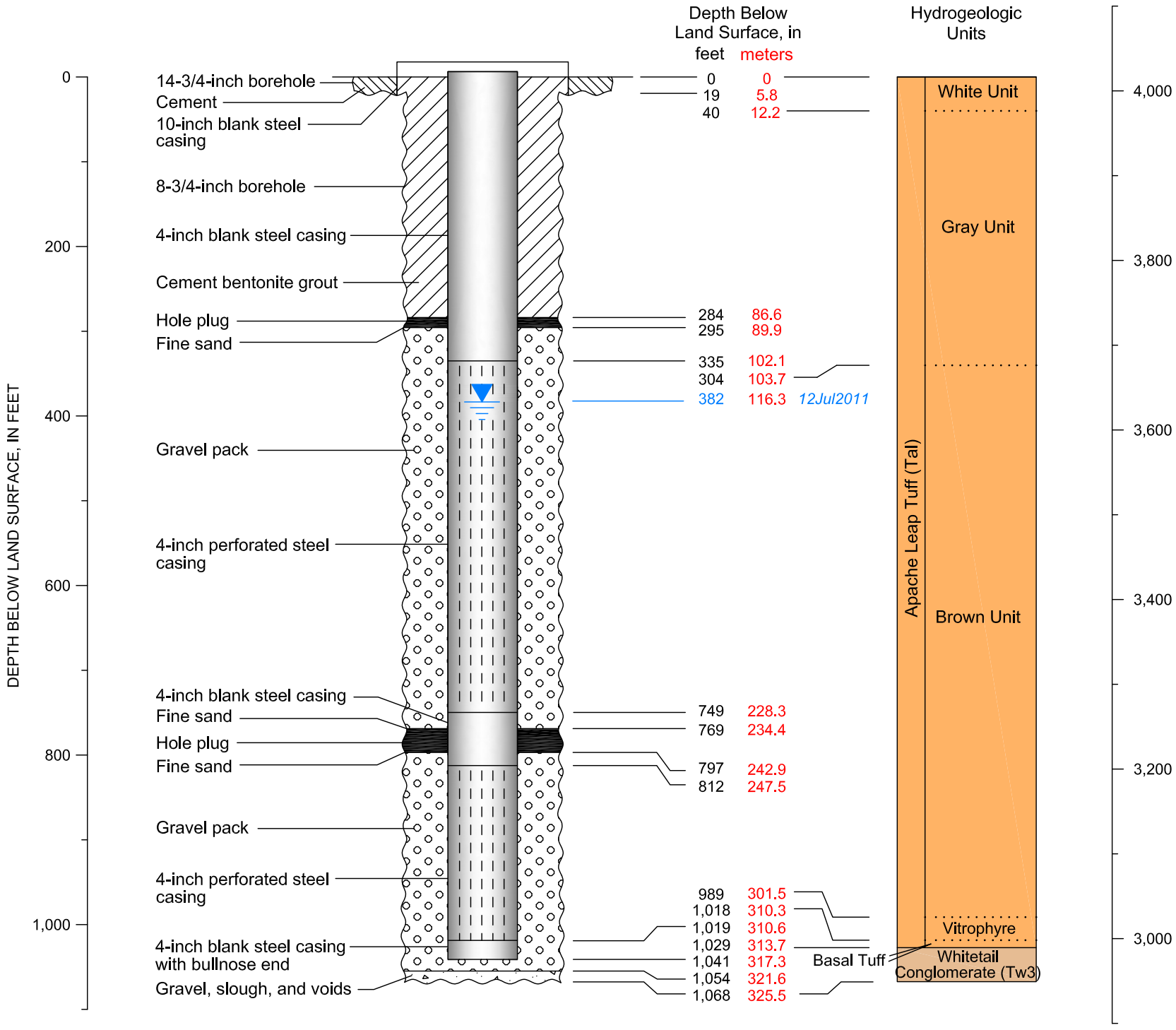
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HRES-06
DIAGRAM OF WELL CONSTRUCTION

Version: October 2015

FIGURE A-9

Drafting\605\WellSchematics_2015\HRESwells_SP83\HRES-6-WS_SP83\22October2015



CADASTRAL: (D-2-13) 08aaa	ADWR NO: 55-907947
NORTHING: 829960.075	EASTING: 969606.450
LAND SURFACE ELEVATION: 4016.46 FEET AMSL	
DATUM: U.S. State Plane Coordinate System of 1983 Epoch 2011 (NAD83 NA2011) Arizona Central Zone (0202) North American Datum 1983 North American Vertical Datum of 1983	

EXPLANATION

Non-pumping Water Level

Resolution Copper Mining

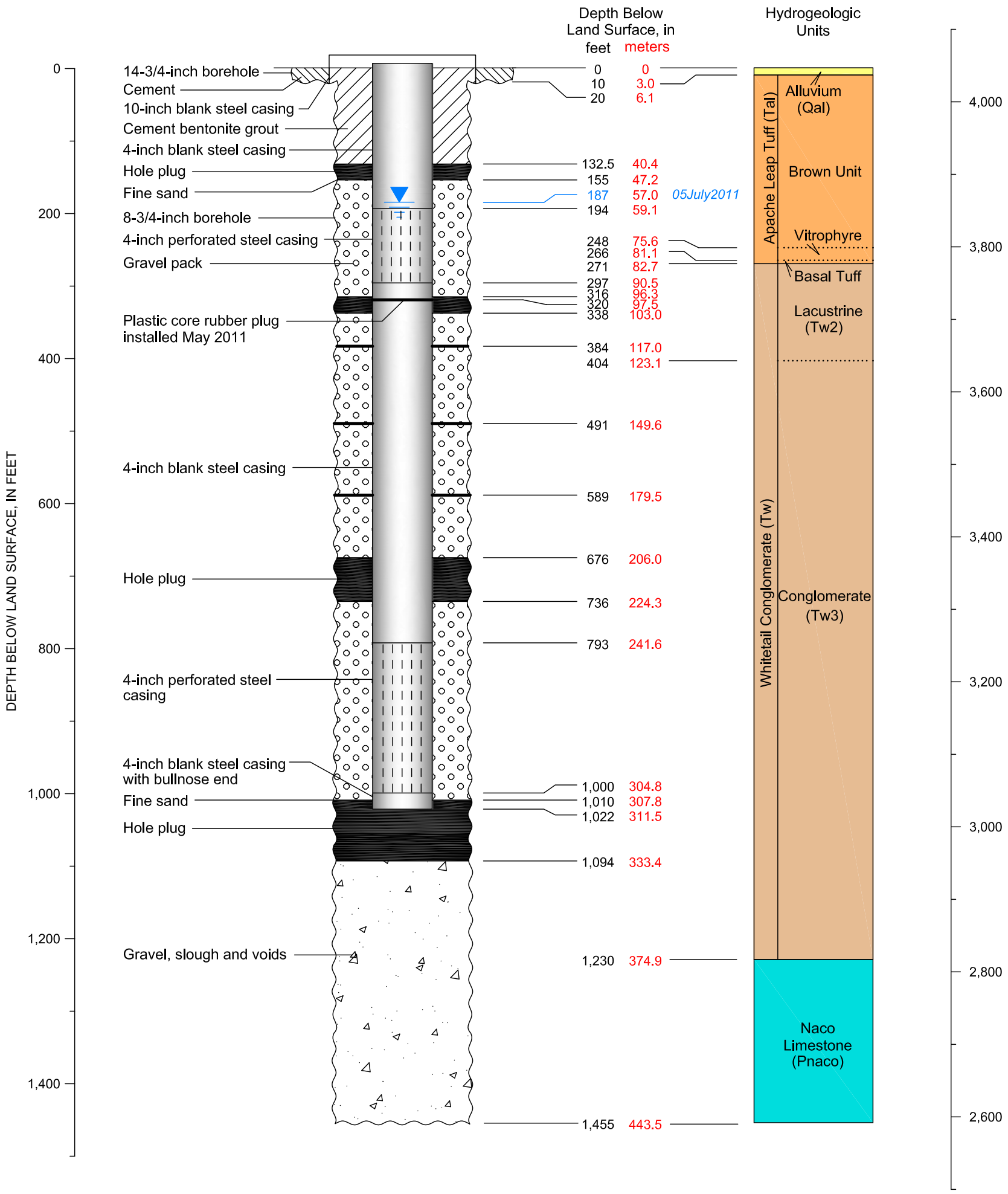
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HRES-07
DIAGRAM OF WELL CONSTRUCTION

Version: October 2015

FIGURE A-10

Drafting\605\WellSchematics_2015\HRESwells_SP83\HRES-7-WS_SP83\22October2015



CADASTRAL: (D-2-13) 08cca	ADWR NO: 55-907946
NORTHING: 825985.648	EASTING: 965599.776
LAND SURFACE ELEVATION: 4046.77 FEET AMSL	
DATUM: U.S. State Plane Coordinate System of 1983 Epoch 2011 (NAD83 NA2011) Arizona Central Zone (0202) North American Datum 1983 North American Vertical Datum of 1983	

EXPLANATION

Non-pumping Water Level

Resolution Copper Mining

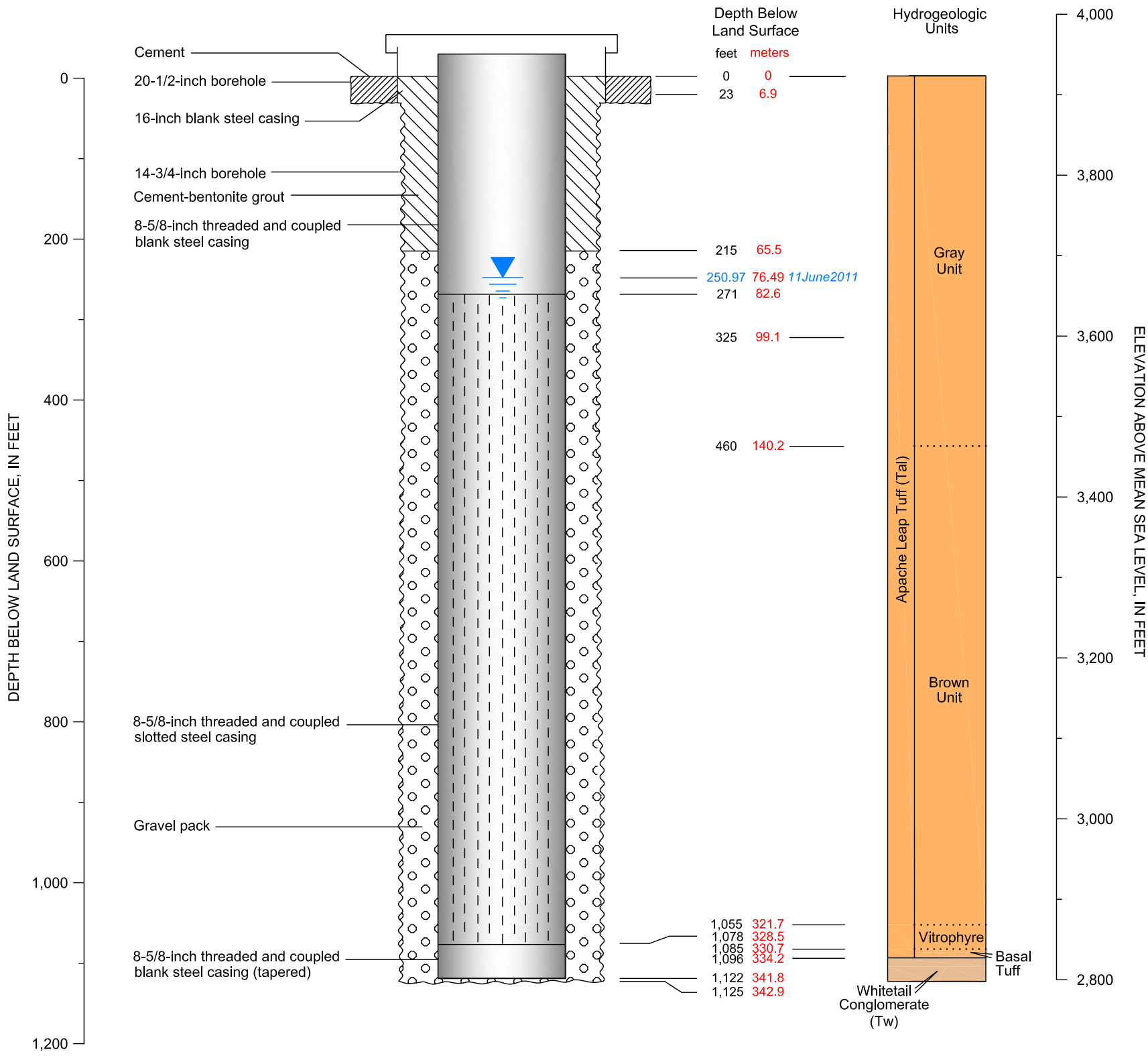
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HRES-08
DIAGRAM OF WELL CONSTRUCTION

Version: October 2015

FIGURE A-11

Drafting\605\WellSchematics_2015\HRESwells_SP83\HRES-8_WS_SP83\22October2015



CADASTRAL: (D-2-12) 05cbd	ADWR NO: 55-911875
NORTHING: 831902.978	EASTING: 965770.234
LAND SURFACE ELEVATION: 3923.32 FEET AMSL	
DATUM: U.S. State Plane Coordinate System of 1983 Epoch 2011 (NAD83 NA2011) Arizona Central Zone (0202) North American Datum 1983 North American Vertical Datum of 1983	

EXPLANATION

Non-pumping Water Level

Resolution Copper Mining

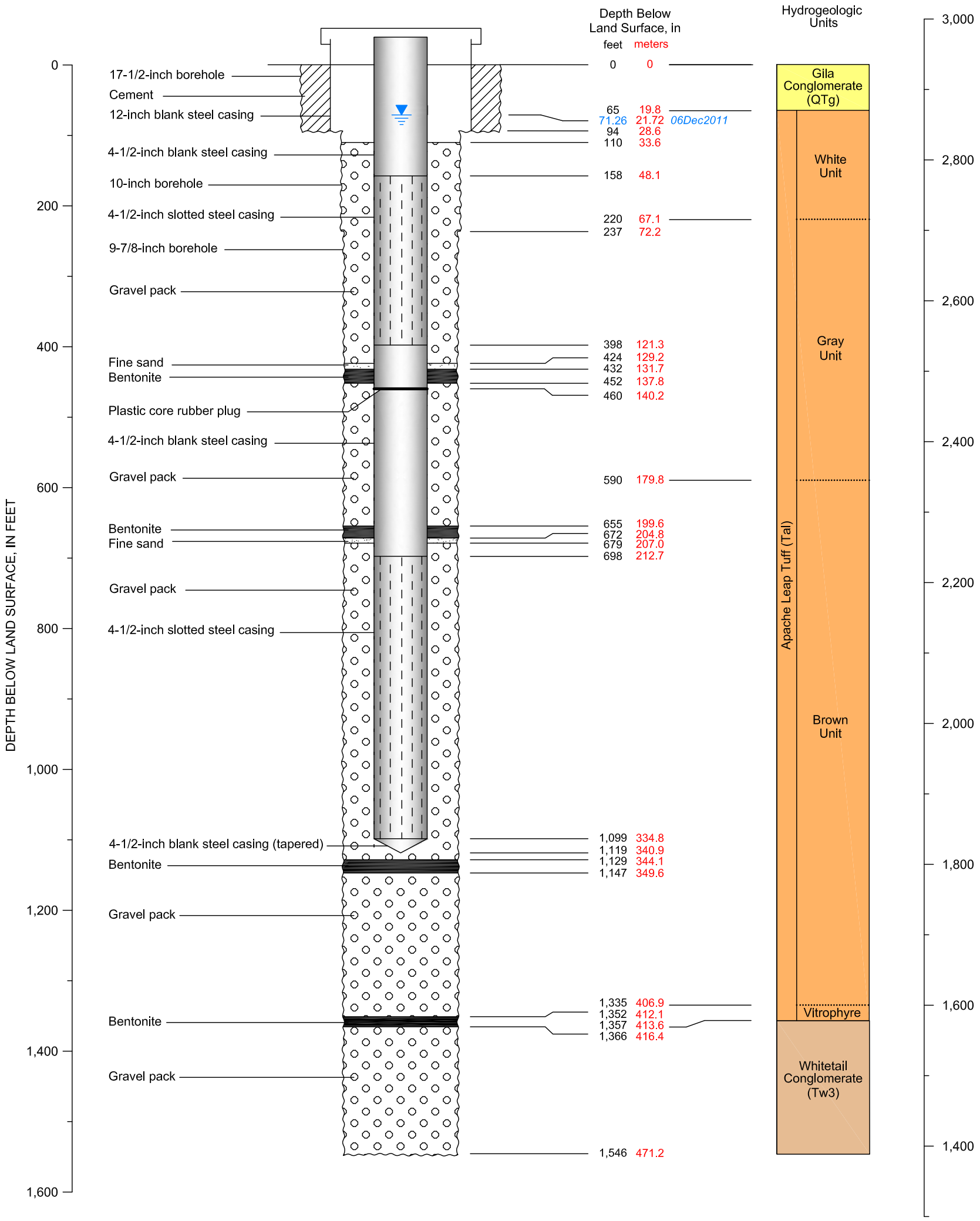
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HRES-09
DIAGRAM OF WELL CONSTRUCTION

Version: October 2015

FIGURE A-12

Drafting\605\WellSchematics_2015\HRESwells_SP83\HRES-9-WS_SP83\22October2015



CADASTRAL: (D-2-13) 12aac	ADWR NO: 55-911941
NORTHING: 829224.879	EASTING: 990434.231
LAND SURFACE ELEVATION: 2935.14 FEET AMSL	
DATUM: U.S. State Plane Coordinate System of 1983 Epoch 2011 (NAD83 NA2011) Arizona Central Zone (0202) North American Datum 1983 North American Vertical Datum of 1983	

EXPLANATION

Shallow non-pumping Water Level

Deep non-pumping Water Level

Resolution Copper Mining

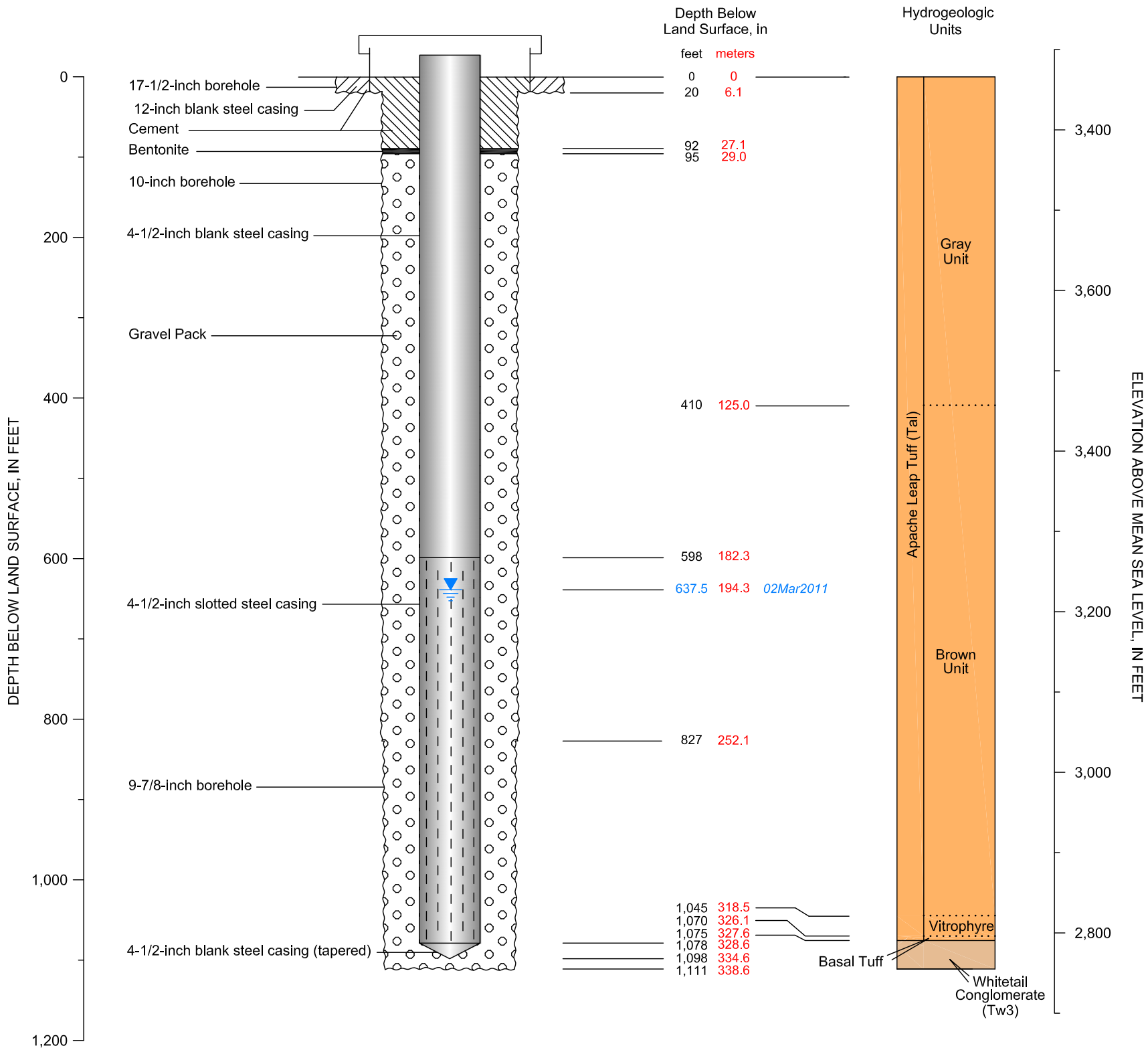
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HRES-10
DIAGRAM OF WELL CONSTRUCTION

Version: October 2015

FIGURE A-13

Drafting\605\WellSchematics_2015\HRESwells_SP83\HRES-10-WS_SP83\22October2015



CADASTRAL: (D-2-13) 15daa	ADWR NO: 55-912021
NORTHING: 821967.096	EASTING: 980584.270
LAND SURFACE ELEVATION: 3466.09 FEET AMSL	
DATUM: U.S. State Plane Coordinate System of 1983 Epoch 2011 (NAD83 NA2011) Arizona Central Zone (0202) North American Datum 1983 North American Vertical Datum of 1983	

EXPLANATION

Shallow non-pumping Water Level

Deep non-pumping Water Level

Resolution Copper Mining

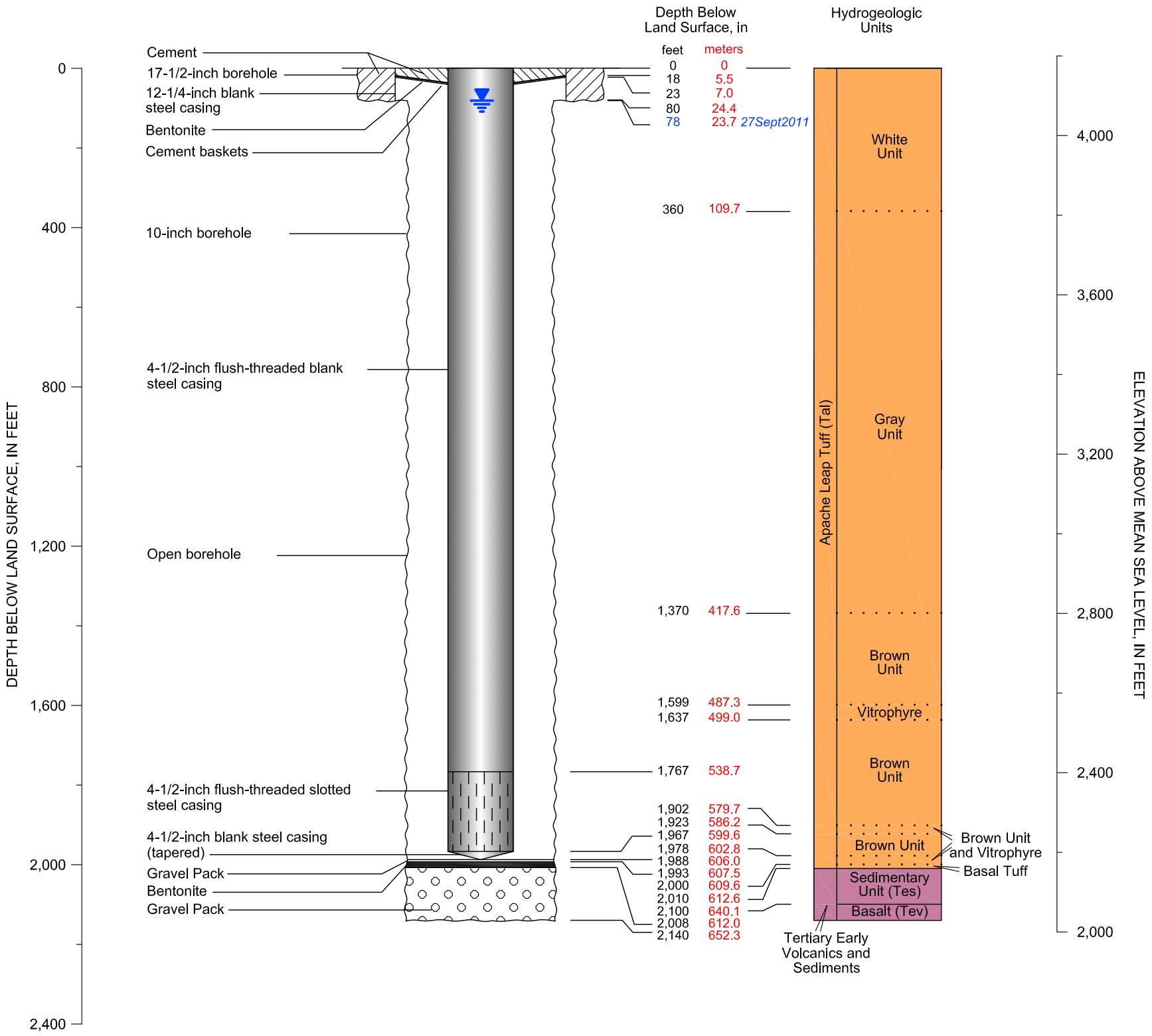
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Water Resource Consultants

HRES-11
DIAGRAM OF WELL CONSTRUCTION

Version: October 2015

FIGURE A-14

Drafting\605\WellSchematics_2015\HRESwells_SP83\HRES-11-WS_SP83\22October2015



CADASTRAL: (D-1-13) 21cbc	ADWR NO: 55-912917
NORTHING: 847210.324	EASTING: 963794.061
LAND SURFACE ELEVATION: 4168.58 FEET AMSL	
DATUM: U.S. State Plane Coordinate System of 1983 Epoch 2011 (NAD83 NA2011) Arizona Central Zone (0202) North American Datum 1983 North American Vertical Datum of 1983	

EXPLANATION

Shallow non-pumping Water Level

Deep non-pumping Water Level

Resolution Copper Mining

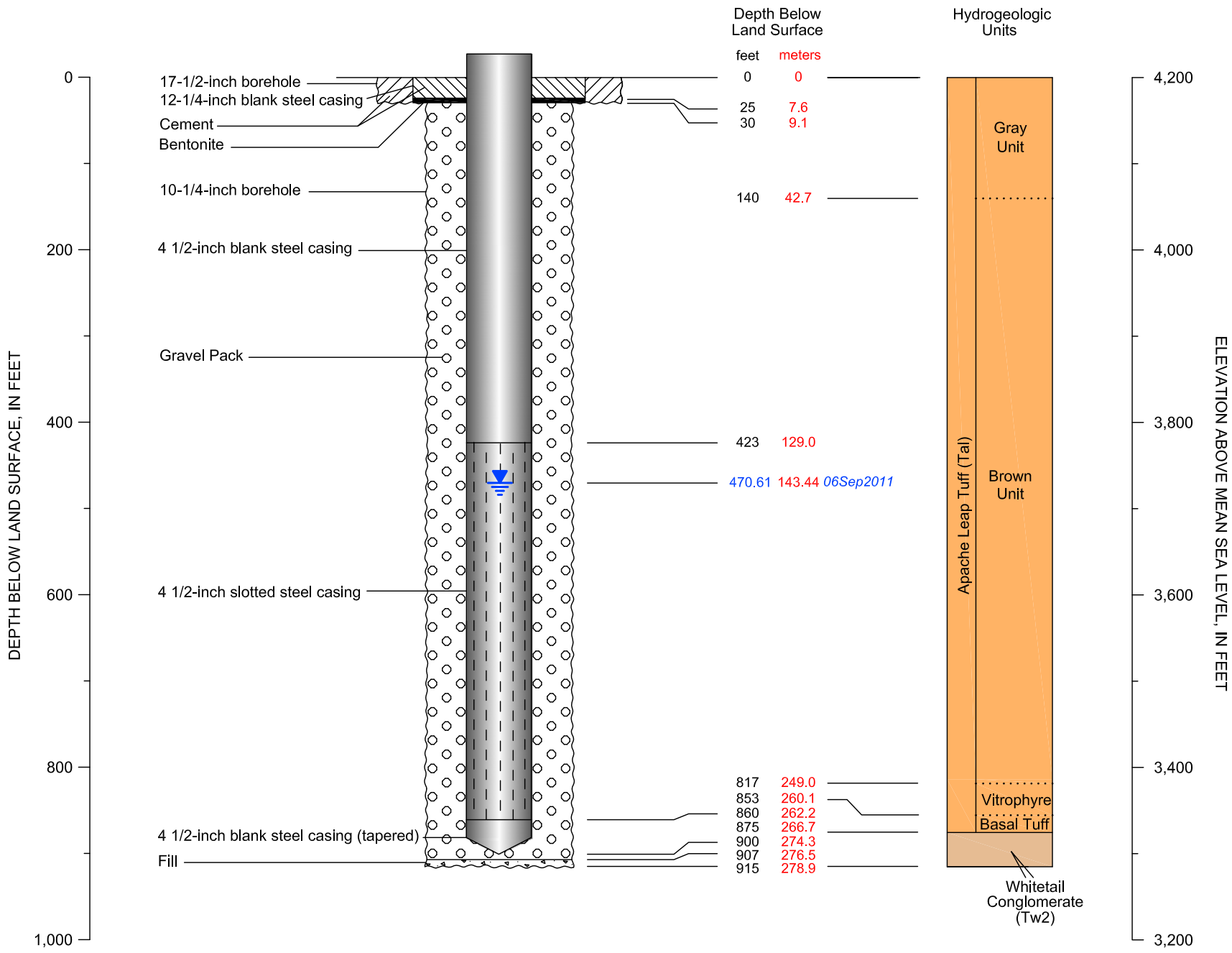
MONTGOMERY & ASSOCIATES
Water Resource Consultants

HRES-12
DIAGRAM OF WELL CONSTRUCTION

Version: October 2015

FIGURE A-15

Drafting\605\WellSchematics_2015\HRESwells_SP83\HRES-3-WS_SP83\22October2015



CADASTRAL: (D-2-13) 07abc	ADWR NO: 55-912967
NORTHING: 829164.988	EASTING: 962267.671
LAND SURFACE ELEVATION: 4199.09 FEET AMSL	
DATUM: U.S. State Plane Coordinate System of 1983 Epoch 2011 (NAD83 NA2011) Arizona Central Zone (0202) North American Datum 1983 North American Vertical Datum of 1983	

EXPLANATION

Non-pumping Water Level

Resolution Copper Mining

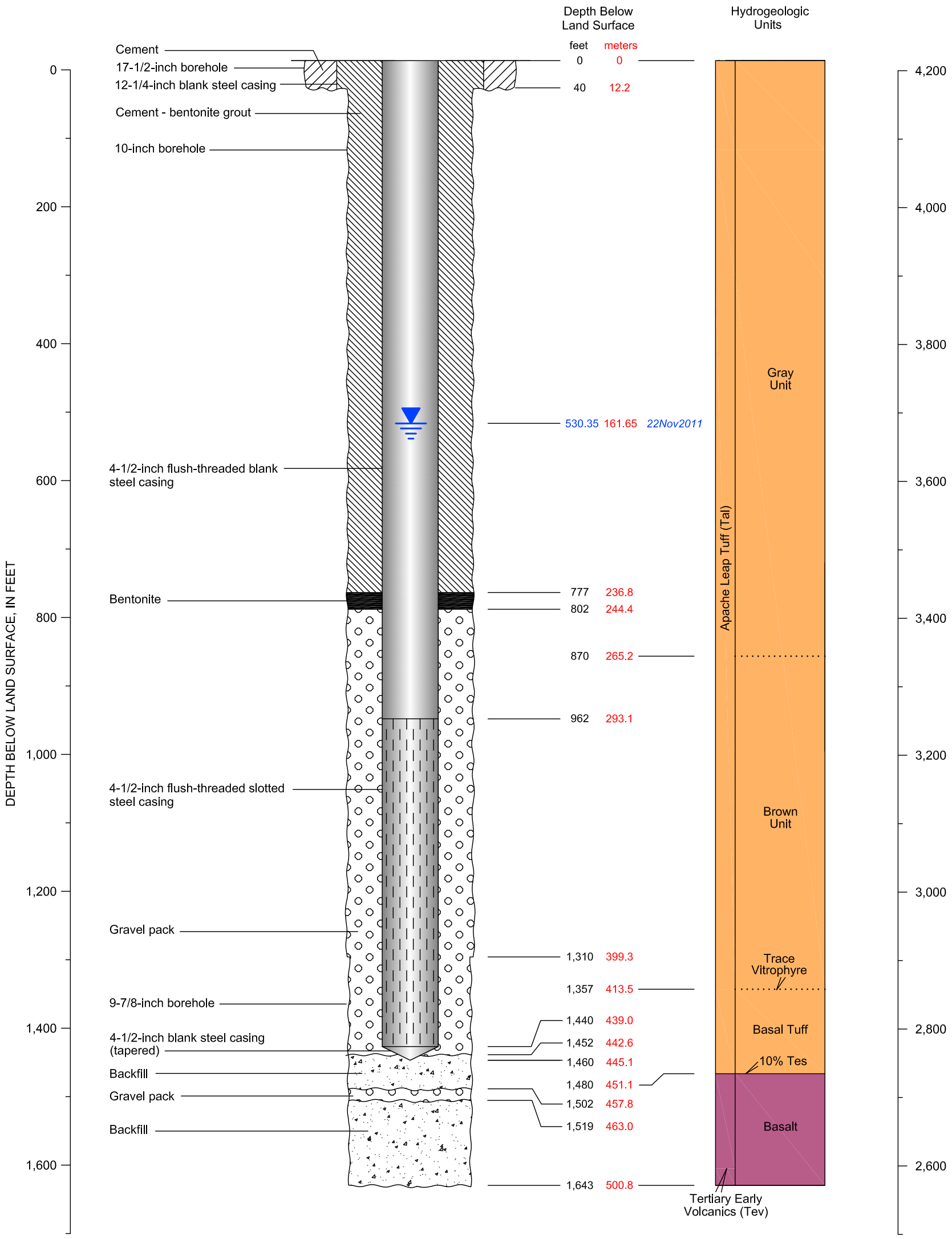
MONTGOMERY & ASSOCIATES
Water Resource Consultants

HRES-13
DIAGRAM OF WELL CONSTRUCTION

Version: October 2015

FIGURE A-16

Drafting\605\WellSchematics_2015\HRESwells_SP83\HRES-13-WS_SP83\22October2015



CADASTRAL: (D-1-13) 22dba	ADWR NO: 55-912993
NORTHING: 848272.497	EASTING: 972011.005
LAND SURFACE ELEVATION: 4214.69 FEET AMSL	
DATUM: U.S. State Plane Coordinate System of 1983 Epoch 2011 (NAD83 NA2011) Arizona Central Zone (0202) North American Datum 1983 North American Vertical Datum of 1983	

EXPLANATION

Shallow non-pumping Water Level

Deep non-pumping Water Level

Resolution Copper Mining

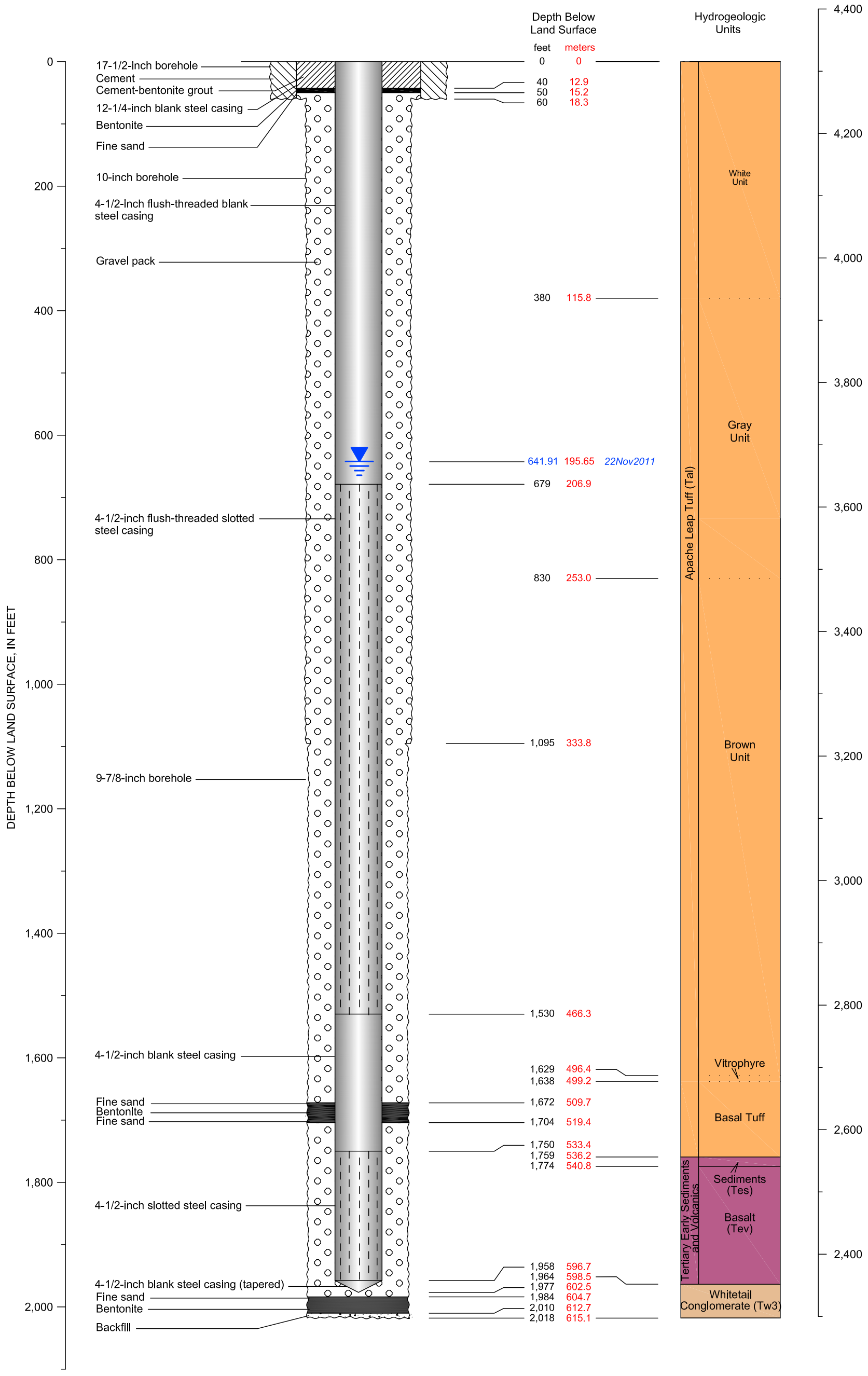
MONTGOMERY & ASSOCIATES
Water Resource Consultants

HRES-14
DIAGRAM OF WELL CONSTRUCTION

Version: October 2015

FIGURE A-17

Drafting\605\WellSchematics_2015\HRESwells_SP83\HRES-14-WS_SP83\22October2015



CADASTRAL: (D-1-13) 27dbc	ADWR NO: 55-913292
NORTHING: 842357.318	EASTING: 971983.412
LAND SURFACE ELEVATION: 4315.37 FEET AMSL	
DATUM: U.S. State Plane Coordinate System of 1983 Epoch 2011 (NAD83 NA2011) Arizona Central Zone (0202) North American Datum 1983 North American Vertical Datum of 1983	

EXPLANATION

Non-pumping Water Level

Resolution Copper Mining

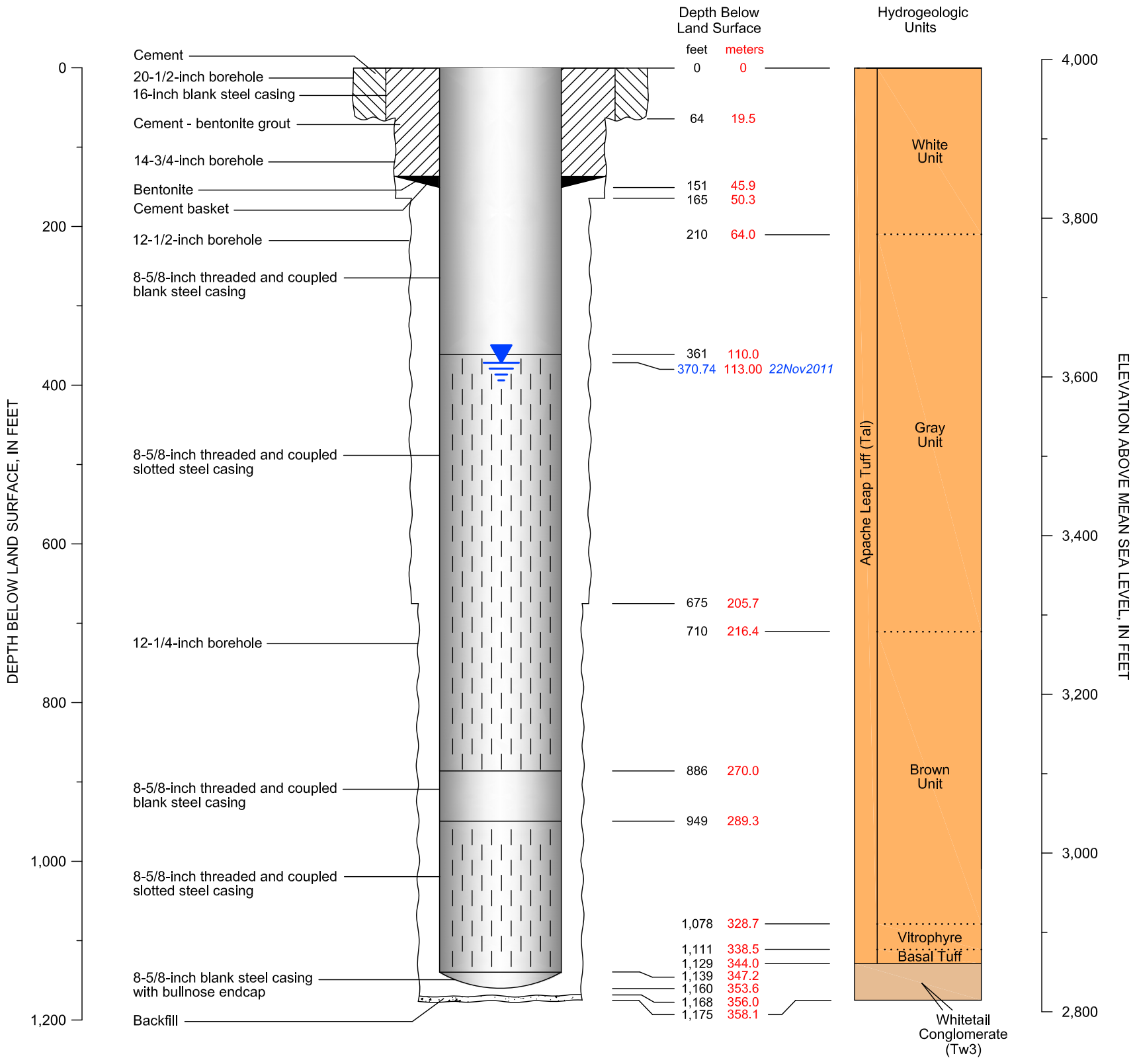
MONTGOMERY & ASSOCIATES
Water Resource Consultants

HRES-15
DIAGRAM OF WELL CONSTRUCTION

Version: October 2015

FIGURE A-18

Drafting\605\WellSchematics_2015\HRESwells_SP83\HRES-15-WS_SP83\22October2015



CADASTRAL: (D-2-13) 04dba	ADWR NO: 55-913342
NORTHING: 832538.408	EASTING: 973982.778
LAND SURFACE ELEVATION: 3989.59 FEET AMSL	
DATUM: U.S. State Plane Coordinate System of 1983 Epoch 2011 (NAD83 NA2011) Arizona Central Zone (0202) North American Datum 1983 North American Vertical Datum of 1983	

EXPLANATION

Shallow non-pumping Water Level

Deep non-pumping Water Level

Resolution Copper Mining

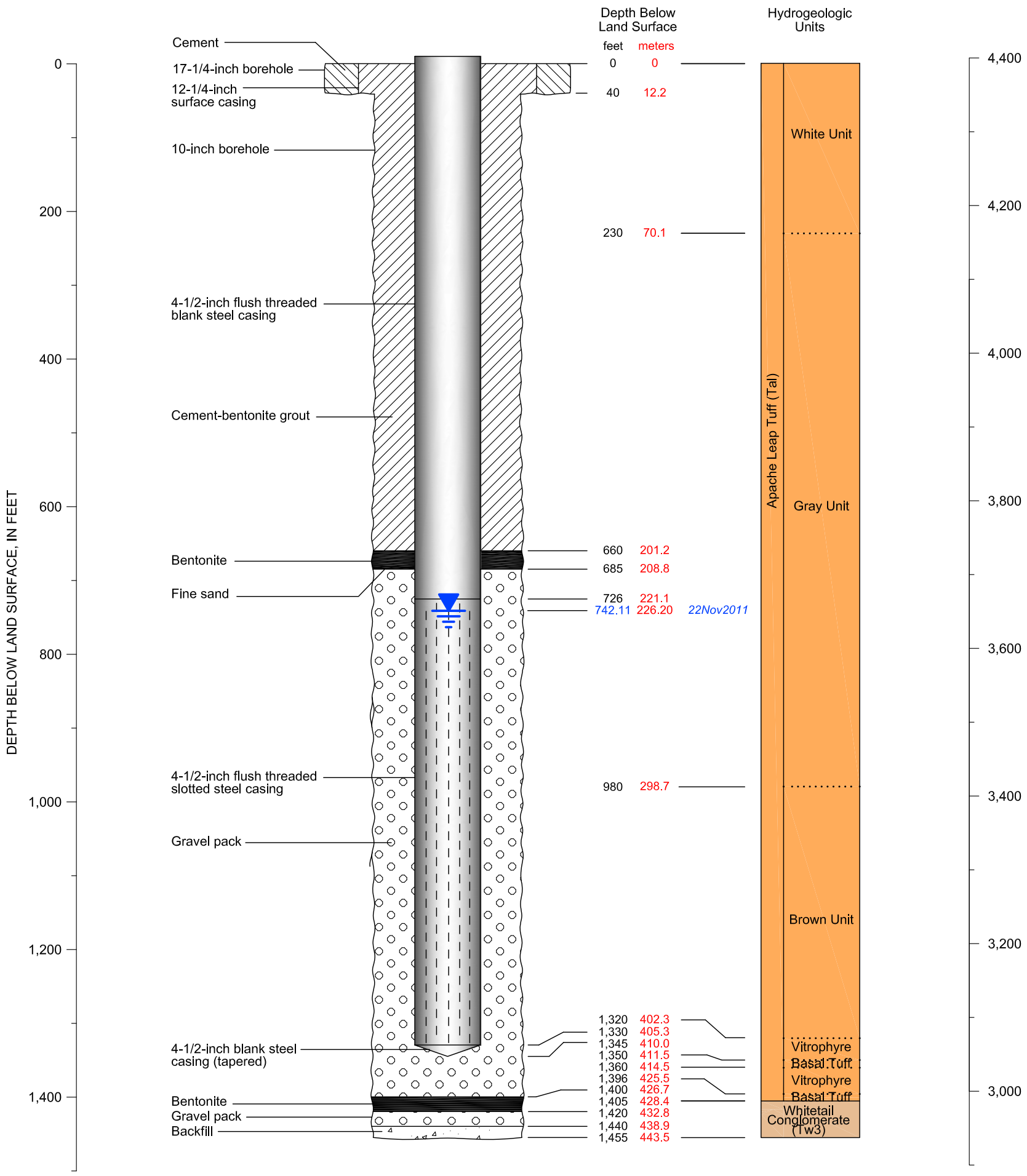
MONTGOMERY & ASSOCIATES
Water Resource Consultants

HRES-16
DIAGRAM OF WELL CONSTRUCTION

Version: October 2015

FIGURE A-19

Drafting\605\WellSchematics_2015\HREStwells_SP83\HRES-16-WS_SP83\22October2015



CADASTRAL: (D-1-13) 26dcc	ADWR NO: 55-913427
NORTHING: 840709.579	EASTING: 976950.799
LAND SURFACE ELEVATION: 4392.33 FEET AMSL	
DATUM: U.S. State Plane Coordinate System of 1983 Epoch 2011 (NAD83 NA2011) Arizona Central Zone (0202) North American Datum 1983 North American Vertical Datum of 1983	

EXPLANATION

Non-pumping Water Level

Resolution Copper Mining

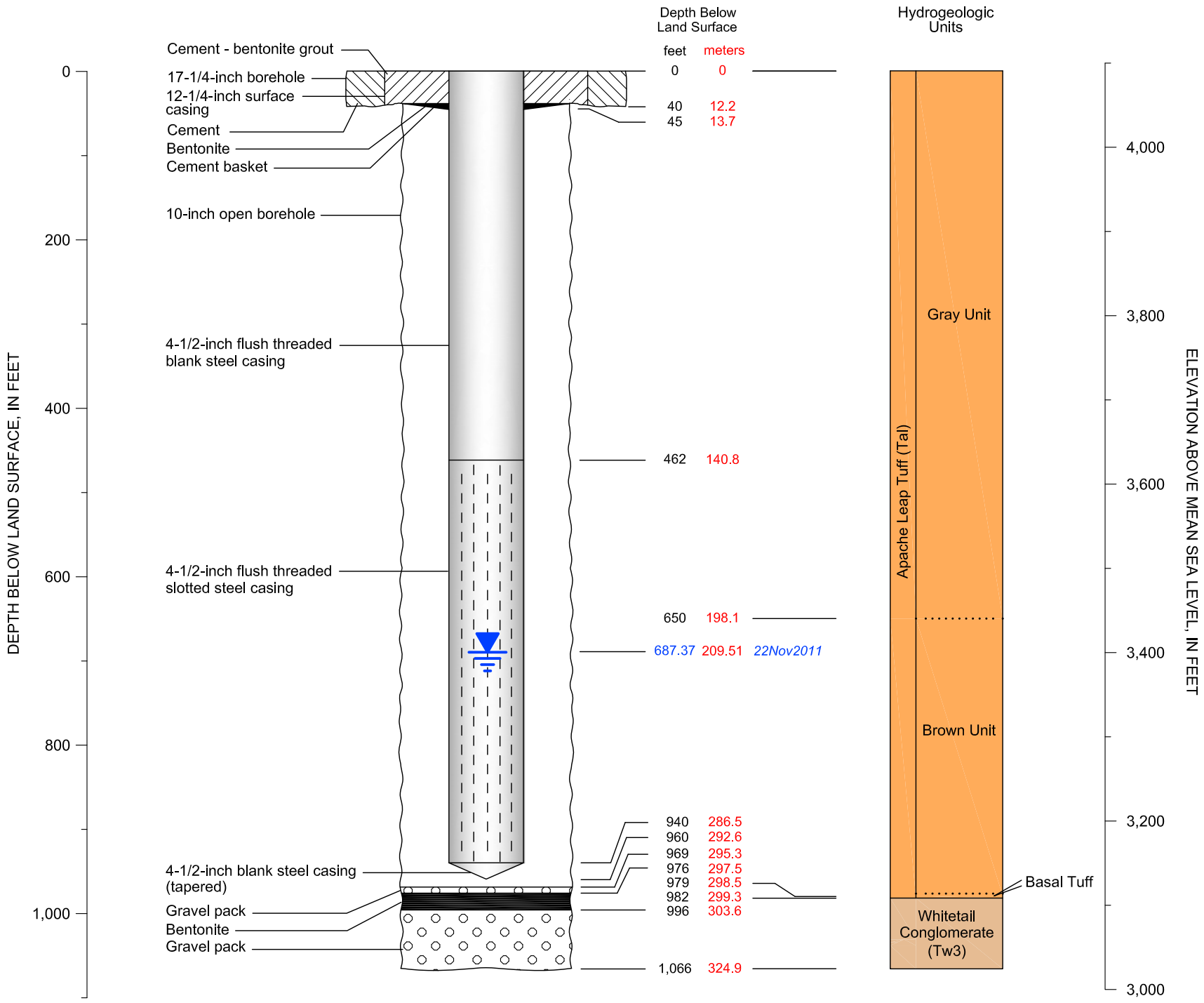
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Water Resource Consultants

HRES-17
DIAGRAM OF WELL CONSTRUCTION

Version: October 2015

FIGURE A-20

Drafting\605\WellSchematics_2015\HRESwells_SP83\HRES-17-WS_SP83\22October2015



CADASTRAL: (D-2-13) 03bba	ADWR NO: 55-913308
NORTHING: 834909.703	EASTING: 976321.471
LAND SURFACE ELEVATION: 4090.44 FEET AMSL	
DATUM: U.S. State Plane Coordinate System of 1983 Epoch 2011 (NAD83 NA2011) Arizona Central Zone (0202) North American Datum 1983 North American Vertical Datum of 1983	

EXPLANATION

Shallow non-pumping Water Level

Deep non-pumping Water Level

Resolution Copper Mining

MONTGOMERY & ASSOCIATES
Water Resource Consultants

HRES-18
DIAGRAM OF WELL CONSTRUCTION

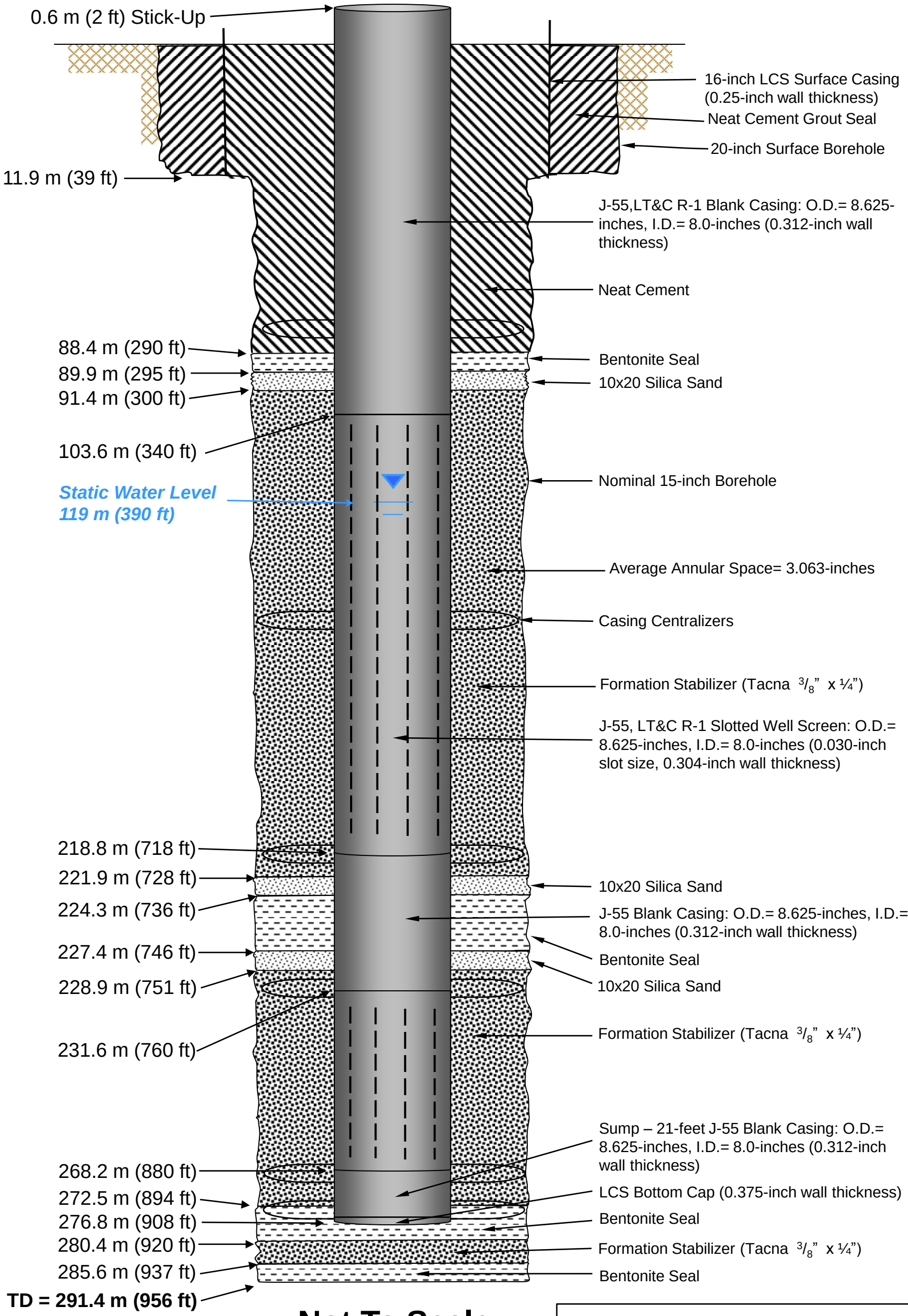
Version: October 2015

FIGURE A-21

Drafting\605\WellSchematics_2015\HRESwells_SP83\HRES-18-WS_SP83\22October2015

HRES-19

ADWR No. 55-914789

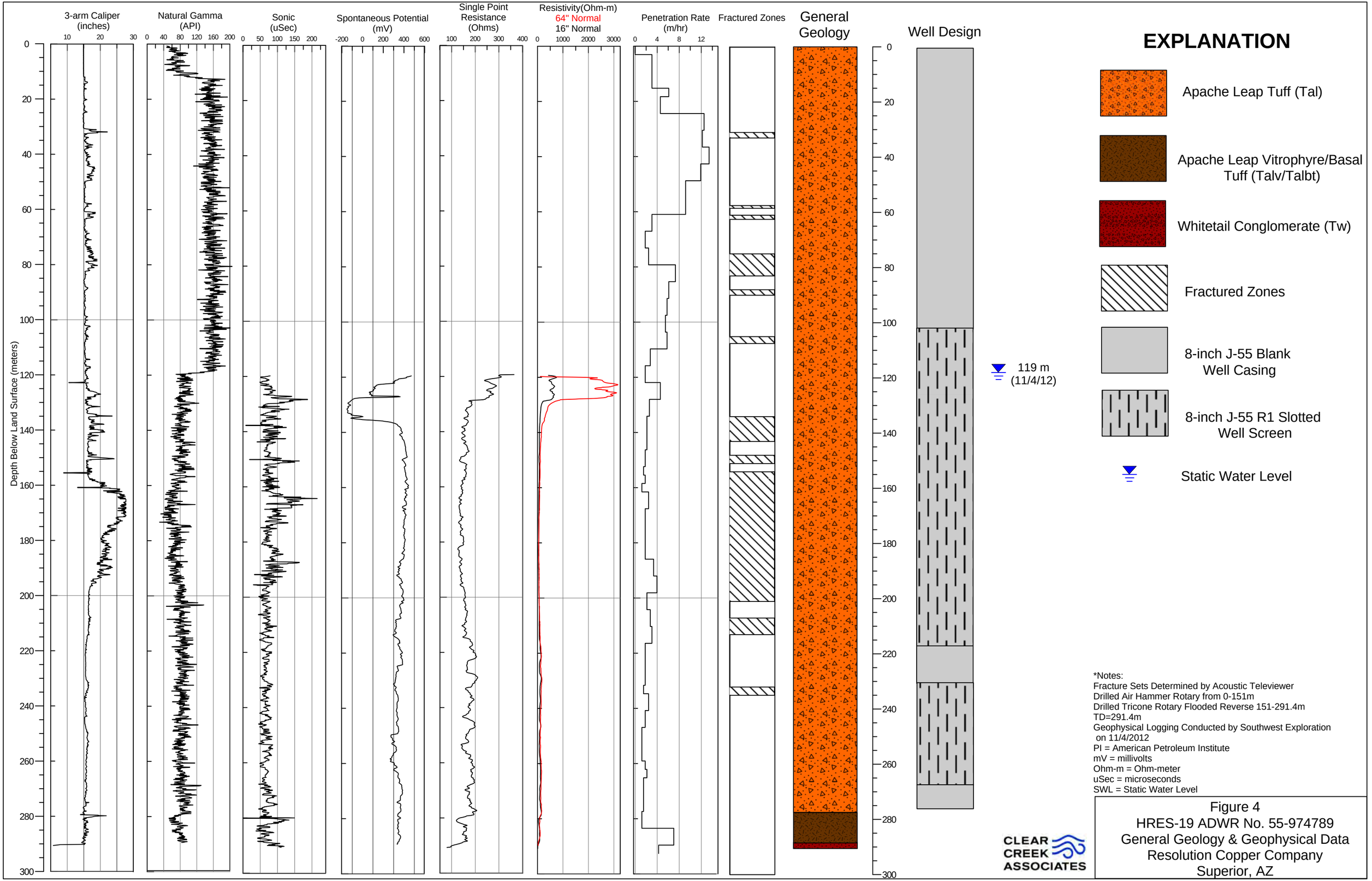


Not To Scale

Notes: LCS = Low Carbon Steel
O.D.= Outside Diameter
I.D. = Inside Diameter

CLEAR CREEK ASSOCIATES

Figure 3
HRES-19 Well
As-Built Diagram
ADWR No. 55-914789
Completion Date
11/8/2012
Job No. 313001



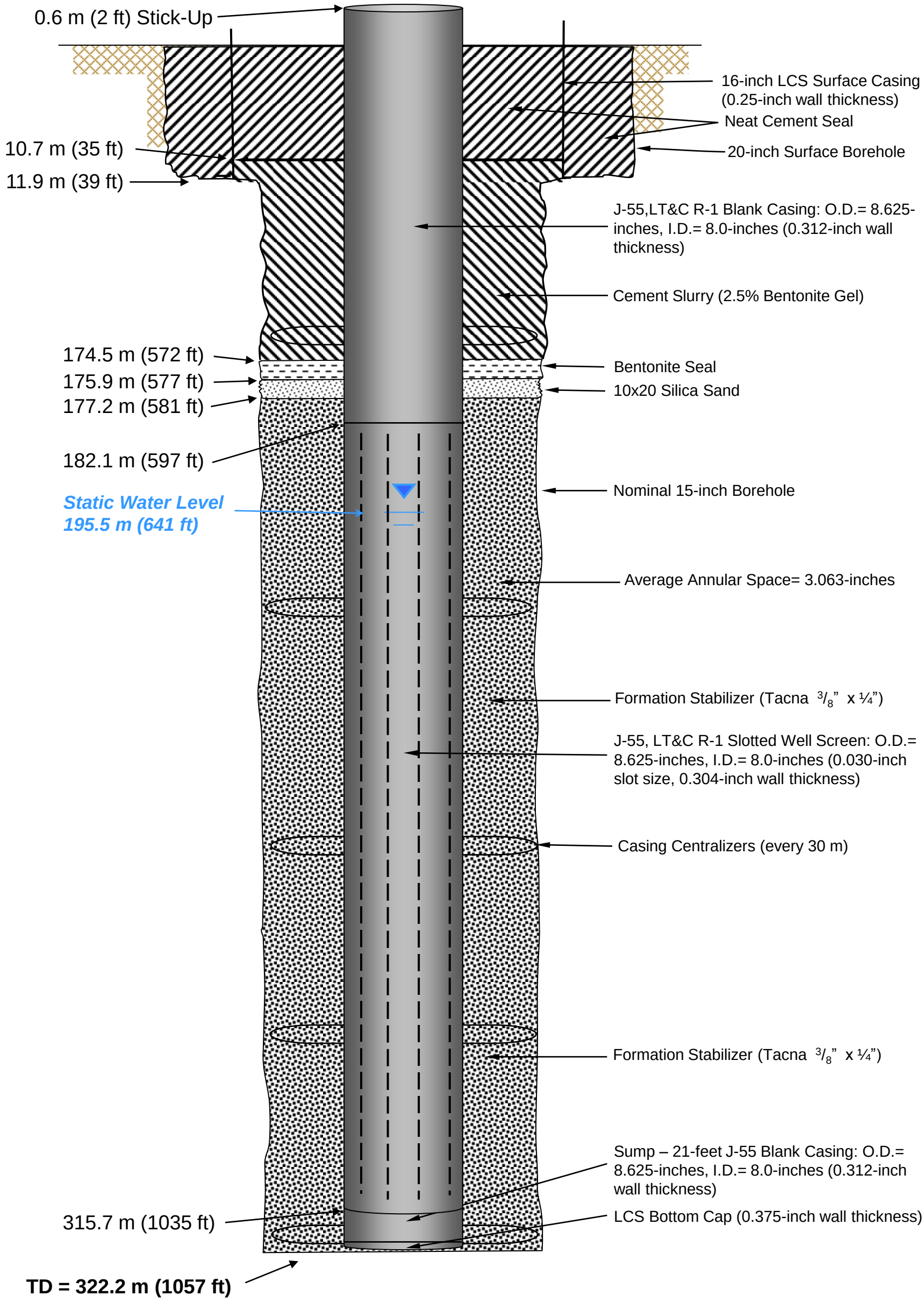
*Notes:
Fracture Sets Determined by Acoustic Televiewer
Drilled Air Hammer Rotary from 0-151m
Drilled Tricone Rotary Flooded Reverse 151-291.4m
TD=291.4m
Geophysical Logging Conducted by Southwest Exploration on 11/4/2012
PI = American Petroleum Institute
mV = millivolts
Ohm-m = Ohm-meter
uSec = microseconds
SWL = Static Water Level

CLEAR CREEK ASSOCIATES

Figure 4
HRES-19 ADWR No. 55-974789
General Geology & Geophysical Data
Resolution Copper Company
Superior, AZ

HRES-20

ADWR No. 55-914790

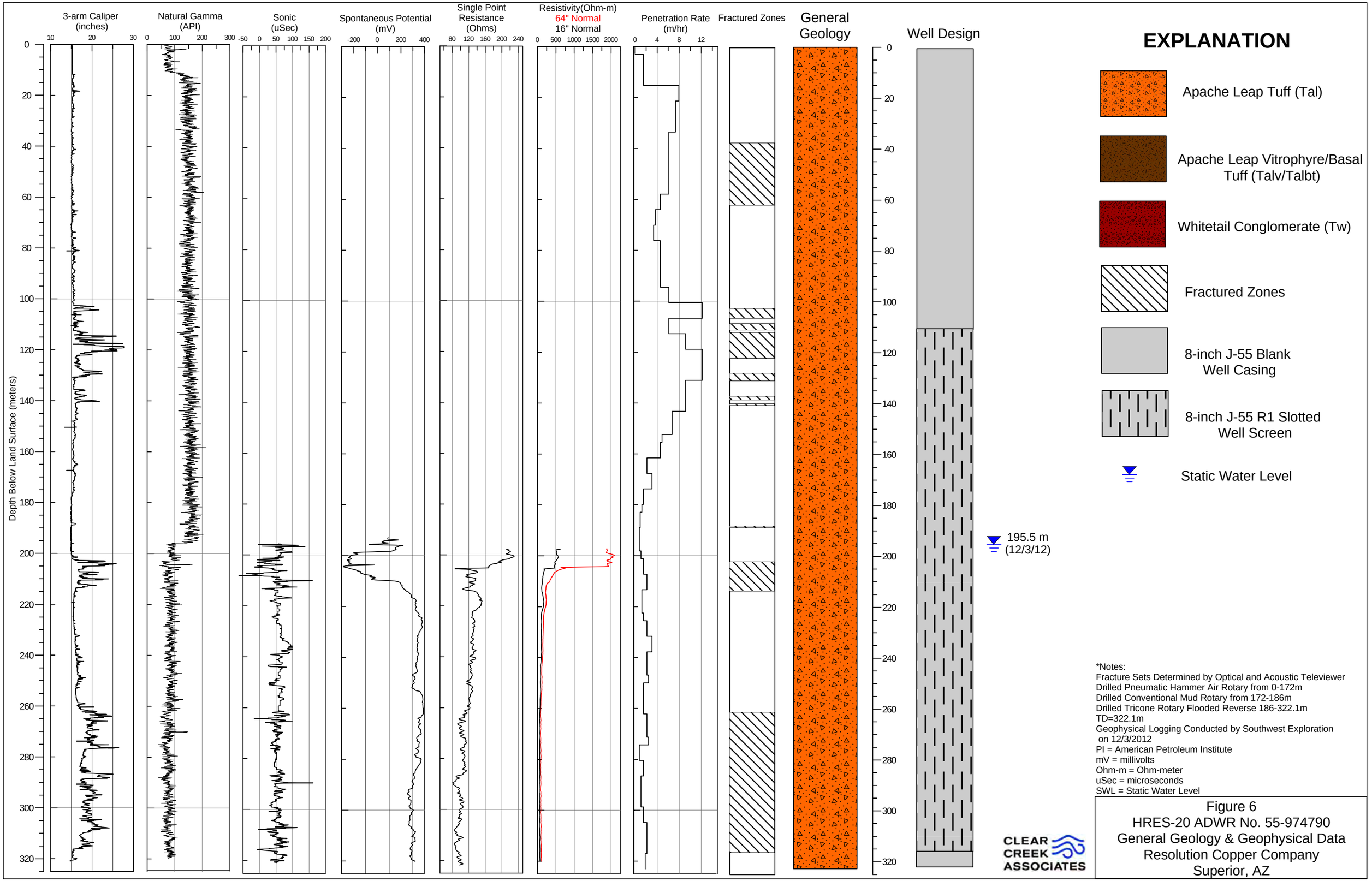


Not To Scale

Notes: LCS = Low Carbon Steel
O.D.= Outside Diameter
I.D. = Inside Diameter

CLEAR CREEK ASSOCIATES

Figure 5
HRES-20 Well
As-Built Diagram
ADWR No. 55-914789
Completion Date
12/7/2012
Job No. 313001



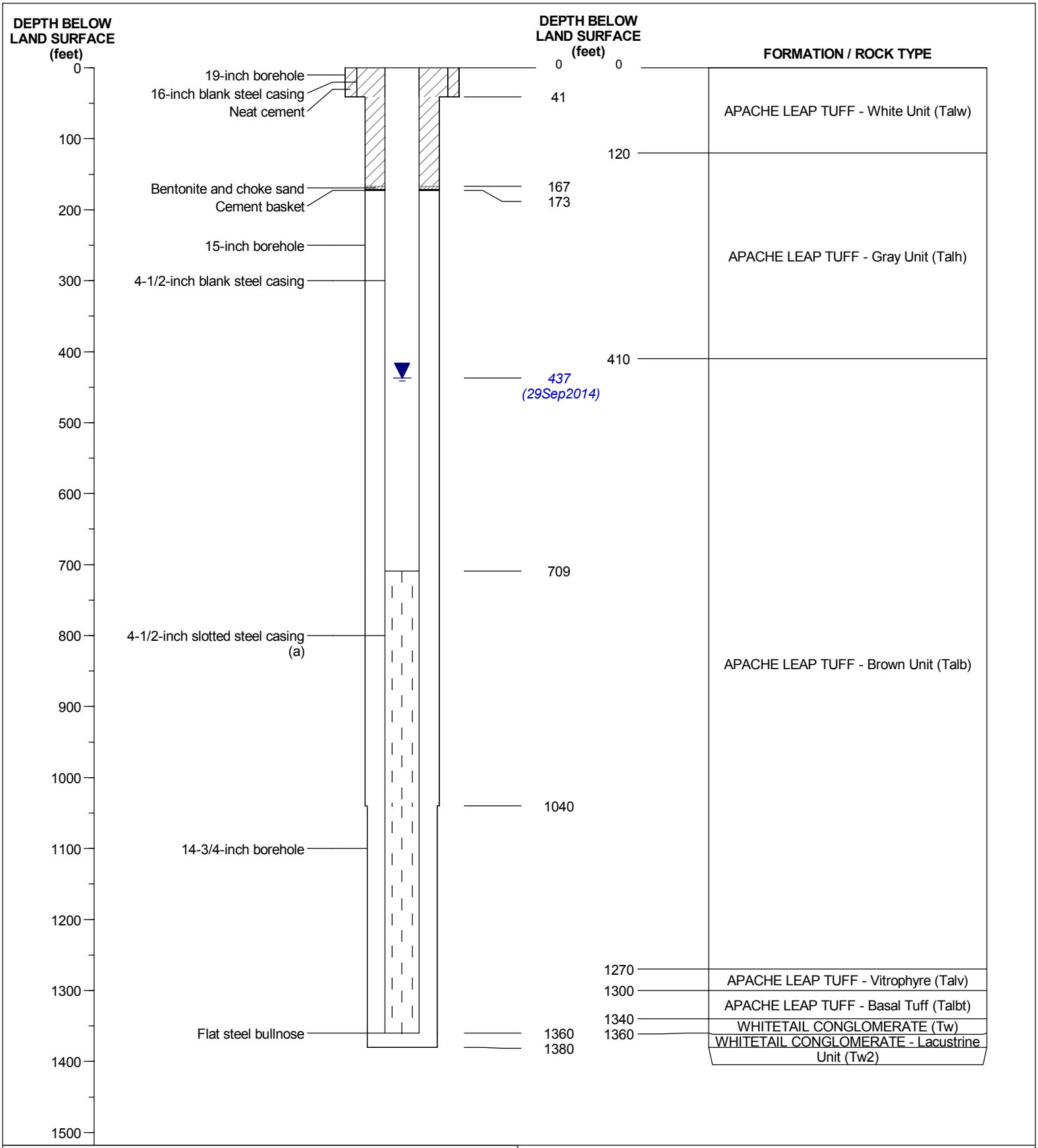
EXPLANATION

- Apache Leap Tuff (Tal)
- Apache Leap Vitrophyre/Basal Tuff (Talv/Talbt)
- Whitetail Conglomerate (Tw)
- Fractured Zones
- 8-inch J-55 Blank Well Casing
- 8-inch J-55 R1 Slotted Well Screen
- Static Water Level

*Notes:
Fracture Sets Determined by Optical and Acoustic Televiewer
Drilled Pneumatic Hammer Air Rotary from 0-172m
Drilled Conventional Mud Rotary from 172-186m
Drilled Tricone Rotary Flooded Reverse 186-322.1m
TD=322.1m
Geophysical Logging Conducted by Southwest Exploration on 12/3/2012
PI = American Petroleum Institute
mV = millivolts
Ohm-m = Ohm-meter
uSec = microseconds
SWL = Static Water Level

CLEAR CREEK ASSOCIATES

Figure 6
HRES-20 ADWR No. 55-974790
General Geology & Geophysical Data
Resolution Copper Company
Superior, AZ



NORTHING: 832967.78	EASTING: 967381.391
CADASTRAL: (D-02-13)05acc	STATE WELL NO: 55-916689
DATUM: U.S. State Plane (NAD83NA2011)	
LAND SURFACE ELEVATION : 4107.38 FEET, AMSL	
EXPLANATION:	

HRES-21

SCHEMATIC DIAGRAM OF WELL CONSTRUCTION

Client: Resolution Copper Mining

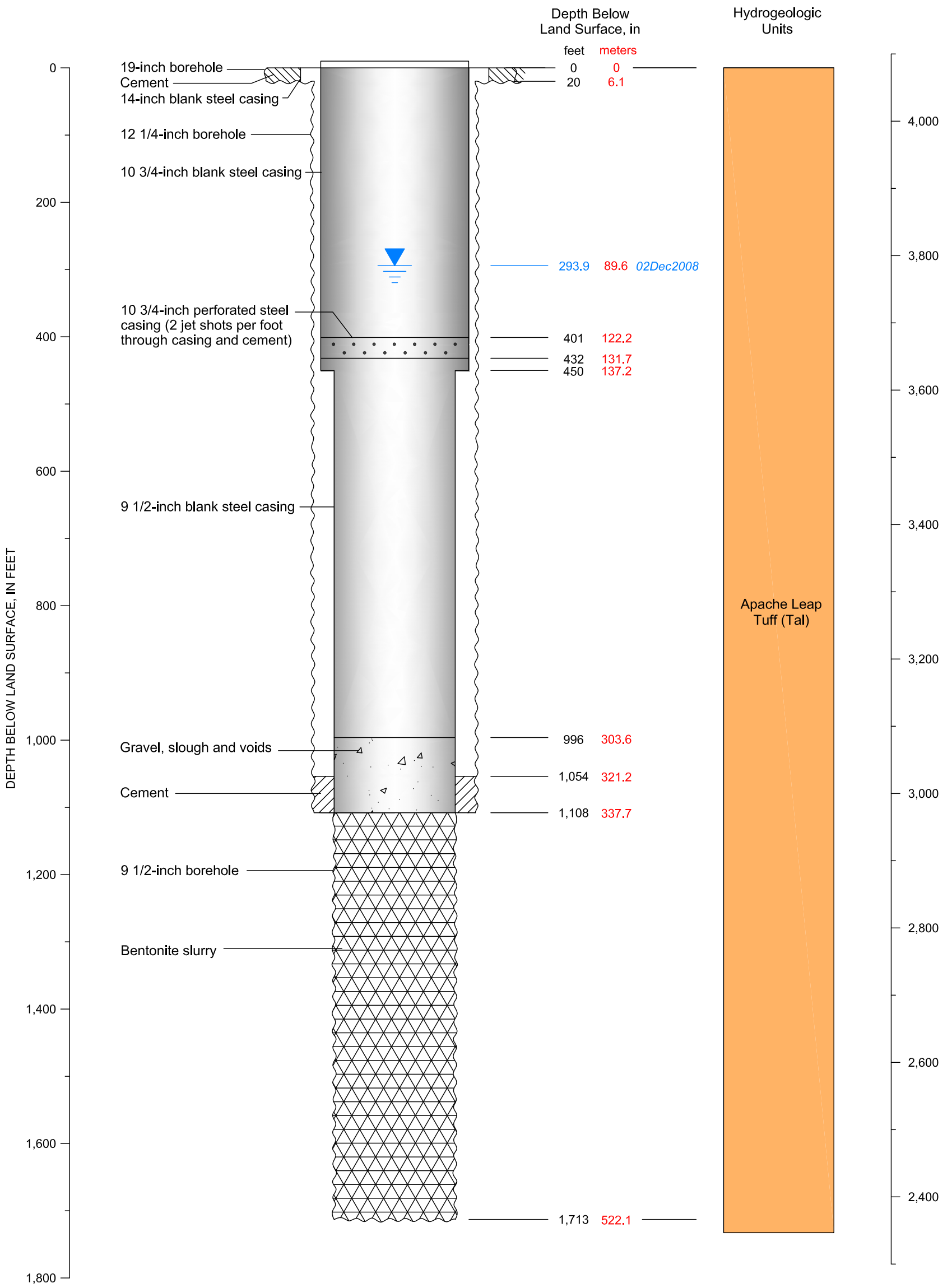
Project: Resolution

Location: Pinal County, Arizona

MONTGOMERY & ASSOCIATES

VERSION: 23Oct2015

FIGURE A-24



CADASTRAL: (D-1-13) 29dcc	ADWR NO: 55-526592
NORTHING: 841129.208	EASTING: 967933.915
LAND SURFACE ELEVATION: 4076.88 FEET AMSL	
DATUM: U.S. State Plane Coordinate System of 1983 Epoch 2011 (NAD83 NA2011) Arizona Central Zone (0202) North American Datum 1983 North American Vertical Datum of 1983	

EXPLANATION

Non-pumping Water Level

Resolution Copper Mining

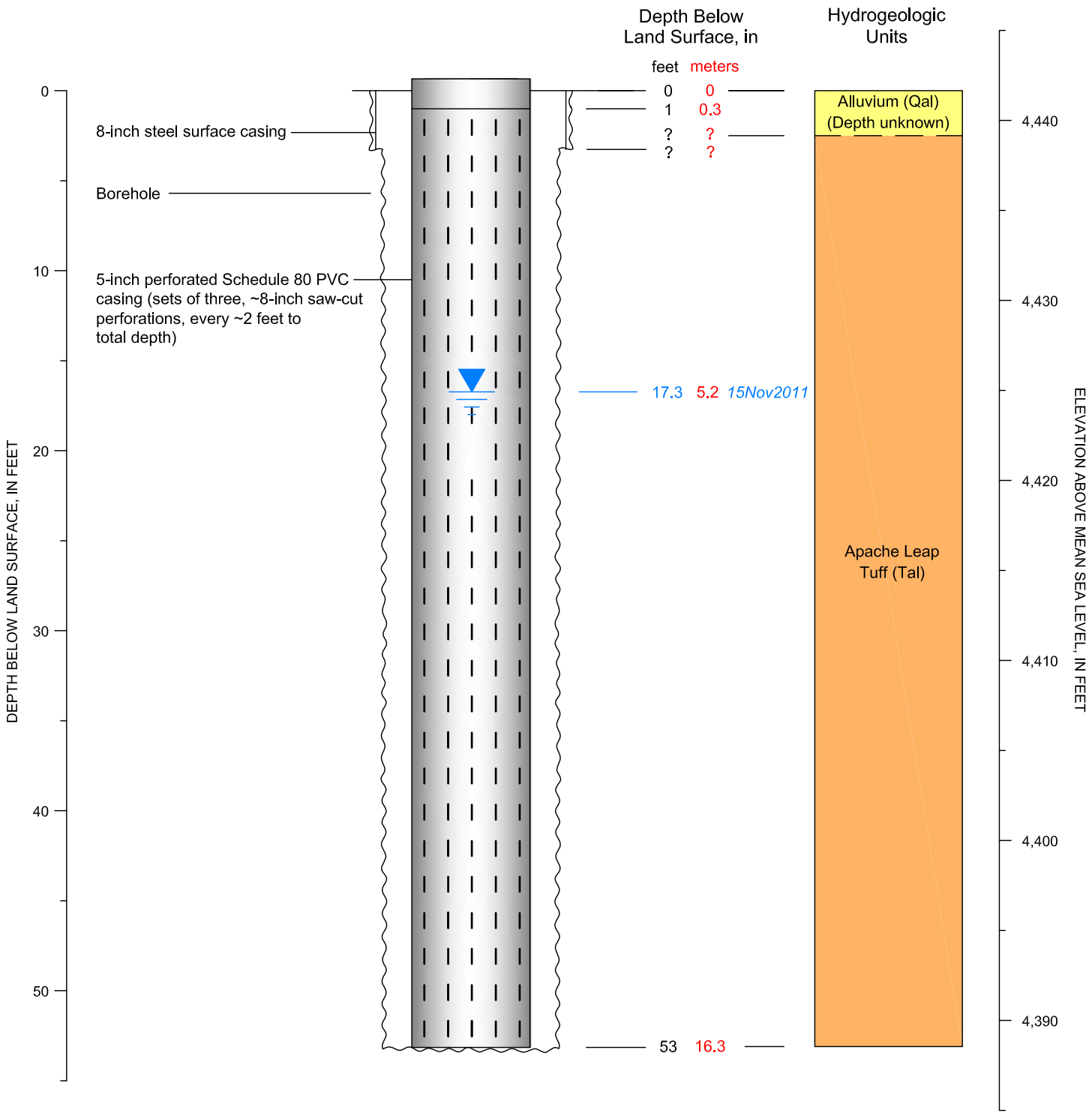
MONTGOMERY & ASSOCIATES
Water Resource Consultants

OAK FLAT WELL
DIAGRAM OF WELL CONSTRUCTION

Version: October 2015

FIGURE A-25

Drafting\605\WellSchematics_2015\HRESwells_SP83\OakFlat_WS_SP83\22October2015



CADASTRAL: (D-1-13) 14dbd	ADWR NO: Not registered
NORTHING: 852431.030	EASTING: 977608.906
LAND SURFACE ELEVATION: 4441.65 FEET AMSL	
DATUM: U.S. State Plane Coordinate System of 1983 Epoch 2011 (NAD83 NA2011) Arizona Central Zone (0202) North American Datum 1983 North American Vertical Datum of 1983	

EXPLANATION

Non-pumping Water Level

Resolution Copper Mining

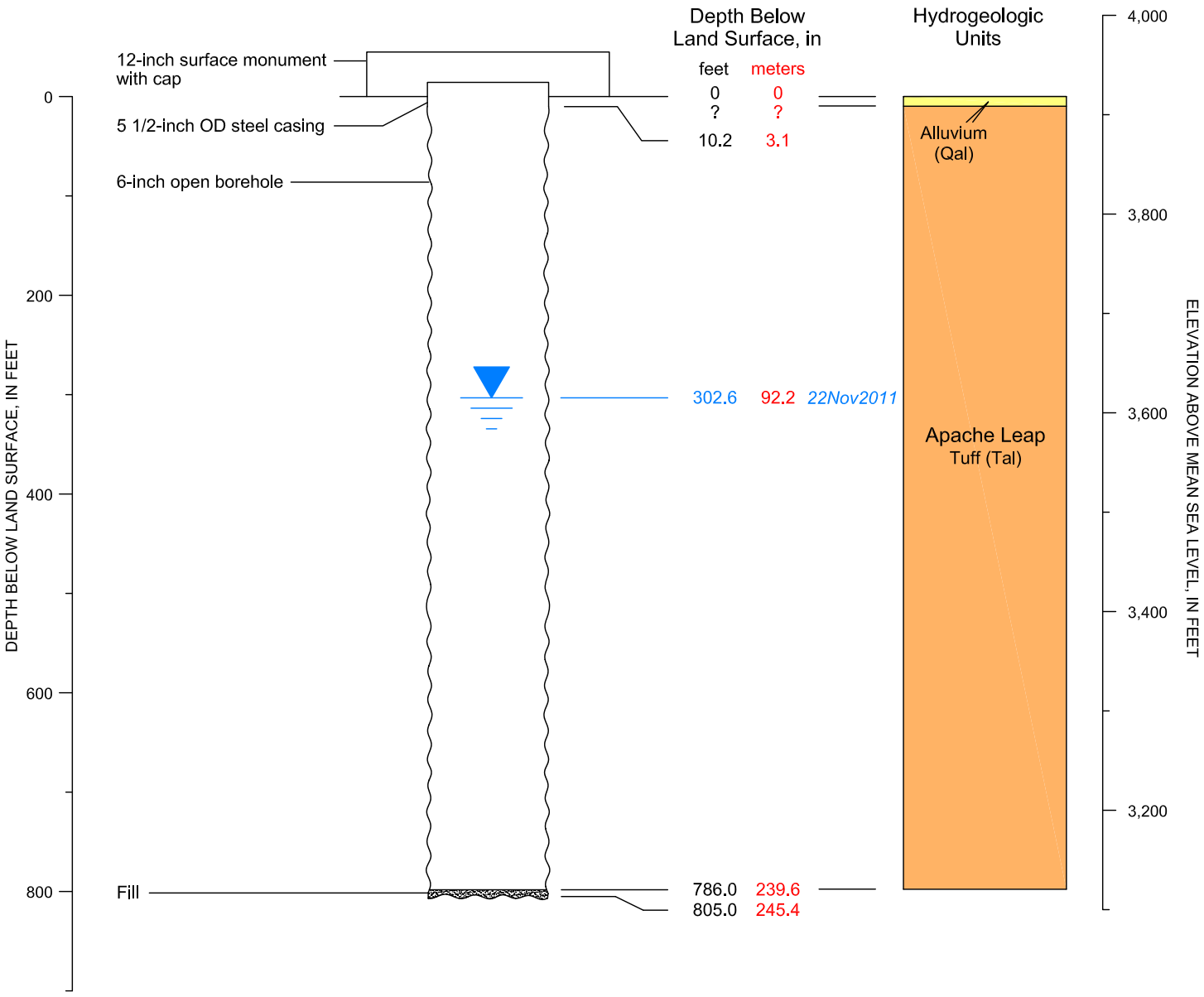
MONTGOMERY & ASSOCIATES
Water Resource Consultants

MIDDLE WELL
DIAGRAM OF WELL CONSTRUCTION

Version: October 2015

FIGURE A-26

Drafting\605\WellSchematics_2015\HREStells_SP83\Middle_WS_SP83\22October2015



CADASTRAL: (D-2-13) 09abd	ADWR NO: 55-615246
NORTHING: 829455.906	EASTING: 973629.342
LAND SURFACE ELEVATION: 3918.33 FEET AMSL	
DATUM: U.S. State Plane Coordinate System of 1983 Epoch 2011 (NAD83 NA2011) Arizona Central Zone (0202) North American Datum 1983 North American Vertical Datum of 1983	

EXPLANATION

Non-pumping Water Level

Resolution Copper Mining

MONTGOMERY & ASSOCIATES
Water Resource Consultants

MJ-11
DIAGRAM OF WELL CONSTRUCTION

Version: October 2015

FIGURE A-27

Drafting\605\WellSchematics_2015\HRESwells_SP83\MJ-11_WS_SP83\22October2015

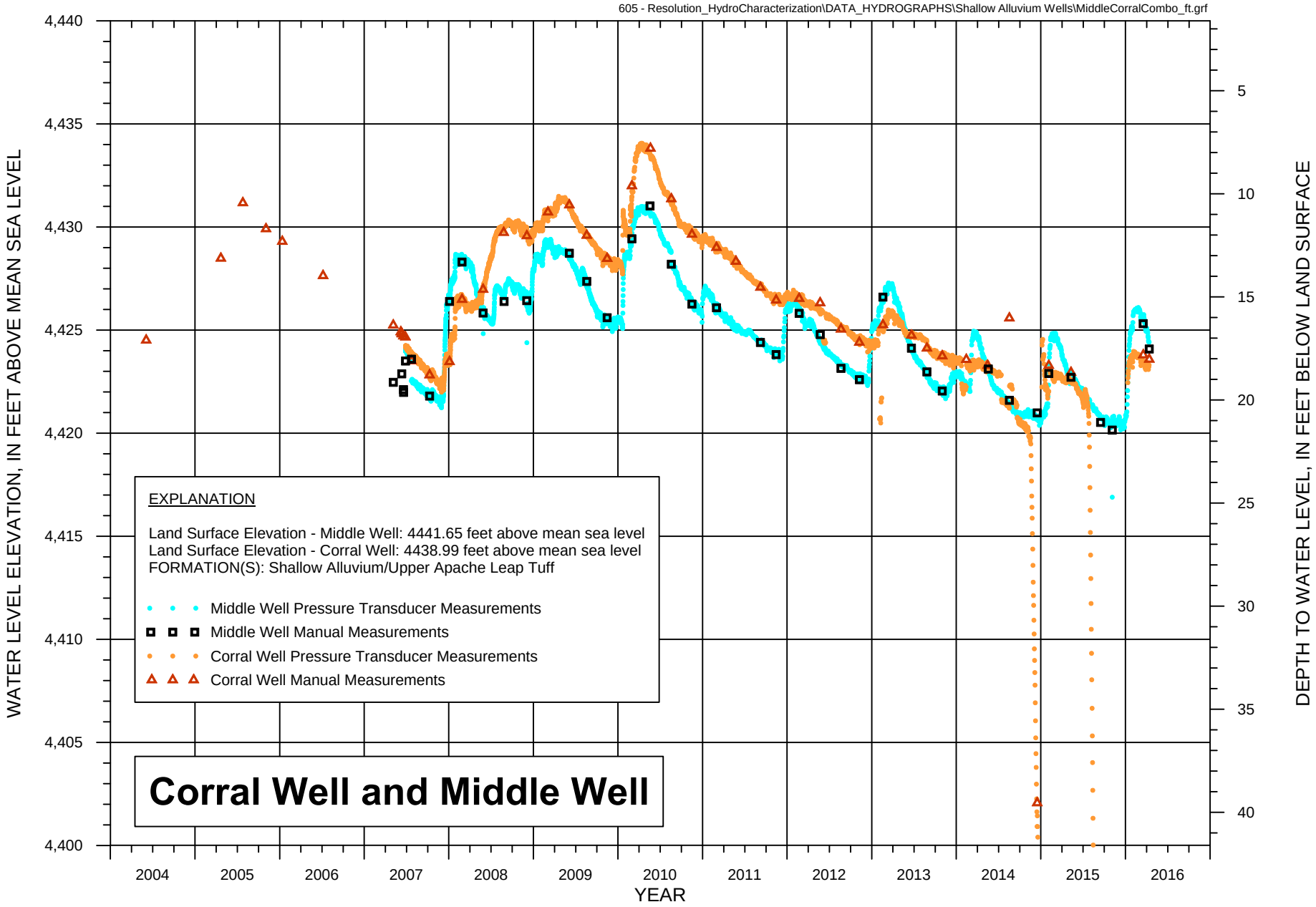


FIGURE A-1. WATER LEVEL HYDROGRAPH FOR CORRAL WELL AND MIDDLE WELL

Resolution Copper Mining

MONTGOMERY & ASSOCIATES

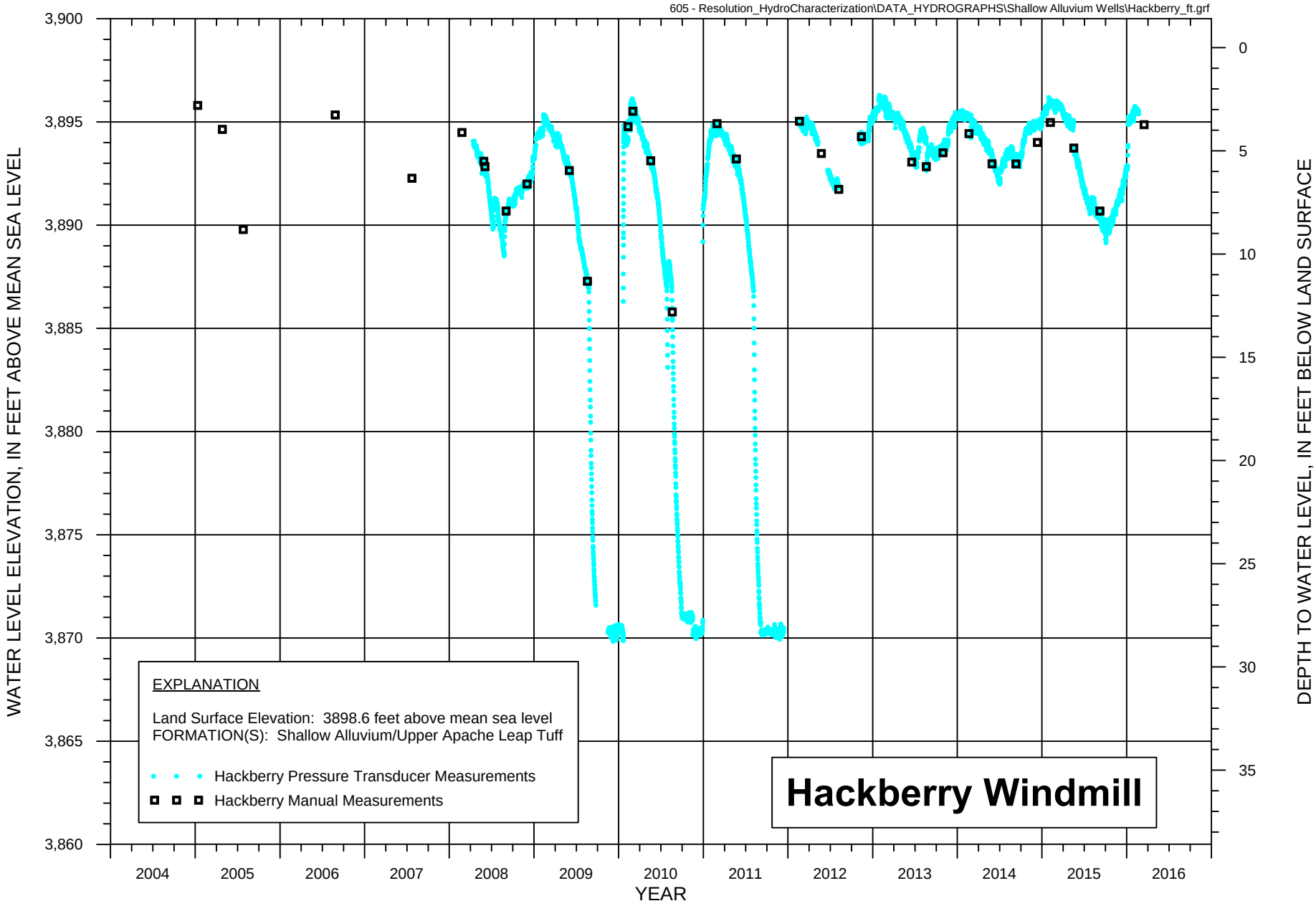


FIGURE A-2. WATER LEVEL HYDROGRAPH FOR HACKBERRY WINDMILL WELL

Resolution Copper Mining

MONTGOMERY & ASSOCIATES

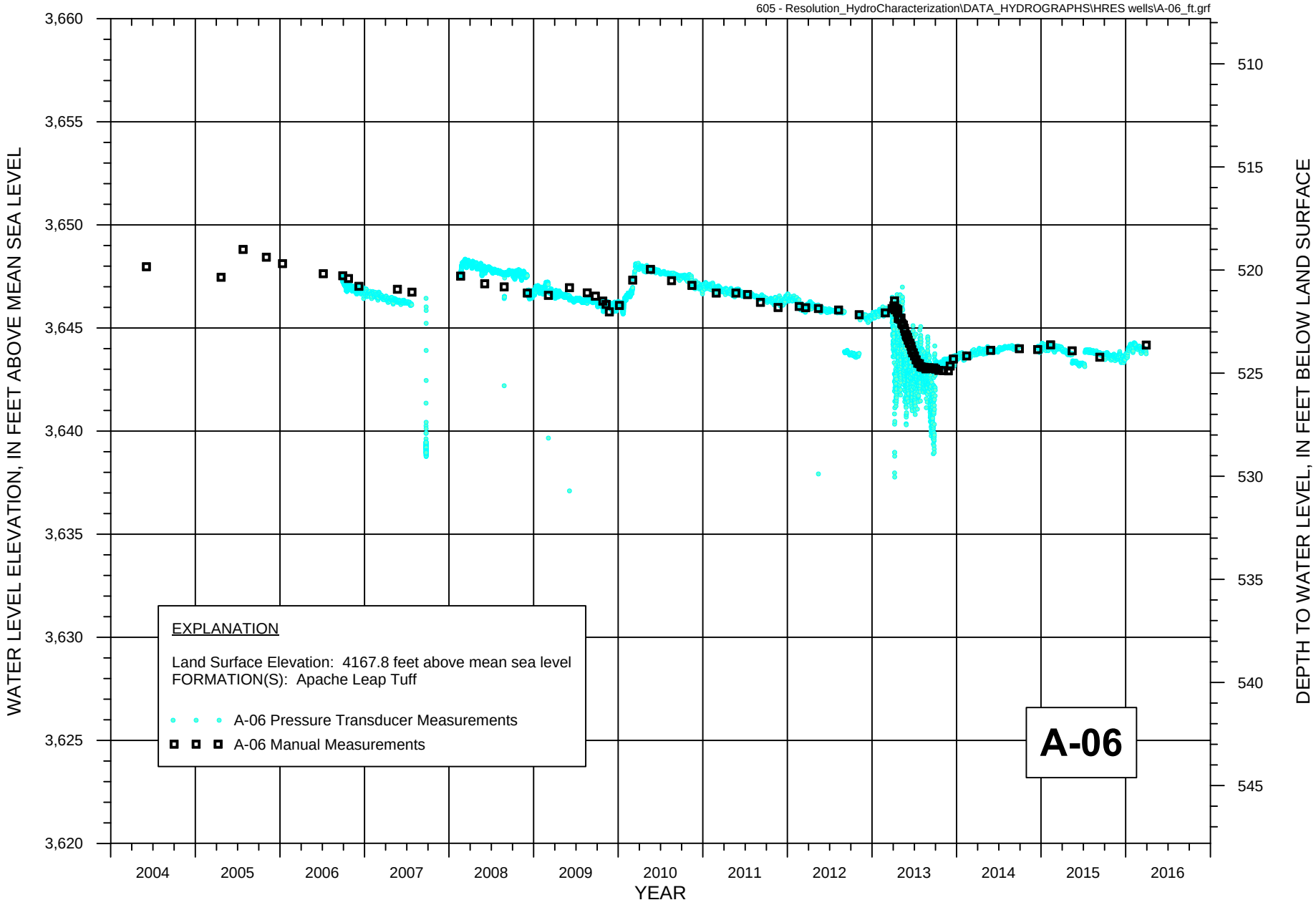


FIGURE A-3. WATER LEVEL HYDROGRAPH FOR MONITORING WELL A-06

Resolution Copper Mining

MONTGOMERY & ASSOCIATES

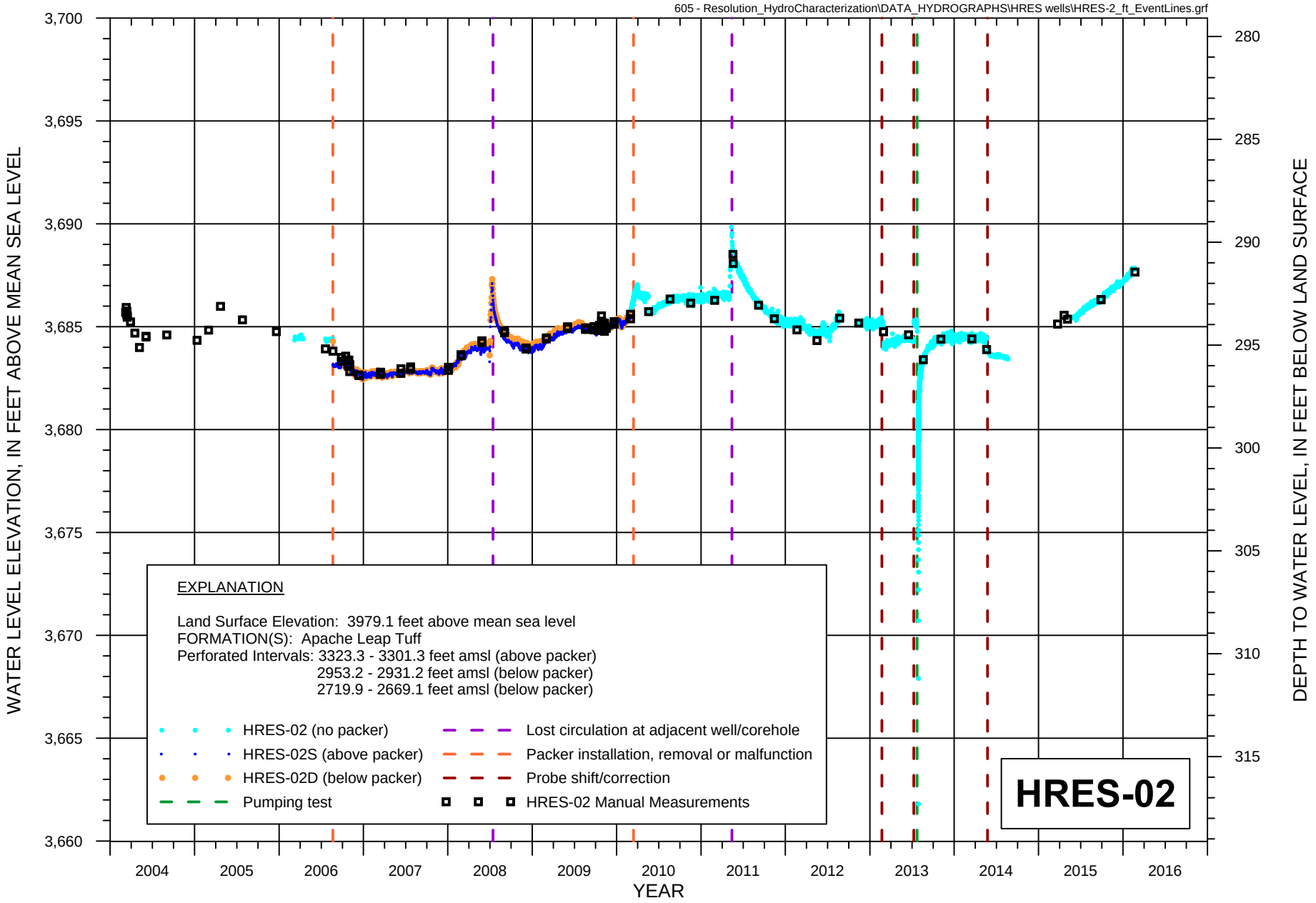


FIGURE A-4. WATER LEVEL HYDROGRAPH FOR HYDROLOGIC TEST WELL HRES-02

Resolution Copper Mining

MONTGOMERY & ASSOCIATES

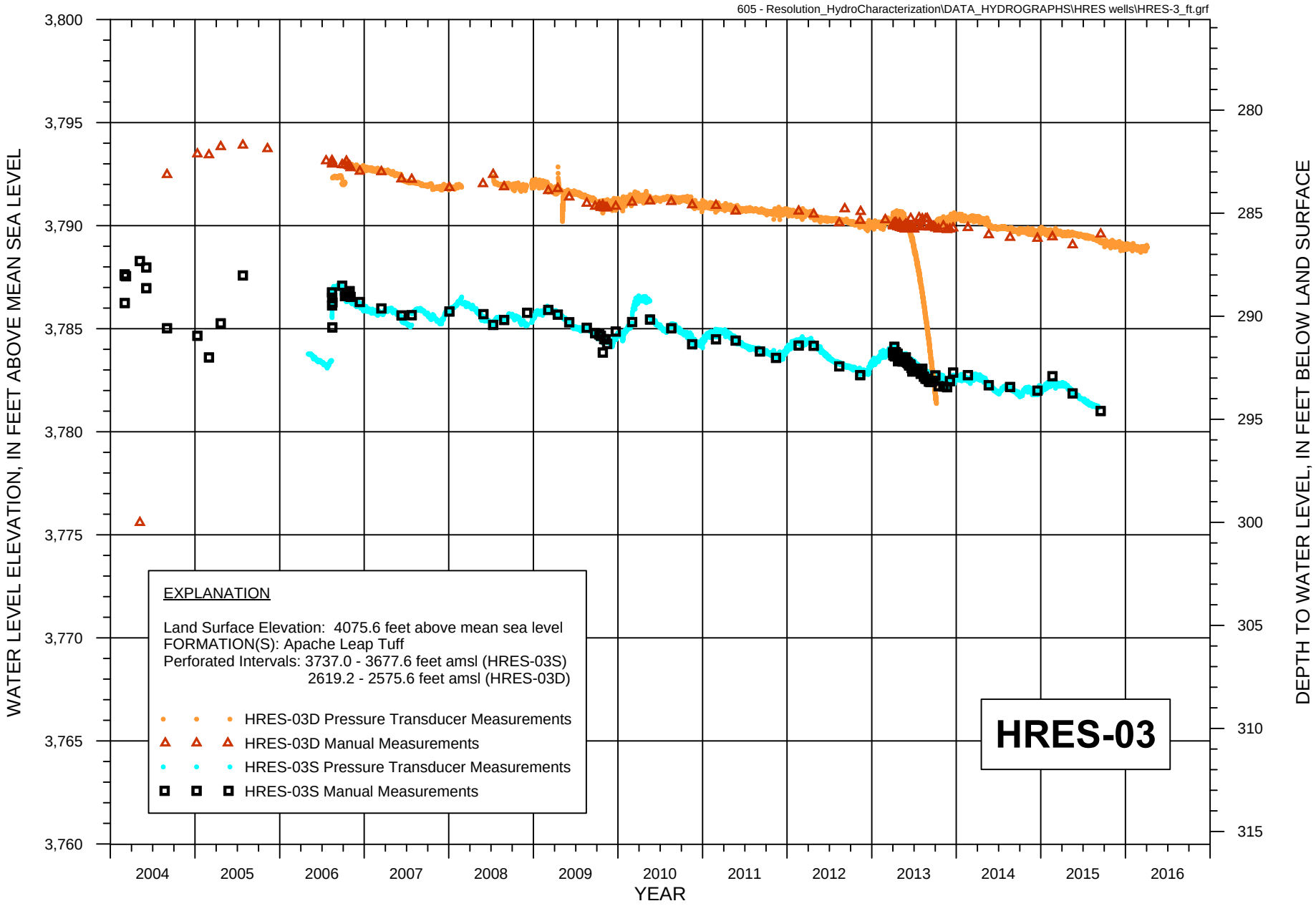


FIGURE A-5. WATER LEVEL HYDROGRAPH FOR HYDROLOGIC TEST WELL HRES-03

Resolution Copper Mining

MONTGOMERY & ASSOCIATES

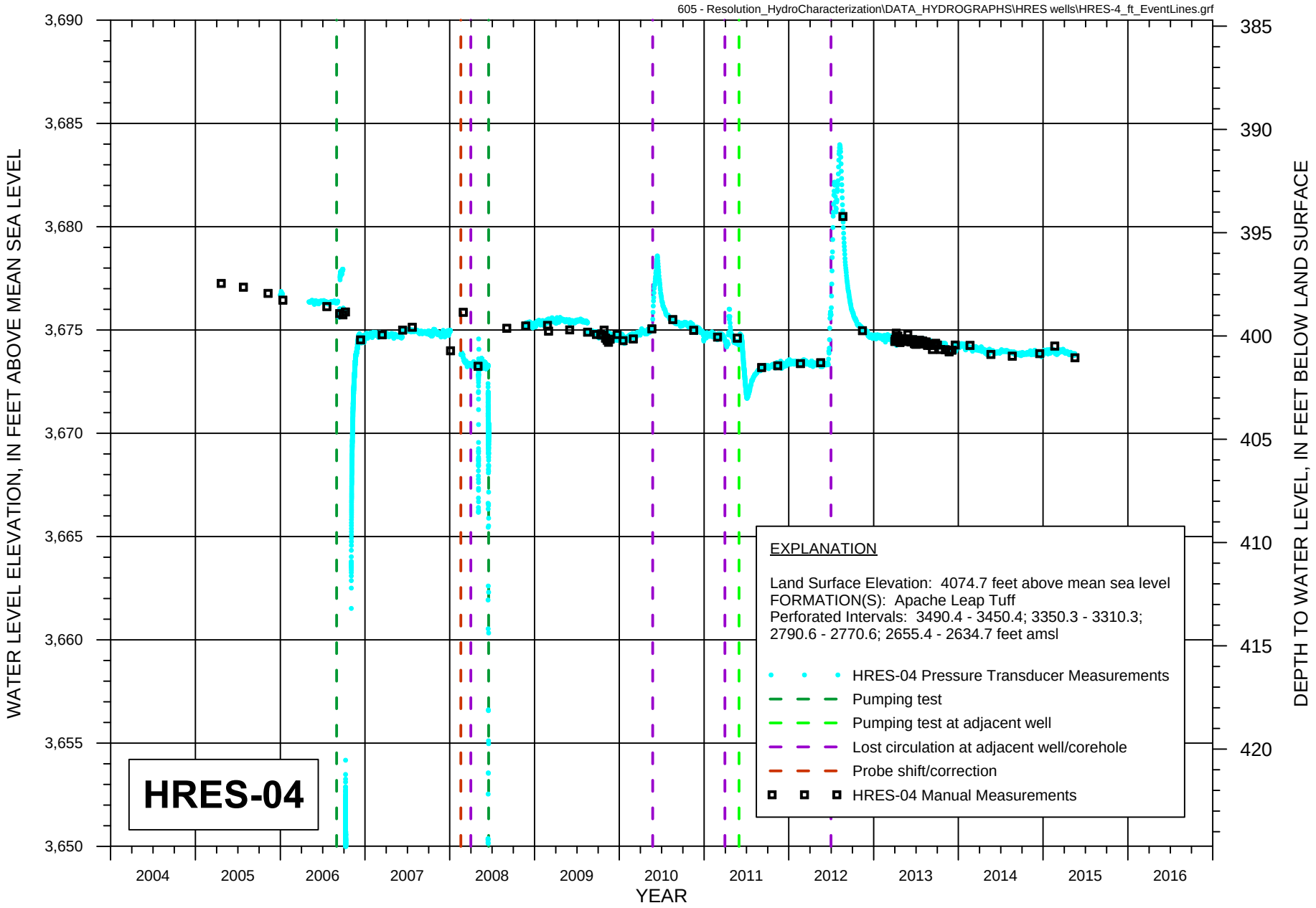


FIGURE A-6. WATER LEVEL HYDROGRAPH FOR HYDROLOGIC TEST WELL HRES-04

Resolution Copper Mining

MONTGOMERY & ASSOCIATES

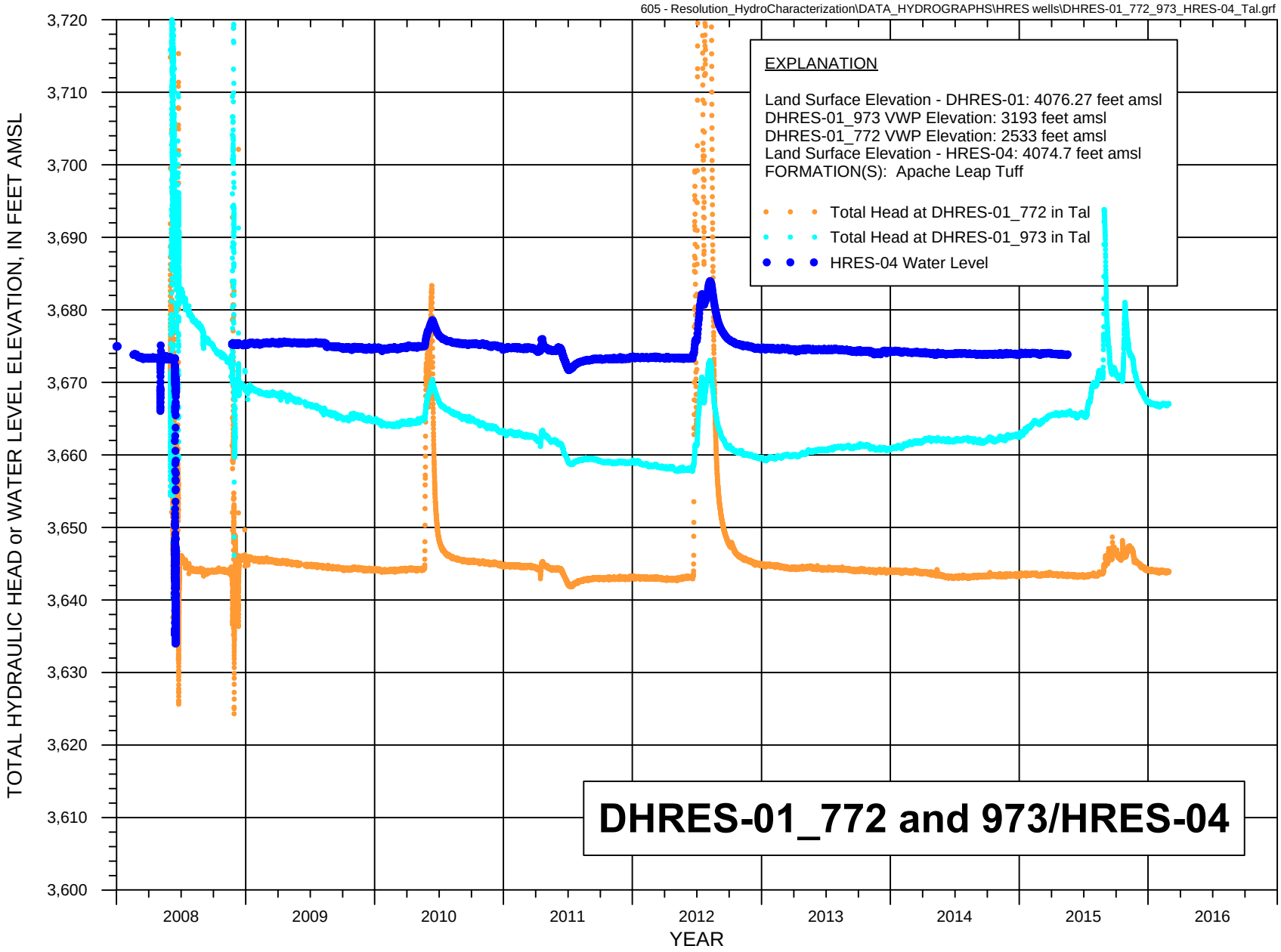


FIGURE A-7. TOTAL HYDRAULIC HEAD HYDROGRAPH FOR GROUTED PIEZOMETERS DHRES-01_772 AND DHRES-01_973, AND WATER LEVEL FOR WELL HRES-04

Resolution Copper Mining

MONTGOMERY & ASSOCIATES

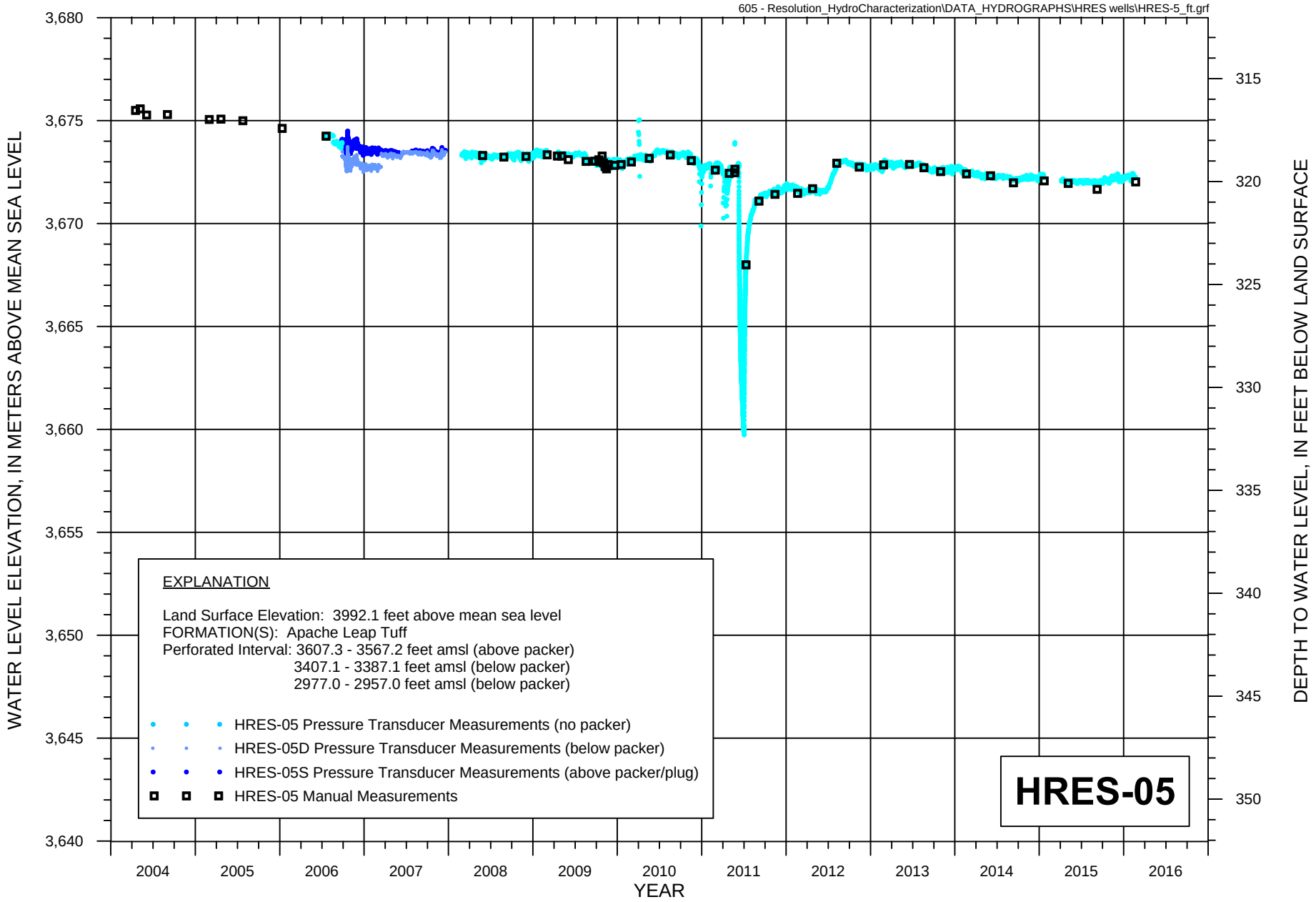


FIGURE A-8. WATER LEVEL HYDROGRAPH FOR HYDROLOGIC TEST WELL HRES-05

Resolution Copper Mining

MONTGOMERY & ASSOCIATES

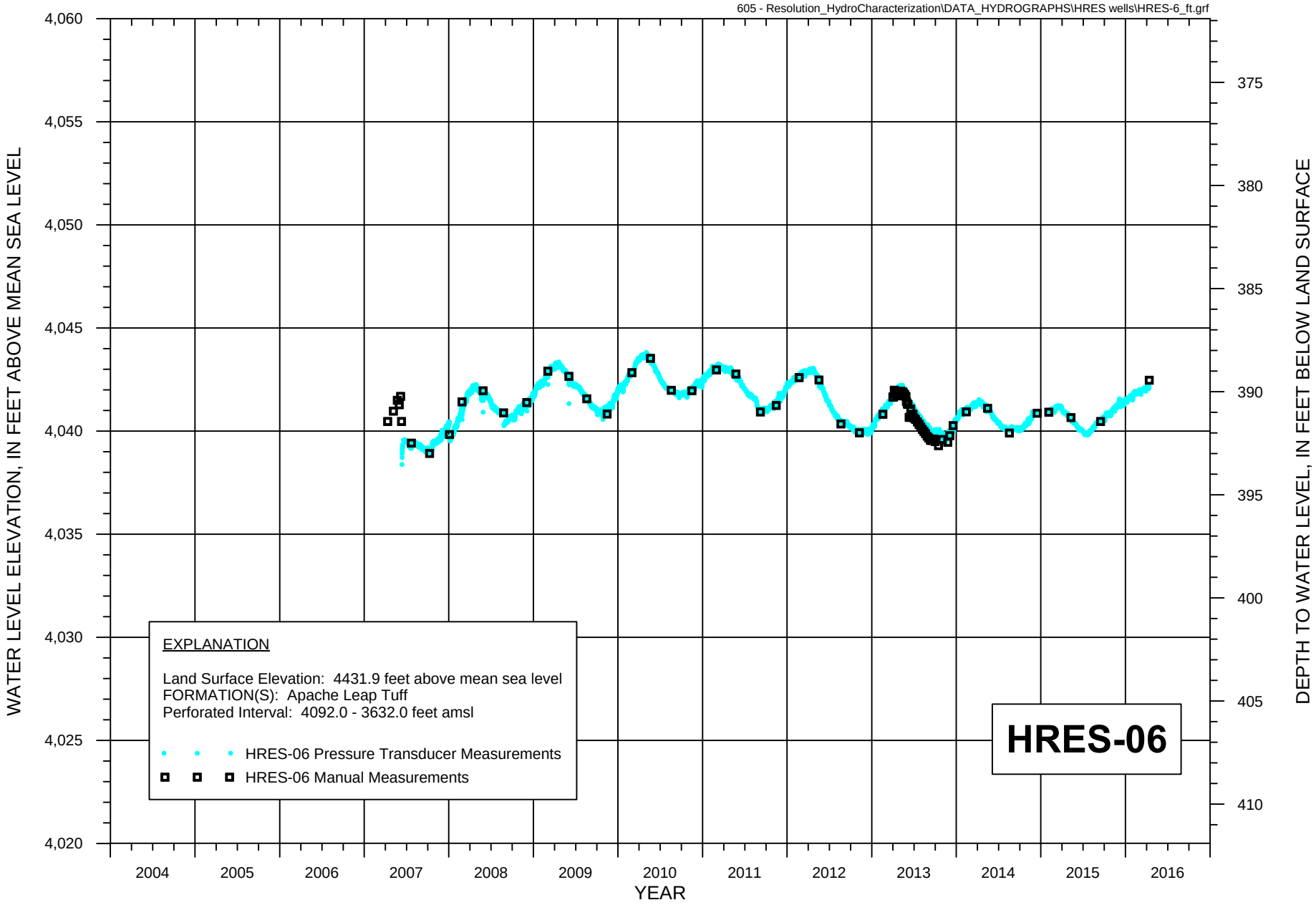


FIGURE A-9. WATER LEVEL HYDROGRAPH FOR HYDROLOGIC TEST WELL HRES-06

Resolution Copper Mining

MONTGOMERY & ASSOCIATES

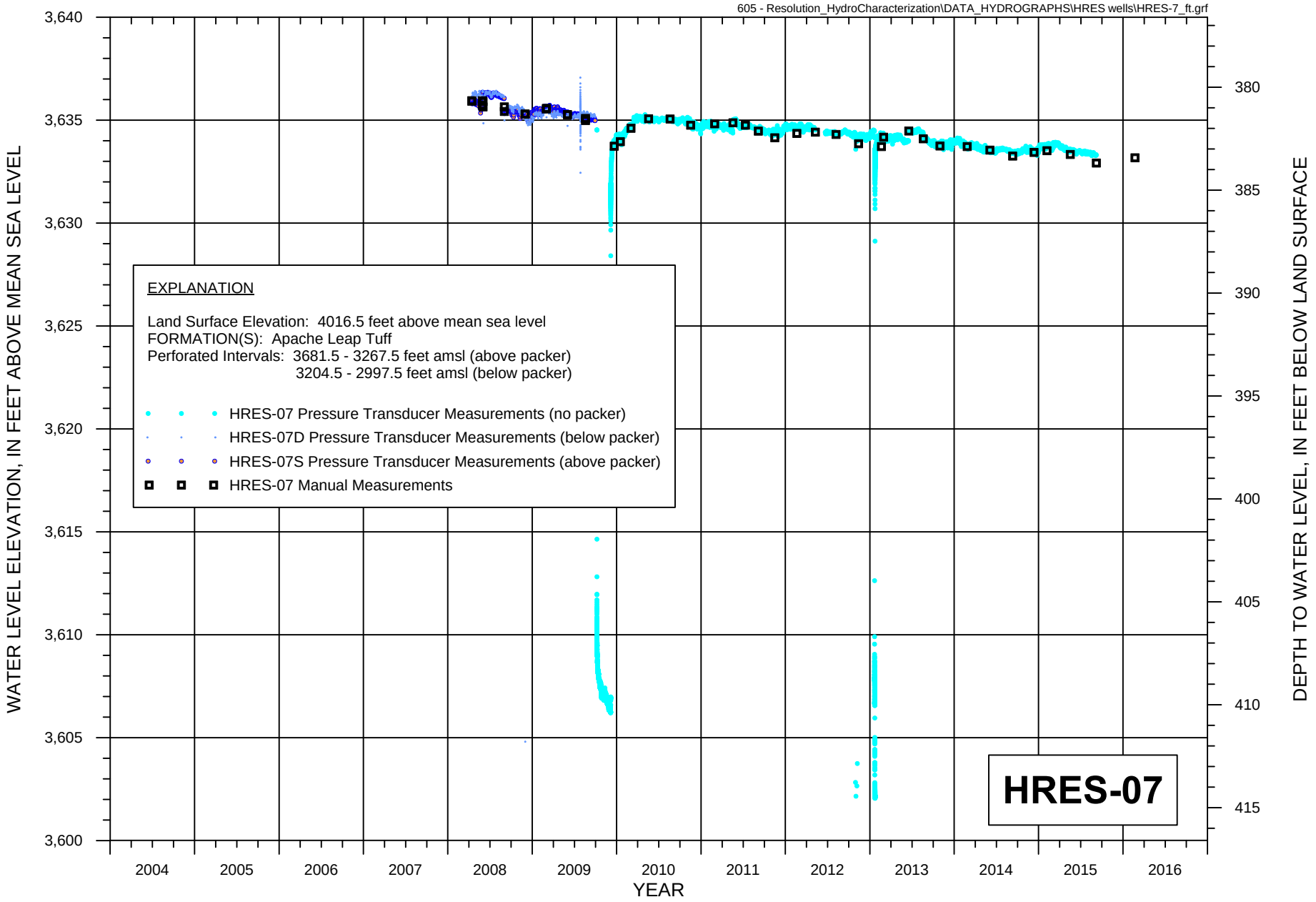


FIGURE A-10. WATER LEVEL HYDROGRAPH FOR HYDROLOGIC TEST WELL HRES-07

Resolution Copper Mining

MONTGOMERY & ASSOCIATES

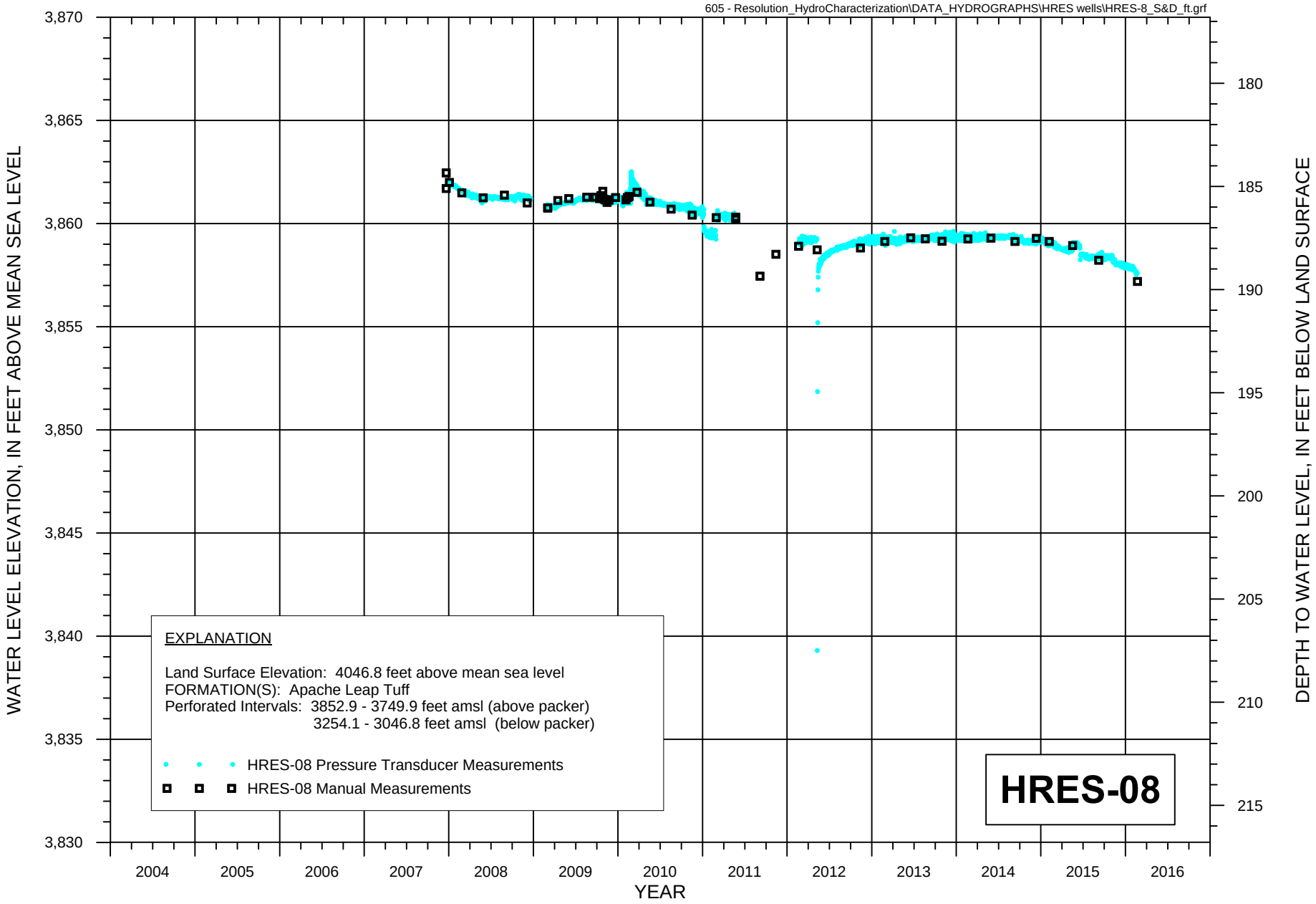


FIGURE A-11. WATER LEVEL HYDROGRAPH FOR HYDROLOGIC TEST WELL HRES-08

Resolution Copper Mining

MONTGOMERY & ASSOCIATES

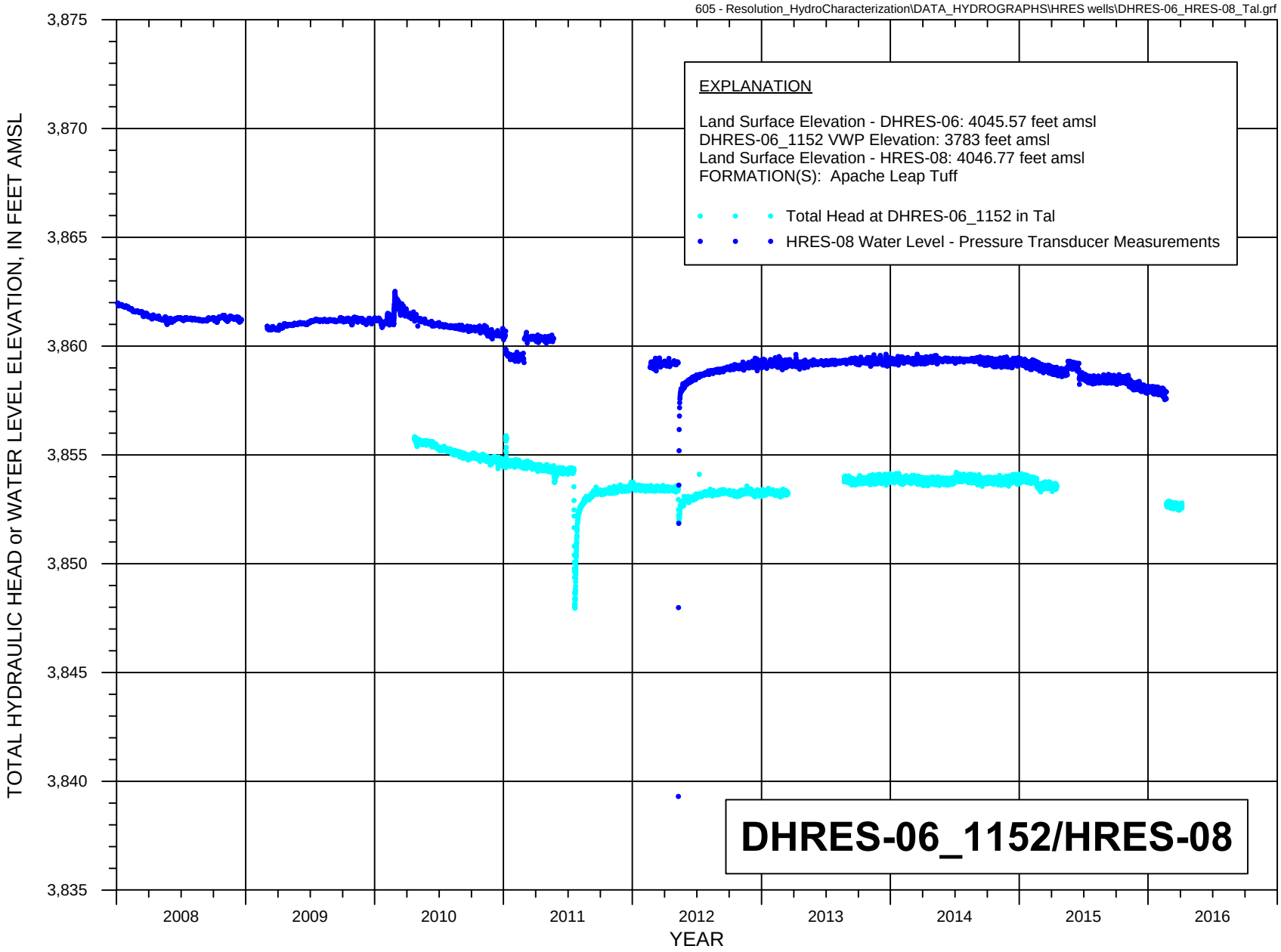


FIGURE A-12. WATER LEVEL HYDROGRAPH FOR HYDROLOGIC TEST WELL HRES-08, AND HYDROGRAPH OF TOTAL HYDRAULIC HEAD FOR GROUTED PIEZOMETER DHRES-06_1152

Resolution Copper Mining

MONTGOMERY & ASSOCIATES

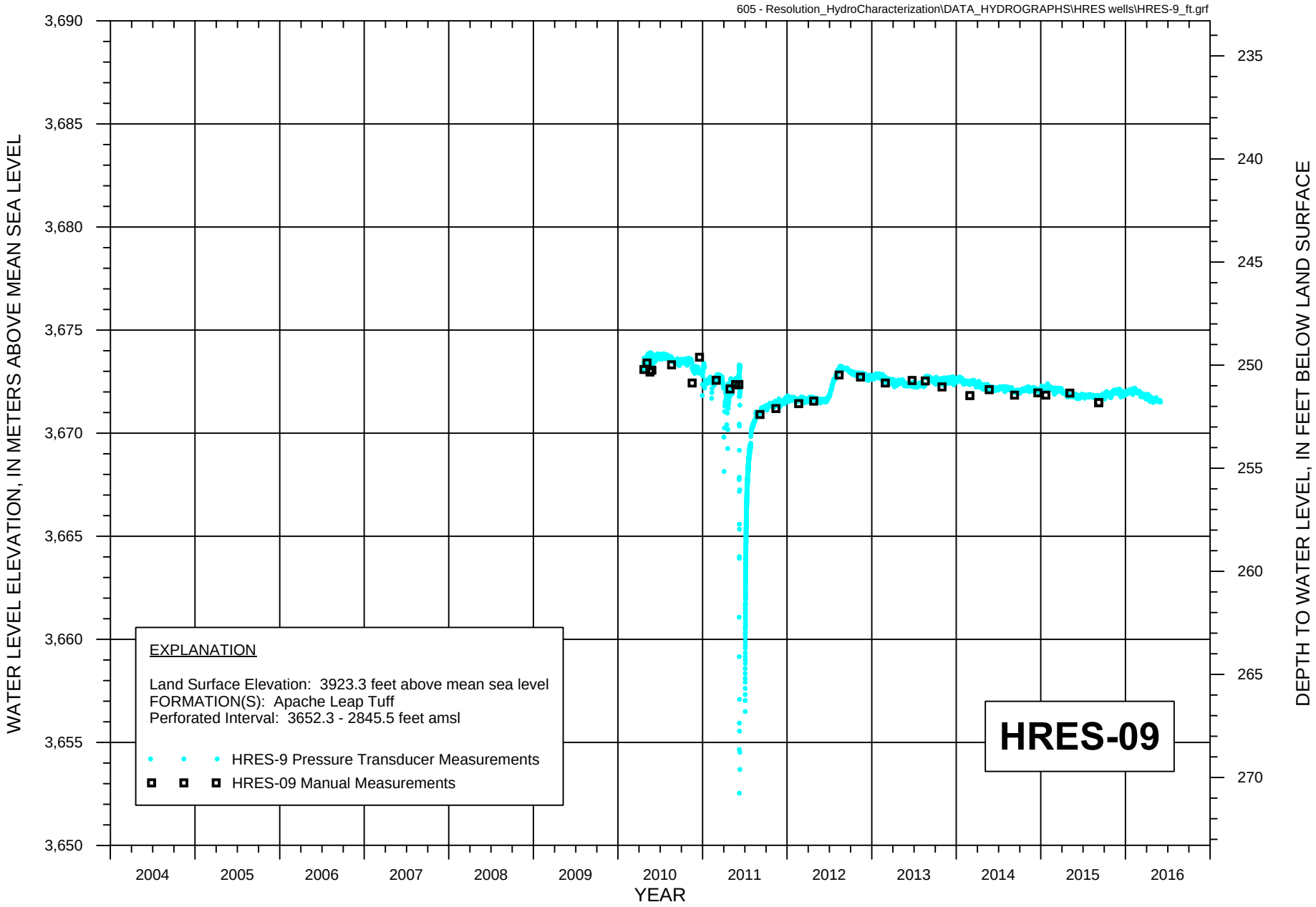


FIGURE A-13. WATER LEVEL HYDROGRAPH FOR HYDROLOGIC TEST WELL HRES-09

Resolution Copper Mining

MONTGOMERY & ASSOCIATES

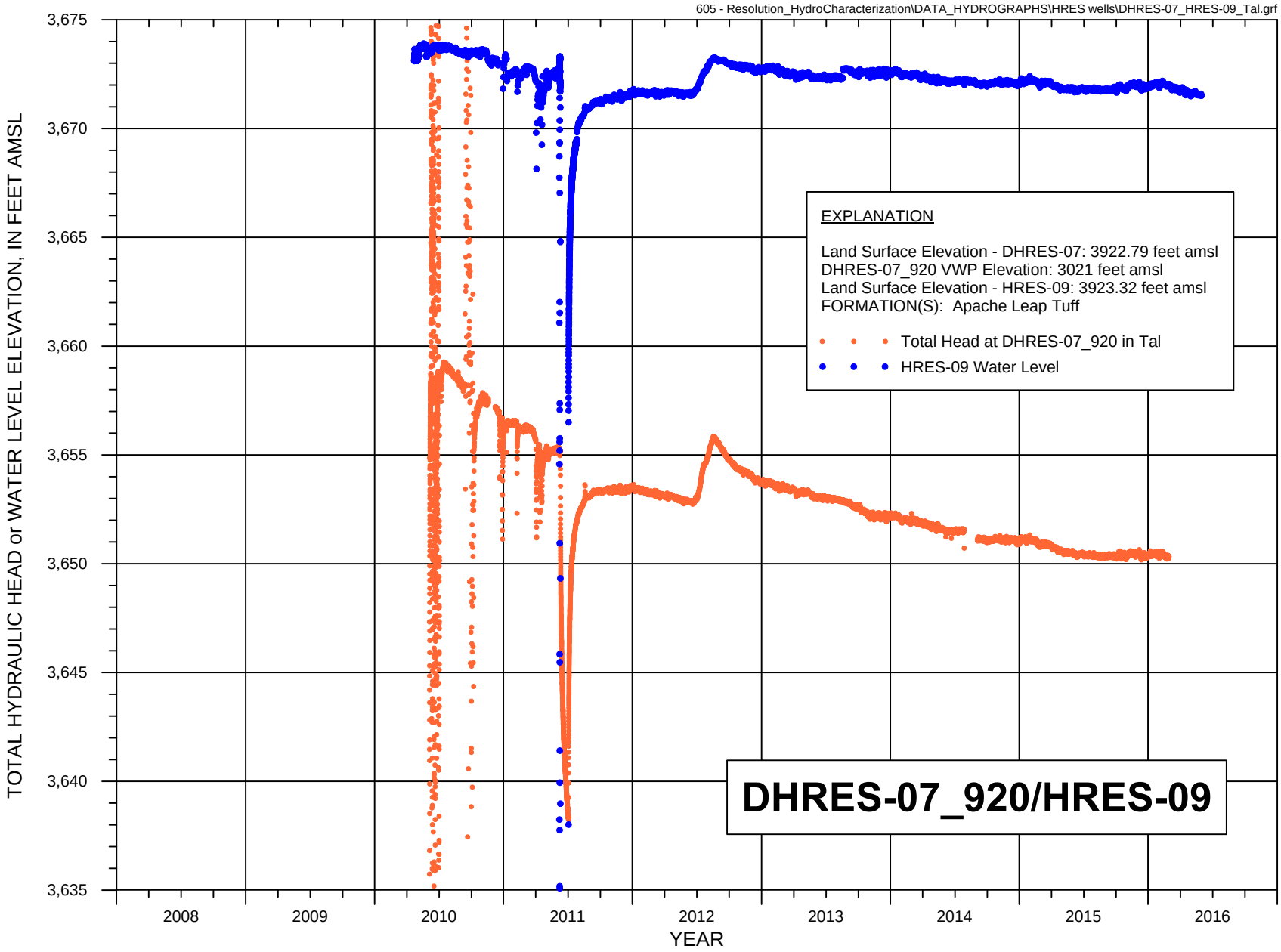


FIGURE A-14. WATER LEVEL HYDROGRAPH FOR HYDROLOGIC TEST WELL HRES-09, AND HYDROGRAPH OF TOTAL HYDRAULIC HEAD FOR GROUTED PIEZOEMETER DHRESD-07_920

Resolution Copper Mining

MONTGOMERY & ASSOCIATES

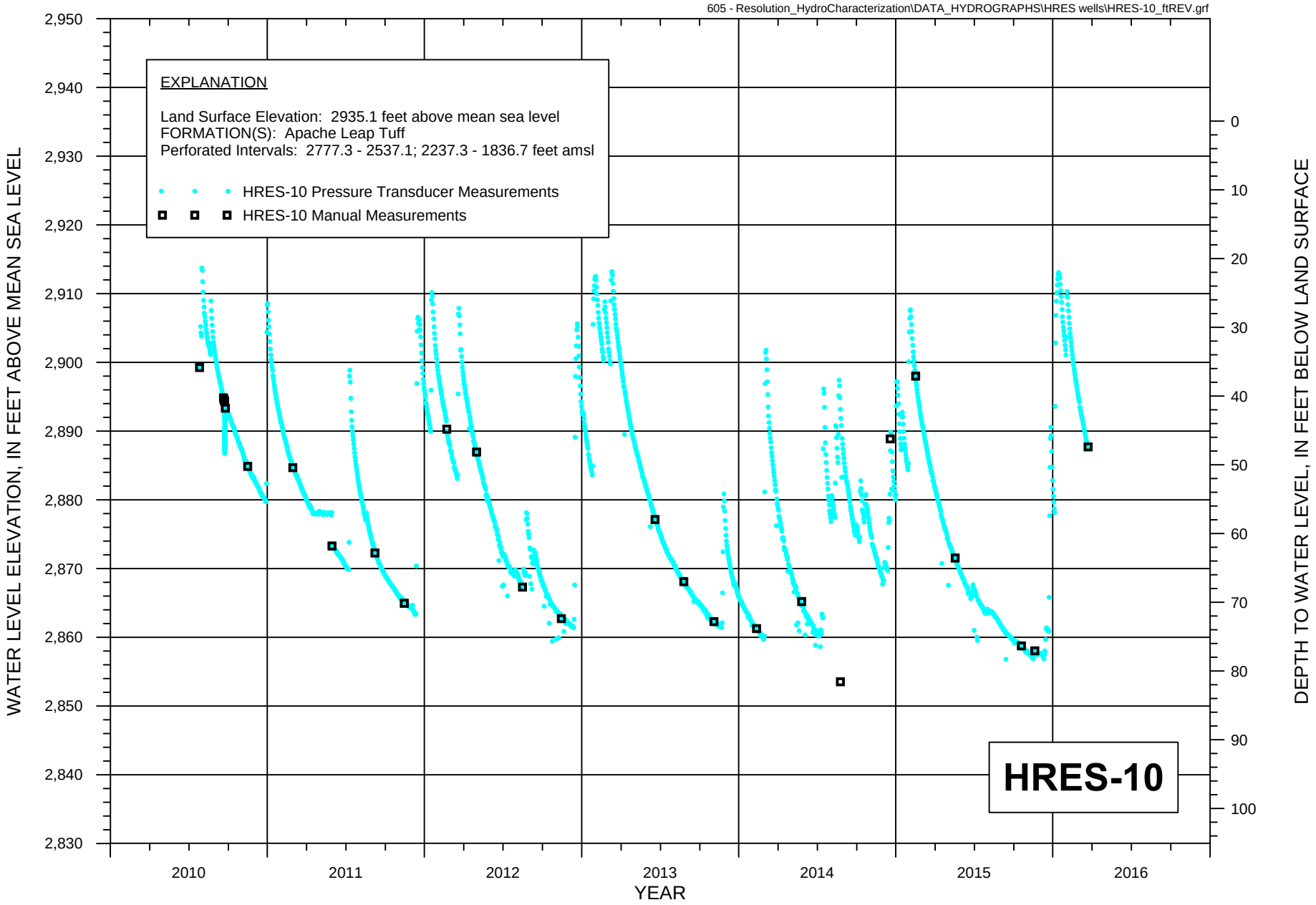


FIGURE A-15. WATER LEVEL HYDROGRAPH FOR HYDROLOGIC TEST WELL HRES-10

Resolution Copper Mining

MONTGOMERY & ASSOCIATES

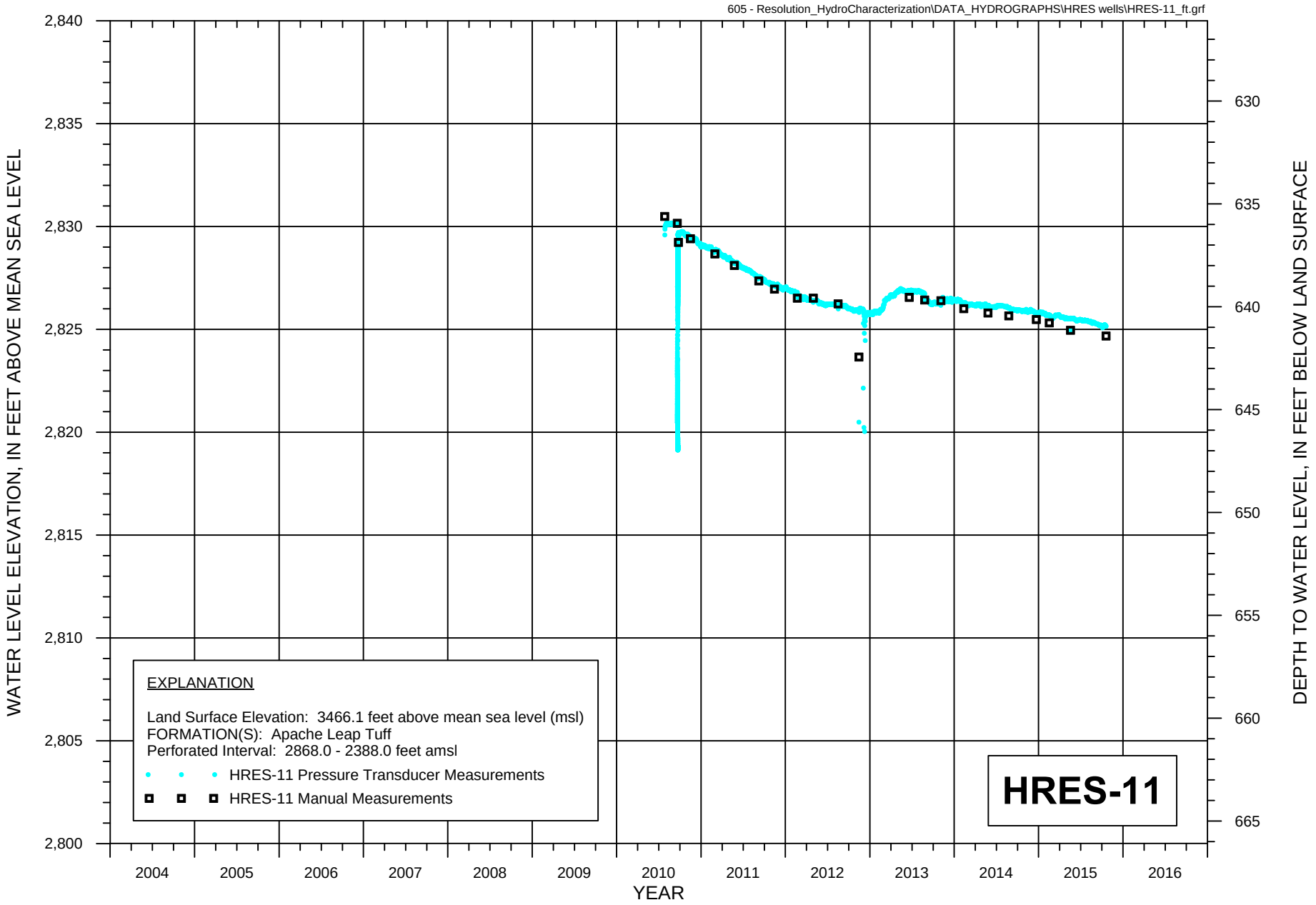


FIGURE A-16. WATER LEVEL HYDROGRAPH FOR HYDROLOGIC TEST WELL HRES-11

Resolution Copper Mining

MONTGOMERY & ASSOCIATES

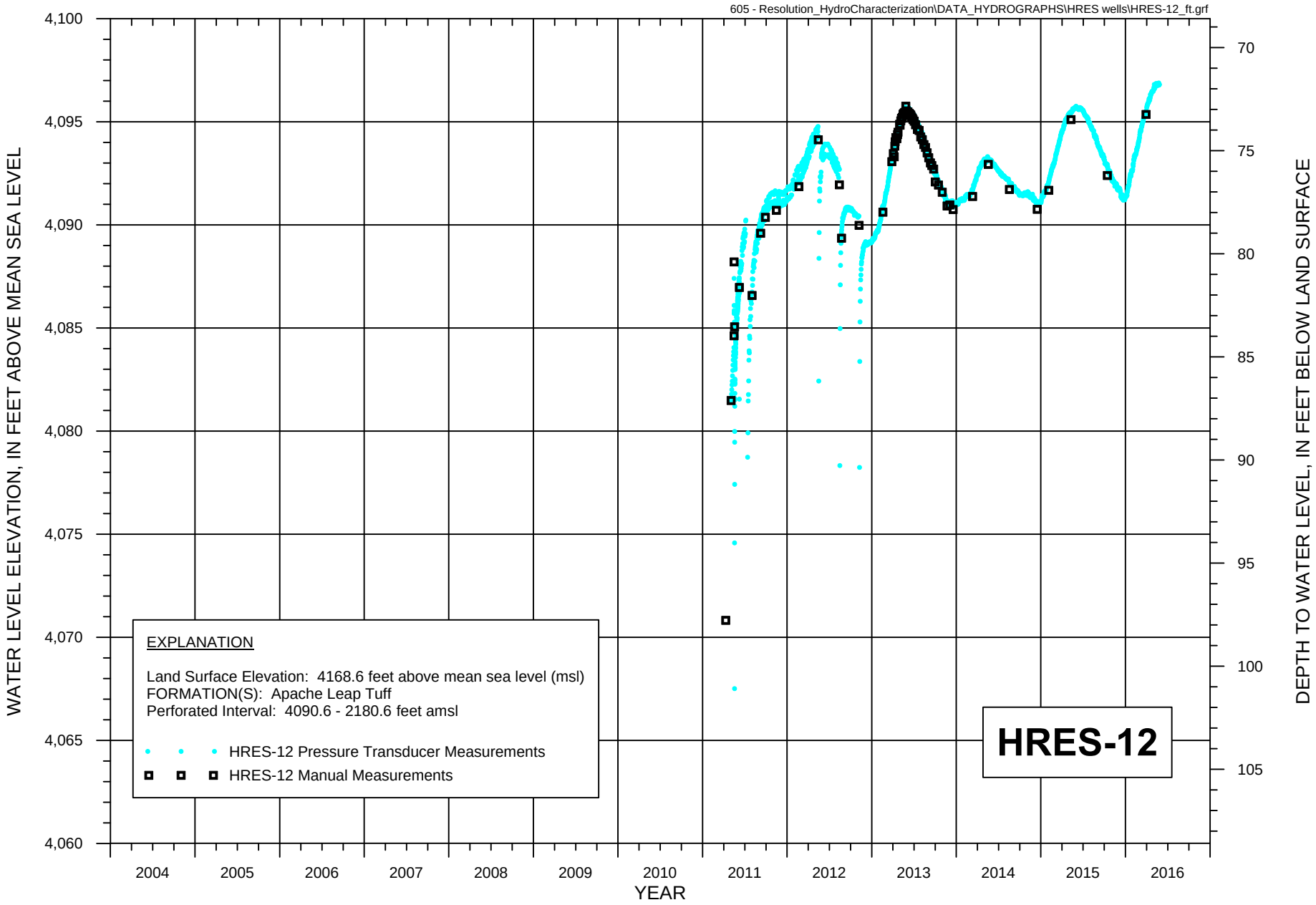


FIGURE A-17. WATER LEVEL HYDROGRAPH FOR HYDROLOGIC TEST WELL HRES-12

Resolution Copper Mining

MONTGOMERY & ASSOCIATES

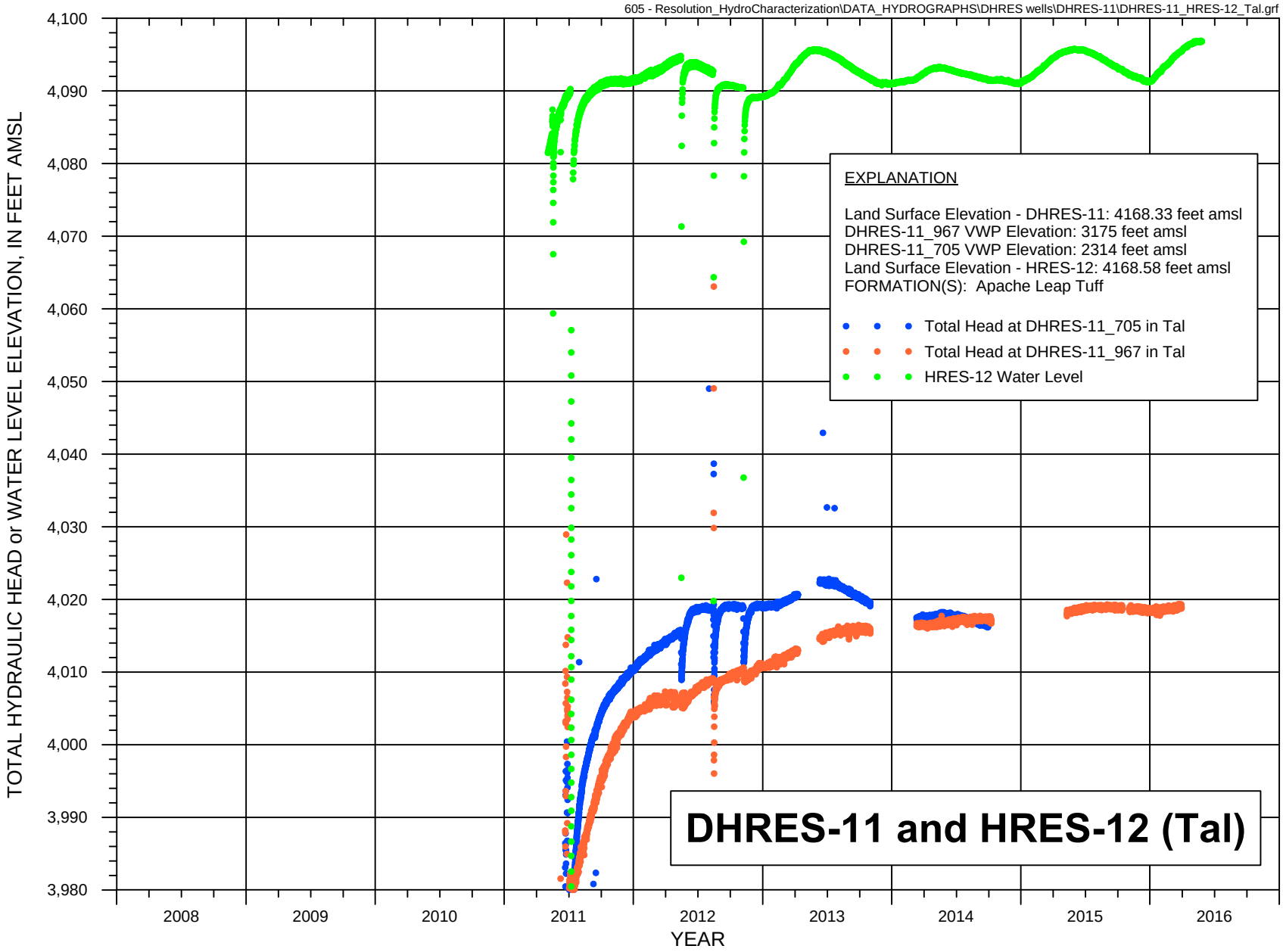


FIGURE A-18. WATER LEVEL HYDROGRAPH FOR HYDROLOGIC TEST WELL HRES-12, AND HYDROGRAPH OF TOTAL HYDRAULIC HEAD FOR GROUTED PIEZOMETERS DHRES-11_967 AND DHRES-11_705

Resolution Copper Mining

MONTGOMERY & ASSOCIATES

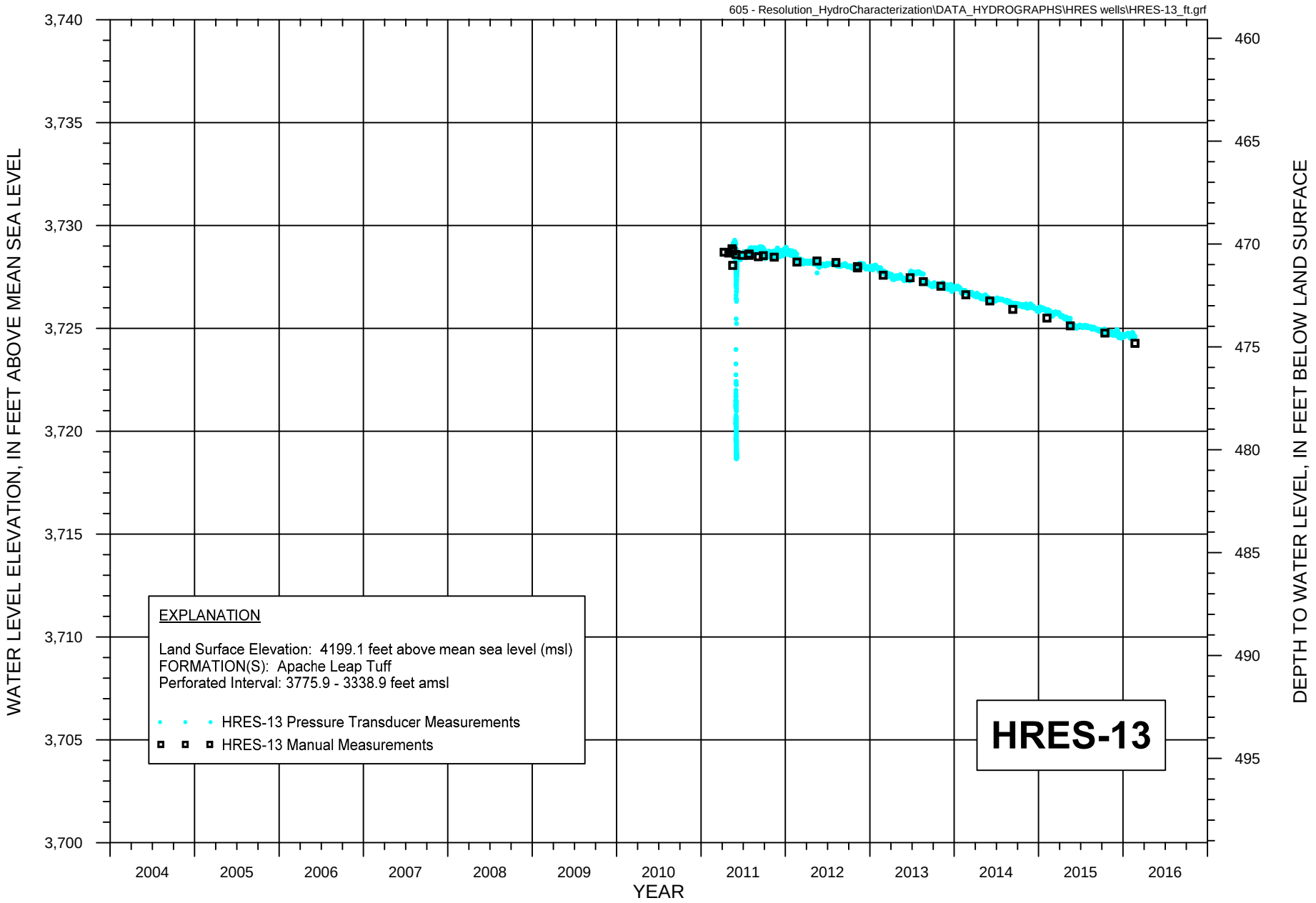


FIGURE A-19. WATER LEVEL HYDROGRAPH FOR HYDROLOGIC TEST WELL HRES-13

Resolution Copper Mining

MONTGOMERY & ASSOCIATES

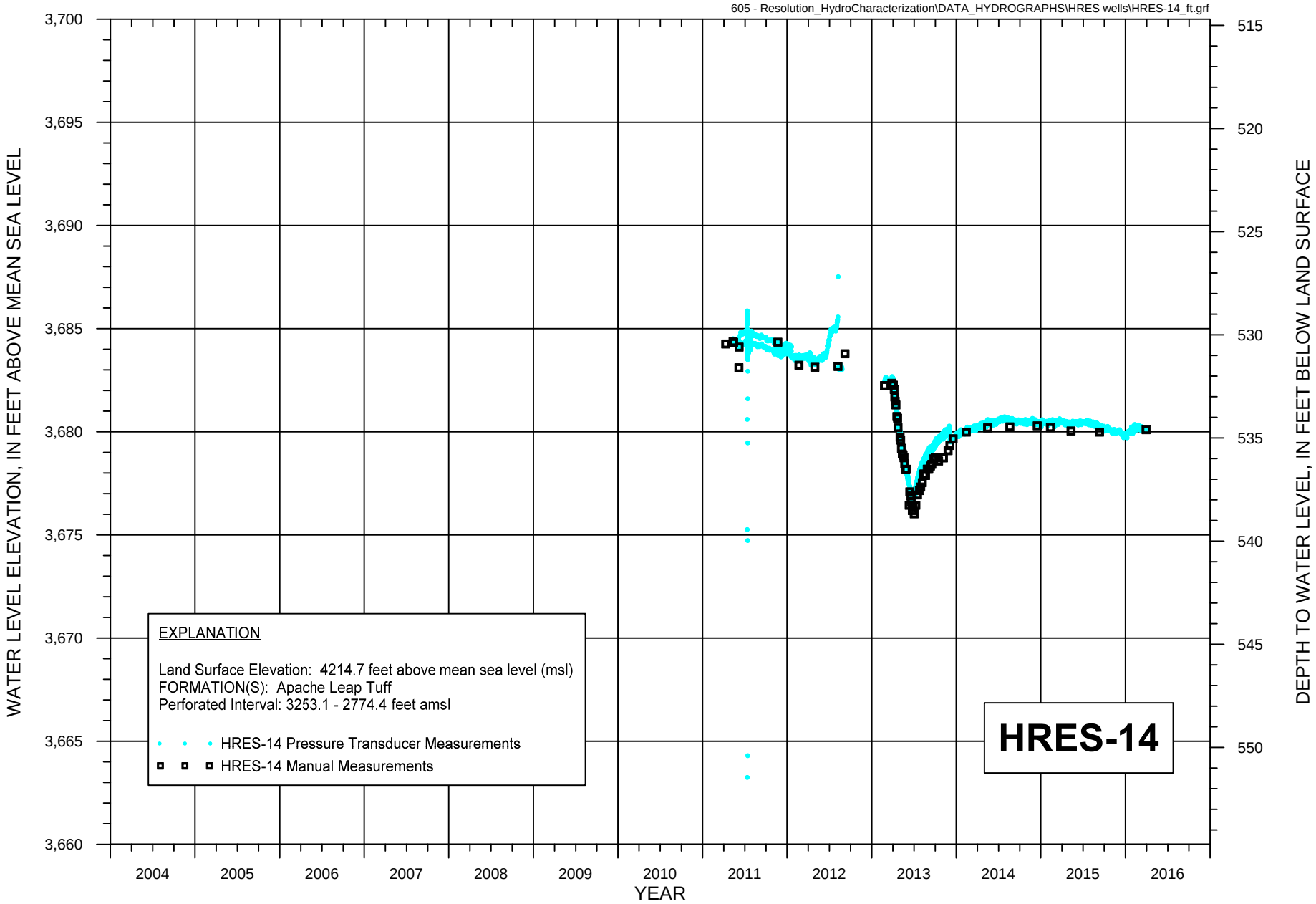


FIGURE A-20. WATER LEVEL HYDROGRAPH FOR HYDROLOGIC TEST WELL HRES-14

Resolution Copper Mining

MONTGOMERY & ASSOCIATES

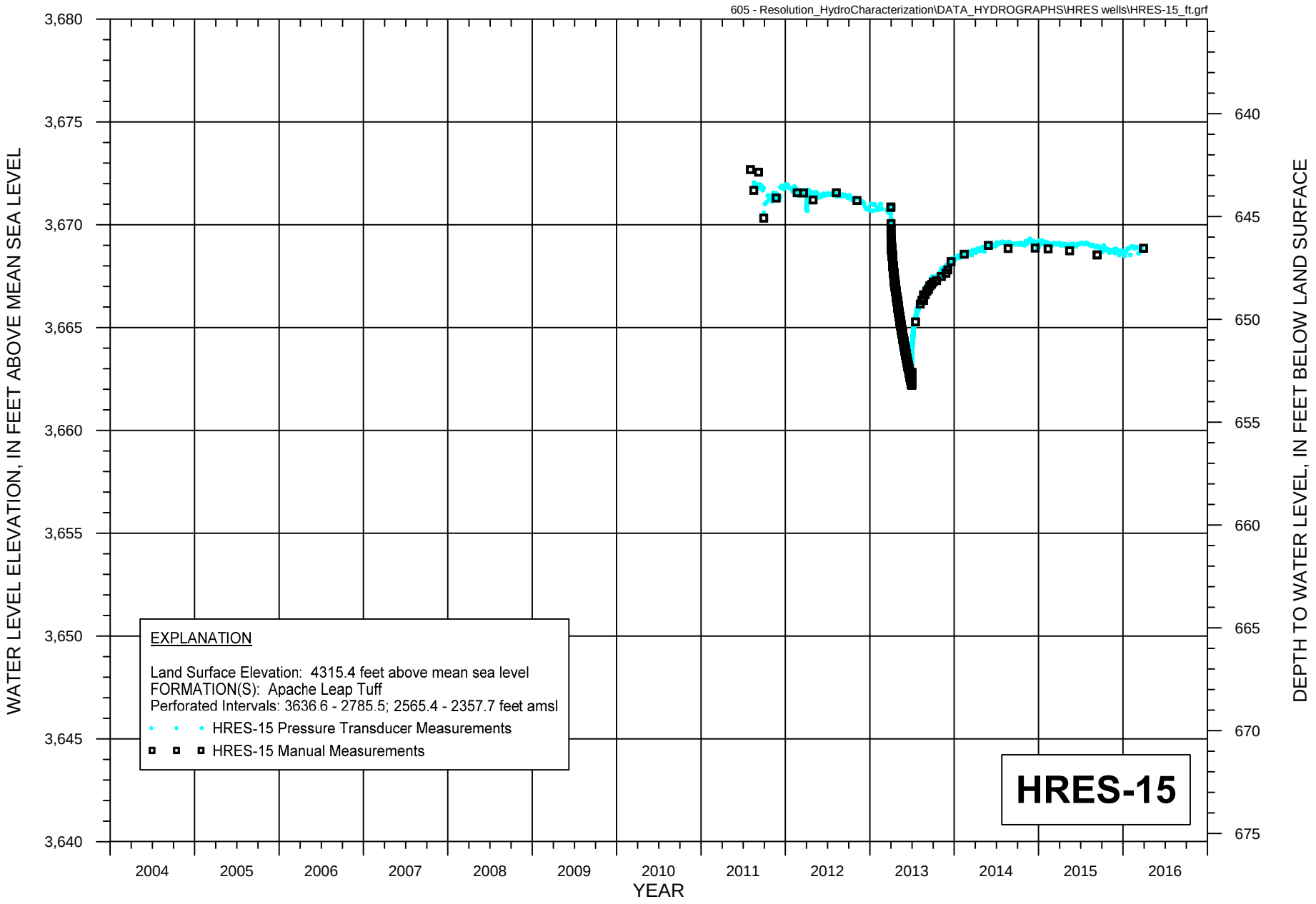


FIGURE A-21. WATER LEVEL HYDROGRAPH FOR HYDROLOGIC TEST WELL HRES-15

Resolution Copper Mining

MONTGOMERY & ASSOCIATES

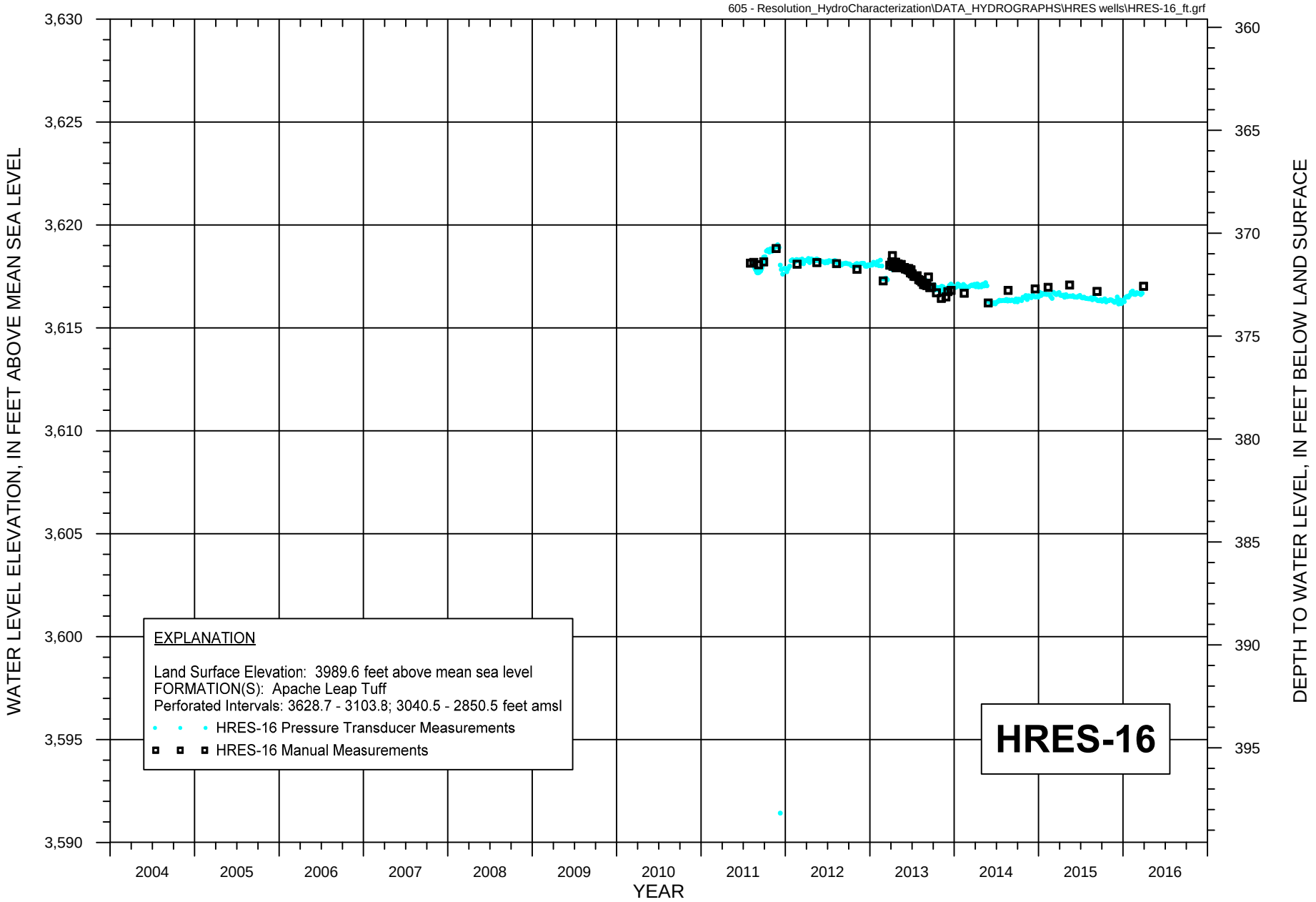


FIGURE A-22. WATER LEVEL HYDROGRAPH FOR HYDROLOGIC TEST WELL HRES-16

Resolution Copper Mining

MONTGOMERY & ASSOCIATES

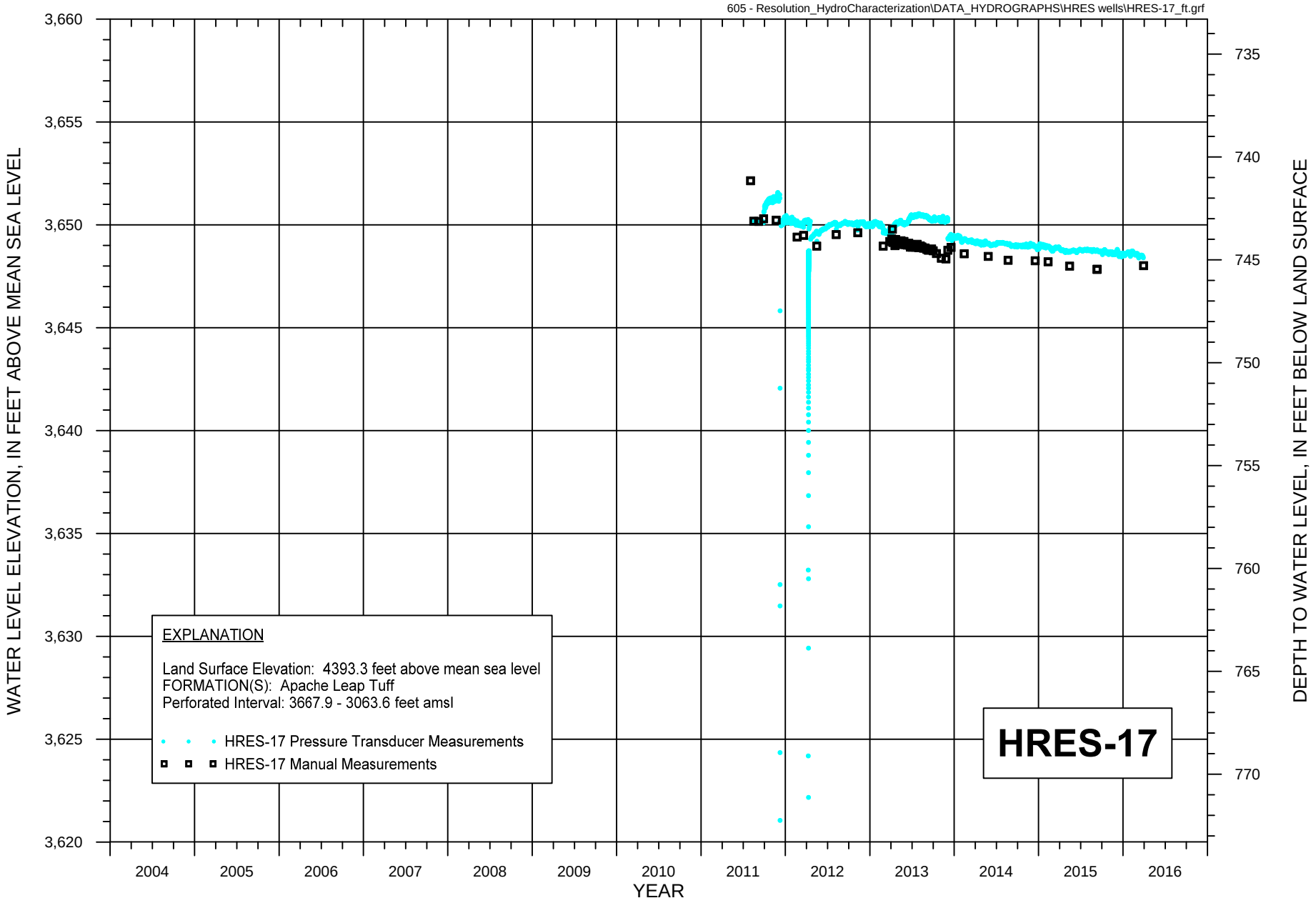


FIGURE A-23. WATER LEVEL HYDROGRAPH FOR HYDROLOGIC TEST WELL HRES-17

Resolution Copper Mining

MONTGOMERY & ASSOCIATES

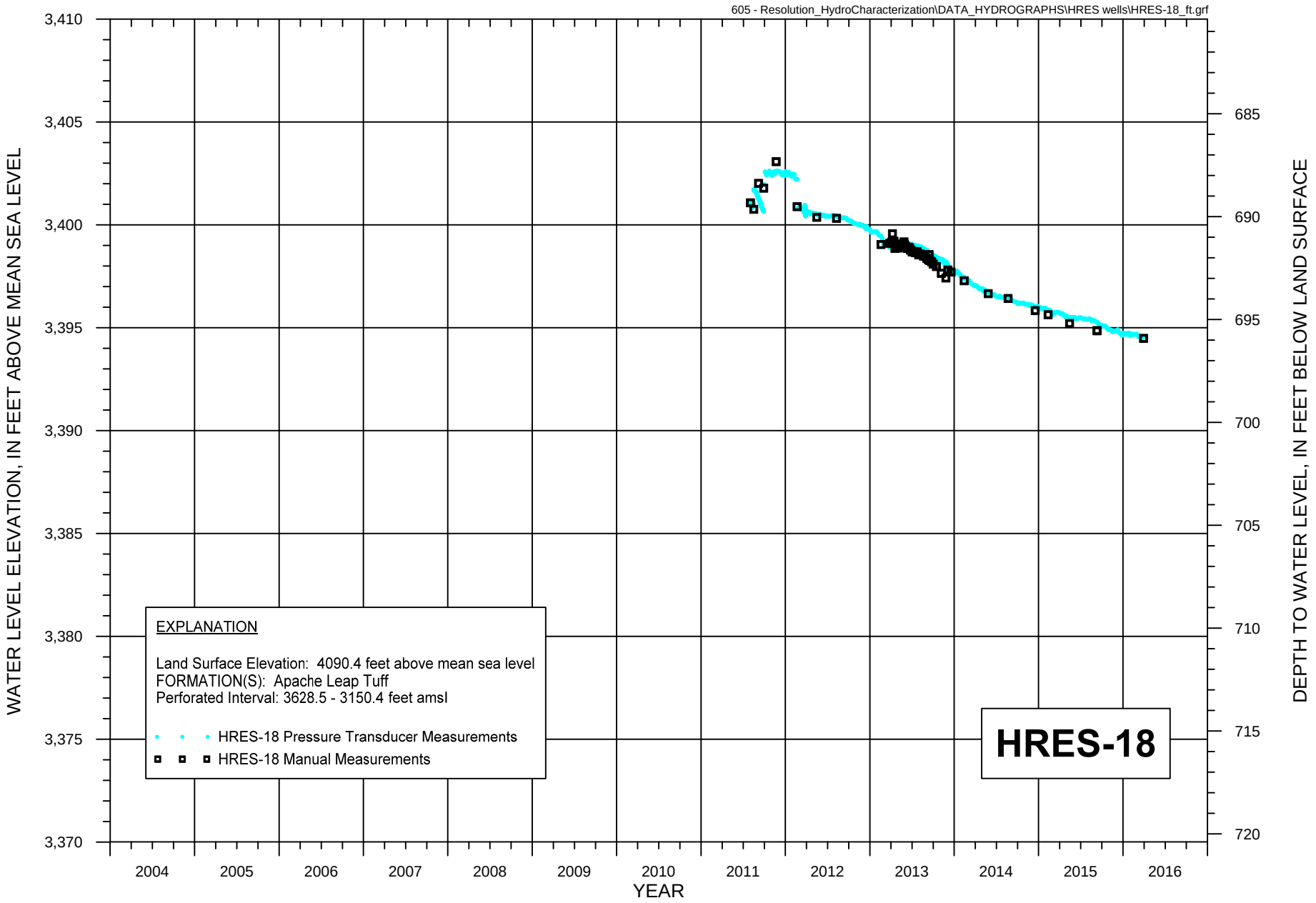


FIGURE A-24. WATER LEVEL HYDROGRAPH FOR HYDROLOGIC TEST WELL HRES-18

Resolution Copper Mining

MONTGOMERY & ASSOCIATES

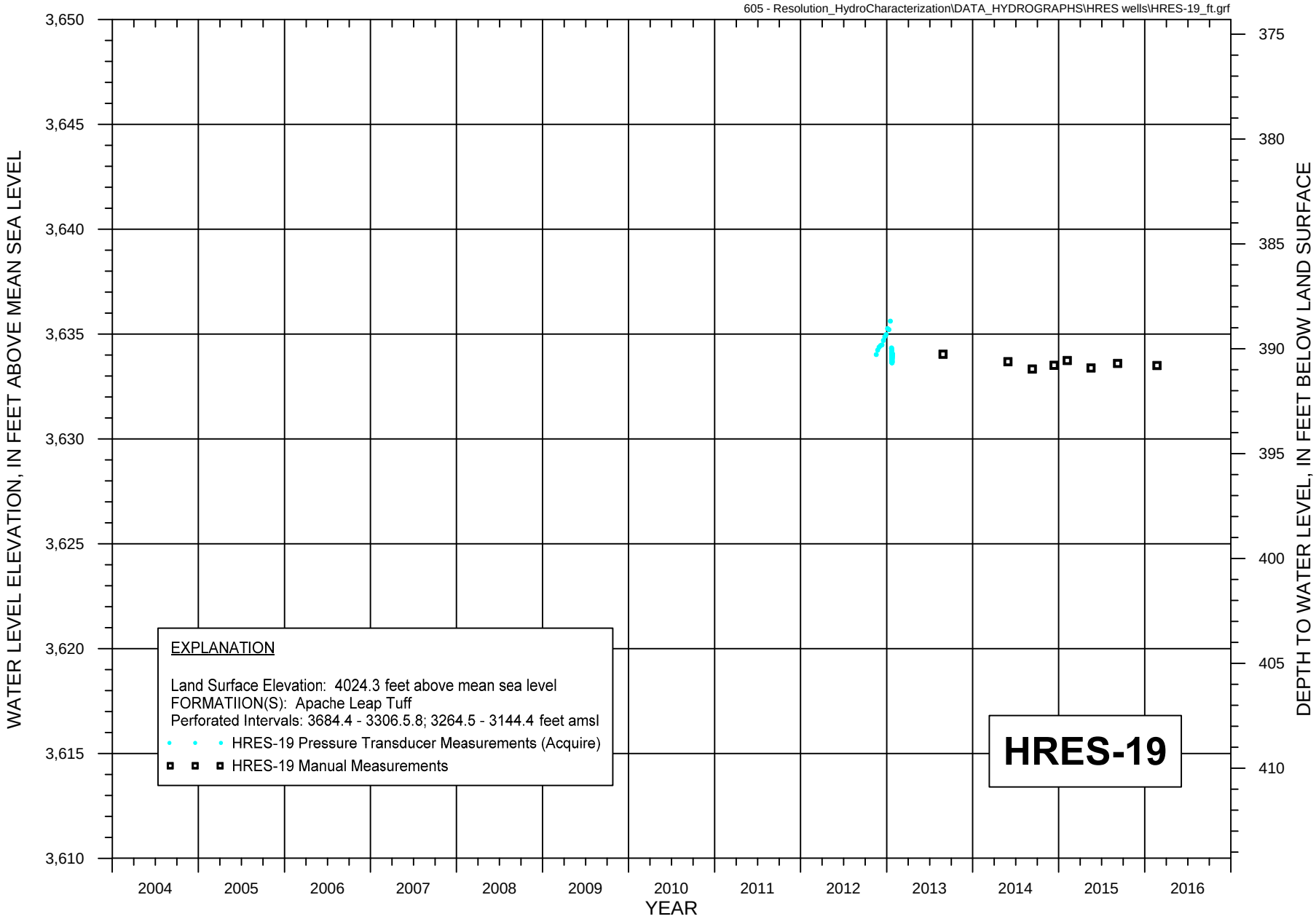


FIGURE A-25. WATER LEVEL HYDROGRAPH FOR HYDROLOGIC TEST WELL HRES-19

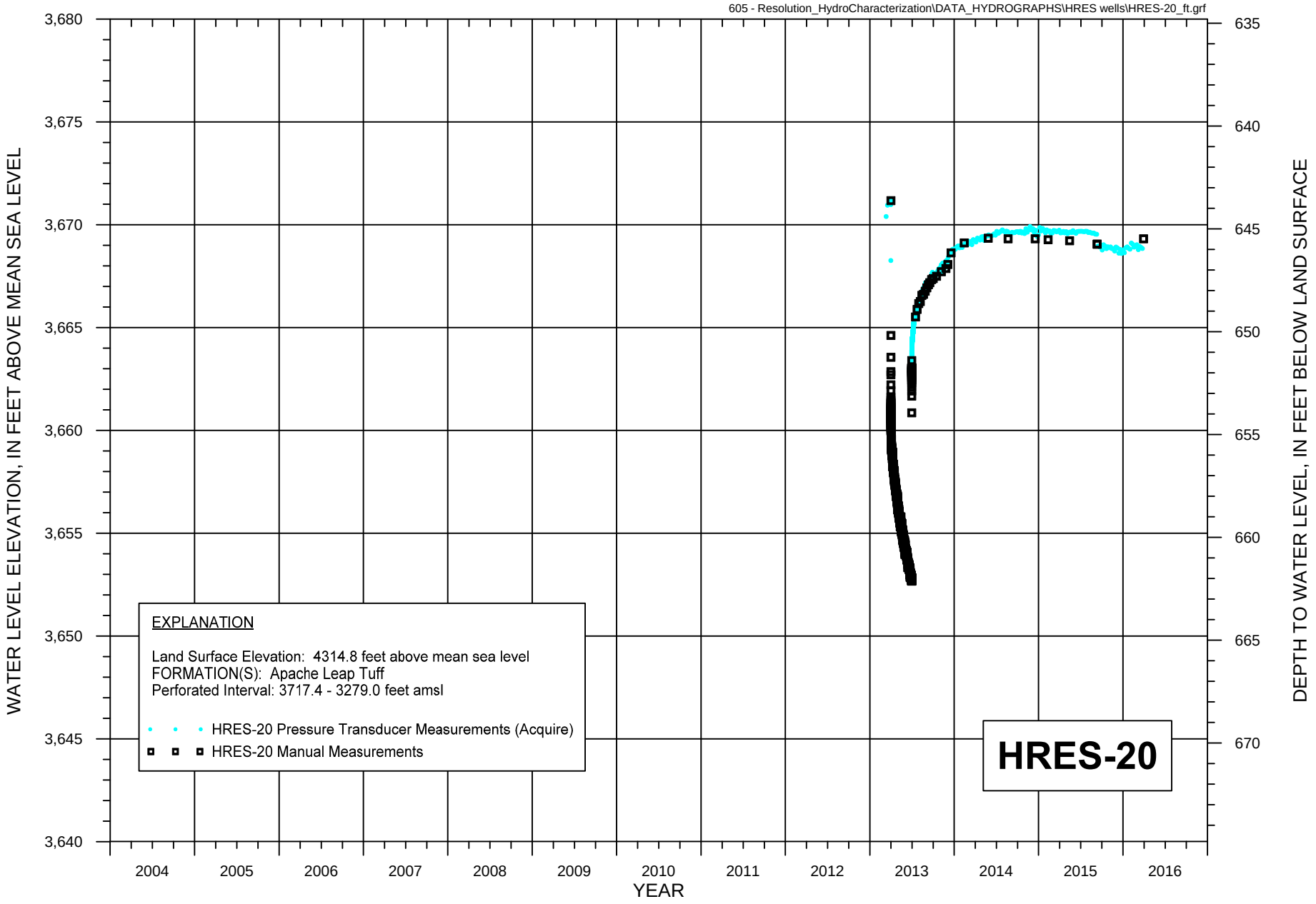


FIGURE A-26. WATER LEVEL HYDROGRAPH FOR HYDROLOGIC TEST WELL HRES-20

Resolution Copper Mining

MONTGOMERY & ASSOCIATES

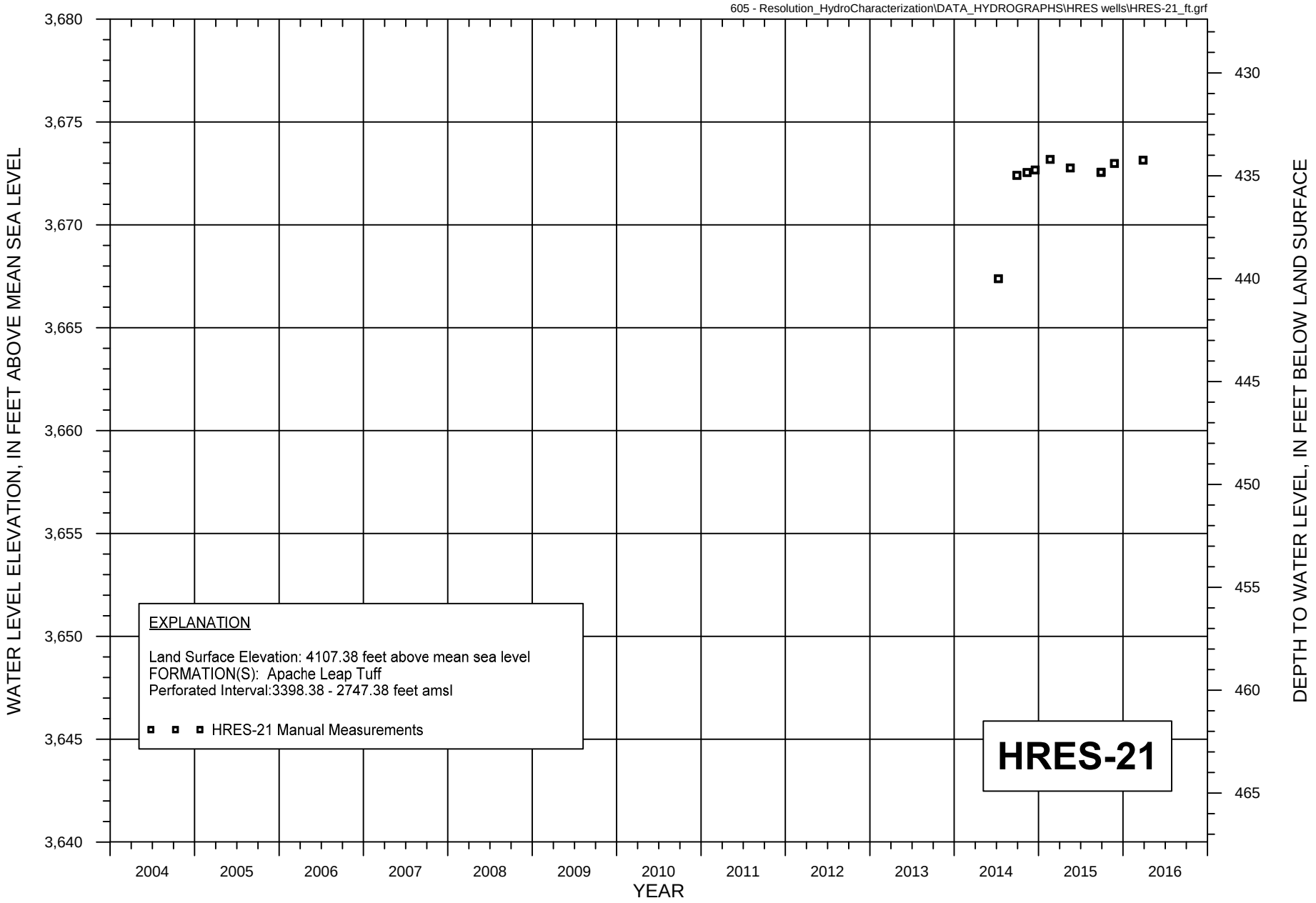


FIGURE A-27. WATER LEVEL HYDROGRAPH FOR HYDROLOGIC TEST WELL HRES-21

Resolution Copper Mining

MONTGOMERY & ASSOCIATES

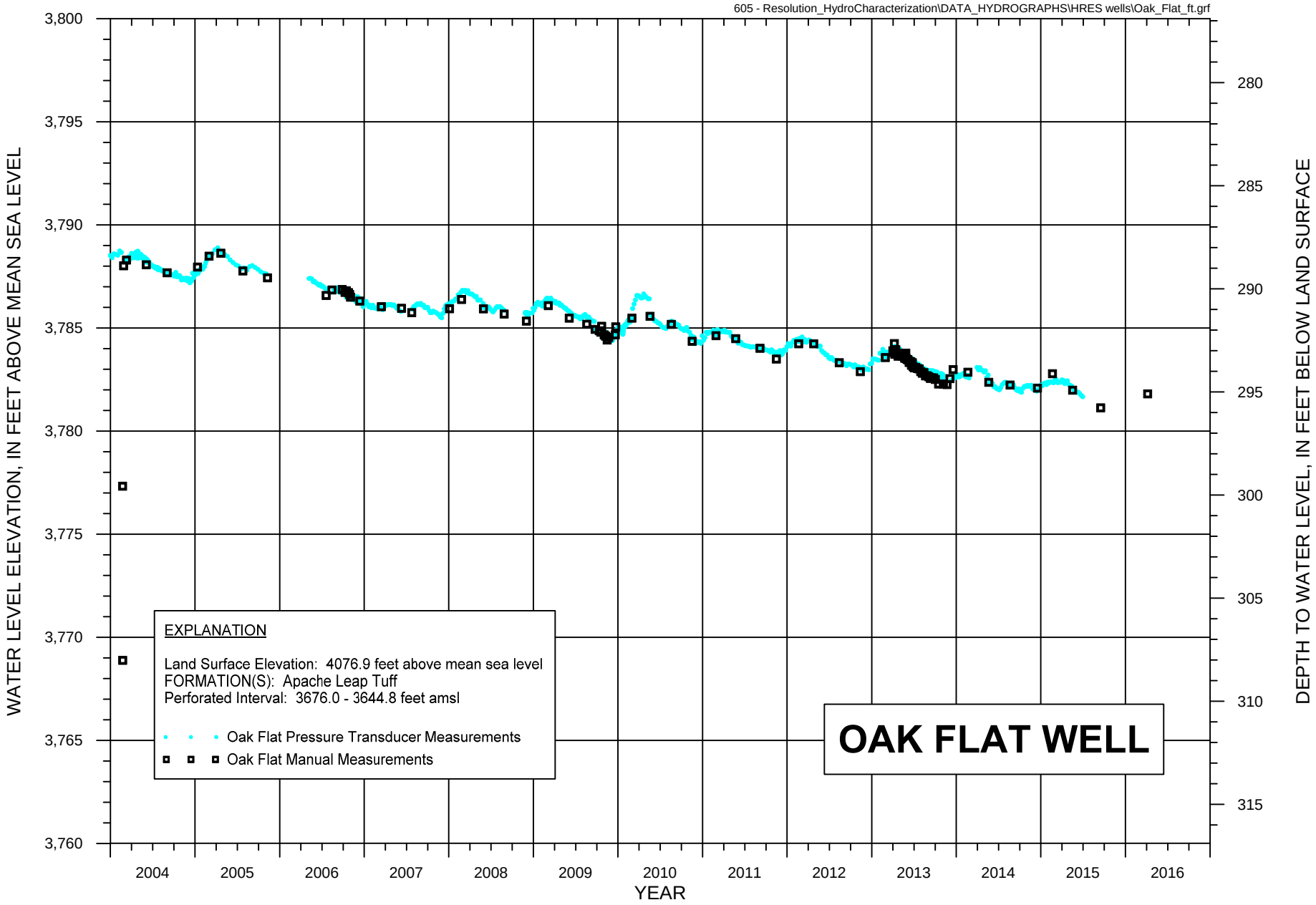


FIGURE A-28. WATER LEVEL HYDROGRAPH FOR OAK FLAT WELL

Resolution Copper Mining

MONTGOMERY & ASSOCIATES

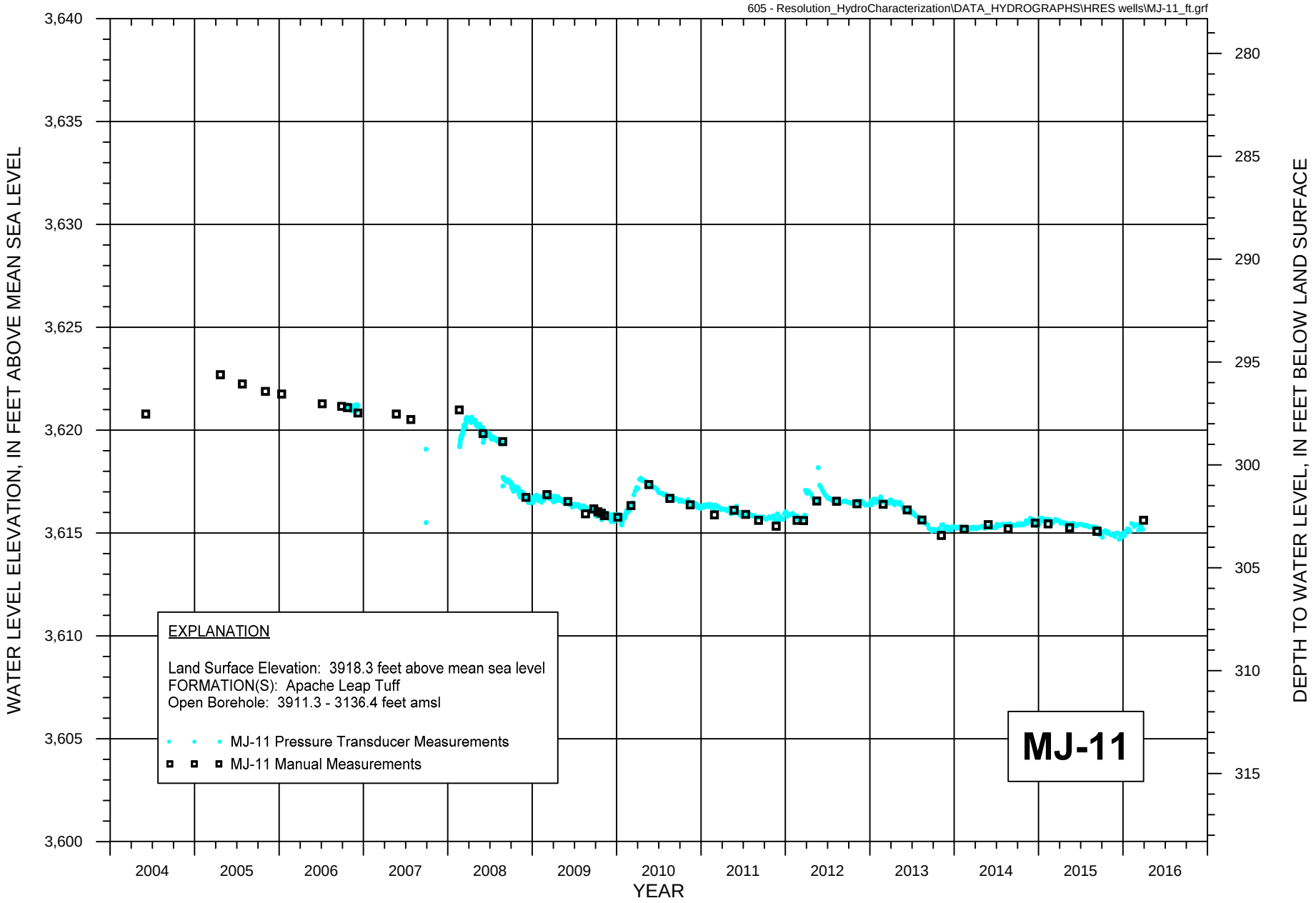


FIGURE A-29. WATER LEVEL HYDROGRAPH FOR WELL MJ-11

Resolution Copper Mining

MONTGOMERY & ASSOCIATES

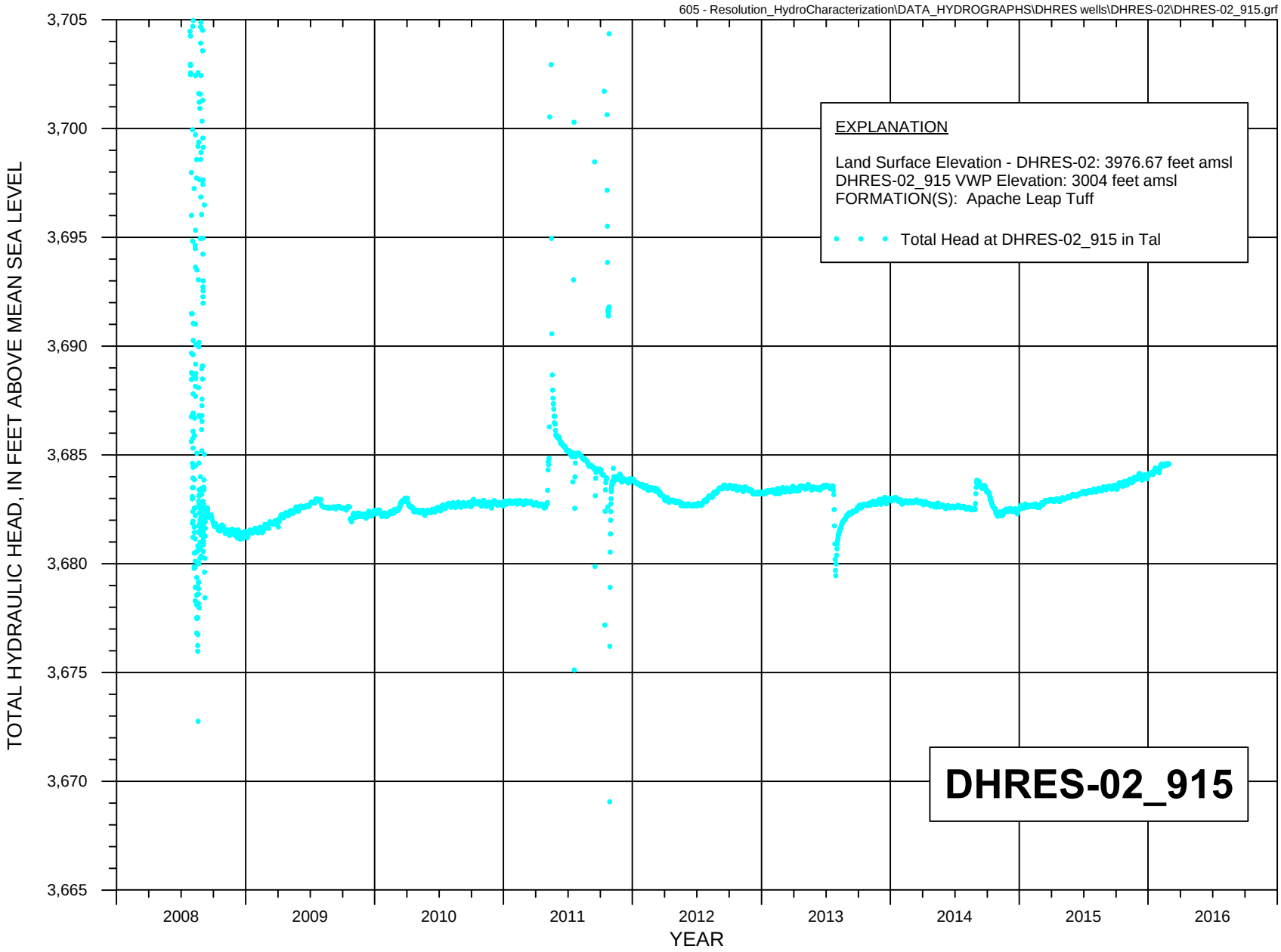


FIGURE A-30. HYDROGRAPH OF TOTAL HYDRAULIC HEAD FOR GROUTED PIEZOMETER DHRES-02_915, APACHE LEAP TUFF

Resolution Copper Mining

MONTGOMERY & ASSOCIATES

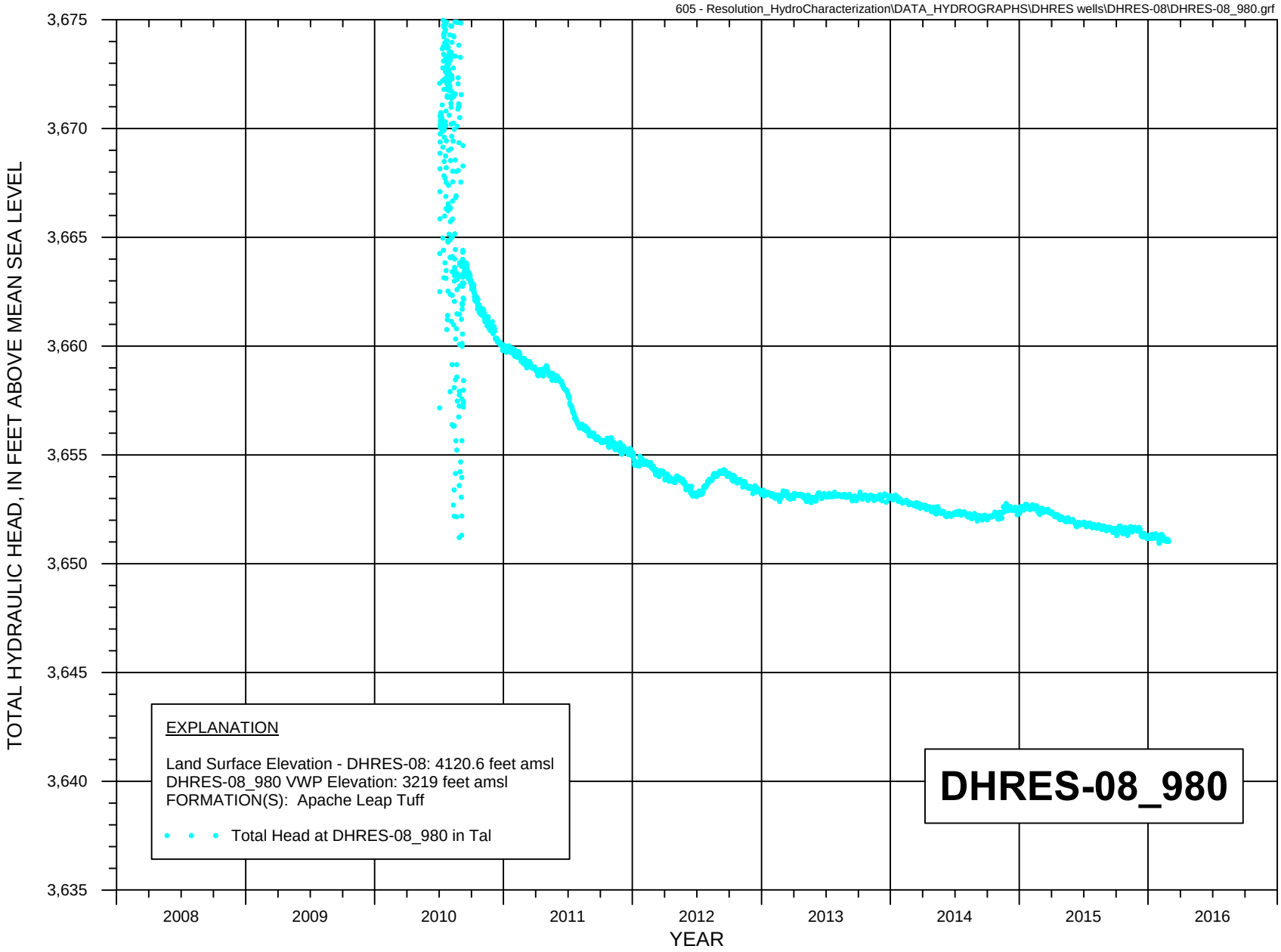


FIGURE A-31. TOTAL HYDRAULIC HEAD HYDROGRAPH FOR GROUTED PIEZOMETER DHRES-08_980

Resolution Copper Mining

MONTGOMERY & ASSOCIATES

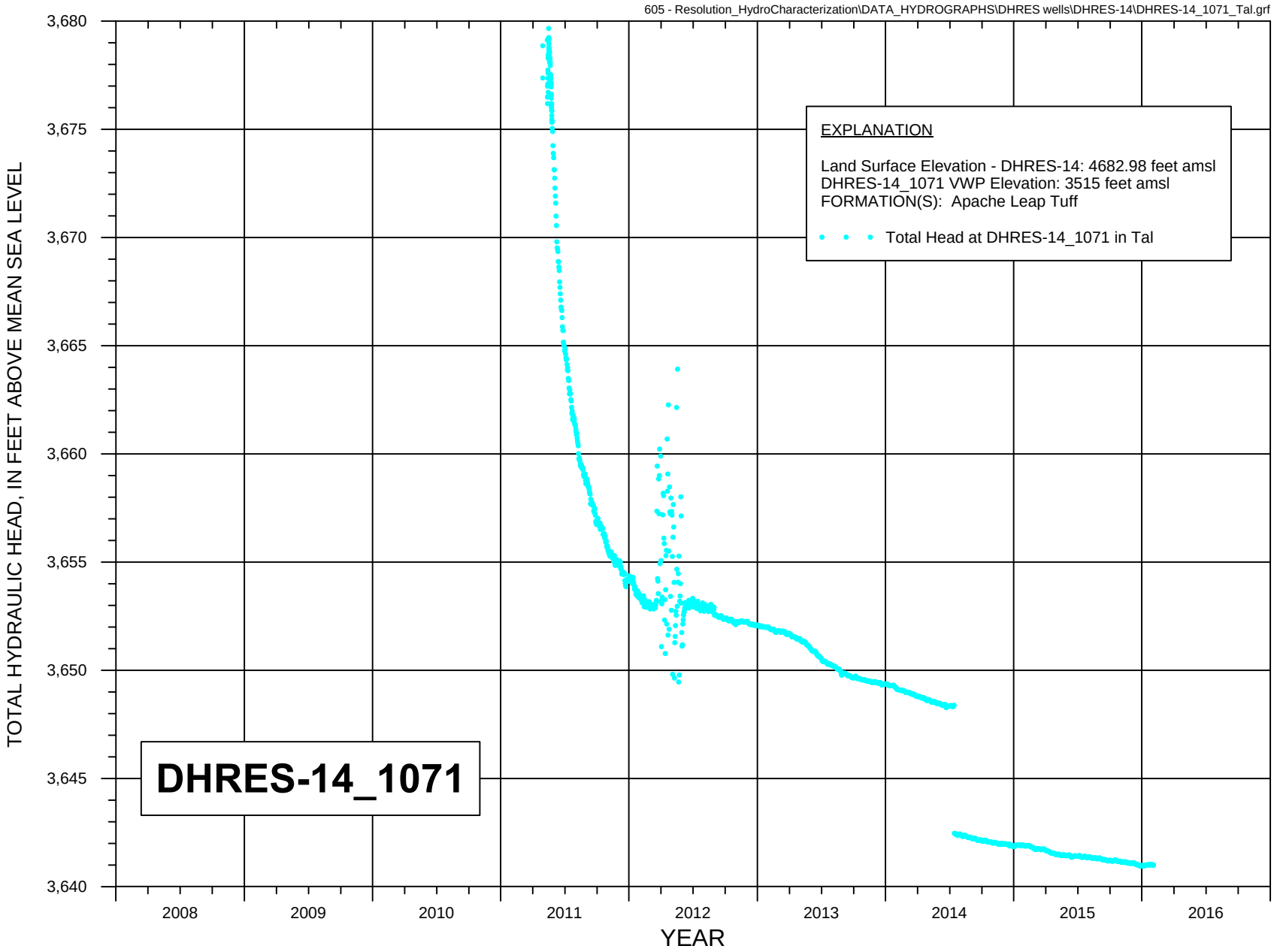
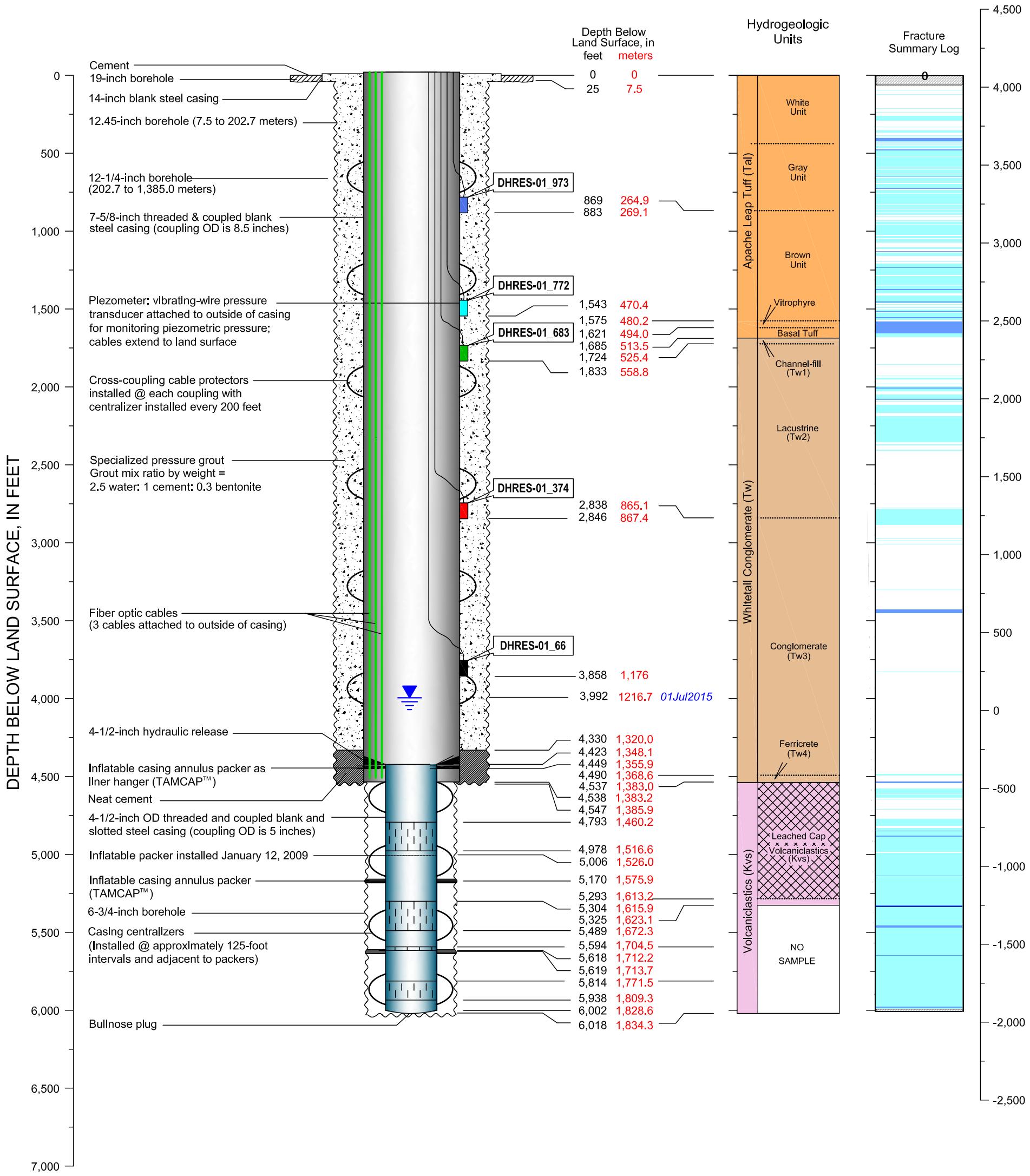


FIGURE A-32. TOTAL HYDRAULIC HEAD HYDROGRAPH FOR GROUTED PIEZOMETER DHRES-14_1071, APACHE LEAP TUFF

Resolution Copper Mining

MONTGOMERY & ASSOCIATES

DEEP AQUIFER SYSTEM/SUPERIOR BASIN



CADASTRAL: (D-1-13) 33ccd	ADWR NO: 55-217406
NORTHING: 835362.846	EASTING: 964528.342
LAND SURFACE ELEVATION: 4076.27 FEET AMSL	
DATUM: U.S. State Plane Coordinate System of 1983 Epoch 2011 (NAD83 NA2011) Arizona Central Zone (0202) North American Datum 1983 North American Vertical Datum of 1983	

EXPLANATION

- No Fracturing Evident
- Minor Fracturing
- Moderate Fracturing
- Major Fracturing
- Non-pumping Water Level
- DHRES-01_973 (Well Identifier; Piezometer Elevation, in meters amsl)

Resolution Copper Mining

MONTGOMERY & ASSOCIATES
Water Resource Consultants

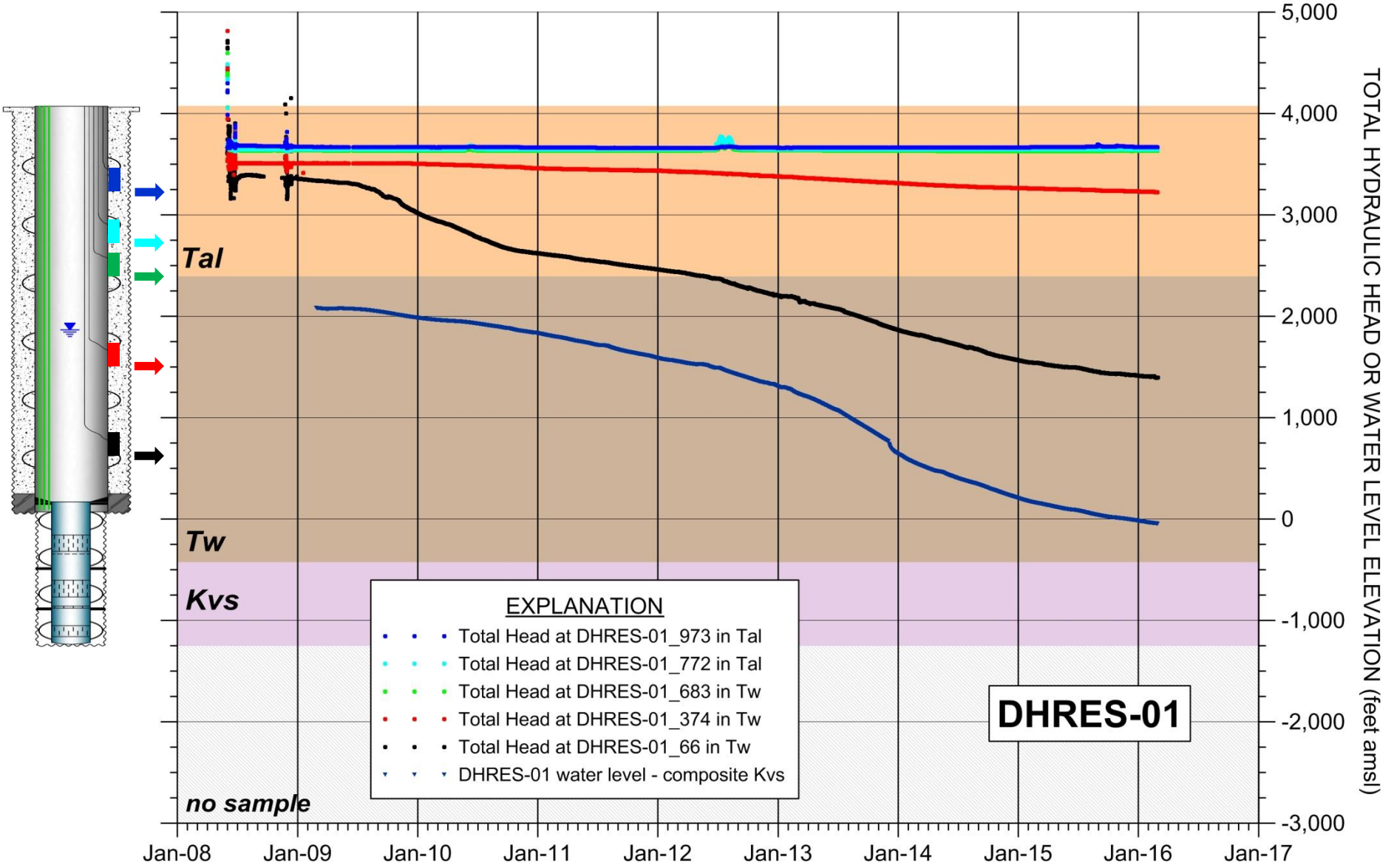
DHRES-01
DIAGRAM OF WELL CONSTRUCTION

Version: October 2015

FIGURE B-1

Drafting\605\WellSchematics_2015\DHRES1_Feet\23Oct2015

DHRES-01 Hydrograph



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Resolution Copper Mining

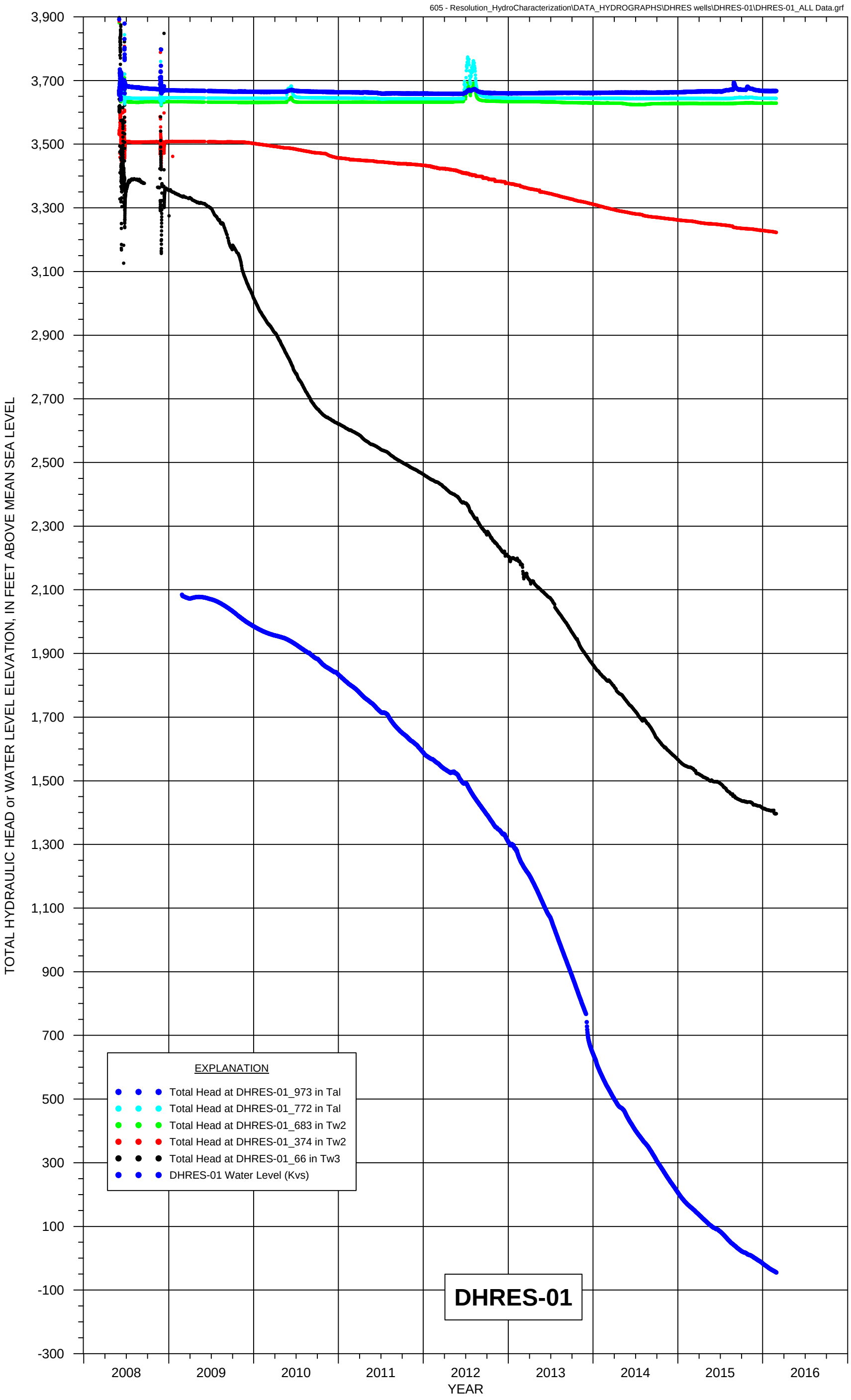


FIGURE B-1a. HYDROGRAPH OF WATER LEVEL, AND TOTAL HYDRAULIC HEAD FOR GROUTED PIEZOMETERS AT HYDROLOGIC TEST WELL DHRES-01

Resolution Copper Mining

MONTGOMERY & ASSOCIATES

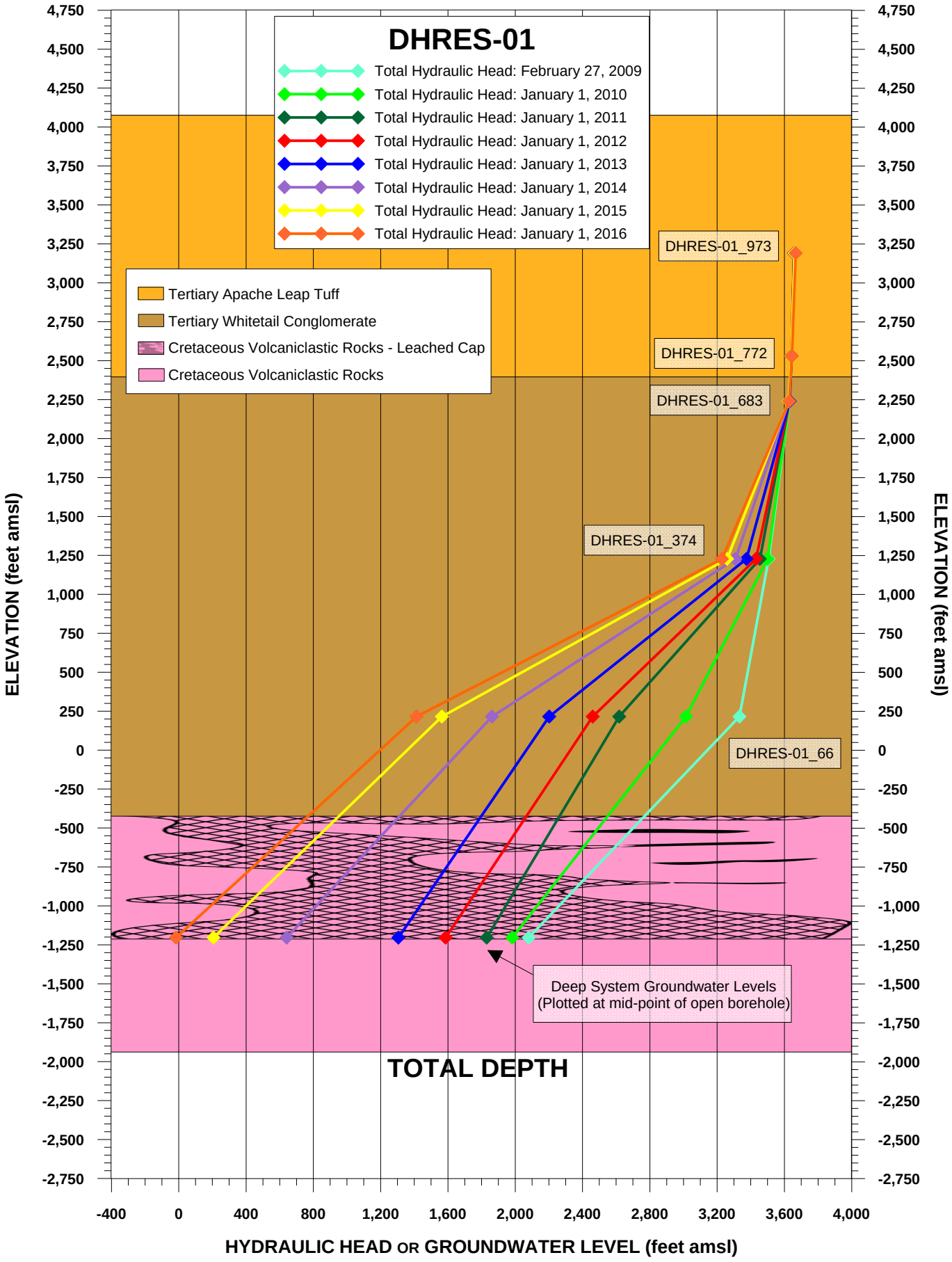
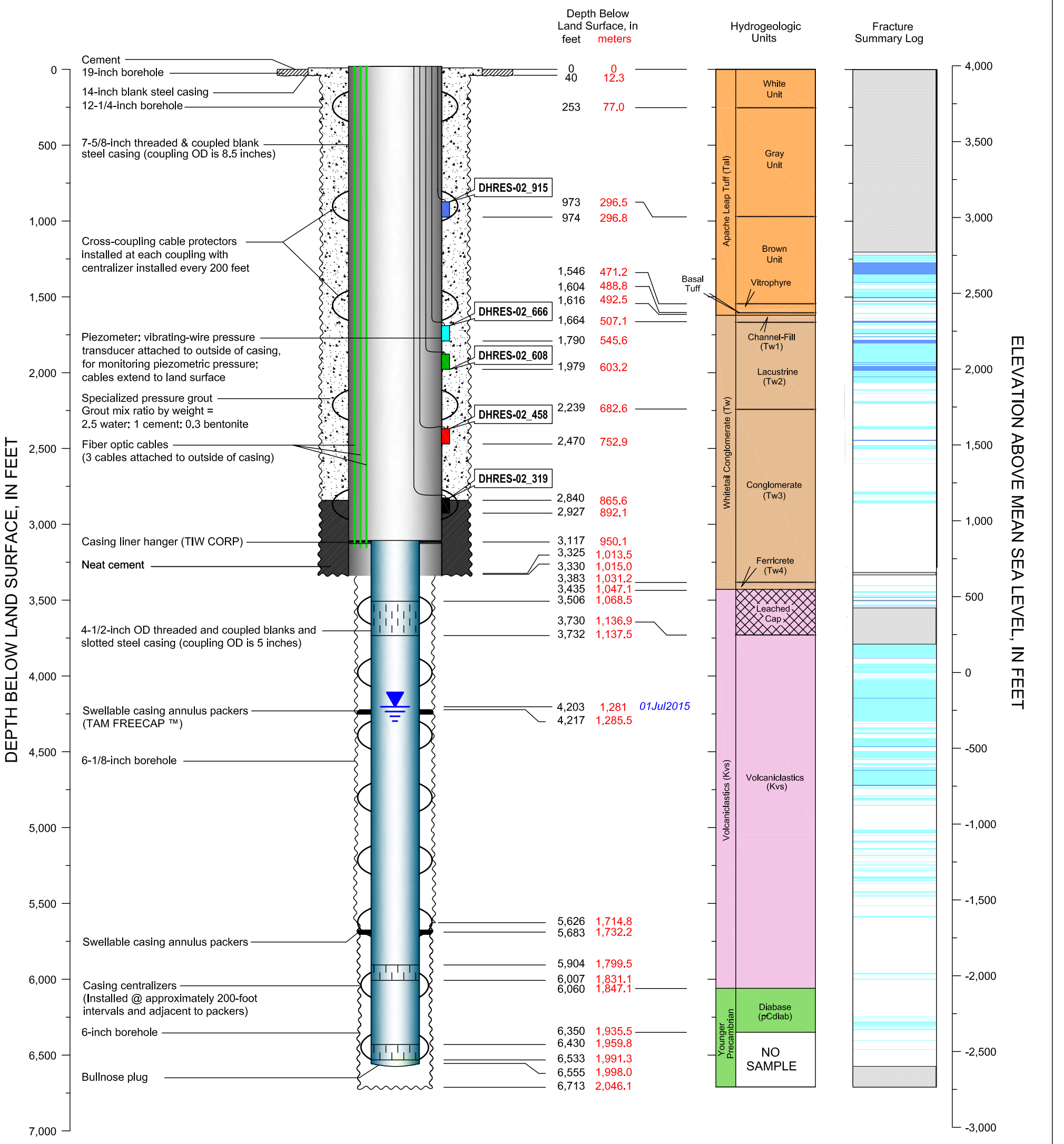


FIGURE 1. TOTAL HYDRAULIC HEAD AND GROUNDWATER LEVEL AT WELL DHRES-01, RESOLUTION PROJECT

605 - Resolution_HydroCharacterization\DATA_HYDROGRAPHS\DHRES wells\Elevation v Tot Hydraulic Head Graphs\DHRES-01_Total-Head.grf

MONTGOMERY & ASSOCIATES



CADASTRAL: (D-1-13) 32dbd	ADWR NO: 55-217467
NORTHING: 836733.333	EASTING: 961873.632
LAND SURFACE ELEVATION: 3976.67 FEET AMSL	
DATUM: U.S. State Plane Coordinate System of 1983 Epoch 2011 (NAD83 NA2011) Arizona Central Zone (0202) North American Datum 1983 North American Vertical Datum of 1983	

EXPLANATION

- No Fracturing Evident
- Minor Fracturing
- Moderate Fracturing
- Major Fracturing
- Non-pumping Water Level

DHRES-02_915 (Well Identifier; Piezometer Elevation, in meters amsl)

Resolution Copper Mining

MONTGOMERY & ASSOCIATES
Water Resource Consultants

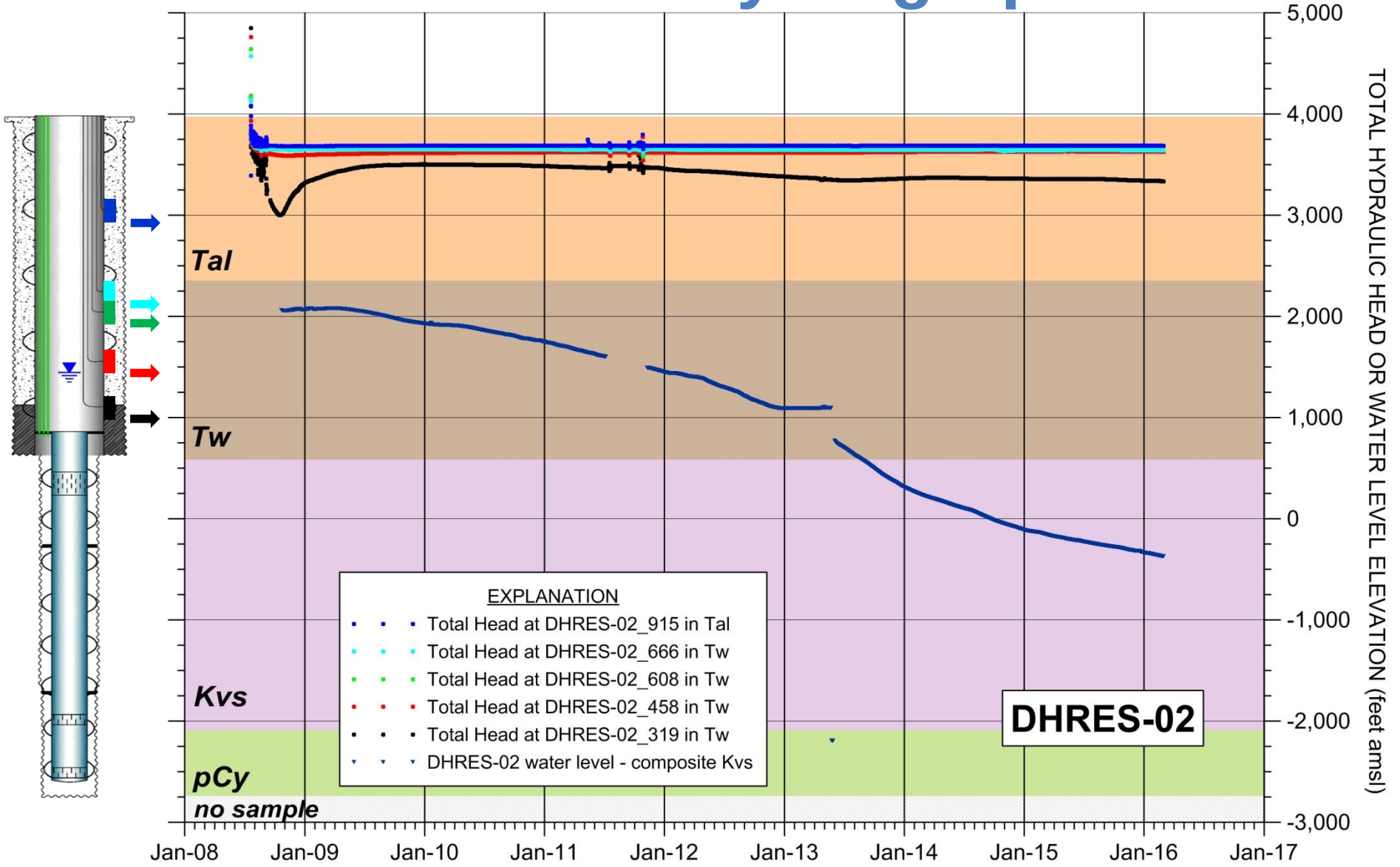
DHRES-02
DIAGRAM OF WELL CONSTRUCTION

Version: October 2015

FIGURE B-2

Drafting\605\WellSchematics_2015\DHRES2_Feet\15Oct2015

DHRES-02 Hydrograph



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Resolution Copper Mining

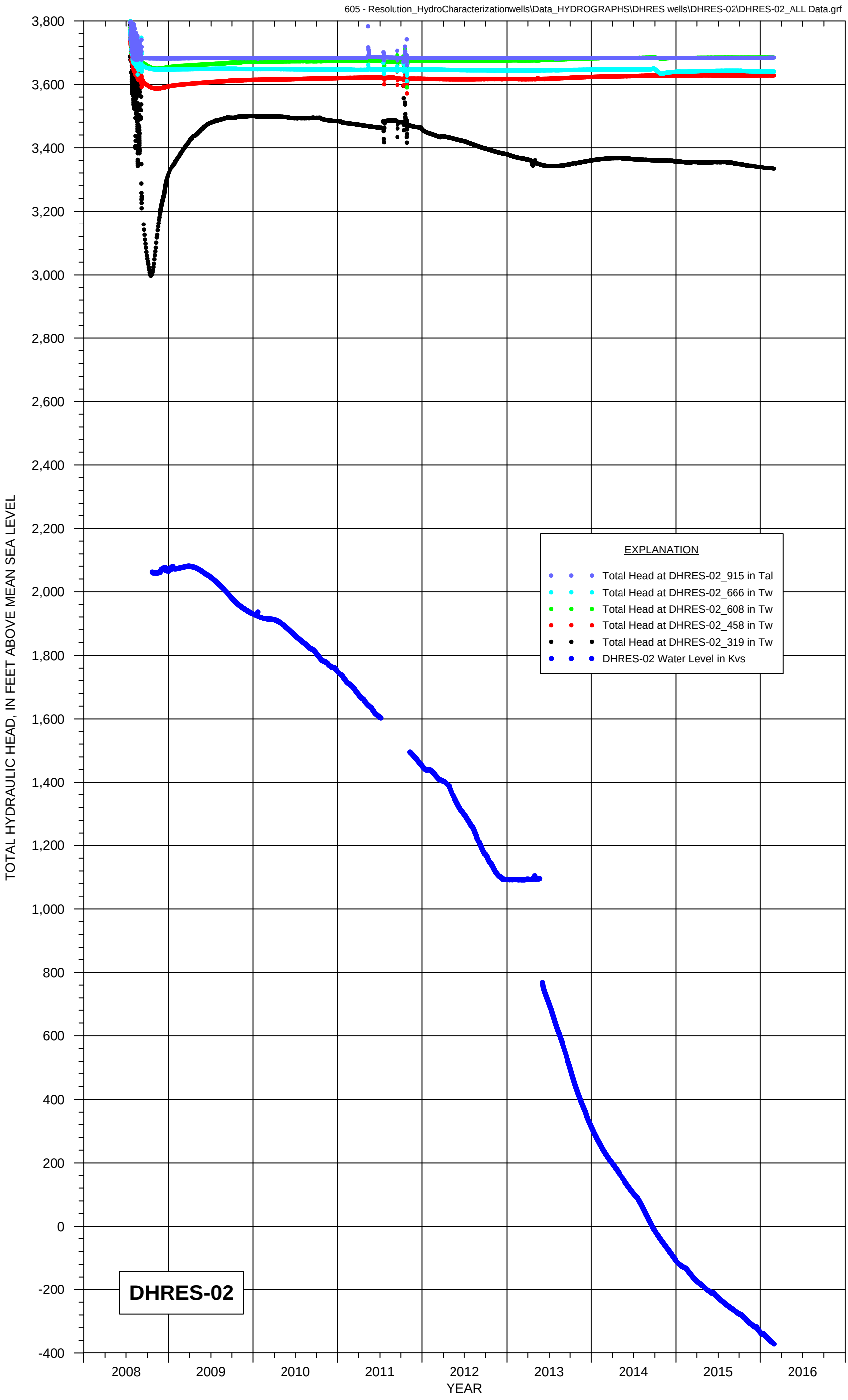


FIGURE B-2b. HYDROGRAPH OF WATER LEVEL, AND TOTAL HYDRAULIC HEAD FOR GROUTED PIEZOMETERS AT HYDROLOGIC TEST WELL DHRES-02

Resolution Copper Mining

MONTGOMER & ASSOCIATES

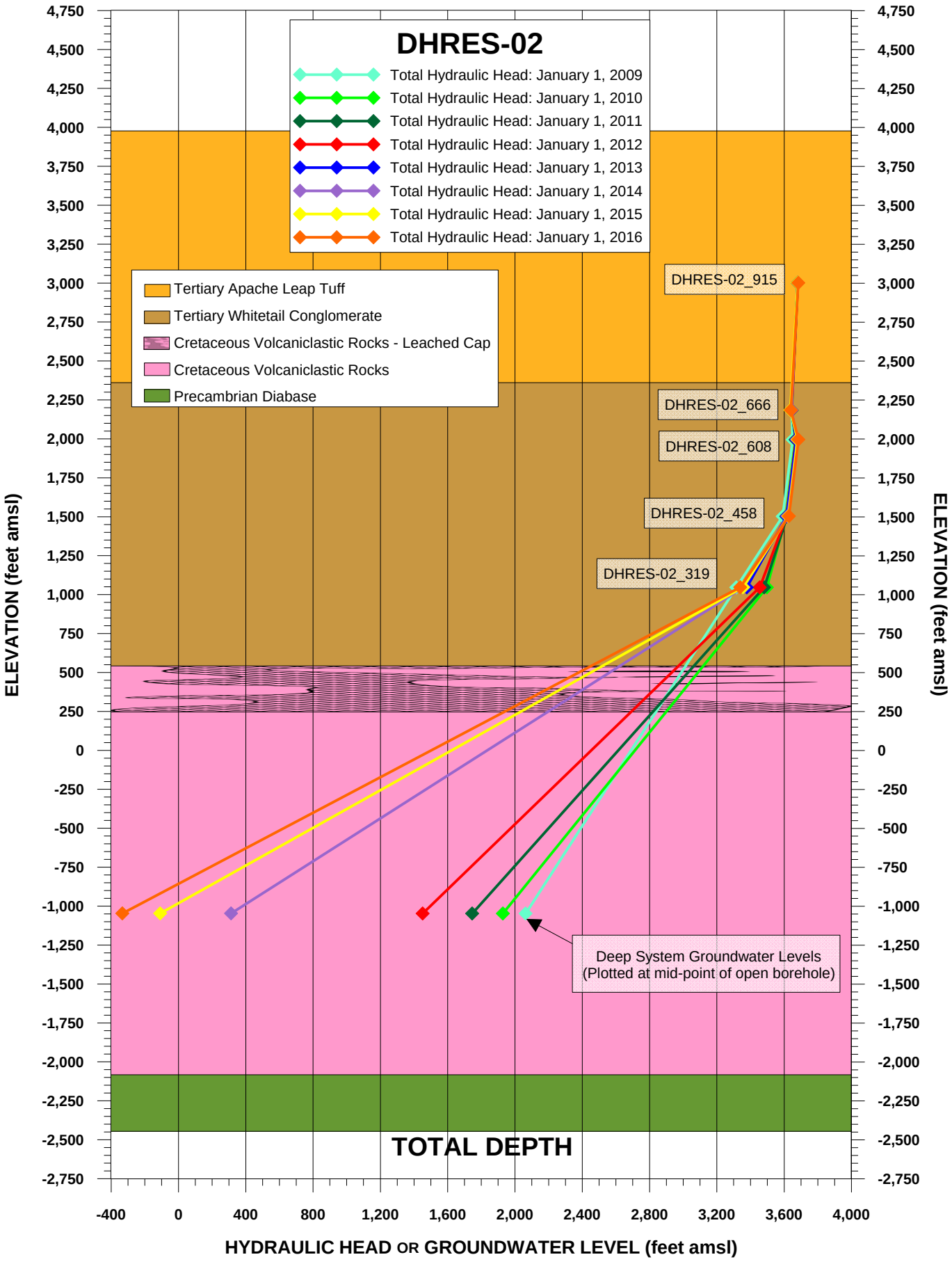
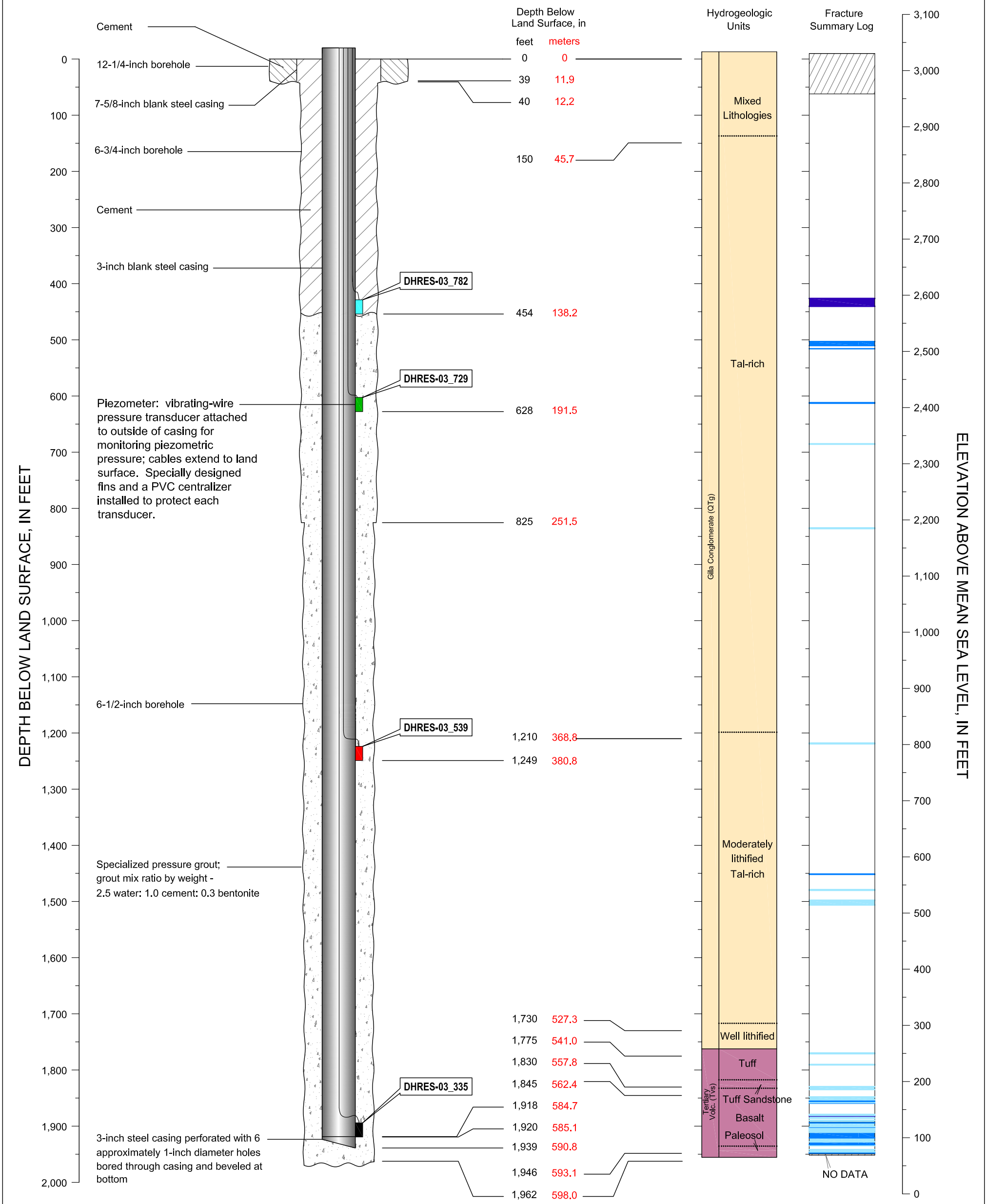


FIGURE 2. TOTAL HYDRAULIC HEAD AND GROUNDWATER LEVEL AT WELL DHRES-02, RESOLUTION PROJECT

MONTGOMERY & ASSOCIATES



CADASTRAL: (D-1-12) 35bcd	ADWR NO: 55-218637
NORTHING: 837612.381	EASTING: 947362.791
LAND SURFACE ELEVATION: 3020.58 FEET AMSL	
DATUM: U.S. State Plane Coordinate System of 1983 Epoch 2011 (NAD83 NA2011) Arizona Central Zone (0202) North American Datum 1983 North American Vertical Datum of 1983	

EXPLANATION

- No Fracturing Evident
- Minor Fracturing
- Moderate Fracturing
- Major Fracturing

DHRES-03_782 — Well Identifier; Piezometer Elevation, in meters amsl

Resolution Copper Mining

MONTGOMERY & ASSOCIATES
Water Resource Consultants

DHRES-03
DIAGRAM OF WELL CONSTRUCTION

Version: October 2015

FIGURE B-3

Drafting\605\WellSchematics_2015\DHRES3_Feet\15Oct2015

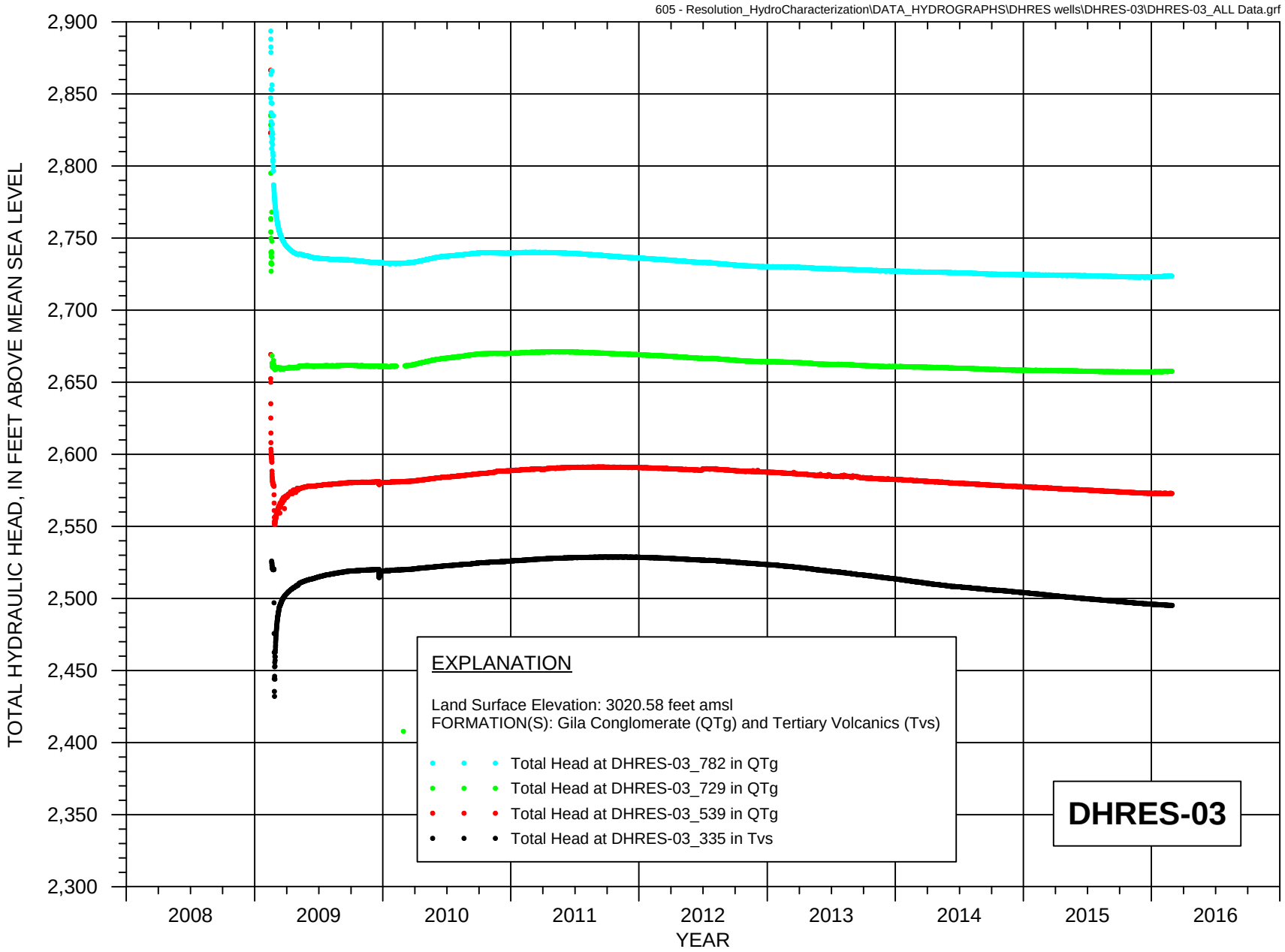


FIGURE B-3a. HYDROGRAPH OF TOTAL HYDRAULIC HEAD FOR GROUTED PIEZOMETERS AT HYDROLOGIC TEST WELL DHRES-03

Resolution Copper Mining

MONTGOMERY & ASSOCIATES

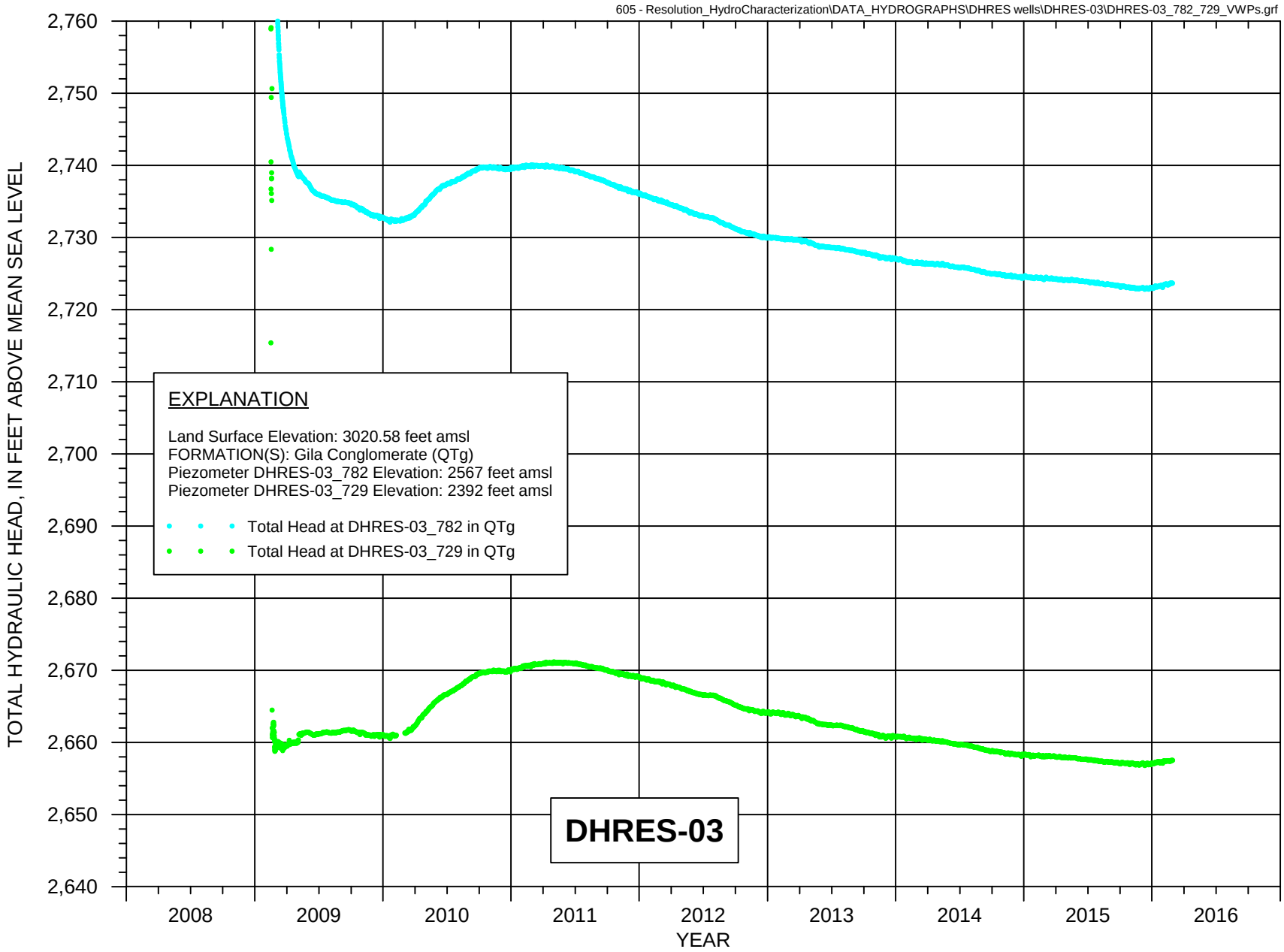


FIGURE B-3b. HYDROGRAPH OF TOTAL HYDRAULIC HEAD FOR GROUTED PIEZOMETERS DHRES-03_782 AND 729 AT HYDROLOGIC TEST WELL DHRES-03

Resolution Copper Mining

MONTGOMERY & ASSOCIATES

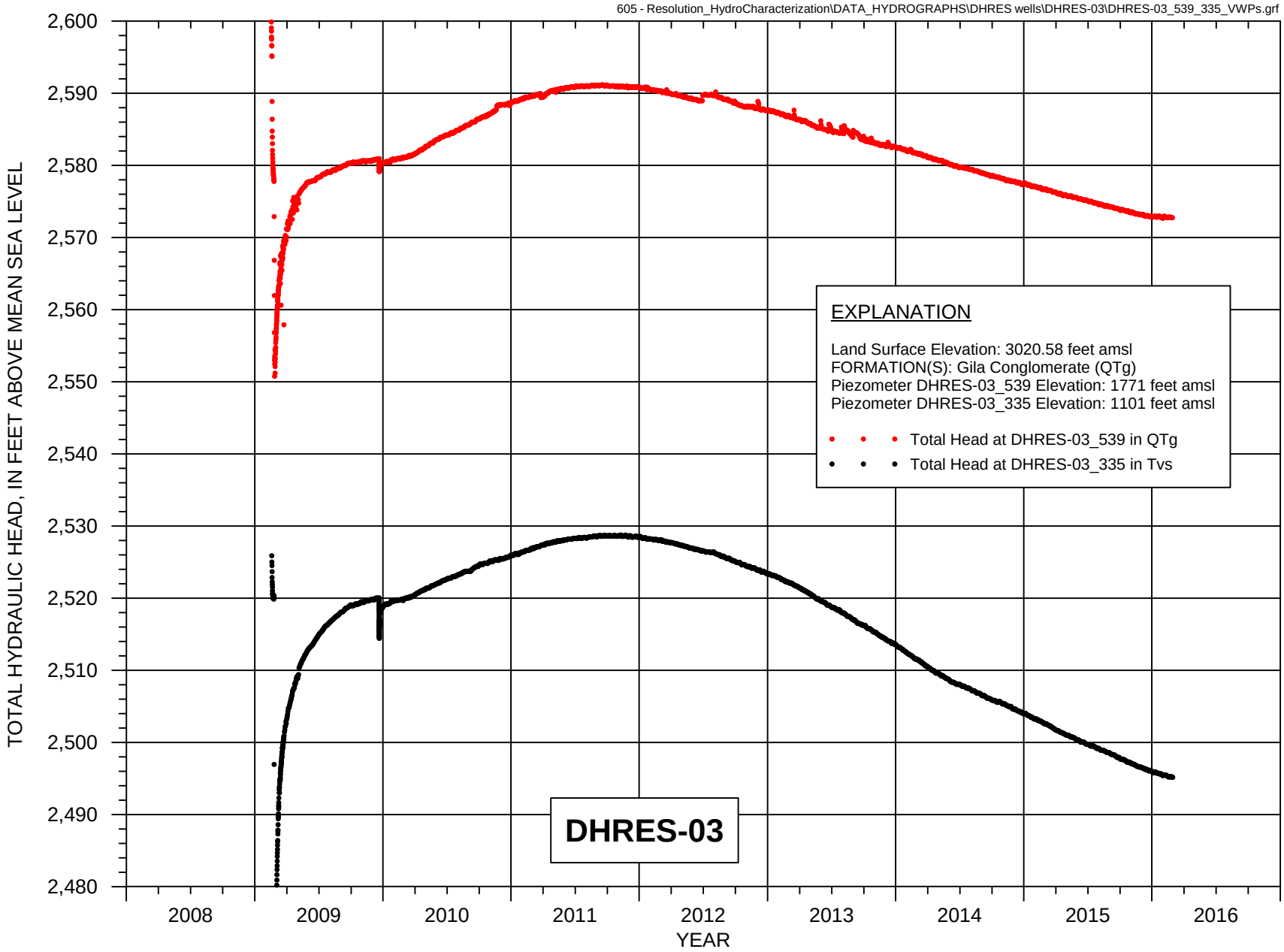


FIGURE B-3c. HYDROGRAPH OF TOTAL HYDRAULIC HEAD FOR GROUTED PIEZOMETERS DHRES-03_539 AND 335 AT HYDROLOGIC TEST WELL DHRES-03

Resolution Copper Mining

MONTGOMERY & ASSOCIATES

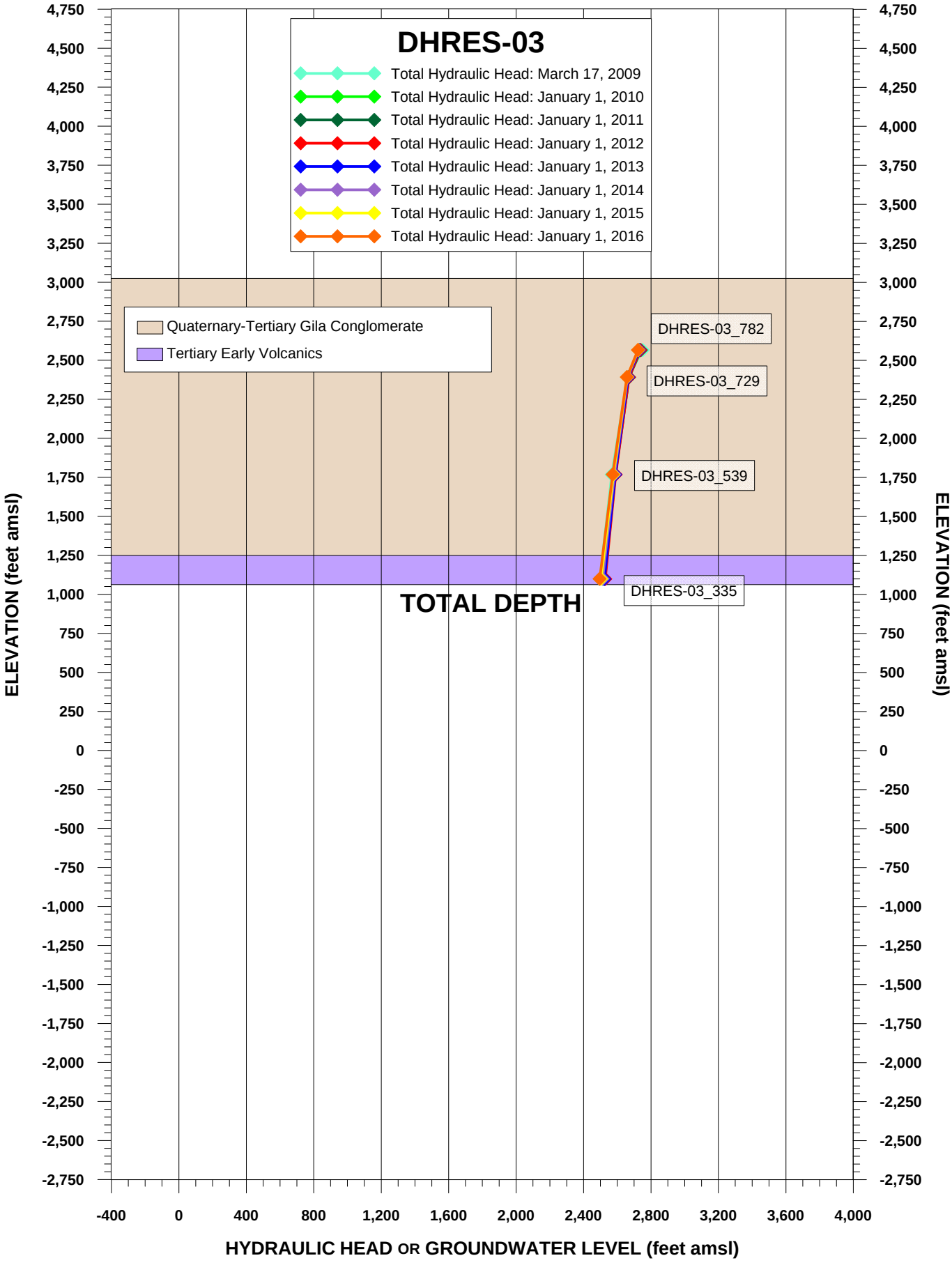
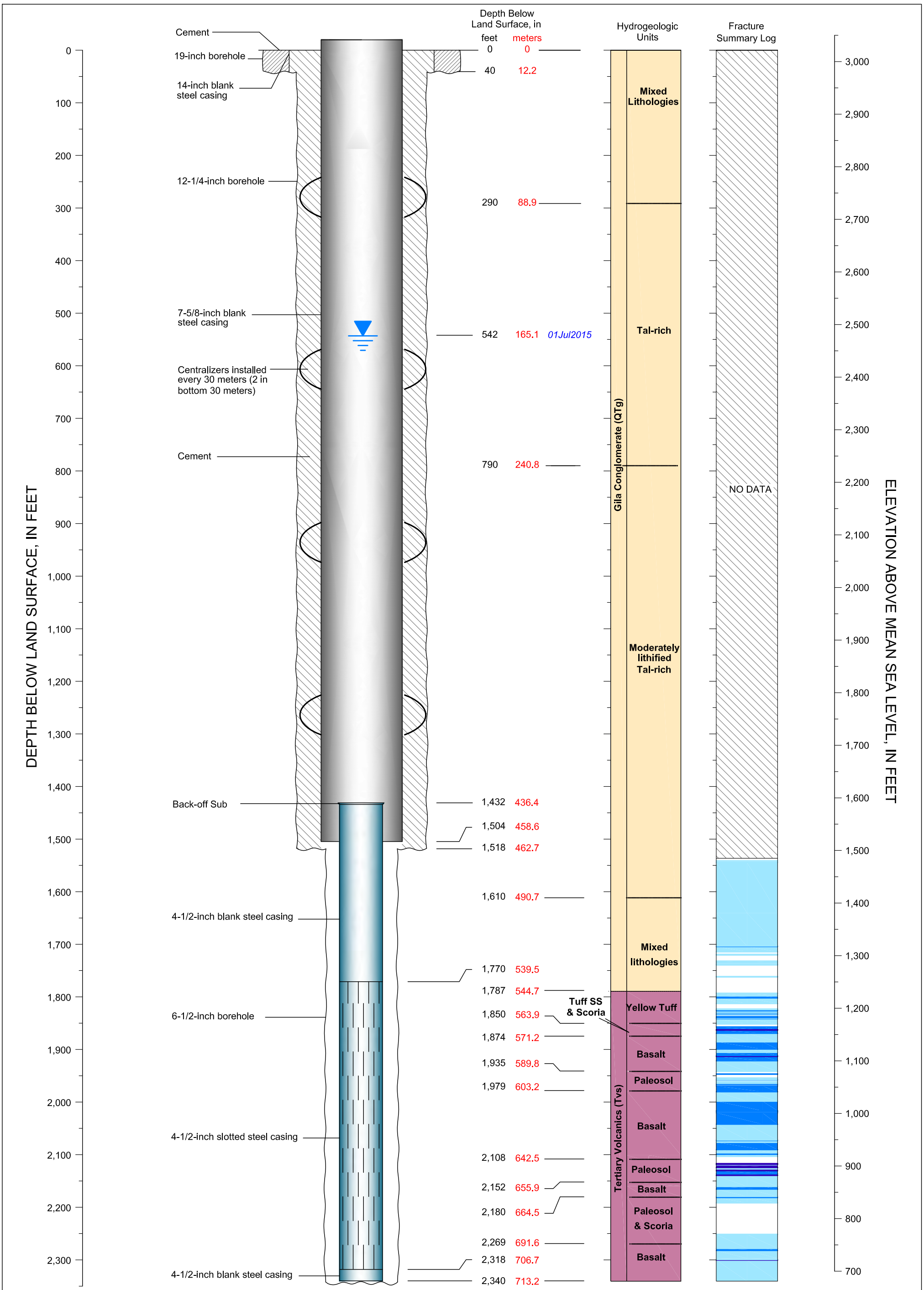


FIGURE 3. TOTAL HYDRAULIC HEAD AND GROUNDWATER LEVEL AT WELL DHRES-03, RESOLUTION PROJECT

MONTGOMERY & ASSOCIATES



CADASTRAL: (D-1-12) 35bcd	ADWR NO: 55-218676
NORTHING: 837627.381	EASTING: 947290.983
LAND SURFACE ELEVATION: 3021.63 FEET AMSL	
DATUM: U.S. State Plane Coordinate System of 1983 Epoch 2011 (NAD83 NA2011) Arizona Central Zone (0202) North American Datum 1983 North American Vertical Datum of 1983	

EXPLANATION

- No Data
- No Fracturing Evident
- Minor Fracturing
- Moderate Fracturing
- Major Fracturing
- Non-pumping Water Level

Resolution Copper Mining

MONTGOMERY & ASSOCIATES
Water Resource Consultants

DHRES-04
DIAGRAM OF WELL CONSTRUCTION

Version: October 2015

FIGURE B-4

Drafting\605\GroutedPiezoMemo\DHRES41\15Oct2012

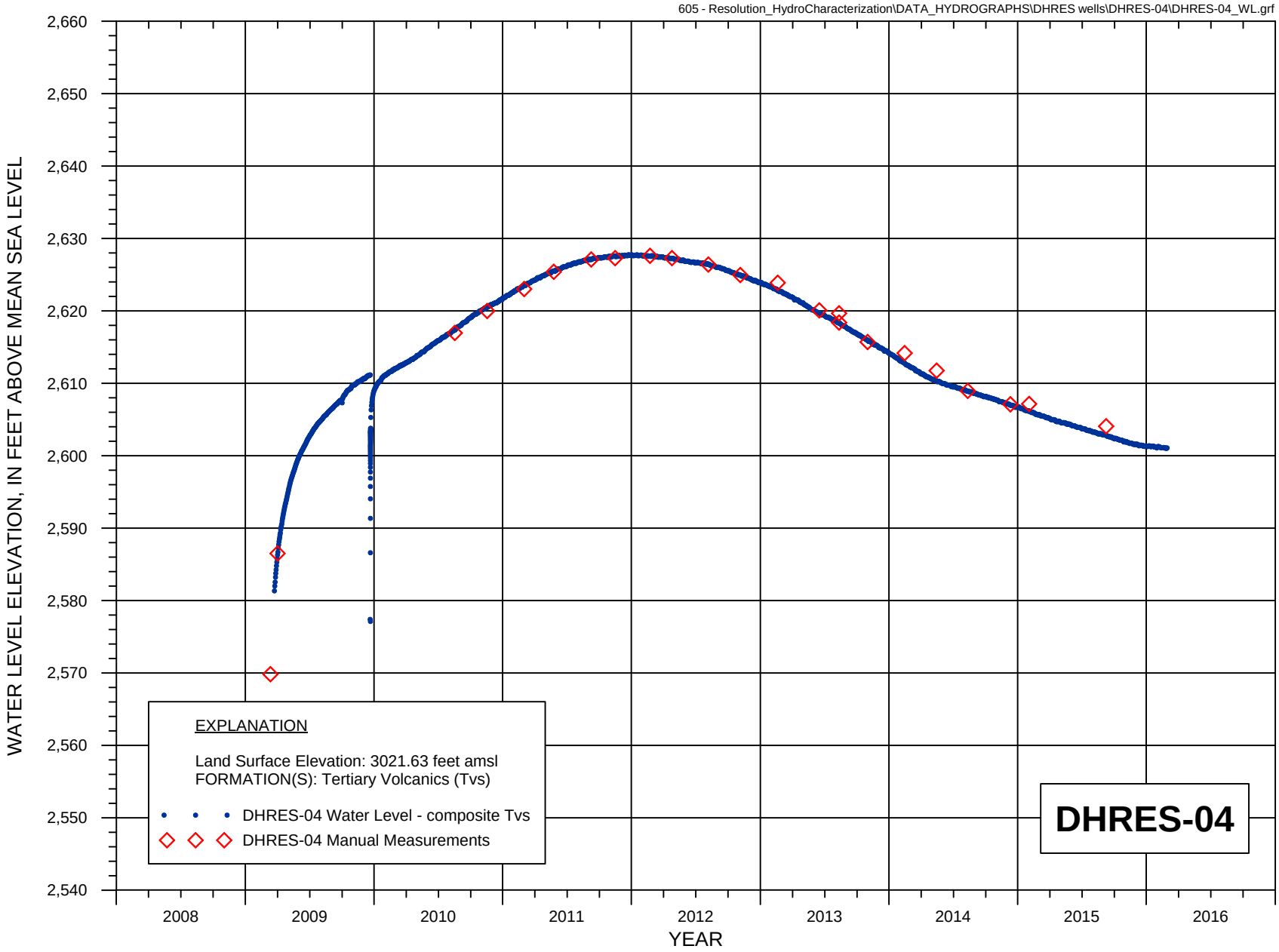
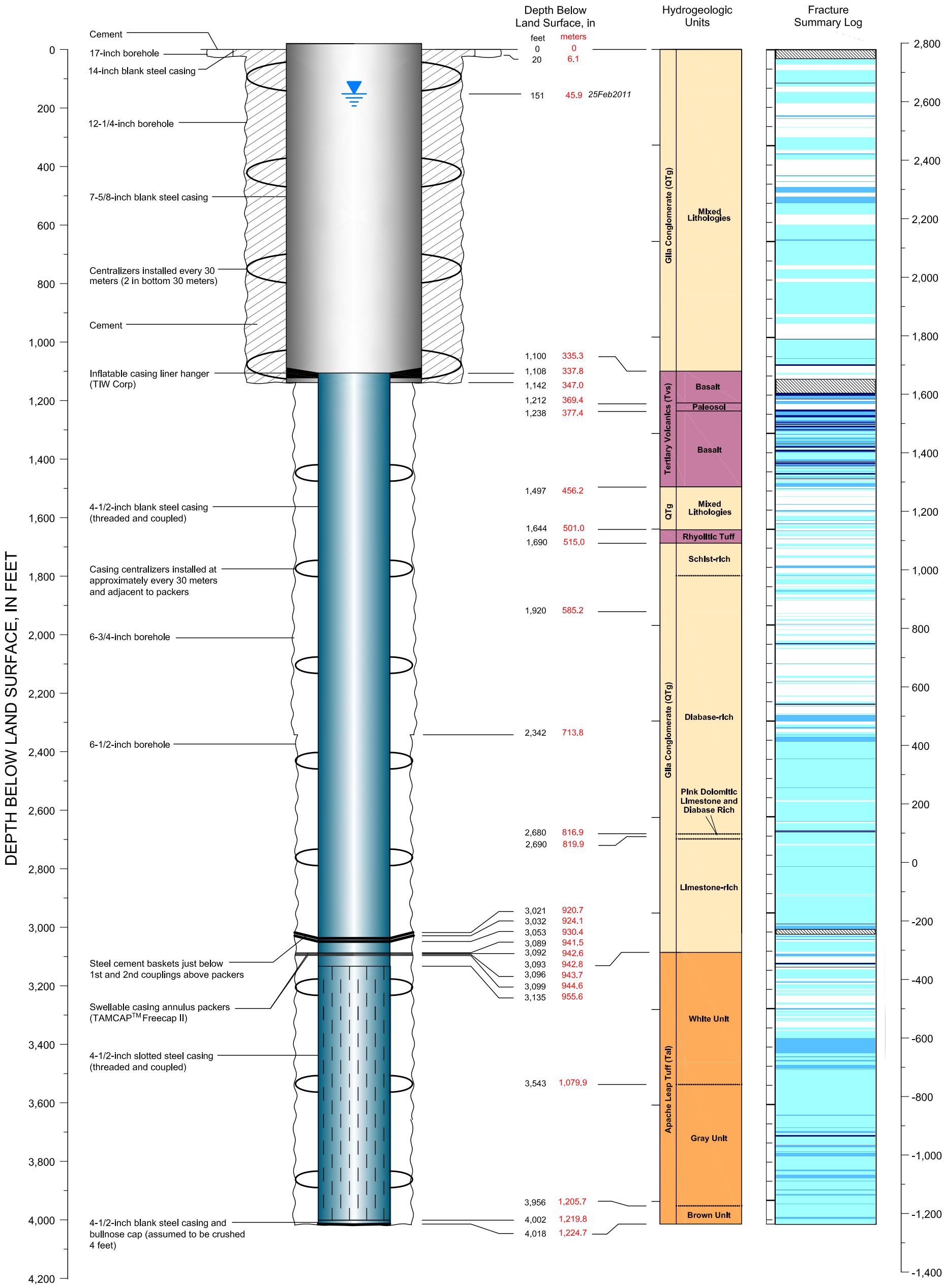


FIGURE B-4a. WATER LEVEL HYDROGRAPH FOR HYDROLOGIC TEST WELL DHRES-04

Resolution Copper Mining

MONTGOMERY & ASSOCIATES



CADASTRAL: (D-1-12)34dbc	ADWR NO: 55-219677
NORTHING: 836291.433	EASTING: 943640.130
LAND SURFACE ELEVATION: 2778.37 FEET AMSL	
DATUM: U.S. State Plane Coordinate System of 1983 Epoch 2011 (NAD83 NA2011) Arizona Central Zone (0202) North American Datum 1983 North American Vertical Datum of 1983	

EXPLANATION

- No Data
- No Fracturing Evident
- Minor Fracturing
- Moderate Fracturing
- Major Fracturing
- Non-pumping Water Level

Resolution Copper Mining

MONTGOMERY & ASSOCIATES
Water Resource Consultants

DHRES-05B
DIAGRAM OF WELL CONSTRUCTION

Version: October 2015

FIGURE B-5

Drafting\605\WellSchematics_2015\DHRES05B_Feet\14Oct2015

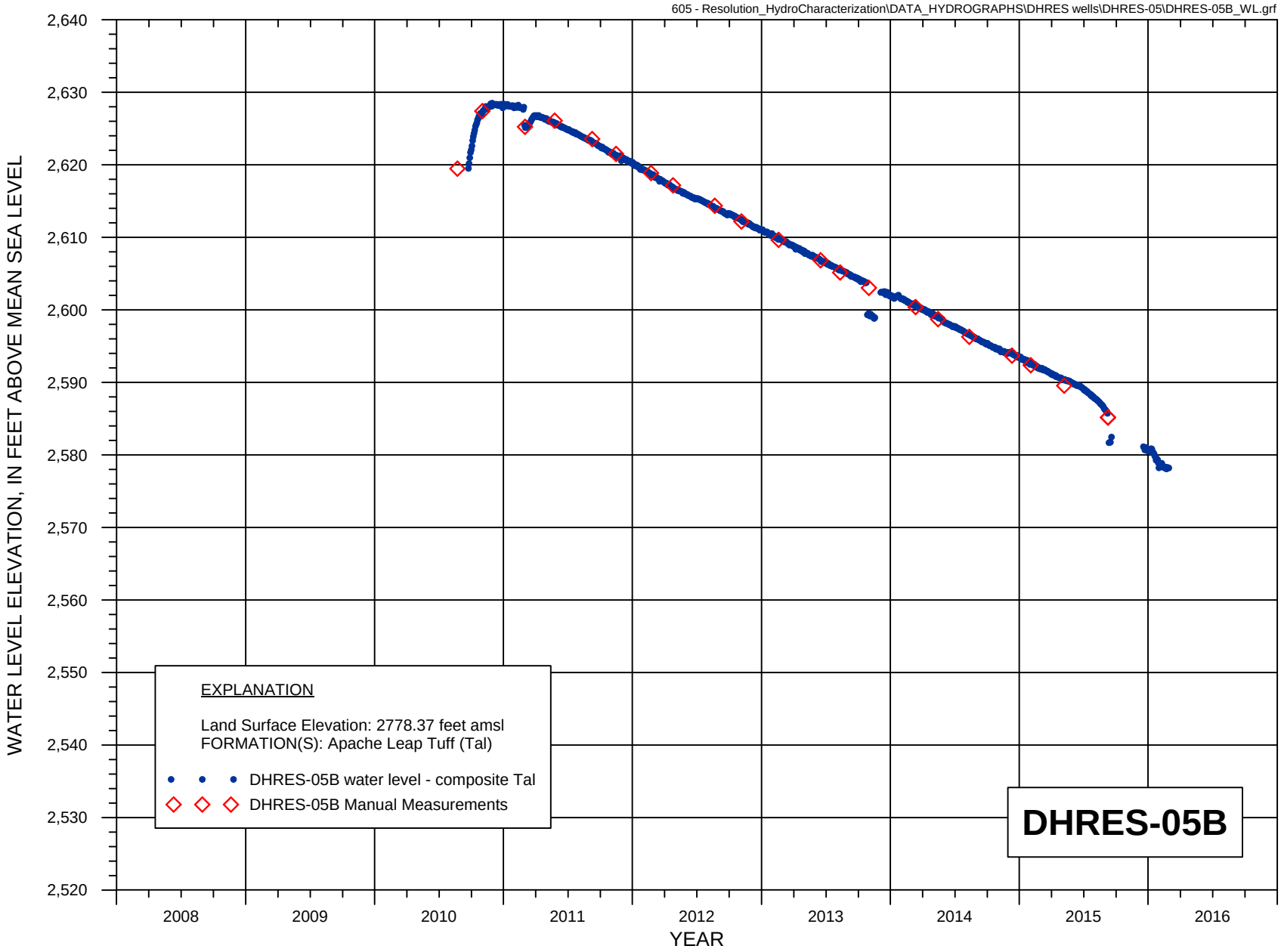
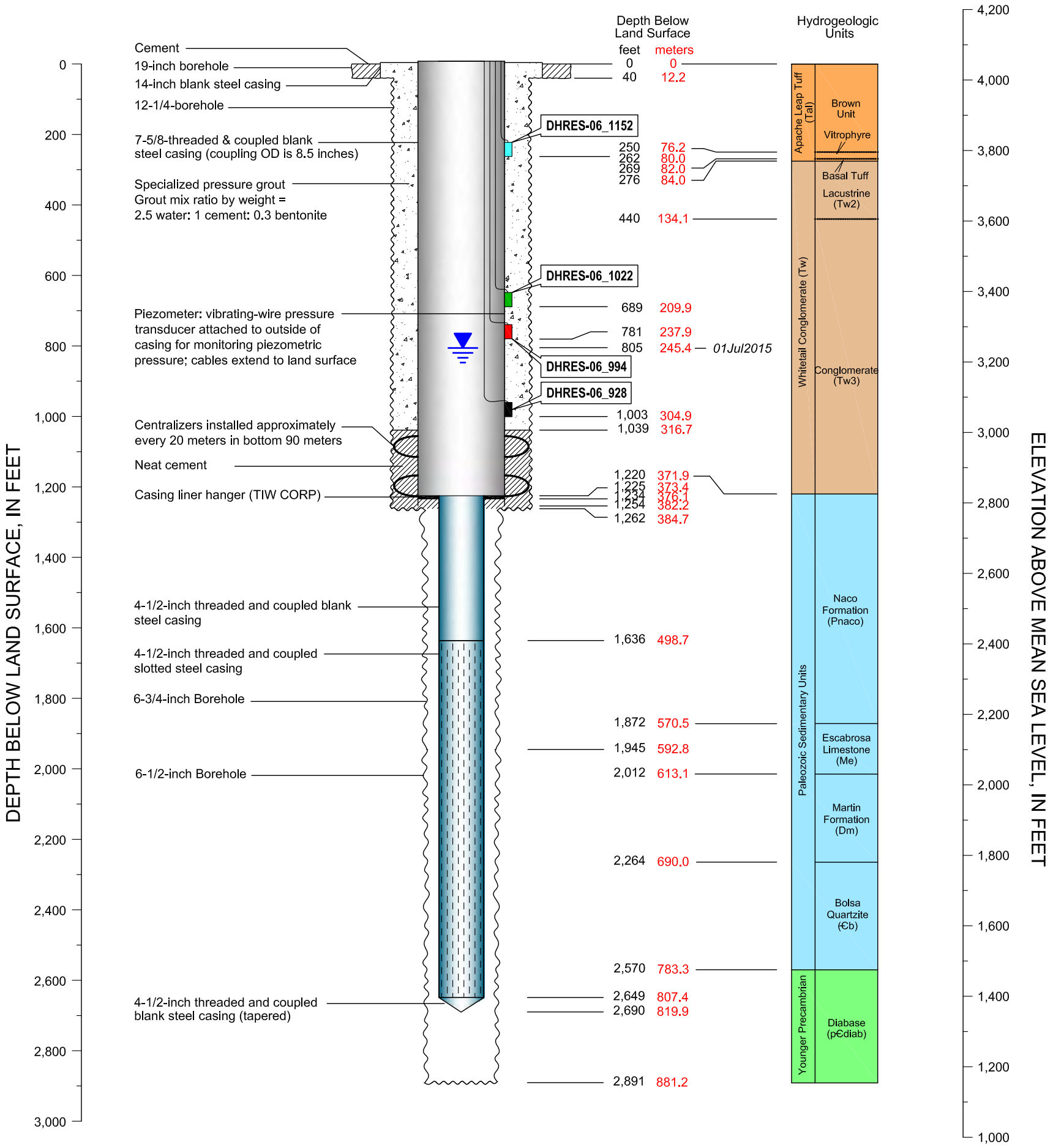


FIGURE B-5a. WATER LEVEL HYDROGRAPH FOR HYDROLOGIC TEST WELL DHRES-05B

Resolution Copper Mining

MONTGOMERY & ASSOCIATES



CADASTRAL: (D-2-13) 8cca	ADWR NO: 55-911688
NORTHING: 826028.632	EASTING: 965587.788
LAND SURFACE ELEVATION: 4045.57 FEET AMSL	
DATUM: U.S. State Plane Coordinate System of 1983 Epoch 2011 (NAD83 NA2011) Arizona Central Zone (0202) North American Datum 1983 North American Vertical Datum of 1983	

EXPLANATION

Non-pumping Water Level

DHRES-06_1152

Well Identifier — Piezometer Elevation, in meters amsl

Resolution Copper Mining

MONTGOMERY & ASSOCIATES
Water Resource Consultants

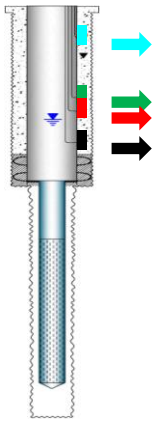
DHRES-06
DIAGRAM OF WELL CONSTRUCTION

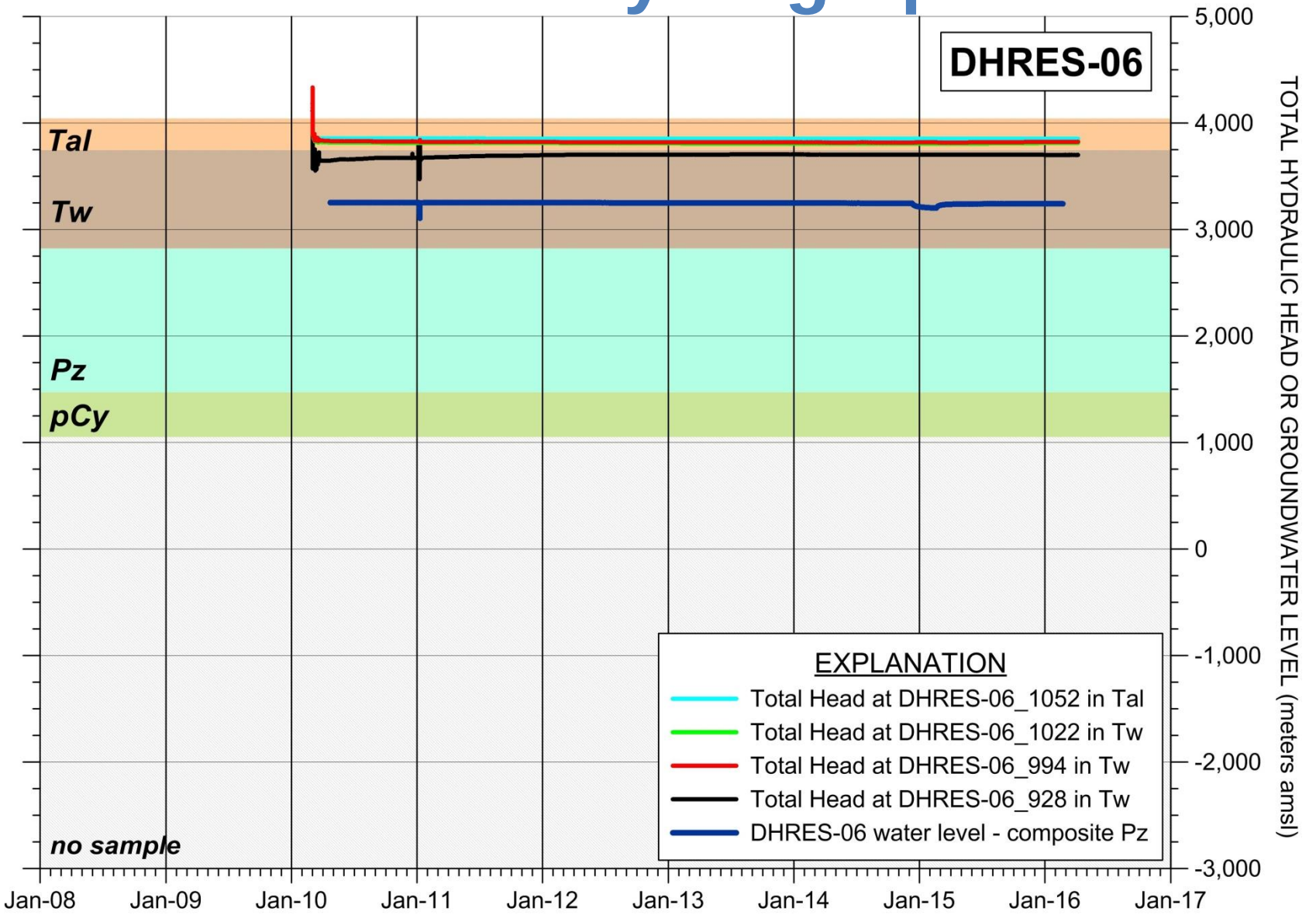
Version: October 2015

FIGURE B-6

Drafting\605\WellSchematics_2015\DHRES6_Feet\15Oct2015

DHRES-06 Hydrograph





MONTGOMERY & ASSOCIATES

Resolution Copper Mining

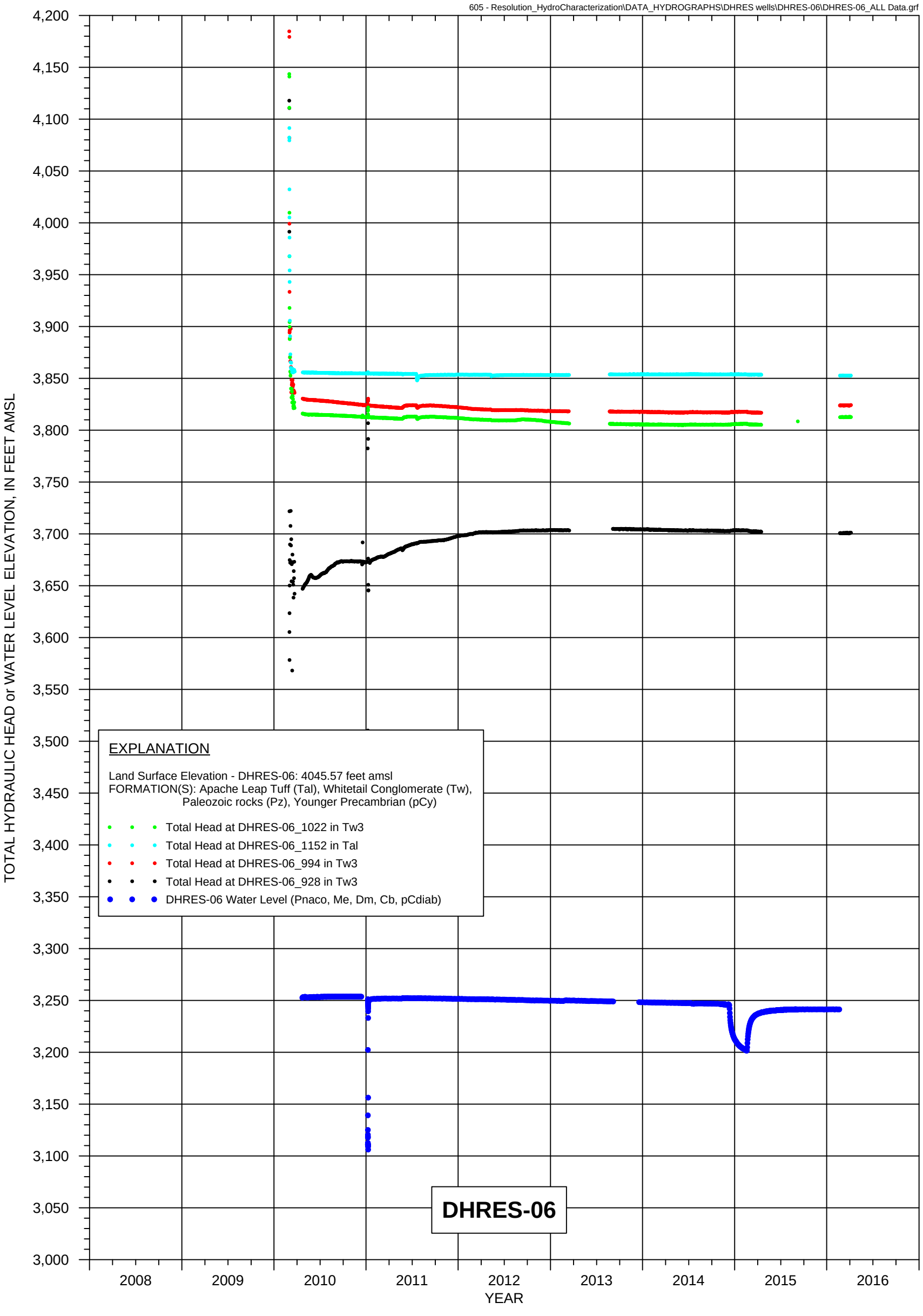


FIGURE B-6a. HYDROGRAPH OF WATER LEVEL, AND TOTAL HYDRAULIC HEAD FOR GROUTED PIEZOMETERS AT HYDROLOGIC TEST WELL DHRES-06

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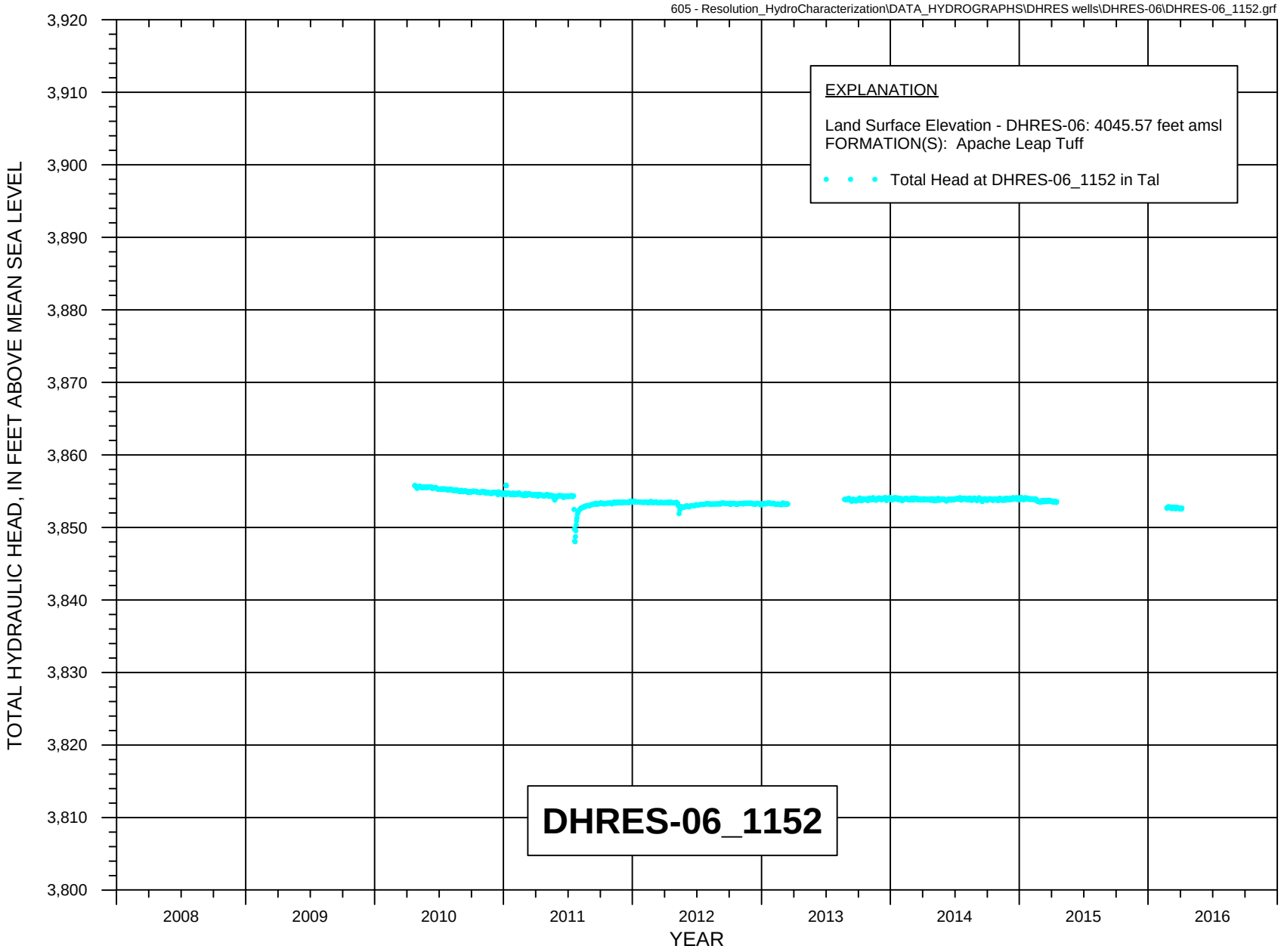


FIGURE B-6b. HYDROGRAPH OF TOTAL HYDRAULIC HEAD FOR GROUTED PIEZOMETER DHRES-06_1152

Resolution Copper Mining

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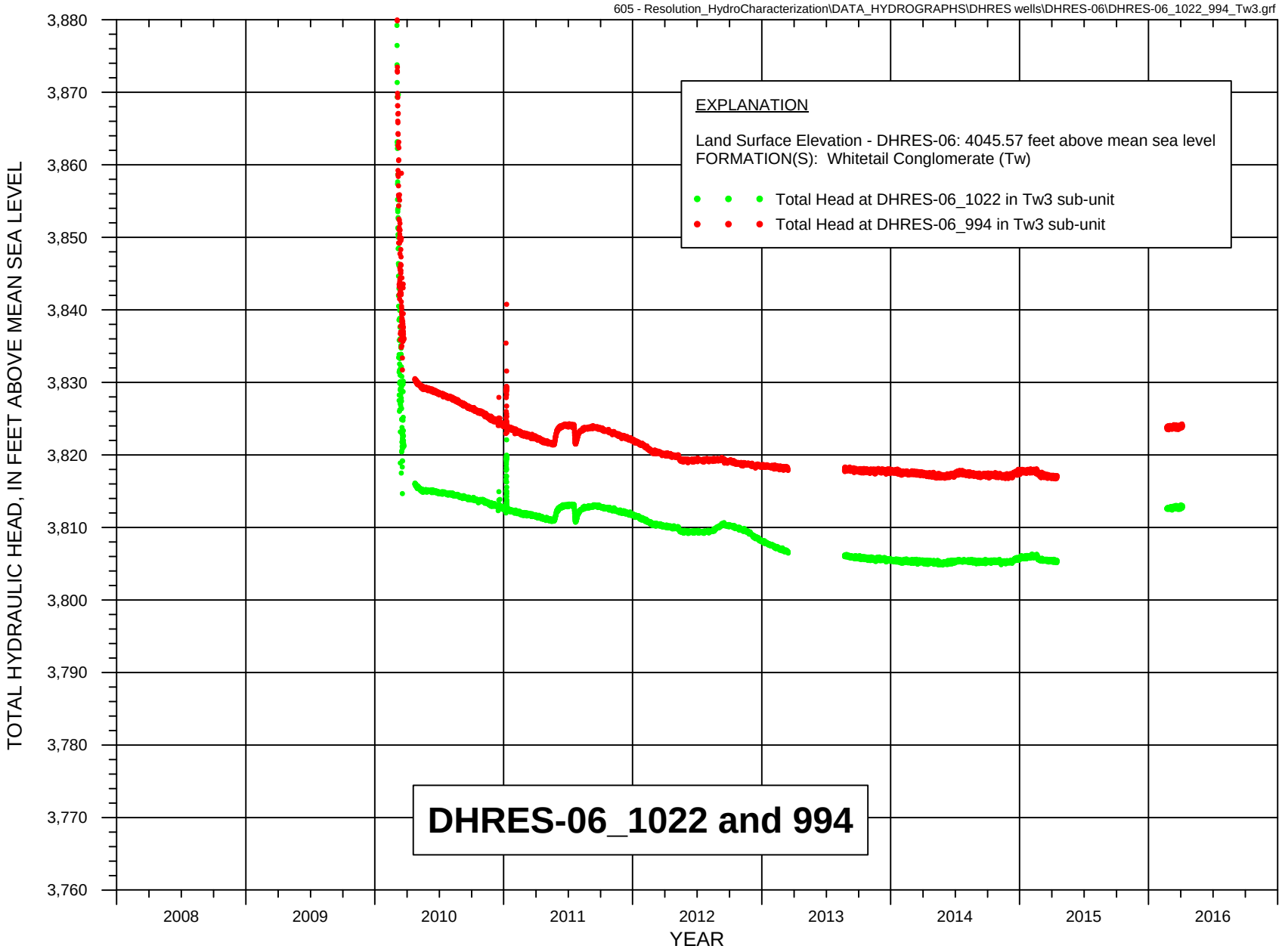


FIGURE B-6c. HYDROGRAPH OF TOTAL HYDRAULIC HEAD FOR GROUTED PIEZOMETERS DHRES-06_1022 and DHRES-06_994, WHITETAIL CONGLOMERATE

Resolution Copper Mining

MONTGOMERY & ASSOCIATES

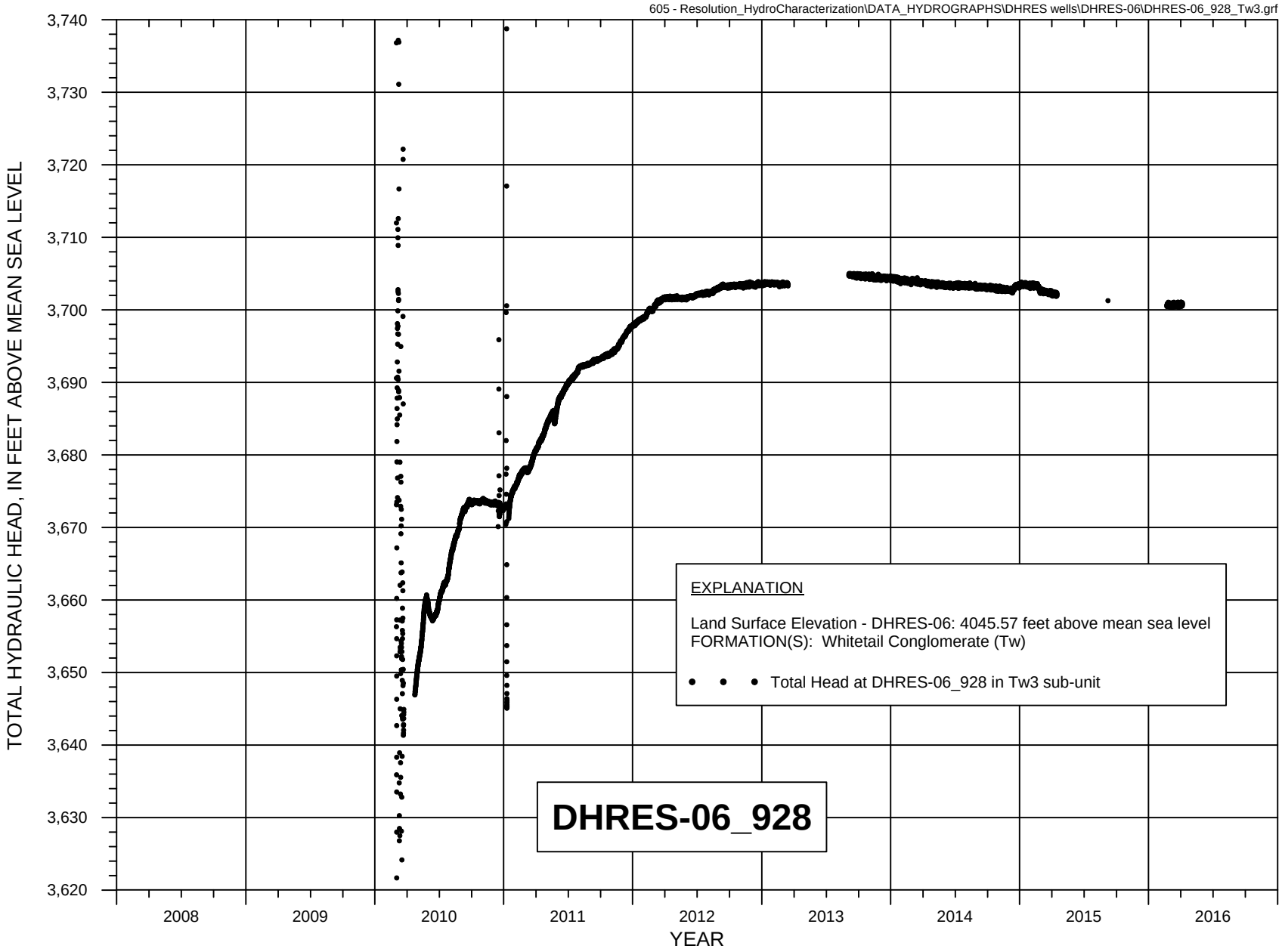


FIGURE B-6d. HYDROGRAPH OF TOTAL HYDRAULIC HEAD FOR GROUTED PIEZOMETER DHRES-06_928, WHITETAIL CONGLOMERATE

Resolution Copper Mining

MONTGOMERY & ASSOCIATES

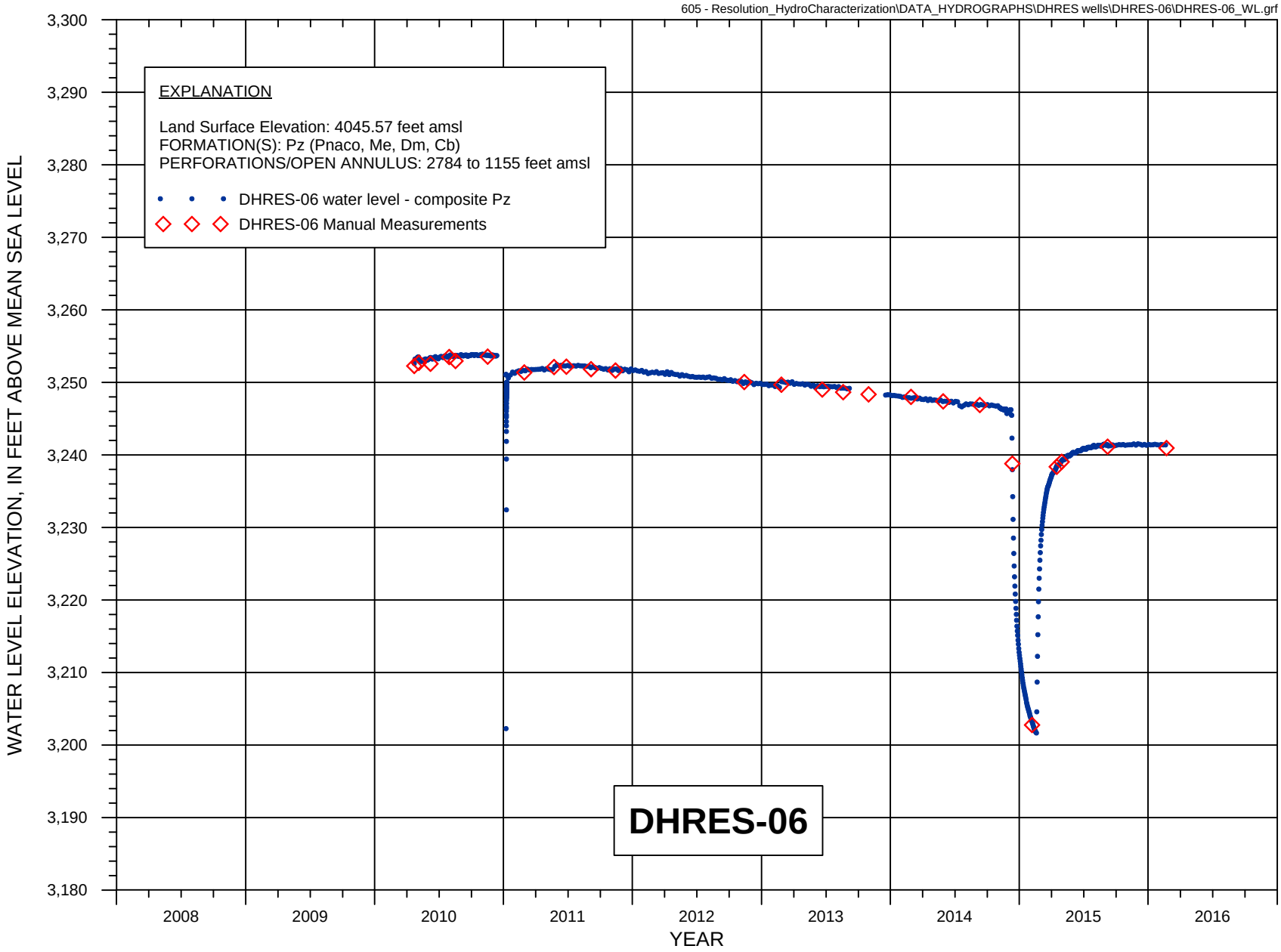


FIGURE B-6e. WATER LEVEL HYDROGRAPH FOR HYDROLOGIC TEST WELL DHRES-06

Resolution Copper Mining

MONTGOMERY & ASSOCIATES

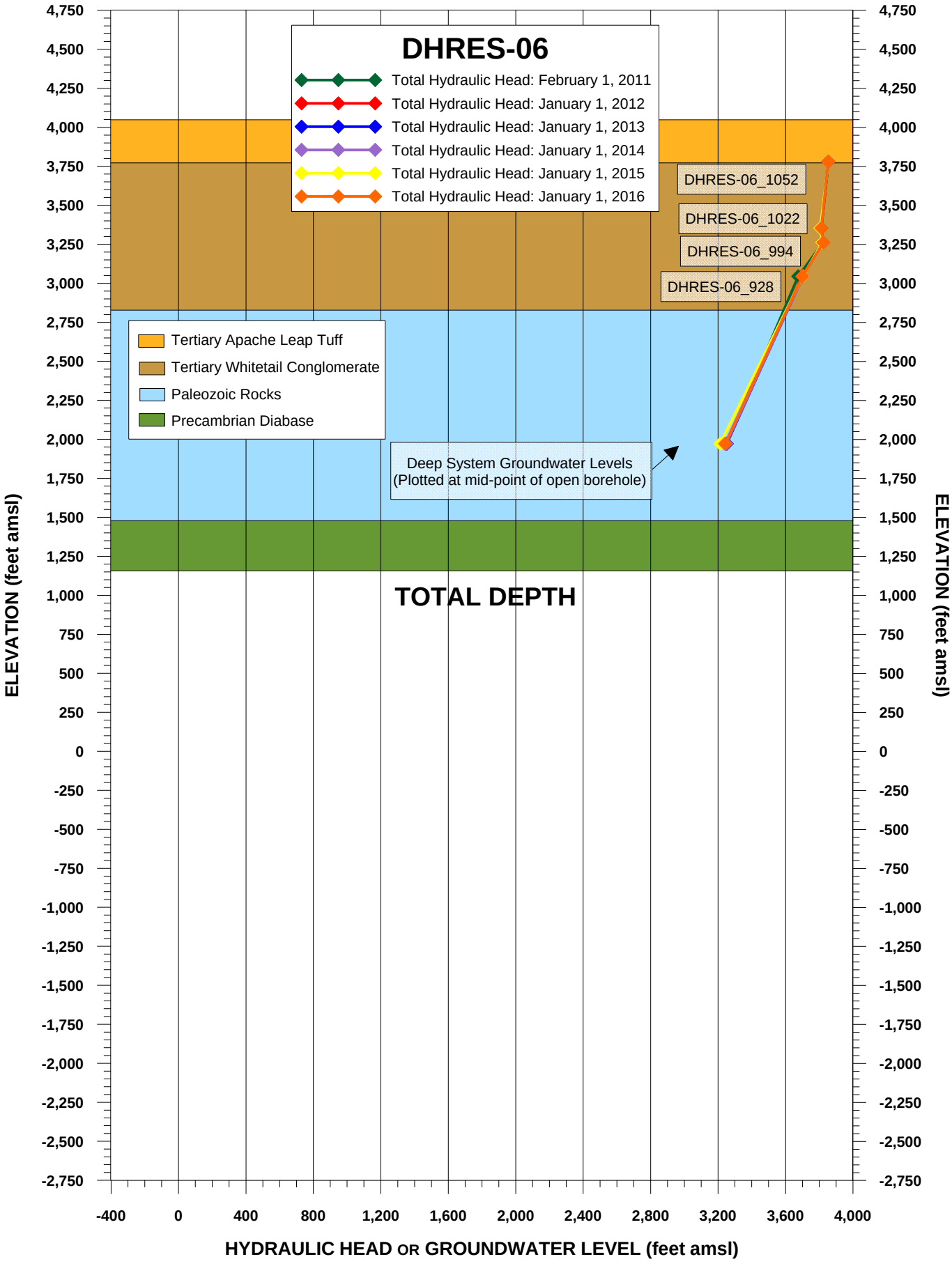
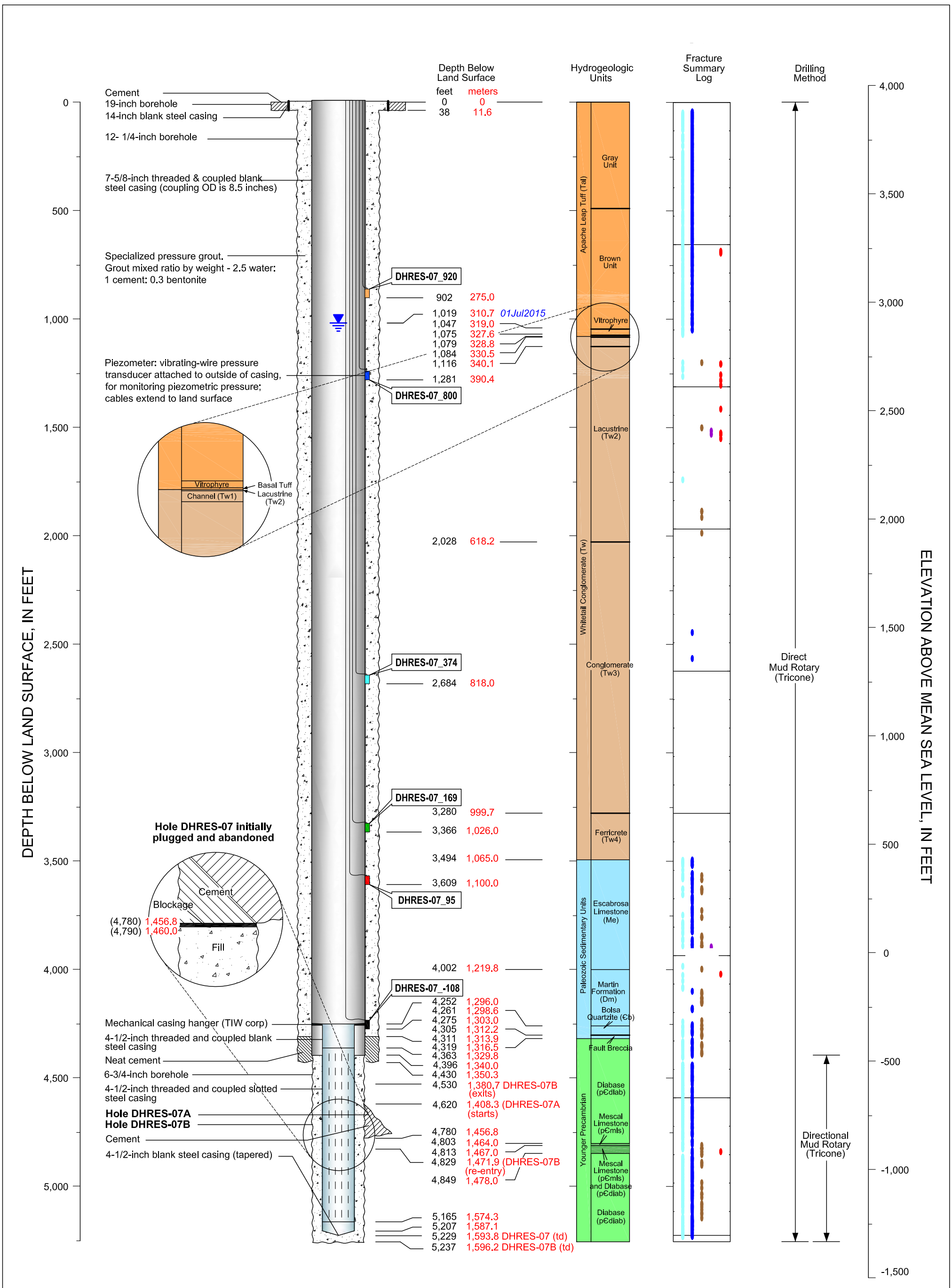


FIGURE 4. TOTAL HYDRAULIC HEAD AND GROUNDWATER LEVEL AT WELL DHRES-06, RESOLUTION PROJECT

MONTGOMERY & ASSOCIATES



CADASTRAL: (D-2-13)05cbd	ADWR NO: 55-911954
NORTHING: 831890.964	EASTING: 965873.361
LAND SURFACE ELEVATION: 3922.79 FEET AMSL	
DATUM: U.S. State Plane Coordinate System of 1983 Epoch 2011 (NAD83 NA2011) Arizona Central Zone (0202) North American Datum 1983 North American Vertical Datum of 1983	

EXPLANATION

- Partial conductive fractures
- Continuous conductive fractures
- Clay-filled fractures
- Faults
- Resistive mineral-filled fractures
- Non-pumping Water Level

DHRES-07_800 (Well Identifier; Piezometer Elevation, in meters amsl)

Resolution Copper Mining

MONTGOMERY & ASSOCIATES
Water Resource Consultants

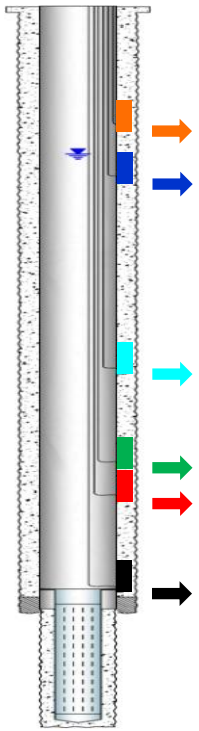
DHRES-07
DIAGRAM OF WELL CONSTRUCTION

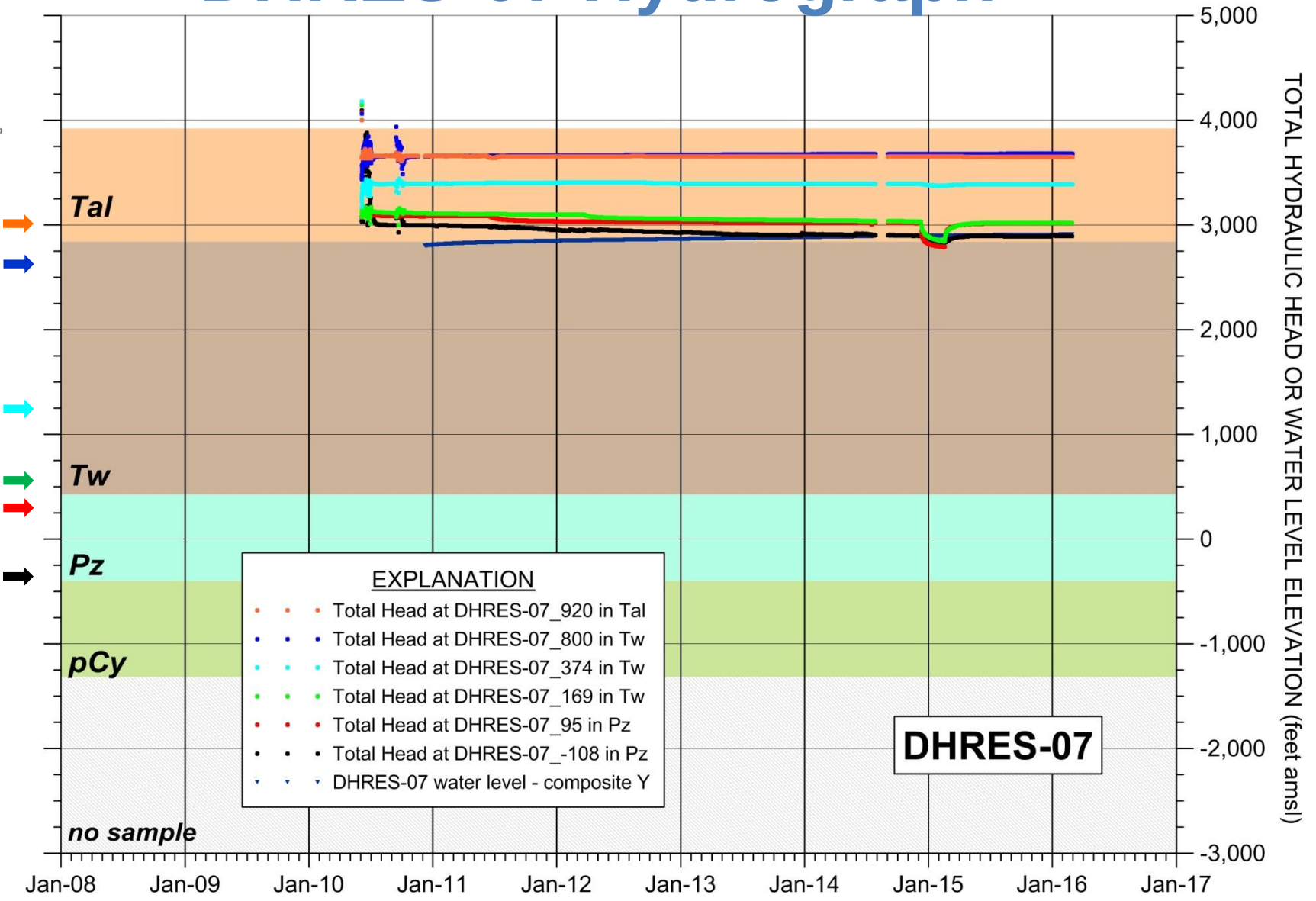
Version: October 2015

FIGURE B-7

Drafting\605\WellSchematics_2015\DHRES7_Feet\15Oct2015

DHRES-07 Hydrograph





MONTGOMERY & ASSOCIATES

Resolution Copper Mining

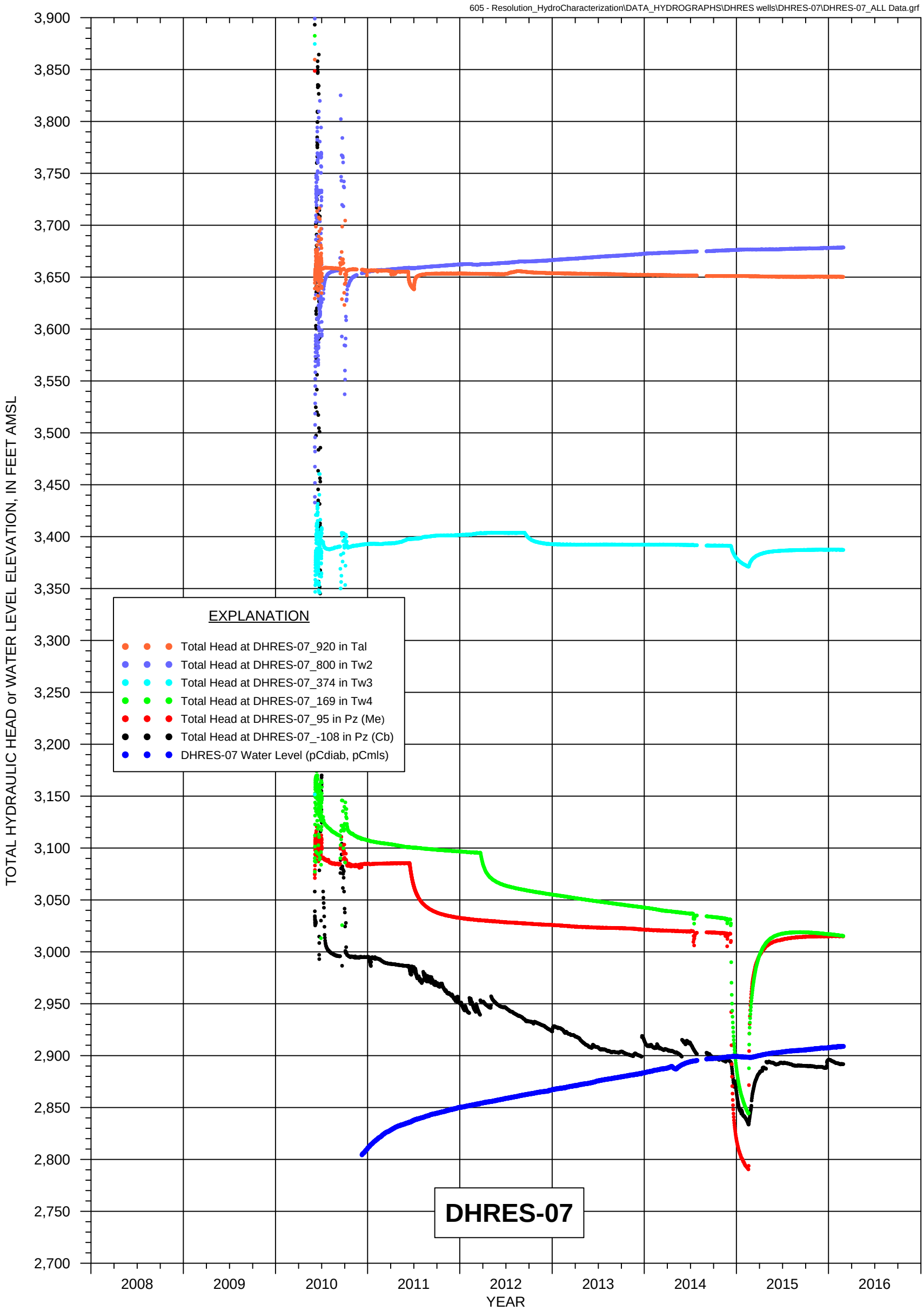


FIGURE B-7a. HYDROGRAPH OF WATER LEVEL, AND TOTAL HYDRAULIC HEAD FOR GROUTED PIEZOMETERS AT HYDROLOGIC TEST WELL DHRES-07

Resolution Copper Mining

MONTGOMERY & ASSOCIATES

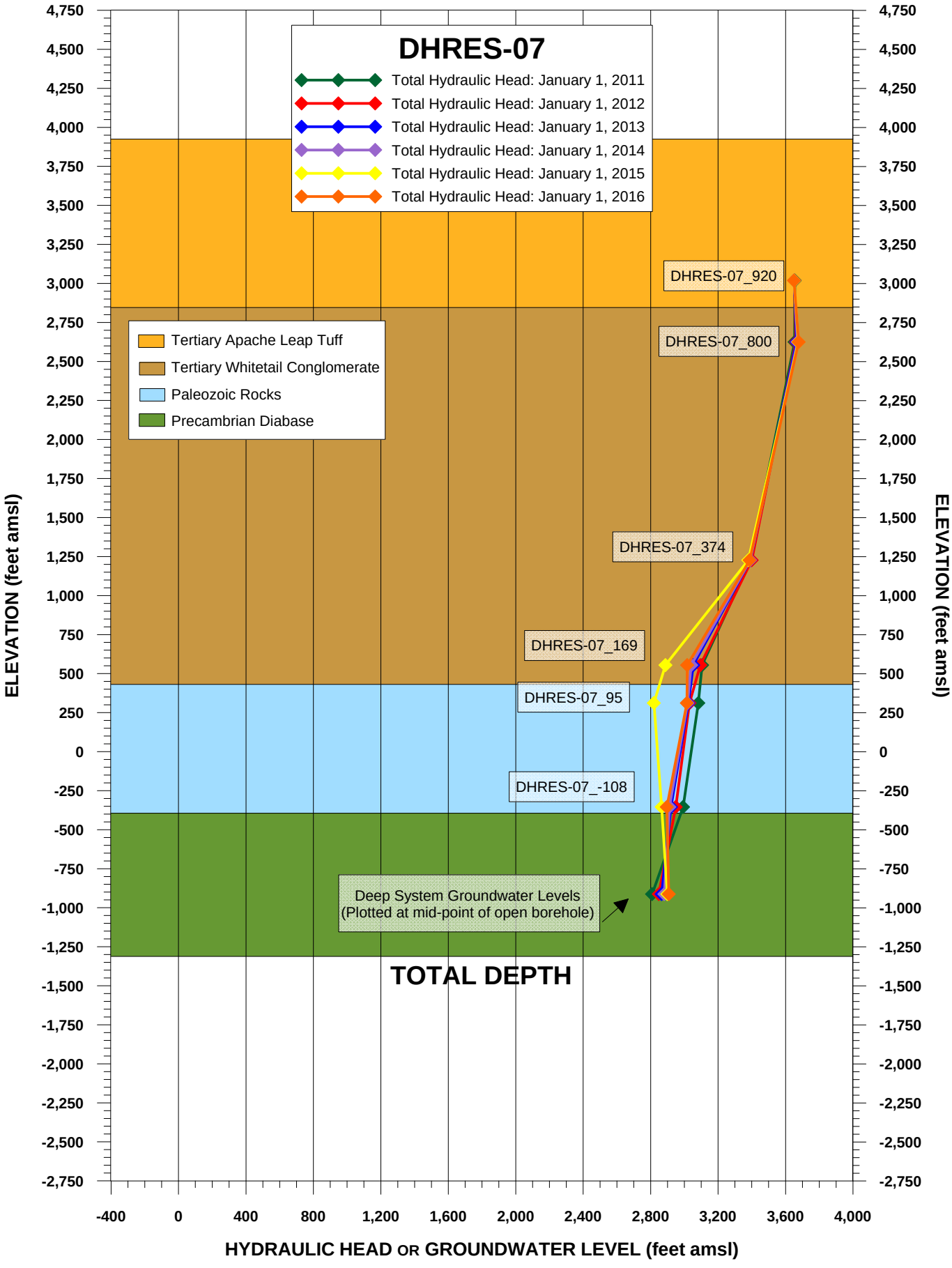
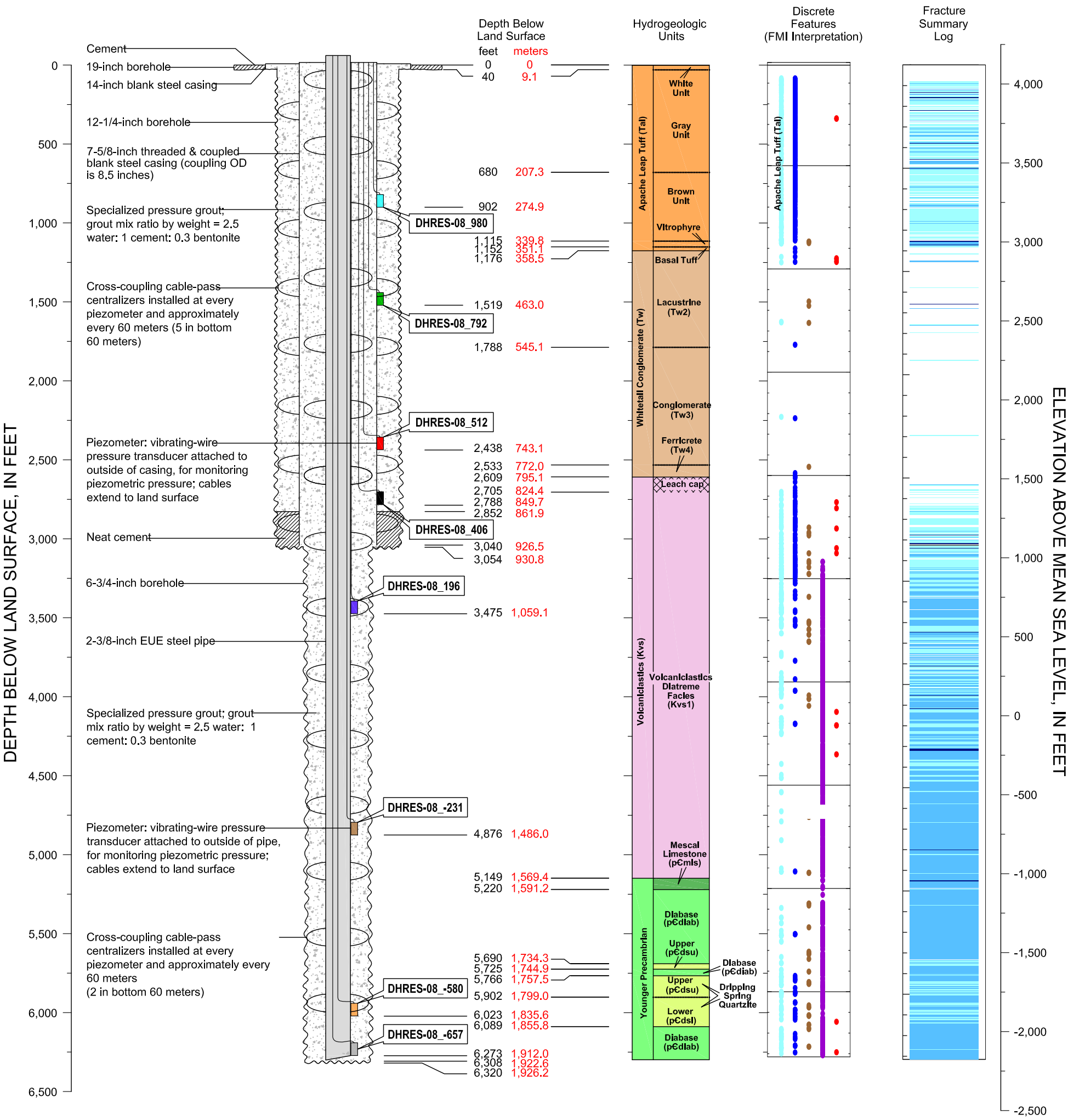


FIGURE 5. TOTAL HYDRAULIC HEAD AND GROUNDWATER LEVEL AT WELL DHRES-07, RESOLUTION PROJECT

MONTGOMERY & ASSOCIATES



DHRES-08_196
Well Identifier
Piezometer Elevation, in meters amsl

CADASTRAL: (D-2-13) 6bdd	ADWR NO: 55-912102
NORTHING: 833211.488	EASTING: 962041.397
LAND SURFACE ELEVATION: 4120.58 FEET AMSL	
DATUM: U.S. State Plane Coordinate System of 1983 Epoch 2011 (NAD83 NA2011) Arizona Central Zone (0202) North American Datum 1983 North American Vertical Datum of 1983	

EXPLANATION

- Partial conductive fractures
- Continuous conductive fractures
- Clay-filled fractures
- Faults
- Resistive mineral-filled fractures
- No Data
- No Fracturing Evident
- Minor Fracturing
- Moderate Fracturing
- Major Fracturing

Resolution Copper Mining

MONTGOMERY & ASSOCIATES
Water Resource Consultants

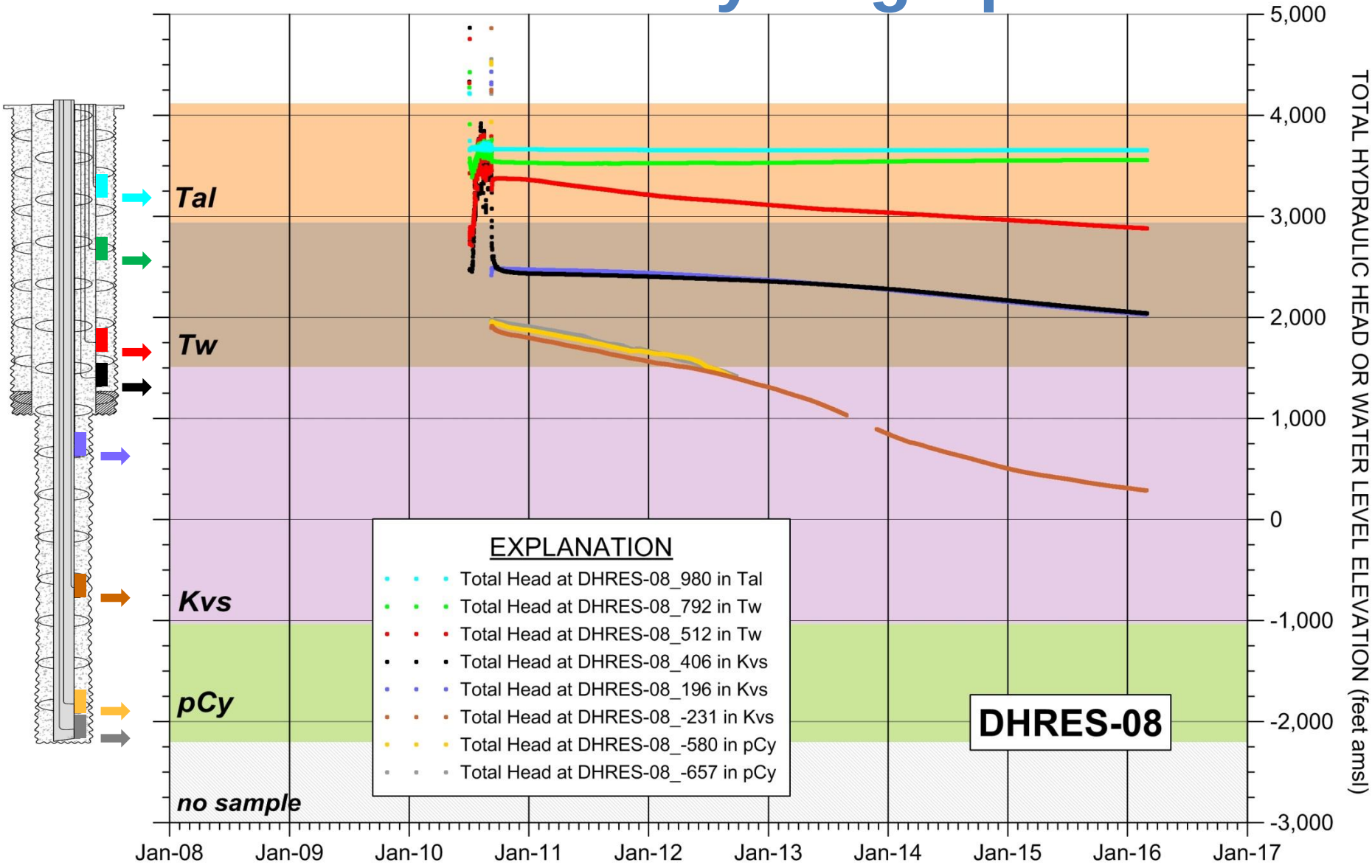
DHRES-08
DIAGRAM OF WELL CONSTRUCTION

Version: October 2015

FIGURE B-8

Drafting\605\WellSchematics_2015\DHRES8_Feet\15October2015

DHRES-08 Hydrograph



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Resolution Copper Mining

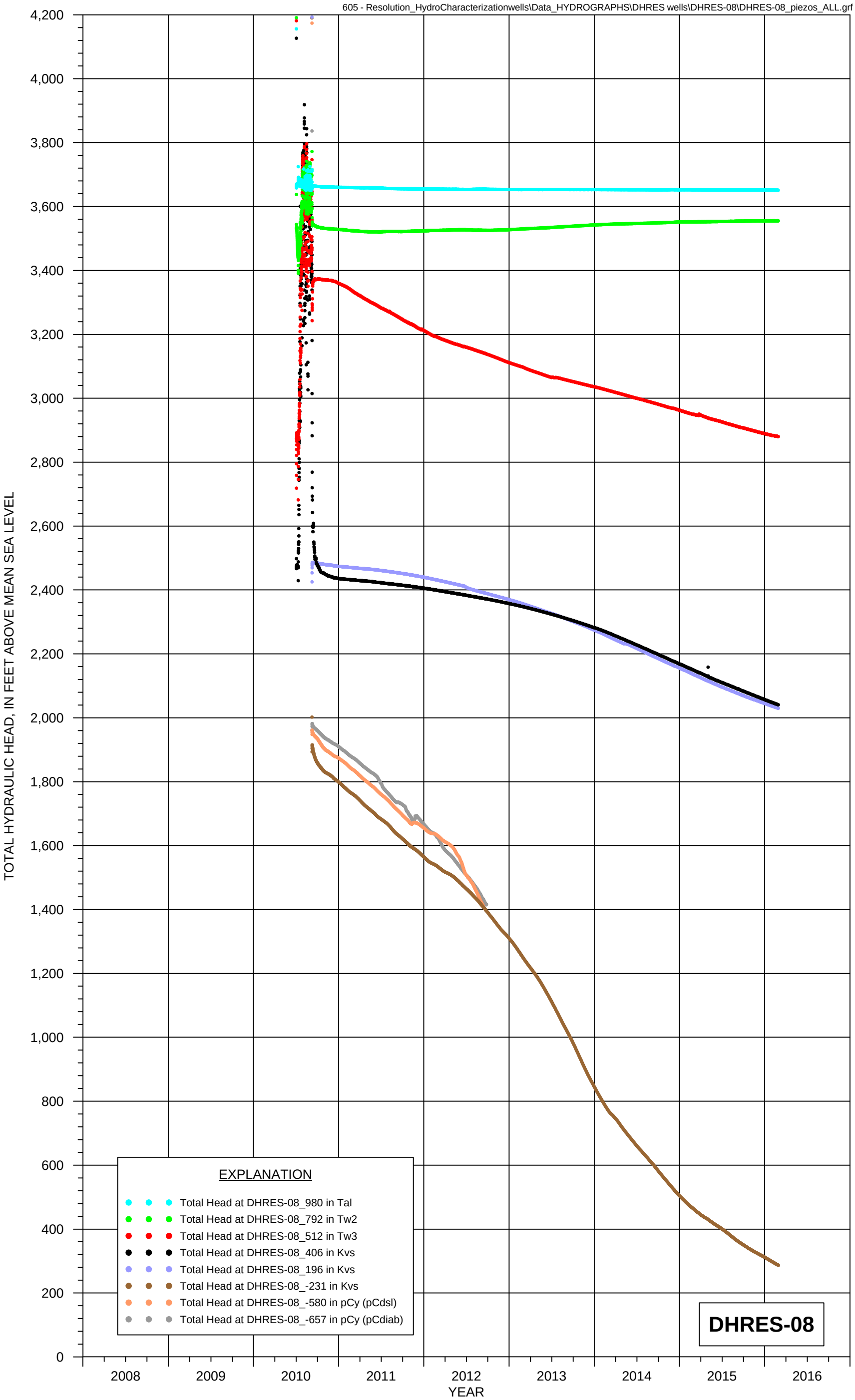


FIGURE B-8a. HYDROGRAPH OF TOTAL HYDRAULIC HEAD FOR GROUTED PIEZOMETERS AT HYDROLOGIC TEST WELL DHRES-08

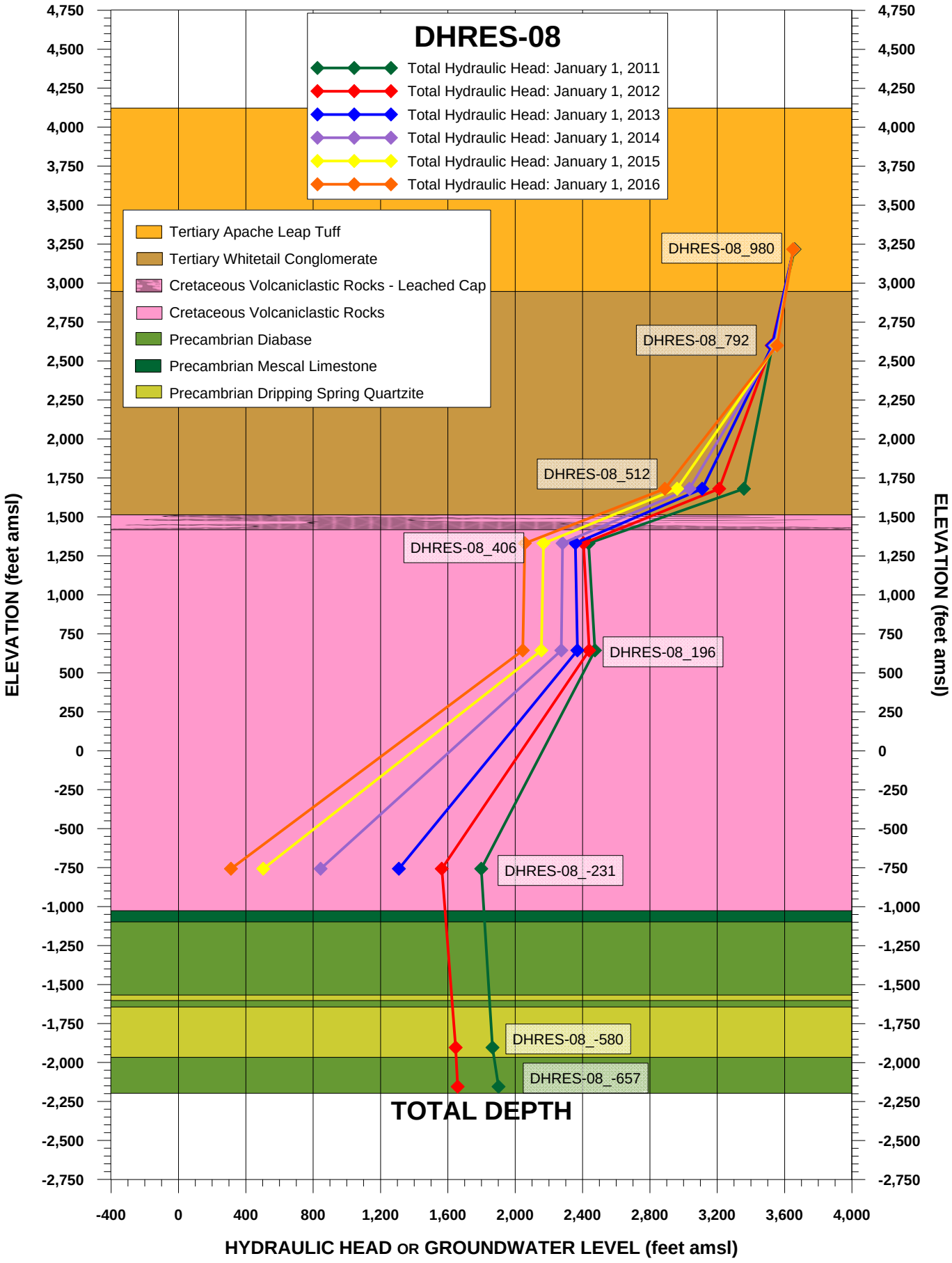
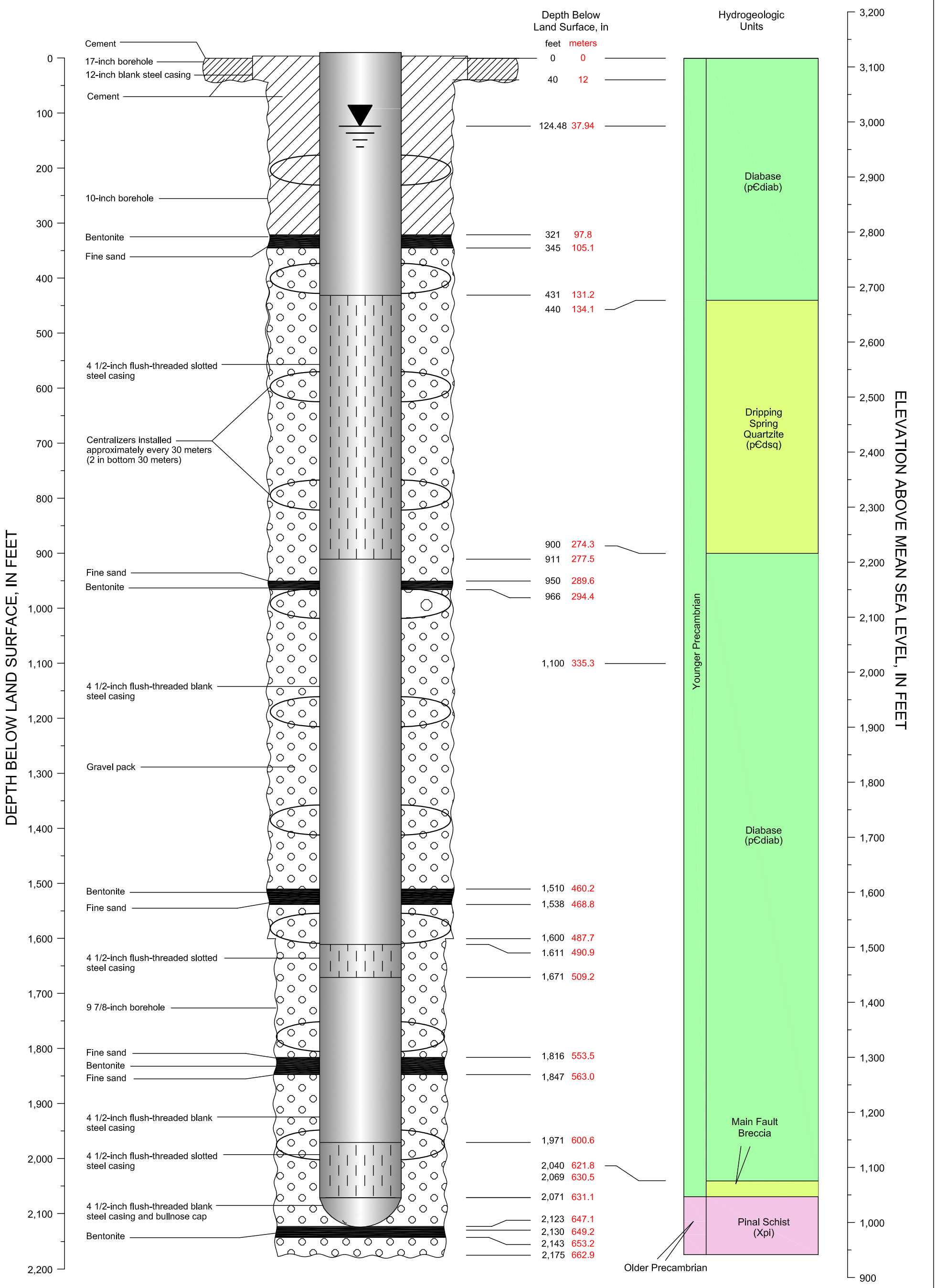


FIGURE 6. TOTAL HYDRAULIC HEAD AND GROUNDWATER LEVEL AT WELL DHRES-08, RESOLUTION PROJECT

MONTGOMERY & ASSOCIATES



CADASTRAL: (D-1-12)26acc	ADWR NO: 55-912289
NORTHING: 841697.19	EASTING: 947570.518
LAND SURFACE ELEVATION: 3115.90 FEET AMSL	
DATUM: U.S. State Plane Coordinate System of 1983 Epoch 2011 (NAD83 NA2011) Arizona Central Zone (0202) North American Datum 1983 North American Vertical Datum of 1983	

EXPLANATION

Non-pumping Water Level

Resolution Copper Mining

MONTGOMERY & ASSOCIATES
Water Resource Consultants

DHRES-09
DIAGRAM OF WELL CONSTRUCTION

Version: October 2015

FIGURE B-9

Drafting\605\WellSchematics_2015\DHRES09_Feet\15Oct2015

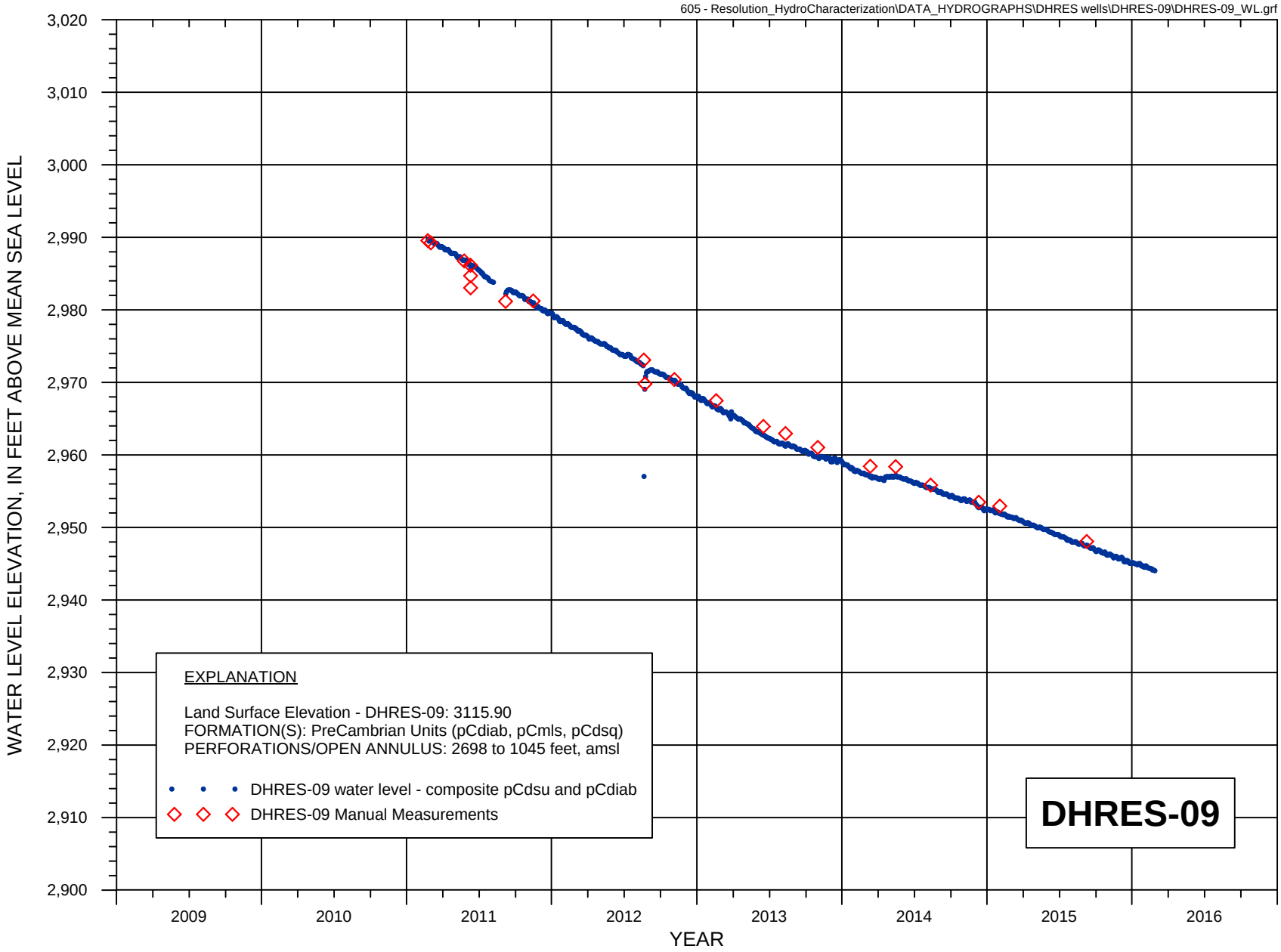
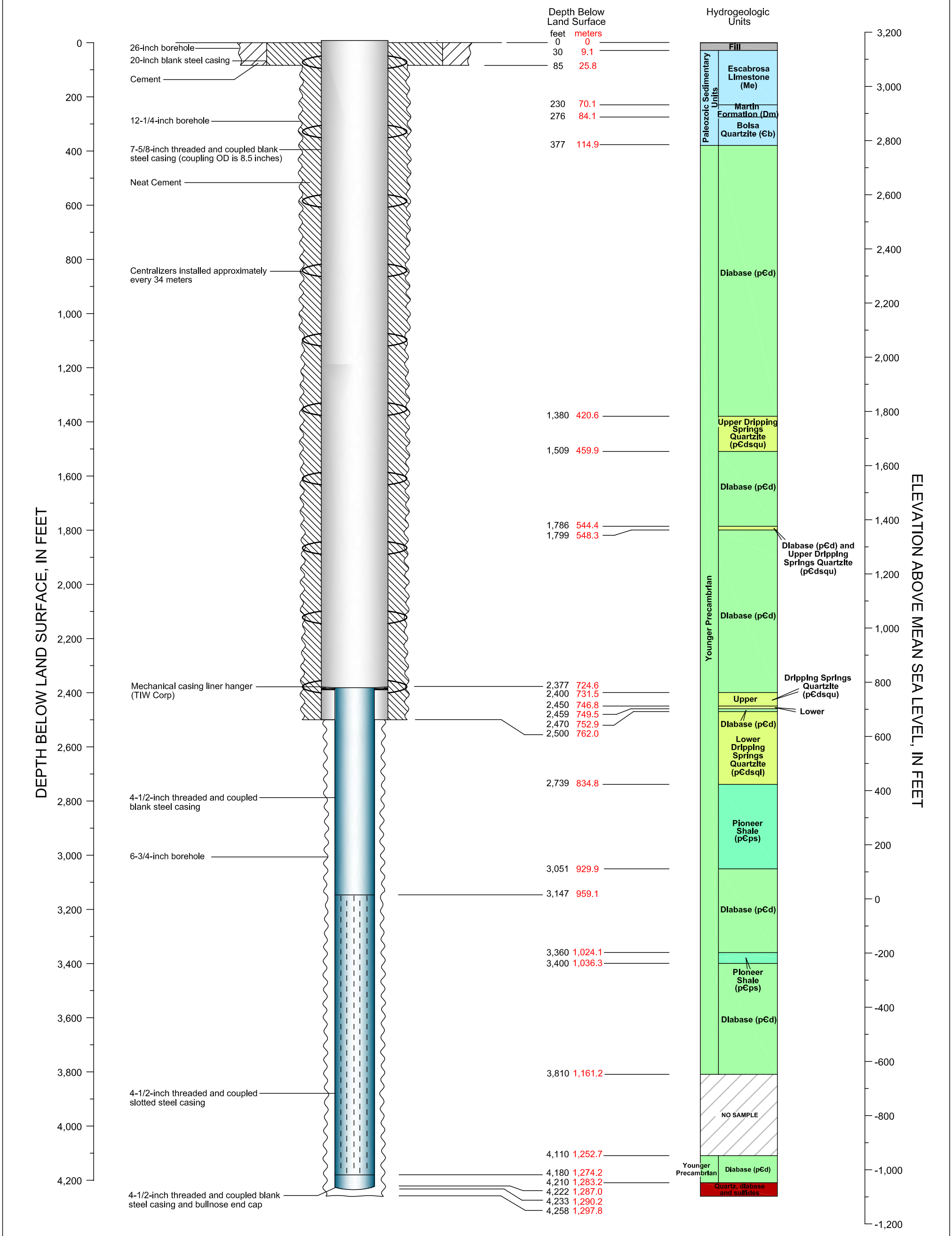


FIGURE B-9a. WATER LEVEL HYDROGRAPH FOR HYDROLOGIC TEST WELL DHRES-09

Resolution Copper Mining

MONTGOMERY & ASSOCIATES



CADASTRAL: (D-1-12)35aac	ADWR NO: 55-912484
NORTHING: 839250.351	EASTING: 950598.911
LAND SURFACE ELEVATION: 3159.25 FEET AMSL	
DATUM: U.S. State Plane Coordinate System of 1983 Epoch 2011 (NAD83 NA2011) Arizona Central Zone (0202) North American Datum 1983 North American Vertical Datum of 1983	

Resolution Copper Mining

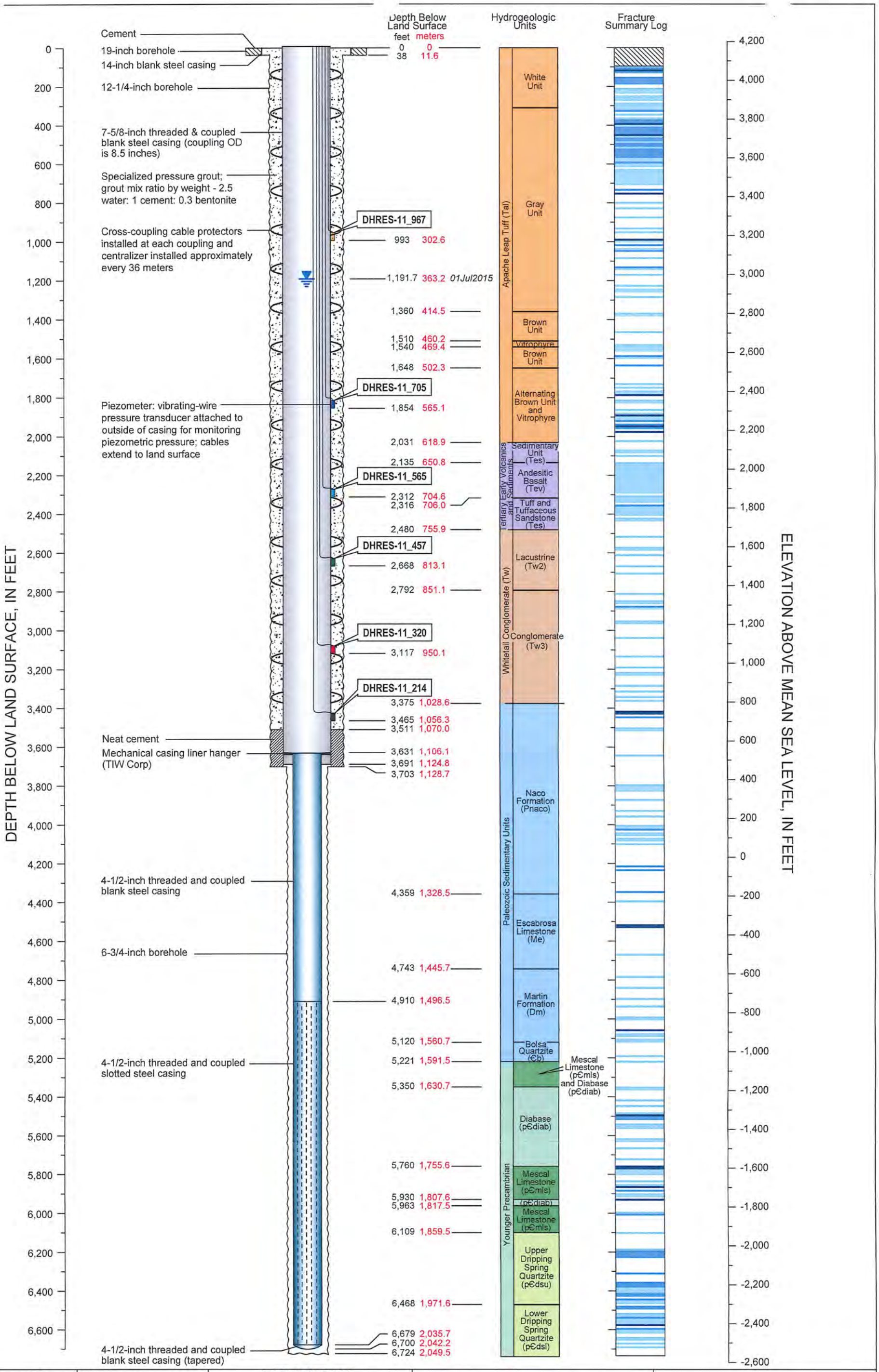
MONTGOMERY & ASSOCIATES
Water Resource Consultants

DHRES-10
DIAGRAM OF WELL CONSTRUCTION

Version: October 2015

FIGURE B-10

Drafting\605\WellSchematics_2015\DHRES10_Feet\15Oct2015



CADASTRAL: (D-1-13) 21cbc	ADWR NO: 55-912601
NORTHING: 847171.255	EASTING: 963819.937
LAND SURFACE ELEVATION: 4168.33 FEET AMSL	
DATUM: U.S. State Plane Coordinate System of 1983 Epoch 2011 (NAD83 NA2011) Arizona Central Zone (0202) North American Datum 1983 North American Vertical Datum of 1983	

EXPLANATION

- No Data
- No Fracturing Evident
- Minor Fracturing
- Moderate Fracturing
- Major Fracturing
- Non-pumping Water Level
- DHRES-11_705 (Well Identifier; Piezometer Elevation, in meters amsl)

Resolution Copper Mining

MONTGOMERY & ASSOCIATES
Water Resource Consultants

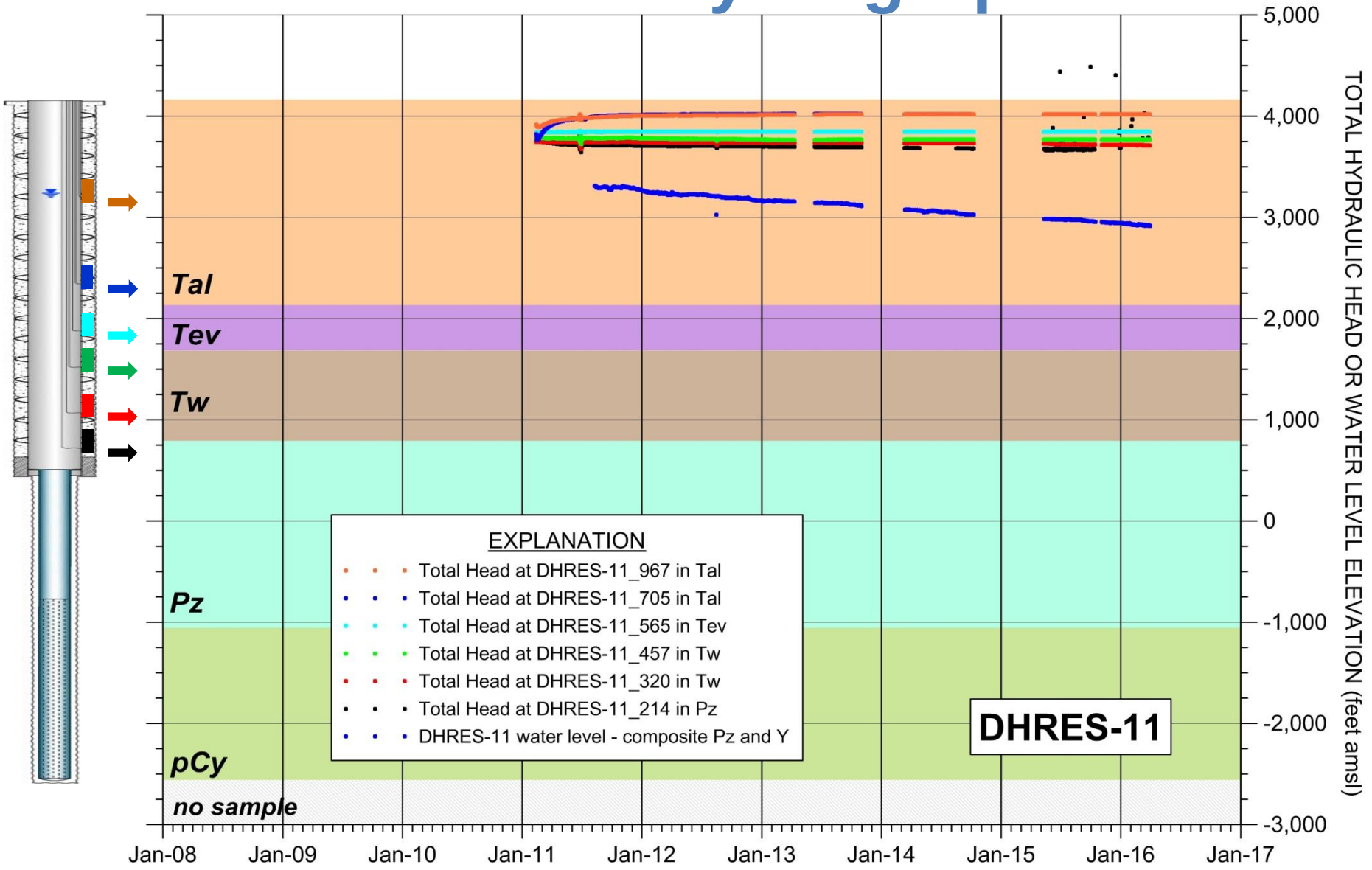
DHRES-11
DIAGRAM OF WELL CONSTRUCTION

Version: October 2015

FIGURE B-11

Drafting\605\WellSchematics_2015\DHRES11_Feet\15Oct2015

DHRES-11 Hydrograph



MONTGOMERY & ASSOCIATES

Resolution Copper Mining

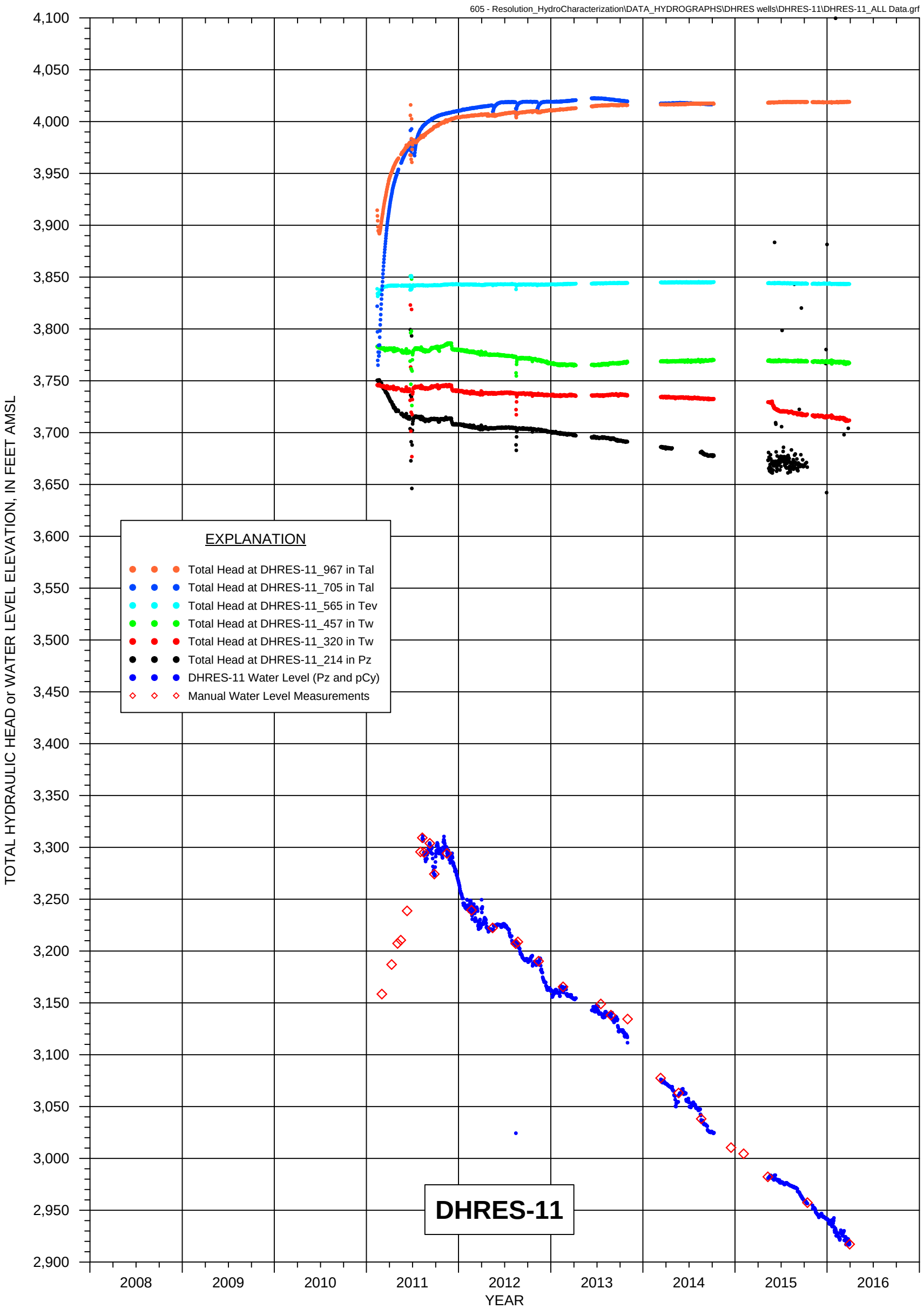


FIGURE B-11a. HYDROGRAPH OF WATER LEVEL, AND TOTAL HYDRAULIC HEAD FOR GROUTED PIEZOMETERS AT HYDROLOGIC TEST WELL DHRES-11

Resolution Copper Mining

MONTGOMERY & ASSOCIATES

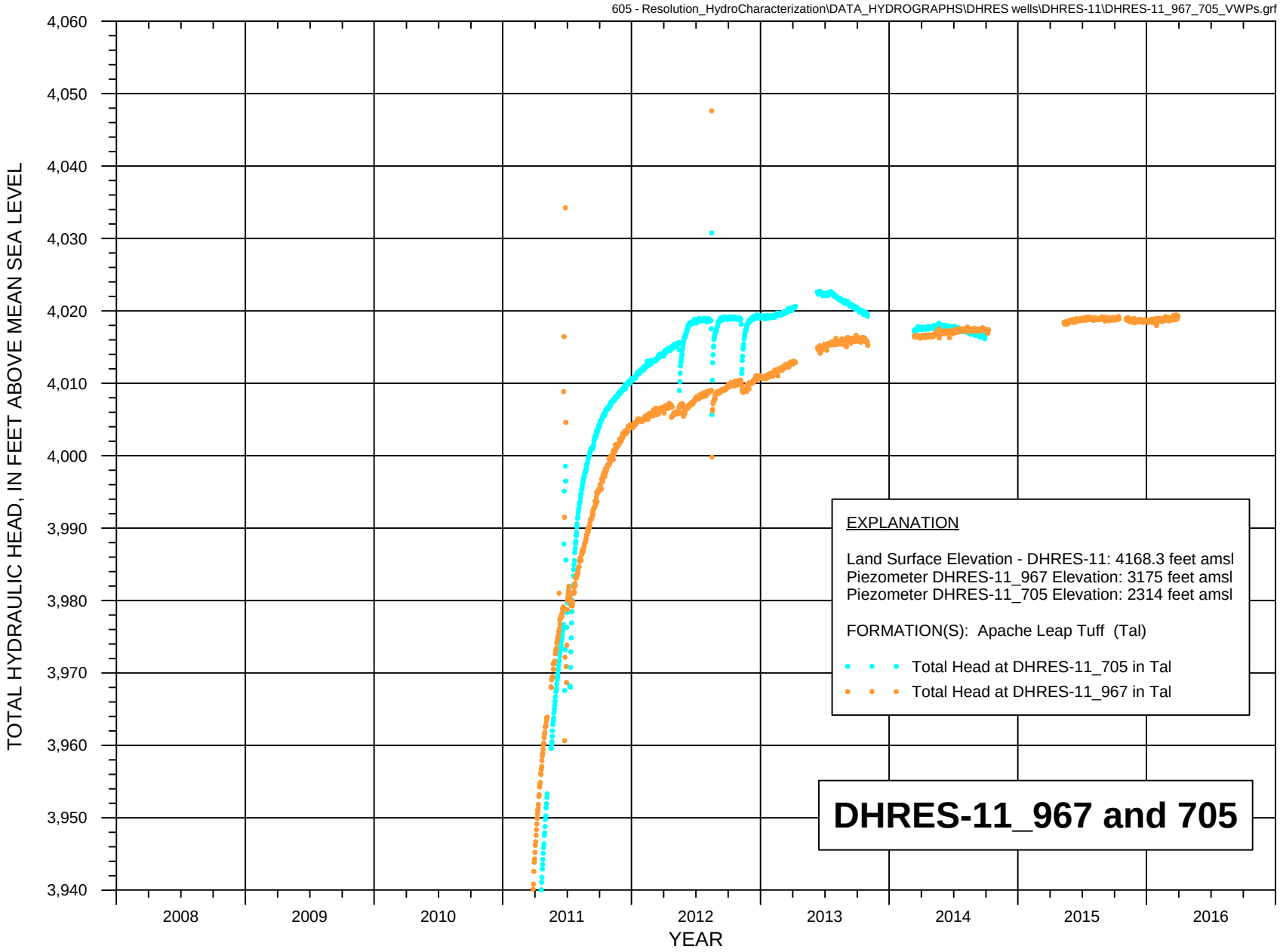


FIGURE B-11b. HYDROGRAPH OF TOTAL HYDRAULIC HEAD FOR GROUTED PIEZOMETERS DHRES-11_967 AND DHRES-11_705

Resolution Copper Mining

MONTGOMERY & ASSOCIATES

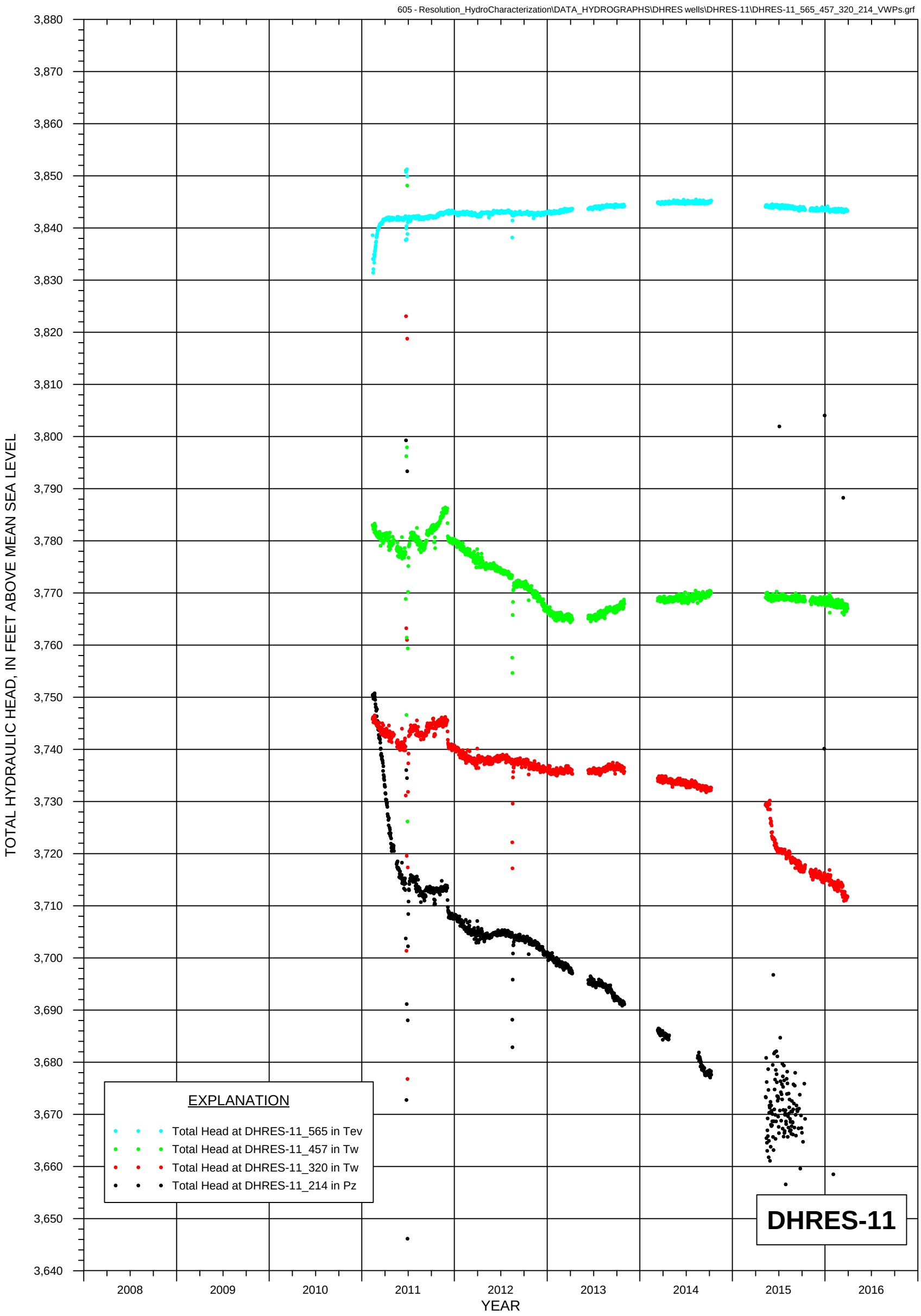


FIGURE B-11c. HYDROGRAPH OF TOTAL HYDRAULIC HEAD FOR GROUTED PIEZOMETERS DHRES-11_565, 457, 320, AND 214 AT HYDROLOGIC TEST WELL DHRES-11

Resolution Copper Mining

MONTGOMERY & ASSOCIATES

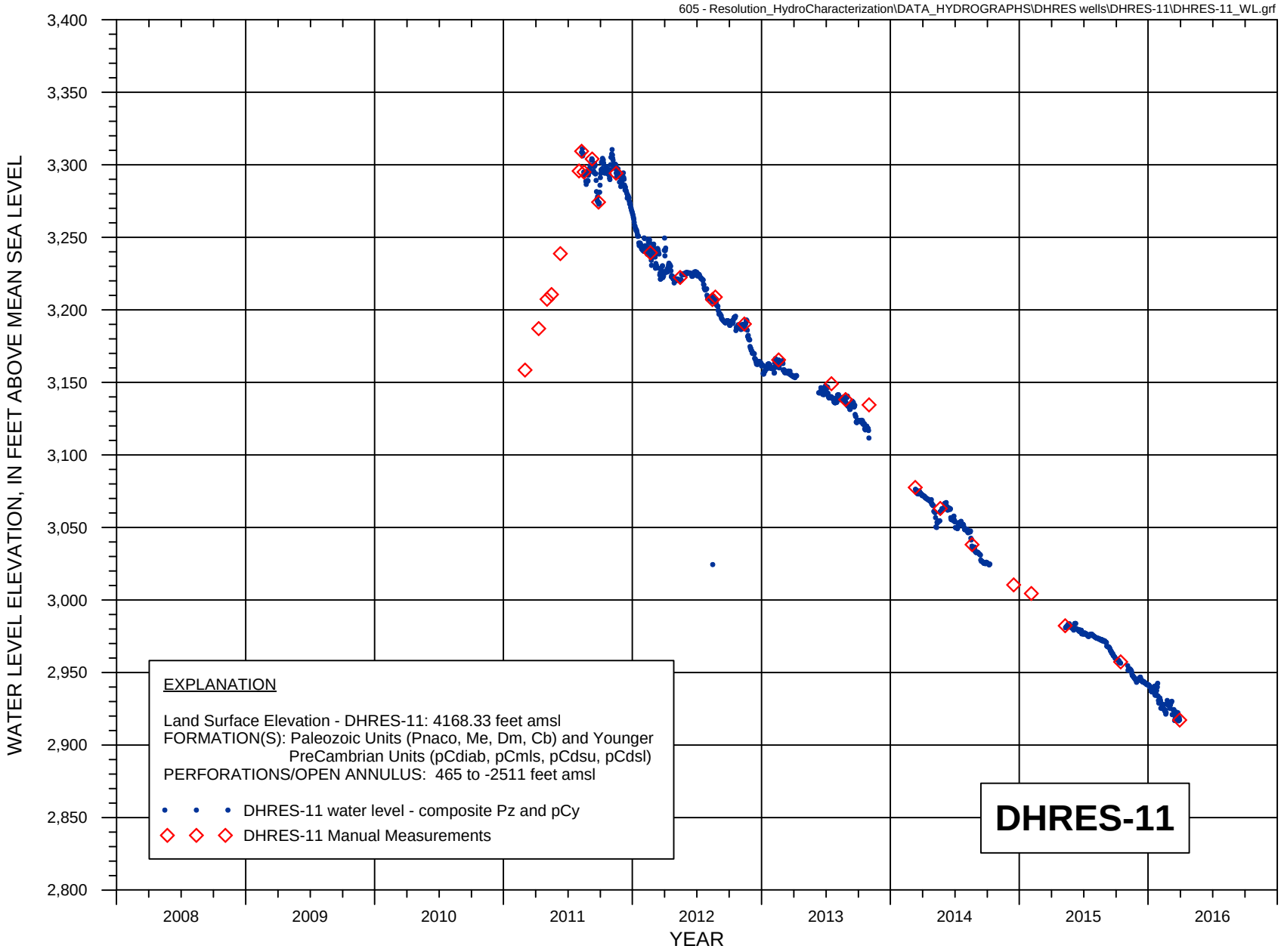


FIGURE B-11d. WATER LEVEL HYDROGRAPH FOR HYDROLOGIC TEST WELL DHRES-11

Resolution Copper Mining

MONTGOMERY & ASSOCIATES

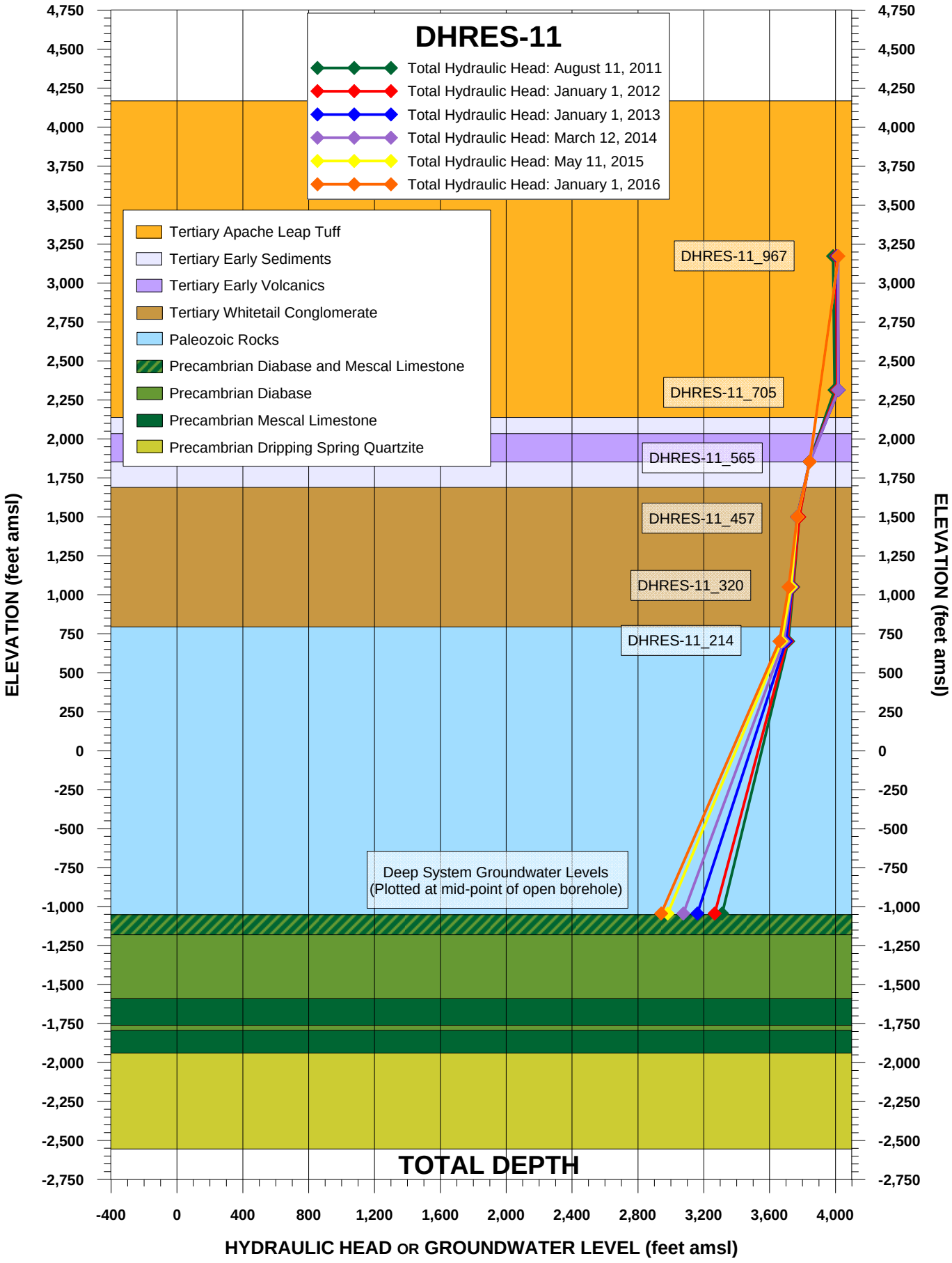
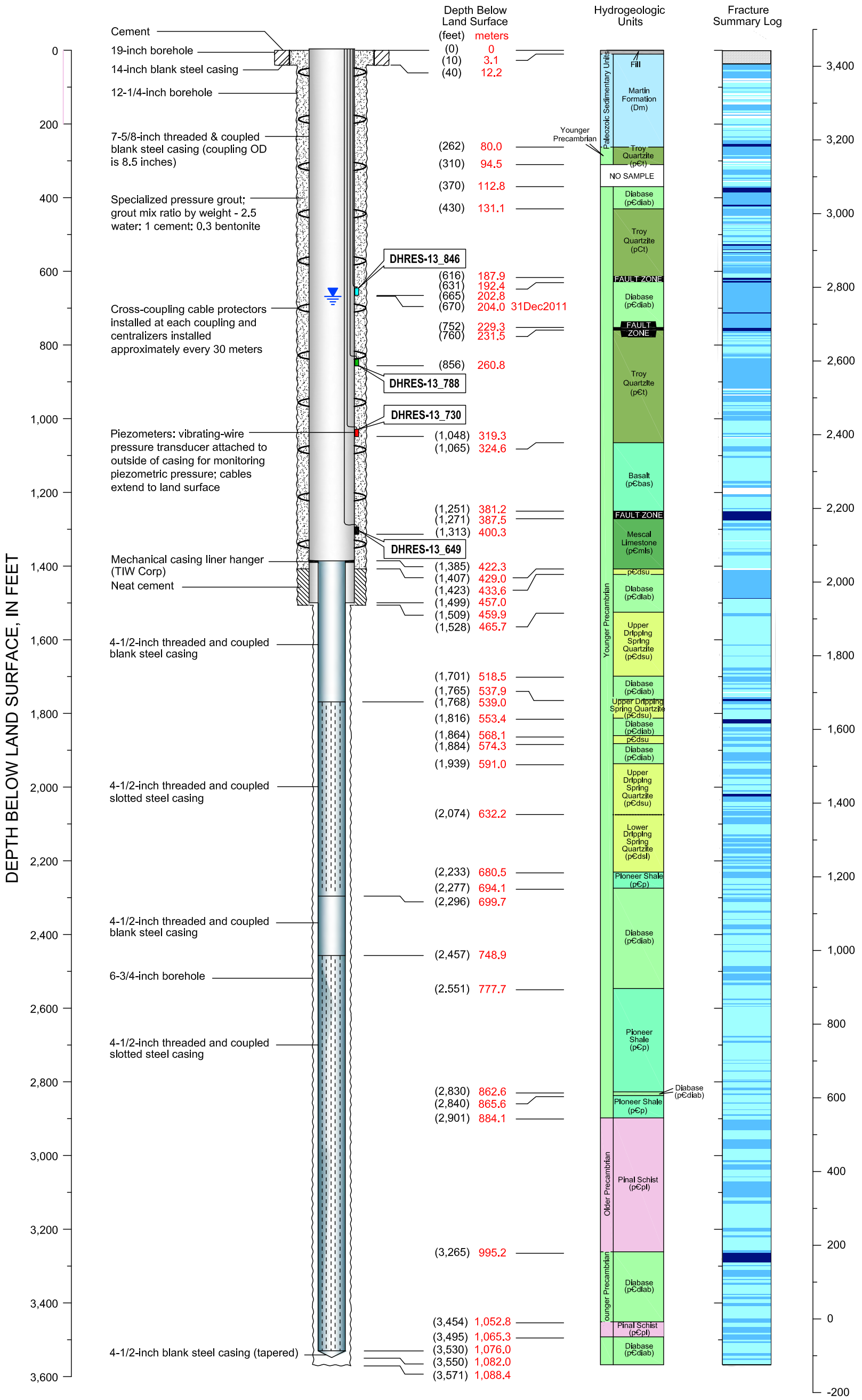


FIGURE 7. TOTAL HYDRAULIC HEAD AND GROUNDWATER LEVEL AT WELL DHRES-11, RESOLUTION PROJECT

MONTGOMERY & ASSOCIATES



CADASTRAL: (D-2-12) 02dba	ADWR NO: 55-912770
NORTHING: 832219.347	EASTING: 954075.423
LAND SURFACE ELEVATION: 3443.33 FEET AMSL	
DATUM: U.S. State Plane Coordinate System of 1983 Epoch 2011 (NAD83 NA2011) Arizona Central Zone (0202) North American Datum 1983 North American Vertical Datum of 1983	

EXPLANATION

- No Data
- No Fracturing Evident
- Minor Fracturing
- Moderate Fracturing
- Major Fracturing
- Non-pumping Water Level
- DHRES-13_846 (Well Identifier; Piezometer Elevation, in meters amsl)

Resolution Copper Mining

MONTGOMERY & ASSOCIATES
Water Resource Consultants

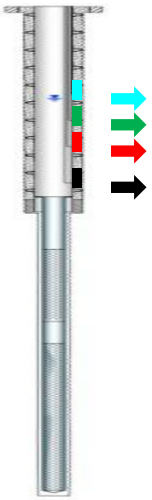
DHRES-13
DIAGRAM OF WELL CONSTRUCTION

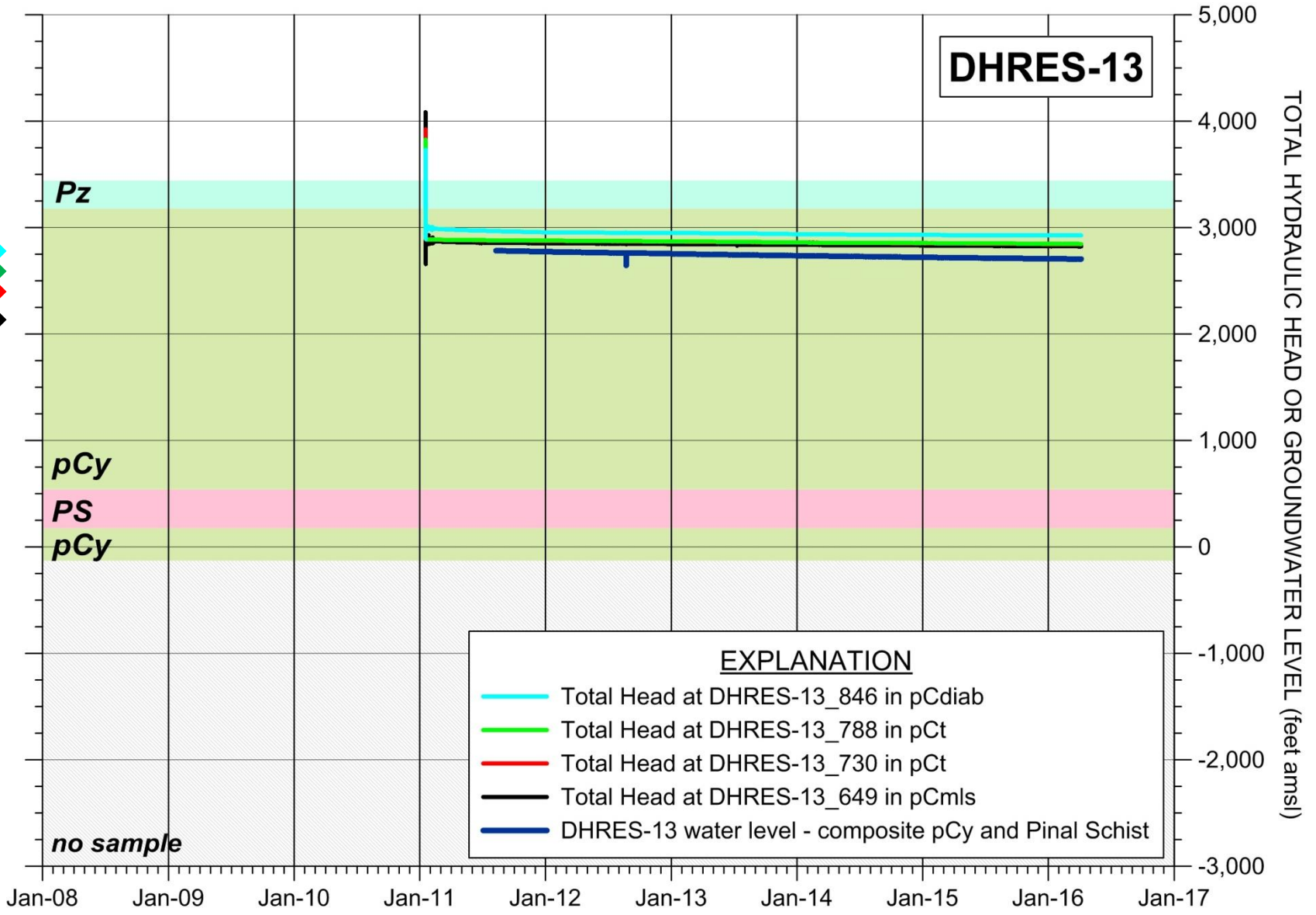
Version: October 2015

FIGURE B-12

Drafting\605\WellSchematics_2015\DHRES13_Feet\15October2015

DHRES-13 Hydrograph





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Resolution Copper Mining

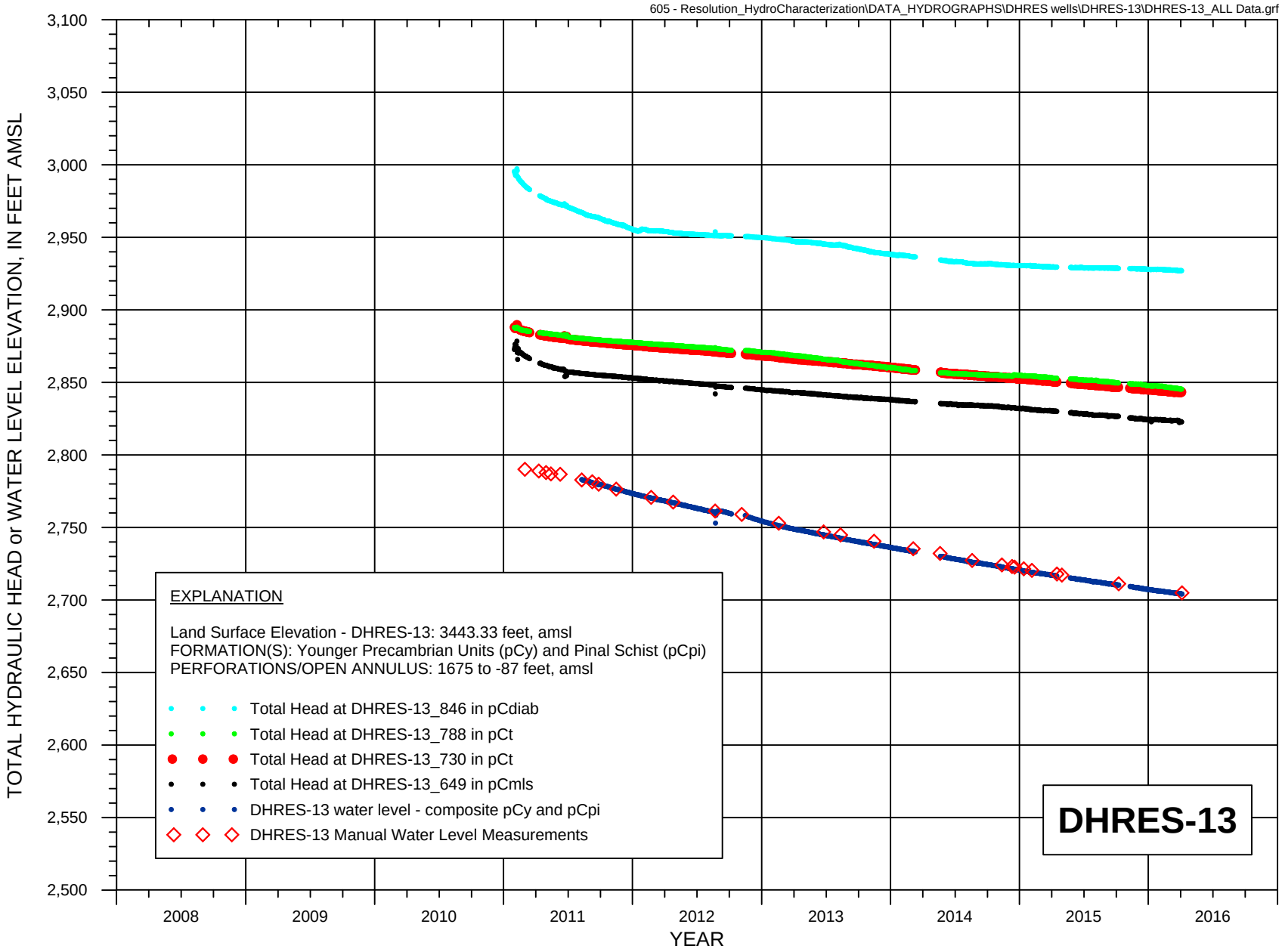


FIGURE B-12a. WATER LEVEL HYDROGRAPH, AND TOTAL HYDRAULIC HEAD FOR GROUTED PIEZOMETERS AT HYDROLOGIC TEST WELL DHRES-13

Resolution Copper Mining

MONTGOMERY & ASSOCIATES

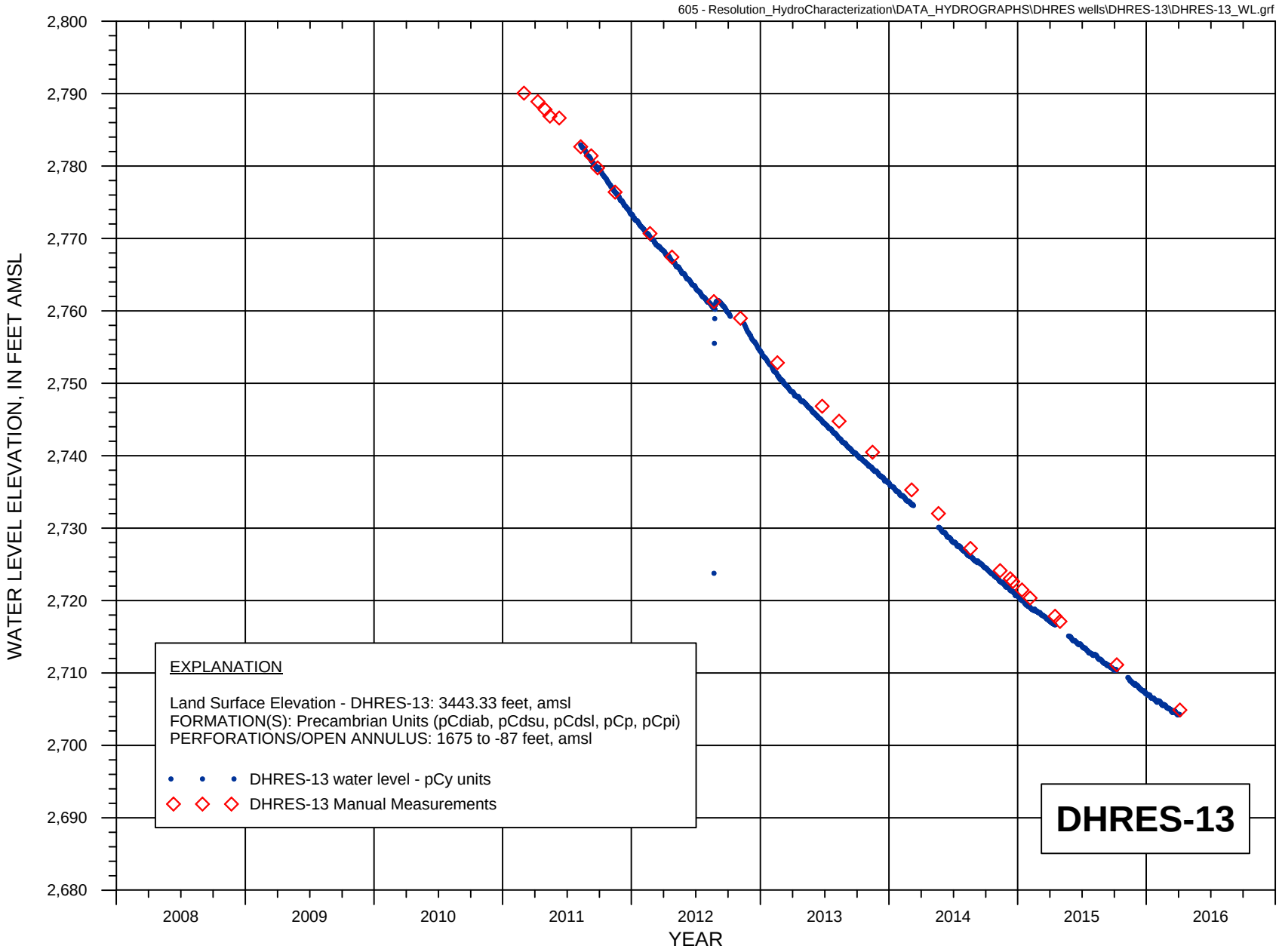


FIGURE B-12b. WATER LEVEL HYDROGRAPH FOR HYDROLOGIC TEST WELL DHRES-13

Resolution Copper Mining

MONTGOMERY & ASSOCIATES

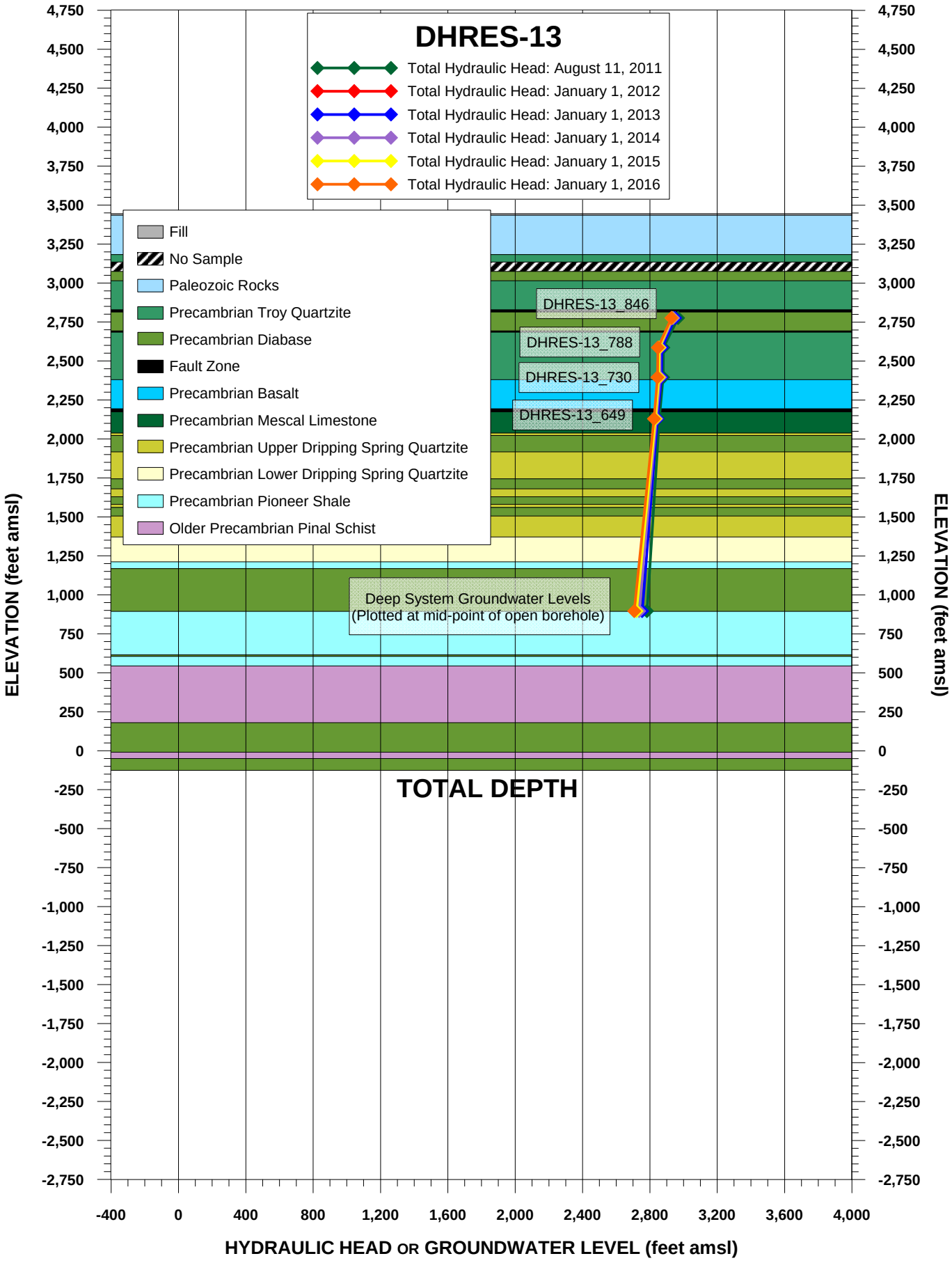
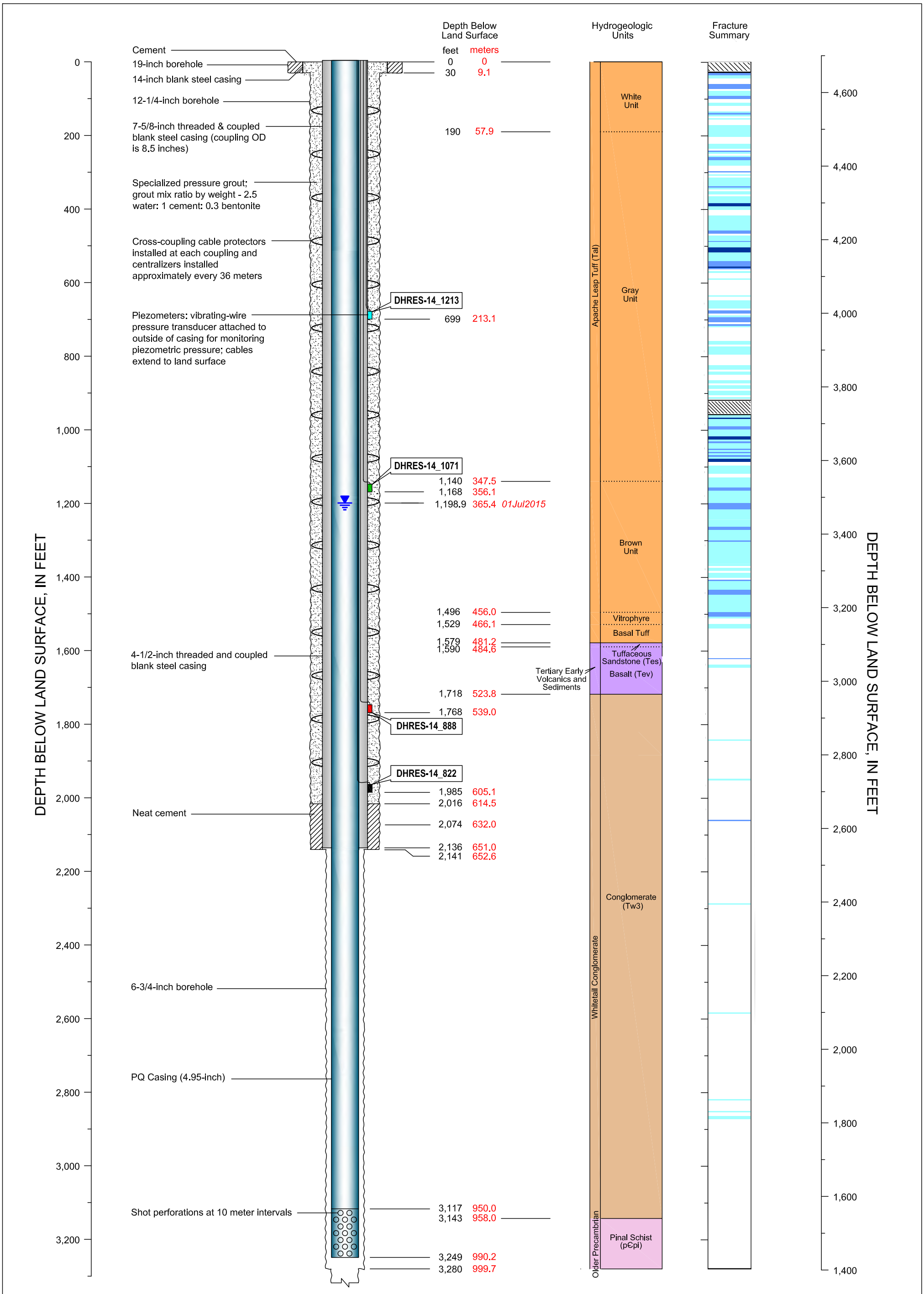


FIGURE 8. TOTAL HYDRAULIC HEAD AND GROUNDWATER LEVEL AT WELL DHRES-15, RESOLUTION PROJECT

MONTGOMERY & ASSOCIATES



CADASTRAL: (D-1-13)28ccc	ADWR NO: 55-913073
NORTHING: 840819.297	EASTING: 974466.978
LAND SURFACE ELEVATION: 4682.98 FEET AMSL	
DATUM: U.S. State Plane Coordinate System of 1983 Epoch 2011 (NAD83 NA2011) Arizona Central Zone (0202) North American Datum 1983 North American Vertical Datum of 1983	

EXPLANATION

- No Data
- No Fracturing Evident
- Minor Fracturing
- Moderate Fracturing
- Major Fracturing
- Non-pumping Water Level
- DHRES-14_1213 — Well Identifier; Piezometer Elevation, in meters amsl

Resolution Copper Mining

MONTGOMERY & ASSOCIATES
Water Resource Consultants

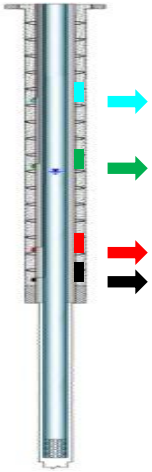
DHRES-14
DIAGRAM OF WELL CONSTRUCTION

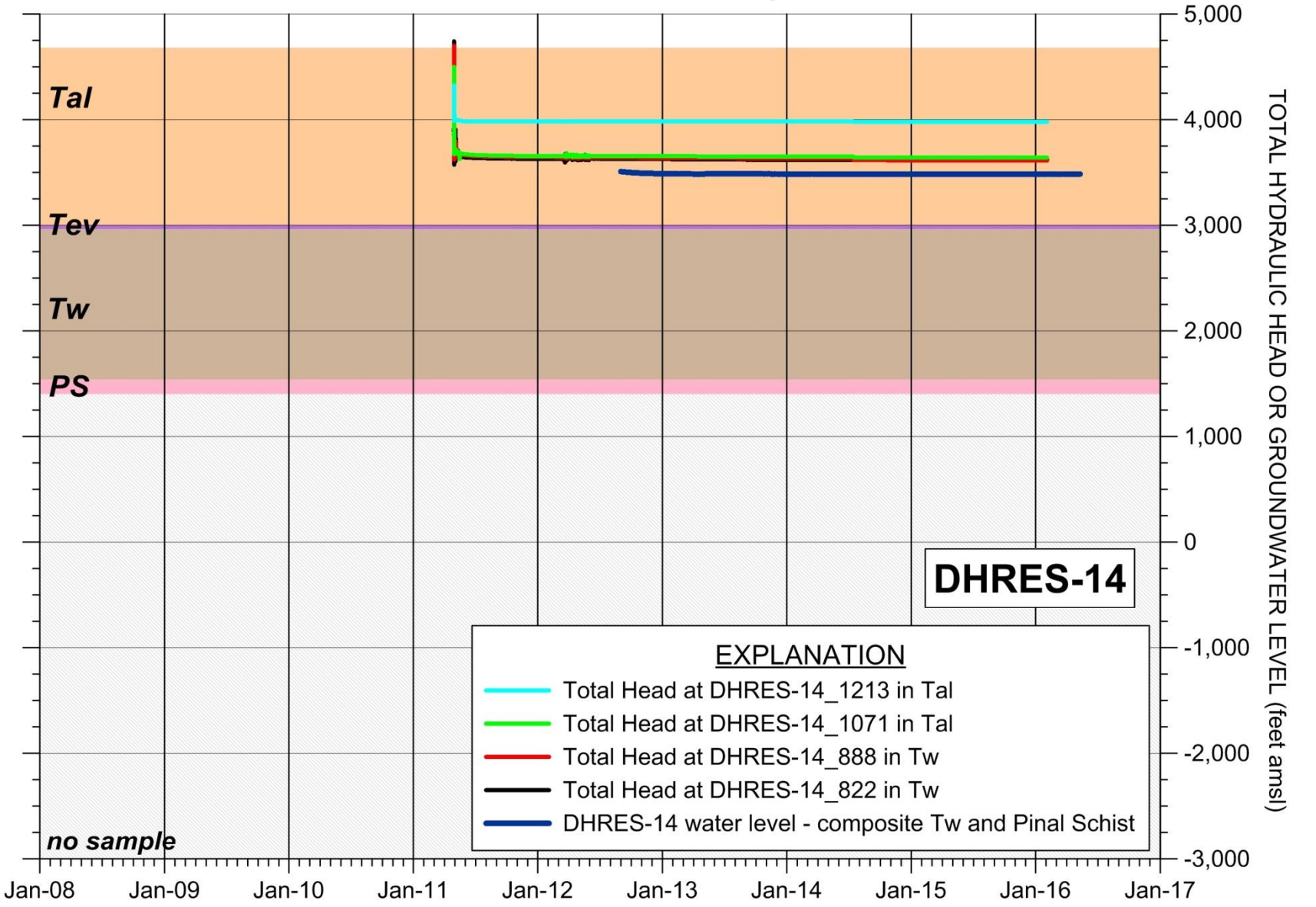
Version: October 2015

FIGURE B-13

Drafting\605\WellSchematics_2015\DHRES14_Feet\15Oct2015

DHRES-14 Hydrograph

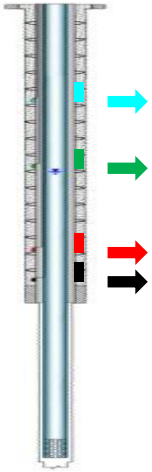


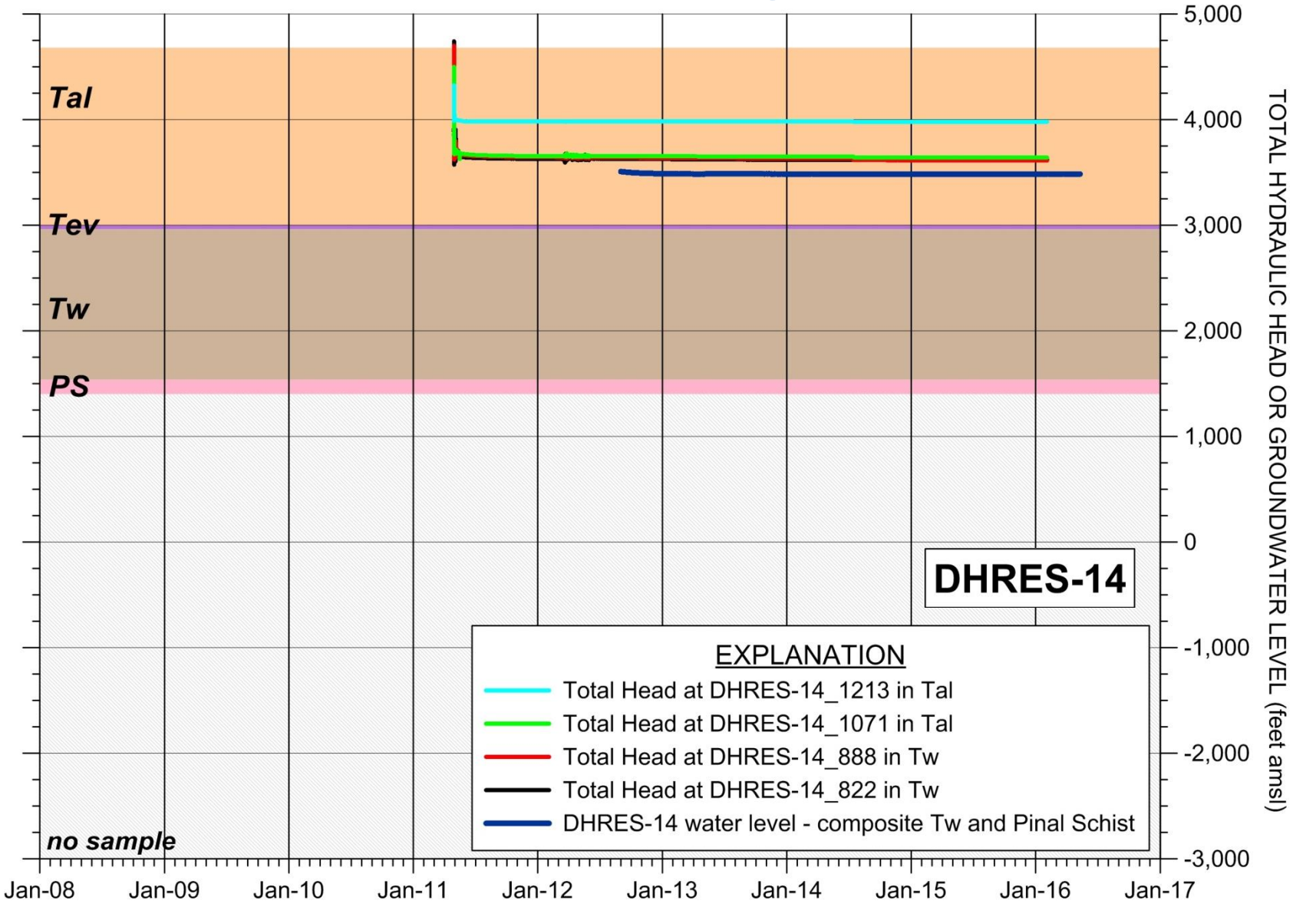


MONTGOMERY & ASSOCIATES

Resolution Copper Mining

DHRES-14 Hydrograph





MONTGOMERY & ASSOCIATES

Resolution Copper Mining

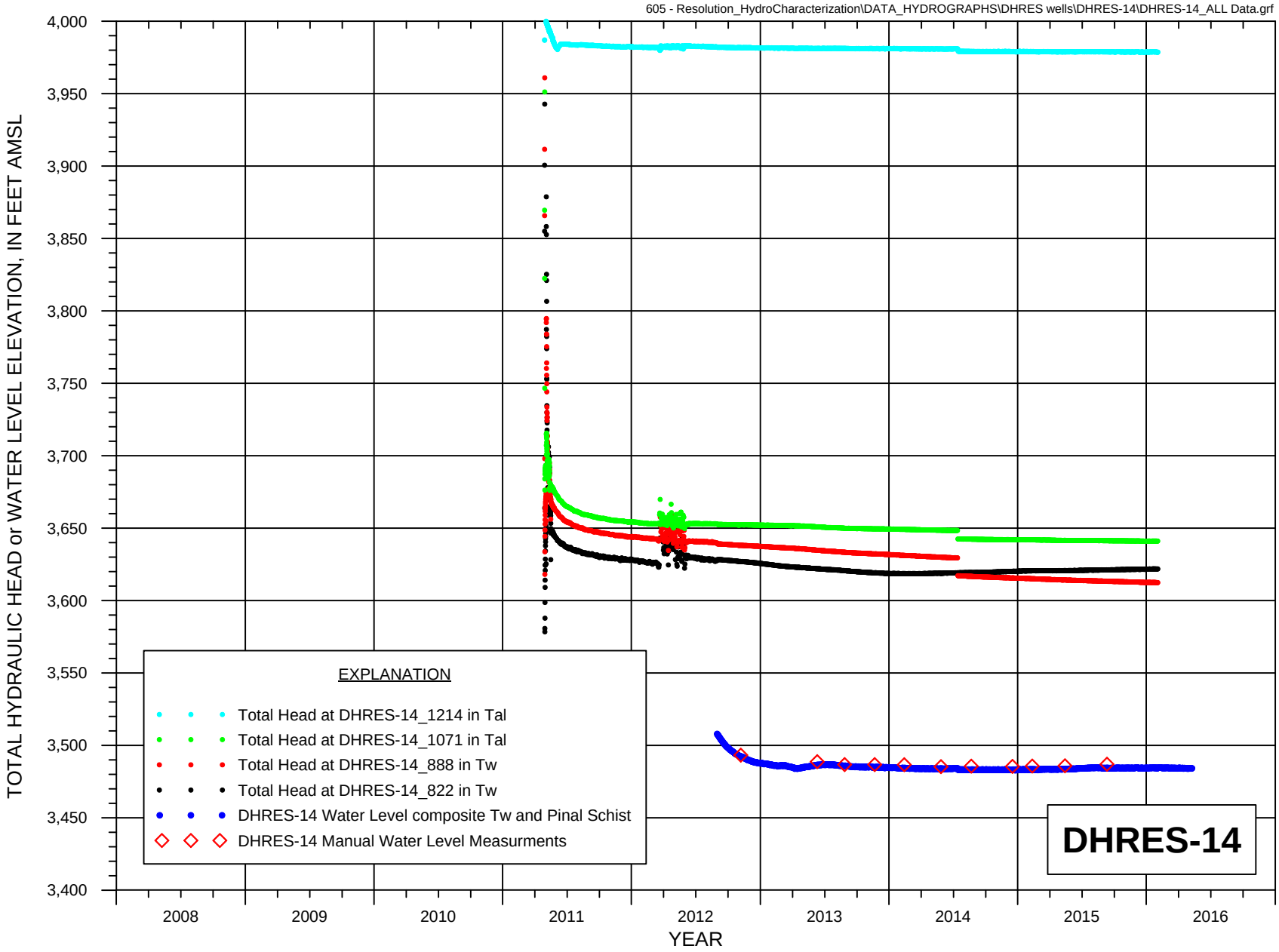


FIGURE B-13a. WATER LEVEL HYDROGRAPH, AND TOTAL HYDRAULIC HEAD FOR GROUTED PIEZOMETERS AT HYDROLOGIC TEST WELL DHRES-14

Resolution Copper Mining

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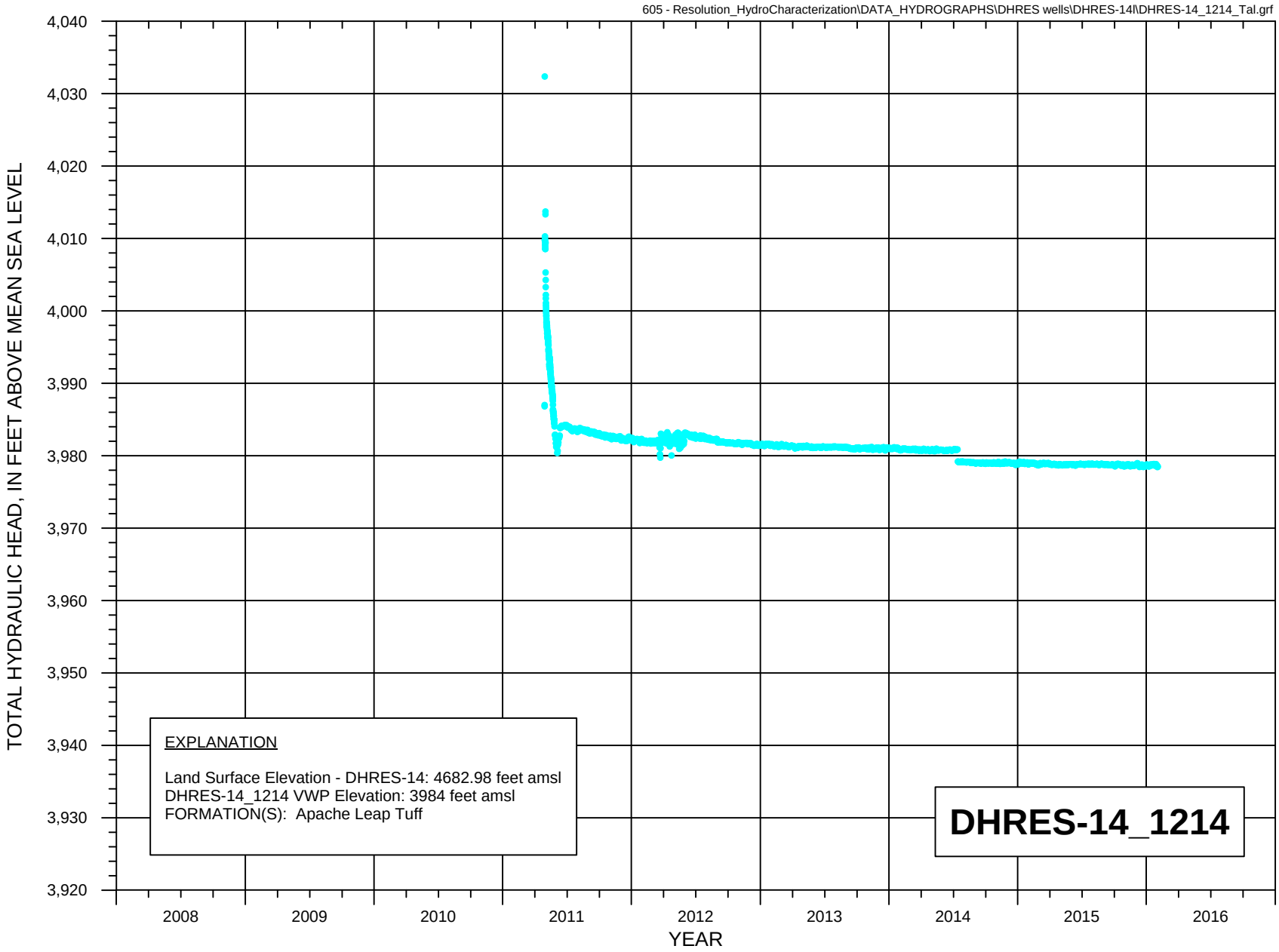


FIGURE B-13b. HYDROGRAPH OF TOTAL HYDRAULIC HEAD FOR GROUTED PIEZOMETER DHRES-14_1214

Resolution Copper Mining

MONTGOMERY & ASSOCIATES

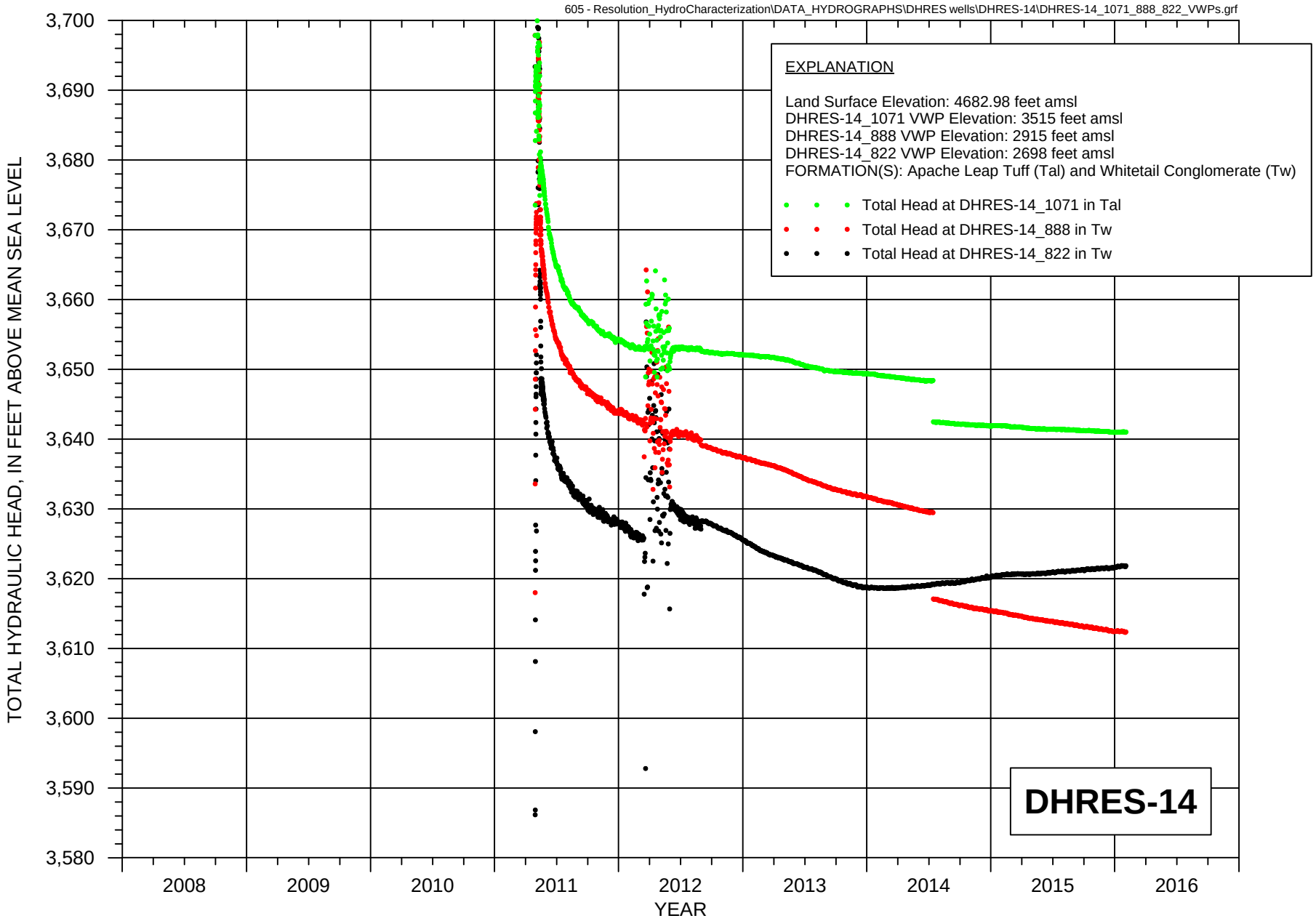


FIGURE B-13c. HYDROGRAPH OF TOTAL HYDRAULIC HEAD FOR GROUTED PIEZOMETERS AT HYDROLOGIC TEST WELL DHRES-14

Resolution Copper Mining

MONTGOMERY & ASSOCIATES

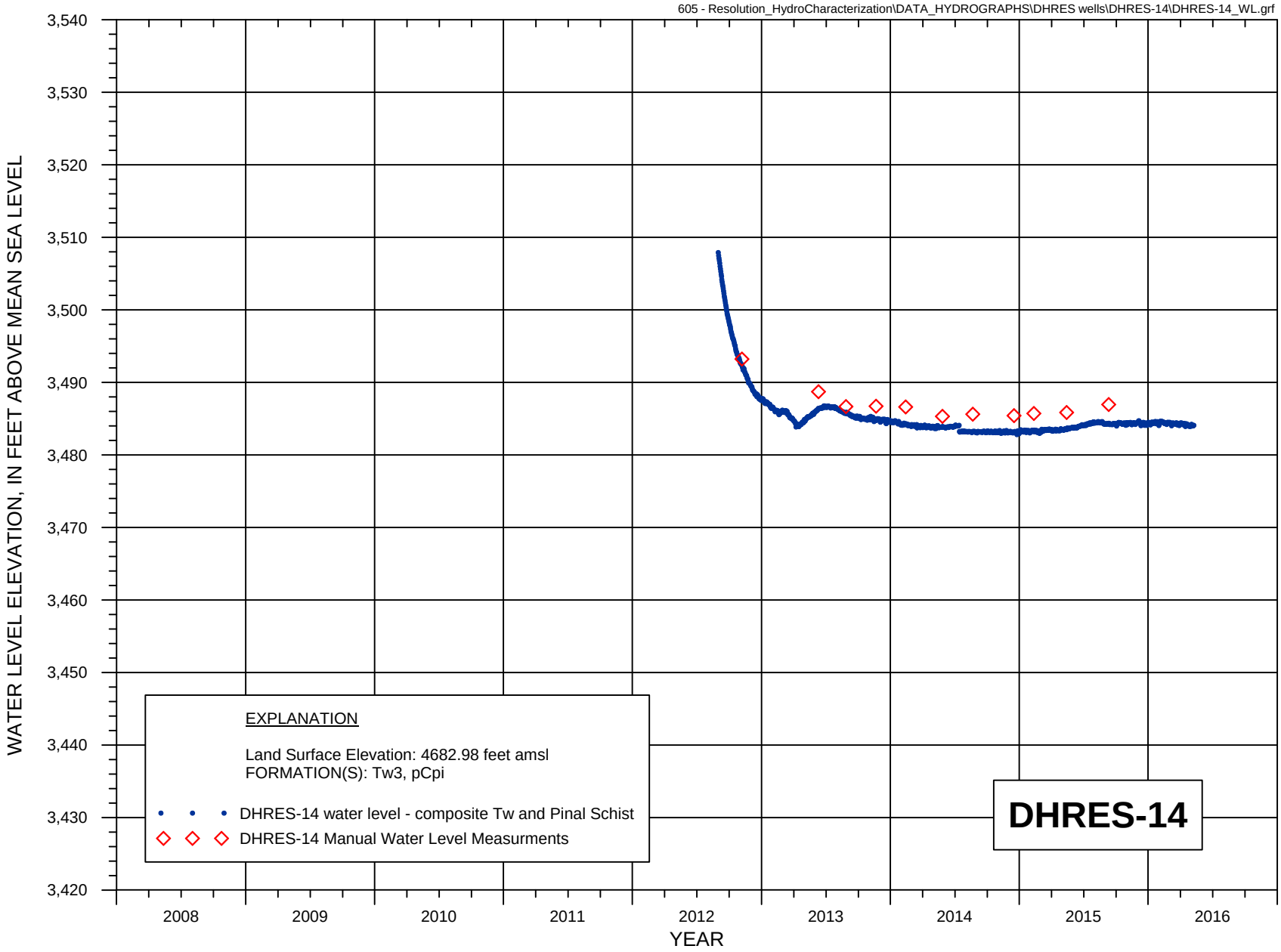


FIGURE B-13d. WATER LEVEL HYDROGRAPH FOR HYDROLOGIC TEST WELL DHRES-14

Resolution Copper Mining

MONTGOMERY & ASSOCIATES

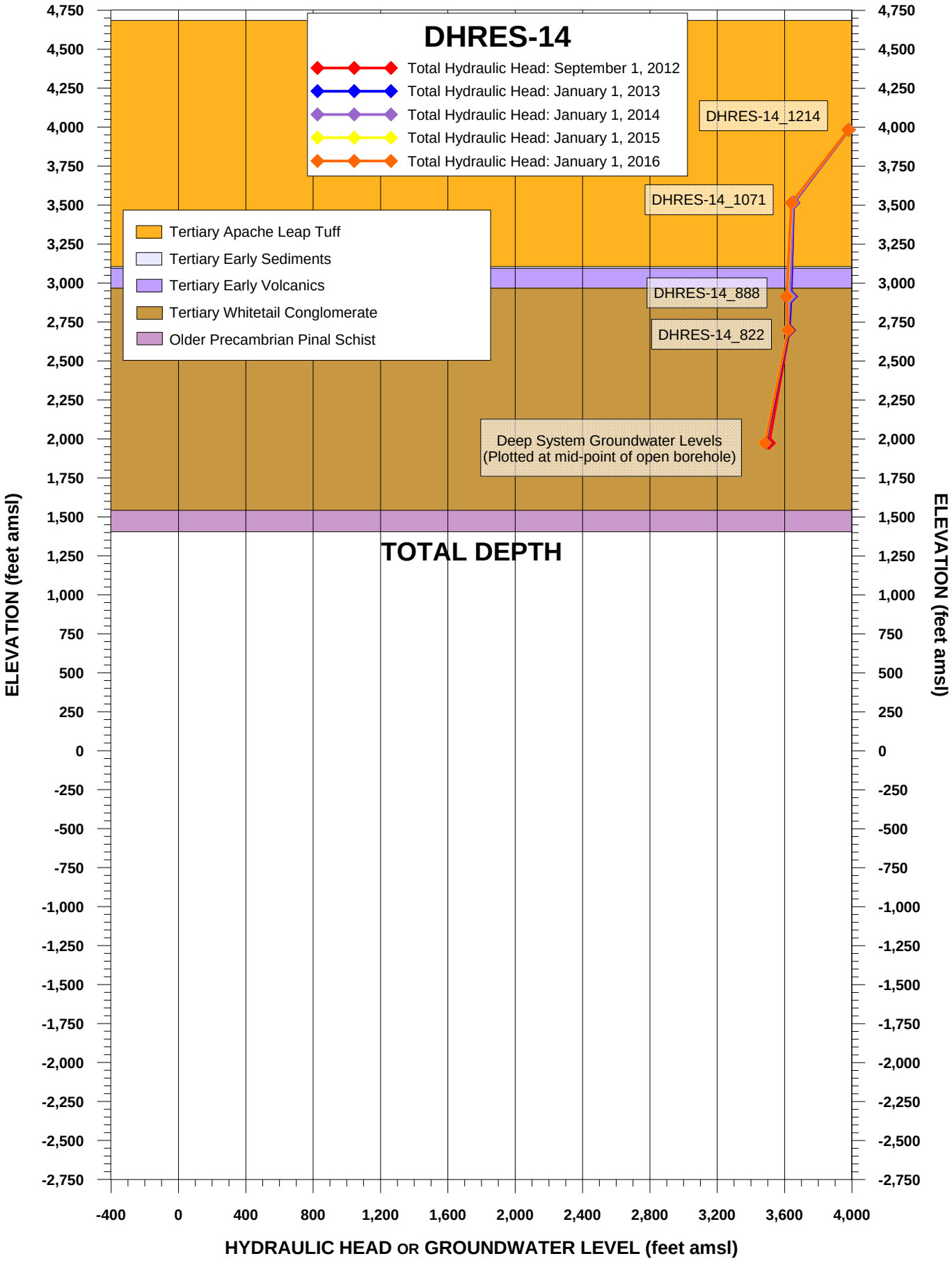
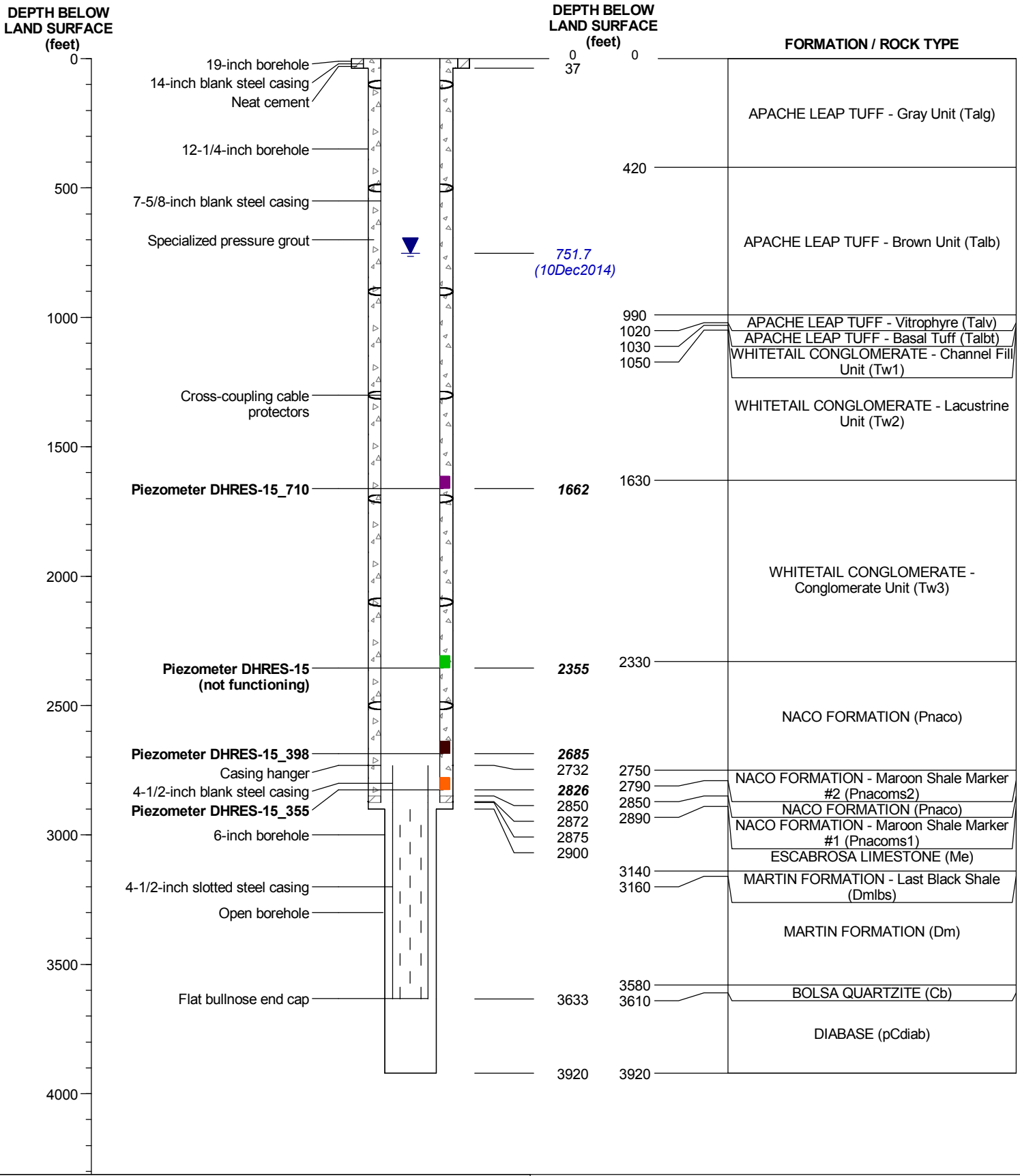


FIGURE 9. TOTAL HYDRAULIC HEAD AND GROUNDWATER LEVEL AT WELL DHRES-14, RESOLUTION PROJECT

MONTGOMERY & ASSOCIATES



NORTHING: 831076.102	EASTING: 964977.715
CADASTRAL: (D-02-13)05ccb	STATE WELL NO: 55-916688
DATUM: U.S. State Plane (NAD83NA2011)	
LAND SURFACE ELEVATION : 3990.83 FEET, AMSL	
EXPLANATION:	

DHRES-15

SCHEMATIC DIAGRAM OF WELL CONSTRUCTION

Client: Resolution Copper Mining

Project: Resolution

Location: Pinal County, Arizona

MONTGOMERY & ASSOCIATES

VERSION: 22Oct2015

FIGURE B-14

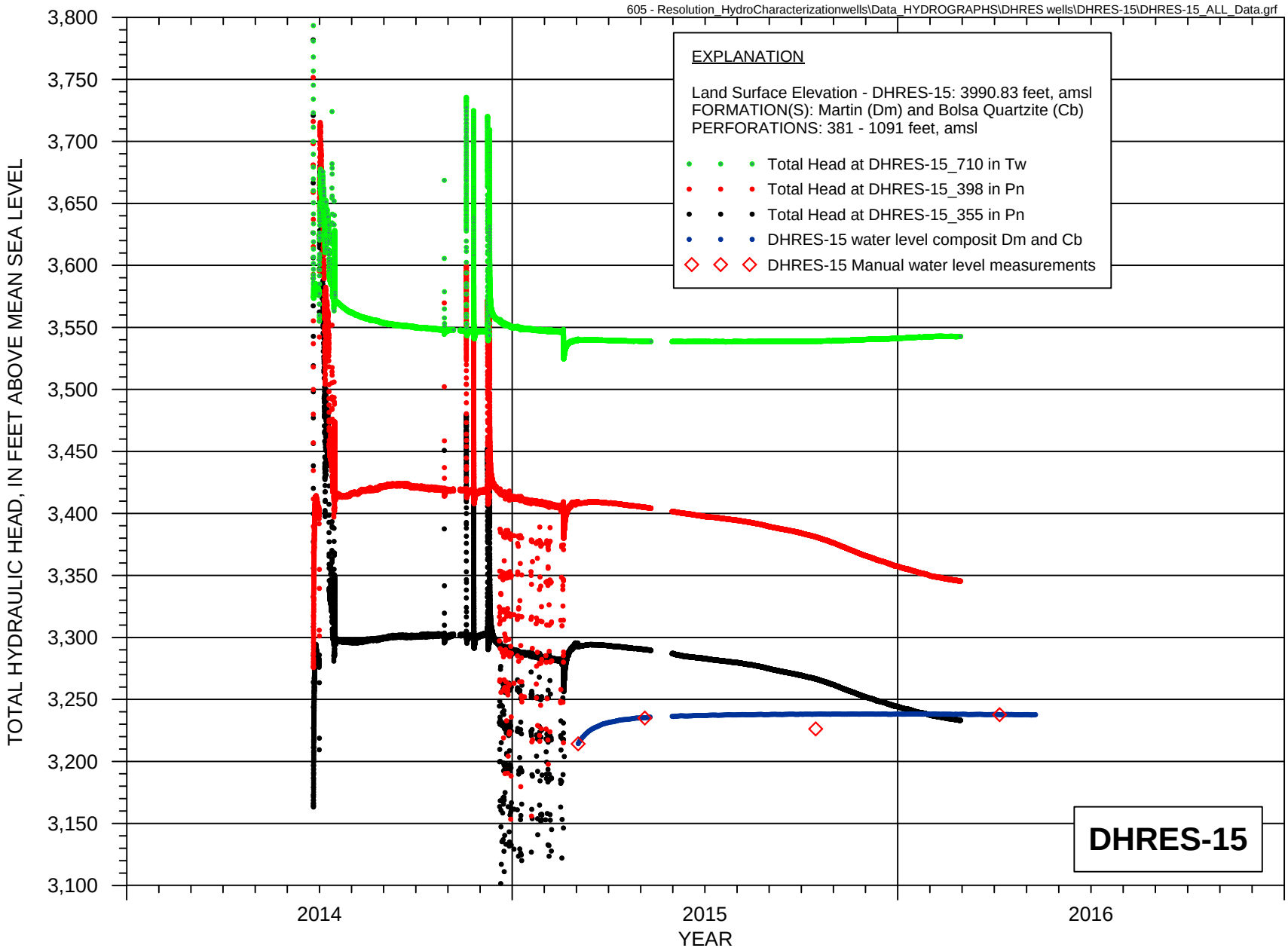
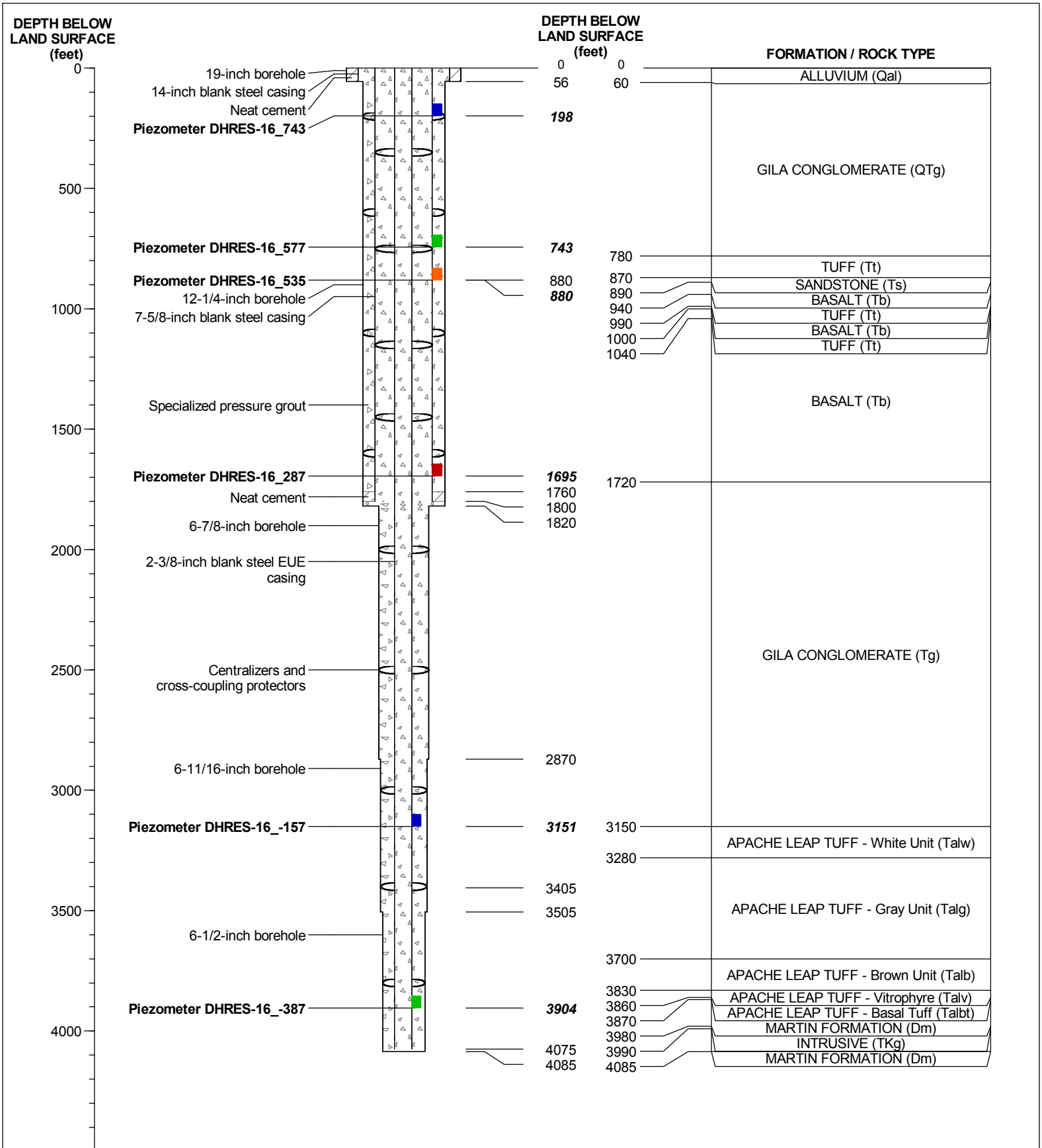


FIGURE B-15b. HYDROGRAPH OF TOTAL HYDRAULIC HEAD FOR GROUTED PIEZOMETERS AT HYDROLOGIC TEST WELL DHRES-15

Resolution Copper Mining

MONTGOMERY & ASSOCIATES



NORTHING: 830712.766	EASTING: 944004.384
CADASTRAL: (D-02-12)04acd	STATE WELL NO: 55-917232
DATUM: U.S. State Plane (NAD83NA2011)	
LAND SURFACE ELEVATION : 2634.254 FEET, AMSL	
EXPLANATION:	

DHRES-16

SCHEMATIC DIAGRAM OF WELL CONSTRUCTION

Client: Resolution Copper Mining

Project: Resolution

Location: Pinal County, Arizona

MONTGOMERY & ASSOCIATES

VERSION: 22Oct2015

FIGURE B-15

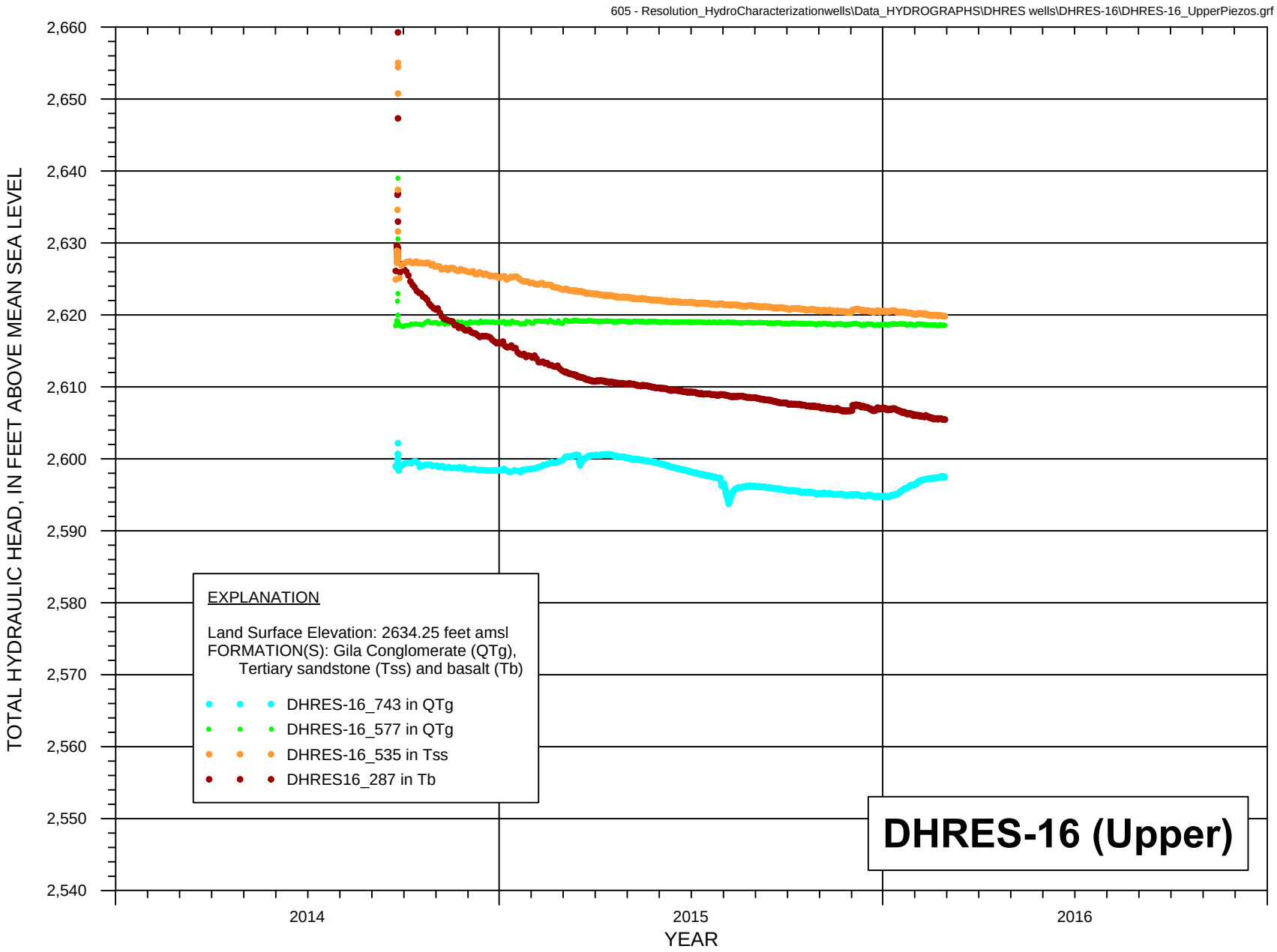


FIGURE B-15a. HYDROGRAPH OF TOTAL HYDRAULIC HEAD FOR GROUTED PIEZOMETERS, UPPER BOREHOLE, DHRES-16

Resolution Copper Mining

MONTGOMERY & ASSOCIATES

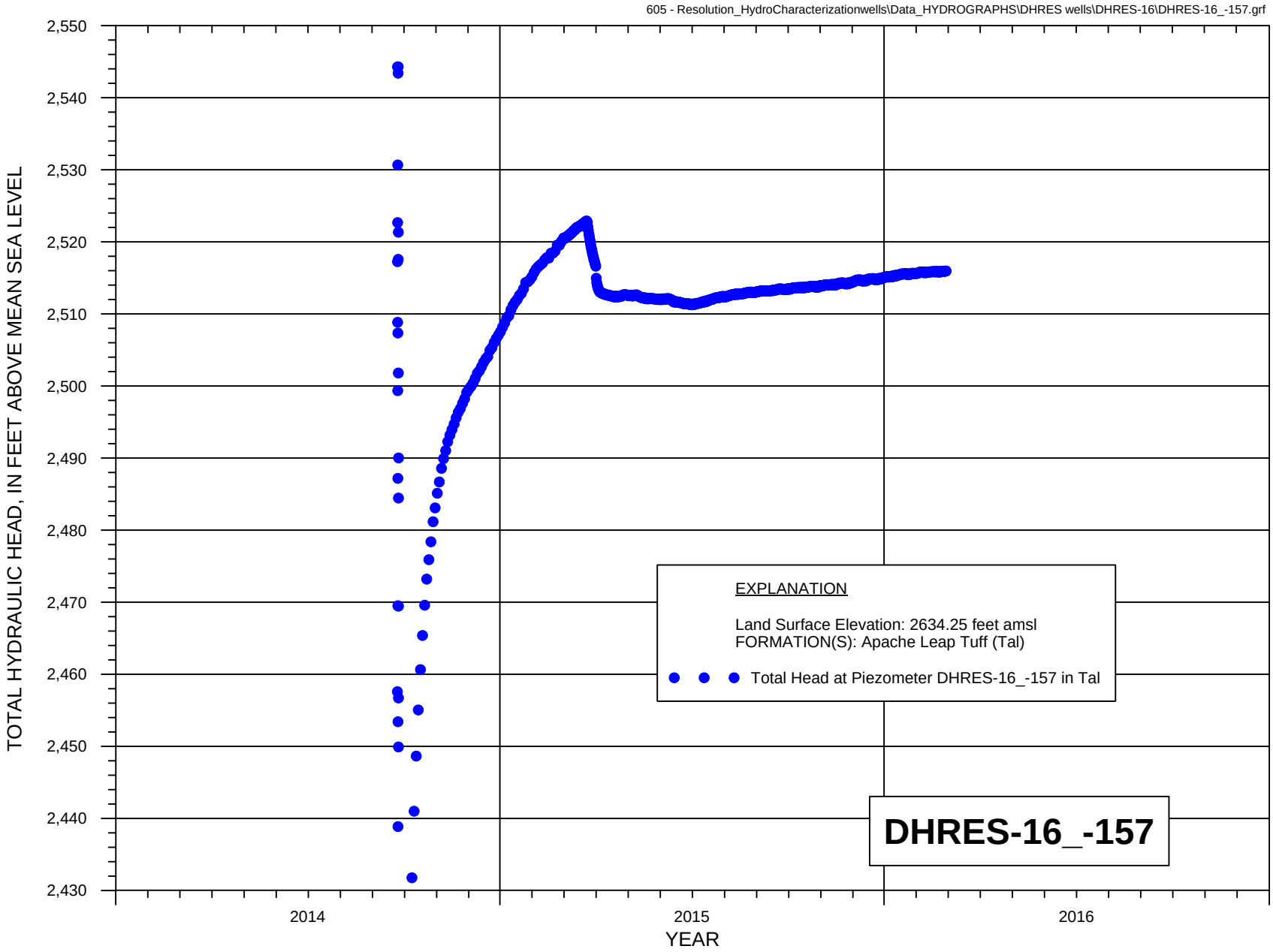


FIGURE B-15d. HYDROGRAPH OF TOTAL HYDRAULIC HEAD FOR GROUTED PIEZOMETER DHRES-16_-157, LOWER BOREHOLE AT DHRES-16

Resolution Copper Mining

MONTGOMERY & ASSOCIATES

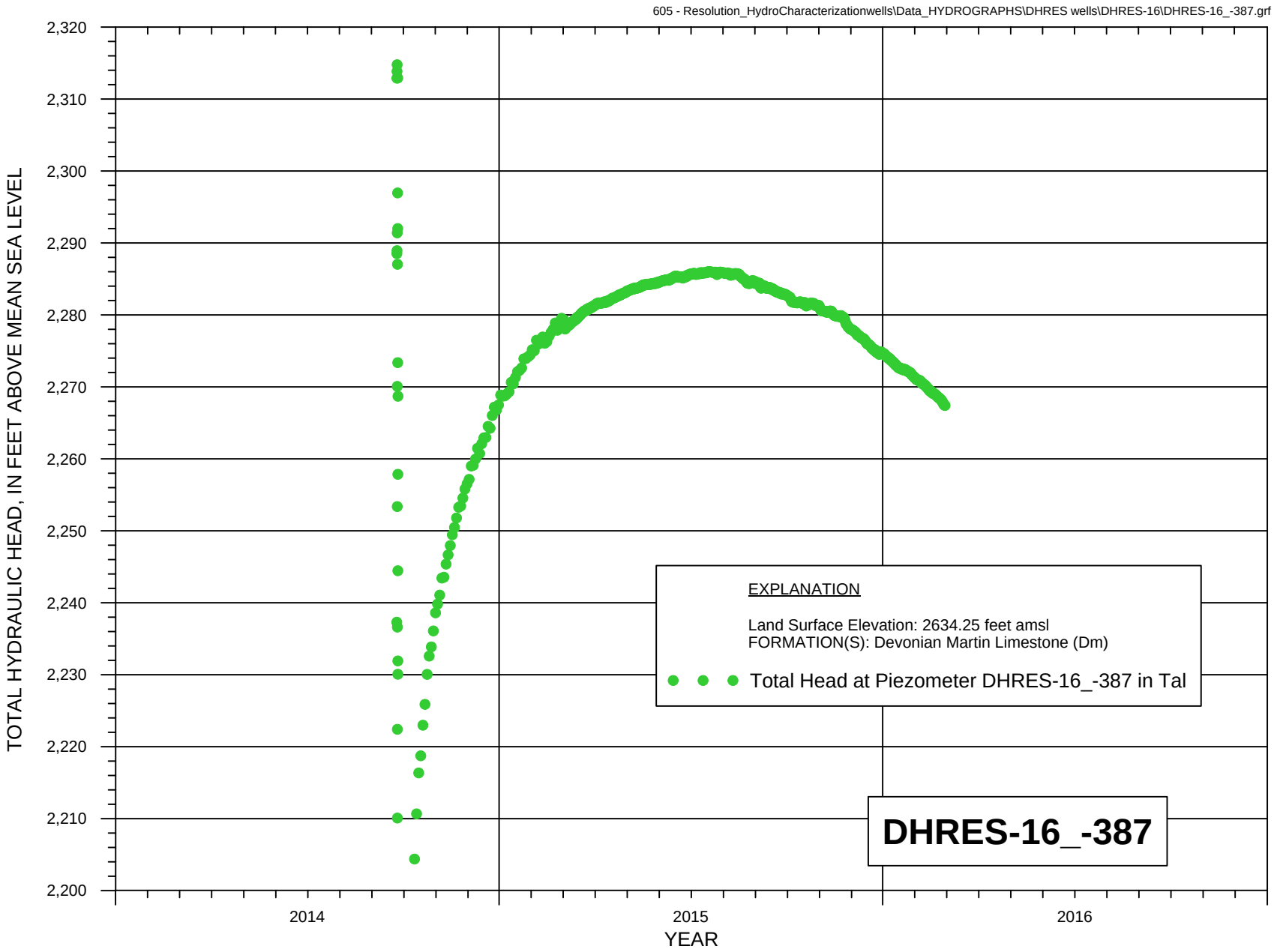
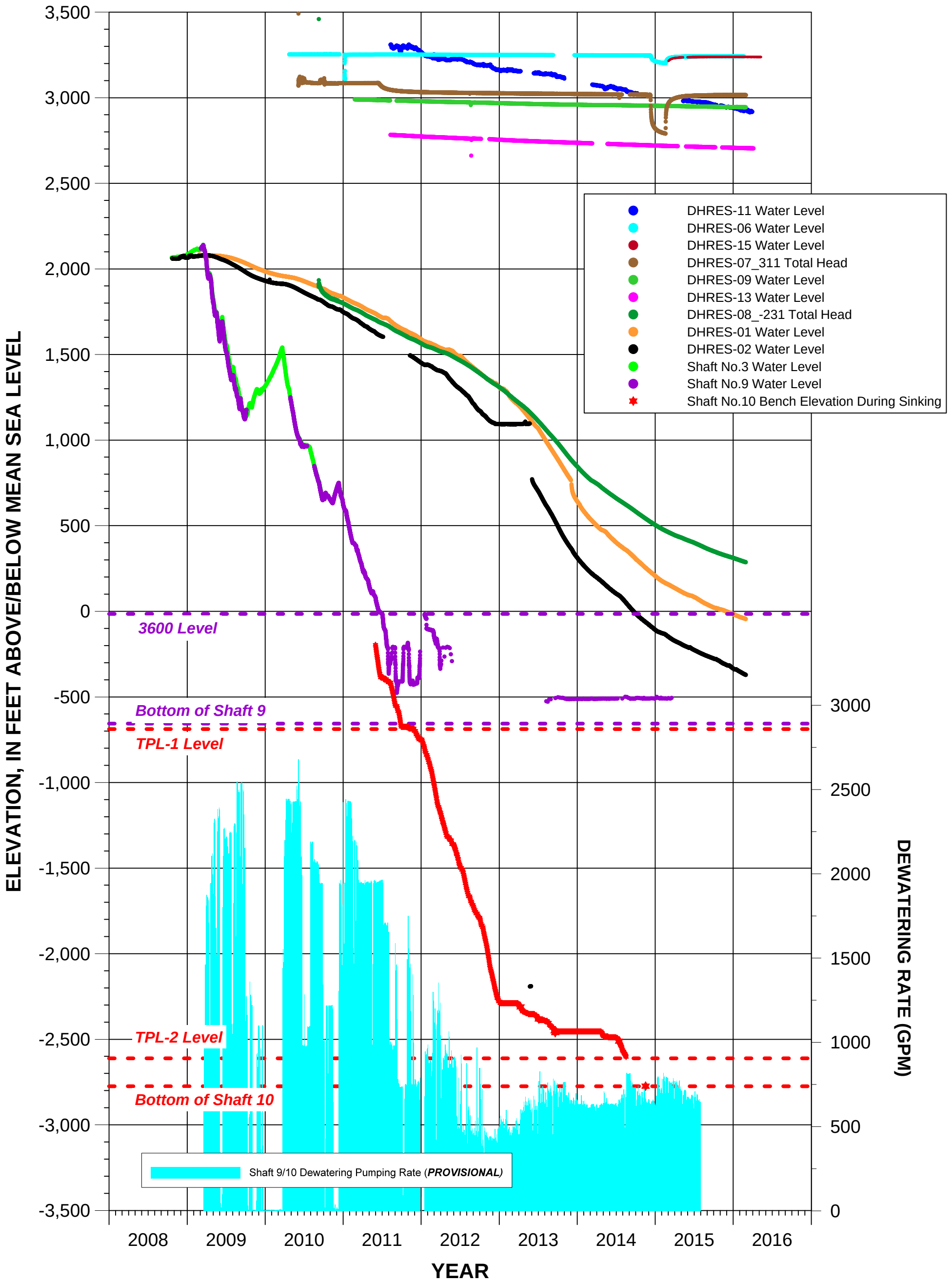


FIGURE B-15d. HYDROGRAPH OF TOTAL HYDRAULIC HEAD FOR GROUTED PIEZOMETER DHRES-16_-387, LOWER BOREHOLE AT DHRES-16

Resolution Copper Mining

MONTGOMERY & ASSOCIATES


ELEVATION, IN FEET ABOVE/BELOW MEAN SEA LEVEL
DEWATERING RATE (GPM)
YEAR
3,500
3,000
2,500
2,000
1,500
1,000
500
0
-500
-1,000
-1,500
-2,000
-2,500
-3,000
-3,500
3000
2500
2000
1500
1000
500
0
2008
2009
2010
2011
2012
2013
2014
2015
2016
3600 Level
Bottom of Shaft 9
TPL-1 Level
TPL-2 Level
Bottom of Shaft 10
DHRES-11 Water Level
DHRES-06 Water Level
DHRES-15 Water Level
DHRES-07_311 Total Head
DHRES-09 Water Level
DHRES-13 Water Level
DHRES-08_-231 Total Head
DHRES-01 Water Level
DHRES-02 Water Level
Shaft No.3 Water Level
Shaft No.9 Water Level
Shaft No.10 Bench Elevation During Sinking
Shaft 9/10 Dewatering Pumping Rate (PROVISIONAL)

WEST PLANT SITE MONITOR WELLS

500 YARD POC WELL

AZ STATE PLANE CENTRAL NAD 83

NORTHING: 837352 ELEVATION (TOC):2998.67

EASTING: 950758

LITHOLOGY

AS-BUILT

CUTTINGS SIZE — FINES, MEDIUM, COARSE

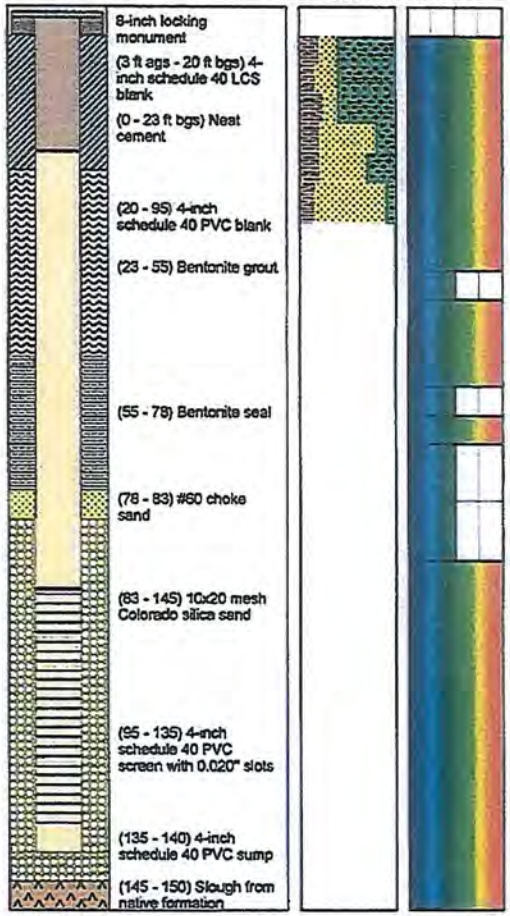
REACTION TO HCl — NONE, WEAK, MOD, STRONG

0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150

DEVELOPMENT ROCK - GRAVEL AND FINES: (GM) Silty gravel with sand. Gravels are fine, up to 2.5 cm, angular. Sand is predominately medium-grained, angular. Fines are silt, low plasticity. Color 5YR 4/4 and 5YR 3/2. Firm consistency. Development rock.

DEVELOPMENT ROCK - SAND WITH FINES AND GRAVEL: (SM) Silty sand with some gravels. Gravels are fine, up to 2 cm, angular. Sand is predominately medium-grained, angular. Fines are silt, low plasticity. Color 10 YR 5/3. Soft consistency. Moderate cementation.

APACHE LEAP DACITE TUFF: Pinkish grey to brown welded dacite tuff with phenocrysts of plagioclase quartz and biotite in a glassy goundmass. Colors: 7.5YR 6/2, 4/3, 4/3.



BOREHOLE No.	500 YARD POC WELL	TOTAL DEPTH DRILLED	150 ft bgs	SCALE	AS SHOWN
ADWR REG No.	55-907035	BIT DIAMETER	8.75"	DATE	06/07/07
LOCATION	SUPERIOR, AZ	DRILLING FLUID	AIR	DESIGN	JCR
CLIENT	RESOLUTION COPPER MINE	LOGGED BY	KKH	CHECK	JJM
DRILLING CO	YELLOW JACKET DRILLING	DATE STARTED	06/01/07	REVIEW	KJ
DRILLING EQUIPMENT	SPEEDSTAR 50K-CH	DATE FINISHED	06/04/07	REV 1	FILE 500 YARD POC WELL.LDF
DRILLING METHOD	AIR ROTARY CASING HAMMER	COMMENTS	USCS SCALE, MUNSELL COLOR CHART	PROJECT No.	073-92522

TITLE

BOREHOLE LOG AND AS-BUILT DRAWING

Golder Associates

FIGURE 2

DRS-POC

Horizontal Datum, NAD 83; Vertical Datum NAVD88

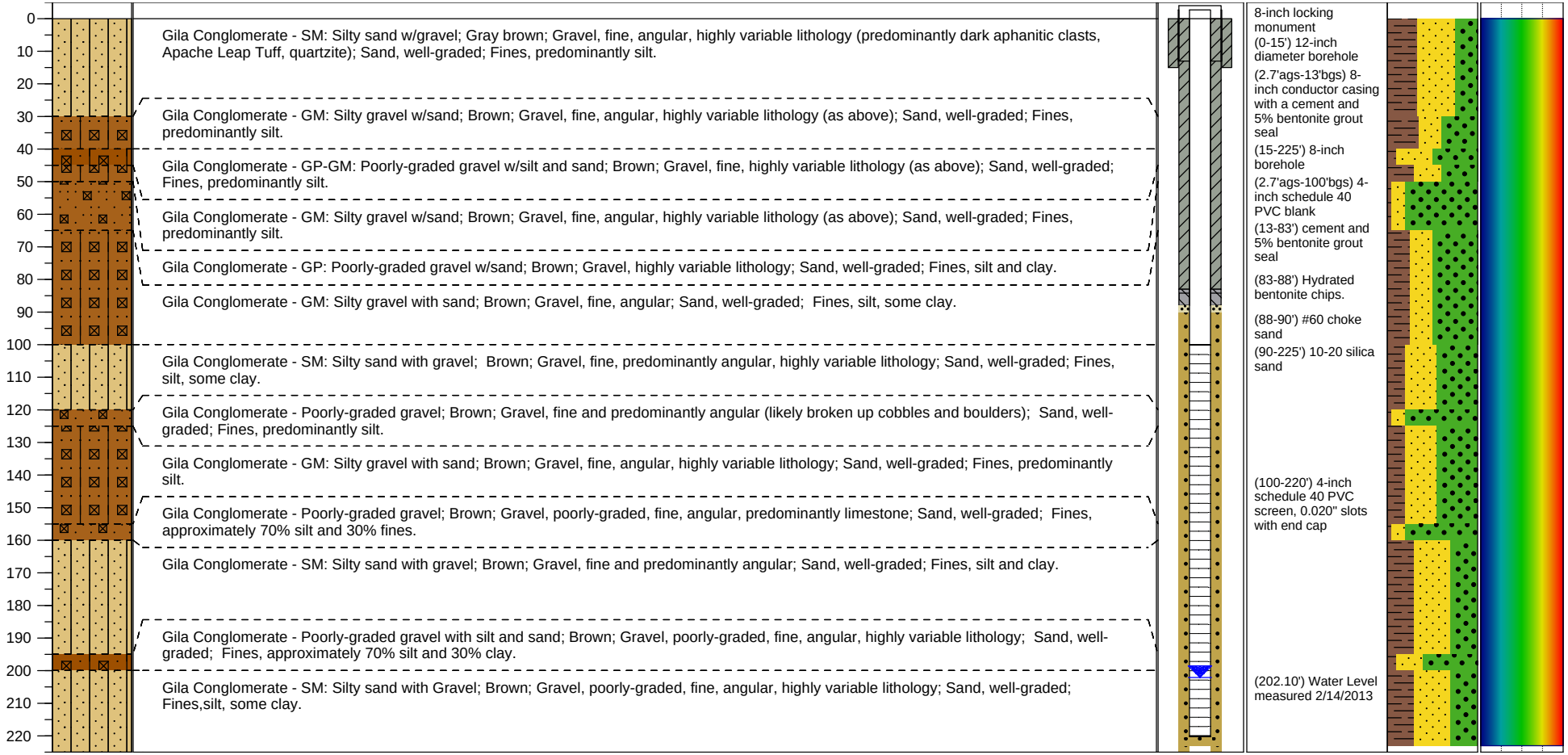
LATITUDE: N33°18'17.363" ELEVATION (TOC FT AMSL): 2997.94

LONGITUDE: W111°06'38.599"

LITHOLOGY **AS-BUILT**

CUTTINGS SIZE FINES MEDIUM COARSE

REACTION TO HCl NONE WEAK MOD STRONG



BOREHOLE No. DRS-POC	TOTAL DEPTH DRILLED 225 FEET	SCALE AS SHOWN	TITLE
ADWR REG No. 55-914375	BIT DIAMETER 12" TO 15'; 8" FROM 15 TO 225'	DATE 04/02/2013	**BOREHOLE LOG AND AS-BUILT DRAWING**
LOCATION SUPERIOR, AZ	DRILLING FLUID AIR	DESIGN KAP	
CLIENT RESOLUTION COPPER MINE	LOGGED BY JJM	CHECK JJM	
DRILLING CO YELLOW JACKET DRILLING	DATE STARTED 06/10/2012	REVIEW KJ	
DRILLING EQUIPMENT SPEEDSTAR 50K-CH	DATE FINISHED 01/10/2013	REV 0 FILE DRS-POC.DAT	Golder Associates
DRILLING METHOD AIR ROTARY	COMMENTS AGS = ABOVE GROUND SURFACE; BGS = BELOW GROUND SURFACE	PROJECT No. 123-92513	FIGURE 2

RECORD OF MONITORING WELL INSTALLATION **GAI-02-01**

PROJECT NUMBER: 023-2552 **SHEET:** 1 OF 7

BOREHOLE LOCATION: APPROX. 200' SE OF TAILINGS POND 6 DAM **PROJECT:** SUPERIOR MONITOR WELLS

COORDINATES N: E: EL: 3007 **BORING DATE:** 04/23/02

DEPTH (feet)	STRATIGRAPHY: DESCRIPTION (Gravel/Sand/Fine)	GRAPHIC LOG	ASTM CLASS.	HCl REACTIVITY	PASTE pH	PASTE COND. (µS/cm)	MONITORING WELL COMPLETION: DESCRIPTION / WELL SKETCH	DRILLING NOTES	DEPTH (feet)
0							8" LOCKING MONUMENT; 2' STICK UP		0
	Well-graded sand with gravel, light brown/tan with variably colored clast; sand and gravel, poorly-graded, angular to sub-rounded, clast composed of schist granite, metavolcanics and limestone: dry. (40/60/TR)		SW	S	7.95	124	4" SCH. 40 LOW CARBON STEEL (2' AGS–19.2' BGS); CEMENT (0'–20')	DRILLING TECHNIQUE USES HAMMER BIT WITH APPROXIMATLY 1" INTERCHANGE WHICH RESULTS IN CRUSHING COURSE GRAVEL UP TO BOULDER SIZE MATERIAL INTO FINE ANGULAR GRAVEL.	
10	Well-graded sand with gravel, light brown/tan with variably colored clast; sand and gravel, poorly-graded, angular to sub-rounded, clast composed of schist granite, metavolcanics and limestone: dry. (40/60/TR)		SW	S	8.27	120	SCH. 40–80 STEEL ADAPTOR (19.2'–20')		10
20	Well-graded sand with gravel, light gray/brown; no plasticity, well-graded in all size fractions; sand, dry. (30/65/5)		SW	S	9.33	98			20
30	Well-graded sand with gravel, light grey/brown; no plasticity, well-graded in all size fractions; sand, well-graded; dry. (30/65/5)		SW	S	9.26	181	BENTONITE SLURRY (20'–145')		30
40	Silty sand with gravel; light brown, no plasticity; well-graded sand and gravel fraction; predominantly angular to sub-angular; dry. (30/55/15)		SM	S	9.44	195	8" BORHOLE (0'–440')		40
50	Silty sand with gravel; light gray/brown, predominantly fine sand and silt; dry. (15/65/20)		SM	S	9.32	195			50
60	Silty sand with gravel; light grey/brown, predominantly fine sand and silt; dry. (15/65/20)		SM	S	9.58	130	4" SCH. 80 PVC CASING (20'–165.8')		60
70							GILA CONGLOMERATE		70

DRILL RIG: SCHRAMM/ DUAL WALL REVERSE CIRCULATION **LOGGED:** JJM

DRILLING CONTRACTOR: LAYNE CHRISTENSEN **CHECKED:**

DRILLER: MARK HALAGER **DATE:**

Golder Associates

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RECORD OF MONITORING WELL INSTALLATION — GAI-02-01

PROJECT NUMBER: 023-2552 — SHEET: 2 OF 7

BOREHOLE LOCATION: APPROX. 200' SE OF TAILINGS POND 6 DAM — PROJECT: SUPERIOR MONITOR WELLS

COORDINATES N: E: EL: 3007 — BORING DATE: 04/23/02

DEPTH (feet)	STRATIGRAPHY: DESCRIPTION (Gravel/Sand/Fine)	GRAPHIC LOG	ASTM CLASS.	HCl REACTIVITY	PASTE pH	PASTE COND. (µS/cm)	MONITORING WELL COMPLETION: DESCRIPTION / WELL SKETCH	DRILLING NOTES	DEPTH (feet)
70	Silty sand with gravel; light gray; no plasticity; sand poorly-graded; predominantly fine; gravel angular, mainly dark aphanitic volcanics; dry. (30/45/25)		SM	S	9.51	125			70
80	Silty sand with gravel; light gray; no plasticity; sand poorly-graded; predominantly fine; gravel angular, mainly dark aphanitic volcanics; dry. (30/45/25)		SM	S	9.31	126	BENTONITE SLURRY (20'–145')		80
90	Silty sand with gravel; light gray; no plasticity; sand, poorly-graded, predominantly fine; gravel fine, angular; dry. (40/40/20)		SM	S	9.28	141			90
100	Silty sand with gravel; light gray; no plasticity; sand, poorly-graded, predominantly fine; gravel, fine, angular, dry. (40/50/10)		SM	S	9.20	140	8" BORHOLE (0'–440')		100
110	Silty sand with gravel; light gray; no plasticity; sand, poorly-graded, predominantly fine; gravel, fine, angular, dry. (40/50/10)		SM	S	9.25	125			110
120	Silty sand; light gray/brown with varied colored clast; sand, well-graded; gravel, fine, angular no plasticity; dry. (30/55/15)		SM	S	9.31	155	4" SCH. 80 PVC CASING (20'–165.8')	Temporarily shut down, no contract signed.	120
130	Silty sand; light gray/brown with varied colored clast; sand, well-graded; gravel, fine, angular no plasticity; dry. (30/55/15)		SM	S	9.32	140			130
140									140

GILA CONGLOMERATE

DRILL RIG: SCHRAMM/ DUAL WALL REVERSE CIRCULATION — LOGGED: JJM

DRILLING CONTRACTOR: LAYNE CHRISTENSEN — CHECKED:

DRILLER: MARK HALAGER — DATE:

Golder Associates

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RECORD OF MONITORING WELL INSTALLATION — **GAI-02-01**

PROJECT NUMBER: 023-2552 — **SHEET:** 3 OF 7

BOREHOLE LOCATION: APPROX. 200' SE OF TAILINGS POND 6 DAM — **PROJECT:** SUPERIOR MONITOR WELLS

COORDINATES N: E: EL: 3007 — **BORING DATE:** 04/23/02

DEPTH (feet)	STRATIGRAPHY: DESCRIPTION (Gravel/Sand/Fine)	GRAPHIC LOG	ASTM CLASS.	HCl REACTIVITY	PASTE pH	PASTE COND. (µS/cm)	MONITORING WELL COMPLETION: DESCRIPTION / WELL SKETCH	DRILLING NOTES	DEPTH (feet)
140	Silty sand; light gray/brown with varied colored clast; sand, well-graded; gravel, fine, angular no plasticity; dry. (30/55/15)		SM	S	9.24	82.4	BENTONITE SLURRY (20'–145'); HYDRATED BENTONITE CHIPS (145'–147')	⊙ 145' Slight dampness and dust reduction. ⊙ 147' Fracture or void in formation.	140
150	Silty sand; light gray/brown with varied colored clast; sand, well-graded; gravel, fine, angular no plasticity; dry. (30/55/15)		SM	S	9.31	85	HYDRATED BENTONITE PELLETS (147'–150'); #50–70 SILICA CHOKE SAND (150'–152')		150
160	Silty sand; light gray/brown with varied colored clast; sand, well-graded; gravel, fine, angular no plasticity; dry. (30/55/15)		SM	S	9.27	103	4" SCH. 80 PVC CASING (20'–165.8')	⊙ approx. 165' Slight moisture occuring in cuttings blowing out of surface casing.	160
170	Well-graded sand with gravel and silt; light brown/gray, non-plastic; sand, angular to sub-rounded; gravel, fine, angular, dry. (30/60/10)		SW–SM	S	9.58	58	4" SCH. 80 PVC 0.020 SLOT (165.8'–195.2'); #10–20 SILICA SAND (152'–206')	▽ Static water level approx. 176' BGS (measured 05/07/02)	170
180	Slightly increase in gravel. Well-graded sand with gravel and silt; light brown/gray, non-plastic; sand, angular to sub-rounded; gravel, fine, angular, dry. (40/60/10)		SW–SM	S	9.50	71	8" BORHOLE (0'–440')	Slightly decrease in fines, possibly due to fines adhering to inside of drill pipe.	180
190	Well-graded sand with gravel; light gray/brown; sand well-graded; gravel fine, angular; fine fraction reduced; dry. (40/55/5)		SW	S	9.52	60	4" SCH. 80 PVC SUMP (195.2'–200.3'); 4" SCH. 80 PVC END CAP (200.3'–200.5')		190
200	Well-graded sand with gravel and silt; light brown/gray; non-plastic; gravel fine, angular; dry. (30/50/10)		SW–SM	S	9.50	65	HYDRATED BENTONITE CHIPS (206'–208'); HYDRATED BENTONITE PELLETS (208'–211')		200
210									210

GILA CONGLOMERATE

DRILL RIG: SCHRAMM/ DUAL WALL REVERSE CIRCULATION — **LOGGED:** JJM

DRILLING CONTRACTOR: LAYNE CHRISTENSEN — **CHECKED:**

DRILLER: MARK HALAGER — **DATE:**

Golder Associates

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RECORD OF MONITORING WELL INSTALLATION

GAI-02-01

PROJECT NUMBER: 023-2552

SHEET: 4 OF 7

BOREHOLE LOCATION: APPROX. 200' SE OF TAILINGS POND 6 DAM

PROJECT: SUPERIOR MONITOR WELLS

COORDINATES N: E: EL: 3007

BORING DATE: 04/23/02

STRATIGRAPHY					PASTE		MONITORING WELL COMPLETION			
DEPTH (feet)	DESCRIPTION (Gravel/Sand/Fine)	GRAPHIC LOG	ASTM CLASS.	HCl REACTIVITY	pH	COND. (µS/cm)	DESCRIPTION	WELL SKETCH	DRILLING NOTES	DEPTH (feet)
210	Well-graded sand with gravel and silt; light brown/gray; non-plastic; gravel fine, angular; dry, cuttings from cyclone are slightly moist. (40/45/10)		SW-SM	S	9.48	90.3	HYDRATED BENTONITE PELLETS (208'-211')		⊙ 213' First moisture in cuttings at both cyclone and surface casing. Circulation momentarily, clogged, driller ups pressure to flush fines.	210
220	Silty sand with gravel; sand, poorly graded, predominantly fine; gravel, fine, angular; moist. (35/50/15)		SM	S	9.22	111				220
230	Silty sand with gravel; sand, poorly graded, predominantly fine; gravel, fine, angular; moist. (35/50/15)		SM	S	8.82	119	BENTONITE SLURRY (211'-440')			230
240	Poorly graded sand with silt; sand, predominantly fine to very fine; gravel, fine, angular; moist. (10/80/10)		SP-SM	S	9.31	152			⊙ 240'-250' extra moist; water producing zone.	240
250	Poorly graded sand with silt; sand, predominantly fine to very fine; gravel, fine, angular; moist. (10/80/10)		SP-SM	S	9.22	135	8" BORHOLE (0'-440')	GILA CONGLOMERATE		250
260	Silty sand; light brown/gray, sand, poorly graded, fine; gravel, fine, angular; fine fraction is silt; moist. (10/60/30)		SM	S	9.51	95.4				260
270	Silty sand; light brown/gray, sand, poorly graded, fine; gravel, fine, angular; fine fraction is silt; slight decrease in silt; moist. (10/70/20)		SM	S	9.45	140				270
280										280

DRILL RIG: SCHRAMM/ DUAL WALL REVERSE CIRCULATION

LOGGED: JJM

DRILLING CONTRACTOR: LAYNE CHRISTENSEN

CHECKED:

DRILLER: MARK HALAGER

DATE:

Golder Associates

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RECORD OF MONITORING WELL INSTALLATION — **GAI-02-01**

PROJECT NUMBER: 023-2552 — **SHEET:** 5 OF 7

BOREHOLE LOCATION: APPROX. 200' SE OF TAILINGS POND 6 DAM — **PROJECT:** SUPERIOR MONITOR WELLS

COORDINATES N: E: EL: 3007 — **BORING DATE:** 04/23/02

STRATIGRAPHY DEPTH (feet)	STRATIGRAPHY DESCRIPTION (Gravel/Sand/Fine)	GRAPHIC LOG	ASTM CLASS.	HCl REACTIVITY	PASTE pH	PASTE COND. (µS/cm)	MONITORING WELL COMPLETION DESCRIPTION	MONITORING WELL COMPLETION WELL SKETCH	DRILLING NOTES	DEPTH (feet)
280	Well-graded sand with gravel and silt; light brown/grey; sand, well-graded, sub-angular, sub-rounded; gravel, fine, angular; moist. (30/65/5)		SW	S	9.63	189			THERE HAS BEEN NO WATER PRODUCTION, HOWEVER, MORE TIME IS NEEDED TO BLOW OUT STICKY MOIST MATERIAL WITH EVERY DRILL PIPE CONNECTION.	280
290	Silty sand; light brown; sand poorly-graded, predominantly fine; gravel, fine, angular; fines composed of silt, non-plastic; moist. (5/75/20)		SM	S	9.35	170				290
300	Silty sand; light brown; sand poorly graded, predominantly fine; gravel, fine, angular; fines composed of silt, non-plastic; moist. (5/75/20)		SM	S	9.45	160	BENTONITE SLURRY (211'-440')			300
310	Silty sand; light brown; sand poorly graded, predominantly fine; gravel, fine, angular; fines composed of silt, non-plastic; moist. (5/75/20)		SM	S	9.51	180		GILA CONGLOMERATE		310
320	Silty sand; light brown; sand poorly graded, predominantly fine; gravel, fine, angular; fines composed of silt, non-plastic; moist. (5/75/20)		SM	S	9.62	196	8" BORHOLE (0'-440')		Trace of low plasticity clay	320
330	Poorly graded sand; light brown; sand, fine to very fine; trace gravel, angular; fines composed of silt, non-plastic; moist. (TR/95/5)		SP	S	9.55	225				330
340	Silty sand; light brown; sand, well-graded; fines predominantly silt, non-plastic; moist. (TR/80/20)		SM	S	9.53	224				340
350										350

DRILL RIG: SCHRAMM/ DUAL WALL REVERSE CIRCULATION — **LOGGED:** JJM

DRILLING CONTRACTOR: LAYNE CHRISTENSEN — **CHECKED:**

DRILLER: MARK HALAGER — **DATE:**

Golder Associates

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RECORD OF MONITORING WELL INSTALLATION GAI-02-01

PROJECT NUMBER: 023-2552 **SHEET:** 6 OF 7

BOREHOLE LOCATION: APPROX. 200' SE OF TAILINGS POND 6 DAM **PROJECT:** SUPERIOR MONITOR WELLS

COORDINATES N: E: **EL:** 3007 **BORING DATE:** 04/23/02

STRATIGRAPHY				PASTE		MONITORING WELL COMPLETION			
DEPTH (feet)	DESCRIPTION (Gravel/Sand/Fine)	ASTM CLASS.	HCl REACTIVITY	pH	COND. (µS/cm)	DESCRIPTION	WELL SKETCH	DRILLING NOTES	DEPTH (feet)
350	Silty sand; brown; sand, poorly-graded, predominantly fine; fine fraction, predominantly silt with trace of low plasticity clay; moist. (0/75/25)	SM	S	9.50	84.6		GILA CONGLOMERATE	THERE HAS BEEN NO WATER PRODUCTION, HOWEVER, MORE TIME IS NEEDED TO BLOW OUT STICKY MOIST MATERIAL WITH EVERY DRILL PIPE CONNECTION.	350
360	Silty sand; brown; sand, poorly graded, predominantly fine; fine fraction, predominantly silt with trace of low plasticity clay; moist. (TR/80/40)	SM	S	9.55	187				360
370	Sandy silt; strong brown; sand, well-graded; fine fraction predominantly silt with approx. 30% low plasticity clay; moist. (TR/40/60)	ML	S	9.53	320	BENTONITE SLURRY (211'-440')			370
380	Sandy silt; strong brown; sand, well-graded; fine fraction predominantly silt with approx. 30% low plasticity clay; moist. (TR/40/60)	ML	S	9.52	341		GILA CONGLOMERATE (INTERBEDDED SILTSTONE/MUDSTONE)		380
390	Sandy silt; strong brown; sand, well-graded; fine fraction predominantly silt with approx. 30% low plasticity clay; moist. (TR/40/60)	ML	S	9.51	325	8" BORHOLE (0'-440')		First seen, trace of low plasticity clay.	390
400	Silt with sand; brown; sand, well-graded; fine fraction predominantly silt with approx. 40% low plasticity clay; moist. (0/15/85)	ML	S	9.46	311				400
410	Silt with sand; brown; sand, well-graded; fine fraction predominantly silt with approx. 40% low plasticity clay; moist. (0/15/85)	ML	S	9.52	260				410
420									420

DRILL RIG: SCHRAMM/ DUAL WALL REVERSE CIRCULATION **LOGGED:** JJM

DRILLING CONTRACTOR: LAYNE CHRISTENSEN **CHECKED:**

DRILLER: MARK HALAGER **DATE:**

Golder Associates

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INDIAN PONDS POC WELL

AZ STATE PLANE CENTRAL NAD 83

NORTHING: 832934 ELEVATION (TOC):2674.25

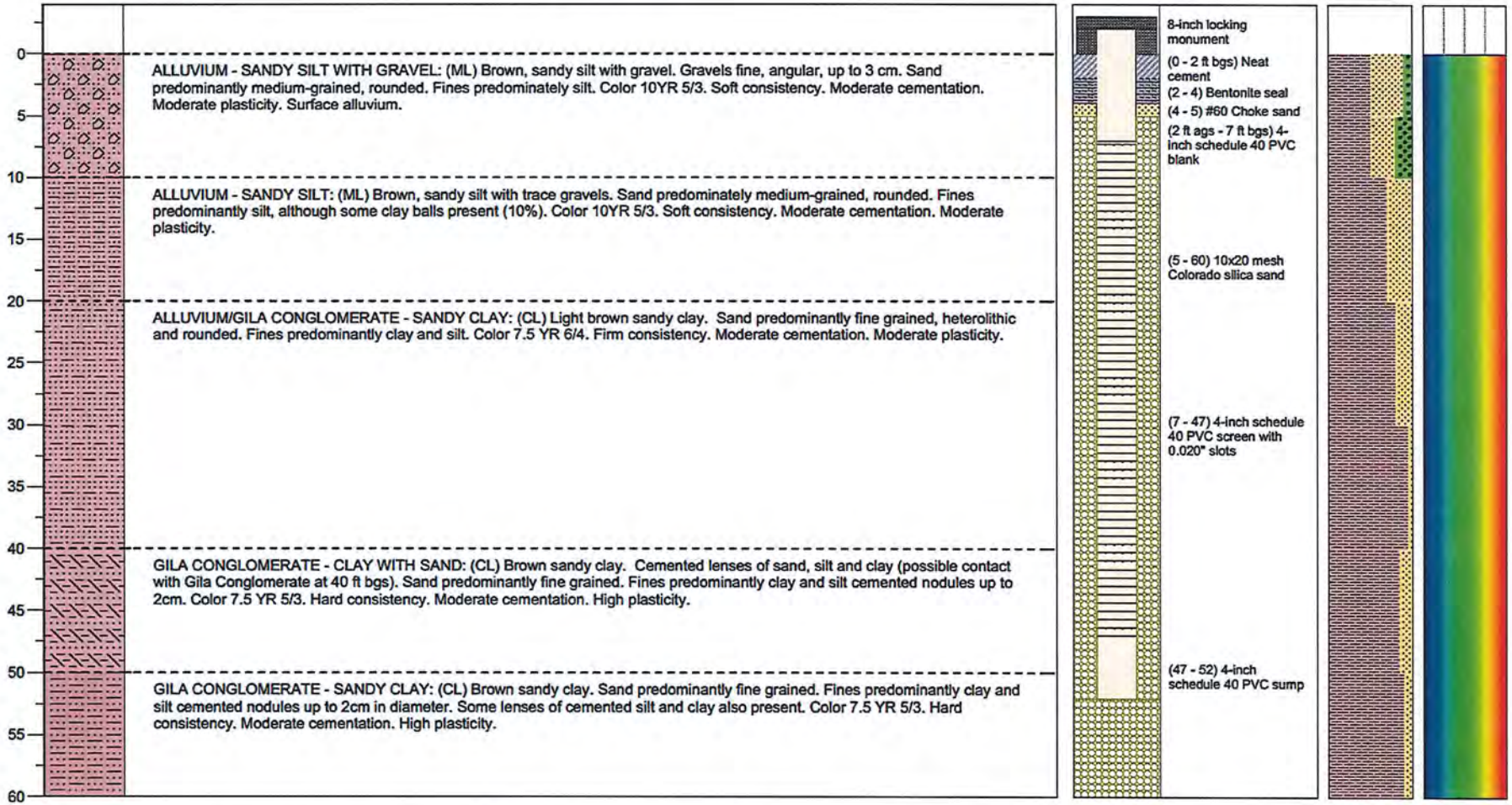
EASTING: 945033

LITHOLOGY

AS-BUILT

CUTTINGS SIZE — FINES, MEDIUM, COARSE

REACTION TO HCl — NONE, WEAK, MOD, STRONG



BOREHOLE No.	INDIAN PONDS POC WELL	TOTAL DEPTH DRILLED	60 ft bgs	SCALE	AS SHOWN
ADWR REG No.	55-907037	BIT DIAMETER	8.75"	DATE	06/07/07
LOCATION	SUPERIOR, AZ	DRILLING FLUID	AIR	DESIGN	JCR
CLIENT	RESOLUTION COPPER MINE	LOGGED BY	KKH	CHECK	JJM
DRILLING CO	YELLOW JACKET DRILLING	DATE STARTED	05/31/07	REVIEW	KJ
DRILLING EQUIPMENT	SPEEDSTAR 50K-CH	DATE FINISHED	05/31/07	REV 1	FILE INDIAN PONDS POC WELL.LDF
DRILLING METHOD	AIR ROTARY CASING HAMMER	COMMENTS	USCS SCALE, MUNSELL COLOR CHART	PROJECT No.	073-92522

TITLE

BOREHOLE LOG AND AS-BUILT DRAWING

Golder Associates

FIGURE 2-2

BROWN AND CALDWELL
Phoenix, Arizona

BORING LOG

Project Name: **BHP Superior** Project Number: **3800.05**

Soil Boring [X] Monitoring Well [ ] Boring/Well Number: **MCC-11** Sheet **1** of **1**

Boring Location: **834684.69(Northing) 946185.00(Easting)**		Elevation and Datum: **2765.9 msl**	
Drilling Contractor: **Stewart Brothers**	Driller:	Date Started: **8/26/97**	Date Finished: **8/26/97**
Drilling Equipment: **Gardner-Denver 15W**	Borehole Diameter: **9 7/8"**	Completed Depth: (feet) **90.0**	Water Depth: (feet) **dry**
Sampling Method: California Method [ ] Shelby Tube [ ] Split Spoon [ ]		WELL CONSTRUCTION	
Drilling Method: **Air Rotary**	Drilling Fluid: **Air**	Type and Diameter of Well Casing: **N/A**	
Backfill Material: **Drill cuttings**		Slot Size: **N/A**	Filter Material: **N/A**
Logged By: **Mike Bostic**	Checked By:	Development Method: **N/A**	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Backfill	Readings PPM	Remarks
0		ALLUVIUM Fine to coarse grained sand and gravel with abundant quartzite.							
10		GILA CONGLOMERATE Unit is grey-red and weakly cemented in a coarse grained sandy matrix. Clasts are composed primarily of dacite with lesser amounts limestone and quartzite.							
20									
30									
40									
50		GILA CONGLOMERATE as above with very few clasts (<5%) in a red sandy matrix.							
60									
70		MUDSTONE Unit is brownish red, dense, and very fine grained.							
80									
90									Drilling terminated at 90 feet. Water table was not encountered. The hole was backfilled with cuttings and abandoned.

BROWN AND CALDWELL
Phoenix, Arizona

BORING LOG

Project Name: **BHP Superior** Project Number: **3800.05**

Soil Boring ☐ Monitoring Well ☒ Boring/Well Number: **MCC-1** Sheet **1** of **4**

Boring Location: **331809.82N(Lat) 1110653.44W(Long)**		Elevation and Datum: **2964.0 msl**	
Drilling Contractor: **Boyles Brothers**	Driller:	Date Started: **3/23/95**	Date Finished: **3/27/95**
Drilling Equipment: **Schramm**	Borehole Diameter: **7.5"**	Completed Depth: (feet) **483.0**	Water Depth: (feet) **153.2**
Sampling Method: California Method ☐ Shelby Tube ☐ Split Spoon ☐		WELL CONSTRUCTION	
Drilling Method: **Air Rotary**	Drilling Fluid: **Air**	Type and Diameter of Well Casing: **4-inch Low Carbon Steel**	
Backfill Material: **Type 5 Cement Grout**		Slot Size: **0.02"**	Filter Material: **10-20 CSSI**
Logged By: **Jim Clarke**	Checked By:	Development Method: **Pump and Surge**	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	Readings PPM	Remarks
		FILL MATERIAL Composed of cobbles, boulders and gravels.							
		GILA CONGLOMERATE Strongly cemented, dense, dry, with clasts composed of schist, granite, metavolcanics and limestone.							
20									
40									
60									
		Local increase in sand at 65 feet bls.							
80									
100									4-inch low carbon steel casing from 0 to 443 feet bls

BROWN AND CALDWELL
Phoenix, Arizona

BORING LOG

Project Name: **BHP Superior** Project Number: **3800.05**

Soil Boring ☐ Monitoring Well ☒ Boring/Well Number: **MCC-1** Sheet 2 of 4

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	Readings PPM	Remarks
120									
		First water encountered during drilling at 135 feet bls.							
140		GILA CONGLOMERATE Gray-brown, damp, very dense, gravelly sand. Rock composed of 70% sand and 30% gravel.							
		GILA CONGLOMERATE Gray-brown, slightly damp, well cemented, very dense, sandy gravel. Rock composed of 70% gravel and 30% sand.							
		Measured Groundwater Level (July, 1998) = 154.15'.							
160									
		GILA CONGLOMERATE as above with an increase in sand (60% sand, 40% gravel). Cuttings are still slightly damp with no indication of water.							
180		Increase in gravel content (90% gravel, 10% sand).							
		Rock contains 40-50% sand with little to no moisture.							
		Rock contains 60-70% sand with no indication of water.							
200									
		Rock contains 50% sand.							
220									
240									4-inch low carbon steel casing from 0 to 443 feet bls
260		Rock appears dry and is dominated by very fine sand and silt reaching 80%, angular rock fragments reaching							

BROWN AND CALDWELL
Phoenix, Arizona

BORING LOG

Project Name: **BHP Superior** Project Number: **3800.05**

Soil Boring ☐ Monitoring Well ☒ Boring/Well Number: **MCC-1** Sheet 3 of 4

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	Readings PPM	Remarks
		20%.							
		Rock contains significant small, well rounded pebbles grading to no pebbles at 300 feet with 80% fine sand and silt with 20% angular rock fragments.							
280									
300									
		Interbedded sandy interval at 310 feet bls.							
320									
		Interbedded sandy interval at 330 feet bls.							
340									
		Rock contains very fractured/angular clasts with 35-45% sand.							
		GILA CONGLOMERATE as above with a decrease in sand fraction.							
360		Unit is very sandy (~90%) and dry.							
		Significant increase in rock fragments (approximately 60%) with a dry, sandy matrix.							
		Same as above except small rock fragments.							
		Increase in rock fragments (80%). Appears dry with a steady decrease in the sand fraction.							
380		Increase in sand content with no increase in moisture.							
		Increase in sand fraction (fine to medium grained, ~80%), slight moisture content.							
		Slight moisture, sand content ~25%, rounded pebbles with fractured rocks observed.							
		Rock fragments greatly reduced to ~5%, very fine sand and silt observed with slight moisture content.							
400		Rock fragments and rounded pebbles comprise ~60% of the rock, sand and silt, slight moisture detected.							
		Increase in sand fraction to ~70% with slight moisture.							
		Rounded small pebbles with some rock fragments, slightly darker color, sand and silt content ~60%, slight							

BROWN AND CALDWELL
Phoenix, Arizona

BORING LOG

Project Name: **BHP Superior** Project Number: **3800.05**

Soil Boring ☐ Monitoring Well ☒ Boring/Well Number: **MCC-1** Sheet 4 of 4

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	Readings PPM	Remarks
		moisture.							
420									Bentonite seal from 400 to 450 feet bls
		GILA CONGLOMERATE as above with an increase in water content.							
		GILA CONGLOMERATE as above with a decrease in water content and slightly more sand.							
440		GILA CONGLOMERATE as above with slightly less sand.							
		GILA CONGLOMERATE as above with well rounded to sub rounded pebbles.							4-inch PVC casing from 443 to 453 feet bls
		GILA CONGLOMERATE as above with an increase in moisture content, clay/silt coatings on chips, and comprised of 80% chips and sub-rounded pebbles. Moist with an increase in sand to ~70%.							Specified 10-20 Mesh sand filter pack from 450 to 483 feet bls
460		Increase in pebble content, silt and fine sands reach 50-60%, rock coated with fines.							4-inch diameter slotted PVC screen (0.02" slot size) from 453 to 483 feet bls
		Unit is saturated, contains very clean, subangular to subrounded gravel and rock fragments with little to none sand or silt.							
480		GILA CONGLOMERATE as above with increased silt but no sand.							Total cased depth = 483 feet bls
		Unit comprised of 80% silt and clay with rock fragments and small sub-angular pebbles. Decrease in water content.							
		GILA CONGLOMERATE as above with an increase in pebble and rock fragment fraction.							
		Unit is moist and comprised predominantly of silt and clay (80%), pebbles and rock fragments (15%), and sand (1-5%).							Total depth hole at 500 feet bls

BROWN AND CALDWELL
Phoenix, Arizona

BORING LOG

Project Name: **BHP Superior** Project Number: **3800.05**

Soil Boring ☐ Monitoring Well ☒ Boring/Well Number: **MCC-2** Sheet **1** of **2**

Boring Location: **331741.85N(Lat) 1110640.75W(Long)**	Elevation and Datum: **2851.3 msl**
Drilling Contractor: **Boyles Brothers** Driller:	Date Started: **3/31/95** Date Finished: **4/1/95**
Drilling Equipment: **Schramm** Borehole Diameter: **7.5"**	Completed Depth: (feet) **225.0** Water Depth: (feet) **59.0**
Sampling Method: California Method ☐ Shelby Tube ☐ Split Spoon ☐	WELL CONSTRUCTION
Drilling Method: **Air Rotary** Drilling Fluid: **Air**	Type and Diameter of Well Casing: **4" LCS(0-123), 4" PVC(123-133)**
Backfill Material: **Type 5 Cement Grout**	Slot Size: **0.02"** Filter Material: **10-20 CSSI**
Logged By: **Jim Clarke** Checked By:	Development Method: **Pump and Surge**

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	Readings PPM	Remarks
		PEDIMENT/ALLUVIUM Silty and gravelly sand, brown-gray, damp, comprised of coarse sand (70%), gravel (15%), silt (15%).							Type 5 cement grout seal from 0 to 100 feet
		GILA CONGLOMERATE Unit comprised of gravelly sand (70% fine to coarse sand, 30% gravel), tan, dry, poorly to moderately sorted, angular to subangular grains, strongly cemented. Clasts composed primarily of limestone, quartzite, and metavolcanics.							
20		Unit is strongly cemented, comprised of sand (80%), low plasticity clay (5%), and gravel (15%).							
		Unit is strongly to moderately cemented, poorly sorted, dry, with an increase in gravel content (40%) and little to none silt or clay.							
		Unit is poorly to moderately sorted, moderately to strongly cemented, dry, and comprised of gravel (70%) and sand (30%).							
40		Unit is moderately sorted, dry to slightly damp, and comprised of sand (65%) and gravel (35%).							
		Unit contains gravel (70%), sand (30%), and is dry to slightly damp with an increase in soil moisture at 55 feet.							4" low carbon steel casing from 0 to 123 feet
60									
		Unit is brown, moist, dense, and comprised of very fine to fine grained sand (70%), silt and clay (25%), with lesser gravel (5%).							
80		MUDSTONE LENSE Unit is brown, moist, very hard, cemented, and comprised of low plasticity silty clay (80%), and sand (20%).							
		Unit is brown, moist, very hard, low plasticity, and comprised of silty and clay (60%), fine to medium grained sand (35%), and lesser gravel (5%).							
100		GILA CONGLOMERATE Unit is brown, moist, very dense, poorly graded, and comprised of fine to medium grained sand (60%), low plasticity clay (40%), and ~10% gravel at 95 feet.							
		First water encountered during drilling at 100 feet.							Bentonite seal from 100 to 128 feet
120									

BROWN AND CALDWELL
Phoenix, Arizona

BORING LOG

Project Name: **BHP Superior** Project Number: **3800.05**

Soil Boring ☐ Monitoring Well ☒ Boring/Well Number: **MCC-2** Sheet 2 of 2

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	Readings PPM	Remarks
140									4" PVC casing from 123 to 133 feet
160		Unit is brown, moist, very hard, and comprised of low plasticity clay (65%), very fine to medium grained sand (35%), and cemented nodules.							4" slotted PVC screen (0.02" slot size) from 133 to 183 feet
		Unit is brown, moist, very hard, and comprised of very fine to medium grained sand (60%), and silt and clay (40%).							
180									Total cased depth = 183 feet
		MUDSTONE Unit is red-brown, moist, low to moderate plasticity, and composed of silty clay.							
200									10-20 Mesh Colorado Silica sand pack from 128 to 220 feet
		Cemented clay nodules at 200 feet.							
220									Stopped drilling at 225 feet

BROWN AND CALDWELL
Phoenix, Arizona

BORING LOG

Project Name: **BHP Superior** Project Number: **3800.05**

Soil Boring ☐ Monitoring Well ☒ Boring/Well Number: **MCC-3A** Sheet 1 of 1

Boring Location: **331740.23N(Lat) 1110619.18W(Long)**	Elevation and Datum: **2798.2 msl**
Drilling Contractor: **Boyles Brothers** Driller:	Date Started: **3/20/95** Date Finished: **3/21/95**
Drilling Equipment: **Schramm** Borehole Diameter: **7.5"**	Completed Depth: (feet) **93.0** Water Depth: (feet) **10.4**
Sampling Method: California Method ☐ Shelby Tube ☐ Split Spoon ☐	WELL CONSTRUCTION
Drilling Method: **Air Rotary** Drilling Fluid: **Air**	Type and Diameter of Well Casing: **4" LCS(0-25), 4" PVC(25-35)**
Backfill Material: **Type 5 Cement Grout**	Slot Size: **0.02"** Filter Material: **10-20 CSSI**
Logged By: **Jim Clarke** Checked By:	Development Method: **Pump and Surge**

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	Readings PPM	Remarks
		FILL/TAILINGS Silty and clayey sand, gray-brown, wet, 60% sand, 40% fines, non cemented.							Type 5 cement grout seal from 0 to 28 feet
10		Measured Groundwater Level (July, 1998) = 26.84 feet bls.							
		ALLUVIUM							4" low carbon steel casing from 0 to 25 feet
20									
		First water encountered during drilling at 28 feet bls.							
30		GILA CONGLOMERATE Unit is competent and contains rounded clasts of limestone in a sandy, silty, clay matrix.							Bentonite seal from 28 to 32 feet 4" PVC casing from 25 to 35 feet
40									
50		MUDSTONE/CLAY							4" Schedule 80 PVC screen (0.02" slot size) from 35 to 85 feet
60		GILA CONGLOMERATE Unit is competent and contains rounded clasts of limestone in a sandy, silty, clay matrix.							10-20 Mesh Colorado Silica sand pack from 32 to 91 feet
70									
		MUDSTONE/CLAY							
80									
		GILA CONGLOMERATE Unit is competent and contains rounded clasts of limestone in a sandy, silty, clay matrix.							Total cased depth = 85 feet
90									Stopped drilling at 91 feet

BROWN AND CALDWELL
Phoenix, Arizona

BORING LOG

Project Name: **BHP Superior** Project Number: **3800.05**

Soil Boring ☐ Monitoring Well ☒ Boring/Well Number: **MCC-3C** Sheet 3 of 3

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	Readings PPM	Remarks
		predominantly of dacite, basalt, quartzite, and limestone.							gel from 437 to 487 feet
480									
									20-40 Mesh sand pack from 487 to 492 feet
500									
		GILA CONGLOMERATE as previously described.							10-20 Mesh Colorado Silica sand pack from 492 to 590 feet
520									
									5 9/16" Schedule 80 PVC screen (0.02" slot size) from 499 to 579 feet
540									
560									
580									Total cased depth = 579 feet
									Stopped drilling at 590 feet

BROWN AND CALDWELL
Phoenix, Arizona

BORING LOG

Project Name: **BHP Superior** Project Number: **3800.05**

Soil Boring ☐ Monitoring Well ☒ Boring/Well Number: **MCC-4** Sheet 1 of 1

Boring Location: **331713.99N(Lat) 1110700.67W(Long)**		Elevation and Datum: **2674.0 msl**	
Drilling Contractor: **Boyles Brothers**	Driller:	Date Started: **3/21/95**	Date Finished: **3/23/95**
Drilling Equipment: **Schramm**	Borehole Diameter: **7.5"**	Completed Depth: (feet) **255.0**	Water Depth: (feet) **63.5**
Sampling Method: California Method ☐ Shelby Tube ☐ Split Spoon ☐		WELL CONSTRUCTION	
Drilling Method: **Air Rotary**	Drilling Fluid: **Air**	Type and Diameter of Well Casing: **4" Low Carbon Steel**	
Backfill Material: **Type 5 Cement Grout**		Slot Size: **0.02"**	Filter Material: **10-20 CSSI**
Logged By: **Jim Clarke**	Checked By:	Development Method: **Pump and Surge**	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	Readings PPM	Remarks
		SILTY CLAY Tan, damp, firm, moderate plasticity, non-cemented.							Type 5 cement grout seal from 0 to 192 feet
		SANDY SILT Gray-brown, damp and dense.							
		MUDSTONE Brown, very moist, firm, moderate plasticity, weakly cemented, with clay nodules at a depth of 22 feet.							
50		MUDSTONE Tan-brown, moist, very hard, moderate plasticity, with clay nodules weakly to moderately cemented.							
		Measured Groundwater Level (July, 1998) = 63.15 feet bls.							4" low carbon steel casing from 0 to 200 feet
100		First water encountered during drilling at 100 feet bls.							
		MUDSTONE Tan-brown, moist, very hard, moderate plasticity, with clay nodules weakly to moderately cemented.							
150									
									Bentonite seal from 192 to 197 feet
200									
		GILA CONGLOMERATE Unit contains moist, gravel sized limestone clasts in a brown clay matrix.							10-20 Mesh Colorado Silica sand pack from 197 to 255 feet
		GILA CONGLOMERATE Unit contains 60% fine grained sand, 35% moderately plastic clay, 5% fine gravel. Unit is brown, very dense, and very moist.							4" Schedule 80 PVC screen (0.02" slot size) from 200 to 250 feet
250		GILA CONGLOMERATE Unit contains 65% sand, 25% silt and clay, and 10% fine gravel.							Total cased depth = 250 feet Stopped drilling at 255 feet

BROWN AND CALDWELL
Phoenix, Arizona

BORING LOG

Project Name: **BHP Superior** Project Number: **3800.05**

Soil Boring ☐ Monitoring Well ☒ Boring/Well Number: **MCC-5B** Sheet **1** of **2**

Boring Location: **331757.14N(Lat) 1110617.37W(Long)**		Elevation and Datum: **2962.7 msl**	
Drilling Contractor: **Water Development**	Driller:	Date Started: **7/28/96**	Date Finished: **7/29/96**
Drilling Equipment: **Dresser T70W**	Borehole Diameter: **10 5/8"**	Completed Depth: (feet) **100.0**	Water Depth: (feet) **36.5**
Sampling Method: California Method ☐ Shelby Tube ☐ Split Spoon ☐		WELL CONSTRUCTION	
Drilling Method: **Air Rotary**	Drilling Fluid: **Air**	Type and Diameter of Well Casing: **4.77" ID Schedule 80 PVC**	
Backfill Material: **Type 5 Cement Grout with 3% bentonite**		Slot Size: **0.02"**	Filter Material: **10-20 CSSI**
Logged By: **John Eliades**	Checked By:	Development Method: **Bail/Swab and pump**	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	Readings PPM	Remarks
10		TAILINGS Pale yellow (2.5yr (7/4), silty to clayey tailings material with slight stiffness.							Type 5 cement with 3% bentonite grout seal from 0 to 43 feet
20		TAILINGS Dark gray (10yr 4/1) silty tailings material.							4.77" ID Schedule 80 PVC casing from 0 to 51 feet
30									
40		Measured Groundwater Level (July, 1998) = 38.51 feet bls.							Fine sand pack from 43 to 49 feet
50									
60		First water encountered during drilling at 55 feet bls.							10-20 Mesh Colorado Silica sand pack from 59 to 100 feet
70									4.77" ID Schedule 80 PVC screen (0.02" slot size) from 51 to 91 feet

BROWN AND CALDWELL
Phoenix, Arizona

BORING LOG

Project Name: **BHP Superior** Project Number: **3800.05**

Soil Boring ☐ Monitoring Well ☒ Boring/Well Number: **MCC-5B** Sheet 2 of 2

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	Readings PPM	Remarks
80		GILA CONGLOMERATE Fine to coarse grained, modereately sorted conglomerate with clasts composed predominantly of dusky red (2.5yr 4/5), medium grained dacite.							
90		GILA CONGLOMERATE as above with clasts composed predominantly of dark greenish black, medium grained igneous intrusives (possibly gabbro or diorite), dusky red, medium grained dacite, and dark quartzites. GILA CONGLOMERATE with clasts composed predominantly of dusky red, medium grained dacite, light gray dacite, and limestone. GILA CONGLOMERATE with clasts composed predominantly of dusky red, medium grained dacite and light gray dacite.							Total cased depth = 91 feet
100									Stopped drilling at 100 feet

BROWN AND CALDWELL
Phoenix, Arizona

BORING LOG

Project Name: **BHP Superior** Project Number: **3800.05**

Soil Boring ☐ Monitoring Well ☒ Boring/Well Number: **MCC-6A** Sheet **1** of **1**

Boring Location: **331756.47N(Lat) 1110703.15W(Long)**		Elevation and Datum: **2811.1 msl**	
Drilling Contractor: **Water Development**	Driller:	Date Started: **7/17/96**	Date Finished: **7/24/96**
Drilling Equipment: **Dresser T70W**	Borehole Diameter: **10 5/8"**	Completed Depth: (feet) **223.0**	Water Depth: (feet) **23.6**
Sampling Method: California Method ☐ Shelby Tube ☐ Split Spoon ☐		WELL CONSTRUCTION	
Drilling Method: **Air Rotary**	Drilling Fluid: **Air**	Type and Diameter of Well Casing: **4.77" ID Schedule 80 PVC**	
Backfill Material: **Type 5 Cement Grout**		Slot Size: **0.02"**	Filter Material: **10-20 CSSI**
Logged By: **John Eliades**	Checked By:	Development Method: **Bail/Swab and pump**	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	Readings PPM	Remarks
		GILA CONGLOMERATE Unit is brown (10yr 4/3), moderately sorted, with medium grained clasts composed predominantly of dark quartzites, igneous mafics, basalt, limestone, and traces of schist and dusky red dacite. The unit reacts strongly with HCl, suggesting calcareous cementation. Measured Groundwater Level (July, 1998) = 23.90 feet bls.							Type 5 cement grout seal from 0 to 151 feet
		First water encountered during drilling at 42 feet bls.							
50									4.77" ID Schedule 80 PVC casing from 0 to 60 feet
100									
150									20-40 Mesh sand pack from 151 to 155 feet
									10-20 Mesh Colorado Silica sand pack from 155 to 220 feet
200									4.77" ID Schedule 80 PVC screen (0.02" slot size) from 160 to 220 feet
									Total cased depth = 220 feet Stopped drilling at 222 feet

BROWN AND CALDWELL
Phoenix, Arizona

BORING LOG

Project Name: **BHP Superior** Project Number: **3800.05**

Soil Boring ☐ Monitoring Well ☒ Boring/Well Number: **MCC-6B** Sheet 1 of 3

Boring Location: **331756.32N(Lat) 1110703.39W(Long)**		Elevation and Datum: **2811.9 msl**	
Drilling Contractor: **Water Development**	Driller:	Date Started: **7/12/96**	Date Finished: **7/17/96**
Drilling Equipment: **Dresser T70W**	Borehole Diameter: **10 5/8"**	Completed Depth: (feet) **605.0**	Water Depth: (feet) **18.0**
Sampling Method: California Method ☐ Shelby Tube ☐ Split Spoon ☐		WELL CONSTRUCTION	
Drilling Method: **Air Rotary**	Drilling Fluid: **Air**	Type and Diameter of Well Casing: **4.77" ID Schedule 80 PVC**	
Backfill Material: **Type 5 Cement Grout**		Slot Size: **0.02"**	Filter Material: **10-20 CSSI**
Logged By: **John Eliades**	Checked By:	Development Method: **Bail/Swab and pump**	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	Readings PPM	Remarks
20		GILA CONGLOMERATE Unit is brown (10yr 4/3), moderately sorted, with clasts composed predominantly of dark quartzites and igneous mafics. The unit reacts strongly with HCl, suggesting calcareous cementation. Measured Groundwater Level (July, 1998) = 18.01 feet bls.							Type 5 cement grout seal from 0 to 487 feet
40		First water encountered during drilling at 42 feet bls.							
60									
80									
100									4.77" ID Schedule 80 PVC casing from 0 to 500 feet
120									
140									
160									
180									

BROWN AND CALDWELL
Phoenix, Arizona

BORING LOG

Project Name: **BHP Superior** Project Number: **3800.05**

Soil Boring ☐ Monitoring Well ☒ Boring/Well Number: **MCC-6B** Sheet 2 of 3

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	Readings PPM	Remarks
220		GILA CONGLOMERATE Unit is brown (10yr 4/3), moderately sorted, with clasts composed predominantly of dark quartzites and igneous mafics. The unit reacts strongly with HCl, suggesting calcareous cementation.							
240									4.77" ID Schedule 80 PVC casing from 0 to 500 feet
260									
280									
300									
320									
340									
360									
380									
400									
420									
440									
460									

BROWN AND CALDWELL
Phoenix, Arizona

BORING LOG

Project Name: **BHP Superior** Project Number: **3800.05**

Soil Boring ☐ Monitoring Well ☒ Boring/Well Number: **MCC-6B** Sheet 3 of 3

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	Readings PPM	Remarks
480		GILA CONGLOMERATE Unit is brown (10yr 4/3), moderately sorted, with clasts composed predominantly of dark quartzites and igneous mafics. The unit reacts strongly with HCl, suggesting calcareous cementation.							20-40 Mesh sand pack from 487 to 493 feet
500									10-20 Mesh Colorado Silica sand pack from 493 to 586 feet
520									
540									4.77" ID Schedule 80 PVC screen (0.02" slot size) from 500 to 580 feet
560									
580									Total cased depth =580 feet
600									Stopped drilling at 605 feet

BROWN AND CALDWELL
Phoenix, Arizona

BORING LOG

Project Name: **BHP Superior** Project Number: **3800.05**

Soil Boring ☐ Monitoring Well ☒ Boring/Well Number: **MCC-6C** Sheet 1 of 1

Boring Location: **331756.30N(Lat) 1110703.20W(Long)**		Elevation and Datum: **2811.4 msl**	
Drilling Contractor: **Stewart Brothers**	Driller:	Date Started: **8/19/97**	Date Finished: **8/20/97**
Drilling Equipment: **Gardner-Denver 15W**	Borehole Diameter: **9 7/8"**	Completed Depth: (feet) **122.0**	Water Depth: (feet) **38.3**
Sampling Method: California Method ☐ Shelby Tube ☐ Split Spoon ☐		WELL CONSTRUCTION	
Drilling Method: **Air Rotary**	Drilling Fluid: **Air**	Type and Diameter of Well Casing: **4.5" Schedule 40 PVC**	
Backfill Material: **Type 5 Cement Grout with 4% bentonite**		Slot Size: **0.02"**	Filter Material: **10-20 CSSI**
Logged By: **Mike Bostic**	Checked By:	Development Method: **Bail/Swab and pump**	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	Readings PPM	Remarks
20		GILA CONGLOMERATE Unit is red to brown and weakly consolidated in a calcareous, fine to coarse sand matrix. Clasts are poorly sorted, subangular to subrounded, and composed of dacite, basalt, limestone, sandstone, quartzite and schist.							Type 5 cement with 4% bentonite grout seal from 0 to 66 feet 4.5" ID Schedule 40 PVC casing from 0 to 76 feet
40		Measured Groundwater Level (July, 1998) = 45.89 feet bls.							
		First water encountered during drilling at 44 feet bls.							
60		SANDSTONE LENSE (50 to 60 feet) Lense consists of fine to very coarse grained sand and is very weakly consolidated.							20-40 Mesh sand pack from 66 to 72 feet
80									10-20 Mesh Colorado Silica sand pack from 72 to 122 feet
100		SANDSTONE LENSE (90 to 120 feet) Lense consists of fine to very coarse grained sand and is very weakly consolidated.							4.5" Schedule 40 PVC screen (0.02" slot size) from 76 to 116 feet
120									Total cased depth = 116 feet Stopped drilling at 122 feet

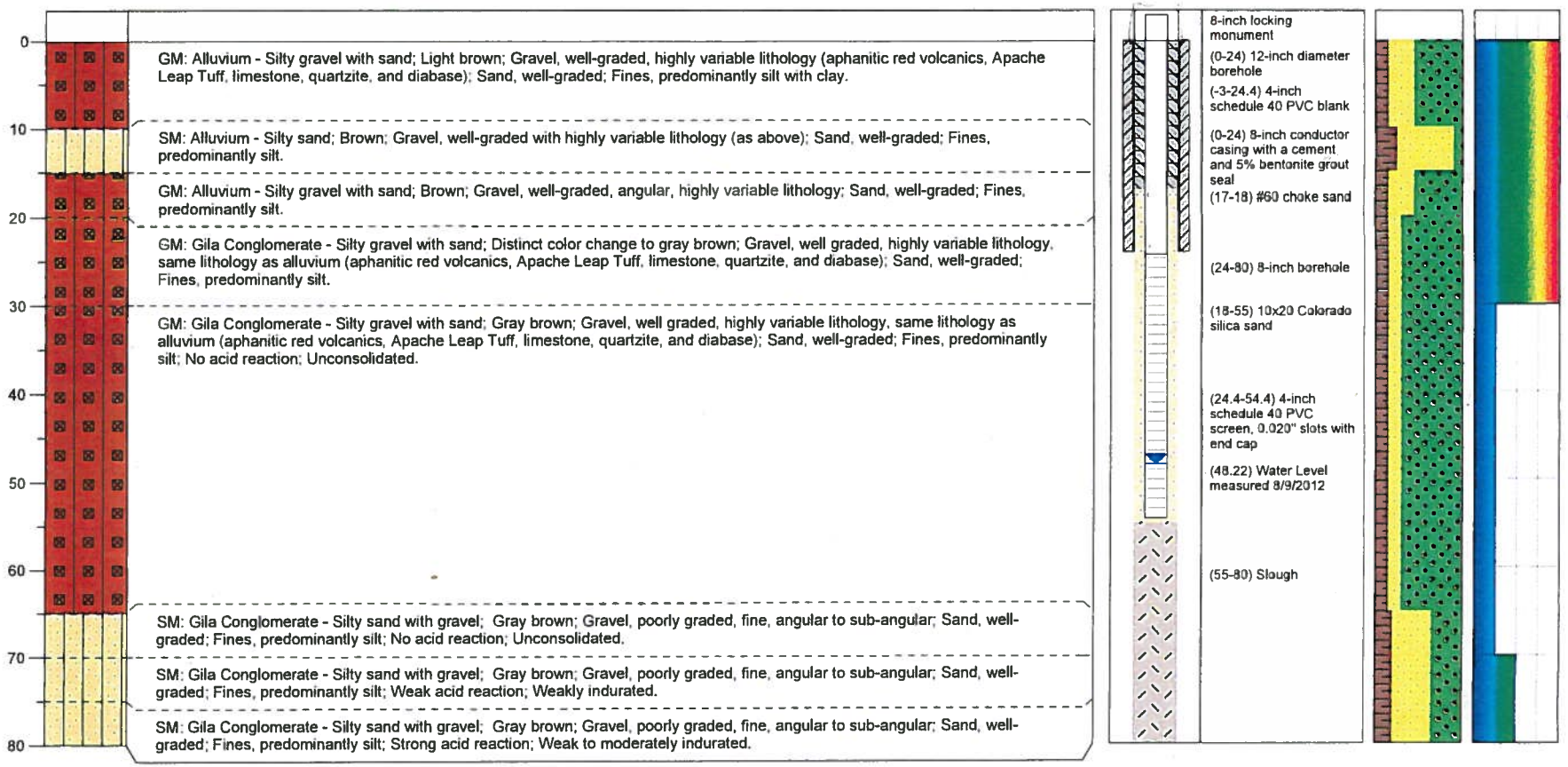
MCC-6D

Horizontal Datum, NAD 83; Vertical Datum NGVD29

LATITUDE: N33°17'57.63803" ELEVATION (TOC FT AMSL): 2817.72

LONGITUDE: W111°07'02.03028"

LITHOLOGY | **AS-BUILT** | **CUTTINGS SIZE** (FINES, MEDIUM, COARSE) | **REACTION TO HCl** (NONE, WEAK, MOD, STRONG)



BOREHOLE No. MCC-6D	TOTAL DEPTH DRILLED 80 FEET	SCALE AS SHOWN	TITLE
ADWR REG No. 55-914374	BIT DIAMETER 11.75" DOWN TO 24'; 8" FROM 24 TO 80'	DATE 7/25/2012	**BOREHOLE LOG AND AS BUILT DRAWING**
LOCATION SUPERIOR, AZ	DRILLING FLUID AIR	DESIGN CAP	
CLIENT RESOLUTION COPPER MINE	LOGGED BY JJM	CHECK JJM	
DRILLING CO YELLOW JACKET DRILLING	DATE STARTED 6/8/2012	REVIEW KJ	
DRILLING EQUIPMENT SPEEDSTAR 50K-CH	DATE FINISHED 8/3/2012	REV 0 FILE MCC-6D.DAT	Golder Associates
DRILLING METHOD AIR ROTARY	COMMENTS AGS = ABOVE GROUND SURFACE, BGS = BELOW GROUND SURFACE	PROJECT No. 123-92513	FIGURE 2

BROWN AND CALDWELL
Phoenix, Arizona

BORING LOG

Project Name: **BHP Superior** Project Number: **3800.05**

Soil Boring ☐ Monitoring Well ☒ Boring/Well Number: **MCC-9** Sheet **1** of **1**

Boring Location: **331732.98N(Lat) 1110626.19W(Long)**		Elevation and Datum: **2769.2 msl**	
Drilling Contractor: **Stewart Brothers**	Driller:	Date Started: **8/18/97**	Date Finished: **8/19/97**
Drilling Equipment: **Gardner-Denver 15W**	Borehole Diameter: **9 7/8"**	Completed Depth: (feet) **60.0**	Water Depth: (feet) **10.0**
Sampling Method: California Method ☐ Shelby Tube ☐ Split Spoon ☐		WELL CONSTRUCTION	
Drilling Method: **Air Rotary**	Drilling Fluid: **Air**	Type and Diameter of Well Casing: **4.5" Schedule 40 PVC**	
Backfill Material: **Type 5 Cement Grout with 4% bentonite**		Slot Size: **0.02"**	Filter Material: **10-20 CSSI**
Logged By: **Mike Bostic**	Checked By:	Development Method: **Bail/Swab and pump**	

Depth (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample	Graphic Log: Lithology	Graphic Log: Well	Readings PPM	Remarks
		ALLUVIUM AND FILL							Type 5 cement with 4% bentonite gel grout seal from 0 to 20 feet
		First water encountered during drilling at 10 feet bls.							
10		Measured Groundwater Level (July, 1998) = 13.32 feet bls.							4.5" Schedule 40 PVC casing from 0 to 28 feet
		GILA CONGLOMERATE Fine to coarse grained clasts in a tuffaceous, sandy matrix. Clasts composed of limestone, quartzite, and volcanics.							
20									20-40 Mesh sand pack from 20 to 23 feet
30									
40									4.5" Schedule 40 PVC screen (0.02" slot size) from 28 to 48 feet 10-20 Mesh Colorado Silica sand pack from 28 to 60 feet
50									Total cased depth = 48 feet
60									Stopped drilling at 60 feet

MCC-9A

Horizontal Datum, NAD 83; Vertical Datum NAVD88

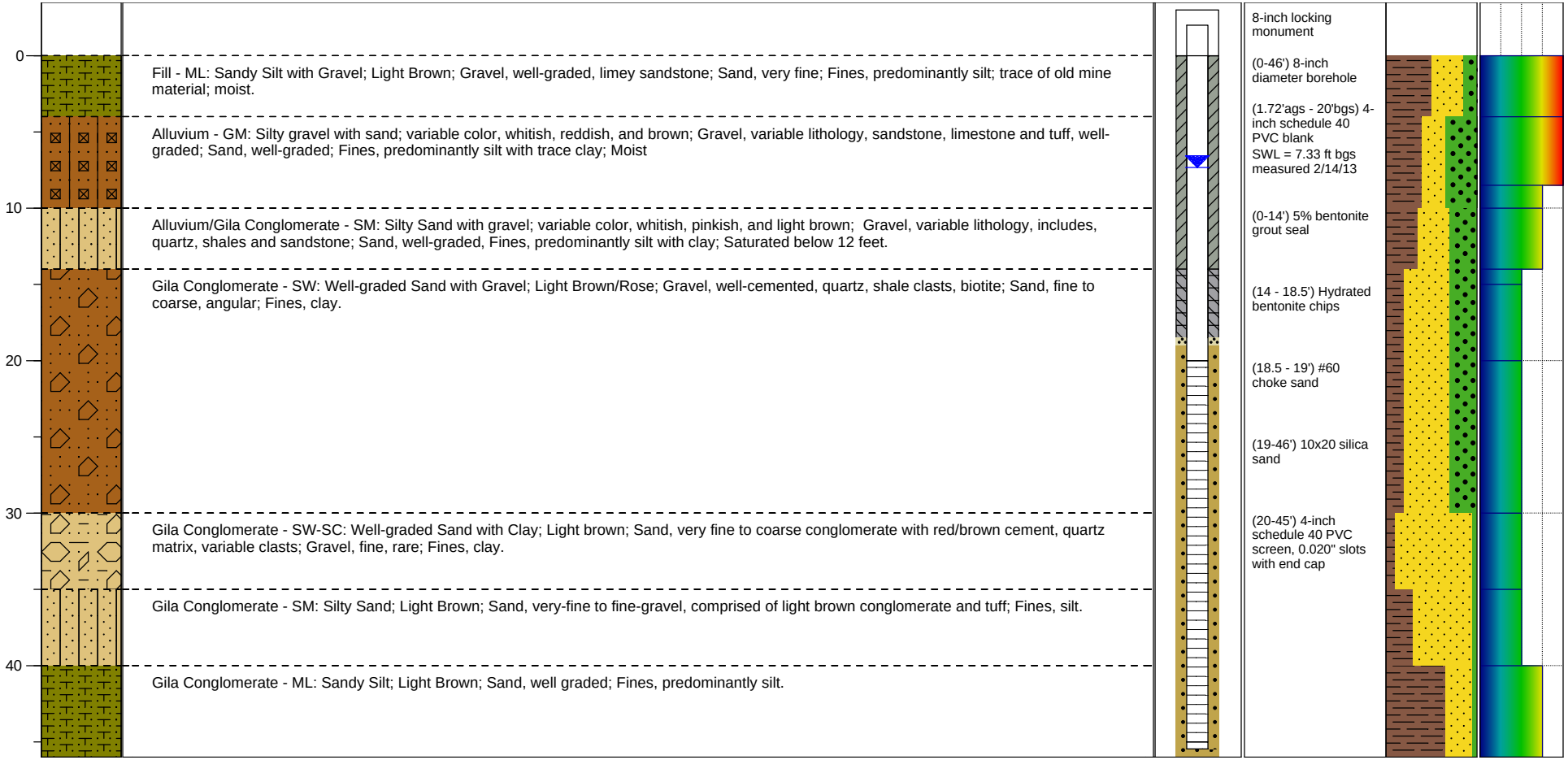
LATITUDE: N33°17'32.789" ELEVATION (TOC FT AMSL): 2764.27

LONGITUDE: W111°06'25.784"

LITHOLOGY **AS-BUILT**

CUTTINGS SIZE FINES MEDIUM COARSE

REACTION TO HCl NONE WEAK MOD STRONG



BOREHOLE No. MCC-9A	TOTAL DEPTH DRILLED 46'	SCALE AS SHOWN	TITLE
ADWR REG No. 55-915069	BIT DIAMETER 4.25" TO 20' THEN STRATEX TO 46'	DATE 04/02/2013	**BOREHOLE LOG AND AS-BUILT DRAWING**
LOCATION SUPERIOR, AZ	DRILLING FLUID n/a	DESIGN KAP	
CLIENT RESOLUTION COPPER MINE	LOGGED BY JJM, KAP	CHECK JJM	
DRILLING CO YELLOW JACKET DRILLING	DATE STARTED 01/04/2013	REVIEW KJ	
DRILLING EQUIPMENT CME 85	DATE FINISHED 01/10/2013	REV 0 FILE MCC-9A.dat	Golder Associates
DRILLING METHOD AUGER TO 20' THEN STRATEX to 46'	COMMENTS AGS = ABOVE GROUND SURFACE; BGS = BELOW GROUND SURFACE	PROJECT No. 123-92513	FIGURE 2

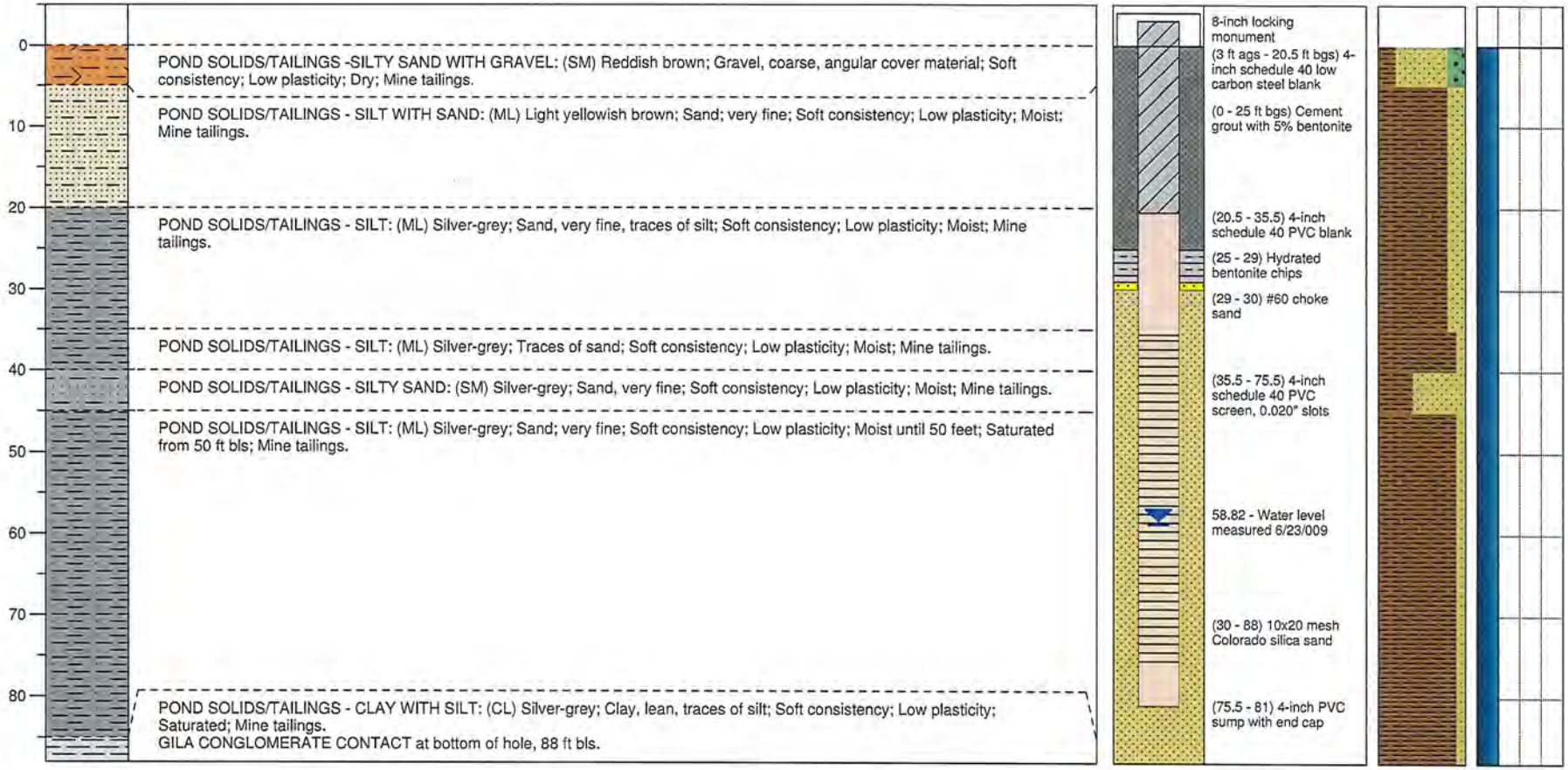
SETTLING PONDS 1 & 2 REPLACEMENT ALERT WELL -"SP 1 & 2-Alert-B"

Horizontal Datum, NAD 83; Vertical Datum NGVD29

LATITUDE:33° 18' 1.380" ELEVATION (TOC):2977.45 feet

LONGITUDE:111° 6' 14.415"

LITHOLOGY | **AS-BUILT** | **CUTTINGS SIZE** (FINES, MEDIUM, COARSE) | **REACTION TO HCl** (NONE, WEAK, MOD, STRONG)



BOREHOLE No. SP 1 & 2- Alert- B		TOTAL DEPTH DRILLED 88		SCALE AS SHOWN	TITLE
ADWR REG No. 55-910699		BIT DIAMETER 8.75"		DATE 06/08/2009	**BOREHOLE LOG AND AS-BUILT DRAWING**
LOCATION SUPERIOR, AZ		DRILLING FLUID AIR		DESIGN CAP	
CLIENT RESOLUTION COPPER MINE		LOGGED BY JJM		CHECK JJM	
DRILLING CO YELLOW JACKET DRILLING		DATE STARTED 05/6/09		REVIEW KJ	
DRILLING EQUIPMENT SPEEDSTAR 50K-CH		DATE FINISHED 05/6/09		REV 1	FILE REPLACEMENT ALERT WELL.LDFX
DRILLING METHOD AIR ROTARY CASING HAMMER		COMMENTS ags= above ground surface; bgs= below ground surface		PROJECT No. 073-92522-10	Golder Associates

FIGURE 2

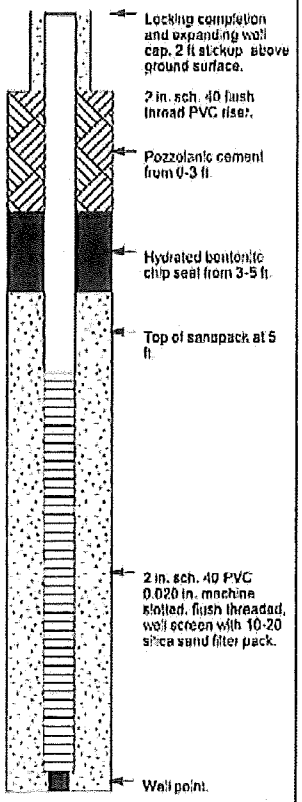
FIGURE 2-4

SMELTER POND POC WELL

CLIENT:	Resolution Copper Company	AZ STATE PLANE N: 834587	SHEET: 1 OF 1
PROJECT:	Lower Smelter Pond	CENTRAL NAD 83 E: 947379.3	DRILL RIG/METHOD: BK-81/4.25" HSA
LOCATION:	Superior, Arizona	ELEVATION: 2743.149 FT AMSL	LOGGED: JAC DATE: 2/13/07
PROJECT NO.:	063-2596	INCLINATION: -90	CHECKED: JAC DATE: 4/25/07

DEPTH	ELEVATION	WATER	SAMPLE NUMBER	RECOVERY / ATTEMP (FT/FT)	SAMPLE TYPE	GRAPHIC LOG	USCS	Sample Description consistency or density, color, MAJOR COMPONENT, minor components, moisture, other notes.	PASTE pH (SU)	ELECTRICAL CONDUCTIVITY (mS)	ADDITIONAL LABORATORY TESTING
0							ML	soft, moderate brown, SANDY SILT, cohesive, some organics, low plasticity, strong reaction with HCl little to some tails, moist, (fill).	8.04	4.41	
	2741.1										
	2.0		1	2 / 4				dense, moderate brown, fine to coarse SAND, trace fine to medium gravel, trace to little fines, completely weathered clasts, variable reaction with HCl, wet, (alluvium). -sample barrel refusal at 4 ft.			
5		▽					SP				
10			2	0.5 / 0.5					7.97	1.61	
	2730.6										
	12.5		3	0.5 / 0.5				hard, weakly cemented, pale brown, fine to coarse SAND, little fine to coarse gravel, little fines, dry, (weathered Gila Conglomerate).	7.28	1	
15			4	0.2 / 0.3			GILA		7.56	0.7	
	2725.6										
	17.5		5	0.2 / 0.3				End of Boring at 17.5 Feet Below Ground Surface.			

Monitor Well Details
Top of Casing Elevation: 2746.28 ft. AMSL



Report of borehole must be read in conjunction with accompanying notes and abbreviations

063-2596 063-2596 RCC LSP.GPJ GLDR_IRV.GDT 11/8/07

TAILING POND 5 REPLACEMENT POC WELL-"TP5-POC-B"

Horizontal Datum, NAD 83; Vertical Datum NGVD29

LATITUDE: 33° 18' 0.389" ELEVATION (TOC):3024.58 feet

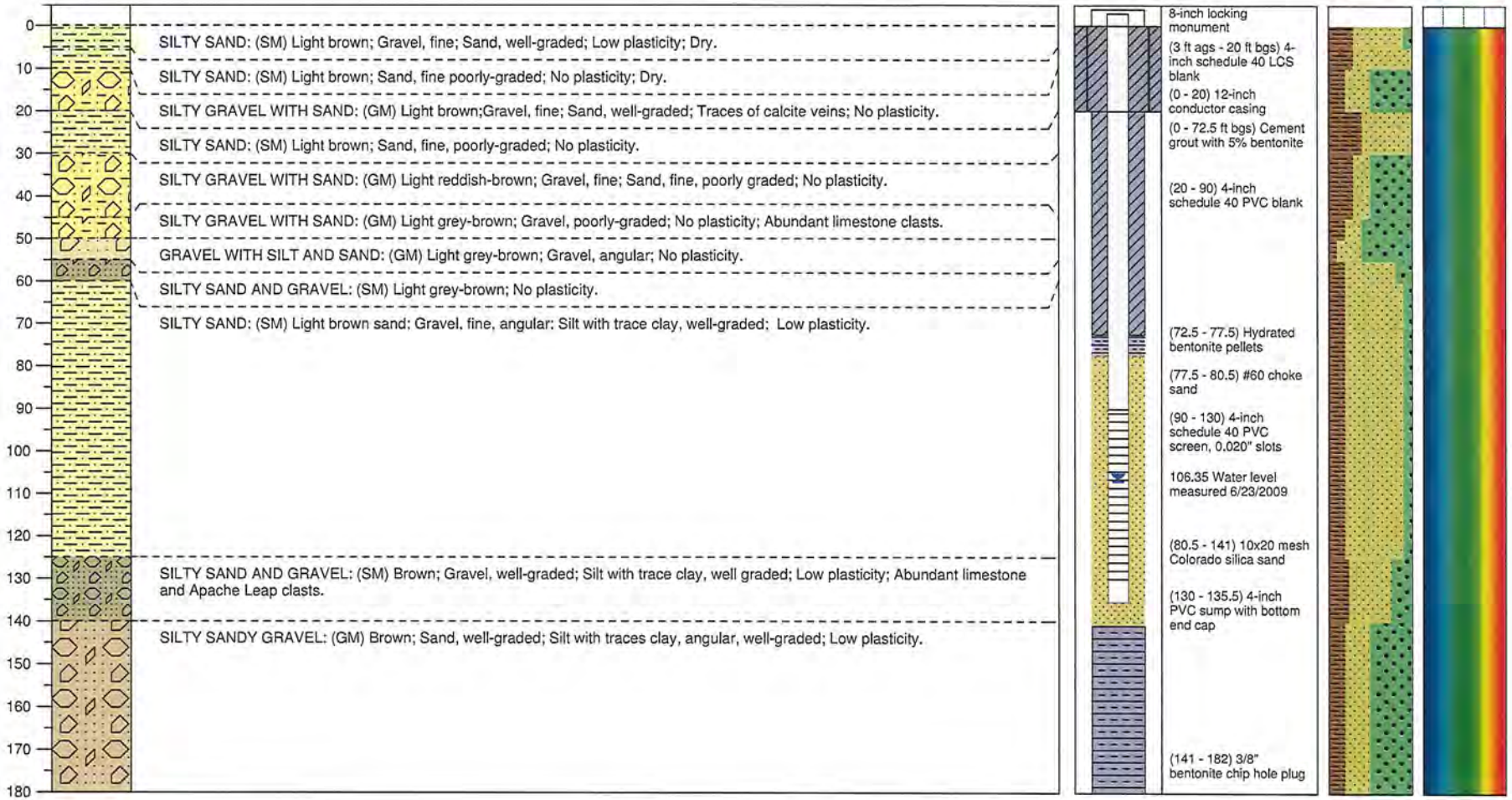
LONGITUDE: 111° 6' 25.805"

LITHOLOGY

AS-BUILT

CUTTINGS SIZE — FINES, MEDIUM, COARSE

REACTION TO HCl — NONE, WEAK, MOD, STRONG



BOREHOLE No. TP5-POC-B		TOTAL DEPTH DRILLED 180		SCALE AS SHOWN	TITLE
ADWR REG No. 55-910698		BIT DIAMETER 16.5 down to 20'; 8.75 from 20-182'		DATE 06/22/2009	**BOREHOLE LOG AND AS-BUILT DRAWING**
LOCATION SUPERIOR, AZ		DRILLING FLUID AIR		DESIGN CAP	
CLIENT RESOLUTION COPPER MINE		LOGGED BY JJM		CHECK JJM	
DRILLING CO YELLOW JACKET DRILLING		DATE STARTED 05/7/09		REVIEW KJ	
DRILLING EQUIPMENT SPEEDSTAR 50K-CH		DATE FINISHED 06/16/09		REV 1 FILE REPLACEMENT TP5 WELL.LDFX	Golder Associates
DRILLING METHOD AIR ROTARY		COMMENTS ags: above ground surface; bgs: below ground surface		PROJECT No. 073-92522-10	FIGURE 3

MONTGOMERY & ASSOCIATES
Water Resource Consultants

Resolution Copper Mining

WEST PLANT HYDROGRAPHS

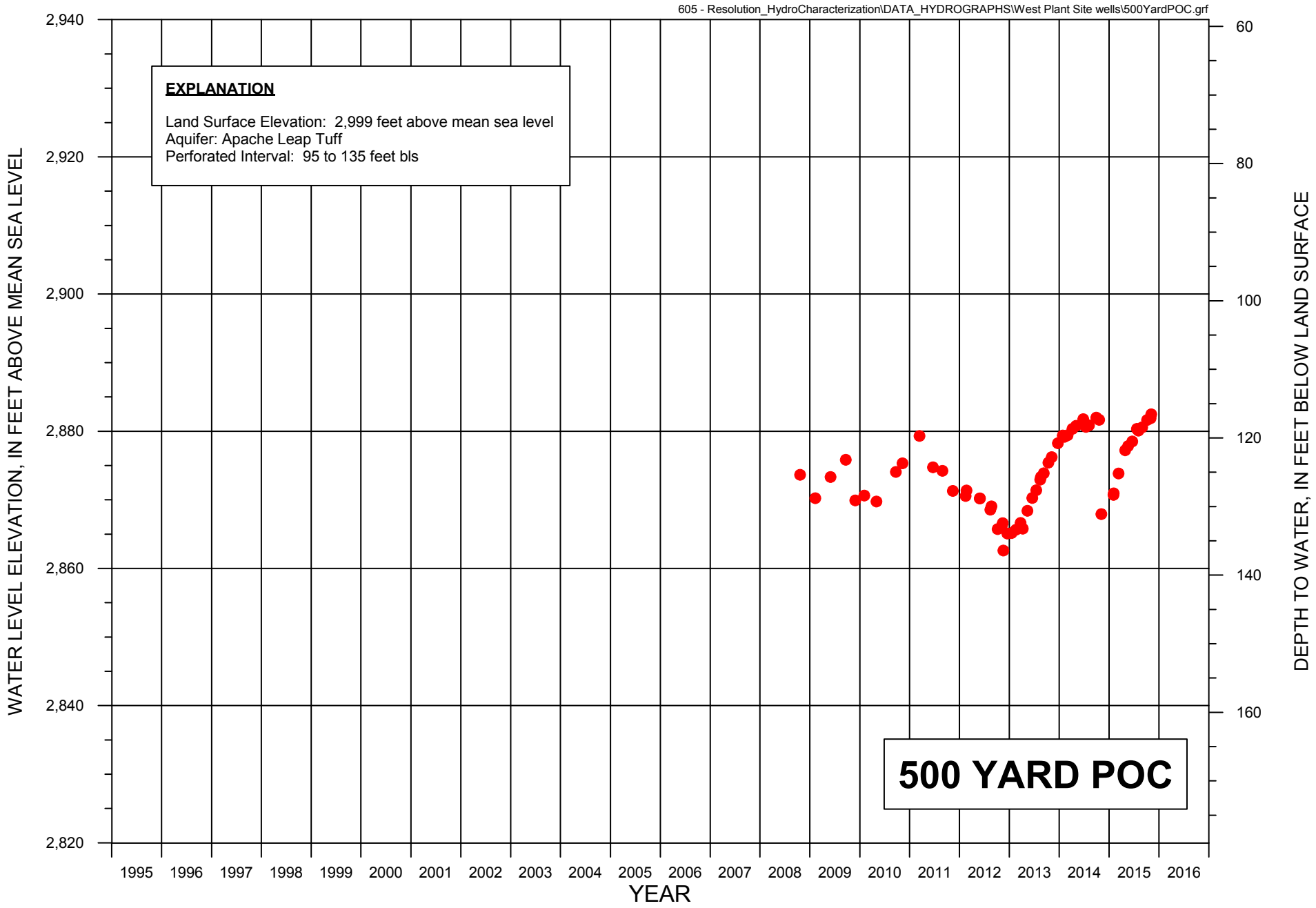


FIGURE C-1. WATER LEVEL HYDROGRAPH FOR MONITOR WELL 500 YARD POC

MONTGOMERY & ASSOCIATES

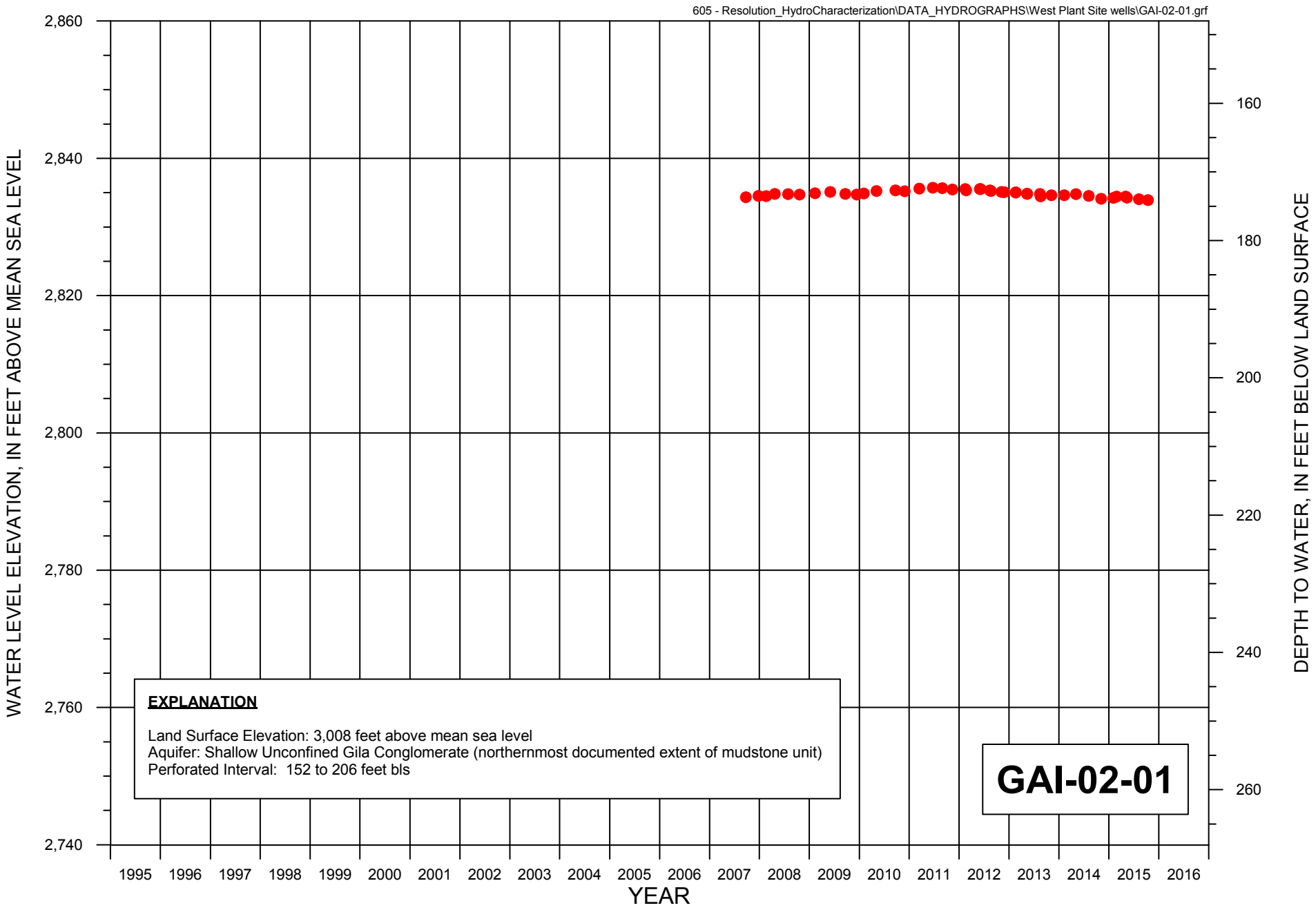


FIGURE C-2. WATER LEVEL HYDROGRAPH FOR MONITOR WELL GAI-02-01

MONTGOMERY & ASSOCIATES

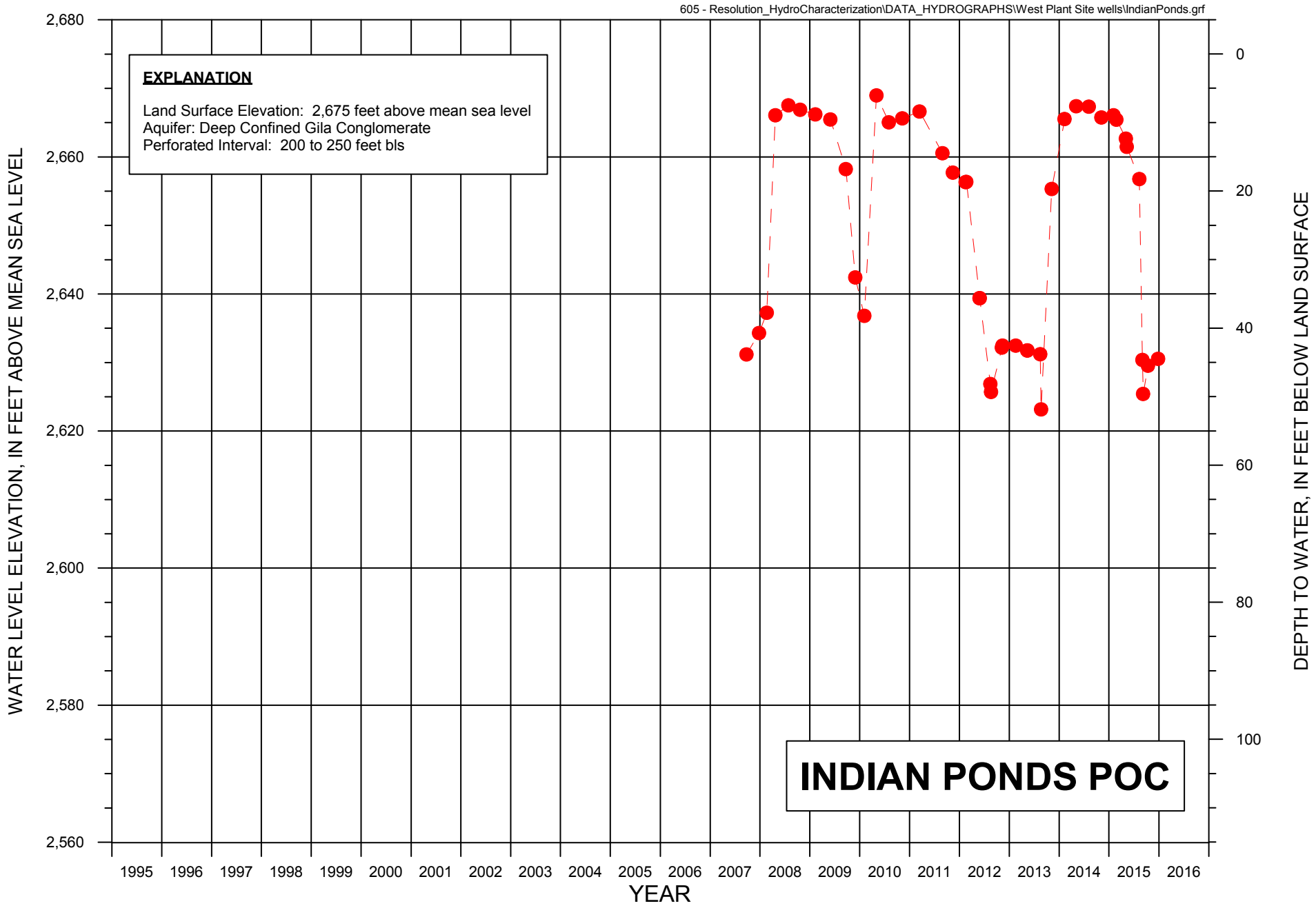


FIGURE C-3. WATER LEVEL HYDROGRAPH FOR MONITOR WELL INDIAN PONDS POC

MONTGOMERY & ASSOCIATES

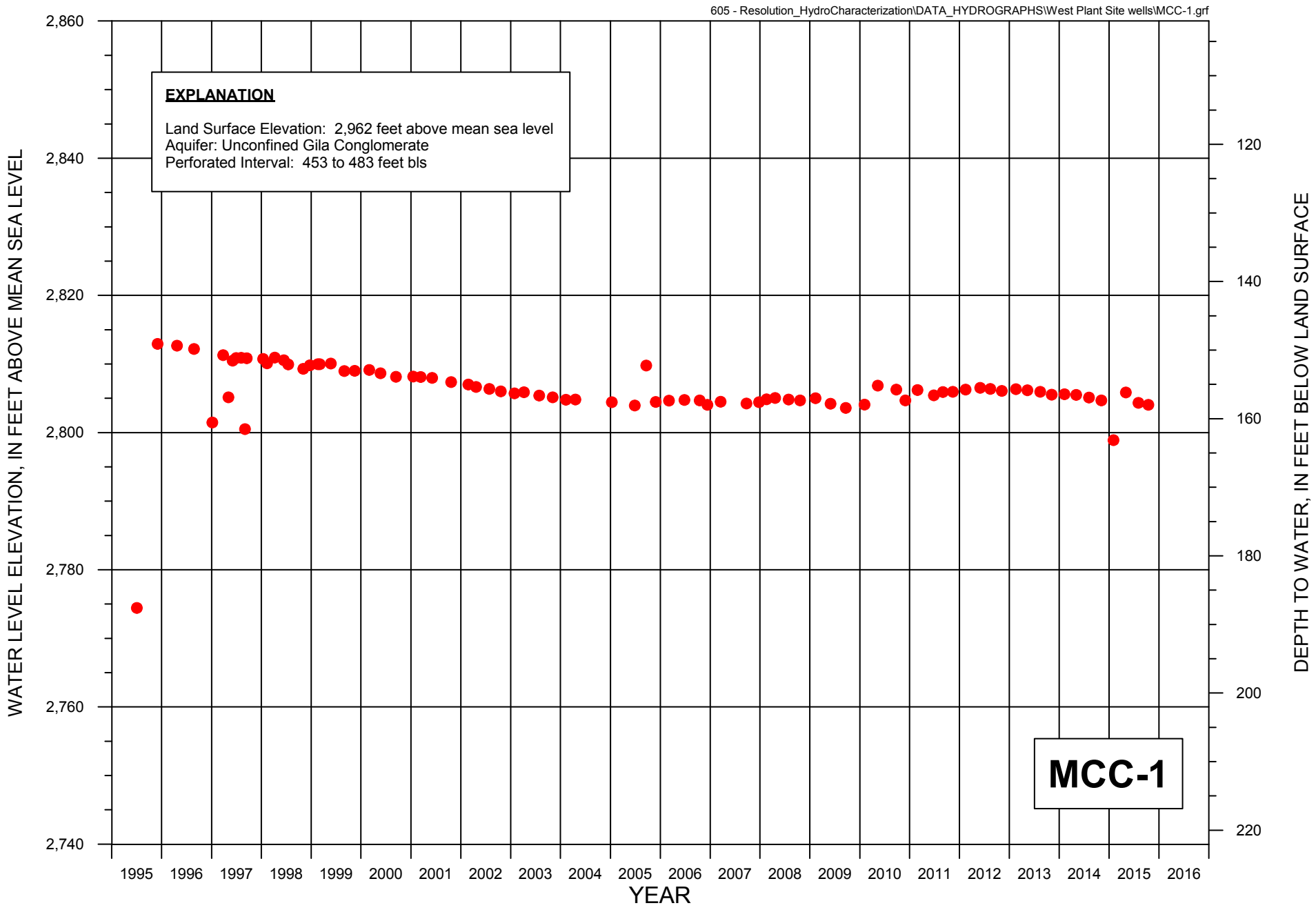


FIGURE C-4. WATER LEVEL HYDROGRAPH FOR MONITOR WELL MCC-1

MONTGOMERY & ASSOCIATES

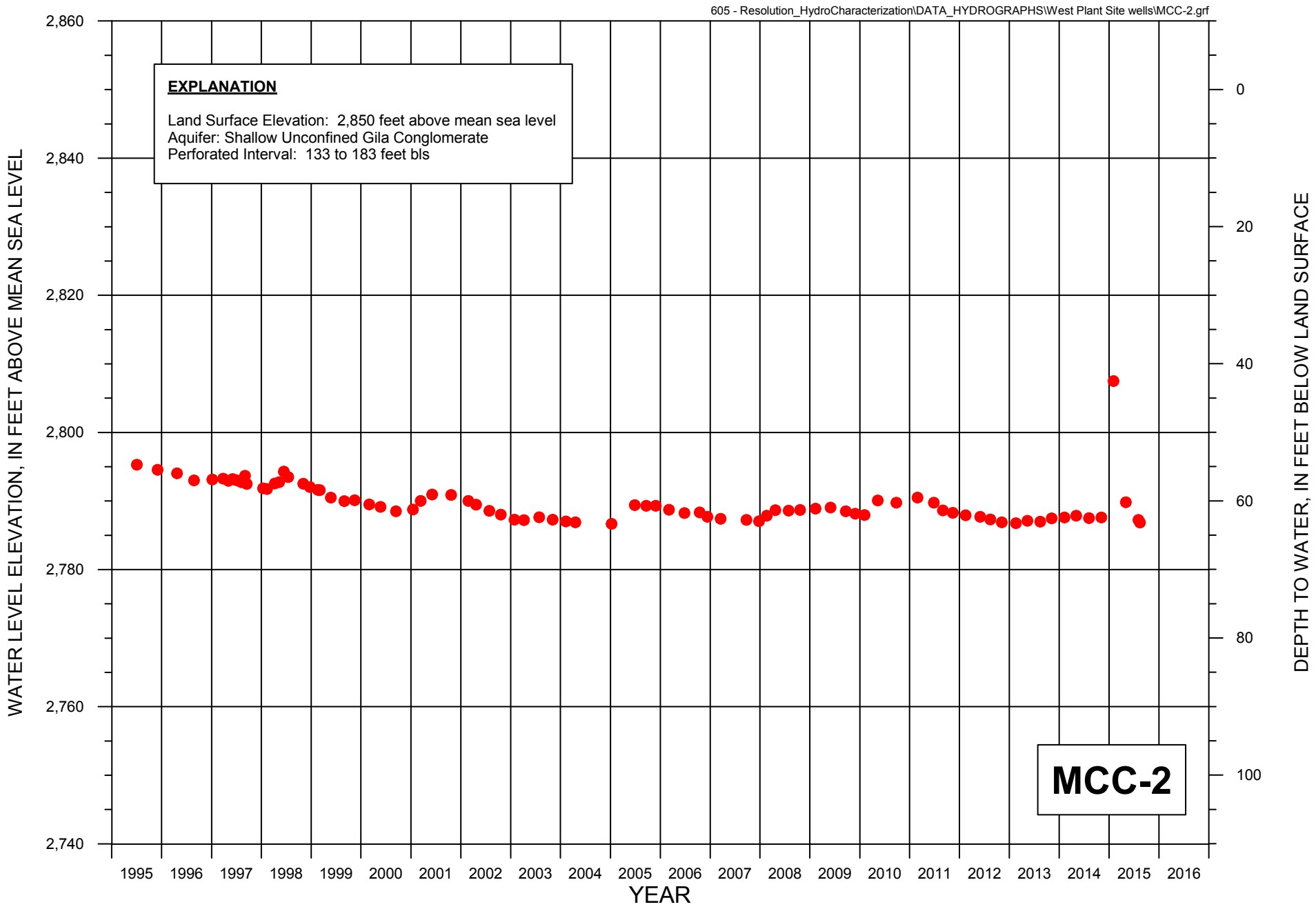


FIGURE C-5. WATER LEVEL HYDROGRAPH FOR MONITOR WELL MCC-2

MONTGOMERY & ASSOCIATES

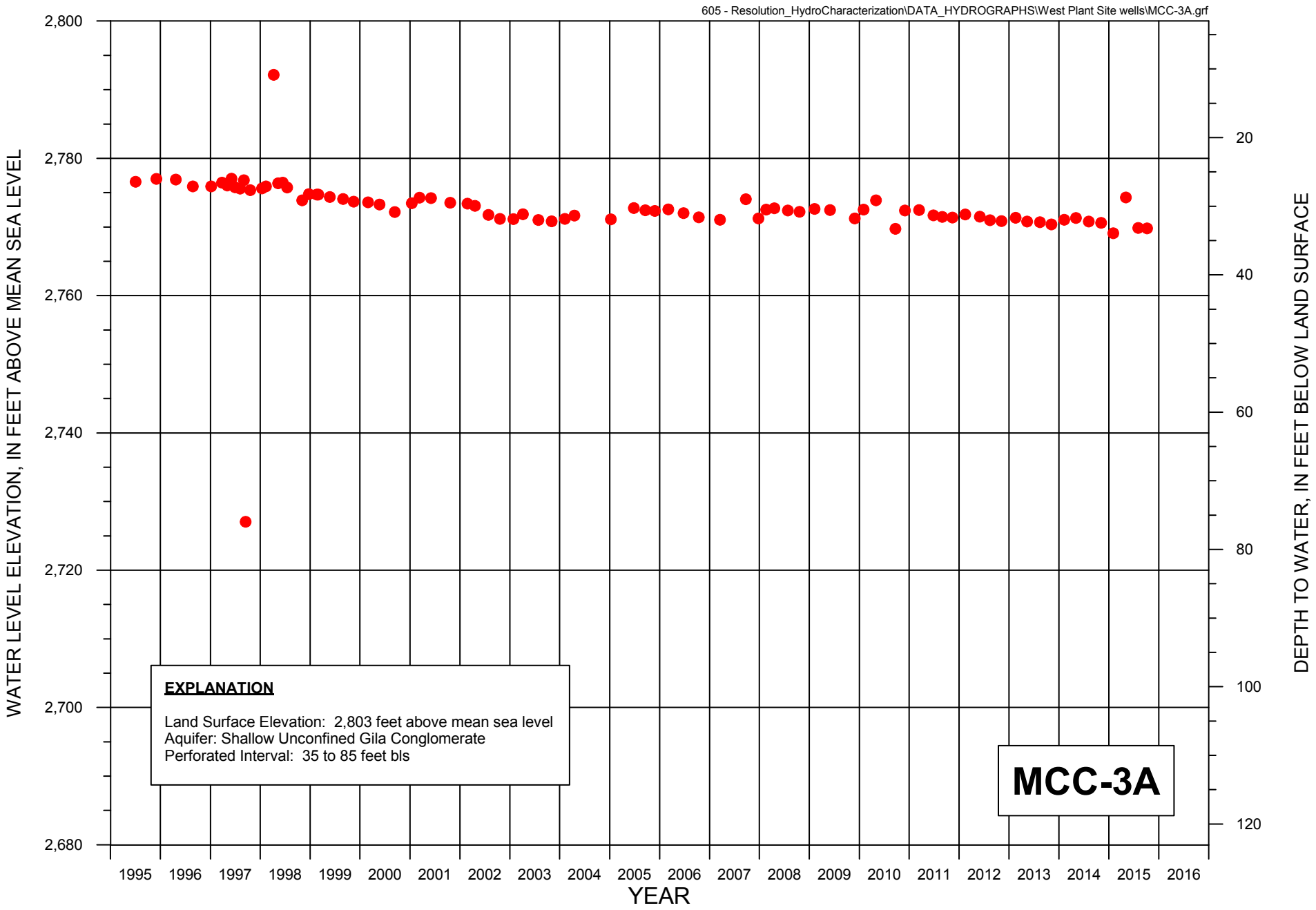


FIGURE C-6. WATER LEVEL HYDROGRAPH FOR MONITOR WELL MCC-3A

MONTGOMERY & ASSOCIATES

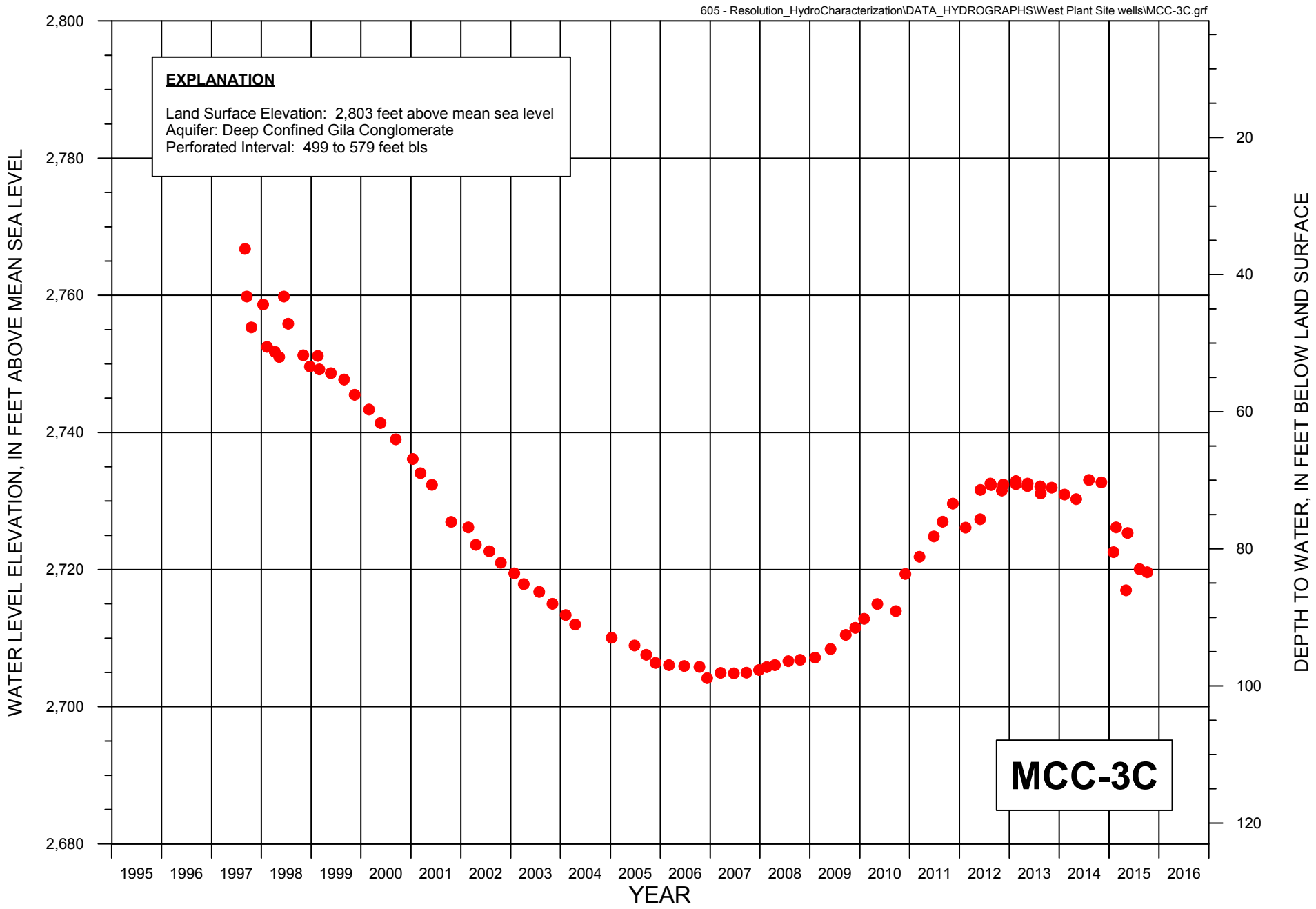


FIGURE C-7. WATER LEVEL HYDROGRAPH FOR MONITOR WELL MCC-3C

MONTGOMERY & ASSOCIATES

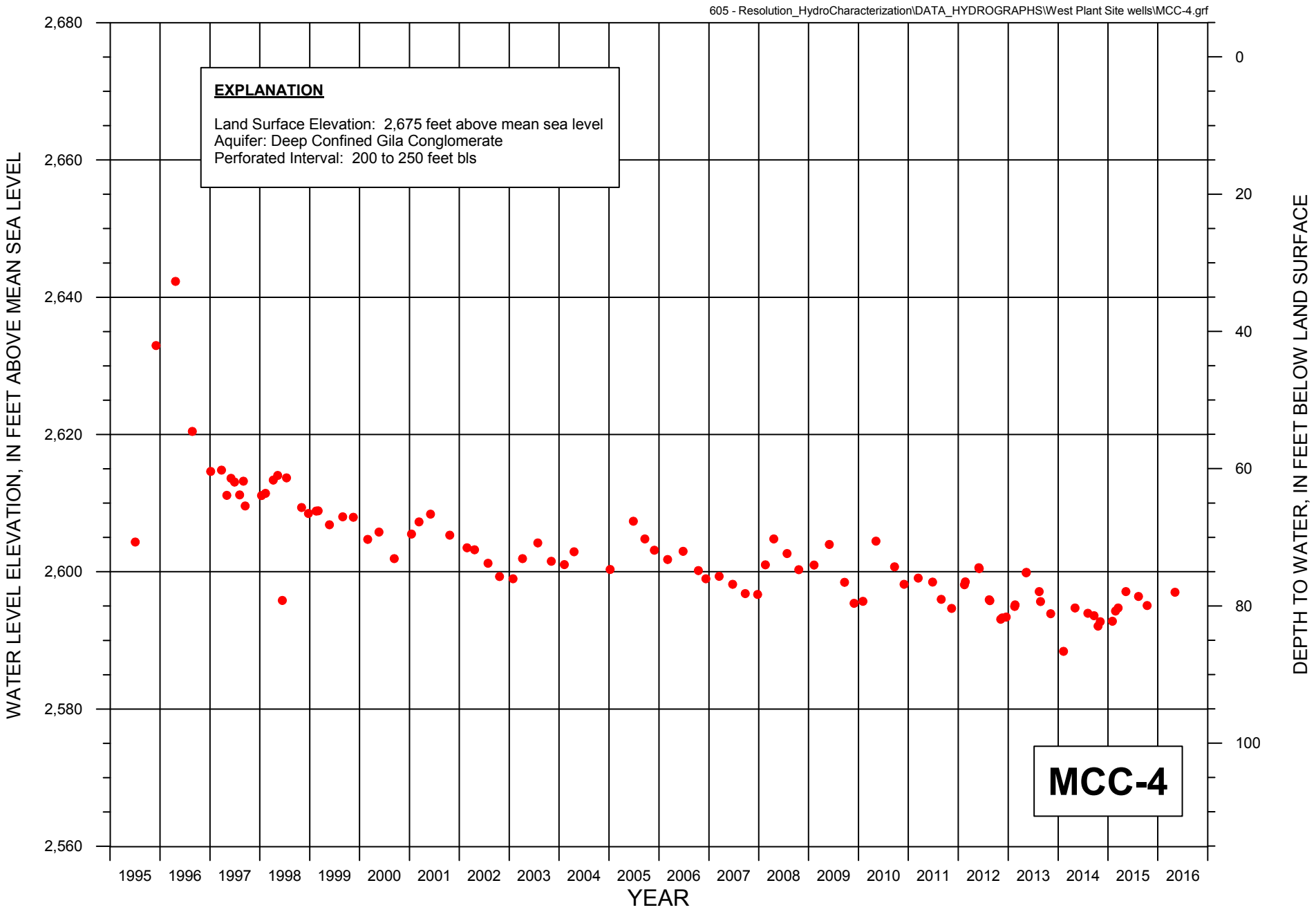


FIGURE C-8. WATER LEVEL HYDROGRAPH FOR MONITOR WELL MCC-4

MONTGOMERY & ASSOCIATES

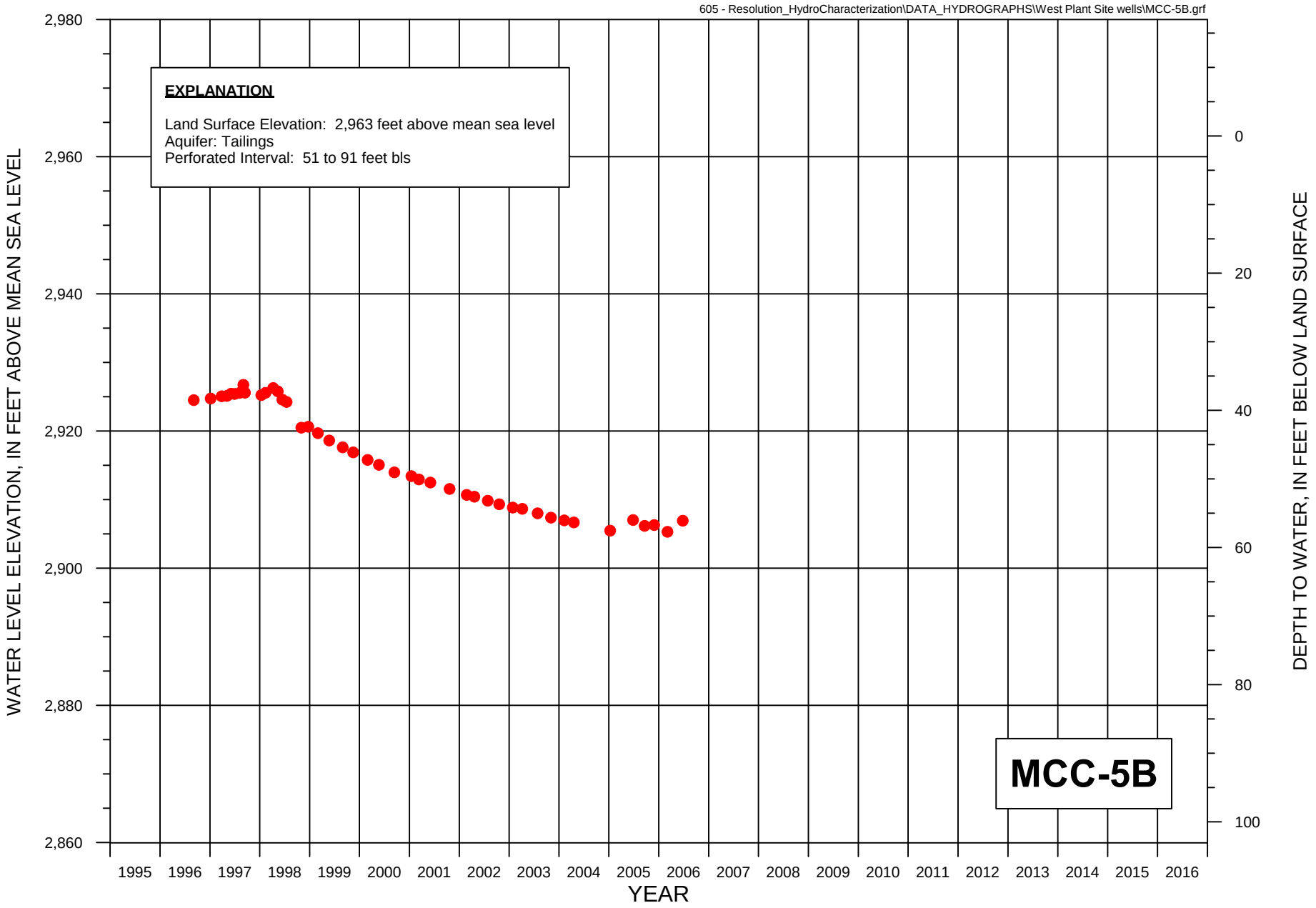


FIGURE C-9. WATER LEVEL HYDROGRAPH FOR MONITOR WELL MCC-5B

DRAFT

MONTGOMERY & ASSOCIATES

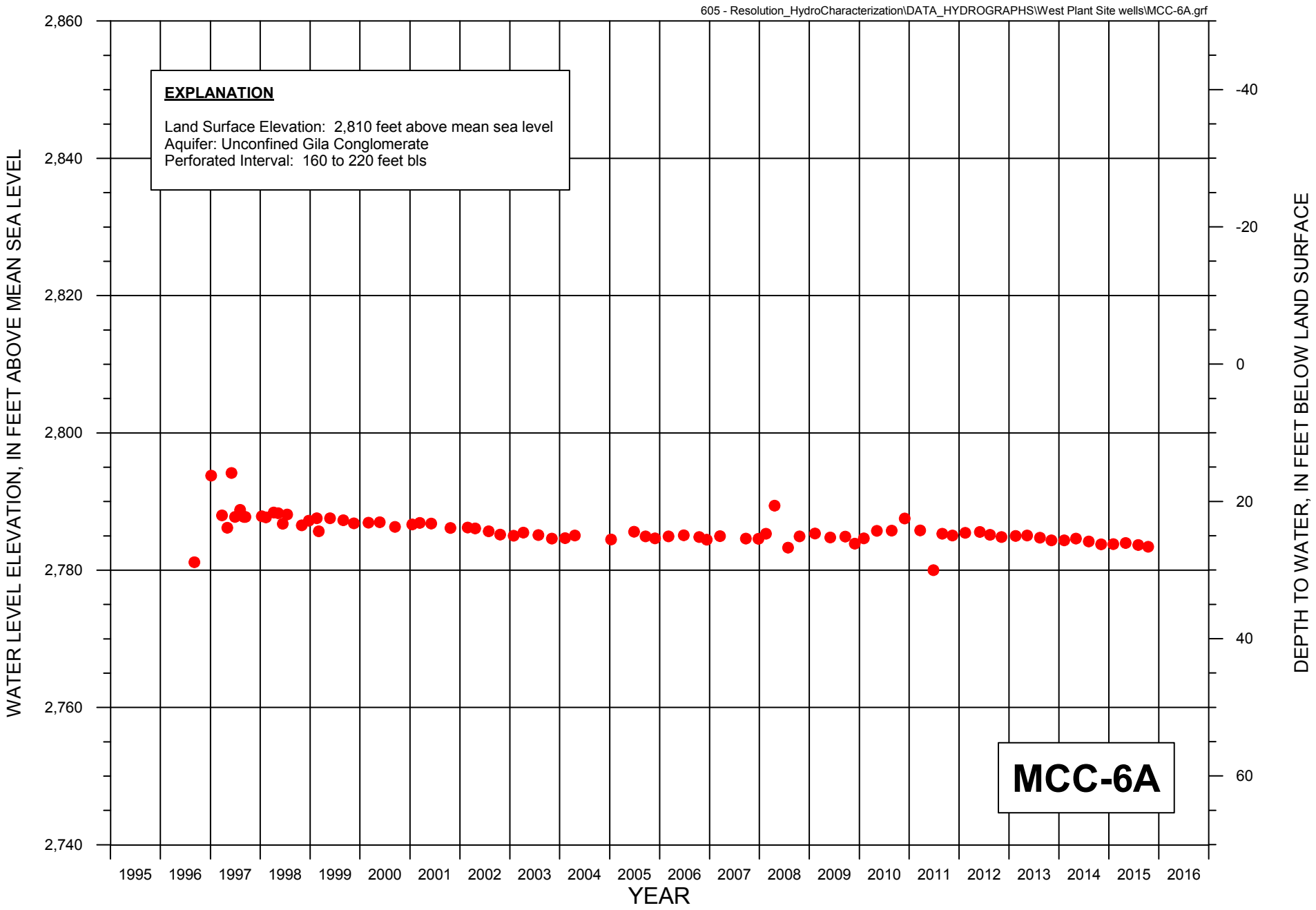


FIGURE C-10. WATER LEVEL HYDROGRAPH FOR MONITOR WELL MCC-6A

MONTGOMERY & ASSOCIATES

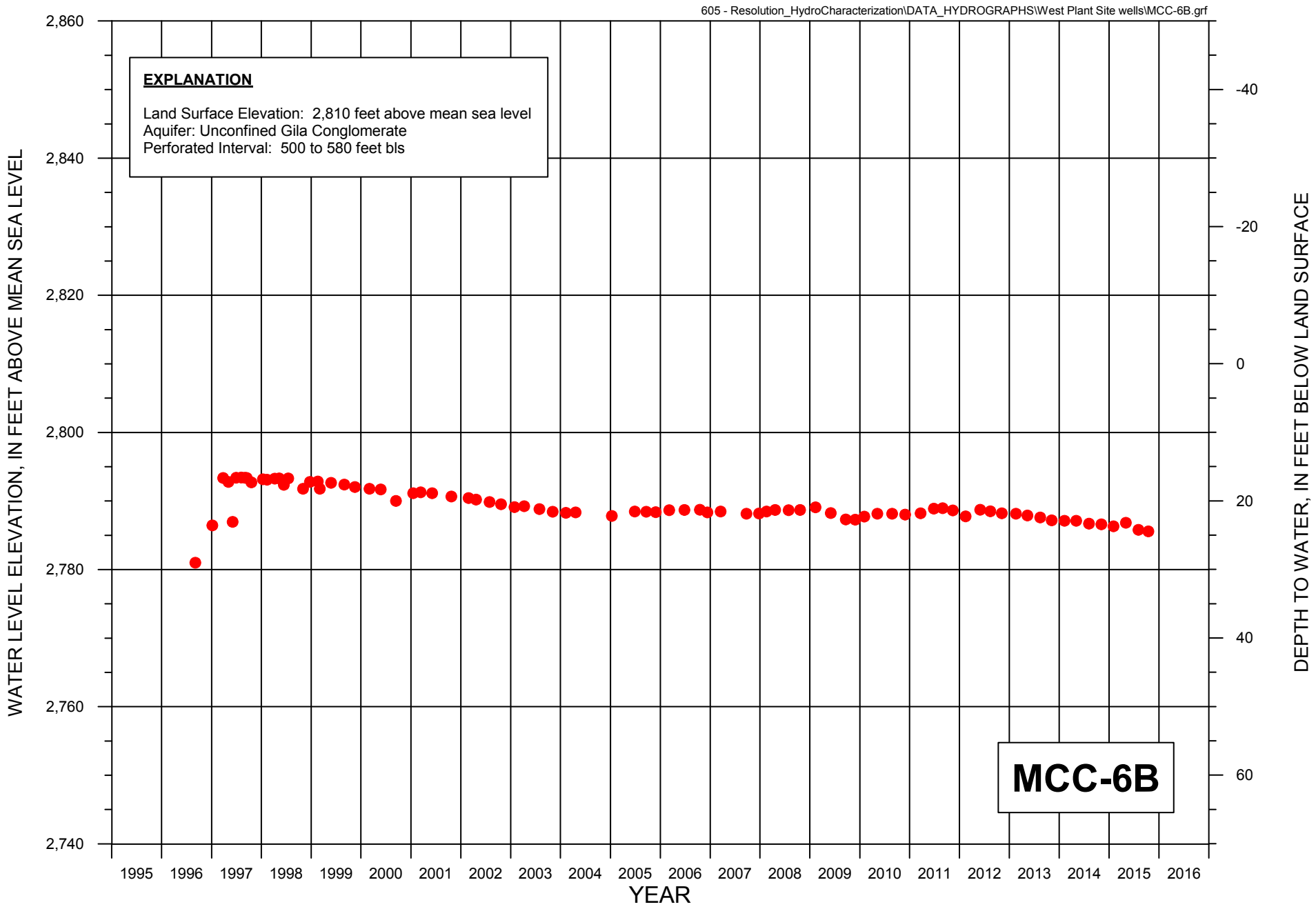


FIGURE C-11. WATER LEVEL HYDROGRAPH FOR MONITOR WELL MCC-6B

MONTGOMERY & ASSOCIATES

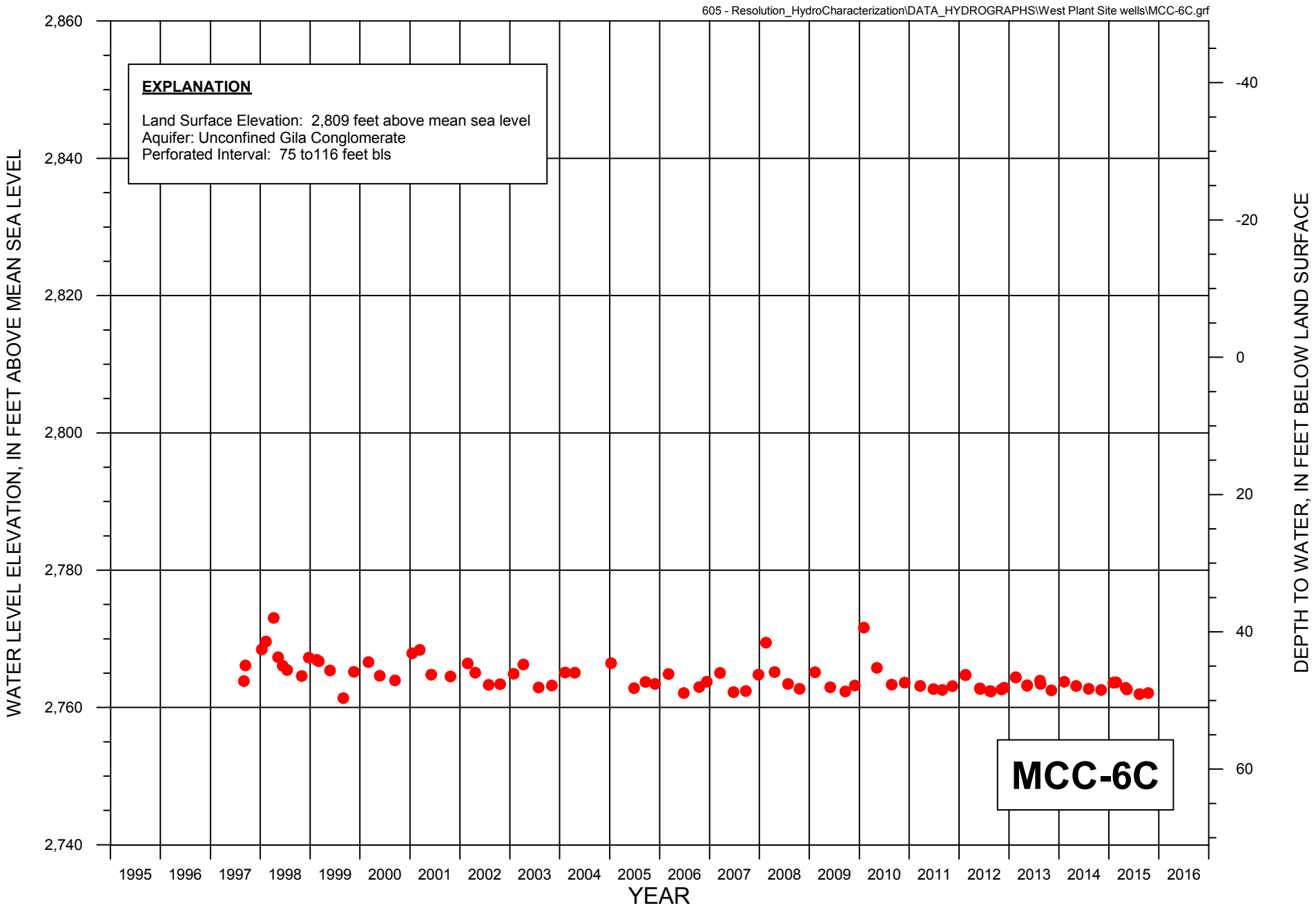


FIGURE C-12. WATER LEVEL HYDROGRAPH FOR MONITOR WELL MCC-6C

MONTGOMERY & ASSOCIATES

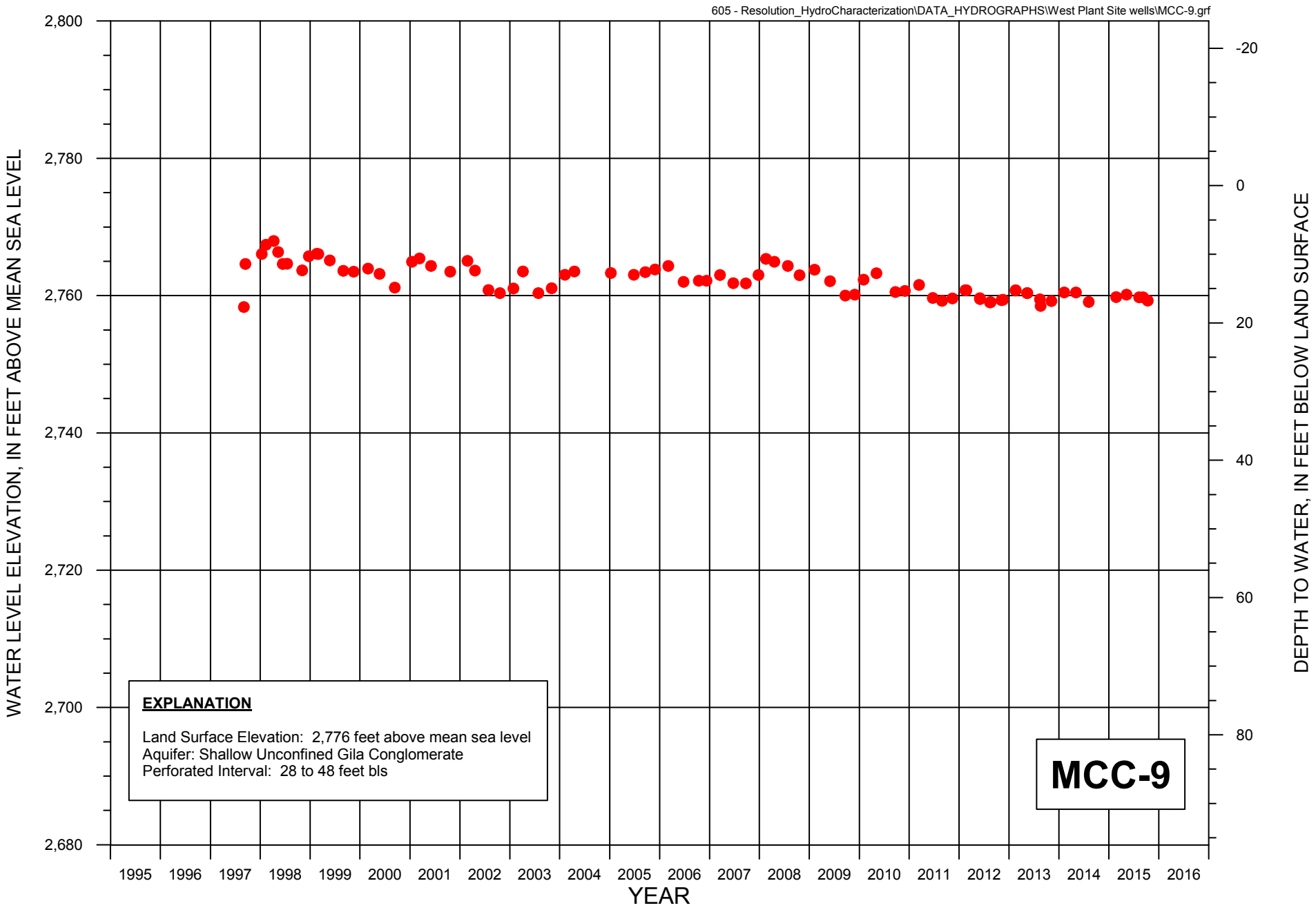


FIGURE C-13. WATER LEVEL HYDROGRAPH FOR MONITOR WELL MCC-9

MONTGOMERY & ASSOCIATES

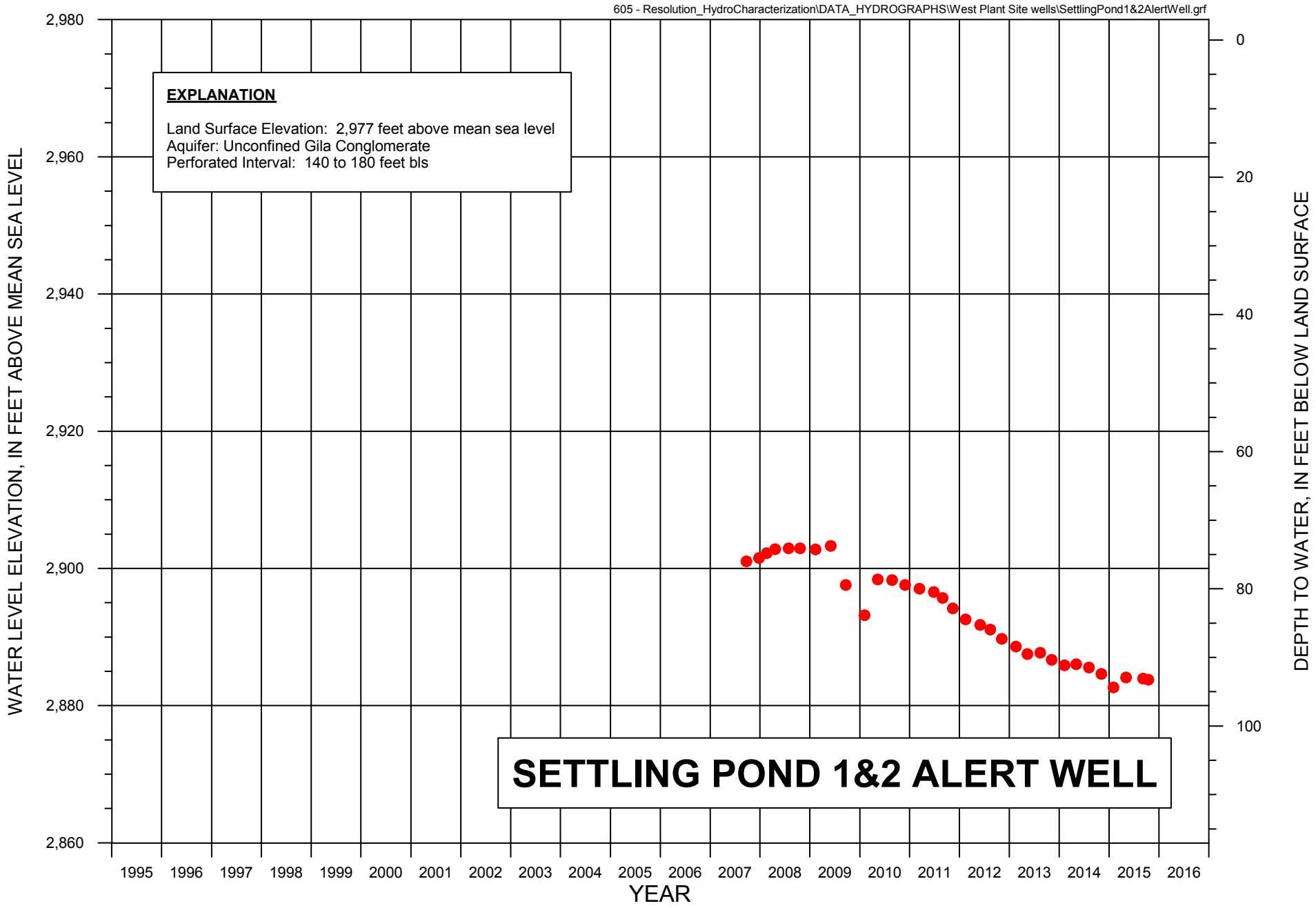


FIGURE C-14. WATER LEVEL HYDROGRAPH FOR MONITOR WELL SETTLING PONDS 1 & 2 ALERT WELL

MONTGOMERY & ASSOCIATES

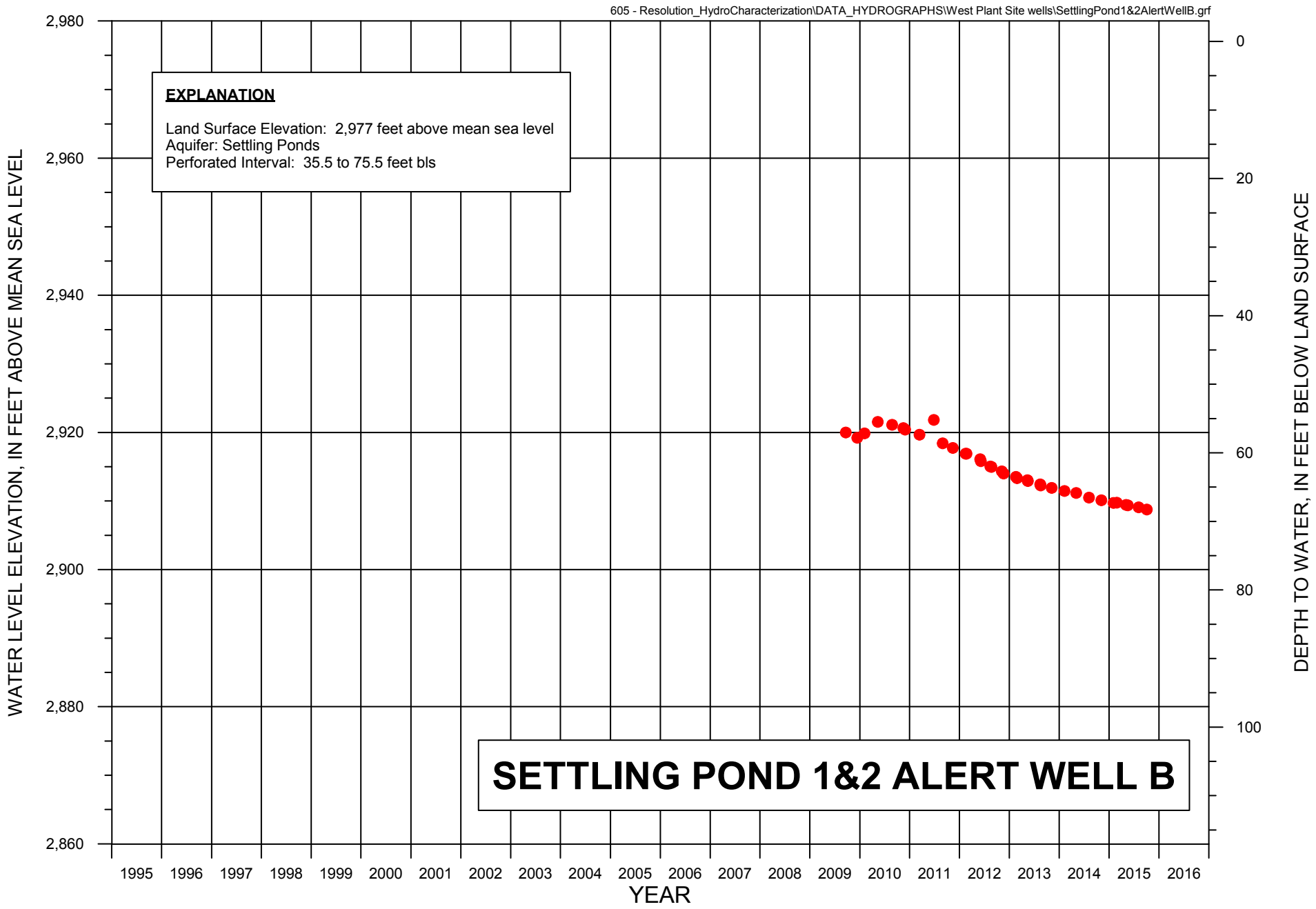


FIGURE C-15. WATER LEVEL HYDROGRAPH FOR MONITOR WELL SETTLING PONDS 1 & 2 ALERT WELL B

MONTGOMERY & ASSOCIATES

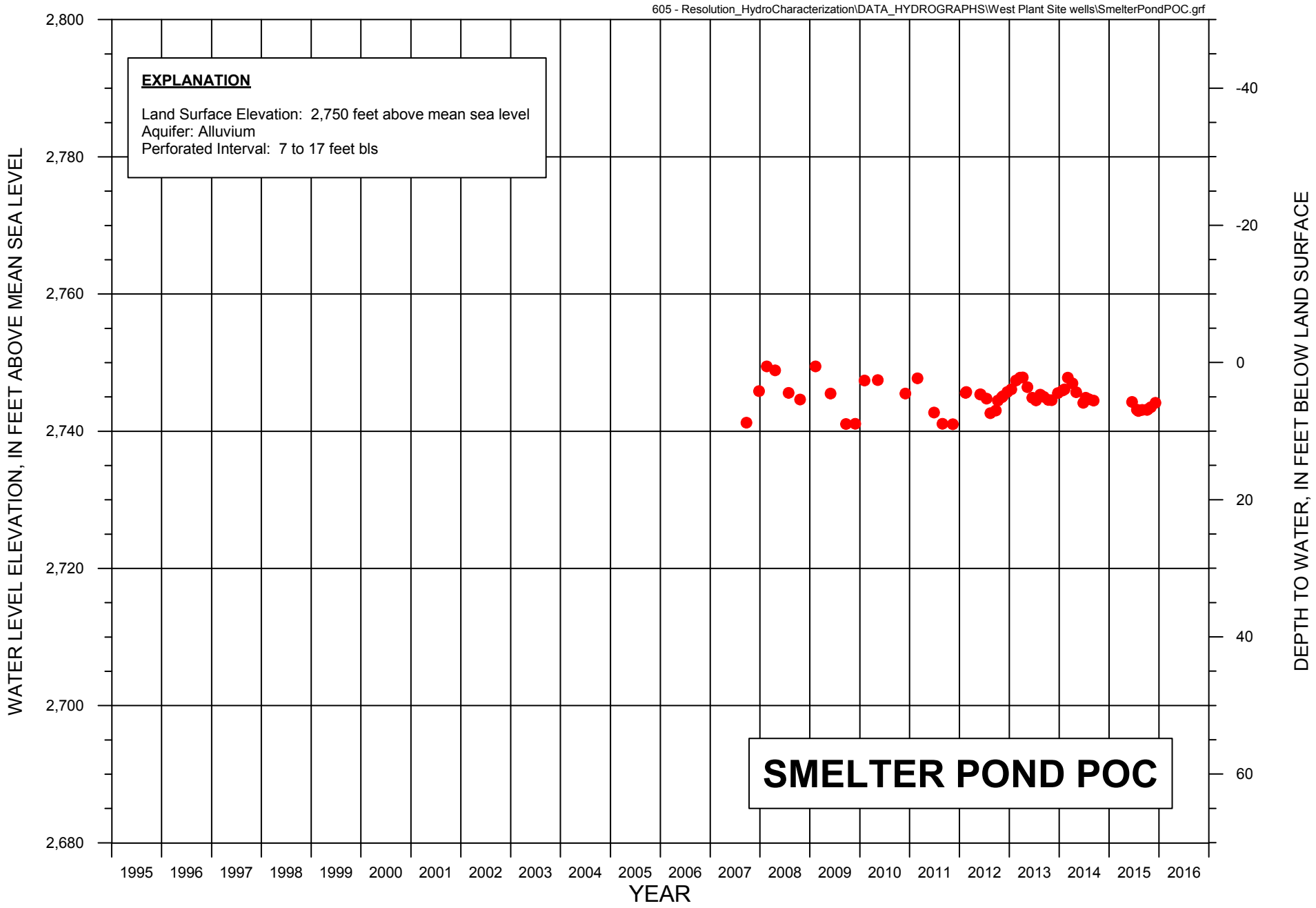


FIGURE C-16. WATER LEVEL HYDROGRAPH FOR MONITOR WELL SMELTER POND POC

MONTGOMERY & ASSOCIATES

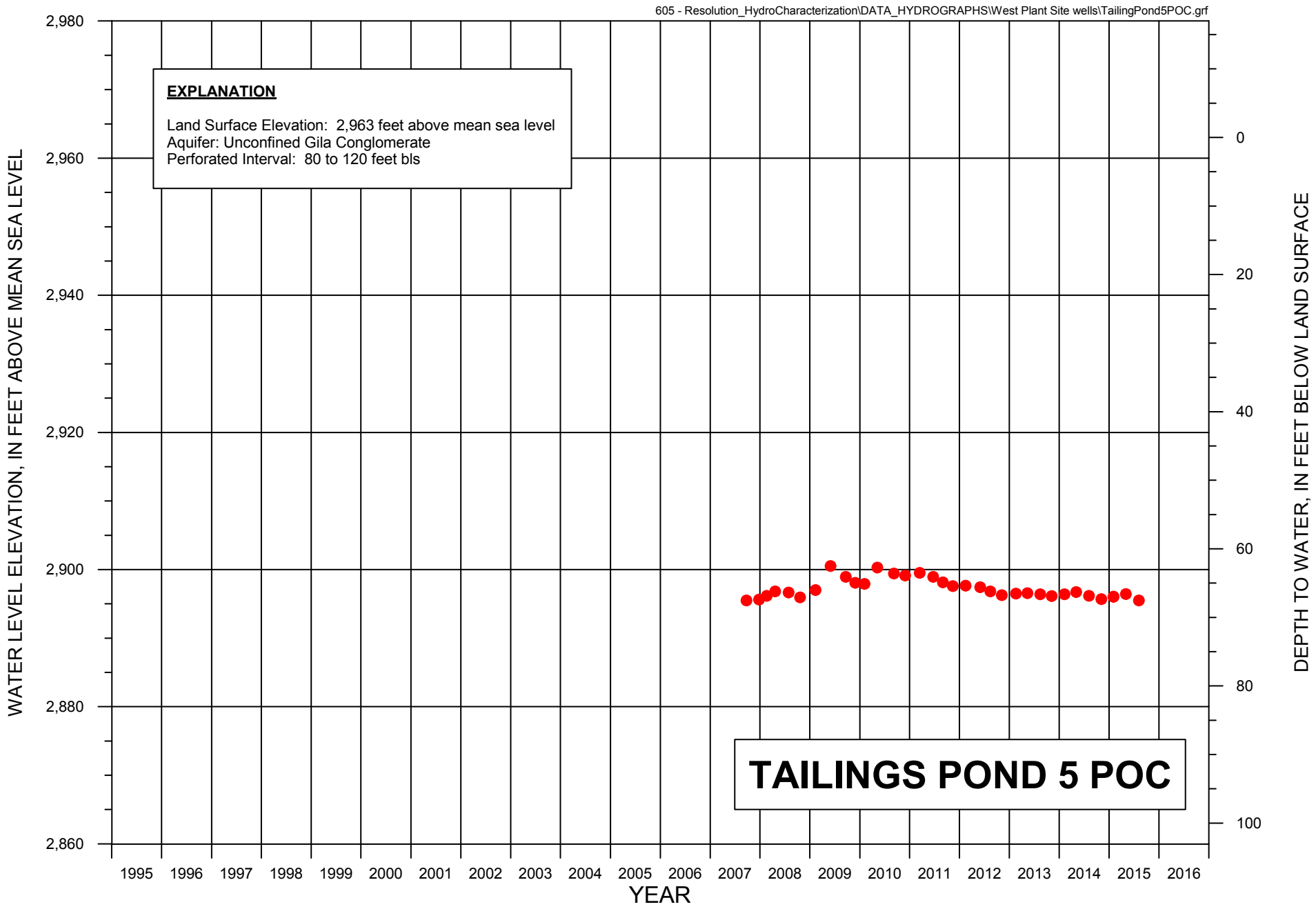


FIGURE C-17. WATER LEVEL HYDROGRAPH FOR MONITOR WELL TAILINGS POND 5 POC

MONTGOMERY & ASSOCIATES

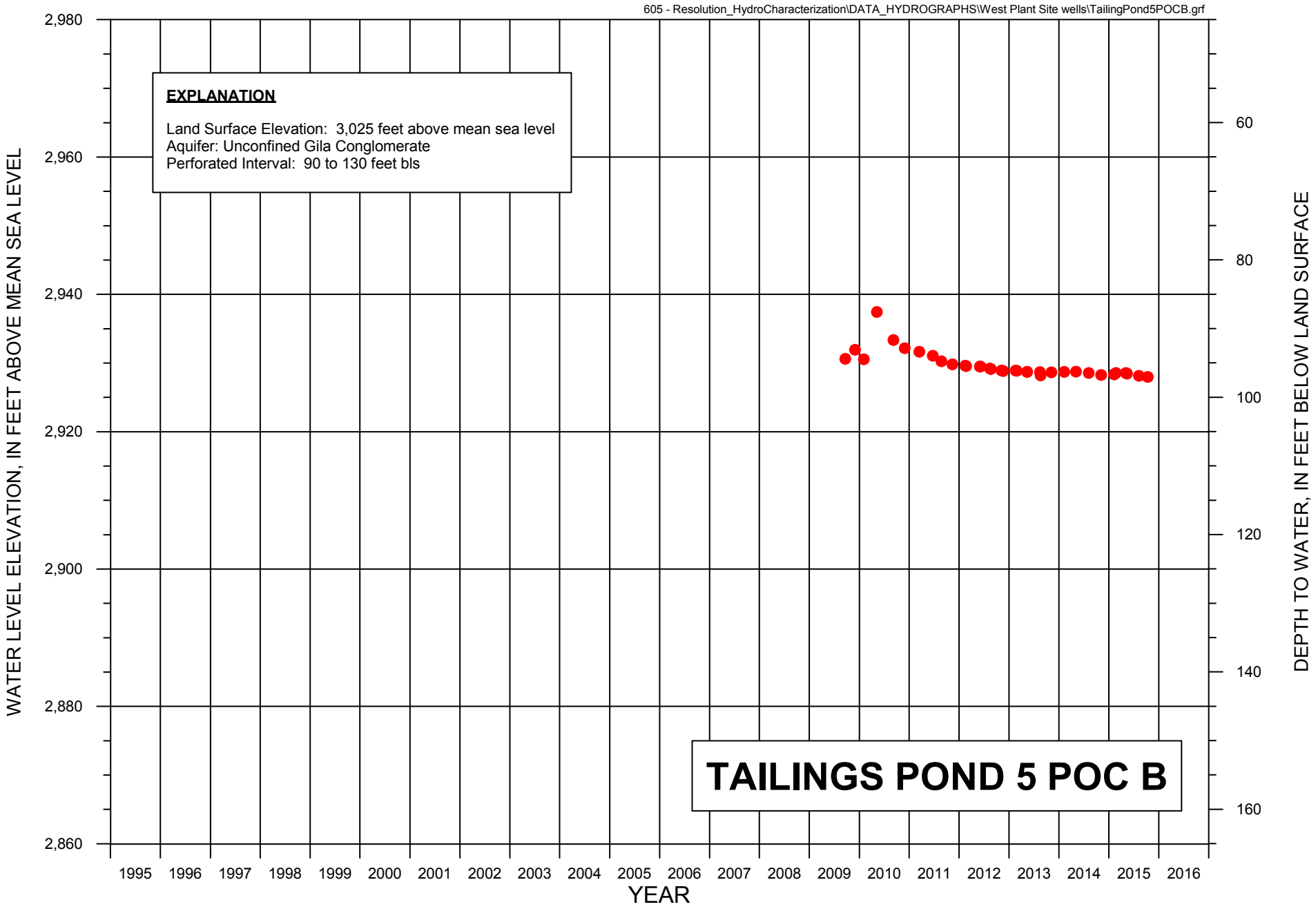


FIGURE C-18. WATER LEVEL HYDROGRAPH FOR MONITOR WELL TAILINGS POND 5 POC B

MONTGOMERY & ASSOCIATES

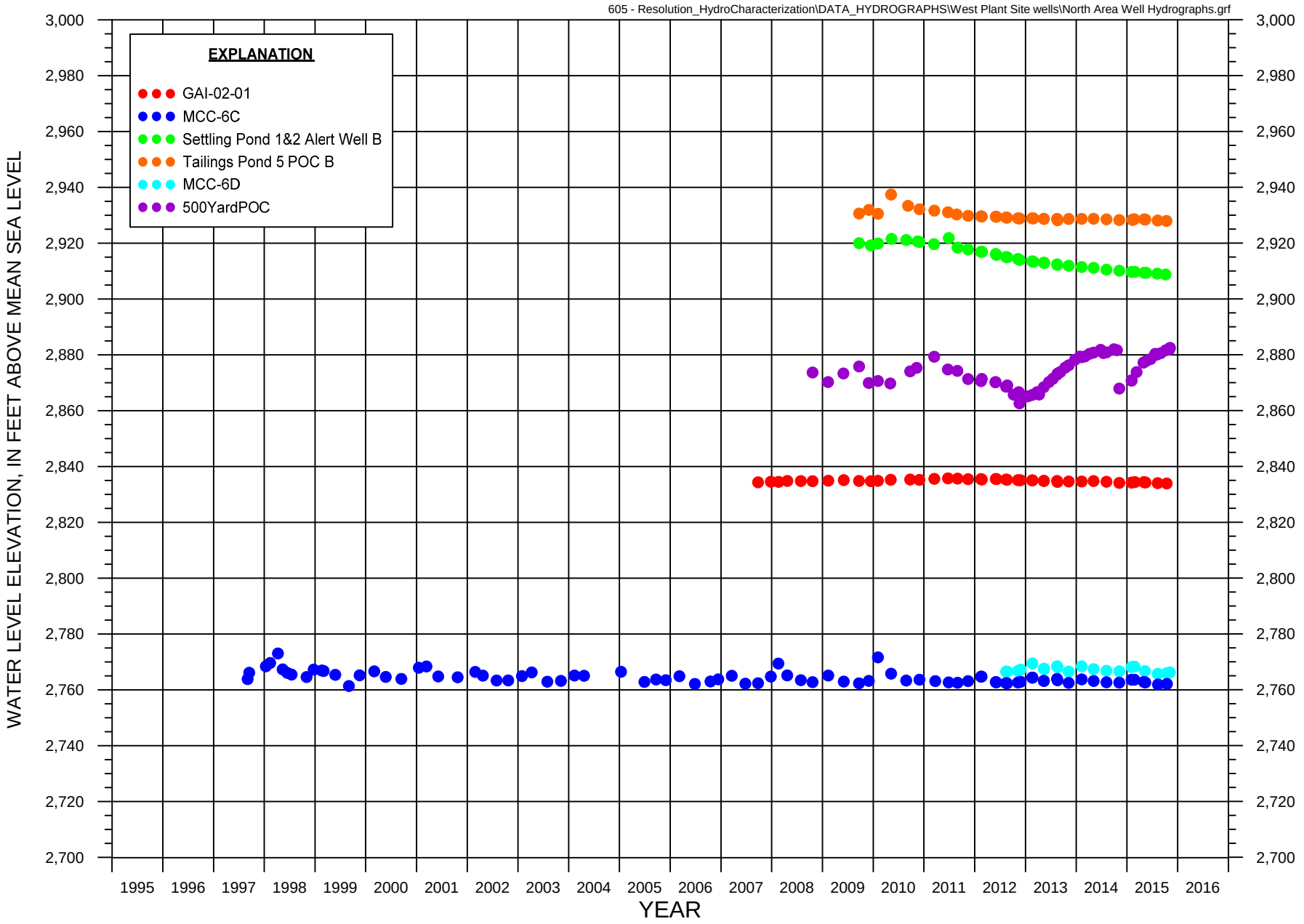


FIGURE C-19. WATER LEVEL HYDROGRAPHS FOR NORTH AREA MONITORING WELLS WEST PLANT SITE

DRAFT

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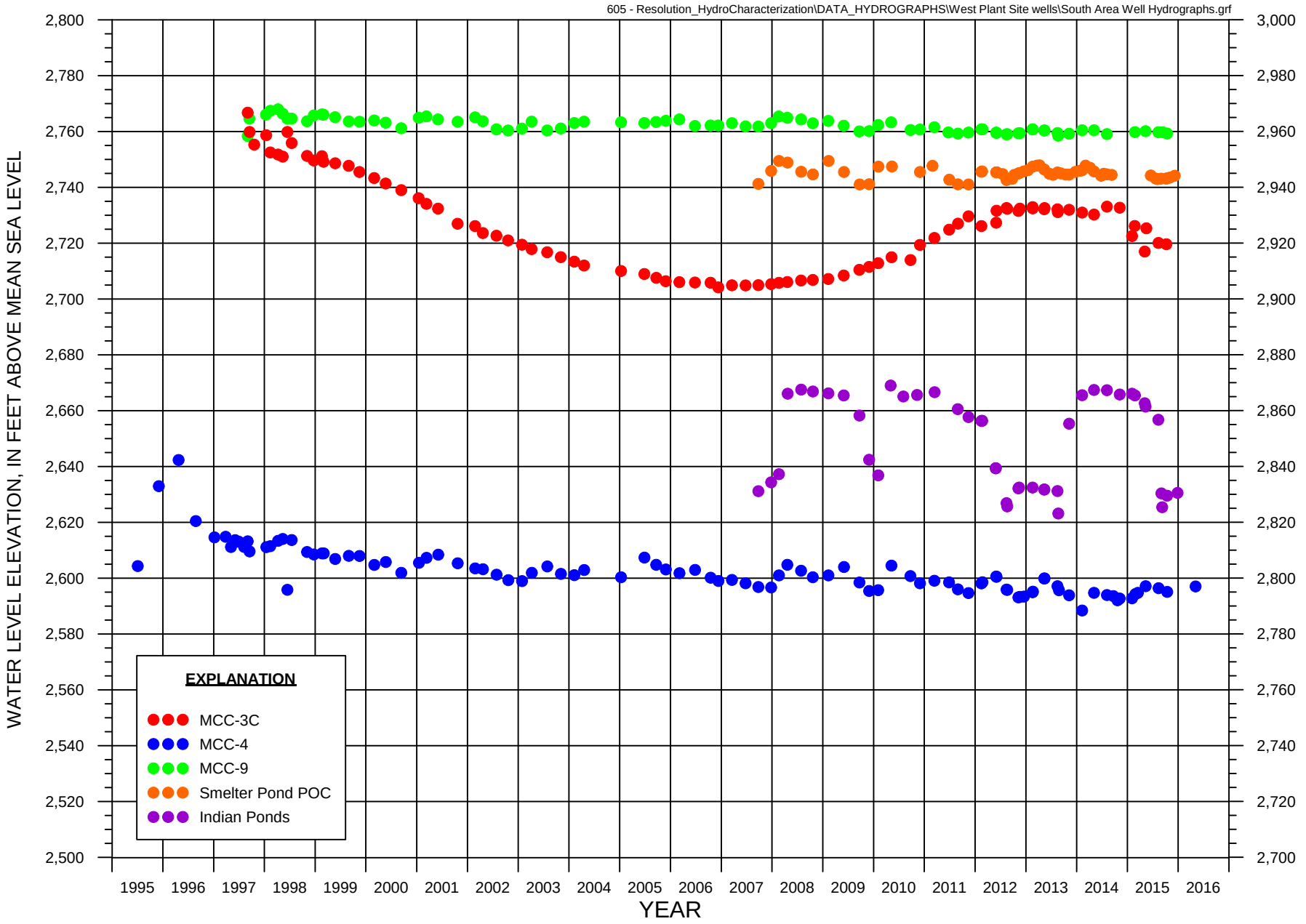


FIGURE C-20. WATER LEVEL HYDROGRAPHS FOR SOUTH AREA MONITORING WELLS WEST PLANT SITE

DRAFT

MONTGOMERY & ASSOCIATES