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TECHNICAL MEMORANDUM

DATE: **February 3, 2010** **PROJECT: 605.1**

TO: Greg Ghidotti
RESOLUTION COPPER MINING LLC

REGISTERED GEOLOGIST
CERTIFICATE NO.
25063
TODD
KEAY
Date Signed 03FEB10
ARIZONA U.S.A.

FROM: Kate Duke, Todd Keay and Dan Weber
MONTGOMERY & ASSOCIATES

SUBJECT: PRELIMINARY RESULTS AND ANALYSIS OF DATA OBTAINED AT DEEP HYDROGEOLOGIC TEST WELLS DHRES-01 AND DHRES-02, RESOLUTION COPPER MINING, PINAL COUNTY, ARIZONA

SUMMARY

In accordance with a request from Greg Ghidotti, Resolution Copper Mining LLC (RCM), Montgomery & Associates (M&A) have prepared this Technical Memorandum to provide an interim summary of data collected at wells DHRES-01 and DHRES-02. A detailed report on the drilling, construction, and testing of wells DHRES-01 and DHRES-02 is currently being prepared and will be submitted to RCM by March 31, 2010.

Deep hydrogeologic test wells DHRES-01 and DHRES-02 were drilled and constructed during the period May 2 to September 10, 2008. Locations of wells DHRES-01 and DHRES-02 are shown on **Figure 1**. In order to measure hydraulic heads at specific elevations in the Apache Leap Tuff (Tal) and Whitetail Conglomerate (Tw), vibrating-wire pressure transducers were grouted in the annulus between the borehole wall and conductor casing at wells DHRES-01 and DHRES-02. Water levels in the deep groundwater system underlying the Tal and Tw are measured using vibrating-wire pressure transducers hung in the wellbore. Observations and conclusions are summarized as follows:

1. Hydraulic heads observed in the upper three piezometers at well DHRES-01 and all five piezometers at well DHRES-02 have generally stabilized and, 16-18 months after installation, are presumably approaching equilibrium with heads in the adjacent Tal and Tw.

2. Heads in the Tal and Tw are on the order of 500 meters higher than heads in the underlying deep groundwater system.

3. In general, piezometer data from wells DHRES-01 and DHRES-02 indicate a small downward hydraulic head gradient in the Tal and Tw.

4. The current conceptual hydrogeologic model for the integrated groundwater system in the Queen Creek/Devils Canyon study area consists of two fractured-rock groundwater systems (Tal aquifer and the underlying deep groundwater system) separated by a confining unit (Tw). Review of hydraulic head and water level data from wells DHRES-01 and DHRES-02 provide support for the following elements of this conceptual model:

    a. Positive pore pressures measured in the Tw indicate that the Tw is saturated at these two locations;

    b. Small downward head gradients in the Tal and Tw indicate that the Tal aquifer is perched on the Tw;

    c. Large head differences between the lower Tw and the underlying deep groundwater system suggest that, in the vicinity of wells DHRES-01 and DHRES-02, the Tw is an effective barrier to downward flow and that little water is transmitted from the Tal to the deep groundwater system through the Tw.

5. The connection between the lower two piezometers at well DHRES-01 and the adjacent Tw may have been compromised. Steeply declining hydraulic head trends suggest that both these piezometers are moving toward equilibrium with heads in the deep groundwater system. Continued monitoring is required to refine understanding of this behavior.

6. Water levels measured in the deep groundwater system at wells DHRES-01 and DHRES-02 clearly show an antecedent recovery trend (due to recovery from historical mine dewatering operations) as well as the initial response to dewatering at Shaft No. 9. Timing and relative magnitude of response at these two wells are consistent with radial flow in the deep groundwater system in response to pumping at Shaft No. 9.

BACKGROUND

Deep hydrogeologic test wells DHRES-01 and DHRES-02 were drilled and constructed during the period May 2 to September 10, 2008. The wells were drilled to evaluate lithologic and hydrogeologic conditions in the deep groundwater system as well as within the overlying

Apache Leap Tuff (Tal) and Whitetail Conglomerate (Tw). **Figure 1** shows locations of deep hydrogeologic test wells DHRES-01 and DHRES-02 and location of the hydrogeologic section shown on **Figure 2**. Final well construction was designed to permit hydrologic testing of the deep groundwater system, to provide access for long-term monitoring of groundwater level and groundwater quality in the deep groundwater system, and to provide measurements of hydraulic head within the Tal and Tw. **Figures 3 and 4** show summary well schematics, hydrographs of hydraulic heads and water levels, and selected photographs for wells DHRES-01 and DHRES-02, respectively.

In November 2008, a 72-hour constant-rate pumping test was conducted at well DHRES-01 to provide hydraulic parameter estimates for the deep groundwater system. Interpretation of aquifer test results will be presented in the final well construction report described previously.

At the end of the 72-hour pumping test, a suite of groundwater samples was collected for hydrochemical analysis. Analyses included: common and trace constituents, routine parameters, radiological constituents, stable isotopes, and radioisotopes. Preliminary interpretation of the hydrochemical data was provided in a draft report summarizing interim results of groundwater monitoring for the Upper Queen Creek and Devils Canyon watersheds (Montgomery & Associates, 2009). A final version of this report will be submitted to RCM during the week of February 8, 2010.

METHODS

In order to measure hydraulic heads at specific elevations in the Tal and Tw, vibrating-wire pressure transducers were grouted in the annulus between the borehole wall and conductor casing at wells DHRES-01 and DHRES-02. Water level in the deep groundwater system underlying the Tal and Tw is measured using vibrating-wire pressure transducers hung in the wellbore. Details regarding the installation of both sets of transducers are provided below.

Annular Piezometers

Annular instrumentation was installed in wells DHRES-01 and DHRES-02 as follows:

1. Five vibrating-wire pressure transducers were attached to the outside of the conductor casing and grouted in the annulus. Elevations of these fully-grouted, annular pressure transducers (hereafter referred to as piezometers) are summarized in **Table 6**, shown on the hydrogeologic section on **Figure 2**, and shown on the well schematics on **Figures 3 and 4**.
2. Fiber-optic cables were attached to the outside of the conductor casing and grouted in the annulus to provide rock strain data. Monitoring data obtained from the fiber optic cables are part of on-going RCM geotechnical studies and are not presented in this technical memorandum.

A summary of the installation of the piezometers is as follows:

1. A nominal 12-1/4-inch borehole was drilled from land surface to the base of the Tw.
2. Blank steel casing (7-5/8-inch) was installed in the borehole; as the casing was installed transducers and fiber-optic cables were attached to the outside of the casing.
3. The annular space between the casing and the borehole wall was filled with a specially prepared cement-bentonite grout (2.5 water: 1 cement: 0.3 bentonite). The goal of this high-porosity, low-permeability grout mix is to allow hydraulic connection to be established horizontally between the cement and the adjacent formation, but not vertically through the cement within the annulus (Contreras et al., 2008). This allows each embedded pressure transducer to measure pressure head in the adjacent formation at the elevation of the transducer. A dense, neat-cement annular seal was installed at the base of the 7-5/8-inch casing ("tail cementing" procedure) to prevent potential damage to the annular seal during drilling of the lower production borehole.
4. Once the grout and cement cured, a 6-3/4-inch borehole was drilled below the 7-5/8-inch conductor casing into the mineralized volcaniclastic rocks that host the deep groundwater system at the DHRES-01 and DHRES-02 locations. This borehole was cased with 4-1/2-inch blank and slotted steel casing (see schematics on **Figures 3 and 4** for perforated intervals). Annular packers (inflatable at DHRES-01 and swellable at DHRES-02) were installed in the annulus of the production string casing to isolate each perforated interval.

Each piezometer is identified with the name of the well and the elevation of the piezometer, in meters above mean sea level (msl). For example, the lowest piezometer in well DHRES-01 is identified as DHRES-01_66; this piezometer is located 66 meters above mean sea level.

Wellbore Pressure Transducers

Water level in the deep groundwater system is monitored using vibrating-wire pressure transducers hanging within the wellbore. Currently, water level is monitored for two zones at well DHRES-01, and for the composite wellbore at DHRES-02. Details are provided below:

1. At well DHRES-01 a packer is installed at 1,526 meters below land surface (bls). This packer separates the uppermost perforated interval from additional perforated intervals that lie in the lower section of the production casing (**Figure 3**). Two pressure transducers are installed in the well:

    a. An upper pressure transducer is installed in the annulus between the conductor casing and the packer tubing above the packer. This transducer provides hydraulic head measurements for the deep groundwater system adjacent to the uppermost perforated section.

b. A lower pressure transducer is installed within the packer tubing. This transducer provides a composite hydraulic head measurement from the deep groundwater system adjacent to the lower perforated sections of the well.

2. A packer is not currently installed at well DHRES-02. A single pressure transducer hangs within the well and provides a composite hydraulic head measurement from the deep groundwater system adjacent to all three perforated intervals (**Figure 4**).

RESULTS

Instrumentation at wells DHRES-01 and DHRES-02 provides hydraulic head data for the Tal and Tw and water level data for the deep groundwater system (**Figures 3 and 4**). Expanded-scale hydrographs are provided on **Figures 5 through 14**.

Apache Leap Tuff (Tal) and Whitetail Conglomerate (Tw)

Well DHRES-01: Hydraulic heads measured at piezometers located adjacent to the Tal and the upper Tw (DHRES-01_973, DHRES-01_772, and DHRES-01_683; **Figure 2**) have declined slightly since they were installed (**Figures 5, 6, and 7**). The pressure declines are relatively small in magnitude; maximum is approximately 5 meters in the uppermost piezometer, DHRES-01_973, over the 18-month period of record (**Figure 5**).

Hydraulic heads measured at piezometer DHRES-01_375 appeared to equilibrate with heads in the Tw and were reasonably stable from installation until mid-November 2009. On November 11, 2009 the hydraulic head trend underwent a substantial change in slope (**Figure 8**). We do not fully understand this behavior; however, it appears that the hydraulic pressure connection between piezometer DHRES-01_375 and the adjacent Tw may have been compromised. Between November 11, 2009 and the end of December 2009 hydraulic head at piezometer DHRES-01_375 declined approximately 0.03 meters per day (m/day); total decline in hydraulic head over this period was 1.5 m.

In contrast to the comparatively stable hydraulic heads exhibited by the upper four piezometers, the lowest piezometer, DHRES-01_66 shows steep declining trends (**Figure 9**). The initial decline in hydraulic head was relatively constant with a slope of approximately 0.08 meters per day (m/day). At the beginning of July 2009, there was a break in slope with the rate of hydraulic head decline increasing to approximately 0.3 to 0.4 m/day. Total decline in hydraulic head between July 1, 2009 and December 31, 2009 was approximately 90 m.

Departures from observed hydraulic head trends at all five piezometers occurred during drilling and testing of the lower portion of the well in June 2008 and again during the constant-rate pumping test conducted at the well in November/December 2008.

Well DHRES-02: The uppermost piezometers at well DHRES-02 (DHRES-02_915 and DHRES-02_666) are located adjacent to the Tal and upper Tw, respectively (**Figure 2**). Once pressure fluctuations due to drilling and testing operations subsided, hydraulic heads at the upper two piezometers were relatively stable over the period of record (**Figures 10 and 11**). Hydraulic heads lower down in the Tw (DHRES-02_608 and DHRES-02_458) initially declined in the first 2 to 2.5 months following the end of drilling and testing operations. Since early November 2008 hydraulic head has increased at both piezometers although heads currently appear to be stabilizing (**Figures 12 and 13**).

The lowest piezometer, DHRES-02_319 exhibits a similar pattern of hydraulic head behavior in that there is an initial decline in head after cessation of drilling and testing activities followed by rising heads that are currently beginning to stabilize (**Figure 14**). However, the magnitude and timing of changes in hydraulic head are substantially different from those observed in the two piezometers located further up the borehole (DHRES-02_608 and DHRES-02_458). This is likely due to the tail cement seal extending much higher than anticipated in the bottom of the DHRES-02 conductor casing and surrounding piezometer DHRES-02_319 with neat cement rather than the desired cement-bentonite grout. The neat cement is less permeable than the cement-bentonite grout and thus takes longer to equilibrate with hydraulic heads in the adjacent formation.

Deep Groundwater System

Water level data from the deep groundwater system collected at hydrologic test wells DHRES-01 and DHRES-02 are shown on **Figure 15**. Water level data from RCM exploration borehole RES-03 are included on **Figure 15** for reference. Locations of DHRES-01, DHRES-02, and RES-03 are shown on **Figure 1**.

Dewatering commenced at Shaft No. 9 on March 17, 2009. Prior to the start of pumping, water levels in the deep groundwater system were recovering from historical mine dewatering operations that ceased in 1998.

Well DHRES-01: Water level data collected at deep hydrologic test well DHRES-01 clearly show the antecedent recovery trend described previously (**Figure 15**). Water levels obtained above the packer show response to Shaft No. 9 pumping in early April 2009. Water level data obtained below the packer are initially anomalous and do not show the antecedent trend; however, by mid-June the pressure transducer had fully equilibrated and is currently showing the same drawdown response as the pressure transducer above the packer (**Figure 15**). Given the inherent uncertainty associated with measuring water levels at these large depths, the observed difference in water levels of roughly 1 to 2 meters between the two pressure transducers is not considered significant. Highest water level elevation of approximately 634 meters msl was measured at the pressure transducer above the packer at 05:00 hrs on April 4, 2009. This indicates a lag of approximately 18 days between commencement of pumping at Shaft No. 9 and water level response at well DHRES-01. Water level at well DHRES-01 declined approximately 30 meters between April 4, 2009 and the end of 2009 (**Figure 15**).

Well DHRES-02: Recovery of water levels in the deep groundwater system is observed in water levels measured at well DHRES-02 during the period October 2008 to April 2009 (**Figure 15**). Departures from this recovery trend in November 2008 through January 2009 are presumably due to drilling operations at nearby RCM borehole RES-09. The first peaks correlate with a lost circulation event at 1,638 meters bls at RES-09 that occurred on November 25, 2008. The quiescent period between the two series of peaks occurred over the winter break when drilling operations were suspended. The second series of peaks ends, and the steady rise in water level resumes, after the daughter hole RES-09K was abandoned and drilling operations were concluded on January 26, 2009. Highest water level of approximately 633 meters msl was measured by the wellbore pressure transducer on March 31, 2009. This indicates a lag period of approximately 14 days between commencement of pumping at Shaft No. 9 and response at well DHRES-02. Water level at well DHRES-02 declined approximately 45 meters between March 31, 2009 and the end of 2009 (**Figure 15**).

DISCUSSION

Connection Between Grouted Piezometers and Adjacent Formation

Ideally, data from a piezometer grouted in the annulus of a well represent hydraulic head in the adjacent formation at the elevation of the piezometer. This occurs because the pore pressures within the grout surrounding the piezometer equilibrate with pore pressures within the adjacent formation. Pore pressure changes are propagated horizontally from the formation, through the grout, to the piezometer (Contreras et al., 2008). Hydraulic heads observed in the upper three piezometers at well DHRES-01 and all the piezometers at well DHRES-02 currently appear to be stabilizing and are presumably approaching equilibrium with heads in the Tw.

Sharp declines in the hydraulic head trends observed at piezometers DHRES-01_375 and DHRES-01_66 suggest that heads measured at these piezometers are not representative of heads in the adjacent Tw, but rather are moving toward equilibrium with hydraulic heads in the underlying deep groundwater system (**Figures 8 and 9**). The route of this pressure exchange at well DHRES-01 is currently unknown though reasonable possibilities include: 1) communication between the deep groundwater system and the lower Tw at one or more nearby RCM exploration boreholes, 2) damage to the formation surrounding the well that allows communication between the grout and the underlying deep groundwater system (i.e. pressure equalization through the well skin), 3) microfracturing in the annular grout due to deformation during drilling and/or airlift testing.

Vertical Gradients

Inspection of the hydrogeologic section shown in **Figure 2** indicates that heads in the Tal and Tw are on the order of 500 meters above heads in the underlying deep groundwater system. **Figure 16** shows hydraulic head plotted against piezometer depth for wells DHRES-01 and

DHRES-02. Hydraulic heads are from November 10, 2009 and, as such, include data from piezometer DHRES-01_375 prior to the apparent loss of connection with the Tw. Data from DHRES-01_66 are not included as we do not consider that they were ever representative of hydraulic head in the adjacent Tw. Inspection of **Figure 16** reveals that in most parts of the Tal and Tw at wells DHRES-01 and DHRES-02 there are small, downward, hydraulic head gradients. One exception occurs at well DHRES-02 where a slight upward gradient is apparent between two piezometers located in the Tw at elevations of 608 and 666 meters bls. Observations of gradient reversals are not unusual in fractured rock due to differential pressurization depending on the pressure domain to which a given region is connected. For example, a region of rock connected to a recharge zone may well see higher pore pressures than an adjacent region that is less well-connected. Despite this one departure, the available data indicate that, in general, hydraulic heads decrease with depth resulting in a small downward gradient from the Tal into the Tw.

Figure 17 shows pressure head at each piezometer plotted versus the elevation of that piezometer. As in **Figure 16**, all pressure heads are from November 10, 2009 and data from DHRES-01_66 are not included. If the system were in hydrostatic equilibrium all the data would plot along the hydrostatic line shown on **Figure 17**. Inspection of this illustration shows that the vertical gradients in the Tal and upper Tw are small, with the data plotting just below the hydrostatic line. This, together with the large separation between heads in the Tal/Tw and heads in the deep groundwater system, is consistent with current understanding of the Tw having very low permeability. This suggests that little water is transmitted from the Tal to the underlying deep groundwater system through the Tw.

Piezometers DHRES-01_683 and DHRES-01_375 are both located in the Tw (**Figure 2**). Computed vertical hydraulic gradient between these two locations, together with an estimate of the hydraulic conductivity for the Tw, was used to estimate discharge velocity through the Tw using the Darcy equation. Using an estimated hydraulic conductivity of 1×10^{-10} meters per second (m/s) from previous packer testing in the Tw (Golder, 2007 - range of reported values 2.9×10^{-7} to $<7.9 \times 10^{-11}$ m/s), the calculated vertical discharge velocity is 1×10^{-6} meters per day.

Using an areal extent of the Tal aquifer of approximately 1.2×10^{8} square meters, and assuming that the Tw underlies the Tal aquifer, vertical flow through the Tw is calculated to be about 25 gallons per minute (130 cubic meters per day). This flux estimate is based on a very simplified conceptualization of the flow system in which water moves vertically through the Tw. It does not account for any heterogeneity in the distribution of hydraulic conductivity or hydraulic gradient within the Tw. Nor does it address potential flow pathways other than vertical flow within the Tw.

Deep Groundwater Response to Pumping at Shaft No. 9

DHRES-02 is 1,175 meters from Shaft No. 9 and 625 meters from the nearest mine working (3900 level). DHRES-01 is 2,125 meters from Shaft No. 9 and 1,500 meters from the nearest mine working. Response in the deep groundwater system to pumping at Shaft No. 9 was observed at both DHRES-01 and DHRES-02. Initial drawdown occurred at well DHRES-02 14 days after pumping commenced and at well DHRES-01 19 days after pumping commenced. Between first response and the end of 2009, water levels declined approximately 45 meters at DHRES-02 and approximately 30 meters at DHRES-01. The timing and magnitude of these responses are consistent with radial flow in the deep groundwater system in response to pumping at Shaft No. 9.

REFERENCES

Contreras, I. A., Grosser, A. T., and Ver Strate R. H., 2008, **The Use of the Fully-Grouted Method for Piezometer Installation Part 1**: Geotechnical News, pp. 30-37.

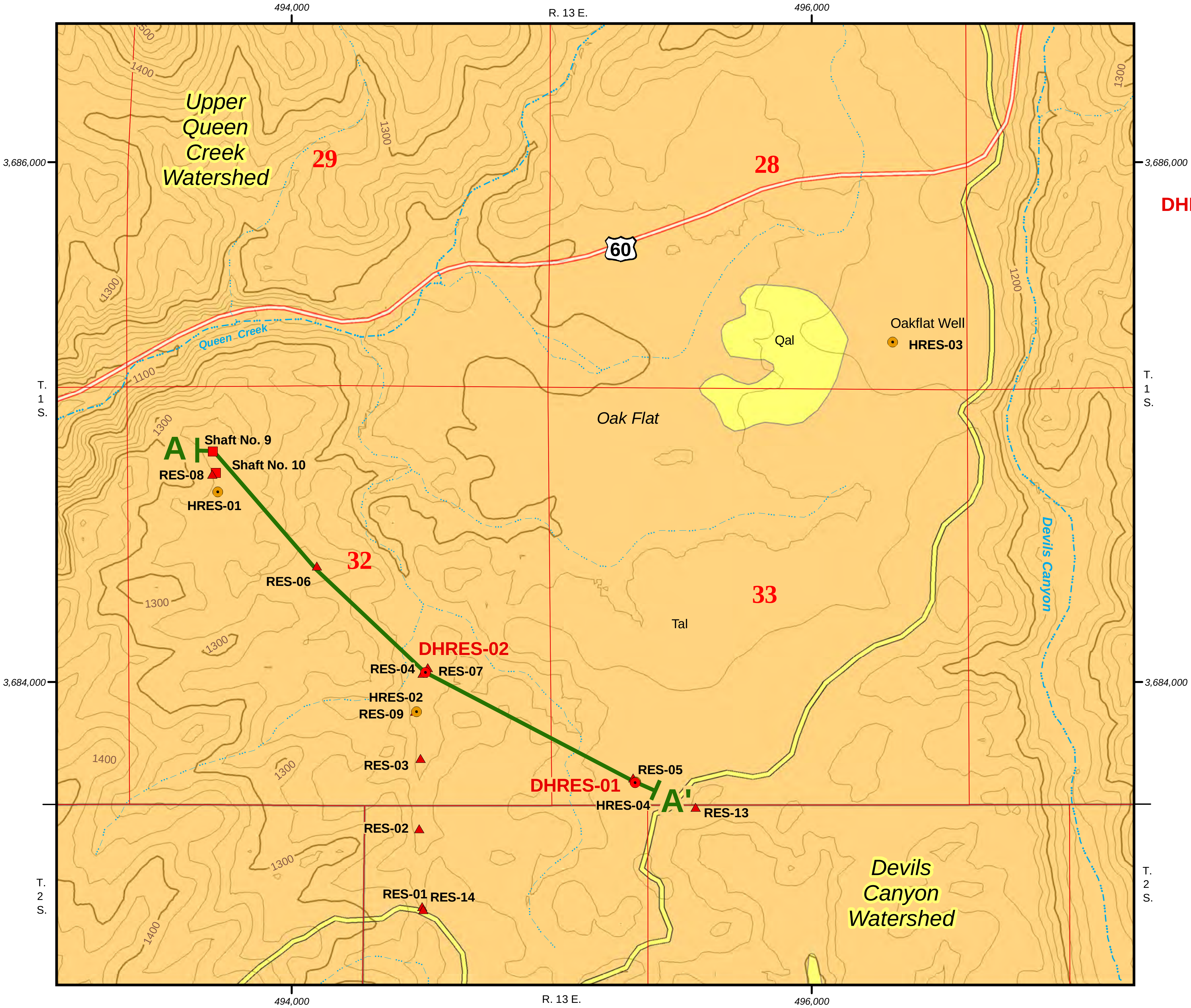
Golder Associates Inc., 2007, **Field Report—Phase IV Hydrogeologic Testing in RES-009 (1680.7 to 2064.5 m)**: Draft Technical Memorandum prepared for Resolution Copper Mining LLC, January 31, 2007.

Montgomery & Associates, 2009, **Interim results of groundwater monitoring, Upper Queen Creek and Devils Canyon watersheds, Resolution Copper Mining LLC, Pinal County, Arizona:** Draft Report prepared for Resolution Copper Mining LLC, September 1, 2009.

TABLE 1. PRESSURE TRANSDUCER SPECIFICATIONS AND INSTALLATION DEPTHS AND HYDRAULIC HEAD/WATER LEVEL MEASUREMENTS FOR GROUTED PIEZOMETERS, SELECTED WELLS, AND SHAFT NO. 9
RESOLUTION COPPER MINING LLC, PINAL COUNTY, ARIZONA

	TRANSDUCER IDENTIFIER	SERIAL NUMBER	INSTALLATION DATE	LAND SURFACE ELEVATION (m, msl)[a]	TRANSDUCER ELEVATION (m, msl)	TRANSDUCER DEPTH (m, bls)[b]	WATER LEVEL ELEVATION (m, msl)	DEPTH TO WATER (m, bls)	MEASUREMENT DATE/TIME
Shaft-9	Manual sounder reading			1270.0	NA	NA	384.8	880.3	12/10/09 8:20
DHRES-01 Grouted Piezos	DHRES-01_973	08-3519	1-Jun-08	1241.9	973	269	1116.2	125.6	12/10/09 8:00
Geokon 4500 vibrating wire	DHRES-01_772	06-9790	1-Jun-08	1241.9	772	470	1109.0	132.8	12/10/09 8:00
pressure transducers	DHRES-01_683	06-9793	1-Jun-08	1241.9	683	559	1104.9	137.0	12/10/09 8:00
	DHRES-01_375	07-3939	1-Jun-08	1241.9	375	867	1065.3	176.5	12/10/09 8:00
	DHRES-01_66	07-3940	1-Jun-08	1241.9	66	1176	928.0	313.9	12/10/09 8:00
DHRES-01 Water Level	Wellbore Transducer Above Packer	06-9796	26 Feb 2009	1241.9	NA	NA	605.4	636.4	12/10/09 8:00
Geokon 4500 vibrating wire	Wellbore Transducer Below Packer	08-21509	26 Feb 2009	1241.9	NA	NA	606.9	635.0	12/10/09 8:00
pressure transducers									
DHRES-02 Grouted Piezos	DHRES-02_915	08-11672	20-Jul-08	1211.4	915	297	1121.3	90.1	12/10/09 8:00
Geokon 4500 vibrating wire	DHRES-02_666	08-8994	20-Jul-08	1211.4	666	546	1110.5	100.9	12/10/09 8:00
pressure transducers	DHRES-02_608	08-8995	20-Jul-08	1211.4	608	603	1116.9	94.5	12/10/09 8:00
	DHRES-02_458	08-9819	20-Jul-08	1211.4	458	753	1100.1	111.3	12/10/09 8:00
	DHRES-02_319	08-10746	20-Jul-08	1211.4	319	892	1063.4	148.0	12/10/09 8:00
DHRES-2 Water Level	Wellbore Transducer	08-5031	22 Oct 2008	1211.4	NA	NA	590.1	621.3	12/10/09 8:00
Geokon 4500 vibrating wire									
pressure transducer									
HRES-1 Water Level	Wellbore Transducer	015136	22 May 2009	1271.7	NA	NA	971.5	300.2	12/10/2009 9:00
In-Situ miniTROLL									
HRES-2s	Wellbore Transducer	014909	27 Feb 2008	1214.3	NA	NA	1124.7	89.6	12/10/2009 8:00
In-Situ miniTROLL									
HRES-4	Wellbore Transducer	136634	15 Oct 2008	1243.5	NA	NA	1121.5	122.0	12/10/2009 8:00
In-Situ Level TROLL									

[a]m, msl meters mean sea level
[b]m, bls meters below land surface
NA = Not applicable



EXPLANATION

Watershed Boundary

A A' Hydrogeologic Section

Groundwater and Surface Water Monitoring Sites

A-06 Apache Leap Tuff Aquifer Monitor Well and Identifier

DHRES-01 Deep Aquifer Monitor Well and Identifier

RES-01 Exploration Borehole and Identifier

Shaft No. 9 Shaft and Identifier

Geologic Units

Qal Quaternary Alluvial Deposits

Tal Tertiary Apache Leap Tuff

N

0 500 1,000 1,500 2,000

Feet

0 150 300 450 600

Meters

Topographic contour interval : 20 meters

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LOCATION OF HYDROGEOLOGIC SECTION

2010

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FIGURE 1

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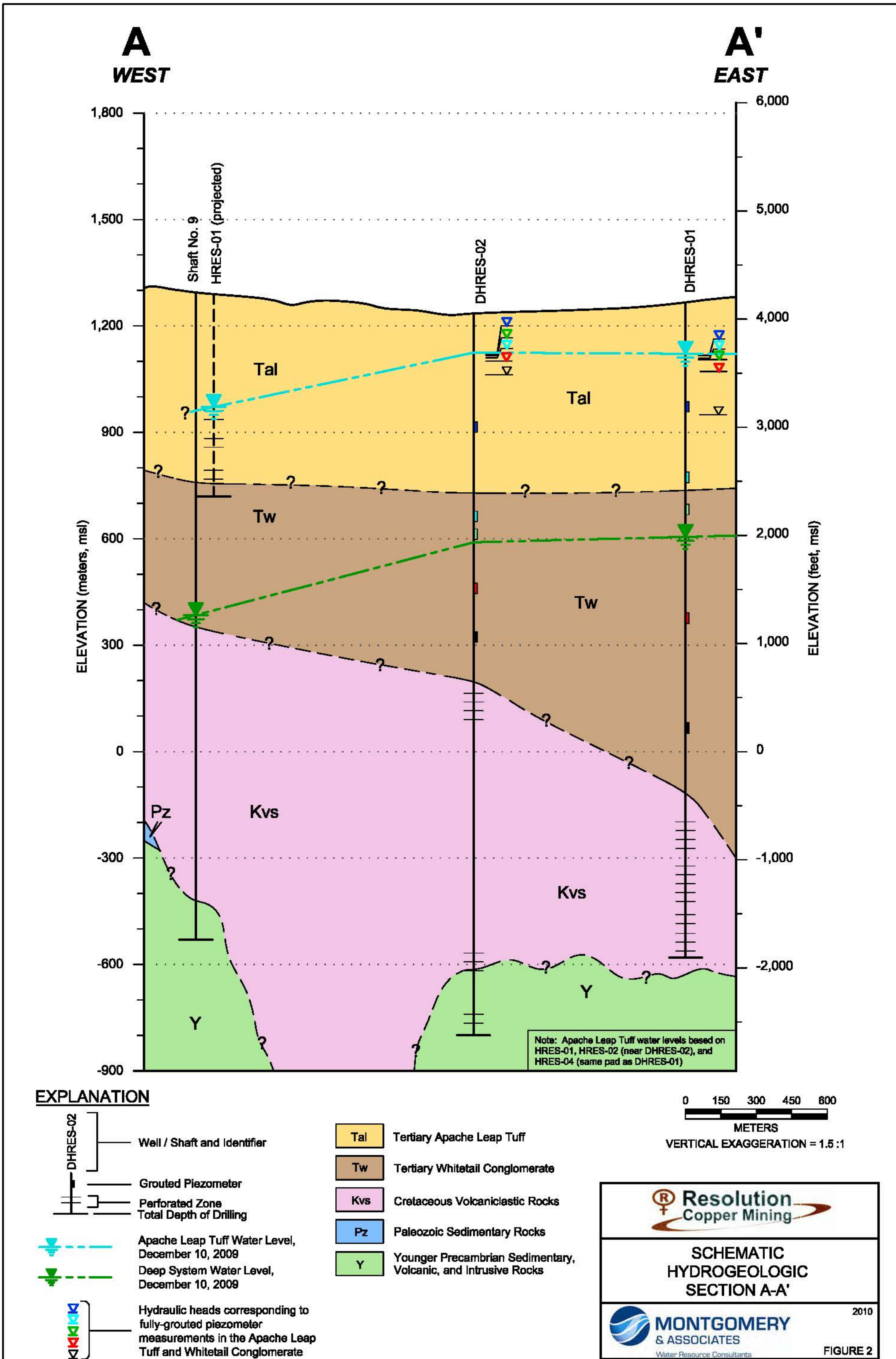

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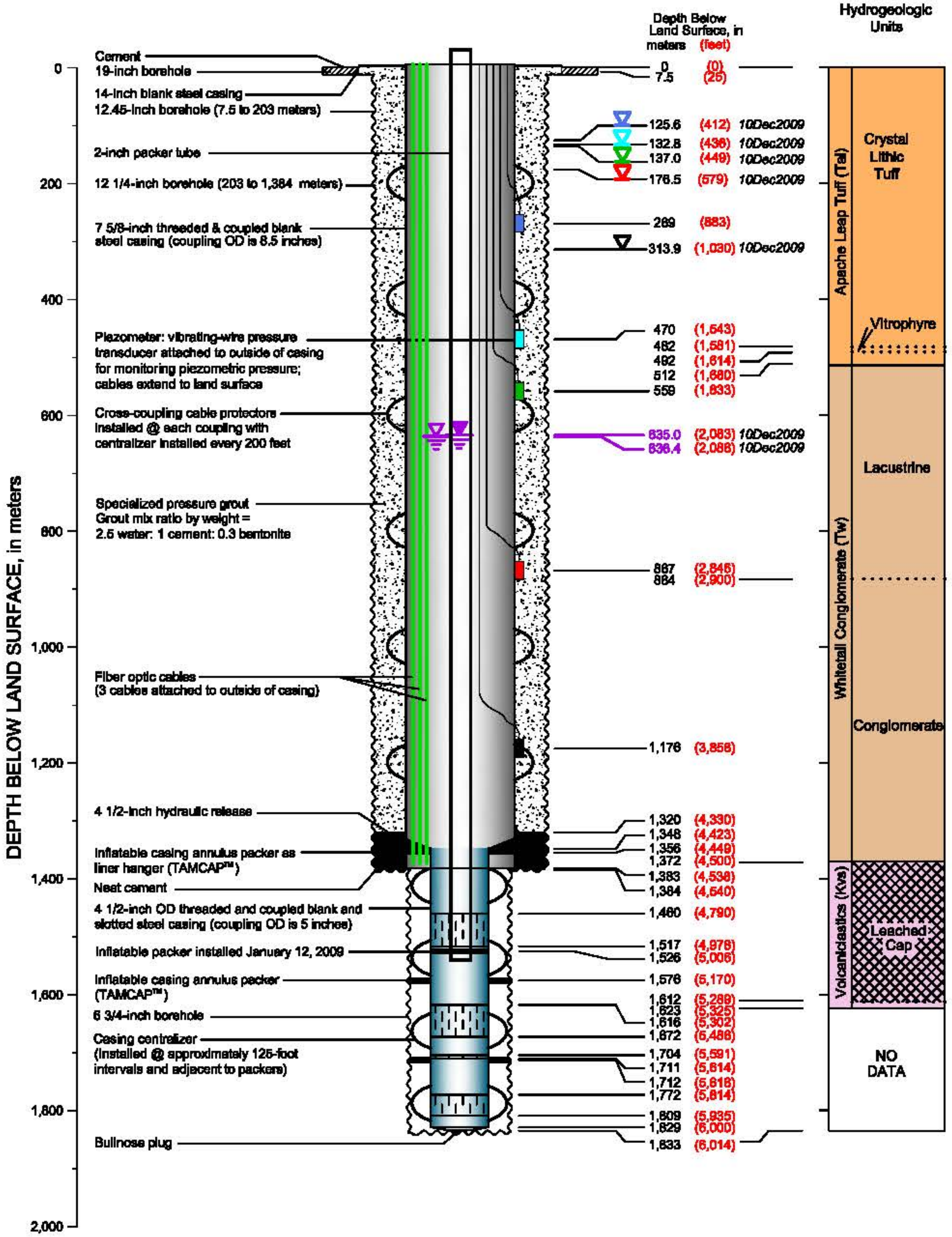
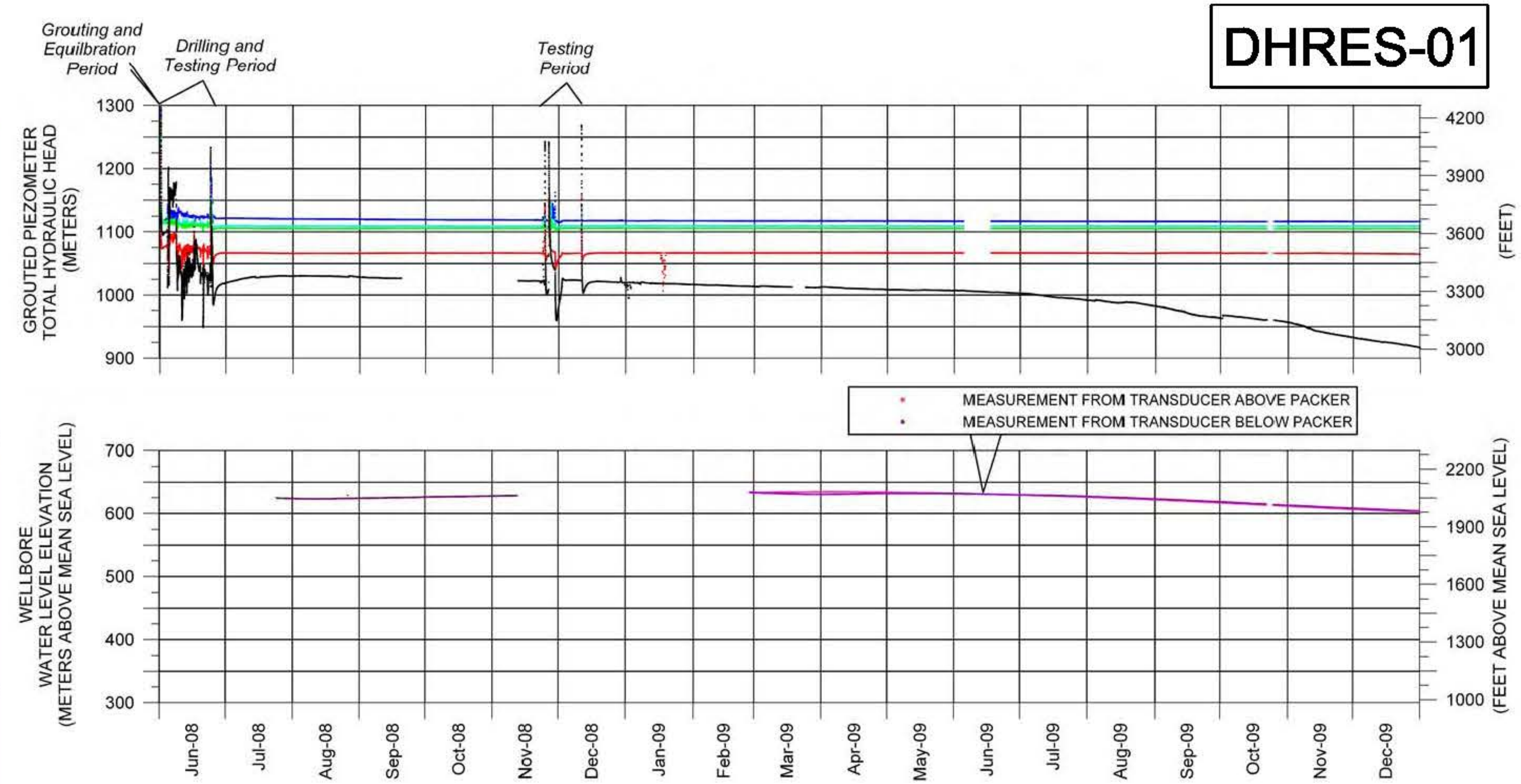
DHRES-01





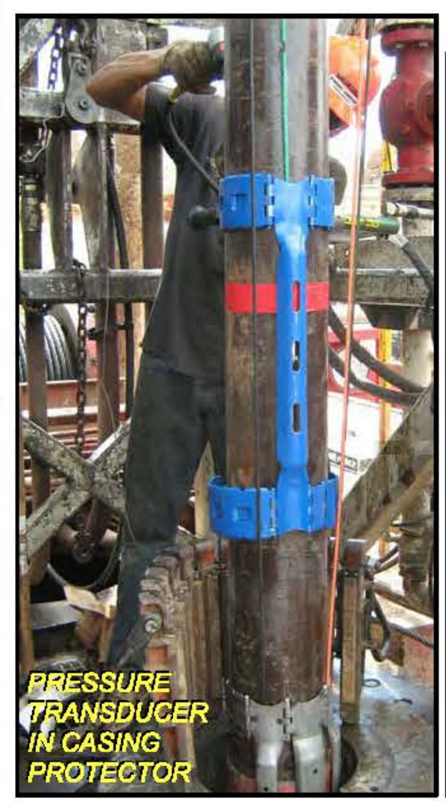


FIGURE 3. SCHEMATIC DIAGRAM OF WELL CONSTRUCTION, LONG-TERM HYDROGRAPHS OF HYDRAULIC HEADS AND WATER LEVELS, AND PHOTOGRAPHS OF CONSTRUCTION OPERATIONS FOR DEEP HYDROLOGIC TEST WELL DHRES-01, RESOLUTION PROJECT

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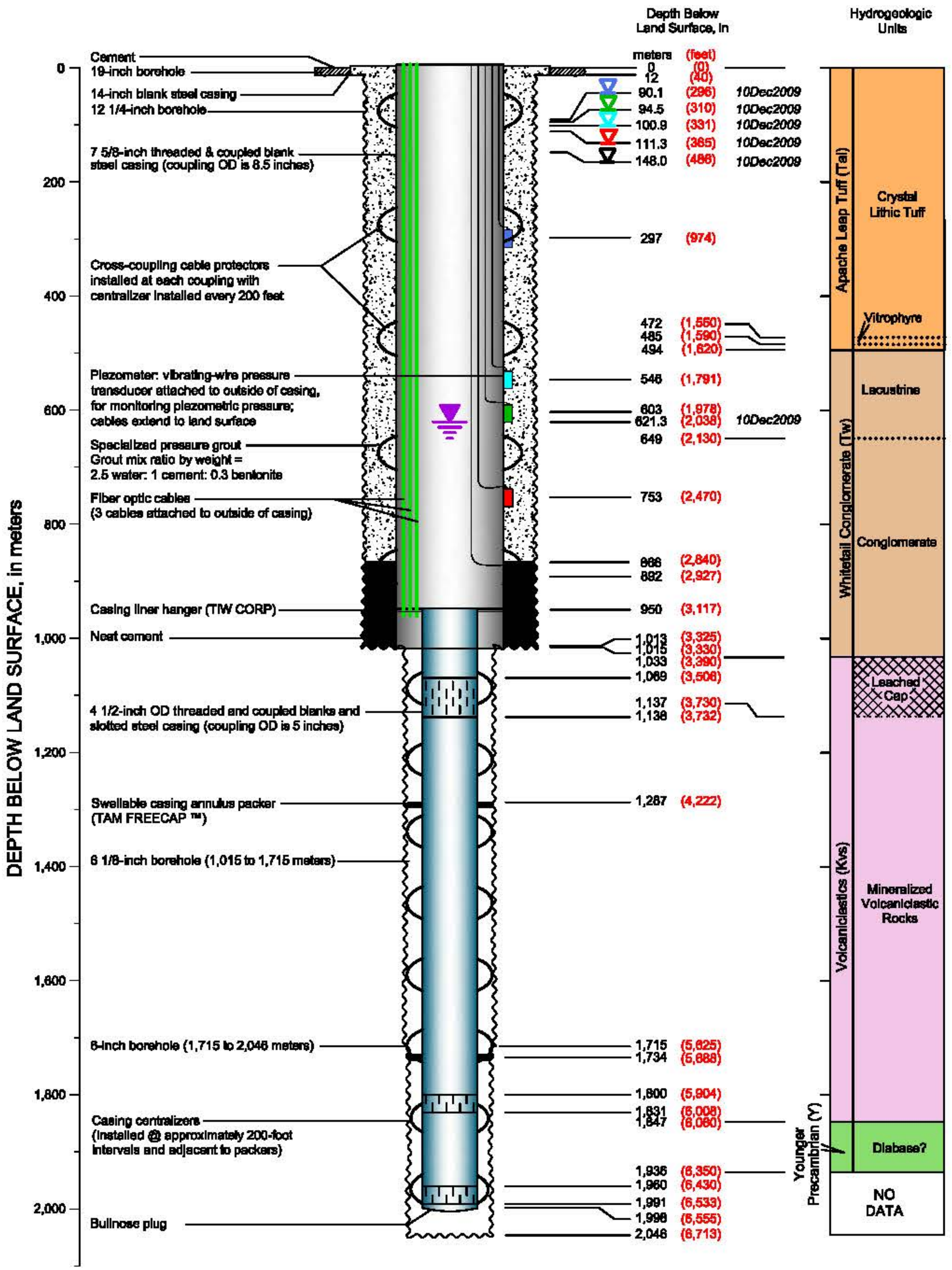
DHRES-02



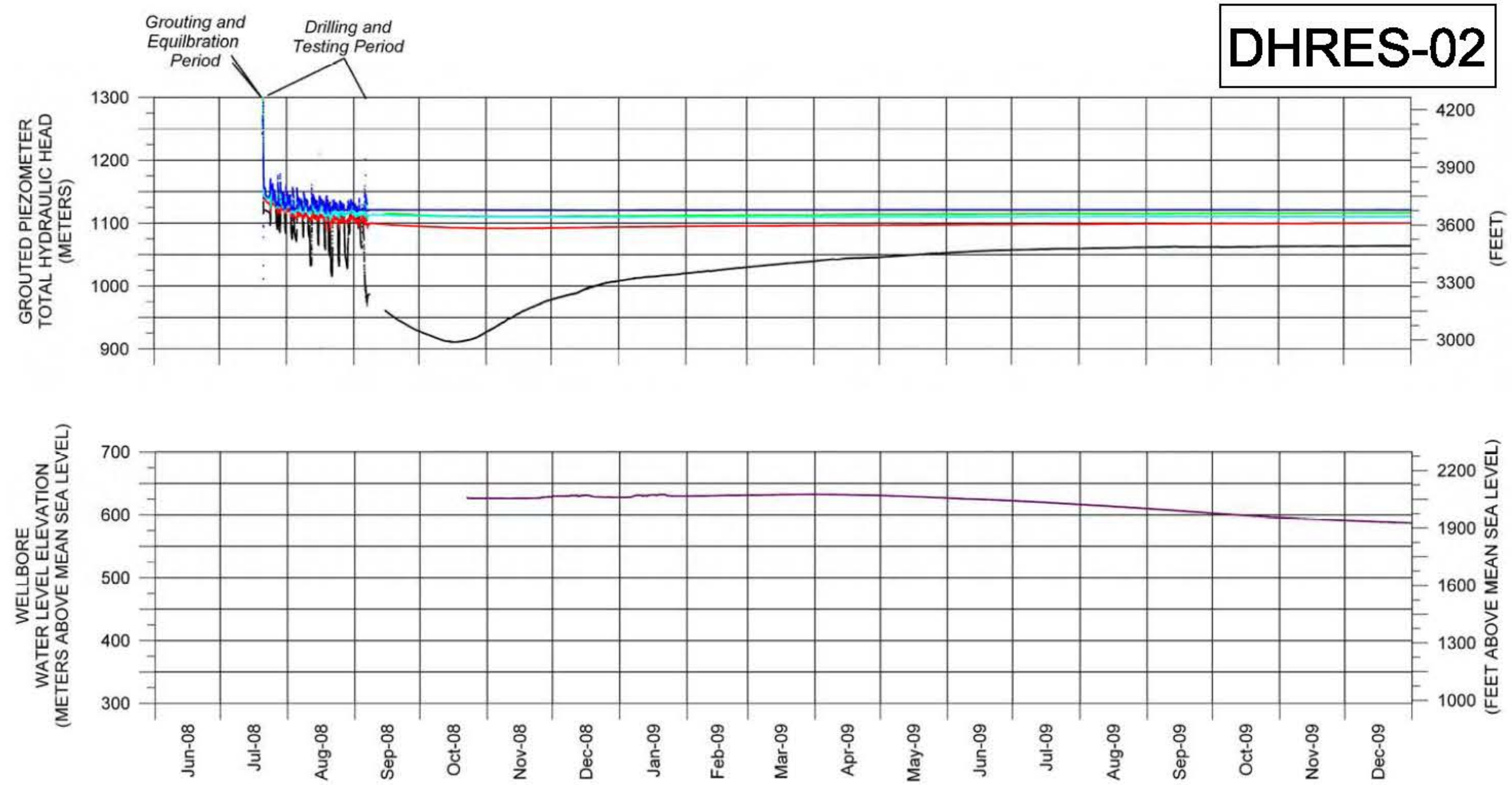


FIGURE 4. SCHEMATIC DIAGRAM OF WELL CONSTRUCTION, LONG-TERM HYDROGRAPHS OF HYDRAULIC HEADS AND WATER LEVEL, AND PHOTOGRAPHS OF CONSTRUCTION OPERATIONS FOR DEEP HYDROLOGIC TEST WELL DHRES-02, RESOLUTION PROJECT

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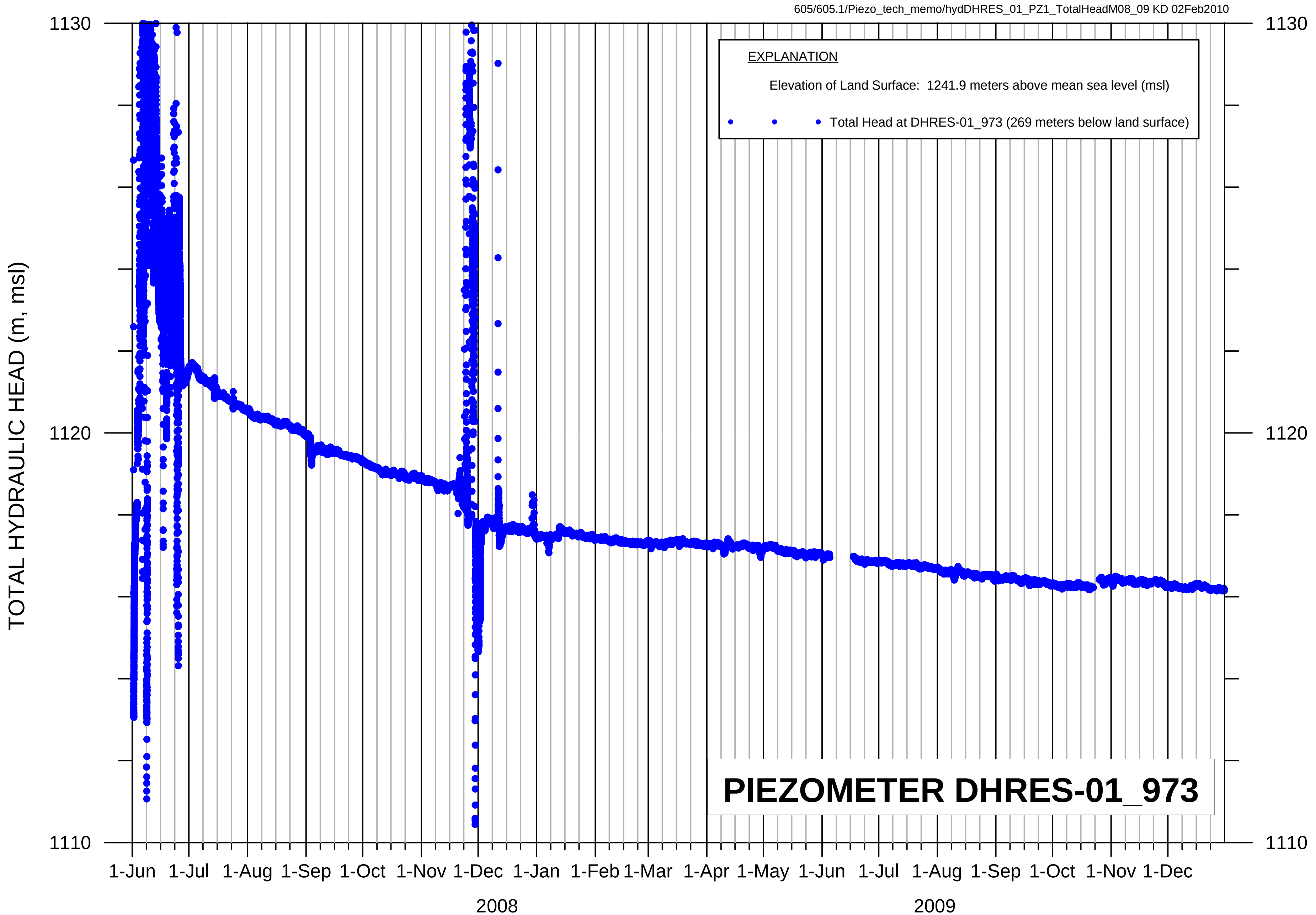

FIGURE 5. TOTAL HYDRAULIC HEAD AT PIEZOMETER DHRES-01_973, RESOLUTION PROJECT

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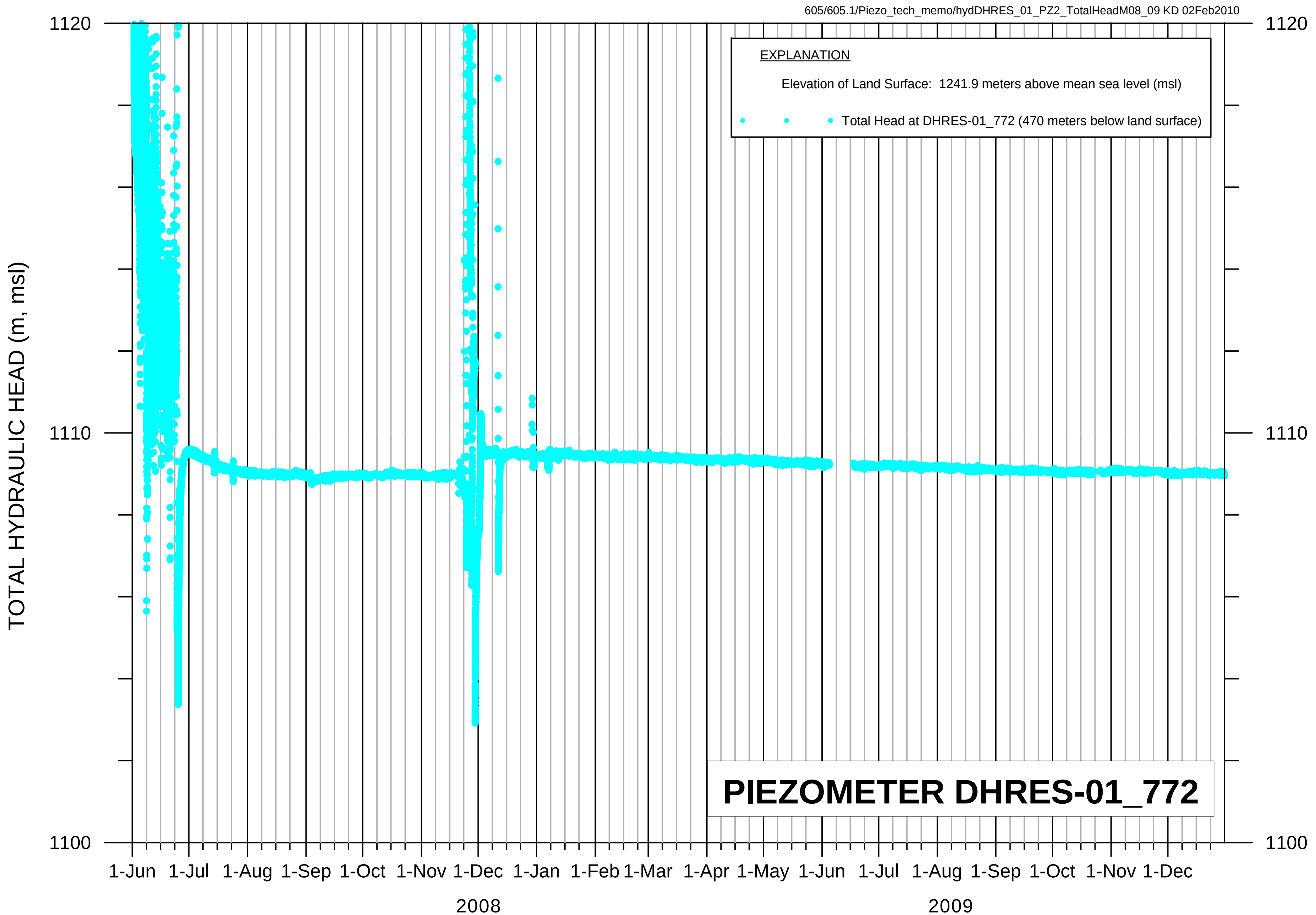

FIGURE 6. TOTAL HYDRAULIC HEAD AT PIEZOMETER DHRES-01_772, RESOLUTION PROJECT

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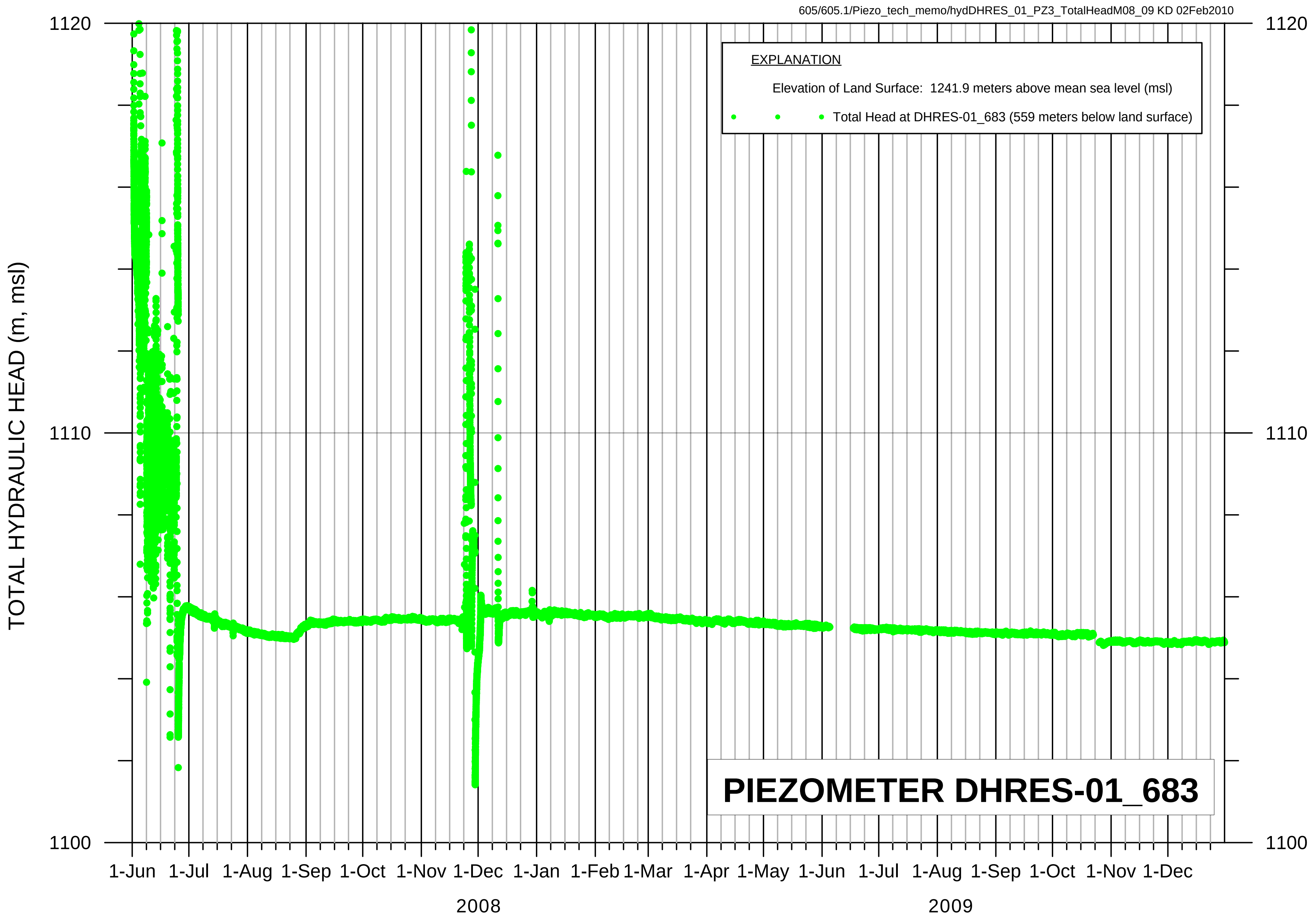

FIGURE 7. TOTAL HYDRAULIC HEAD AT PIEZOMETER DHRES-01_683, RESOLUTION PROJECT

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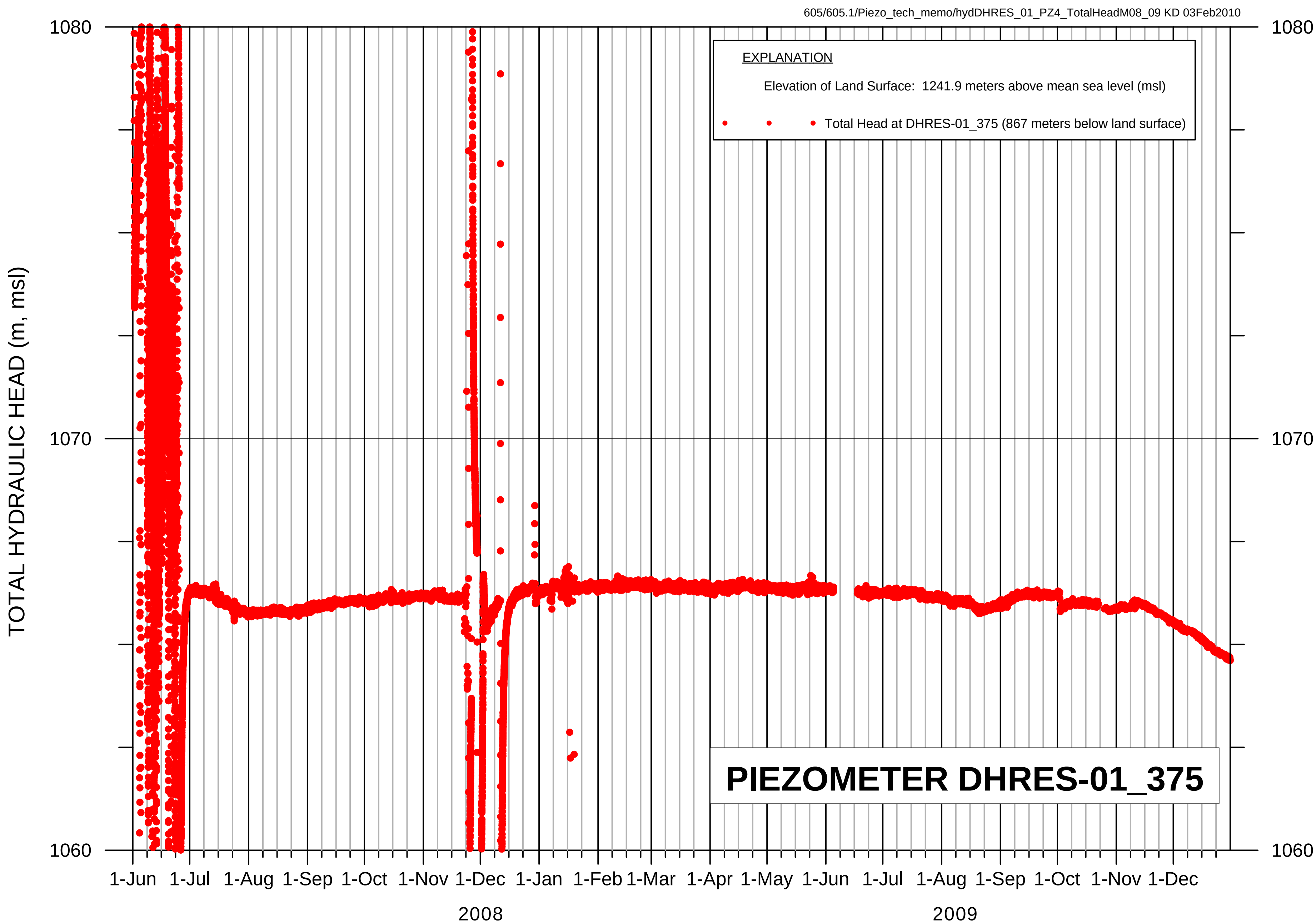

FIGURE 8. TOTAL HYDRAULIC HEAD AT PIEZOMETER DHRES-01_375, RESOLUTION PROJECT

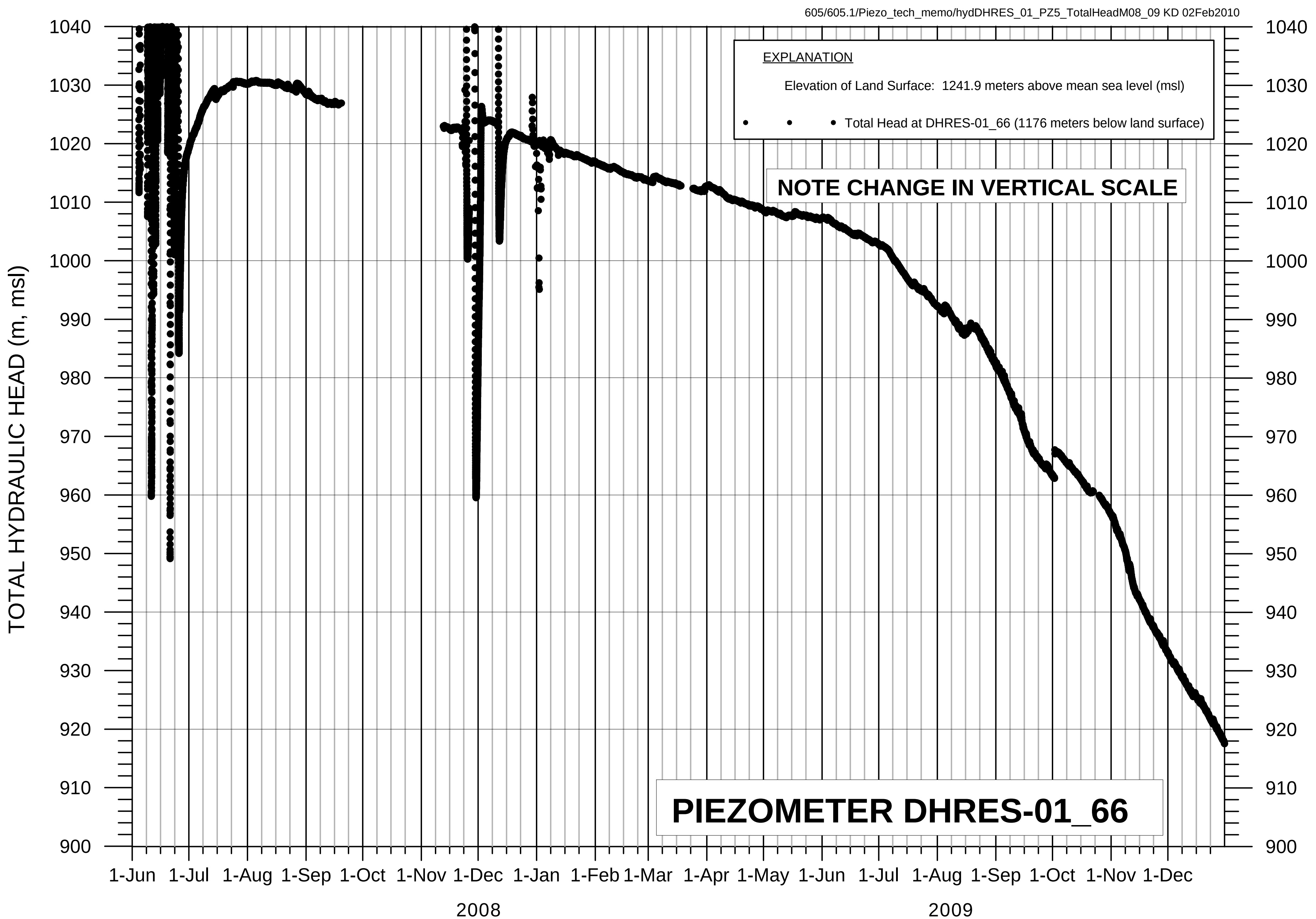

FIGURE 9: TOTAL HYDRAULIC HEAD AT PIEZOMETER DHRES-01_66, RESOLUTION PROJECT

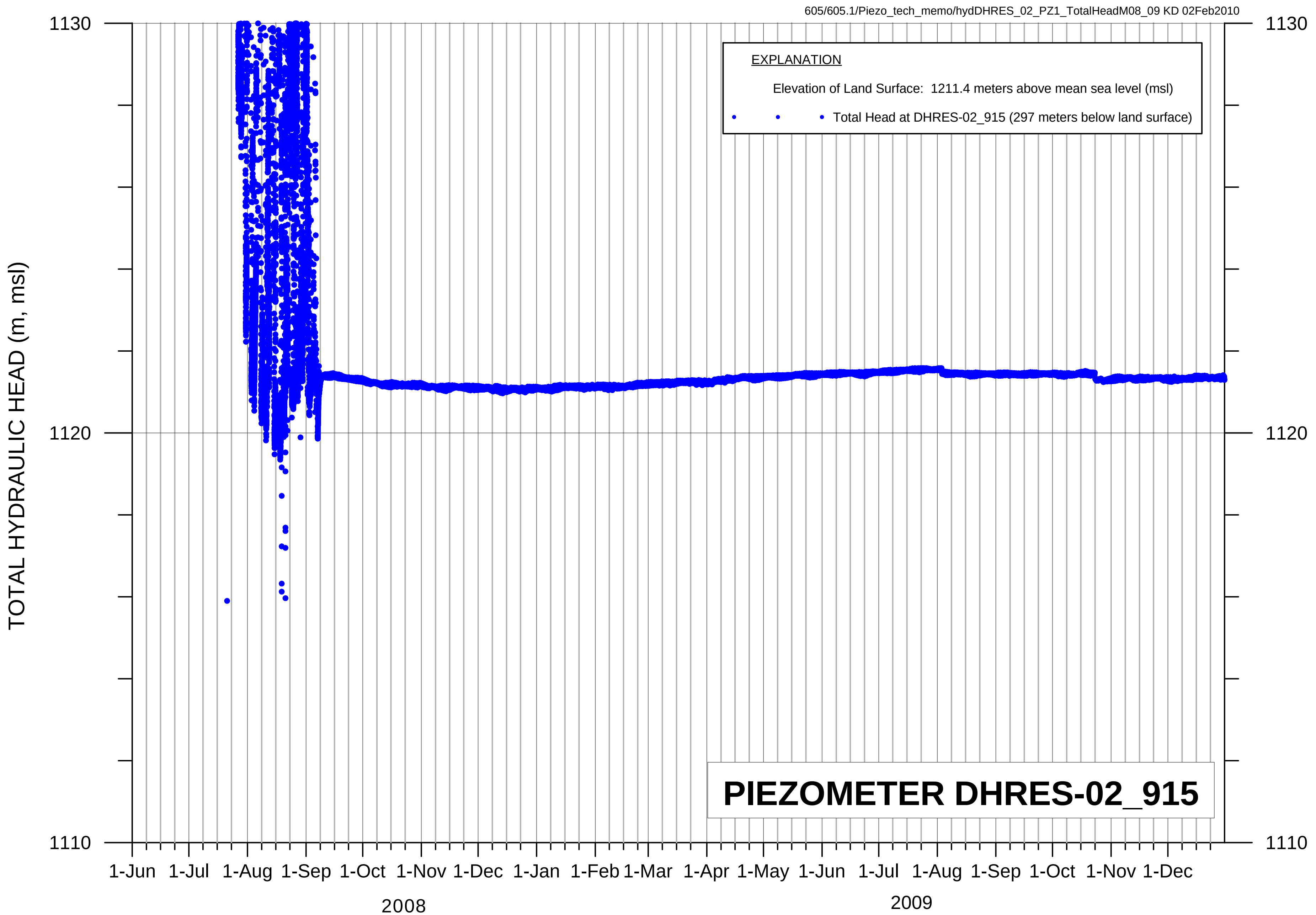

FIGURE 10. TOTAL HYDRAULIC HEAD AT PIEZOMETER DHRES-02_915, RESOLUTION PROJECT

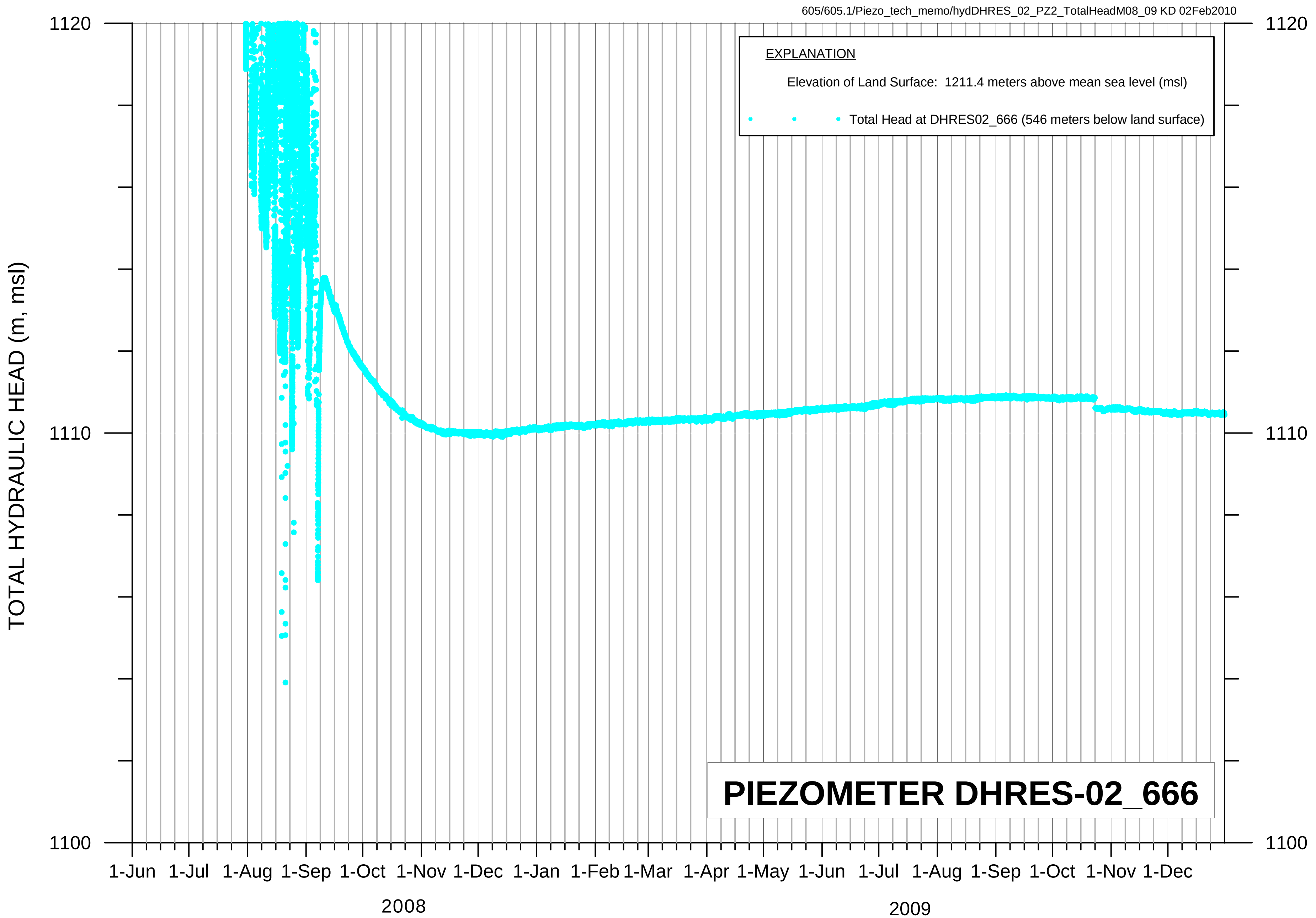

FIGURE 11. TOTAL HYDRAULIC HEAD AT PIEZOMETER DHRES-02_666, RESOLUTION PROJECT

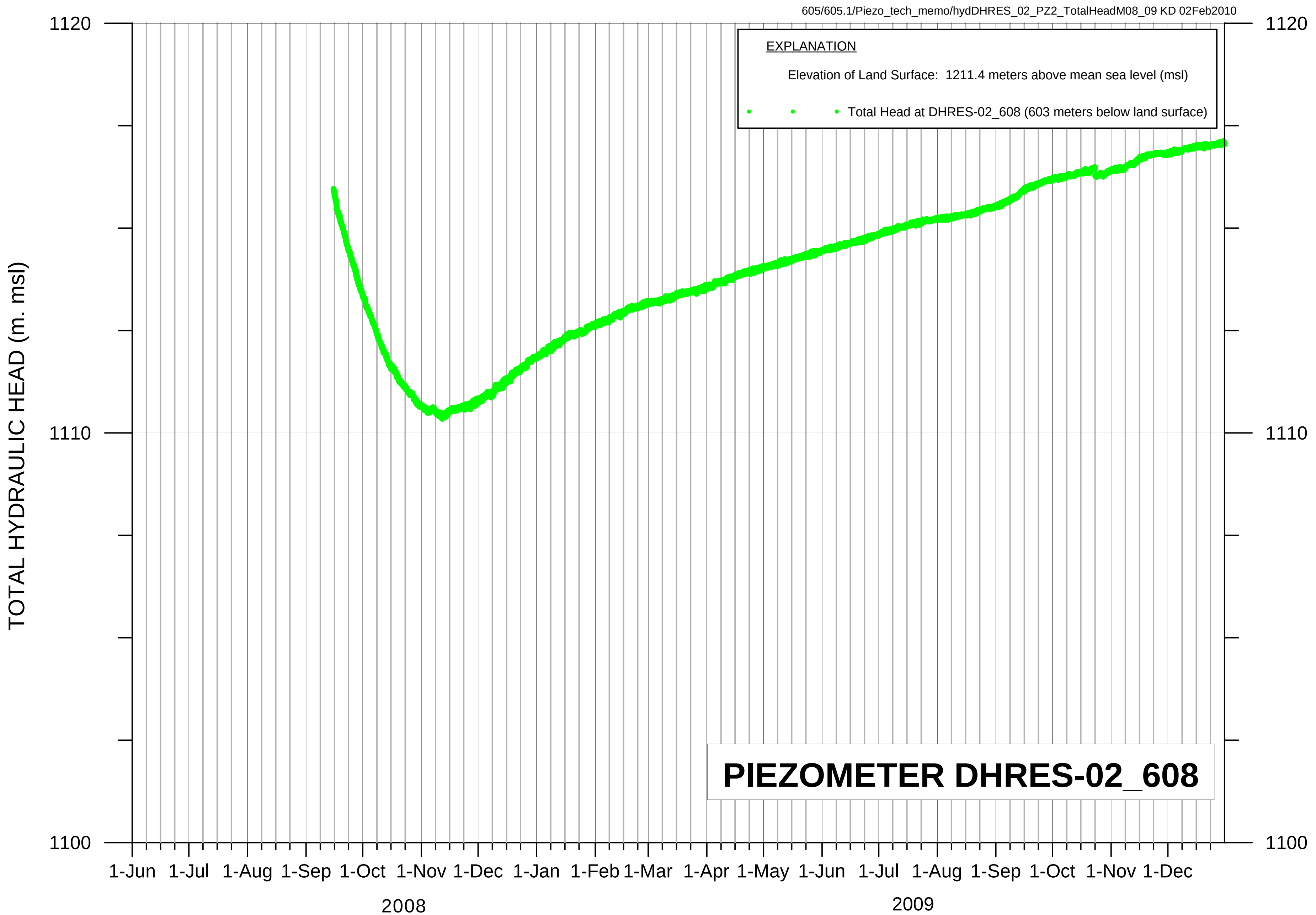

FIGURE 12. TOTAL HYDRAULIC HEAD AT PIEZOMETER DHRES-02_608, RESOLUTION PROJECT

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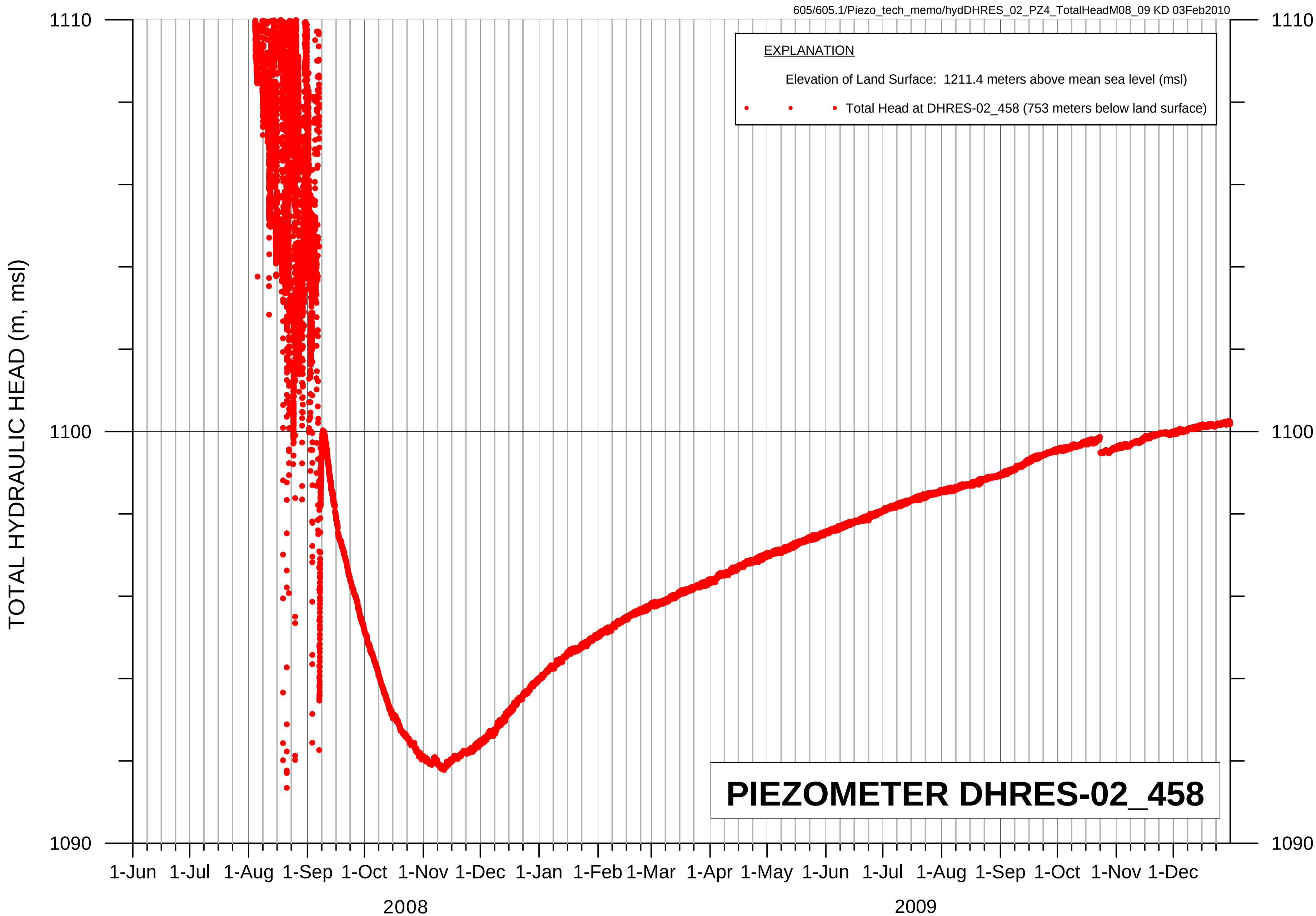

FIGURE 13. TOTAL HYDRAULIC HEAD AT PIEZOMETER DHRES-02_458, RESOLUTION PROJECT

MONTGOMERY & ASSOCIATES

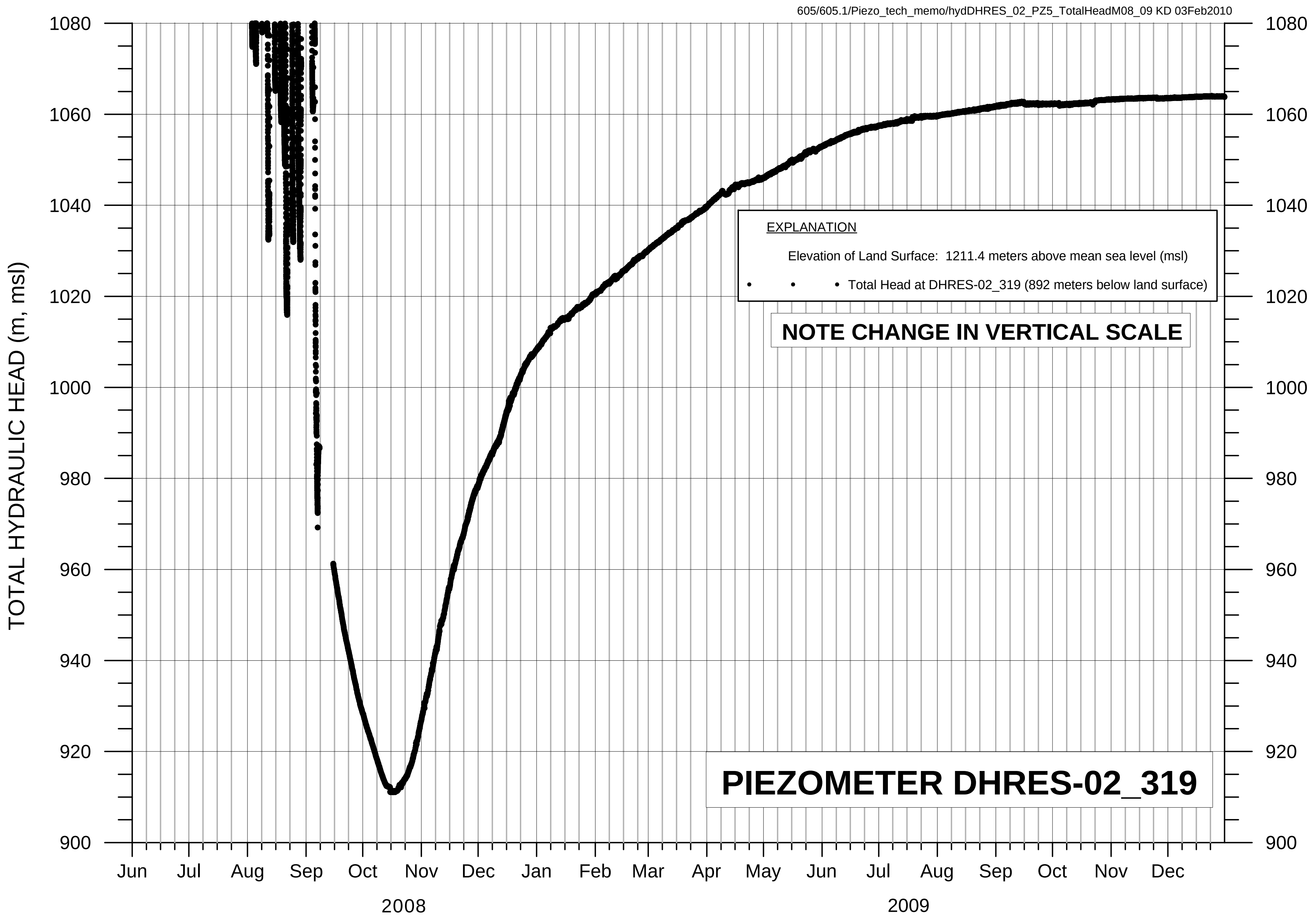

FIGURE 14. TOTAL HYDRAULIC HEAD AT PIEZOMETER DHRES-02_319, RESOLUTION PROJECT

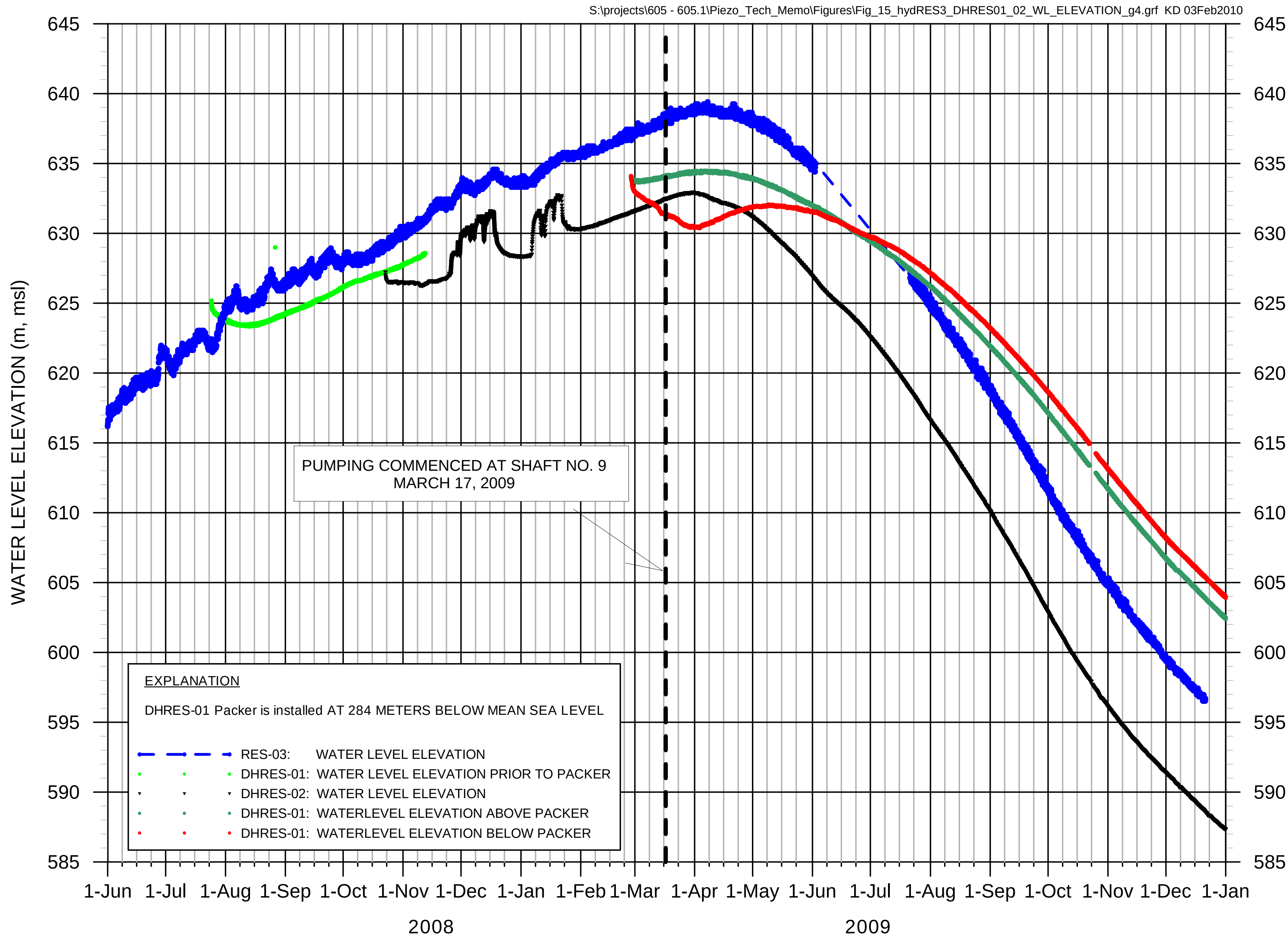

FIGURE 15. HYDROGRAPH OF WATER LEVEL ELEVATION IN DEEP GROUNDWATER SYSTEM AT DHRES-01, DHRES-02, AND RES-03, RESOLUTION PROJECT

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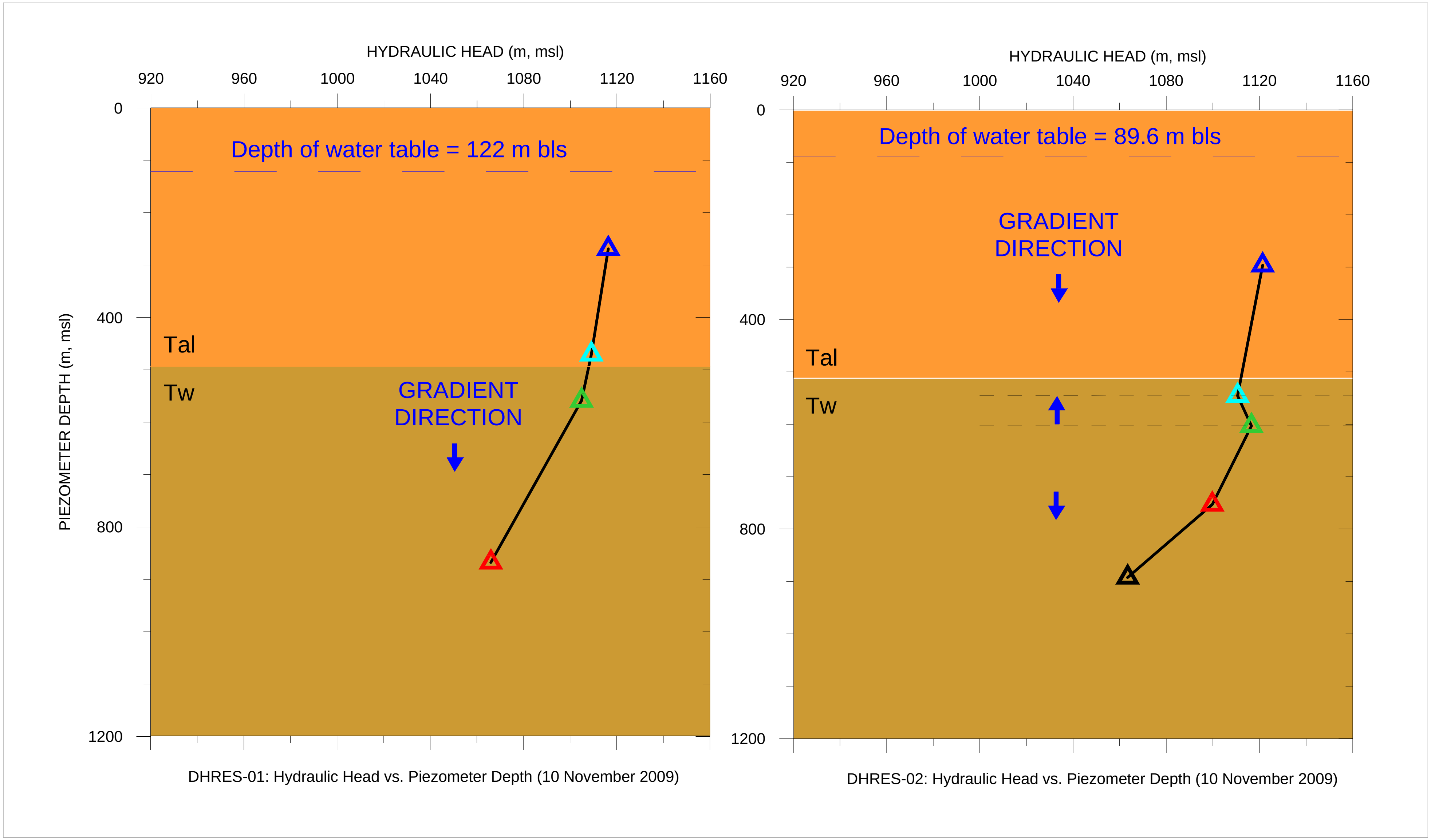

FIGURE 16. HYDRAULIC HEAD VS. PIEZOMETER DEPTH AT DEEP HYDROLOGIC TEST WELLS DHRES-01 AND DHRES-02, RESOLUTION PROJECT

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605/605.1/Piezo_Tech_Memo/Piezo_depth_vs_pressure_head.grf 03Feb2010 KD

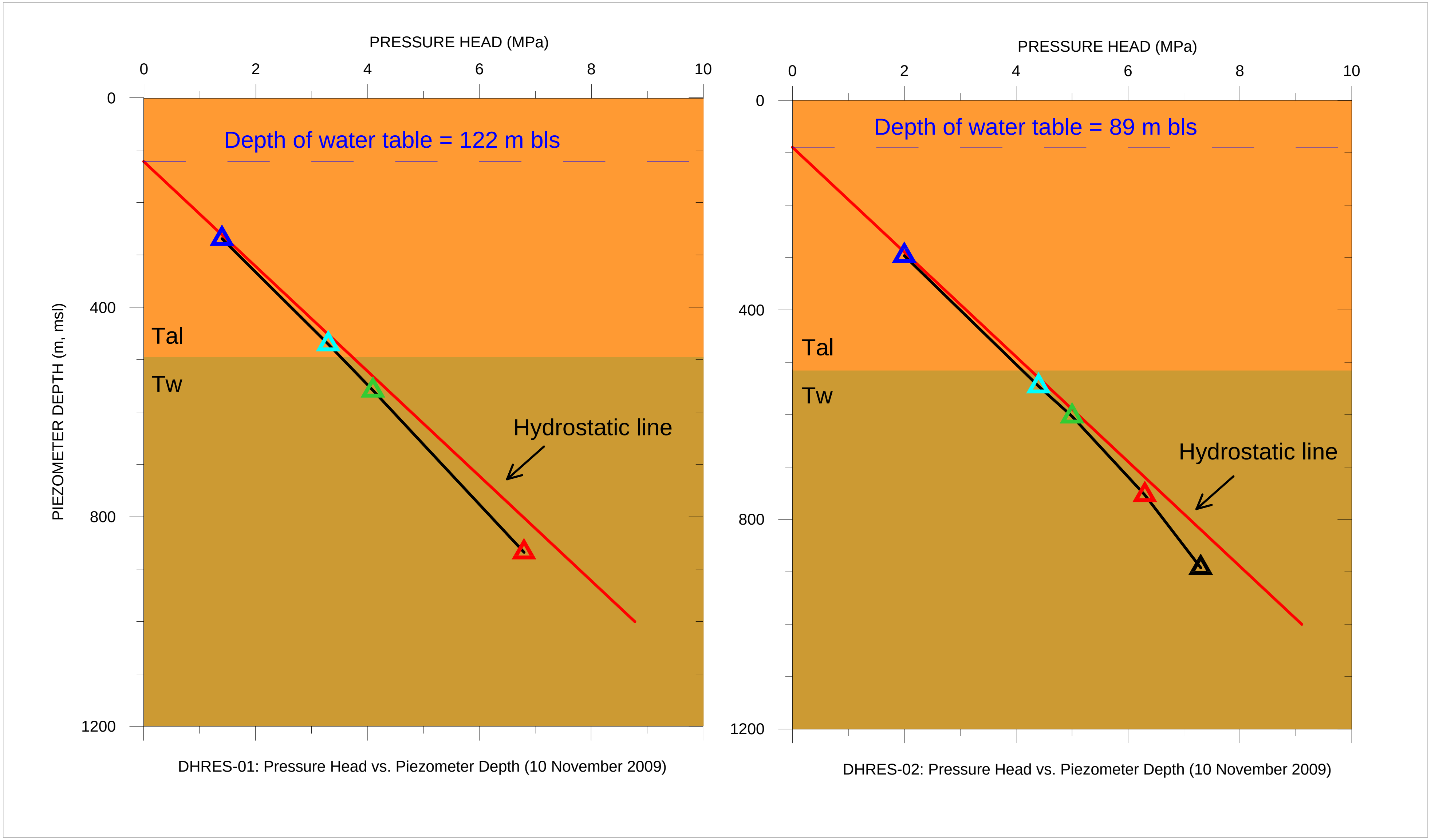

FIGURE 17. PRESSURE HEAD VS. PIEZOMETER DEPTH AT DEEP HYDROLOGIC TEST WELLS DHRES-01 AND DHRES-02, RESOLUTION PROJECT

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