526 South Church Street
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April 9, 2020

Mr. Greg Cassidy, Brownfields Project Manager
South Carolina Department of Health and Environmental Control
Division of Site Assessment, Remediation, and Revitalization
Bureau of Land and Waste Management
2600 Bull Street
Columbia, South Carolina 29201

Subject: Quarterly Progress Report – First Quarter 2020
Former Bramlette Manufactured Gas Plant
400 East Bramlette Road
Greenville, South Carolina
VCC 16-5857-RP

Dear Mr. Cassidy:

This Quarterly Progress Report has been prepared for the referenced site in accordance with the requirements of the Responsible Party Voluntary Cleanup Contract (VCC 16-5857-RP) between Duke Energy Carolinas (Duke Energy) and the South Carolina Department of Health and Environmental Control (SCDHEC), dated July 29, 2016.

The following sections provide a summary of work performed during the reporting period, test and sampling results generated during the reporting period, environmental problems experienced during the reporting period and their resolution, and work to be performed during the next reporting period. Monitoring wells were installed in accordance with SCDHEC Monitoring Well Approval MW-12085, dated August 6, 2019, pursuant to the provisions of South Carolina Well Standards R.61-71. The work was conducted in accordance with the July 2, 2019 Remedial Investigation Work Plan Addendum (RIWP-A) submitted by Duke Energy and approved by the SCDHEC on August 6, 2019.

Work Performed During the Reporting Period

Activities performed during the first quarter (January 1 through March 31, 2020) included the following:

Soil Borings (Section 4.5 of the RIWP-A)

- Drilled and logged soil borings RI-SB-11 and RI-SB-12 in the MGP source area on Parcel 2 (**Figure 1**).

Monitoring Well Installation (Section 4.6 of the RIWP-A)

- Installed monitoring wells at locations shown on **Figure 2** and summarized in the following table:

Location	Monitoring Well Identification
Parcel 1	MW-36S, MW-36TZ, MW-36BR MW-37S, MW-37TZ, MW-37BR MW-42S, MW-42TZ, MW-42BR
Parcel 2	MW-29BR MW-35S, MW-35TZ
Parcel 3	MW-3BRL MW-21BRL MW-39BRL
Parcel 4	MW-40BR
Adjacent to Reedy River	MW-48S, MW-48TZ

- Developed and slug tested 34 monitoring wells in accordance with the Quality Assurance Project Plan (QAPP). Slug test data will be presented and evaluated in the RI Report.
- A SC licensed professional land surveyor (PLS) determined the location and elevation of 34 monitoring wells. Survey data (measuring point and ground surface elevation) is provided in **Table 1**.

Monitoring Well Abandonment (Section 4.4 of April 13, 2018 RIWP-A)

- Abandoned monitoring wells MW-23 and MW-24 per RIWP-A (2018) by a South Carolina certified well driller per S.C. Code Section 40-23-10 et seq. Well abandonment forms are provided in Attachment A.

Bedrock Characterization (Section 4.7 of the RIWP-A)

- Performed borehole geophysics in monitoring well MW-29BR, MW-36BR, MW-37BR, and MW-42BR boreholes.

Groundwater Monitoring (Section 4.8 of the RIWP-A)

- Collected groundwater samples from 51 monitoring wells for analysis of VOCs by EPA Method 8260 and SVOCs by EPA Method 8270.
- Measured water levels in all monitoring wells, staff gages, and on-site river gaging locations as shown in **Table 1**.
- Downloaded water level data from data loggers installed in monitoring wells in the MGP Source Area (MW-26 and MW-27), Vaughn Landfill (MW-03BR and MW-20), and along the Reedy River/Swamp Rabbit Trail (MW-31S and MW-31TZ).

Surface Water and Sediment Sampling (Section 4.9 of the RIWP-A)

- Collected surface water samples at SW-07, SW-08, SW-09, SW-10, SW-11, SW-12, SW-13, SW-14, SW-15, and SW-16 for analysis of VOCs by EPA Method 8260, SVOCs by EPA Method 8270, and Total Suspended Solids (TSS) by Method SM 2540D-2011. Locations are shown on **Figure 2**.
- Collected sediment samples at SW-13, SW-14, SW-15, and SW-16 at various depths for analysis of VOCs by EPA Method 8260 and SVOCs by EPA Method 8270. Samples for geotechnical analysis at SW-14 and SW-16 were collected and submitted. Locations are shown on **Figure 2**.

Additional Work Performed

- Initiated preparation of RI Report based on data collected during implementation of the July 2019 RIWP-A.

Summary of Test and Sampling Results Generated During Reporting Period

A summary of the test and sampling results for work performed during the first quarter (January 1 through March 31, 2020) is provided below:

- Results of the borehole geophysical investigation are provided in Attachment B. Results of the borehole geophysics were used to inform monitoring well design.
- NAPL was not observed in soil borings RI-SB-11 and RI-SB-12.
- NAPL was observed in two boreholes during drilling and monitoring well installation this quarter. Oil-like material (OLM) was observed in bedrock at MW-03BRL and in an alluvial sand at MW-36BR (**Figure 2**). Boring logs will be prepared and included in the Groundwater Remedial Investigation (RI) Report.
- Analytical results for groundwater samples are summarized in **Table 2**.
- Analytical results for surface water samples are summarized in **Table 3**.
- Analytical results for sediment samples are summarized in **Table 4**.
- The laboratory analytical reports for groundwater, surface water, and sediment samples collected during this quarter are provided in Attachment C. Analytical data for RIWP-A environmental samples collected to date have been reviewed for quality and completeness and approved for release by the qualified laboratory performing the analysis. Full data validation in accordance with Section 6 of the September 2018 QAPP will be conducted prior to submittal of the RI Report.
- Monitoring well construction details are listed in **Table 5**.
- Borehole geophysical logging reports are provided in Attachment B. A full evaluation of the data will be provided with the RI Report.

- Time series hydrographs showing water level data are included for the MGP Parcel (**Figure 3**) adjacent to the Reedy River (**Figure 4**) and the Vaughn landfill (**Figure 5**). Observations from the data include:

    - Vertical gradients within the MW-26/MW-27 well cluster on the MGP parcel and MW-20/MW-03BR cluster in the Vaughn landfill are generally slightly downward.
    - Vertical gradients within the MW-31S/MW-31TZ well cluster are minimal and vary from upward to downward.
    - Vertical gradient information suggests the Reedy River can act as a gaining stream or a losing stream based on precipitation and ground saturation.

Environmental Problems Identified During Reporting Period and Their Resolution

Environmental conditions encountered during implementation of the July 2019 RIWP-A which resulted in variation from the proposed scope of work included:

- Based of field observations and geophysical heat pulse flowmeter data, the borehole at MW-35BR was determined to be low-yield thus producing an insufficient volume of water to set a monitoring well. Therefore, the borehole was abandoned by an SC licensed driller, and an offset location for MW-35BR is proposed as shown on **Figure 6**.
- The transition zone at the MW-40 location on the CSXT/Transflo property (**Figure 2**) was insufficient thickness for installing a well. A lower saprolite well (MW-22) is already present at this location; consequently, only a bedrock well was installed.

Work to be Performed During the Next Reporting Period (Second Quarter 2020)

The following activities are scheduled to be conducted in accordance with Section 4 of the RIWP-A during the second quarter of 2020 (April 1 through June 30, 2020). The proposed schedule is subject to change based on safe work practices, weather conditions, site access, availability of subcontractors, and other unforeseen delays. Field work notifications will be provided in accordance with the VCC and access agreements.

- Complete off-site soil borings in the wetlands on Legacy Charter School property adjacent to Parcel 3 – June 2020
- Install twelve (12) additional monitoring wells based on field observations during drilling operations. Additional monitoring well locations are shown on **Figure 6** – May - June 2020.
- Conduct borehole geophysics at bedrock monitoring well locations – June 2020
- Survey location and elevation of monitoring wells and soil borings – June 2020

- Slug testing of newly installed monitoring wells – June 2020
- Collect groundwater samples from newly installed monitoring wells – June 2020
- IDW disposal – Periodically and upon completion of the field program
- Download and monitor water level transducers/data loggers in monitoring wells and Reedy River stage from a United States Geological Survey (USGS) stream gaging station located downstream of the site – Monthly
- Conduct data validation in accordance with Section 6 of the September 2018 QAPP – April - June 2020
- Submit RI Report based on data collected during implementation of the July 2019 RIWP-A – on or before June 30, 2020

If you have any questions regarding this submittal, please contact me at 980.373.2663 or by email at Richard.Powell2@duke-energy.com.

Sincerely,

Richard E. Powell

Richard E. Powell, P.G.
Lead Environmental Specialist

cc: Kevin Boland, CSXT
Daniel Schmitt, Esq., CSXT
Ty Houck, Greenville County
Mike Ruhe, Duke Energy Carolinas, LLC
Todd Plating, SynTerra

Enclosures:

Figures

Figure 1 – Source Area Verification Soil Sampling

Figure 2 – Site Layout Map

Figure 3 – MGP Source Area (Parcel 1) Hydrographs

Figure 4 – Reedy River (Swamp Rabbit Trail) Hydrographs

Figure 5 – Vaughn Landfill Area (Parcel 3) Hydrographs

Figure 6 – Proposed Monitoring Well Locations

Tables

Table 1 – Water Level Measurement Data

Table 2 – Groundwater Analytical Results Summary

Table 3 – Surface Water Analytical Results Summary

Table 4 – Analyses Results for Sediment Samples Collected from Parcels 4 and 5

Table 5 – Monitoring Well Construction Details

Attachment A – Well Abandonment Forms

Attachment B – Results of Borehole Geophysical Investigation

Attachment C – Laboratory Analytical Reports for Groundwater, Surface Water, and Sediment

FIGURES

NOTES:

[1] SOIL BORINGS WITH THE PREFIX 'SA-SB' AND TEST PIT LOCATIONS ARE BASED ON GPS COORDINATES AND ARE APPROXIMATE.

[2] SOIL BORINGS WITH PREFIX 'RI-SB' HAVE BEEN SURVEYED BY A LICENSED PROFESSIONAL LAND SURVEYOR.

[3] PASSIVE SOIL GAS SURVEY LOCATIONS ARE LOCATED WITHIN 7 FEET OF NEAR SURFACE SOIL BORINGS.

[4] SURFACE WATER LOCATIONS, FORMER DRAINAGE DITCHES, EXCAVATION AREA, AND VAUGHN LANDFILL BOUNDARY FROM ERM GROUNDWATER REMEDIAL INVESTIGATION WORK PLAN ADDENDUM, APRIL 13, 2018. THESE LAYERS ARE GEOREFERENCED AND ARE APPROXIMATE.

[5] TOPOGRAPHIC CONTOURS FOR GREENVILLE COUNTY FROM SC DNR (2013).

[6] PROPERTY BOUNDARIES SOURCED FROM GREENVILLE COUNTY.

[7] AERIAL PHOTOGRAPHY OBTAINED FROM GOOGLE EARTH PRO ON MAY 3, 2019. AERIAL WAS COLLECTED ON MARCH 12, 2018.

[8] DRAWING HAS BEEN SET WITH A PROJECTION OF SOUTH CAROLINA STATE PLANE COORDINATE SYSTEM FIPS 3900 (NAD83 INTERNATIONAL FEET).

950

SA-SB-1 SA-SB-2 RI-SB-12 SA-SB-3 SA-SB-4 RI-SB-04 SA-SB-6 RI-SB-11 SA-SB-5 SA-SB-7 SA-SB-9 SA-SB-10 SA-SB-11 SA-SB-8 RI-SB-05 SA-SB-13 SA-TP-15 SA-SB-12 SA-SB-14 SA-SB-15 SA-TP-14 PARCEL 1 SA-SB-17 SA-TP-13 SA-SB-16 RI-SB-07 SA-SB-19 FORMER MGP FOOTPRINT SA-TP-1 SA-SB-18 SA-SB-20 RI-SB-06 SA-SB-21 SA-SB-22 SA-SB-23 SA-SB-24 SA-TP-2 EXCAVATION AREA (2001-2002) SA-SB-25 SA-SB-26 SA-SB-27 SA-SB-28 SA-SB-30 SA-SB-31 SA-TP-8 SA-SB-29 SA-TP-3 SA-TP-9 SA-SB-34 SA-TP-16 SA-SB-37 SA-SB-38 SA-SB-33 PARCEL 2 SA-SB-32 SA-SB-35 SA-SB-36 RI-SB-08 RI-SB-10 SA-TP-4 SA-TP-10 SA-SB-40 SA-SB-41 SA-SB-42 SA-SB-43 SA-SB-39 SA-TP-7 SA-TP-12 SA-TP-5 SA-SB-44 SA-TP-6 RI-SB-09 SA-TP-11 SA-SB-45 SA-SB-46 E BRAMLETTE RD SA-SB-47

LEGEND

- NEAR SURFACE SOIL BORINGS/PASSIVE GAS SOIL SURVEY LOCATIONS
- ADDITIONAL SOIL BORINGS
- SHALLOW TEST PITS
- TOPOGRAPHIC CONTOUR (10')
- TOPOGRAPHIC CONTOUR (2')
- FORMER AND/OR CURRENT DRAINAGE DITCH (1964)
- ROAD
- RAILROAD
- BUILDING
- EXCAVATED AREA (2001-2002)
- PARCEL BOUNDARY

DUKE ENERGY CAROLINAS

synTerra

GRAPHIC SCALE
40 0 40 80
(IN FEET)

DRAWN BY: T. KING DATE: 05/21/2019
REVISED BY: C. WYATT DATE: 03/31/2020
CHECKED BY:
APPROVED BY:
PROJECT MANAGER: T. PLATING

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FIGURE 1
SOURCE AREA VERIFICATION SOIL SAMPLING
FORMER BRAMLETTE MGP SITE
EAST BRAMLETTE ROAD
GREENVILLE, SOUTH CAROLINA

NOTES:

[1] ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM 88 (NAVD 88).

[2] SURFACE WATER LOCATIONS, FORMER DRAINAGE DITCHES, EXCAVATION AREA, AND VAUGHN LANDFILL BOUNDARY FROM ERM GROUNDWATER REMEDIAL INVESTIGATION WORK PLAN ADDENDUM, APRIL 13, 2018. THESE LAYERS ARE GEOREFERENCED AND APPROXIMATE.

[3] MONITORING WELL LOCATIONS AND ELEVATIONS SURVEYED BY A SOUTH CAROLINA LICENSED PROFESSIONAL LAND SURVEYOR

[4] TOPOGRAPHIC CONTOURS FOR GREENVILLE COUNTY FROM SC DNR (2013).

[5] PROPERTY BOUNDARIES SOURCED FROM GREENVILLE COUNTY.

[6] WETLANDS (USFWS) BY US FISH AND WILDLIFE NATIONAL WETLAND INVENTORY. WETLANDS (AES) DELINEATED BY APPLIED ENGINEERING AND SCIENCE, INC. IN 1999.

[7] SWAMP RABBIT TRAIL CENTERLINE FROM CITY OF GREENVILLE.

[8] AERIAL PHOTOGRAPHY OBTAINED FROM GOOGLE EARTH PRO ON MAY 3, 2019. AERIAL WAS COLLECTED ON MARCH 12, 2018.

[9] DRAWING HAS BEEN SET WITH A PROJECTION OF SOUTH CAROLINA STATE PLANE COORDINATE SYSTEM FIPS 3900 (NAD83 INTERNATIONAL FEET).

MW-13R
MW-27
MW-26
EXCAVATION AREA (2001-2002)
MW-16
MW-15
PARCEL 1
MW-36S
MW-36TZ
MW-36BR
MW-37S
MW-37TZ
MW-37BR
MW-33S
MW-33TZ
MW-7R
MW-9R
MW-28
MW-42S
MW-42TZ
MW-42BR
PARCEL 2
MW-34S
MW-34TZ
MW-34BR
MW-48S
MW-48TZ
MW-35S
MW-35TZ
MW-29S
MW-29TZ
MW-29BR
MW-25R
SW-1
SS-01
MW-1
RI-SG1
MW-41S
MW-41TZ
MW-41BR
RI-RR1
SW-7
MW-2
MW-02TZ
MW-02BR
SS-03
MW-3BR
MW-3BRL
RI-SG2
SS-02
MW-3
MW-20
SW-2
MW-30S
MW-30TZ
SW-4
SW-3
SW-8
VAUGHN LANDFILL
MW-32S
MW-32TZ
PARCEL 3
MW-39S
MW-39BR
MW-39BRL
RI-RR2
MW-31S
MW-31TZ
MW-21
MW-21BR
MW-21BRL
RI-SG3
SW-9
SW-5
SW-13
MW-18
SW-6
REEDY RIVER
PARCEL 4
SW-14
MW-22
MW-5
MW-40BR
SW-10
SW-15
PARCEL 5
SW-16
SW-11
RI-RR4
RI-RR3
SW-12
W WASHINGTON ST
WALNUT DR
TEMPLE ST
ELMORE ST
CAGLE ST
REACH ST
OWENS ST
WILLARD ST

LEGEND

- WELL SCREENED IN SHALLOW
- WELL SCREENED IN TRANSITION
- WELL SCREENED IN BEDROCK
- SURFACE WATER/SEDIMENT SAMPLE LOCATION
- STAFF GAUGE
- RIVER GAUGE
- SHEEN
- TOPOGRAPHIC CONTOUR (10')
- TOPOGRAPHIC CONTOUR (2')
- FORMER DRAINAGE DITCH (1964)
- ROAD
- SWAMP RABBIT TRAIL
- RAILROAD
- BUILDING
- EXCAVATED AREA (2001-2002)
- VAUGHN LANDFILL BOUNDARY
- HYDROLOGY
- PARCEL BOUNDARY
- WETLANDS (AES)
- WETLANDS (USFWS)

DUKE ENERGY CAROLINAS

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GRAPHIC SCALE
125 0 125 250
(IN FEET)

DRAWN BY: T. KING DATE: 05/21/2019
REVISED BY: C. WYATT DATE: 03/31/2020
CHECKED BY:
APPROVED BY:
PROJECT MANAGER: T. PLATING

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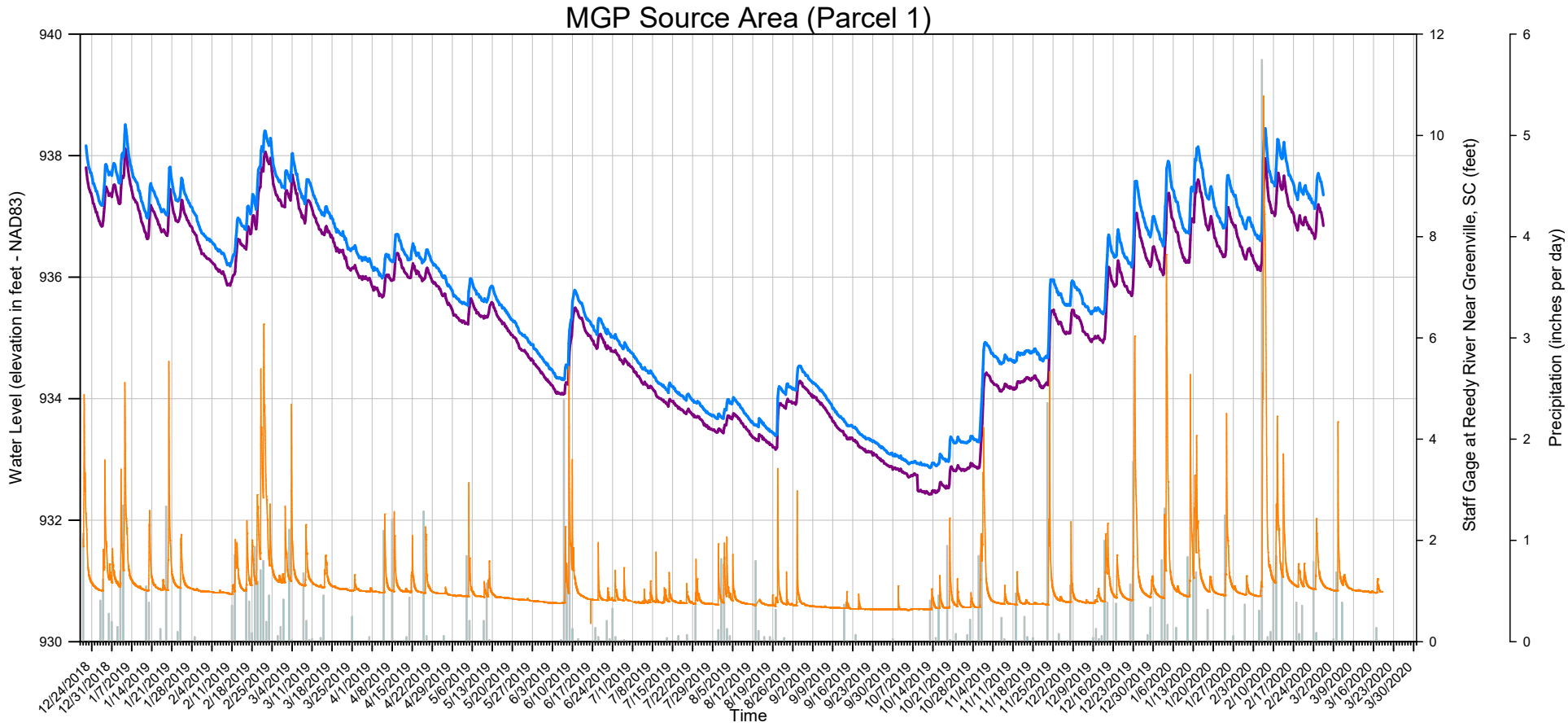
FIGURE 2
SITE LAYOUT MAP (MARCH 2020)
FORMER BRAMLETTE MGP SITE
EAST BRAMLETTE ROAD
GREENVILLE, SOUTH CAROLINA



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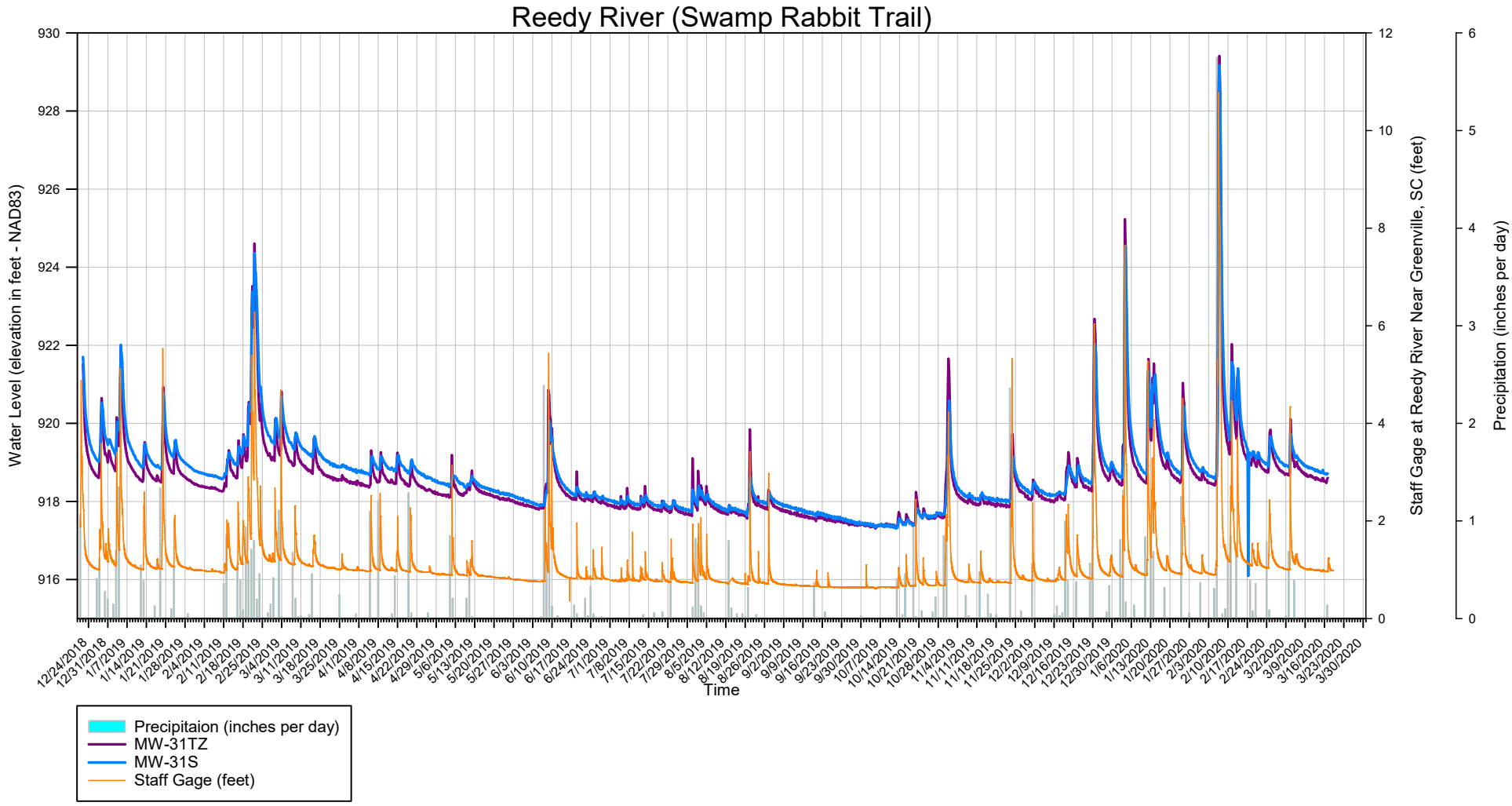
148 RIVER STREET, SUITE 220
GREENVILLE, SOUTH CAROLINA 29601
PHONE 864-421-9999
www.synterracorp.com

DRAWN BY: T KING DATE: DECEMBER 2019
PROJECT MANAGER: T PLATING
LAYOUT:

P:\Duke Energy Progress.1026\102. Asheville Ash Basin GW Assessment Plan\50.EHS IAP Monitoring & Reporting\April 2018 Annual Report\Figures

FIGURE 3
MGP SOURCE AREA (PARCEL 1) HYDROGRAPHS
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREENVILLE, SC



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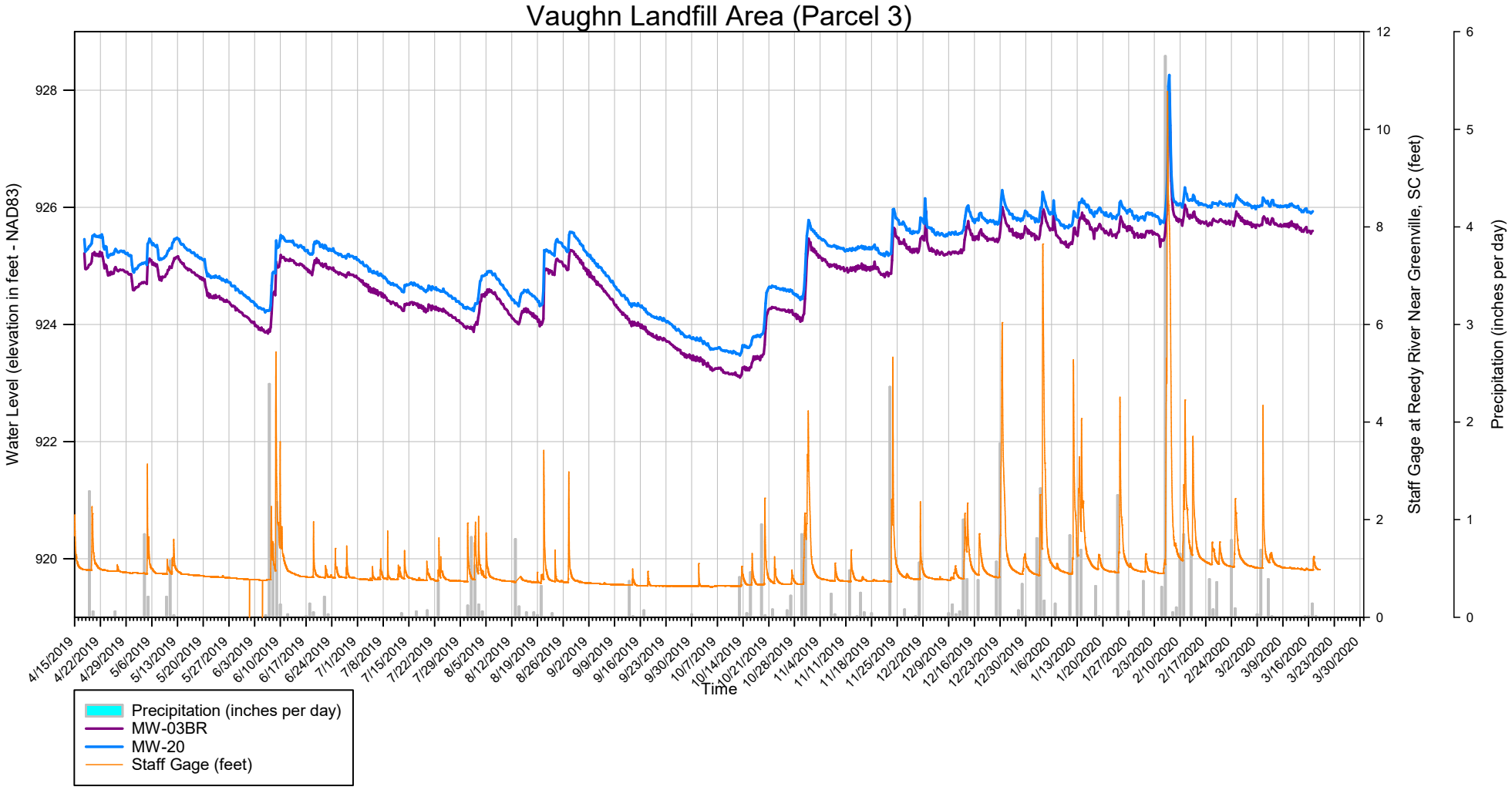
PROJECT MANAGER: T PLATING
LAYOUT:

P:\Duke Energy Progress.1026\102. Asheville Ash Basin GW Assessment Plan\50.EHS IAP Monitoring & Reporting\April 2018 Annual Report\Figures

FIGURE 4
REEDY RIVER (SWAMP RABBIT TRAIL) HYDROGRAPHS
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREENVILLE, SC



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PROJECT MANAGER: T PLATING
LAYOUT:

P:\Duke Energy Progress.1026\102. Asheville Ash Basin GW Assessment Plan\50.EHS IAP Monitoring & Reporting\April 2018 Annual Report\Figures

FIGURE 5
VAUGHN LANDFILL AREA (PARCEL 3) HYDROGRAPHS
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREENVILLE, SC

NOTES:

[1] ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM 88 (NAVD 88).

[2] SURFACE WATER LOCATIONS, FORMER DRAINAGE DITCHES, EXCAVATION AREA, AND VAUGHN LANDFILL BOUNDARY FROM ERM GROUNDWATER REMEDIAL INVESTIGATION WORK PLAN ADDENDUM, APRIL 13, 2018. THESE LAYERS ARE GEOREFERENCED AND APPROXIMATE.

[3] PROPOSED MONITORING WELL LOCATIONS ARE APPROXIMATE. WELL LOCATIONS ARE SUBJECT TO CHANGE FOLLOWING SITE WALK OR UTILITY LOCATING.

[4] TOPOGRAPHIC CONTOURS FOR GREENVILLE COUNTY FROM SC DNR (2013).

[5] PROPERTY BOUNDARIES SOURCED FROM GREENVILLE COUNTY.

[6] WETLANDS (USFWS) BY US FISH AND WILDLIFE NATIONAL WETLAND INVENTORY. WETLANDS (AES) DELINEATED BY APPLIED ENGINEERING AND SCIENCE, INC. IN 1999.

[7] SWAMP RABBIT TRAIL CENTERLINE FROM CITY OF GREENVILLE.

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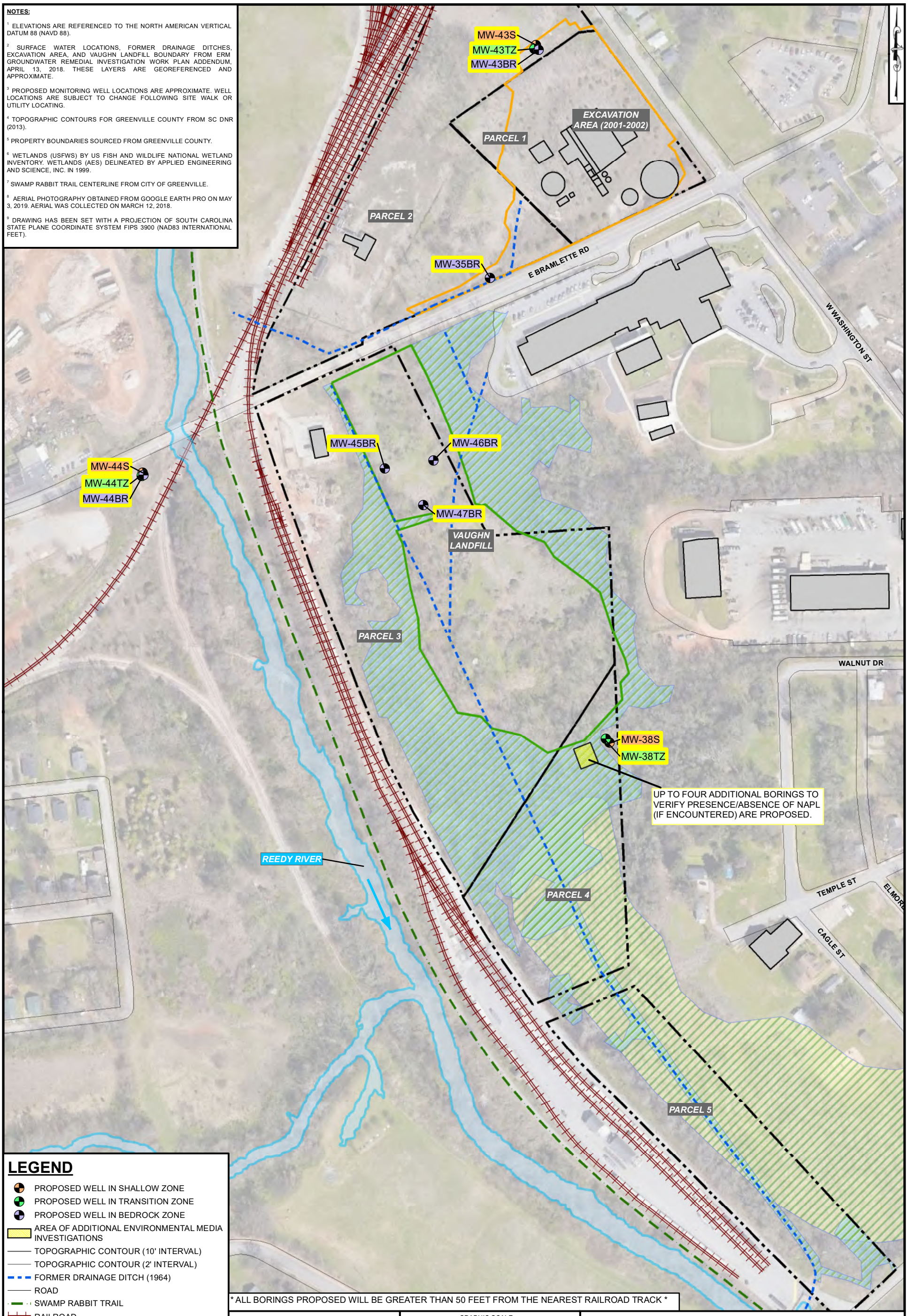

LEGEND

- PROPOSED WELL IN SHALLOW ZONE
- PROPOSED WELL IN TRANSITION ZONE
- PROPOSED WELL IN BEDROCK ZONE
- AREA OF ADDITIONAL ENVIRONMENTAL MEDIA INVESTIGATIONS
- TOPOGRAPHIC CONTOUR (10' INTERVAL)
- TOPOGRAPHIC CONTOUR (2' INTERVAL)
- FORMER DRAINAGE DITCH (1964)
- ROAD
- SWAMP RABBIT TRAIL
- RAILROAD
- BUILDING
- EXCAVATED AREA (2001-2002)
- VAUGHN LANDFILL BOUNDARY
- HYDROLOGY
- PARCEL BOUNDARY
- WETLANDS (AES)
- WETLANDS (USFWS)

* ALL BORINGS PROPOSED WILL BE GREATER THAN 50 FEET FROM THE NEAREST RAILROAD TRACK *

DUKE ENERGY CAROLINAS

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GRAPHIC SCALE
100 0 100 200
(IN FEET)

DRAWN BY: T. KING DATE: 05/21/2019
REVISED BY: C. WYATT DATE: 03/31/2020
CHECKED BY:
APPROVED BY:
PROJECT MANAGER: T. PLATING

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FIGURE 6
PROPOSED MONITORING WELL LOCATIONS
FORMER BRAMLETTE MGP SITE
EAST BRAMLETTE ROAD
GREENVILLE, SOUTH CAROLINA

TABLES

TABLE 1
WATER LEVEL MEASUREMENT DATA
QUARTERLY PROGRESS REPORT - FIRST QUARTER 2020
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREENVILLE, SC

Monitoring Well ID	Measuring Point TOC Elevation (ft-NAVD 88)	Ground Surface Elevation (ft-NAVD 88)	Measured Well Depth (ft-BTOC)	Measured Water Level (ft-BTOC)	Groundwater Elevation (ft-NAVD 88)
MONITORING WELLS					
MW-01	933.97	931.35	16.90	5.97	928.00
MW-02	933.45	931.87	18.15	9.04	924.41
MW-2TZ	934.90	931.61	28.50	9.26	925.64
MW-2BR	934.42	931.37	62.84	9.43	924.99
MW-03	935.23	932.66	16.57	9.54	925.69
MW-03BR	935.87	932.99	67.01	10.15	925.72
MW-03BRL	936.49	933.44	107.11	10.84	925.65
MW-05	930.10	930.25	15.58	8.12	921.98
MW-07R	936.01	932.93	18.69	3.38	932.63
MW-09R	936.47	933.62	29.88	3.82	932.65
MW-13R	940.18	937.64	23.45	3.65	936.53
MW-15	939.07	936.52	57.10	7.45	931.62
MW-16	938.75	936.84	17.87	7.63	931.12
MW-20	932.83	935.36	27.98	9.68	923.15
MW- 21	934.42	932.14	19.28	10.75	923.67
MW-21BR	930.89	928.00	45.00	8.12	922.77
MW-21BRL	931.51	928.48	67.13	8.38	923.13
MW-22	930.08	930.26	34.92	8.42	921.66
MW-25R	930.08	930.16	16.35	2.71	927.37
MW-26	940.91	937.90	58.50	3.70	937.21
MW-27	940.93	937.83	38.62	3.42	937.51
MW-28	936.47	933.88	44.57	4.07	932.40
MW-29BR	933.32	930.36	88.79	7.07	926.25
MW-29S	932.86	930.27	17.79	6.77	926.09
MW-29TZ	932.92	930.18	34.00	6.78	926.14
MW-30S	932.80	932.6	19.90	12.01	920.79
MW-30TZ	932.54	932.57	NM	11.76	920.78
MW-31S	932.51	932.11	19.75	12.43	920.08
MW-31TZ	932.37	932.07	37.85	12.80	919.57
MW-32S	931.73	931.98	NM	12.11	919.62
MW-32TZ	931.92	931.74	NM	11.59	920.33
MW-33S	932.06	932.12	NM	10.81	921.25
MW-33TZ	931.24	931.81	NM	9.12	922.12
MW-34BR	937.92	935.11	110.75	11.02	926.90
MW-34S	937.53	934.82	28.59	8.13	929.40
MW-34TZ	937.91	935.14	53.56	9.70	928.21
MW-35S	933.26	930.06	18.44	4.11	929.15
MW-35TZ	933.51	930.12	38.11	4.33	929.18
MW-36BR	940.04	936.72	71.49	7.51	932.53
MW-36S	940.49	937.18	23.82	7.60	932.89
MW-36TZ	940.07	936.89	48.73	7.40	932.67
MW-37BR	943.12	940.09	118.68	9.94	933.18
MW-37S	943.05	940.16	23.08	7.44	935.61
MW-37TZ	943.27	940.15	72.94	8.40	934.87
MW-39BR	937.92	935.25	52.86	11.70	926.22
MW-39BRL	937.91	935.17	82.65	12.45	925.46
MW-39S	938.60	935.55	27.12	12.56	926.04
MW-40BR	929.85	930.17	NM	NM	NM
MW-41S	929.93	930.13	19.96	2.11	927.82
MW-41TZ	929.52	929.94	55.65	1.40	928.12
MW-41BR	929.80	929.92	90.40	8.63	921.17
MW-42BR	939.52	936.84	79.83	6.99	932.53
MW-42S	940.42	937.47	23.40	8.15	932.27
MW-42TZ	940.18	937.04	57.66	7.84	932.34
MW-48S	932.56	932.80	30.80	NM	NM
MW-48TZ	932.66	932.72	NM	NM	NM
STAFF GAGES					
RI-SG1	927.79	922.30	NA	3.48	925.77
RI-SG2	930.31	924.47	NA	1.98	926.79
RI-SG3	927.44	921.54	NA	0.72	922.66
RIVER GAGES					
RI-RR1	938.68	NA	NA	18.41	920.27
RI-RR2	934.14	NA	NA	15.20	918.94
RI-RR3	929.49	NA	NA	12.94	916.55
RI-RR4	925.81	NA	NA	9.01	916.80

Prepared by: JPC Checked by: TCK

Notes:

Water Levels collected between 8am 2/10/2020 -6pm 2/10/2020

BTOC - Below Top of Casing

ft - feet

NA - Not Applicable

NAVD 88 - North American Vertical Datum of 1988.

NM - Not Measured

TABLE 2
GROUNDWATER ANALYTICAL RESULTS SUMMARY
QUARTERLY PROGRESS REPORT - FIRST QUARTER 2020
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREENVILLE, SC

		8260B (VOA and MTBE)							8260B (Other VOC)				8270D (PAH)					
Analytical Parameter		**Benzene**	**Ethylbenzene**	**Toluene**	**Xylene**			**MTBE**	**2-Butanone (MEK)**	**2-Hexanone**	**Acetone**	**Trichloroethene**	**Naphthalene**	**1-Methylnaphthalene**	**2-Methylnaphthalene**	**Acenaphthene**	**Acenaphthylene**	**Anthracene**
					m&p-Xylene	**o-Xylene**	**Total Xylene**											
Reporting Units		**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**
Regulatory Standard		**5**	**700**	**1,000**	**NE**	**NE**	**10,000**	**40**	**NE**	**NE**	**NE**	**NE**	**25**	**NE**	**NE**	**NE**	**NE**	**NE**
Sample ID	**Sample Collection Date**	**Analytical Results**							**Analytical Results**				**Analytical Results**					
MW-01	02/17/2020	**29.9**	**42.4**	**12.4**	**43.3**	**28.3**	**71.5**	<10	<50	<50	<250	<10	**1970**	**462**	**476**	**207**	<96.2	<96.2
MW-02	02/17/2020	0.37 j	<1	<1	<2	<1	<1	<1	<5	<5	<25	<1	2.4 j	<10	<10	<10	<10	<10
MW-02BR	02/17/2020	**964**	**92.8**	**69**	**72.8**	**45.5**	**118**	<12.5	<62.5	<62.5	<312	<12.5	**1160**	**46.5**	**59.8**	**28.7**	3.6 j	<9.8
MW-02TZ	02/17/2020	**817**	**109**	<12.5	**28**	4.9 j	**28**	<12.5	<62.5	<62.5	<312	<12.5	**1590**	**180**	**224**	94.9 j	<99	<99
MW-03BR	02/17/2020	**595**	**136**	**266**	**150**	**83**	**233**	<10	<50	<50	<250	<10	**1430**	35.8 j	49.7 j	<98	28.1 j	<98
MW-03BRL	02/18/2020	**588**	**146**	**124**	**110**	**64.6**	**175**	<10	<50	<50	<250	<10	**2430 M1**	**126**	**193**	29.4 j	80.3 j	<98
MW-05	02/18/2020	<1	<1	<1	<2	<1	<1	<1	<5	<5	<25	<1	<1	<10	<10	<10	<10	<10
MW-07R	02/13/2020	**22**	**4.7**	<1	**2.8**	0.33 j	**2.8**	**1.1**	<5	<5	<25	<1	**51.7**	4 j	<9.9	<9.9	<9.9	<9.9
MW-09R	02/13/2020	<1	<1	<1	<2	<1	<1	**1.7**	<5	<5	<25	<1	<1	<9.7	<9.7	<9.7	<9.7	<9.7
MW-13R	02/10/2020	<1	<1	<1	<2	<1	<1	<1	<5	<5	<25	<1	<1	<9.8	<9.8	<9.8	<9.8	<9.8
MW-15	02/12/2020	<1	<1	<1	<2	<1	<1	<1	<5	<5	<25	<1	<1	<9.8	<9.8	<9.8	<9.8	<9.8
MW-16	02/12/2020	<1	<1	<1	<2	<1	<1	<1	<5	<5	<25	<1	<1	<9.7	<9.7	<9.7	<9.7	<9.7
MW-21	02/18/2020	**4.8**	0.92 j	**1.1**	<2	0.98 j	<1	<1	<5	<5	<25	<1	<9.8	2.2 j	<9.8	4.6 j	<9.8	<9.8
MW-21BR	02/18/2020	3.6 j	**53.2**	**43.5**	**43**	**23.2**	**66.2**	<5	<25	<25	<125	<5	**752**	**20.1**	**17.5**	8.4 j	7.1 j	<9.9
MW-21BRL	02/18/2020	<1	**2.1**	**5.3**	**6.6**	**2.7**	**9.3**	<1	<5	<5	<25	<1	**105**	3.1 j	5.5 j	<10	2.5 j	<10
MW-22	02/18/2020	<1	<1	<1	<2	<1	<1	<1	<5	<5	<25	<1	1.8 j	<9.6	<9.6	<9.6	<9.6	<9.6
MW-25R	02/13/2020	<1	<1	<1	<2	<1	<1	<1	<5	<5	<25	<1	<1	<10	<10	<10	<10	<10
MW-26	02/10/2020	<1	<1	<1	<2	<1	<1	<1	<5	<5	<25	<1	<1	<10	<10	<10	<10	<10
MW-27	02/10/2020	<1	<1	<1	<2	<1	<1	0.41 j	<5	<5	<25	<1	<1	<9.9	<9.9	<9.9	<9.9	<9.9
MW-28	02/13/2020	<1	<1	<1	<2	<1	<1	**1.1**	<5	<5	<25	<1	2.6 j	<9.8	<9.8	<9.8	<9.8	<9.8
MW-29BR	02/11/2020	**151**	**11.2**	**109**	**25.1**	**12.8**	**37.8**	<2.5	<12.5	<12.5	<62.5	<2.5	**306**	**13**	**21.1**	<9.9	7.2 j	<9.9
MW-29S	02/11/2020	<1	<1	<1	<2	<1	<1	<1	<5	<5	<25	<1	<1	<9.8	<9.8	<9.8	<9.8	<9.8
MW-29TZ	02/13/2020	**1680**	**242**	18.1 j	**119**	**79.3**	**198**	<25	<125	<125	<625	<25	**3200**	**322 E**	**211**	**142 E**	<9.6	3.1 j
MW-30S	02/17/2020	<1	<1	<1	<2	<1	<1	<1	<5	<5	<25	<1	<1	<9.9	<9.9	<9.9	<9.9	<9.9
MW-30TZ	02/17/2020	**2.9**	0.62 j	<1	<2	0.31 j	<1	<1	<5	<5	<25	<1	2 j	<10	<10	<10	<10	<10
MW-31S	02/17/2020	<1	<1	<1	<2	<1	<1	<1	<5	<5	<25	<1	2.8 j	<10	<10	2.8 j	<10	<10
MW-31TZ	02/17/2020	<1	<1	<1	<2	<1	<1	<1	<5	<5	<25	<1	<1	<9.9	<9.9	<9.9	<9.9	<9.9
MW-32S	02/17/2020	<1	<1	<1	<2	<1	<1	<1	<5	<5	<25	<1	<1	<10	<10	<10	<10	<10
MW-32TZ	02/17/2020	<1	<1	<1	<2	<1	<1	<1	<5	<5	<25	<1	2.7 j	<9.9	<9.9	<9.9	<9.9	<9.9
MW-33S	02/17/2020	<1	<1	<1	<2	<1	<1	<1	<5	<5	<25	<1	6.1 j	<10	<10	<10	<10	<10
MW-33TZ	02/17/2020	<1	<1	<1	<2	<1	<1	<1	3.4 j	<5	18.3 j	<1	2.9 j	<9.8	<9.8	<9.8	<9.8	<9.8
MW-34BR	02/11/2020	**6.6**	0.37 j	**4.2**	1.2 j	0.63 j	<1	<1	<5	<5	<25	<1	2.2 j	<9.6	<9.6	<9.6	<9.6	<9.6
MW-34S	02/11/2020	<1	<1	<1	<2	<1	<1	<1	<5	<5	<25	<1	0.73 j	<9.7	<9.7	<9.7	<9.7	<9.7
MW-34TZ	02/11/2020	<1	<1	<1	<2	<1	<1	<1	<5	<5	<25	<1	0.42 j	<9.9	<9.9	<9.9	<9.9	<9.9
MW-35S	02/13/2020	<1	<1	<1	<2	<1	<1	<1	<5	<5	<25	<1	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8
MW-35TZ	02/13/2020	<1	<1	<1	<2	<1	<1	<1	<5	<5	<25	<1	1.4 j	<10	<10	<10	<10	<10
MW-36BR	02/12/2020	<1	<1	<1	<2	<1	<1	0.32 j	<5	<5	<25	<1	<1	<9.6	<9.6	<9.6	<9.6	<9.6
MW-36S	02/12/2020	**9.4**	**51**	**11.7**	**54.8**	**33.3**	**88.2**	<4	<20	<20	<100	<4	**368**	**26.6**	**18**	**17.8**	6.7 j	3.2 j
MW-36TZ	02/12/2020	<1	<1	<1	<2	<1	<1	**1.8**	<5	<5	<25	<1	<1	<10	<10	<10	<10	<10
MW-37BR	02/11/2020	<1	<1	<1	<2	<1	<1	<1	<5	<5	<25	<1	<1	<9.9	<9.9	<9.9	<9.9	<9.9
MW-37S	02/10/2020	<1	<1	<1	<2	<1	<1	0.38 j	<5	<5	<25	<1	<1	<9.6	<9.6	<9.6	<9.6	<9.6
MW-37TZ	02/11/2020	<1	<1	0.52 j	<2	<1	<1	**1.6**	<5	<5	<25	<1	<1	<9.6	<9.6	<9.6	<9.6	<9.6
MW-39BR	02/18/2020	<1	<1	<1	<2	<1	<1	<1	<5	<5	<25	<1	2.2 j	<10	<10	<10	<10	<10
MW-39BRL	02/18/2020	<1	<1	<1	<2	<1	<1	<1	<5	<5	<25	<1	3.8 j	<9.8	<9.8	<9.8	<9.8	<9.8
MW-39S	02/18/2020	<1	<1	<1	<2	<1	<1	<1	<5	<5	<25	<1	<1	<10	<10	<10	<10	<10
MW-41S	02/13/2020	<1	<1	<1	<2	<1	<1	<1	<5	<5	<25	<1	<1	<10	<10	<10	<10	<10
MW-41TZ	02/13/2020	<1	<1	<1	<2	<1	<1	<1	<5	<5	<25	<1	<1	<9.9	<9.9	<9.9	<9.9	<9.9
MW-41TZL	02/13/2020	<1	<1	<1	<2	<1	<1	<1	<5	<5	<25	<1	<1	<9.8	<9.8	<9.8	<9.8	<9.8
MW-42BR	02/12/2020	<1	<1	<1	<2	<1	<1	<1	<5	<5	<25	<1	<1	<9.6	<9.6	<9.6	<9.6	<9.6
MW-42S	02/13/2020	<1	<1	<1	<2	<1	<1	**2.2**	<5	<5	<25	<1	<1	<10	<10	<10	<10	<10
MW-42TZ	02/12/2020	<1	<1	<1	<2	<1	<1	0.36 j	<5	<5	<25	<1	<1	<10	<10	<10	<10	<10

TABLE 2
GROUNDWATER ANALYTICAL RESULTS SUMMARY
QUARTERLY PROGRESS REPORT - FIRST QUARTER 2020
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREENVILLE, SC

		8270D (PAH)												8270D (Other SVOC)				
Analytical Parameter		**Benzo(a)anthracene**	**Benzo(a)pyrene**	**Benzo(b)fluoranthene**	**Benzo(g,h,i)perylene**	**Benzo(k)fluoranthene**	**Chrysene**	**Dibenz(a,h)anthracene**	**Fluoranthene**	**Fluorene**	**Indeno(1,2,3-cd)pyrene**	**Phenanthrene**	**Pyrene**	**2,4-Dimethylphenol**	**2,4-Dinitrotoluene**	**2-Methylphenol(o-Cresol)**	**Dibenzofuran**	**Phenol**
Reporting Units		**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**
Regulatory Standard		**10**	**0.2**	**10**	**NE**	**10**	**10**	**10**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**
Sample ID	**Sample Collection Date**	**Analytical Results**												**Analytical Results**				
MW-01	02/17/2020	<96.2	<96.2	<96.2	<96.2	<96.2	<96.2	<96.2	<96.2	66.7 j	<96.2	74.2 j	<96.2	<96.2	<96.2	<96.2	23.2 j	<96.2
MW-02	02/17/2020	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
MW-02BR	02/17/2020	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	6.2 j	<9.8	5.8 j	<9.8	**24.8**	<9.8	<9.8	<9.8	<9.8
MW-02TZ	02/17/2020	<99	<99	<99	<99	<99	<99	<99	<99	<99	<99	<99	<99	<99	<99	<99	<99	<99
MW-03BR	02/17/2020	<98	<98	<98	<98	<98	<98	<98	<98	<98	<98	<98	<98	49.8 j	<98	<98	<98	<98
MW-03BRL	02/18/2020	<98	<98	<98	<98	<98	<98	<98	<98	20.2 j	<98	21.5 j	<98	<98	<98	<98	<98	<98
MW-05	02/18/2020	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
MW-07R	02/13/2020	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9
MW-09R	02/13/2020	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7
MW-13R	02/10/2020	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8
MW-15	02/12/2020	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8
MW-16	02/12/2020	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7
MW-21	02/18/2020	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	3 j	<9.8	2 j	<9.8	<9.8	<9.8	<9.8	2 j	<9.8
MW-21BR	02/18/2020	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	3.7 j	<9.9	4.1 j	<9.9	<9.9	<9.9	<9.9	2.5 j	<9.9
MW-21BRL	02/18/2020	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
MW-22	02/18/2020	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
MW-25R	02/13/2020	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
MW-26	02/10/2020	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
MW-27	02/10/2020	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9
MW-28	02/13/2020	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8
MW-29BR	02/11/2020	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	2.2 j	<9.9	<9.9	<9.9	<9.9
MW-29S	02/11/2020	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8
MW-29TZ	02/13/2020	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	**28.7**	<9.6	**18.2**	<9.6	**230 E**	<9.6	<9.6	9.5 j	5.9 j
MW-30S	02/17/2020	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9
MW-30TZ	02/17/2020	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
MW-31S	02/17/2020	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
MW-31TZ	02/17/2020	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9
MW-32S	02/17/2020	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
MW-32TZ	02/17/2020	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9
MW-33S	02/17/2020	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
MW-33TZ	02/17/2020	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8
MW-34BR	02/11/2020	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
MW-34S	02/11/2020	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7	<9.7
MW-34TZ	02/11/2020	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9
MW-35S	02/13/2020	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8
MW-35TZ	02/13/2020	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
MW-36BR	02/12/2020	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
MW-36S	02/12/2020	<10	<10	<10	<10	<10	<10	<10	3.1 j	**11.6**	<10	9.3 j	<10	<10	<10	<10	**14**	<10
MW-36TZ	02/12/2020	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
MW-37BR	02/11/2020	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9
MW-37S	02/10/2020	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
MW-37TZ	02/11/2020	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
MW-39BR	02/18/2020	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
MW-39BRL	02/18/2020	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8
MW-39S	02/18/2020	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
MW-41S	02/13/2020	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
MW-41TZ	02/13/2020	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9
MW-41TZL	02/13/2020	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8	<9.8
MW-42BR	02/12/2020	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
MW-42S	02/13/2020	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
MW-42TZ	02/12/2020	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10

TABLE 2
GROUNDWATER ANALYTICAL RESULTS SUMMARY
QUARTERLY PROGRESS REPORT - FIRST QUARTER 2020
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREENVILLE, SC

		8260B (VOA and MTBE)							8260B (Other VOC)				8270D (PAH)					
	Analytical Parameter	Benzene	Ethylbenzene	Toluene	Xylene			MTBE	2-Butanone (MEK)	2-Hexanone	Acetone	Trichloroethene	Naphthalene	1-Methylnaphthalene	2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene
					m&p-Xylene	o-Xylene	Total Xylene											
	Reporting Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	Regulatory Standard	5	700	1,000	NE	NE	10,000	40	NE	NE	NE	NE	25	NE	NE	NE	NE	NE
Sample ID	Sample Collection Date	Analytical Results							Analytical Results				Analytical Results					
QC SAMPLE RESULTS																		
EB-01_WQ_20200210	02/10/2020	<1	<1	<1	<2	<1	<1	<1	<5	<5	<25	<1	<1	<10	<10	<10	<10	<10
EB-02_WQ_20200211	02/11/2020	<1	<1	<1	<2	<1	<1	<1	<5	<5	<25	<1	<1	<10	<10	<10	<10	<10
EB-03_WQ_20200212	02/12/2020	<1	<1	<1	<2	<1	<1	<1	<5	<5	<25	<1	<1	<10	<10	<10	<10	<10
EB-04_WQ_20200213	02/13/2020	<1	<1	<1	<2	<1	<1	<1	<5	<5	<25	<1	1.5 j	<9.6	<9.6	<9.6	<9.6	<9.6
EB-05-WQ-20200217	02/17/2020	<1	<1	<1	<2	<1	<1	<1	<5	<5	<25	<1	<1	<9.9	<9.9	<9.9	<9.9	<9.9
EB-06_WQ_20200218	02/18/2020	<1	<1	<1	<2	<1	<1	<1	<5	<5	<25	<1	<1	<10	<10	<10	<10	<10
MSMD-03_WQ_20200218	02/18/2020	**5.7**	**1.1**	**1.9**	0.79 j	**1.3**	**1.3**	<1	<5	<5	<25	<1	<10 H2,R0	<10 H2,R0	<10 H2,R0	2.6 j,H2,R0	<10 H2,R0	<10 H2,R0
MW-03BR DUP	02/17/2020	**576**	**103**	**266**	**107**	**59.5**	**166**	<20	<100	<100	<500	<20	**1770**	69.2 j	**102**	<97.1	53.9 j	<97.1
MW-21 DUP	02/18/2020	**6.7**	**1.2**	**2.3**	0.87 j	**1.5**	**1.5**	<1	<5	<5	<25	<1	<9.6	1.7 j	<9.6	3.2 j	<9.6	<9.6
MW-42BR DUP	02/12/2020	<1	<1	<1	<2	<1	<1	<1	<5	<5	<25	<1	<1	<10	<10	<10	<10	<10
TB-01_WQ_20200210	02/10/2020	<1	<1	<1	<2	<1	<1	<1	<5	<5	<25	<1	<1	NA	NA	NA	NA	NA
TB-02_WQ_20200211	02/11/2020	<1	<1	<1	<2	<1	<1	<1	<5	<5	<25	<1	<1	NA	NA	NA	NA	NA
TB-03_WQ_20200212	02/12/2020	<1	<1	<1	<2	<1	<1	<1	<5	<5	<25	<1	<1	NA	NA	NA	NA	NA
TB-04_WQ_20200213	02/13/2020	<1	<1	<1	<2	<1	<1	<1	<5	<5	<25	<1	<1	NA	NA	NA	NA	NA
TB-05-WQ-20200217	02/17/2020	<1	<1	<1	<2	<1	<1	<1	<5	<5	<25	<1	<1	NA	NA	NA	NA	NA
TB-06_WQ_20200218	02/18/2020	<1	<1	<1	<2	<1	<1	<1	<5	<5	<25	<1	<1	NA	NA	NA	NA	NA

Prepared by: JPC Checked by: TCK

Notes:

Bold type indicates that the compound was detected above the adjusted method detection limit.

Yellow shading indicates that the compound was detected above a potentially applicable regulatory standard listed in Section 4.11 of the 2019 RIWP-A

< - concentration not detected at or above the adjusted reporting limit.

E - Analyte concentration exceeded the calibration range. The reported result is estimated.

H2 - Extraction or preparation was conducted outside of the recognized method holding time.

j - Estimated concentration above the adjusted method detection limit ug/L - Micrograms per liter

M1 - Matrix spike recovery was high: the associated Laboratory Contrc umhos/cm - Micro mhos per centimeter

MTBE - Methyl-tert-butyl ether

NA - Not analyzed

NE - No regulatory standard established at this time. A site-specific target level may be established as part of the risk assessment outlined in Section 5.0 of the RIWP-A.

µg/L - Micrograms per liter

PAH - polyaromatic hydrocarbons

R0 - The data are unusable. The sample results are rejected due to serious deficiencies in meeting quality control criteria. The analyte may or may not be present in the sample.

SVOC - semi-volatile organic compounds

VOA - volatile organic analysis

VOC - volatile organic compounds

TABLE 2
GROUNDWATER ANALYTICAL RESULTS SUMMARY
QUARTERLY PROGRESS REPORT - FIRST QUARTER 2020
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREENVILLE, SC

		8270D (PAH)												8270D (Other SVOC)				
Analytical Parameter		**Benzo(a)anthracene**	**Benzo(a)pyrene**	**Benzo(b)fluoranthene**	**Benzo(g,h,i)perylene**	**Benzo(k)fluoranthene**	**Chrysene**	**Dibenz(a,h)anthracene**	**Fluoranthene**	**Fluorene**	**Indeno(1,2,3-cd)pyrene**	**Phenanthrene**	**Pyrene**	**2,4-Dimethylphenol**	**2,4-Dinitrotoluene**	**2-Methylphenol(o-Cresol)**	**Dibenzofuran**	**Phenol**
Reporting Units		**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**
Regulatory Standard		**10**	**0.2**	**10**	**NE**	**10**	**10**	**10**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**
Sample ID	**Sample Collection Date**	**Analytical Results**												**Analytical Results**				
QC SAMPLE RESULTS																		
EB-01_WQ_20200210	02/10/2020	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
EB-02_WQ_20200211	02/11/2020	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
EB-03_WQ_20200212	02/12/2020	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
EB-04_WQ_20200213	02/13/2020	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
EB-05-WQ-20200217	02/17/2020	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9
EB-06_WQ_20200218	02/18/2020	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
MSMD-03_WQ_20200218	02/18/2020	<10 H2,R0	<10 H2,R0	<10 H2,R0	<10 H2,R0	<10 H2,R0	<10 H2,R0	<10 H2,R0	<10 H2,R0	<10 H2,R0	<10 H2,R0	<10 H2,R0	<10 H2,R0	<10 H2,R0	<10 H2,R0	<10 H2,R0	<10 H2,R0	<10 H2,R0
MW-03BR DUP	02/17/2020	<97.1	<97.1	<97.1	<97.1	<97.1	<97.1	<97.1	<97.1	<97.1	<97.1	<97.1	<97.1	50.8 j	<97.1	<97.1	<97.1	<97.1
MW-21 DUP	02/18/2020	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	1.8 j	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6	<9.6
MW-42BR DUP	02/12/2020	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
TB-01_WQ_20200210	02/10/2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TB-02_WQ_20200211	02/11/2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TB-03_WQ_20200212	02/12/2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TB-04_WQ_20200213	02/13/2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TB-05-WQ-20200217	02/17/2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TB-06_WQ_20200218	02/18/2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Prepared by: JPC Checked by: TCK

Notes:

Bold type indicates that the compound was detected above the adjusted method detection limit.

Yellow shading indicates that the compound was detected above a potentially applicable regulatory standard listed in Section 4.11 of the 2019 RIWP-A

< - concentration not detected at or above the adjusted reporting limit.

E - Analyte concentration exceeded the calibration range. The reported result is estimated.

H2 - Extraction or preparation was conducted outside of the recognized method holding time.

j - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

M1 - Matrix spike recovery was high: the associated Laboratory Control Spike (LCS) was acceptable.

MTBE - Methyl-tert-butyl ether

NA - Not analyzed

NE - No regulatory standard established at this time. A site-specific target level may be established as part of the risk assessment outlined in Section 5.0 of the RIWP-A.

µg/L - Micrograms per liter

PAH - polyaromatic hydrocarbons

R0 - The data are unusable. The sample results are rejected due to serious deficiencies in meeting quality control criteria. The analyte may or may not be present in the sample.

SVOC - semi-volatile organic compounds

VOA - volatile organic analysis

VOC - volatile organic compounds

TABLE 3
SURFACE WATER ANALYTICAL RESULTS SUMMARY
QUARTERLY PROGRESS REPORT - FIRST QUARTER 2020
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREENVILLE, SC

		8260B (VOA and MTBE)							8260B (Other VOC)				8270D (PAH)					
Analytical Parameter		**Benzene**	**Ethylbenzene**	**Toluene**	**Xylene**			**MTBE**	**2-Butanone (MEK)**	**2-Hexanone**	**Acetone**	**Trichloroethene**	**Naphthalene**	**1-Methylnaphthalene**	**2-Methylnaphthalene**	**Acenaphthene**	**Acenaphthylene**	**Anthracene**
					m&p-Xylene	**o-Xylene**	**Total Xylene**											
Reporting Units		**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**
SCDHEC Regulation 61-68		**5**	**700**	**1000**	**NE**	**NE**	**10000**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**
Sample ID	**Sample Collection Date**	**Analytical Results**																
SW-07	03/09/2020	<1	<1	<1	<2	<1	<1	<1	<5	<5	<25	<1	<1	<10	<10	<10	<10	<10
SW-08	03/09/2020	<1	<1	<1	<2	<1	<1	<1	<5	<5	<25	<1	<1	<10	<10	<10	<10	<10
SW-09	03/09/2020	<1	<1	<1	<2	<1	<1	<1	<5	<5	<25	<1	<1	<10	<10	<10	<10	<10
SW-10	03/09/2020	<1	<1	<1	<2	<1	<1	<1	<5	<5	<25	<1	<1	<10	<10	<10	<10	<10
SW-11	03/09/2020	<1	<1	<1	<2	<1	<1	<1	<5	<5	<25	<1	<1	<10	<10	<10	<10	<10
SW-12	03/09/2020	<1	<1	<1	<2	<1	<1	<1	<5	<5	<25	<1	<1	<10	<10	<10	<10	<10
SW-13	03/01/2020	<1	<1	<1	<2	<1	<1	<1	<5	<5	<25	<1	<1	<10	<10	<10	<10	<10
SW-14	03/01/2020	<1	<1	<1	<2	<1	<1	<1	<5	<5	<25	<1	<1	<10	<10	<10	<10	<10
SW-15	03/01/2020	<1	<1	<1	<2	<1	<1	<1	<5	<5	<25	<1	<1	<10	<10	<10	<10	<10
SW-16	03/01/2020	<1	<1	<1	<2	<1	<1	<1	<5	<5	<25	<1	<1	<10	<10	<10	<10	<10
QC SAMPLE RESULTS																		
SW-15 DUP	03/01/2020	<1	<1	<1	<2	<1	<1	<1	<5	<5	<25	<1	<1	<10	<10	<10	<10	<10
EB-01_WQ_20200301	03/01/2020	<1	<1	<1	<2	<1	<1	<1	<5	<5	<25	<1	<1	<10	<10	<10	<10	<10
EB-01_WQ_20200309	03/09/2020	<1	<1	<1	<2	<1	<1	<1	<5	<5	<25	<1	<1	<10	<10	<10	<10	<10
TB-01_WQ_20200301	03/01/2020	<1	<1	<1	<2	<1	<1	<1	<5	<5	<25	<1	<1	NA	NA	NA	NA	NA
TB-01_WQ_20200309	03/09/2020	<1	<1	<1	<2	<1	<1	<1	<5	<5	<25	<1	<1	NA	NA	NA	NA	NA

Prepared by: JPC Checked by: TCK

Notes:

Bold type indicates that the compound was detected above the adjusted method detection limit.
< - concentration not detected at or above the adjusted reporting limit.
MTBE - methyl-tert-butyl ether
NA - Not analyzed
NE - No regulatory standard established at this time. A site-specific target level may be established as part of the risk assessment outlined in Section 5.0 of the RIWP-A.
µg/L - micrograms per liter
PAH - polyaromatic hydrocarbons
SCDHEC - South Carolina Department of Health and Environmental Control
SVOC - semi-volatile organic compounds
VOA - volatile organic analysis
VOC - volatile organic compounds

TABLE 3
SURFACE WATER ANALYTICAL RESULTS SUMMARY
QUARTERLY PROGRESS REPORT - FIRST QUARTER 2020
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREENVILLE, SC

		8270D (PAH)												8270D (Other SVOC)				
Analytical Parameter		**Benzo(a)anthracene**	**Benzo(a)pyrene**	**Benzo(b)fluoranthene**	**Benzo(g,h,i)perylene**	**Benzo(k)fluoranthene**	**Chrysene**	**Dibenz(a,h)anthracene**	**Fluoranthene**	**Fluorene**	**Indeno(1,2,3-cd)pyrene**	**Phenanthrene**	**Pyrene**	**2,4-Dimethylphenol**	**2,4-Dinitrotoluene**	**2-Methylphenol(o-Cresol)**	**Dibenzofuran**	**Phenol**
Reporting Units		**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**
Regulatory Standard		**NE**	**0.2**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**
Sample ID	**Sample Collection Date**	**Analytical Results**																
SW-07	03/09/2020	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<50	<10	<10	<10
SW-08	03/09/2020	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<50	<10	<10	<10
SW-09	03/09/2020	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<50	<10	<10	<10
SW-10	03/09/2020	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<50	<10	<10	<10
SW-11	03/09/2020	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<50	<10	<10	<10
SW-12	03/09/2020	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<50	<10	<10	<10
SW-13	03/01/2020	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<50	<10	<10	<10
SW-14	03/01/2020	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<50	<10	<10	<10
SW-15	03/01/2020	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<50	<10	<10	<10
SW-16	03/01/2020	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<50	<10	<10	<10
QC SAMPLE RESULTS																		
SW-15 DUP	03/01/2020	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<50	<10	<10	<10
EB-01_WQ_20200301	03/01/2020	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<50	<10	<10	<10
EB-01_WQ_20200309	03/09/2020	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<50	<10	<10	<10
TB-01_WQ_20200301	03/01/2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TB-01_WQ_20200309	03/09/2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Prepared by: JPC Checked by: TCK

Notes:

Bold type indicates that the compound was detected above the adjusted method detection limit.
< - concentration not detected at or above the adjusted reporting limit.
MTBE - Methyl-tert-butyl ether
NA - Not analyzed
NE - No regulatory standard established at this time. A site-specific target level may be established as part of the risk assessment outlined in Section 5.0 of the RIWP-A.
µg/L - Micrograms per liter
PAH - polyaromatic hydrocarbons
SCDHEC - South Carolina Department of Health and Environmental Control
SVOC - semi-volatile organic compounds
VOA - volatile organic analysis
VOC - volatile organic compounds

TABLE 4
ANALYSES RESULTS FOR SEDIMENT SAMPLES COLLECTED FROM PARCELS 4 AND 5
QUARTERLY PROGRESS REPORT - FIRST QUARTER 2020
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREENVILLE, SC
VCC 16-5857-RP

Laboratory Method		8260B (VOA and MTBE)							8260B (Other VOC)						8270D (PAH)		
Analytical Parameter		Benzene	Ethylbenzene	Toluene	Xylene			MTBE	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Acetone	Methylene Chloride	p-Isopropyltoluene	Naphthalene	1-Methylnaphthalene	2-Methylnaphthalene
					m&p-Xylene	o-Xylene	Xylene (Total)										
Reporting Units		µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
EPA RSL for Industrial Soil		5100	25000	47000000	2400000	2800000	2500000	210000	NE	1800000	1500000	670000000	1000000	NE	17000	73000	3000000
EPA RSL for Residential Soil		1200	5800	4900000	560000	650000	580000	47000	NE	300000	270000	61000000	57000	NE	3800	18000	240000
Sample ID	**Sample Collection Date**	**Analytical Results**															
SW-13 (0-0.5)	03/02/2020	<12.1	<12.1	<12.1	<24.2	<12.1	<24.2	<12.1	<12.1	<12.1	<12.1	68.3 j	<48.4	<12.1	<12.1	<470	<470
SW-13 (0.5-1)	03/02/2020	<8.5	<8.5	<8.5	<17	<8.5	<17	<8.5	<8.5	<8.5	<8.5	<170	<34.1	<8.5	<8.5	<482	<482
SW-13 (1-2)	03/02/2020	<8.2	<8.2	<8.2	<16.3	<8.2	<16.3	<8.2	<8.2	<8.2	<8.2	<163	<32.7	<8.2	<8.2	<510	<510
SW-13A (0-0.5)	03/02/2020	<21.8	<21.8	<21.8	<43.7	<21.8	<43.7	<21.8	<21.8	<21.8	<21.8	65.5 j	<87.4	<21.8	379 j	<1300	<1300
SW-13A (0.5-1)	03/02/2020	<20.1	<20.1	<20.1	<40.2	<20.1	<40.2	<20.1	<20.1	<20.1	<20.1	59.5 j	<80.3	<20.1	<933	<933	<933
SW-14 (0-0.5)	03/02/2020	<9.9	<9.9	<9.9	<19.7	<9.9	<19.7	<9.9	<9.9	<9.9	<9.9	<197	<39.5	<9.9	<9.9	<514	<514
SW-14 (0.5-1)	03/02/2020	<7.7	<7.7	<7.7	<15.5	<7.7	<15.5	<7.7	<7.7	<7.7	<7.7	81.2 j	<30.9	<7.7	<7.7	<504	<504
SW-14 (1-2)	03/02/2020	<9.1	<9.1	<9.1	<18.1	<9.1	<18.1	<9.1	<9.1	<9.1	<9.1	252	<36.2	<9.1	<9.1	<429	<429
SW-14 (2-3)	03/02/2020	NA	NA	NA	NA	NA	NA	NA	<487	NA	NA	NA	NA	NA	<487	<487	<487
SW-14A (0-0.5)	03/02/2020	<31.3	<31.3	<31.3	<62.5	<31.3	<62.5	<31.3	<31.3	<31.3	<31.3	<625	<125	<31.3	2180 j	<6640	<6640
SW-15 (0-0.5)	03/01/2020	<13.7	<13.7	<13.7	<27.5	<13.7	<27.5	<13.7	<13.7	<13.7	<13.7	48.8 j	<54.9	<13.7	<13.7	<789	<789
SW-15 (0.5-1)	03/01/2020	<10.1	<10.1	<10.1	<20.1	<10.1	<20.1	<10.1	<10.1	<10.1	<10.1	39 j	<40.3	<10.1	<10.1	<3230	<3230
SW-16 (0-0.5)	03/01/2020	<19.6	<19.6	<19.6	<39.3	<19.6	<39.3	<19.6	<19.6	<19.6	<19.6	184 j	<78.6	<19.6	240 j	<657	<657
SW-16 (0.5-1)	03/01/2020	<20.6	<20.6	<20.6	<41.2	<20.6	<41.2	<20.6	<20.6	<20.6	<20.6	104 j	<82.3	23.3	<20.6	<553	<553
SW-16 (1-2)	03/01/2020	<6.2	<6.2	<6.2	<12.4	<6.2	<12.4	<6.2	<6.2	<6.2	<6.2	<124	<24.8	<6.2	<6.2	<488	<488
SW-16 (2-3)	03/01/2020	<7.5	<7.5	<7.5	<14.9	<7.5	<14.9	<7.5	<7.5	<7.5	<7.5	21.7 j	<29.8	<7.5	<7.5	<467	<467
QC SAMPLE RESULTS																	
SW-13A (0-0.5) DUP	03/02/2020	<22.1	<22.1	<22.1	<44.2	<22.1	<44.2	<22.1	<22.1	<22.1	<22.1	<442	<88.4	<22.1	<22.1	<1170	<1170

Prepared by: JPC Checked by: TCK

Notes:
Bold type indicates that the compound was detected above the adjusted method detection limit.
 - Indicates that the compound was detected above EPA RSL for Industrial Soil as listed in Section 4.11 of the RIWP-A
 - Indicates that the compound was detected above EPA RSL for Residential Soil as listed in Section 4.11 of the RIWP-A
< - Concentration not detected at or above the adjusted reporting limit.
µg/kg - Micrograms per kilogram
ASTM - American Society for Testing and Materials
Dup - duplicate
EPA - Environmental Protection Agency
j - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
MTBE - Methyl tert-butyl ether
NA - Not analyzed
NE - No screening level established at this time. A site-specific risk-based screening level may be established as part of the risk assessment process outlined in Section 5.0 of the RIWP-A.
PAH - Poly Aromatic Hydrocarbons
R1 - Relative Percent Difference (RPD) value was outside control limits.
RSL - Regional Screening Level
SVOC - semi-volatile organic compounds
VOA - volatile organic analysis
VOC - volatile organic compounds

TABLE 4
ANALYSES RESULTS FOR SEDIMENT SAMPLES COLLECTED FROM PARCELS 4 AND 5
QUARTERLY PROGRESS REPORT - FIRST QUARTER 2020
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREENVILLE, SC
VCC 16-5857-RP

Laboratory Method		8270D (PAH)															8270D (Other SVOC)	9060A (TOC)
Analytical Parameter		Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Phenanthrene	Pyrene	Dibenzofuran	Mean Total Organic Carbon
Reporting Units		µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	mg/kg
EPA RSL for Industrial Soil		45000000	NE	230000000	NE	2100	21000	NE	210000	2100000	2100	30000000	30000000	21000	NE	23000000	1000000	NE
EPA RSL for Residential Soil		3600000	NE	18000000	NE	110	1100	NE	11000	110000	110	2400000	2400000	1100	NE	1800000	73000	NE
Sample ID	Sample Collection Date	Analytical Results																
SW-13 (0-0.5)	03/02/2020	<470	287 j	490	1720	**1680**	**1870**	1030	748	1530	<470	3010	<470	876	1280	2860	<470	NA
SW-13 (0.5-1)	03/02/2020	<482	142 j	<482	597	**615**	683	391 j	279 j	529	<482	942	<482	326 j	201 j	819	<482	NA
SW-13 (1-2)	03/02/2020	<510	<510	<510	172 j	<510	<510	<510	<510	163 j	<510	301 j	<510	<510	<510	269 j	<510	NA
SW-13A (0-0.5)	03/02/2020	<1300	516 j	1100 j	1990	**1860**	**2160**	1040 j	902 j	1810	<1300	4530	449 j	898 j	2380	4060	<1300	113000
SW-13A (0.5-1)	03/02/2020	<933	<933	<933	432 j	**421 j**	469 j	<933	<933	396 j	<933	875 j,R1	<933	<933	389 j	901 j,R1	<933	NA
SW-14 (0-0.5)	03/02/2020	<514	<514	<514	<514	<514	<514	<514	<514	<514	<514	182 j	<514	<514	<514	192 j	<514	NA
SW-14 (0.5-1)	03/02/2020	<504	<504	<504	<504	<504	<504	<504	<504	<504	<504	<504	<504	<504	<504	<504	<504	NA
SW-14 (1-2)	03/02/2020	<429	<429	<429	<429	<429	<429	<429	<429	<429	<429	<429	<429	<429	<429	<429	<429	NA
SW-14 (2-3)	03/02/2020	<487	<487	<487	<487	<487	<487	<487	<487	<487	<487	<487	<487	<487	<487	<487	<487	NA
SW-14A (0-0.5)	03/02/2020	<6640	3360 j	10500	22800	**20800**	**23200**	11400	8810	19700	<6640	44500	3230 j	**10400**	28600	43400	<6640	189000
SW-15 (0-0.5)	03/01/2020	<789	<789	<789	593 j	**573 j**	613 j	<789	<789	515 j	<789	968	<789	<789	296 j	879	<789	NA
SW-15 (0.5-1)	03/01/2020	<3230	1540 j	3580	8320	**8060**	**8970**	4600	3390	7280	<3230	16300	1420 j	**4040**	10400	16100	<3230	NA
SW-16 (0-0.5)	03/01/2020	<657	566 j	1910	4710	**3970**	**4540**	2210	2070	4040	<657	11400	412 j	**2000**	6630	8250	242 j	97900
SW-16 (0.5-1)	03/01/2020	<553	<553	<553	824	**739**	827	337 j	358 j	720	<553	1080	<553	338 j	143 j	962	<553	NA
SW-16 (1-2)	03/01/2020	<488	<488	<488	<488	<488	<488	<488	<488	<488	<488	<488	<488	<488	<488	<488	<488	NA
SW-16 (2-3)	03/01/2020	<467	<467	<467	<467	<467	<467	<467	<467	<467	<467	<467	<467	<467	<467	<467	<467	NA
QC SAMPLE RESULTS																		
SW-13A (0-0.5) DUP	03/02/2020	<1170	342 j	520 j	1020 j	**978 j**	976 j	545 j	<1170	935 j	<1170	2340	<1170	<1170	1060 j	1860	<1170	125000

Prepared by: JPC Checked by: TCK

Notes:
Bold type indicates that the compound was detected above the adjusted method detection limit.
- Indicates that the compound was detected above a potentially applicable screening level listed in Section 4.11 of the RIWP-A
- Indicates that the compound was detected above a potentially applicable screening level listed in Section 4.11 of the RIWP-A
< - Concentration not detected at or above the adjusted reporting limit.
µg/kg - Micrograms per kilogram
ASTM - American Society for Testing and Materials
Dup - duplicate
EPA - Environmental Protection Agency
j - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
MTBE - Methyl tert-butyl ether
NA - Not analyzed
NE - No screening level established at this time. A site-specific risk-based screening level may be established as part of the risk assessment process outlined in Section 5.0 of the RIWP-A.
PAH - Poly Aromatic Hydrocarbons
R1 - Relative Percent Difference (RPD) value was outside control limits.
RSL - Regional Screening Level
SVOC - semi-volatile organic compounds
VOA - volatile organic analysis
VOC - volatile organic compounds

TABLE 5
MONITORING WELL CONSTRUCTION DETAILS
QUARTERLY PROGRESS REPORT - FIRST QUARTER 2020
FORMER BRAMLETTE MGP SITE
DUKE ENERGY CAROLINAS, LLC, GREENVILLE, SC
VCC 16-5857-RP

Location	Well ID	Surface Casing (6-Inch Diameter)		Geophysics		Well Construction/Screened Interval (2-Inch Diameter)		
		Date	Depth (ft bls)	Date	Depth (ft bls)	Date	Top (ft bls)	Bottom (ft bls)
Source area (Parcel 1)	MW-37S	--	--	--	--	1/16/2020	5	20
	MW-37TZ	--	--	--	--	1/16/2020	65	70
	MW-37BR	1/7/2020	73	1/14/2020	124	1/15/2020	111	116
	MW-36S	--	--	--	--	1/30/2020	5	20
	MW-36TZ	--	--	--	--	1/30/2020	40	45
	MW-36BR	--	49	--	--	--	--	--
	MW-36BR	1/15/2020	54	2/4/2020	105	2/4/2020	63	68
	MW-42S	--	--	--	--	1/23/2020	5	20
	MW-42TZ	--	--	--	--	1/22/2020	50	55
	MW-42BR	1/13/2020	64	1/27/2020 1/28/2020	115	1/29/2020	72	77
Downgradient of Source Area (Parcel 2)	MW-35S	--	--	--	--	1/21/2020	5	15
	MW-35TZ	--	--	--	--	1/21/2020	30	35
	MW-29BR	12/17/2019	40	1/13/2020	90	1/15/2020	81	86
	MW-34S	--	--	--	--	11/7/2019	10	25
	MW-34TZ	--	--	--	--	11/7/2019	40	50
	MW-34BR	11/7/2019	69	11/22/2019 12/5/2019	120	12/5/2019	103	108
West of Vaughn Landfill (Parcel 3)	MW-02TZ	--	--	--	--	11/19/2019	27	32
	MW-02BR	11/18/2019	39	11/22/2019	80	11/22/2019	55	60
Within Vaughn Landfill (Parcel 3)	MW-03BRL	1/6/2020	69	--	105	1/9/2020	99	104
	MW-21BR	11/21/2019	25	12/6/2019	125	12/10/2019	37	42
	MW-21BRL	12/12/2019	48	--	--	1/20/2020	60	65
Adjacent to Reedy River (Swamp Rabbit Trail)	MW-30TZ	--	--	--	--	12/18/2019	35	40
	MW-32S	--	--	--	--	12/18/2019	20	35
	MW-32TZ	--	--	--	--	12/17/2019	56	66
	MW-33S	--	--	--	--	12/19/2019	5	20
	MW-33TZ	--	--	--	--	12/18/2019	35	40
	MW-48S	--	--	--	30.8	2/21/2020	15	30
	MW-48TZ	--	--	--	55	2/23/2020	45	55
CSXT/TransFlo Adjacent to Railroad Tracks (Moved East from Swamp Rabbit Trail due to Access Issues)	MW-40BR	2/22/2020	50	--	80	2/23/2020	65	75
South of Vaughn landfill (Parcel 4 - near property line adjacent to private properties)	MW-39S	--	--	--	--	11/22/2019	9	24
	MW-39BR	11/21/2019	35	12/5/2019	85	12/6/2019	45	50
	MW-39BRL	12/9/2019	55	--	--	1/20/2020	75	80
Behind Legacy Charter Elementary School	MW-41S	--	--	--	20	10/20/2019	5	20
	MW-41TZ	--	--	--	--	11/6/2019	45	55
	MW-41BR	--	--	--	--	10/20/2019	80	90

Prepared by: JPC Checked by: TCK

Notes:
All depths are approximate. Total depths are subject to change based on field conditions.
bls - below land surface

ATTACHMENT A

WELL ABANDONMENT FORMS

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

Note: *Personal information provided on this document is subject to public scrutiny or release.*

1. WELL OWNER INFORMATION:
Name: Duke Energy Carolinas (last) (first)
Address: 422 South Church St
City: Charlotte State: NC Zip: 29242-0000
Telephone: Work: Home:

2. LOCATION OF WELL: **COUNTY:** Greenville
Name: Bramlette Rd MGP Site
Street Address: 400 East Bramlett Road
City: Greenville Zip: 29601-0000
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:** MW-23

4. ABANDONMENT: ☑ Yes ☐ No
Give Details Below
Grouted Depth: from 42.5 ft. to SURFACE ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
Well Abandoned using		
Type I/11 neat cement		
to surface with tremie pipe.		
Well casing cemented in ground.		
Protective casing and		
well pad removed.		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		
5. REMARKS:		

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER:

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 4/27/1999
42.5 ft. Date Completed: 5/3/1999

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
0 in. to 32.5 ft. depth
in. to ft. depth
Height: Above/Below Surface 2.5 ft.
Weight lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: PVC Diam.: 2 inches
Slot/Gauge: 0.010 inches Length: 10 feet
Set Between: 32.5 ft. and 42.5 ft.
ft. and ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
ft. after hrs. Pumping G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield:

14. WATER QUALITY
Chemical Analysis ☐ Yes ☑ No Bacterial Analysis ☐ Yes ☑ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☐ Yes ☐ No
Installed from ft. to ft.
Effective size Uniformity Coefficient

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other
Depth: From 45 ft. to Surface ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft. direction
Type
Well Disinfected ☐ Yes ☐ No Type: Amount:

18. PUMP: Date installed: Not installed ☐
Mfr. Name: Model No.:
H.P. Volts Length of drop pipe ft. Capacity gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: Brian Spillane **CERT. NO.:** 2167
Address: (Print) Level: A B C D (circle one)
148 River Street Greenville SC 29601
Telephone No.: 8644219999 Fax No.:

20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Signed: Well Driller Date: 3/24/2020

If D Level Driller, provide supervising driller's name:
Richard Jacobs 1421B

COPY 1 MAIL TO SCDHEC, COPY 2 TO WELL OWNER, COPY 3 TO WELL DRILLER

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

Note: *Personal information provided on this document is subject to public scrutiny or release.*

1. WELL OWNER INFORMATION:
Name: Duke Energy Carolinas (last) (first)
Address: 422 South Church St
City: Charlotte State: NC Zip: 29242-0000
Telephone: Work: Home:

2. LOCATION OF WELL: **COUNTY:** Greenville
Name: Bramlette Rd MGP Site
Street Address: 400 East Bramlett Road
City: Greenville Zip: 29601-0000
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:** MW-24

4. ABANDONMENT: ☑ Yes ☐ No
Give Details Below
Grouted Depth: from 11 ft. to SURFACE ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
Well Abandoned using		
Type I/11 neat cement		
to surface with tremie pipe.		
Well casing removed ground.		
Protective casing and		
well pad removed.		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		
5. REMARKS:		

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER:

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 5/3/1999
11 ft. Date Completed: 5/3/1999

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
0 in. to 0.4 ft. depth
in. to ft. depth
Height: Above/Below
Surface 2.5 ft.
Weight lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: PVC Diam.: 2 inches
Slot/Gauge: 0.010 inches Length: 10 feet
Set Between: 0.4 ft. and 10.4 ft.
ft. and ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
ft. after hrs. Pumping G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield:

14. WATER QUALITY
Chemical Analysis ☐ Yes ☑ No Bacterial Analysis ☐ Yes ☑ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☐ Yes ☐ No
Installed from ft. to ft.
Effective size Uniformity Coefficient

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other
Depth: From 11 ft. to Surface ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft. direction
Type
Well Disinfected ☐ Yes ☐ No Type: Amount:

18. PUMP: Date installed: Not installed ☐
Mfr. Name: Model No.:
H.P. Volts Length of drop pipe ft. Capacity gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: Brian Spillane **CERT. NO.:** 2167
Address: (Print) Level: A B C D (circle one)
148 River Street Greenville SC 29601
Telephone No.: 8644219999 Fax No.:

20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Signed: Well Driller Date: 3/24/2020

If D Level Driller, provide supervising driller's name:
Richard Jacobs 1421B

DHEC 1903 (08/2017) **COPY 1 MAIL TO SCDHEC, COPY 2 TO WELL OWNER, COPY 3 TO WELL DRILLER**

INSTRUCTIONS

Water Well Record

This form is to be completed by an SC Certified Water Well Driller within thirty days of completion of the well. One copy is to be submitted to SCDHEC, another is intended for the well owner, and the final copy is for the well driller. In most cases, well location, owner, driller and other administrative information can be obtained from the Notice of Intent form. If additional comments are necessary, attach those on a separate sheet.

1. Include the name and present mailing address and telephone number of the well owner. This can be a tract owner or developer in the case of a new subdivision.

2. Indicate the exact number, street, city, zip, and county for the location of the well. If the street address is not available, attach a sketch map for general location and include lot number if it is in a new subdivision. “Same as 1" can be indicated if that is the case.

3. For public water supply, indicate system name and number.

4. Check appropriate box; for abandoned well, note grout depths. For the driller’s log, describe the formation, indicate the thickness and complete the depth to the bottom of the stratum.

5. Insert any comments.

6. Check the box indicating the drilling method.

7. Insert the eight-digit number assigned when the Notice of Intent was submitted for a residential or irrigation well. This space can also be used for the SCDHEC site identification number.

8. Check box indicating use.

9. Indicate the total depth in the space provided; fill in the requested dates.

10. Check appropriate boxes and complete the information requested for the casing.

11. Complete the information requested for the screen; check the appropriate box.

12. Measure the static water level 24 hours after well completion and provide the measurement in the space.

13. Provide pumping level, time, and rates in the appropriate spaces.

14. Indicate whether these analyses were run.

15. Provide the requested information on filter pack.

16. Check the appropriate boxes and provide the type and depth of the grout.

17. Complete the requested information concerning the nearest source of possible contamination.

18. If installed, provide the information requested concerning the pump.

19. Print name, SC certification number, address and business or mobile (or both) telephone number and fax number for the well driller.

20. The well driller installing the well signs and dates the form. If the driller is Level D, provide the supervising drillers name.

The completed Form 1903 should be submitted to the SCDHEC, Bureau of Water, Private Well Program, 2600 Bull Street, Columbia, SC 29201-1708.

ATTACHMENT B

RESULTS OF BOREHOLE GEOPHYSICAL INVESTIGATION

GEL Solutions

821 Livingston Court, Suite E
Marietta, GA 30067

P 770.980.1002

Geophysical Logging Report

MW – 02 BR, MW – 21 BR, MW – 29 BR, MW – 34 BR, MW – 35 BR, MW – 36 BR, MW – 37 BR, MW – 39 BR, MW – 42 BR

Former Bramlette MGP Plant, Greenville, South Carolina

Performed for:

SynTerra

March 3, 2020

Geophysical Logging Report: MW – 02 BR, MW – 21 BR, MW – 29 BR, MW – 34 BR, MW – 35 BR, MW – 36 BR, MW – 37 BR, MW – 39 BR, MW – 42 BR, Former Bramlette MGP Plant, Greenville, South Carolina

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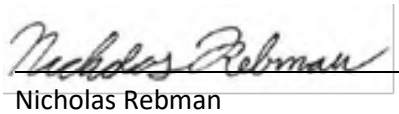
SIGNATURE PAGE

This report, entitled "Geophysical Logging Report: MW – 02 BR, MW – 21 BR, MW – 29 BR, MW – 34 BR, MW – 35 BR, MW – 36 BR, MW – 37 BR, MW – 39 BR MW – 42 BR, Former Bramlette MGP Plant, Greenville, South Carolina" has been prepared for SynTerra located in Greenville, South Carolina. It has been prepared under the supervision of Mr. Jorgen Bergstrom at the request of and the exclusive use of SynTerra. This report has been prepared in accordance with accepted quality control practices and has been reviewed by the undersigned.

GEL Solutions, LLC
A Member of the GEL Group, Inc.

Jorgen Bergstrom, P.Gp.
Senior Geophysicist



Nicholas Rebman
Geophysical Specialist

February 28, 2020

Date

EXECUTIVE SUMMARY

GEL Solutions performed geophysical borehole logging services in 9 borings located at a Former Bramlette MGP Plant in Greenville, South Carolina. The field investigations were performed on various dates between November 22, 2019 and February 4, 2020. This investigation was conducted to aid SynTerra in evaluating potential pathways for groundwater migration through fractured bedrock at the site. The geophysical logs consisted of acoustic televiewer, optical televiewer, caliper, fluid conductivity, fluid temperature, single point resistance (SPR), spontaneous potential (SP), and heat pulse flowmeter (HPF). HPF logging was conducted under both ambient and pumping conditions throughout the logging intervals.

The logging data was analyzed to determine the location and orientation of fractures; and other features. In addition to these data sets, synthetic caliper logs were calculated from the acoustic televiewer travel time data to aid in the interpretation. The logs were analyzed for fractures and other features. Dip and azimuth (dip direction) were calculated for each detected fracture based on the televiewer dataset. HPF data was analyzed to detect water producing fractures.

1.0 INTRODUCTION

GEL Solutions performed geophysical borehole logging services in 9 borings located at a Former Duke Energy MGP Plant in Greenville, South Carolina. The geophysical logs consisted of acoustic and optical televiewer, 3-arm caliper, fluid conductivity, fluid temperature, single point resistance (SPR), spontaneous potential (SP), and heat pulse flowmeter (HPF). The field investigation was performed . The logging data was analyzed to determine the location and orientation of fractures; and other features. In addition to these data sets, synthetic caliper logs were calculated from the acoustic televiewer travel time data to aid in the interpretation.

2.0 EQUIPMENT AND METHODOLOGY

The information below is an overview of the geophysical methodologies used for this investigation. The intent of this overview is to give the reader a better understanding of each method, and background information as to what is actually measured, the resolution of the method, and the limitations imposed by site-specific subsurface conditions.

2.1 Acoustic Televiewer

Acoustic televiewer (ATV) logging produces a high resolution, magnetically oriented digital image of the borehole wall to map the location and orientation of intersecting fractures, foliations, and lithologic contacts. The Acoustic televiewer tool emits a rotating, narrow, acoustic beam that is reflected off the borehole wall. The travel time and amplitude of the reflected wave are recorded by the tool and used to create borehole images. Both datasets are useful for identifying the location and orientation of fractures. The amplitude of the reflected signal will decrease at the location of fractures and the travel time will increase. The travel time data can also be used for developing a high resolution caliper log for a more comprehensive analysis of fractures. Acoustic televiewers can only be used in fluid filled boreholes. However, the fluid does not have to be optically clear for the method to work.

When operating the ATV, a “time window” is set based on the borehole diameter. The time window is the time interval in which the ATV instrument searches for an echo from the borehole wall. For smaller increases in borehole diameter around fractures and sections of weaker rock, the ATV typically records an accurate borehole diameter (correlates well with three-arm caliper data). However, if borehole openings are

much larger than the borehole diameter, the echo from the borehole wall may fall outside the time window, or be too weak to be detected. In these situations, borehole diameters recorded with ATV may be inaccurate. Since ATV only records the reflection from the borehole wall, the data cannot be used to determine how far a fracture extends from the borehole. The acoustic televiewer has a vertical resolution of 2 millimeters.

2.2 Optical Televiewer

Optical televiewer (OTV) logging is used to record and digitize a 360-degree color image of the borehole wall. Planar features such as fractures, foliation, and lithologic contacts can be identified directly on the images. The tool is magnetically oriented in order to determine the strike and dip of features. Televiewers have a vertical resolution of 2mm. As a result, it is able to see features other tools may not resolve. Optical images can be collected above or below the water surface, provided the water is sufficiently clear for viewing the borehole wall**.**

2.3 3-Arm Caliper

Caliper logging is used to generate a profile of the borehole diameter with depth. The tool measures the borehole diameter using three spring-loaded arms. Narrow enlargements in the borehole diameter can, in most cases, be attributed to fractures. Caliper logging can be conducted above and below the water surface.

2.4 Fluid Temperature

Fluid temperature logging is used to identify where water enters or exits the borehole. In the absence of fluid flow, a gradual increase on water temperature of approximately 1^{o}F per 100 feet of depth is expected. Rapid changes in the fluid temperature indicate water-producing or water-receiving zones. Little or no temperature gradient indicates intervals of vertical flow.

2.5 Fluid Conductivity

Fluid conductivity logging is used to measure the electrical conductivity of the fluid in the borehole. Variations in fluid conductivity can be contributed to concentration variations of dissolved solids. These differences can occur when sources of water have contrasting chemistry and have come from different transmissive zones. Fluid temperature and conductivity are measured concurrently using the same logging tool.

2.6 Single Point Resistance (SPR)

Single point resistance logging involves passing an alternate current between a surface electrode and a probe electrode and measuring the voltage difference created by the current. SPR is then calculated using Ohm's law. SPR is the sum of cable resistance, and the resistance based on the composition of the medium, the cross sectional area and length of the path through the medium. Therefore, the single point resistance log does not provide quantitative data. In general, SPR increases with increasing grain size and decreases with increasing borehole diameter, fracture density, and the concentration of dissolved solids in the water. Single-point resistance logs are useful in the determination of lithology, water quality, and location of fracture zones

2.7 Spontaneous Potential (SP)

SP logging is conducted to measure naturally occurring voltage differences along a borehole. The method has been found useful for delineating sandstone/shale layering and other boundaries between permeable and impermeable beds. The measurements are made with reference to an electrode at ground level. Therefore, SP logging does not provide quantitative data.

2.8 Heat Pulse Flowmeter (HPF)

HPF logging measures the direction and rate of vertical fluid flow in a borehole by heating up a small volume of water and monitoring temperature variations as the heated water moves with the fluid flow in the borehole. Under ambient conditions, differences in hydraulic head between two transmissive fractures produce vertical flow in the borehole. However, if the hydraulic head is the same, no flow will occur under ambient conditions. Therefore, HPF logging is also conducted under low-rate pumping conditions. HPF readings are point readings at the location of fractures. The location and number of these readings can be determined after analyzing the other geophysical logs for fractures. HPF can be used for measuring vertical flows between 0.005 gallons per minute (gpm) and approximately 1.5 gpm. In HPF data, upward flow is shown as positive flow, and downward flow is shown as negative flow.

3.0 FIELD PROCEDURES

All GEL Solutions activities on-site were supervised by a senior geophysicist. For this investigation, GEL Solutions used a Mount Sopris Matrix logging system. Pumping tests during HPF testing were conducted using a Grundfos Redi-Flow-2 water pump with variable speed control box and an in-situ Mini-Troll pressure transducer with logging capabilities. The pump is placed above the interval to be analyzed and preferably in the casing

(unless the water level is too low). HPF logging under pumping conditions commenced after the borehole water level had stabilized. HPF logging was conducted at every 5 feet throughout the logging intervals under ambient and pumping conditions. More closely spaced readings were then conducted at sections with abrupt changes in flow. A summary of the configuration of the boreholes, pumping rates, and water levels is provided below. All depth measurements are referenced from the ground surface. All borings are surface cased and open hole below the casing.

Logging Configuration Summary

Well ID:	MW - 29 BR	MW - 35 BR	MW - 36 BR	MW - 37 BR	MW - 42 BR
Casing Material:	PVC	PVC	PVC	PVC	PVC
Casing Diameter (in):	5.9	5.9	5.9	5.9	5.9
Open Hole (ft):	38 - 88	39 - 89	54 - 102	73 - 122	63 - 113
Open Hole Diameter (in):	5.0	5.0	5.0	5.0	5.0
Pumping Rate (gpm):	0.2	< 0.1	1.0	1.0	1.0
Pump Depth (ft)	30	30	30	30	30
Water level before Pumping (ft):	3.5	0.9	4.8	4.8	4.15
Water level at equilibrium (ft):	22.6	25.4	6.9	21.4	21.45

Well ID:	MW-02 BR	MW-21 BR	MW-34 BR	MW-39 BR
Casing Material:	PVC	PVC	PVC	PVC
Casing diameter (in):	5.9	5.9	5.9	5.9
Open hole (ft):	39-72	24-120	69-118	35-84
Open hole diameter (in):	5.0	5.0	5.0	5.0
Pumping rate (gpm):	1.0	1.0	0.1	0.5
Pump depth (ft):	30	20	45	30
Water level before pumping (ft):	7.6	5.6	17.2	10.3
Water level at equilibrium (ft):	26.8	7.8	39.85	28.3

4.0 DATA PROCESSING AND RESULTS

The logs were analyzed for fractures and other features using WellCAD software, manufactured by Advanced Logic Technology. The travel time data from the acoustic televiewer log was used to develop a maximum caliper log. Fractures were interpreted through a complete data analysis of all logs. Dip and azimuth (dip direction) were calculated for each detected fracture. The fracture data was corrected from apparent to true dip and azimuth using deviation logs included with the televiewer dataset, and from magnetic north to true north by rotating the fracture azimuths 6.7° counterclockwise. Magnetic north is 6.7° west of true north at the site (according to National Oceanic and Atmospheric Administration). The reported azimuth is measured clockwise from true north (Figure 1). A fracture summary table including fracture attributes is provided in Appendix 1. Dominating water producing fractures based on flow logging or other evidence are highlighted and shown in bold and italics text. Minor water producing fractures based on flow logging are shown in bold.

Schmidt stereonets (lower hemisphere) with fracture characteristics and fracture rose diagrams are presented on Appendix 2. HPF logs and fracture characteristics are shown on Appendix 3. All logs are presented on Appendix 4. All depths are referenced from ground surface.

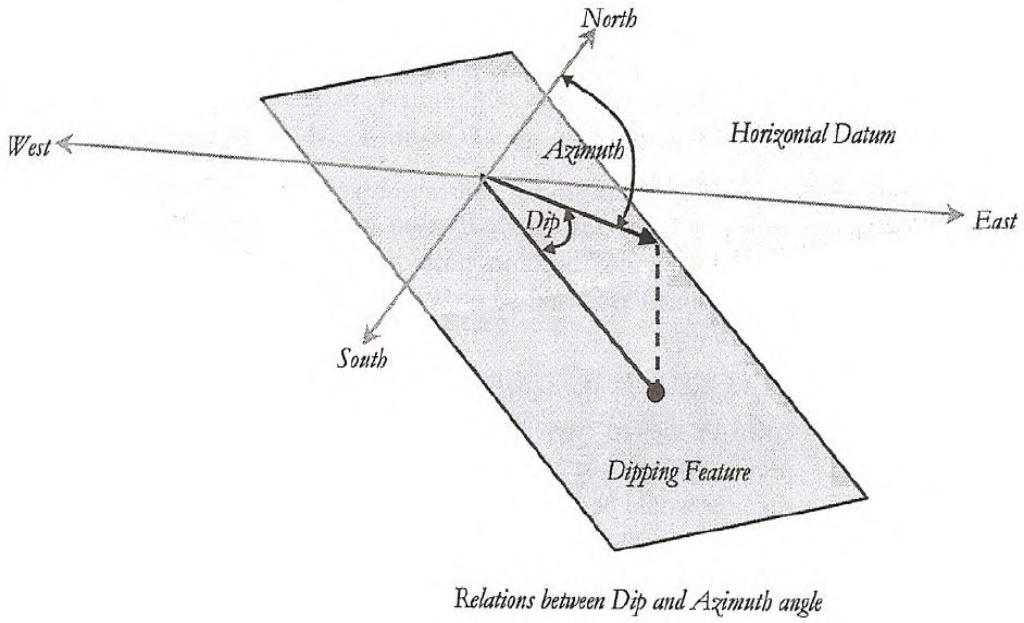


Figure 1 Explanation of azimuth and dip for fractures

Appendix 1

Fracture Summary Table
Former Bramlette MGP Plant

MW - 29 BR

Depth ft	Azimuth deg	Dip deg
39.9	18	54
40.4	268	62
42.3	**345**	**51**
47.8	295	34
53.4	65	26
54.0	30	36
54.1	23	34
57.2	32	28
57.6	41	28
58.0	20	34
58.5	31	37
58.9	49	38
60.9	21	45
61.8	19	15
63.6	94	15
65.2	36	35
65.4	37	40
66.3	26	30
66.8	41	19
67.5	296	29
68.9	14	33
69.5	49	35
71.2	46	31
72.7	358	10
73.0	**322**	**20**
75.9	271	38
78.5	36	40
82.8	**34**	**20**
84.7	**36**	**46**

MW - 35 BR

Depth ft	Azimuth deg	Dip deg
39.6	45	49
41.1	**344**	**57**
43.3	**334**	**40**
43.7	12	28
44.4	211	24
50.2	358	38
54.1	3	13
65.2	15	40
66.7	22	24
66.9	96	41
68.9	341	27
69.1	43	15
76.6	72	33
81.2	34	42
81.3	54	43
81.5	31	51
81.9	13	32
82.3	16	33
83.3	61	20
83.7	112	17
85.0	99	40
85.7	356	48
87.3	26	41
88.5	33	49

MW - 36 BR

Depth ft	Azimuth deg	Dip deg
54.7	***147***	***29***
55.2	175	11
58.2	66	37
58.8	251	22
63.4	177	79
64.1	109	38
65.7	183	42
66.5	152	73
66.8	351	45
67.4	168	51
67.4	358	61
69.7	294	23
70.0	316	37
78.1	36	31
87.1	96	23
87.7	9	28
92.7	83	29
92.9	58	27
94.1	**307**	**52**
94.2	32	34
94.3	4	58
95.7	348	44
95.8	12	34
95.9	357	23
96.3	2	41
96.9	3	30
97.3	310	48
97.9	**274**	**28**

Dominating water producing fractures are highlighted and shown in bold italicized text. Minor water producing fractures are shown in bold text. Closed fractures are shown in plain text.

Fracture Summary Table
Former Bramlette MGP Plant

MW - 37 BR

Depth ft	Azimuth deg	Dip deg
73.1	104	17
73.8	1	82
76.4	176	81
80.9	344	40
81.4	346	36
82.5	62	45
84.9	42	45
87.1	**86**	**19**
87.3	**76**	**43**
90.9	345	25
91.2	353	21
98.1	242	1
98.3	293	82
105.8	34	59
114.6	***33***	***59***
116.2	**34**	**79**

MW - 42 BR

Depth ft	Azimuth deg	Dip deg
64.4	213	49
65.5	343	69
66.4	22	38
67.4	18	43
68.9	276	70
69.0	335	44
70.1	16	21
70.6	336	20
72.4	48	43
73.7	***60***	***46***
75.6	351	61
78.0	53	12
79.3	331	39
79.5	46	26
82.5	46	44
83.7	26	51
83.9	268	50
85.7	**316**	**71**
89.3	**49**	**43**
89.5	***56***	***40***
92.0	39	57
92.2	43	49
94.3	30	38
97.5	38	32
98.0	28	42
98.3	82	51
98.6	84	44
99.0	39	38
99.9	55	40
101.9	66	33
102.2	72	11
102.5	68	34
103.6	43	45
112.2	52	45

Dominating water producing fractures are highlighted and shown in bold italicized text. Minor water producing fractures are shown in bold text. Closed fractures are shown in plain text.

Fracture Summary Table
Former Bramlette MGP Plant

MW-02 BR

Depth ft	Azimuth deg	Dip deg
39.3	**244**	**8**
40.4	**264**	**42**
46.0	**38**	**59**
46.5	***43***	***42***
46.9	**40**	**60**
52.0	49	64
54.6	38	44
54.8	234	31
55.6	162	48
57.5	8	30
57.7	343	18
57.9	12	22
58.6	356	38
60.1	269	53
60.2	267	40
62.5	53	47
64.6	**2**	**35**
65.8	**31**	**46**

MW-21 BR

Depth ft	Azimuth deg	Dip deg
24.3	***66***	***18***
27.7	149	26
29.1	**19**	**28**
34.6	52	15
35.3	**208**	**55**
35.7	**216**	**56**
36.2	147	20
36.3	207	13
36.5	52	1
37.0	48	30
37.5	87	40
37.9	274	27
38.3	219	46
38.4	219	48
40.1	**210**	**46**
43.7	42	2
45.3	182	16
45.8	186	21
46.3	162	27
46.6	181	17
47.1	42	1
48.9	221	51
49.4	45	1
49.7	179	4
49.7	196	22
49.9	83	20
50.0	59	22
50.6	46	1
50.6	358	6
51.1	344	30
52.0	269	19
52.1	43	1
52.3	144	12
52.5	205	32
53.2	111	33
53.3	160	34
53.6	346	9
53.7	358	11

MW-21 BR

Depth ft	Azimuth deg	Dip deg
54.0	32	31
54.3	275	37
54.5	319	35
54.8	108	31
55.4	323	39
56.0	343	28
56.6	54	16
57.1	309	24
57.8	**19**	**35**
58.0	358	31
58.8	60	79
59.0	38	31
59.6	345	16
59.9	315	18
60.6	349	28
61.5	**49**	**35**
62.1	191	17
62.5	***9***	***46***
63.0	***20***	***51***
63.2	**39**	**50**
64.4	26	54
64.9	17	33
65.2	0	29
66.1	**96**	**26**
66.6	35	16
72.5	12	19
72.8	59	17
73.2	42	24
78.5	5	7
78.7	353	10
84.0	**22**	**38**
88.5	147	7
89.9	42	2
90.6	149	42
91.1	40	2
96.7	**353**	**71**
98.9	357	59
102.0	358	43

Dominating water producing fractures are highlighted and shown in bold italicized text. Minor water producing fractures are shown in bold text. Closed fractures are shown in plain text.

Fracture Summary Table
Former Bramlette MGP Plant

MW-21 BR

Depth ft	Azimuth deg	Dip deg
104.1	15	53
105.4	185	60
106.0	349	33
106.0	173	15
106.1	16	40
110.9	336	23
111.1	37	2
111.2	38	2
111.6	15	33
111.9	179	17
112.0	37	2
112.2	163	9
114.2	**67**	**22**
114.4	**43**	**30**
114.6	**28**	**40**

MW-34 BR

Depth ft	Azimuth deg	Dip deg
71.7	**318**	**39**
73.1	**349**	**36**
74.4	345	35
75.7	345	27
77.6	357	17
77.8	6	14
78.2	5	30
80.9	326	43
85.4	46	39
86.5	32	47
87.4	31	44
87.7	38	47
88.3	21	44
89.8	14	52
90.4	330	39
91.1	12	46
92.0	50	37
94.2	72	38
95.4	38	31
95.8	20	32
96.8	18	24
98.4	52	50
99.2	32	49
100.1	35	40
101.2	50	31
103.8	131	76
104.0	328	16
104.2	300	66
104.8	***317***	***43***
105.1	***319***	***52***
105.6	40	26
106.6	268	39
107.0	62	33
107.7	69	54
108.6	68	64
108.7	195	54
109.4	253	22
110.9	80	45

MW-34 BR

Depth ft	Azimuth deg	Dip deg
111.3	43	44
111.6	71	51
112.0	7	29
112.2	55	56
112.7	58	60
113.2	21	42
115.1	**51**	**36**
115.3	**44**	**38**

Dominating water producing fractures are highlighted and shown in bold italicized text. Minor water producing fractures are shown in bold text. Closed fractures are shown in plain text.

Fracture Summary Table
Former Bramlette MGP Plant

MW-39 BR

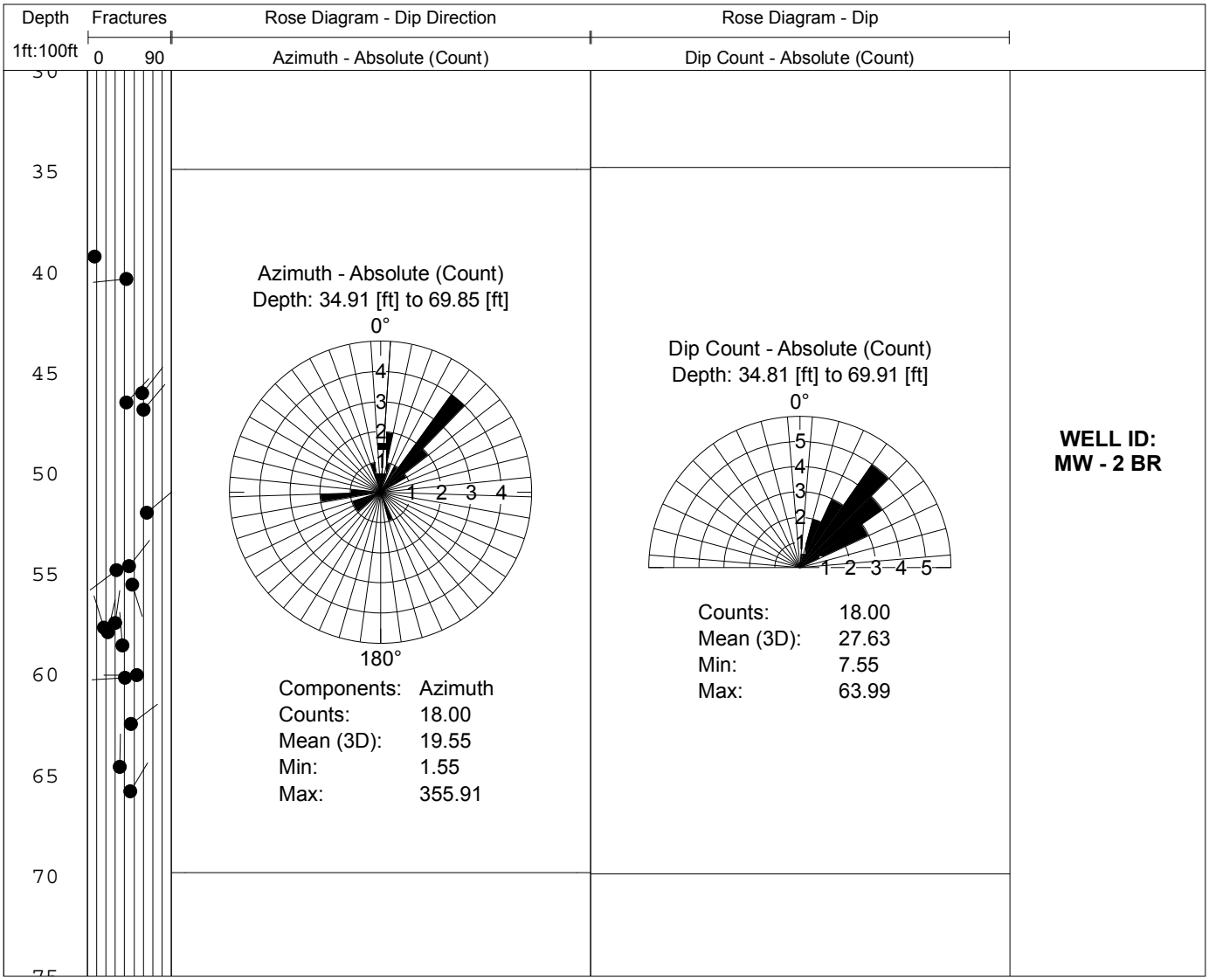
Depth ft	Azimuth deg	Dip deg
35.8	***72***	***12***
36.2	31	30
36.3	39	20
37.1	54	31
37.3	55	31
37.8	13	65
38.2	84	32
38.5	98	6
38.7	68	37
39.7	87	27
40.1	63	38
40.4	110	24
42.1	69	29
42.6	82	32
42.7	64	18
42.9	82	32
43.3	61	25
44.0	***0***	***20***
44.0	***120***	***11***
44.5	356	11
44.7	359	10
45.4	***119***	***16***
45.9	131	23
46.2	***153***	***11***
46.7	351	34
47.2	44	35
47.8	46	37
49.2	334	35
49.7	***223***	***6***
50.1	342	30
50.5	335	26
50.8	342	25
50.9	33	16
51.9	***35***	***26***
52.3	***309***	***19***
52.5	***78***	***32***
52.8	52	27
53.3	28	21

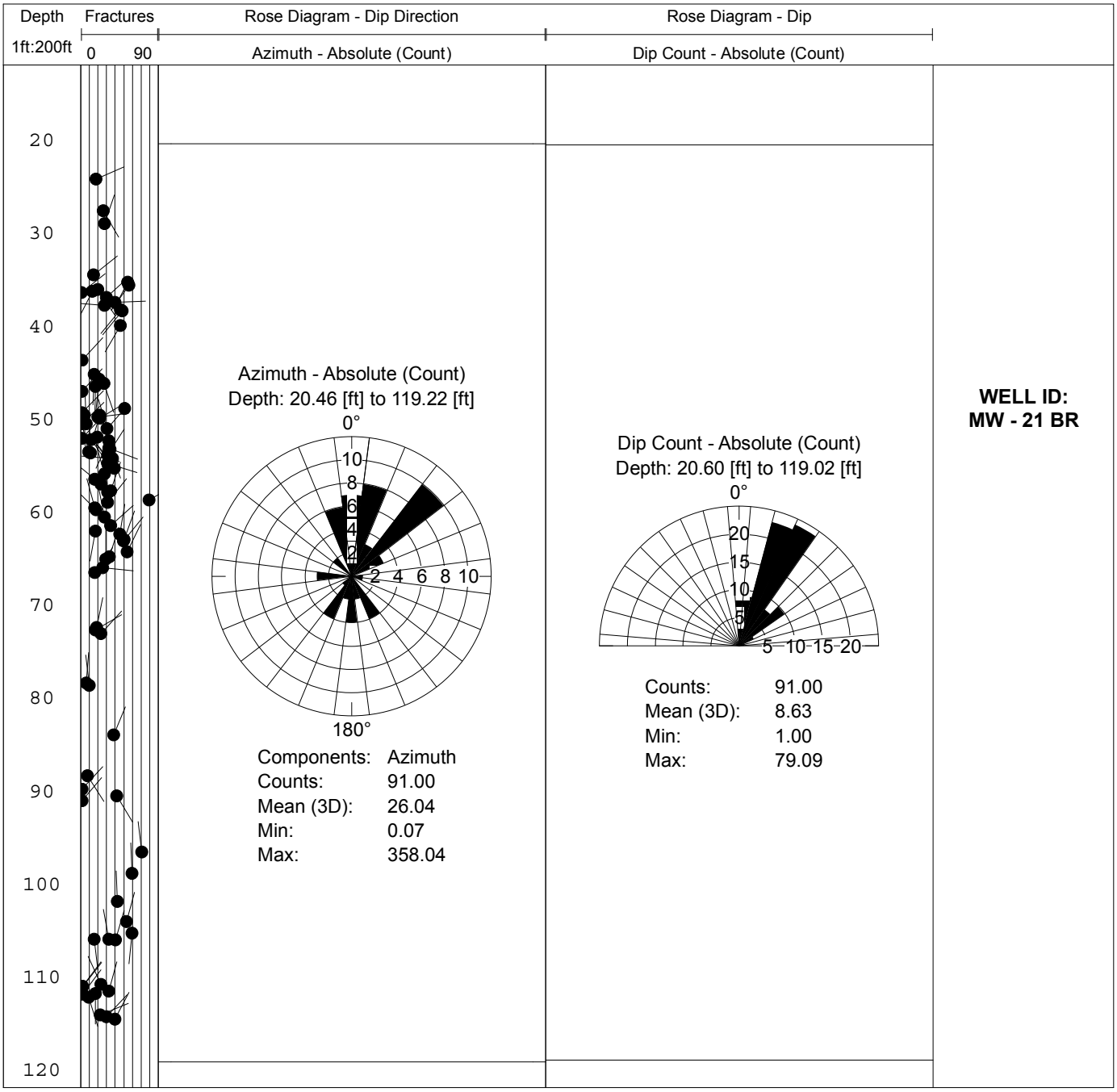
MW-39 BR

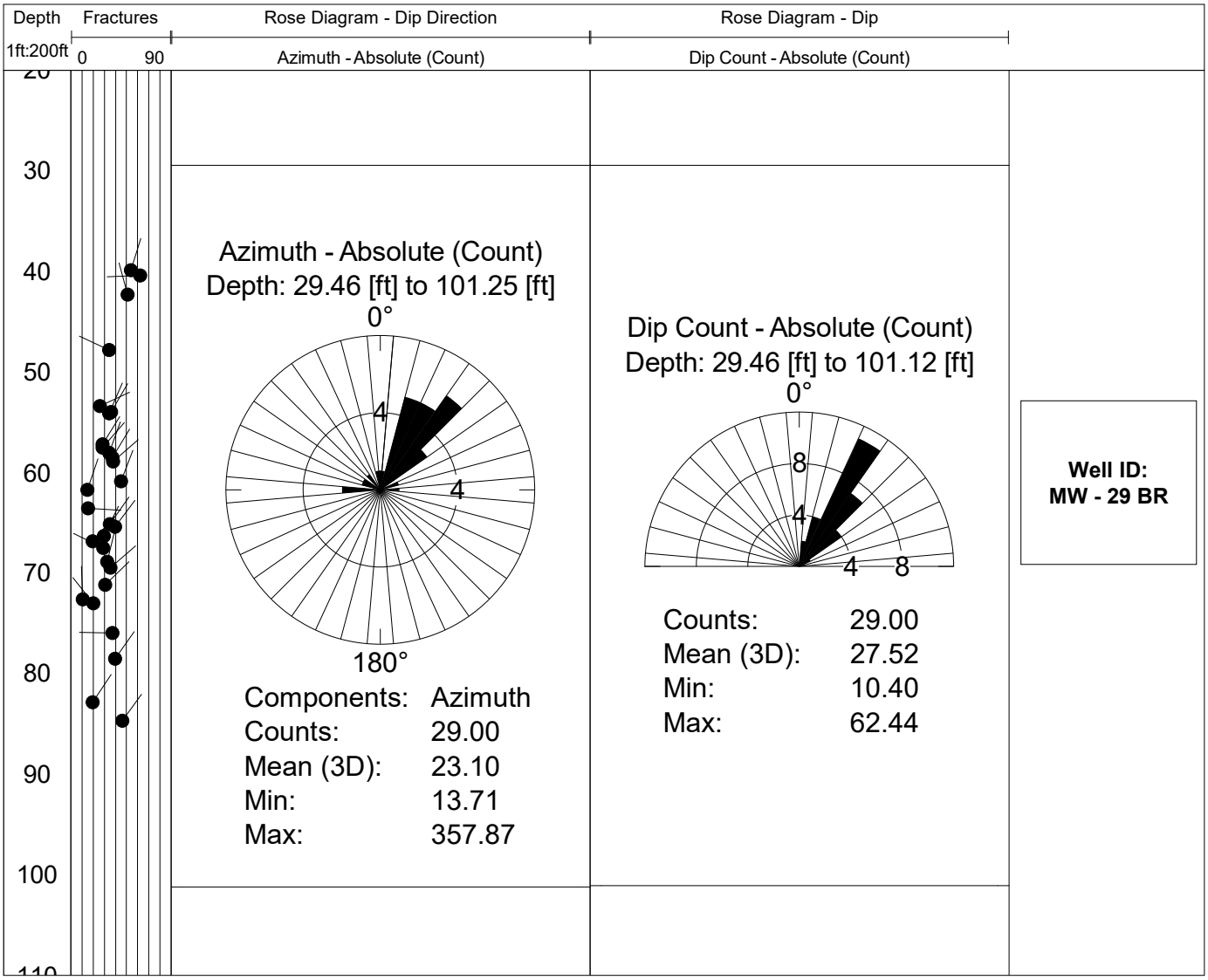
Depth ft	Azimuth deg	Dip deg
53.5	26	38
54.7	169	25
55.5	13	26
55.8	4	25
56.7	59	11
58.1	206	20
59.9	295	26
60.9	86	51
61.6	273	45
61.8	91	25
64.8	321	39
70.6	76	34
71.2	77	25
73.8	61	37
74.0	66	38
74.7	**84**	**32**
77.6	**164**	**73**

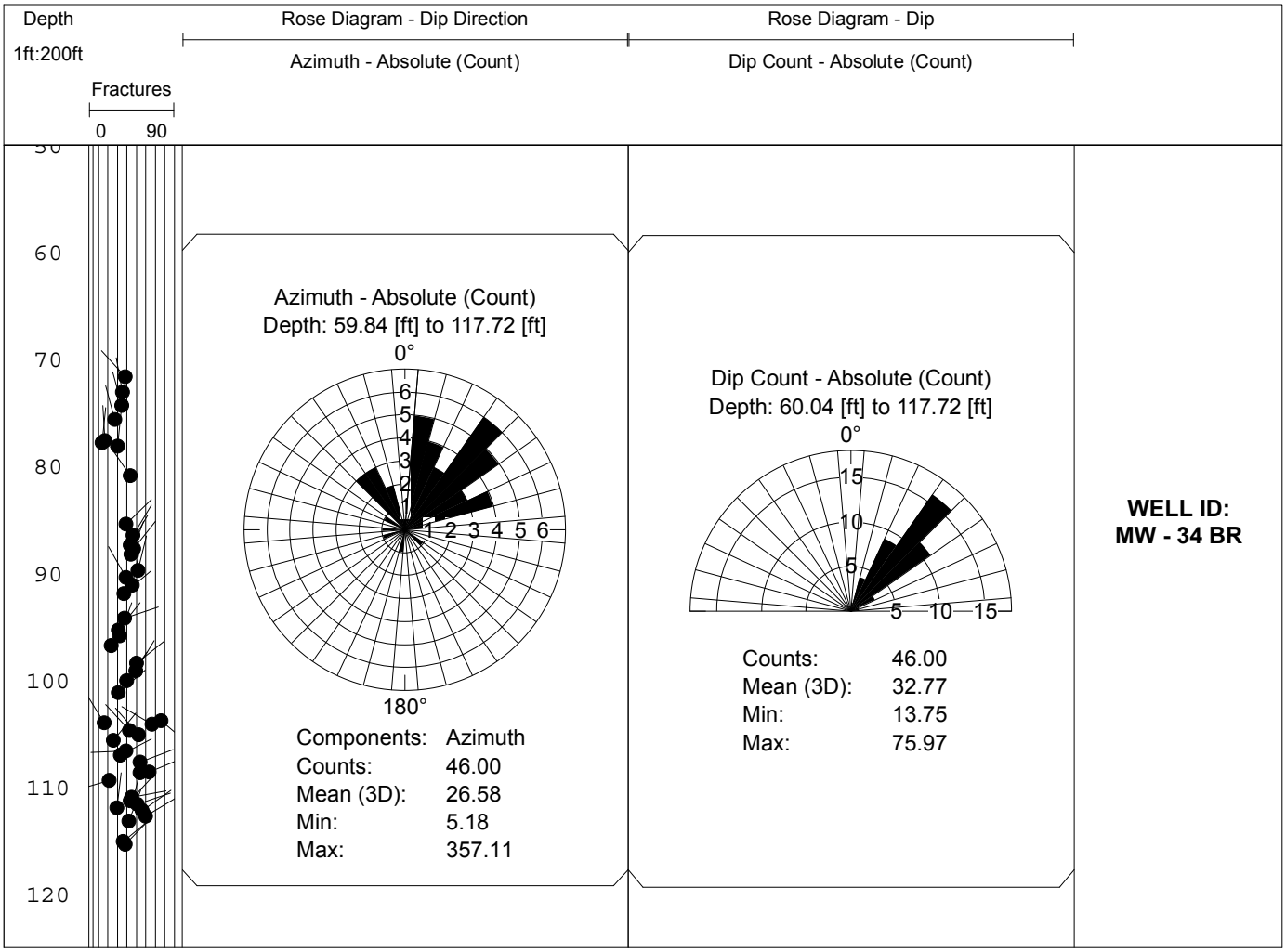
Dominating water producing fractures are highlighted and shown in bold italicized text. Minor water producing fractures are shown in bold text. Closed fractures are shown in plain text.

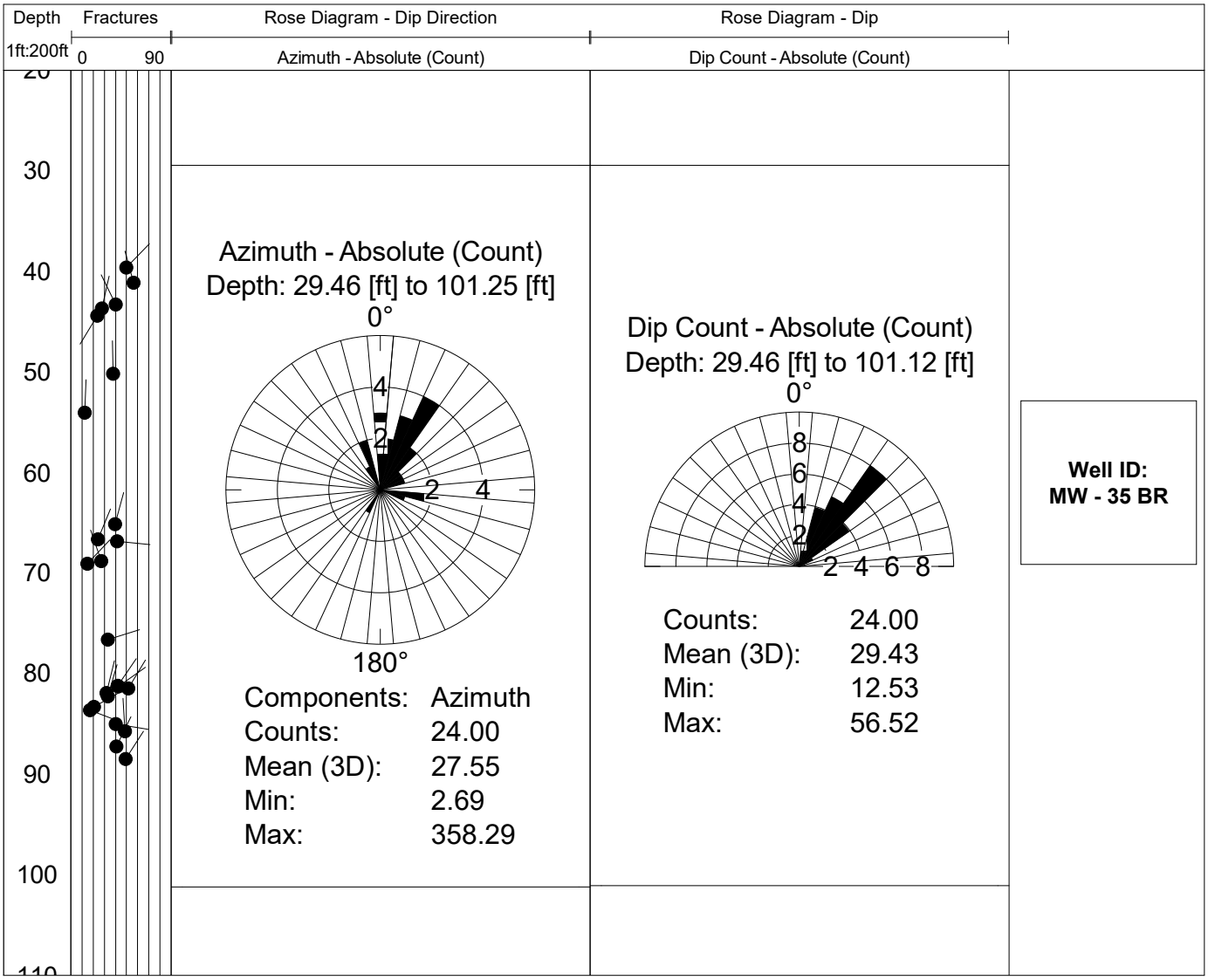
Appendix 2

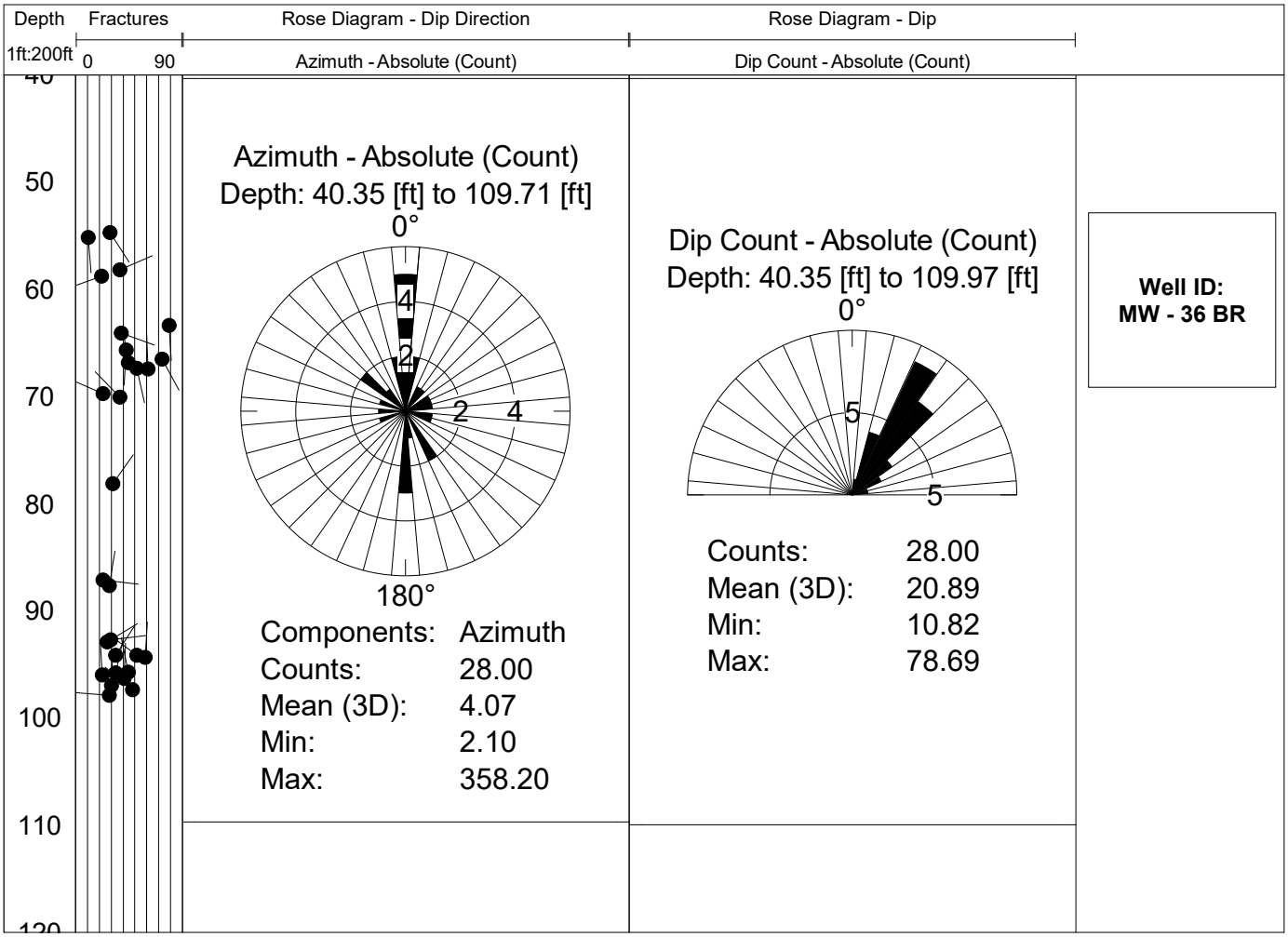

Depth
1ft:100ft
Fractures
0
90
Rose Diagram - Dip Direction
Azimuth - Absolute (Count)
Rose Diagram - Dip
Dip Count - Absolute (Count)
35
40
45
50
55
60
65
70
Azimuth - Absolute (Count)
Depth: 34.91 [ft] to 69.85 [ft]
0°
1
2
3
4
180°
Components: Azimuth
Counts: 18.00
Mean (3D): 19.55
Min: 1.55
Max: 355.91
Dip Count - Absolute (Count)
Depth: 34.81 [ft] to 69.91 [ft]
0°
1
2
3
4
5
Counts: 18.00
Mean (3D): 27.63
Min: 7.55
Max: 63.99
WELL ID:
MW - 2 BR

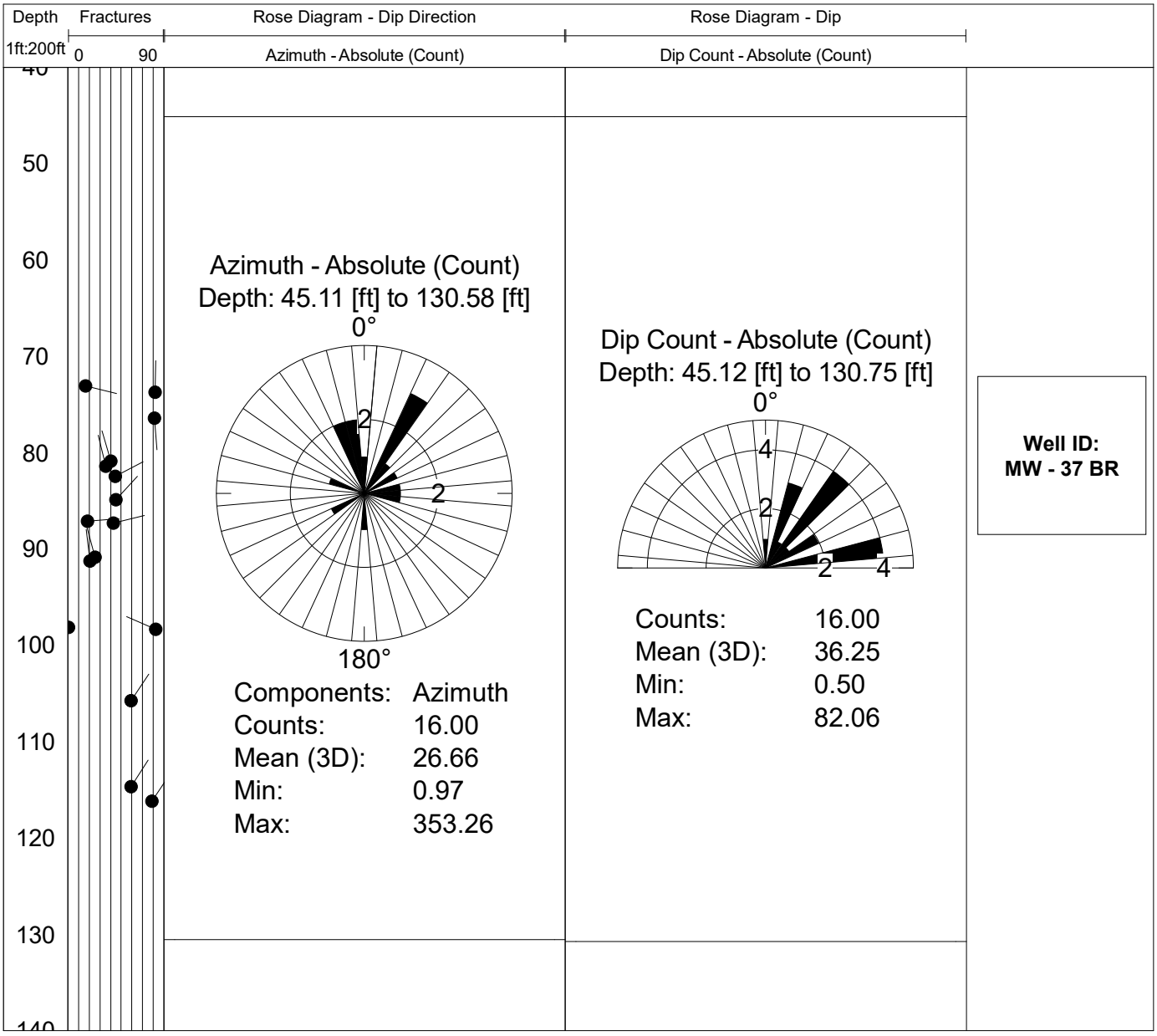

Depth
1ft:200ft
Fractures
0
90
Rose Diagram - Dip Direction
Azimuth - Absolute (Count)
Rose Diagram - Dip
Dip Count - Absolute (Count)
20
30
40
50
60
70
80
90
100
110
120
Azimuth - Absolute (Count)
Depth: 20.46 [ft] to 119.22 [ft]
0°
10
8
6
4
2
2 4 6 8 10
180°
Components: Azimuth
Counts: 91.00
Mean (3D): 26.04
Min: 0.07
Max: 358.04
Dip Count - Absolute (Count)
Depth: 20.60 [ft] to 119.02 [ft]
0°
20
15
10
5
5 10 15 20
Counts: 91.00
Mean (3D): 8.63
Min: 1.00
Max: 79.09
WELL ID:
MW - 21 BR

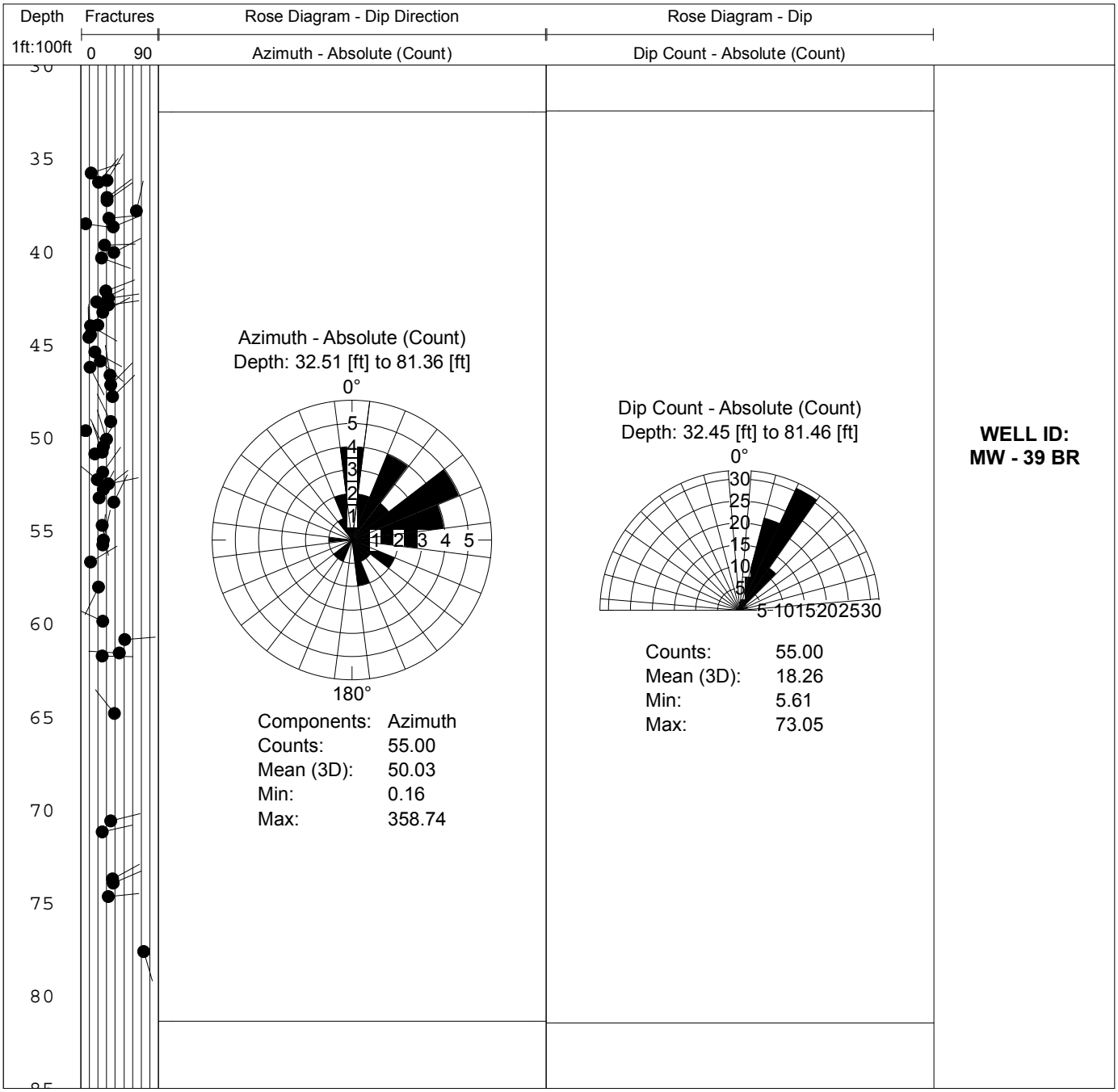

Depth
Fractures
Rose Diagram - Dip Direction
Rose Diagram - Dip
1ft:200ft
0
90
Azimuth - Absolute (Count)
Dip Count - Absolute (Count)
30
40
50
60
70
80
90
100
Azimuth - Absolute (Count)
Depth: 29.46 [ft] to 101.25 [ft]
0°
4
4
180°
Components: Azimuth
Counts: 29.00
Mean (3D): 23.10
Min: 13.71
Max: 357.87
Dip Count - Absolute (Count)
Depth: 29.46 [ft] to 101.12 [ft]
0°
8
4
4
8
Counts: 29.00
Mean (3D): 27.52
Min: 10.40
Max: 62.44
Well ID:
MW - 29 BR

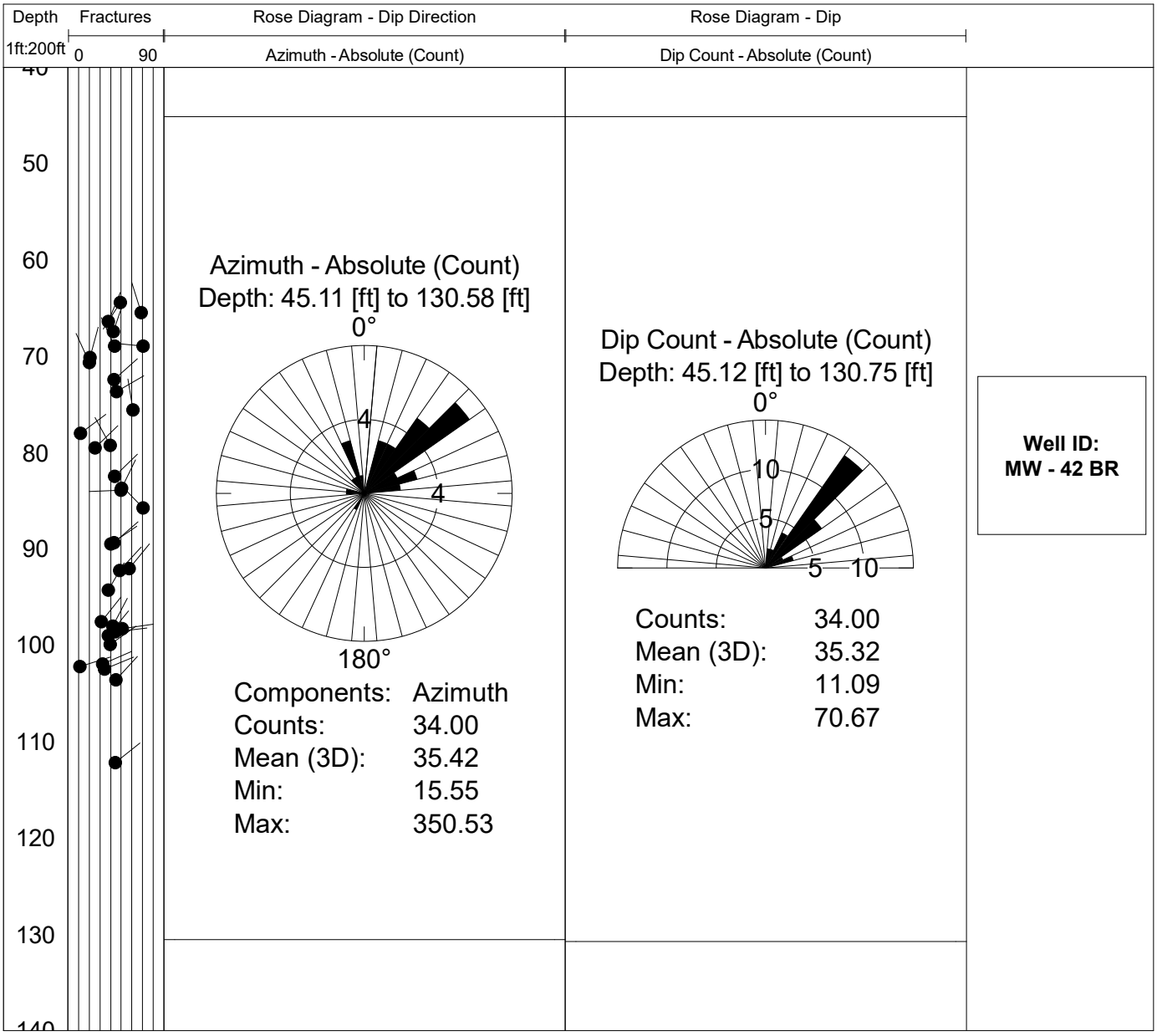

Depth
1ft:200ft
Fractures
0
90
Rose Diagram - Dip Direction
Azimuth - Absolute (Count)
Rose Diagram - Dip
Dip Count - Absolute (Count)
60
70
80
90
100
110
120
Azimuth - Absolute (Count)
Depth: 59.84 [ft] to 117.72 [ft]
0°
1 2 3 4 5 6
180°
Components: Azimuth
Counts: 46.00
Mean (3D): 26.58
Min: 5.18
Max: 357.11
Dip Count - Absolute (Count)
Depth: 60.04 [ft] to 117.72 [ft]
0°
5
10
15
5 10 15
Counts: 46.00
Mean (3D): 32.77
Min: 13.75
Max: 75.97
WELL ID:
MW - 34 BR


Depth
Fractures
Rose Diagram - Dip Direction
Rose Diagram - Dip
1ft:200ft
0
90
Azimuth - Absolute (Count)
Dip Count - Absolute (Count)
20
30
40
50
60
70
80
90
100
110
Azimuth - Absolute (Count)
Depth: 29.46 [ft] to 101.25 [ft]
0°
4
2
2
4
180°
Components: Azimuth
Counts: 24.00
Mean (3D): 27.55
Min: 2.69
Max: 358.29
Dip Count - Absolute (Count)
Depth: 29.46 [ft] to 101.12 [ft]
0°
8
6
4
2
2 4 6 8
Counts: 24.00
Mean (3D): 29.43
Min: 12.53
Max: 56.52
Well ID:
MW - 35 BR

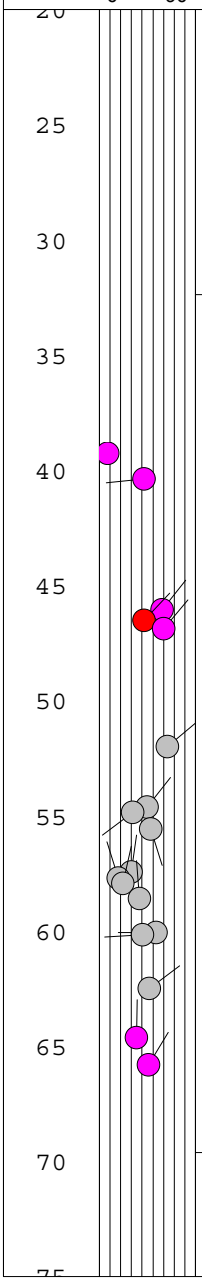

Depth
Fractures
Rose Diagram - Dip Direction
Rose Diagram - Dip
1ft:200ft
0
90
Azimuth - Absolute (Count)
Dip Count - Absolute (Count)
50
60
70
80
90
100
110
Azimuth - Absolute (Count)
Depth: 40.35 [ft] to 109.71 [ft]
0°
4
2
2
4
180°
Components: Azimuth
Counts: 28.00
Mean (3D): 4.07
Min: 2.10
Max: 358.20
Dip Count - Absolute (Count)
Depth: 40.35 [ft] to 109.97 [ft]
0°
5
5
Counts: 28.00
Mean (3D): 20.89
Min: 10.82
Max: 78.69
Well ID:
MW - 36 BR


Depth
Fractures
Rose Diagram - Dip Direction
Rose Diagram - Dip
1ft:200ft
0
90
Azimuth - Absolute (Count)
Dip Count - Absolute (Count)
50
60
70
80
90
100
110
120
130
Azimuth - Absolute (Count)
Depth: 45.11 [ft] to 130.58 [ft]
0°
2
2
180°
Components: Azimuth
Counts: 16.00
Mean (3D): 26.66
Min: 0.97
Max: 353.26
Dip Count - Absolute (Count)
Depth: 45.12 [ft] to 130.75 [ft]
0°
4
2
2
4
Counts: 16.00
Mean (3D): 36.25
Min: 0.50
Max: 82.06
Well ID:
MW - 37 BR

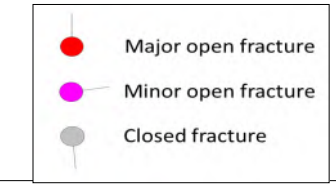

Depth
1ft:100ft
Fractures
0
90
Rose Diagram - Dip Direction
Azimuth - Absolute (Count)
Rose Diagram - Dip
Dip Count - Absolute (Count)
35
40
45
50
55
60
65
70
75
80
Azimuth - Absolute (Count)
Depth: 32.51 [ft] to 81.36 [ft]
0°
1 2 3 4 5
180°
Components: Azimuth
Counts: 55.00
Mean (3D): 50.03
Min: 0.16
Max: 358.74
Dip Count - Absolute (Count)
Depth: 32.45 [ft] to 81.46 [ft]
0°
30
25
20
15
10
5
5 10 15 20 25 30
Counts: 55.00
Mean (3D): 18.26
Min: 5.61
Max: 73.05
WELL ID:
MW - 39 BR


Depth
Fractures
Rose Diagram - Dip Direction
Rose Diagram - Dip
1ft:200ft
0
90
Azimuth - Absolute (Count)
Dip Count - Absolute (Count)
50
60
70
80
90
100
110
120
130
Azimuth - Absolute (Count)
Depth: 45.11 [ft] to 130.58 [ft]
0°
4
4
180°
Components: Azimuth
Counts: 34.00
Mean (3D): 35.42
Min: 15.55
Max: 350.53
Dip Count - Absolute (Count)
Depth: 45.12 [ft] to 130.75 [ft]
0°
10
5
5
10
Counts: 34.00
Mean (3D): 35.32
Min: 11.09
Max: 70.67
Well ID:
MW - 42 BR

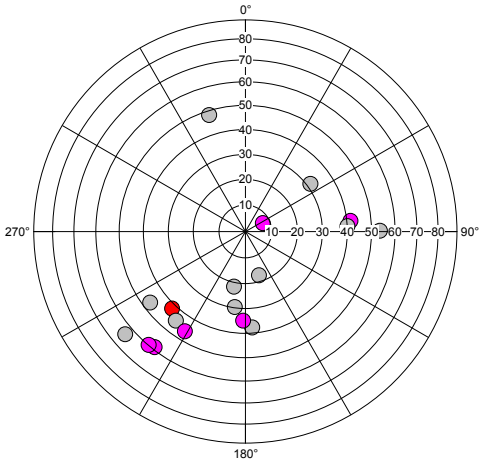
Depth	Fractures	Poles - Dip - Lower Hemisphere	Great Circles - Strike - Lower Hemisphere
1ft:100ft	0 90	Schmidt Plot - LH - Type	Schmidt Plot (Strike) - LH - Type



Well ID:
MW - 02 BR

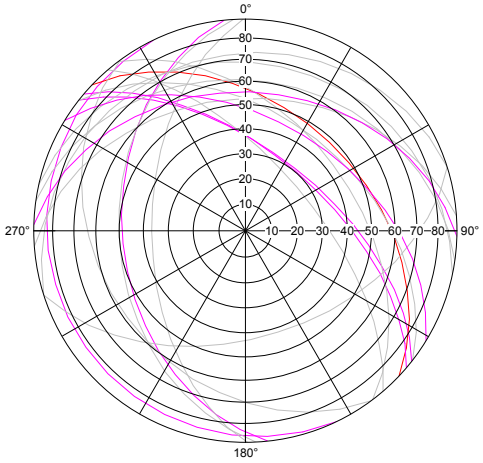


Schmidt Plot - LH - Type
Depth: 32.37 [ft] to 69.60 [ft]

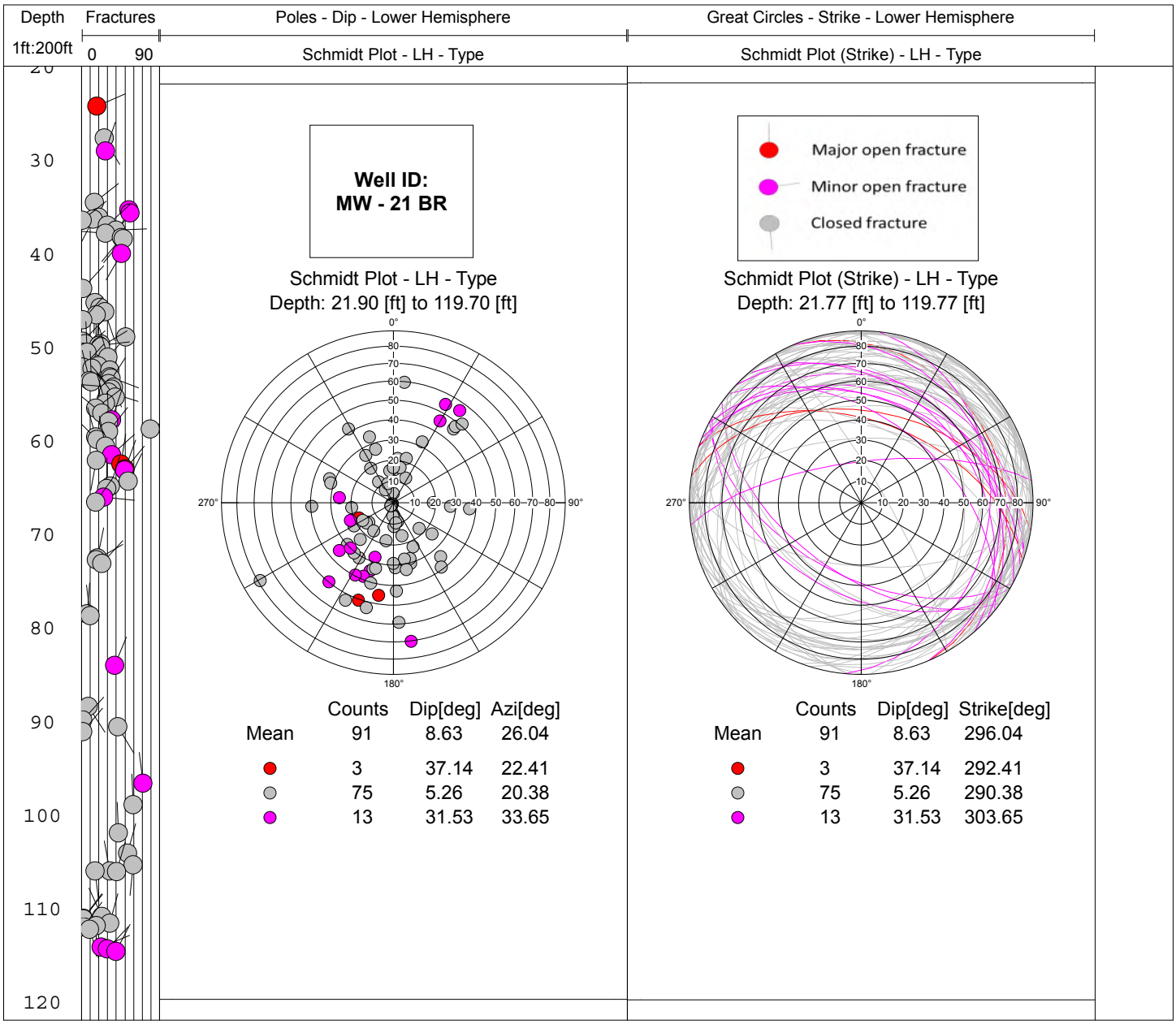


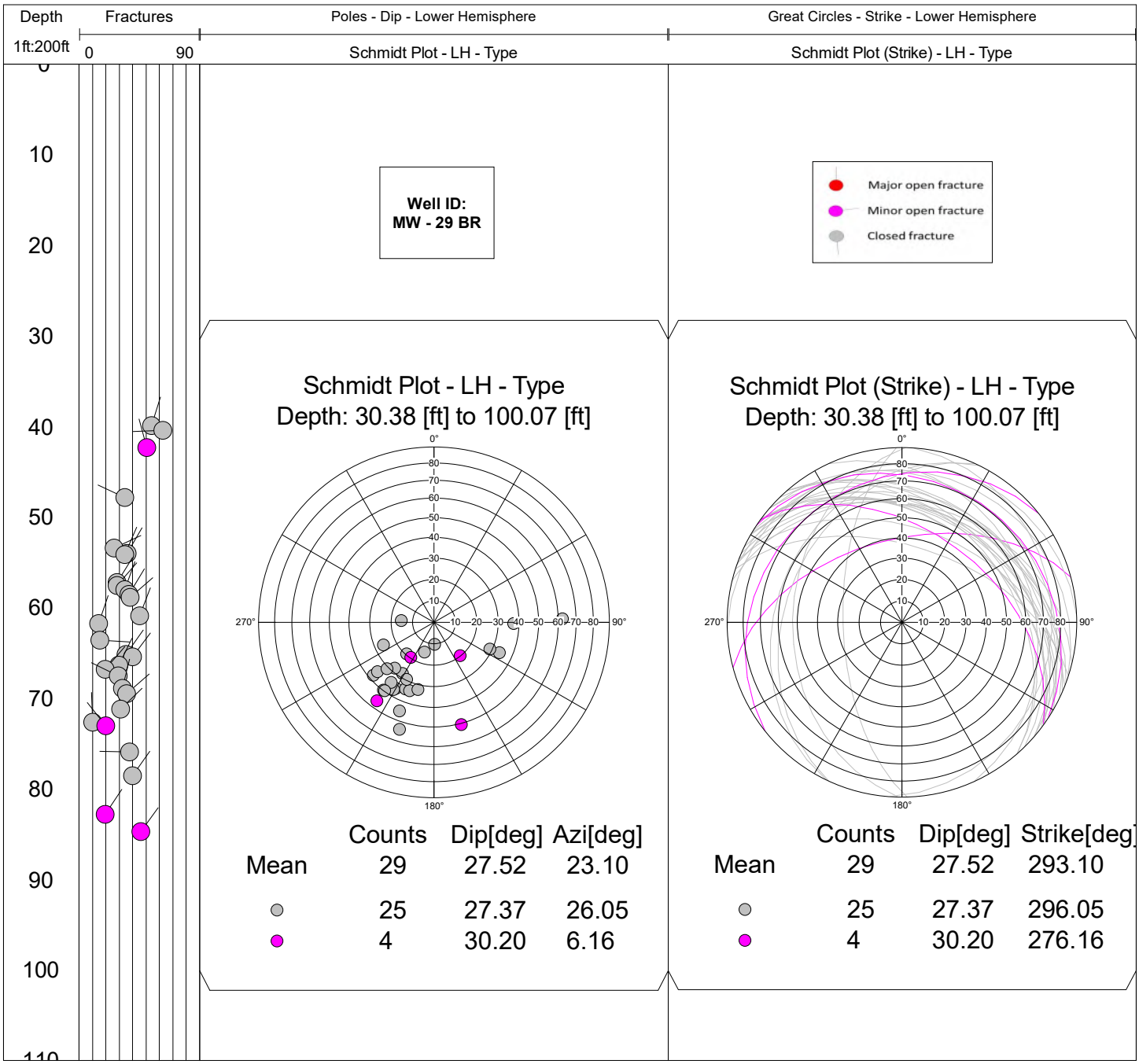
	Counts	Dip[deg]	Azi[deg]
Mean	18	27.63	19.55
●	6	35.97	23.71
●	1	41.86	43.49
●	11	20.04	5.58

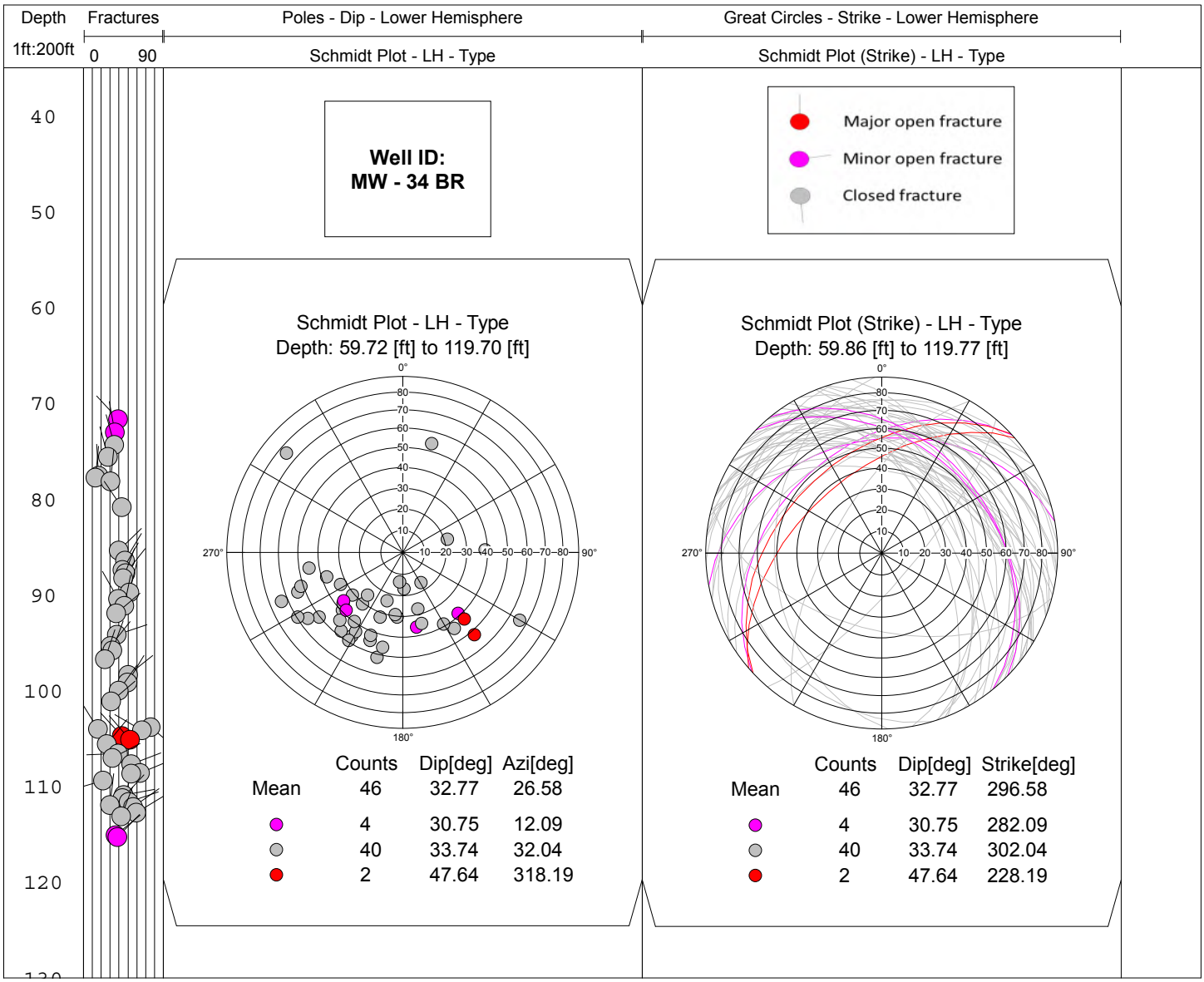
Schmidt Plot (Strike) - LH - Type
Depth: 32.37 [ft] to 69.55 [ft]

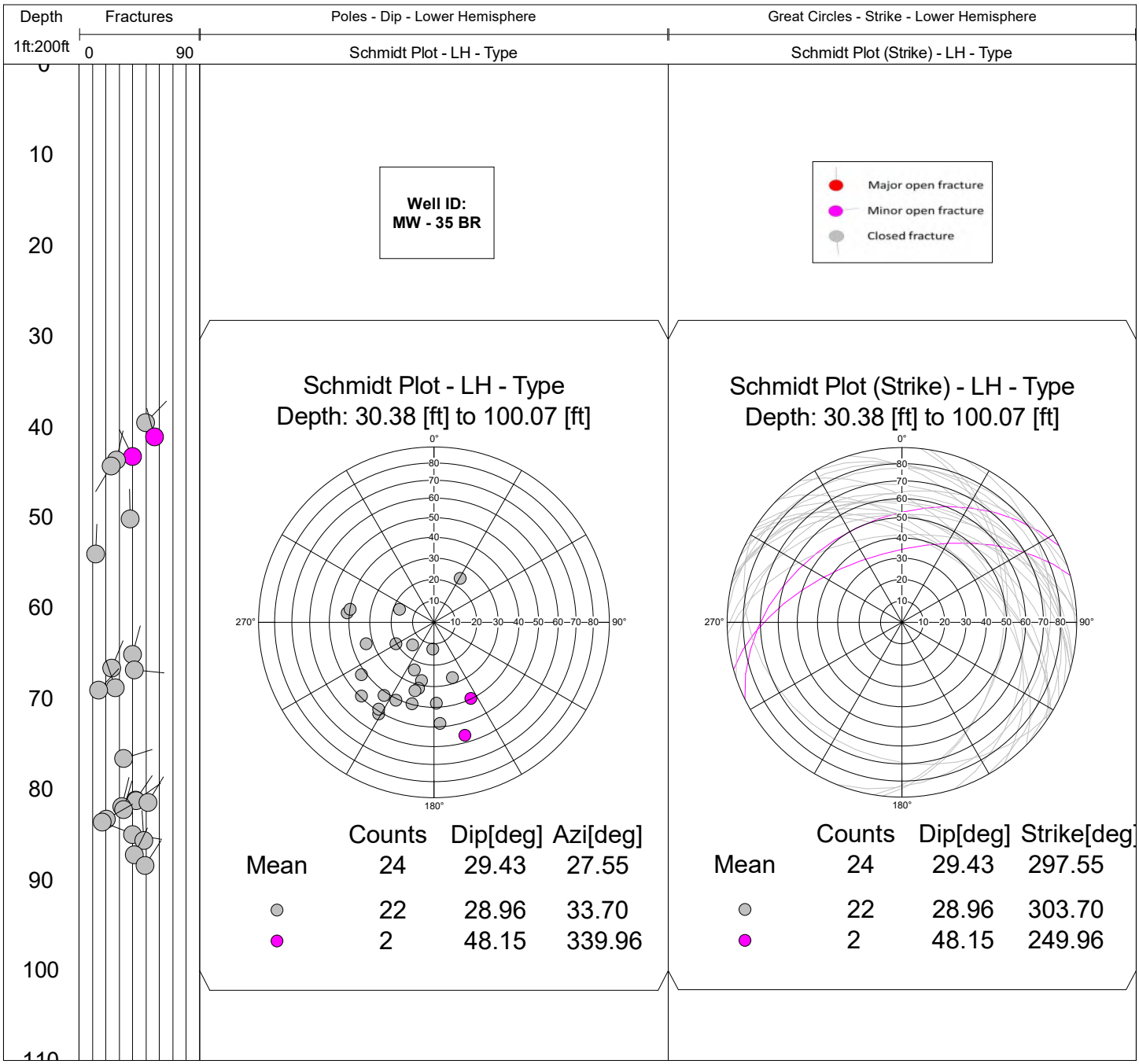


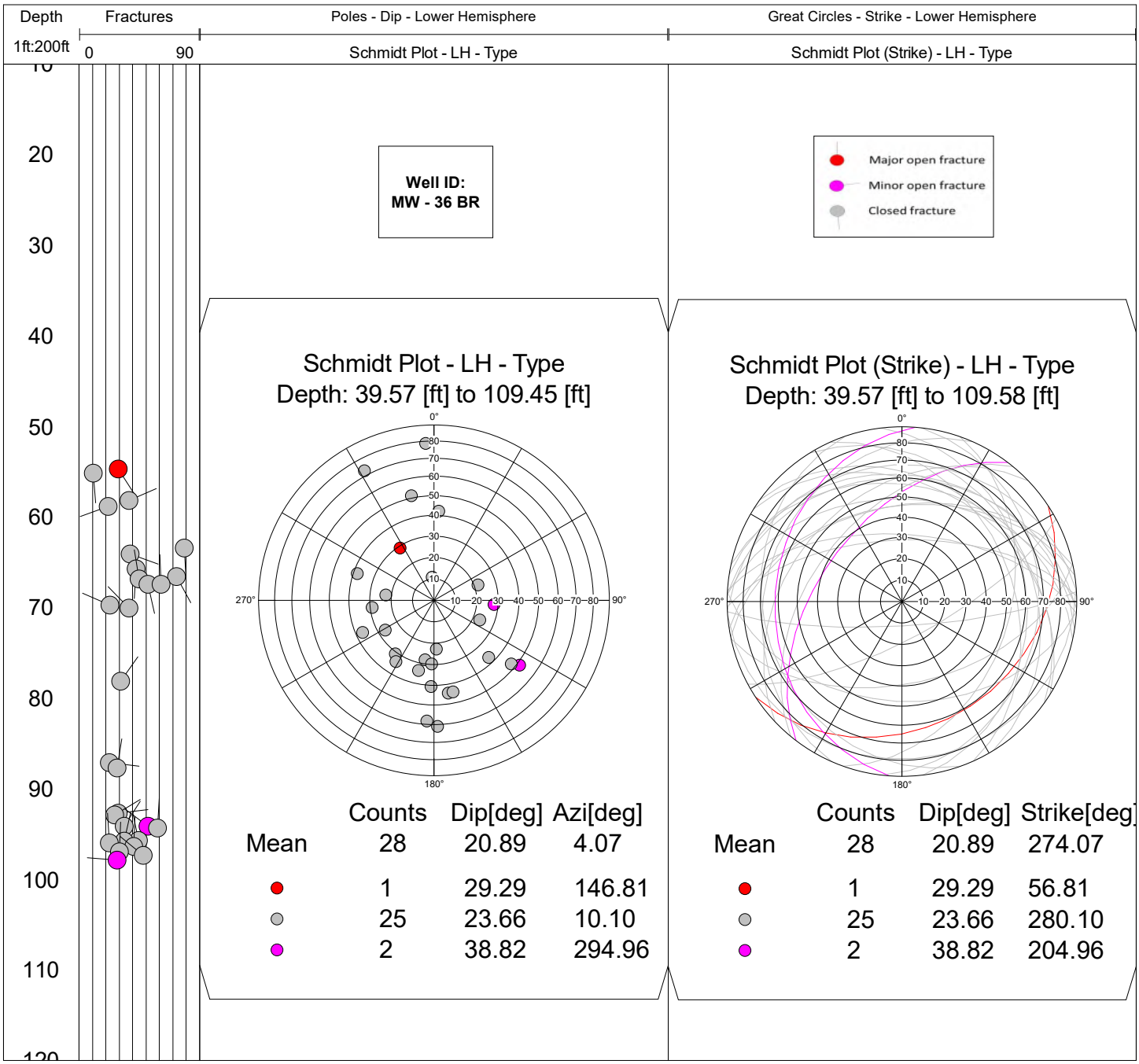
	Counts	Dip[deg]	Strike[deg]
Mean	18	27.63	289.55
●	6	35.97	293.71
●	1	41.86	313.49
●	11	20.04	275.58


Depth
1ft:200ft
Fractures
0
90
Poles - Dip - Lower Hemisphere
Schmidt Plot - LH - Type
Great Circles - Strike - Lower Hemisphere
Schmidt Plot (Strike) - LH - Type
20
30
40
50
60
70
80
90
100
110
120
Well ID:
MW - 21 BR
Major open fracture
Minor open fracture
Closed fracture
Schmidt Plot - LH - Type
Depth: 21.90 [ft] to 119.70 [ft]
Schmidt Plot (Strike) - LH - Type
Depth: 21.77 [ft] to 119.77 [ft]
0°
90°
180°
270°
Counts Dip[deg] Azi[deg]
Mean 91 8.63 26.04
3 37.14 22.41
75 5.26 20.38
13 31.53 33.65
Counts Dip[deg] Strike[deg]
Mean 91 8.63 296.04
3 37.14 292.41
75 5.26 290.38
13 31.53 303.65


Depth
1ft:200ft
Fractures
0
90
Poles - Dip - Lower Hemisphere
Schmidt Plot - LH - Type
Great Circles - Strike - Lower Hemisphere
Schmidt Plot (Strike) - LH - Type
10
20
30
40
50
60
70
80
90
100
Well ID:
MW - 29 BR
Major open fracture
Minor open fracture
Closed fracture
Schmidt Plot - LH - Type
Depth: 30.38 [ft] to 100.07 [ft]
Schmidt Plot (Strike) - LH - Type
Depth: 30.38 [ft] to 100.07 [ft]
Counts Dip[deg] Azi[deg]
Mean 29 27.52 23.10
25 27.37 26.05
4 30.20 6.16
Counts Dip[deg] Strike[deg]
Mean 29 27.52 293.10
25 27.37 296.05
4 30.20 276.16


Depth
1ft:200ft
Fractures
0
90
Poles - Dip - Lower Hemisphere
Schmidt Plot - LH - Type
Great Circles - Strike - Lower Hemisphere
Schmidt Plot (Strike) - LH - Type
40
50
60
70
80
90
100
110
120
Well ID:
MW - 34 BR
Major open fracture
Minor open fracture
Closed fracture
Schmidt Plot - LH - Type
Depth: 59.72 [ft] to 119.70 [ft]
Counts Dip[deg] Azi[deg]
Mean 46 32.77 26.58
4 30.75 12.09
40 33.74 32.04
2 47.64 318.19
Schmidt Plot (Strike) - LH - Type
Depth: 59.86 [ft] to 119.77 [ft]
Counts Dip[deg] Strike[deg]
Mean 46 32.77 296.58
4 30.75 282.09
40 33.74 302.04
2 47.64 228.19


Depth
1ft:200ft
Fractures
0
90
Poles - Dip - Lower Hemisphere
Schmidt Plot - LH - Type
Great Circles - Strike - Lower Hemisphere
Schmidt Plot (Strike) - LH - Type
10
20
30
40
50
60
70
80
90
100
110
Well ID:
MW - 35 BR
Major open fracture
Minor open fracture
Closed fracture
Schmidt Plot - LH - Type
Depth: 30.38 [ft] to 100.07 [ft]
0°
90°
180°
270°
Counts
Dip[deg]
Azi[deg]
Mean
24
29.43
27.55
22
28.96
33.70
2
48.15
339.96
Schmidt Plot (Strike) - LH - Type
Depth: 30.38 [ft] to 100.07 [ft]
Counts
Dip[deg]
Strike[deg]
Mean
24
29.43
297.55
22
28.96
303.70
2
48.15
249.96

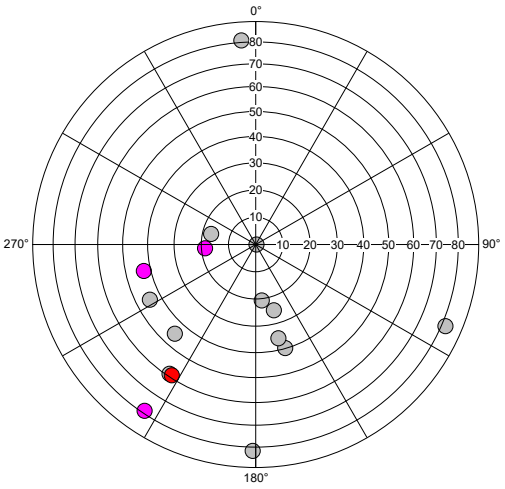

Depth
1ft:200ft
Fractures
0
90
Poles - Dip - Lower Hemisphere
Schmidt Plot - LH - Type
Great Circles - Strike - Lower Hemisphere
Schmidt Plot (Strike) - LH - Type
Well ID:
MW - 36 BR
Major open fracture
Minor open fracture
Closed fracture
Schmidt Plot - LH - Type
Depth: 39.57 [ft] to 109.45 [ft]
Schmidt Plot (Strike) - LH - Type
Depth: 39.57 [ft] to 109.58 [ft]
Counts Dip[deg] Azi[deg]
Mean 28 20.89 4.07
1 29.29 146.81
25 23.66 10.10
2 38.82 294.96
Counts Dip[deg] Strike[deg]
Mean 28 20.89 274.07
1 29.29 56.81
25 23.66 280.10
2 38.82 204.96

Depth	Fractures	Poles - Dip - Lower Hemisphere	Great Circles - Strike - Lower Hemisphere
1ft:200ft	0 90	Schmidt Plot - LH - Type	Schmidt Plot (Strike) - LH - Type

Well ID:
MW - 37 BR

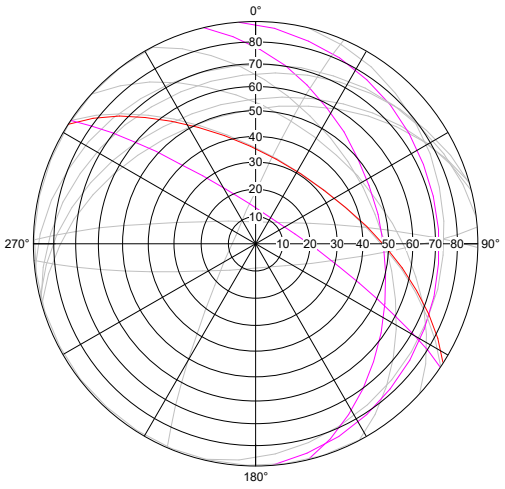
Major open fracture
Minor open fracture
Closed fracture

Schmidt Plot - LH - Type
Depth: 49.72 [ft] to 130.63 [ft]

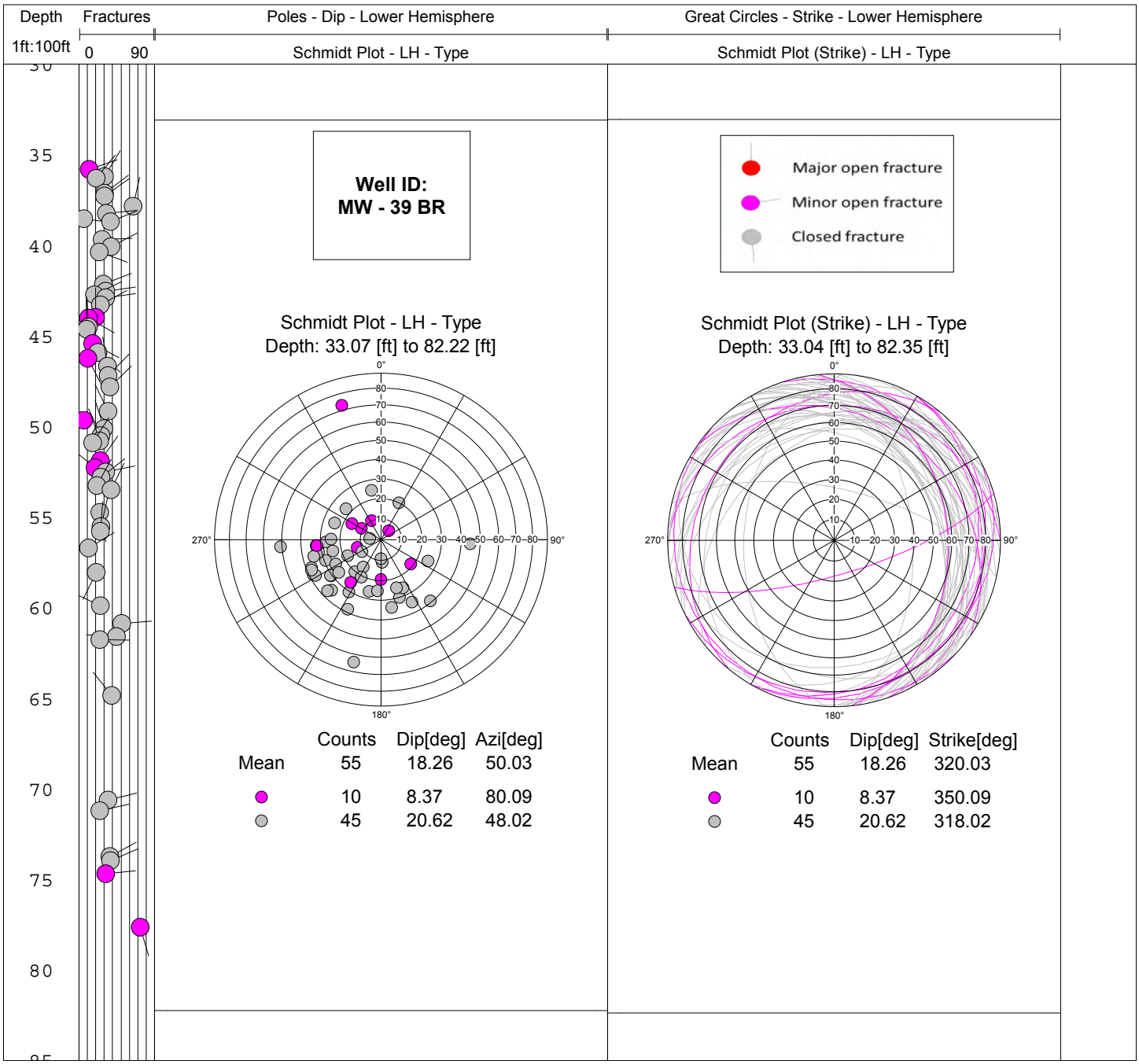


	Counts	Dip[deg]	Azi[deg]
Mean	16	36.25	26.66
	12	33.70	12.00
	3	42.09	59.77
	1	59.30	32.54

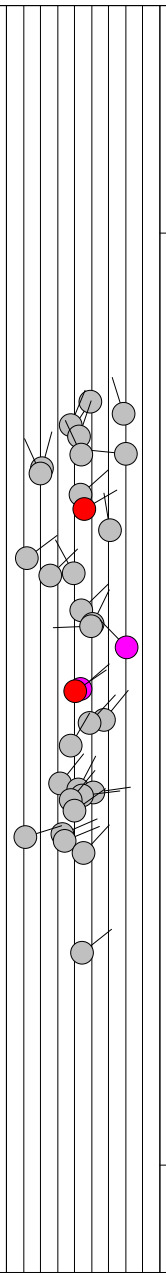
Schmidt Plot (Strike) - LH - Type
Depth: 49.72 [ft] to 130.50 [ft]



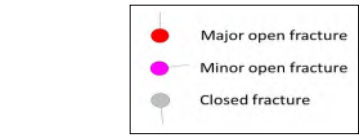
	Counts	Dip[deg]	Strike[deg]
Mean	16	36.25	296.66
	12	33.70	282.00
	3	42.09	329.77
	1	59.30	302.54


Depth
1ft:100ft
Fractures
0
90
Poles - Dip - Lower Hemisphere
Schmidt Plot - LH - Type
Great Circles - Strike - Lower Hemisphere
Schmidt Plot (Strike) - LH - Type
35
40
45
50
55
60
65
70
75
80
Well ID:
MW - 39 BR
Major open fracture
Minor open fracture
Closed fracture
Schmidt Plot - LH - Type
Depth: 33.07 [ft] to 82.22 [ft]
Schmidt Plot (Strike) - LH - Type
Depth: 33.04 [ft] to 82.35 [ft]
0°
90°
180°
270°
10
20
30
40
50
60
70
80
Counts Dip[deg] Azi[deg]
Mean 55 18.26 50.03
10 8.37 80.09
45 20.62 48.02
Counts Dip[deg] Strike[deg]
Mean 55 18.26 320.03
10 8.37 350.09
45 20.62 318.02

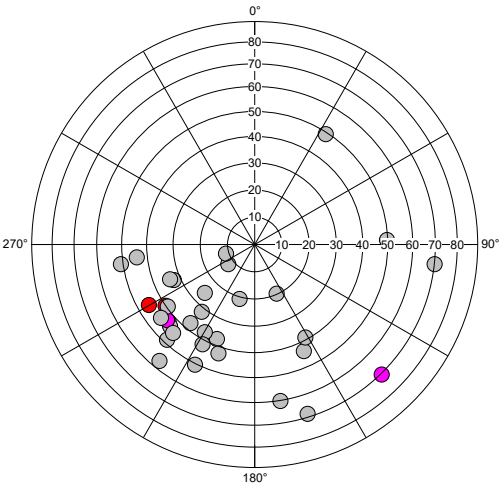
Depth	Fractures	Poles - Dip - Lower Hemisphere	Great Circles - Strike - Lower Hemisphere
1ft:200ft	0 90	Schmidt Plot - LH - Type	Schmidt Plot (Strike) - LH - Type



Well ID:
MW - 42 BR

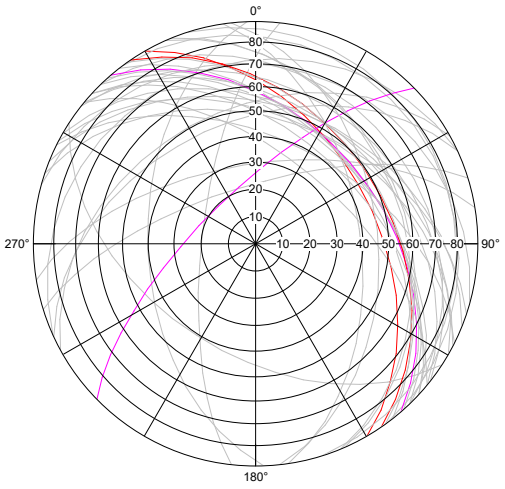


Schmidt Plot - LH - Type
Depth: 49.72 [ft] to 130.63 [ft]



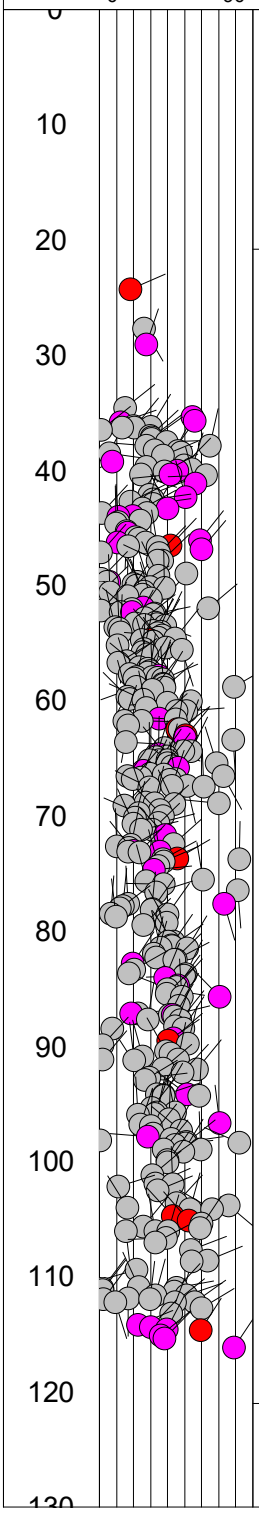
	Counts	Dip[deg]	Azi[deg]
Mean	34	35.32	35.42
	30	34.51	33.68
	2	42.95	57.96
	2	46.94	352.87

Schmidt Plot (Strike) - LH - Type
Depth: 49.72 [ft] to 130.50 [ft]



	Counts	Dip[deg]	Strike[deg]
Mean	34	35.32	305.42
	30	34.51	303.68
	2	42.95	327.96
	2	46.94	262.87

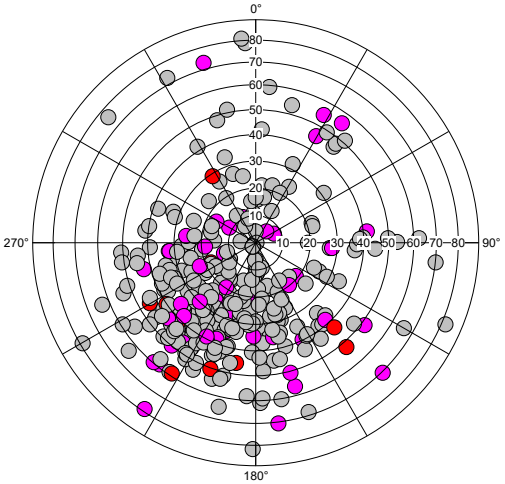
Depth	Fractures	Poles - Dip - Lower Hemisphere	Great Circles - Strike - Lower Hemisphere
1ft:200ft	0 90	Schmidt Plot - LH - Type	Schmidt Plot (Strike) - LH - Type



All Fractures

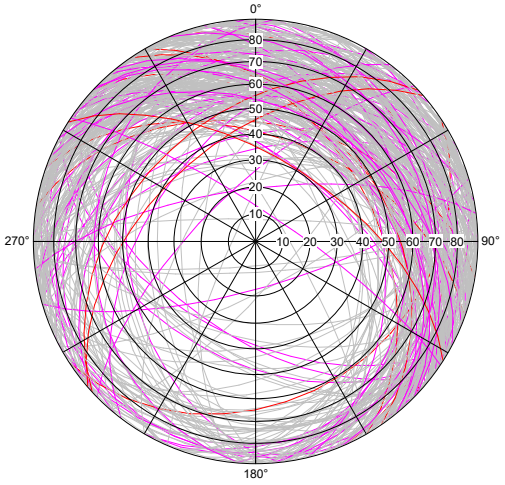
Major open fracture
Minor open fracture
Closed fracture

Schmidt Plot - LH - Type
Depth: 20.80 [ft] to 121.00 [ft]



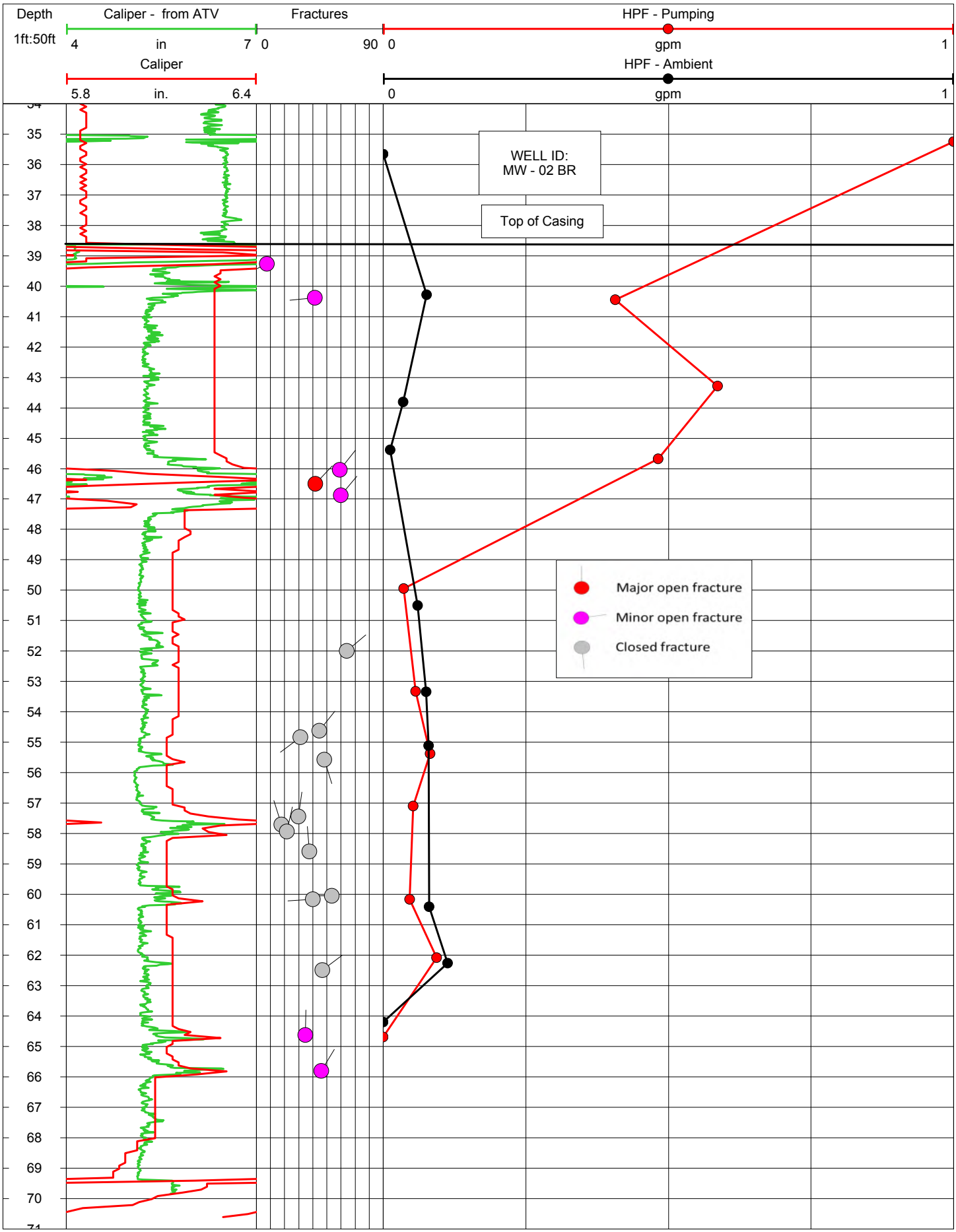
	Counts	Dip[deg]	Azi[deg]
Mean	341	22.32	28.54
●	10	35.14	28.19
●	285	21.59	29.65
●	46	24.51	21.59

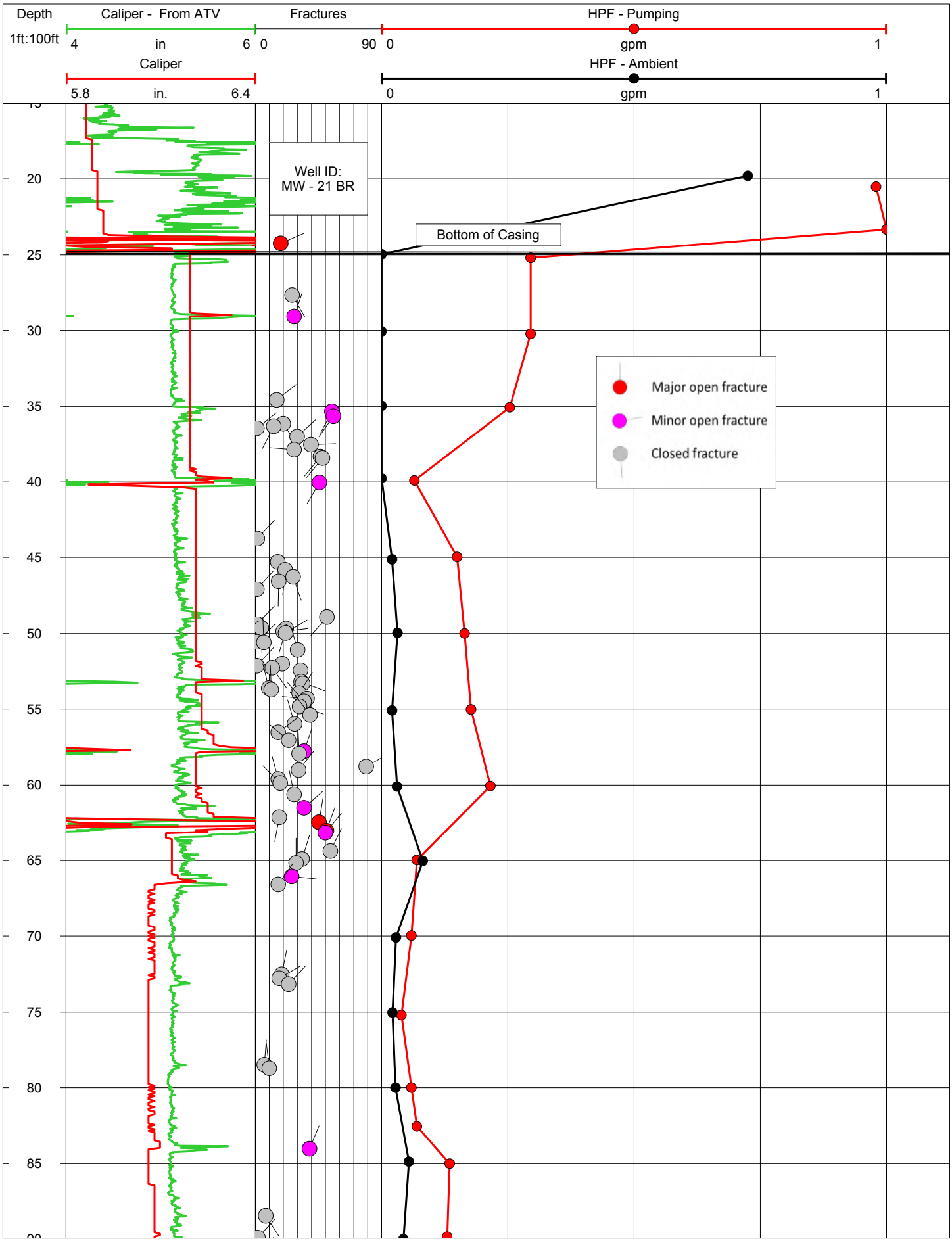
Schmidt Plot (Strike) - LH - Type
Depth: 20.93 [ft] to 120.47 [ft]

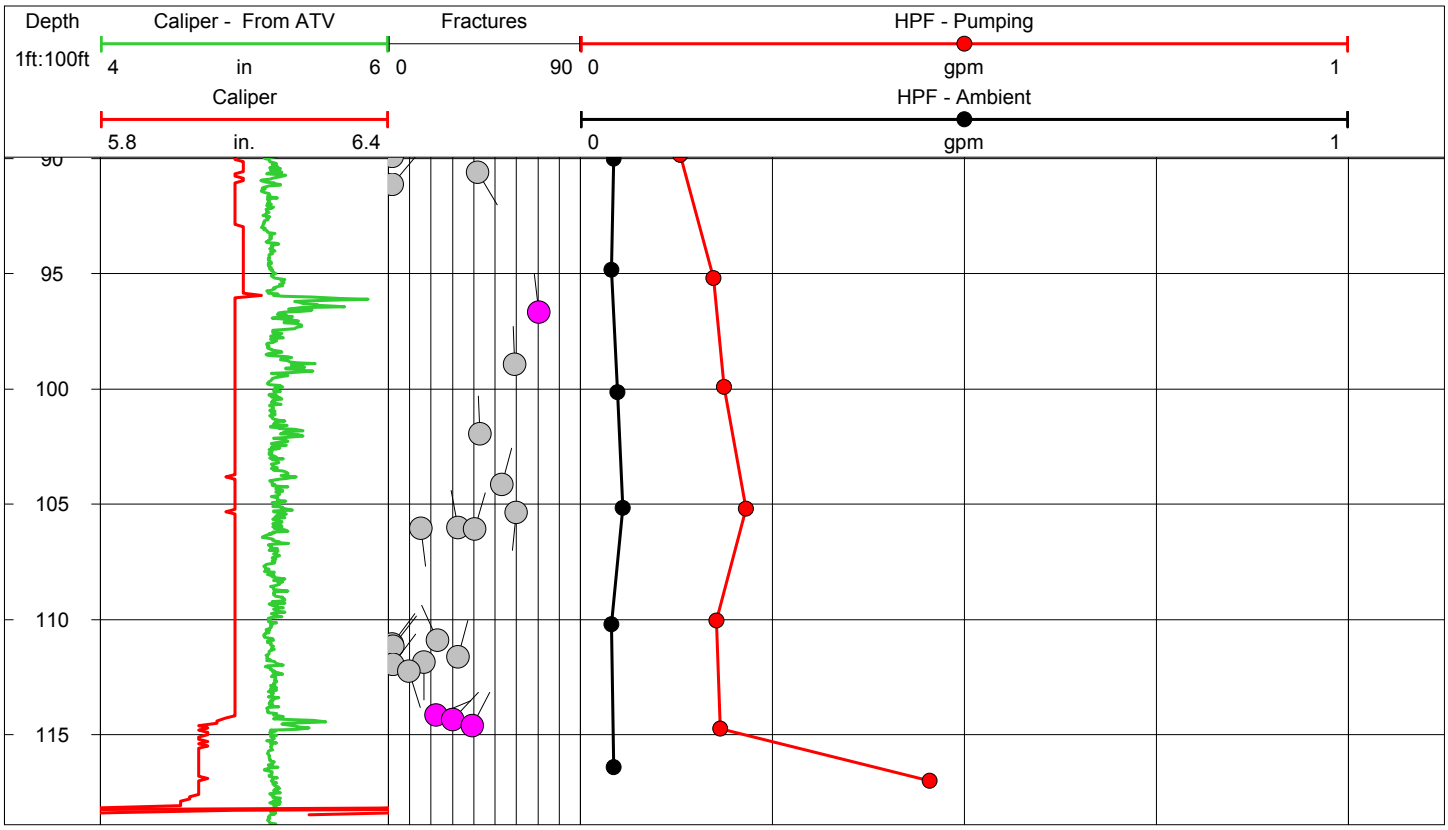


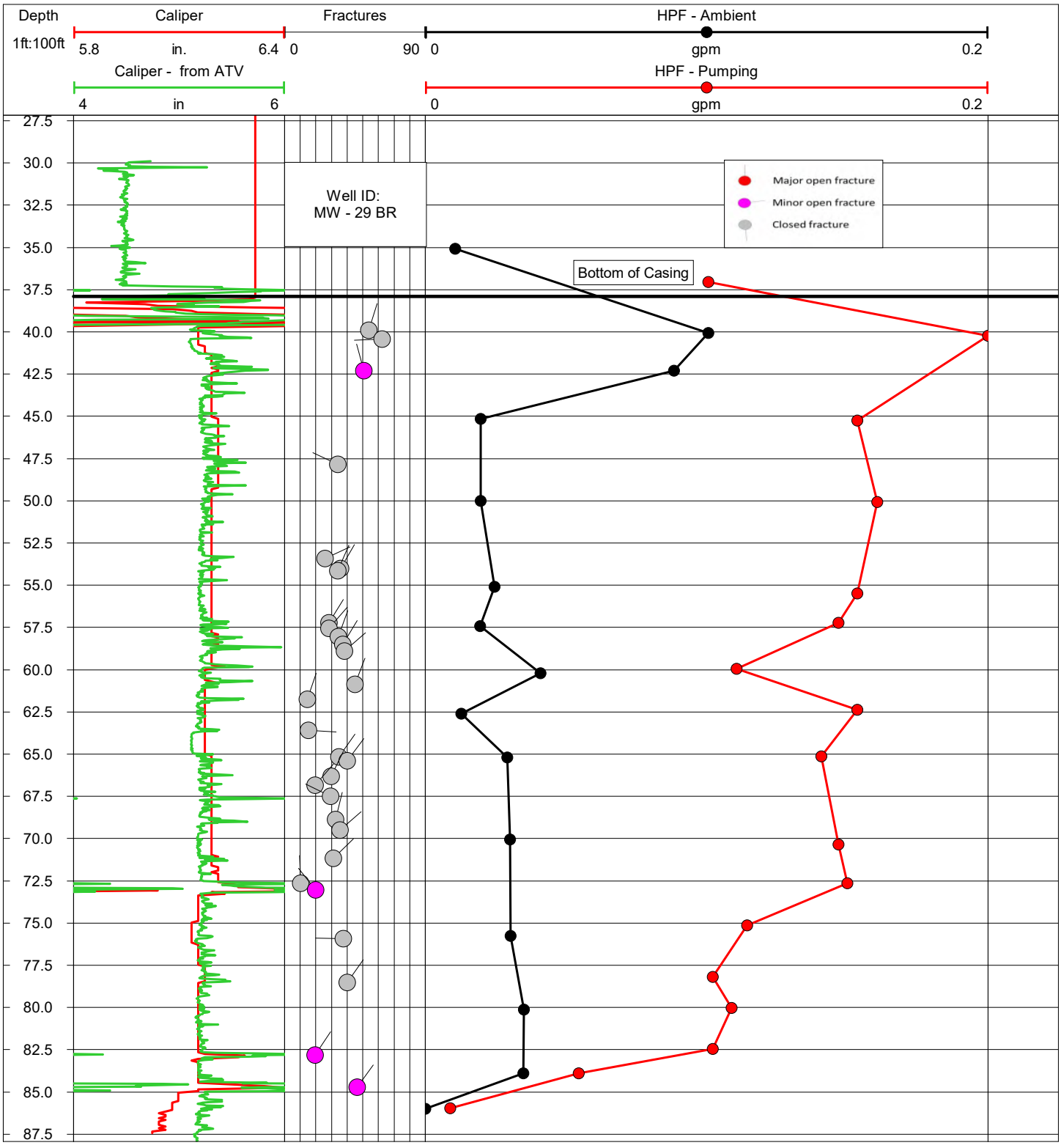
	Counts	Dip[deg]	Strike[deg]
Mean	341	22.32	298.54
●	10	35.14	298.19
●	285	21.59	299.65
●	46	24.51	291.59

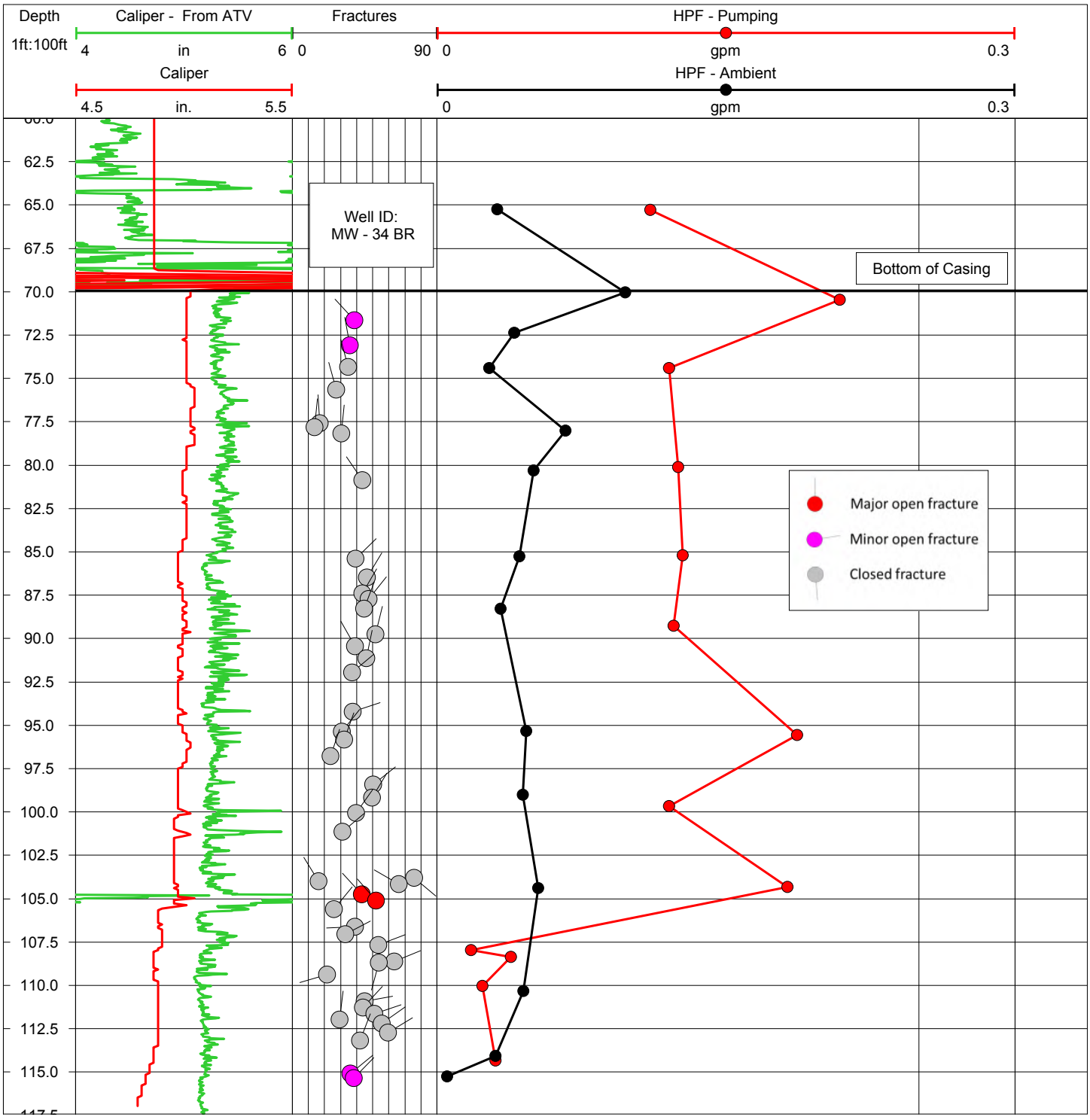
Appendix 3

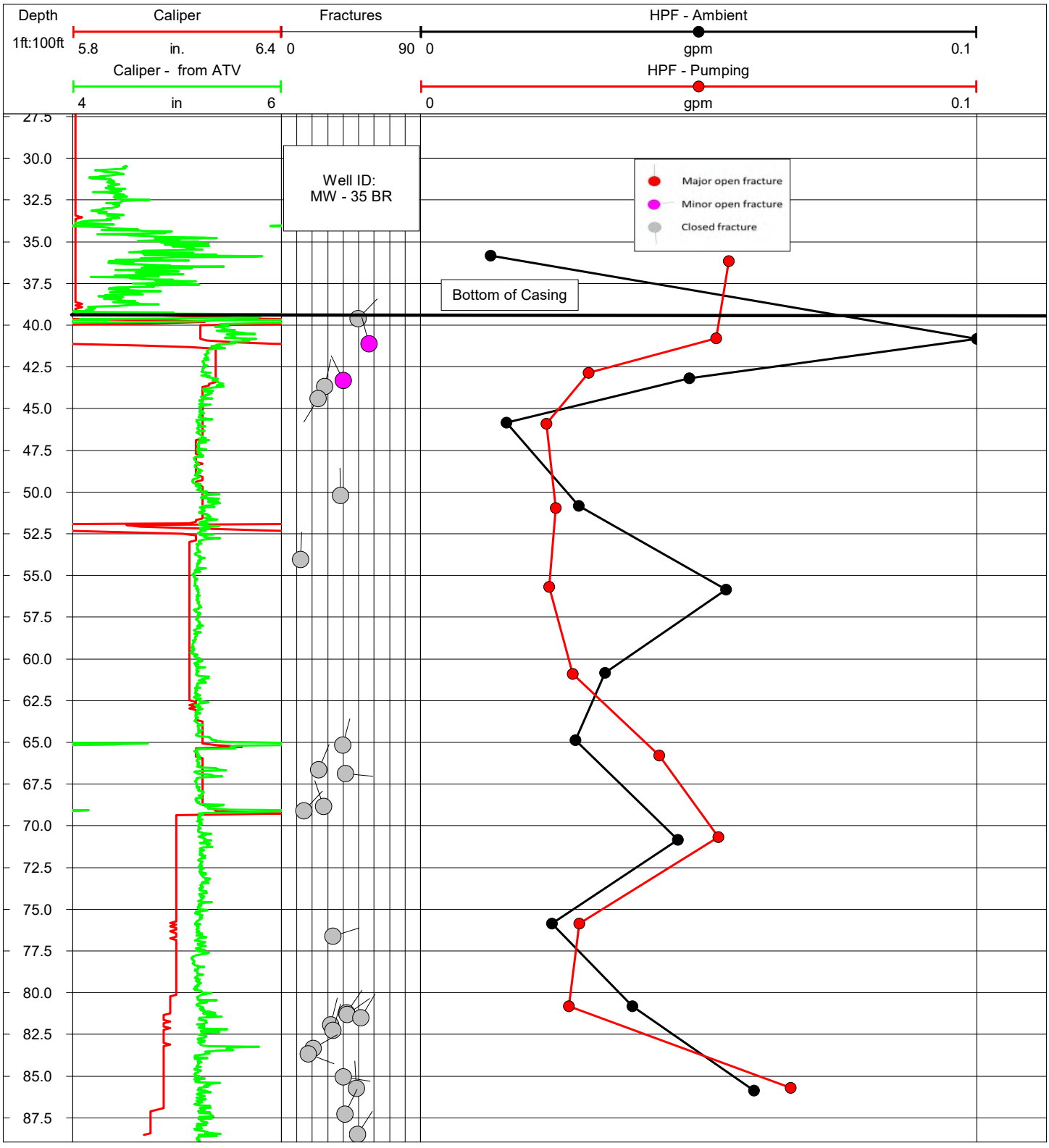

Depth
1ft:50ft
Caliper - from ATV
4
in
7
Caliper
5.8
in.
6.4
Fractures
0
90
HPF - Pumping
0
gpm
1
HPF - Ambient
0
gpm
1
WELL ID:
MW - 02 BR
Top of Casing
Major open fracture
Minor open fracture
Closed fracture
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70

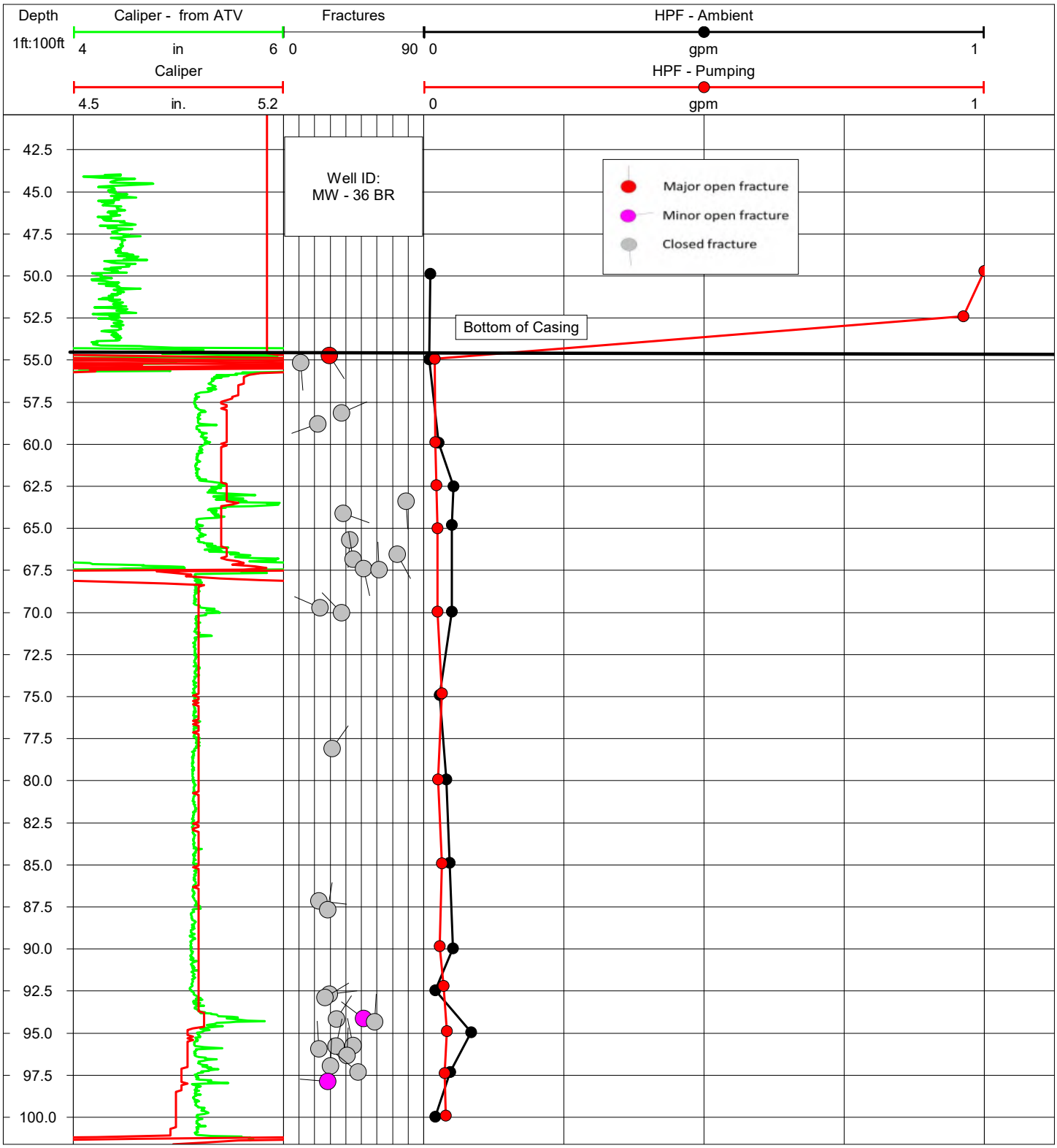

Depth
1ft:100ft
Caliper - From ATV
4
in
6
Caliper
5.8
in.
6.4
Fractures
0
90
HPF - Pumping
0
gpm
1
HPF - Ambient
0
gpm
1
Well ID:
MW - 21 BR
Bottom of Casing
Major open fracture
Minor open fracture
Closed fracture
20
25
30
35
40
45
50
55
60
65
70
75
80
85

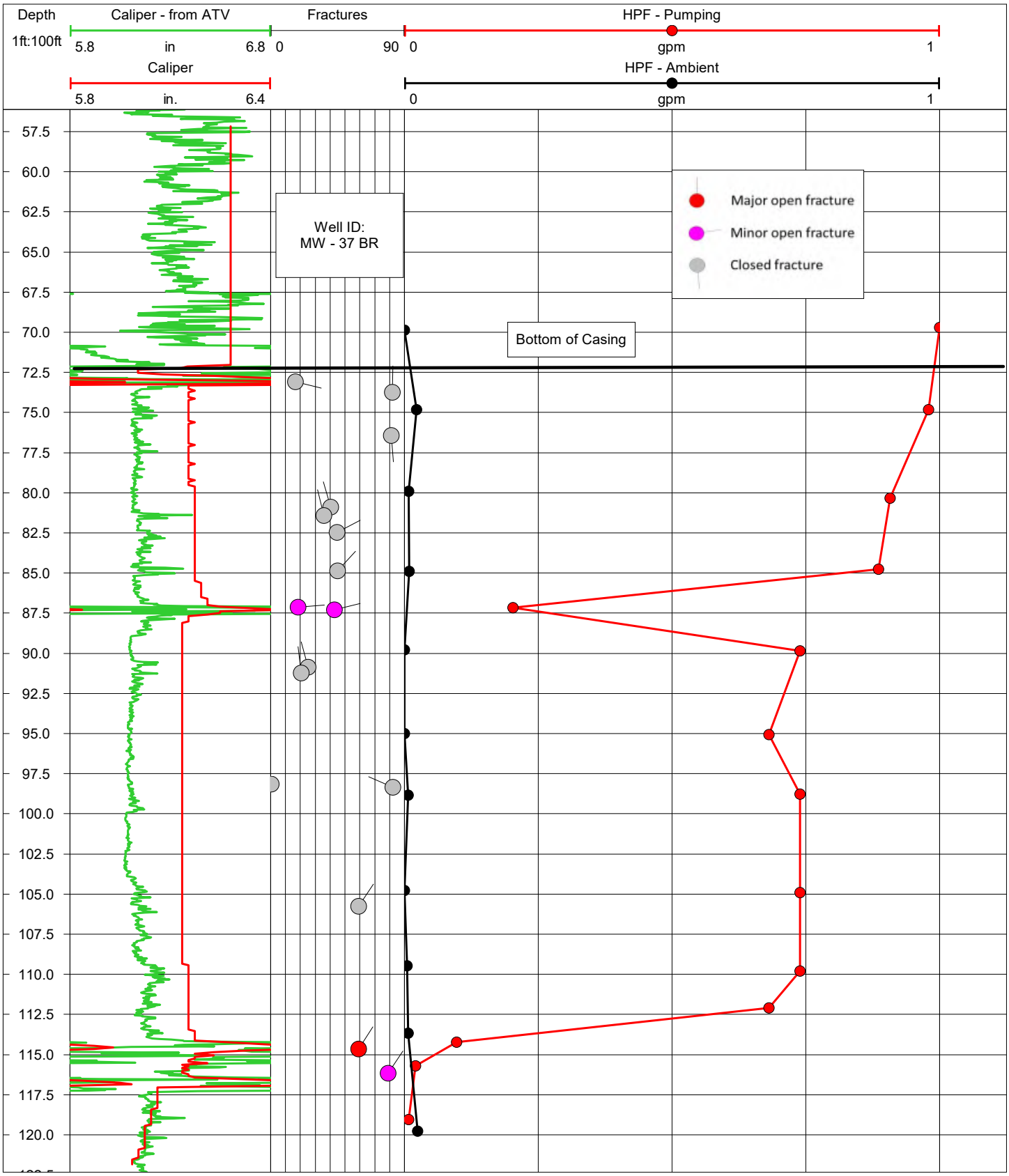

Depth
1ft:100ft
Caliper - From ATV
4
in
6
Fractures
0
90
HPF - Pumping
0
gpm
1
Caliper
5.8
in.
6.4
HPF - Ambient
0
gpm
1
95
100
105
110
115

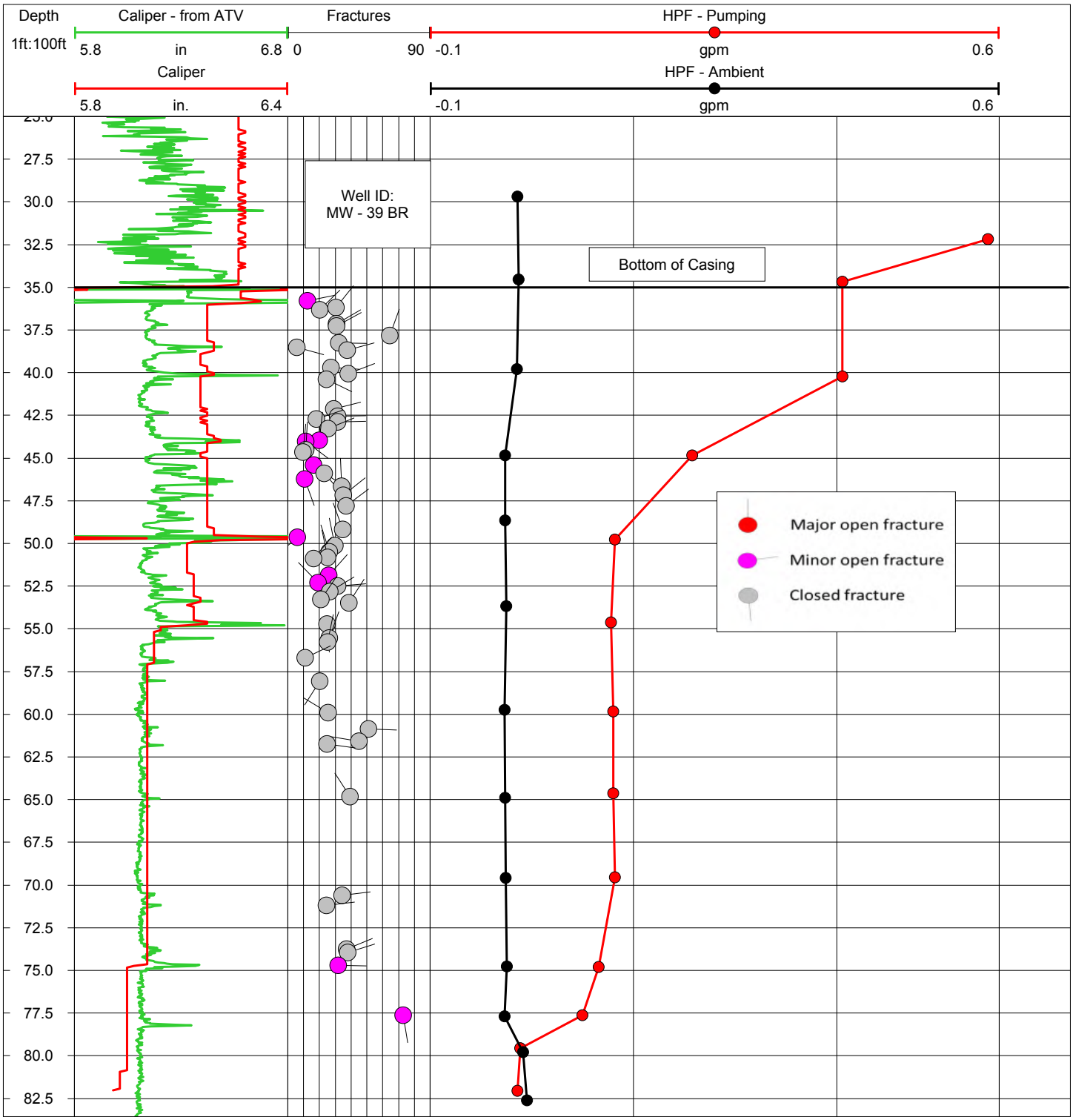

Depth
1ft:100ft
Caliper
5.8
in.
6.4
Caliper - from ATV
4
in
6
Fractures
0
90
HPF - Ambient
0
gpm
0.2
HPF - Pumping
0
gpm
0.2
27.5
30.0
32.5
35.0
37.5
40.0
42.5
45.0
47.5
50.0
52.5
55.0
57.5
60.0
62.5
65.0
67.5
70.0
72.5
75.0
77.5
80.0
82.5
85.0
87.5
Well ID:
MW - 29 BR
Major open fracture
Minor open fracture
Closed fracture
Bottom of Casing

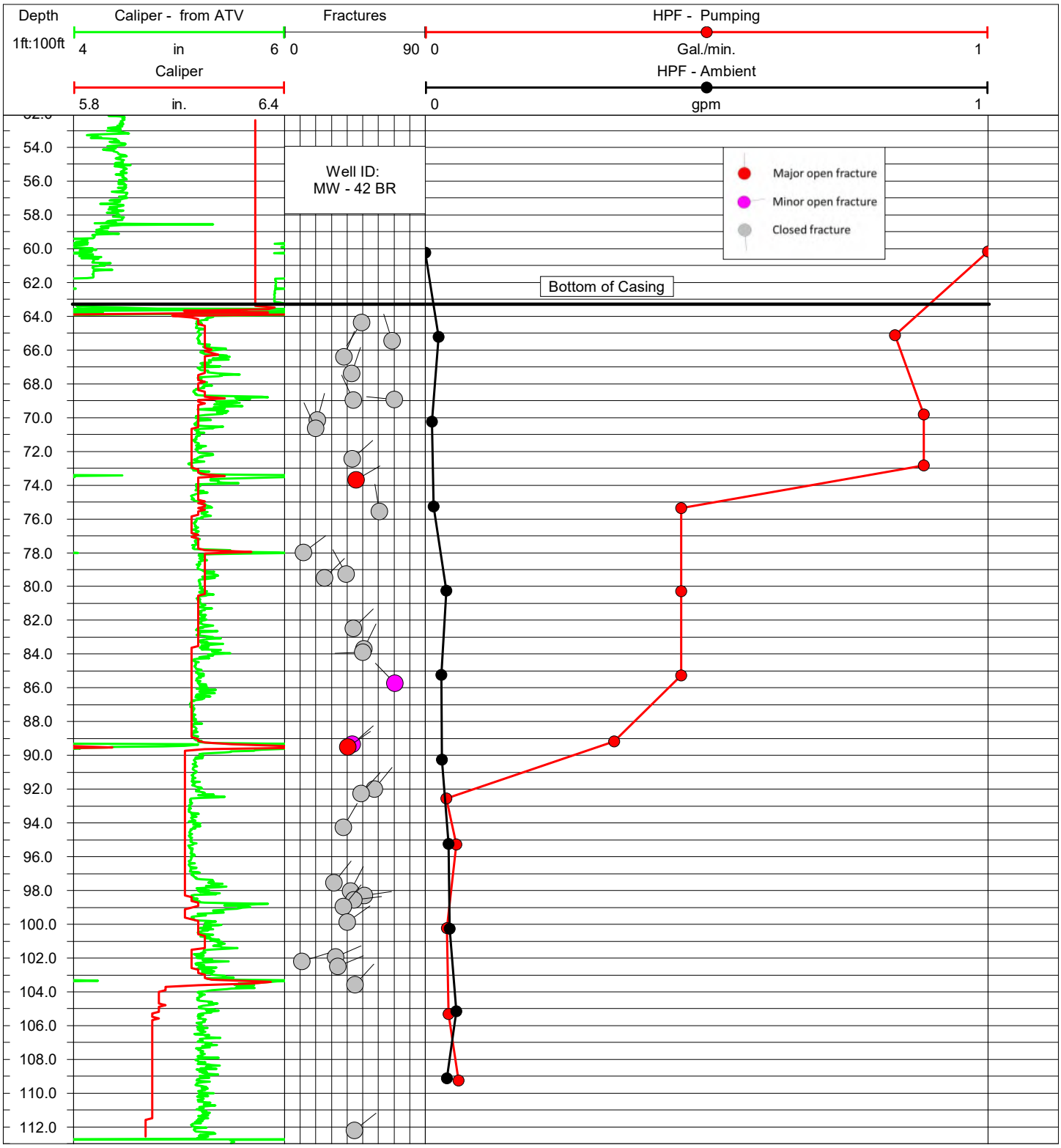

Depth
1ft:100ft
Caliper - From ATV
4
in
6
Caliper
4.5
in.
5.5
Fractures
0
90
HPF - Pumping
0
gpm
0.3
HPF - Ambient
0
gpm
0.3
Well ID:
MW - 34 BR
Bottom of Casing
Major open fracture
Minor open fracture
Closed fracture
62.5
65.0
67.5
70.0
72.5
75.0
77.5
80.0
82.5
85.0
87.5
90.0
92.5
95.0
97.5
100.0
102.5
105.0
107.5
110.0
112.5
115.0


Depth
1ft:100ft
Caliper
5.8
in.
6.4
Caliper - from ATV
4
in
6
Fractures
0
90
HPF - Ambient
0
gpm
0.1
HPF - Pumping
0
gpm
0.1
Well ID:
MW - 35 BR
Major open fracture
Minor open fracture
Closed fracture
Bottom of Casing
27.5
30.0
32.5
35.0
37.5
40.0
42.5
45.0
47.5
50.0
52.5
55.0
57.5
60.0
62.5
65.0
67.5
70.0
72.5
75.0
77.5
80.0
82.5
85.0
87.5

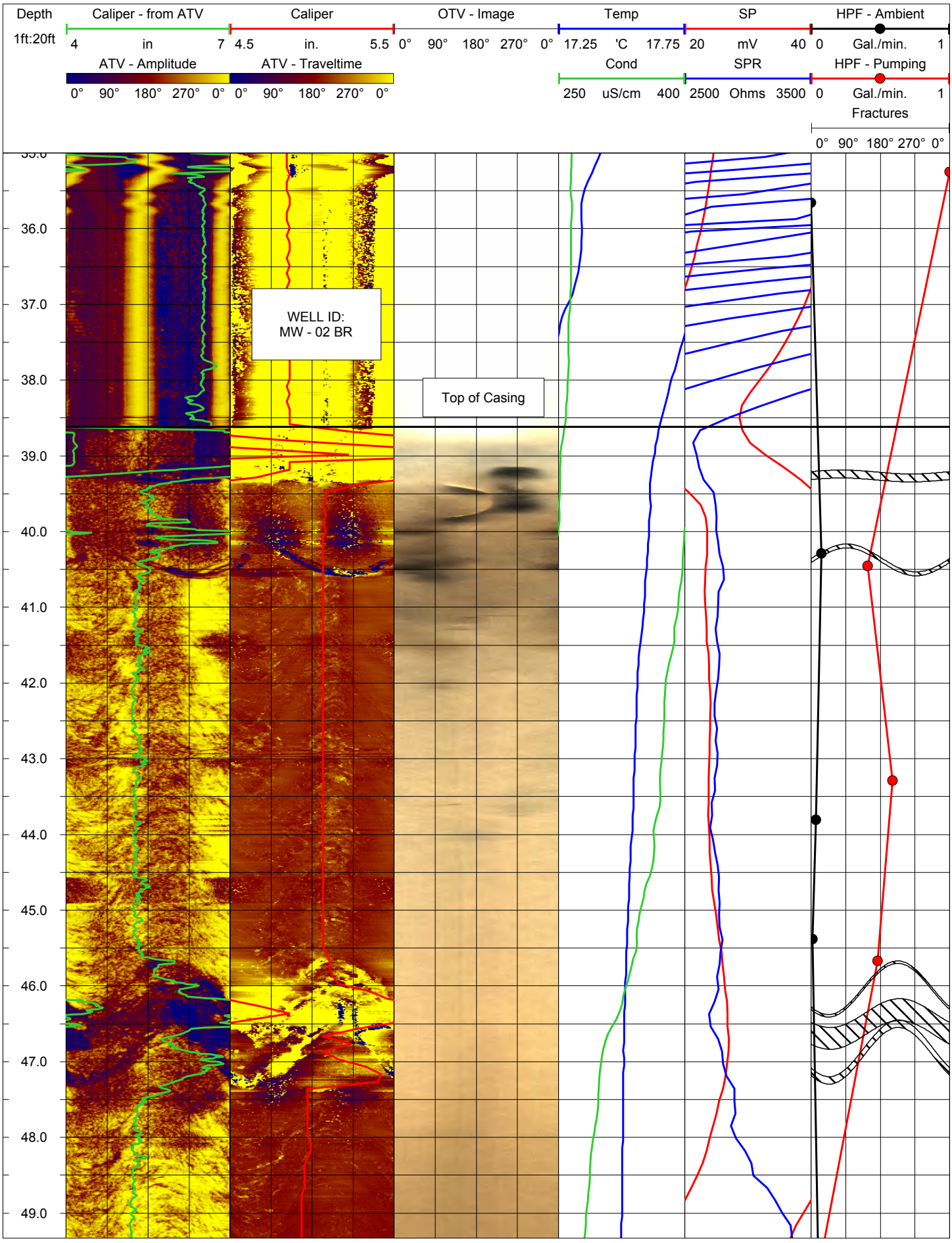

Depth
1ft:100ft
Caliper - from ATV
4
in
6
Caliper
4.5
in.
5.2
Fractures
0
90
HPF - Ambient
0
gpm
1
HPF - Pumping
0
gpm
1
Well ID:
MW - 36 BR
Major open fracture
Minor open fracture
Closed fracture
Bottom of Casing
42.5
45.0
47.5
50.0
52.5
55.0
57.5
60.0
62.5
65.0
67.5
70.0
72.5
75.0
77.5
80.0
82.5
85.0
87.5
90.0
92.5
95.0
97.5
100.0

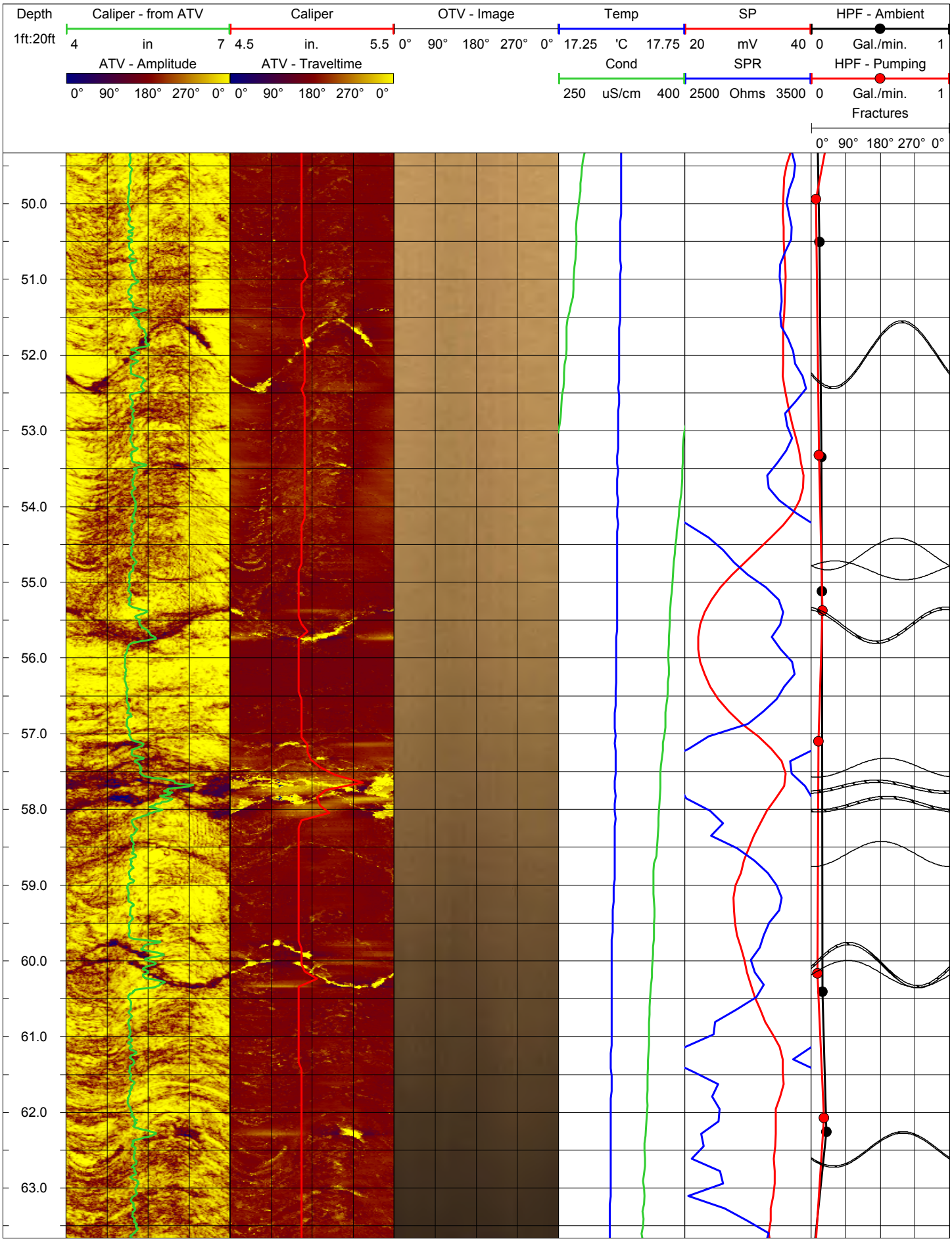

Depth
1ft:100ft
Caliper - from ATV
5.8
in
6.8
Caliper
5.8
in.
6.4
Fractures
0
90
HPF - Pumping
0
gpm
1
HPF - Ambient
0
gpm
1
57.5
60.0
62.5
65.0
67.5
70.0
72.5
75.0
77.5
80.0
82.5
85.0
87.5
90.0
92.5
95.0
97.5
100.0
102.5
105.0
107.5
110.0
112.5
115.0
117.5
120.0
Well ID:
MW - 37 BR
Bottom of Casing
Major open fracture
Minor open fracture
Closed fracture

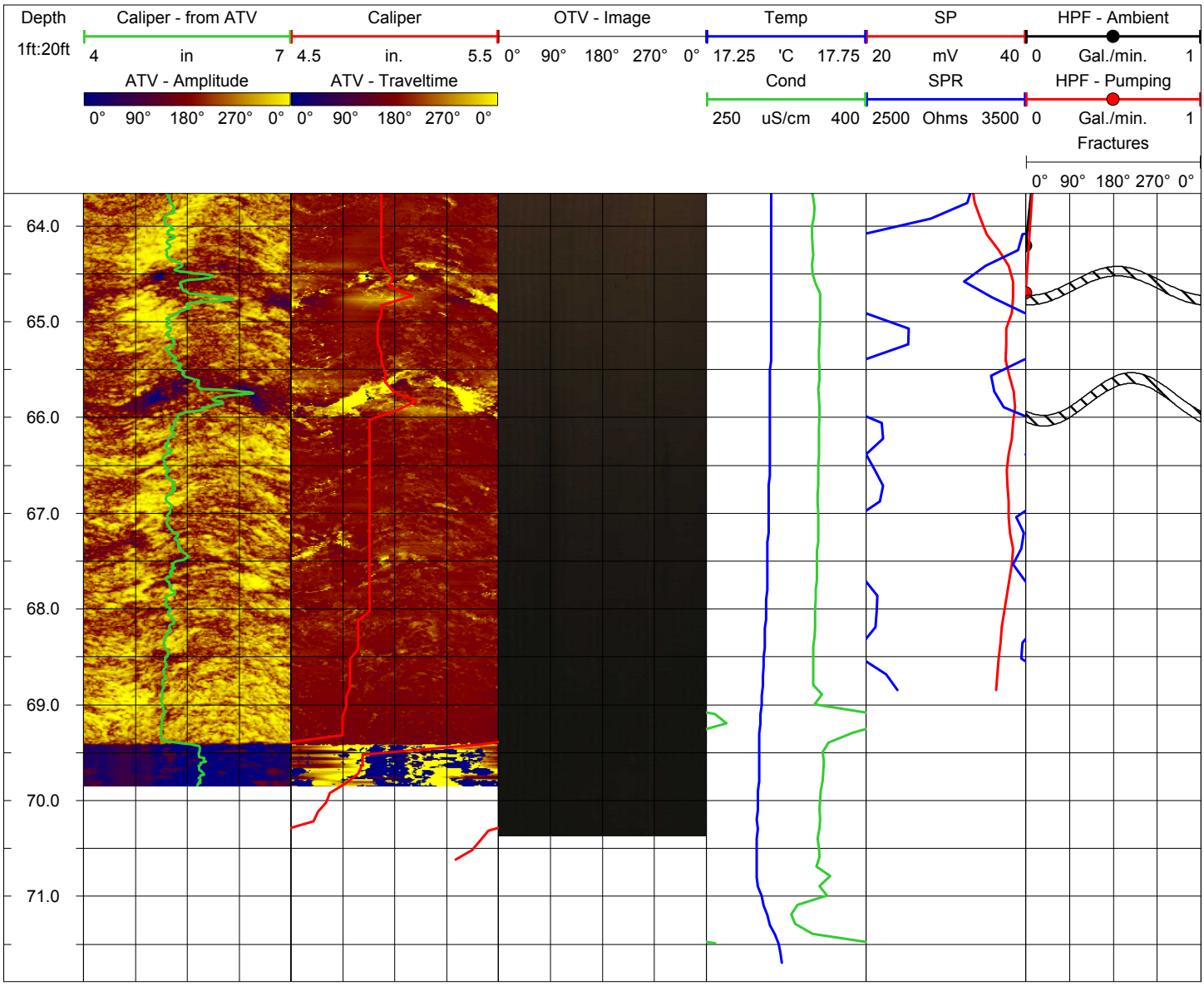

Depth
1ft:100ft
Caliper - from ATV
5.8
in
6.8
Caliper
5.8
in.
6.4
Fractures
0
90
HPF - Pumping
-0.1
gpm
0.6
HPF - Ambient
-0.1
gpm
0.6
Well ID:
MW - 39 BR
Bottom of Casing
Major open fracture
Minor open fracture
Closed fracture
27.5
30.0
32.5
35.0
37.5
40.0
42.5
45.0
47.5
50.0
52.5
55.0
57.5
60.0
62.5
65.0
67.5
70.0
72.5
75.0
77.5
80.0
82.5

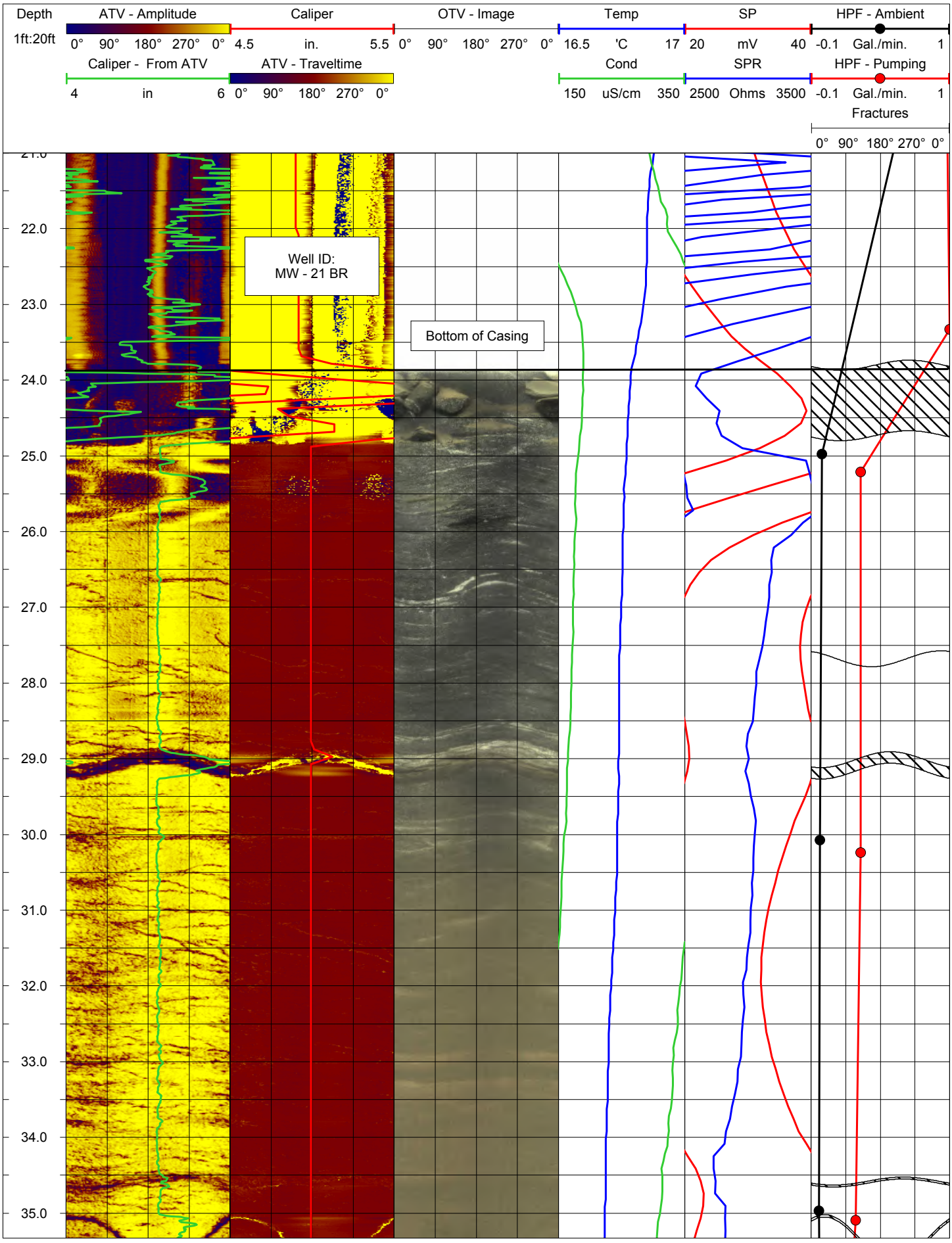

Depth
1ft:100ft
Caliper - from ATV
4
in
6
Caliper
5.8
in.
6.4
Fractures
0
90
HPF - Pumping
0
Gal./min.
1
HPF - Ambient
0
gpm
1
Well ID:
MW - 42 BR
Major open fracture
Minor open fracture
Closed fracture
Bottom of Casing
54.0
56.0
58.0
60.0
62.0
64.0
66.0
68.0
70.0
72.0
74.0
76.0
78.0
80.0
82.0
84.0
86.0
88.0
90.0
92.0
94.0
96.0
98.0
100.0
102.0
104.0
106.0
108.0
110.0
112.0

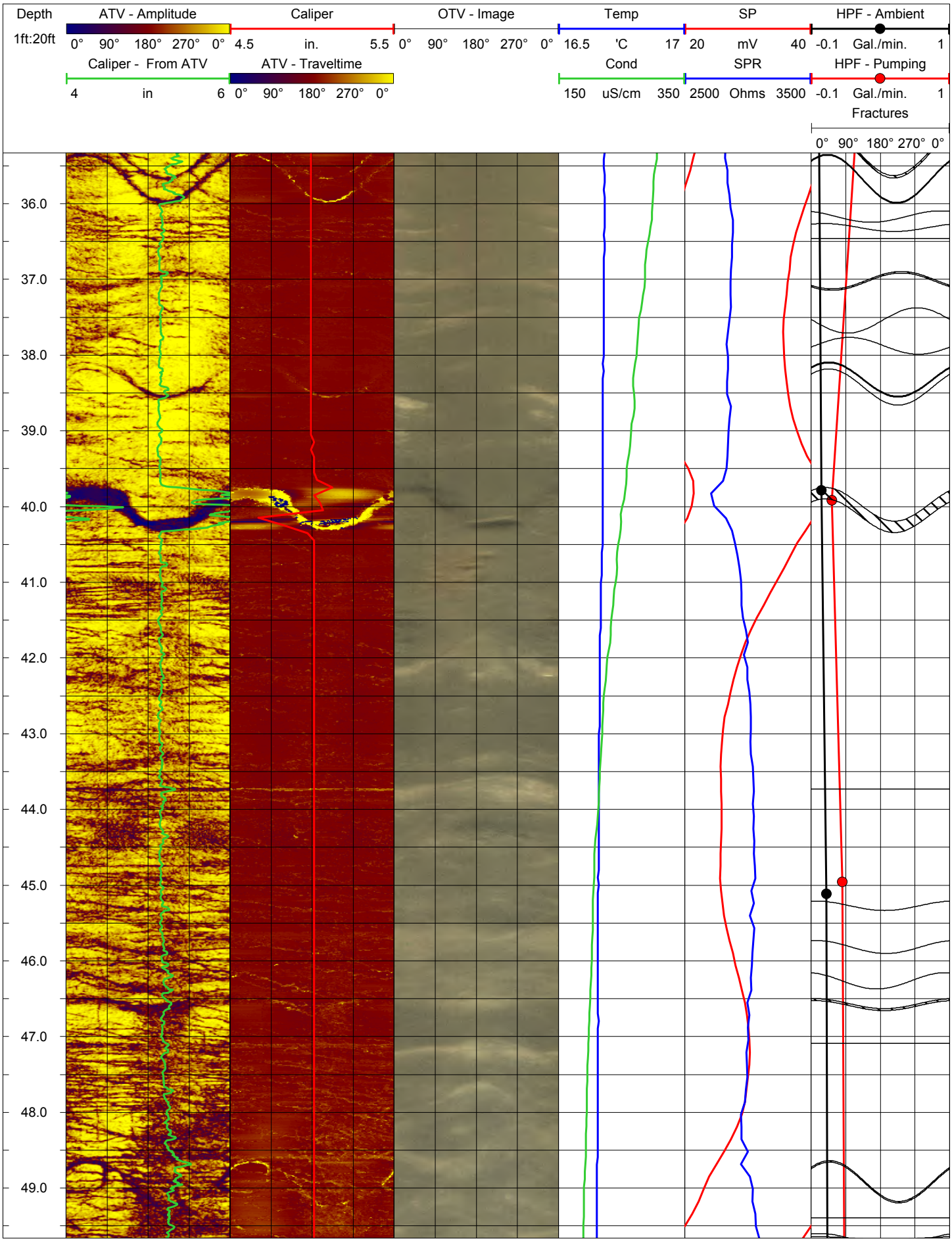
Appendix 4

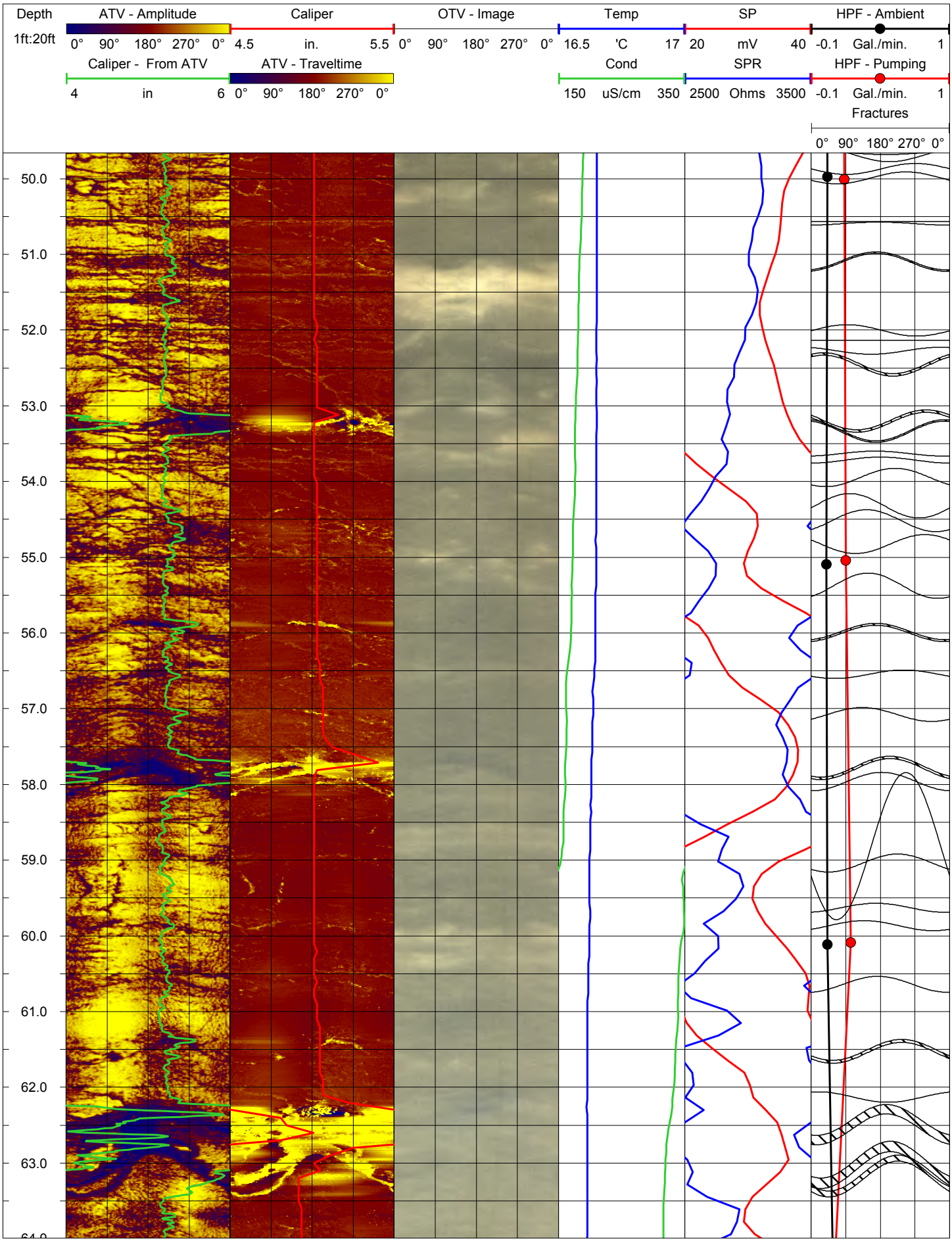

Depth
1ft:20ft
Caliper - from ATV
4 in 7
Caliper
4.5 in. 5.5
OTV - Image
0° 90° 180° 270° 0°
Temp
17.25 'C 17.75
SP
20 mV 40
HPF - Ambient
0 Gal./min. 1
ATV - Amplitude
0° 90° 180° 270° 0°
ATV - Traveltime
0° 90° 180° 270° 0°
Cond
250 uS/cm 400
SPR
2500 Ohms 3500
HPF - Pumping
0 Gal./min. 1
Fractures
0° 90° 180° 270° 0°
36.0
37.0
38.0
39.0
40.0
41.0
42.0
43.0
44.0
45.0
46.0
47.0
48.0
49.0
WELL ID:
MW - 02 BR
Top of Casing

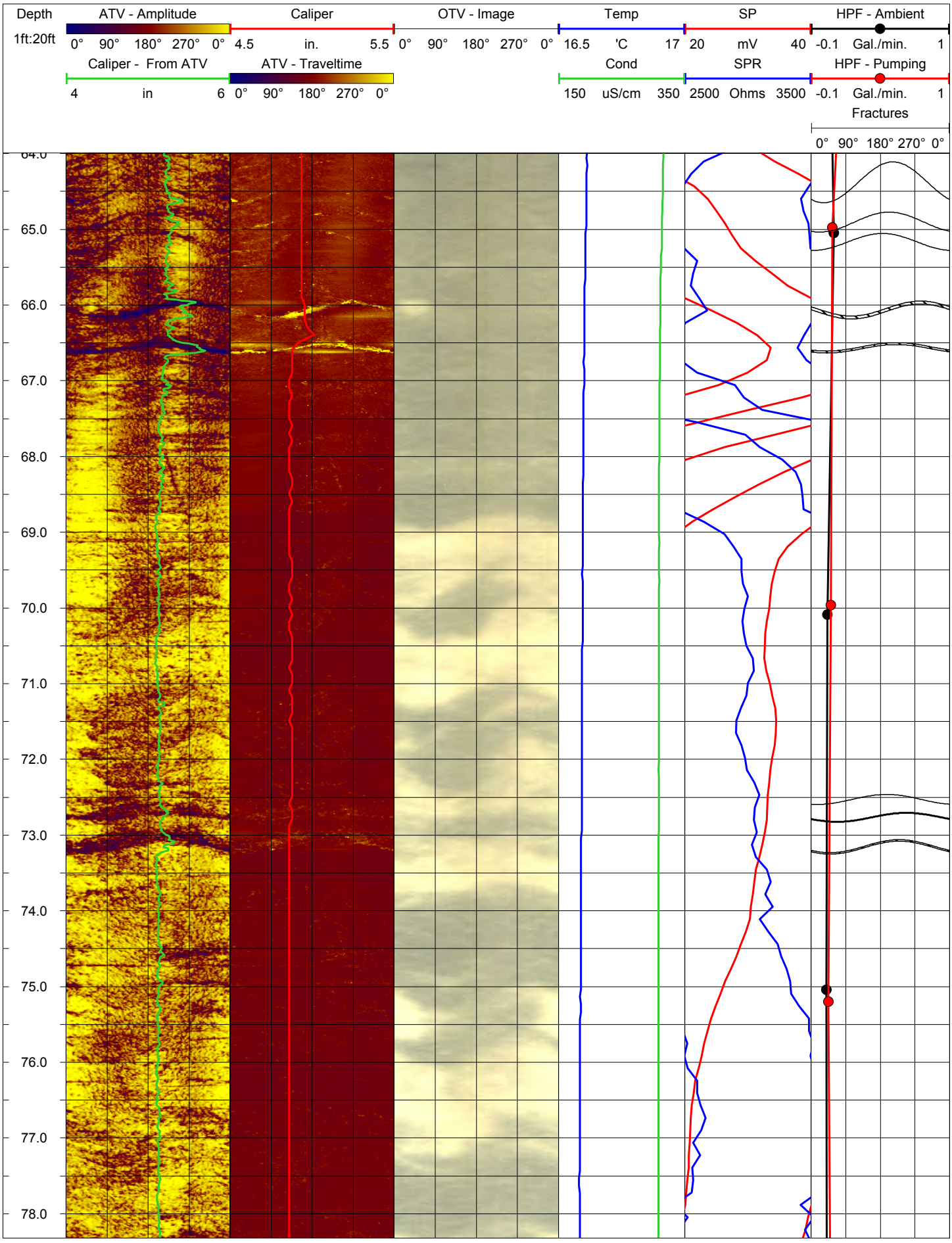

Depth
1ft:20ft
Caliper - from ATV
4 in 7
Caliper
4.5 in. 5.5
OTV - Image
0° 90° 180° 270° 0°
Temp
17.25 'C 17.75
SP
20 mV 40
HPF - Ambient
0 Gal./min. 1
ATV - Amplitude
0° 90° 180° 270° 0°
ATV - Traveltime
0° 90° 180° 270° 0°
Cond
250 uS/cm 400
SPR
2500 Ohms 3500
HPF - Pumping
0 Gal./min. 1
Fractures
0° 90° 180° 270° 0°
50.0
51.0
52.0
53.0
54.0
55.0
56.0
57.0
58.0
59.0
60.0
61.0
62.0
63.0

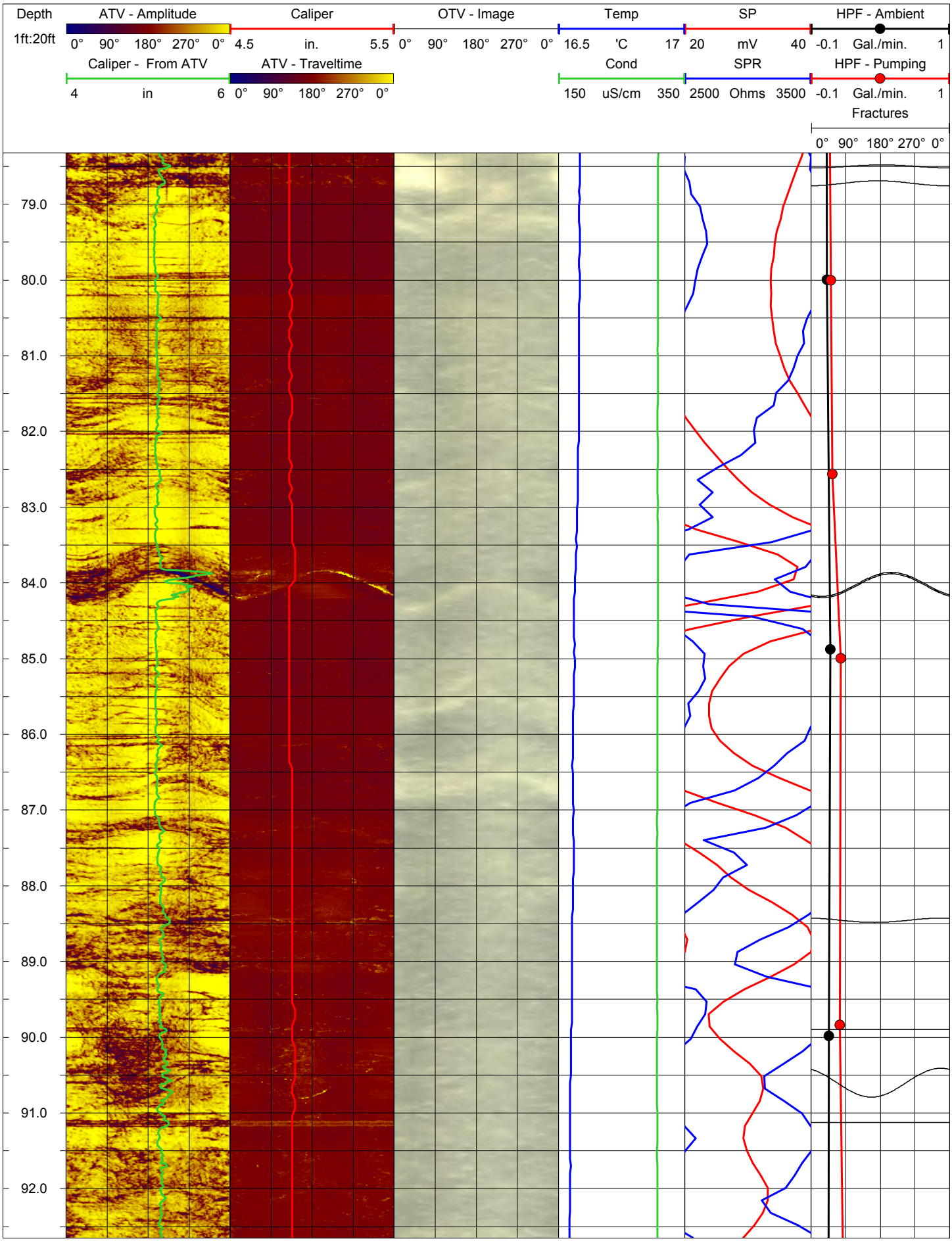

Depth
1ft:20ft
Caliper - from ATV
4
in
7
Caliper
4.5
in.
5.5
OTV - Image
0° 90° 180° 270° 0°
Temp
17.25
'C
17.75
SP
20
mV
40
HPF - Ambient
0
Gal./min.
1
ATV - Amplitude
0° 90° 180° 270° 0°
ATV - Traveltime
0° 90° 180° 270° 0°
Cond
250
uS/cm
400
SPR
2500
Ohms
3500
HPF - Pumping
0
Gal./min.
1
Fractures
0° 90° 180° 270° 0°
64.0
65.0
66.0
67.0
68.0
69.0
70.0
71.0

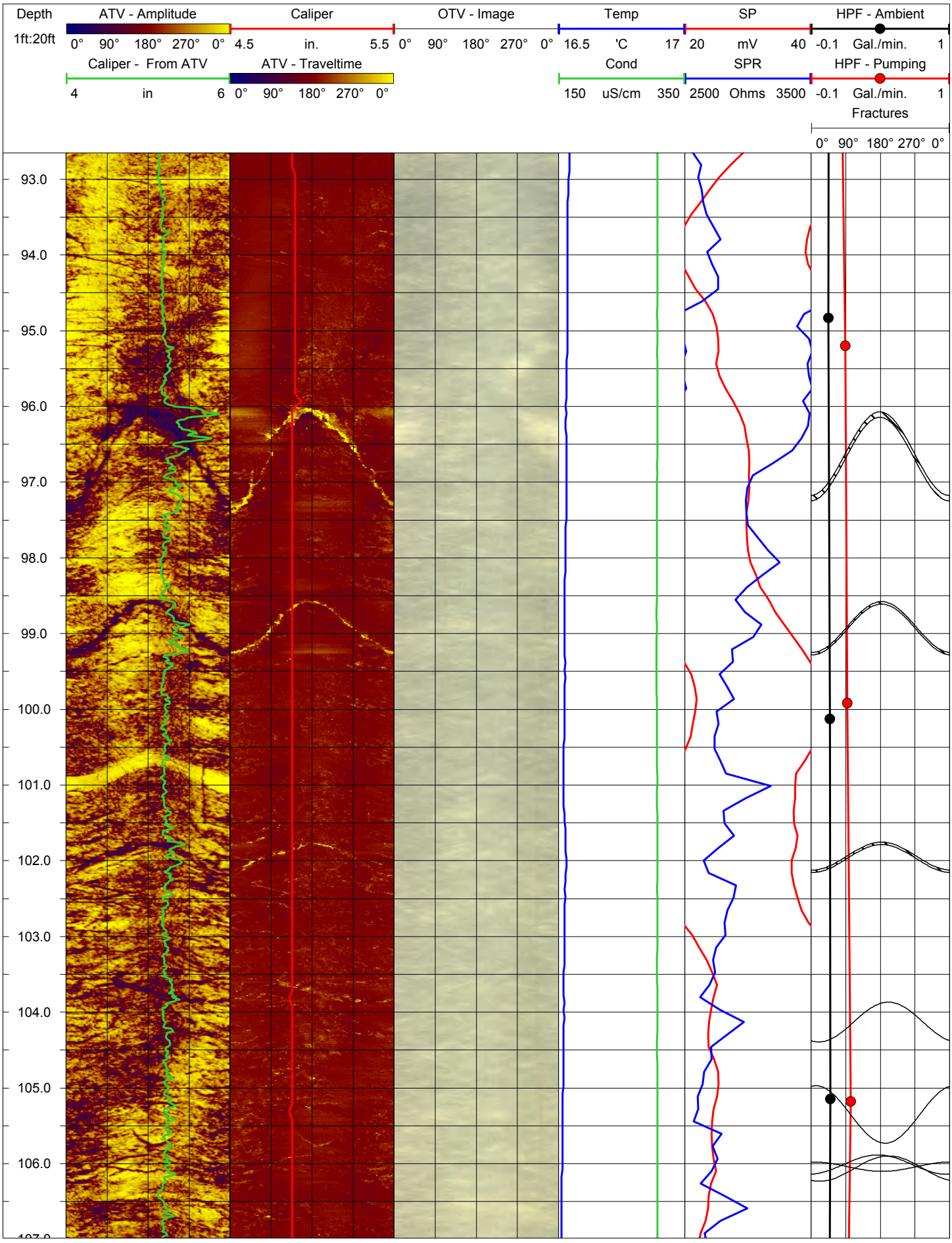

Depth
1ft:20ft
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper
4.5 in. 5.5
OTV - Image
0° 90° 180° 270° 0°
Temp
16.5 'C 17
SP
20 mV 40
HPF - Ambient
-0.1 Gal./min. 1
Caliper - From ATV
4 in 6
ATV - Traveltime
0° 90° 180° 270° 0°
Cond
150 uS/cm 350
SPR
2500 Ohms 3500
HPF - Pumping
-0.1 Gal./min. 1
Fractures
0° 90° 180° 270° 0°
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
31.0
32.0
33.0
34.0
35.0
Well ID:
MW - 21 BR
Bottom of Casing

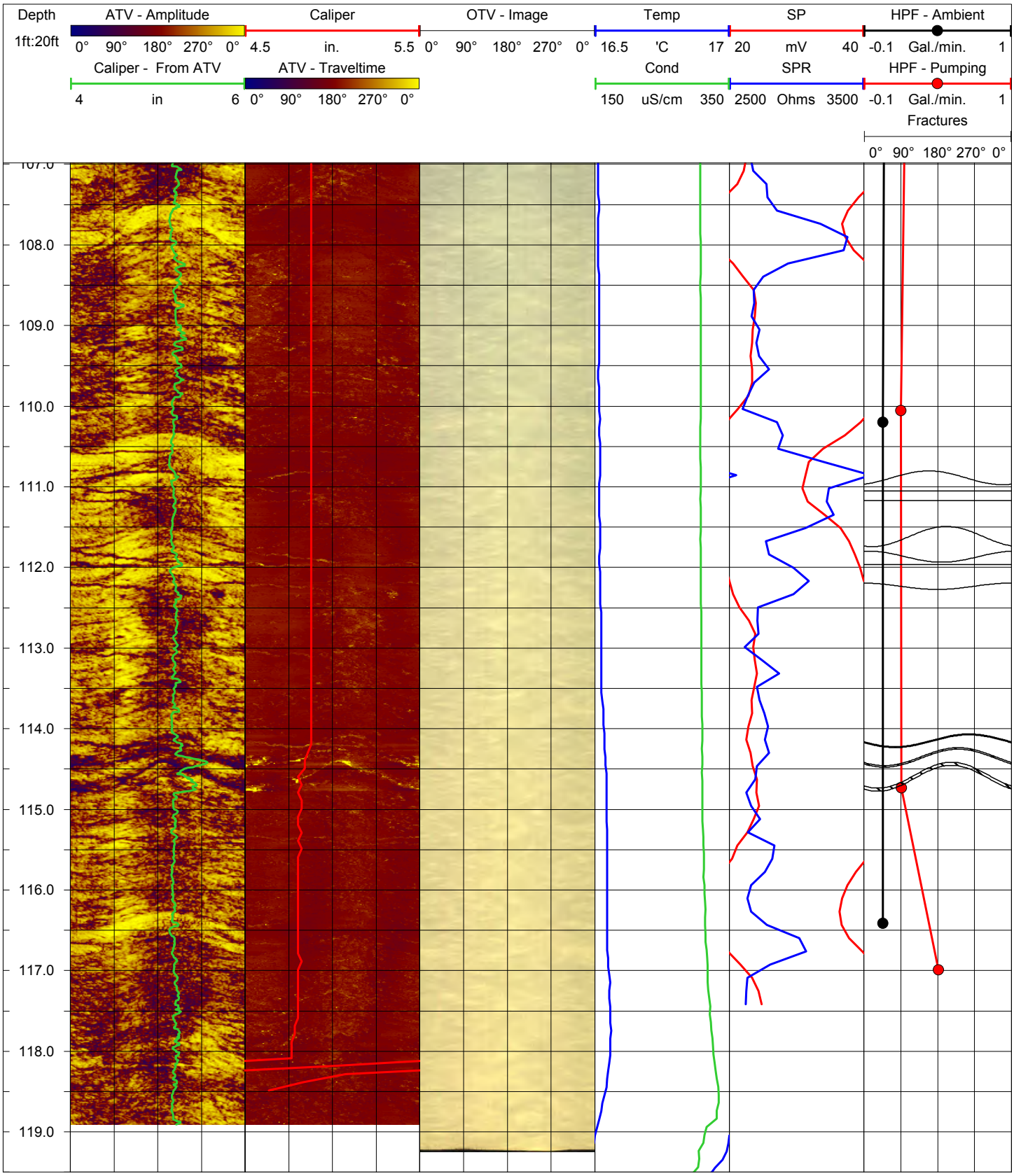

Depth
1ft:20ft
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper
4.5 in. 5.5
OTV - Image
0° 90° 180° 270° 0°
Temp
16.5 'C 17
SP
20 mV 40
HPF - Ambient
-0.1 Gal./min. 1
Caliper - From ATV
4 in 6
ATV - Traveltime
0° 90° 180° 270° 0°
Cond
150 uS/cm 350
SPR
2500 Ohms 3500
HPF - Pumping
-0.1 Gal./min. 1
Fractures
0° 90° 180° 270° 0°
36.0
37.0
38.0
39.0
40.0
41.0
42.0
43.0
44.0
45.0
46.0
47.0
48.0
49.0

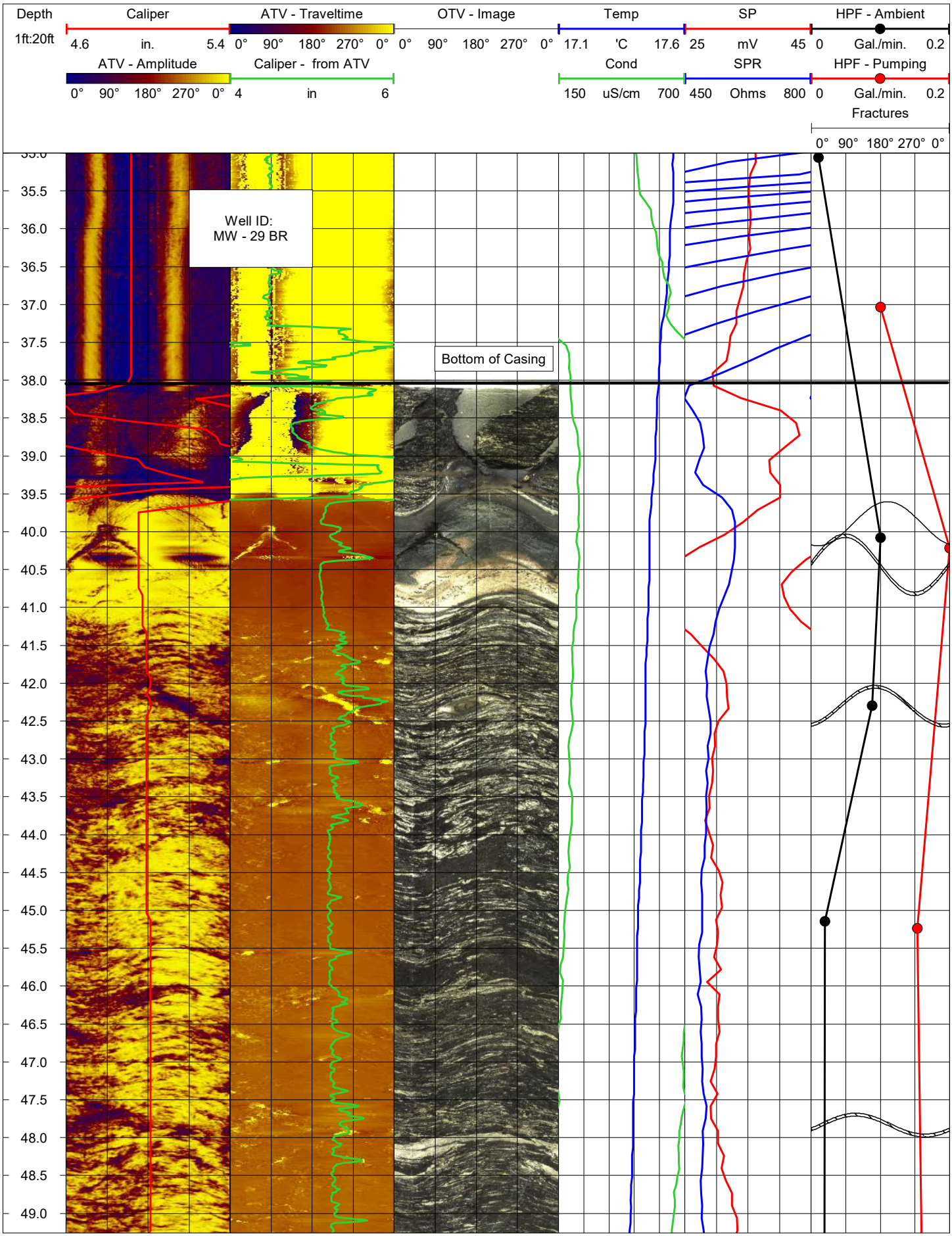

Depth
1ft:20ft
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper
4.5 in. 5.5
OTV - Image
0° 90° 180° 270° 0°
Temp
16.5 'C 17
SP
20 mV 40
HPF - Ambient
-0.1 Gal./min. 1
Caliper - From ATV
4 in 6
ATV - Traveltime
0° 90° 180° 270° 0°
Cond
150 uS/cm 350
SPR
2500 Ohms 3500
HPF - Pumping
-0.1 Gal./min. 1
Fractures
0° 90° 180° 270° 0°
50.0
51.0
52.0
53.0
54.0
55.0
56.0
57.0
58.0
59.0
60.0
61.0
62.0
63.0


Depth
1ft:20ft
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper
4.5 in. 5.5
OTV - Image
0° 90° 180° 270° 0°
Temp
16.5 'C 17
SP
20 mV 40
HPF - Ambient
-0.1 Gal./min. 1
Caliper - From ATV
4 in 6
ATV - Traveltime
0° 90° 180° 270° 0°
Cond
150 uS/cm 350
SPR
2500 Ohms 3500
HPF - Pumping
-0.1 Gal./min. 1
Fractures
0° 90° 180° 270° 0°
64.0
65.0
66.0
67.0
68.0
69.0
70.0
71.0
72.0
73.0
74.0
75.0
76.0
77.0
78.0


Depth
1ft:20ft
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper
4.5 in. 5.5
OTV - Image
0° 90° 180° 270° 0°
Temp
16.5 'C 17
SP
20 mV 40
HPF - Ambient
-0.1 Gal./min. 1
Caliper - From ATV
4 in 6
ATV - Traveltime
0° 90° 180° 270° 0°
Cond
150 uS/cm 350
SPR
2500 Ohms 3500
HPF - Pumping
-0.1 Gal./min. 1
Fractures
0° 90° 180° 270° 0°
79.0
80.0
81.0
82.0
83.0
84.0
85.0
86.0
87.0
88.0
89.0
90.0
91.0
92.0


Depth
1ft:20ft
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper
4.5 in. 5.5
OTV - Image
0° 90° 180° 270° 0°
Temp
16.5 'C 17
SP
20 mV 40
HPF - Ambient
-0.1 Gal./min. 1
Caliper - From ATV
4 in 6
ATV - Traveltime
0° 90° 180° 270° 0°
Cond
150 uS/cm 350
SPR
2500 Ohms 3500
HPF - Pumping
-0.1 Gal./min. 1
Fractures
0° 90° 180° 270° 0°
93.0
94.0
95.0
96.0
97.0
98.0
99.0
100.0
101.0
102.0
103.0
104.0
105.0
106.0


Depth
1ft:20ft
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper
4.5 in. 5.5
OTV - Image
0° 90° 180° 270° 0°
Temp
16.5 'C 17
SP
20 mV 40
HPF - Ambient
-0.1 Gal./min. 1
Caliper - From ATV
4 in 6
ATV - Traveltime
0° 90° 180° 270° 0°
Cond
150 uS/cm 350
SPR
2500 Ohms 3500
HPF - Pumping
-0.1 Gal./min. 1
Fractures
0° 90° 180° 270° 0°
108.0
109.0
110.0
111.0
112.0
113.0
114.0
115.0
116.0
117.0
118.0
119.0


Depth
1ft:20ft
Caliper
4.6 in. 5.4
ATV - Traveltime
0° 90° 180° 270° 0°
OTV - Image
0° 90° 180° 270° 0°
Temp
17.1 'C 17.6
SP
25 mV 45
HPF - Ambient
0 Gal./min. 0.2
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper - from ATV
4 in 6
Cond
150 uS/cm 700
SPR
450 Ohms 800
HPF - Pumping
0 Gal./min. 0.2
Fractures
0° 90° 180° 270° 0°
Well ID:
MW - 29 BR
Bottom of Casing
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5
42.0
42.5
43.0
43.5
44.0
44.5
45.0
45.5
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46.5
47.0
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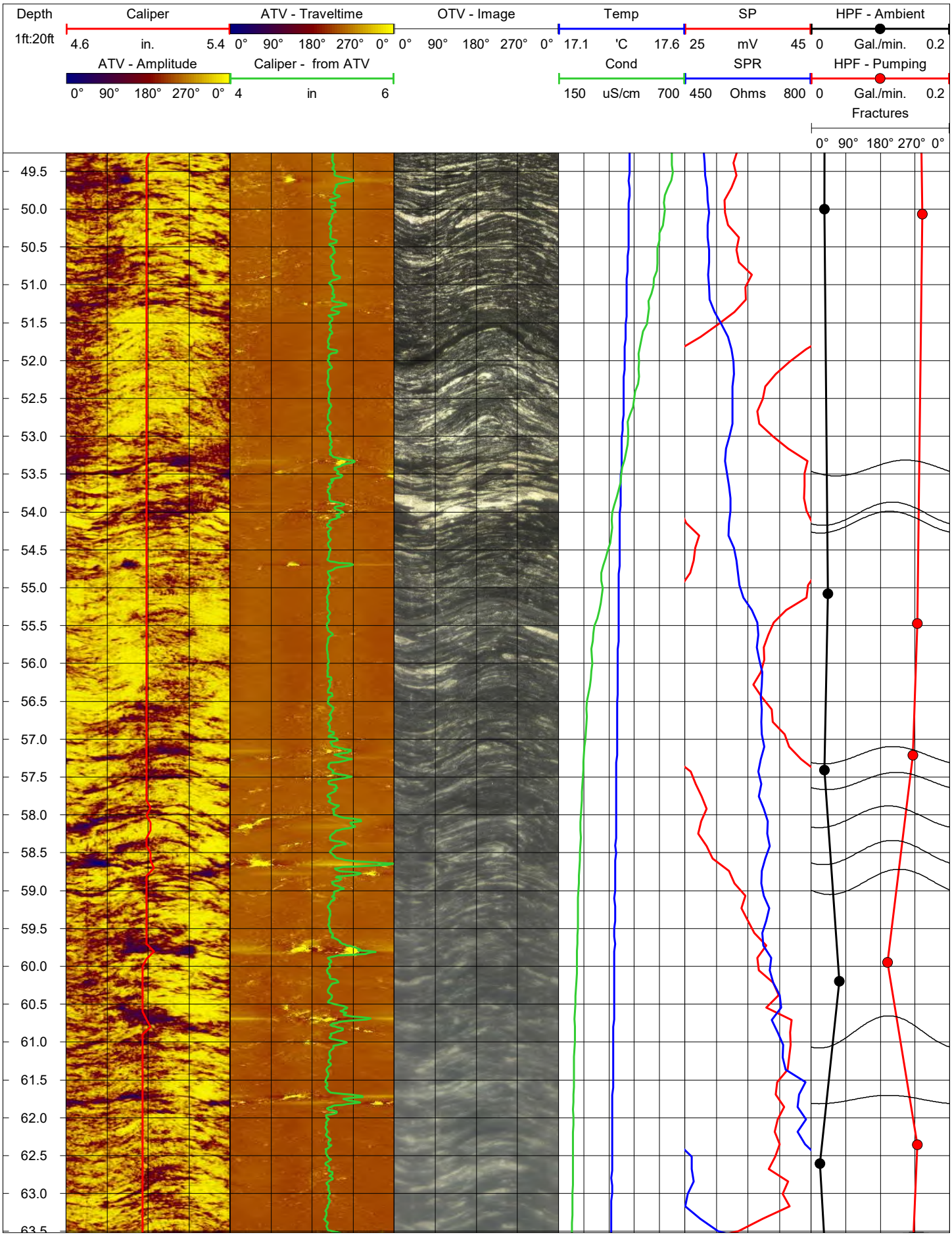
48.5
49.0


Depth
1ft:20ft
Caliper
4.6 in. 5.4
ATV - Traveltime
0° 90° 180° 270° 0°
OTV - Image
0° 90° 180° 270° 0°
Temp
17.1 'C 17.6
SP
25 mV 45
HPF - Ambient
0 Gal./min. 0.2
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper - from ATV
4 in 6
Cond
150 uS/cm 700
SPR
450 Ohms 800
HPF - Pumping
0 Gal./min. 0.2
Fractures
0° 90° 180° 270° 0°
49.5
50.0
50.5
51.0
51.5
52.0
52.5
53.0
53.5
54.0
54.5
55.0
55.5
56.0
56.5
57.0
57.5
58.0
58.5
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60.5
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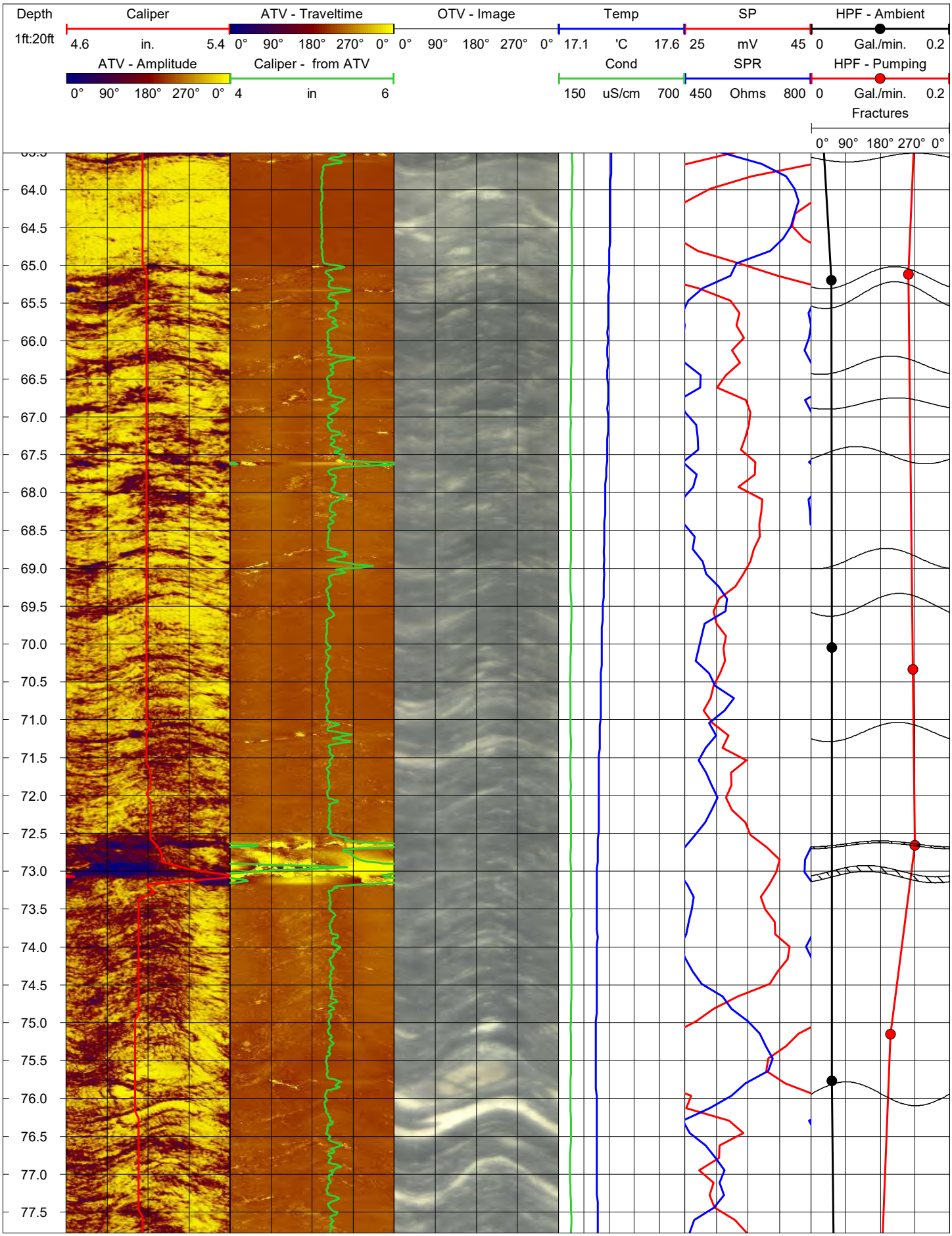
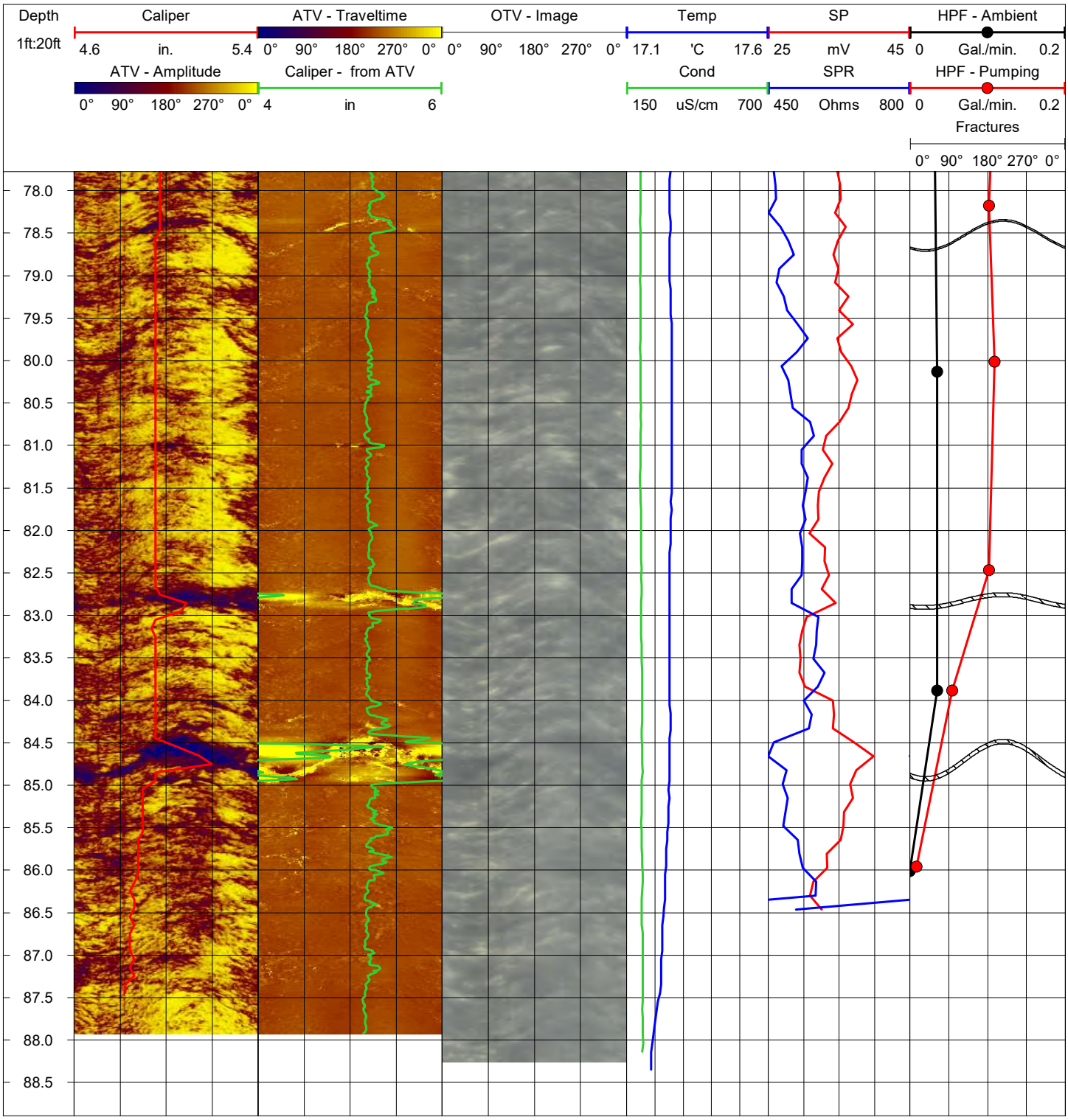
61.5
62.0
62.5
63.0
63.5


Depth
1ft:20ft
Caliper
4.6 in. 5.4
ATV - Traveltime
0° 90° 180° 270° 0°
OTV - Image
0° 90° 180° 270° 0°
Temp
17.1 'C 17.6
SP
25 mV 45
HPF - Ambient
0 Gal./min. 0.2
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper - from ATV
4 in 6
Cond
150 uS/cm 700
SPR
450 Ohms 800
HPF - Pumping
0 Gal./min. 0.2
Fractures
0° 90° 180° 270° 0°
64.0
64.5
65.0
65.5
66.0
66.5
67.0
67.5
68.0
68.5
69.0
69.5
70.0
70.5
71.0
71.5
72.0
72.5
73.0
73.5
74.0
74.5
75.0
75.5
76.0
76.5
77.0
77.5


Depth
1ft:20ft
Caliper
4.6 in. 5.4
ATV - Traveltime
0° 90° 180° 270° 0°
OTV - Image
0° 90° 180° 270° 0°
Temp
17.1 'C 17.6
SP
25 mV 45
HPF - Ambient
0 Gal./min. 0.2
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper - from ATV
4 in 6
Cond
150 uS/cm 700
SPR
450 Ohms 800
HPF - Pumping
0 Gal./min. 0.2
Fractures
0° 90° 180° 270° 0°
78.0
78.5
79.0
79.5
80.0
80.5
81.0
81.5
82.0
82.5
83.0
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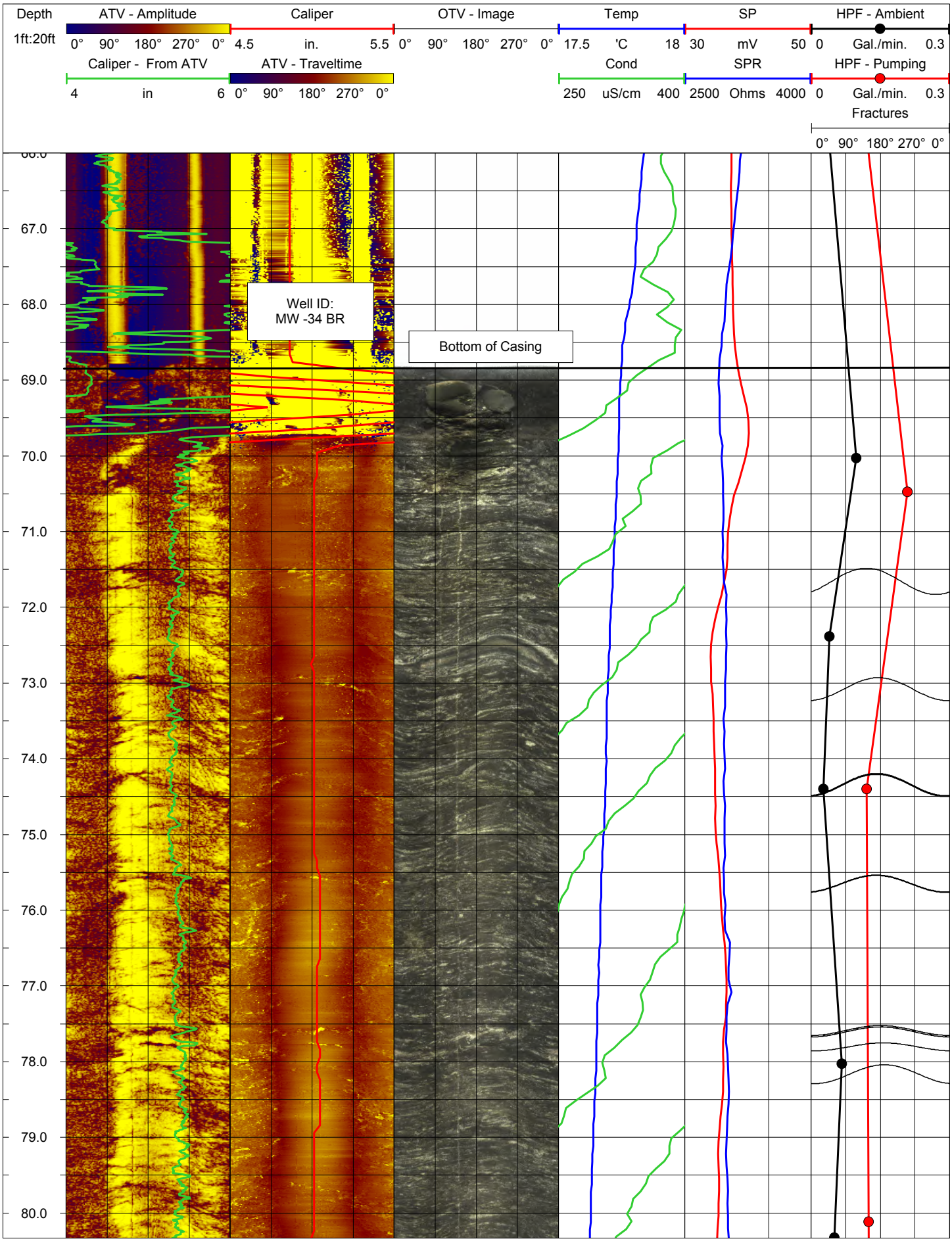
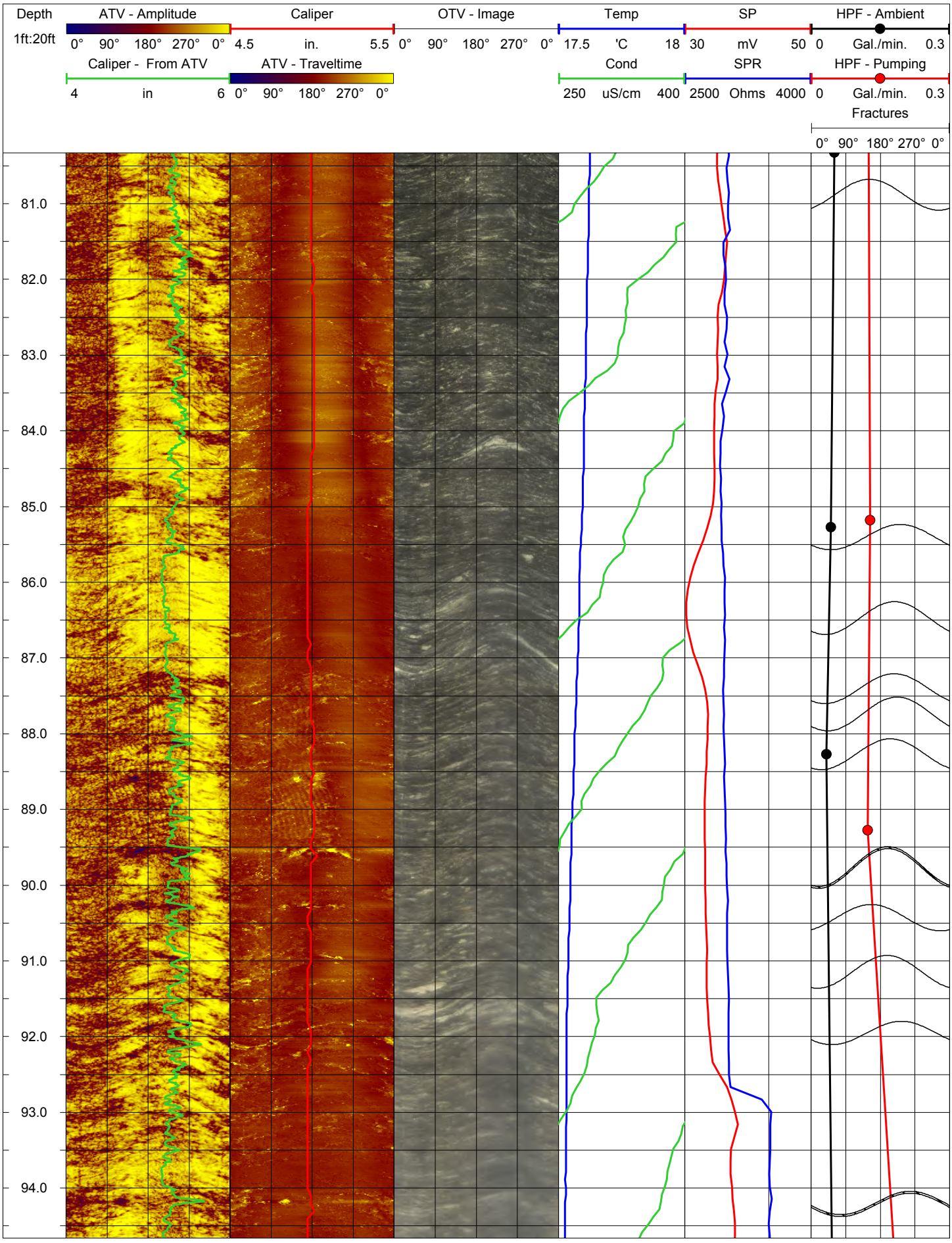
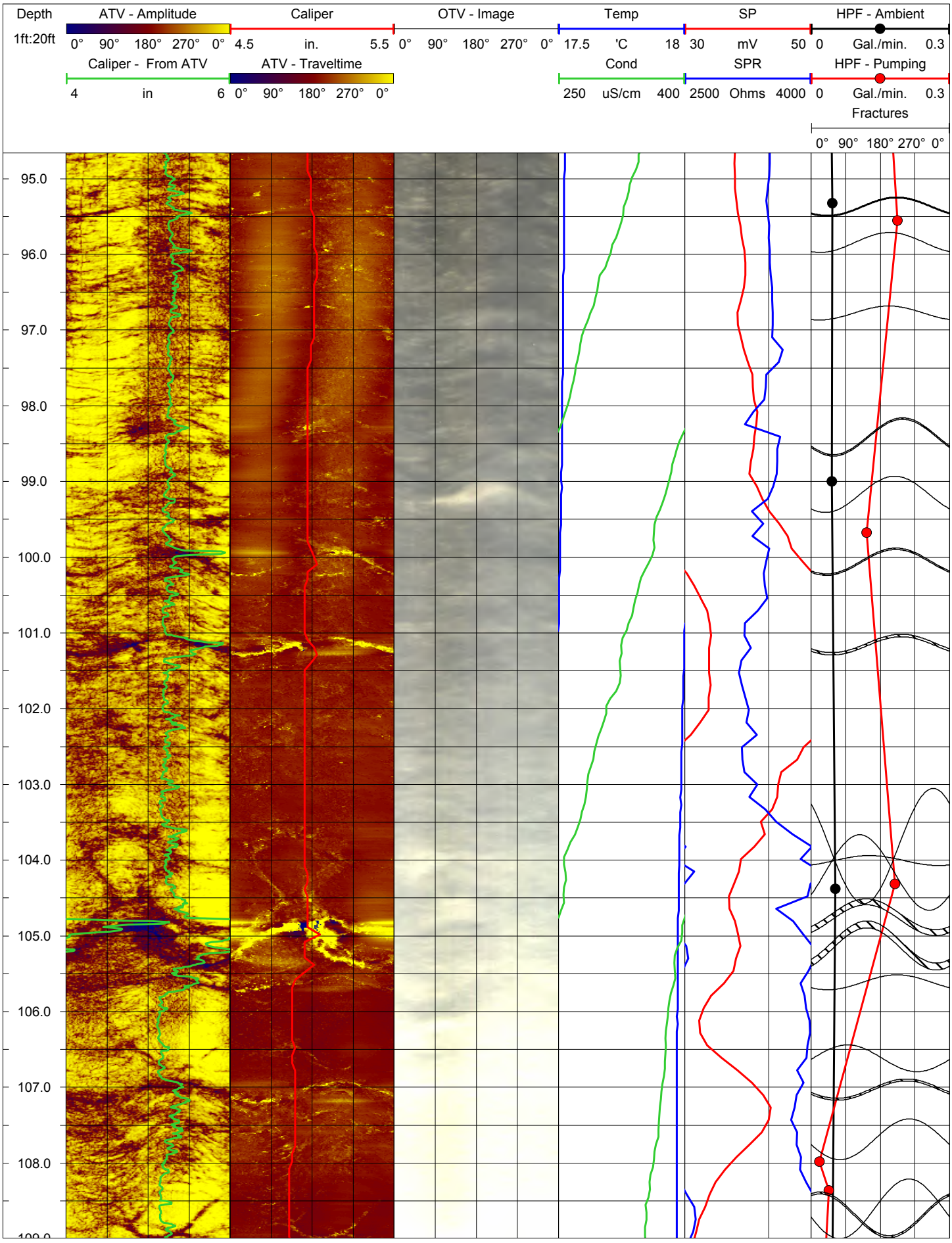
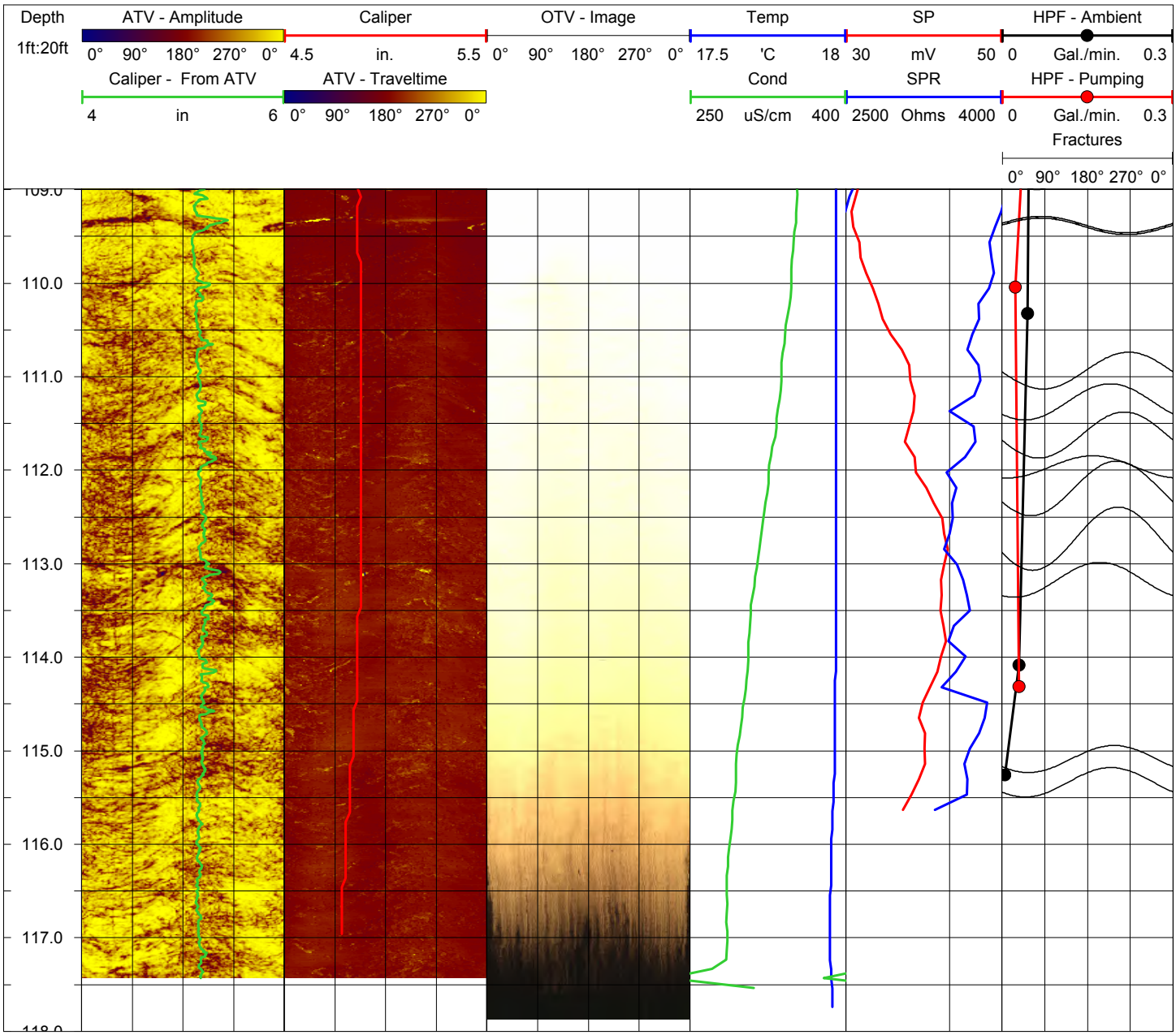
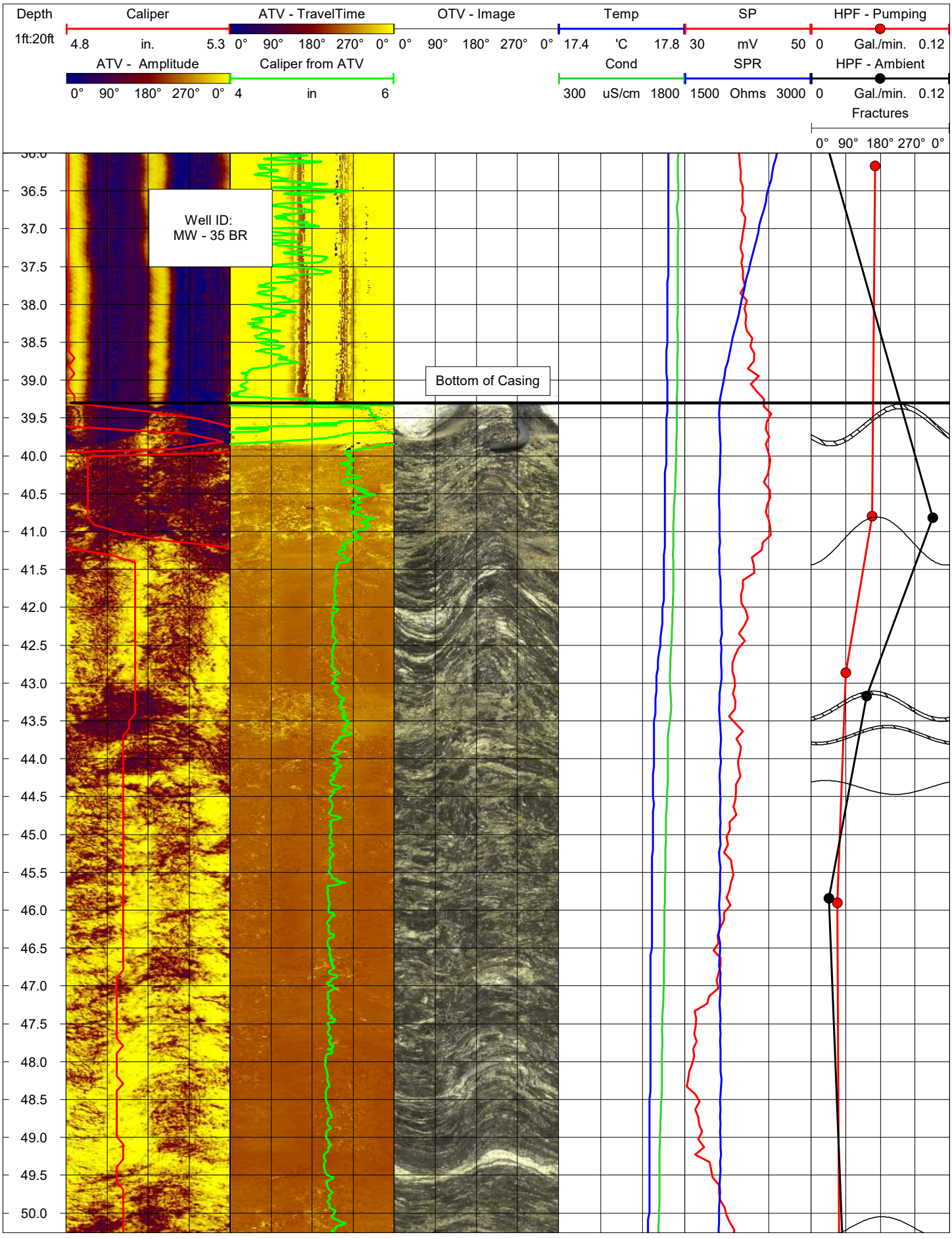
86.0
86.5
87.0
87.5
88.0
88.5

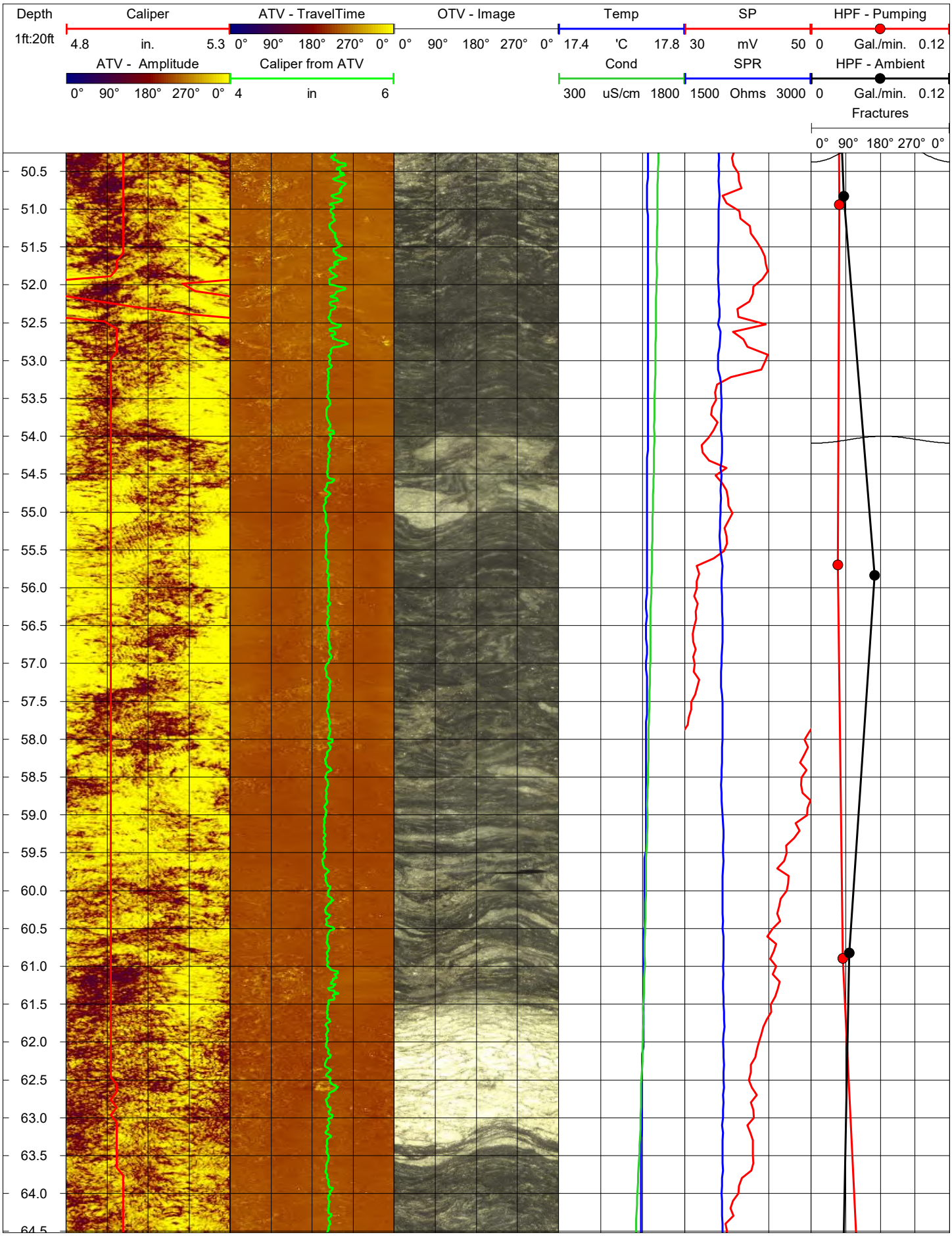

Depth
1ft:20ft
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper
4.5 in. 5.5
OTV - Image
0° 90° 180° 270° 0°
Temp
17.5 'C 18
SP
30 mV 50
HPF - Ambient
0 Gal./min. 0.3
Caliper - From ATV
4 in 6
ATV - Traveltime
0° 90° 180° 270° 0°
Cond
250 uS/cm 400
SPR
2500 Ohms 4000
HPF - Pumping
0 Gal./min. 0.3
Fractures
0° 90° 180° 270° 0°
67.0
68.0
69.0
70.0
71.0
72.0
73.0
74.0
75.0
76.0
77.0
78.0
79.0
80.0
Well ID:
MW -34 BR
Bottom of Casing

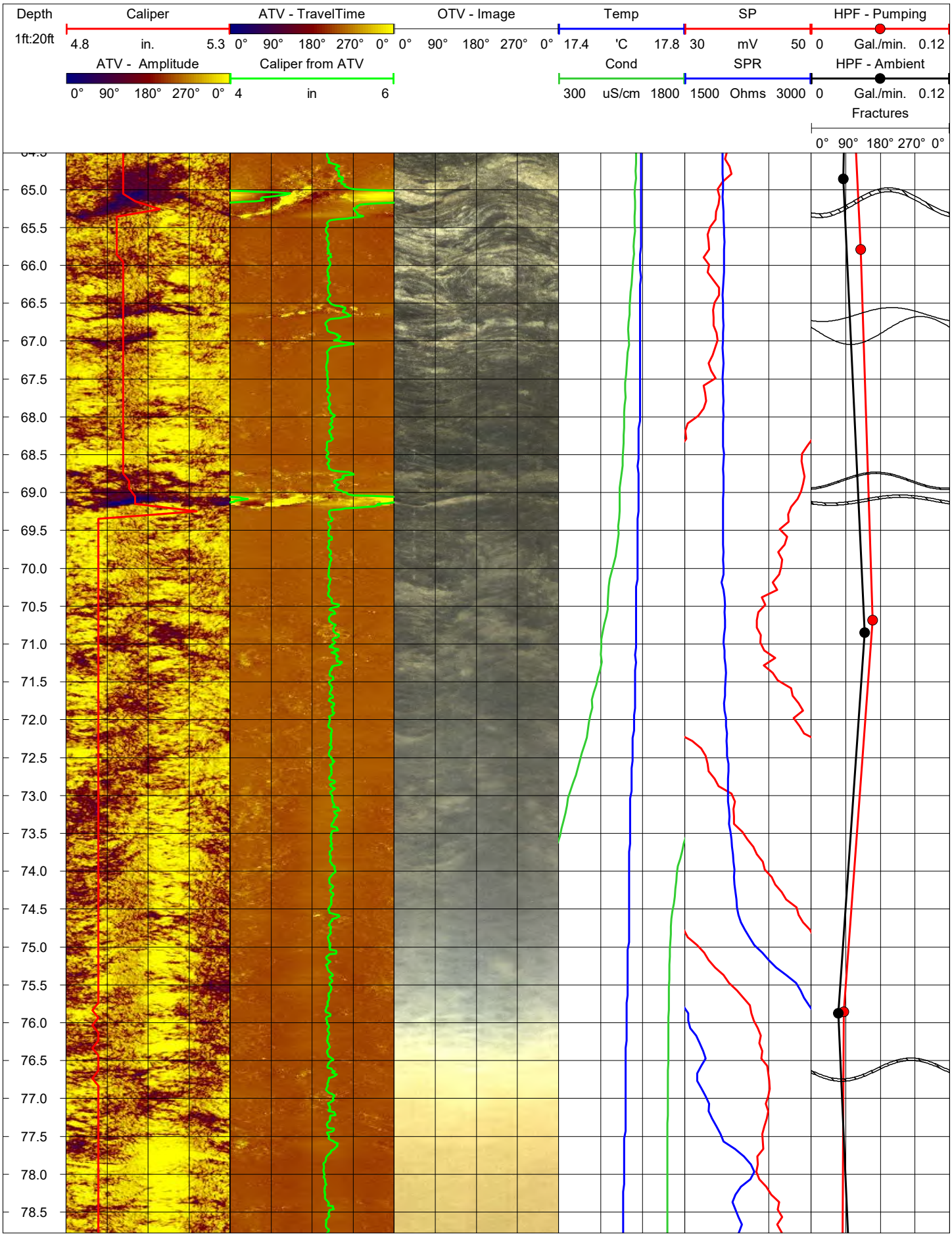

Depth
1ft:20ft
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper
4.5 in. 5.5
OTV - Image
0° 90° 180° 270° 0°
Temp
17.5 'C 18
SP
30 mV 50
HPF - Ambient
0 Gal./min. 0.3
Caliper - From ATV
4 in 6
ATV - Traveltime
0° 90° 180° 270° 0°
Cond
250 uS/cm 400
SPR
2500 Ohms 4000
HPF - Pumping
0 Gal./min. 0.3
Fractures
0° 90° 180° 270° 0°
81.0
82.0
83.0
84.0
85.0
86.0
87.0
88.0
89.0
90.0
91.0
92.0
93.0
94.0

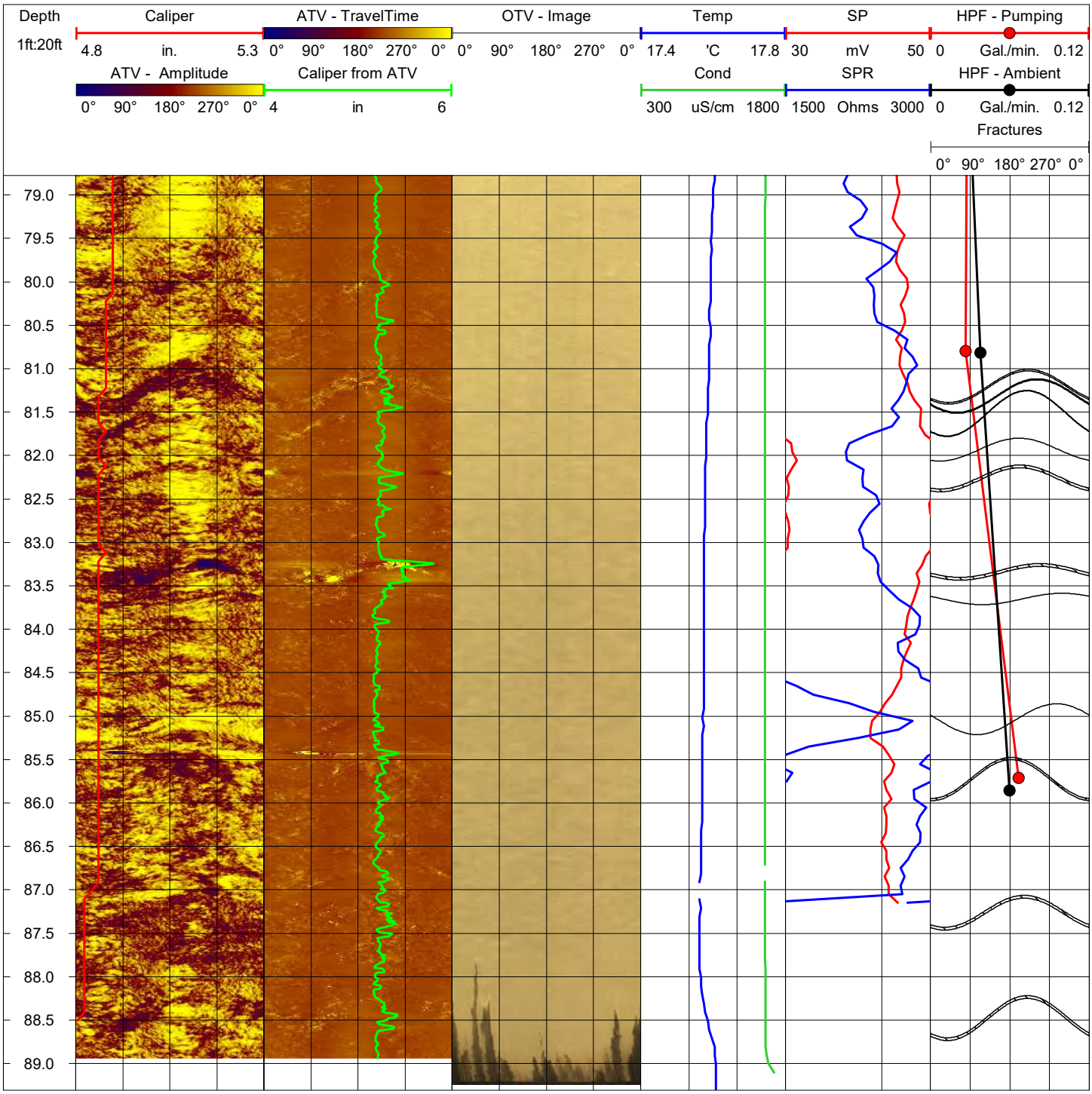

Depth
1ft:20ft
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper
4.5 in. 5.5
OTV - Image
0° 90° 180° 270° 0°
Temp
17.5 'C 18
SP
30 mV 50
HPF - Ambient
0 Gal./min. 0.3
Caliper - From ATV
4 in 6
ATV - Traveltime
0° 90° 180° 270° 0°
Cond
250 uS/cm 400
SPR
2500 Ohms 4000
HPF - Pumping
0 Gal./min. 0.3
Fractures
0° 90° 180° 270° 0°
95.0
96.0
97.0
98.0
99.0
100.0
101.0
102.0
103.0
104.0
105.0
106.0
107.0
108.0


Depth
1ft:20ft
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper
4.5 in. 5.5
OTV - Image
0° 90° 180° 270° 0°
Temp
17.5 'C 18
SP
30 mV 50
HPF - Ambient
0 Gal./min. 0.3
Caliper - From ATV
4 in 6
ATV - Traveltime
0° 90° 180° 270° 0°
Cond
250 uS/cm 400
SPR
2500 Ohms 4000
HPF - Pumping
0 Gal./min. 0.3
Fractures
0° 90° 180° 270° 0°
110.0
111.0
112.0
113.0
114.0
115.0
116.0
117.0


Depth
1ft:20ft
Caliper
4.8 in. 5.3
ATV - TravelTime
0° 90° 180° 270° 0°
OTV - Image
0° 90° 180° 270° 0°
Temp
17.4 'C 17.8
SP
30 mV 50
HPF - Pumping
0 Gal./min. 0.12
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper from ATV
4 in 6
Cond
300 uS/cm 1800
SPR
1500 Ohms 3000
HPF - Ambient
0 Gal./min. 0.12
Fractures
0° 90° 180° 270° 0°
Well ID:
MW - 35 BR
Bottom of Casing
36.5
37.0
37.5
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5
42.0
42.5
43.0
43.5
44.0
44.5
45.0
45.5
46.0
46.5
47.0
47.5
48.0
48.5
49.0
49.5
50.0


Depth
1ft:20ft
Caliper
4.8 in. 5.3
ATV - TravelTime
0° 90° 180° 270° 0°
OTV - Image
0° 90° 180° 270° 0°
Temp
17.4 'C 17.8
SP
30 mV 50
HPF - Pumping
0 Gal./min. 0.12
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper from ATV
4 in 6
Cond
300 uS/cm 1800
SPR
1500 Ohms 3000
HPF - Ambient
0 Gal./min. 0.12
Fractures
0° 90° 180° 270° 0°
50.5
51.0
51.5
52.0
52.5
53.0
53.5
54.0
54.5
55.0
55.5
56.0
56.5
57.0
57.5
58.0
58.5
59.0
59.5
60.0
60.5
61.0
61.5
62.0
62.5
63.0
63.5
64.0


Depth
1ft:20ft
Caliper
4.8 in. 5.3
ATV - TravelTime
0° 90° 180° 270° 0°
OTV - Image
0° 90° 180° 270° 0°
Temp
17.4 'C 17.8
SP
30 mV 50
HPF - Pumping
0 Gal./min. 0.12
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper from ATV
4 in 6
Cond
300 uS/cm 1800
SPR
1500 Ohms 3000
HPF - Ambient
0 Gal./min. 0.12
Fractures
0° 90° 180° 270° 0°
65.0
65.5
66.0
66.5
67.0
67.5
68.0
68.5
69.0
69.5
70.0
70.5
71.0
71.5
72.0
72.5
73.0
73.5
74.0
74.5
75.0
75.5
76.0
76.5
77.0
77.5
78.0
78.5


Depth
1ft:20ft
Caliper
4.8
in.
5.3
ATV - TravelTime
0° 90° 180° 270° 0°
OTV - Image
0° 90° 180° 270° 0°
Temp
17.4
'C
17.8
SP
30
mV
50
HPF - Pumping
0
Gal./min.
0.12
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper from ATV
4
in
6
Cond
300
uS/cm
1800
SPR
1500
Ohms
3000
HPF - Ambient
0
Gal./min.
0.12
Fractures
0° 90° 180° 270° 0°
79.0
79.5
80.0
80.5
81.0
81.5
82.0
82.5
83.0
83.5
84.0
84.5
85.0
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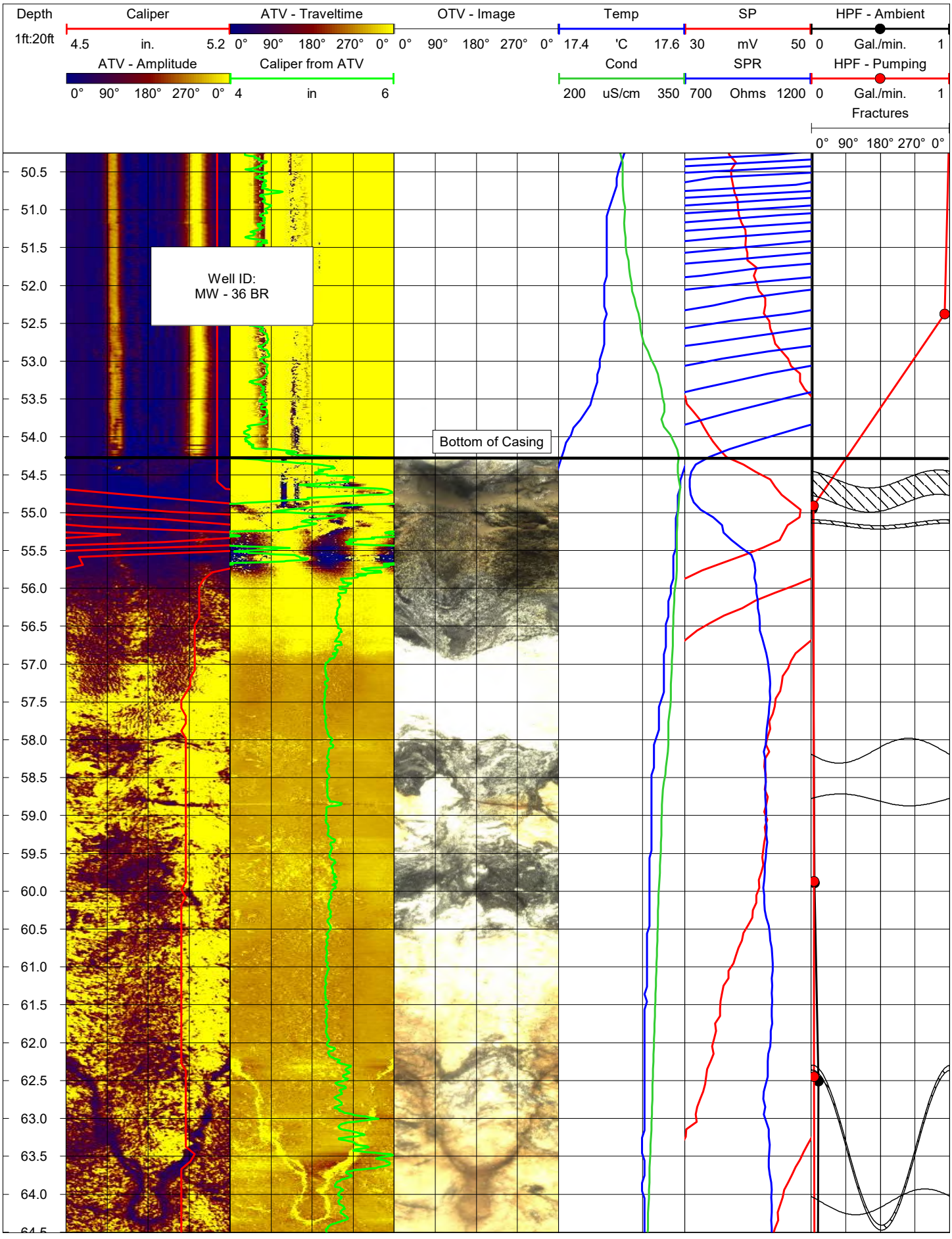
86.0
86.5
87.0
87.5
88.0
88.5
89.0


Depth
1ft:20ft
Caliper
4.5 in. 5.2
ATV - Traveltime
0° 90° 180° 270° 0°
OTV - Image
0° 90° 180° 270° 0°
Temp
17.4 'C 17.6
SP
30 mV 50
HPF - Ambient
0 Gal./min. 1
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper from ATV
4 in 6
Cond
200 uS/cm 350
SPR
700 Ohms 1200
HPF - Pumping
0 Gal./min. 1
Fractures
0° 90° 180° 270° 0°
Well ID:
MW - 36 BR
Bottom of Casing
50.5
51.0
51.5
52.0
52.5
53.0
53.5
54.0
54.5
55.0
55.5
56.0
56.5
57.0
57.5
58.0
58.5
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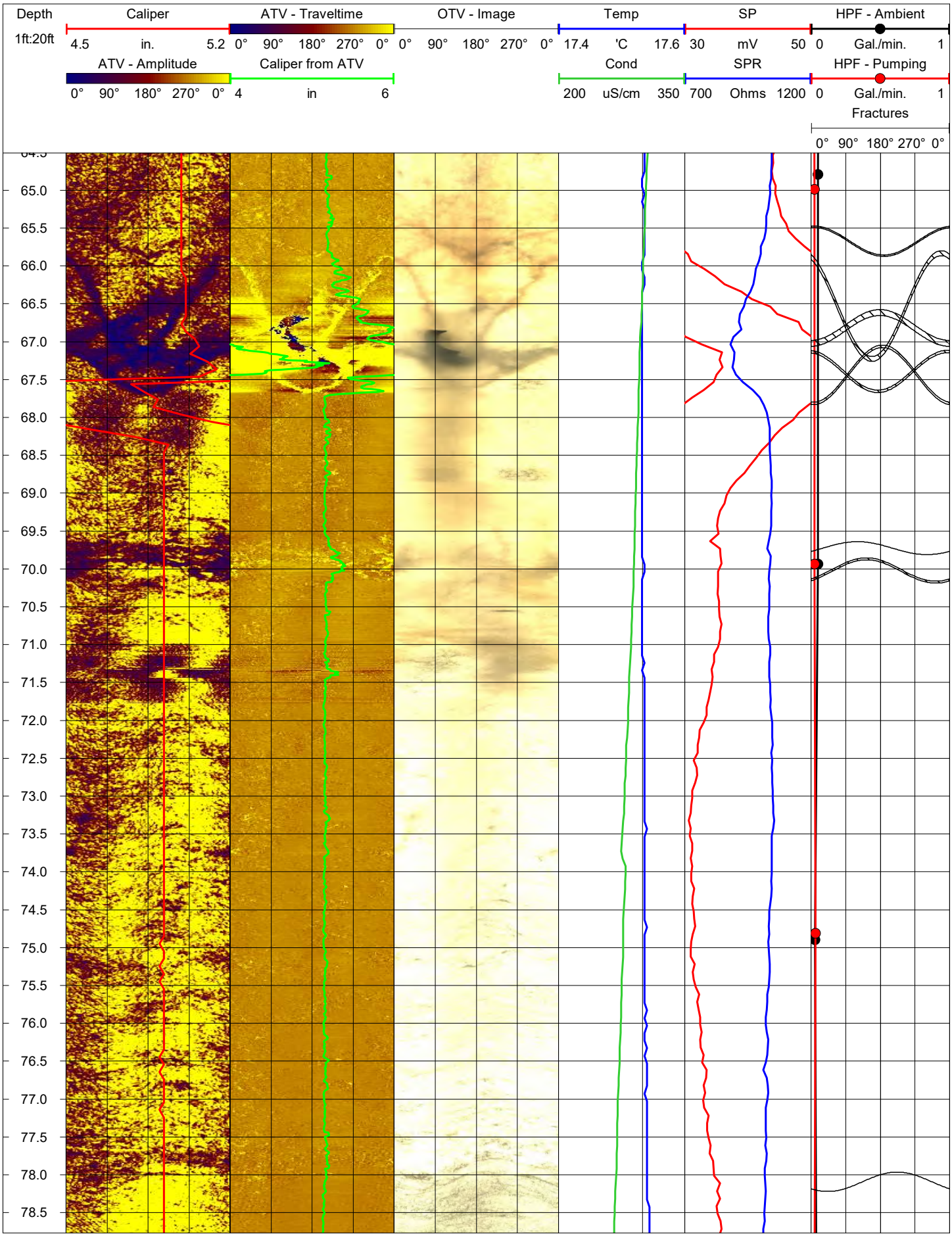
59.5
60.0
60.5
61.0
61.5
62.0
62.5
63.0
63.5
64.0


Depth
1ft:20ft
Caliper
4.5
in.
5.2
ATV - Traveltime
0° 90° 180° 270° 0°
OTV - Image
0° 90° 180° 270° 0°
Temp
17.4
'C
17.6
SP
30
mV
50
HPF - Ambient
0
Gal./min.
1
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper from ATV
4
in
6
Cond
200
uS/cm
350
SPR
700
Ohms
1200
HPF - Pumping
0
Gal./min.
1
Fractures
0° 90° 180° 270° 0°
65.0
65.5
66.0
66.5
67.0
67.5
68.0
68.5
69.0
69.5
70.0
70.5
71.0
71.5
72.0
72.5
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76.5
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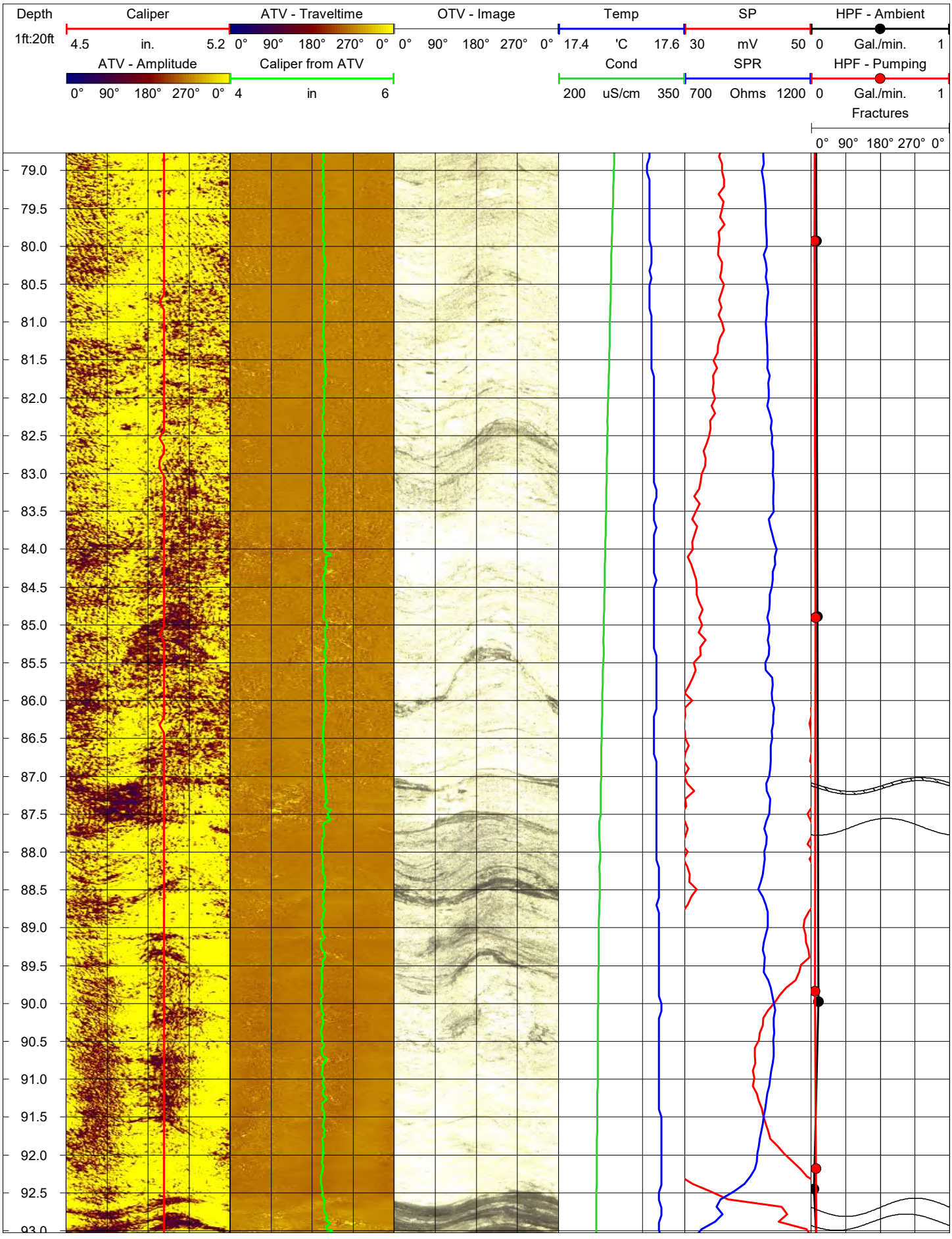
77.5
78.0
78.5


Depth
1ft:20ft
Caliper
4.5
in.
5.2
ATV - Traveltime
0° 90° 180° 270° 0°
OTV - Image
0° 90° 180° 270° 0°
Temp
17.4
'C
17.6
SP
30
mV
50
HPF - Ambient
0
Gal./min.
1
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper from ATV
4
in
6
Cond
200
uS/cm
350
SPR
700
Ohms
1200
HPF - Pumping
0
Gal./min.
1
Fractures
0° 90° 180° 270° 0°
79.0
79.5
80.0
80.5
81.0
81.5
82.0
82.5
83.0
83.5
84.0
84.5
85.0
85.5
86.0
86.5
87.0
87.5
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89.0
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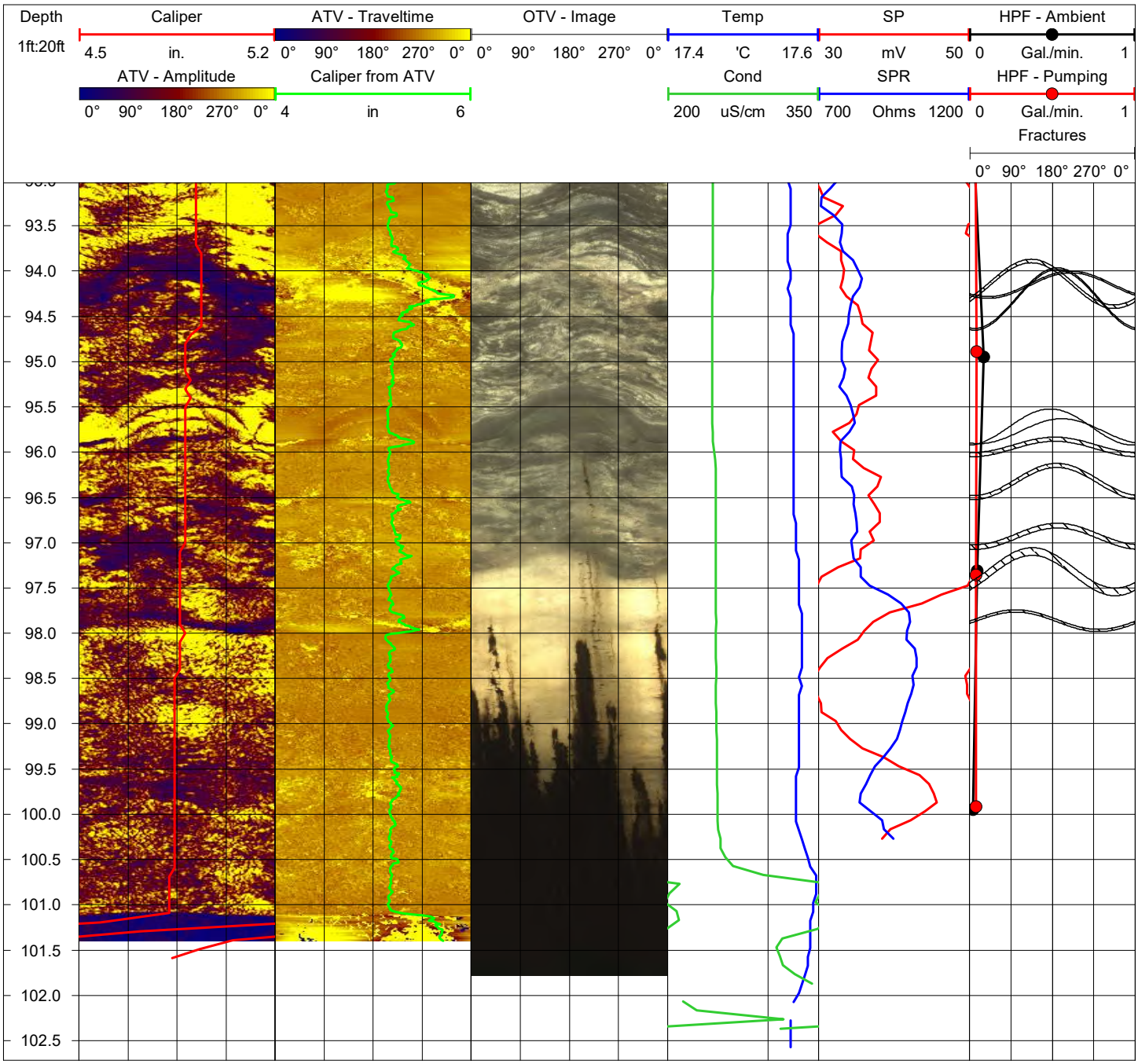
90.5
91.0
91.5
92.0
92.5
93.0


Depth
1ft:20ft
Caliper
4.5 in. 5.2
ATV - Traveltime
0° 90° 180° 270° 0°
OTV - Image
0° 90° 180° 270° 0°
Temp
17.4 'C 17.6
SP
30 mV 50
HPF - Ambient
0 Gal./min. 1
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper from ATV
4 in 6
Cond
200 uS/cm 350
SPR
700 Ohms 1200
HPF - Pumping
0 Gal./min. 1
Fractures
0° 90° 180° 270° 0°
93.5
94.0
94.5
95.0
95.5
96.0
96.5
97.0
97.5
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100.0
100.5
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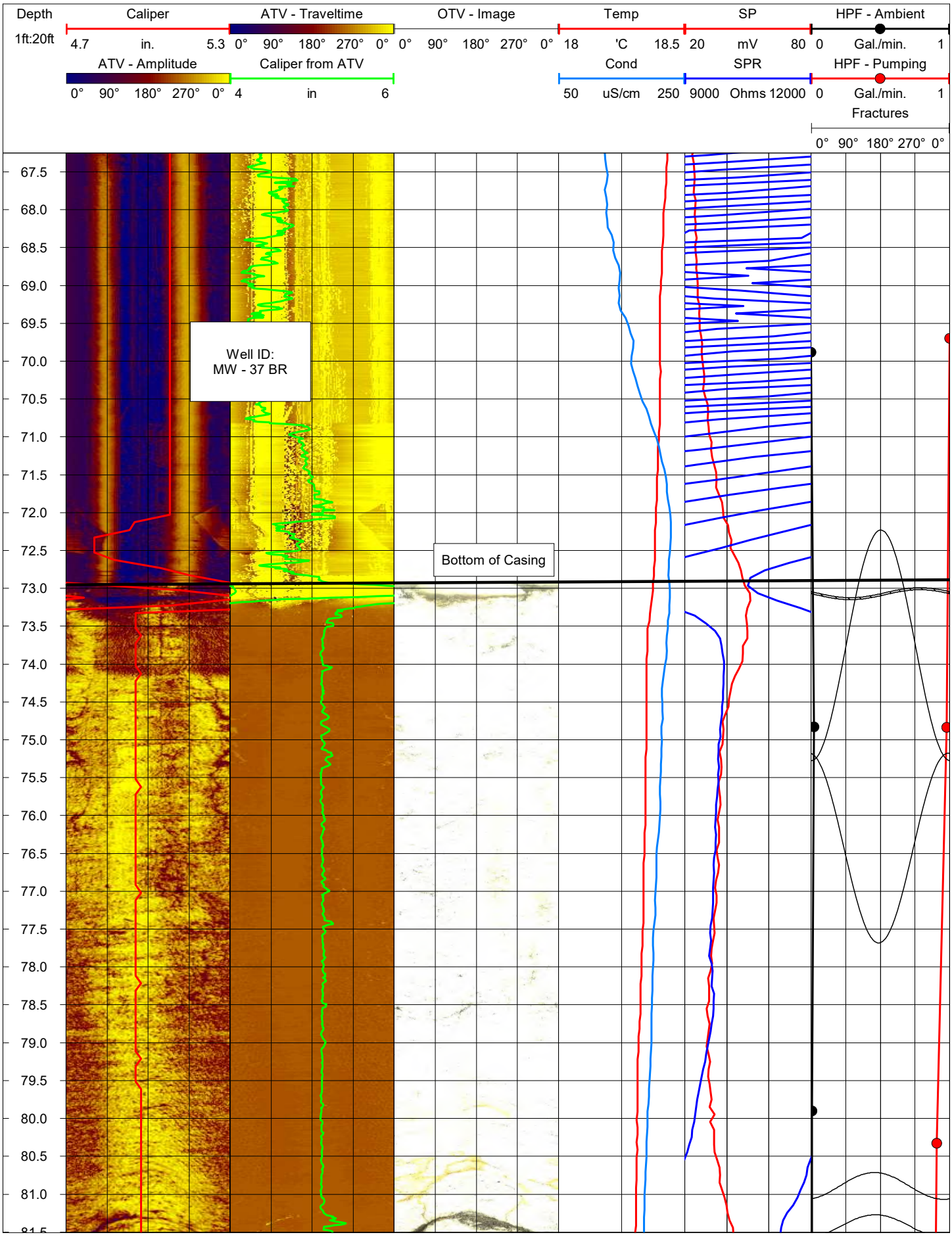
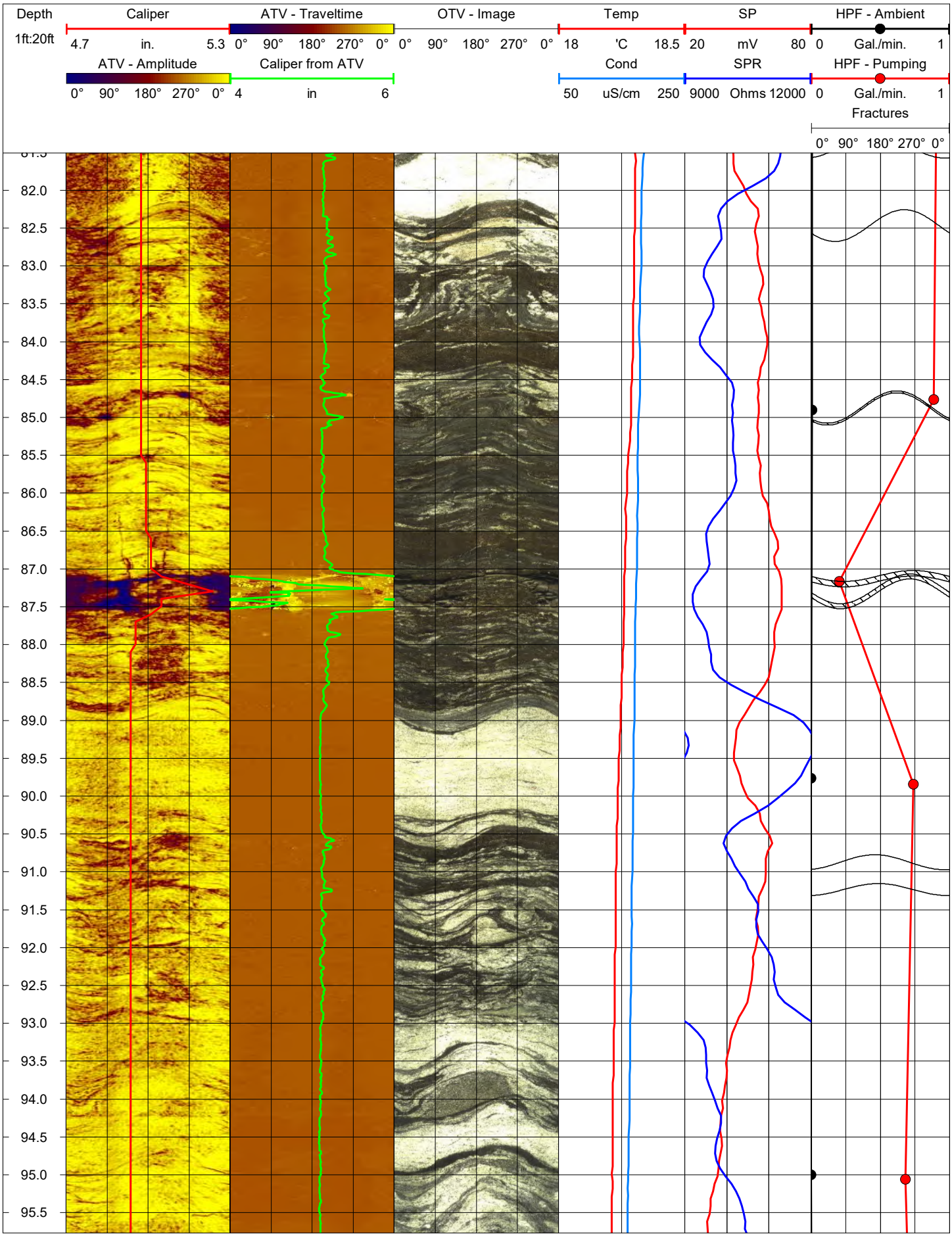
102.0
102.5


Depth
1ft:20ft
Caliper
4.7 in. 5.3
ATV - Traveltime
0° 90° 180° 270° 0°
OTV - Image
0° 90° 180° 270° 0°
Temp
18 'C 18.5
SP
20 mV 80
HPF - Ambient
0 Gal./min. 1
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper from ATV
4 in 6
Cond
50 uS/cm 250
SPR
9000 Ohms 12000
HPF - Pumping
0 Gal./min. 1
Fractures
0° 90° 180° 270° 0°
67.5
68.0
68.5
69.0
69.5
70.0
70.5
71.0
71.5
72.0
72.5
73.0
73.5
74.0
74.5
75.0
75.5
76.0
76.5
77.0
77.5
78.0
78.5
79.0
79.5
80.0
80.5
81.0
Well ID:
MW - 37 BR
Bottom of Casing


Depth
1ft:20ft
Caliper
4.7 in. 5.3
ATV - Traveltime
0° 90° 180° 270° 0°
OTV - Image
0° 90° 180° 270° 0°
Temp
18 'C 18.5
SP
20 mV 80
HPF - Ambient
0 Gal./min. 1
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper from ATV
4 in 6
Cond
50 uS/cm 250
SPR
9000 Ohms 12000
HPF - Pumping
0 Gal./min. 1
Fractures
0° 90° 180° 270° 0°
82.0
82.5
83.0
83.5
84.0
84.5
85.0
85.5
86.0
86.5
87.0
87.5
88.0
88.5
89.0
89.5
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93.5
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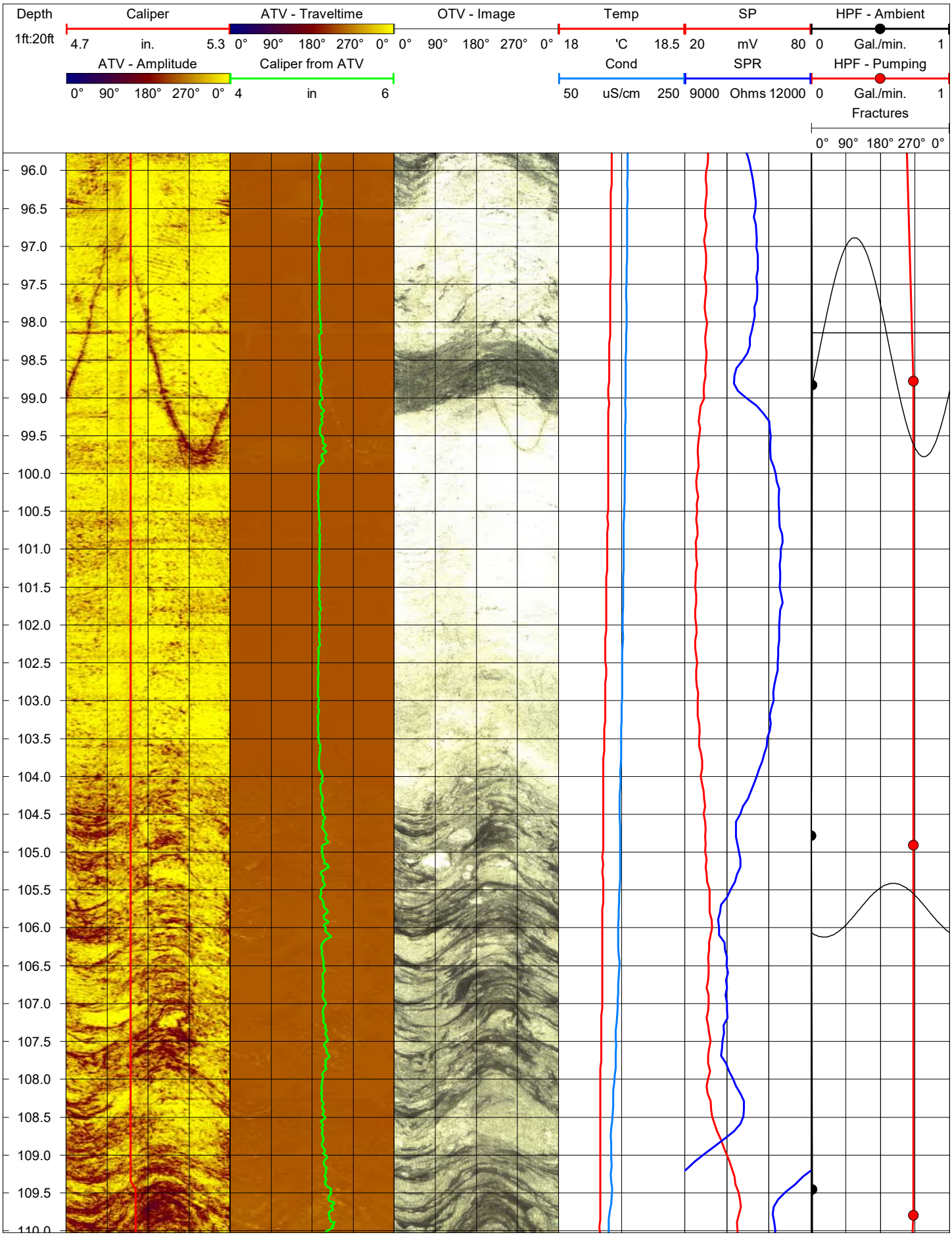
94.5
95.0
95.5


Depth
1ft:20ft
Caliper
4.7
in.
5.3
ATV - Traveltime
0° 90° 180° 270° 0°
OTV - Image
0° 90° 180° 270° 0°
Temp
18
'C
18.5
SP
20
mV
80
HPF - Ambient
0
Gal./min.
1
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper from ATV
4
in
6
Cond
50
uS/cm
250
SPR
9000
Ohms
12000
HPF - Pumping
0
Gal./min.
1
Fractures
0° 90° 180° 270° 0°
96.0
96.5
97.0
97.5
98.0
98.5
99.0
99.5
100.0
100.5
101.0
101.5
102.0
102.5
103.0
103.5
104.0
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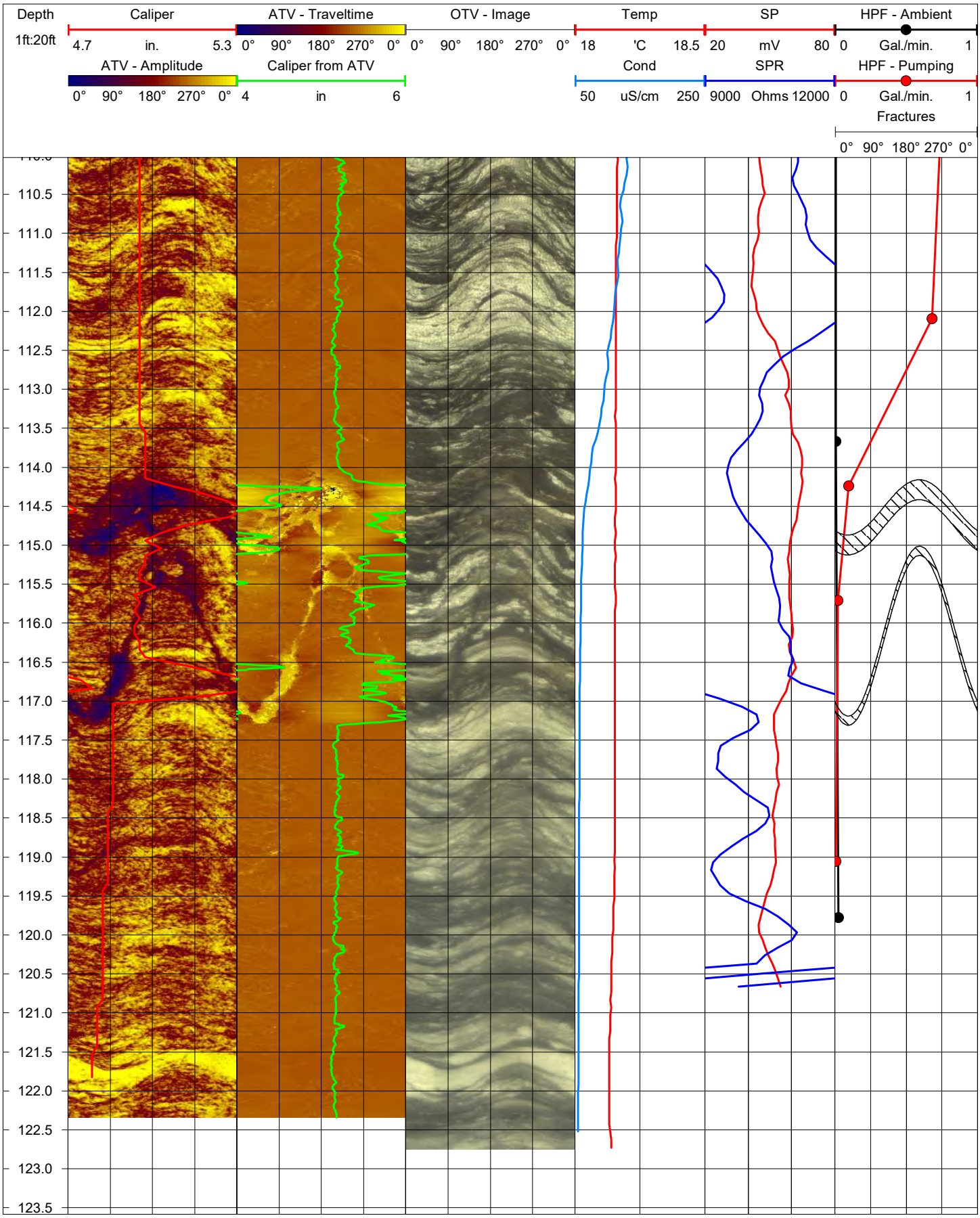
110.0


Depth
1ft:20ft
Caliper
4.7
in.
5.3
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OTV - Image
0° 90° 180° 270° 0°
Temp
18
'C
18.5
SP
20
mV
80
HPF - Ambient
0
Gal./min.
1
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper from ATV
4
in
6
Cond
50
uS/cm
250
SPR
9000
Ohms
12000
HPF - Pumping
0
Gal./min.
1
Fractures
0° 90° 180° 270° 0°
110.5
111.0
111.5
112.0
112.5
113.0
113.5
114.0
114.5
115.0
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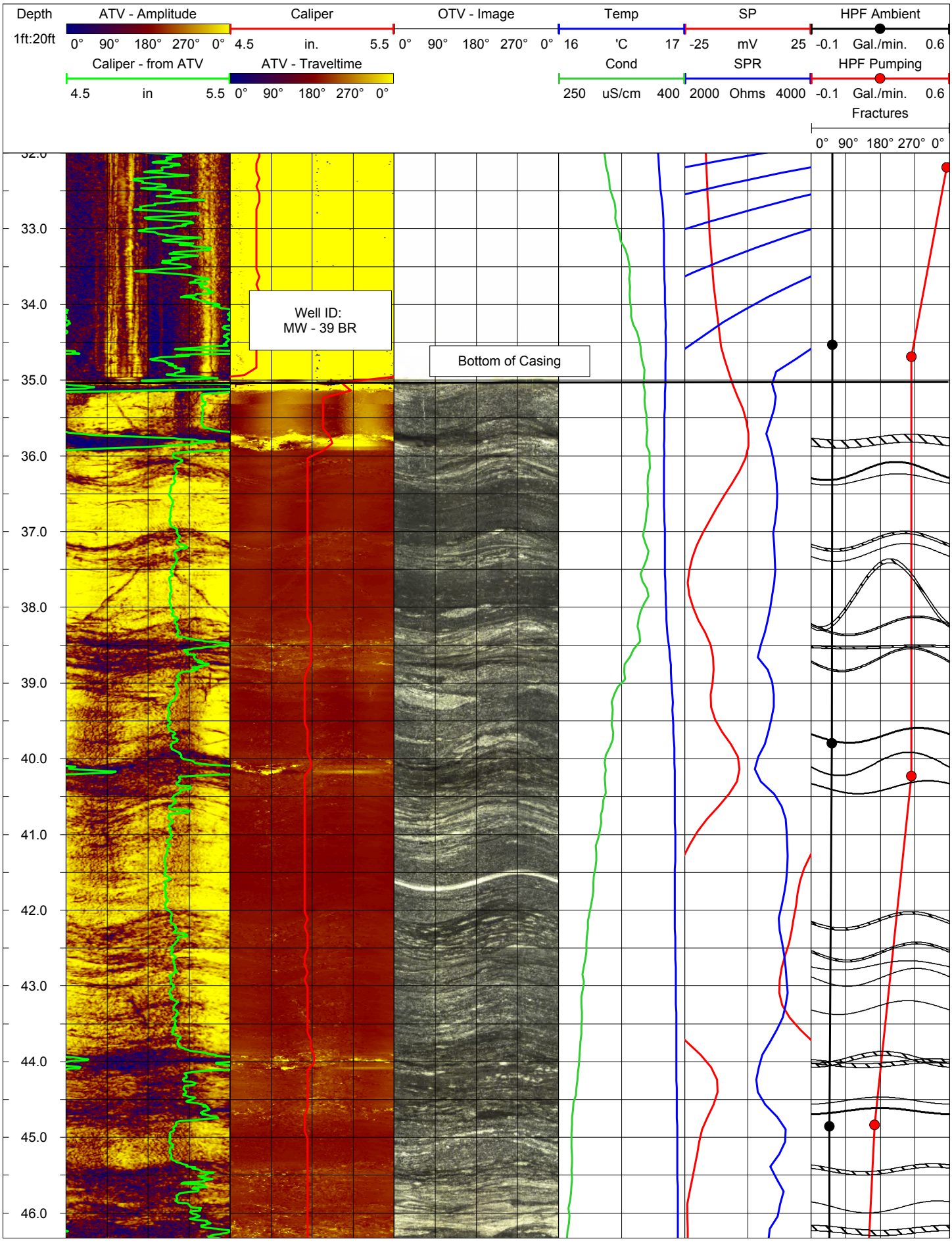
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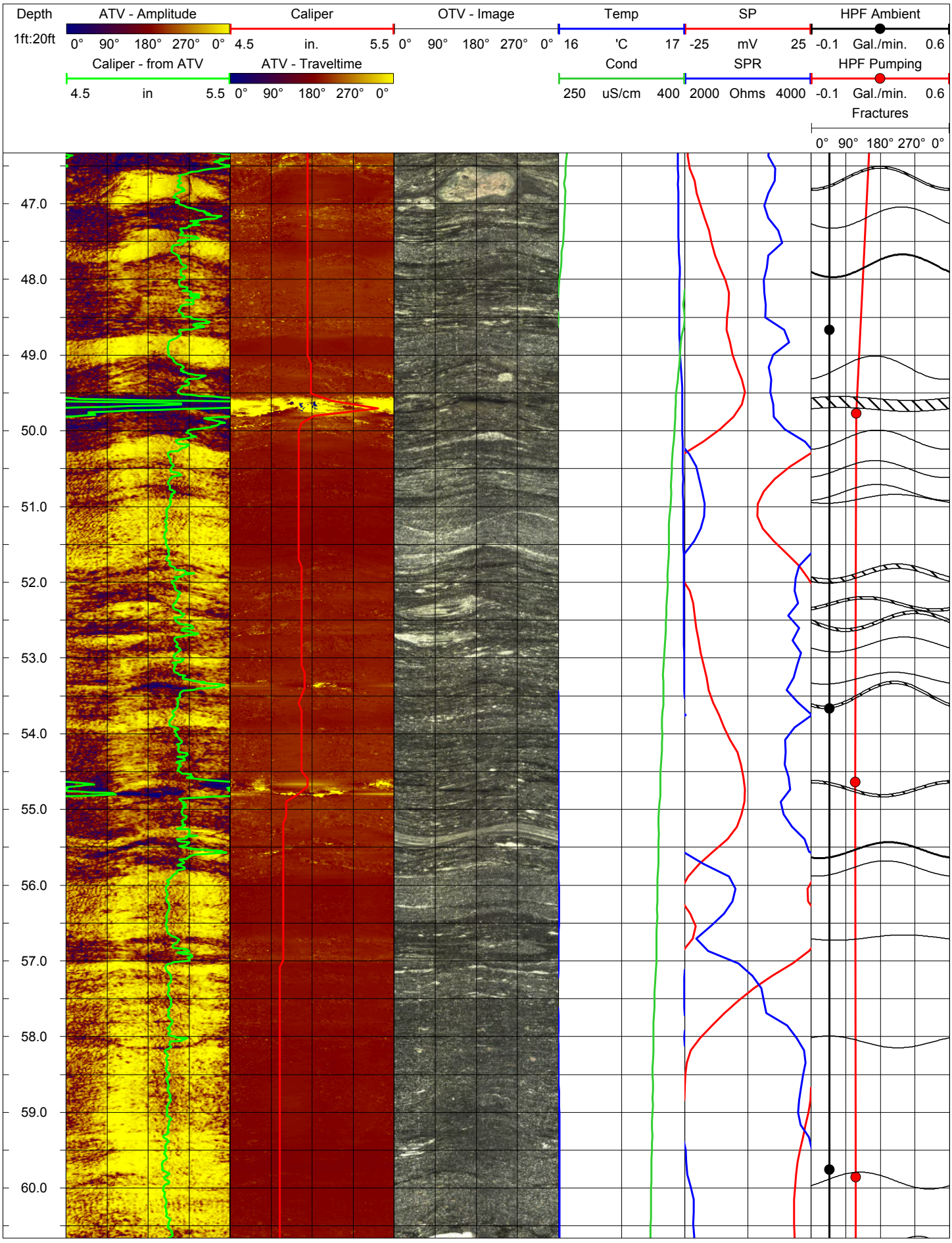
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper
4.5 in. 5.5
OTV - Image
0° 90° 180° 270° 0°
Temp
16 'C 17
SP
-25 mV 25
HPF Ambient
-0.1 Gal./min. 0.6
Caliper - from ATV
4.5 in 5.5
ATV - Traveltime
0° 90° 180° 270° 0°
Cond
250 uS/cm 400
SPR
2000 Ohms 4000
HPF Pumping
-0.1 Gal./min. 0.6
Fractures
0° 90° 180° 270° 0°
33.0
34.0
35.0
36.0
37.0
38.0
39.0
40.0
41.0
42.0
43.0
44.0
45.0
46.0
Well ID:
MW - 39 BR
Bottom of Casing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Caliper
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OTV - Image
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Temp
16 'C 17
SP
-25 mV 25
HPF Ambient
-0.1 Gal./min. 0.6
Caliper - from ATV
4.5 in 5.5
ATV - Traveltime
0° 90° 180° 270° 0°
Cond
250 uS/cm 400
SPR
2000 Ohms 4000
HPF Pumping
-0.1 Gal./min. 0.6
Fractures
0° 90° 180° 270° 0°
47.0
48.0
49.0
50.0
51.0
52.0
53.0
54.0
55.0
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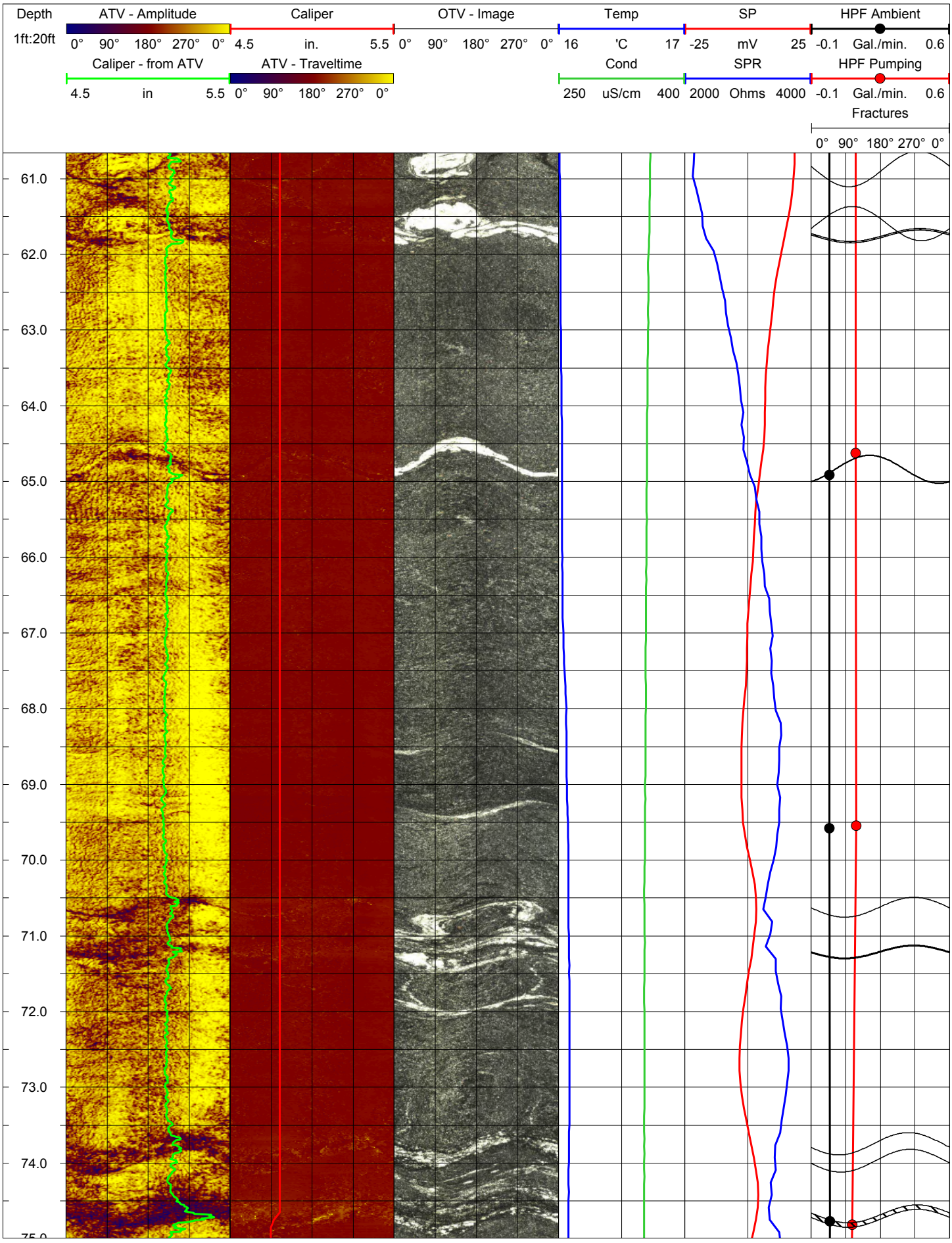
59.0
60.0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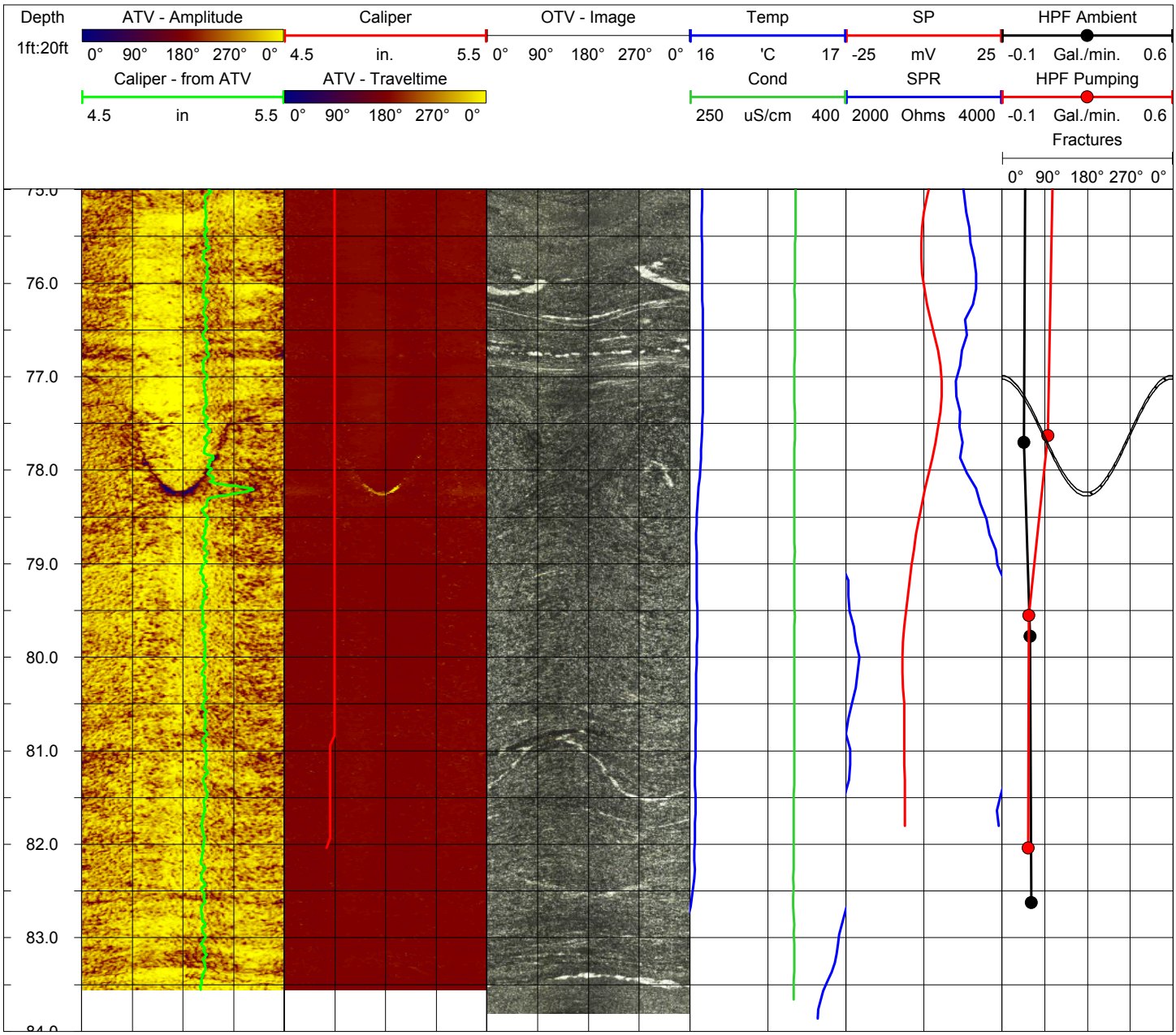
Caliper
4.5 in. 5.5
OTV - Image
0° 90° 180° 270° 0°
Temp
16 'C 17
SP
-25 mV 25
HPF Ambient
-0.1 Gal./min. 0.6
Caliper - from ATV
4.5 in 5.5
ATV - Traveltime
0° 90° 180° 270° 0°
Cond
250 uS/cm 400
SPR
2000 Ohms 4000
HPF Pumping
-0.1 Gal./min. 0.6
Fractures
0° 90° 180° 270° 0°
61.0
62.0
63.0
64.0
65.0
66.0
67.0
68.0
69.0
70.0
71.0
72.0
73.0
74.0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Caliper
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OTV - Image
0° 90° 180° 270° 0°
Temp
16 'C 17
SP
-25 mV 25
HPF Ambient
-0.1 Gal./min. 0.6
Caliper - from ATV
4.5 in 5.5
ATV - Traveltime
0° 90° 180° 270° 0°
Cond
250 uS/cm 400
SPR
2000 Ohms 4000
HPF Pumping
-0.1 Gal./min. 0.6
Fractures
0° 90° 180° 270° 0°
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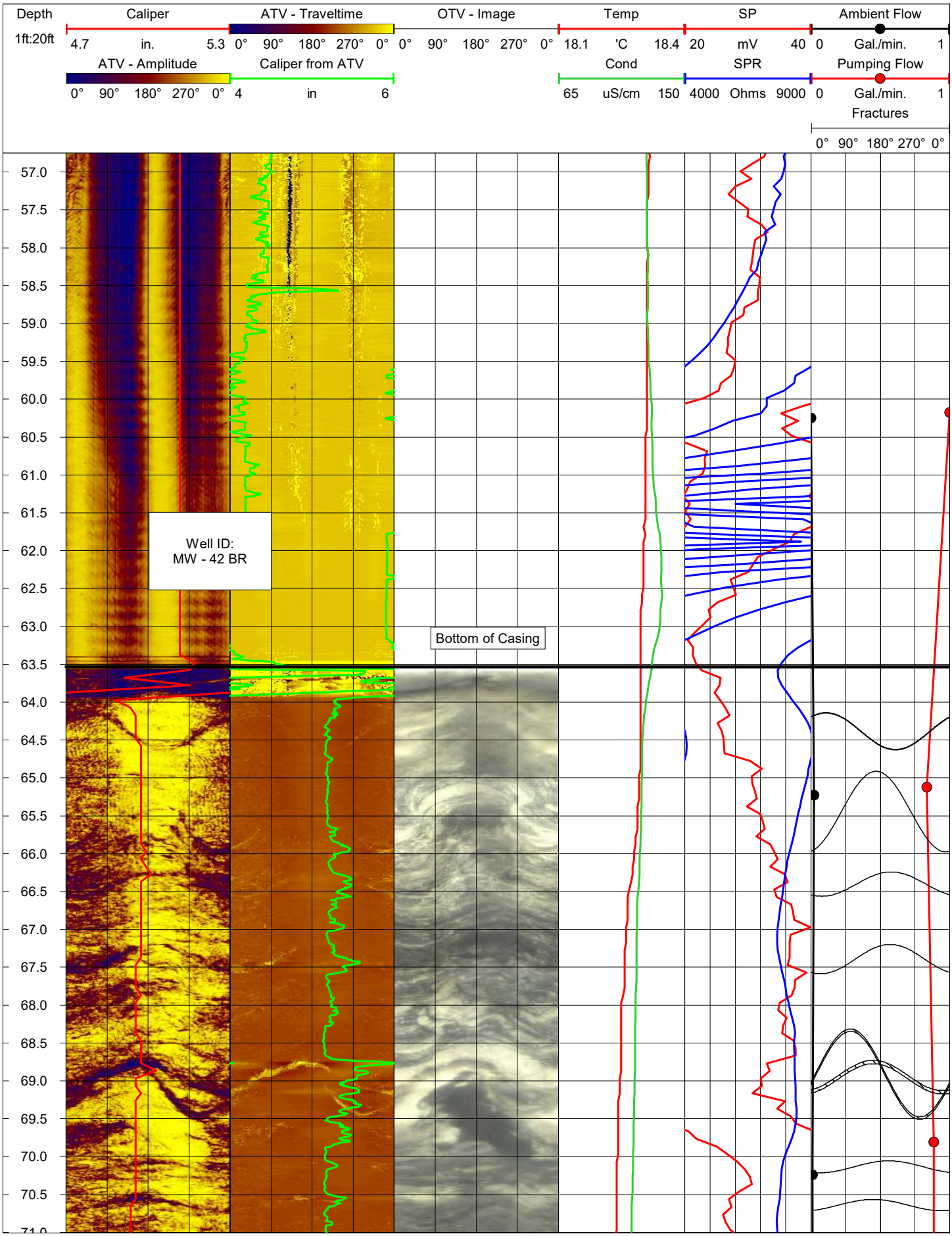
77.0
78.0
79.0
80.0
81.0
82.0
83.0


Depth
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Caliper
4.7 in. 5.3
ATV - Traveltime
0° 90° 180° 270° 0°
OTV - Image
0° 90° 180° 270° 0°
Temp
18.1 'C 18.4
SP
20 mV 40
Ambient Flow
0 Gal./min. 1
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper from ATV
4 in 6
Cond
65 uS/cm 150
SPR
4000 Ohms 9000
Pumping Flow
0 Gal./min. 1
Fractures
0° 90° 180° 270° 0°
57.0
57.5
58.0
58.5
59.0
59.5
60.0
60.5
61.0
61.5
62.0
62.5
63.0
63.5
64.0
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65.0
65.5
66.0
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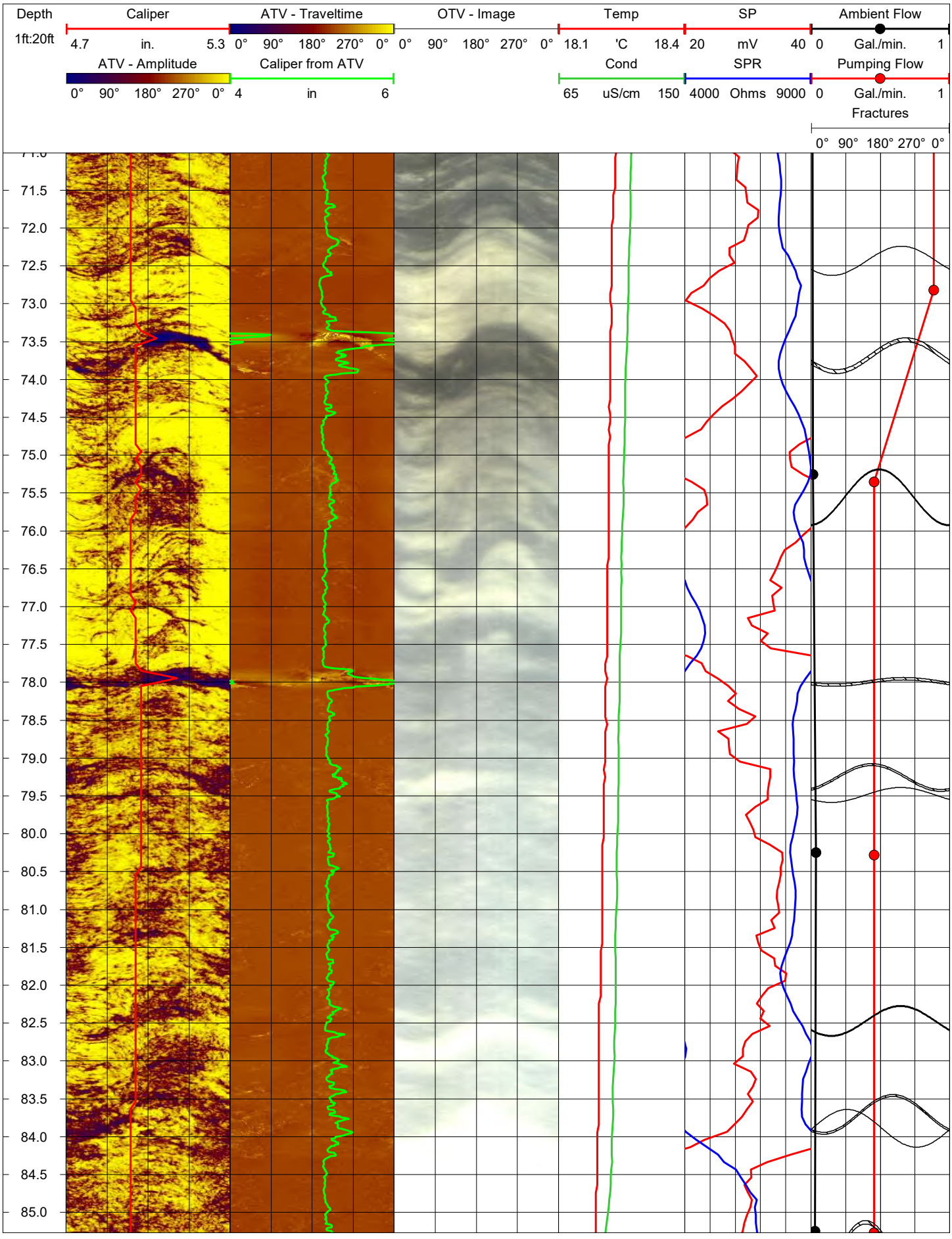
69.0
69.5
70.0
70.5
Well ID:
MW - 42 BR
Bottom of Casing


Depth
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Caliper
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ATV - Traveltime
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OTV - Image
0° 90° 180° 270° 0°
Temp
18.1 'C 18.4
SP
20 mV 40
Ambient Flow
0 Gal./min. 1
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper from ATV
4 in 6
Cond
65 uS/cm 150
SPR
4000 Ohms 9000
Pumping Flow
0 Gal./min. 1
Fractures
0° 90° 180° 270° 0°
71.5
72.0
72.5
73.0
73.5
74.0
74.5
75.0
75.5
76.0
76.5
77.0
77.5
78.0
78.5
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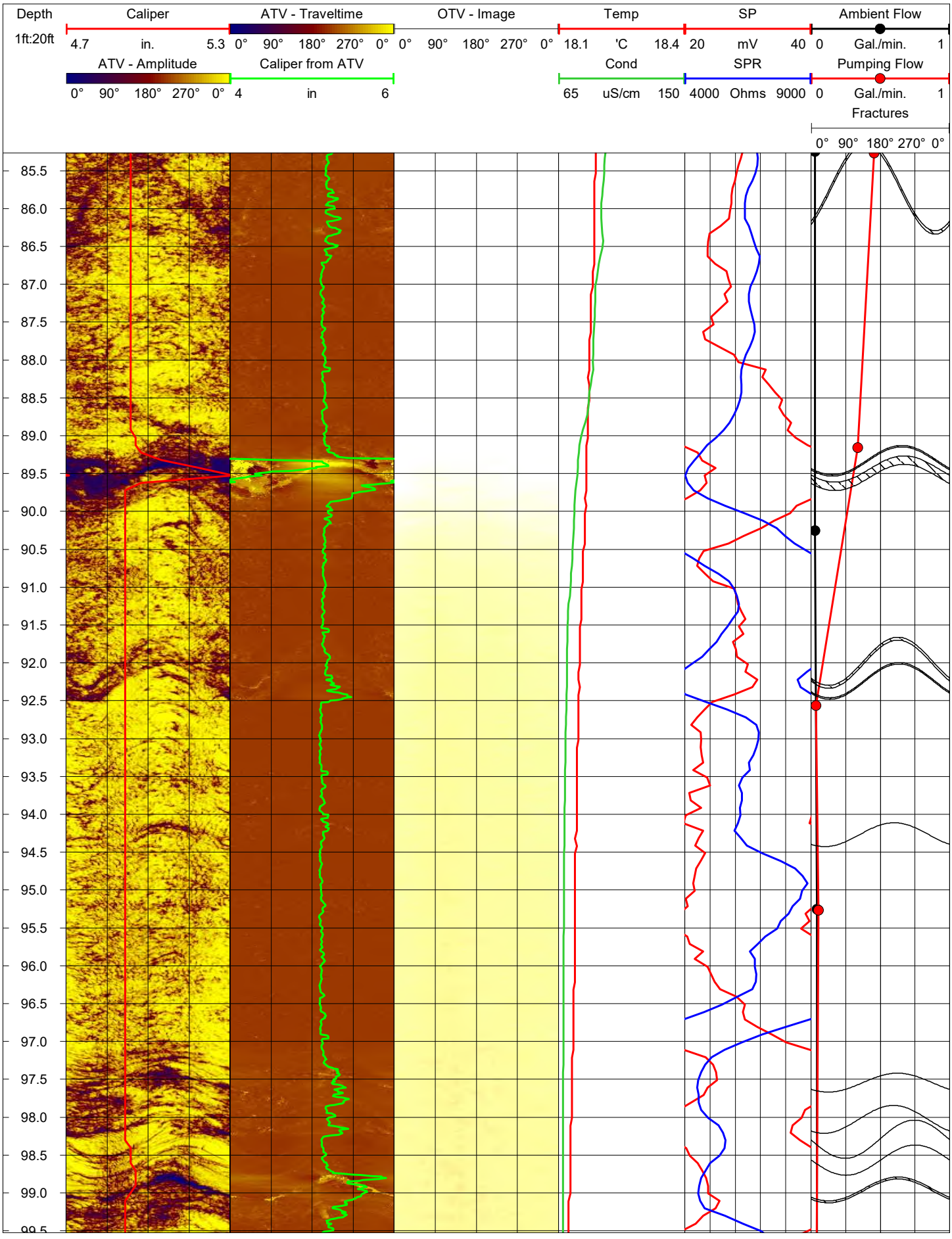
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Caliper
4.7 in. 5.3
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0° 90° 180° 270° 0°
OTV - Image
0° 90° 180° 270° 0°
Temp
18.1 'C 18.4
SP
20 mV 40
Ambient Flow
0 Gal./min. 1
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper from ATV
4 in 6
Cond
65 uS/cm 150
SPR
4000 Ohms 9000
Pumping Flow
0 Gal./min. 1
Fractures
0° 90° 180° 270° 0°
85.5
86.0
86.5
87.0
87.5
88.0
88.5
89.0
89.5
90.0
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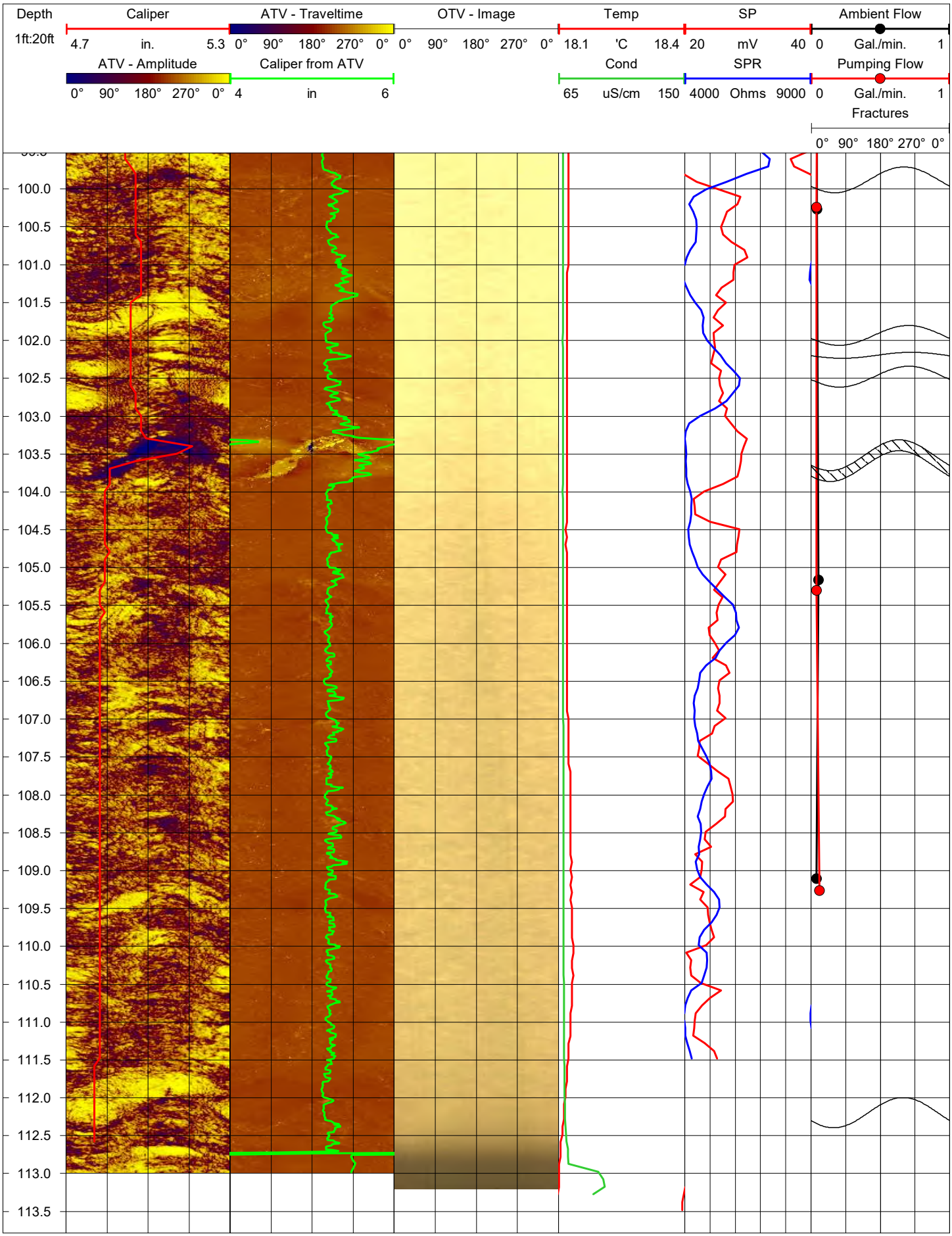
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Caliper
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OTV - Image
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Temp
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0° 90° 180° 270° 0°
Caliper from ATV
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65 uS/cm 150
SPR
4000 Ohms 9000
Pumping Flow
0 Gal./min. 1
Fractures
0° 90° 180° 270° 0°
100.0
100.5
101.0
101.5
102.0
102.5
103.0
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112.0
112.5
113.0
113.5

GEL Solutions

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P 770.980.1002

Geophysical Logging Report

MW – 02 BR, MW – 21 BR, MW – 29 BR, MW – 34 BR, MW – 35 BR, MW – 36 BR, MW – 37 BR, MW – 39 BR, MW – 42 BR

Former Bramlette MGP Plant, Greenville, South Carolina

Performed for:

SynTerra

March 3, 2020

Geophysical Logging Report: MW – 02 BR, MW – 21 BR, MW – 29 BR, MW – 34 BR, MW – 35 BR, MW – 36 BR, MW – 37 BR, MW – 39 BR, MW – 42 BR, Former Bramlette MGP Plant, Greenville, South Carolina

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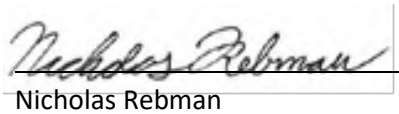
SIGNATURE PAGE

This report, entitled "Geophysical Logging Report: MW – 02 BR, MW – 21 BR, MW – 29 BR, MW – 34 BR, MW – 35 BR, MW – 36 BR, MW – 37 BR, MW – 39 BR MW – 42 BR, Former Bramlette MGP Plant, Greenville, South Carolina" has been prepared for SynTerra located in Greenville, South Carolina. It has been prepared under the supervision of Mr. Jorgen Bergstrom at the request of and the exclusive use of SynTerra. This report has been prepared in accordance with accepted quality control practices and has been reviewed by the undersigned.

GEL Solutions, LLC
A Member of the GEL Group, Inc.

Jorgen Bergstrom, P.Gp.
Senior Geophysicist



Nicholas Rebman
Geophysical Specialist

February 28, 2020

Date

EXECUTIVE SUMMARY

GEL Solutions performed geophysical borehole logging services in 9 borings located at a Former Bramlette MGP Plant in Greenville, South Carolina. The field investigations were performed on various dates between November 22, 2019 and February 4, 2020. This investigation was conducted to aid SynTerra in evaluating potential pathways for groundwater migration through fractured bedrock at the site. The geophysical logs consisted of acoustic televiewer, optical televiewer, caliper, fluid conductivity, fluid temperature, single point resistance (SPR), spontaneous potential (SP), and heat pulse flowmeter (HPF). HPF logging was conducted under both ambient and pumping conditions throughout the logging intervals.

The logging data was analyzed to determine the location and orientation of fractures; and other features. In addition to these data sets, synthetic caliper logs were calculated from the acoustic televiewer travel time data to aid in the interpretation. The logs were analyzed for fractures and other features. Dip and azimuth (dip direction) were calculated for each detected fracture based on the televiewer dataset. HPF data was analyzed to detect water producing fractures.

1.0 INTRODUCTION

GEL Solutions performed geophysical borehole logging services in 9 borings located at a Former Duke Energy MGP Plant in Greenville, South Carolina. The geophysical logs consisted of acoustic and optical televiewer, 3-arm caliper, fluid conductivity, fluid temperature, single point resistance (SPR), spontaneous potential (SP), and heat pulse flowmeter (HPF). The field investigation was performed . The logging data was analyzed to determine the location and orientation of fractures; and other features. In addition to these data sets, synthetic caliper logs were calculated from the acoustic televiewer travel time data to aid in the interpretation.

2.0 EQUIPMENT AND METHODOLOGY

The information below is an overview of the geophysical methodologies used for this investigation. The intent of this overview is to give the reader a better understanding of each method, and background information as to what is actually measured, the resolution of the method, and the limitations imposed by site-specific subsurface conditions.

2.1 Acoustic Televiewer

Acoustic televiewer (ATV) logging produces a high resolution, magnetically oriented digital image of the borehole wall to map the location and orientation of intersecting fractures, foliations, and lithologic contacts. The Acoustic televiewer tool emits a rotating, narrow, acoustic beam that is reflected off the borehole wall. The travel time and amplitude of the reflected wave are recorded by the tool and used to create borehole images. Both datasets are useful for identifying the location and orientation of fractures. The amplitude of the reflected signal will decrease at the location of fractures and the travel time will increase. The travel time data can also be used for developing a high resolution caliper log for a more comprehensive analysis of fractures. Acoustic televiewers can only be used in fluid filled boreholes. However, the fluid does not have to be optically clear for the method to work.

When operating the ATV, a “time window” is set based on the borehole diameter. The time window is the time interval in which the ATV instrument searches for an echo from the borehole wall. For smaller increases in borehole diameter around fractures and sections of weaker rock, the ATV typically records an accurate borehole diameter (correlates well with three-arm caliper data). However, if borehole openings are

much larger than the borehole diameter, the echo from the borehole wall may fall outside the time window, or be too weak to be detected. In these situations, borehole diameters recorded with ATV may be inaccurate. Since ATV only records the reflection from the borehole wall, the data cannot be used to determine how far a fracture extends from the borehole. The acoustic televiewer has a vertical resolution of 2 millimeters.

2.2 Optical Televiewer

Optical televiewer (OTV) logging is used to record and digitize a 360-degree color image of the borehole wall. Planar features such as fractures, foliation, and lithologic contacts can be identified directly on the images. The tool is magnetically oriented in order to determine the strike and dip of features. Televiewers have a vertical resolution of 2mm. As a result, it is able to see features other tools may not resolve. Optical images can be collected above or below the water surface, provided the water is sufficiently clear for viewing the borehole wall**.**

2.3 3-Arm Caliper

Caliper logging is used to generate a profile of the borehole diameter with depth. The tool measures the borehole diameter using three spring-loaded arms. Narrow enlargements in the borehole diameter can, in most cases, be attributed to fractures. Caliper logging can be conducted above and below the water surface.

2.4 Fluid Temperature

Fluid temperature logging is used to identify where water enters or exits the borehole. In the absence of fluid flow, a gradual increase on water temperature of approximately 1^{o}F per 100 feet of depth is expected. Rapid changes in the fluid temperature indicate water-producing or water-receiving zones. Little or no temperature gradient indicates intervals of vertical flow.

2.5 Fluid Conductivity

Fluid conductivity logging is used to measure the electrical conductivity of the fluid in the borehole. Variations in fluid conductivity can be contributed to concentration variations of dissolved solids. These differences can occur when sources of water have contrasting chemistry and have come from different transmissive zones. Fluid temperature and conductivity are measured concurrently using the same logging tool.

2.6 Single Point Resistance (SPR)

Single point resistance logging involves passing an alternate current between a surface electrode and a probe electrode and measuring the voltage difference created by the current. SPR is then calculated using Ohm's law. SPR is the sum of cable resistance, and the resistance based on the composition of the medium, the cross sectional area and length of the path through the medium. Therefore, the single point resistance log does not provide quantitative data. In general, SPR increases with increasing grain size and decreases with increasing borehole diameter, fracture density, and the concentration of dissolved solids in the water. Single-point resistance logs are useful in the determination of lithology, water quality, and location of fracture zones

2.7 Spontaneous Potential (SP)

SP logging is conducted to measure naturally occurring voltage differences along a borehole. The method has been found useful for delineating sandstone/shale layering and other boundaries between permeable and impermeable beds. The measurements are made with reference to an electrode at ground level. Therefore, SP logging does not provide quantitative data.

2.8 Heat Pulse Flowmeter (HPF)

HPF logging measures the direction and rate of vertical fluid flow in a borehole by heating up a small volume of water and monitoring temperature variations as the heated water moves with the fluid flow in the borehole. Under ambient conditions, differences in hydraulic head between two transmissive fractures produce vertical flow in the borehole. However, if the hydraulic head is the same, no flow will occur under ambient conditions. Therefore, HPF logging is also conducted under low-rate pumping conditions. HPF readings are point readings at the location of fractures. The location and number of these readings can be determined after analyzing the other geophysical logs for fractures. HPF can be used for measuring vertical flows between 0.005 gallons per minute (gpm) and approximately 1.5 gpm. In HPF data, upward flow is shown as positive flow, and downward flow is shown as negative flow.

3.0 FIELD PROCEDURES

All GEL Solutions activities on-site were supervised by a senior geophysicist. For this investigation, GEL Solutions used a Mount Sopris Matrix logging system. Pumping tests during HPF testing were conducted using a Grundfos Redi-Flow-2 water pump with variable speed control box and an in-situ Mini-Troll pressure transducer with logging capabilities. The pump is placed above the interval to be analyzed and preferably in the casing

(unless the water level is too low). HPF logging under pumping conditions commenced after the borehole water level had stabilized. HPF logging was conducted at every 5 feet throughout the logging intervals under ambient and pumping conditions. More closely spaced readings were then conducted at sections with abrupt changes in flow. A summary of the configuration of the boreholes, pumping rates, and water levels is provided below. All depth measurements are referenced from the ground surface. All borings are surface cased and open hole below the casing.

Logging Configuration Summary

Well ID:	MW - 29 BR	MW - 35 BR	MW - 36 BR	MW - 37 BR	MW - 42 BR
Casing Material:	PVC	PVC	PVC	PVC	PVC
Casing Diameter (in):	5.9	5.9	5.9	5.9	5.9
Open Hole (ft):	38 - 88	39 - 89	54 - 102	73 - 122	63 - 113
Open Hole Diameter (in):	5.0	5.0	5.0	5.0	5.0
Pumping Rate (gpm):	0.2	< 0.1	1.0	1.0	1.0
Pump Depth (ft)	30	30	30	30	30
Water level before Pumping (ft):	3.5	0.9	4.8	4.8	4.15
Water level at equilibrium (ft):	22.6	25.4	6.9	21.4	21.45

Well ID:	MW-02 BR	MW-21 BR	MW-34 BR	MW-39 BR
Casing Material:	PVC	PVC	PVC	PVC
Casing diameter (in):	5.9	5.9	5.9	5.9
Open hole (ft):	39-72	24-120	69-118	35-84
Open hole diameter (in):	5.0	5.0	5.0	5.0
Pumping rate (gpm):	1.0	1.0	0.1	0.5
Pump depth (ft):	30	20	45	30
Water level before pumping (ft):	7.6	5.6	17.2	10.3
Water level at equilibrium (ft):	26.8	7.8	39.85	28.3

4.0 DATA PROCESSING AND RESULTS

The logs were analyzed for fractures and other features using WellCAD software, manufactured by Advanced Logic Technology. The travel time data from the acoustic televiewer log was used to develop a maximum caliper log. Fractures were interpreted through a complete data analysis of all logs. Dip and azimuth (dip direction) were calculated for each detected fracture. The fracture data was corrected from apparent to true dip and azimuth using deviation logs included with the televiewer dataset, and from magnetic north to true north by rotating the fracture azimuths 6.7° counterclockwise. Magnetic north is 6.7° west of true north at the site (according to National Oceanic and Atmospheric Administration). The reported azimuth is measured clockwise from true north (Figure 1). A fracture summary table including fracture attributes is provided in Appendix 1. Dominating water producing fractures based on flow logging or other evidence are highlighted and shown in bold and italics text. Minor water producing fractures based on flow logging are shown in bold.

Schmidt stereonets (lower hemisphere) with fracture characteristics and fracture rose diagrams are presented on Appendix 2. HPF logs and fracture characteristics are shown on Appendix 3. All logs are presented on Appendix 4. All depths are referenced from ground surface.

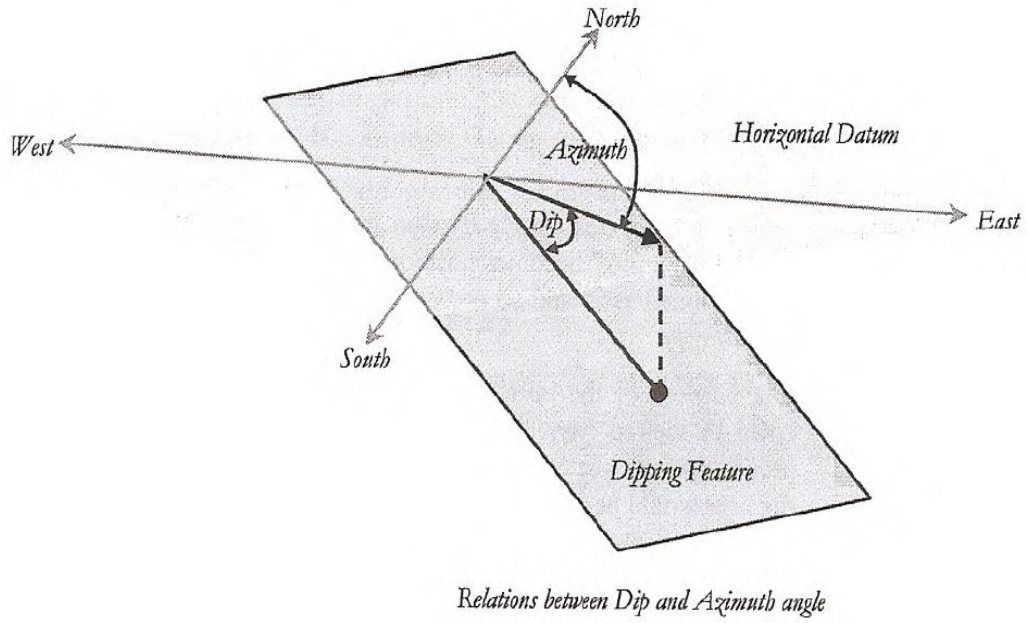


Figure 1 Explanation of azimuth and dip for fractures

Appendix 1

Fracture Summary Table
Former Bramlette MGP Plant

MW - 29 BR

Depth ft	Azimuth deg	Dip deg
39.9	18	54
40.4	268	62
42.3	**345**	**51**
47.8	295	34
53.4	65	26
54.0	30	36
54.1	23	34
57.2	32	28
57.6	41	28
58.0	20	34
58.5	31	37
58.9	49	38
60.9	21	45
61.8	19	15
63.6	94	15
65.2	36	35
65.4	37	40
66.3	26	30
66.8	41	19
67.5	296	29
68.9	14	33
69.5	49	35
71.2	46	31
72.7	358	10
73.0	**322**	**20**
75.9	271	38
78.5	36	40
82.8	**34**	**20**
84.7	**36**	**46**

MW - 35 BR

Depth ft	Azimuth deg	Dip deg
39.6	45	49
41.1	**344**	**57**
43.3	**334**	**40**
43.7	12	28
44.4	211	24
50.2	358	38
54.1	3	13
65.2	15	40
66.7	22	24
66.9	96	41
68.9	341	27
69.1	43	15
76.6	72	33
81.2	34	42
81.3	54	43
81.5	31	51
81.9	13	32
82.3	16	33
83.3	61	20
83.7	112	17
85.0	99	40
85.7	356	48
87.3	26	41
88.5	33	49

MW - 36 BR

Depth ft	Azimuth deg	Dip deg
54.7	***147***	***29***
55.2	175	11
58.2	66	37
58.8	251	22
63.4	177	79
64.1	109	38
65.7	183	42
66.5	152	73
66.8	351	45
67.4	168	51
67.4	358	61
69.7	294	23
70.0	316	37
78.1	36	31
87.1	96	23
87.7	9	28
92.7	83	29
92.9	58	27
94.1	**307**	**52**
94.2	32	34
94.3	4	58
95.7	348	44
95.8	12	34
95.9	357	23
96.3	2	41
96.9	3	30
97.3	310	48
97.9	**274**	**28**

Dominating water producing fractures are highlighted and shown in bold italicized text. Minor water producing fractures are shown in bold text. Closed fractures are shown in plain text.

Fracture Summary Table
Former Bramlette MGP Plant

MW - 37 BR

Depth ft	Azimuth deg	Dip deg
73.1	104	17
73.8	1	82
76.4	176	81
80.9	344	40
81.4	346	36
82.5	62	45
84.9	42	45
87.1	**86**	**19**
87.3	**76**	**43**
90.9	345	25
91.2	353	21
98.1	242	1
98.3	293	82
105.8	34	59
114.6	***33***	***59***
116.2	**34**	**79**

MW - 42 BR

Depth ft	Azimuth deg	Dip deg
64.4	213	49
65.5	343	69
66.4	22	38
67.4	18	43
68.9	276	70
69.0	335	44
70.1	16	21
70.6	336	20
72.4	48	43
73.7	***60***	***46***
75.6	351	61
78.0	53	12
79.3	331	39
79.5	46	26
82.5	46	44
83.7	26	51
83.9	268	50
85.7	**316**	**71**
89.3	**49**	**43**
89.5	***56***	***40***
92.0	39	57
92.2	43	49
94.3	30	38
97.5	38	32
98.0	28	42
98.3	82	51
98.6	84	44
99.0	39	38
99.9	55	40
101.9	66	33
102.2	72	11
102.5	68	34
103.6	43	45
112.2	52	45

Dominating water producing fractures are highlighted and shown in bold italicized text. Minor water producing fractures are shown in bold text. Closed fractures are shown in plain text.

Fracture Summary Table
Former Bramlette MGP Plant

MW-02 BR

Depth ft	Azimuth deg	Dip deg
39.3	**244**	**8**
40.4	**264**	**42**
46.0	**38**	**59**
46.5	***43***	***42***
46.9	**40**	**60**
52.0	49	64
54.6	38	44
54.8	234	31
55.6	162	48
57.5	8	30
57.7	343	18
57.9	12	22
58.6	356	38
60.1	269	53
60.2	267	40
62.5	53	47
64.6	**2**	**35**
65.8	**31**	**46**

MW-21 BR

Depth ft	Azimuth deg	Dip deg
24.3	***66***	***18***
27.7	149	26
29.1	**19**	**28**
34.6	52	15
35.3	**208**	**55**
35.7	**216**	**56**
36.2	147	20
36.3	207	13
36.5	52	1
37.0	48	30
37.5	87	40
37.9	274	27
38.3	219	46
38.4	219	48
40.1	**210**	**46**
43.7	42	2
45.3	182	16
45.8	186	21
46.3	162	27
46.6	181	17
47.1	42	1
48.9	221	51
49.4	45	1
49.7	179	4
49.7	196	22
49.9	83	20
50.0	59	22
50.6	46	1
50.6	358	6
51.1	344	30
52.0	269	19
52.1	43	1
52.3	144	12
52.5	205	32
53.2	111	33
53.3	160	34
53.6	346	9
53.7	358	11

MW-21 BR

Depth ft	Azimuth deg	Dip deg
54.0	32	31
54.3	275	37
54.5	319	35
54.8	108	31
55.4	323	39
56.0	343	28
56.6	54	16
57.1	309	24
57.8	**19**	**35**
58.0	358	31
58.8	60	79
59.0	38	31
59.6	345	16
59.9	315	18
60.6	349	28
61.5	**49**	**35**
62.1	191	17
62.5	***9***	***46***
63.0	***20***	***51***
63.2	**39**	**50**
64.4	26	54
64.9	17	33
65.2	0	29
66.1	**96**	**26**
66.6	35	16
72.5	12	19
72.8	59	17
73.2	42	24
78.5	5	7
78.7	353	10
84.0	**22**	**38**
88.5	147	7
89.9	42	2
90.6	149	42
91.1	40	2
96.7	**353**	**71**
98.9	357	59
102.0	358	43

Dominating water producing fractures are highlighted and shown in bold italicized text. Minor water producing fractures are shown in bold text. Closed fractures are shown in plain text.

Fracture Summary Table
Former Bramlette MGP Plant

MW-21 BR

Depth ft	Azimuth deg	Dip deg
104.1	15	53
105.4	185	60
106.0	349	33
106.0	173	15
106.1	16	40
110.9	336	23
111.1	37	2
111.2	38	2
111.6	15	33
111.9	179	17
112.0	37	2
112.2	163	9
114.2	**67**	**22**
114.4	**43**	**30**
114.6	**28**	**40**

MW-34 BR

Depth ft	Azimuth deg	Dip deg
71.7	**318**	**39**
73.1	**349**	**36**
74.4	345	35
75.7	345	27
77.6	357	17
77.8	6	14
78.2	5	30
80.9	326	43
85.4	46	39
86.5	32	47
87.4	31	44
87.7	38	47
88.3	21	44
89.8	14	52
90.4	330	39
91.1	12	46
92.0	50	37
94.2	72	38
95.4	38	31
95.8	20	32
96.8	18	24
98.4	52	50
99.2	32	49
100.1	35	40
101.2	50	31
103.8	131	76
104.0	328	16
104.2	300	66
104.8	***317***	***43***
105.1	***319***	***52***
105.6	40	26
106.6	268	39
107.0	62	33
107.7	69	54
108.6	68	64
108.7	195	54
109.4	253	22
110.9	80	45

MW-34 BR

Depth ft	Azimuth deg	Dip deg
111.3	43	44
111.6	71	51
112.0	7	29
112.2	55	56
112.7	58	60
113.2	21	42
115.1	**51**	**36**
115.3	**44**	**38**

Dominating water producing fractures are highlighted and shown in bold italicized text. Minor water producing fractures are shown in bold text. Closed fractures are shown in plain text.

Fracture Summary Table
Former Bramlette MGP Plant

MW-39 BR

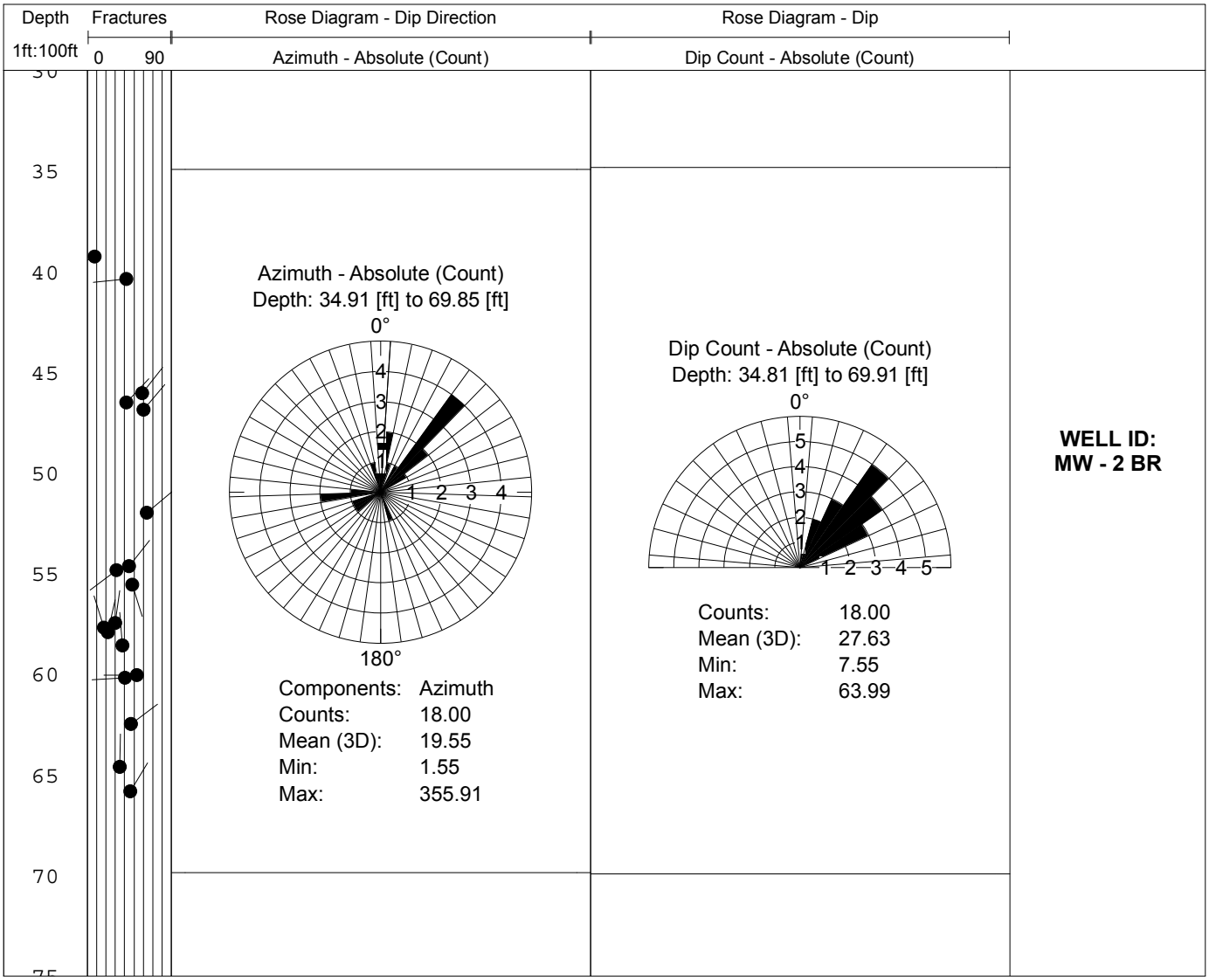
Depth ft	Azimuth deg	Dip deg
35.8	***72***	***12***
36.2	31	30
36.3	39	20
37.1	54	31
37.3	55	31
37.8	13	65
38.2	84	32
38.5	98	6
38.7	68	37
39.7	87	27
40.1	63	38
40.4	110	24
42.1	69	29
42.6	82	32
42.7	64	18
42.9	82	32
43.3	61	25
44.0	***0***	***20***
44.0	***120***	***11***
44.5	356	11
44.7	359	10
45.4	***119***	***16***
45.9	131	23
46.2	***153***	***11***
46.7	351	34
47.2	44	35
47.8	46	37
49.2	334	35
49.7	***223***	***6***
50.1	342	30
50.5	335	26
50.8	342	25
50.9	33	16
51.9	***35***	***26***
52.3	***309***	***19***
52.5	***78***	***32***
52.8	52	27
53.3	28	21

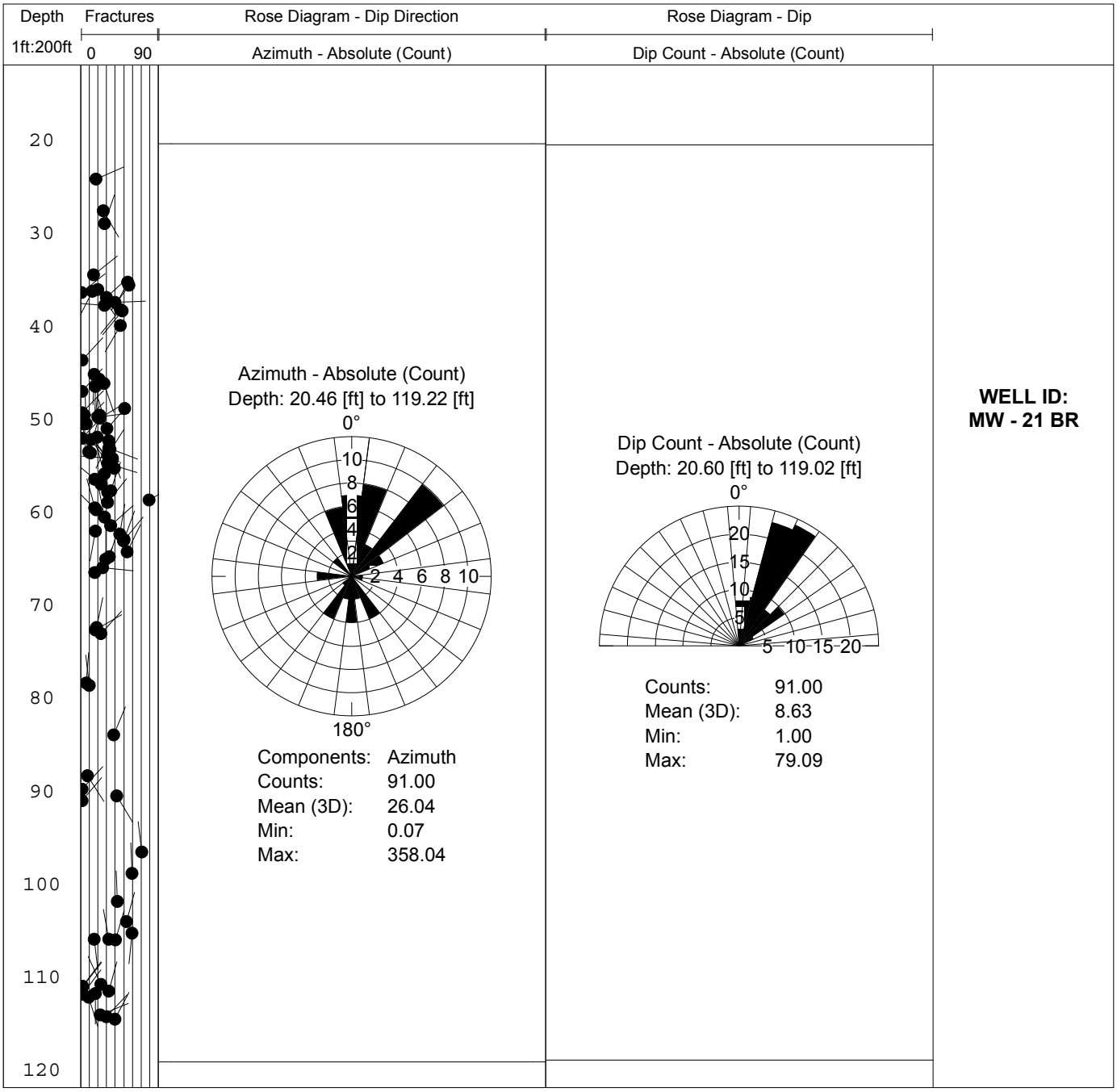
MW-39 BR

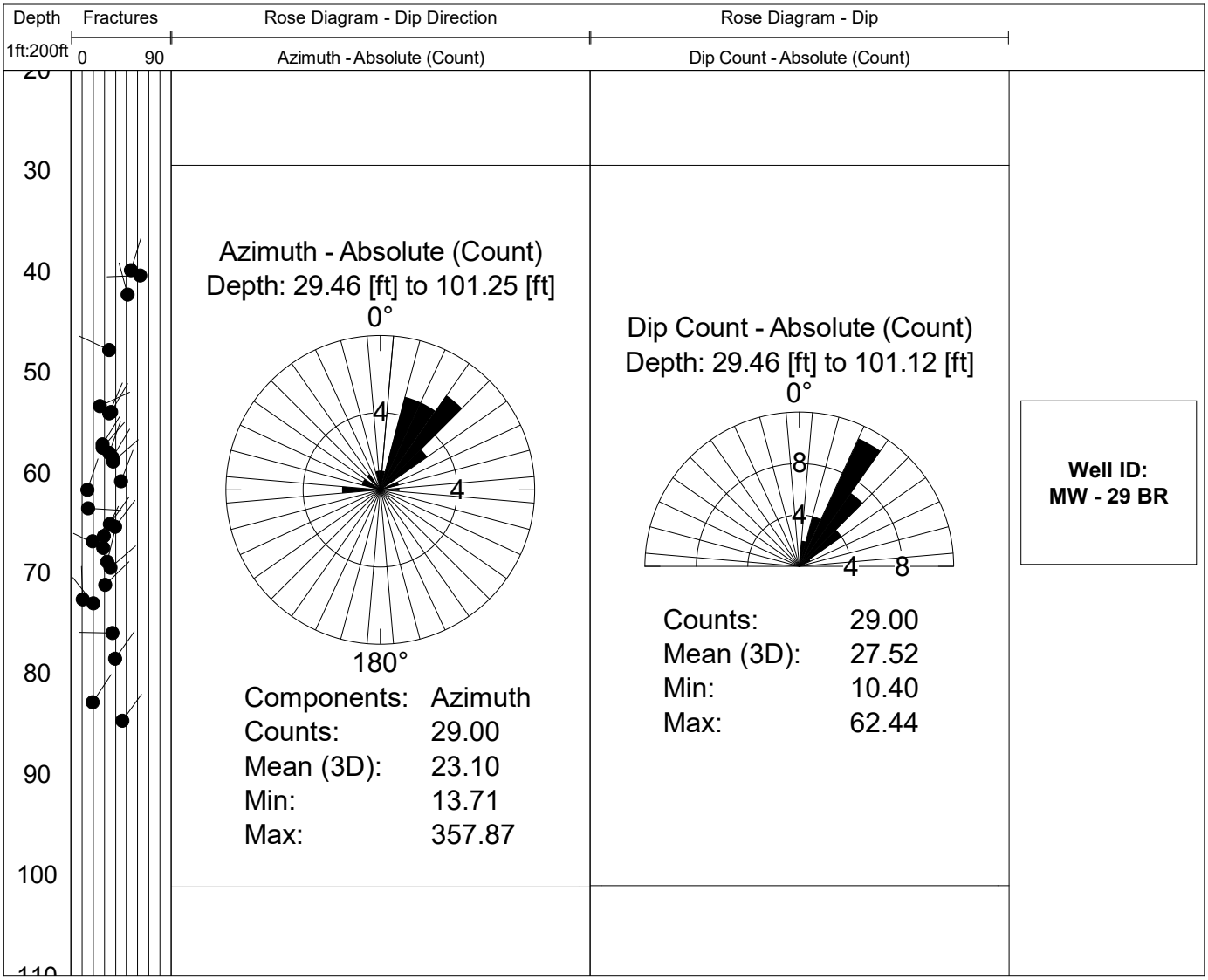
Depth ft	Azimuth deg	Dip deg
53.5	26	38
54.7	169	25
55.5	13	26
55.8	4	25
56.7	59	11
58.1	206	20
59.9	295	26
60.9	86	51
61.6	273	45
61.8	91	25
64.8	321	39
70.6	76	34
71.2	77	25
73.8	61	37
74.0	66	38
74.7	**84**	**32**
77.6	**164**	**73**

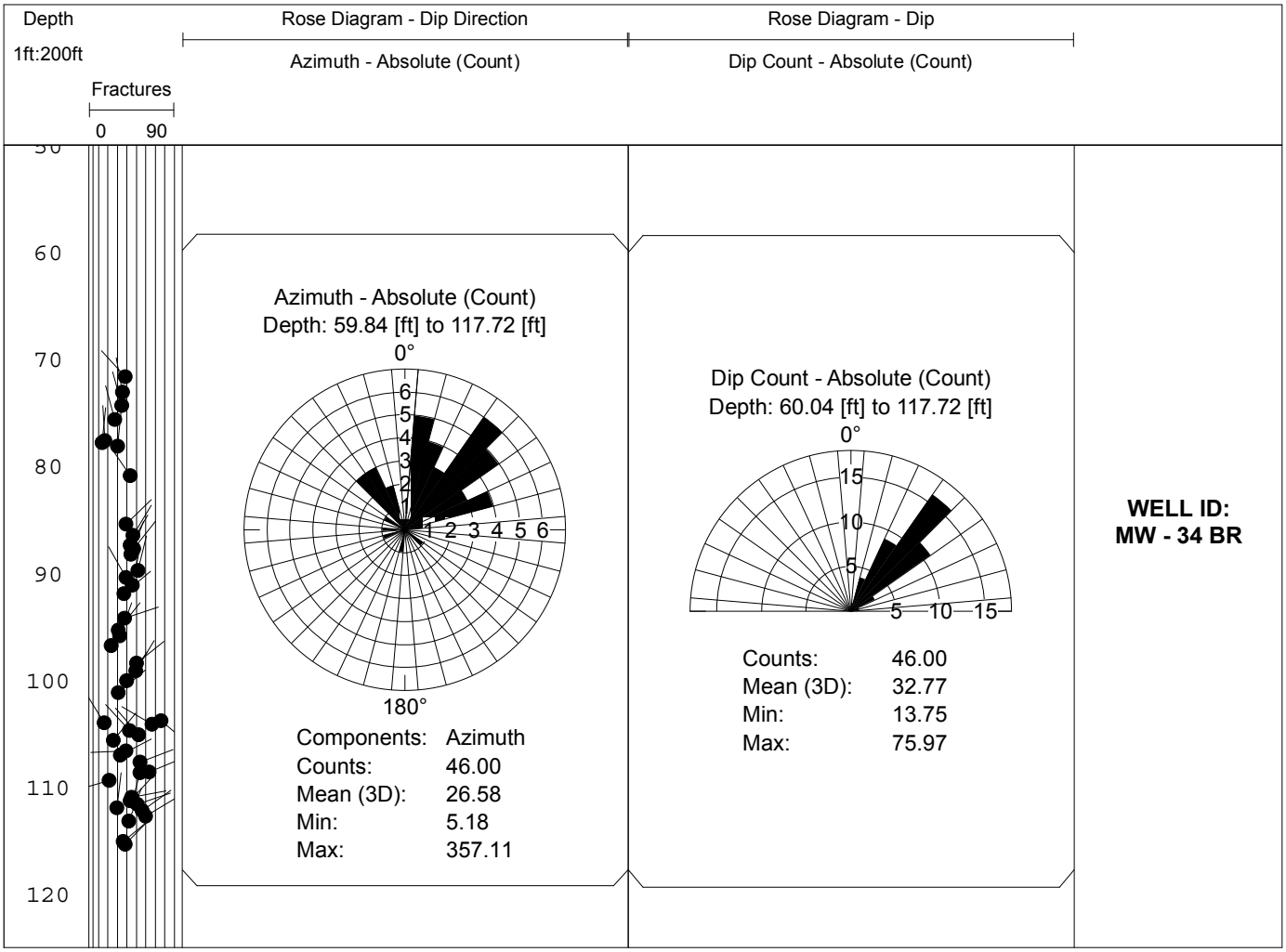
Dominating water producing fractures are highlighted and shown in bold italicized text. Minor water producing fractures are shown in bold text. Closed fractures are shown in plain text.

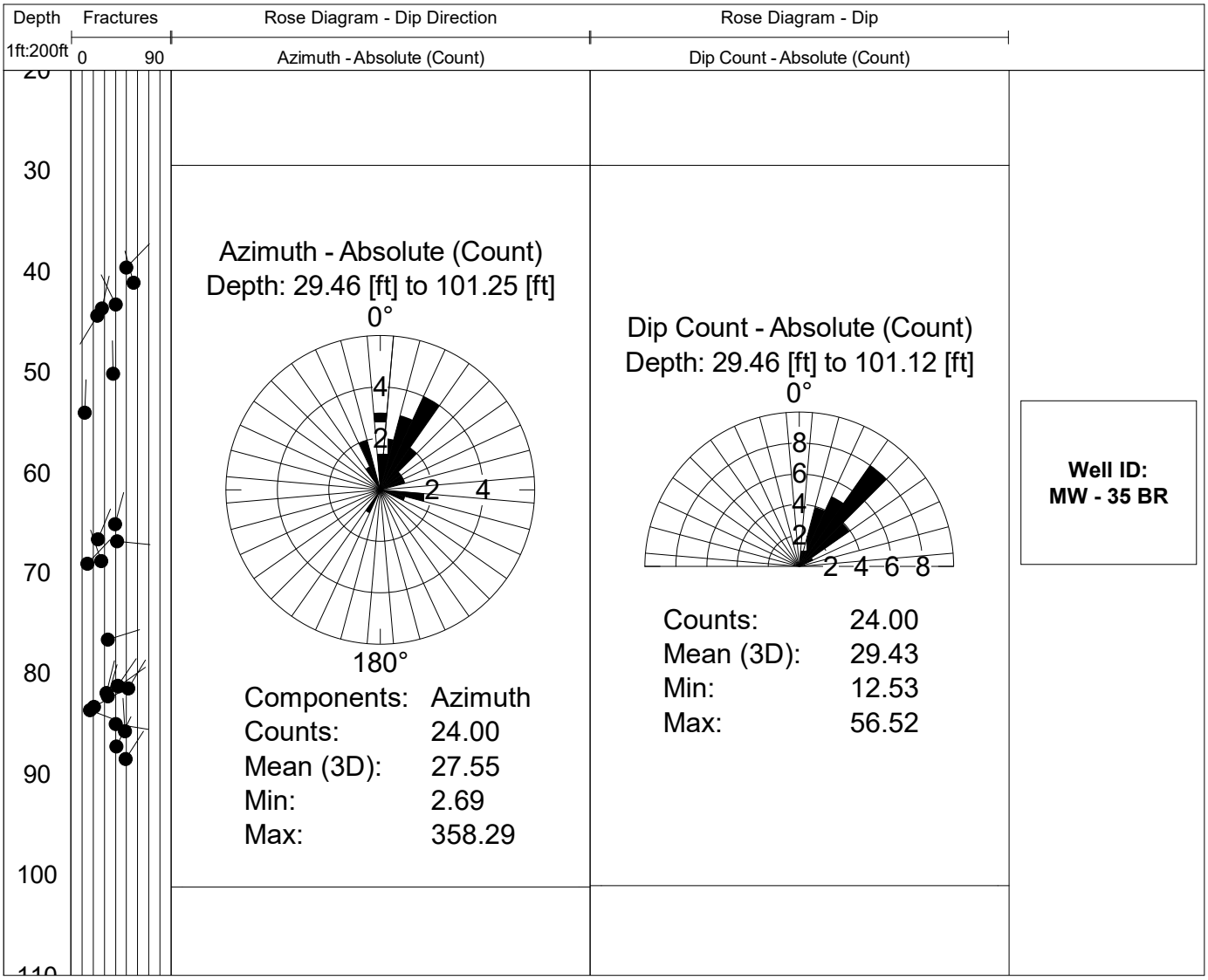
Appendix 2

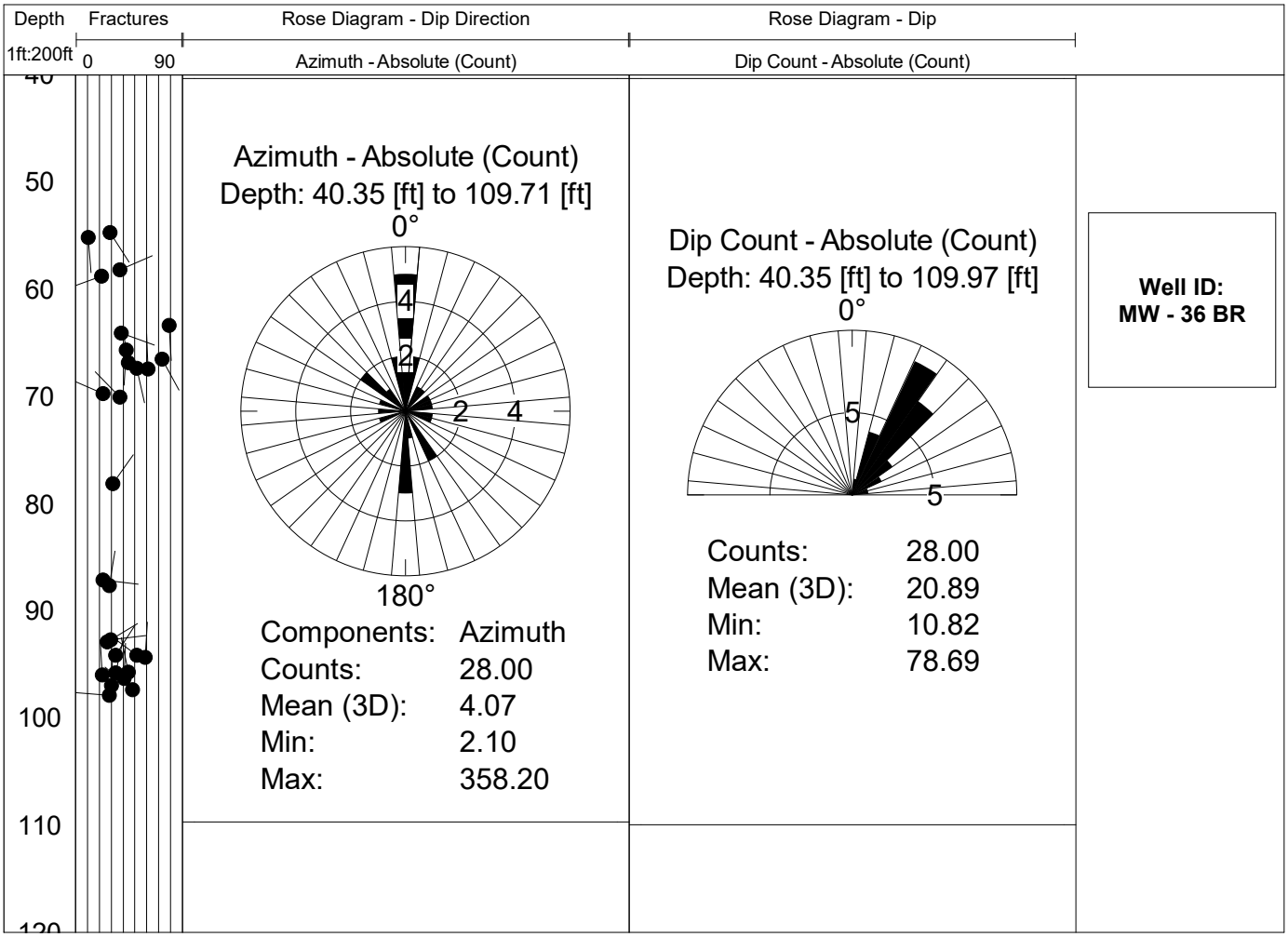

Depth
1ft:100ft
Fractures
0
90
Rose Diagram - Dip Direction
Azimuth - Absolute (Count)
Rose Diagram - Dip
Dip Count - Absolute (Count)
35
40
45
50
55
60
65
70
Azimuth - Absolute (Count)
Depth: 34.91 [ft] to 69.85 [ft]
0°
1
2
3
4
180°
Components: Azimuth
Counts: 18.00
Mean (3D): 19.55
Min: 1.55
Max: 355.91
Dip Count - Absolute (Count)
Depth: 34.81 [ft] to 69.91 [ft]
0°
1
2
3
4
5
Counts: 18.00
Mean (3D): 27.63
Min: 7.55
Max: 63.99
WELL ID:
MW - 2 BR

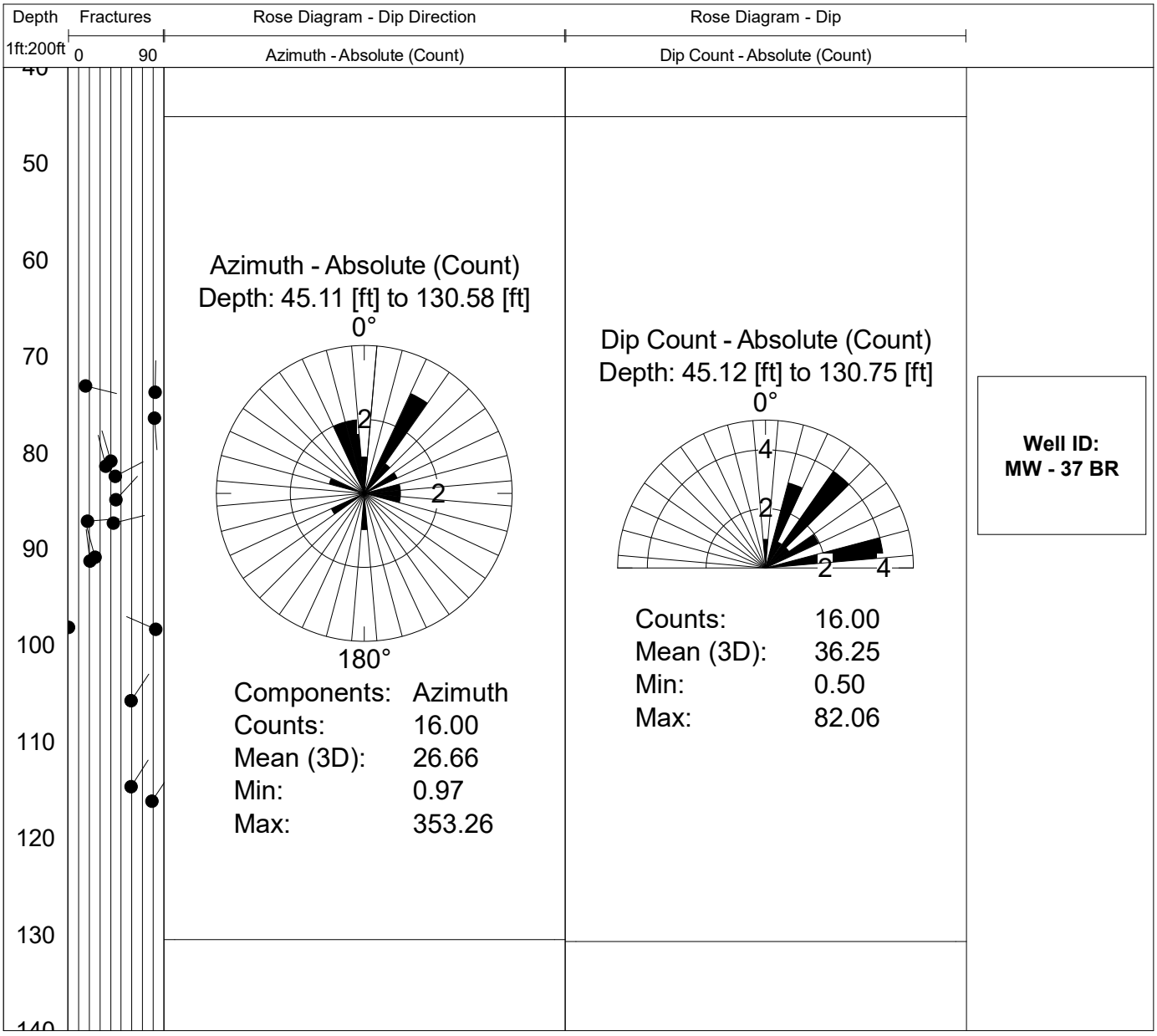

Depth
1ft:200ft
Fractures
0
90
Rose Diagram - Dip Direction
Azimuth - Absolute (Count)
Rose Diagram - Dip
Dip Count - Absolute (Count)
20
30
40
50
60
70
80
90
100
110
120
Azimuth - Absolute (Count)
Depth: 20.46 [ft] to 119.22 [ft]
0°
10
8
6
4
2
2 4 6 8 10
180°
Components: Azimuth
Counts: 91.00
Mean (3D): 26.04
Min: 0.07
Max: 358.04
Dip Count - Absolute (Count)
Depth: 20.60 [ft] to 119.02 [ft]
0°
20
15
10
5
5 10 15 20
Counts: 91.00
Mean (3D): 8.63
Min: 1.00
Max: 79.09
WELL ID:
MW - 21 BR

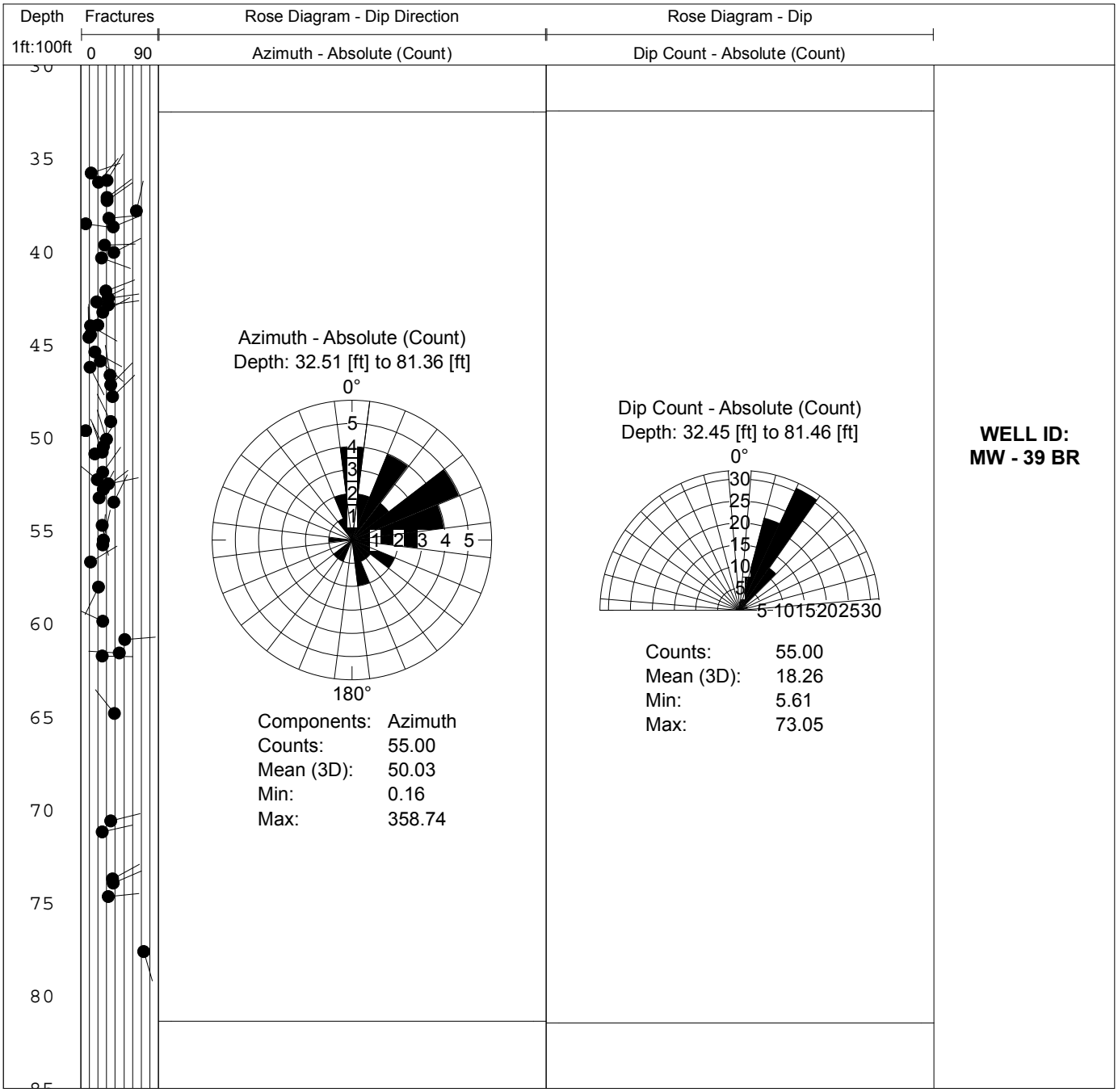

Depth
Fractures
Rose Diagram - Dip Direction
Rose Diagram - Dip
1ft:200ft
0
90
Azimuth - Absolute (Count)
Dip Count - Absolute (Count)
30
40
50
60
70
80
90
100
Azimuth - Absolute (Count)
Depth: 29.46 [ft] to 101.25 [ft]
0°
4
4
180°
Components: Azimuth
Counts: 29.00
Mean (3D): 23.10
Min: 13.71
Max: 357.87
Dip Count - Absolute (Count)
Depth: 29.46 [ft] to 101.12 [ft]
0°
8
4
4
8
Counts: 29.00
Mean (3D): 27.52
Min: 10.40
Max: 62.44
Well ID:
MW - 29 BR

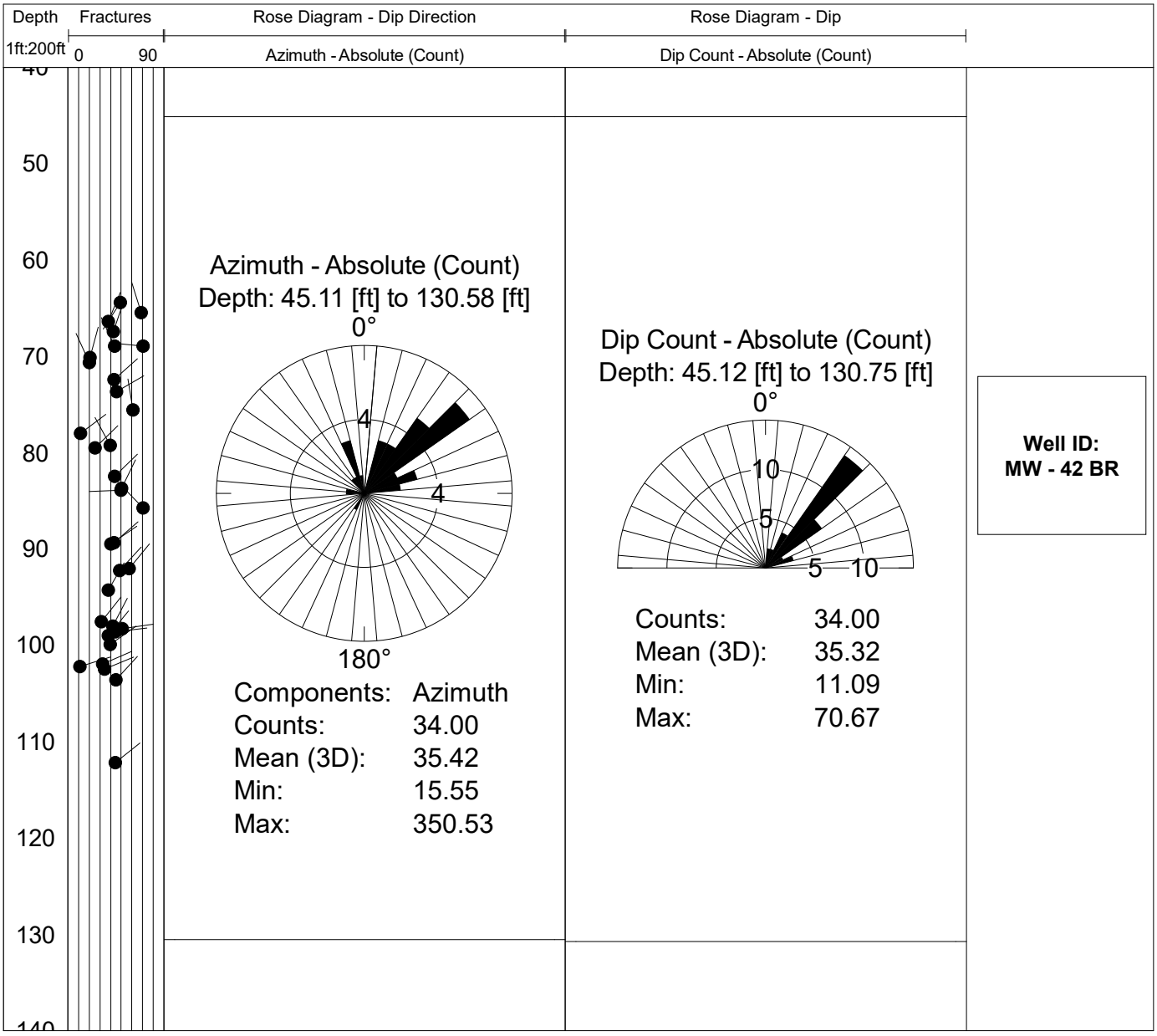

Depth
1ft:200ft
Fractures
0
90
Rose Diagram - Dip Direction
Azimuth - Absolute (Count)
Rose Diagram - Dip
Dip Count - Absolute (Count)
60
70
80
90
100
110
120
Azimuth - Absolute (Count)
Depth: 59.84 [ft] to 117.72 [ft]
0°
1 2 3 4 5 6
180°
Components: Azimuth
Counts: 46.00
Mean (3D): 26.58
Min: 5.18
Max: 357.11
Dip Count - Absolute (Count)
Depth: 60.04 [ft] to 117.72 [ft]
0°
5
10
15
5 10 15
Counts: 46.00
Mean (3D): 32.77
Min: 13.75
Max: 75.97
WELL ID:
MW - 34 BR


Depth
Fractures
Rose Diagram - Dip Direction
Rose Diagram - Dip
1ft:200ft
0
90
Azimuth - Absolute (Count)
Dip Count - Absolute (Count)
20
30
40
50
60
70
80
90
100
110
Azimuth - Absolute (Count)
Depth: 29.46 [ft] to 101.25 [ft]
0°
4
2
2
4
180°
Components: Azimuth
Counts: 24.00
Mean (3D): 27.55
Min: 2.69
Max: 358.29
Dip Count - Absolute (Count)
Depth: 29.46 [ft] to 101.12 [ft]
0°
8
6
4
2
2 4 6 8
Counts: 24.00
Mean (3D): 29.43
Min: 12.53
Max: 56.52
Well ID:
MW - 35 BR

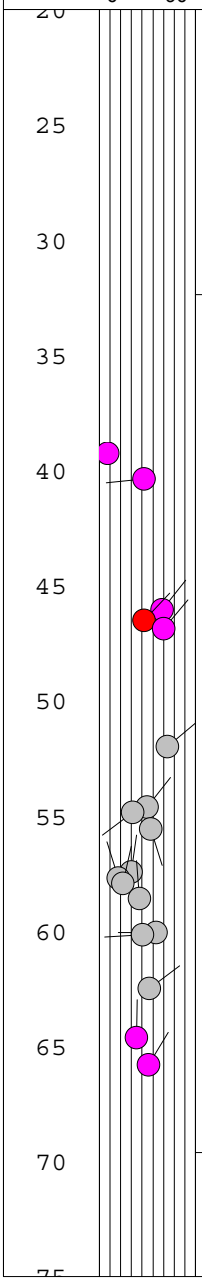

Depth
Fractures
Rose Diagram - Dip Direction
Rose Diagram - Dip
1ft:200ft
0
90
Azimuth - Absolute (Count)
Dip Count - Absolute (Count)
50
60
70
80
90
100
110
Azimuth - Absolute (Count)
Depth: 40.35 [ft] to 109.71 [ft]
0°
4
2
2
4
180°
Components: Azimuth
Counts: 28.00
Mean (3D): 4.07
Min: 2.10
Max: 358.20
Dip Count - Absolute (Count)
Depth: 40.35 [ft] to 109.97 [ft]
0°
5
5
Counts: 28.00
Mean (3D): 20.89
Min: 10.82
Max: 78.69
Well ID:
MW - 36 BR


Depth
Fractures
Rose Diagram - Dip Direction
Rose Diagram - Dip
1ft:200ft
0
90
Azimuth - Absolute (Count)
Dip Count - Absolute (Count)
50
60
70
80
90
100
110
120
130
Azimuth - Absolute (Count)
Depth: 45.11 [ft] to 130.58 [ft]
0°
2
2
180°
Components: Azimuth
Counts: 16.00
Mean (3D): 26.66
Min: 0.97
Max: 353.26
Dip Count - Absolute (Count)
Depth: 45.12 [ft] to 130.75 [ft]
0°
4
2
2
4
Counts: 16.00
Mean (3D): 36.25
Min: 0.50
Max: 82.06
Well ID:
MW - 37 BR

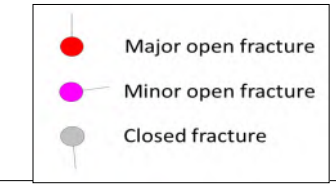

Depth
1ft:100ft
Fractures
0
90
Rose Diagram - Dip Direction
Azimuth - Absolute (Count)
Rose Diagram - Dip
Dip Count - Absolute (Count)
35
40
45
50
55
60
65
70
75
80
Azimuth - Absolute (Count)
Depth: 32.51 [ft] to 81.36 [ft]
0°
1 2 3 4 5
180°
Components: Azimuth
Counts: 55.00
Mean (3D): 50.03
Min: 0.16
Max: 358.74
Dip Count - Absolute (Count)
Depth: 32.45 [ft] to 81.46 [ft]
0°
30
25
20
15
10
5
5 10 15 20 25 30
Counts: 55.00
Mean (3D): 18.26
Min: 5.61
Max: 73.05
WELL ID:
MW - 39 BR


Depth
Fractures
Rose Diagram - Dip Direction
Rose Diagram - Dip
1ft:200ft
0
90
Azimuth - Absolute (Count)
Dip Count - Absolute (Count)
50
60
70
80
90
100
110
120
130
Azimuth - Absolute (Count)
Depth: 45.11 [ft] to 130.58 [ft]
0°
4
4
180°
Components: Azimuth
Counts: 34.00
Mean (3D): 35.42
Min: 15.55
Max: 350.53
Dip Count - Absolute (Count)
Depth: 45.12 [ft] to 130.75 [ft]
0°
10
5
5
10
Counts: 34.00
Mean (3D): 35.32
Min: 11.09
Max: 70.67
Well ID:
MW - 42 BR

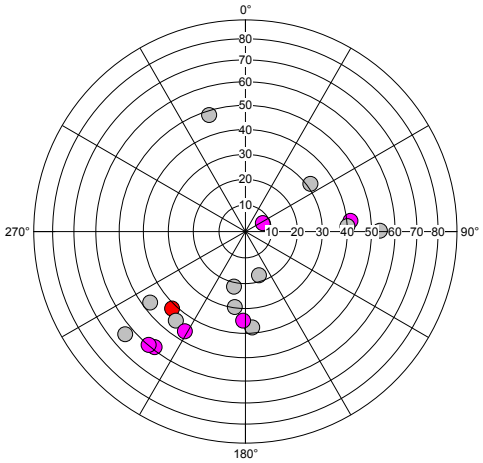
Depth	Fractures	Poles - Dip - Lower Hemisphere	Great Circles - Strike - Lower Hemisphere
1ft:100ft	0 90	Schmidt Plot - LH - Type	Schmidt Plot (Strike) - LH - Type



Well ID:
MW - 02 BR

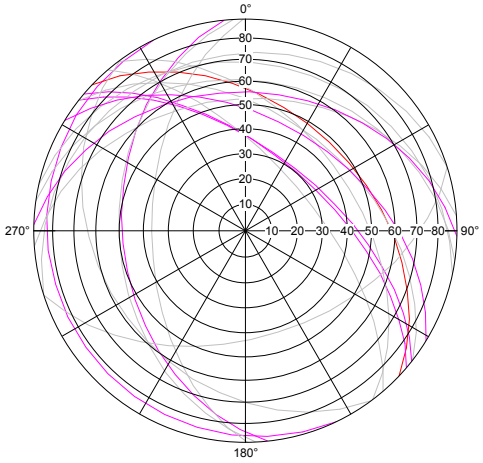


Schmidt Plot - LH - Type
Depth: 32.37 [ft] to 69.60 [ft]

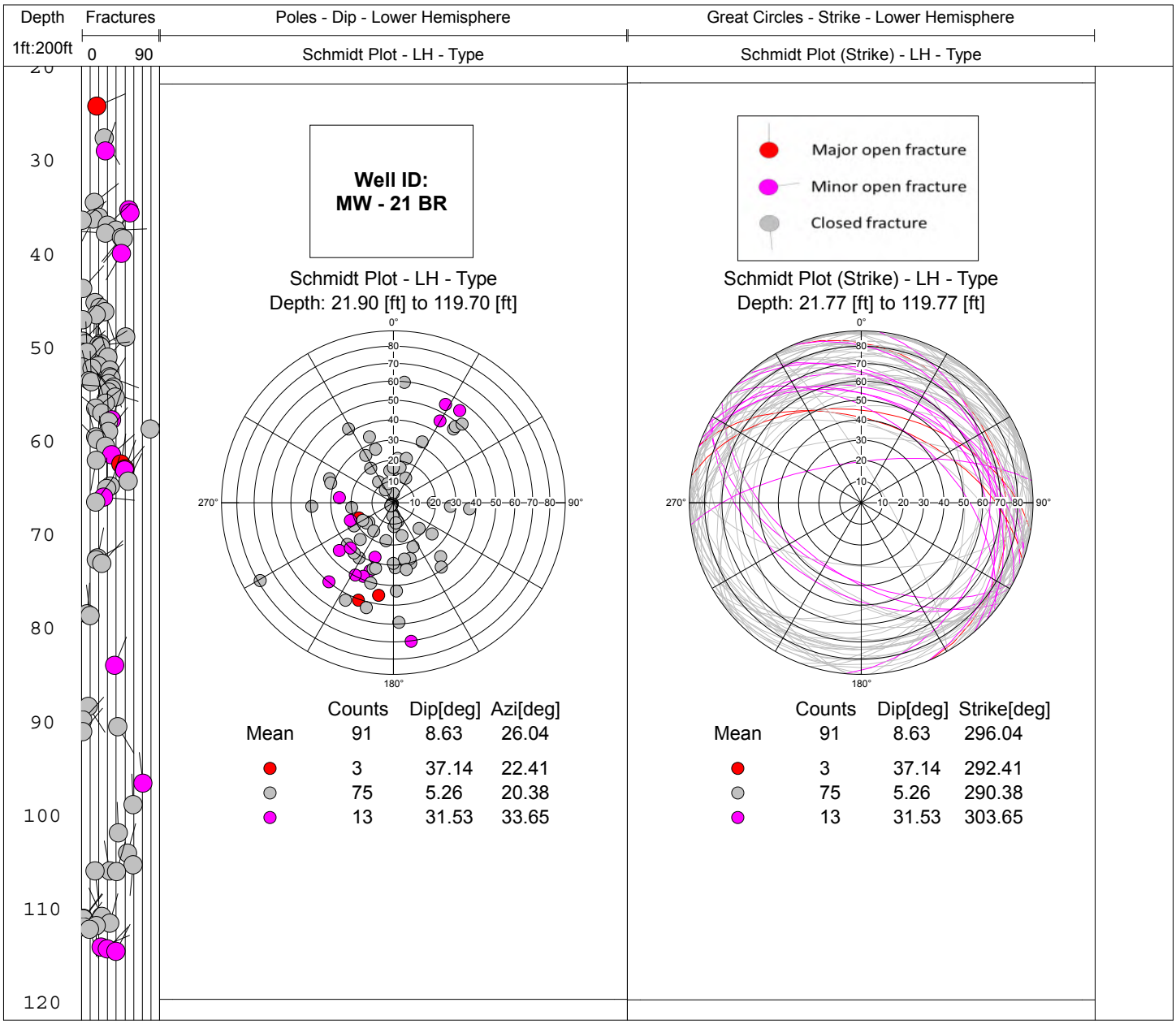


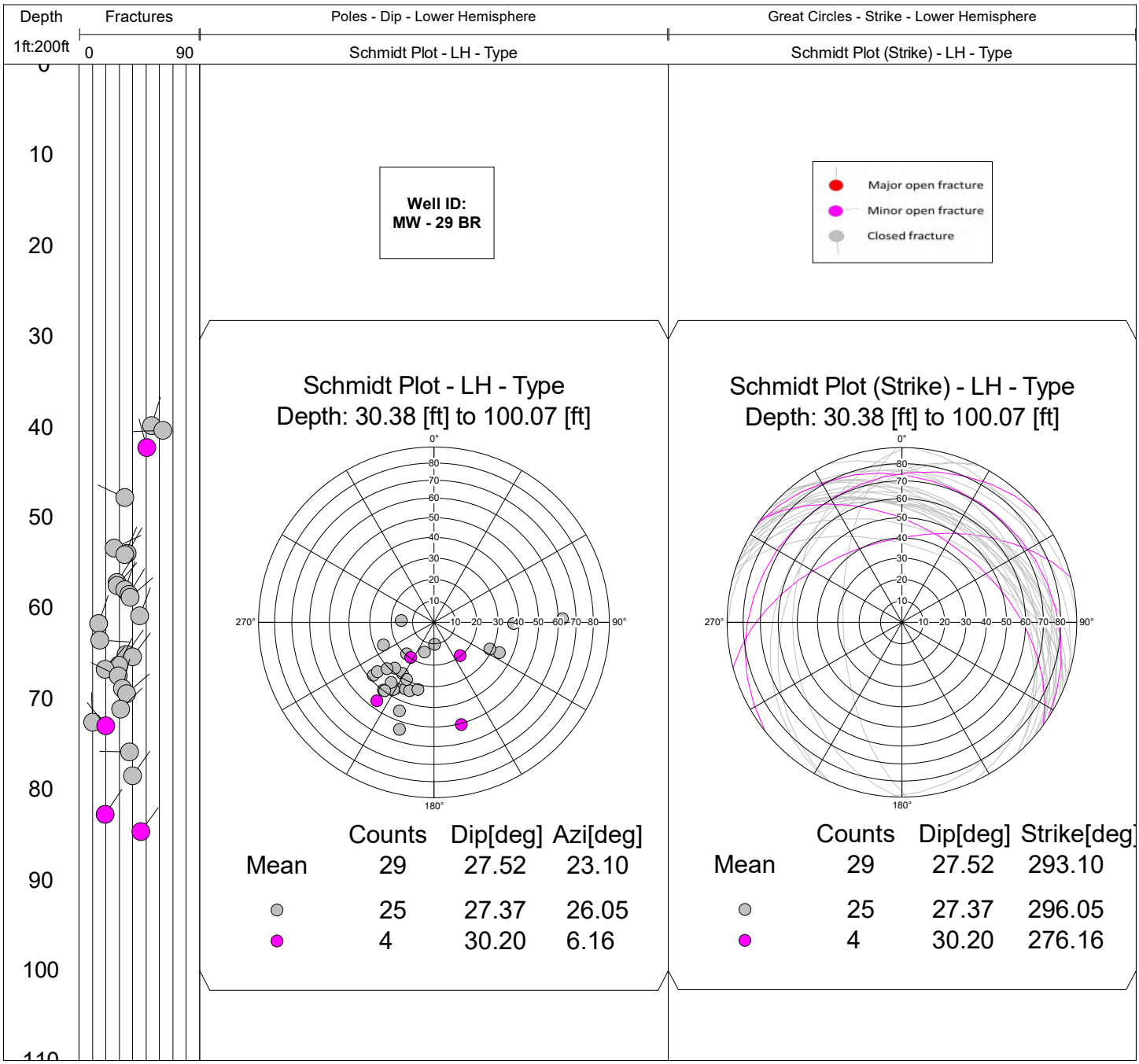
	Counts	Dip[deg]	Azi[deg]
Mean	18	27.63	19.55
●	6	35.97	23.71
●	1	41.86	43.49
●	11	20.04	5.58

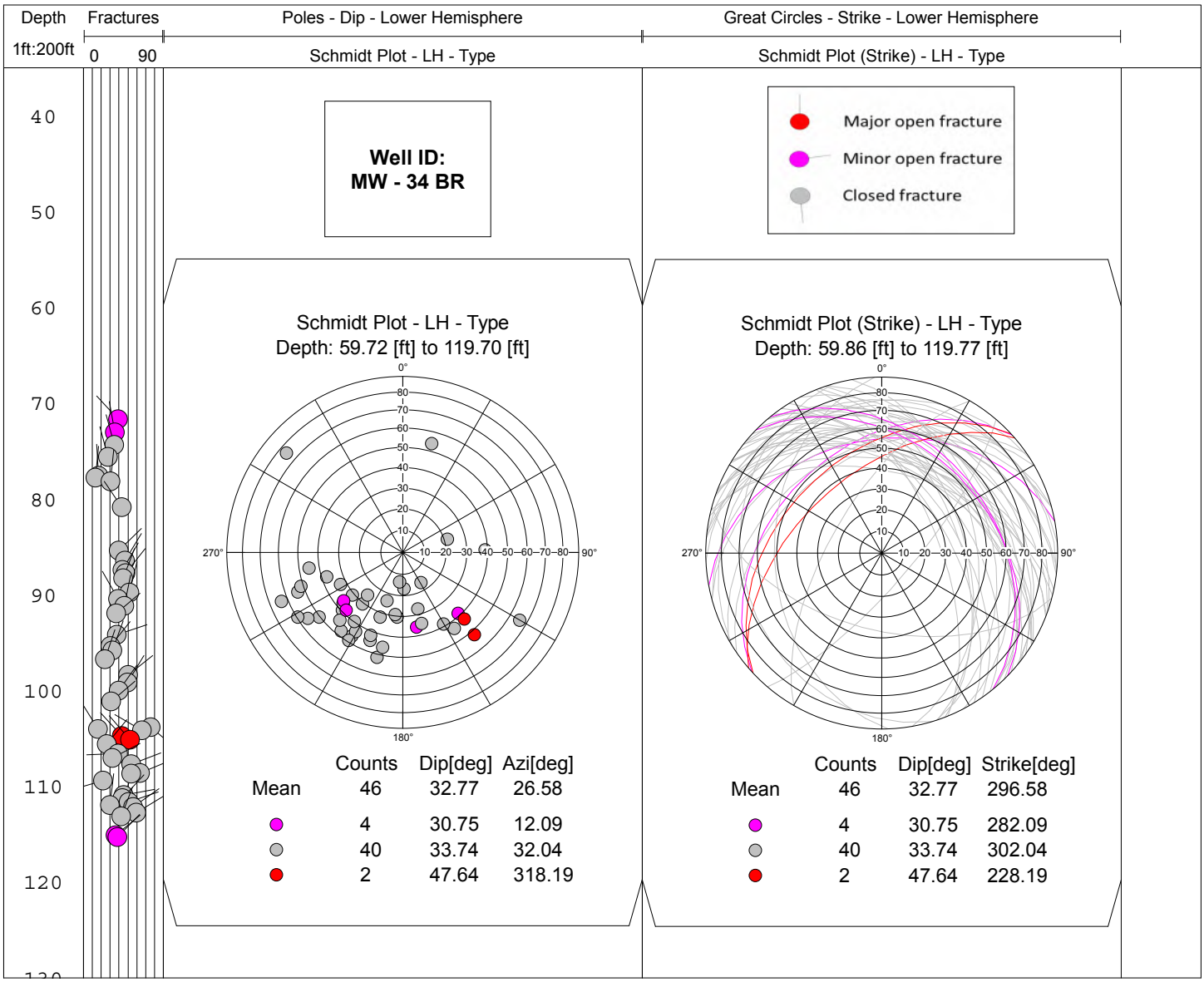
Schmidt Plot (Strike) - LH - Type
Depth: 32.37 [ft] to 69.55 [ft]

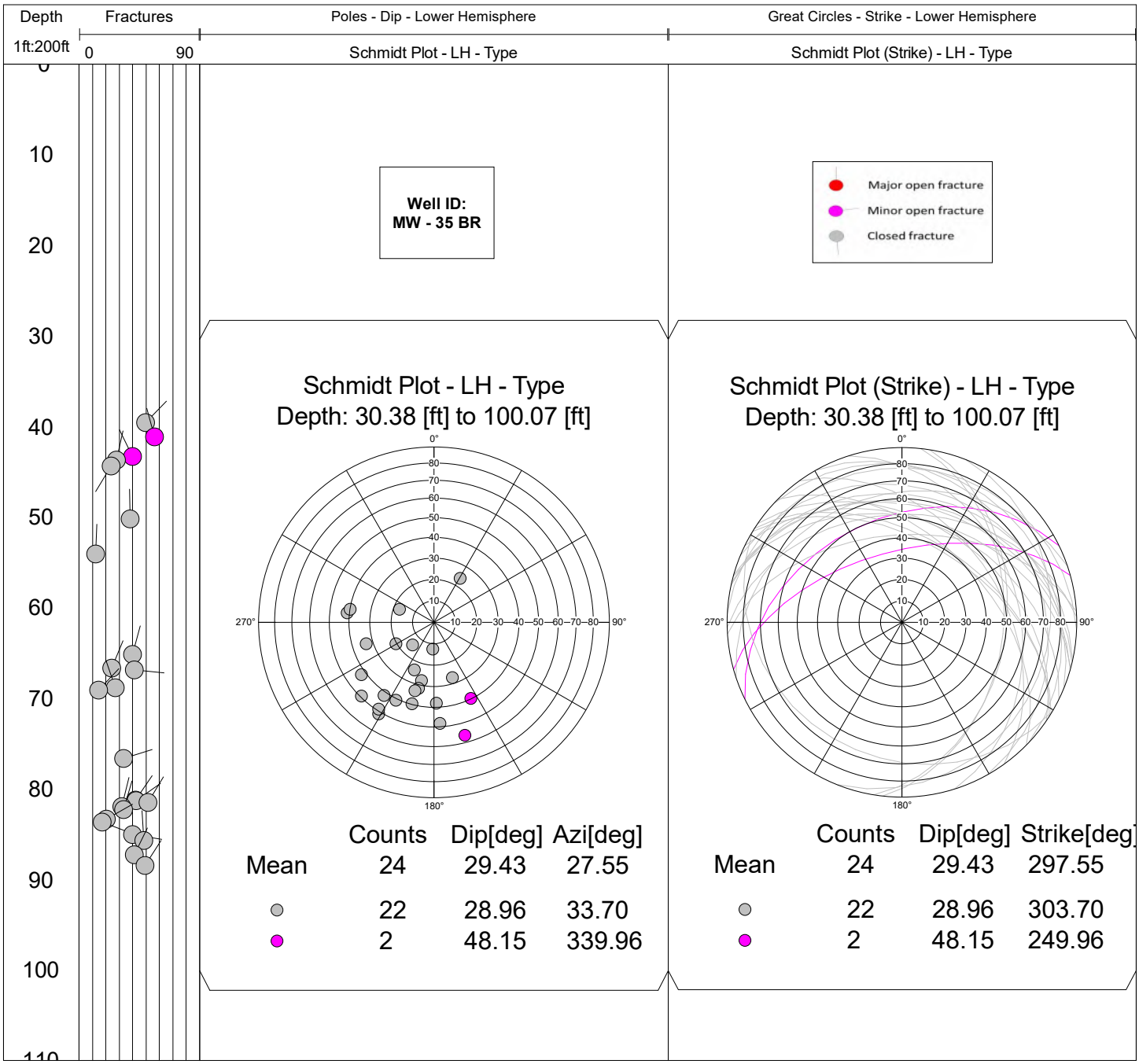


	Counts	Dip[deg]	Strike[deg]
Mean	18	27.63	289.55
●	6	35.97	293.71
●	1	41.86	313.49
●	11	20.04	275.58


Depth
1ft:200ft
Fractures
0
90
Poles - Dip - Lower Hemisphere
Schmidt Plot - LH - Type
Great Circles - Strike - Lower Hemisphere
Schmidt Plot (Strike) - LH - Type
20
30
40
50
60
70
80
90
100
110
120
Well ID:
MW - 21 BR
Major open fracture
Minor open fracture
Closed fracture
Schmidt Plot - LH - Type
Depth: 21.90 [ft] to 119.70 [ft]
Schmidt Plot (Strike) - LH - Type
Depth: 21.77 [ft] to 119.77 [ft]
0°
90°
180°
270°
Counts Dip[deg] Azi[deg]
Mean 91 8.63 26.04
3 37.14 22.41
75 5.26 20.38
13 31.53 33.65
Counts Dip[deg] Strike[deg]
Mean 91 8.63 296.04
3 37.14 292.41
75 5.26 290.38
13 31.53 303.65

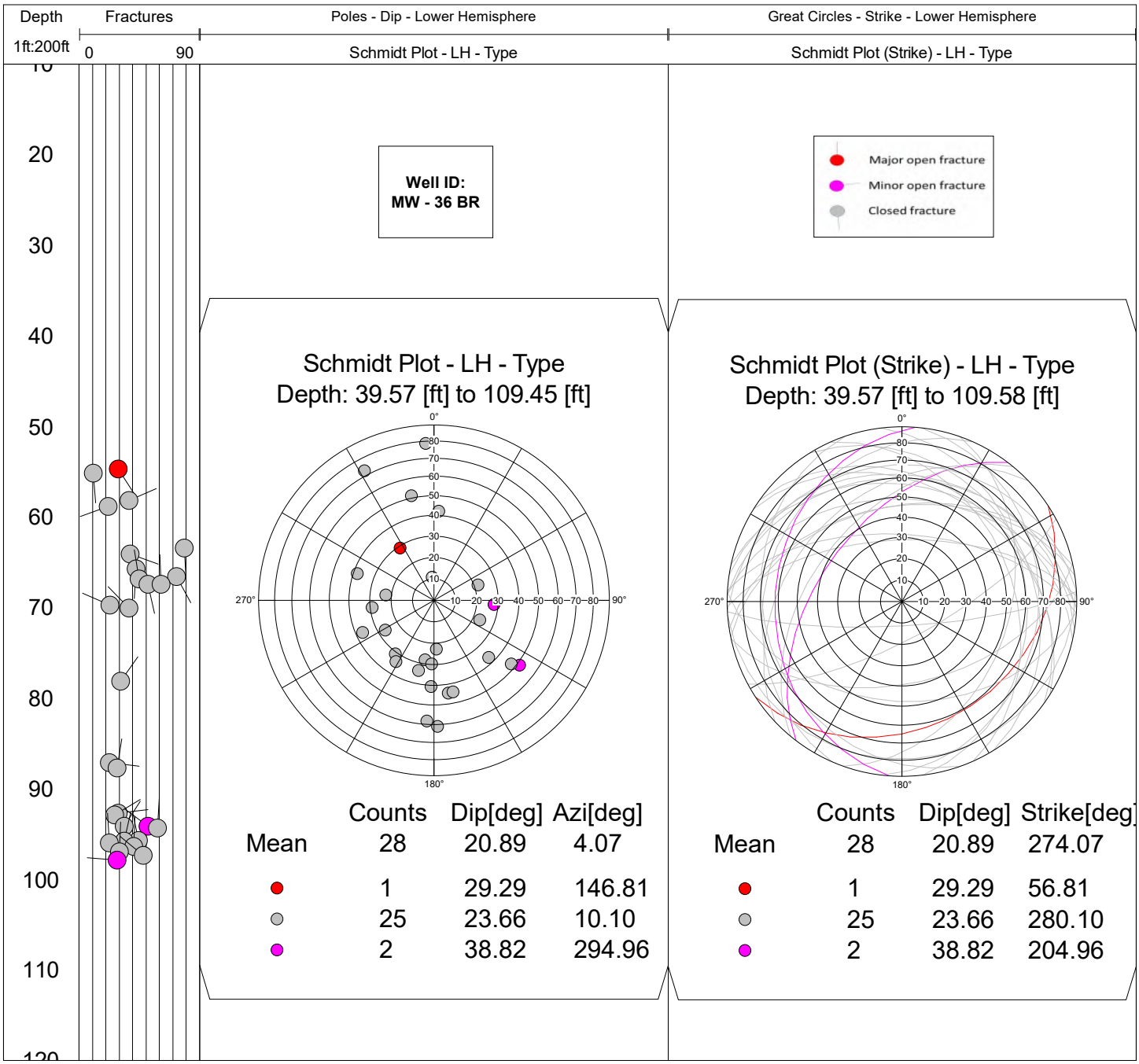

Depth
1ft:200ft
Fractures
0
90
Poles - Dip - Lower Hemisphere
Schmidt Plot - LH - Type
Great Circles - Strike - Lower Hemisphere
Schmidt Plot (Strike) - LH - Type
10
20
30
40
50
60
70
80
90
100
Well ID:
MW - 29 BR
Major open fracture
Minor open fracture
Closed fracture
Schmidt Plot - LH - Type
Depth: 30.38 [ft] to 100.07 [ft]
Schmidt Plot (Strike) - LH - Type
Depth: 30.38 [ft] to 100.07 [ft]
Counts Dip[deg] Azi[deg]
Mean 29 27.52 23.10
25 27.37 26.05
4 30.20 6.16
Counts Dip[deg] Strike[deg]
Mean 29 27.52 293.10
25 27.37 296.05
4 30.20 276.16


Depth
1ft:200ft
Fractures
0
90
Poles - Dip - Lower Hemisphere
Schmidt Plot - LH - Type
Great Circles - Strike - Lower Hemisphere
Schmidt Plot (Strike) - LH - Type
40
50
60
70
80
90
100
110
120
Well ID:
MW - 34 BR
Major open fracture
Minor open fracture
Closed fracture
Schmidt Plot - LH - Type
Depth: 59.72 [ft] to 119.70 [ft]
Counts Dip[deg] Azi[deg]
Mean 46 32.77 26.58
4 30.75 12.09
40 33.74 32.04
2 47.64 318.19
Schmidt Plot (Strike) - LH - Type
Depth: 59.86 [ft] to 119.77 [ft]
Counts Dip[deg] Strike[deg]
Mean 46 32.77 296.58
4 30.75 282.09
40 33.74 302.04
2 47.64 228.19

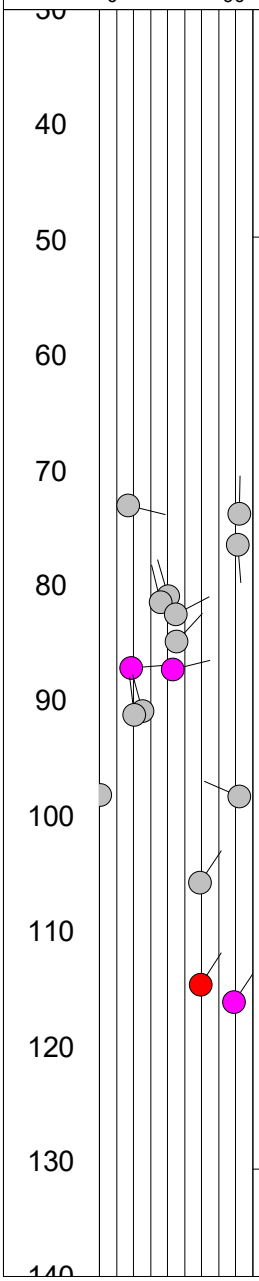


	Counts	Dip[deg]	Azi[deg]
Mean	24	29.43	27.55
●	22	28.96	33.70
●	2	48.15	339.96

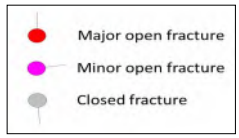
	Counts	Dip[deg]	Strike[deg]
Mean	24	29.43	297.55
●	22	28.96	303.70
●	2	48.15	249.96


Depth
1ft:200ft
Fractures
0
90
Poles - Dip - Lower Hemisphere
Schmidt Plot - LH - Type
Great Circles - Strike - Lower Hemisphere
Schmidt Plot (Strike) - LH - Type
Well ID:
MW - 36 BR
Major open fracture
Minor open fracture
Closed fracture
Schmidt Plot - LH - Type
Depth: 39.57 [ft] to 109.45 [ft]
Schmidt Plot (Strike) - LH - Type
Depth: 39.57 [ft] to 109.58 [ft]
Counts Dip[deg] Azi[deg]
Mean 28 20.89 4.07
1 29.29 146.81
25 23.66 10.10
2 38.82 294.96
Counts Dip[deg] Strike[deg]
Mean 28 20.89 274.07
1 29.29 56.81
25 23.66 280.10
2 38.82 204.96

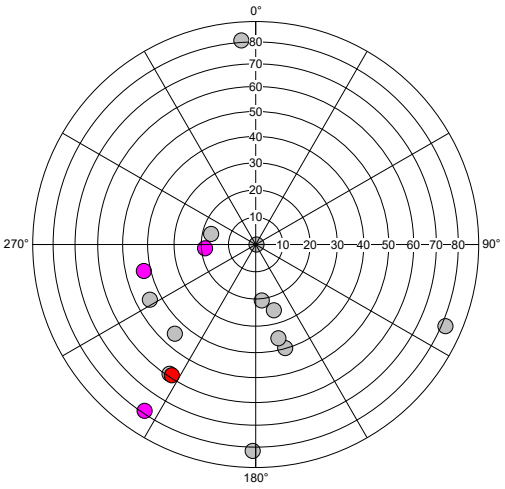
Depth	Fractures	Poles - Dip - Lower Hemisphere	Great Circles - Strike - Lower Hemisphere
1ft:200ft	0 90	Schmidt Plot - LH - Type	Schmidt Plot (Strike) - LH - Type



Well ID:
MW - 37 BR

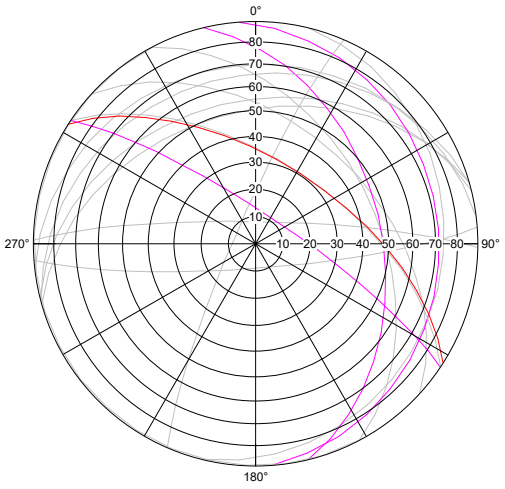


Schmidt Plot - LH - Type
Depth: 49.72 [ft] to 130.63 [ft]

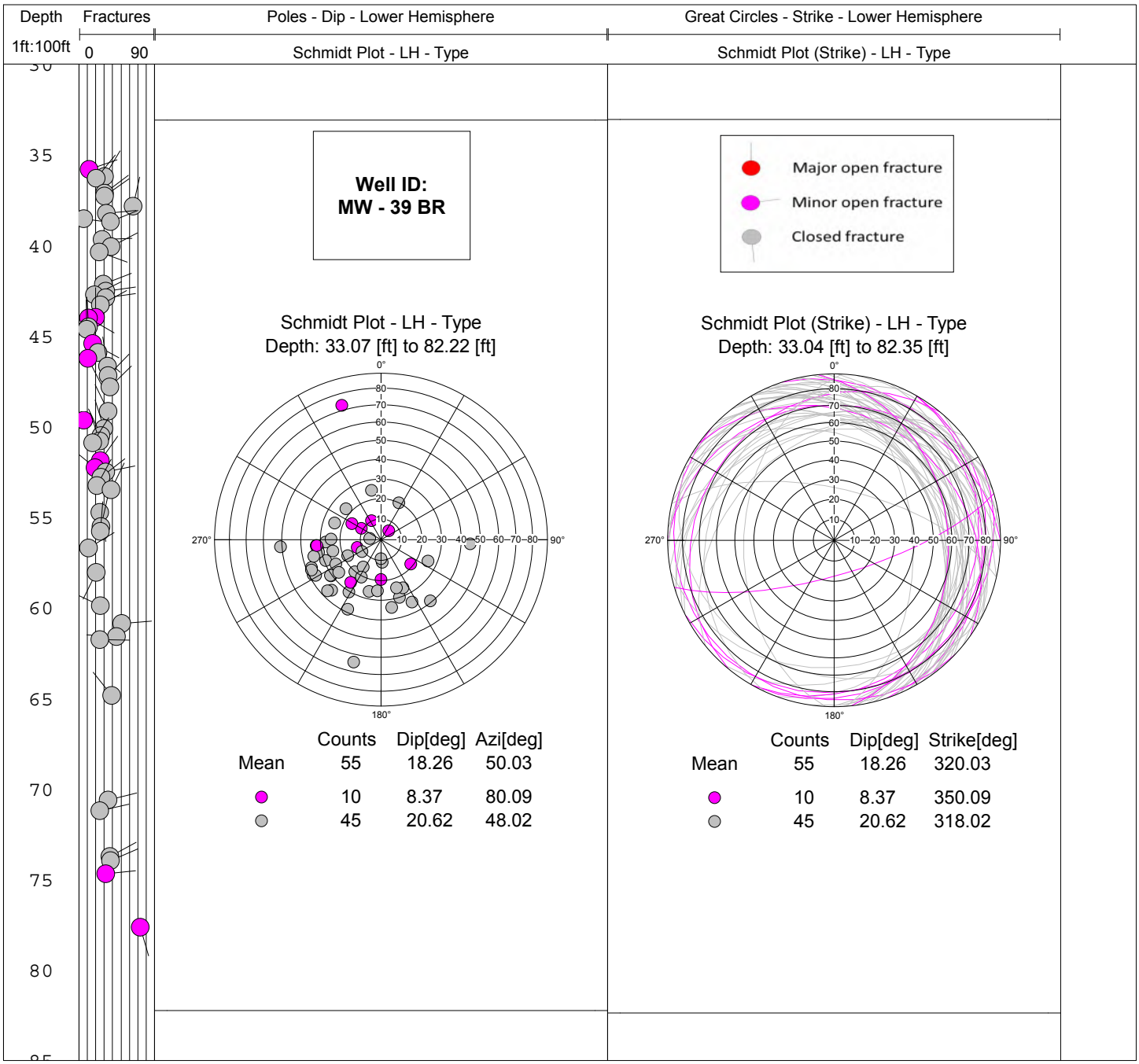


	Counts	Dip[deg]	Azi[deg]
Mean	16	36.25	26.66
	12	33.70	12.00
	3	42.09	59.77
	1	59.30	32.54

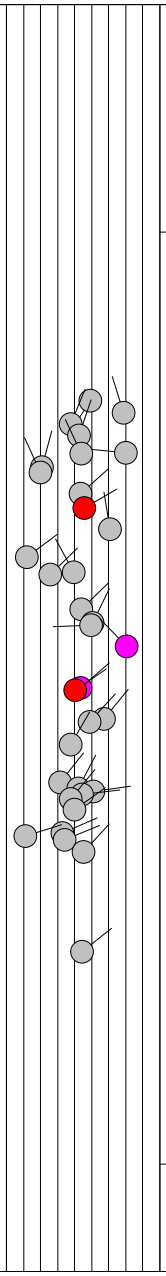
Schmidt Plot (Strike) - LH - Type
Depth: 49.72 [ft] to 130.50 [ft]



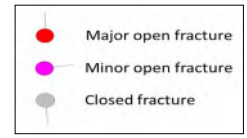
	Counts	Dip[deg]	Strike[deg]
Mean	16	36.25	296.66
	12	33.70	282.00
	3	42.09	329.77
	1	59.30	302.54


Depth
1ft:100ft
Fractures
0
90
Poles - Dip - Lower Hemisphere
Schmidt Plot - LH - Type
Great Circles - Strike - Lower Hemisphere
Schmidt Plot (Strike) - LH - Type
35
40
45
50
55
60
65
70
75
80
Well ID:
MW - 39 BR
Major open fracture
Minor open fracture
Closed fracture
Schmidt Plot - LH - Type
Depth: 33.07 [ft] to 82.22 [ft]
Schmidt Plot (Strike) - LH - Type
Depth: 33.04 [ft] to 82.35 [ft]
0°
90°
180°
270°
10
20
30
40
50
60
70
80
Counts Dip[deg] Azi[deg]
Mean 55 18.26 50.03
10 8.37 80.09
45 20.62 48.02
Counts Dip[deg] Strike[deg]
Mean 55 18.26 320.03
10 8.37 350.09
45 20.62 318.02

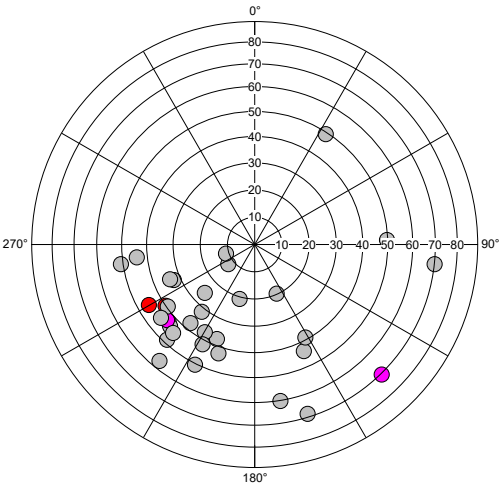
Depth	Fractures	Poles - Dip - Lower Hemisphere	Great Circles - Strike - Lower Hemisphere
1ft:200ft	0 90	Schmidt Plot - LH - Type	Schmidt Plot (Strike) - LH - Type



Well ID:
MW - 42 BR

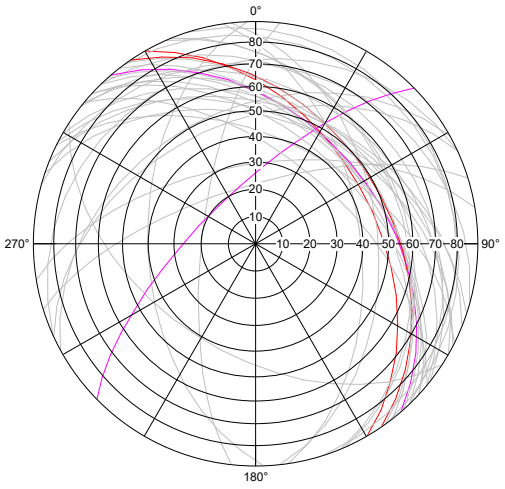


Schmidt Plot - LH - Type
Depth: 49.72 [ft] to 130.63 [ft]

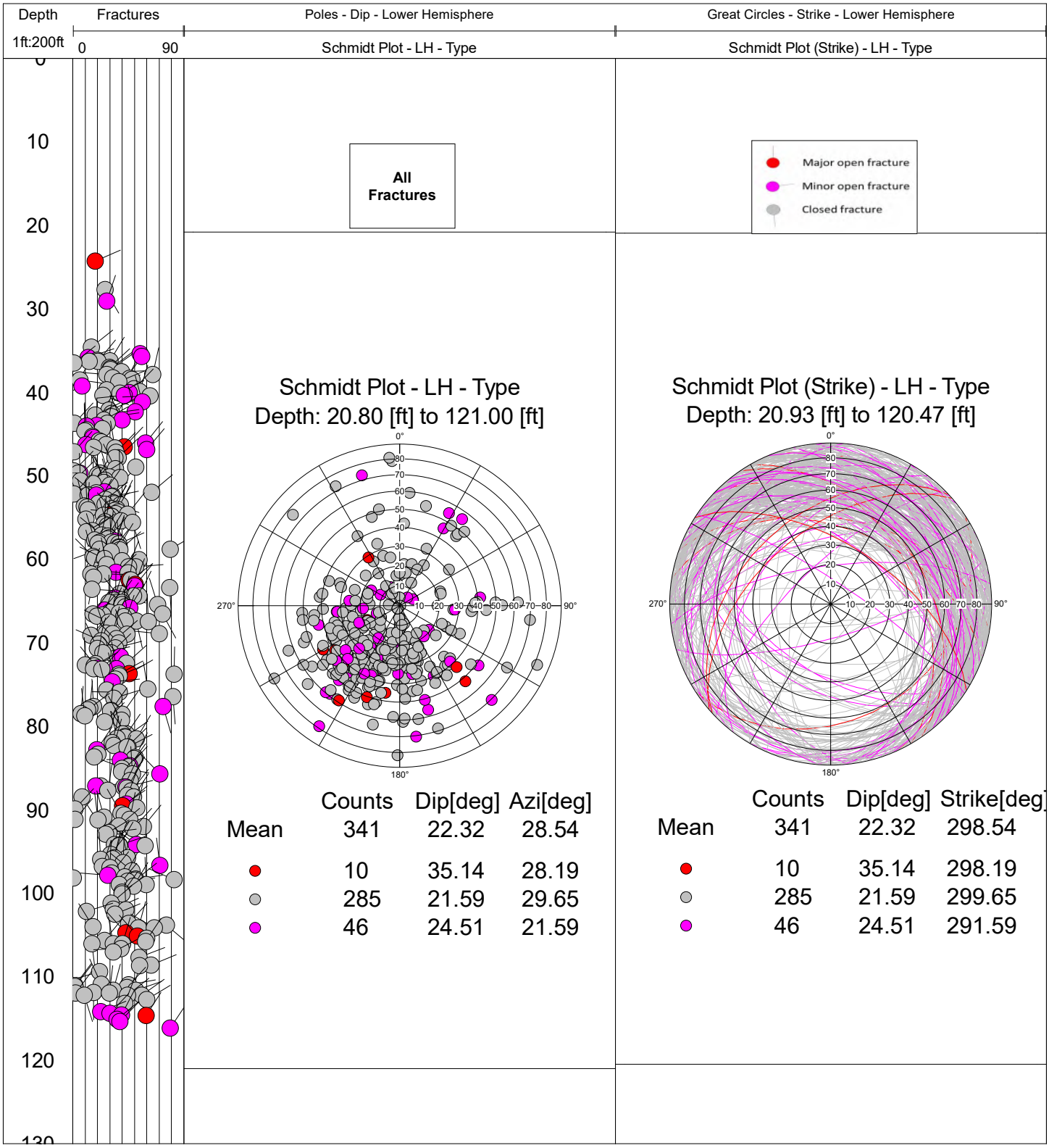


	Counts	Dip[deg]	Azi[deg]
Mean	34	35.32	35.42
	30	34.51	33.68
	2	42.95	57.96
	2	46.94	352.87

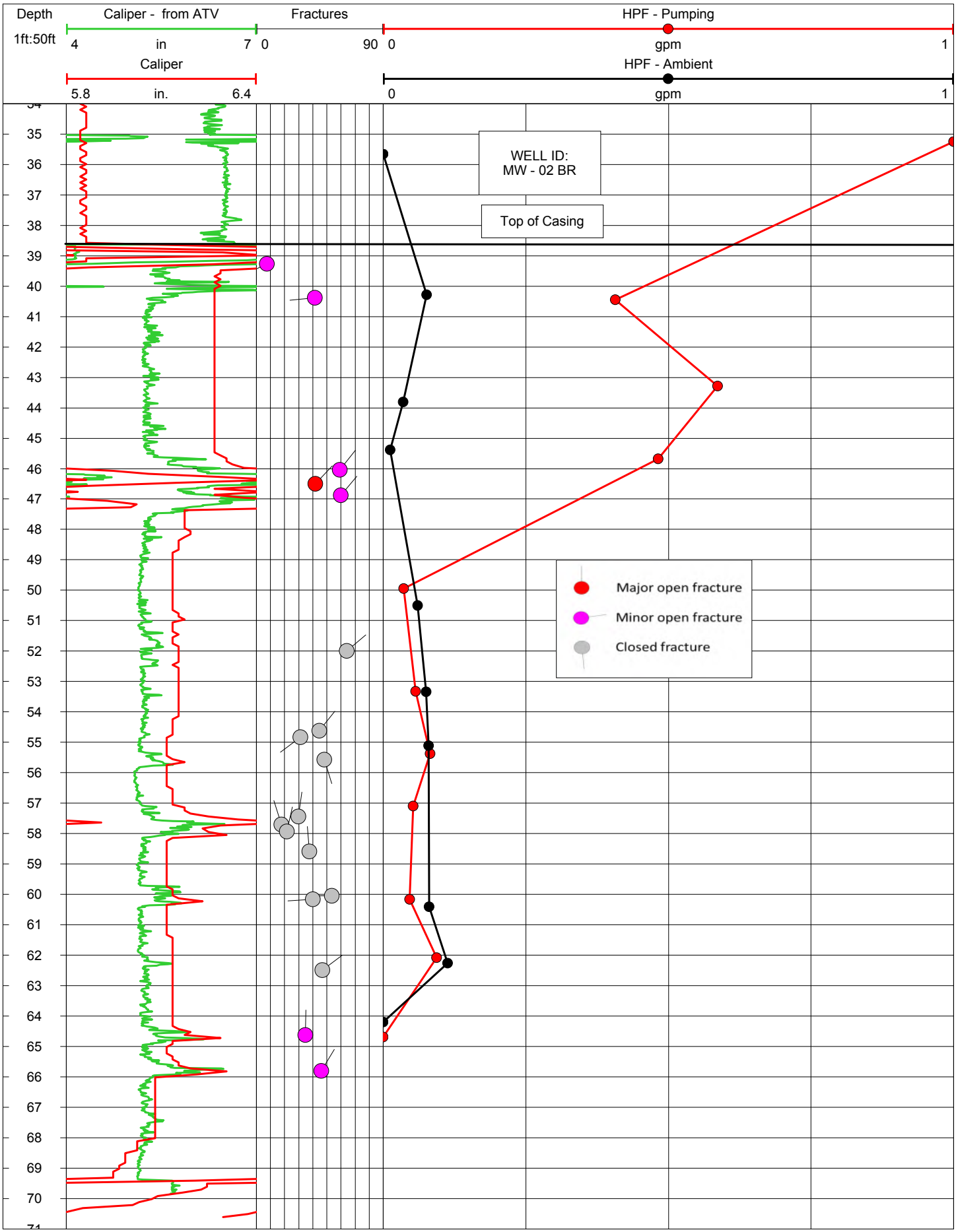
Schmidt Plot (Strike) - LH - Type
Depth: 49.72 [ft] to 130.50 [ft]

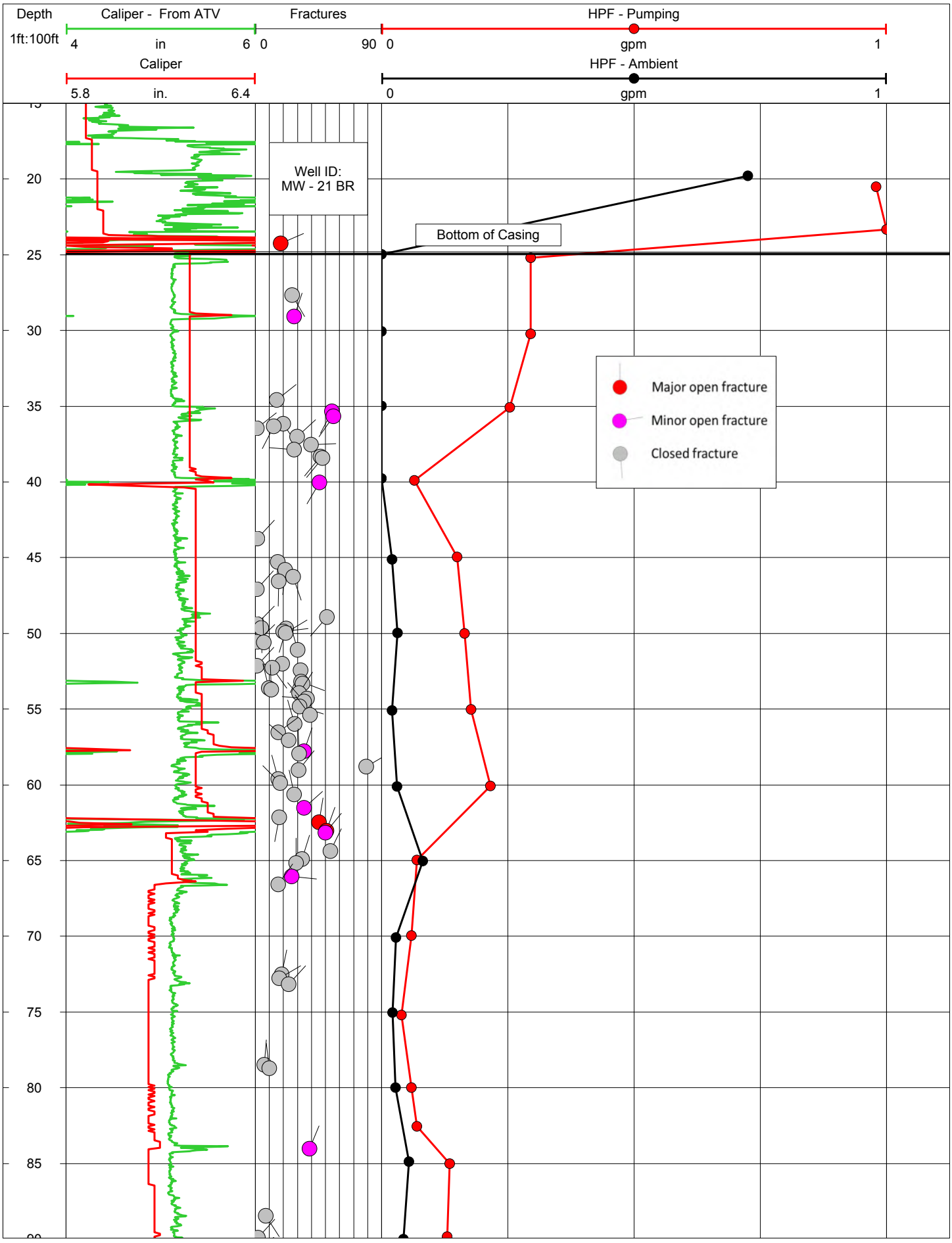


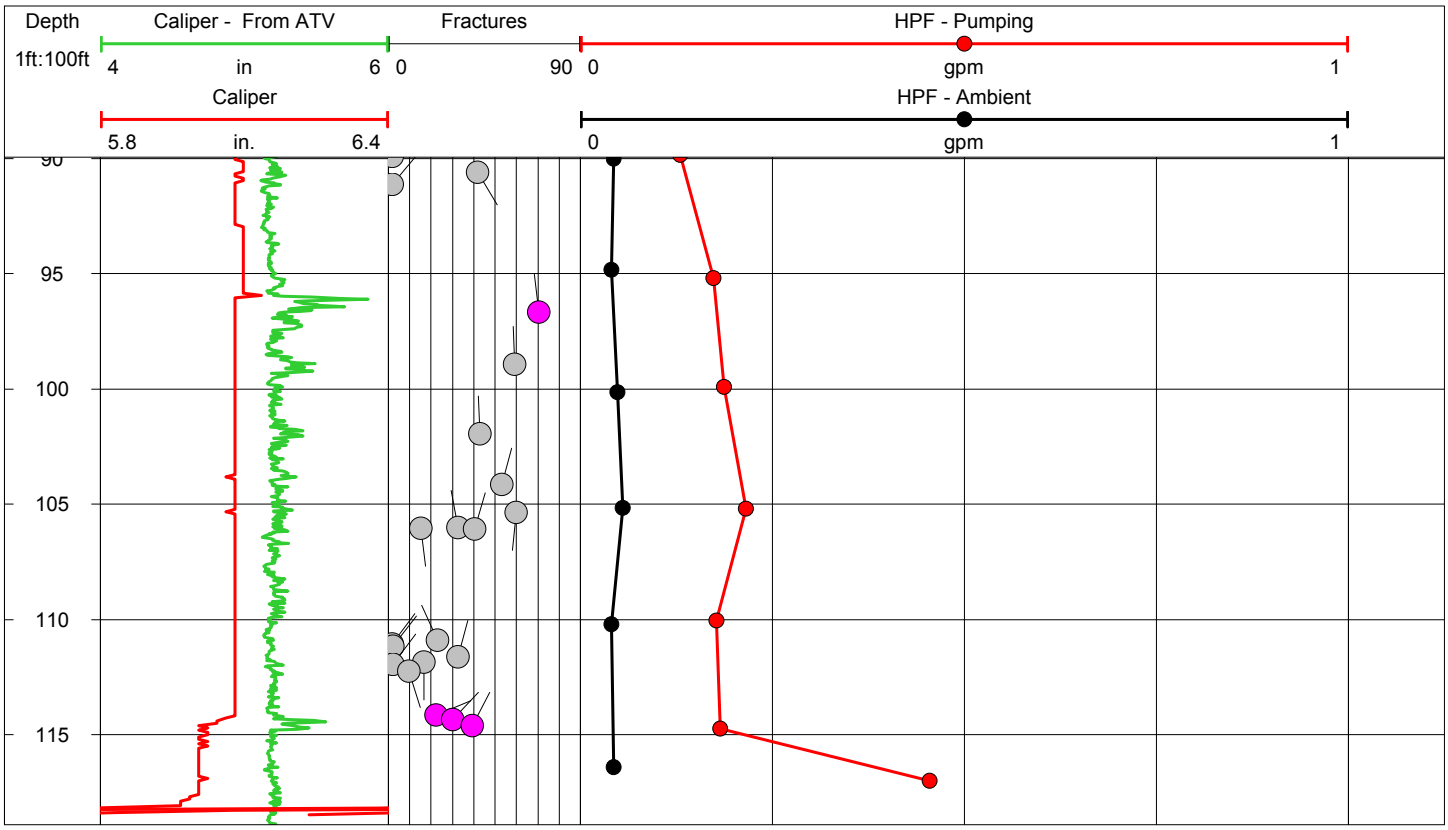
	Counts	Dip[deg]	Strike[deg]
Mean	34	35.32	305.42
	30	34.51	303.68
	2	42.95	327.96
	2	46.94	262.87

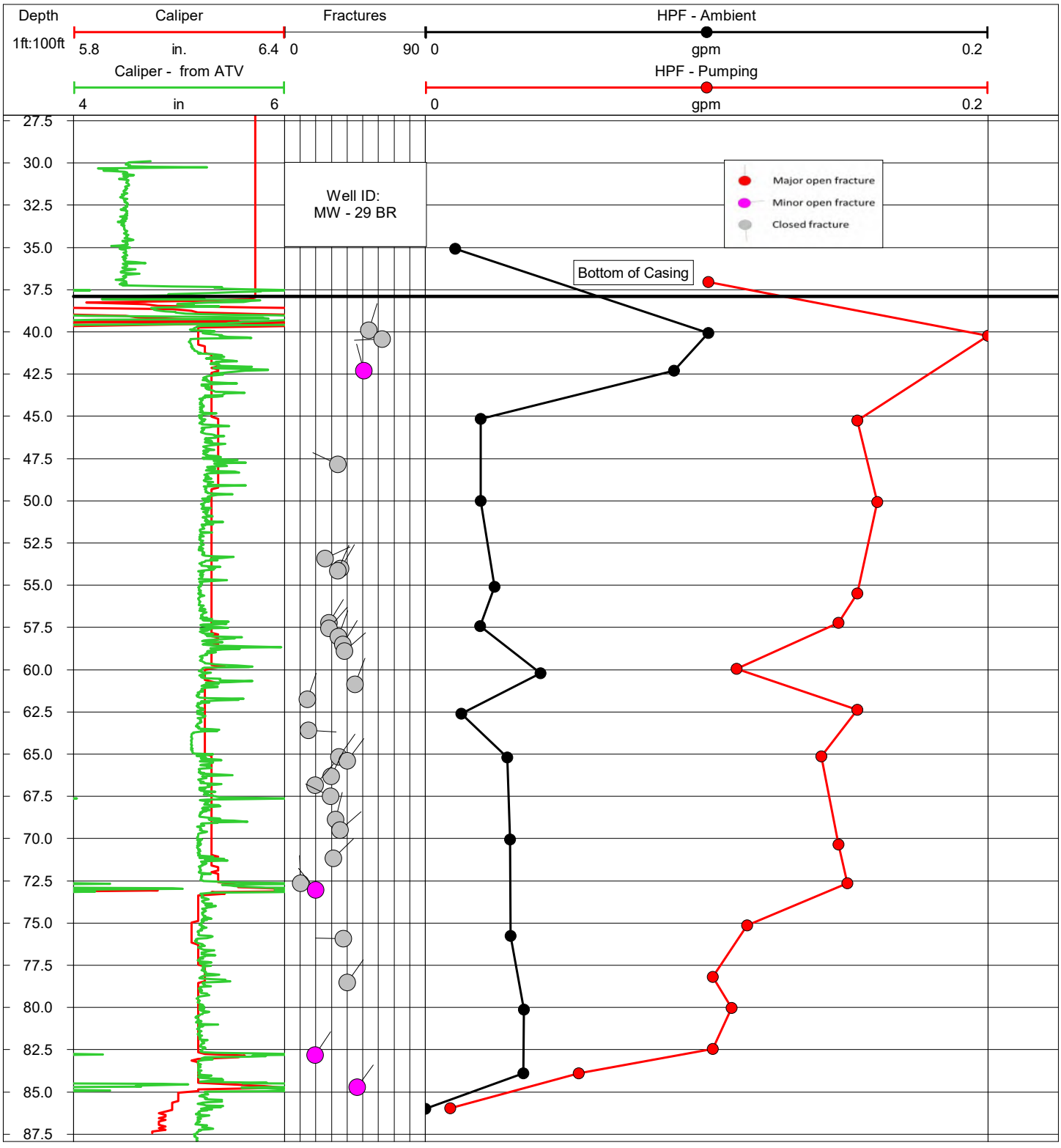

Depth
1ft:200ft
Fractures
0
90
Poles - Dip - Lower Hemisphere
Schmidt Plot - LH - Type
Great Circles - Strike - Lower Hemisphere
Schmidt Plot (Strike) - LH - Type
All Fractures
Major open fracture
Minor open fracture
Closed fracture
Schmidt Plot - LH - Type
Depth: 20.80 [ft] to 121.00 [ft]
Schmidt Plot (Strike) - LH - Type
Depth: 20.93 [ft] to 120.47 [ft]
Counts Dip[deg] Azi[deg]
Mean 341 22.32 28.54
10 35.14 28.19
285 21.59 29.65
46 24.51 21.59
Counts Dip[deg] Strike[deg]
Mean 341 22.32 298.54
10 35.14 298.19
285 21.59 299.65
46 24.51 291.59

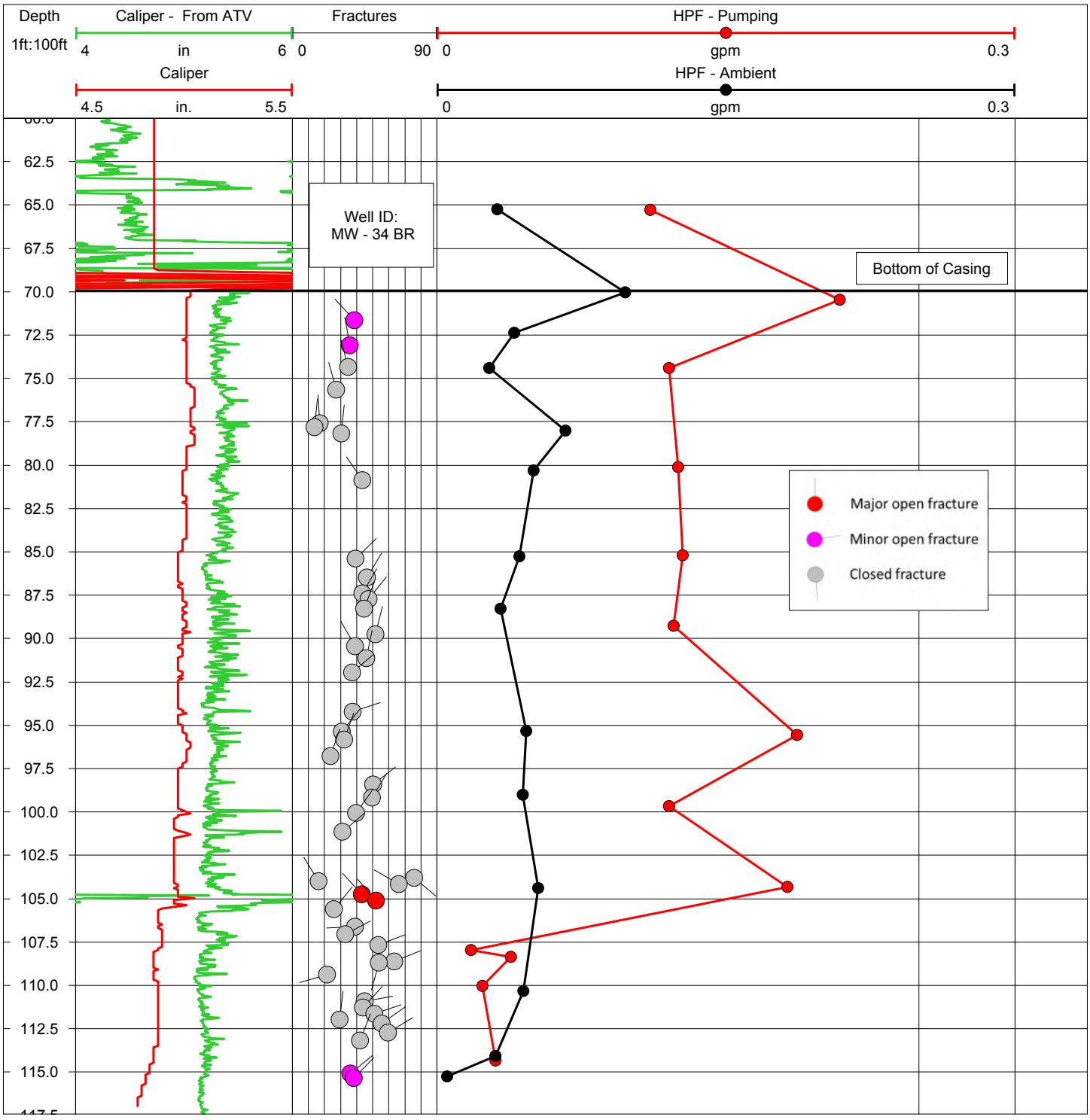
Appendix 3

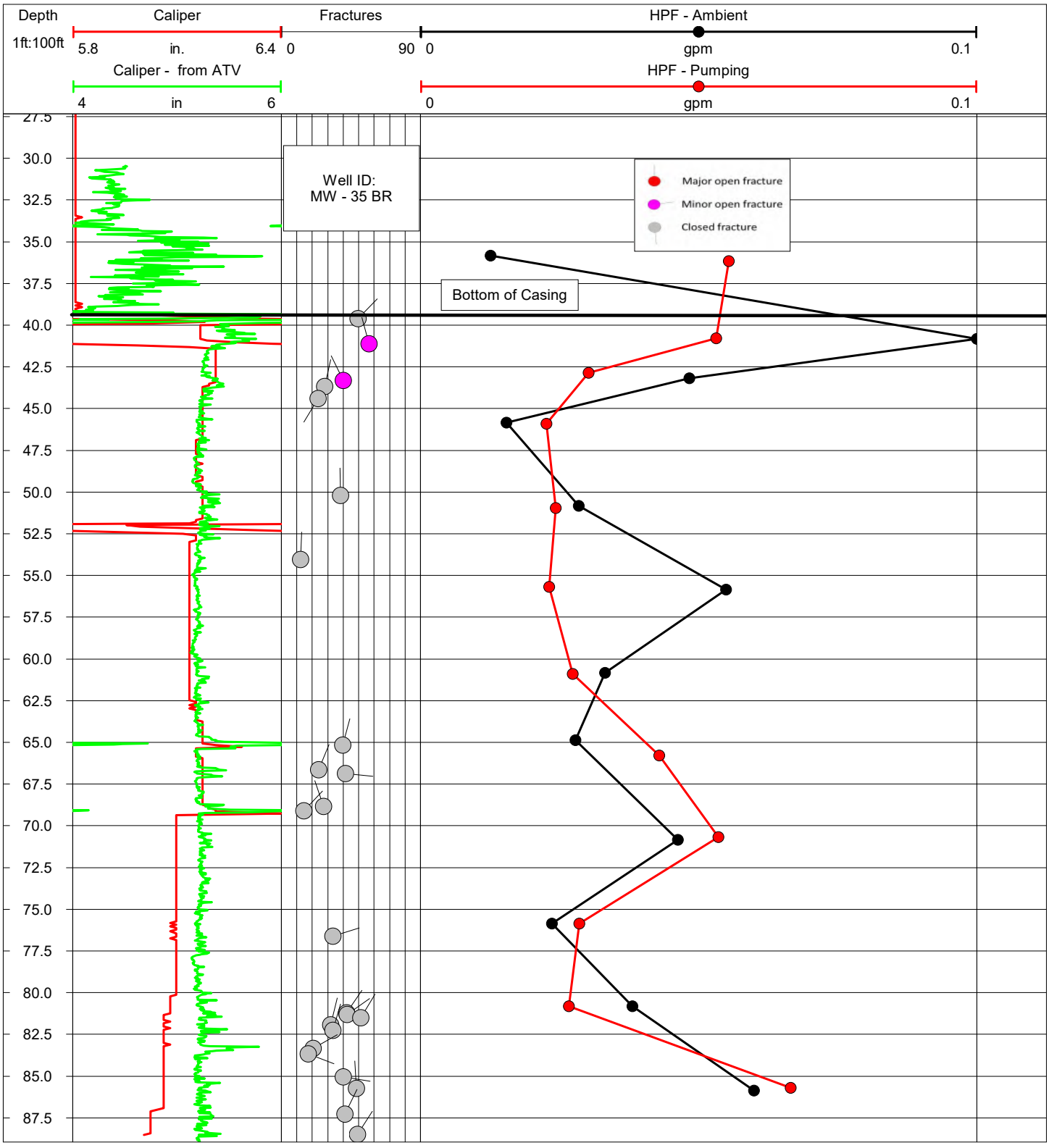

Depth
1ft:50ft
Caliper - from ATV
4
in
7
Caliper
5.8
in.
6.4
Fractures
0
90
HPF - Pumping
0
gpm
1
HPF - Ambient
0
gpm
1
WELL ID:
MW - 02 BR
Top of Casing
Major open fracture
Minor open fracture
Closed fracture
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70

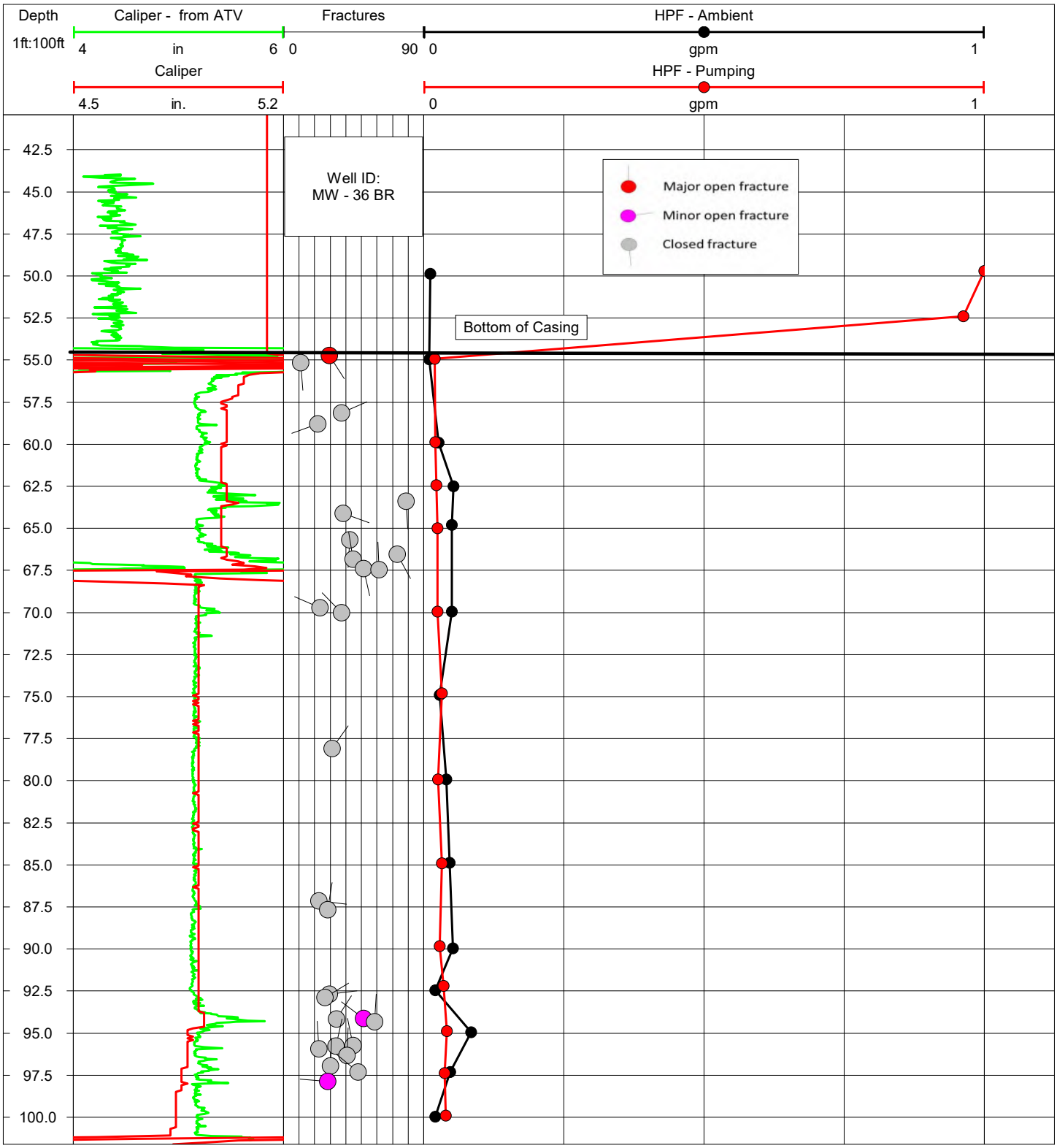

Depth
1ft:100ft
Caliper - From ATV
4
in
6
Caliper
5.8
in.
6.4
Fractures
0
90
HPF - Pumping
0
gpm
1
HPF - Ambient
0
gpm
1
Well ID:
MW - 21 BR
Bottom of Casing
Major open fracture
Minor open fracture
Closed fracture
20
25
30
35
40
45
50
55
60
65
70
75
80
85

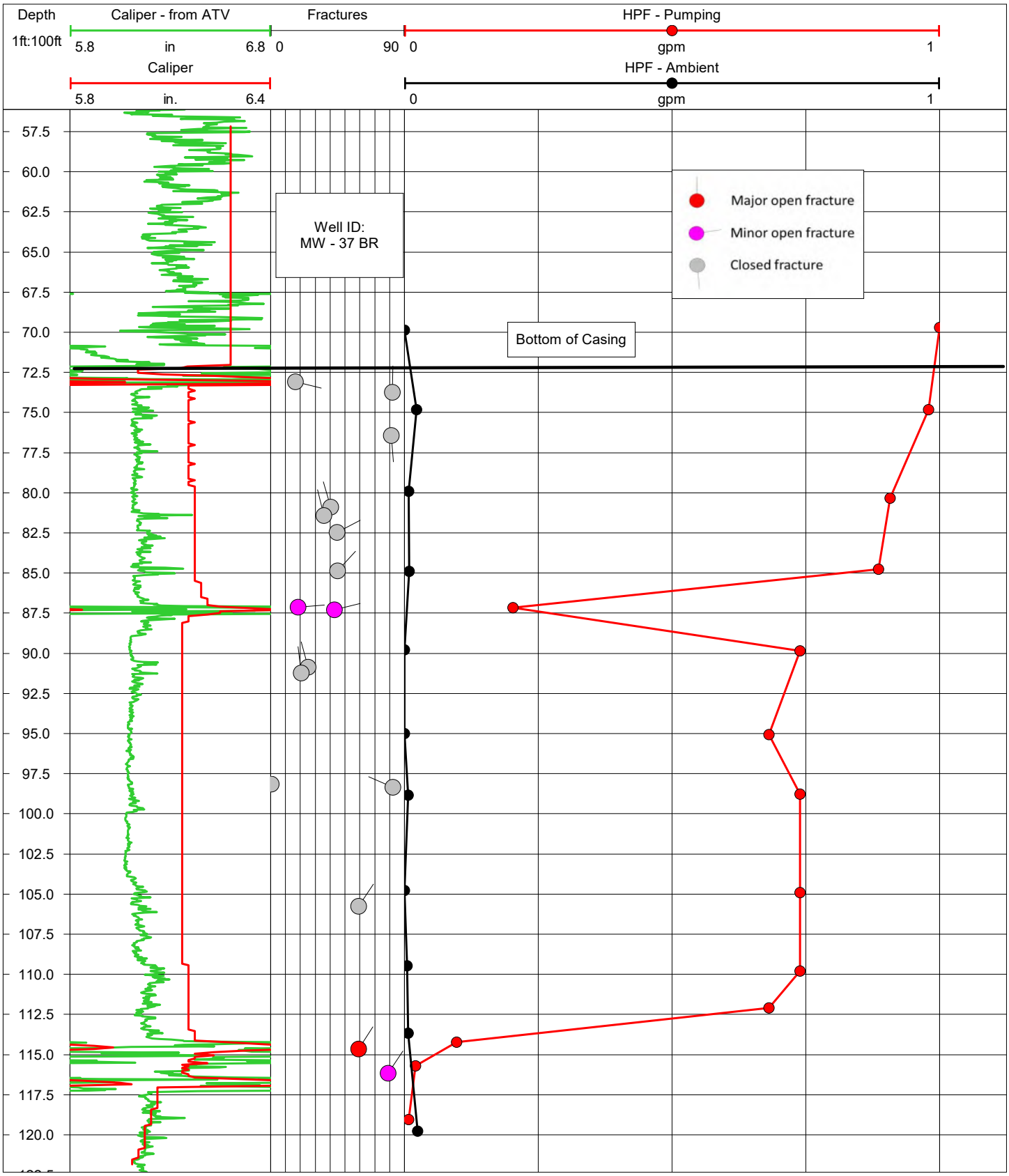

Depth
1ft:100ft
Caliper - From ATV
4
in
6
Fractures
0
90
HPF - Pumping
0
gpm
1
Caliper
5.8
in.
6.4
HPF - Ambient
0
gpm
1
95
100
105
110
115

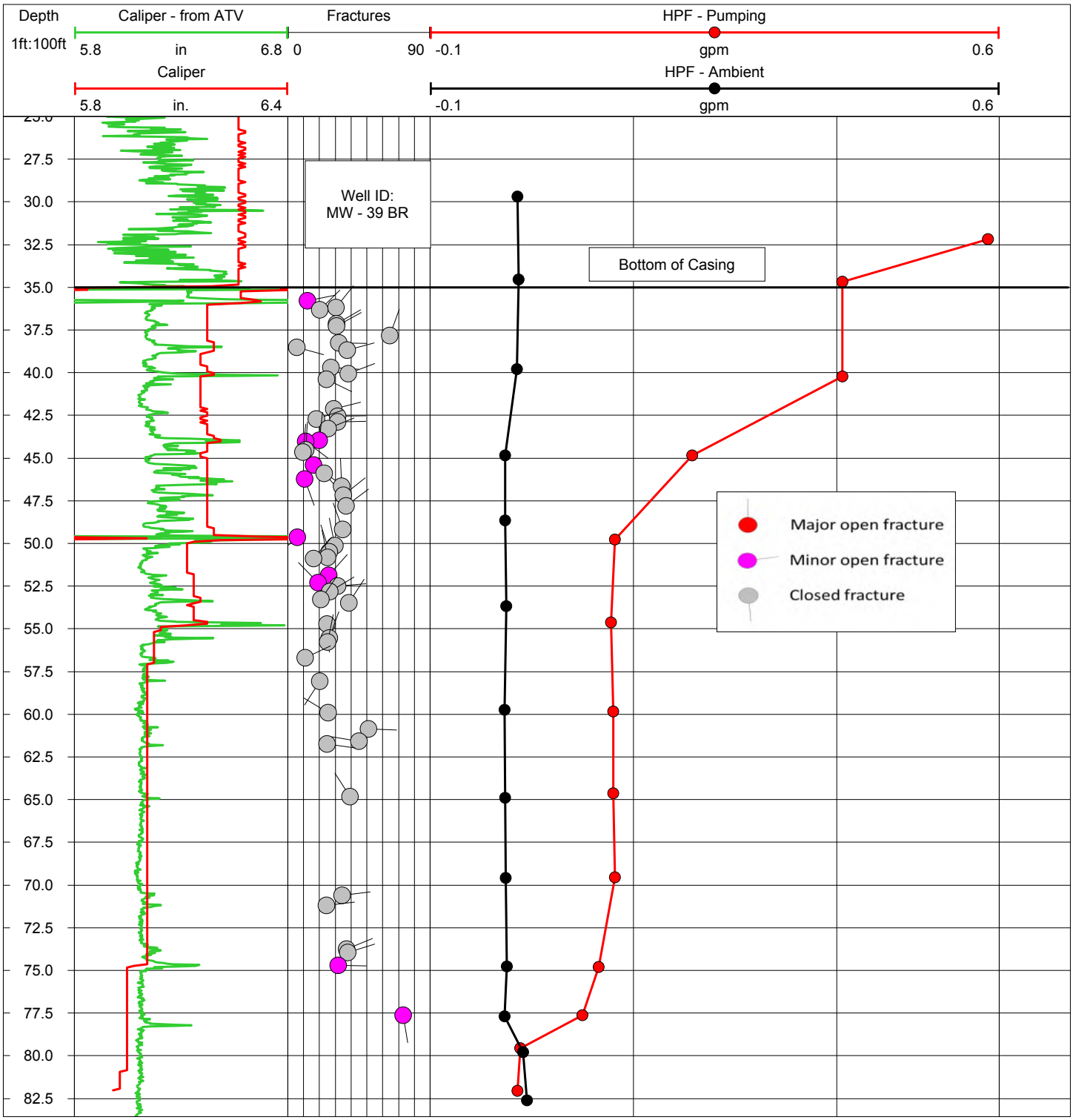

Depth
1ft:100ft
Caliper
5.8
in.
6.4
Caliper - from ATV
4
in
6
Fractures
0
90
HPF - Ambient
0
gpm
0.2
HPF - Pumping
0
gpm
0.2
27.5
30.0
32.5
35.0
37.5
40.0
42.5
45.0
47.5
50.0
52.5
55.0
57.5
60.0
62.5
65.0
67.5
70.0
72.5
75.0
77.5
80.0
82.5
85.0
87.5
Well ID:
MW - 29 BR
Major open fracture
Minor open fracture
Closed fracture
Bottom of Casing

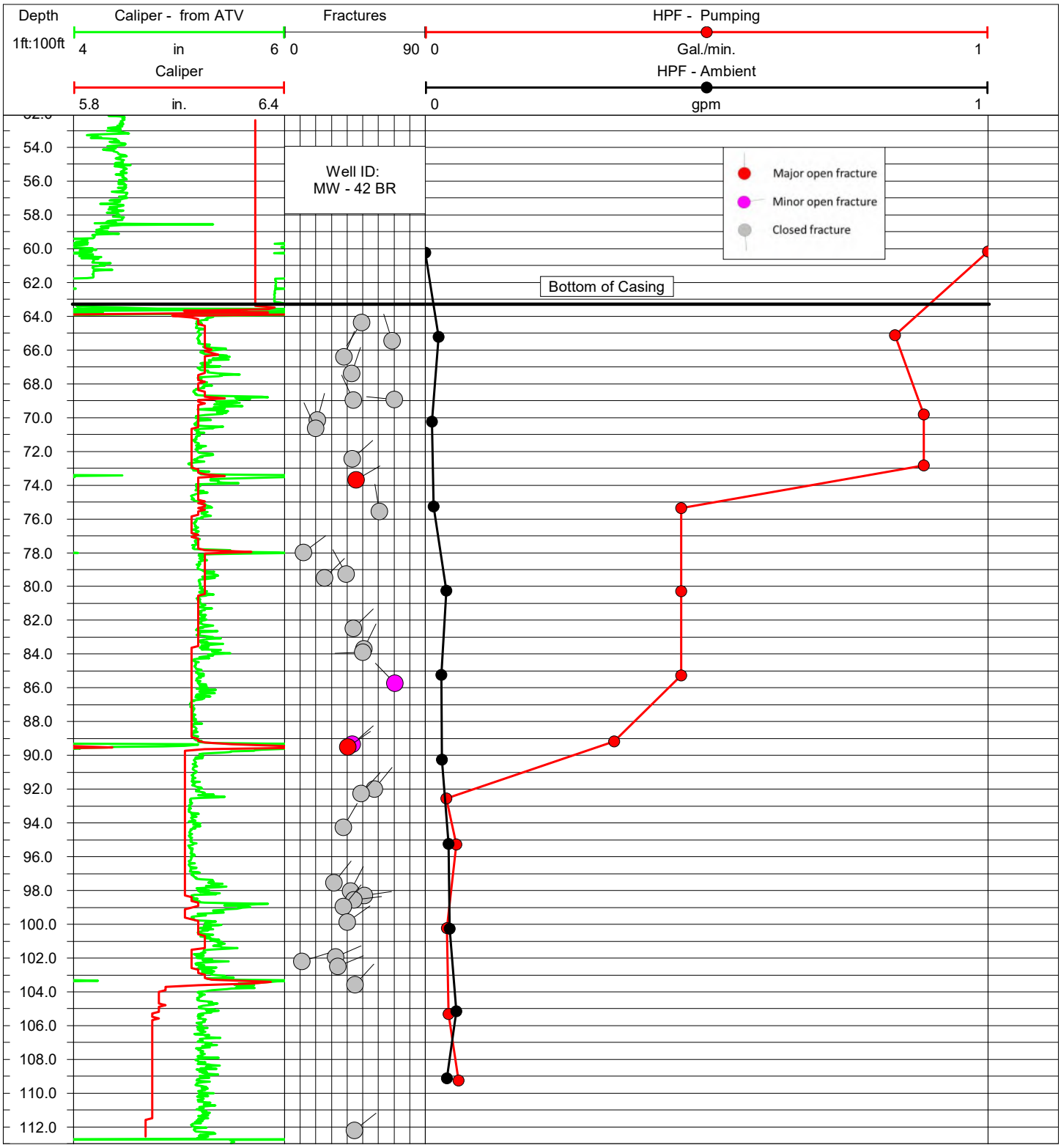

Depth
1ft:100ft
Caliper - From ATV
4
in
6
Caliper
4.5
in.
5.5
Fractures
0
90
HPF - Pumping
0
gpm
0.3
HPF - Ambient
0
gpm
0.3
Well ID:
MW - 34 BR
Bottom of Casing
Major open fracture
Minor open fracture
Closed fracture
62.5
65.0
67.5
70.0
72.5
75.0
77.5
80.0
82.5
85.0
87.5
90.0
92.5
95.0
97.5
100.0
102.5
105.0
107.5
110.0
112.5
115.0


Depth
1ft:100ft
Caliper
5.8
in.
6.4
Caliper - from ATV
4
in
6
Fractures
0
90
HPF - Ambient
0
gpm
0.1
HPF - Pumping
0
gpm
0.1
Well ID:
MW - 35 BR
Major open fracture
Minor open fracture
Closed fracture
Bottom of Casing
27.5
30.0
32.5
35.0
37.5
40.0
42.5
45.0
47.5
50.0
52.5
55.0
57.5
60.0
62.5
65.0
67.5
70.0
72.5
75.0
77.5
80.0
82.5
85.0
87.5

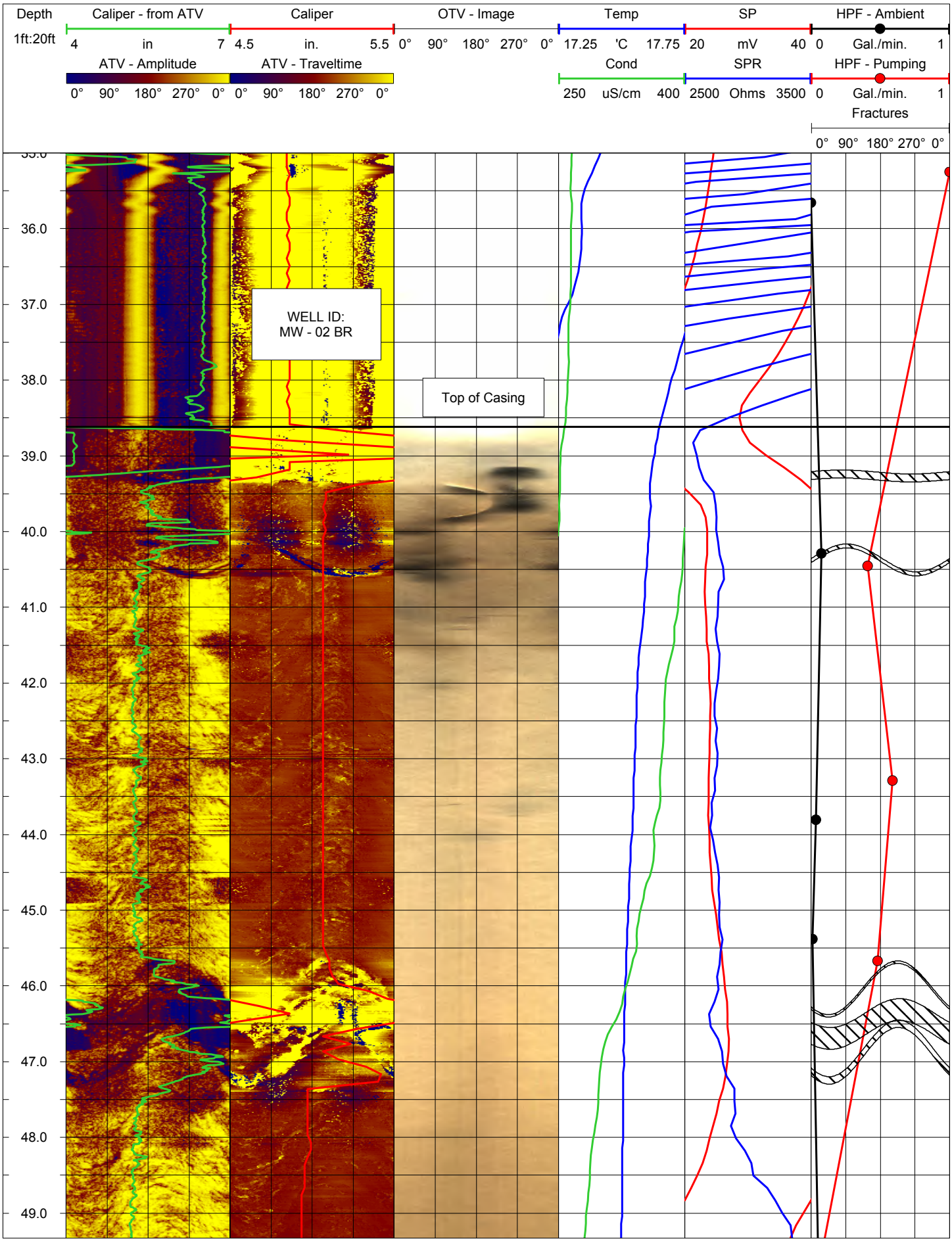

Depth
1ft:100ft
Caliper - from ATV
4
in
6
Caliper
4.5
in.
5.2
Fractures
0
90
HPF - Ambient
0
gpm
1
HPF - Pumping
0
gpm
1
Well ID:
MW - 36 BR
Major open fracture
Minor open fracture
Closed fracture
Bottom of Casing
42.5
45.0
47.5
50.0
52.5
55.0
57.5
60.0
62.5
65.0
67.5
70.0
72.5
75.0
77.5
80.0
82.5
85.0
87.5
90.0
92.5
95.0
97.5
100.0

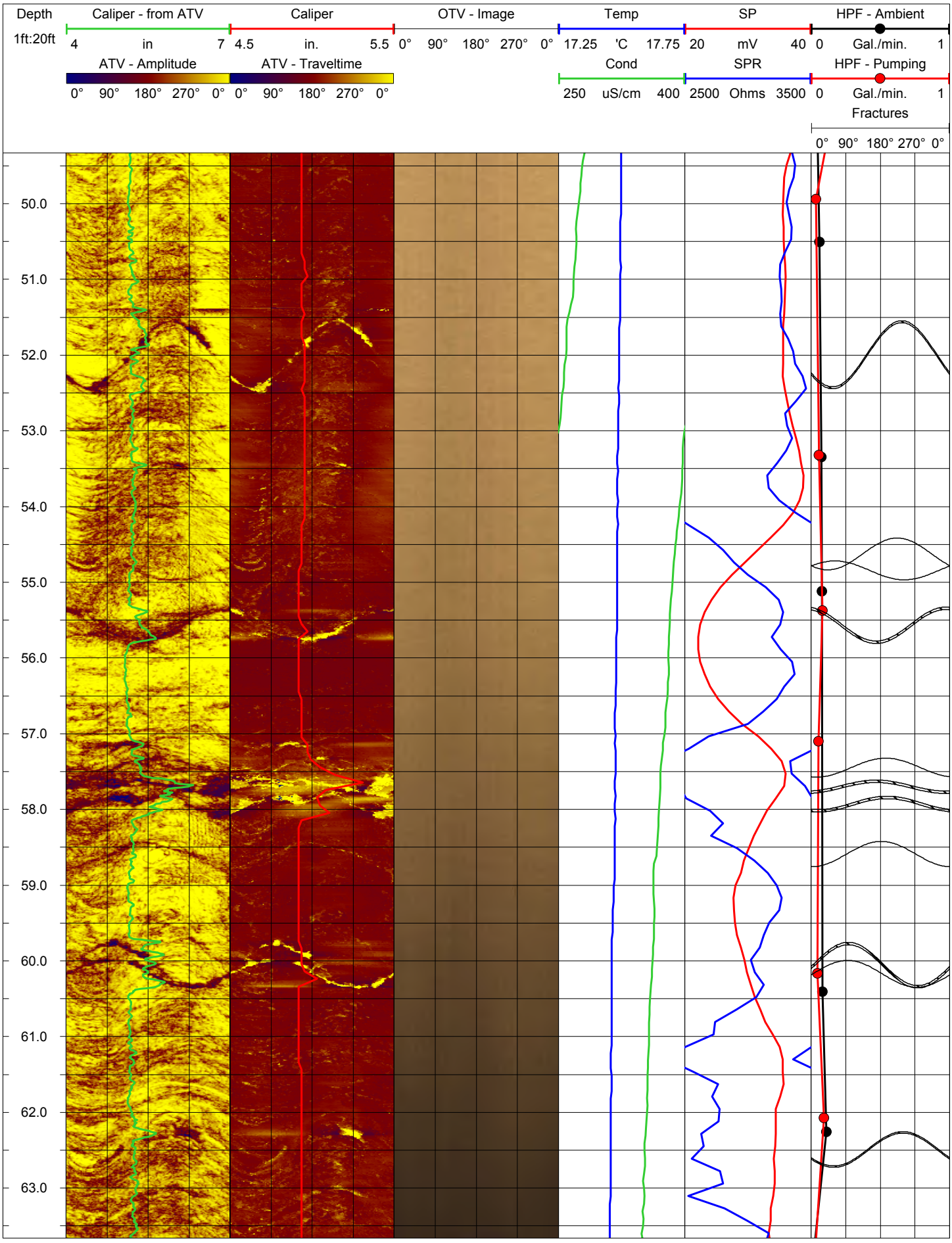

Depth
1ft:100ft
Caliper - from ATV
5.8
in
6.8
Caliper
5.8
in.
6.4
Fractures
0
90
HPF - Pumping
0
gpm
1
HPF - Ambient
0
gpm
1
57.5
60.0
62.5
65.0
67.5
70.0
72.5
75.0
77.5
80.0
82.5
85.0
87.5
90.0
92.5
95.0
97.5
100.0
102.5
105.0
107.5
110.0
112.5
115.0
117.5
120.0
Well ID:
MW - 37 BR
Bottom of Casing
Major open fracture
Minor open fracture
Closed fracture

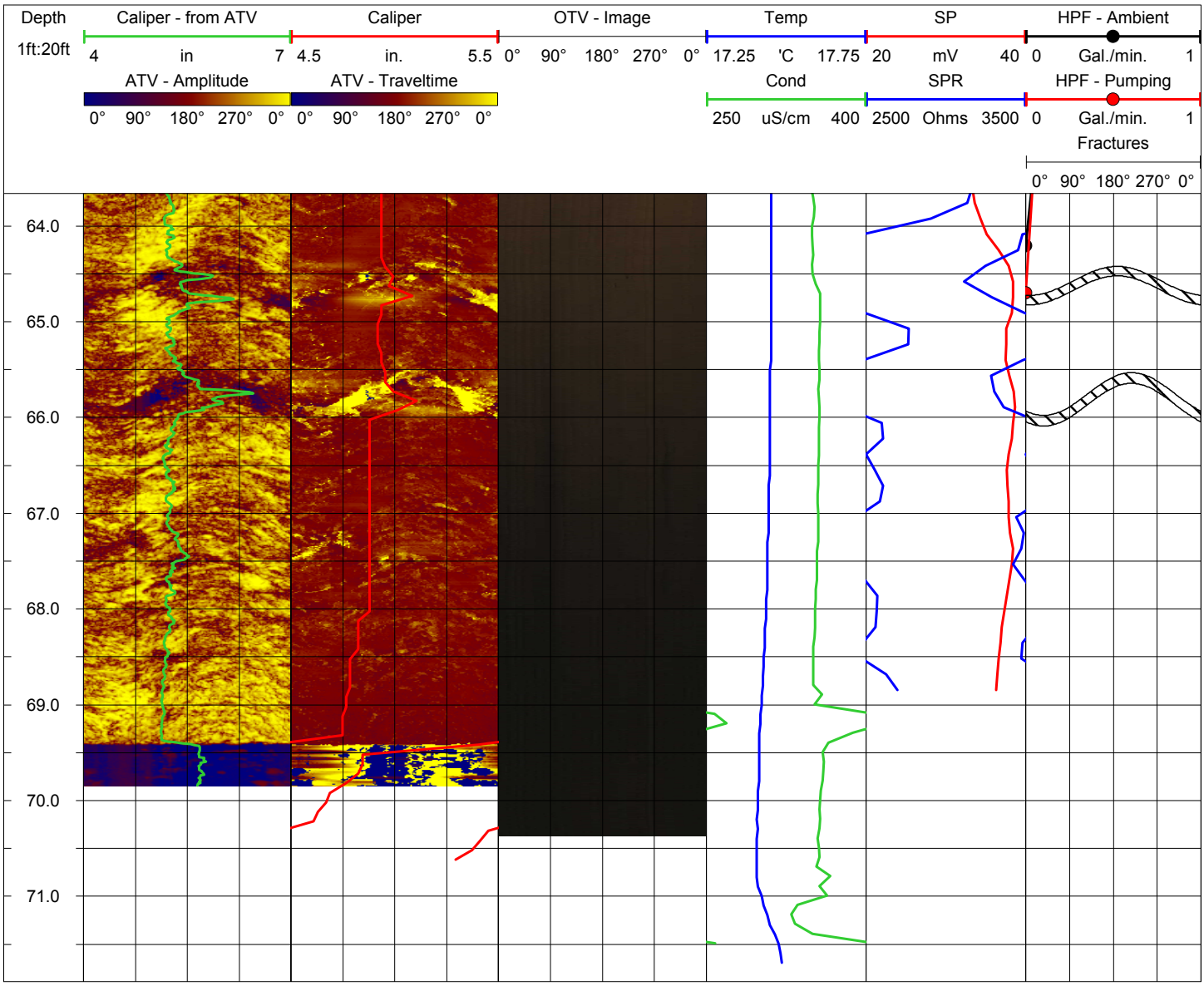

Depth
1ft:100ft
Caliper - from ATV
5.8
in
6.8
Fractures
0
90
HPF - Pumping
-0.1
gpm
0.6
Caliper
5.8
in.
6.4
HPF - Ambient
-0.1
gpm
0.6
Well ID:
MW - 39 BR
Bottom of Casing
Major open fracture
Minor open fracture
Closed fracture
27.5
30.0
32.5
35.0
37.5
40.0
42.5
45.0
47.5
50.0
52.5
55.0
57.5
60.0
62.5
65.0
67.5
70.0
72.5
75.0
77.5
80.0
82.5

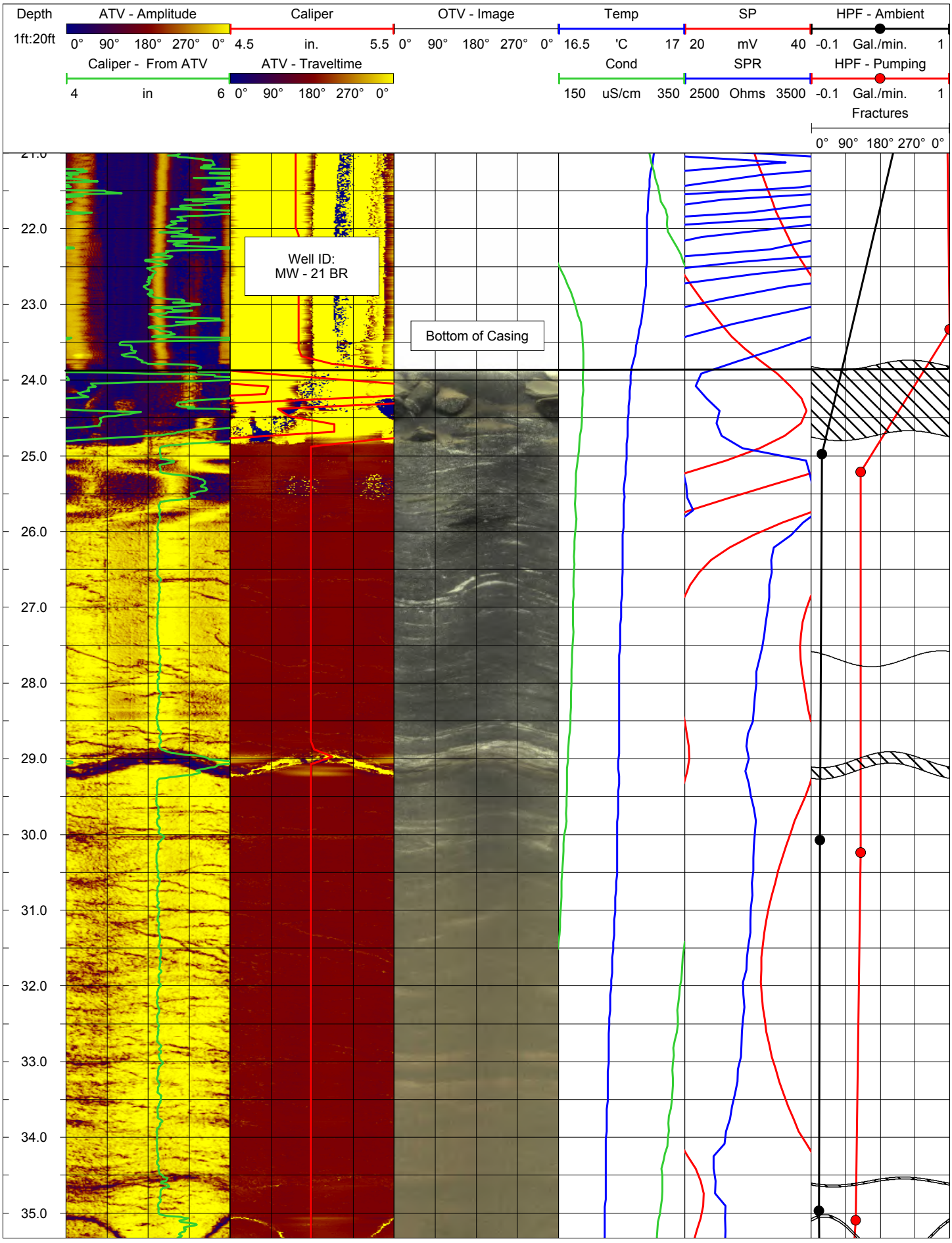

Depth
1ft:100ft
Caliper - from ATV
4
in
6
Caliper
5.8
in.
6.4
Fractures
0
90
HPF - Pumping
0
Gal./min.
1
HPF - Ambient
0
gpm
1
Well ID:
MW - 42 BR
Major open fracture
Minor open fracture
Closed fracture
Bottom of Casing
54.0
56.0
58.0
60.0
62.0
64.0
66.0
68.0
70.0
72.0
74.0
76.0
78.0
80.0
82.0
84.0
86.0
88.0
90.0
92.0
94.0
96.0
98.0
100.0
102.0
104.0
106.0
108.0
110.0
112.0

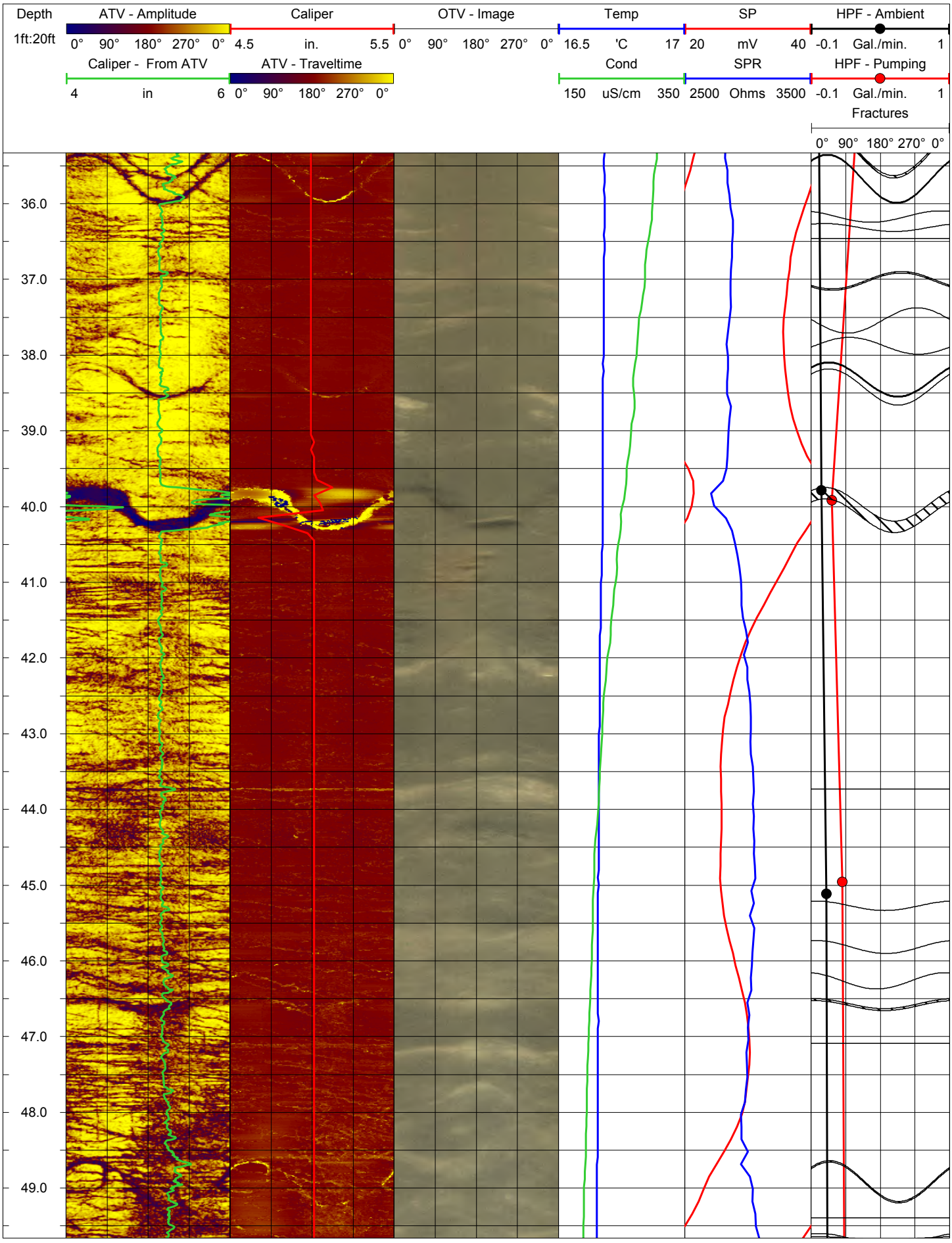
Appendix 4

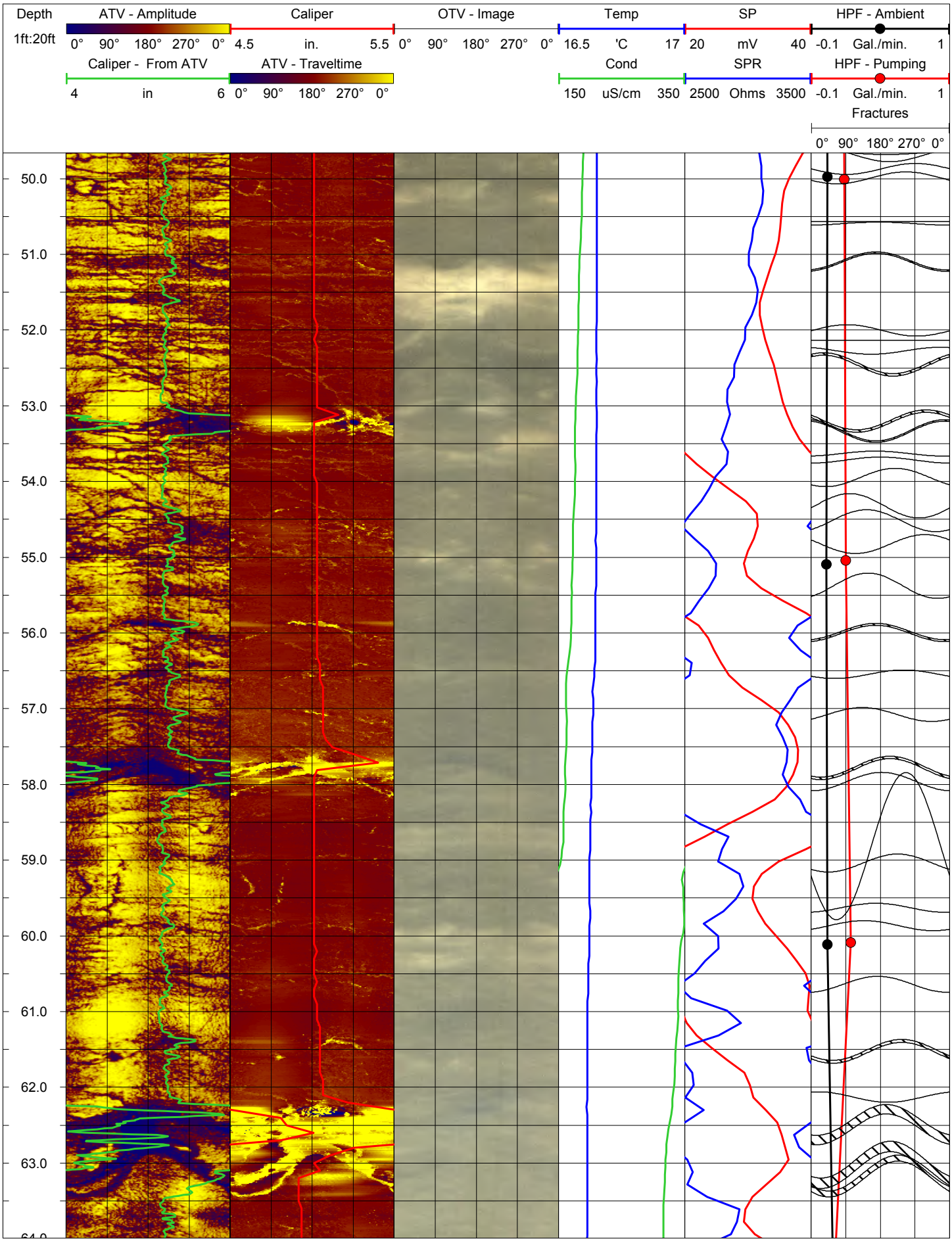

Depth
1ft:20ft
Caliper - from ATV
4 in 7
Caliper
4.5 in. 5.5
OTV - Image
0° 90° 180° 270° 0°
Temp
17.25 'C 17.75
SP
20 mV 40
HPF - Ambient
0 Gal./min. 1
ATV - Amplitude
0° 90° 180° 270° 0°
ATV - Traveltime
0° 90° 180° 270° 0°
Cond
250 uS/cm 400
SPR
2500 Ohms 3500
HPF - Pumping
0 Gal./min. 1
Fractures
0° 90° 180° 270° 0°
WELL ID:
MW - 02 BR
Top of Casing
36.0
37.0
38.0
39.0
40.0
41.0
42.0
43.0
44.0
45.0
46.0
47.0
48.0
49.0

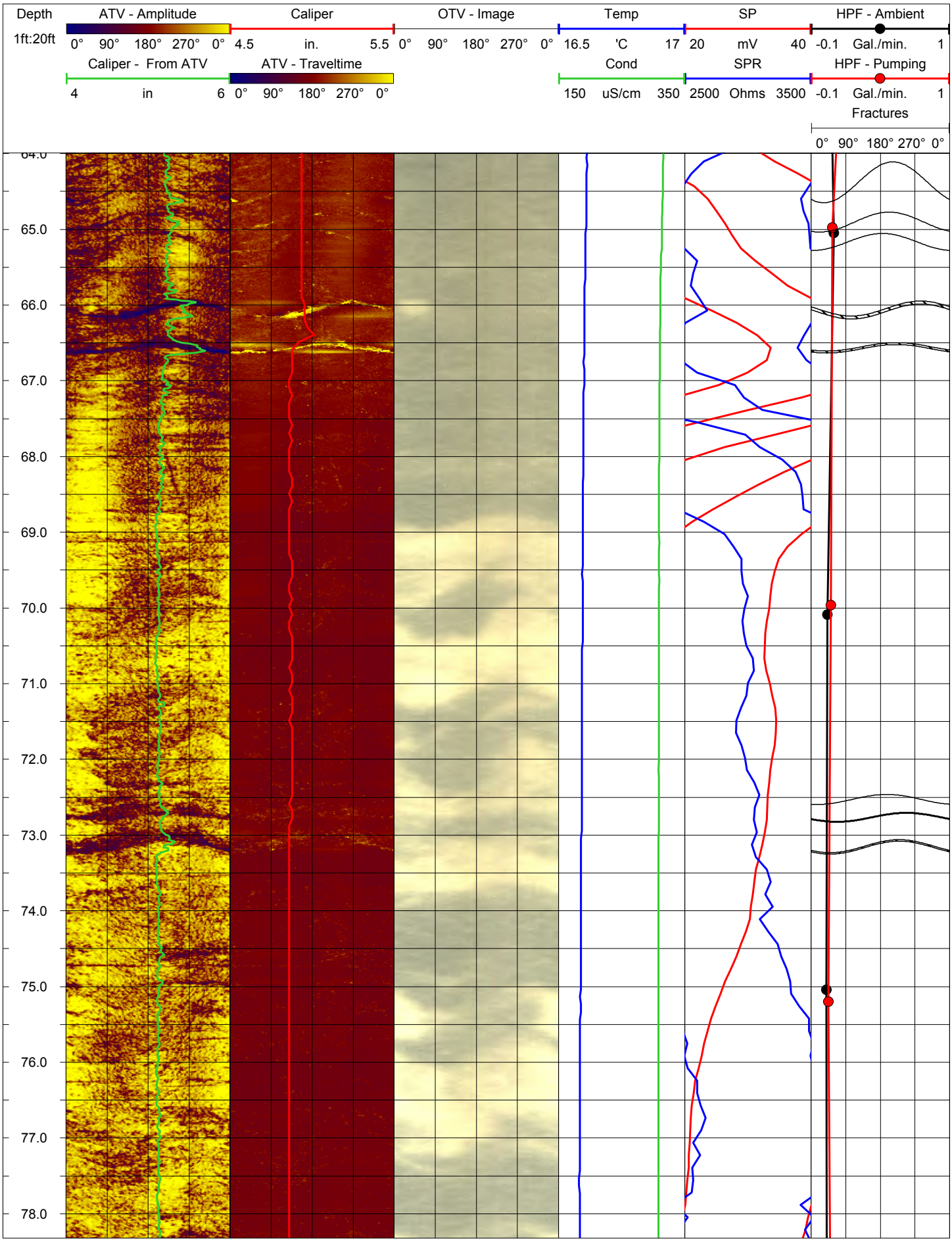

Depth
1ft:20ft
Caliper - from ATV
4 in 7
Caliper
4.5 in. 5.5
OTV - Image
0° 90° 180° 270° 0°
Temp
17.25 'C 17.75
SP
20 mV 40
HPF - Ambient
0 Gal./min. 1
ATV - Amplitude
0° 90° 180° 270° 0°
ATV - Traveltime
0° 90° 180° 270° 0°
Cond
250 uS/cm 400
SPR
2500 Ohms 3500
HPF - Pumping
0 Gal./min. 1
Fractures
0° 90° 180° 270° 0°
50.0
51.0
52.0
53.0
54.0
55.0
56.0
57.0
58.0
59.0
60.0
61.0
62.0
63.0


Depth
1ft:20ft
Caliper - from ATV
4
in
7
Caliper
4.5
in.
5.5
OTV - Image
0° 90° 180° 270° 0°
Temp
17.25
'C
17.75
SP
20
mV
40
HPF - Ambient
0
Gal./min.
1
ATV - Amplitude
0° 90° 180° 270° 0°
ATV - Traveltime
0° 90° 180° 270° 0°
Cond
250
uS/cm
400
SPR
2500
Ohms
3500
HPF - Pumping
0
Gal./min.
1
Fractures
0° 90° 180° 270° 0°
64.0
65.0
66.0
67.0
68.0
69.0
70.0
71.0


Depth
1ft:20ft
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper
4.5 in. 5.5
OTV - Image
0° 90° 180° 270° 0°
Temp
16.5 'C 17
SP
20 mV 40
HPF - Ambient
-0.1 Gal./min. 1
Caliper - From ATV
4 in 6
ATV - Traveltime
0° 90° 180° 270° 0°
Cond
150 uS/cm 350
SPR
2500 Ohms 3500
HPF - Pumping
-0.1 Gal./min. 1
Fractures
0° 90° 180° 270° 0°
21.0
22.0
23.0
24.0
25.0
26.0
27.0
28.0
29.0
30.0
31.0
32.0
33.0
34.0
35.0
Well ID:
MW - 21 BR
Bottom of Casing


Depth
1ft:20ft
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper
4.5 in. 5.5
OTV - Image
0° 90° 180° 270° 0°
Temp
16.5 'C 17
SP
20 mV 40
HPF - Ambient
-0.1 Gal./min. 1
Caliper - From ATV
4 in 6
ATV - Traveltime
0° 90° 180° 270° 0°
Cond
150 uS/cm 350
SPR
2500 Ohms 3500
HPF - Pumping
-0.1 Gal./min. 1
Fractures
0° 90° 180° 270° 0°
36.0
37.0
38.0
39.0
40.0
41.0
42.0
43.0
44.0
45.0
46.0
47.0
48.0
49.0


Depth
1ft:20ft
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper
4.5 in. 5.5
OTV - Image
0° 90° 180° 270° 0°
Temp
16.5 'C 17
SP
20 mV 40
HPF - Ambient
-0.1 Gal./min. 1
Caliper - From ATV
4 in 6
ATV - Traveltime
0° 90° 180° 270° 0°
Cond
150 uS/cm 350
SPR
2500 Ohms 3500
HPF - Pumping
-0.1 Gal./min. 1
Fractures
0° 90° 180° 270° 0°
50.0
51.0
52.0
53.0
54.0
55.0
56.0
57.0
58.0
59.0
60.0
61.0
62.0
63.0


Depth
1ft:20ft
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper
4.5 in. 5.5
OTV - Image
0° 90° 180° 270° 0°
Temp
16.5 'C 17
SP
20 mV 40
HPF - Ambient
-0.1 Gal./min. 1
Caliper - From ATV
4 in 6
ATV - Traveltime
0° 90° 180° 270° 0°
Cond
150 uS/cm 350
SPR
2500 Ohms 3500
HPF - Pumping
-0.1 Gal./min. 1
Fractures
0° 90° 180° 270° 0°
65.0
66.0
67.0
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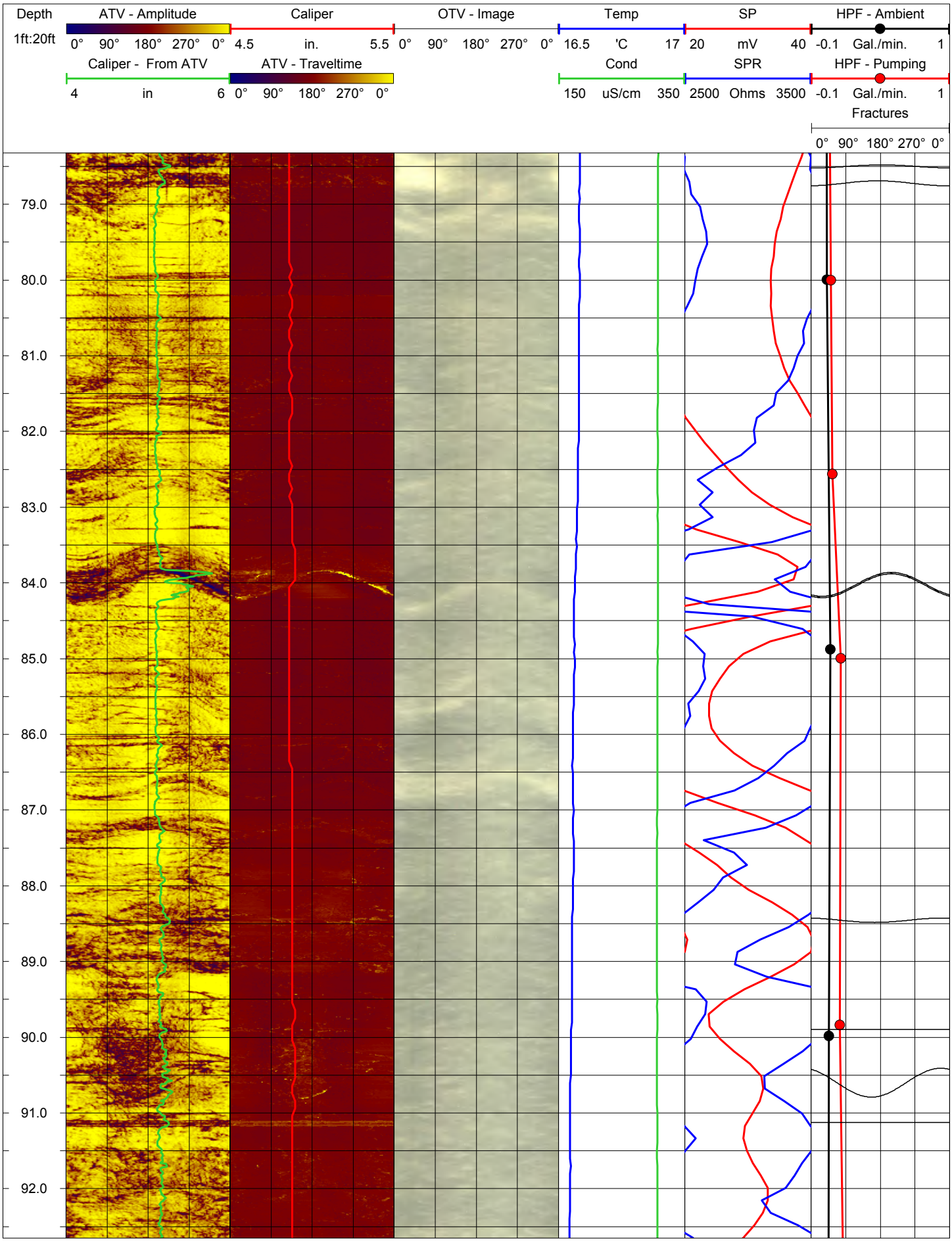
73.0
74.0
75.0
76.0
77.0
78.0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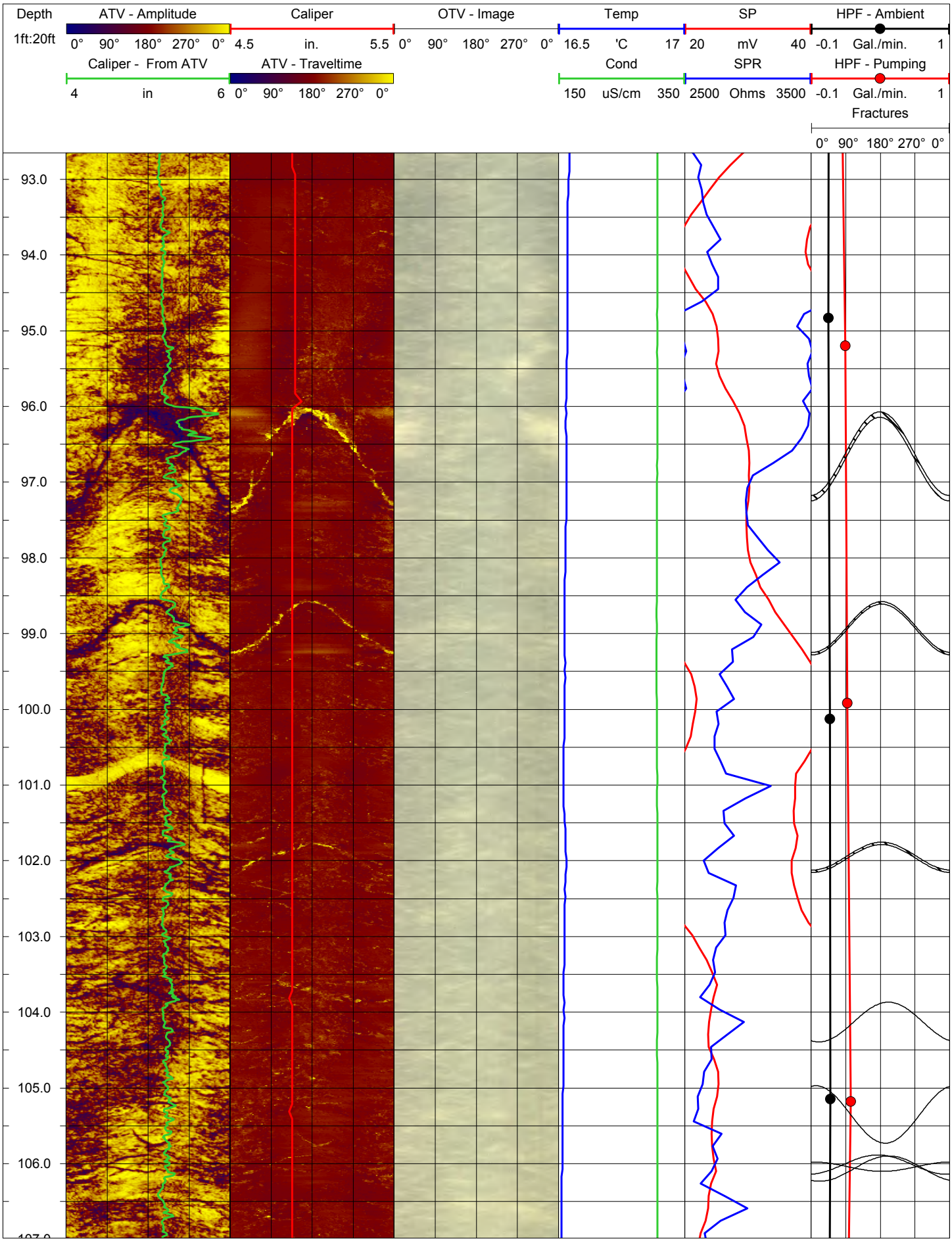
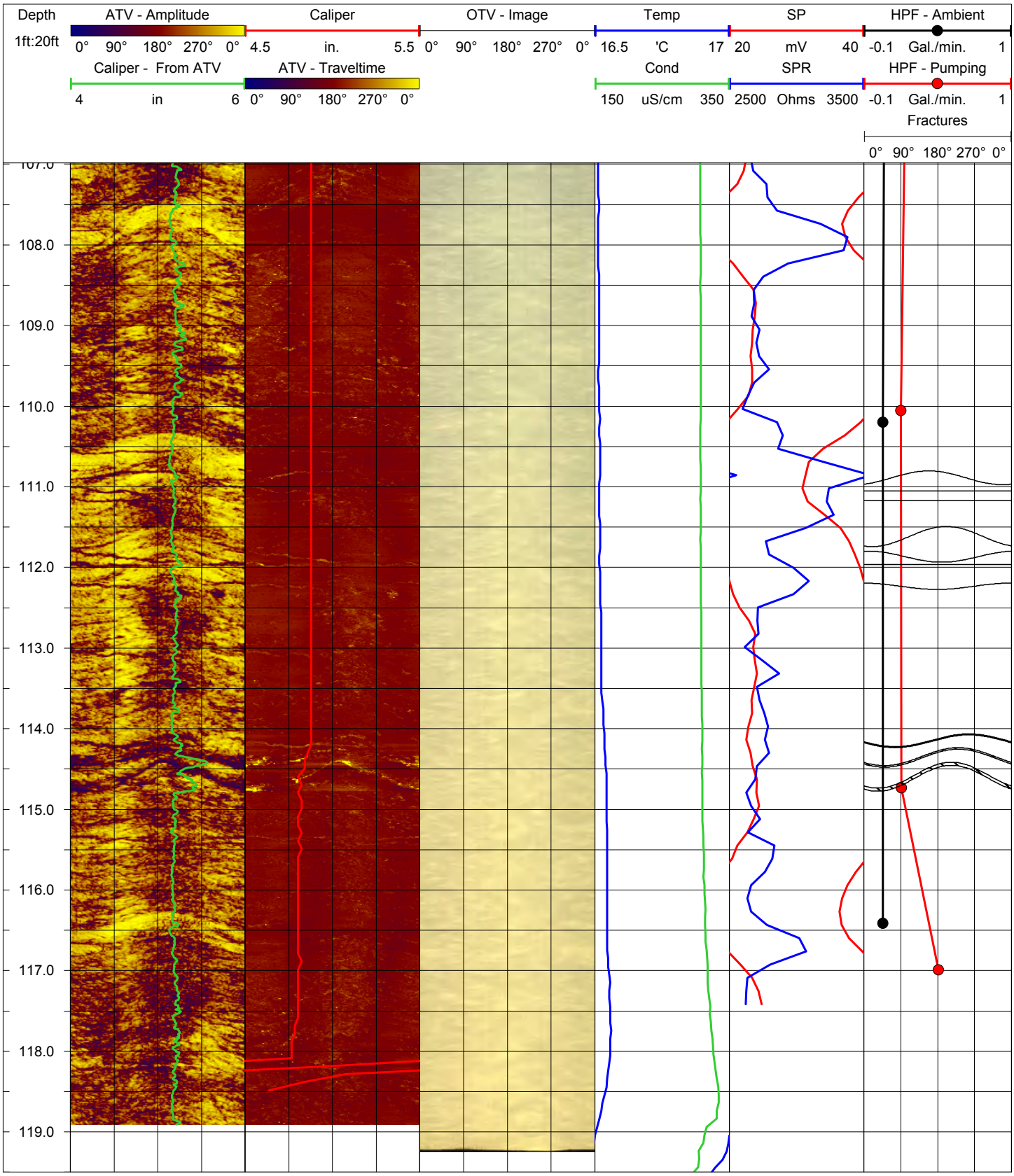
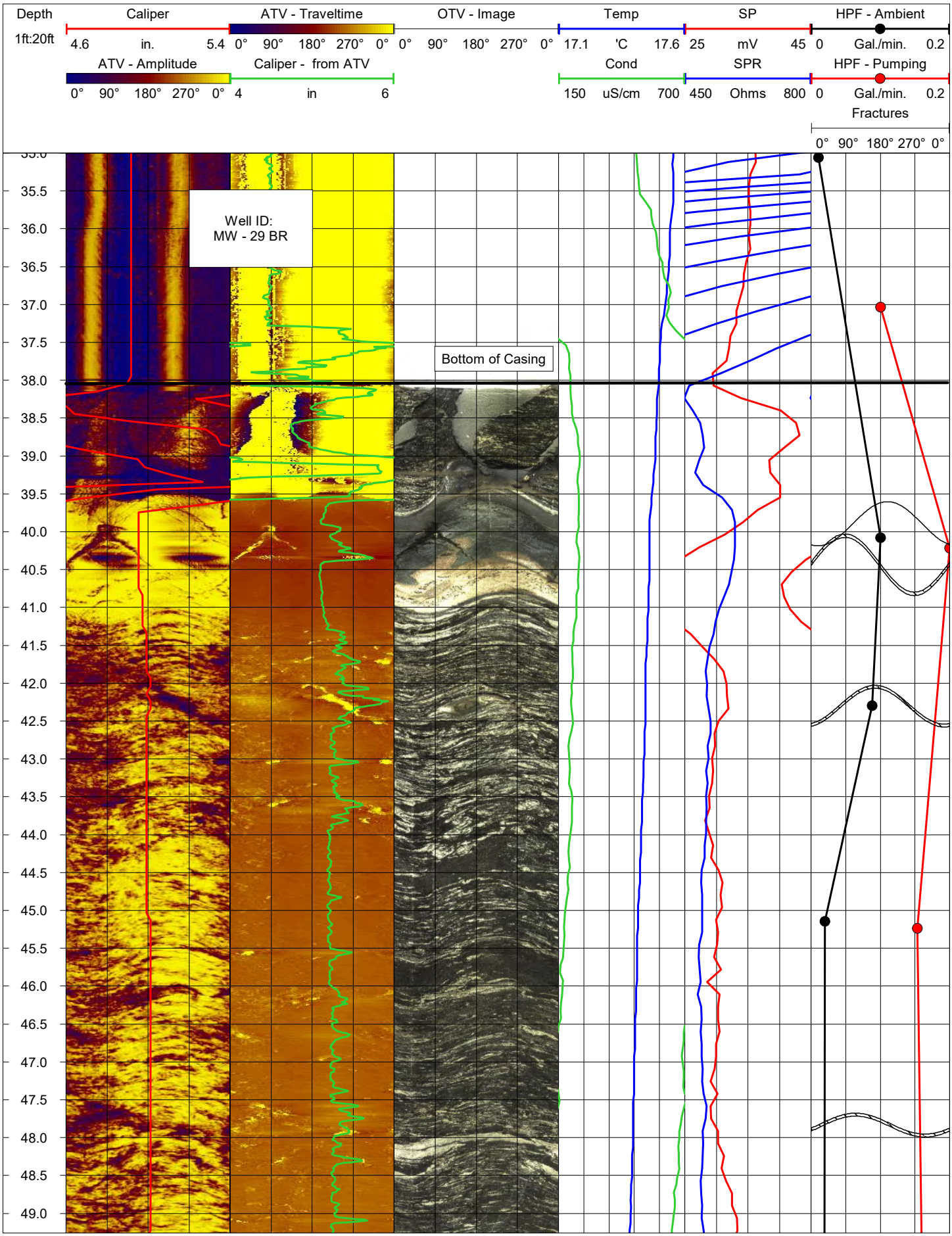
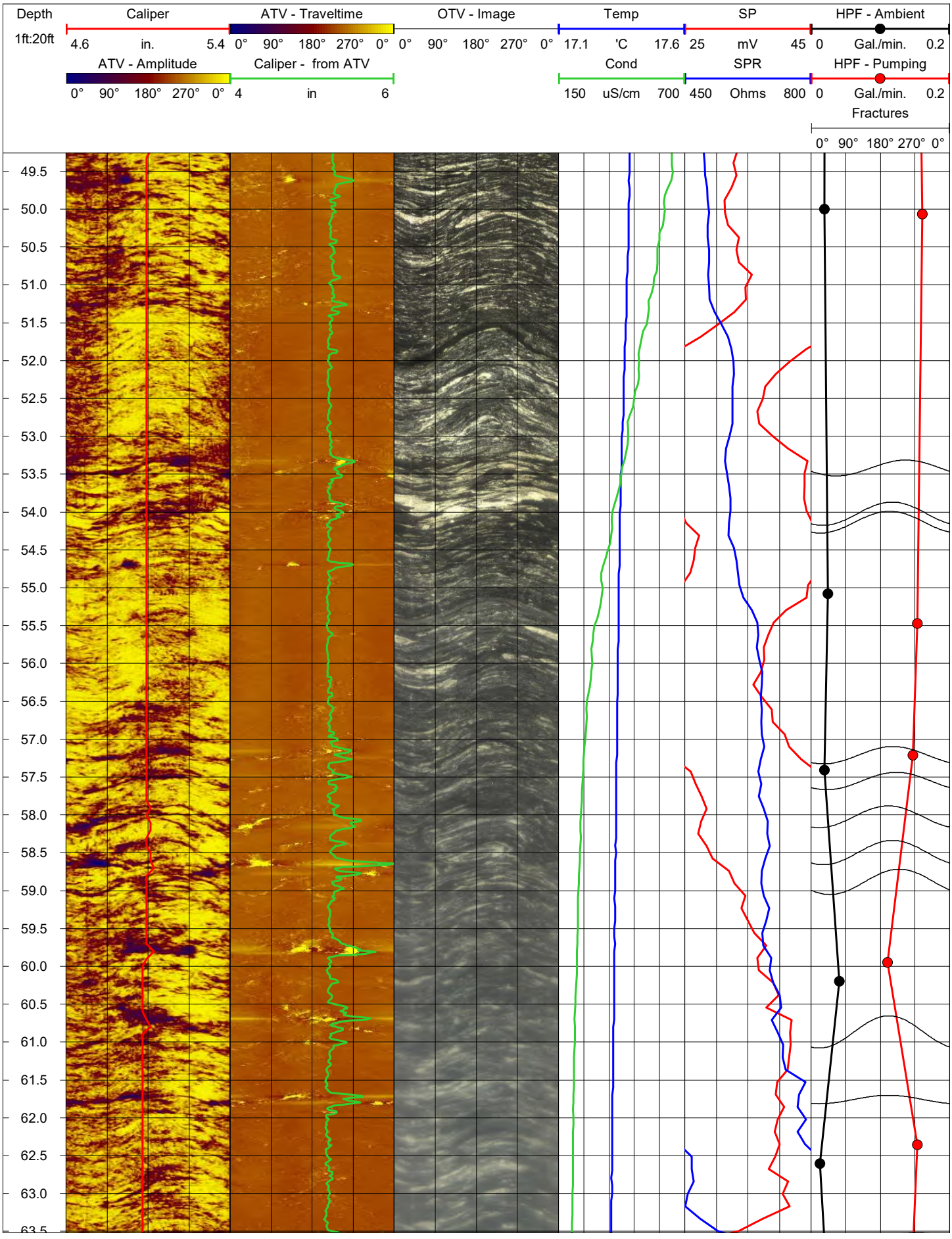
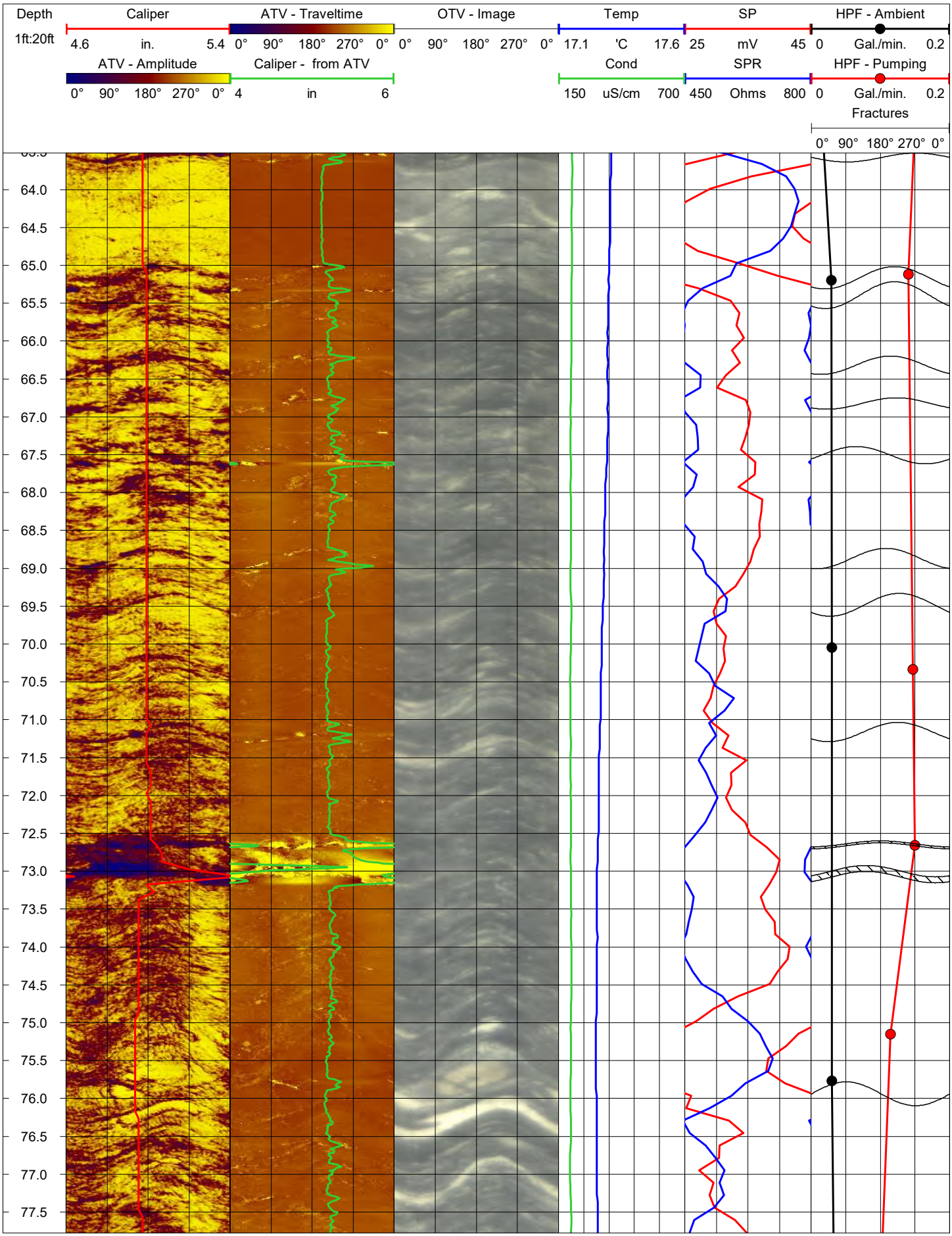
1ft:20ft
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper
4.5 in. 5.5
OTV - Image
0° 90° 180° 270° 0°
Temp
16.5 'C 17
SP
20 mV 40
HPF - Ambient
-0.1 Gal./min. 1
Caliper - From ATV
4 in 6
ATV - Traveltime
0° 90° 180° 270° 0°
Cond
150 uS/cm 350
SPR
2500 Ohms 3500
HPF - Pumping
-0.1 Gal./min. 1
Fractures
0° 90° 180° 270° 0°
79.0
80.0
81.0
82.0
83.0
84.0
85.0
86.0
87.0
88.0
89.0
90.0
91.0
92.0

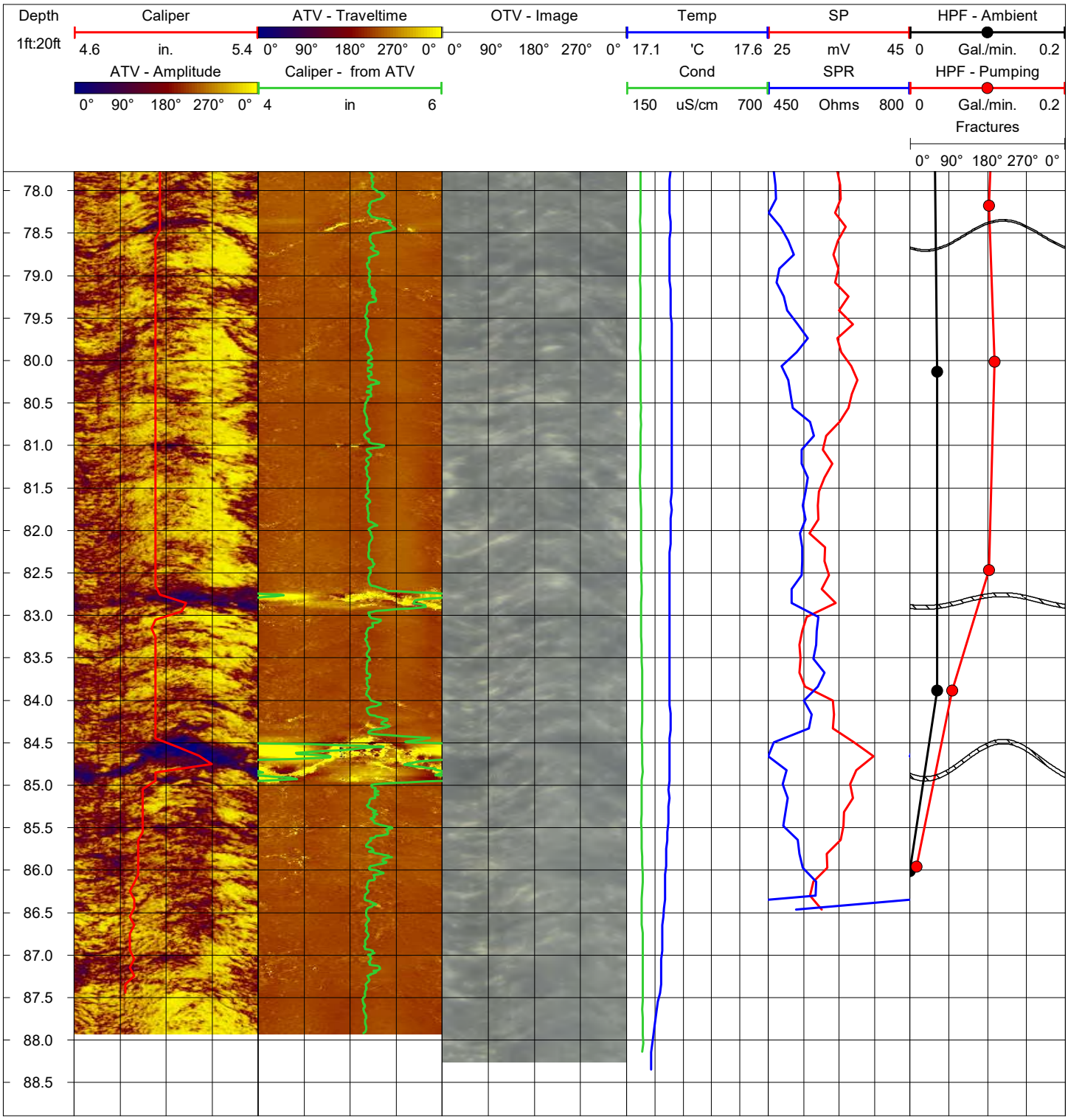

Depth
1ft:20ft
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper
4.5 in. 5.5
OTV - Image
0° 90° 180° 270° 0°
Temp
16.5 'C 17
SP
20 mV 40
HPF - Ambient
-0.1 Gal./min. 1
Caliper - From ATV
4 in 6
ATV - Traveltime
0° 90° 180° 270° 0°
Cond
150 uS/cm 350
SPR
2500 Ohms 3500
HPF - Pumping
-0.1 Gal./min. 1
Fractures
0° 90° 180° 270° 0°
93.0
94.0
95.0
96.0
97.0
98.0
99.0
100.0
101.0
102.0
103.0
104.0
105.0
106.0


Depth
1ft:20ft
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper
4.5 in. 5.5
OTV - Image
0° 90° 180° 270° 0°
Temp
16.5 'C 17
SP
20 mV 40
HPF - Ambient
-0.1 Gal./min. 1
Caliper - From ATV
4 in 6
ATV - Traveltime
0° 90° 180° 270° 0°
Cond
150 uS/cm 350
SPR
2500 Ohms 3500
HPF - Pumping
-0.1 Gal./min. 1
Fractures
0° 90° 180° 270° 0°
108.0
109.0
110.0
111.0
112.0
113.0
114.0
115.0
116.0
117.0
118.0
119.0


Depth
1ft:20ft
Caliper
4.6 in. 5.4
ATV - Traveltime
0° 90° 180° 270° 0°
OTV - Image
0° 90° 180° 270° 0°
Temp
17.1 'C 17.6
SP
25 mV 45
HPF - Ambient
0 Gal./min. 0.2
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper - from ATV
4 in 6
Cond
150 uS/cm 700
SPR
450 Ohms 800
HPF - Pumping
0 Gal./min. 0.2
Fractures
0° 90° 180° 270° 0°
Well ID:
MW - 29 BR
Bottom of Casing
35.5
36.0
36.5
37.0
37.5
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5
42.0
42.5
43.0
43.5
44.0
44.5
45.0
45.5
46.0
46.5
47.0
47.5
48.0
48.5
49.0


Depth
1ft:20ft
Caliper
4.6 in. 5.4
ATV - Traveltime
0° 90° 180° 270° 0°
OTV - Image
0° 90° 180° 270° 0°
Temp
17.1 'C 17.6
SP
25 mV 45
HPF - Ambient
0 Gal./min. 0.2
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper - from ATV
4 in 6
Cond
150 uS/cm 700
SPR
450 Ohms 800
HPF - Pumping
0 Gal./min. 0.2
Fractures
0° 90° 180° 270° 0°
49.5
50.0
50.5
51.0
51.5
52.0
52.5
53.0
53.5
54.0
54.5
55.0
55.5
56.0
56.5
57.0
57.5
58.0
58.5
59.0
59.5
60.0
60.5
61.0
61.5
62.0
62.5
63.0
63.5


Depth
1ft:20ft
Caliper
4.6 in. 5.4
ATV - Traveltime
0° 90° 180° 270° 0°
OTV - Image
0° 90° 180° 270° 0°
Temp
17.1 'C 17.6
SP
25 mV 45
HPF - Ambient
0 Gal./min. 0.2
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper - from ATV
4 in 6
Cond
150 uS/cm 700
SPR
450 Ohms 800
HPF - Pumping
0 Gal./min. 0.2
Fractures
0° 90° 180° 270° 0°
64.0
64.5
65.0
65.5
66.0
66.5
67.0
67.5
68.0
68.5
69.0
69.5
70.0
70.5
71.0
71.5
72.0
72.5
73.0
73.5
74.0
74.5
75.0
75.5
76.0
76.5
77.0
77.5


Depth
1ft:20ft
Caliper
4.6 in. 5.4
ATV - Traveltime
0° 90° 180° 270° 0°
OTV - Image
0° 90° 180° 270° 0°
Temp
17.1 'C 17.6
SP
25 mV 45
HPF - Ambient
0 Gal./min. 0.2
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper - from ATV
4 in 6
Cond
150 uS/cm 700
SPR
450 Ohms 800
HPF - Pumping
0 Gal./min. 0.2
Fractures
0° 90° 180° 270° 0°
78.0
78.5
79.0
79.5
80.0
80.5
81.0
81.5
82.0
82.5
83.0
83.5
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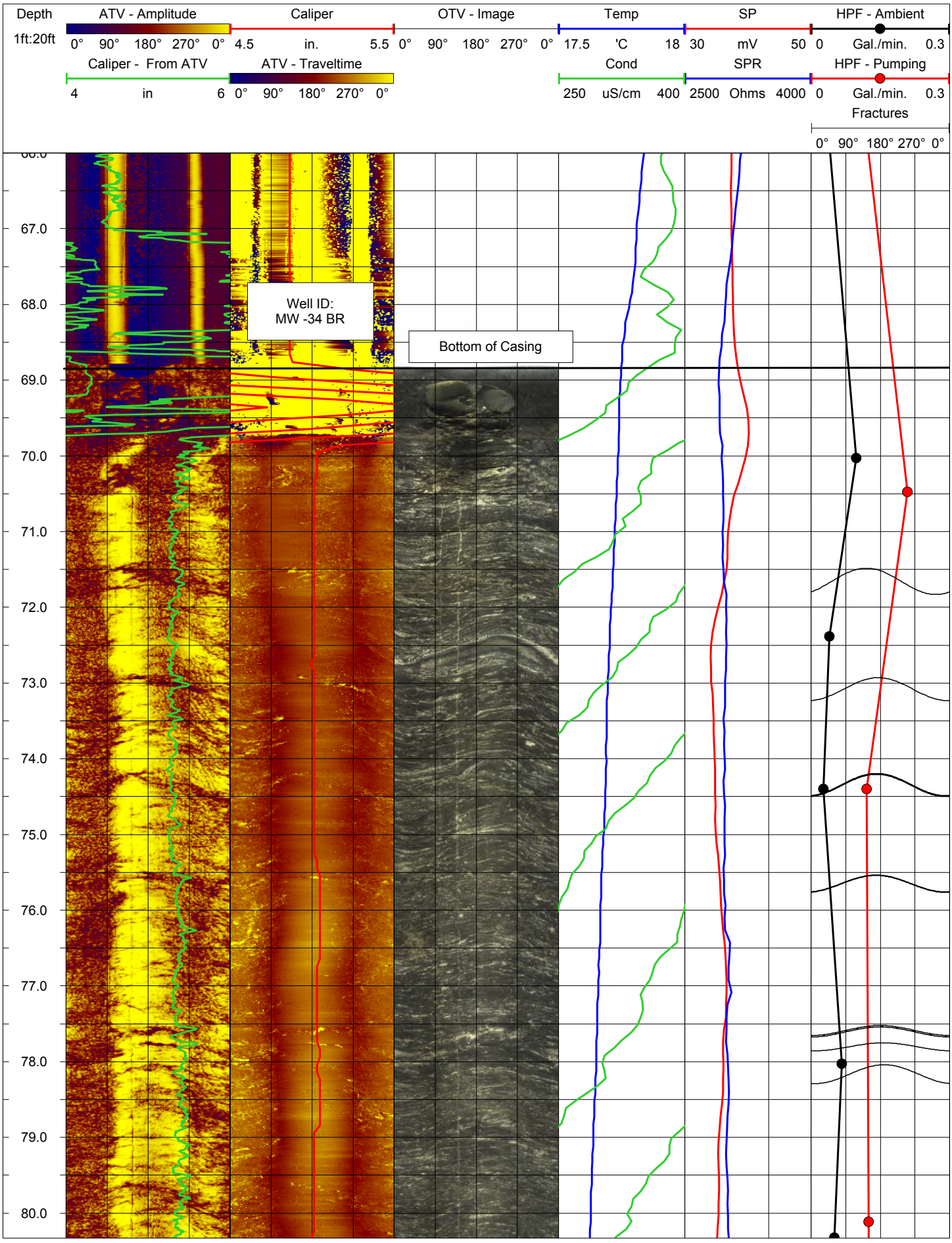
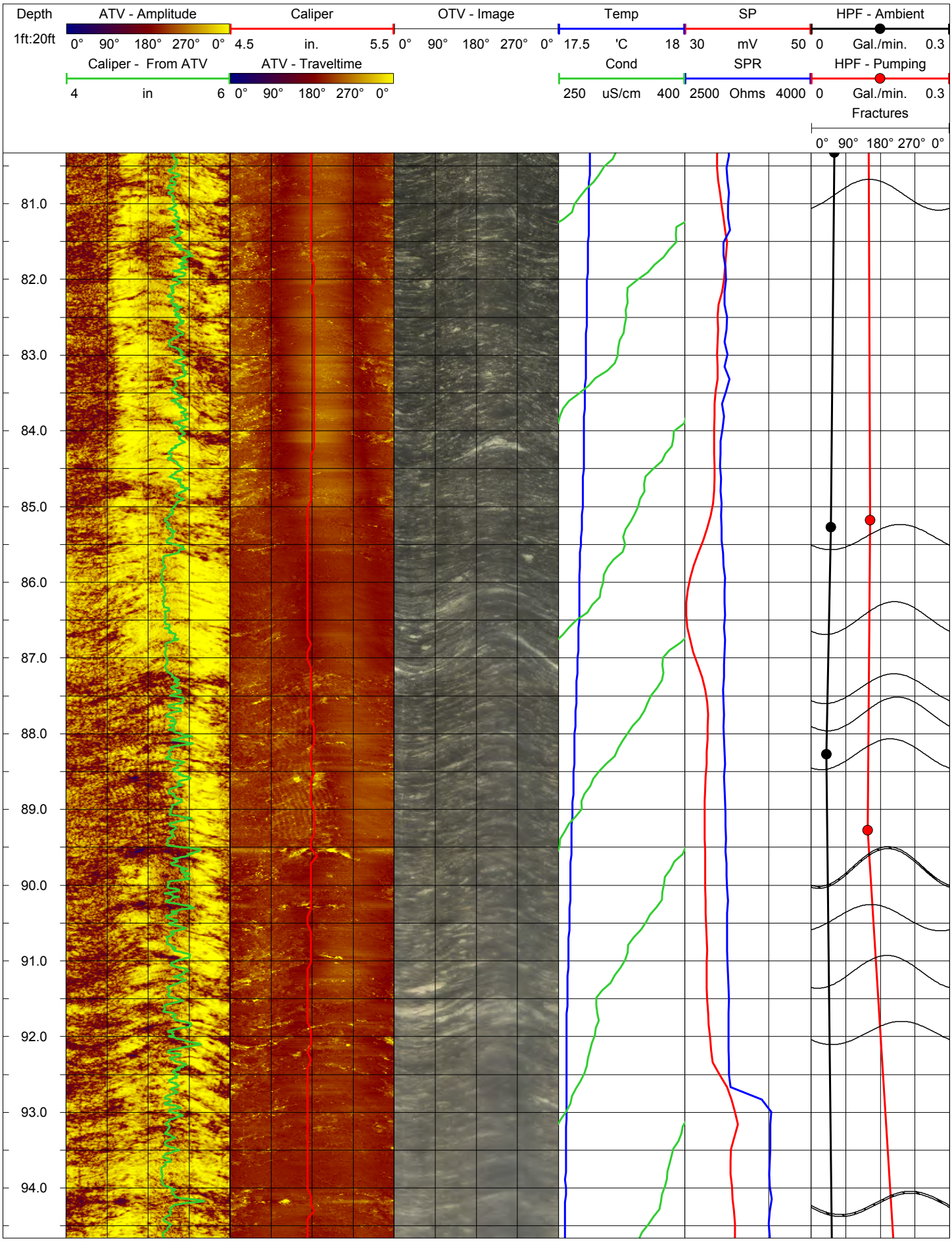
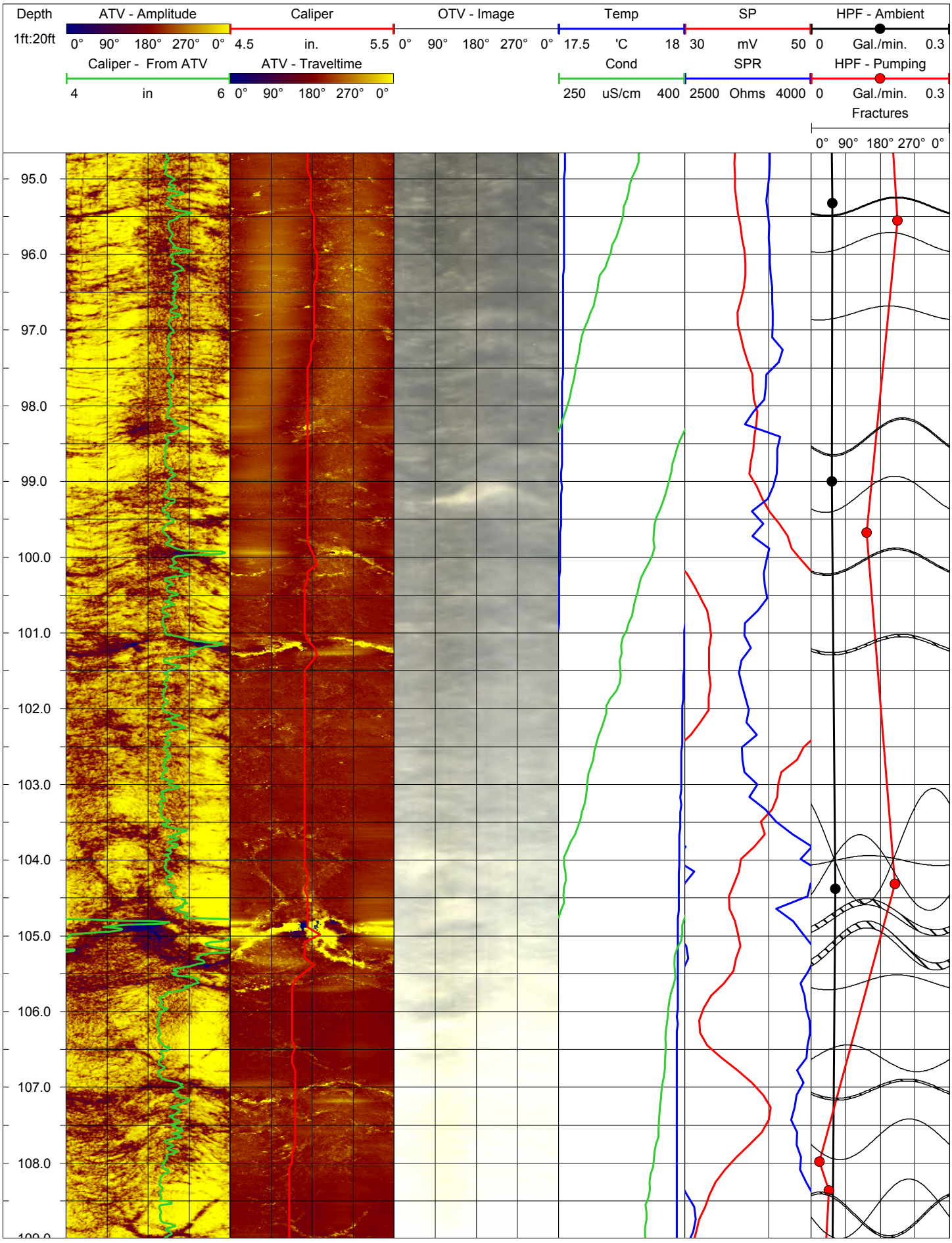
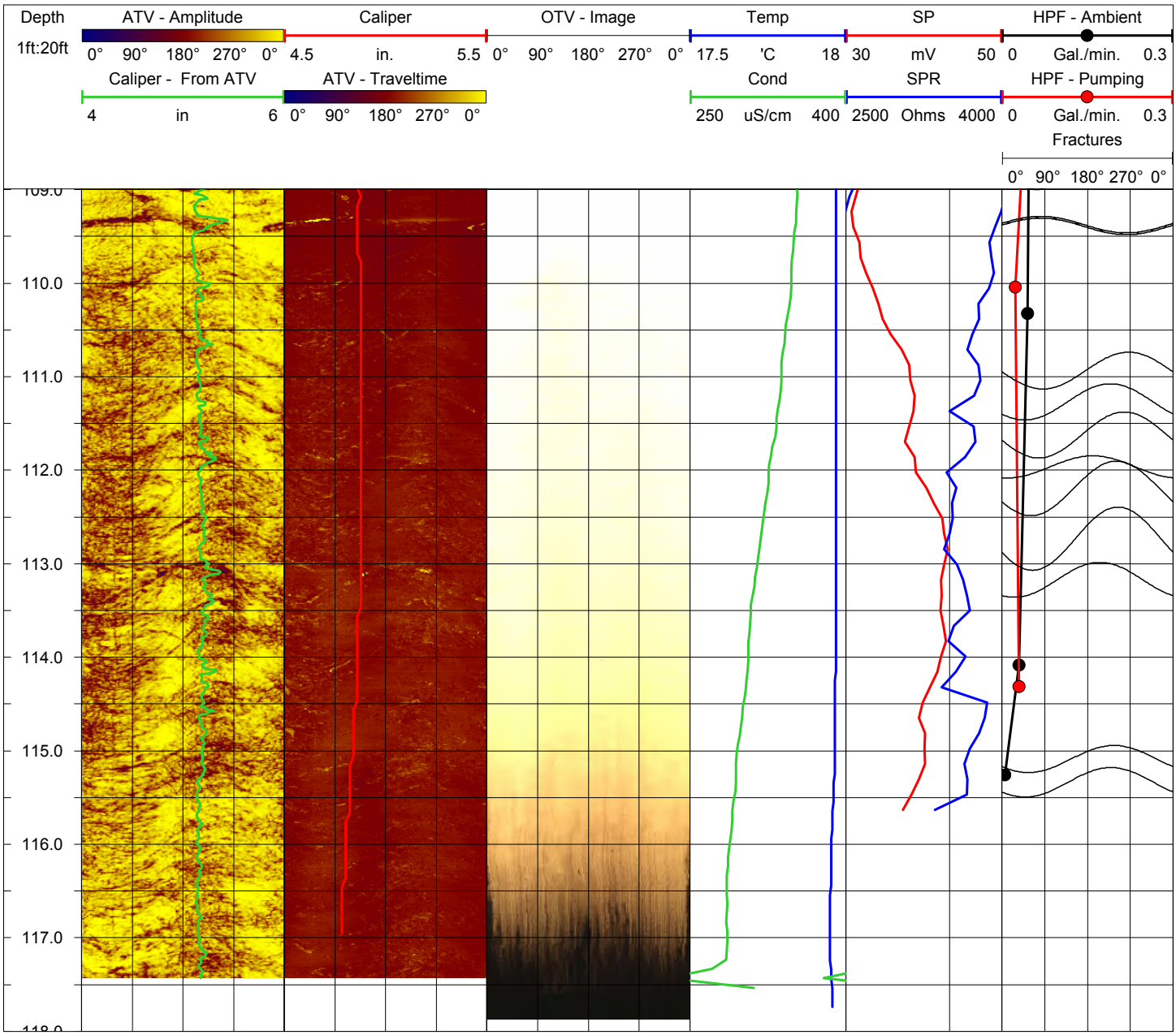
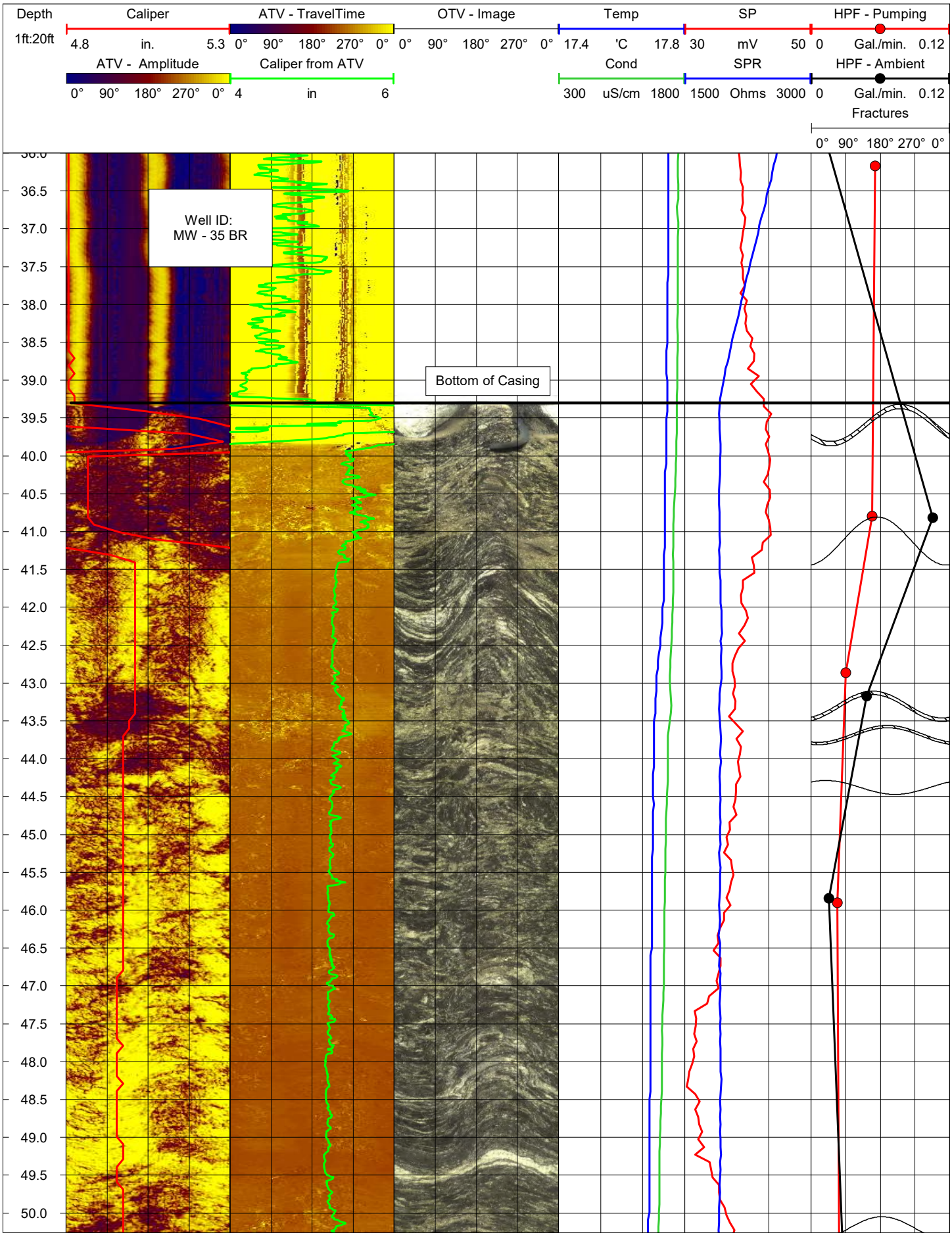
86.0
86.5
87.0
87.5
88.0
88.5

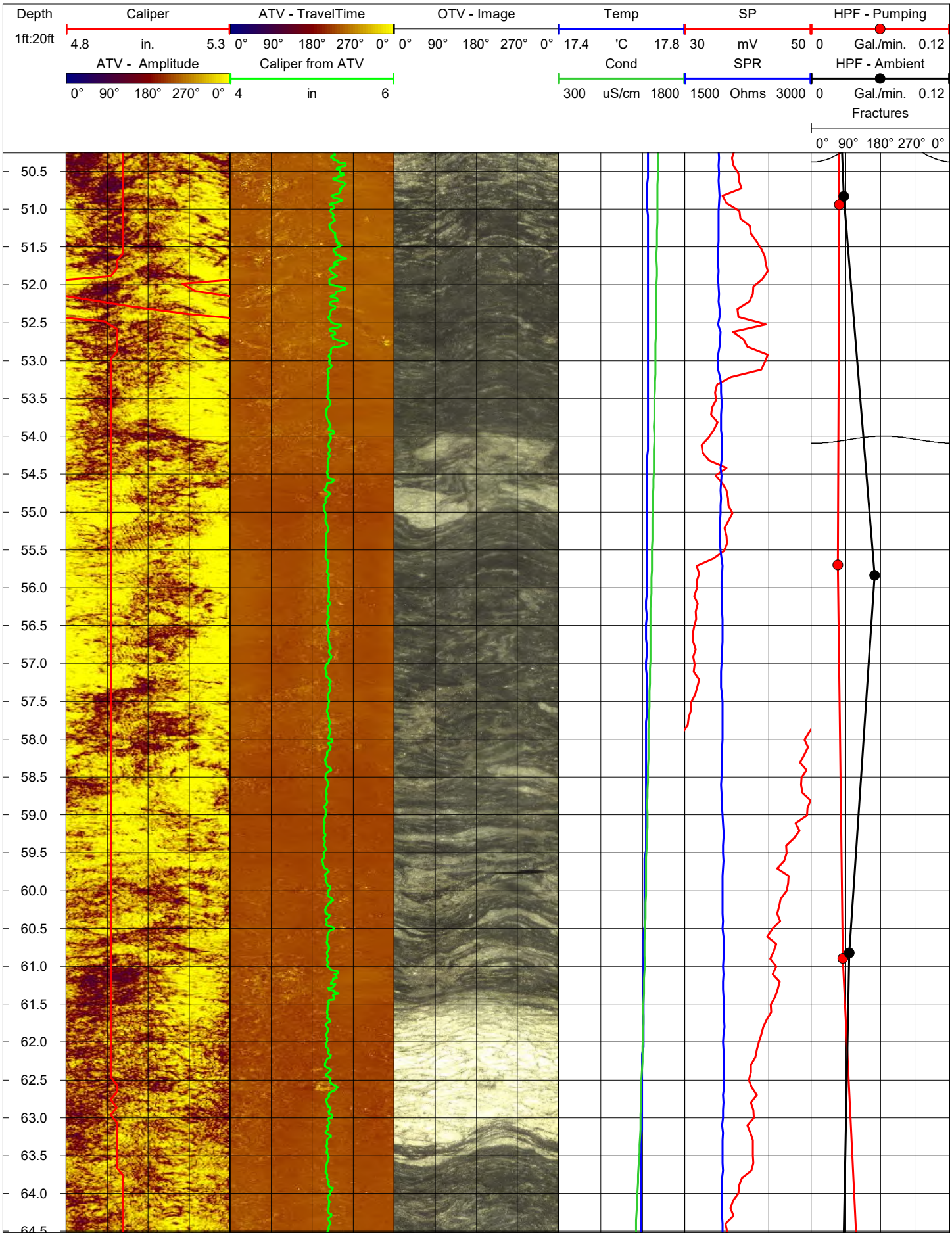

Depth
1ft:20ft
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper
4.5 in. 5.5
OTV - Image
0° 90° 180° 270° 0°
Temp
17.5 'C 18
SP
30 mV 50
HPF - Ambient
0 Gal./min. 0.3
Caliper - From ATV
4 in 6
ATV - Traveltime
0° 90° 180° 270° 0°
Cond
250 uS/cm 400
SPR
2500 Ohms 4000
HPF - Pumping
0 Gal./min. 0.3
Fractures
0° 90° 180° 270° 0°
67.0
68.0
69.0
70.0
71.0
72.0
73.0
74.0
75.0
76.0
77.0
78.0
79.0
80.0
Well ID:
MW -34 BR
Bottom of Casing

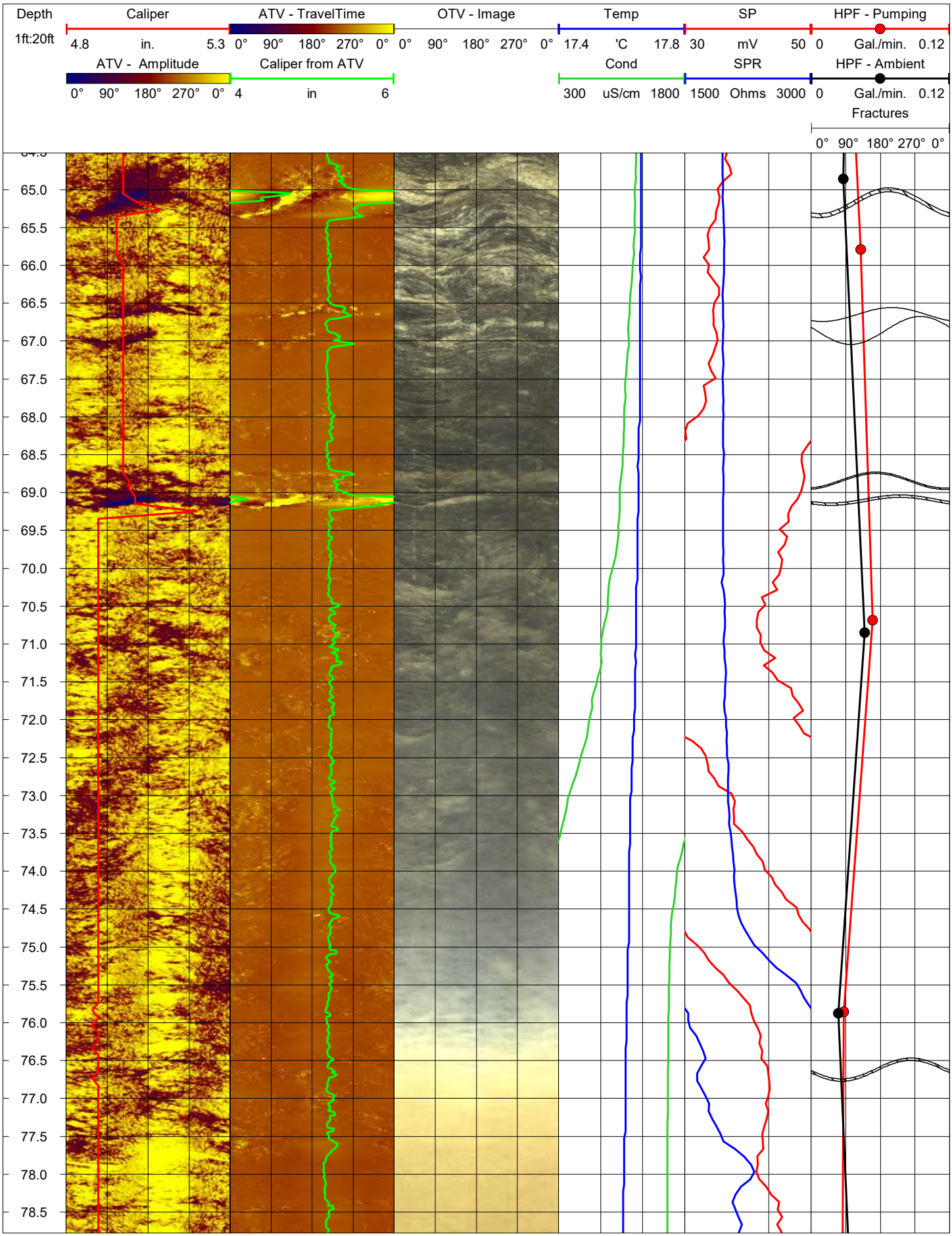

Depth
1ft:20ft
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper
4.5 in. 5.5
OTV - Image
0° 90° 180° 270° 0°
Temp
17.5 'C 18
SP
30 mV 50
HPF - Ambient
0 Gal./min. 0.3
Caliper - From ATV
4 in 6
ATV - Traveltime
0° 90° 180° 270° 0°
Cond
250 uS/cm 400
SPR
2500 Ohms 4000
HPF - Pumping
0 Gal./min. 0.3
Fractures
0° 90° 180° 270° 0°
81.0
82.0
83.0
84.0
85.0
86.0
87.0
88.0
89.0
90.0
91.0
92.0
93.0
94.0

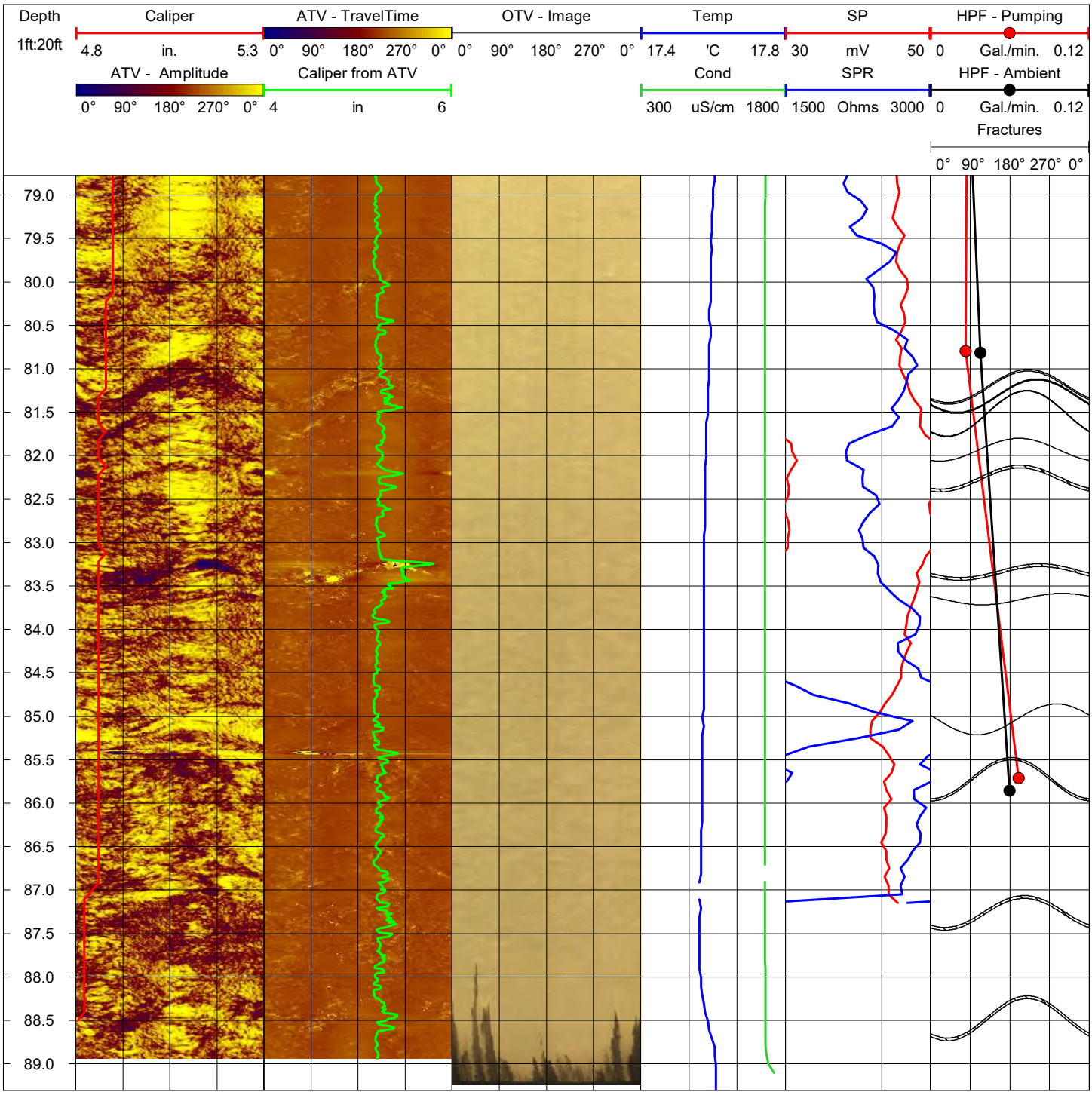

Depth
1ft:20ft
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper
4.5 in. 5.5
OTV - Image
0° 90° 180° 270° 0°
Temp
17.5 'C 18
SP
30 mV 50
HPF - Ambient
0 Gal./min. 0.3
Caliper - From ATV
4 in 6
ATV - Traveltime
0° 90° 180° 270° 0°
Cond
250 uS/cm 400
SPR
2500 Ohms 4000
HPF - Pumping
0 Gal./min. 0.3
Fractures
0° 90° 180° 270° 0°
95.0
96.0
97.0
98.0
99.0
100.0
101.0
102.0
103.0
104.0
105.0
106.0
107.0
108.0


Depth
1ft:20ft
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper
4.5 in. 5.5
OTV - Image
0° 90° 180° 270° 0°
Temp
17.5 'C 18
SP
30 mV 50
HPF - Ambient
0 Gal./min. 0.3
Caliper - From ATV
4 in 6
ATV - Traveltime
0° 90° 180° 270° 0°
Cond
250 uS/cm 400
SPR
2500 Ohms 4000
HPF - Pumping
0 Gal./min. 0.3
Fractures
0° 90° 180° 270° 0°
110.0
111.0
112.0
113.0
114.0
115.0
116.0
117.0


Depth
1ft:20ft
Caliper
4.8 in. 5.3
ATV - TravelTime
0° 90° 180° 270° 0°
OTV - Image
0° 90° 180° 270° 0°
Temp
17.4 'C 17.8
SP
30 mV 50
HPF - Pumping
0 Gal./min. 0.12
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper from ATV
4 in 6
Cond
300 uS/cm 1800
SPR
1500 Ohms 3000
HPF - Ambient
0 Gal./min. 0.12
Fractures
0° 90° 180° 270° 0°
Well ID:
MW - 35 BR
Bottom of Casing
36.5
37.0
37.5
38.0
38.5
39.0
39.5
40.0
40.5
41.0
41.5
42.0
42.5
43.0
43.5
44.0
44.5
45.0
45.5
46.0
46.5
47.0
47.5
48.0
48.5
49.0
49.5
50.0


Depth
1ft:20ft
Caliper
4.8 in. 5.3
ATV - TravelTime
0° 90° 180° 270° 0°
OTV - Image
0° 90° 180° 270° 0°
Temp
17.4 'C 17.8
SP
30 mV 50
HPF - Pumping
0 Gal./min. 0.12
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper from ATV
4 in 6
Cond
300 uS/cm 1800
SPR
1500 Ohms 3000
HPF - Ambient
0 Gal./min. 0.12
Fractures
0° 90° 180° 270° 0°
50.5
51.0
51.5
52.0
52.5
53.0
53.5
54.0
54.5
55.0
55.5
56.0
56.5
57.0
57.5
58.0
58.5
59.0
59.5
60.0
60.5
61.0
61.5
62.0
62.5
63.0
63.5
64.0


Depth
1ft:20ft
Caliper
4.8 in. 5.3
ATV - TravelTime
0° 90° 180° 270° 0°
OTV - Image
0° 90° 180° 270° 0°
Temp
17.4 'C 17.8
SP
30 mV 50
HPF - Pumping
0 Gal./min. 0.12
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper from ATV
4 in 6
Cond
300 uS/cm 1800
SPR
1500 Ohms 3000
HPF - Ambient
0 Gal./min. 0.12
Fractures
0° 90° 180° 270° 0°
65.0
65.5
66.0
66.5
67.0
67.5
68.0
68.5
69.0
69.5
70.0
70.5
71.0
71.5
72.0
72.5
73.0
73.5
74.0
74.5
75.0
75.5
76.0
76.5
77.0
77.5
78.0
78.5


Depth
1ft:20ft
Caliper
4.8
in.
5.3
ATV - TravelTime
0° 90° 180° 270° 0°
OTV - Image
0° 90° 180° 270° 0°
Temp
17.4
'C
17.8
SP
30
mV
50
HPF - Pumping
0
Gal./min.
0.12
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper from ATV
4
in
6
Cond
300
uS/cm
1800
SPR
1500
Ohms
3000
HPF - Ambient
0
Gal./min.
0.12
Fractures
0° 90° 180° 270° 0°
79.0
79.5
80.0
80.5
81.0
81.5
82.0
82.5
83.0
83.5
84.0
84.5
85.0
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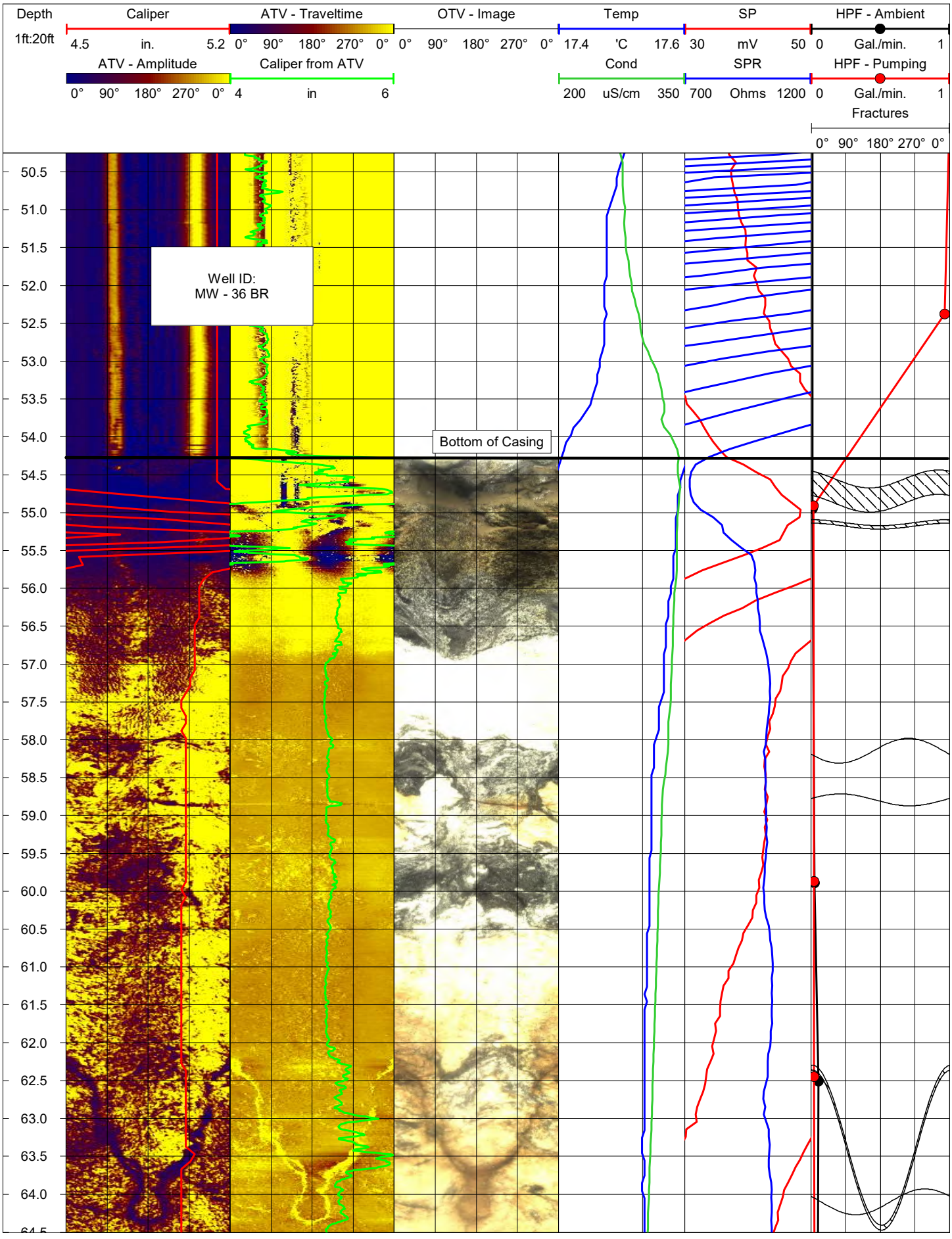
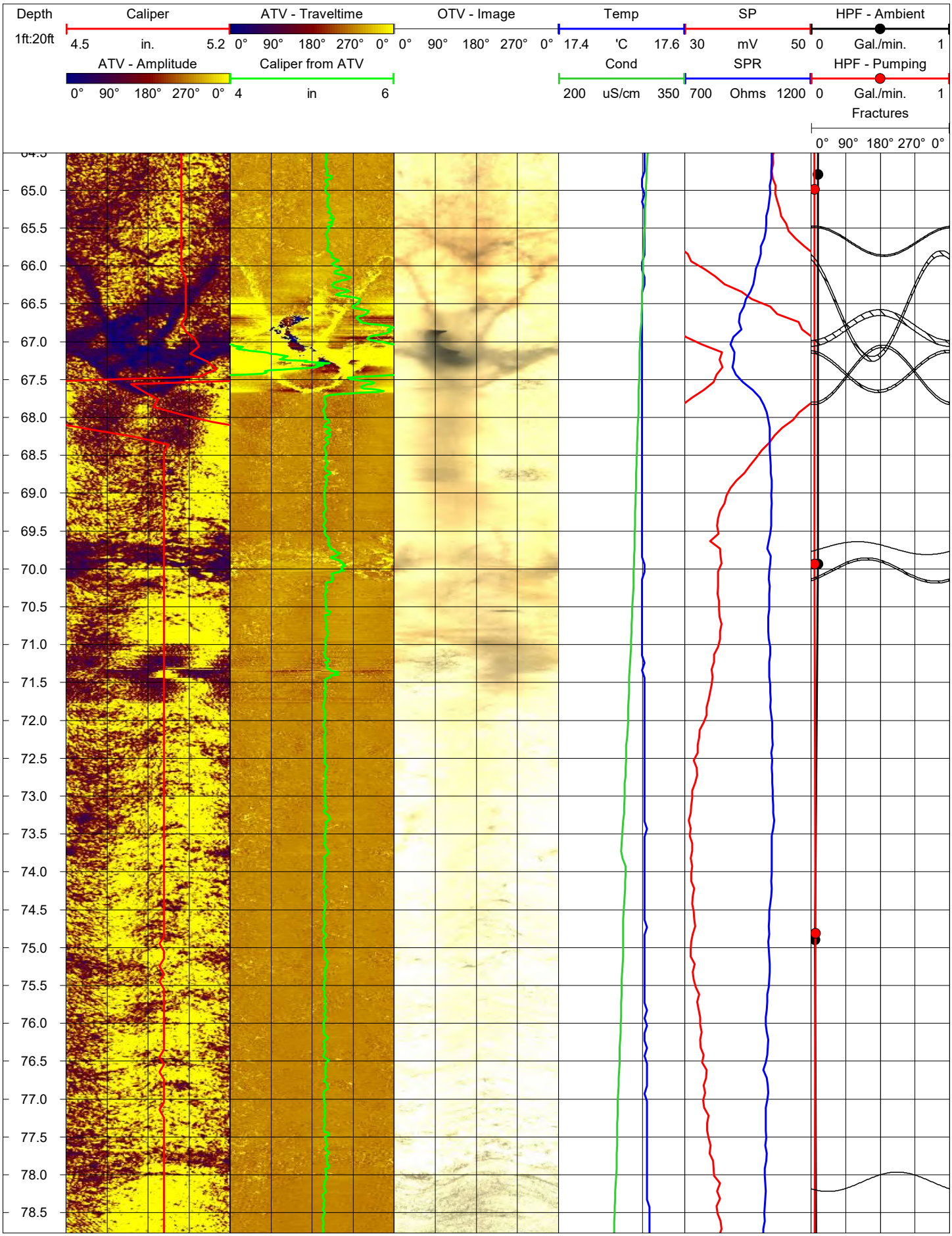
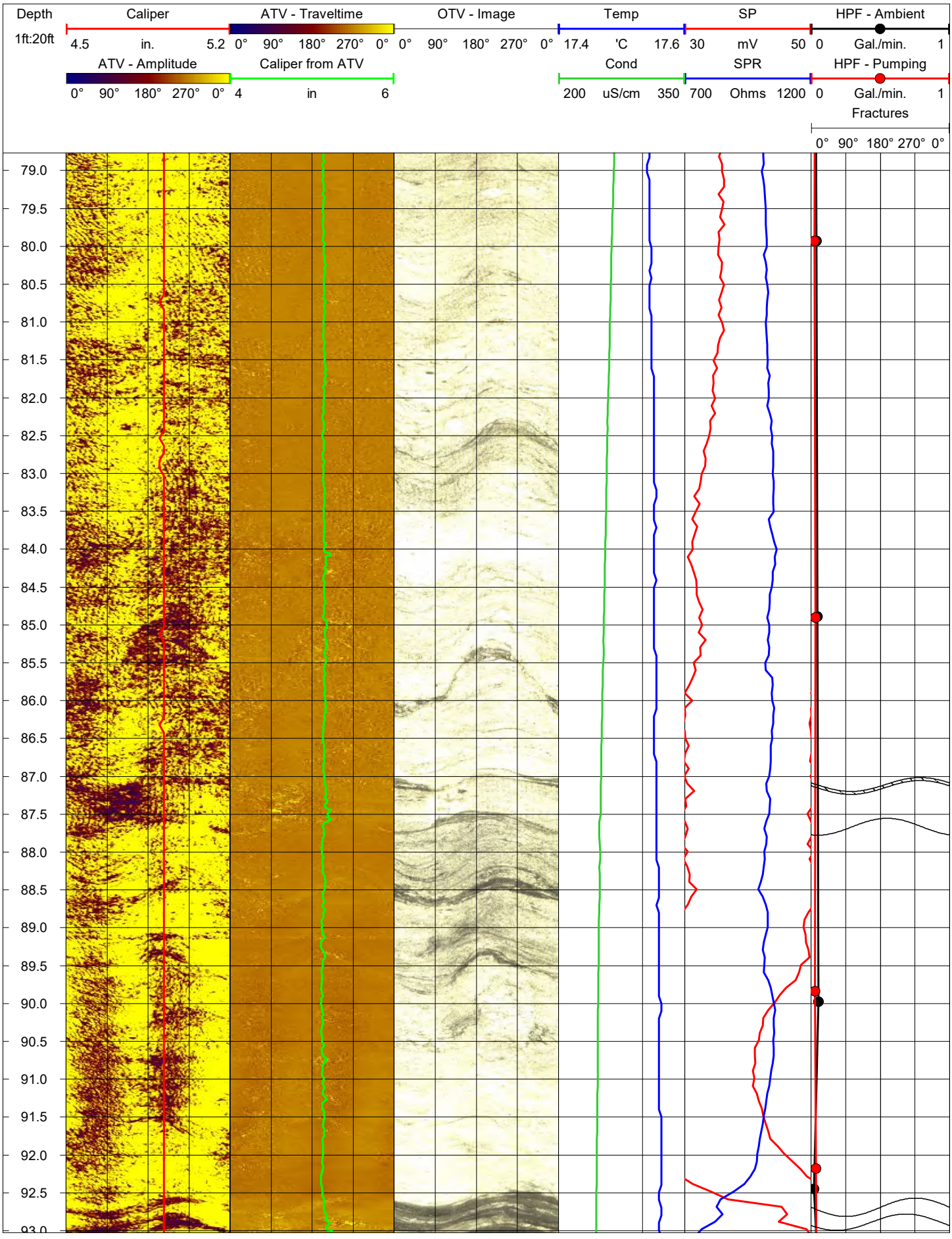
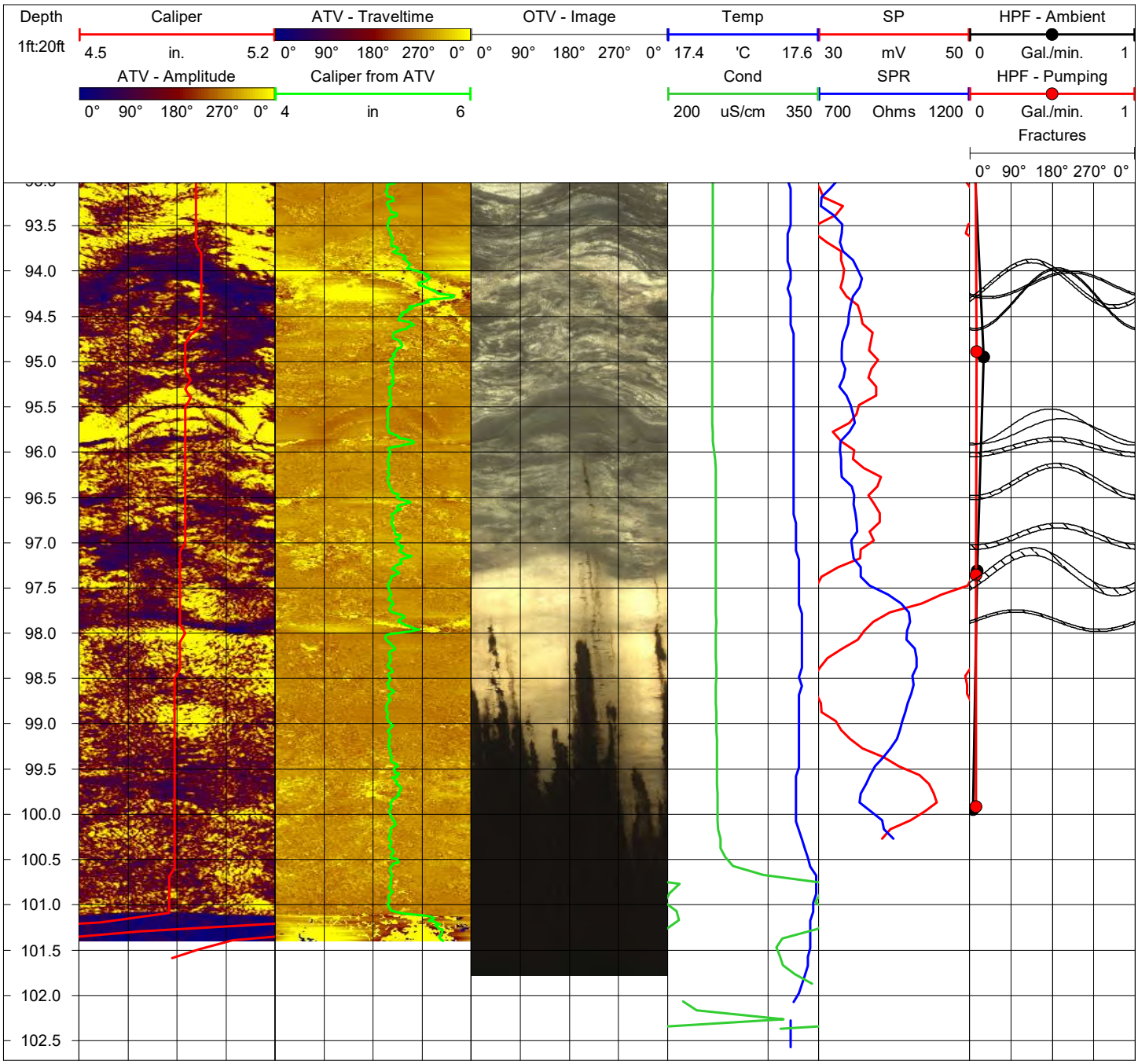
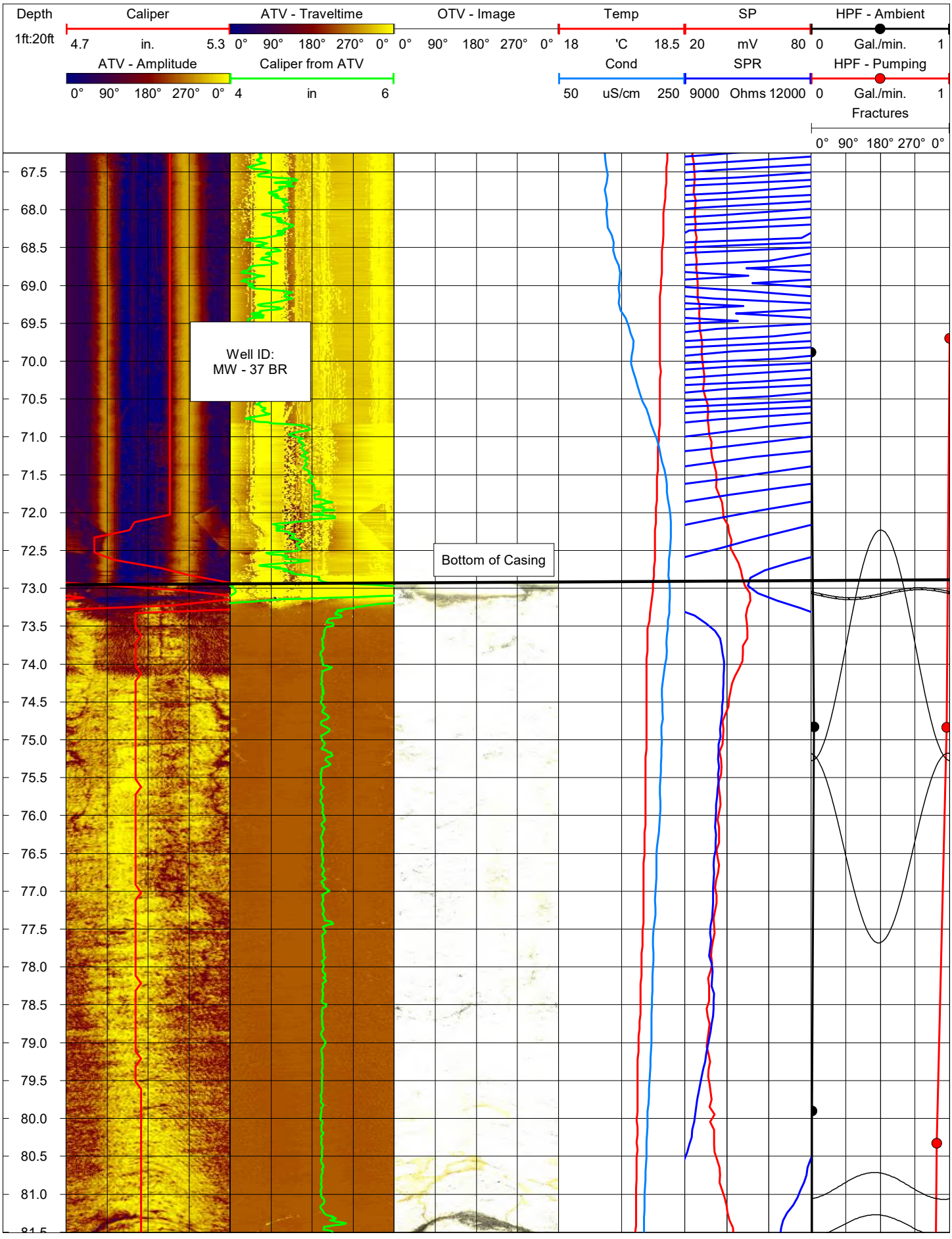
86.5
87.0
87.5
88.0
88.5
89.0

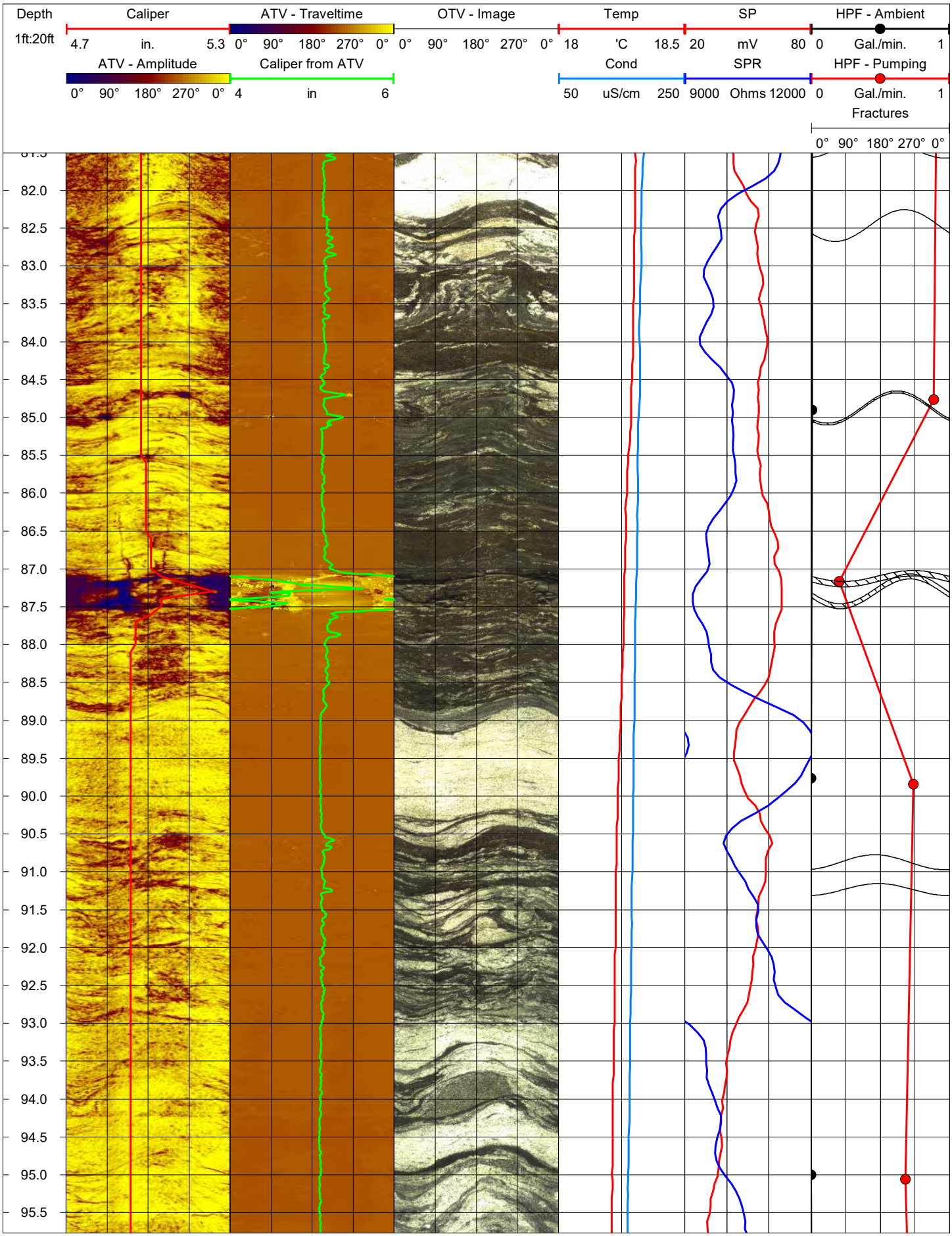

Depth
1ft:20ft
Caliper
4.5 in. 5.2
ATV - Traveltime
0° 90° 180° 270° 0°
OTV - Image
0° 90° 180° 270° 0°
Temp
17.4 'C 17.6
SP
30 mV 50
HPF - Ambient
0 Gal./min. 1
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper from ATV
4 in 6
Cond
200 uS/cm 350
SPR
700 Ohms 1200
HPF - Pumping
0 Gal./min. 1
Fractures
0° 90° 180° 270° 0°
50.5
51.0
51.5
52.0
52.5
53.0
53.5
54.0
54.5
55.0
55.5
56.0
56.5
57.0
57.5
58.0
58.5
59.0
59.5
60.0
60.5
61.0
61.5
62.0
62.5
63.0
63.5
64.0
Well ID:
MW - 36 BR
Bottom of Casing

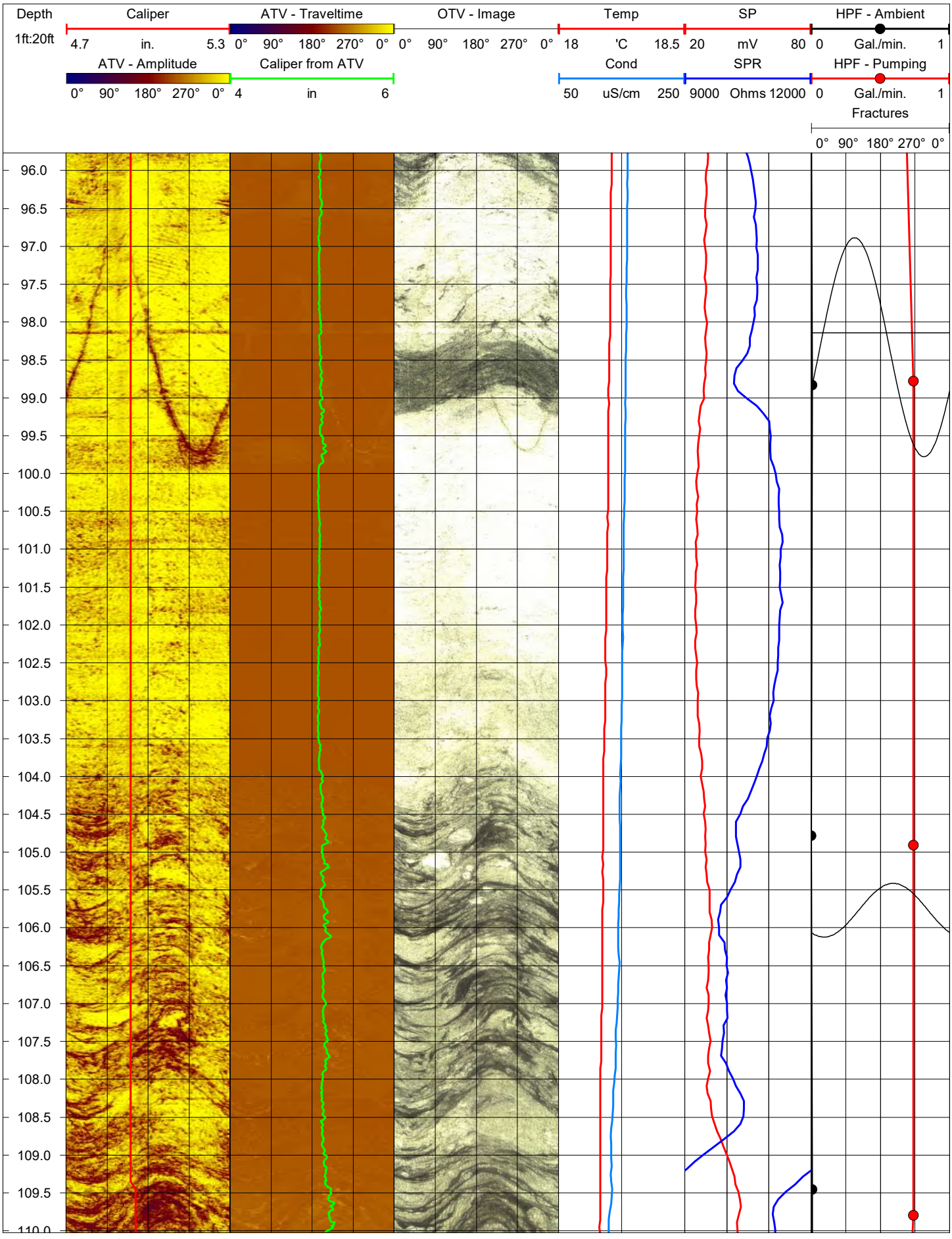

Depth
1ft:20ft
Caliper
4.5
in.
5.2
ATV - Traveltime
0° 90° 180° 270° 0°
OTV - Image
0° 90° 180° 270° 0°
Temp
17.4
'C
17.6
SP
30
mV
50
HPF - Ambient
0
Gal./min.
1
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper from ATV
4
in
6
Cond
200
uS/cm
350
SPR
700
Ohms
1200
HPF - Pumping
0
Gal./min.
1
Fractures
0° 90° 180° 270° 0°
65.0
65.5
66.0
66.5
67.0
67.5
68.0
68.5
69.0
69.5
70.0
70.5
71.0
71.5
72.0
72.5
73.0
73.5
74.0
74.5
75.0
75.5
76.0
76.5
77.0
77.5
78.0
78.5

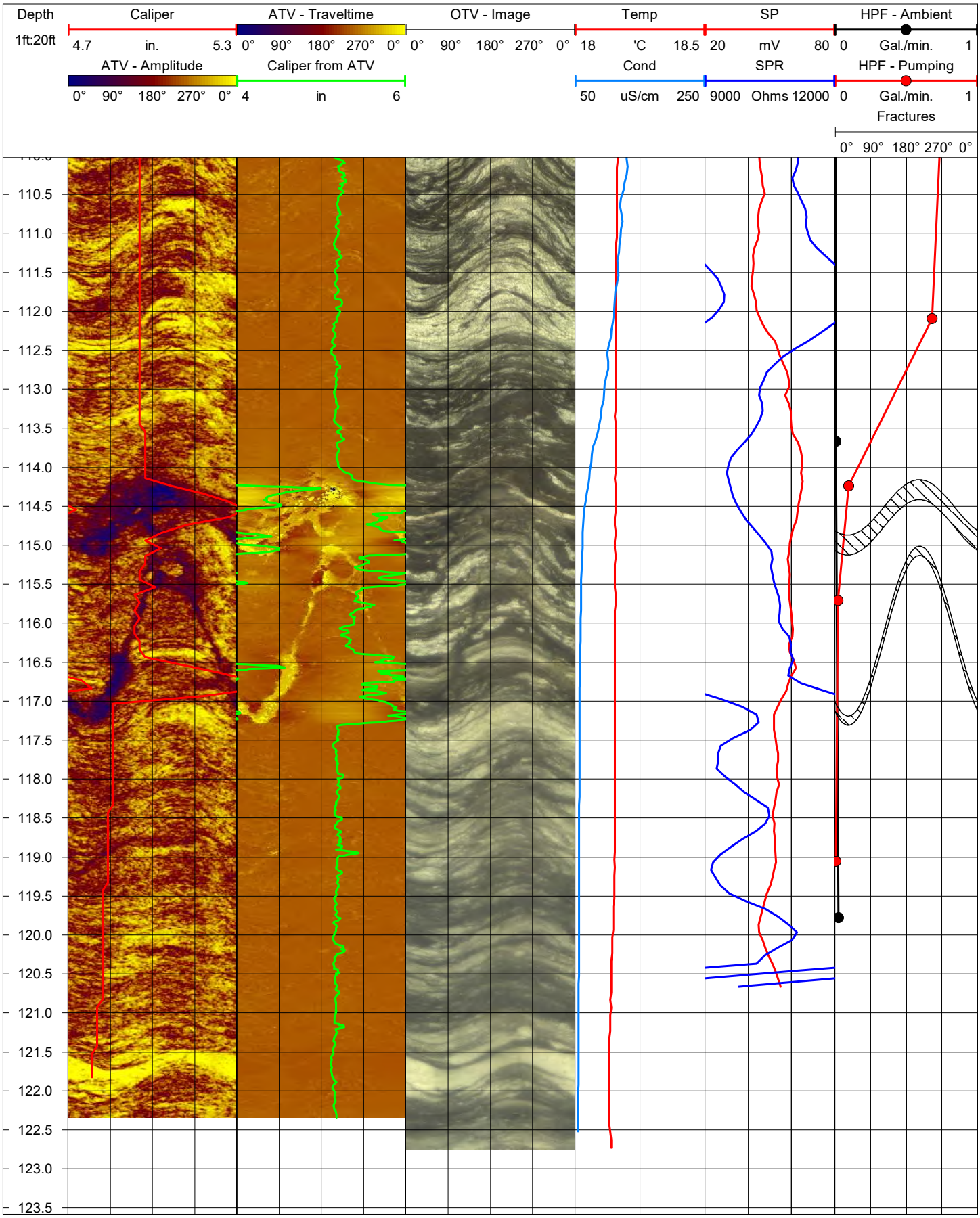

Depth
1ft:20ft
Caliper
4.5 in. 5.2
ATV - Traveltime
0° 90° 180° 270° 0°
OTV - Image
0° 90° 180° 270° 0°
Temp
17.4 'C 17.6
SP
30 mV 50
HPF - Ambient
0 Gal./min. 1
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper from ATV
4 in 6
Cond
200 uS/cm 350
SPR
700 Ohms 1200
HPF - Pumping
0 Gal./min. 1
Fractures
0° 90° 180° 270° 0°
79.0
79.5
80.0
80.5
81.0
81.5
82.0
82.5
83.0
83.5
84.0
84.5
85.0
85.5
86.0
86.5
87.0
87.5
88.0
88.5
89.0
89.5
90.0
90.5
91.0
91.5
92.0
92.5
93.0


Depth
1ft:20ft
Caliper
4.5 in. 5.2
ATV - Traveltime
0° 90° 180° 270° 0°
OTV - Image
0° 90° 180° 270° 0°
Temp
17.4 'C 17.6
SP
30 mV 50
HPF - Ambient
0 Gal./min. 1
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper from ATV
4 in 6
Cond
200 uS/cm 350
SPR
700 Ohms 1200
HPF - Pumping
0 Gal./min. 1
Fractures
0° 90° 180° 270° 0°
93.5
94.0
94.5
95.0
95.5
96.0
96.5
97.0
97.5
98.0
98.5
99.0
99.5
100.0
100.5
101.0
101.5
102.0
102.5


Depth
1ft:20ft
Caliper
4.7 in. 5.3
ATV - Traveltime
0° 90° 180° 270° 0°
OTV - Image
0° 90° 180° 270° 0°
Temp
18 'C 18.5
SP
20 mV 80
HPF - Ambient
0 Gal./min. 1
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper from ATV
4 in 6
Cond
50 uS/cm 250
SPR
9000 Ohms 12000
HPF - Pumping
0 Gal./min. 1
Fractures
0° 90° 180° 270° 0°
67.5
68.0
68.5
69.0
69.5
70.0
70.5
71.0
71.5
72.0
72.5
73.0
73.5
74.0
74.5
75.0
75.5
76.0
76.5
77.0
77.5
78.0
78.5
79.0
79.5
80.0
80.5
81.0
Well ID:
MW - 37 BR
Bottom of Casing


Depth
1ft:20ft
Caliper
4.7 in. 5.3
ATV - Traveltime
0° 90° 180° 270° 0°
OTV - Image
0° 90° 180° 270° 0°
Temp
18 'C 18.5
SP
20 mV 80
HPF - Ambient
0 Gal./min. 1
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper from ATV
4 in 6
Cond
50 uS/cm 250
SPR
9000 Ohms 12000
HPF - Pumping
0 Gal./min. 1
Fractures
0° 90° 180° 270° 0°
82.0
82.5
83.0
83.5
84.0
84.5
85.0
85.5
86.0
86.5
87.0
87.5
88.0
88.5
89.0
89.5
90.0
90.5
91.0
91.5
92.0
92.5
93.0
93.5
94.0
94.5
95.0
95.5


Depth
1ft:20ft
Caliper
4.7
in.
5.3
ATV - Traveltime
0° 90° 180° 270° 0°
OTV - Image
0° 90° 180° 270° 0°
Temp
18
'C
18.5
SP
20
mV
80
HPF - Ambient
0
Gal./min.
1
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper from ATV
4
in
6
Cond
50
uS/cm
250
SPR
9000
Ohms
12000
HPF - Pumping
0
Gal./min.
1
Fractures
0° 90° 180° 270° 0°
96.0
96.5
97.0
97.5
98.0
98.5
99.0
99.5
100.0
100.5
101.0
101.5
102.0
102.5
103.0
103.5
104.0
104.5
105.0
105.5
106.0
106.5
107.0
107.5
108.0
108.5
109.0
109.5
110.0


Depth
1ft:20ft
Caliper
4.7
in.
5.3
ATV - Traveltime
0° 90° 180° 270° 0°
OTV - Image
0° 90° 180° 270° 0°
Temp
18
'C
18.5
SP
20
mV
80
HPF - Ambient
0
Gal./min.
1
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper from ATV
4
in
6
Cond
50
uS/cm
250
SPR
9000
Ohms
12000
HPF - Pumping
0
Gal./min.
1
Fractures
0° 90° 180° 270° 0°
110.5
111.0
111.5
112.0
112.5
113.0
113.5
114.0
114.5
115.0
115.5
116.0
116.5
117.0
117.5
118.0
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119.5
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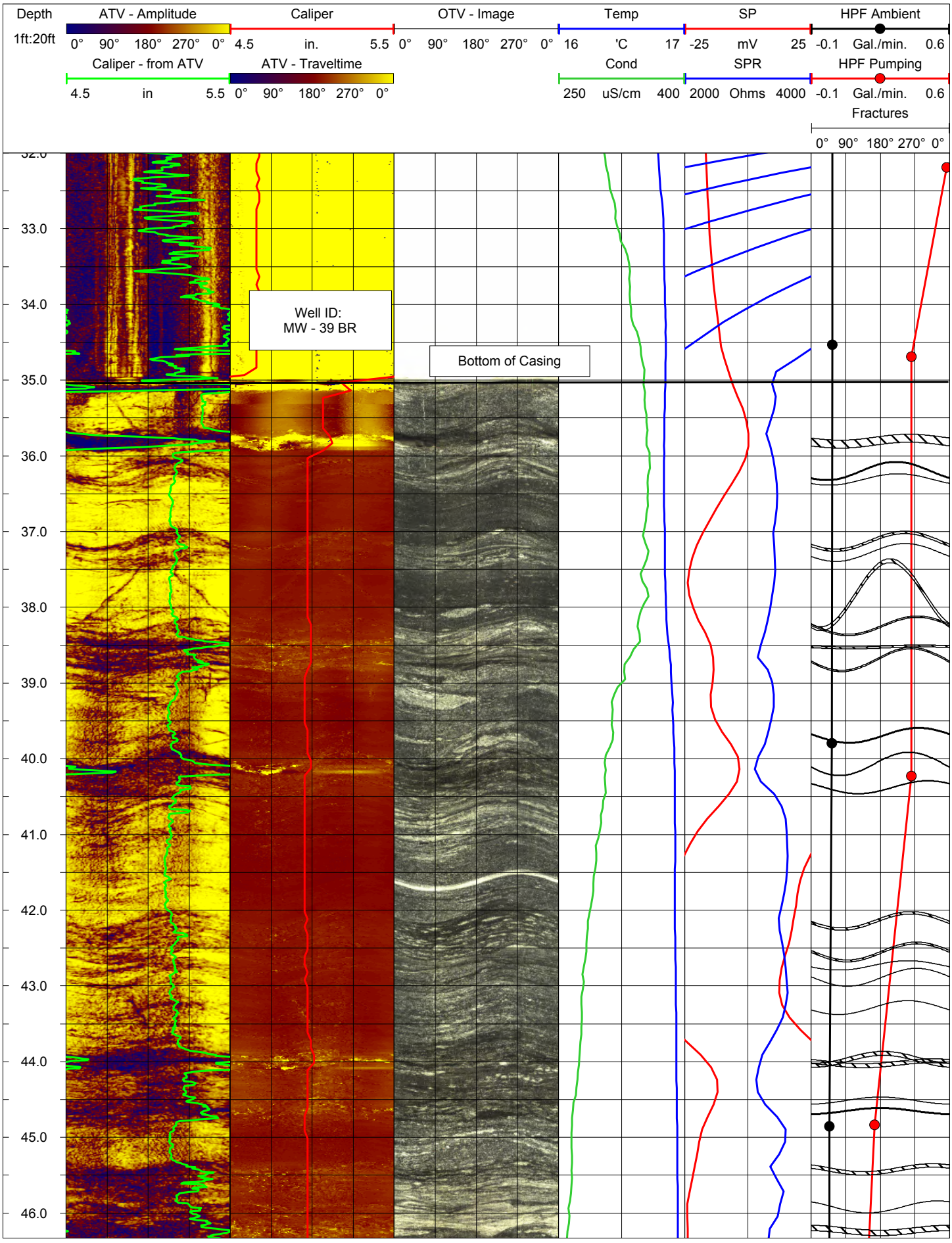
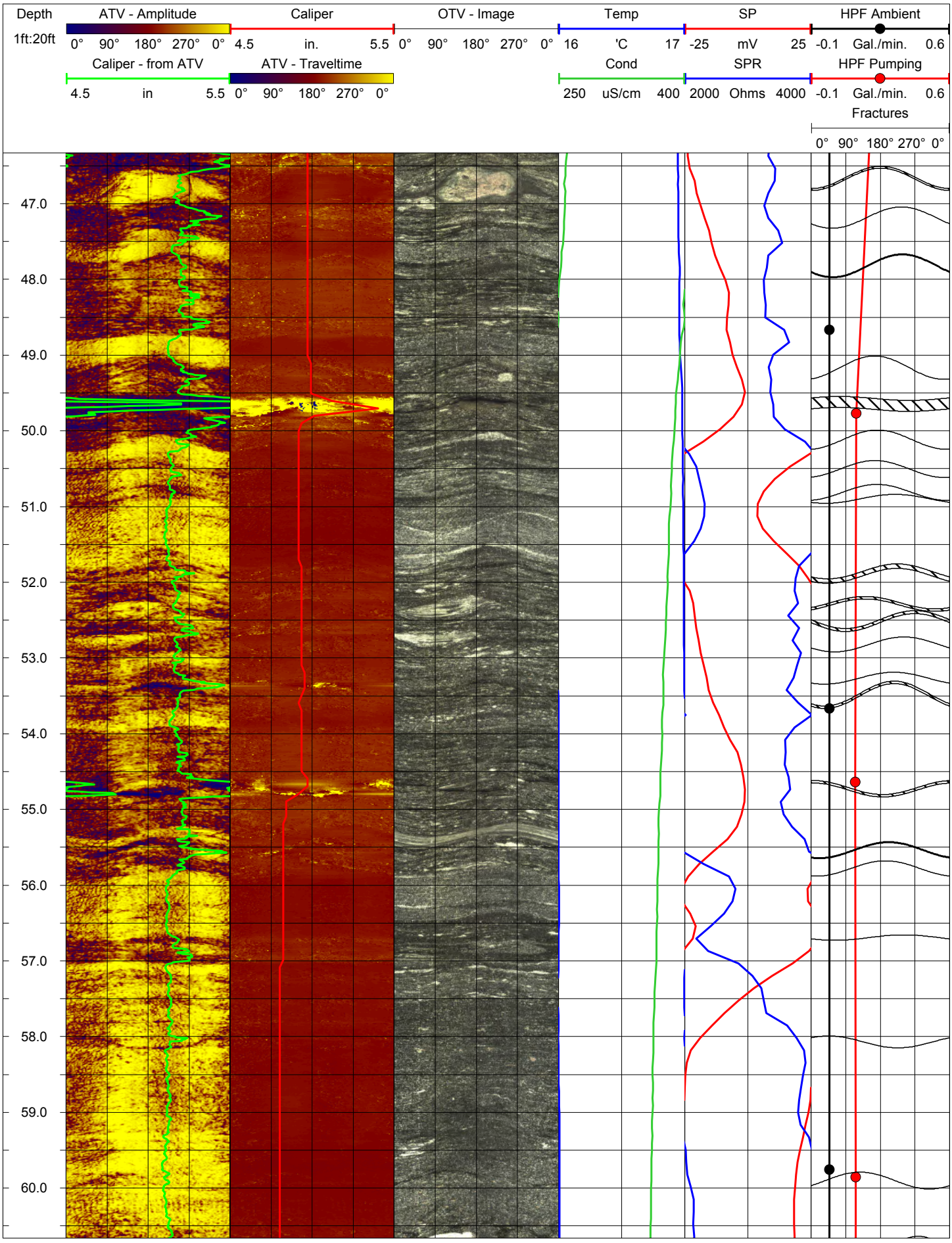
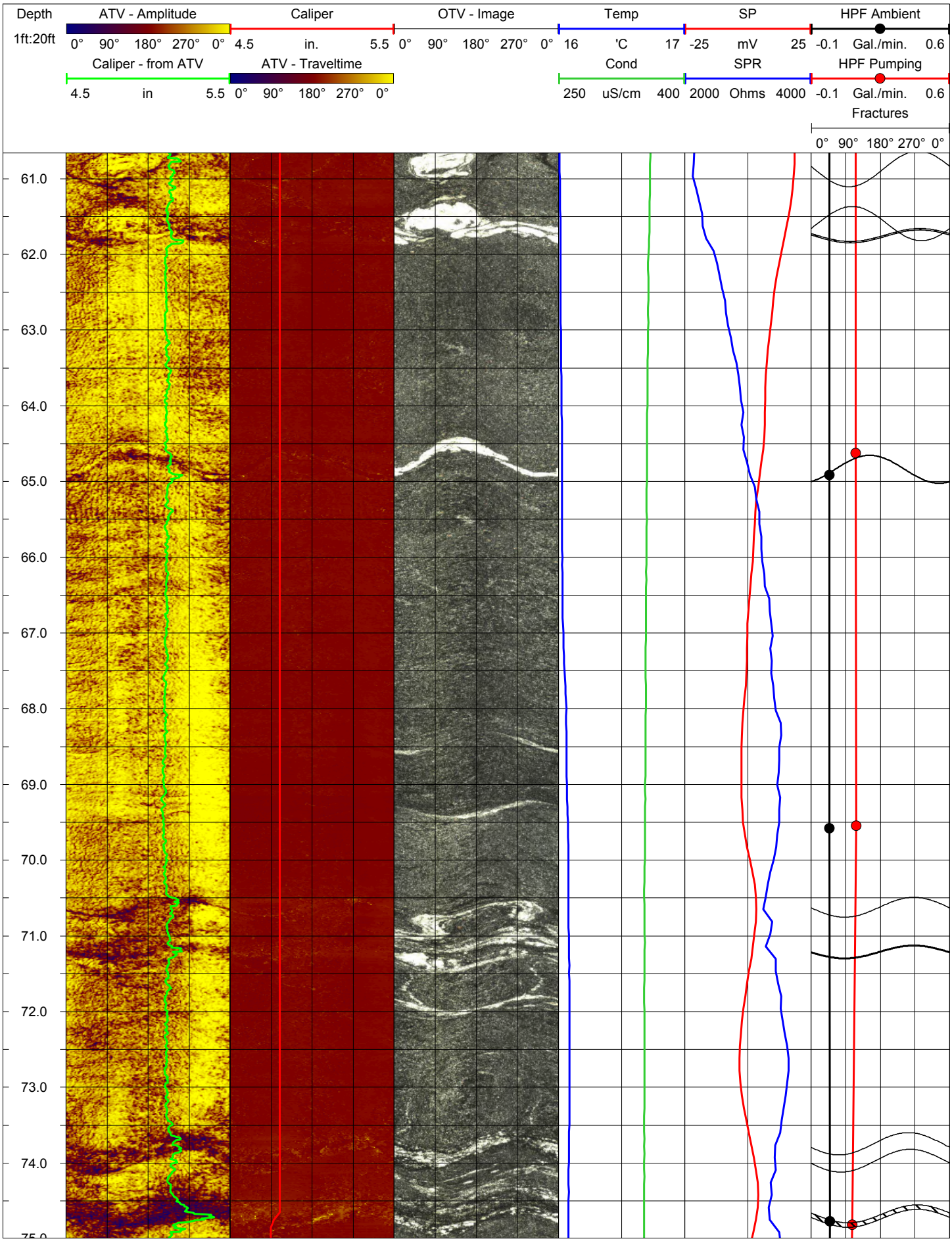
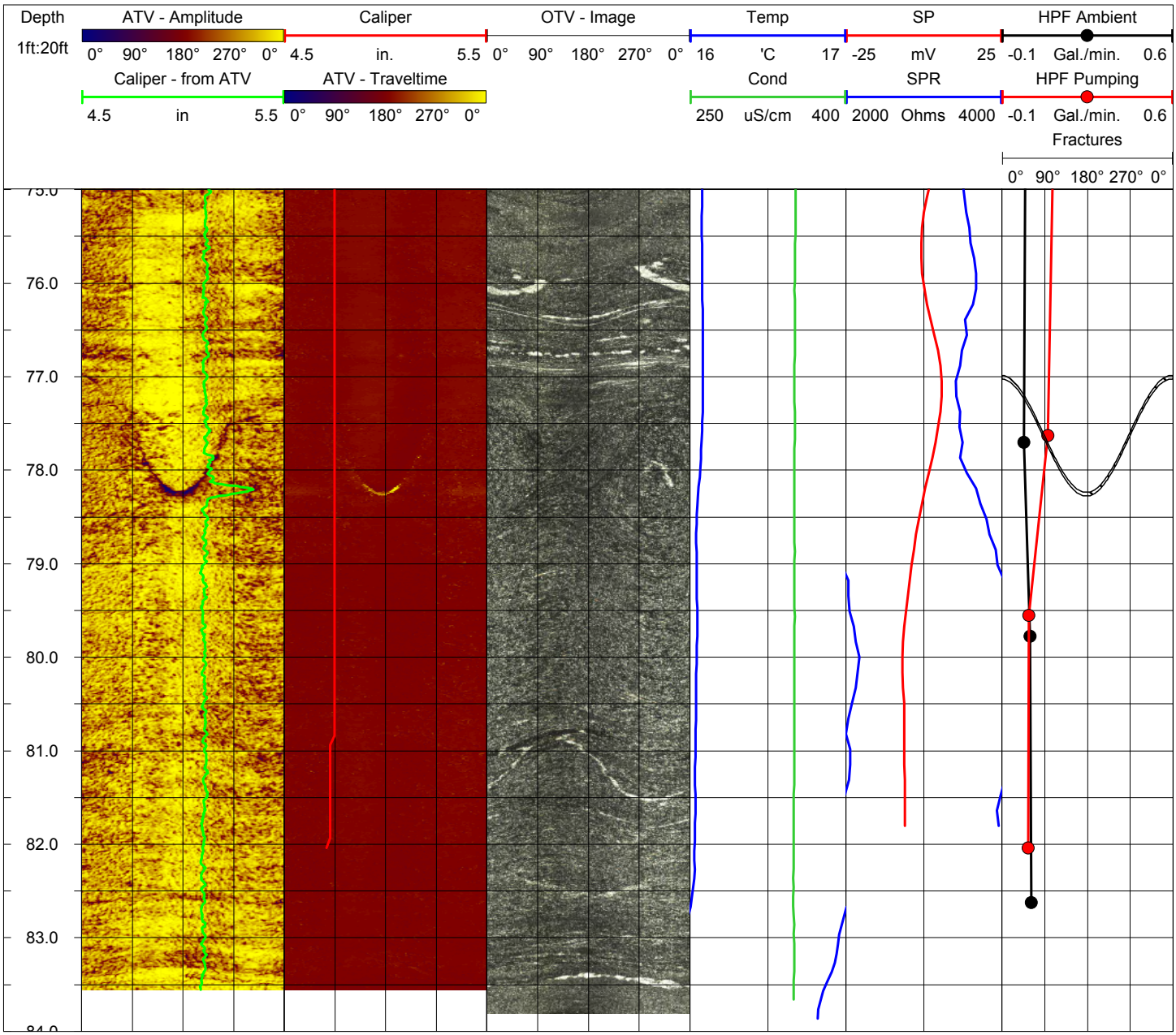
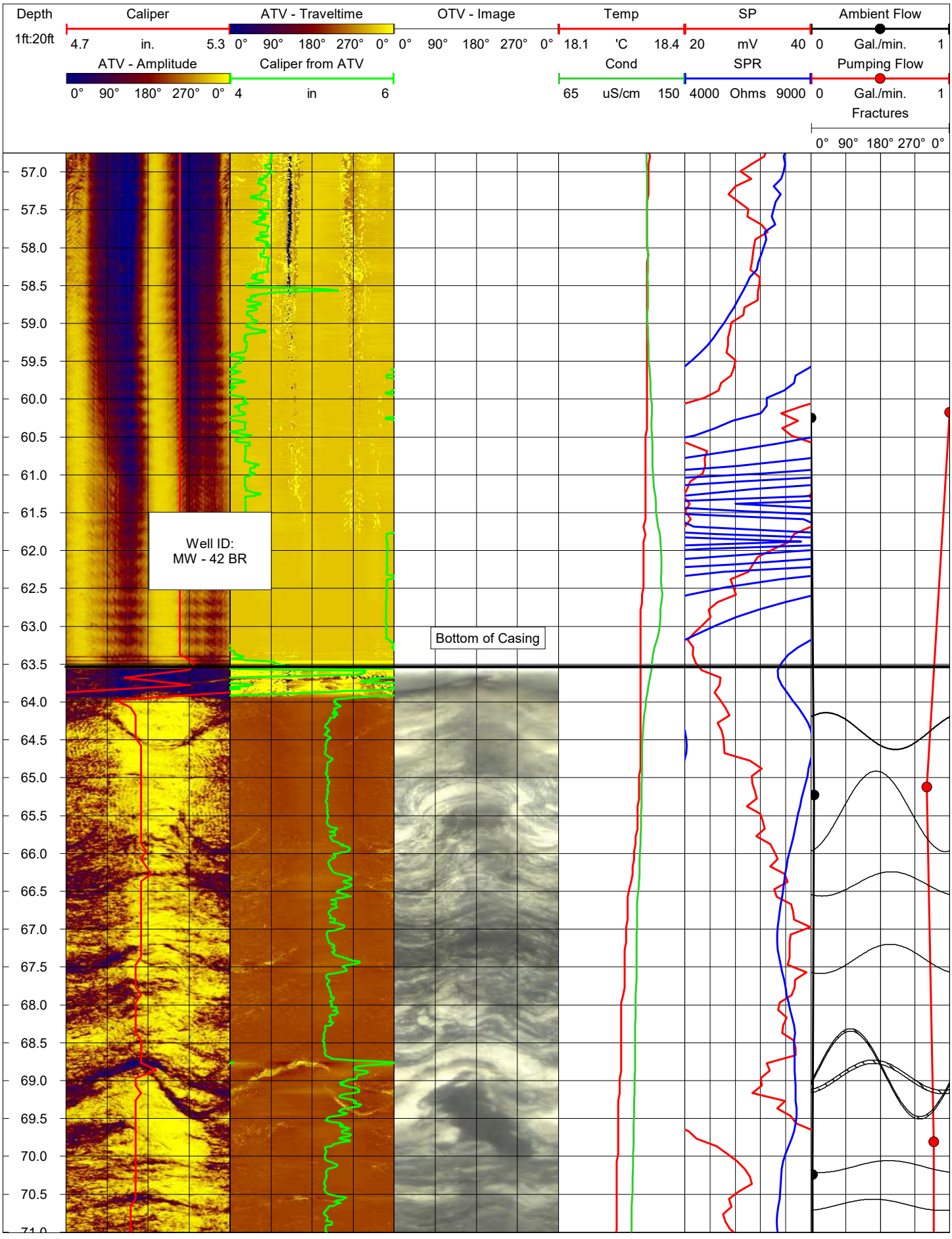
120.5
121.0
121.5
122.0
122.5
123.0
123.5

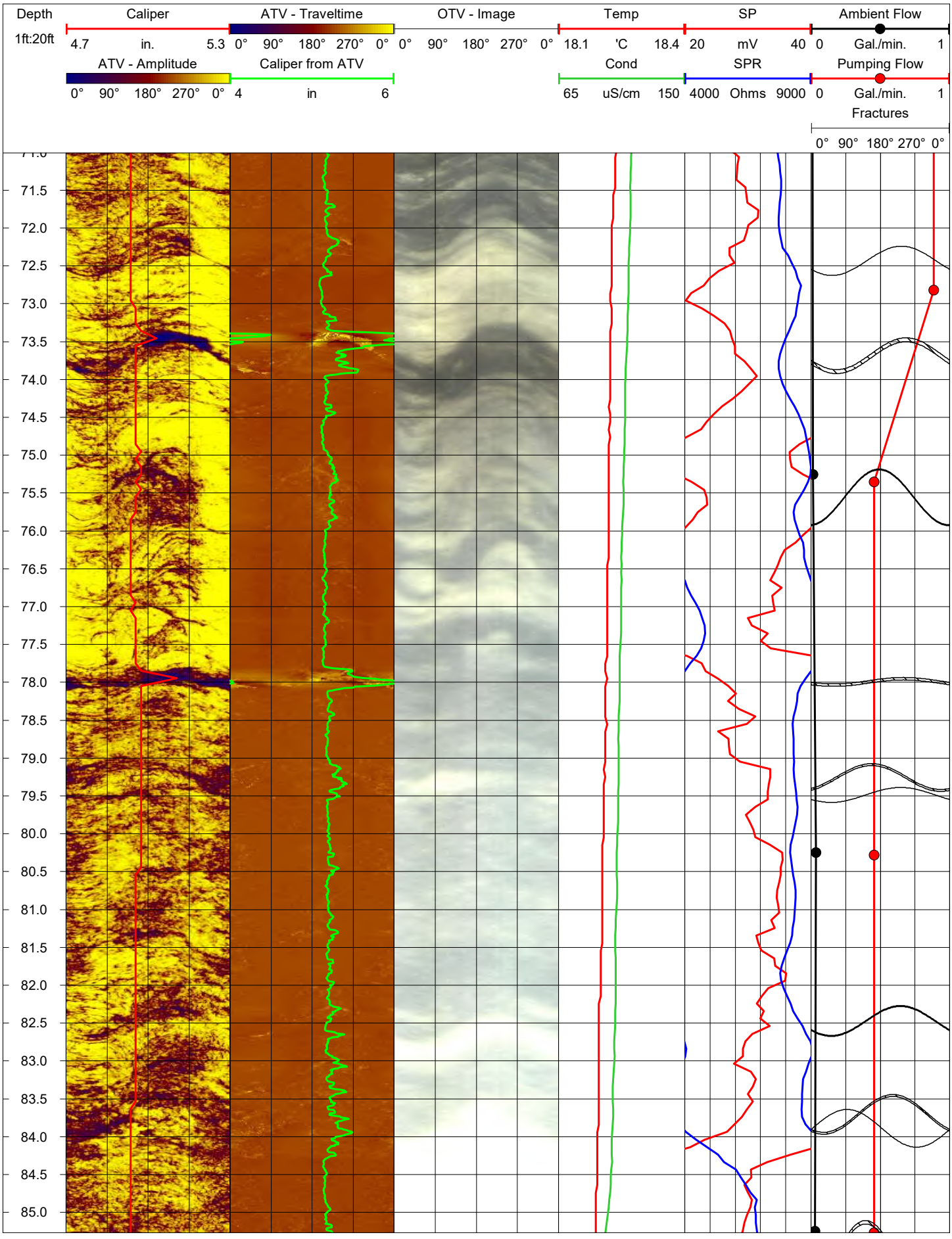

Depth
1ft:20ft
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper
4.5 in. 5.5
OTV - Image
0° 90° 180° 270° 0°
Temp
16 'C 17
SP
-25 mV 25
HPF Ambient
-0.1 Gal./min. 0.6
Caliper - from ATV
4.5 in 5.5
ATV - Traveltime
0° 90° 180° 270° 0°
Cond
250 uS/cm 400
SPR
2000 Ohms 4000
HPF Pumping
-0.1 Gal./min. 0.6
Fractures
0° 90° 180° 270° 0°
33.0
34.0
35.0
36.0
37.0
38.0
39.0
40.0
41.0
42.0
43.0
44.0
45.0
46.0
Well ID:
MW - 39 BR
Bottom of Casing


Depth
1ft:20ft
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper
4.5 in. 5.5
OTV - Image
0° 90° 180° 270° 0°
Temp
16 'C 17
SP
-25 mV 25
HPF Ambient
-0.1 Gal./min. 0.6
Caliper - from ATV
4.5 in 5.5
ATV - Traveltime
0° 90° 180° 270° 0°
Cond
250 uS/cm 400
SPR
2000 Ohms 4000
HPF Pumping
-0.1 Gal./min. 0.6
Fractures
0° 90° 180° 270° 0°
47.0
48.0
49.0
50.0
51.0
52.0
53.0
54.0
55.0
56.0
57.0
58.0
59.0
60.0


Depth
1ft:20ft
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper
4.5 in. 5.5
OTV - Image
0° 90° 180° 270° 0°
Temp
16 'C 17
SP
-25 mV 25
HPF Ambient
-0.1 Gal./min. 0.6
Caliper - from ATV
4.5 in 5.5
ATV - Traveltime
0° 90° 180° 270° 0°
Cond
250 uS/cm 400
SPR
2000 Ohms 4000
HPF Pumping
-0.1 Gal./min. 0.6
Fractures
0° 90° 180° 270° 0°
61.0
62.0
63.0
64.0
65.0
66.0
67.0
68.0
69.0
70.0
71.0
72.0
73.0
74.0


Depth
1ft:20ft
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper
4.5 in. 5.5
OTV - Image
0° 90° 180° 270° 0°
Temp
16 'C 17
SP
-25 mV 25
HPF Ambient
-0.1 Gal./min. 0.6
Caliper - from ATV
4.5 in 5.5
ATV - Traveltime
0° 90° 180° 270° 0°
Cond
250 uS/cm 400
SPR
2000 Ohms 4000
HPF Pumping
-0.1 Gal./min. 0.6
Fractures
0° 90° 180° 270° 0°
76.0
77.0
78.0
79.0
80.0
81.0
82.0
83.0


Depth
1ft:20ft
Caliper
4.7 in. 5.3
ATV - Traveltime
0° 90° 180° 270° 0°
OTV - Image
0° 90° 180° 270° 0°
Temp
18.1 'C 18.4
SP
20 mV 40
Ambient Flow
0 Gal./min. 1
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper from ATV
4 in 6
Cond
65 uS/cm 150
SPR
4000 Ohms 9000
Pumping Flow
0 Gal./min. 1
Fractures
0° 90° 180° 270° 0°
57.0
57.5
58.0
58.5
59.0
59.5
60.0
60.5
61.0
61.5
62.0
62.5
63.0
63.5
64.0
64.5
65.0
65.5
66.0
66.5
67.0
67.5
68.0
68.5
69.0
69.5
70.0
70.5
Well ID:
MW - 42 BR
Bottom of Casing


Depth
1ft:20ft
Caliper
4.7 in. 5.3
ATV - Traveltime
0° 90° 180° 270° 0°
OTV - Image
0° 90° 180° 270° 0°
Temp
18.1 'C 18.4
SP
20 mV 40
Ambient Flow
0 Gal./min. 1
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper from ATV
4 in 6
Cond
65 uS/cm 150
SPR
4000 Ohms 9000
Pumping Flow
0 Gal./min. 1
Fractures
0° 90° 180° 270° 0°
71.5
72.0
72.5
73.0
73.5
74.0
74.5
75.0
75.5
76.0
76.5
77.0
77.5
78.0
78.5
79.0
79.5
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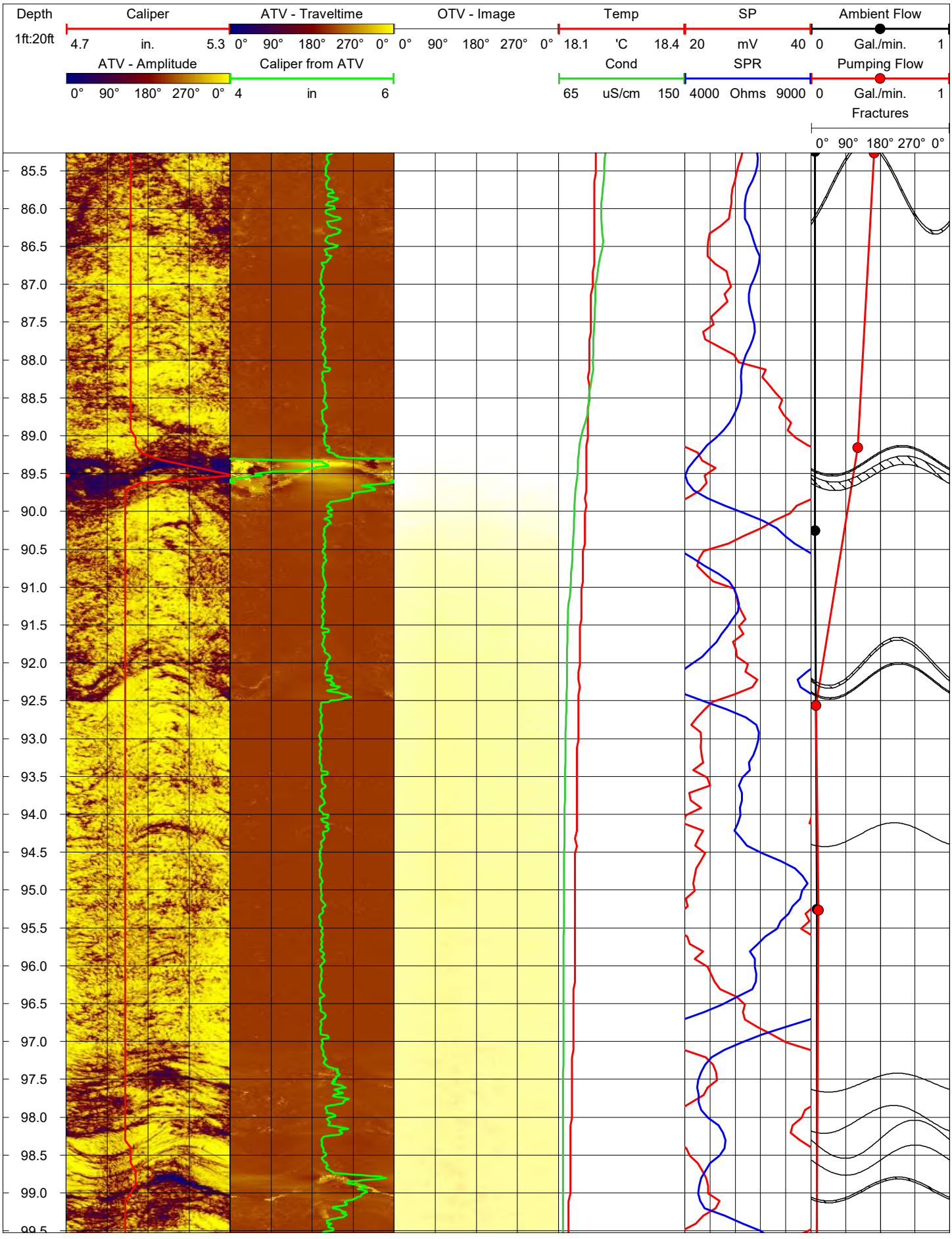
80.5
81.0
81.5
82.0
82.5
83.0
83.5
84.0
84.5
85.0


Depth
1ft:20ft
Caliper
4.7 in. 5.3
ATV - Traveltime
0° 90° 180° 270° 0°
OTV - Image
0° 90° 180° 270° 0°
Temp
18.1 'C 18.4
SP
20 mV 40
Ambient Flow
0 Gal./min. 1
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper from ATV
4 in 6
Cond
65 uS/cm 150
SPR
4000 Ohms 9000
Pumping Flow
0 Gal./min. 1
Fractures
0° 90° 180° 270° 0°
85.5
86.0
86.5
87.0
87.5
88.0
88.5
89.0
89.5
90.0
90.5
91.0
91.5
92.0
92.5
93.0
93.5
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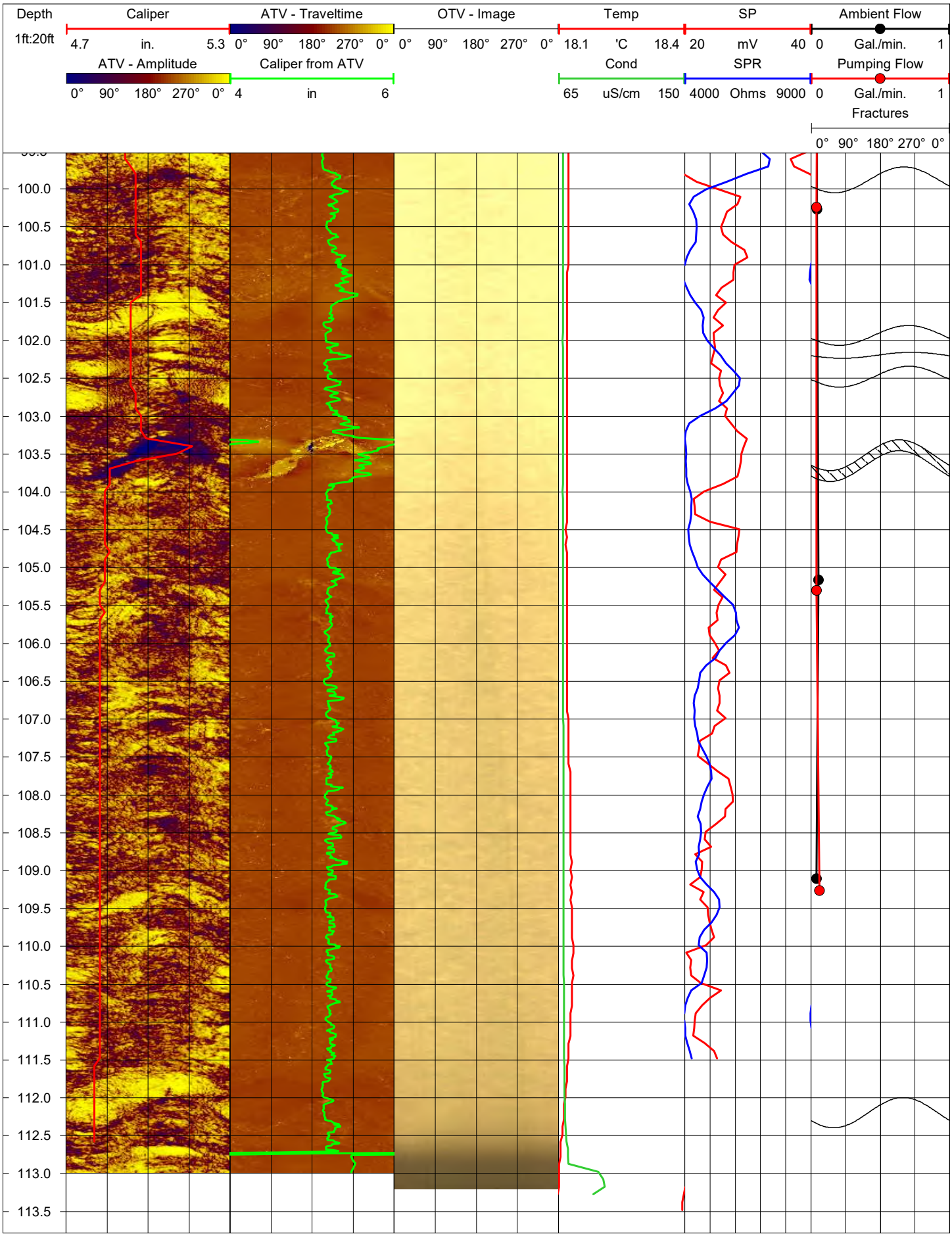
99.5


Depth
1ft:20ft
Caliper
4.7 in. 5.3
ATV - Traveltime
0° 90° 180° 270° 0°
OTV - Image
0° 90° 180° 270° 0°
Temp
18.1 'C 18.4
SP
20 mV 40
Ambient Flow
0 Gal./min. 1
ATV - Amplitude
0° 90° 180° 270° 0°
Caliper from ATV
4 in 6
Cond
65 uS/cm 150
SPR
4000 Ohms 9000
Pumping Flow
0 Gal./min. 1
Fractures
0° 90° 180° 270° 0°
100.0
100.5
101.0
101.5
102.0
102.5
103.0
103.5
104.0
104.5
105.0
105.5
106.0
106.5
107.0
107.5
108.0
108.5
109.0
109.5
110.0
110.5
111.0
111.5
112.0
112.5
113.0
113.5

ATTACHMENT C

LABORATORY ANALYTICAL REPORTS FOR GROUNDWATER, SURFACE WATER, AND SEDIMENT

(LABORATORY ANALYTICAL REPORTS TRANSMITTED ELECTRONICALLY WITH HARDCOPY DELIVERABLE)