

**Colorado Oil and Gas Conservation Commission
Denver, Colorado**

**Monitoring Wells Summary Report
September 2004**

**3M Project Monitoring Program
La Plata County, Colorado**

Colorado Oil and Gas Conservation Commission
Applied Hydrology Associates, Inc.
Denver, Colorado

October 2004

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1.0 INTRODUCTION

The 3M Project Monitoring Program in La Plata County, Colorado was initiated by the Colorado Oil and Gas Conservation Commission (COGCC) in January 2001. This report describes the results of wellhead and bottomhole pressure monitoring at four monitoring well sites through September, 2004. The monitoring work was carried out by staff of the COGCC and Applied Hydrology Associates, Inc. (AHA) on behalf of the COGCC.

Figure 1 shows the location of the four monitoring well sites. Table 1 identifies the monitoring wells, locations, and the depths of completion at the four monitoring well sites. Table 2 lists the depth and type of pressures transducers used in each monitoring well. Table 3 provides a chronology of monitoring well installation, operation and maintenance activities from January 2001 through June 2004.

2.0 MONITORING ACTIVITIES AND DATA SUMMARY

2.1 MONITORING SITE ACTIVITIES IN THIRD QUARTER 2004

Monitoring site maintenance and repair activities performed August 24-25, 2004 included the following:

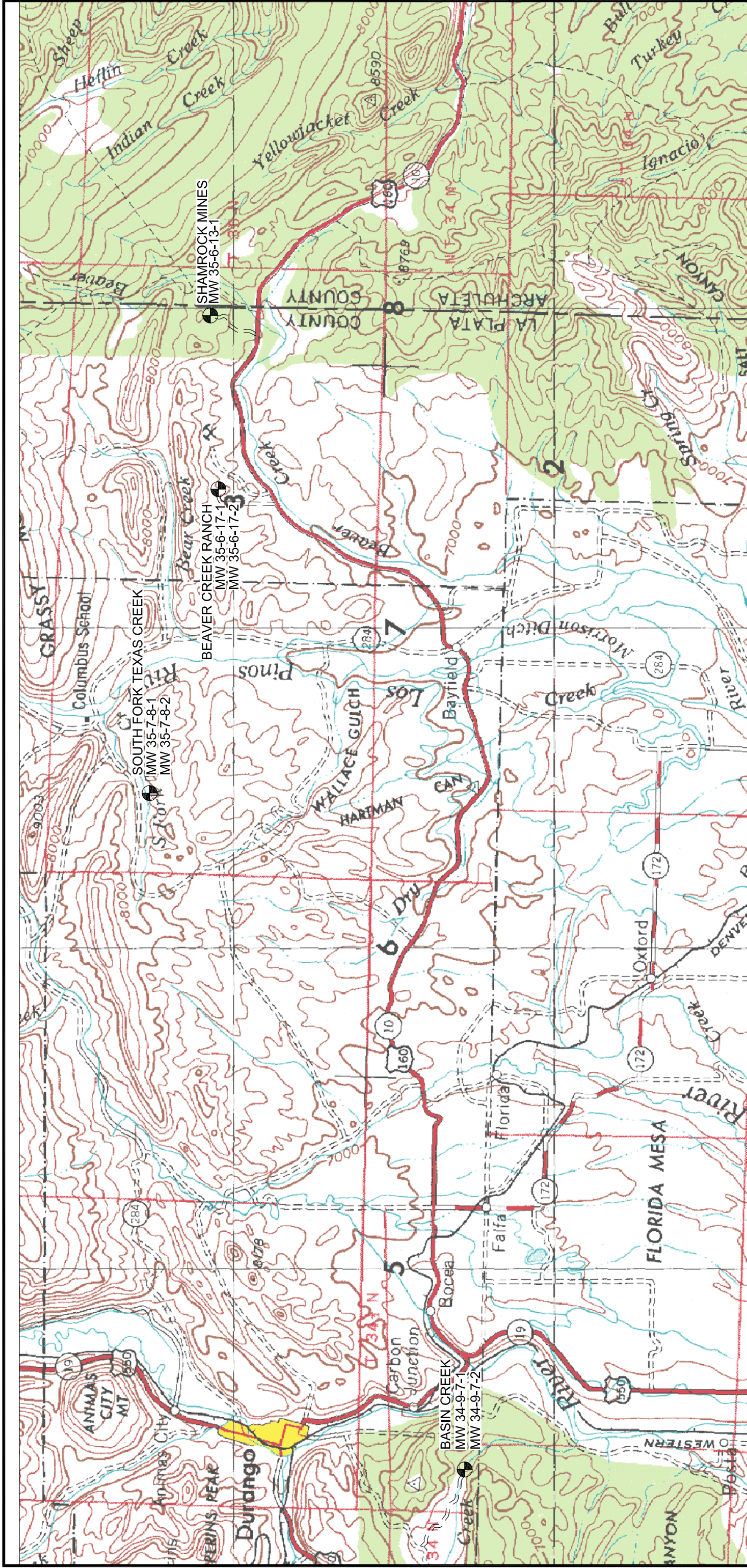
- Raised upper pressure transducer in Basin Creek well MW 34-9-7-2 to 1.65 ft above ground surface
- Replaced 1000 psia lower transducer in South Fork Texas Creek well MW 35-7-8-1 with a 500 psia transducer
- Installed new internal alkaline battery pack in each of the 4 Hermit 3000 data loggers
- Collected gas sample from each monitoring well with wellhead pressure greater than atmospheric pressure

Remote downloading of well pressure measurements automatically recorded at each of the four monitoring sites was performed monthly by AHA in Denver via telemetry.

2.2 MONITORING WELL PRESSURE DATA SUMMARY

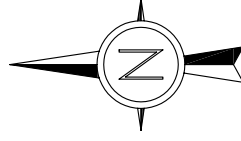
Well pressure is currently being measured and recorded twice daily (12-hour interval) at all sites. Well pressure and calculated well water level data for the entire period of record for each monitoring well are plotted in annotated charts. The water level in a well is calculated using the depth of the lower transducer and the difference in pressure between upper and lower transducers. This calculation is only applicable when the water level in a well is below the upper transducer.

Well pressure data analyses and interpretation by site and monitoring well are summarized below. Well pressure measurements recorded by the data logger at each monitoring well site are available upon request to all interested parties.



MONITORING WELL SITE AND DESIGNATION

SOURCE
USGS 1" X 2" SERIES (TOPOGRAPHIC)
NJ 13-7
DURANGO, COLORADO



0 10,000 20,000
FEET
CONTOUR INTERVAL 200 FEET



Applied
Hydrology
Associates, Inc.

3M Project
La Plata County, CO

Figure 1
3M Site Map
Well Locations

| | | | | | |
|---------|-----|--------|----------|-----------------|----------------------|
| DESIGN: | NLH | DATE: | 6/12/02 | DRAWING NUMBER: | |
| DRAWN: | JLS | SCALE: | AS SHOWN | PROJECT: | San Juan Dur-Bay.dwg |
| SCRIP: | | | | | |

**Table 1
3M Project Monitoring Well Completion Summary**

| Location | Well ID | Construction Completion Date | Drilled Depth (fbgs) | Cored Intervals (fbgs) | Casing Depth (fbgs) | Casing Stickup (fags) | Well Casing Material | Perforated Interval in Coal seam(s) (fbgs) | Wellhead Design (Figure Number) | Log Type | Logged Depth (fbgs) | Log Date | |
|------------------------|--|------------------------------|----------------------|---------------------------------------|---------------------|-----------------------|--|--|-------------------------------------|--|----------------------------------|----------|----------|
| Basin Creek | MW 34-9-7-1 | 01/28/01 | 820 | | 802 | 1 | 2", Schedule 40 galvanized steel pipe | 578 - 609 | 2-1 | gamma ray, bulk density, caliper, resistance | 819 | 01/27/01 | |
| | | | | | | | | | | 64" normal resistivity, 16" normal resistivity, sp | 822 | 01/27/01 | |
| | | | | | | | | | | temperature, differential temperature | 822 | 01/27/01 | |
| | | | | | | | | | | gamma ray, casing collar locator | 763 | 09/27/01 | |
| | MW 34-9-7-2 | 04/25/02 | 570 | 359 - 374 * 498 - 513 578 - 593 | 561 | 1.5 | 2.875" & 2.375", Oilfield steel tubing | 496 - 526 | 2-2 | gamma ray, casing collar locator | 550 | 05/02/02 | |
| South Fork Texas Creek | MW 35-7-8-1 | 09/20/01 | 486 | | 463 | 1.6 | 2", Schedule 40 galvanized steel pipe | 403 - 416 | 2-1 | gamma ray, bulk density, caliper, resistance | 485 | 09/19/01 | |
| | | | | | | | | | | 64" normal resistivity, 16" normal resistivity, sp | 485 | 09/19/01 | |
| | | | | | | | | | | temperature, differential temperature | 485 | 09/19/01 | |
| | | | | | | | | | | gamma ray, casing collar locator | 462 | 09/27/01 | |
| | | MW 35-7-8-2 | 09/21/01 | 420 | 410 - 425 | 425 | 1.6 | 2", Schedule 40 galvanized steel pipe | 235 - 241 254 - 258 264 - 274 | 2-1 | gamma ray, casing collar locator | 420 | 09/27/01 |
| Beaver Creek Ranch | MW 35-6-17-1 | 04/04/02 | 1,645 | 1,457 - 1,467 1,564 - 1,572 | 1,631 | 1.5 | 2.875", Oilfield steel tubing | 1,572 - 1,576 1,582 - 1,584 | 2-4 | 64" normal resistivity, 16" normal resistivity, sp | 1,645 | 04/03/02 | |
| | | | | | | | | | | temperature, differential temperature | 1,640 | 04/03/02 | |
| | | | | | | | | | | gamma ray, bulk density, caliper, resistance | 1,643 | 04/03/02 | |
| | | | | | | | | | | gamma ray, casing collar locator | 1,618 | 05/02/02 | |
| | | MW 35-6-17-2 | 10/04/01 | 1,550 | | 1,500 | 2 | 2", Schedule 40 galvanized steel pipe | 1,437 - 1,449 1,458 - 1,472 | 2-3 | gamma ray, neutron | 1,499 | 10/10/01 |
| | temperature, 4Pi density | | | | | | | | | | 1,493 | 11/14/01 | |
| | signal amplitude, travel time \ D T, VDL | | | | | | | | | | 1,484 | 11/14/01 | |
| | | | | | | | | | | gamma ray, casing collar locator | 1,483 | 11/27/01 | |
| Shamrock Mines | MW 35-6-13-1 | 05/07/02 | 627 | | 606 | 1.5 | 2.375", Oilfield steel tubing | 507 - 511 517 - 533 539 - 562 | 2-2 | gamma ray, bulk density, caliper, resistance | 626 | 05/06/02 | |
| | | | | | | | | | | 64" normal resistivity, 16" normal resistivity, sp | 626 | 05/06/02 | |
| | | | | | | | | | | gamma ray, casing collar locator | 626 | 05/10/02 | |

* Cored interval from initial well drilled in February 2001 that was subsequently plugged and abandoned due to bad cement job.

Table 2
3M Project Monitoring Well Pressure Transducers

| Location | Well ID | Upper Transducer | | Lower Transducer | |
|------------------------|--------------|------------------|--------------------|------------------|--------------------|
| | | Depth (fbgs) | Type and Rating | Depth (fbgs) | Type and Rating |
| Basin Creek | MW 34-9-7-1 | 0.5 | PXD-261-30 psig | 570 | PXD-461-500 psia |
| | MW 34-9-7-2 | 1.65 ftags* | PXD-461-500 psia | 485 | PXD-461-500 psia |
| South Fork Texas Creek | MW 35-7-8-1 | 5 | PXD-261-30 psig | 390 | PXD-461-500 psia |
| | MW 35-7-8-2 | 4 | PXD-461-500 psia | 225 | PXD-461-500 psia |
| Beaver Creek Ranch | MW 35-6-17-1 | 5 | PXD-461-500 psia | 1,565 | PXD-461-1,000 psia |
| | MW 35-6-17-2 | 2.5 ftags** | PXD-461-1,000 psia | None** | PXD-461-1,000 psia |
| Shamrock Mines | MW 35-6-13-1 | 5 | PXD-461-500 psia | 500 | PXD-461-1,000 psia |

* MW34-9-7-2 upper transducer raised from 4.6 fbgs to ground surface April 23, 2004 and to 1.65 ftags August 25, 2004

** MW 35-6-17-2 lower transducer raised from 1420 fbgs to 1415 fbgs August 22, 2003

MW 35-6-17-2 lower transducer removed and upper transducer raised to 2.5 ftags April 22, 2004

Table 3
3M Project Monitoring Well Chronology

| Location | Well | 2001 | | | | 2002 | | | | | | | | | |
|------------------------|--------------|--------------------------------|---|---|----------|---|---|-------------------------------------|---|--|----------|--|--|---|--|
| | | January | September | November | December | January | February | March | April | May | June | July | November | December | |
| Basin Creek | MW 34-9-7-1 | Jan. 24-28: Drill/install well | Sept. 27: Perforate well | Nov. 28: Set up telemetry unit; replace bad xds cables | Surveyed | Jan. 18: Tighten wellhead fittings; rewire telemetry system | Install new batteries in telemetry unit with In-Situ assistance | | | | | | | | Lost telemetry communication with datalogger |
| | MW 34-9-7-2 | | | | | | | | April 24-25: Drill & install well | May 5: Perforate well May 9: Fish out cable May 22: Install xds | Surveyed | | | | |
| South Fork Texas Creek | MW 35-7-8-1 | | Sept. 17-20: Drill/install well; Sept. 27: Perforate well | Nov. 29: Set up telemetry unit; replace bad xd cables | Surveyed | Jan. 18: Tighten wellhead fittings; rewire telemetry unit | Install new batteries in telemetry unit with In-Situ assistance | | | May 21: Ck for leaks | | | | Dec. 4: Data lost through end of year due to Hermit internal battery failure; lost telemetry communication with datalogger | |
| | MW 35-7-8-2 | | Sept. 20-21: Drill/install well Sept. 27: Perforate well | Nov. 29: Set up telemetry unit; replace bad xd cables | Surveyed | Jan. 18: Tighten wellhead fittings | | | | May 21: Ck for leaks | | | | | |
| Beaver Creek Ranch | MW 35-6-17-1 | | | | | | Install new batteries in telemetry unit with In-Situ assistance | Mar. 5- Apr 4: Drill & install well | | May 2: Perforate well; May 20-21: Install xds | Surveyed | July 10: Replace lower xd cable with unvented cable | | Dec 13: Insp by Raymond Const. - no wellhead gas leak; solar pwr @ 14.8 v; datalogger batt pack @ 0% capacity; modem pwr off (auto pwr-up disabled or modem memory prob); | |
| | MW 35-6-17-2 | | Sept. 22-Oct. 4: Drill/install well | Nov. 26: Perforate well Nov. 27: Set up telemetry unit | Surveyed | Jan. 17 - Install new xd cables with SwageLok fittings; rewire telemetry unit | | | Apr 8: Pull lower xd cable; no data Apr 8 to May 20 | May 21: Install unvented, heavy duty xd cable | | Gas leak @ top bushing; July 10: Vent well & ck bushing galls; July 11: Shut in well | Nov. 14: Vent well; replace valve and reseal all connections | Dec. 19: Data lost through end of year due to bad data logger bkup battery | |
| Shamrock Mines | MW 35-6-13-1 | | | | | | | | | May 3-7: Drill/install well; May 10: Perforate well; May 20, 21: Install pad, telemetry & data logger systems, & xds | Surveyed | | | Lost telmetry communication with datalogger | |

Table 3
3M Project Monitoring Well Chronology

| Location | Well | 2003 | | | | | | | 2004 | | | | |
|------------------------|--------------|--|---|---|--|--|--|--|---|--|--|--|--|
| | | January | Feb - May | May | June | August | October | December | January- March | April | August | | |
| Basin Creek | MW 34-9-7-1 | Jan 20: New well 34-9-7-1 upper xd (30 psig, sn 7201); move datalogger ext pwr + lead to + pole on batt charger regul.; replace datalogger bkup batt; re-flash modem memory; enable modem auto pwr-up; start new datalogger test | Telemetry system malfunction; datalogger & power OK | May 20: Replace modem and cell phone; power and datalogger systems OK | | Aug 21: Vent both wells and tighten wellhead xd cable strain relief fittings | Oct 8: Conduct rapid blowdown & shutin test | | | | Aug 25: New data logger battery pack; vent well; gas sample | | |
| | MW 34-9-7-2 | | | | Aug 21: Vent both wells and tighten wellhead xd cable strain relief fittings | Oct 8: Conduct rapid blowdown & shutin test | | | Apr 23: vent well & raise upper xd from 5 fbg to ground surface | Aug 25: vent well; raise upper xd to 1.65 ft above ground; gas sample | | | |
| South Fork Texas Creek | MW 35-7-8-1 | Jan 20: Move datalogger ext pwr + lead to + pole on batt charger regul.; replace datalogger bkup batt; re-flash modem memory; enable modem auto pwr-up; start new datalogger test | Telemetry system malfunction; datalogger & power OK | May 20: Replace modem and cell phone; power and datalogger systems OK | ~June 16: lower xd failed | | Oct 8: Conduct well pressure buildup test | | No data reported for 6/16/03 to 4/22/04 - lower xd failed | Apr 22: vent well; temporarily replaced lower xd with 1000 psia xd | Aug 25: New data logger battery pack; vent well; tighten xd fittings; gas sample | | |
| | MW 35-7-8-2 | | | | | | Oct 8: Conduct well pressure buildup test | Well pressure data suggest that wellhead xd cable strain relief fittings leak intermittently in winter | Apr 22: vent well; replaced strain relief fittings | Aug 25: vent well; tighten xd fittings replace lwr 1000 psia xd with new 500 psia xd; gas sample | | | |
| Beaver Creek Ranch | MW 35-6-17-1 | Jan 7 & Jan 21: No wellhead gas leak @ MW35-6-17-2; Jan 21: Move datalogger, modem & solar panel pwr common leads to charger regul. common poles; replace datalogger bkup lith. batt; re-flash modem memory; enable modem auto pwr-up; start new datalogger test | Telemetry system malfunction; datalogger & power OK | May 20: Replace modem and cell phone; power and datalogger systems OK | | | Oct 7 & 21: conduct well pressure buildup tests | | | | Aug 24: New data logger battery pack; vent well; Aug 25: gas sample | | |
| | MW 35-6-17-2 | | MW 35-6-17-2: Bushing leak | May 20: Location of wellhead threaded bushing leak identified; wellhead assembly to be redesigned | | Aug 20: New flanged wellhead assembly installed; xd cable leak at swagelok fitting | Oct 8 & 21: well pressure buildup tests; wellhead leaks @ pressure >570 psia | Wellhead leaks @ pressure >570 psia | Wellhead leaks @ pressure >570 psia | Apr 22: vent well/removed lower xd; attached upper xd externally to wellhead; no leaks | Aug 24: vent well; Aug 25: gas sample | | |
| Shamrock Mines | MW 35-6-13-1 | Jan 21: Move solar pwr common lead to common pole on charger regul.; replaced datalogger bkup lith. batt; re-flash modem memory; enable modem auto pwr-up; start new datalogger test | Telemetry system malfunction; datalogger & power OK | May 20: Replace modem and cell phone; power and datalogger systems OK | | Aug 20: Modem not powering up; replaced 12v battery - works | Oct 7: Replace 12v Pb-acid battery, modem works; Oct 8: well pressure buildup tests; Oct 21: Replace solar panel | | | | Aug 24: New data logger battery pack; vent well, no gas to sample | | |

2.2.1 BASIN CREEK

MW 34-9-7-1

Figure 2 charts the upper and lower pressure transducer data and the calculated water level in the well for the period of record. Initial and ending monitoring well pressures and calculated water levels in the well are summarized in Table 4 for the period of record. This well has been monitored continuously since November 29, 2001.

**Table 4
 Well Pressure Data Summary for Basin Creek Monitoring Wells**

| Well ID and Transducers (XD) | Period of Record | Initial Well Pressure psia | Ending Well Pressure psia | Net Change in Well Pressure psi | Initial Water Level in Well fbg | Ending Water Level in Well fbg | Net Water Level Change in Well ft |
|-------------------------------------|-------------------------|-----------------------------------|----------------------------------|--|---|---------------------------------------|--|
| MW 34-9-7-1 Upper XD | 11/29/01 to 9/30/04 | 11.46 | 18.09 | 6.63 | 20.97 | 61.07 | -40.10 |
| Lower XD | | 249.34 | 238.60 | -10.74 | | | |
| MW 34-9-7-2 Upper XD* | 05/24/02 to 4/23/04 | 31.20 | 27.80* | -3.40 | Well water level appears to be above ground level; see discussion and Figures 3 and 3a for more details | | |
| Upper XD** | 4/23/04 To 8/25/04 | 25.73 | 26.13 | 0.40 | | | |
| Upper XD*** | 8/26/04 To 9/30/04 | Average 25.40 | Average 24.75 | -0.65 | | | |
| Lower XD | 5/24/02 to 9/30/04 | 241.42 | 234.42 | -5.93 | | | |

* MW 34-9-7-2 upper XD at 4.6 ft below ground level (under water)

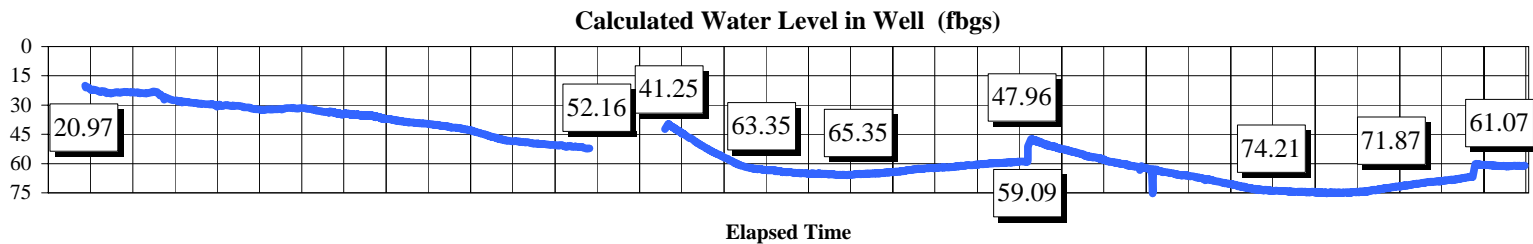
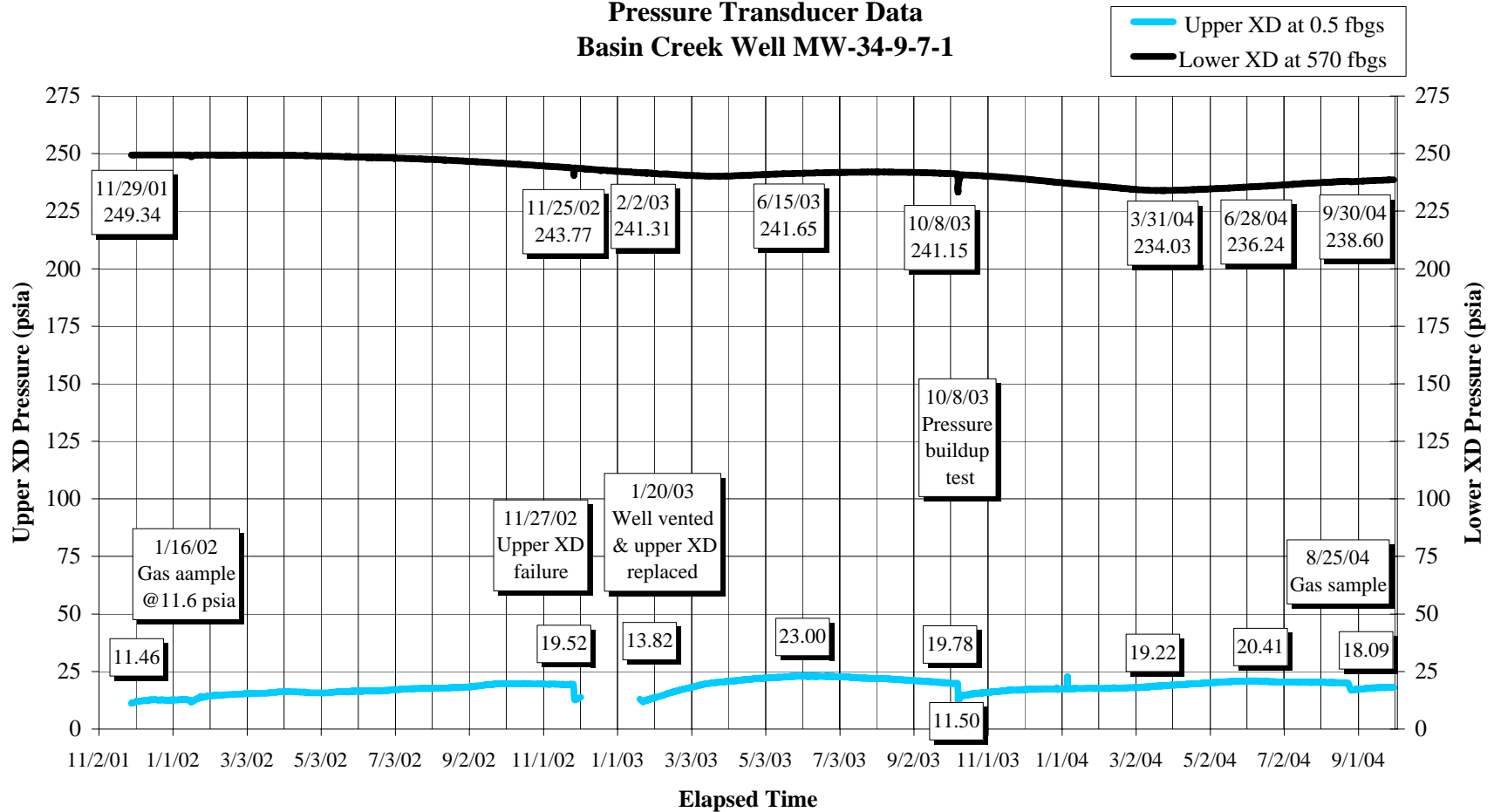
** MW 34-9-7-2 upper XD at ground level (under water)

*** MW 34-9-7-2 upper XD at 1.65 ft above ground level

The upper transducer, lower transducer and calculated well water level charts (Figure 2) indicate a trend of gradually increasing pressure at the wellhead, decreasing bottomhole pressure, and a corresponding apparent decline in the water level in the well for the period of record. In addition, Figure 2 shows bottomhole pressure and well water level are subject to slight seasonal fluctuations in the overall declining trend for the period of record.

The three short-term interruptions in the wellhead pressure and calculated well water level curves for the period of record are due to venting of the well to replace a transducer, conduct a pressure build up test, or to sample gas from the well. Bottomhole pressure rapidly returned to previous levels after each time the well was vented, while wellhead pressure and water level in the well gradually returned to previous levels.

Figure 2
Pressure Transducer Data
Basin Creek Well MW-34-9-7-1



MW 34-9-7-2

Well MW 34-9-7-2 has been monitored continuously since May 24, 2002. As discussed below, the upper transducer was raised from 4.6 feet below ground level to ground level on April 23, 2004, and to 1.65 feet above ground level on August 25, 2004 to identify the shut-in water level in the well. The pressure data for well MW-34-9-7-2 are charted on Figures 3 and 3a. Figure 3 also charts the calculated bottomhole and wellhead differential pressure in the well for the period of record. Initial and ending monitoring well pressures and estimated water level in the well are summarized in Table 4 for the period of record.

Figures 3 and 3a show a trend of gradually declining bottomhole pressures for the period of record. Figure 3a shows slight seasonal fluctuations in bottomhole pressures between January 1, 2004 and September 30, 2004 within the overall declining trend for the period of record.

Figures 3 and 3a show a notable difference in wellhead pressure relative to the location of the upper transducer. On April 23, 2004 (Figure 3a), the shut-in wellhead pressure at 4.6 fbgs was 27.8 psia versus 25.73 psia at ground level, a difference of about 2 psia. On August 25, 2004, the shut-in pressure at ground level was 26.13 psia versus 25.08 psia at 1.65 ft above ground surface (ftags), a difference of about 1 psia. In both cases, there was no corresponding difference in the bottomhole pressure (Figure 3a). Differential wellhead pressures between 4.6 fbgs and 1.65 ftags confirm the upper transducer is under water at 4.6 fbgs and ground level. Thus, the previously reported calculated water levels in well MW 34-9-7-2 are incorrect because the method of calculation is valid only if the wellhead pressure transducer is above the water level in the well.

The calculated water level in the well is nearly one foot above ground level immediately after the well is vented. Each time the well was vented on October 8, 2003, April 23, 2004 and August 25, 2004, there was a release of a small volume of gas followed in about one minute by artesian water flow. The flow rate was measured one time at 0.17 gpm from the 2.5-inch wellhead tubing 1.76 feet above ground level. The capacity of 2.5-inch tubing (2.44-inch ID) is 0.243 gallons per linear foot. Since it took about one minute for the water to flow from the tubing at an assumed rate of 0.17 gpm, approximately 0.17 gallons of tubing capacity was filled before the water flowed from the wellhead. A volume of 0.17 gallons will fill approximately 0.7 ft of 2.5-inch tubing ($0.243 \text{ gpf} \times 0.7 \text{ ft} = 0.17 \text{ g}$). Based on the tubing capacity and water discharge rate, the estimated water level in the well was approximately 0.9 feet above ground level ($1.6 \text{ ft stickup} - 0.7 \text{ ft} = 0.9 \text{ ft}$) immediately after the well was vented to atmospheric pressure (about 11.52 psi). This level is consistent with differential pressure data (Figures 3 and 3a) that indicates the upper transducer is underwater in the well at ground level.

The 12-hour interval (3 am and 3 pm) pressure data shows well pressures at 4.6 fbgs and 485 fbgs are subject to only very small diurnal fluctuations (Figure 3a). In contrast, wellhead pressure at and above ground level is subject to significant diurnal fluctuations.. Wellhead pressure is consistently 0.4 psia to 0.5 psia higher at 3 pm than 3am at ground level, and about 1 psia higher at 1.65 ftags. These diurnal pressure fluctuations appear to occur in response to daily ambient air temperature fluctuations that warms and cools the 2.5-inch wellhead tubing above ground level.

Figure 3
Pressure Transducer Data
Basin Creek Well MW-34-9-7-2

- Upper XD 4.6 ft below ground
- Upper XD at ground level
- Upper XD 1.65 ft above ground
- Lower XD at 485.36 fbgs

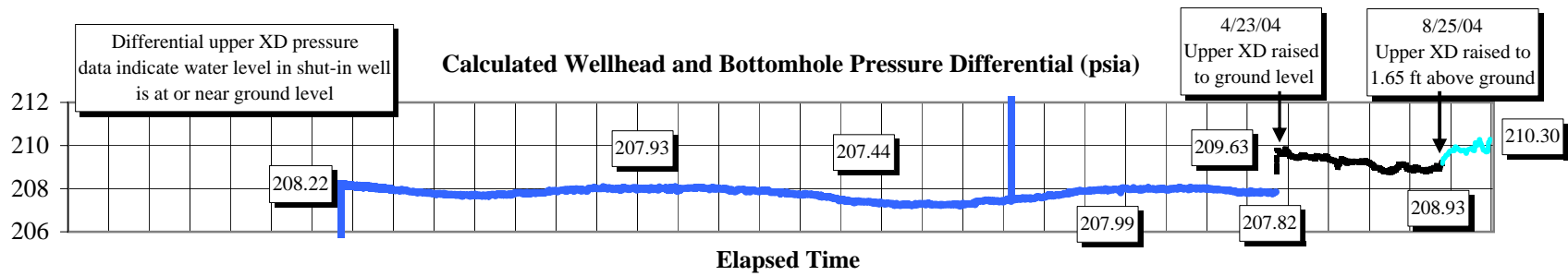
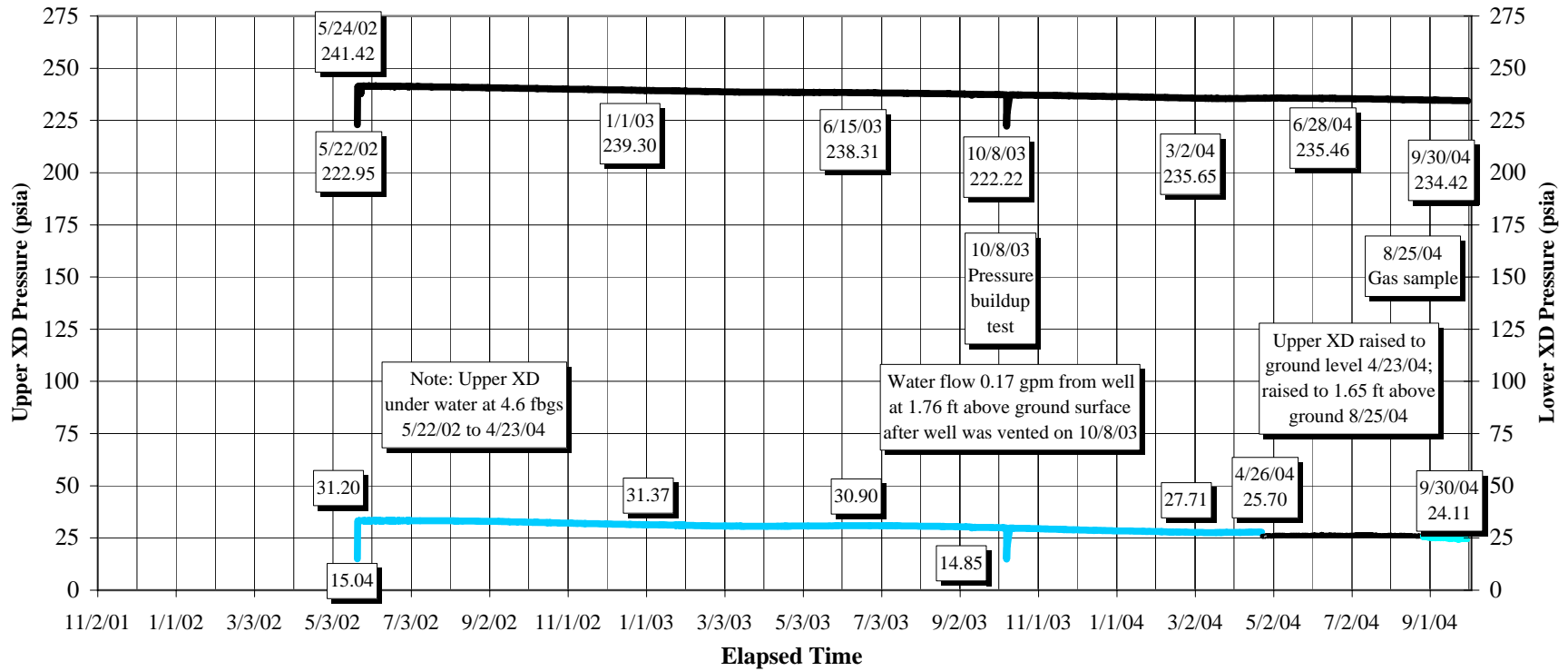
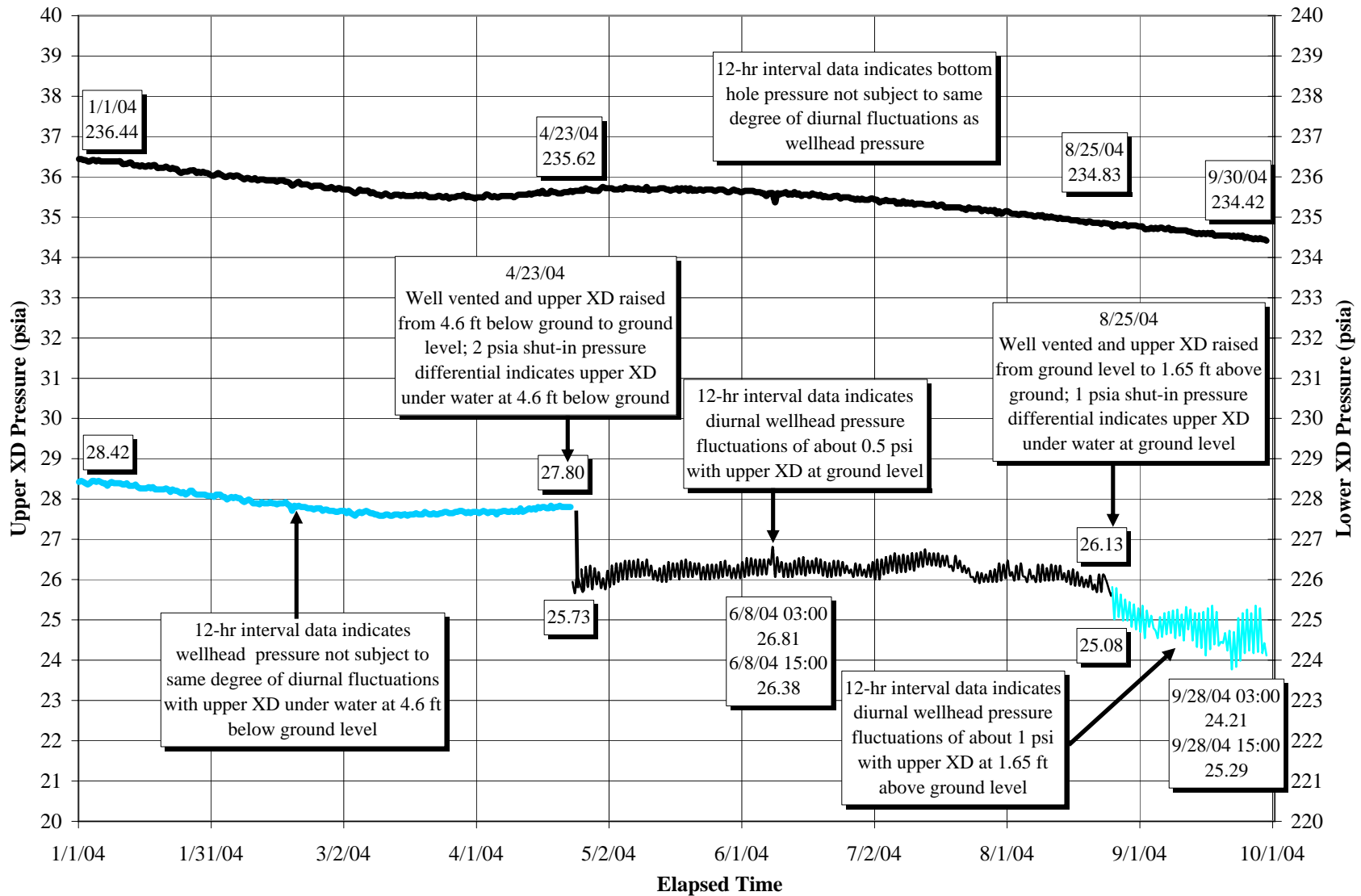


Figure 3a
Pressure Transducer Data
Basin Creek Well MW-34-9-7-2

- Upper XD 4.6 ft below ground
- Upper XD at ground level
- Upper XD 1.65 ft above ground
- Lower XD at 485.36 ft below ground



2.2.2 SOUTH FORK TEXAS CREEK

Both monitoring wells have been monitored continuously since November 29, 2001, except for the period of monitoring system power failure between December 4, 2002 and January 20, 2003.

MW 35-7-8-1

Data for MW 35-7-8-1 are charted in Figures 4 and 4a and summarized in Table 5. Upper transducer data recorded since January 1, 2002 indicate a relatively stable wellhead pressure, ranging between 13.1 psia and 13.8 psia, about 2 psia above atmospheric pressure. On September 30, 2004, the measured atmospheric pressure at this site was as about 11.11 psia. The 13 psia wellhead pressure in this well continues to be about seven times lower than the 90+ psia wellhead pressure measured at well MW 35-7-8-2.

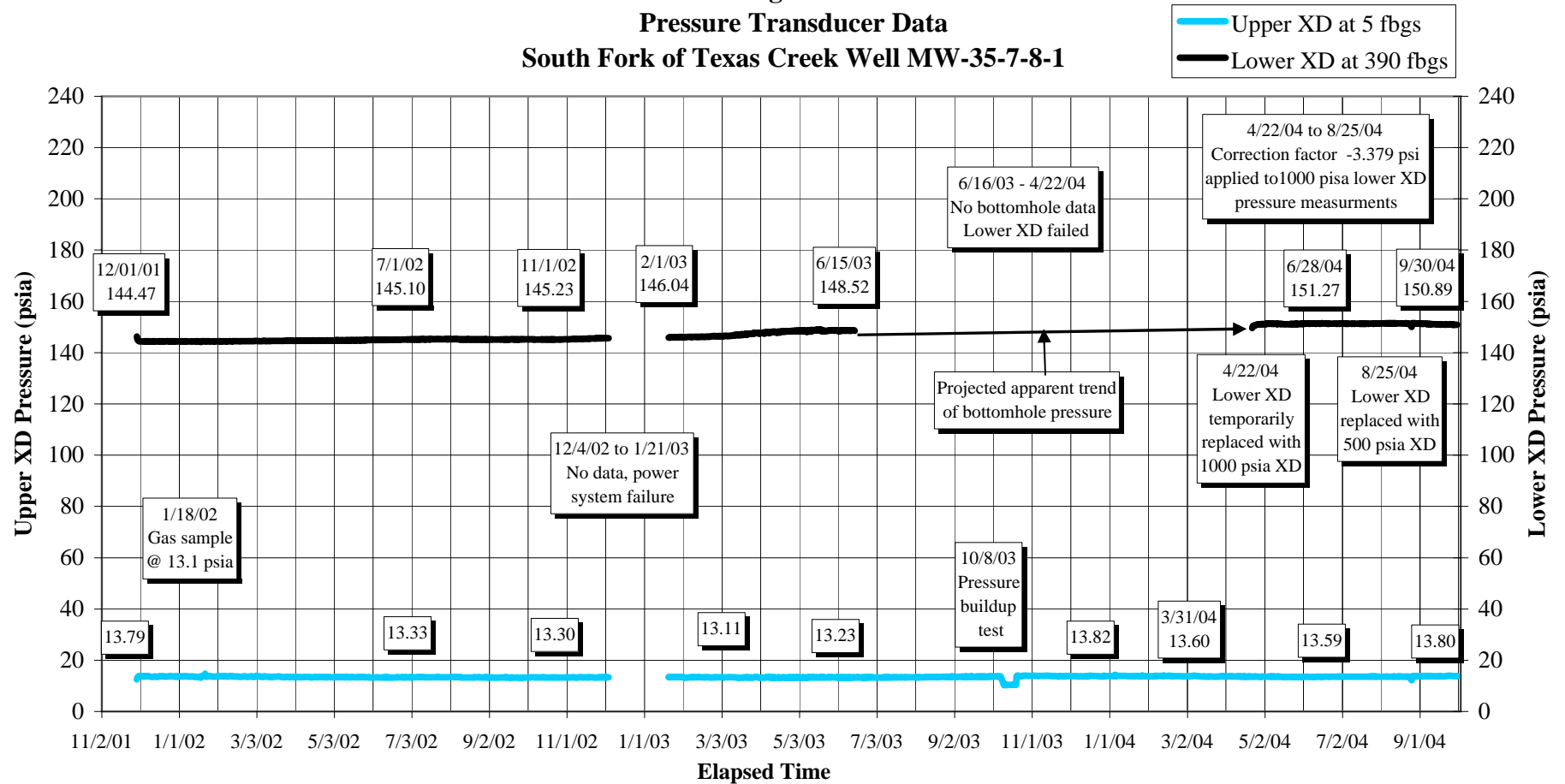
The failed 500 psia lower transducer was temporarily replaced with a 1000 psia transducer on April 22, 2004. Bottomhole pressure measured by the 1000 psia transducer after April 22, 2004 is consistently between 154 and 155 psia. On August 25, 2004, the lower transducer was replaced with a new 500 psia transducer calibrated by In-Situ Inc. in August 2004. There is an average discrepancy of about 3.379 psia between the 1000 psia and 500 psia transducers. The average of the last two pressure measurements recorded for the 1000 psia transducer is 154.739, while the average of the first two 500 psia transducer measurements is 151.360 psia. Since the 500 psia transducer is new and recently calibrated, it is assumed to be more accurate than the 1000 psia transducer. Therefore, a correction factor of -3.379 psia is applied to lower transducer data for the period between April 23, 2004 and August 25, 2004.

The calculated water level in the well on September 30, 2004 (73.6 fbgs) is about 4 feet higher than on June 15, 2003, prior to failure of the lower transducer. Figure 4 shows trend lines for an apparent increase in bottomhole pressure and water level rise for the period of missing bottomhole pressure measurements (June 15, 2003 to April 22, 2004). The calculated water level in the well between May 1, 2004 and September 30, 2004 varied between a high of about 71.54 fbgs on June 16, 2004 to a low of 73.81 fbgs on September 25, 2004.

Table 5
Well Pressure Data Summary for South Fork Texas Creek Monitoring Wells

| Well ID and Transducers (XD) | Period of Record | Initial Well Pressure psia | Ending Well Pressure psia | Net Change in Well Pressure psi | Initial Water Level in Well fbgs | Ending Water Level in Well fbgs | Net Water Level Change in Well ft |
|------------------------------|---------------------|----------------------------|---------------------------|---------------------------------|----------------------------------|---------------------------------|-----------------------------------|
| MW 35-7-8-1 Upper XD | 12/01/01 to 9/30/04 | 13.79 | 13.80 | 0.01 | 88.39 | 73.60 | 14.79 |
| Lower XD | | 144.47 | 150.89 | 6.42 | | | |
| MW 35-7-8-2 Upper XD | 1/15/02 to 9/30/04 | 91.30 | 90.56 | -0.74 | Water level in well is >225 fbgs | | |
| Lower XD | | 91.91 | 90.69 | -1.22 | | | |

Figure 4
Pressure Transducer Data
South Fork of Texas Creek Well MW-35-7-8-1



Calculated Water Level in Well (fbgs)

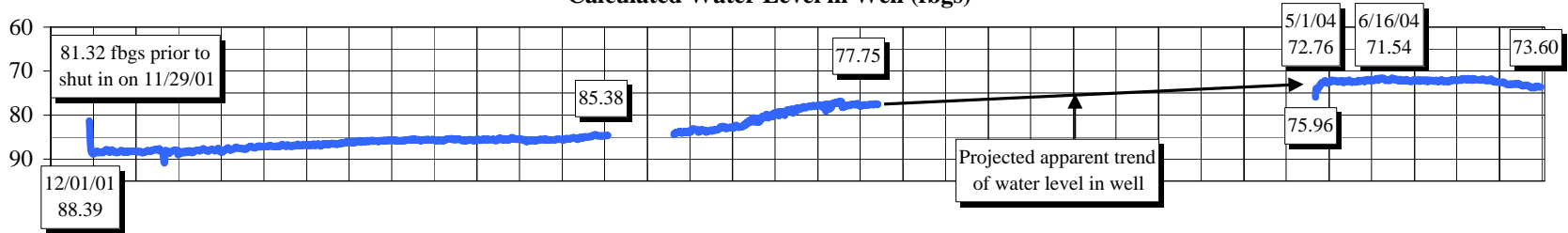
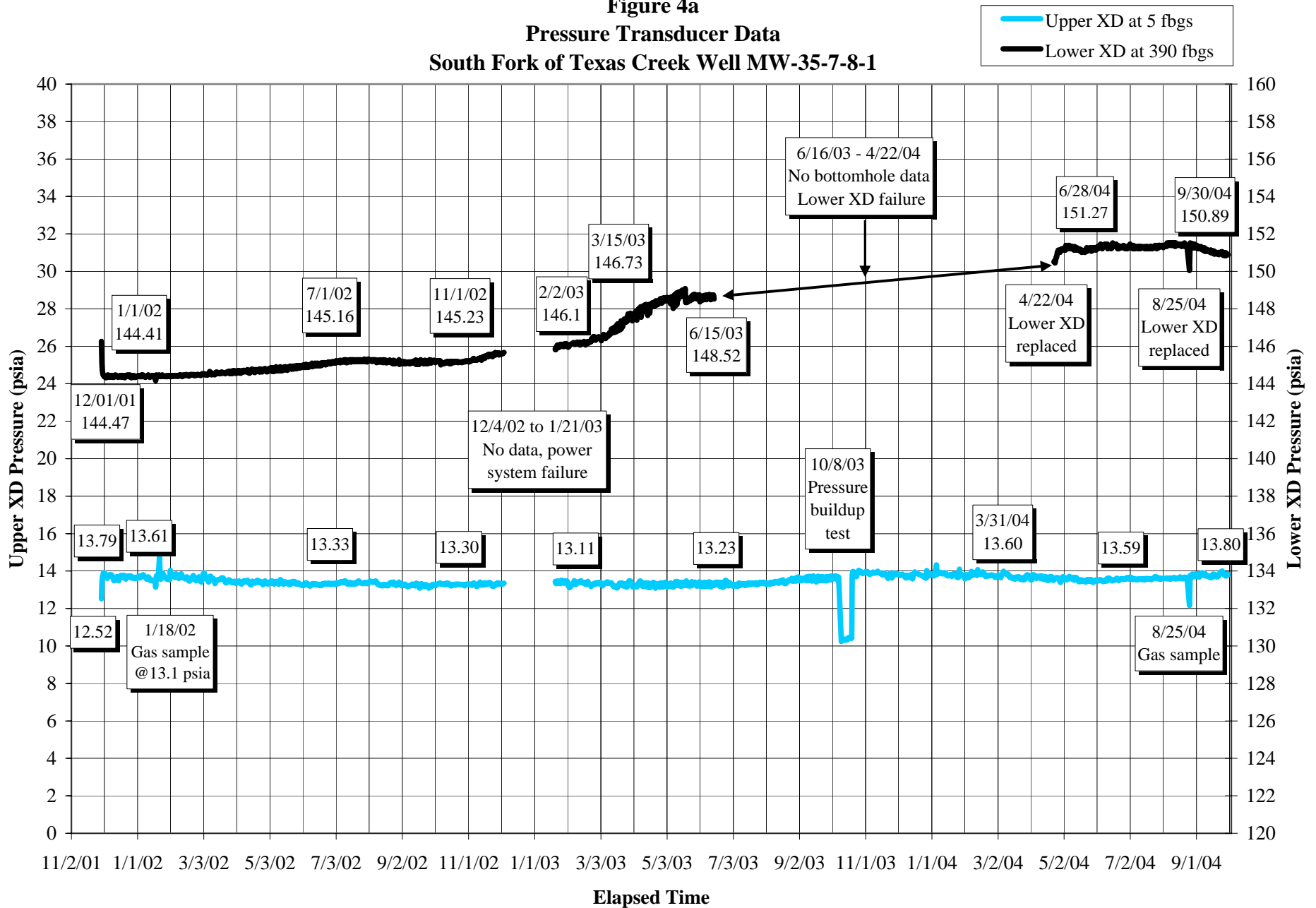


Figure 4a
Pressure Transducer Data
South Fork of Texas Creek Well MW-35-7-8-1

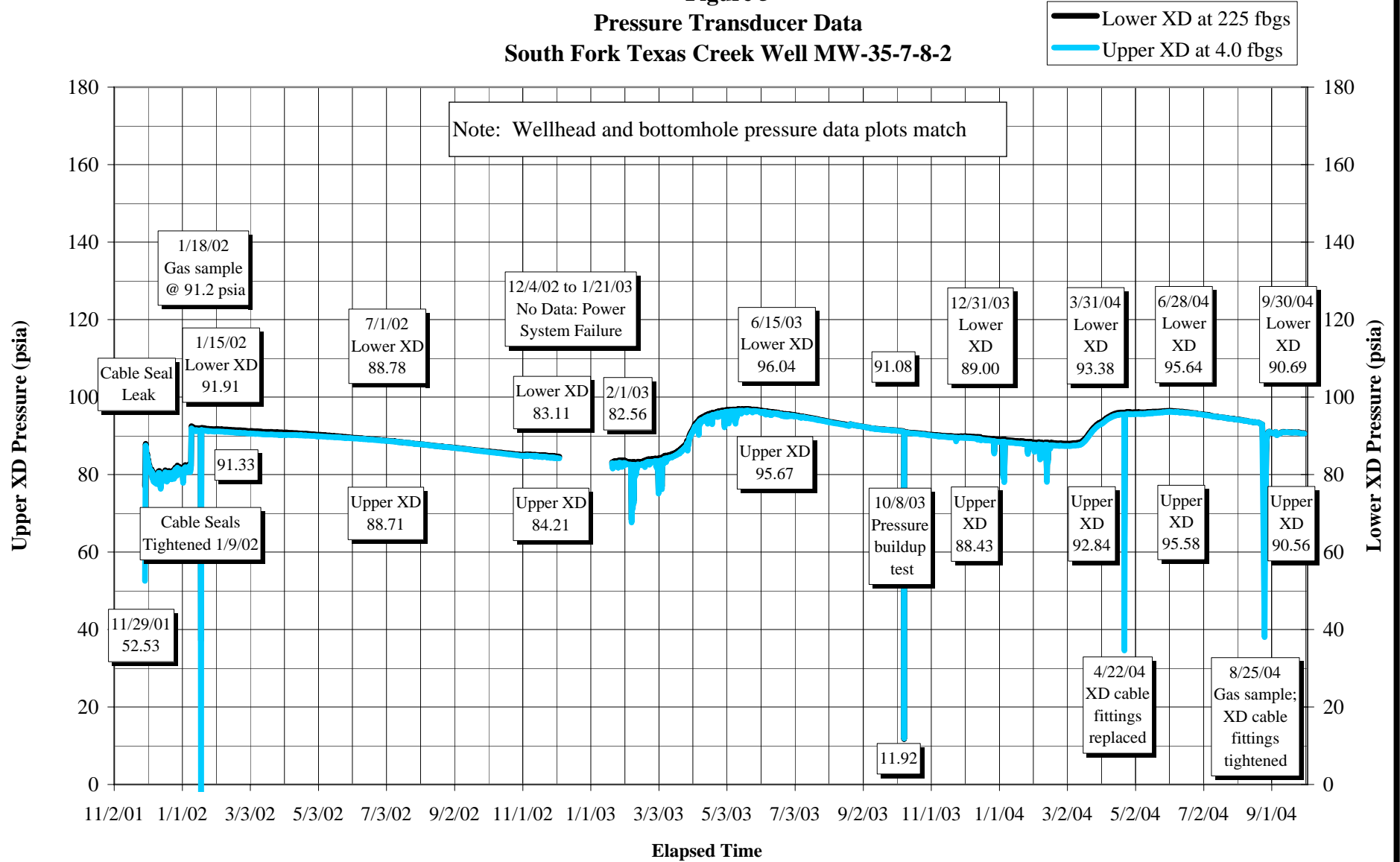


MW 35-7-8-2

Figure 5 charts the pressure data for well MW 35-7-8-2, which exhibits an entirely different pressure regime than the deeper monitoring well MW 35-7-8-1. Figure 5 and Table 5 continue to show equal wellhead and bottomhole pressures for the entire period of record. Thus, the water level in the well is deeper than 225 fbs, which is the depth of the lower transducer.

Table 5 indicates a net decline between 0.7 psi to 1.2 psi in the well pressure for the period of record. Figure 5 shows that well pressure is subject to seasonal fluctuations. In general, well pressure for the period of record since January 1, 2003 appears to increase several psia in the spring (March through May) and then gradually decline until the following spring.

Figure 5
Pressure Transducer Data
South Fork Texas Creek Well MW-35-7-8-2



2.2.3 BEAVER CREEK RANCH

MW 35-6-17-1

Monitoring data for well MW 35-6-27-1 are charted in Figure 6 and summarized in Table 6. This well has been monitored almost continuously since May 21, 2002. As described below, the pressure regime for this well is different than the regime exhibited by well MW 35-6-17-2.

Pressure buildup tests were conducted on October 7, 2003 and October 21, 2003. Figure 6 shows a notably different well pressure regime since the pressure buildup tests in October 2003. Between October 7, 2003 and March 3, 2004, the wellhead pressure increased about 90.9 psi, from 14.36 psia to 105.24 psia. Between March 3, 2004 and September 30, 2004, wellhead pressure declined approximately 30 psia, from about 105 psia (March 3, 2004) to 74.78 psia (June 28, 2004), and then gradually increased by approximately 8 psi to 82.91 psia (September 30, 2004).

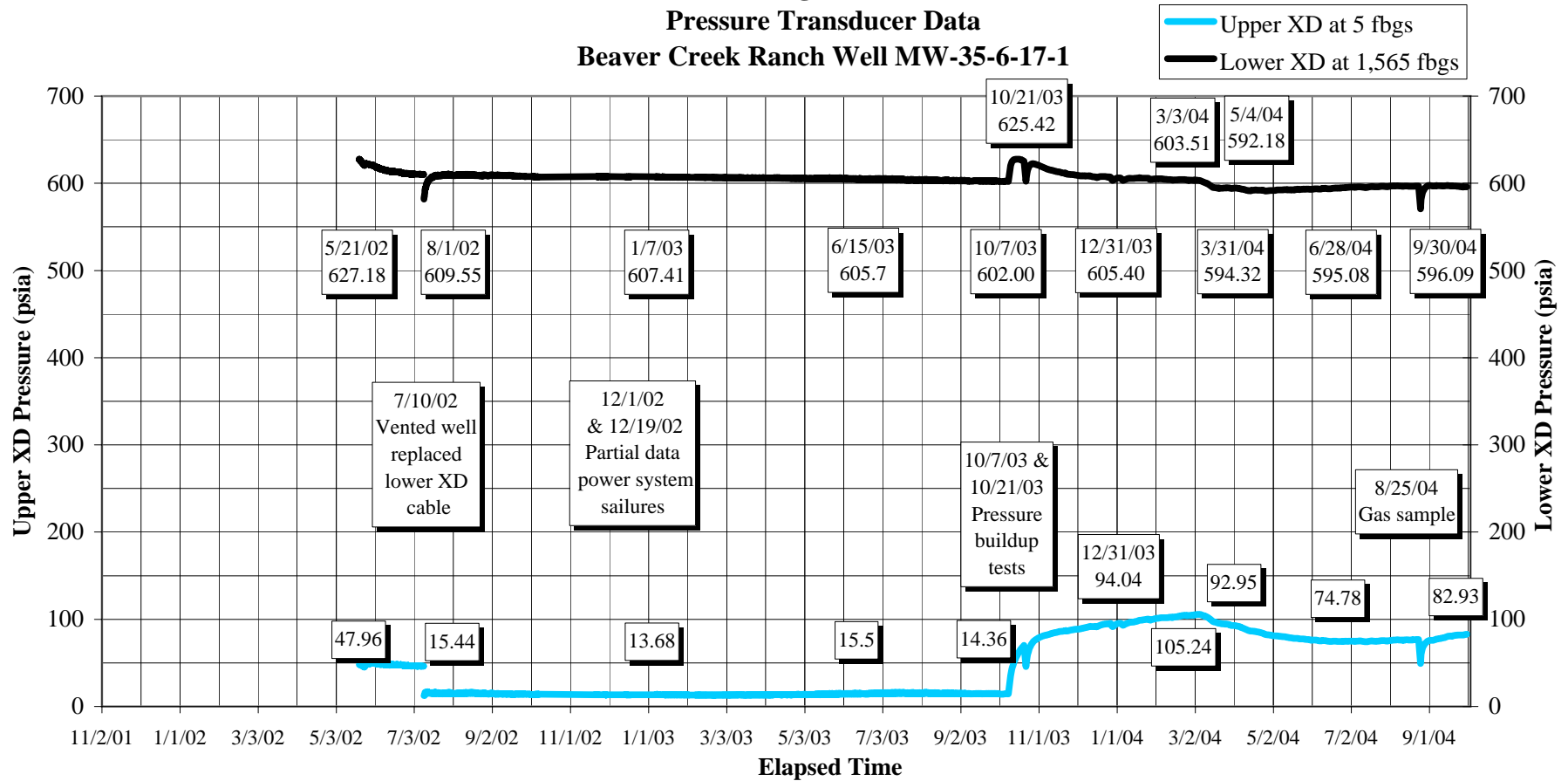
Just prior to the October 7, 2003 buildup test, Figure 6 shows a bottomhole pressure of about 602 psia. After the well was vented and shut in on October 7, 2003, there was a bottomhole pressure buildup of about 23 psi, from 602 psia to 625.42 psia between October 7, 2003 and the October 21, 2003 buildup test. Between October 21, 2003 and September 30, 2004, bottomhole pressure measurements show a decrease of about 33 psi, from 625.42 psia on October 21, 2003 to 592.18 psia on May 4, 2004, and an increase of about 4 psi, to 596.09 psia, as of September 30, 2004.

After October 7, 2003, calculated water levels in the well indicate a decline about 200 feet, from 219.08 fbg on October 7, 2003 to 418.02 fbg on March 10, 2004 (Figure 6). Between March 10, 2004 and June 28, 2004, there was an apparent rise of approximately 53 feet in the well water level, from 418.02 fbg to 364.67 fbg. Figure 6 shows a calculated 16.5 feet (364.67 to 381.16 fbg) of decline in well water level between June 28, 2004 and September 30, 2004. These fluctuations appear to be seasonal.

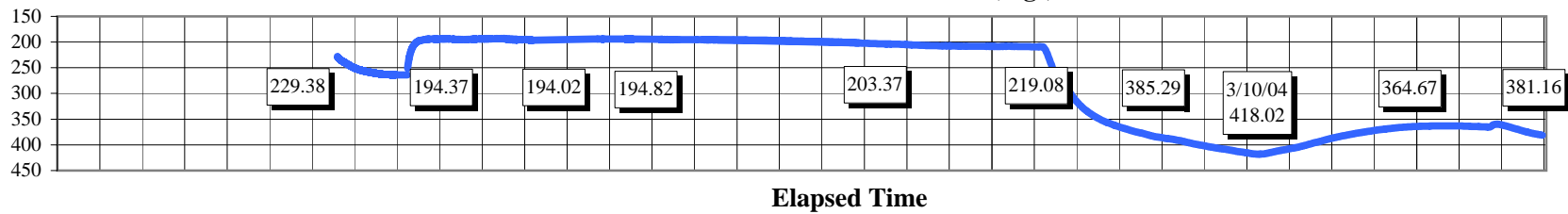
Table 6
Well Pressure Data Summary for Beaver Creek Ranch Monitoring Wells

| Well ID and Transducers (XD) | Period of Record | Initial Well Pressure psia | Ending Well Pressure psia | Net Change in Well Pressure psi | Initial Water Level in Well fbg | Ending Water Level in Well fbg | Net Water Level Change in Well ft |
|------------------------------|---------------------|----------------------------|---------------------------|---------------------------------|---------------------------------|--------------------------------|-----------------------------------|
| MW 35-6-17-1 Upper XD | 08/01/02 to 9/30/04 | 15.44 | 82.93 | 59.34 | 194.37 | 381.16 | -186.97 |
| Lower XD | | 609.55 | 596.09 | -14.47 | | | |
| MW 35-6-17-2 Upper XD | 06/15/02 to 9/30/04 | 614.23 | 559.43 | -54.80 | 1,378.64 | No Data | NA |
| Lower XD | | 632.63 | XD removed | NA | | | |

Figure 6
Pressure Transducer Data
Beaver Creek Ranch Well MW-35-6-17-1



Calculated Water Level in Well (fbs)



MW 35-6-17-2

Wellhead pressure, bottomhole pressure, and calculated apparent water level data for well MW 35-6-17-2 are charted in Figure 7 and summarized in Table 6 for the period of record. This well has been monitored since December 3, 2001. Data were not collected between April 8, 2002 and May 20, 2002 due to a damaged lower transducer cable. There are no data for the periods December 1, 2002 to December 13, 2002 and December 19, 2002 to January 7, 2003 due to power system failure. Monitoring of bottomhole pressure ended after the lower transducer was removed from the well on April 22, 2004.

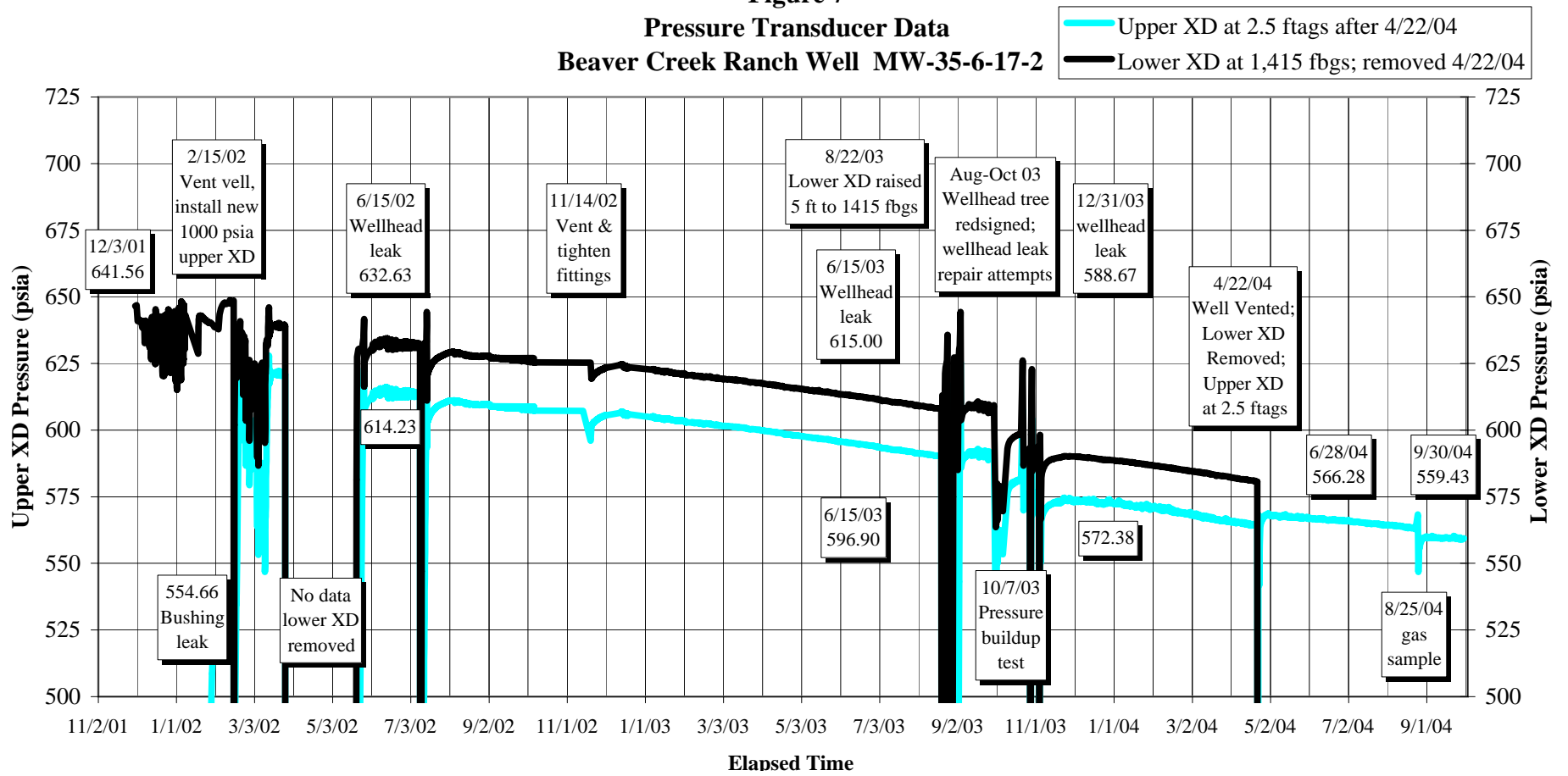
The wellhead pressure has been measured in excess of 600 psia, which is notably higher than in the other 3M monitoring wells. However, the wellhead had not been completely shut in since February 2002 because of a variety of wellhead fittings leaks. Consequently, the pressure data charted in Figure 7 and summarized in Table 6 are only considered to be minimum values. True pressures and trends could not be measured until a complete shut in was accomplished. As discussed below, it appears that a complete shut in was accomplished in April 2004.

On April 22, 2004, the well was vented and both pressure transducer systems were removed from inside the well. One 1000 psia transducer was adapted to tap directly into the top of the flanged wellhead assembly. This external transducer adaptation makes it possible to measure wellhead pressure without passing flexible transducer cables through the wellhead assembly. Bottomhole pressure and water level data are not available without a lower transducer.

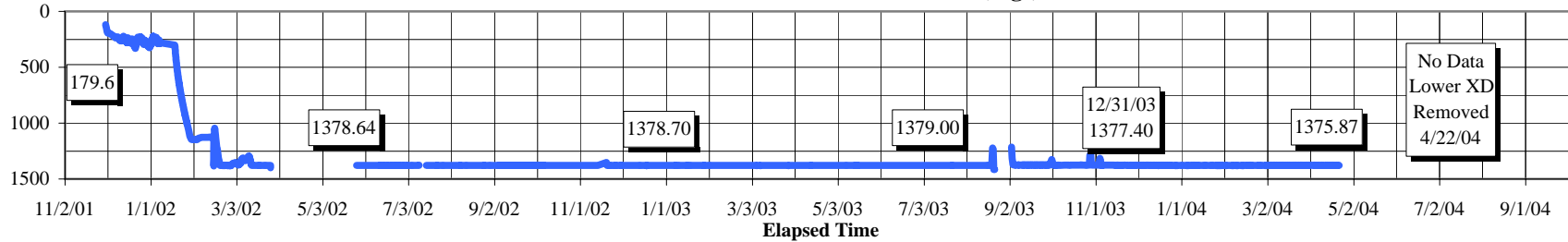
Prior to venting the well on April 22, 2004, the wellhead pressure reading was 564.35 psia. On May 3, 2004, eleven days after the well was shut in again, the measured wellhead pressure buildup peaked at 568.23 psia. AHA inspected the wellhead assembly for leaks on May 13, 2004 and August 25, 2004. No leaks were detected during the inspections.

Figure 7 shows a gradual wellhead pressure decline of about 13 psi between January 1, 2004 (572.38 psia) and September 30, 2004 (559.43 psia). An overall decline of about 54.8 psia in wellhead pressure has occurred since the pressure was recorded at 614.23 psia on June 15, 2002.

Figure 7
Pressure Transducer Data
Beaver Creek Ranch Well MW-35-6-17-2



Calculated Water Level in Well (ftgs)



2.2.4 SHAMROCK MINES

Well MW 35-6-13-1 monitoring data are charted in Figures 8 and 8a and summarized in Table 7 for the entire period of record. This well has been monitored continuously since May 22, 2002.

The wellhead pressure regime continues to be stable at about atmospheric pressure and fluctuates within a range of 1 psi (between 11 psia and 12 psia). The measured atmospheric pressure at this site (altitude 7717 feet) was about 11.1 psia on September 30, 2004.

Both bottomhole pressure and calculated apparent water level in the well continue to exhibit a similar trend of seasonal fluctuation. Bottomhole pressure fluctuates within a range of approximately 3 psi, between 210 psia and 213 psia. These apparent fluctuations in bottomhole pressure mirror seasonal water level fluctuations in the well. Figures 8 and 8a show the calculated water level in the well consistently rises in the spring, peaks in June, and gradually declines until the following spring.

For the period of record, the calculated water level in the well is subject to a seasonal fluctuation of about 7 feet. The highest water level in the well calculated to date, about 35 fbgs, occurred in May 2004 and the lowest water level calculated to date, about 41.7 fbgs, occurred in February 2004.

Table 7
Well Pressure Data Summary for Shamrock Mines Monitoring Well

| Well ID and Transducers (XD) | Period of Record | Initial Well Pressure psia | Ending Well Pressure psia | Net Change in Well Pressure psi | Initial Water Level in Well fbgs | Ending Water Level in Well fbgs | Net Water Level Change in Well ft |
|-------------------------------------|--------------------------|-----------------------------------|----------------------------------|--|---|--|--|
| MW 35-6-13-1 Upper XD | 5/22/02 to 6/28/04 | 12.06 | 11.96 | -0.08 | 39.66 | 36.83 | 2.38 |
| Lower XD | | 211.60 | 212.73 | 1.13 | | | |

Figure 8
Pressure Transducer Data
Shamrock Mines Well MW-35-6-13-1

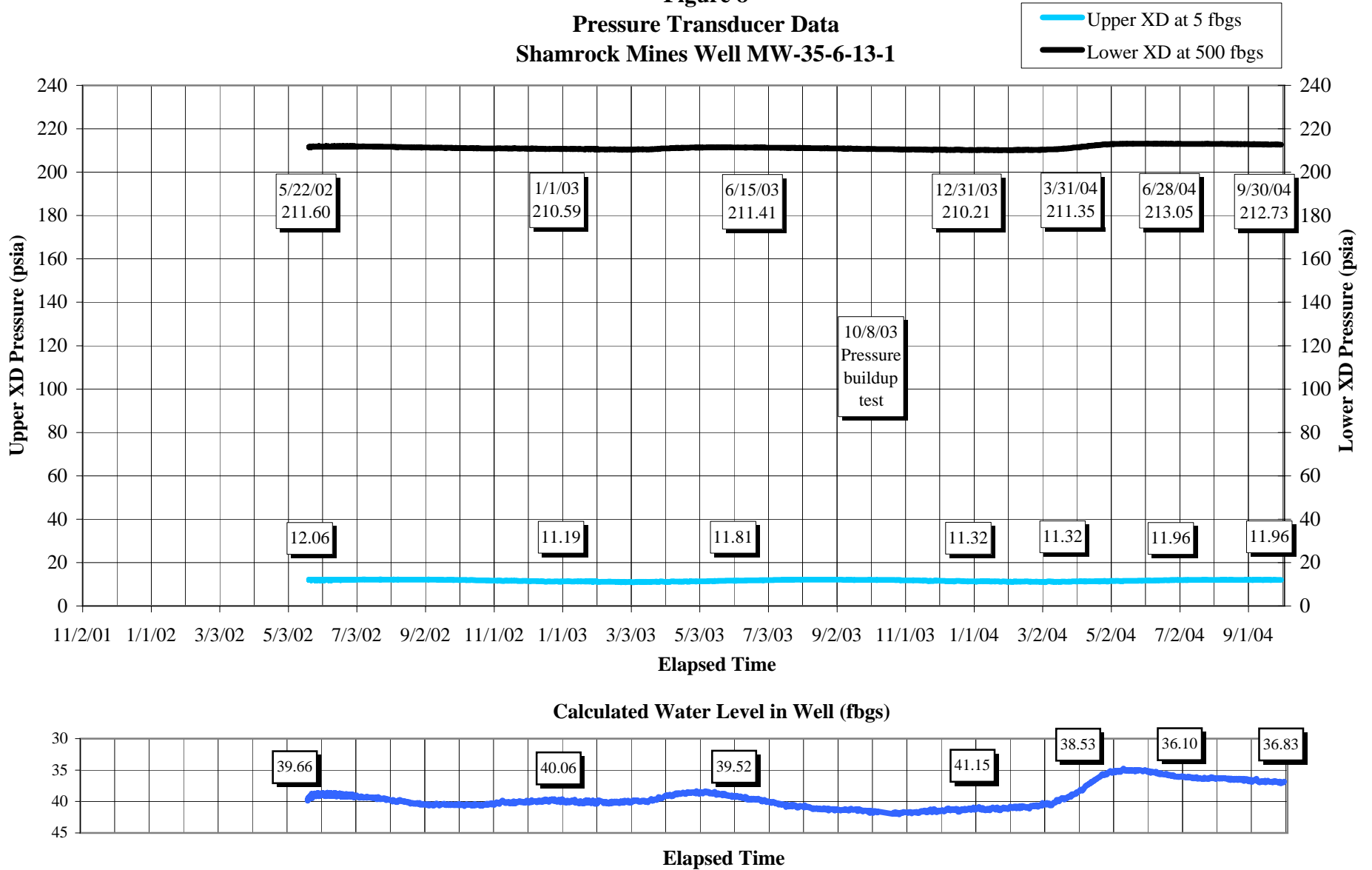
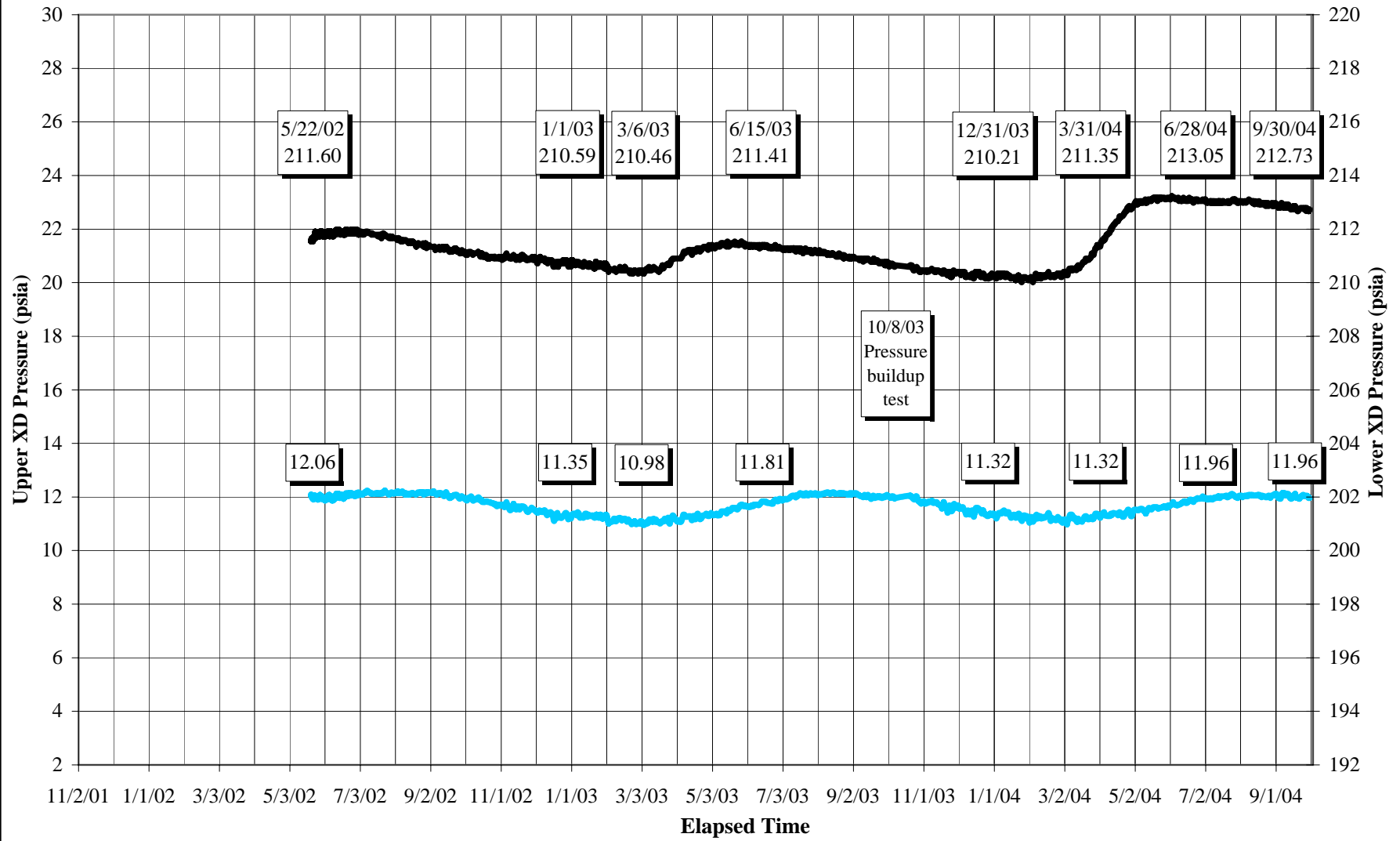


Figure 8a
Pressure Transducer Data
Shamrock Mines Well MW-35-6-13-1

— Upper XD at 5 fbg
 — Lower XD at 500 fbg



3.0 FUTURE WORK – FOURTH QUARTER 2004

Routine work will continue to include periodic checks of each monitoring system and remote download of recorded pressure measurement data via telemetry. Specific operation and maintenance activities will be performed in the fourth quarter as needed.