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Multiwell Experiment (MWX) Stimulation Data Review, In Situ Stress Analysis

Topical Report

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SUMMARY

The reserve potential from low permeability, "tight" gas sands has been recognized for many years, however, only in the last decade, with the development of massive hydraulic fracturing, has significant production been recovered from these formations. During that time, MHF has played a major role in the development of tight gas reservoirs in several areas including East Texas and the Denver Basin. However, along with the "traditional" uncertainties in producing such reservoirs, e.g., low flow rates and uncertain reserves (since usual well test techniques are generally not applicable), uncertainties in the well stimulation technologies have contributed to less development in the often more complex tight gas sands found in the Western U.S. These uncertainties make it difficult to predict post-stimulation well performance, thus dramatically increasing the economic risks associated with the development of these tight reservoirs.

As part of a program to address problems associated with tight gas production, a three well experimental program was conducted in the Piceance Basin in Western Colorado. This Multi-Well Experiment (MWX) aimed at addressing many questions involving log interpretation, reserve analysis, etc.; along with these, one major goal of the project was to study and resolve some of the questions surrounding propped fracture behavior - thus possibly removing much of the uncertainty associated with massive fracture stimulations. To address the fracturing question, a large number of pre-frac tests were conducted along with extensive monitoring during actual propped fracture stimulations.

Of particular interest here is the large number of in situ stress tests conducted throughout the Mesaverde Group, since stresses of strata in and around the pay zone are widely assumed to be the dominant factor in controlling hydraulic fracture behavior. Several of these stress tests were re-analyzed, and the results generally substantiated the previously established stresses. However, though the analysis procedures used originally do produce repeatable results (e.g. the re-analysis yielded similar answers) an alternative stress test analysis procedure was examined and found to give more definitive results, and often allowed interpretation of otherwise uninterpretable test data.

This substantiation of previously established stresses confirms that significant stress differences can exist between formations in a complex layered, lenticular geology such as the Mesaverde Group in the Piceance Basin. Thus the potential for creating the long conductive fractures needed for production from tight gas reservoirs appears to exist. More interesting is the striking correlation between measured stresses and lithology. This relationship is striking both for its

simplicity and its accuracy, and, if confirmed, would allow a readily available avenue for utilizing the MWX data base in other areas of the Basin. Such confirmation would consist of two steps: 1) further analysis of fracturing records to verify the ability of stress test data (and the resulting lithology correlation) to predict fracturing behavior, and 2) additional stress data from other Piceance Basin wells to confirm the lateral validity of the stress/lithology correlation.

INTRODUCTION

Historically, producing gas from low permeability formations has been uneconomical and inefficient, due to low natural flow rates. Stimulation techniques for these reservoirs are available; however, the data needed to design or post-analyze the effectiveness of these techniques is generally unavailable. To some extent, there is even a lack of specific, recognized procedures for collecting the required data, and uncertainty as to what, and how much, information is needed. These uncertainties, coupled with naturally low production rates (even after a successful well stimulation), severely reduce the incentives to drill and develop natural gas reserves found in such formations.

An integral part of the Department of Energy's Unconventional Gas Recovery Program is research into "tight gas sands", particularly the lenticular sandstone formations common to the Western United States. Two broad research goals have been identified as being needed to address the basic problems of uncertainty and poor economics stated above: 1) establish the production potential from such lenticular reservoirs, and 2) improve the existing production technology. The ultimate purpose is to demonstrate the economic feasibility of producing natural gas from these unconventional reservoirs.

A major part of this program of research into Western U.S. tight gas sands was the establishment of the Multi-Well Experiment (MWX) in the Piceance Basin in Western Colorado. MWX included three closely spaced wells penetrating the lenticular Mesaverde Group, an amalgamation of Cretaceous age sediments. Testing included extensive coring and core analysis, production testing, and instrumented stimulation experiments as described in the literature in various summary papers, particularly in references 1 and 2.[1,2] A major "sub-goal" of the MWX project was to address the question of the predictability of well stimulation procedures; thus the program included extensive "pre-frac" testing.

While several stimulation techniques have been tested in tight gas formations, including the use of nuclear explosives, hydraulic fracturing currently remains the best well completion technique for such wells. However, the natural production rates from these formations are so low that an extremely successful stimulation treatment is mandatory for economic well performance. This need for 100% success highlights the unknowns and uncertainties inherent in the hydraulic fracturing process - chief among these being the determination or prediction of both the fracture height and the final in situ conductivity or flow capacity of the proppant placed in the fracture.

Final post-frac productivity is a function of fracture length and fracture conductivity, and the importance of fracture height lies in its dominating control over fracture geometry - e.g., final created fracture length. This control is easily quantified by examining two dimensional mathematical models of the fracturing process. For a confined height fracture, a "Perkins & Kern" fracture model is generally considered to provide the best description of the final fracture geometry.[3] Based on this model, it can be shown that the rate of fracture length extension is related to other fracture variables by [4]

$$dL/dt \simeq \frac{Q^{0.75} \; E^{0.25}}{H \; \mu^{0.25} \; L^{0.25}}$$

where L is fracture length, Q is injection rate, E is the modulus of the formations, μ is fluid viscosity, and H is fracture height. Clearly Q and H are the dominant terms controlling the rate of length extension since, for example, a 50% change in modulus or viscosity only affects the rate of length extension by ±10% (note that this simple equation neglects the effects of fluid leak-off, however, for tight gas formations the rate of fluid loss is generally expected to be quite small). Considering these two main variables, Q and H, the injection rate is, of course, controllable; therefore, fracture height becomes the dominant formation characteristic which, to a large extent, determines the success or failure of a well stimulation treatment.

Less well understood is the question of which factors control fracture height. It has become widely accepted in the petroleum industry that variations of in situ stress between formations is the dominating factor controlling fracture height.[5] However, in spite of theoretical analyses and laboratory testing, there is little field scale "proof" of this control - e.g., situations where the in situ stresses have been carefully delineated to enable fracture height predictions and comparisons with indications of created fracture height from logs and other post-frac tests. The extensive stress testing in the Mesaverde, along with fully instrumented fracture treatments, both unpropped "mini-frac" tests (e.g., treatments conducted without proppant for test purposes) and final propped fracture stimulations, offers an opportunity to: a) test the theories of hydraulic fracture geometry in a field scale environment, and b) examine the usefulness of pre-frac testing for improving the predictability of well stimulations.

The second large uncertainty governing the predictability of propped fracture stimulations is the final effectiveness of various propping agents in creating fracture conductivity or flow capacity. For MWX this was addressed via an extensive series of laboratory tests along with post-frac production testing and analysis. However, whatever the results of these studies, the final in situ conductivity of a proppant is

largely a function of the in situ stress, e.g., the fracture closure pressure, since this is the force acting to crush the proppant (which can severely diminish its conductivity). Thus, either indirectly for the case of length, or directly for the case of fracture conductivity, the in situ stress state ultimately governs the final success of a propped fracture treatment.

Given the clear importance of characterizing the in situ stress state, it is surprising that no definitive stress measurement technique is universally accepted. Even the "most common" procedure, micro-frac testing, is subject to argument over both optimum injection rates and volumes, and there is also controversy regarding analysis procedures. This test procedure is covered in the Background Section below, and this report will discuss and review the stress testing program conducted at MWX.

PURPOSE

The MWX experiments conducted in the Mesaverde Group in Colorado have created a comprehensive data base of fracturing tests and measured hydraulic fracturing behavior. NSI views some of the major goals of the MWX STIMULATION DATA REVIEW to be: * Provide a comprehensive engineering review/analysis of existing MWX stimulation raw data to establish results and conclusions independent of existing results; and * Review the overall stimulation testing program, inclusive of actual propped fracture treatments, to establish the overall effectiveness of the testing program, potential for improving the techniques used in testing, and provide new insight into establishing guidelines for testing tight gas sands, in particular, lenticular sands. Developing a testing program, or substantiating that a testing program can lead to predictable well treatment results would be a significant step in reducing technological and economic risks associated with developing "tight" gas reserves.

Since in situ stresses are the primary control mechanism over fracture geometry, a significant portion of the pre-frac "fracture" testing was concerned with stress tests. As the first step in evaluating the final utility of the stress testing program in terms of: a) testing theories of fracture geometry in a field scale environment, and b) examining the usefulness of pre-frac testing for improving the predictability of well stimulations; much of the in situ stress test data collected in the MWX wells was reviewed, and, in some instances, re-analyzed. The immediate goals of this review, as reported on here, were to: confirm the stress results showing that significant stress differences can exist in lenticular

formations, to evaluate the micro-frac stress testing procedure utilized for the MWX wells, and to examine correlations between measured stresses and other formation properties. Either the actual stress test data, or a formation property correlation, would then be used to generate a stress profile for each stimulated zone (e.g., Paludal, Coastal, and Fluvial) in the Mesaverde Group. These stress profiles will form the basis for subsequent fracturing analysis to compare predicted versus actual fracture behavior, and thus test fracturing theories and evaluate the utility of pre-frac testing.

BACKGROUND

As a portion of the effort to achieve Department of Energy research goals of more precisely establishing the resource potential present in tight gas sands (particularly lenticular sands located in the Western U.S.); improving extraction technology available for reservoirs of this type; and demonstrating the feasibility of economically producing such gas reserves, a three well field laboratory was established in the Piceance Basin in 1983. Work conducted at this Multi-Well Experiment (MWX) covered a systematic assessment of reservoir potential (including extensive core analysis, regional geologic studies, and geophysical log analysis), reservoir performance (pre- and post-stimulation well tests, multiple well production testing), and stimulation performance (extensive stress testing, "mini-frac" testing, and geophysical monitoring of hydraulic fracture stimulations); a considerable body of literature has been produced reporting on the findings of this work. Any review of MWX or further analysis of MWX data must necessarily begin from this knowledge base; to insure that starting point, a brief literature survey is presented below to furnish background for this review of the in situ stress testing. The emphasis for this survey is literature (and specific points within these various published documents) that relates directly to stress testing, or, for later analyses, which relates directly to the behavior or post-frac well performance of the propped fracture stimulation treatments.

LITERATURE SURVEY

GEOLOGY

U.S. Geologic Survey Open File Report Number 84-757, 1984, "Geologic Studies in Support of the U.S. Department of Energy Multi-Well Experiment, Garfield County, Colorado"

This report, prepared by the USGS studied and reported on several various aspects of the MWX site geology as well as the regional geology of the area. Several sub-sections of the report are mentioned below.

"Reservoir Sedimentology of Mesaverde Rocks at the MWX Site"
John C. Lorenz

The MWX wells penetrated several distinct depositional environments in the Mesaverde formation as described in this sub-section of the USGS report. Since the Mesaverde Group has been subdivided into five zones based on these various sedimentologic and depositional regimes, and since much of the MWX work has referenced or is identified with these various zones, a brief summary is included here.

The MARINE section is the deepest zone, and is identified as shoreline/marine depositions with potential natural gas reservoirs being relatively homogeneous, laterally extensive, "blanket" type sandstones. Specific formations within this zone of the Mesaverde Group include the Rollins, the Corcoran, and the Cozzette sands and the Mancos shale. At the MWX site, the sands ranged from 30 to 100 feet (10 to 30 m) thick.

As progradation took place, the marine deposits were overlain with delta plain deposits, and in the Mesaverde group these deposits have been subdivided into LOWER DELTA PLAIN and UPPER DELTA PLAIN environments. In this delta plain environment, reservoir quality rock would correspond to the relatively straight distributary channels radiating out over the delta plain from the main river channel. These channel sands would be lenticular in cross section and the channel widths are expected to be similar in both upper and lower delta plain environments. The PALUDAL zone, which corresponds to the lower delta plain would contain significant coal deposits as compared to the COASTAL zone, which corresponds to the upper delta plain and overlays the Paludal zone.

With further progradation, the delta plain depositions were overlain by the FLUVIAL zone consisting of meandering river deposits. Most reservoir quality rock consists of point bars which may be on the order of 700 feet (200 m) across and 2 to 13 feet (1 to 4) thick. These sub-units are stacked on top of one another creating complex composite reservoirs 20 to 60 feet (6 to 20 m) thick and 1000 to 2000 (300 to 600 m) feet across.

The fifth zone is a marine influenced PARALIC zone above the Fluvial deposits. The Paralic zone represents a major change from the regressive succession of the four deeper zones, and contains no significant gas at the MWX site. This zone was not discussed by Lorenz.

"Mineralogy of Selected Sandstone/Shale Pairs ...."
Richard M. Pollastro

This section of the USGS report discusses X-Ray Diffraction and scanning electron microscope (SEM) studies done on core samples from MWX wells. No significant quantity of "swelling" clays were present in the formations - thus water sensitivity, in the usual sense, would not have been a problem for stimulating these formations. The mineralogy study did reveal, however, large amounts of fibrous discrete illite (up to 21% by weight). For the fourteen sandstone samples studied, the average quantity of fibrous illite was ±14.5% by weight.

This type of clay can present production problems (as noted in the study) by causing turbulence and, if flow in the reservoir causes the fibers to break, the subsequent movement can bridge over pore throats causing permeability damage. For gas flow rates common to these low permeability formations, the potential for damage may be small - however, during a propped

fracture stimulation, the fluid loss rates associated with the tip of the fracture, along with the higher viscosity of the fluid loss (as compared to reservoir gas) could conceivably create permanent reservoir damage that would not have occurred during pre-frac production tests.

"Petrology of Selected Sandstones in the MWX Wells ..."
Janet K. Pitman & Charles W. Spencer

This study showed the Cretaceous Mesaverde sandstones to be composed dominantly of framework quartz, feldspar, sedimentary lithic fragments, and carbonate along with clays generally consisting of illite, mixed layer illite-smectite, kaolinite, and chlorite. The matrix clays and rock fragments were primarily responsible for causing all field recorded porosity logs to yield anomalously high porosity values.

"Predictions of Size and Orientations of Lenticular Reservoirs in the Mesaverde Group, Northwestern Colorado," J. C. Lorenz, SPE/DOE 13851, presented at the 1985 Low Permeability Symp., Denver, Colorado, May 19-22, 1985.
and
"Determination of Widths of Meander-Belt Sandstone Reservoirs from Vertical Downhole Data, Mesaverde Group, Piceance Creek Basin, Colorado", John C. Lorenz, et. al., American Association of Petroleum Geologists Bulletin, V. 69, No. 5, May 1985.

These two papers discuss widths of the lenticular sands found in the non-marine sections of the Mesaverde Group. The first paper (SPE/DOE 13851) discusses the delta plain deposited PALUDAL and COASTAL zones and lens widths are estimated to be 100 to 500 feet (30 to 150 m) in width. At the MWX site, the delta plain channels are generally oriented with 45° of an easterly direction, with a bias towards the northeast quadrant. Though the mathematical correlation is fairly poor, as would be expected for such geologic data, there appears to be a general correlation between lens width and thickness given by

$$\text{Width} = 8.6 \times \text{Thickness}^{1.1} .$$

The second paper discussed the meander belt sandstone reservoirs of the FLUVIAL zone. Sand deposits in this interval are expected to be randomly oriented, elongated deposits, with an average lens width on the order of 1500 feet (450 m).

STRESS TESTING PROCEDURES

While it has generally become accepted in the industry that the minimum in situ stress (closure stress) controls hydraulic fracture behavior and growth, there is little data comparing the accuracy and usefulness of various stress test techniques in an oil field environment. To add to the existing data base, three procedures were employed to measure the closure stress in various formations in the MWX wells. These techniques included: 1) micro-frac injection tests, 2) larger volume "fracturing"

tests, and 3) two types of core analysis. Published literature which discusses and presents the basic theory of these techniques is briefly reviewed below.

MICRO-FRAC STRESS TESTS

This technique involves injecting small volumes of a low viscosity fluid at relatively low rates (typically 5 to 20 gallons per minute) into a small, isolated interval of a wellbore, then immediately shutting in the injection. The theory is that a small (due to the small volume), narrow (due to the low viscosity and low rate) fracture will close very quickly (e.g., nearly instantly) and the instantaneous shut-in pressure (ISIP) will be approximately equal to the minimum in situ stress (e.g. fracture closure pressure). The testing is usually conducted using a downhole shut-in device and associated downhole pressure monitoring tools as seen in figure 1.

An "ideal" pressure versus time record might appear as seen in figure 2; where a clear ISIP value such as this is evident, and the remaining conditions of small volume, low rate, low viscosity, etc., are satisfied, the micro-frac test should give a valid indication of the minimum in situ stress, e.g., the fracture closure pressure. One important item of this figure is the "repeatability". Micro-frac tests are normally repeated several times with such repeatability being one simple (but effective) quality control measure for the testing.

"The Determination of Tectonic Stresses Through Analysis of Hydraulic Well Fracturing," Ralph O. Kehle, J. of Geophysical Research, Vol. 69, No. 2, January 15, 1964.

The discussion by Kehle is one of the earlier references directly to the use of fracturing pressure data to measure stresses, although the idea is implicit in the early work of Hubbert and Willis in 1957. In this publication, Kehle states "... if the well is shut in immediately upon completion of the fracturing treatment, the pressure will quickly stabilize to a value just slightly greater than the perpendicular regional stress, ..." . While the procedure has been developed and refined since 1964, this short statement aptly summarizes the basic theory of micro-frac testing.

"How Instantaneous are Instantaneous Shut-In Pressures," J. D. McLennan and J. C. Rogiers, SPE 11064, presented at 57th Annual Fall Meeting of SPE, New Orleans, Louisiana, Sept. 26-29, 1982.

In many cases, a clear, objective value for the ISIP cannot be determined from the pressure versus time behavior following shut-in, and many of the problems with, and controversy about micro-frac tests were discussed in this SPE publication. Several analysis plots were discussed as tools for enhancing the interpretation of micro-frac data, and some of these analysis techniques are discussed below under FRACTURE TESTING. In addition, this paper presents a good review of the literature and history of the micro-frac stress measurement technique.

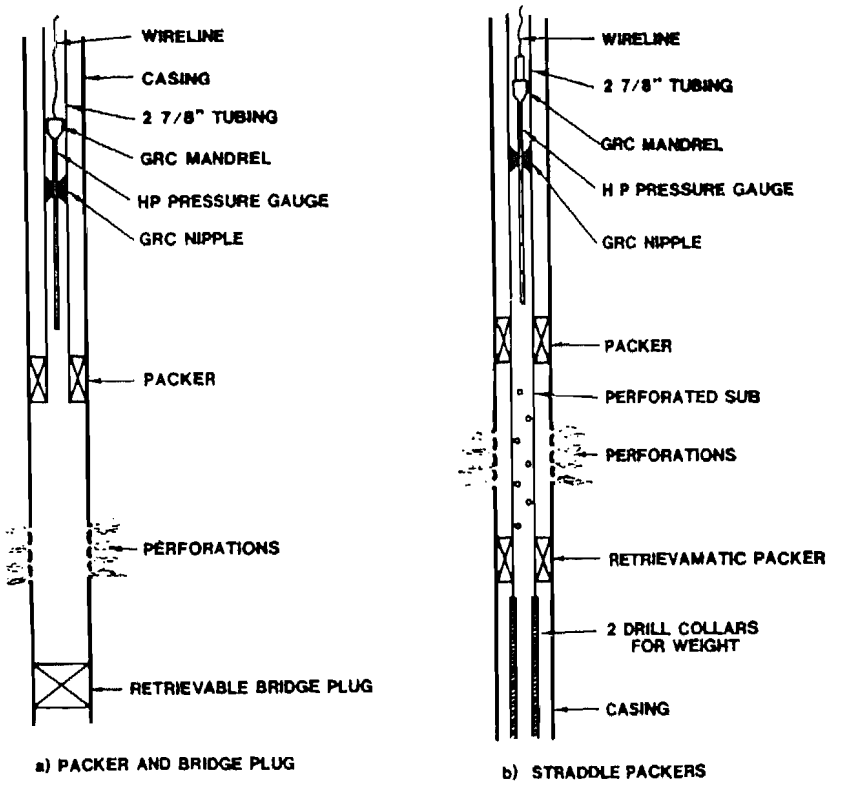


Figure 1: Schematic of the Apparatus Used to Conduct Downhole Shut-in Stress Tests of the Type Performed at the MWX Site

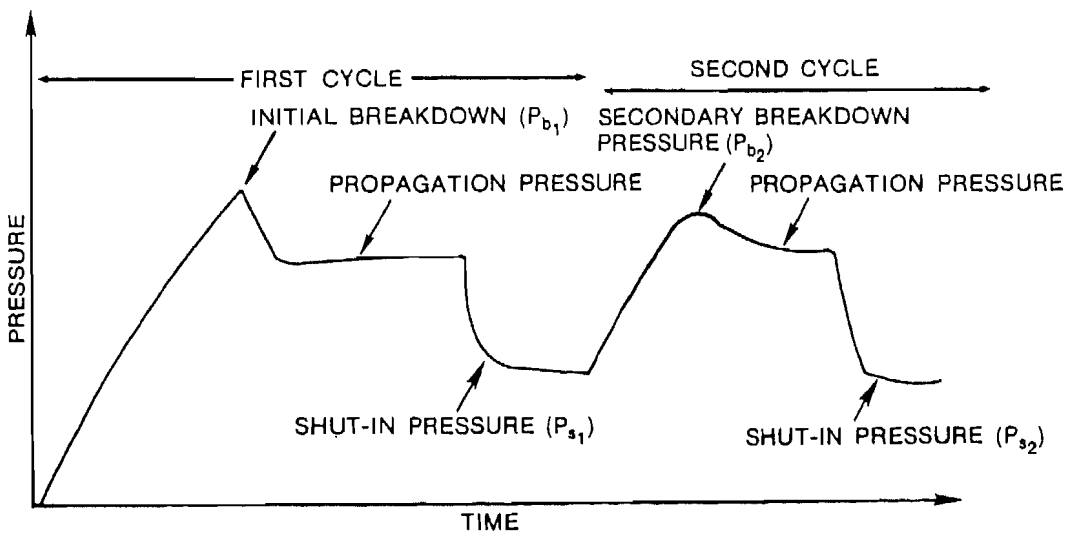


Figure 2: Pressure vs. Time Plot for the First Two Cycles of an "Ideal" Micro-frac Stress Test

"Investigation of the Accuracy and Reliability of In Situ Stress Measurements Using Hydraulic Fracturing in Perforated Cased Holes," N. R. Warpinski, Proceedings 24th U. S. Symposium on Rock Mechanics, June, 1983.

The bulk of the theory and use of micro-frac stress testing has been concerned with and involved open hole situations where a small section of a wellbore is isolated with inflatable packers. However, for oil field applications, open hole testing is normally impractical, and testing must be conducted through a small perforated section of a cased and cemented wellbore. This paper discusses a series of tests addressing the question of whether accurate results can be achieved in such an environment and concludes that by following proper procedures, reliable and accurate results can be obtained.

"FRACTURE" TESTING

As a routine part of normal well completion procedures, the closure stress for a formation about to be fractured is often measured. Since this usually involves a fairly thick interval (as compared to the ±2 feet being tested during a micro-frac test) larger volumes of fluid must be injected at higher rates to insure the interval is actually fractured. These larger injection volumes lead to a fracture volume too large to close "instantly", and the ISIP value can be as much as several hundred psi above the actual closure stress. For such cases, testing techniques have been proposed involving either special injection procedures (e.g. pump-in/flow-back tests) or better analysis procedures for determining closure pressure from the pressure decline behavior following an injection.

FRACTURE TESTING - LOG-LOG PLOT

One analysis approach, discussed in the McLennan & Rogiers publication above, involves plotting the change in pressure (measured from the injection pressure immediately prior to shut-in) versus the incremental time since shut-in on log-log scales. A "unit" slope on this plot would indicate wellbore storage, e.g. that fluid flow is still occurring from the wellbore into the fracture and data during this period would be invalid. Note that this is usually not a problem for micro-frac tests due to the small volumes, and normally due to the use of a downhole shut-in device as seen in figure 1. As discussed by McLennan and Rogiers, the log-log plot may also display a "1/2" slope indicating that change in pressure is related to the square root of time. Since the fluid mechanics of the hydraulic fracturing process is dominated by linear flow (due to either linear flow of fluid down the fracture, or linear flow of fluid leaking off into the formation, or both), this slope may indicate that the fracturing process is still dominating pressure behavior - and a deviation from this behavior may indicate fracture closure.

FRACTURE TESTING - SQUARE ROOT OF TIME PLOT

A "1/2" slope on a log-log plot would indicate that the change in pressure is related to the square root of time - or that a plot of pressure versus the square root of time would yield a direct, straight line relationship. Again (as with the 1/2 slope) a deviation from the square root of time behavior would be interpreted as fracture closure.

FRACTURE TESTING - PUMP-IN/FLOW-BACK TESTS

"Fracture Design Considerations Based on Pressure Analysis," K. G. Nolte, SPE 10911, presented at 1982 SPE Cotton Valley Symposium, Tyler, Texas, May 20, 1982.

For very low permeability formations, if significant fracture volume remains after shut-in, then the time-to-close may be very long, making identification of fracture closure (and thus identifying in situ stress) difficult. A special testing procedure involving a flow-back is proposed for these cases. After opening the fracture with an injection period, the injection is shut-in and the well back-flowed to force the fracture closed. Since the back flow is withdrawing fluid from the wellbore entrance to the fracture, the fracture will close at this point first, isolating the wellbore from the fluid volume stored in the fracture and causing, due to the constant rate flow-back, an acceleration in the rate of pressure decline. The pressure where the rate of pressure decline begins to increase is the fracture closure pressure or the minimum in situ stress.

CORE TESTING - ANELASTIC STRAIN RECOVERY (ASR)

"Determination of In Situ Stress from Anelastic Strain Recovery Measurements of Oriented Core," L. W. Teufel, SPE 11649, Proceedings, SPE/DOE Symposium on Low Permeability, Denver, Colorado, March, 1983.

This technique was first introduced by Teufel, and consists of measuring the time dependent strain relaxation of core samples. The samples are selected, sealed, and instrumented immediately after the core is recovered at the surface and the strain relaxation monitored for ±48 hours. Based on measurements of relaxation in different directions, the axes of maximum and minimum strain recovery are determined, and since (for an both an elastic phenomena and even a time dependent "anelastic" phenomena) stress and strain are proportional, the directions and magnitudes of the principal stresses can be determined. Determination of principal stress directions proceeds directly from the directions of the principal axes of strain recovery (e.g., the directions coincide); however, conversion of the strain measurements to stress values involves

additional lab testing and/or correlation of the vertical strains to the overburden stress as determined from density logs.

CORE TESTING - DIFFERENTIAL STRAIN CURVE ANALYSIS (DSCA)

"Predicting the In Situ Stresses for Deep Wells Using the Differential Strain Curve Analysis," F. Strickland and N. Ren, SPE 8954, Proceedings SPE/DOE Symposium on Unconventional Gas Recovery, Pittsburgh, Pennsylvania, May, 1980.

This technique, introduced by Strickland and Ren, involves re-stressing small core samples and measuring the stress-strain response of the sample in several different directions. The basic theory assumes that the release of the in situ stresses inherent in the coring operation will permanently alter the fabric of the rock, such that on re-stressing, the axis of maximum strain will correspond to the maximum horizontal stress direction in the earth. As with the ASR data, the principal in situ stress directions can be inferred directly from the principal axes of strain determined after the re-stressing; however, converting the strain data to in situ stress values involves additional lab testing and/or correlation of the vertical strains to the overburden stress.

MWX STRESS TESTS

Probably the major variable in propped fracture stimulation design is fracture height - and uncertainty in this parameter is one of the primary problems in predicting post-frac performance from low permeability wells. It has become generally accepted in the oil industry that stress differences between formations is the major factor controlling fracture height - however, there is little evidence of this control on a field scale. Thus one major "sub-goal" of the MWX tests was to test this control over fracture height through an extensive series of in situ stress tests and corresponding measurement of fracture height during propped fracture treatments. The results of this closure stress testing program were discussed in the following publications:

"In Situ Stress Measurements at DOE's Multi-Well Experiment Site, Mesaverde Group, Rifle, Colorado," N. R. Warpinski,et al, J. Pet. Tech., March, 1985, page 527.

This SPE paper summarizes the micro-frac tests conducted in the Marine zone of MWX-2, along with three initial tests from the lower delta plain, Paludal zone. Test interpretation was reasonably straight forward for the marine zone tests, and a strong correlation between stress and lithology was noted, though no correlation was quantified. The clay rich shales had very high stresses (closure stress gradient varying between 1.02 and 1.1 psi/foot of depth), essentially equal in most cases to the weight of the overburden, while the sandstone

intervals had lower stresses with closure stresses ranging from 0.85 to 0.90 psi/foot of depth. Thus in the marine interval, a stress difference on the order of 1000 psi existed between the sands and shales.

No similar stress differences were noted for the Paludal zone, however, of the three tests reported, the coal test was not interpretable and the sandstone test was aborted due to communication with offset perforations. The test in a mudstone interval had a closure stress gradient of 0.88 psi/foot. Some preliminary speculation was advanced that stress differences might not exist in a complex geology such as the Paludal where lenticular sands are embedded in a shale matrix - however, additional tests reported later and discussed below, did show stress differences in non-Marine zones of the Mesaverde.

"In Situ Stresses in Low Permeability, Non-Marine Rocks," N. R. Warpinski and L. W. Teufel, SPE/DOE 16402.

In a subsequent publication, the stress testing was extended to include 27 additional tests in non-Marine sections of the Mesaverde Group (the Paludal, Coastal, and Fluvial zones). The tests covered sandstones, silts, mudstones, and coals and (refuting the slim evidence of three earlier tests conducted in the Paludal zone) again a correlation between lithology and stress was noted with the clay rich formations having significantly higher closure stresses. It is worth noting that the one good micro-frac test obtained in a coal interval had the highest closure stress (minimum in situ stress) measured for any formation, with a closure stress of 7200 psi at 7050 feet.

Along with the micro-frac data, anelastic strain relaxation (ASR) data was collected on 22 samples and the results compared to the micro-frac results. On a "gross" level, the ASR data was in fair agreement with the actual stresses as measured with the injection tests. However, looking at fine detail showed differences of 200 to 700 psi (20% to 70% of the shale-sand stress difference) making such data of marginal use for actual treatment design. Laboratory tests (differential strain curve analysis, DSCA) were also conducted on a few samples with apparently random results. Some samples showed relatively good agreement with injection test data while for other samples the lab core analysis differed from micro-frac tests by 2000 psi.

"MWX Paludal In Situ Stress Measurements and Hydraulic Fracture Behavior," N. R. Warpinski, Sandia Laboratories Memorandum, October, 1984.

Following the unexpectedly good containment noted for Paludal zone fracturing tests and propped fracture treatment, three additional Paludal zone micro-frac stress tests were conducted. These additional tests did show layers of high stress existing in the Paludal which were not revealed with the earlier general testing program. These tests confirmed that large stress differences can exist within a complex, lenticular geologic environment - however, the inability to predict the

fracture behavior based on the earlier tests casts serious doubt on the usefulness of micro-frac stress tests in such a complex geology.

Larger volume fracturing tests are also reported on for some of the thicker sandstone intervals in the Paludal zone. In general, these larger volume tests were in good agreement with the micro-frac closure stress test results in comparable intervals.

"Stress Test Data In Coastal Red and Yellow Sands," N. R. Warpinski, Sandia Laboratories Memorandum, August 6, 1985.

This memorandum summarizes the micro-frac stress test data from the upper delta plain environment, Coastal zone. This data is also summarized in SPE/DOE 16402 and the data supplies definitive proof that large stress differences can exist between various formation layers even in a complex, lenticular geologic environment. In general, the data quality is better than that measured during Paludal zone tests - possibly due to the lack of interference from (and confusion generated by) coal layers which existed in the lower delta plain Paludal zone.

DISCUSSION

STRESS DATA SUMMARY

This section presents a summary of much of the closure stress data and analysis results obtained during the MWX testing program. The tests were mainly conducted in the Coastal, Paludal and Marine zones, with four of the referenced tests being conducted in the Fluvial zone. Later in the Testing Program, further tests were performed in the Fluvial Zone, and these will be fully examined in later reports. The small volume (micro-frac) stress tests described in the Background Section of this report were the main type of stress test used. These tests were divided between Wells 2 and 3; stress tests in Well 1 were performed on larger perforated intervals, and different testing techniques were used, such as the pump-in/flow-back test. Appendix A presents VOLAN Log (a Schlumberger log which attempts to delineate formation type and hydrocarbon porosity, etc.) sections for all three wells, with stress test intervals highlighted (Figures A-1-1a-g, A-2-1a-j, A-3-1a-g).

The test zone designations given in these Figures designate the well and zone that tests were performed in; for example, Zone 2P1 indicates a test in well MWX-2 in the Paludal zone, with the final "1" indicating the first micro-frac test zone (by depth, relative to those included in this report) in the Paludal section of that well. Zones highlighted in the MWX-1 well (Figures A-1-1a-1g), show the "frac zone", which was tested and stimulated (this corresponds to Sand zones 3 and 4 in Sandia literature); there is also a perforated interval from 7256 ft to 7284 ft that was pumped into for larger volume stress test purposes. The Sandia Laboratories published results for these tests are given in Table 1, which lists depth, test zone, gamma ray (averaged over the 2 foot test interval) closure stress, pore pressure, etc. It should be noted that the closure stress results were obtained by subjective picking of an ISIP from a plot of pressure versus time, as described in the Background Section of this report. Also, though a number of tests were conducted in each zone, there is only one value given for closure stress in Table 1, which is meant to represent an average of the results for that zone; these results have varying standard deviations associated with them.

To date, NSI has received detailed pressure data (actual time-pressure data files) for seven of these small micro-frac zones, plus Paludal "frac zone" data for MWX-1. All of these data fall in the Paludal Section of the Mesaverde Group; it was hoped that detailed analysis of the tests would lead to correlations between closure stress and formation parameters quantifiable by log analysis. Also, if the Sandia stress values in this zone could be accurately verified, then stress results from outside the zone could be assumed valid and possibly used

TEST ZONE	DEPTH	GAMMA RAY	CLOSURE STRESS	FRAC GRADIENT	PORE PRES	OB PRES	K FACTOR
2F1	5851	90	5925	1.01	3400	6144	0.92
2F2	5941	115	5750	0.97	3465	6238	0.82
2F3	5963	65	4600	0.77	3480	6261	0.40
2F4	6007	110	6200	1.03	3500	6307	0.96
3C1	6375	125	6540	1.03	4300	6694	0.94
3C2	6399	140	6445	1.01	4300	6719	0.89
3C3	6421	140	6805	1.06	4400	6742	1.03
3C4	6443	55	5720	0.89	4400	6765	0.56
3C5	6461	65	5670	0.88	4400	6784	0.53
3C6	6513	75	5845	0.90	4400	6839	0.59
3C7	6528	145	6665	1.02	4400	6854	0.92
3C8	6549	53	5640	0.86	4400	6876	0.50
3C9	6566	120	6980	1.06	4400	6894	1.03
3C10	6607	120	7130	1.08	4500	6937	1.08
3C11U*	6707	90	7100	1.06	4600	7042	1.02
3C11L*	6766	90	7100	1.05	4600	7104	1.00
2P1 +	6929	115	5830	0.84	4950	7275	0.38
2P2 +	6964	70	5745	0.82	5030	7312	0.31
2P3 +	7011	90	6325	0.90	5140	7362	0.53
3P1 +	7033	160	6800	0.97	5190	7385	0.73
3P2 +	7049	30	7200	1.02	5230	7401	0.91
3P3 +	7069	115	5780	0.82	5300	7422	0.23
2P4	7170	80	7000	0.98	5300	7529	0.76
2P5 +	7207	75	6900	0.96	5450	7567	0.68
2P6	7264	50	6755	0.93	5500	7627	0.59
2P7	7304	110	6430	0.88	5550	7669	0.42
2P8	7395	65	6720	0.91	5600	7765	0.52
2P9	7424	30	6865	0.92	5600	7795	0.58
2M1 #	7467	50	6800	0.91	5800	7840	0.49
2M2 #	7531	55	6590	0.88	5850	7908	0.36
2M3 #	7601	85	7610	1.00	5900	7981	0.82
2M4	7665	105	8150	1.06	6300	8048	1.06
2M5	7766	105	8590	1.11	6300	8154	1.23
2M6 &	7850	50	6645	0.85	6150	8243	0.24
2M7	7895	80	6830	0.87	6300	8290	0.27
2M8	7924	90	7800	0.98	6300	8320	0.74
2M9	7971	60	6885	0.86	6300	8370	0.28
2M10	8015	110	8150	1.02	6800	8416	0.84
2M11	8061	90	8230	1.02	6800	8464	0.86

* - ZONES IN COMMUNICATION
\+ - ZONES WITH AVAILABLE BOTTOMHOLE PRESSURE DATA
\# - ESTIMATED PORE PRESSURE
& - 3 TEN FOOT PERFORATED ZONES OPEN; 3 MONTH DRAWDOWN (PORE PRESSURE)

Table 1: Summary of Sandia Stress Test Results

for similar correlation analyses. The pressure data for the Paludal zones is given in Appendix B; it was analyzed using techniques discussed in the Background Section, and the results are summarized below.

PALUDAL ZONE DATA ANALYSIS

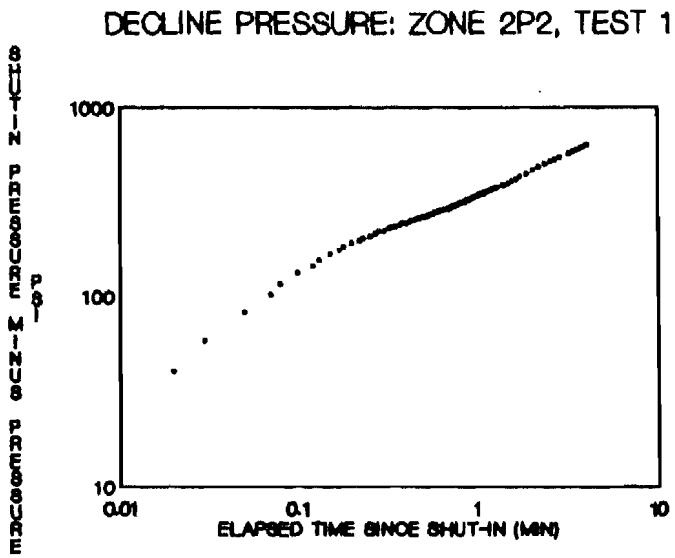
MICRO-FRAC TESTS

The data for seven Paludal zones is plotted in Appendix A (Figures A-2-2 to A-2-37, A-3-2 to A-3-28); these plots (and the data itself) formed the basis for the analysis. For each test (there are 2 to 4 tests for each of the seven zones), Appendix A gives two plots of pressure versus time (one including the injection and one focusing on the pressure decline), and a plot of the pressure decline versus square root time.

One additional analysis plot was examined for each zone: a plot of the logarithm of the change in pressure (referenced to pressure at the instant before shut-in) versus the logarithm of elapsed time (since shut-in). This was used to determine if any wellbore storage effects were present in the data. None of these effects were expected (see Background Section), due to the downhole shut-in configuration, but it was felt important to check this possibility. Figures 3a and 3b show examples of these plots, which are labelled by test number and zone.

As described above a unit (1:1) slope on this log-log plot indicates that the data is affected by wellbore storage, e.g. flow is continuing into the formation after shut-in. For Figures 3a and 3b, only the first 2-3 seconds of data fall on or near a unit slope line. This indicates that the pressure decline behavior is controlled by something happening outside the wellbore, either formation behavior (e.g., fluid leakoff, etc.), fracture behavior (e.g., extension or closure), or a combination of the two. This lead to confidently pursuing further "reservoir type" analysis of pressure data for these tests in an effort to determine fracture closure stress. Since it had been identified that the first 2-3 points may have been affected by wellbore storage, these data points would not be used for determining closure pressure (they would be included in the various plots, however).

The main analysis tool used to determine closure pressure was the plot of pressure versus square root time (e.g., Figure A-2-4, A-2-7, etc.). As discussed in the Background Section of this report, the analysis procedure consisted of looking for linear flow behavior in the pressure data, with a deviation from linear flow behavior taken as indicating fracture closure. This procedure is in contrast to the normal "micro-frac" analysis where it is assumed that because of the small injection volume, closure stress can be inferred by subjectively picking the instantaneous shut-in pressure (ISIP) from a plot of



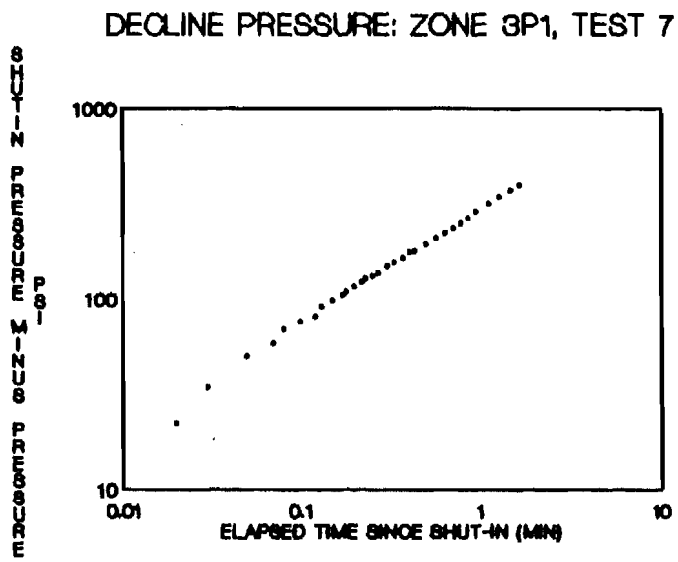
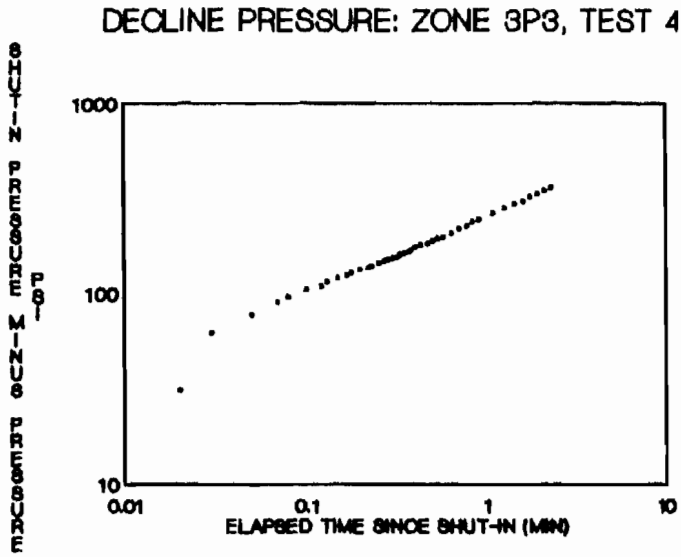


Figure 3a: Log (delta P) vs. Log (delta T) Plots of Pressure Decline Data from Microfrac Stress Test Zones



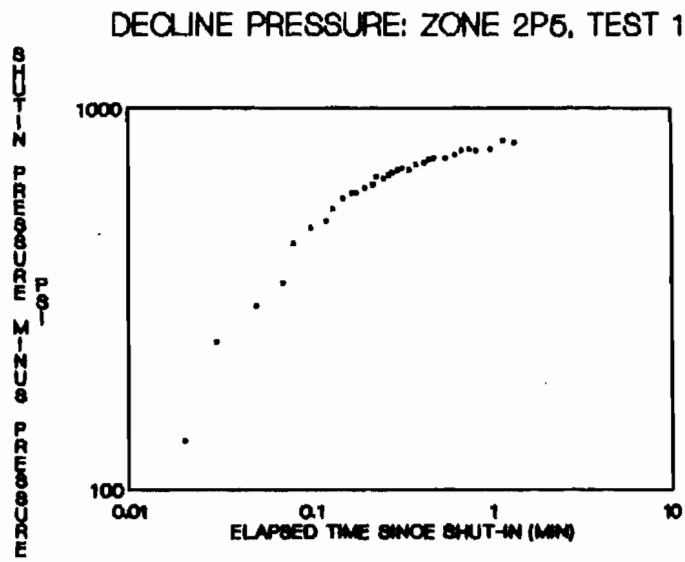


Figure 3b: Log (delta P) vs. Log (delta T) Plots of Pressure Decline Data from Microfrac Stress Test Zones

pressure versus time for the pressure decline. For many tests this procedure may be too subjective, and "reservoir type" analysis may yield a more definitive value for fracture closure.

Figure 4 shows an example plot of pressure decline versus square root time for zone 2P2 (test 1), with a closure stress of 5750 psi indicated. Figure 5 shows a plot of pressure decline versus time for the same test. In Figure 4, the break from the early linear behavior is readily apparent (note that the line goes past the region with potential for wellbore storage effects). In Figure 5, one could choose an ISIP between 5720 psi to 5780 psi and the two methods are in good agreement. When an ISIP "pick" is reasonably definitive, as for this case, it still (generally) has a higher standard deviation than does a stress derived from the decline plot versus square root time; also, there is no clear criterion for choosing this ISIP. The earlier analysis for this zone (results generally published by zone, not by individual test) was 5745 psi.

There were many instances in the data where there was a definitive deviation from linear behavior on a square root time plot, and little or no indication of an ISIP on the corresponding linear plot. One of these occurrences was in the same zone as the case described above, 2P2. Figure 6 shows pressure decline versus square root time for test 4 in this zone; Figure 7 shows the linear time plot for this test. In Figure 6, there is a clear deviation from early linear flow behavior (the first two data points of the decline were ignored, as they are potentially storage dominated), indicating a closure stress at approximately 6000 psi. In Figure 7, there is little character that could lead one to pick an ISIP; it appears that it could be anywhere from 5970 psi to 6100 psi. As mentioned above, the Sandia analysis showed a closure stress of 5745 psi for this zone.

It is not coincidental that examples of a good match between analysis methods as well as poor matches should come from the same zone. This is probably due to an increasing closure stress exhibited in this zone, which is a water saturated, porous sand section. This increase in closure stress affects the magnitude of the stress results from the square root time plots, but the character of the curve remained unchanged, e.g., a sharp break in the data. However, in the linear time plots, increasing injection altered the character of the decline curve such that an ISIP was essentially indiscernible (see Figure A-2-12 and A-2-13 for the plots of the second test in the zone, where a stress increase is also evident). Sandia chose the initial closure stress derived from the ISIP in the first test (Figure 4) as their pick of closure stress for this zone. While technically correct, any attempt at fracture modelling in a zone that exhibited increased closure stress with fluid injection would have to account for the stress increase.[6] This phenomenon is further discussed below.

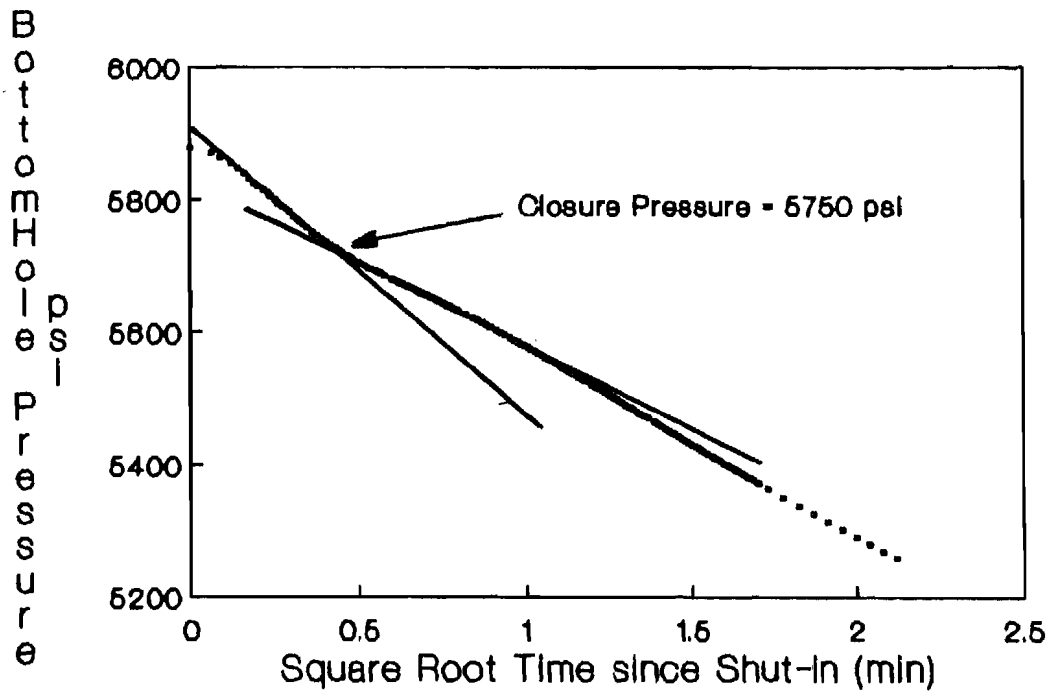


Figure 4: Pressure Decline Plot (vs. Square Root Time): Test 1, Zone 2P2

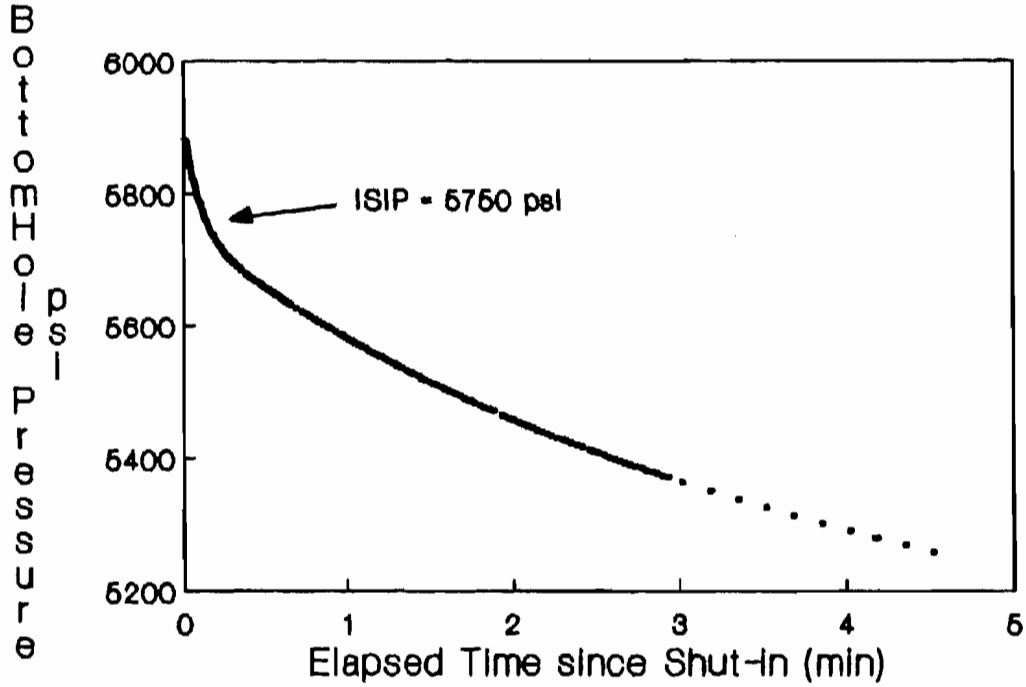


Figure 5: Pressure Decline Plot (vs. Time): Test 1, Zone 2P2

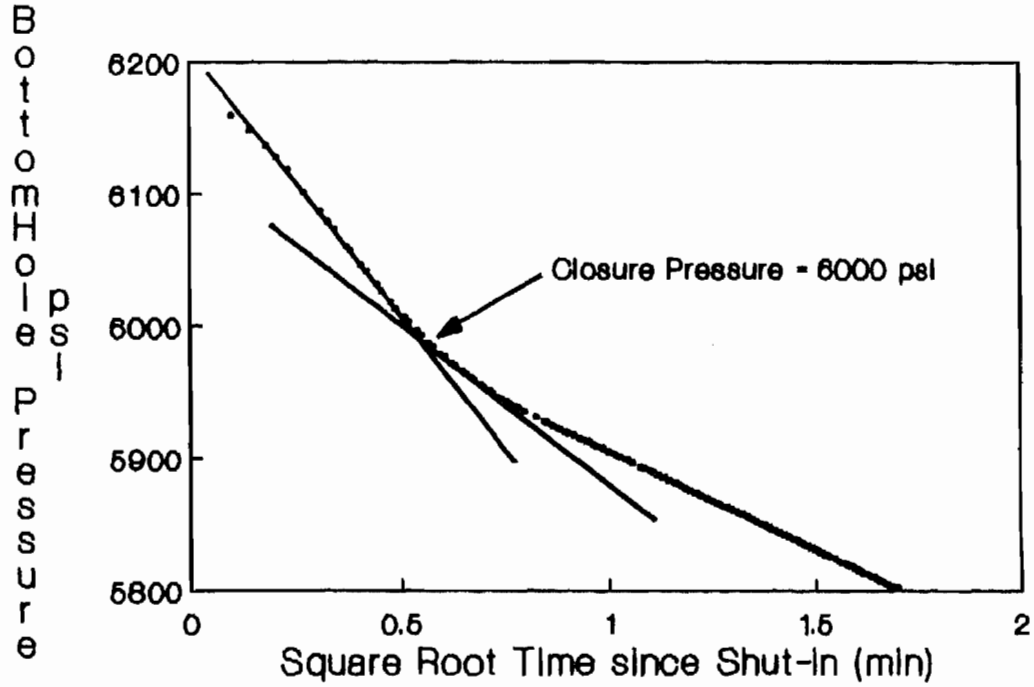


Figure 6: Pressure Decline Plot (vs. Square Root Time): Test 4, Zone 2P2

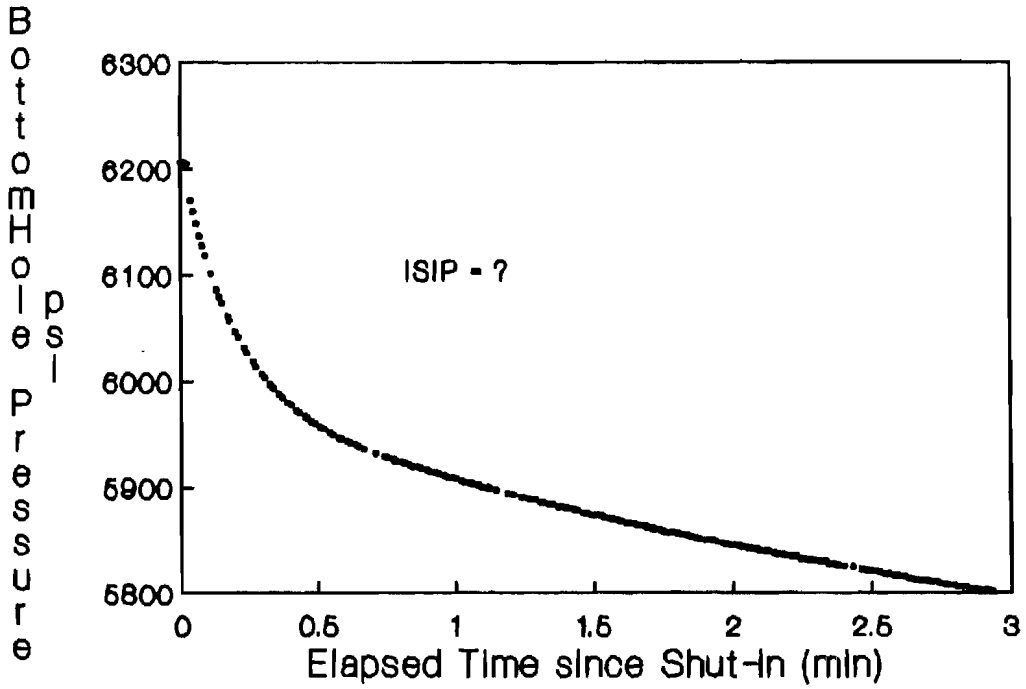


Figure 7: Pressure Decline Plot (vs. Time): Test 4, Zone 2P2

There are also instances in the data where there is good agreement between the square root time analysis and the ISIP technique for each test in a zone. For example, Figure 8 and 9 show the square root and linear time plots (respectively) for test 3 in zone 2P3. There is excellent agreement between the deviation from linearity and the ISIP (6300 psi from the square root plot, with Sandia picking 6325 psi for the zone closure stress (again, there appears to be a larger standard deviation associated with the ISIP pick). Tests 4 and 5 in this zone (pictured in Figure A-2-21, A-2-22, A-2-24, and A-2-25) show the same agreement between the methods, at nearly the same stress level. If closure stress remains constant in a zone (as it should for any case other than a liquid saturated porous zone), and there is good agreement initially between the square root analysis and the ISIP, this agreement should hold for other tests in the zone. In those zones where there is increasing closure stress, one would have to let the well bleed off to initial conditions to get repeatable stress results (however, as stated above, this knowledge of increasing closure stress can be a crucial piece of information).

Common to the data sets analyzed here is the fact that there is no case where picking an ISIP gives a clearer definition of closure stress than determining the deviation from linear behavior on a square root of time plot. While performing a re-analysis of the data, we conclude that "reservoir type" methods for determining closure stress are generally superior to picking an ISIP, even for small volume tests. This would include using the logarithmic plot described above to determine the presence of storage effects, and then using the square root of time plot to determine closure stress. Another "reservoir type" plot commonly used in the industry is the Horner time plot of pressure decline (used to determine reservoir pressure, etc.); we feel that the small volume/short time duration nature of the injection severely limits the usefulness of this plot, and did not pursue this type of analysis.

In general, the re-analysis showed that picking an ISIP is easier when a small fracture has been created in a non-permeable formation; the corresponding pressure decline has an "L" shape. When longer injections are performed, or permeable zones are encountered, the decline curve has less character, and ISIP picks are difficult.

The above discussion does not imply the infallibility of a square root time analysis for determining closure pressure, it only points out that this method tends to yield clearer, often more definitive results than using a subjective pick of an ISIP (the only situation where the ISIP pick could be as clear is with the "L" shaped decline described above). There are examples (in this data) of ambiguous picks using the square root time plot method, however, the corresponding linear plots are equally ambiguous. For example, Figures 10 and 11 show the square root and linear time plots for test 8 in zone 3P1. We

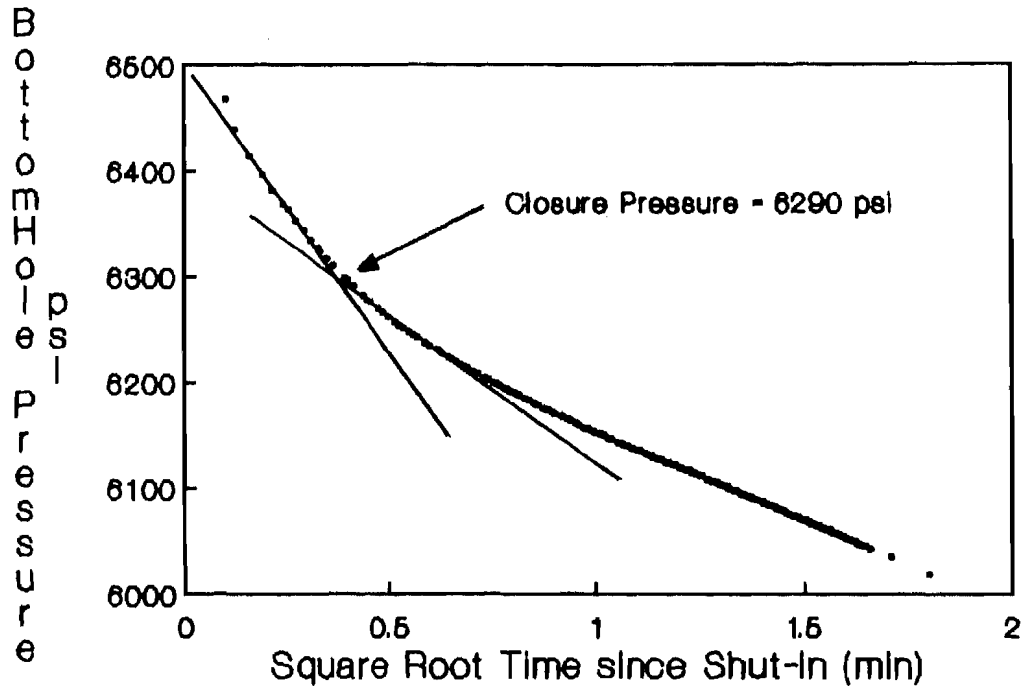


Figure 8: Pressure Decline Plot (vs. Square Root Time): Test 3, Zone 2P3

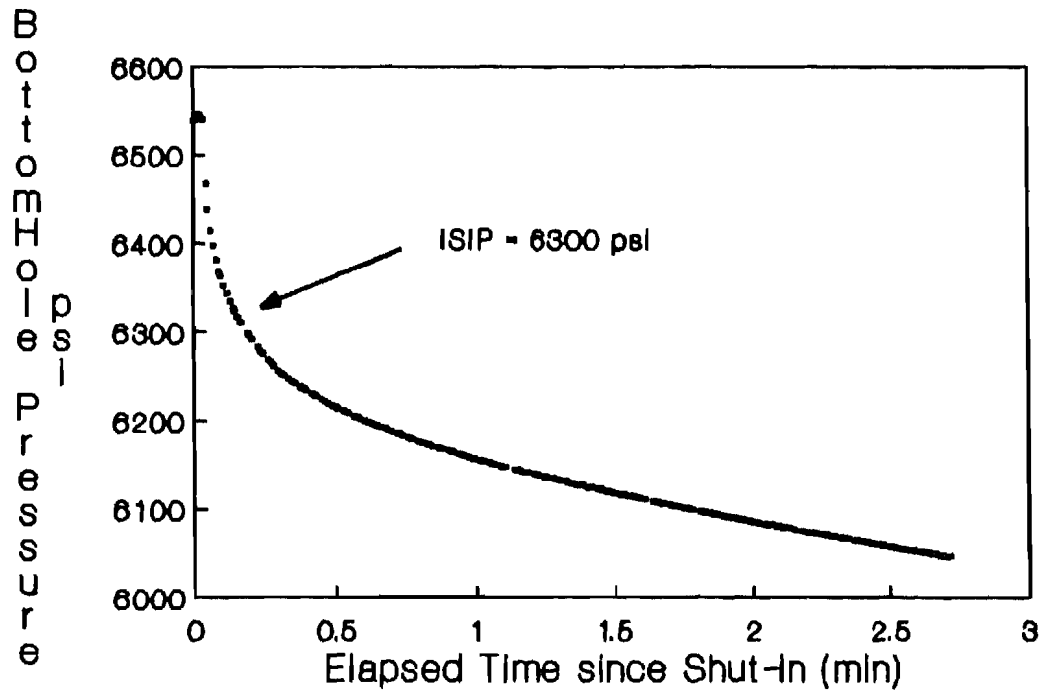


Figure 9: Pressure Decline Plot (vs. Time): Test 3, Zone 2P3

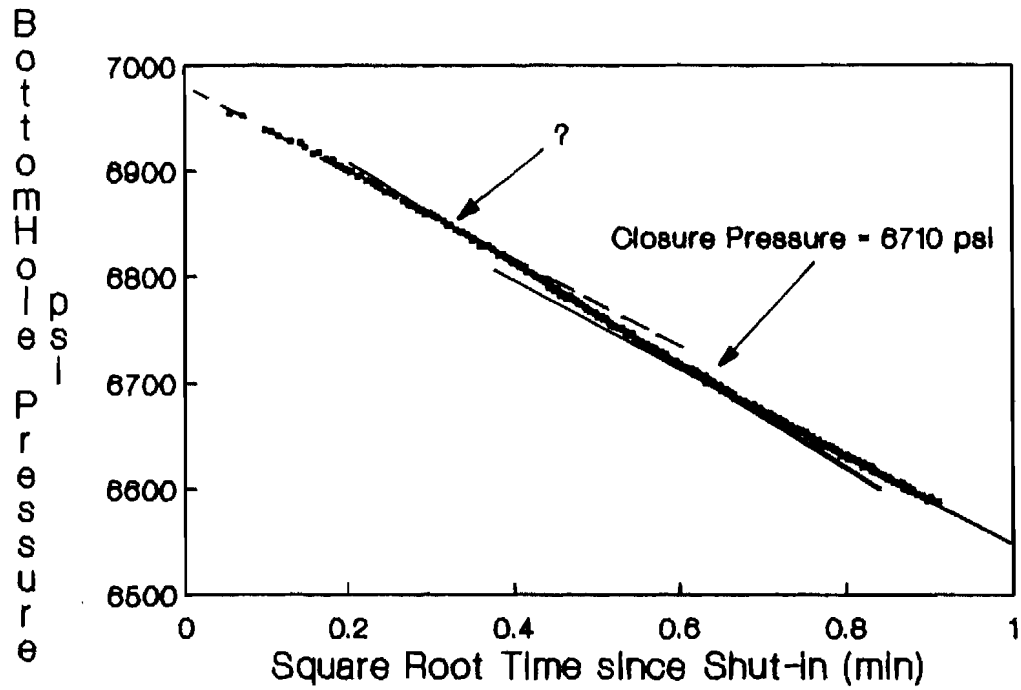


Figure 10: Pressure Decline Plot (vs. Square Root Time): Test 8, Zone 3P1

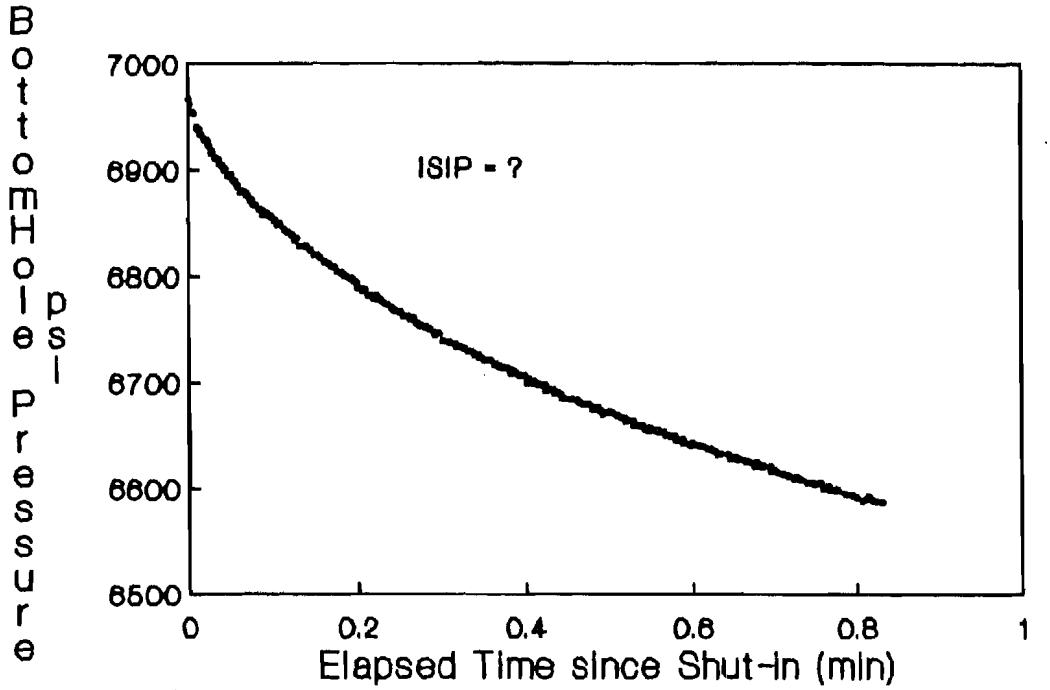


Figure 11: Pressure Decline Plot (vs. Time): Test 8, Zone 3P1

feel the square root plot is fairly suspect; there is a case for drawing an earlier straight line, and the slope change in the plot is not as pronounced as in other cases). Reviewing the linear plot (Figure 11) does little to dispel this ambiguity; an ISIP pick would have an associated uncertainty of ±100 psi or more. It should be noted that the Paludal Zone is the most heterogeneous formation in the Mesaverde Group, and, according to Sandia reports, yielded the most difficult data to analyze (see correlation discussion, below).

However, this re-analysis, principally using linear flow behavior (square root of time plots) to indicate fracture closure is substantially in agreement with earlier published stress results. Thus the ISIP from small volume micro-frac tests can be used to infer fracture closure pressure (even in a complex lithology) if proper care is taken in the analysis. A linear flow, square root of time, analysis, however, often yields a more definitive, objective indication of closure, and may make otherwise uninterpretable data, interpretable.

LARGE VOLUME STRESS TESTS

These tests were performed using two methods, in three separate perforated intervals. On test type was a breakdown/shut-in, where fluid was injected into the zone, and the well was shut in downhole; the pressure decline was monitored and the ISIP method was used to pick closure stress. This was performed on an interval in MWX-1 from 7256 ft to 7284 ft (see Figure A-1-1d), and on an interval in MWX-3 from 7080 ft to 7102 ft (two perforated intervals, corresponding to Paludal Sands 3 and 4 - see Figure A-3-1g). The other test performed was the pump-in/flow-back test, which was done in the Paludal Frac Interval in MWX-1 (two perforated interval treated simultaneously, from 7076 ft to 7100 ft, and 7120 ft to 7144 ft - see Figure A-1-1d); this section will discuss some of the results from these tests. The focus will be on the flow-back tests, as no detailed pressure data was available for the breakdown tests.

The only available data that NSI has for the two breakdown zones is in the form of plots from Sandia reports. Figure 12 shows the pressure record from the initial pump-in for the MWX-1 breakdown zone; Sandia personnel picked an ISIP at 6300 psi, ±50 psi. The poor data quality near the shut-in time make this pick questionable; one might pick 6200 psi with a standard deviation of ±100 psi. Since this is a porous interval, it would be important to see if subsequent pump-ins in this zone (there were two) led to increased closure stress. Figure 13 shows the initial breakdown in the Paludal Frac Interval in MWX-3; the Sandia ISIP pick was 5805 psi ±50 psi and this appears to be a more definitive test.

As described in the Background Section, a pump-in/flow-back test is the preferred test for determining closure stress in

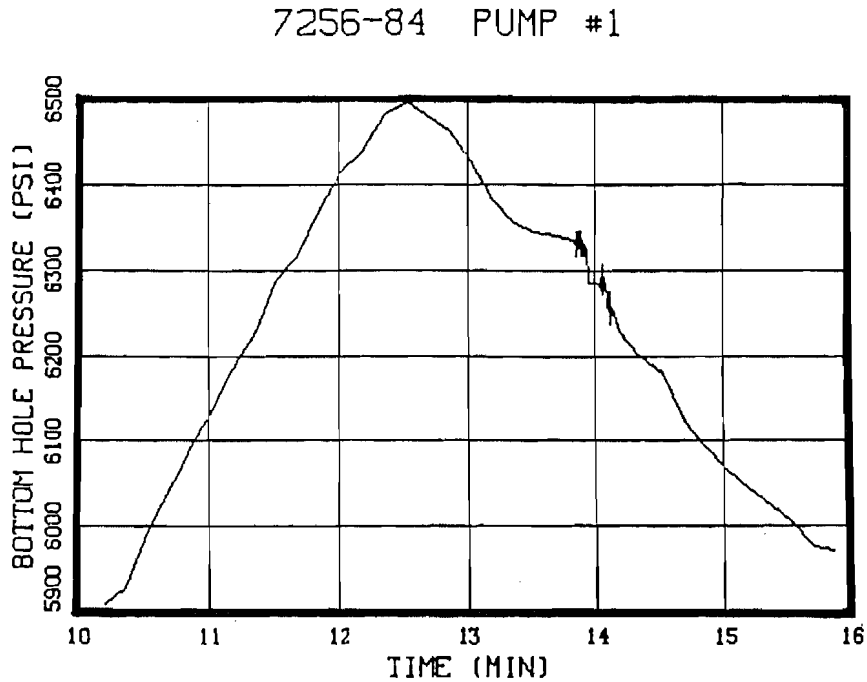


Figure 12: Pressure vs. Time for the Initial Breakdown in MWX-1 Breakdown Zone, 7256 ft to 7284 ft.

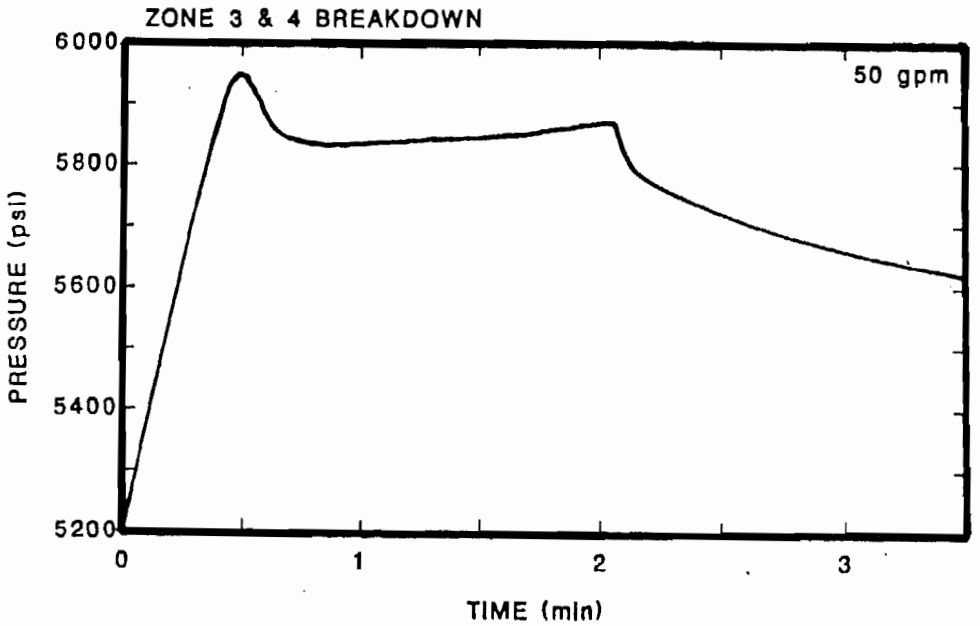


Figure 13: Pressure vs. Time for the Initial Breakdown in the MWX-3 Breakdown Zone, 7080 ft to 7102 ft.

porous formations. If a correct flow-back rate is chosen, the change in curvature of the pressure decline curve (versus time) is usually definitive. Any series of flow-back tests should start with a step-rate injection, which helps characterize fracture extension pressure, and which serves as an upper limit on closure pressure (e.g. any subsequent clear indication of closure stress above this extension pressure could be indicative of increased closure stress with volume injected). Results and data plots for these tests are included in Appendix A and are summarized below.

Figure 14 shows a pressure versus time curve for the entire step-rate/flow-back test conducted in the Paludal "frac zone" (7076 ft - 7100 ft and 7120 ft - 7144 ft) in MWX-1. The usual method for analyzing a step-rate injection (the test procedure is described in the Background Section) is to plot "stabilized" pressure at the end of each time step (if pressure hasn't stabilized, the last pressure before rate is adjusted upward is used) versus rate for each time step. This leads to a set of data such as shown in Figure 15, which gives the Sandia analysis plot of the step rate injection. While examining the pressure data for this step injection (included in Appendix B), it became apparent that Sandia had plotted the pressure at the mid-point of each time step (versus rate for that time step) instead of the end point. This is not the usual method and Sandia's fracture extension pressure determination of 5940 psi likely underestimates the actual value. Figure 16 gives the NSI re-analysis of this data; the fracture extension pressure is approximately 6010 psi (note that the rate data used to construct these plots is included on each plot).

Figure 17 is a plot of the flow-back performed after the step injection. Both the decline pressure and the derivative of this pressure curve are plotted versus time. A change of curvature indicating an acceleration in the rate of pressure decline is indicative of closure pressure. The philosophy for evaluating these tests is such that the anomalies (on the pressure and derivative curves) must be reasonably obvious to the eye. If not, it is likely that the flow-back rate was set incorrectly or that storage effects, etc. are masking fracture phenomena. Figure 17 shows a change of curvature at ±5800 psi; had the flow-back rate been higher, this may have been more pronounced. The data from 6000 psi to 5800 psi is essentially a straight line, with little in the way of clear inflection; the choice for closure pressure is at the end of this straight line, where the derivative curve starts becoming more negative indicating an acceleration in the rate of pressure decline. The excellent agreement between this value and value of 5805 psi found in the breakdown stress test conducted in the MWX-3 interval from 7080-7100' should also be noted.

Sandia evaluated these tests by fitting the data to a polynomial function of order 9. They then evaluated the second derivative of the polynomial; where the value of the second

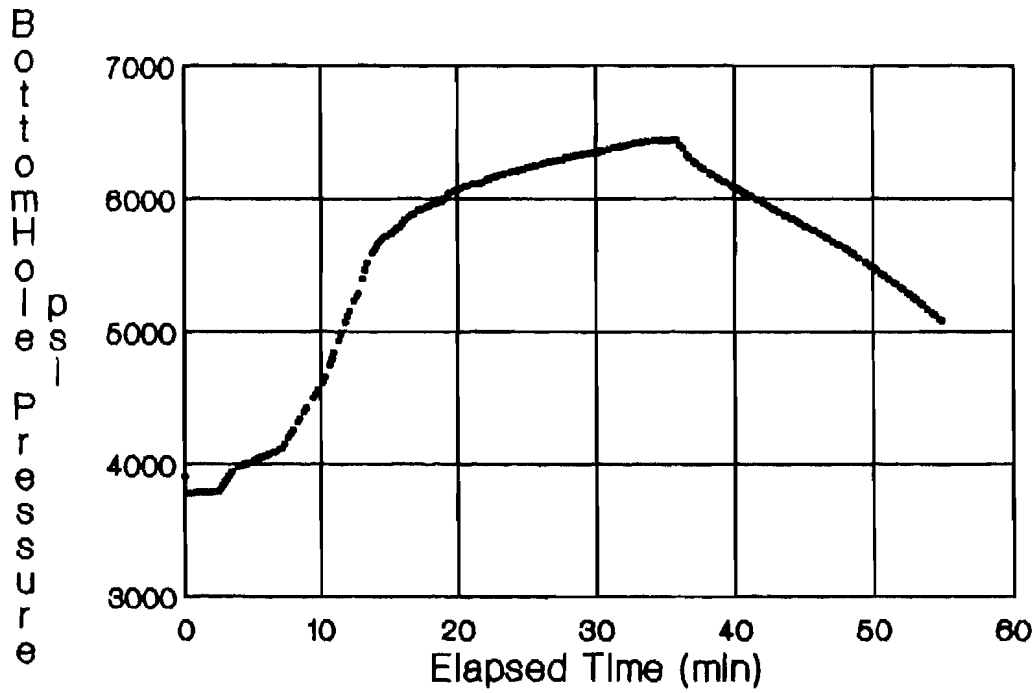


Figure 14: Pressure vs. Time for the Step Rate/Flowback Test in the MWX-1 Frac Zone

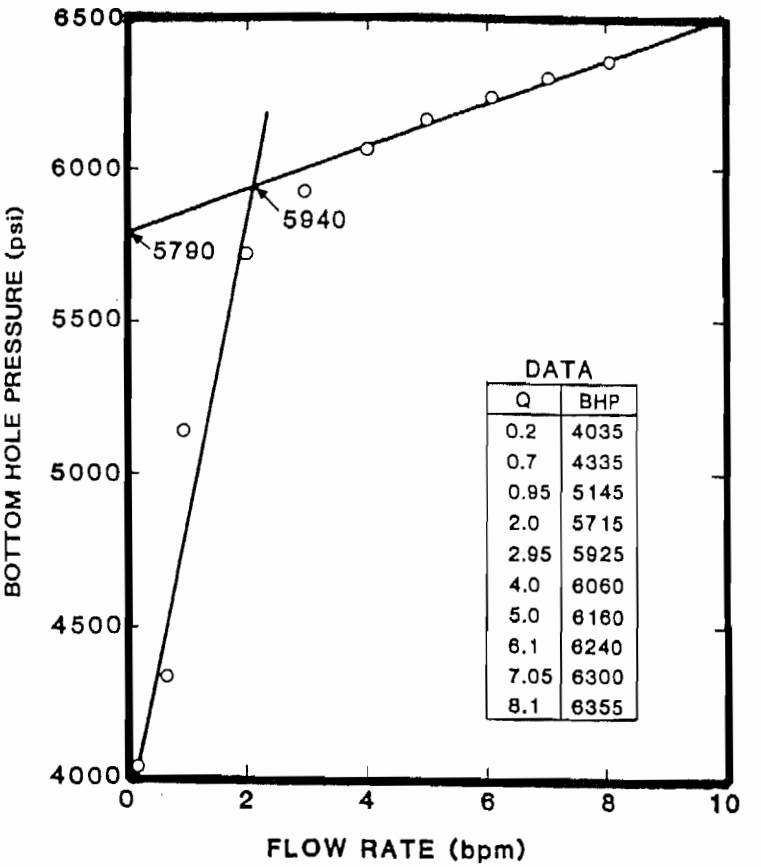


Figure 15: Sandia Pressure vs. Rate Analysis of the Step Rate Test

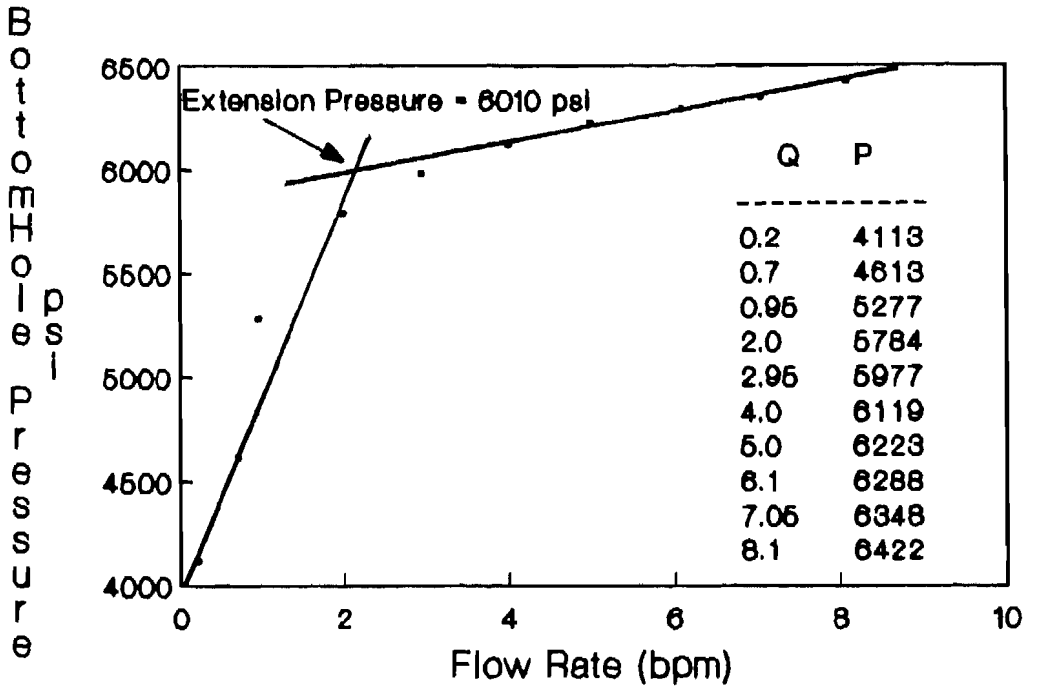


Figure 16: NSI Pressure vs. Rate Analysis of the Step Rate Test

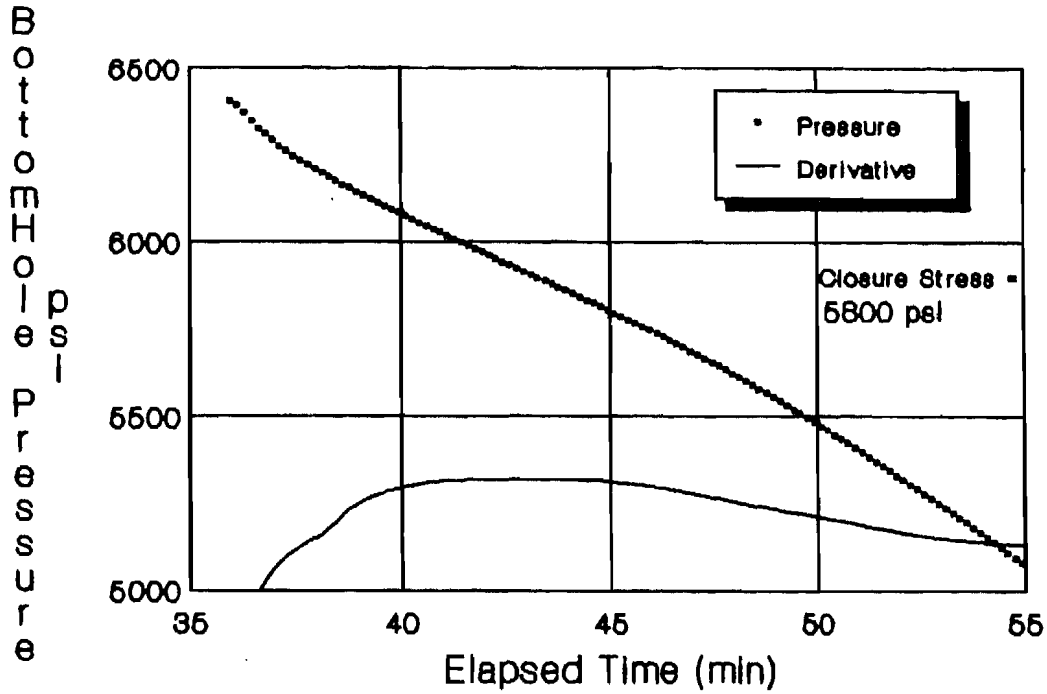


Figure 17: Plot of Pressure and Pressure Curve Derivative vs. Time for the First Flowback Test in the MWX-1 Frac Zone

derivative went from positive to negative, the pressure curve would be changing curvature. This is potentially a good method for evaluating such tests and can reduce the final uncertainty in the result, but only if there are obvious anomalies in the data. Using this method, Sandia found a closure stress of 5900 psi, which is essentially the "middle" of the straight line behavior which occurred for pressures between 6000 and 5800 psi. The "power" of the Sandia analysis lies in reducing the data to an analytical function - allowing objective, semi-automatic analysis. However, in practical application of evaluating flow-back data, such power may be misused. This may be the case for the analysis of the subsequent test.

Immediately after this step rate injection/flow-back test, a pump-in/flow-back test was run (with an injection rate of ±8 bpm, the final rate in the step rate test). The pressure record for this entire test is shown in Figure 18 (the brief shut-in during pumping was an effort to determine the water hammer response of the system to shut-in). The data seen in this figure was analyzed by fitting the pressure decline to a polynomial of order 11, and from this, closure stress was determined as approximately 6100 psi. Figure 19 presents a plot of the pressure decline and derivative of the pressure data versus time for this test. This curve has little of the character one would expect from this type of test, and no obvious inflection exists on it. Any analysis of this data should be treated with extreme care since: a) there is no clear inflection, and b) more fundamentally, the pressure data does not decline back to the earlier measured closure stress. This analysis may be a case of a high order polynomial "fit" producing a result which is not real.

During testing, data was recorded down to a pressure of ±5600 psi as seen in Figure 20, however the later portion of this data is no longer available for analysis. There appears to be a slope change in this figure at ±6000 psi, however, without the actual data it would be careless to infer anything from this slope change.

The polynomial fit analysis of the available data did provide a result of ±6100 psi, however, the validity of this result is possibly dubious. The increase in measured stress from 5900 to 6100 psi between the two tests was attributed to "backstress" (e.g. rise in closure stress due to poro-elastic effects as discussed below) however, such a large backstress phenomenon in a gas saturated zone would be surprising and such a conclusion cannot be drawn from this uncertain data. While the backstress explanation is possible, it is also possible that: a) closure stress has not changed, particularly since the ISIP was about 6400 psi for both tests, or b) the second injection began to breakdown and open a fracture in the lower of the two perforated intervals. It is probable that the two components of the frac zone (e.g. 7076-7100' and 7120-7144') fracture and experience fracture closure at different pressures

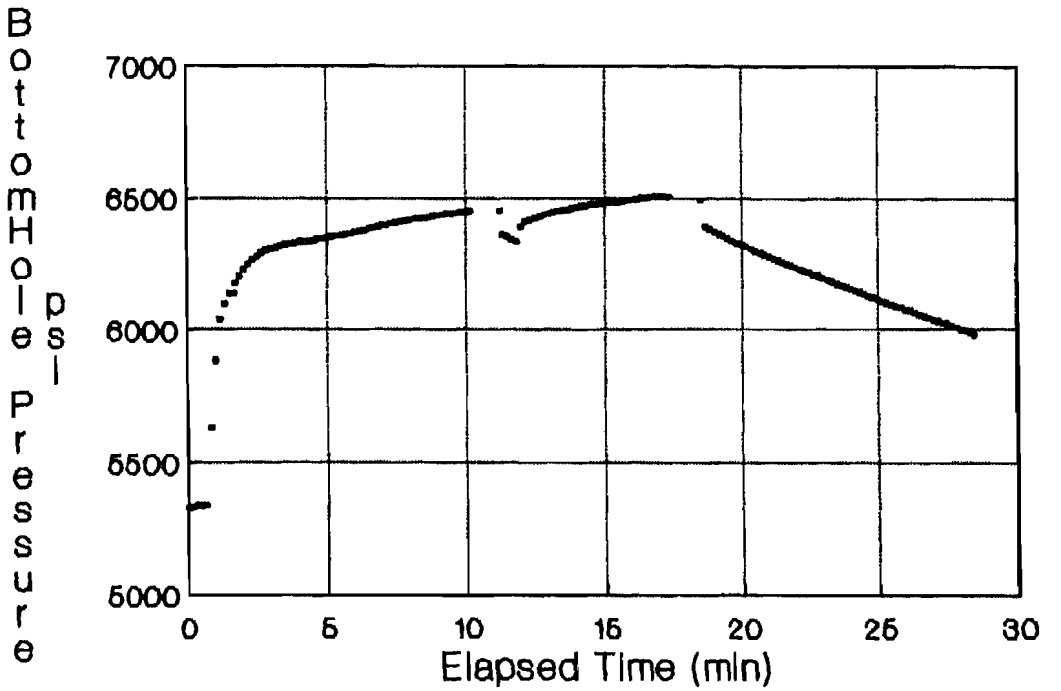


Figure 18: Pressure vs. Time for the Pump-in/Flowback Test in the MWX-1 Frac Zone

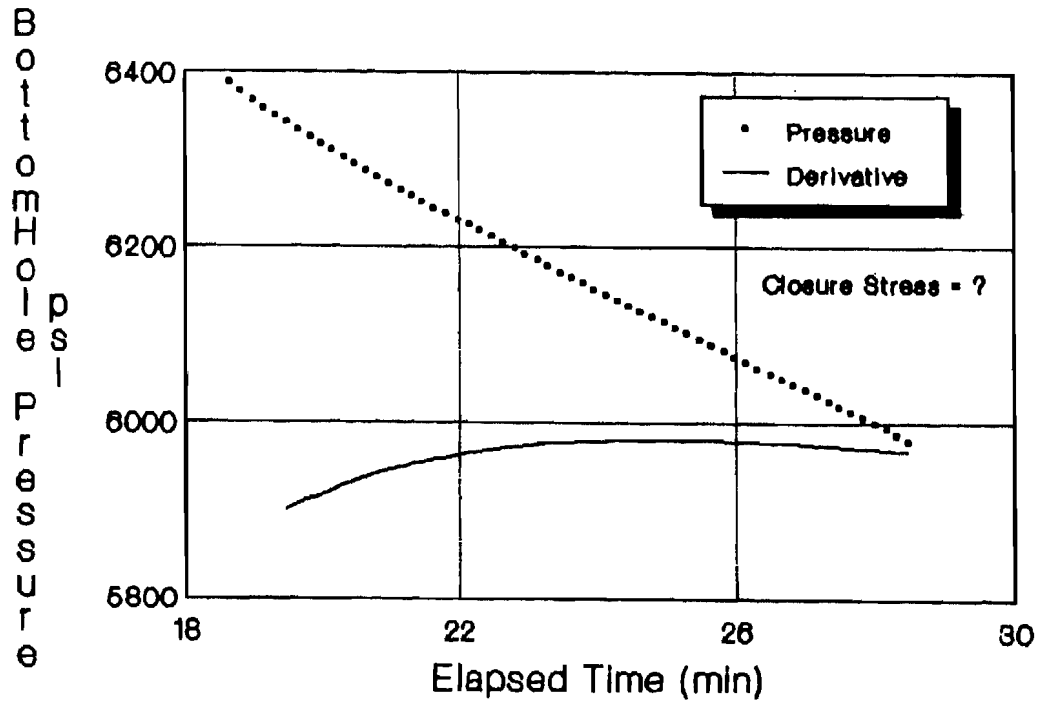


Figure 19: Plot of Pressure and Pressure Curve Derivative vs. Time for the Second Flowback Test in the MWX-1 Frac Zone

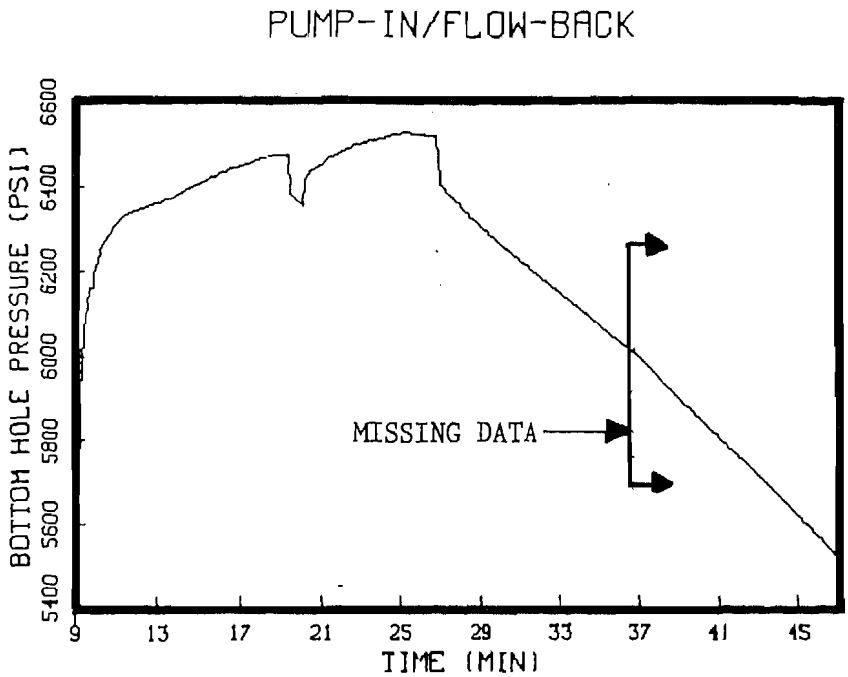


Figure 20: Plot of Pressure vs. Time for the Second Flowback Test in the MWX-1 Frac Zone with missing data included

(see correlation discussion below), and the indication of a higher closure stress may be reflective of this. For case "a", it is probable that a repeat test with an increased flow-back rate would have replicated the results of the first test.

A scenario for case "b" would assume the original result reflected a stress level in the lower stress zone (and likely did not breakdown the higher stress zone). The second test might open both zones, and the initial closure stress value seen on the pressure decline curve would reflect the higher stress zone. Examination of the lost data might detect the presence of an anomaly at the lower stress value (measured in the first test). This may be a plausible alternative to the backstress hypothesis; this subject will be covered fully in a later report on fracture modeling in this zone.

Following the flow-back tests, two minifracs were performed in this same perforated interval (one and three days later, respectively). It was thought that square root time analysis of the pressure declines associated with these minifracs could yield additional closure stress information in these zones. Unfortunately, the pressure was not allowed to decline back to the original closure pressure; this was mainly due to surface line freezing problems since all testing was performed in early December, 1983. While there were periods of linear behavior in these pressure decline curves, this behavior has been previously observed in gas wells, and can be a false indication of closure stress (or these minifracs could be causing the same dual closure stress scenario mentioned above). This data will be further analyzed and interpreted in the fracture modelling report; it will not be included in this report. However, since the pressure decline was not measured "all the way down" to the original closure pressure, definitive conclusions as to possible changes in closure stress will not be realizable from the mini-frac decline data.

SUMMARY OF PALUDAL STRESS ANALYSES

This section will summarize the results of the NSI analysis of the pressure data supplied by Sandia Laboratories, and it will also compare these results to those of the original analysis performed by Sandia.

Table 2 gives the results of the seven Paludal micro-frac stress test zones for which pressure data was available. The first column designates the test, e.g. 2P1TST3 means the third test performed in zone 2P1. The next column gives the mid-perf depth of these 2 foot thick test intervals. The Sandia closure stress column gives the published analysis of the data; note there is only one value per zone, as they presented an average of all the tests in a zone in the literature. The NSI closure stress column gives stress analysis results for each test. The pore pressure column gives the values that were reported in the

TEST	DEPTH	SANDIA CLOSURE	NSI CLOSURE	PORE PRES	OB PRES	SANDIA GRADIENT	NSI GRADIENT	SANDIA K	NSI K
2P1TST3	6929	5830	6015	4950	7275	0.84	0.87	0.38	0.46
2P1TST4	6929	5830	6200	4950	7275	0.84	0.89	0.38	0.54
2P2TST1	6964	5745	5750	5030	7312	0.82	0.83	0.31	0.32
2P2TST2	6964	5745	5835	5030	7312	0.82	0.84	0.31	0.35
2P2TST4	6964	5745	6000	5030	7312	0.82	0.86	0.31	0.43
2P3TST3	7011	6325	6295	5140	7362	0.90	0.90	0.53	0.52
2P3TST4	7011	6325	6280	5140	7362	0.90	0.90	0.53	0.51
2P3TST5	7011	6325	6300	5140	7362	0.90	0.90	0.53	0.52
3P1TST4	7033	6800	6710	5190	7385	0.97	0.95	0.73	0.69
3P1TST5	7033	6800	6675	5190	7385	0.97	0.95	0.73	0.68
3P1TST7	7033	6800	6795	5190	7385	0.97	0.97	0.73	0.73
3P1TST8	7033	6800	6710	5190	7385	0.97	0.95	0.73	0.69
3P2TST3	7049	7200	7125	5230	7401	1.02	1.01	0.91	0.87
3P2TST4	7049	7200	7235	5230	7401	1.02	1.03	0.91	0.92
3P2TST5	7049	7200	7135	5230	7401	1.02	1.01	0.91	0.88
3P3TST4	7069	5780	5700	5300	7422	0.82	0.81	0.23	0.19
3P3TST5	7069	5780	5690	5300	7422	0.82	0.80	0.23	0.18
2P5TST1	7207	6900	6820	5450	7567	0.96	0.95	0.68	0.65
2P5TST2	7207	6900	6820	5450	7567	0.96	0.95	0.68	0.65
2P5TST3	7207	6900	6865	5450	7567	0.96	0.95	0.68	0.67
2P5TST4	7207	6900	6845	5450	7567	0.96	0.95	0.68	0.66

Table 2: Summary of Paludal Zone Stress Data Re-analysis Results

literature, and the overburden pressure column gives principal vertical stress values calculated by assuming an overburden pressure gradient of 1.05 psi/ft. The Sandia and NSI frac gradient columns divide the respective closure stress values for each test by the depth of the zone tested.

For shale intervals, pore pressure is assumed equal to that in nearby porous sandstone zones. For the geologic environment of the Mesaverde Group, this seem to be a reasonable assumption since the formations are being "unloaded" (e.g. overburden is being reduced) during recent geologic time. Overpressured shales are common in younger sediments such as the Gulf Coast where rapid sedimentation (and the resultant increase in overburden pressure) along with salt dome intrusions for the particular case of the Gulf Coast, are loading and compressing the shale formations faster than the resulting excess pore pressures can escape from such low permeability rocks.

Finally, a "K factor" was calculated to attempt to normalize out effects of depth and pore pressure in comparing the stress results from different zones. Other studies [7] have noted a general linear relation between fracture closure pressure, depth, and pore pressure which might be written as

$$\sigma_c = K\ (OB - p_{res}) + p_{res} \qquad \text{Eqn 1}$$

where σ_c is closure pressure, "OB" is the weight of the overburden, and p_{res} is reservoir or pore pressure. This can be re-written as

$$K = (\sigma_c - p_{res})\ /\ (OB - p_{res}) \qquad \text{Eqn 2}$$

and it is often further assumed that "K" is related to the elastic properties of the rocks by

$$K = \nu\ /\ (1 - \nu)\ .$$

No such assumption is implied here by the use of "K", it is simply a convenient means of comparing stress test results from zones at different depths with different pore pressures.

Overall, there is good agreement between the Sandia stress values and those from the NSI re-analysis. Figure 21 shows a plot of NSI frac gradient (closure stress/depth) versus Sandia frac gradient. The tests were analyzed in the order that they were performed; however, note that in the legend, "FIRST TEST ANALYZED" refers to the first test actually analyzed for the zone, and does not necessarily correspond to the first test performed on the zone. For instance, for zone 3P1, the first test analyzed was the fourth test performed, the second test analyzed was the fifth test performed, etc. The points were plotted using this convention in an effort to determine if the stress test results were indicative of possible backstress effects which are discussed below.

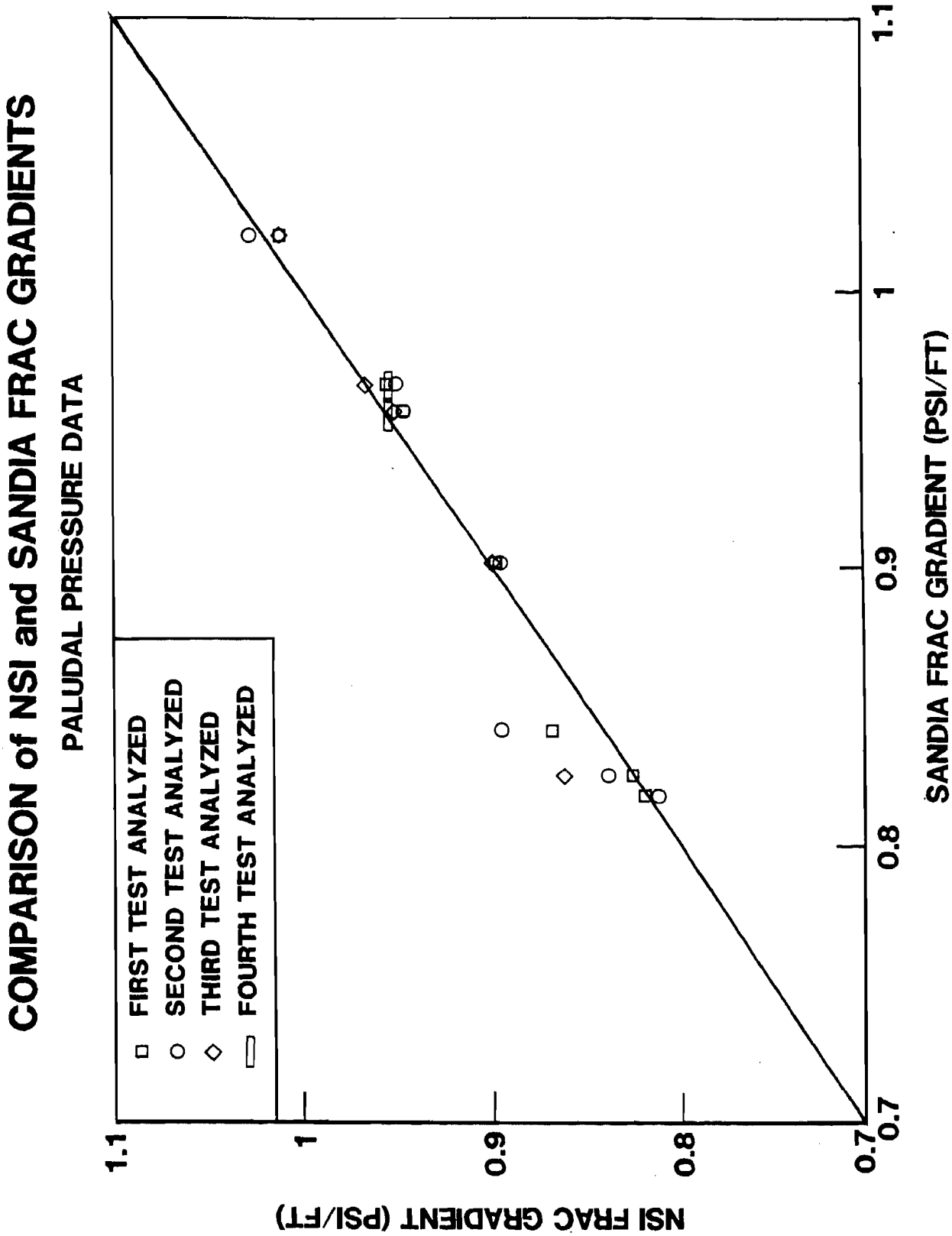


Figure 21: Comparison of NSI and Sandia Frac Gradients for Paludal Test Zones

The only deviation in stress values of greater than 4% occurs in zone 2P1, where the Sandia closure stress was 5830 psi, and the NSI closure stress value averaged approximately 6100 psi. Looking at a plots of the decline data versus linear time (Figures A-2-3, A-2-6), it appears that 5830 psi is below a pressure that could be considered an ISIP; this pressure is not reached until at least 36 seconds have elapsed (considerably longer than this time in the data from test 4). This leads one to believe that the Sandia ISIP value was based on data from earlier tests in zone 2P1, e.g. test 1 or 2. Since this data is no longer available, this discrepancy cannot be resolved. It is possible that this zone exhibits backstress effects; however, with only two data points for analysis, this cannot be assumed.

Other than zone 2P1, the rest of the data shows good agreement. Even though one may be concerned with the subjective nature of the ISIP analysis, the results matched well with the more objective "reservoir" type approach. Linear regression of the points plotted in Figure 21, with the y intercept of the plot forced to be zero, yield a line with a slope of 0.999, and a coefficient of linearity R = 0.961. This indicates a very strong linear correlation for these data points around the line Y = 0.999 X; e.g. there is nearly perfect agreement. Since the Paludal appears to be the most complex of the various zones of the Mesaverde Group, this good agreement implies that an ISIP analysis of micro-frac stress tests does yield a consistent, repeatable result for in situ stress if proper care is taken with the testing and analysis. However, linear flow analysis (e.g. square root of time plots) can, in many instances, provide a more definitive and objective analysis method.

Another point clearly indicated by Figure 21 is that significant stress differences (on the order of 0.2 psi/foot or ±1500 psi) can exist in this layered, heterogeneous formation. This somewhat unexpected phenomenon has been extensively commented on in previous MWX publications and was verified with this re-analysis.

Also, considering the agreement between the two analysis procedures and the complexity of the Paludal zone - it seems certain that similar agreement would prevail for stress tests in the lower Marine, and uphole Coastal and Fluvial zones. Therefore the previous Sandia stress analyses for these zones will be used below in looking for correlations between in situ stress and other formation properties.

PALUDAL CORRELATION ANALYSIS

Attempts were made to determine if there was evidence of a correlation between stress results in the Paludal zone and properties of the formation either derived or inferred from log

analysis. If a correlation could be found from a commonly run log, then, in similar wells, stresses could be determined without running costly stress tests (on a field wide basis); these stresses could be put into fracturing simulations in the form of a pressure/height (P/H) relationship (e.g. what level of fracturing pressure yields a certain fracture height). Since fracture height is a simulation parameter that is generally very difficult to determine, this type of P/H relationship can be invaluable in optimizing fracture stimulations.

As discussed above, a linear relation generally exists between depth, pore pressure, and closure stress as expressed by a K factor - and this factor is often assumed linked to the Poisson's Ratio of the formations by

$$\sigma_c = K\ (OB - p_{res}) + p_{res} \quad , \quad K = \nu / (1 - \nu)$$

where ν is Poisson's Ratio. This possible relation has led to the use of special sonic logs for predicting in situ stresses. [8,9] These special sonic tools attempt to measure both the compression wave and shear wave velocity in the formations, and from these two velocities, a Poisson's Ratio can be calculated based on assuming the formation is an elastic, isotropic, homogeneous material. While there are obvious questions as to the theoretical validity of such a calculation, this procedure has been used on an empirical basis in several areas including the East Texas Cotton Valley tight gas play.[10] Also, some empirical evidence exists suggests that such log derived stresses may generally correlate with actual stresses. In particular, Veatch [11] published a correlation (not 1:1) between log derived and actual stresses which included data from several areas.

Based on these ideas and assumptions, and this evidence, logging companies routinely produce "fracture height" logs. However, these logs assume a one to one correlation between calculated and measured stress, and, in practice, this is rarely the case. In a new area, stress tests must be run along with the log to determine what, if any, relationship exists between actual stress and log derived stress. If a correlation exists, then actual stresses are used to calibrate the fracture height log and provide a powerful tool for data extrapolation. The large number of stress tests through the Mesaverde Group would appear to offer an almost unprecedented opportunity to search for a valid correlation between measured closure stress and (sonic) log calculated stress.

A long spaced sonic log (using Amoco Production Research's tool) was run in MWX-2, throughout the Mesaverde Group. The data was processed by Amoco and the resulting values for used to calculate a K factor. Since the overall correlation between frac gradient and "K" values calculated from the measured stress data was good (described below), the log derived "K" was compared directly to the "K" calculated from the stress data. Unfortunately, the Paludal zone is very heterogeneous and

layered with many coal streaks. This heterogeneity manifested itself in the presence of thin streaks of lithology, with rapid changes from sand to shale, etc. This was evident when gamma ray log values were averaged over a ten foot interval surrounding the two feet perforated for each stress test (based on consideration of potential micro-frac size, the fracture would "see" more than just the small perforated interval). The standard deviations in gamma ray calculated over these ten foot intervals (centered around the stress test zones) were uniformly large in the Paludal Zone, in some cases exceeding 30 API Gamma Ray Units (these standard deviations - as well as those for all the stress tests summarized in Table 1 are presented in Table 3). Most of the standard deviations that exceeded 10 API Units were not used for correlation analysis since it was felt that in these areas, no clear comparison of log properties with measured stress was possible.

It is often tempting when choosing zones for stress testing to pick unusual zones, e.g. a 3 foot shale between two coal streaks (see Figure 22, note the position of Zone 2P1); however, the difficulty encountered in interpreting these results argue for a more reasonable choice of test points. In a formation as heterogeneous as the Paludal, making such choices becomes difficult. If the stress testing in such a complex lithology reveals uniform stresses, then clearly the choice of test intervals becomes irrelevant. However, when significant stress differences are found to exist (as in the Paludal interval), it becomes difficult (if not impossible) to determine which, or what type, formations are actually exhibiting high stresses.

The coals presented another serious problem for attempts at log correlation, especially with the sonic log analysis. Sonic velocities in coal formations are very slow, such that sonic waves travel faster in the wellbore drilling fluids than in the formation - and no useful information is recorded with the logging tool. This created large gaps in the sonic log data, some of which coincided with the stress test zones. With this problem, along with zones "disqualified" due to heterogeneity, there were only four data points remaining with which to build correlations (this included zones for which detailed pressure data is no longer available; it was assumed that the earlier Sandia stress values were suitably accurate). Figure 23 shows a plot of K factor (based on measured stress) versus K factor derived from the sonic log. There is obviously almost no correlation, and it would be tenuous at best to build a relation with four points. It was decided to attempt to build a similar correlation for all the available data (subject to similar requirements of low standard deviation on Gamma Ray and lack of proximity to coals - this is discussed below).

A quick view of the stress data seems to suggest a relation between lithology and in situ stress - particularly since all the lower stresses were measured in the "relatively" clean

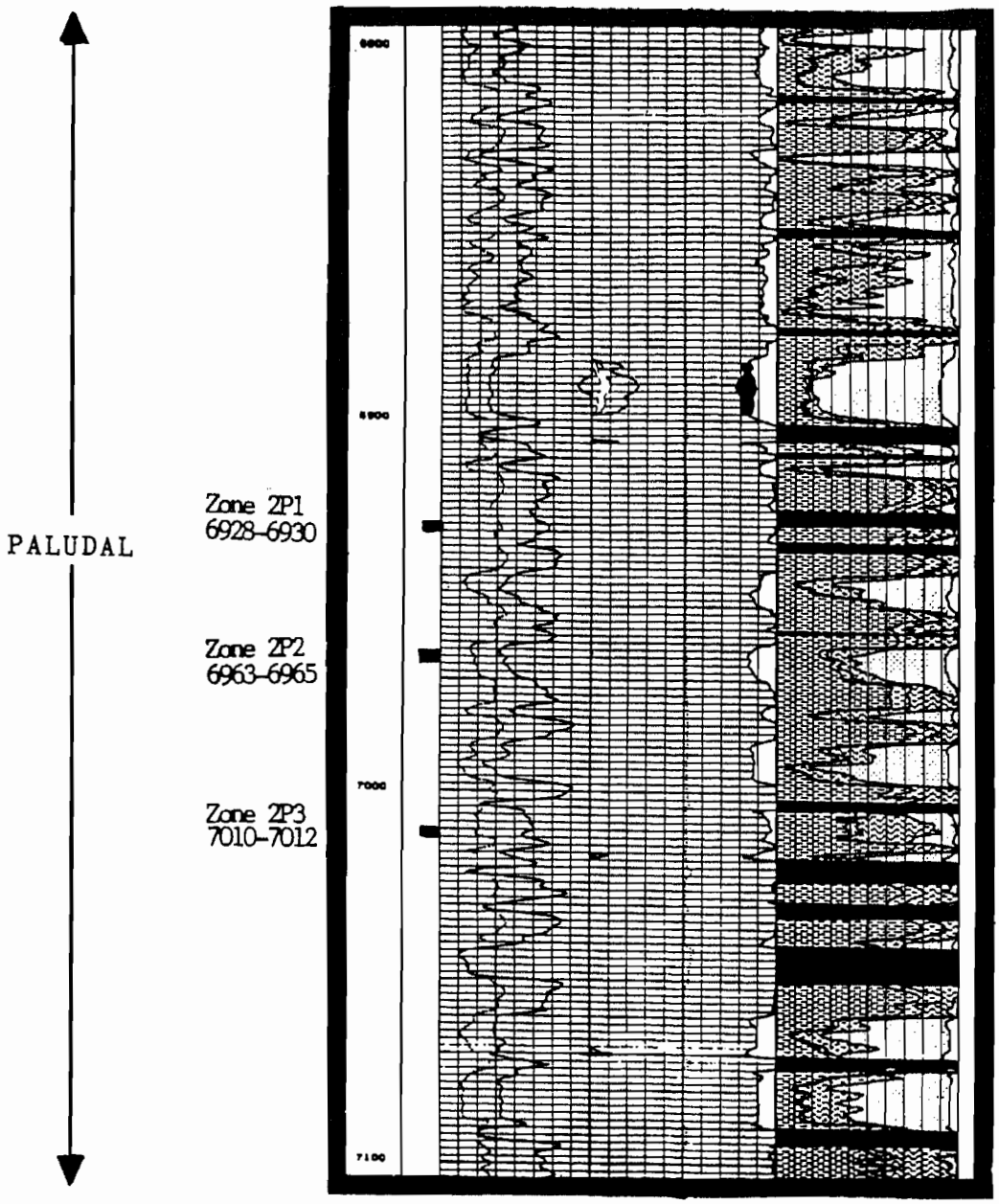


Figure 22: VOLAN Log Section of MWX-2 from 6800 ft to 7100 ft.

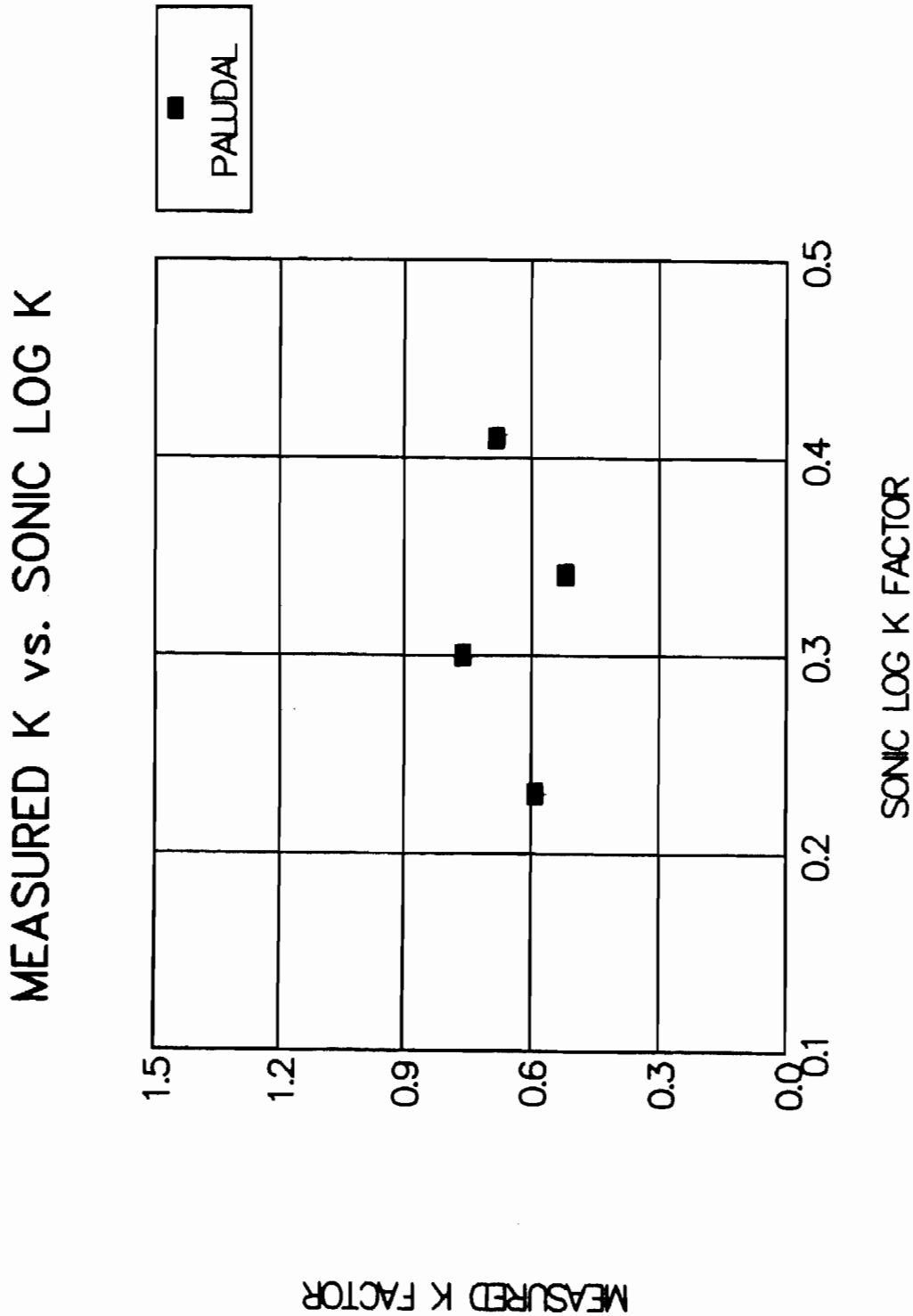


Figure 23: K Factor (Based on Measured Stress Results) vs. K Factor (Based on Sonic Log Results)

sandstone sections of the formation. The Paludal data was analyzed to determine if there was a quantitative correlation between closure stress and lithology in a zone, as represented by the average gamma ray value around a zone. High gamma ray numbers generally indicate a shalier or siltier formation, which have high stresses in many areas. Smaller gamma ray values occur in sand zones, which often have lower stress than shales. Again, coal sections go against this common assumption, as they often have high stresses and a very low gamma ray value (it should be noted that while fracturing in coals is being practiced on a widespread basis, the fracturing behavior of these formations is not fully understood). Measured stress values (as K factors) were plotted versus average gamma ray numbers (for 10 foot intervals surrounding the stress test zone) for the same four zones used in the sonic log analysis (again, the same gamma ray standard deviation criteria was used, and zones likely to be influenced by coals were excluded). The results were similar to those pictured in Figure 23, and indicate little likelihood of a correlation from the Paludal Zone data. This correlation will be examined using data from the other Mesaverde zones as discussed below.

STRESS BUILD-UP: PORO-ELASTICITY

The discussion above comparing micro-frac "ISIP" analysis with linear flow analysis included two examples from zone 2P2 (Figures 4, 5, 6, & 7) showing a possible increase in closure stress of ±200 psi between two micro-frac stress tests. One possible explanation for such an increase would be a poro-elastic effect where leak-off from the fracture increases pore pressure in the formation, resulting in an increase in closure stress. Equation 1 above indicated a relation between pore pressure and closure stress, and while that simple equation cannot describe the more complex effect of a local, transient, change in pore pressure, the general relation of increased pore pressure leading to increased closure pressure will still apply. [6,12] Such a stress increase has been labeled "backstress" and that terminology will be utilized here.

Such a build-up in stress with increased fluid injection has been observed in liquid filled reservoirs [6], however, current thought is that it would be a limited phenomenon in gas reservoirs. Geertsma [13] has shown mathematically that for a vacuum filled formation where the region of increased pore pressure is limited to the depth of invasion of the fracturing fluid leak-off, there would be no significant backstress, and it is generally speculated that these calculations would apply to a gas reservoir due to the high compressibility of gas. However, there is no theoretical analyses nor detailed field studies to support this speculation, reasonable as it seems.

Since some apparent stress increase or backstress was seen in zone 2P2, the remainder of the Paludal stress tests (for

which detailed pressure history data is available) were reviewed for this effect. The analyses discussed below refers to Figure 21, which plots NSI frac gradient versus Sandia frac gradient values, Table 2, which summarizes these values, and the appropriate figures in Appendix A (e.g. well logs). This review is somewhat limited since there is no available data on the timing of the tests, e.g., there are likely inconsistent intervals between repeat tests in each zone, allowing some formations to bleed off more than others; in some cases, this may not allow definitive conclusions to be drawn (for zones where one might expect backstress and the data doesn't show evidence of it).

Backstress is possibly exhibited in Zone 2P1 (a small silt/shale zone with possibly 3% water saturated porosity surrounded by two thin coal streaks); Figure 21 shows a clear increase in the NSI closure stress value between the first and second tests (see Table 2). However, with only two points, the data is not conclusive - zone 3P2 shows a rise in closure stress from the third to the fourth test; however, the fifth test stress level decrease to that of the third test indicating the apparent increase is probably only associated with data analysis uncertainties. Considerations for zone 2P1 mentioned above in the Paludal Summary Section (e.g. - relatively low stress value from the Sandia analysis, with indications that it was taken from earlier tests) may support the theory that backstress occurs in this zone. For the complex, local lithology for this test zone, backstress may be possible under two scenarios: a) due to the water in the pores, or b) due to the coals above and below accepting fluid in the coal cleat system which builds in pressure under subsequent re-injections. Although many factors point to the presence of backstress, the overall ambiguity of the pressure data (e.g. possible curvature in pressure decline plot, etc.), leaves a question mark about this zone. It is an example of a questionable choice of zone for a micro-frac closure stress test (as described above); even with the stress characterized, it is difficult to discern what the stress value represents.

There is clear evidence of backstress occurring in zone 2P2. Figure 21 shows closure stress uniformly rising through tests 1, 2 and 4, with a larger rise between the second and fourth tests (the third test probably also contributed to the stress rise). The log shows 2P2 to be a fairly clean 10 foot sand interval, with 5-8 percent porosity and no gas present; under these conditions, one would expect increased stress with continuing fluid injection.

Zone 2P3 shows no evidence that closure stress increased during the stress testing; tests 3, 4, and 5 are all within 40 psi (with no uniform increasing trend). The log shows a ten foot sand/shale interval, relatively close to coal streaks on either side. There is 2-3 percent porosity, with a 2 foot interval of 10 percent porosity with gas present (80 percent

water saturation). Without information on the timing of the tests, it appears that no backstress effect exists in this zone; the gas shown on the log supports this conclusion. Zone 3P1 also shows no evidence of closure stress increase during testing. Tests 4, 5, 7, and 8 are within 45 psi, and there is no tendency for stress to increase uniformly. While complex in a lithology sense (the zone is perforated on a coal/silt interface); the silty portion has 8 to 10 percent porosity, with gas (50 - 60 percent water saturation), and it is unlikely that backstress would occur under these conditions.

As mentioned above, zone 3P2 has a rise in closure stress initially, followed by a decline to a lower stress level. Zone 3P2 is in a coal section, near a silt interface. It is difficult to determine if there is any backstress effect due to the presence of the coal; a mechanism exists in the coal that could cause backstress (increasing fluid pressure in a cleat system), but not enough is known about the fracturing characteristics of coal to reach a conclusion.

Zone 3P3 shows a slight closure stress decrease between tests 4 and 5. The tests occurs in a sand/silt sequence, with a 20 percent porosity streak with high gas saturation (20 percent water saturation). It is highly unlikely that this zone would see any increase in closure stress due to injected volume. Zone 2P5 also shows no evidence of uniform closure stress increase through four consecutive tests. It has lithology similar to that of zone 2P3; it is in a 15 foot sandy interval with 5 - 8 percent porosity and a gas streak (40 percent water saturation). No backstress effects would be expected in these zones.

To summarize, these seven tests show conclusive evidence of backstress effects for only one zone, 2P2. The lithology of this zone indicated that backstress was likely, based on current industry "thought". Zone 2P1 showed indications of stress increases, with some lithology evidence also; however, there is no conclusive evidence for this zone. None of the other zones showed any stress increase; their lithology was such that none was expected. Further detailed pressure data from other tests will be needed to confirm our current hypothesis, which states that in the MWX wells, backstress will only occur in porous water filled formations, and should not occur in gas bearing zones.

The stress tests performed in the MWX-1 Paludal frac interval were also examined. While there appeared to be a closure stress increases from the two flow-back tests and the minifracs, there is no conclusive evidence due to factors described above (e.g. possible dual closure stresses in the two perforated intervals, and lack of sufficient data in the pressure declines for the second flow-back and the two minifracs). The lithology of this gas bearing zone shows 12 percent porosity (60 percent water saturation) through the upper perforated

(7076 ft to 7100 ft) section, and 8 percent porosity (40 percent water saturation) through the lower (7120 ft to 7144 ft) section. Since there is gas present, we feel it is unlikely that closure stress will increase as a function of injected volume. This possibility will be explored in greater detail in later fracture modelling since increasing closure stress with injection in this zone would have a significant bearing on fracturing pressures.

COMPARISON OF RESULTS FOR FLOW-BACK TESTS AND MICRO-FRAC TESTS

With only one valid flow-back test, and only one micro-frac zone that represents a good comparison in lithology (relatively clean sand), there is limited data for making this comparison. The first flow-back test in the MWX-1 frac interval yielded a closure stress of approximately 5800 (a frac gradient of 0.85), which yields a "K" value of 0.27. Zone 2P2 has a closure stress (using the original value before the occurrence of back stress effects) of 5750 (a frac gradient of 0.83); this yields a "K" value of 0.31. The numbers are fairly consistent; however, with only one comparison point, little information is gained from this analysis.

The two "large interval" breakdown tests also have consistent values (see Table 3) for frac gradient and "K" (accounting for the stress from the breakdown in MWX-1, which is likely too large - see discussion above). Again, there is not enough data from which to make valid conclusions; this comparison of results will be expanded upon in later reports with the benefit of more data.

STRESS CORRELATION ANALYSIS

This section of the report will examine correlations between measured closure stress data (presented in Tables 1, 3, and 4) and other rock properties such as lithology and acoustic velocity. An average gamma ray value for each particular test zone (an eleven foot interval centered around the zone) was used to "define" lithology. An attempt is made to build a correlation with the value of K factor derived from a sonic log, but it is not found to be as accurate as the gamma ray correlation; the gamma ray correlation is shown to have other advantages.

GAMMA RAY LITHOLOGY CORRELATION

Table 3 summarizes the stress test results which were considered for this report. There are four tests from the Fluvial Section; eleven in the Coastal section (zones at 6707 feet and 6766 feet were in communication); twelve tests in the Paludal section, and eleven tests in the Marine section (the test at 7850 feet deviated substantially from the micro-frac procedure; three ten foot thick perforated zones (spanning an interval 60 feet long) were treated simultaneously due to communication problems).

In table 3, the "GAMMA RAY" column gives the average gamma ray for the 2 foot perforated zone; the "MEAN GAMMA" column gives the mean gamma ray value for an eleven foot interval surrounding the test zone - note there are some substantial differences between these values and those in the "GAMMA RAY" column. The "STD DEV" column gives the standard deviation in gamma ray associated with the mean gamma ray results. The "K (STRESS)" and "FRAC GRADIENT" columns give results for K Factor and frac gradient based on the published stress test results (the re-analysis discussed above for the Paludal zone verified the earlier results for that zone; it was assumed that results for the other zones were also accurate). The "K (SONIC)" column gives K factor results based on sonic log data from MWX-2. Values are only given for zones in MWX-2 where there was reliable sonic log data; sonic log derived (Poisson's Ratio) values, averaged over ten feet, are used to calculate K factors using the relationship $K = \nu/(1-\nu)$. Future work will expand the number of sonic log K factor values, both by including the later Fluvial stress test values, and adding points from MWX-3 tests (if reliable lithology correlations can be found between stress test zones in MWX-3 and corresponding strata in MWX-2).

Values for Poisson's Ratio used to calculate "K" were those determined from the original MWX log analysis. No attempt has been made to review the basic log data for reanalysis or "re-picking" of the shear and compressional wave velocities. Since

sonic logs used to record shear waves tend to be long spaced, uncompensated, logging tools (e.g. no "compensation" for borehole effects such as an enlarged wellbore or washout), the basic open hole logs were reviewed to insure there were no adverse wellbore effects in the zones of interest.

The K factor values (based on stress) in Table 3 were plotted versus the mean gamma ray values, and, as had been noted throughout the MWX testing, there appeared to be a general relation between stress and lithology (e.g. between K factor and gamma ray). However, there was a significant amount of scatter in the total data set. As noted in the discussion of the Paludal zone stress data above, it many instances it was difficult to relate the measured stress to anything - due to the complexity of the lithology in the vicinity of the stress test zone. In the Paludal analysis, data from a stress test was deemed unsuitable for correlation analysis if it was in or near a coal section, or if the mean gamma ray value had a large standard deviation, e.g. complex layered lithology. These zones from the Paludal section were eliminated from the overall correlation analysis and tests from other zones, such as the Coastal and Fluvial, were evaluated for suitability based on these criteria.

This plot of K factor vs. mean Gamma Ray for all zones listed in Table 3 is given in Figure 24. Points from zones with a high standard deviation are highlighted (see legend), as are points from zones in or near coals. The remaining data show a strong trend of increasing stress (as characterized by "K") with increasing gamma ray - e.g. shalier or siltier layers have higher in situ stresses than cleaner sandstone intervals. In figure 25, K factor vs. Gamma Ray is plotted using these remaining data, which are also summarized in Table 4 for ease of reference. This plot shows a definite trend; K factor rises in a nearly linear manner with increasing gamma ray. The data for mean gamma ray values greater than approximately 90 API Units is somewhat scattered, and appears to flatten out, e.g. little or no increase in K factor with an increase in mean gamma ray value. This flat spot in the "K" versus gamma ray curve occurs at or near K = 1. Recalling the definition of K factor from Equation 2 above,

$$K = (\sigma_c - p_{res})/(OB - P_{res}) \;;$$

K = 1 implies that σ_c = OB, e.g., closure stress is equal to overburden stress.

If closure stress equals or exceeds overburden stress, injection pressure in a micro-frac stress test of these magnitudes may tend to create or open horizontal fractures instead of the expected vertical fracture. The significance of this is twofold: a) one would generally not be measuring the true closure stress for vertical fractures in a zone; it could be higher, and b) this higher closure stress in a zone,

TEST ZONE	DEPTH	GAMMA RAY	MEAN GAMMA	STD DEV	FRAC GRADIENT	K (STRESS)	K (SONIC)
2F1	5851	90	100	10	1.01	0.92	0.353
2F2	5941	115	112	11	0.97	0.82	0.345
2F3	5963	65	63	4	0.77	0.40	0.269
2F4	6007	110	108	9	1.03	0.96	0.326
3C1	6375	125	121	18	1.03	0.94	-
3C2	6399	140	125	20	1.01	0.89	-
3C3	6421	140	132	15	1.06	1.03	-
3C4	6443	55	60	7	0.89	0.56	-
3C5	6461	65	65	2	0.88	0.53	-
3C6	6513	75	74	8	0.90	0.59	-
3C7	6528	145	118	21	1.02	0.92	-
3C8	6549	53	57	4	0.86	0.50	-
3C9	6566	120	113	15	1.06	1.03	-
3C10	6607	120	119	18	1.08	1.08	-
3C11U	6707	90	89	7	1.06	1.02	-
3C11L	6766	90	112	23	1.05	1.00	-
2P1	6929	115	101	8	0.84	0.38	*
2P2	6964	70	77	17	0.82	0.31	*
2P3	7011	90	94	13	0.90	0.53	0.416
3P1	7033	160	109	36	0.97	0.73	-
3P2	7049	30	56	30	1.02	0.91	-
3P3	7069	115	115	18	0.82	0.23	-
2P4	7170	80	85	5	0.98	0.76	0.300
2P5	7207	75	72	10	0.96	0.68	0.410
2P6	7264	50	60	11	0.93	0.59	0.230
2P7	7304	110	103	9	0.88	0.42	0.387
2P8	7395	65	68	7	0.91	0.52	0.341
2P9	7424	30	35	13	0.92	0.58	*
2M1	7467	50	53	4	0.91	0.49	0.239
2M2	7531	55	56	2	0.88	0.36	0.291
2M3	7601	85	81	2	1.00	0.82	0.290
2M4	7665	105	102	3	1.06	1.06	0.364
2M5	7766	105	105	2	1.11	1.23	0.354
2M6	7850	50	50	8	0.85	0.24	0.178
2M7	7895	80	87	8	0.87	0.27	0.279
2M8	7924	90	90	2	0.98	0.74	0.300
2M9	7971	60	60	1	0.86	0.28	0.233
2M10	8015	110	110	7	1.02	0.84	0.330
2M11	8061	90	92	2	1.02	0.86	0.298

* - NO USABLE SONIC LOG INFORMATION IN ZONE

Table 3: Summary of Stress, Sonic Log, and Mean Gamma Ray Data Considered for Correlation Analysis

TEST ZONE	DEPTH	GAMMA RAY	MEAN GAMMA	STD DEV	FRAC GRADIENT	K (STRESS)	K (SONIC)
2F1	5851	90	100	10	1.01	0.92	0.353
2F3	5963	65	63	4	0.77	0.40	0.269
2F4	6007	110	108	9	1.03	0.96	0.326
3C4	6443	55	60	7	0.89	0.56	-
3C5	6461	65	65	2	0.88	0.53	-
3C6	6513	75	74	8	0.90	0.59	-
3C8	6549	53	57	4	0.86	0.50	-
3C9	6566	120	113	15	1.06	1.03	-
3C11U	6707	90	89	7	1.06	1.02	-
2P4	7170	80	85	5	0.98	0.76	0.300
2P5	7207	75	72	10	0.96	0.68	0.410
2P6	7264	50	60	11	0.93	0.59	0.230
2P8	7395	65	68	7	0.91	0.52	0.341
2M1	7467	50	53	4	0.91	0.49	0.239
2M2	7531	55	56	2	0.88	0.36	0.291
2M3	7601	85	81	2	1.00	0.82	0.290
2M4	7665	105	102	3	1.06	1.06	0.364
2M5	7766	105	105	2	1.11	1.23	0.354
2M6	7850	50	50	8	0.85	0.24	0.178
2M8	7924	90	90	2	0.98	0.74	0.300
2M9	7971	60	60	1	0.86	0.28	0.233
2M10	8015	110	110	7	1.02	0.84	0.330
2M11	8061	90	92	2	1.02	0.86	0.298

*** - NO USABLE SONIC LOG INFORMATION IN ZONE**

Table 4: Summary of Stress, Sonic Log, and Mean Gamma Ray Data used to Build K Factor/Gamma Ray and K Factor/ Sonic Log Correlations

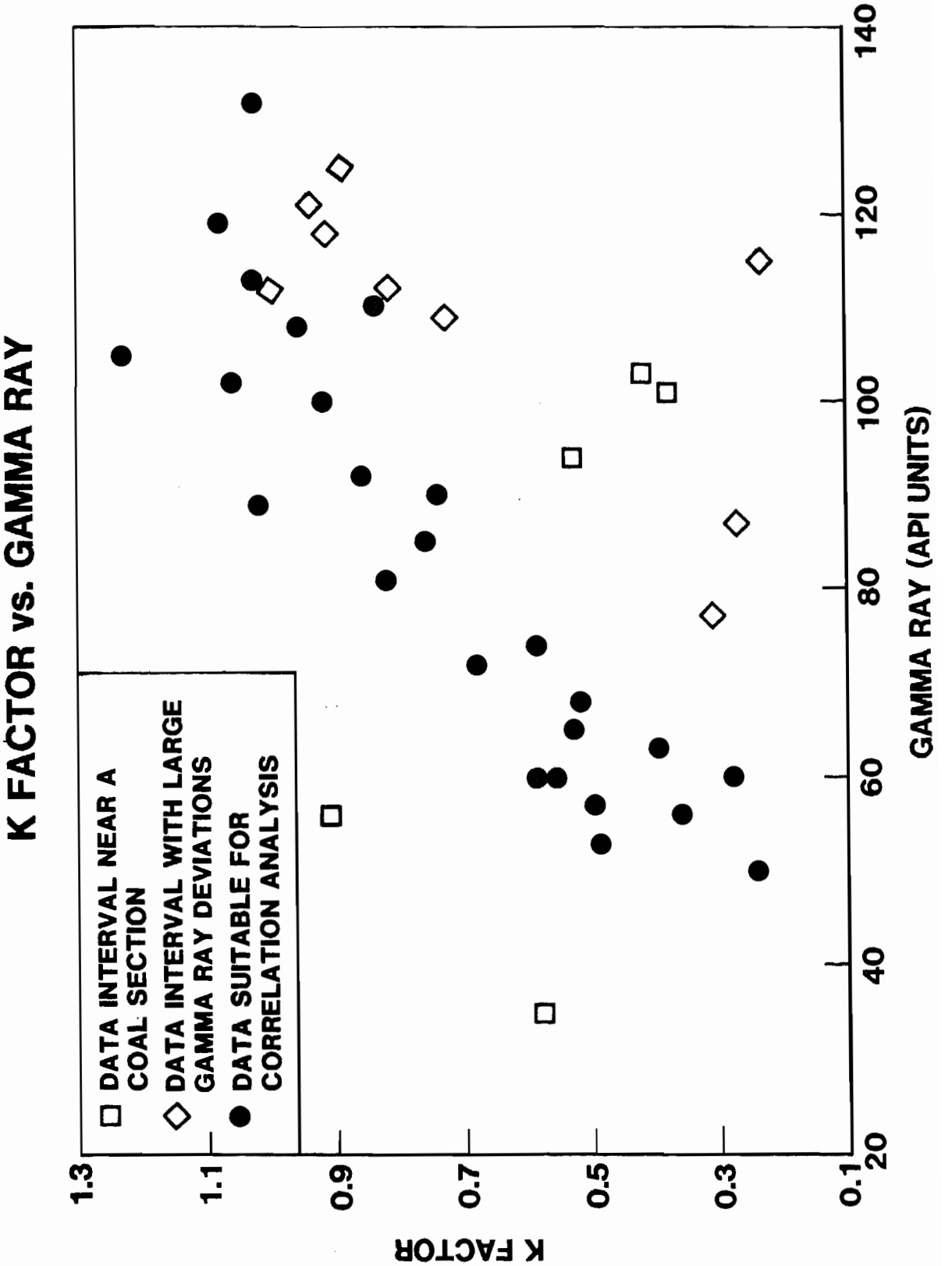


Figure 24: K Factor (Based on Measured Stress Results) vs. Mean Gamma Ray for all Test Zones

unmeasurable in many situations, would serve as a much better barrier to fracture height growth than the stress values measured by the micro-frac tests would indicate.

In a minifrac situation (e.g., a fracture treatment pumped without proppant for testing purposes), zones or formations which stress test data showed to be marginal for containing the height of a fracture could offer excellent height confinement if the measured closure stress in the confining zone were actually the vertical (overburden) stress as opposed to a horizontal stress. If the fluid opened a horizontal fracture (e.g. "lifted" the overburden), then fracture height growth would be arrested - if not, then the horizontal stresses impeding vertical fracture growth would still be greater than that derived from the stress test measurement; in either case, the tendency is toward better confinement than indicated from stress test results. A propped fracture stimulation could present greater problems as any horizontal fracturing occurred; the resultant horizontal opening would have little width, and proppant would likely bridge in the small opening. This pinch point might be sufficient to drive up pumping pressure and cause a sandout or screenout situation as, depending on leakoff considerations, additional fracture growth might be hindered. Such stress behavior could help explain the indications of height confinement observed in the Paludal minifracs and main stimulation; the earlier indication of a lack of significant barriers to height growth was possibly misleading.

It is hypothesized that the correlation between K factor and gamma ray, as demonstrated in figure 25, may be bilinear in nature. Below a certain value of gamma ray (±90 API units), one relationship exists between the two parameters; above this value, for shalier formations, the relationship can be defined simply by K = 1. This bilinear behavior is displayed in figure 26, which shows the same data from the previous figure, with best fit lines drawn through the data. This correlation enables one to determine the stress value for any zone based on its mean gamma ray value, overburden stress, and local pore pressure using equation 1.

It is unclear whether K factor derived from the lithology correlation actually measures resistance to vertical fracturing, or, for shalier/siltier formations, measures overburden pressure. The linear trend below gamma ray = 90 API Units, when extrapolated, may yield the closure stress for a vertical fracture. If one assumed this to be true, figure 26 shows that for a given gamma ray value over 90, the K factor (and closure stress) derived from this correlation would significantly exceed that derived from the bilinear correlation. Given this uncertainty, it was decided to construct stress profiles using correlations for both the linear and bilinear hypotheses for fracture stimulation studies.

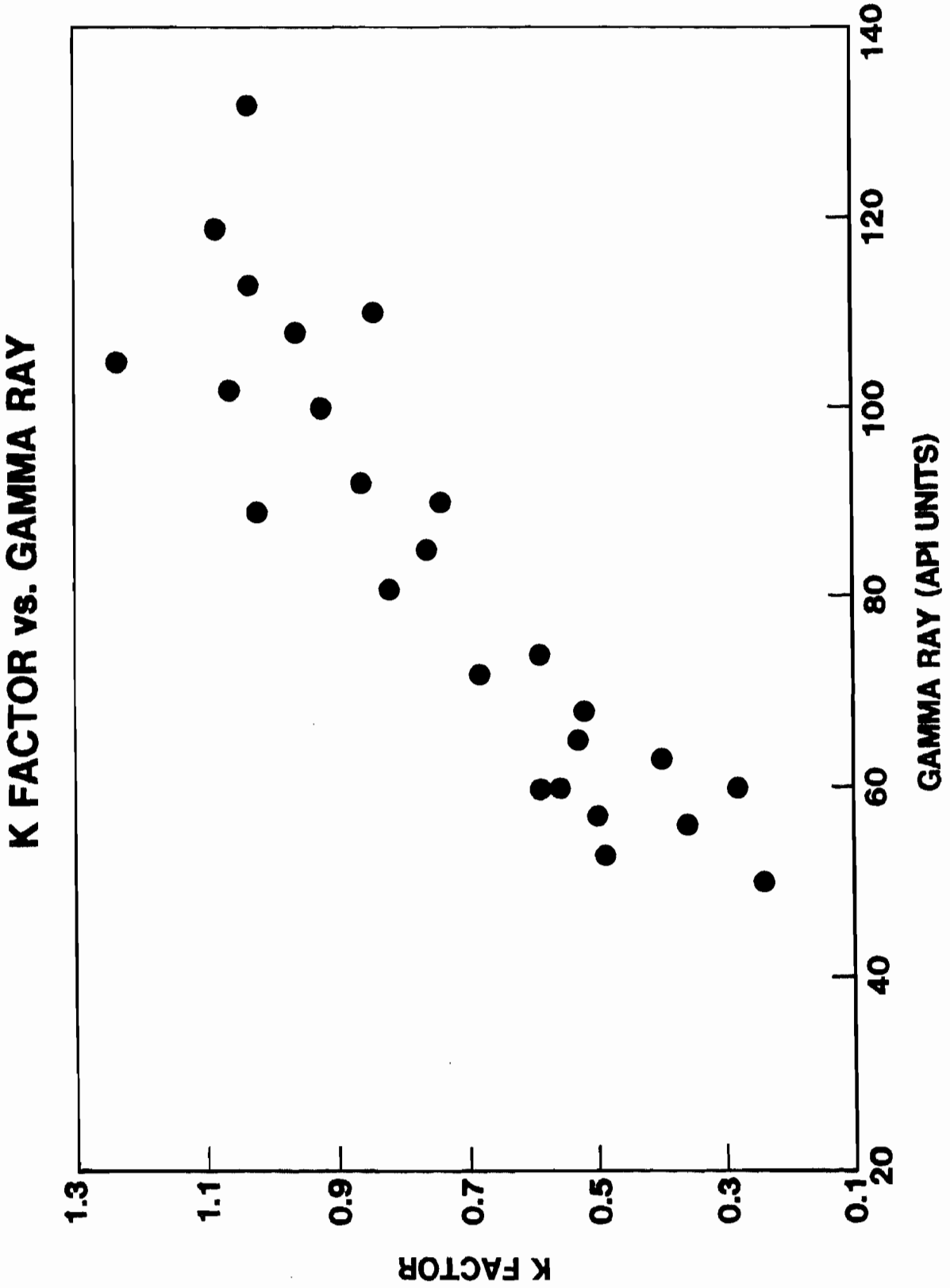


Figure 25: K Factor (Based on Measured Stress Results) vs. Mean Gamma Ray, with Coal and High Standard Deviation Test Zones Removed

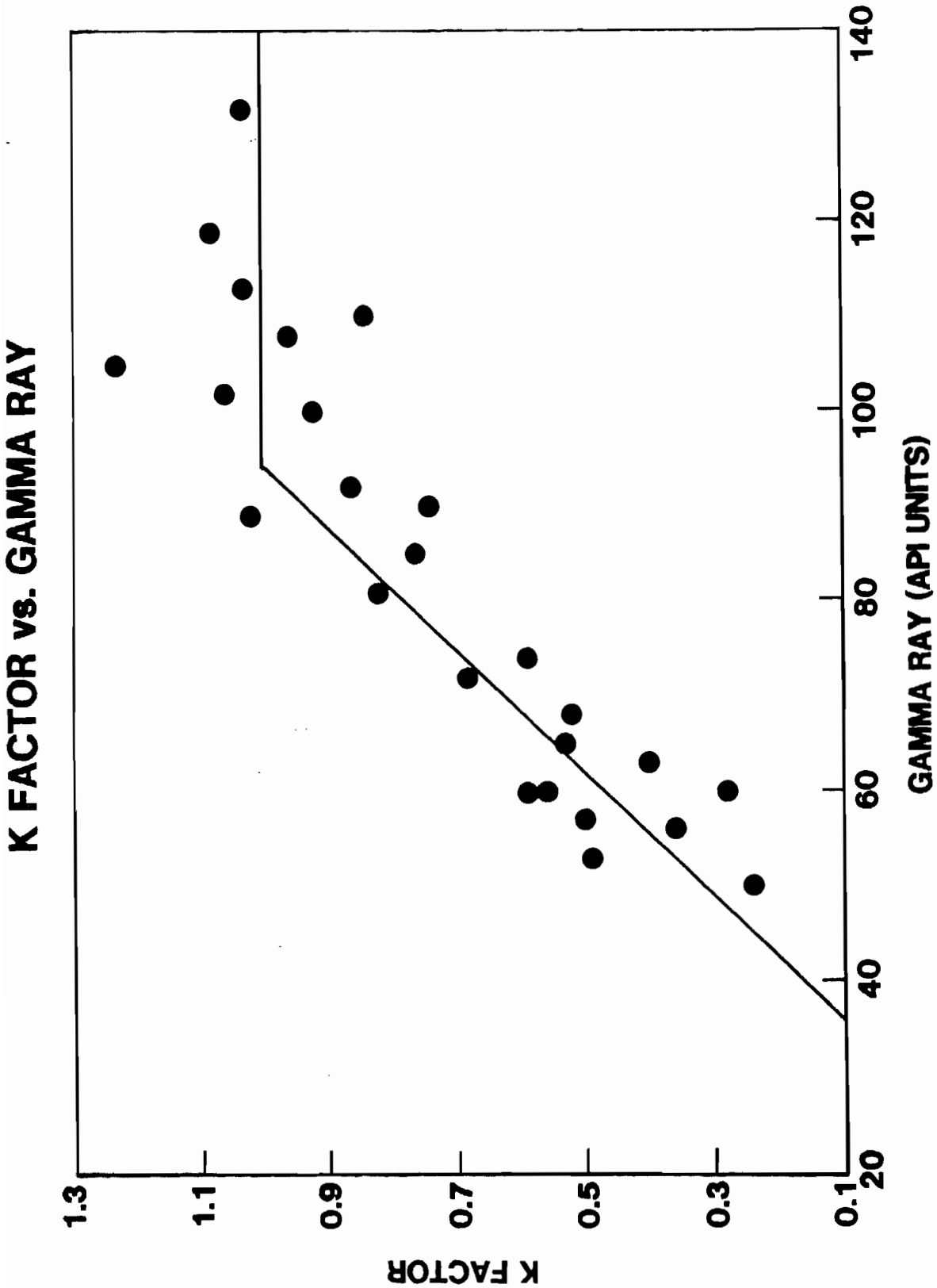


Figure 26: K Factor vs. Gamma Ray (Same Points in Figure 25), Showing Bilinear Correlation

Figure 27 shows K factor vs. Gamma Ray for gamma ray less than 90 API Units, with a best fit line drawn through the data. The equation for this line, determined by linear regression, is given as:

$$K = MGR * 0.01532 - 0.458$$

where "MGR" is the "mean gamma ray" value for a zone and this line has a coefficient of linearity R = 0.88, indicating a highly linear grouping. The K factor values (based on mean gamma ray) values for both the linear and bilinear correlations are summarized below.

Correlation	Range	Equation
Linear	All Gamma Ray	K = MGR*0.01532-0.458
Bilinear	Gamma Ray < 90	K = MGR*0.01532-0.458
	Gamma Ray > 90	K = 1.00

Using the linear correlation above, and equation 1, one can calculate expected frac gradients for the stress test zones given in Table 4. This plot of measured frac gradient versus "calculated" frac gradient is a good indicator of the accuracy and potential usefulness of the correlation, and is given in figure 28. There is strong agreement evident in the plot, with an average error of ±250 psi between measured and "calculated" closure stress. Again, a flattening is seen for frac gradients above 1.05 (the approximate value of the vertical or overburden stress). Use of the above bilinear correlation takes calculated fracture gradients greater than the overburden gradient of 1.05 and assigns them a value of 1.05; this gives a slightly better relation (as seen in figure 29), with an average error in closure stress of about 200 psi.

Given a base uncertainty in the average closure stress measurement of 50 to 100 psi, this simple lithology correlation appears to be quite accurate. Also, it should be noted that much of the average error for the bilinear correlation comes from the single, very high stress zone at 7766 feet (measured gradient of 1.11 psi/foot, which is adjusted to 1.05 psi/ft for this correlation) located in the middle of a thick Marine shale near the bottom of the Mesaverde Group. Unfortunately, no detailed data for this test is available, however, Warpinski [14] discusses the test and presents a pressure record for one micro-frac stress test which displays a reasonably definitive indication of ISIP and thus, presumably, closure pressure. It was noted in the original analysis of this data that test behavior in this zone was anomalous (as compared to all other tests), with both relatively large injection volumes needed to reach a stabilized injection pressure, and that each test exhibited a very large pressure drop at shut-in. Based on the

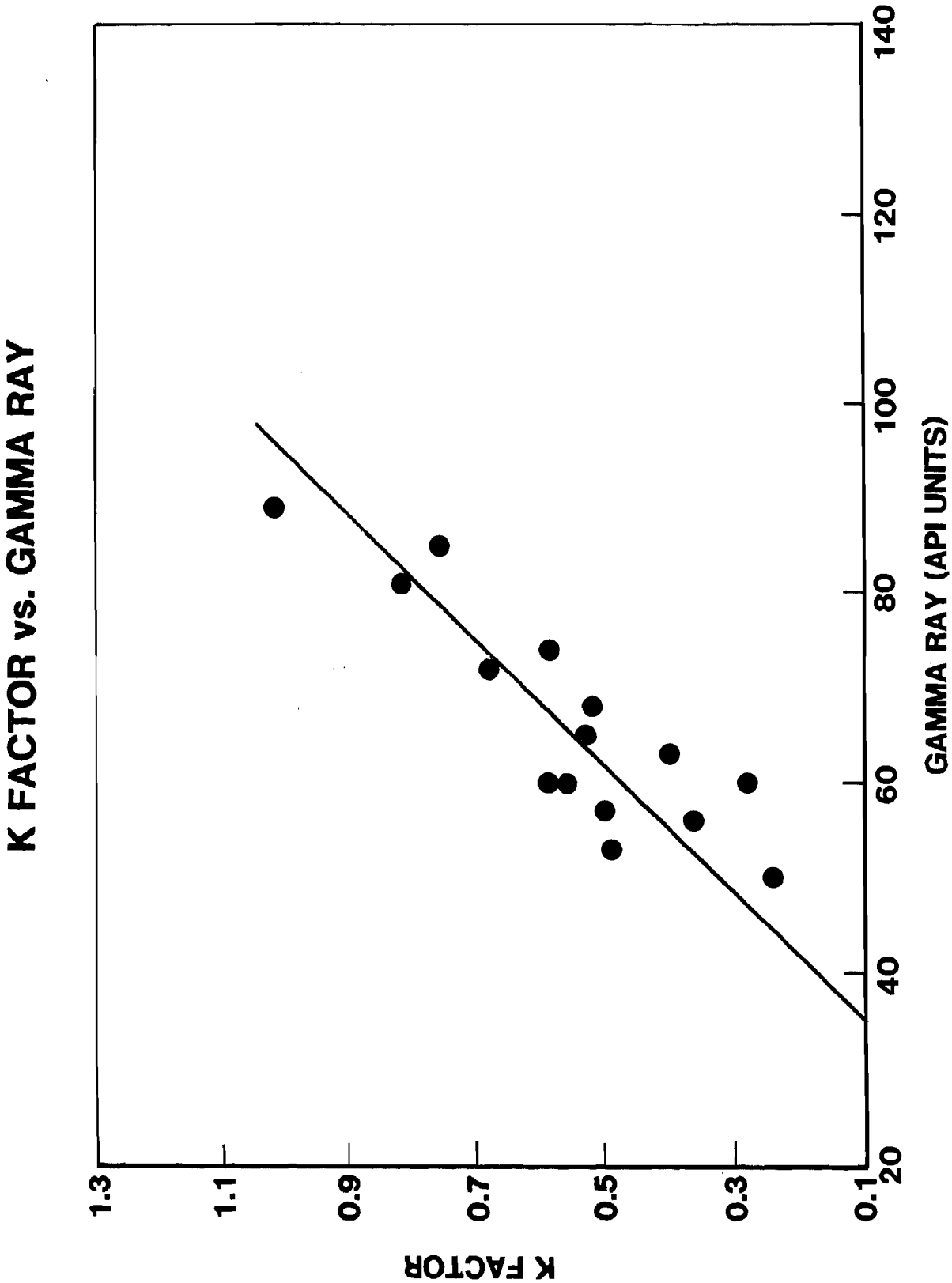


Figure 27: K Factor vs. Gamma Ray for Mean Gamma Ray < 90 API Units, Showing Best-Fit Linear Correlation

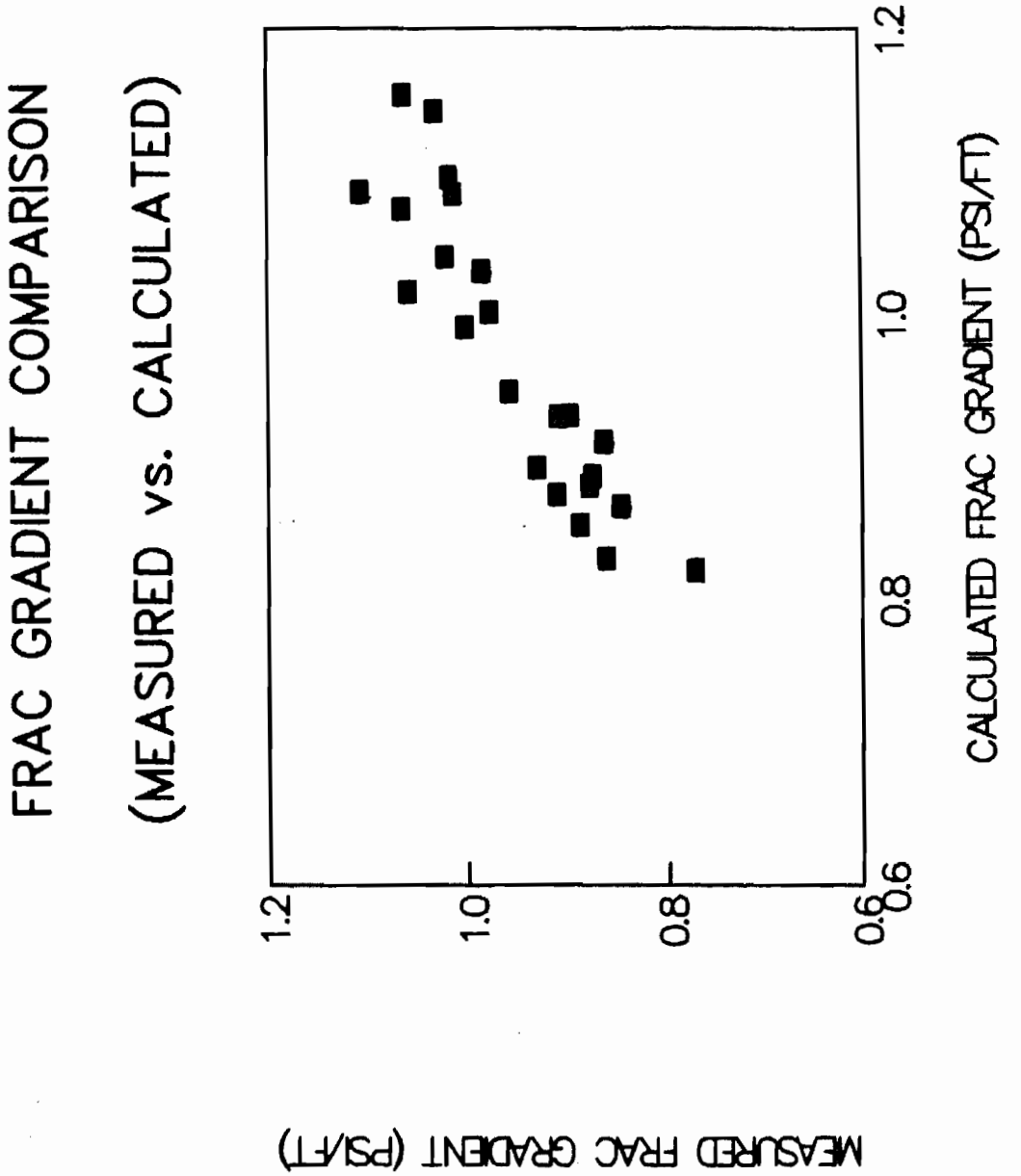


Figure 28: Measured Frac Gradient vs. Frac Gradient Calculated from the Linear K Factor/Gamma Ray Correlation

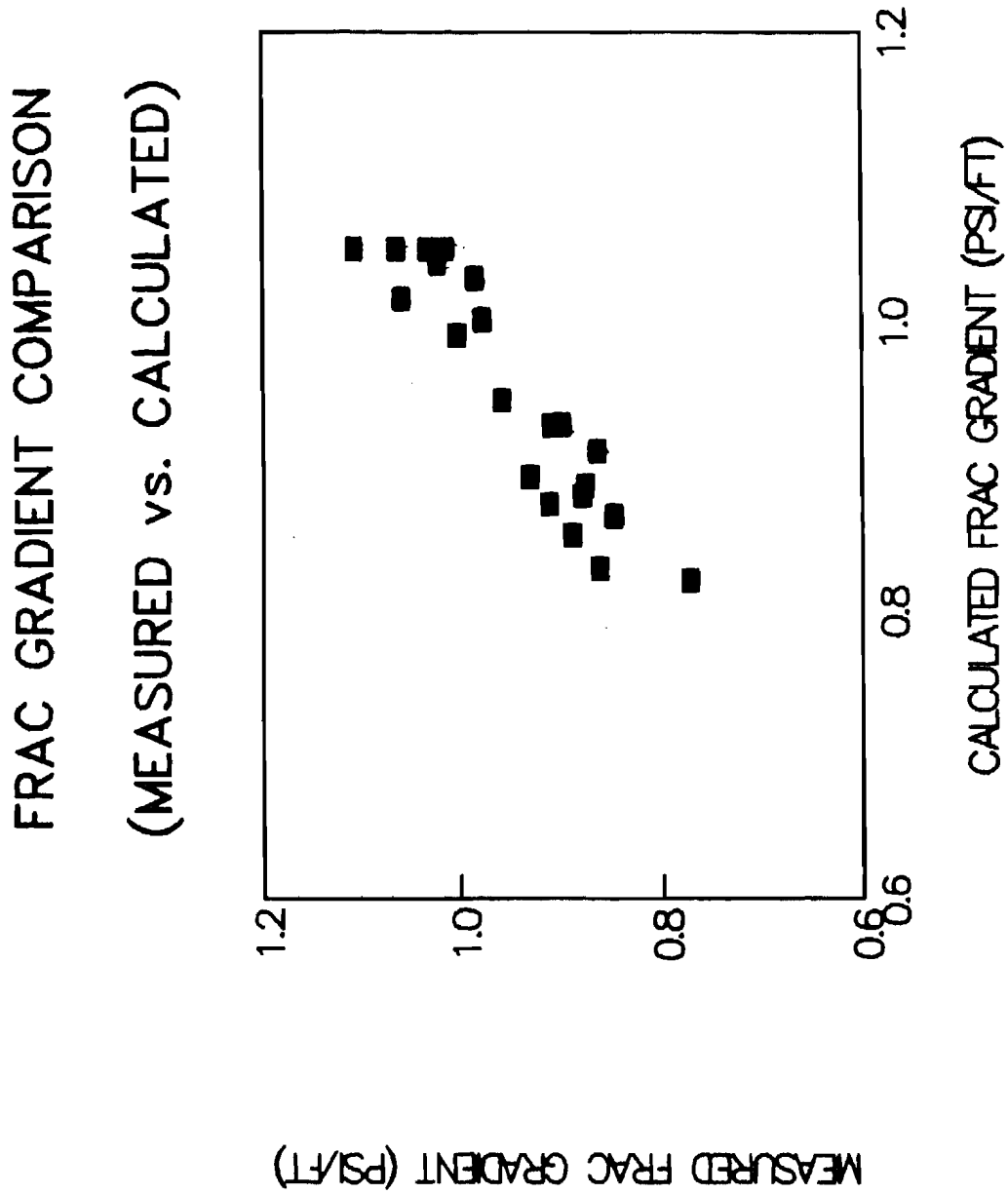


Figure 29: Measured Frac Gradient vs. Frac Gradient Calculated from the Bilinear K Factor/Gamma Ray Correlation

high measured pressure and anomalous behavior, it is speculated that the tests in this zone were unable to initiate or open a horizontal fracture, and that the measured stress is indicative of a vertical fracture opening against the minimum horizontal stress - which in this case is likely greater than the overburden stress. If so, figure 28 shows this single high stress value to be in very good agreement with the stress predicted via the linear correlation with lithology described above.

SONIC LOG CORRELATION

Sonic log data from MWX-2 was investigated in an attempt to determine if a relationship existed between stress properties derived from the sonic log (e.g. frac gradient and K factor), and actual stress values measured in micro-frac test zones. K factors were calculated from the sonic log data (using the simple relation $K = \nu/(1-\nu)$), and were compared to corresponding stress test zones from MWX-2; only the zones included in the lithology correlation analysis (Table 4) were used. As yet, no attempt has been made to correlate sonic log values in MWX-2 to Coastal section stress test zones in MWX-3; this will be accomplished in future work.

Figure 30 shows a plots of K factor determined from the measured stress data versus "K" as calculated from sonic log data for the Fluvial, Paludal, and Marine zones. The Paludal data exhibits almost no linearity (R=0.134), while the Fluvial (only 3 points) and the Marine zones show a strong relation. Figure 31 shows a plot of the combined data for the Fluvial and Marine zones, which has a coefficient of linearity of R=0.88, comparable to the value obtained above for the K factor/lithology correlation. But, while a relation between sonic log data and stress may exist, it is NOT a 1:1 relation, and the simple equation above (Equation 2) cannot be used to calculate the closure stress.

To fully compare the two correlations, a comparison of the sonic log K factor generated frac gradients and the measured frac gradients must be performed; these results are then comparable with results from the lithology (gamma ray) correlation (figure 28). The sonic log "K" (calculated from $\nu/(1-\nu)$) is "corrected" using

$$K_{corr} = 5.2 * K_{log} - 0.82$$

based on a linear regression fit between sonic log "K" and measured "K" in figure 31. The fracture gradient calculated using this corrected K factor is compared to measured data in figure 32 (again with no Paludal data), and a reasonable relation appears to exist. However, even with all Paludal data removed, the average error between calculated and measured stress of about 257 psi is still poorer than that found for the bilinear lithology correlation.

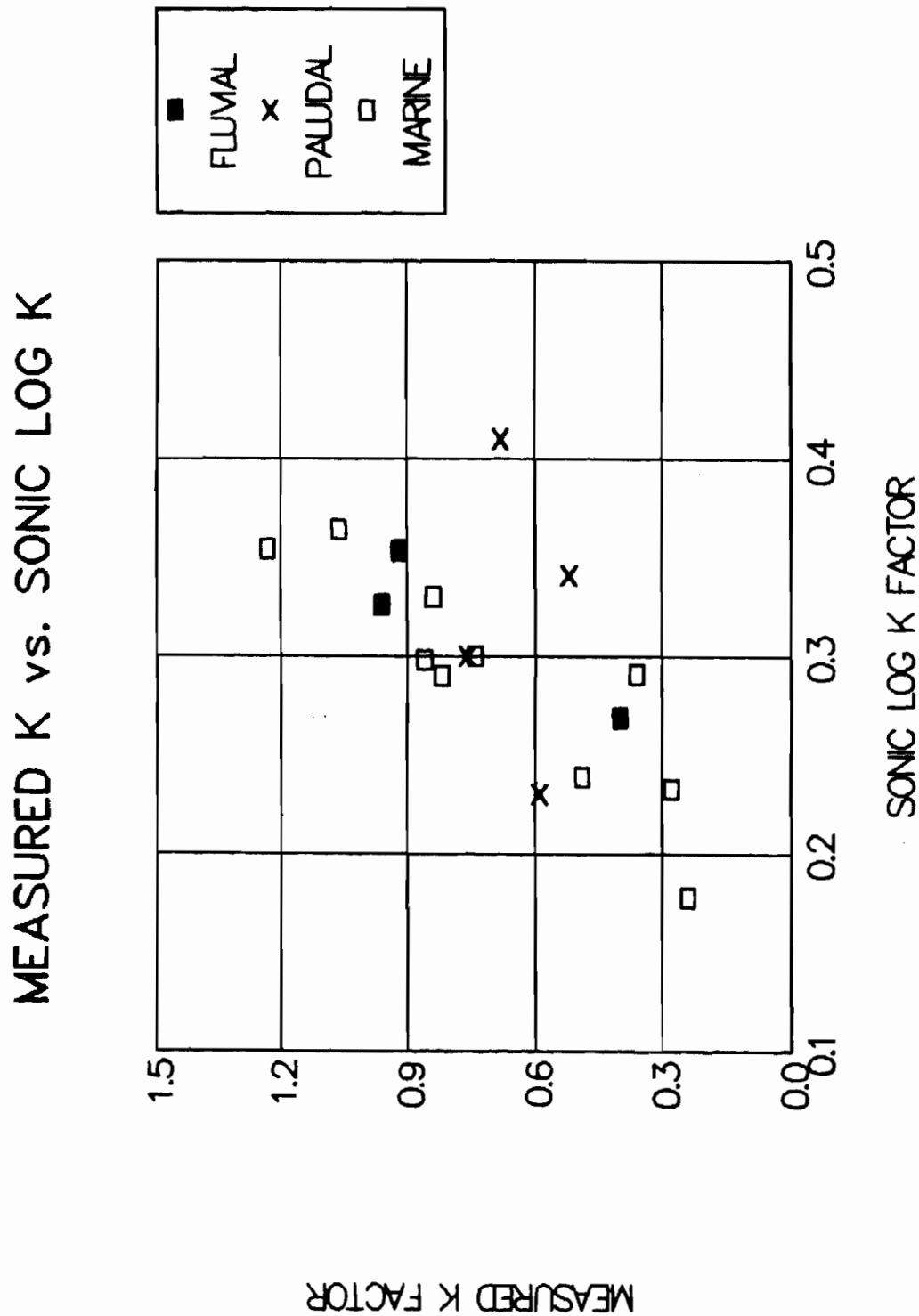


Figure 30: Measured K Factor vs. K Factor Calculated from the MWX-2 Sonic Log Results for the Fluvial, Paludal and Marine Zones

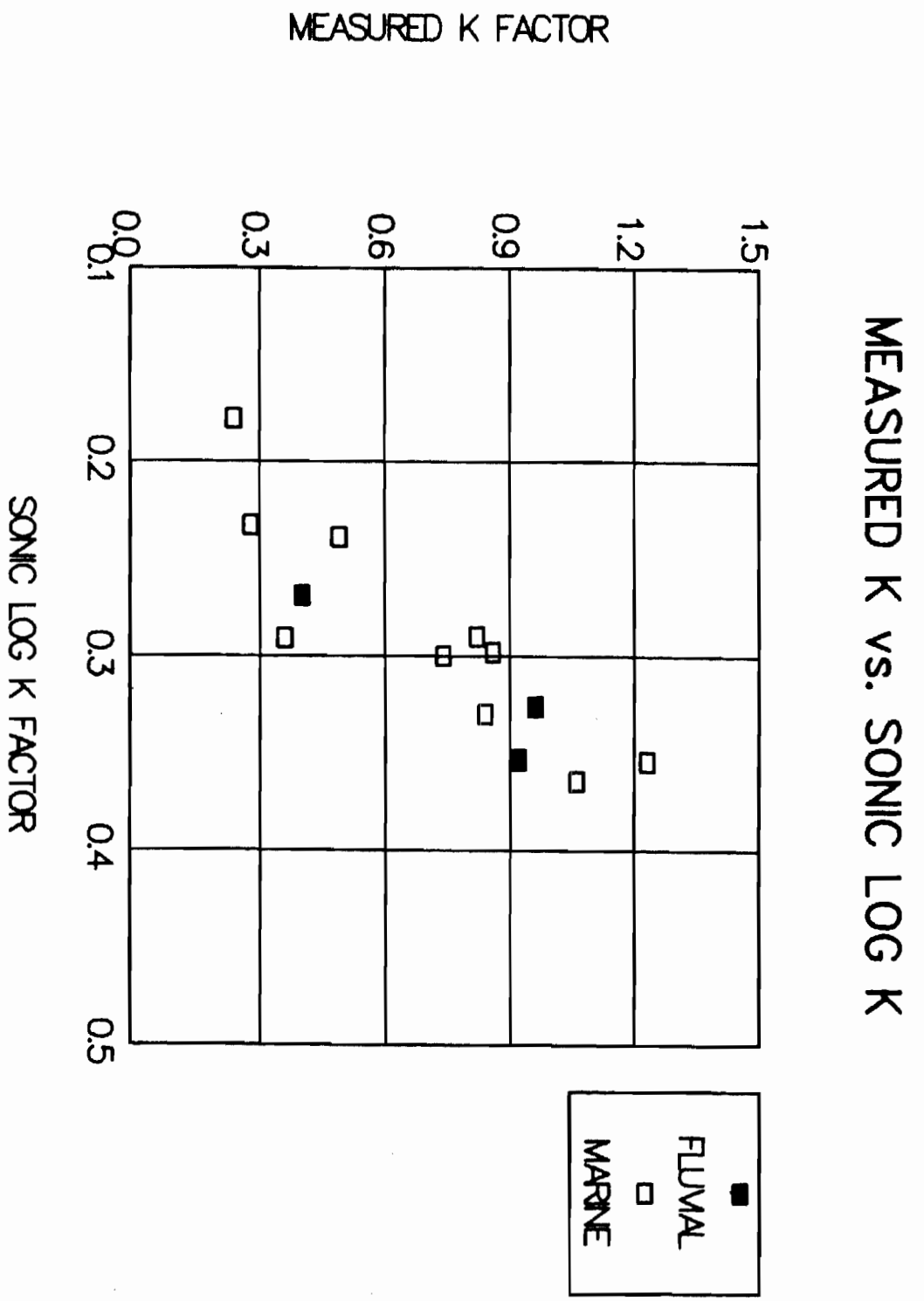


Figure 31: Measured K Factor vs. K Factor Calculated from the MWX-2 Sonic Log Results for the Combined Data from the Fluvial and Marine Zones

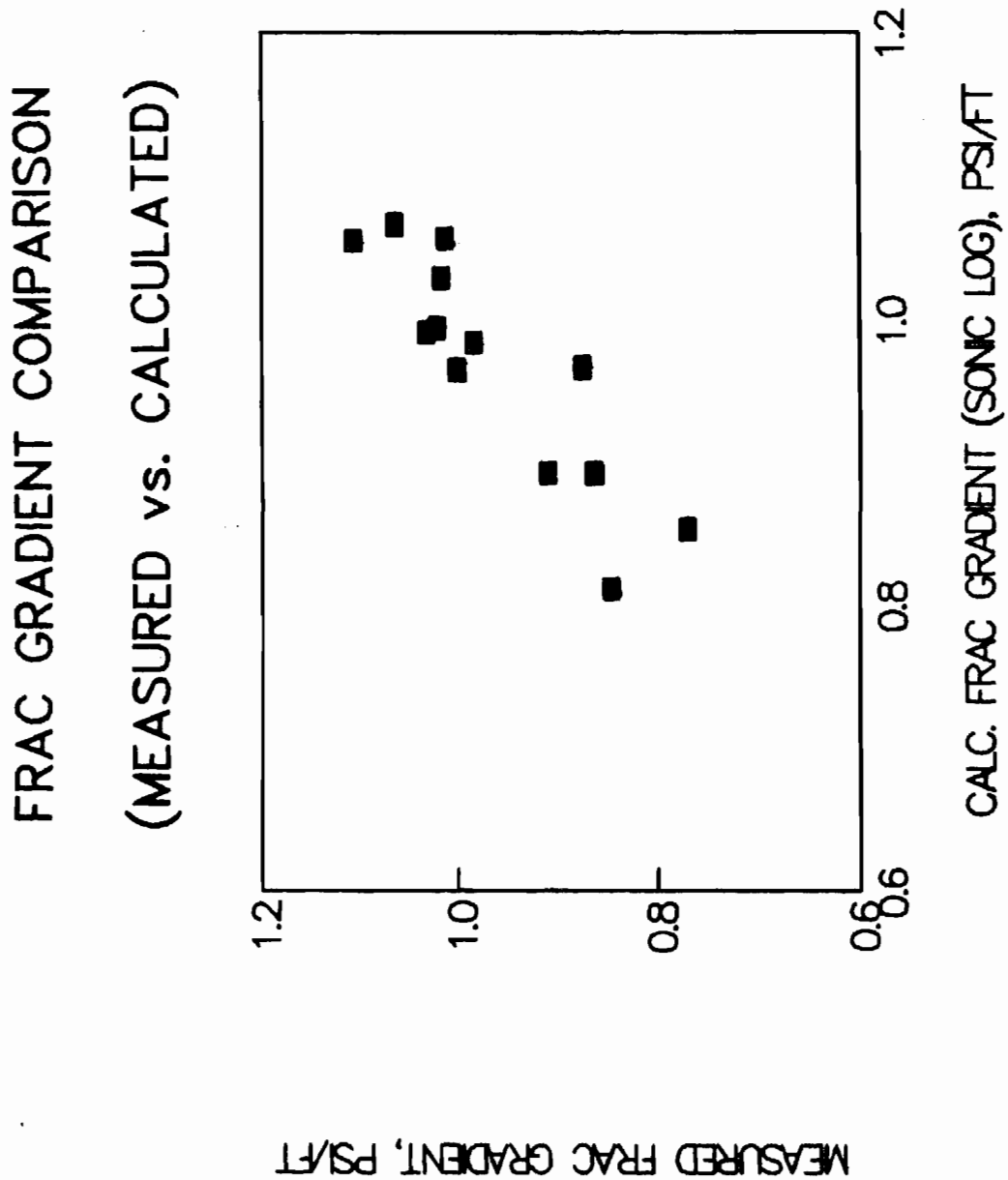


Figure 32: Measured Frac Gradient vs. Frac Gradient Calculated from the Sonic Log K Factor/Measured K Factor Correlation

However accurate the relation between sonic log derived "K" and actual stress data, the comparison found for the MWX wells can also be compared to other published data where sonic log calculations are compared to measured stress data. [11] Figure 33 plots sonic log calculated stress (using the simple $K = \nu/(1-\nu)$ relation) versus measured stress from the MWX data, along with data from reference [11]. Clearly the good correlation reported for several areas by Veatch is not reflected in the MWX data - while a correlation may exist in the Mesaverde between log calculations and actual stresses, it is clearly a different one from that of Veatch, with larger associated errors.

COMPARISON OF SONIC LOG & LITHOLOGY CORRELATIONS

Some direct comparisons were made between the lithology relation (using the bilinear gamma ray correlation) and the sonic log relation with stress (using the "corrected" K factor) by comparing calculated versus measured fracture gradients. These comparisons are seen in figure 29, which presents the lithology correlation for all the data, and figure 32, which presents the sonic log calculated frac gradients for the Marine and Fluvial zones. For these, along with two other cases, the agreement between measured and calculated stress was determined and the results of this are seen below.

Correlation	Paludal Zone Data	Coefficient of Linearity (R)	Average Error (psi)
Sonic Log	Included	0.69	360
Sonic Log	Not Included	0.88	257
Gamma Ray	Included	0.93	200
Gamma Ray	Not Included	0.94	206

It is clearly evident that the lithology correlation based on gamma ray is superior to that of the sonic log for all cases. However, it is also interesting to speculate on the effect that inclusion of the Paludal data has on the correlations. For the lithology relation, the inclusion of Paludal data has no effect on the fit, or the error. This is good in the sense that the general relation evidenced in other zones of the Mesaverde is also valid in the very lenticular Paludal zone - at least where stress test data was collected in reasonably homogeneous sections. However, for the sonic log, inclusion of the Paludal data significantly increased the error, indicating no relation between log measurements and actual stress data in this zone. Possibly this is related to the "thin bedded" nature of the Paludal zone. As discussed above, the sonic log in question utilizes a "long spacing" tool, possibly causing the measured velocities to reflect too much of an "average" value, or, possibly sonic wave reflections from the bedding may hinder definitive log interpretation. In any case, the total lack of correlation between the log and actual measured stresses in the

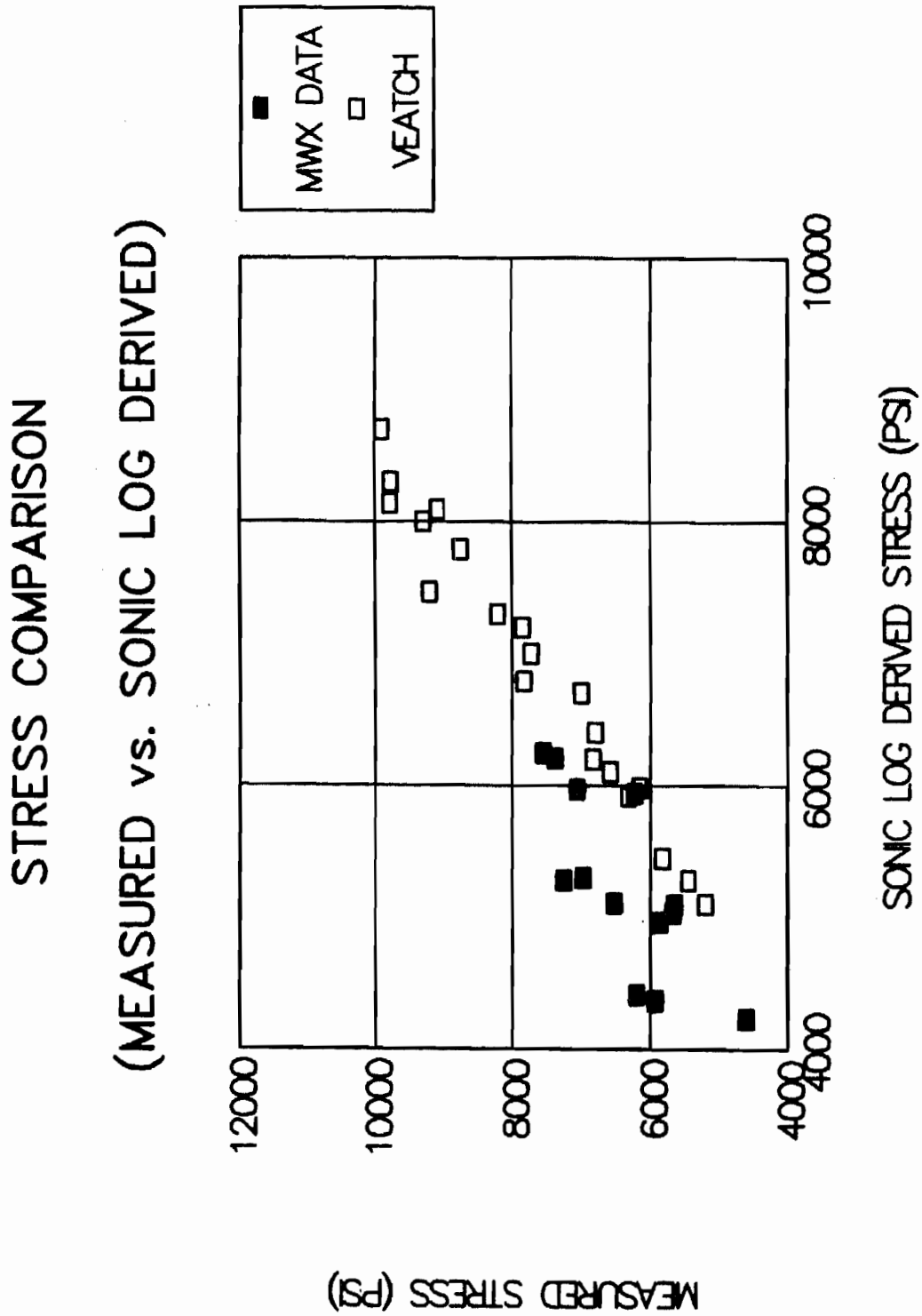


Figure 33: Measured vs. Log Derived Stress Comparison for both the MWX-2 Data and Data Published by Veatch

Paludal Zone raises questions about the usefulness of long spaced sonic "stress" logs in such heterogeneous, coal studded formations.

Even if sonic log stress data showed a similarly clear relation with measured stress values as did the gamma ray correlation, the gamma ray or lithology correlation would still be preferred for a number of reasons. A primary reason is economics: a long spaced sonic log and subsequent stress analysis (Schlumberger's FracHite log, for instance) is relatively expensive on a well by well basis. A gamma ray log, by contrast, is run routinely on all wells and would thus provide a powerful tool for extrapolating actual test data to new wells in the same formation. The frac gradient/gamma ray correlation is striking both for it's accuracy and simplicity. It would be worthwhile to examine other fields where sonic log stress correlations have been developed, and determine if a correlation between stress values and gamma ray values exist there.

Another reason the gamma ray correlation is preferred, especially for this work, is that the sonic log correlation breaks down when Paludal zone data is included. The heterogeneous nature of the Paludal section, as well as the presence of many coal streaks, seriously compromises the sonic log arrival time data; it is totally masked in or near coal seams. The gamma ray correlation has no such trouble with the Paludal section, although many zones in the Paludal section were not used for the gamma ray correlation due to complex, layered lithology in the vicinity of the test zone.

STRESS PROFILES

The two lithology correlations (linear and bilinear) discussed above were used to generate stress profiles or stress logs. These are seen in figures 34 - 37 which show each stress profile through the entire Paludal interval, and also in the direct vicinity of the frac zone in well MWX-1. These profiles provide the basis for future fracture modeling in this zone. Of particular interest is the indication of a high stress "shale" between the two perforated intervals. This, along with the possibly higher stress in the lower perforated interval (higher than that in the upper perforated interval of the MWX-1 Frac Zone) may have been significant factors in the apparently high treating pressures recorded for the MWX-1 Paludal fracture treatments. [15]

LARGE ZONE STRESS TEST RESULTS

In addition to the micro-frac tests discussed above which were used to generate the Paludal zone stress profiles, several larger volume stress tests were conducted in MWX-1 and MWX-3.

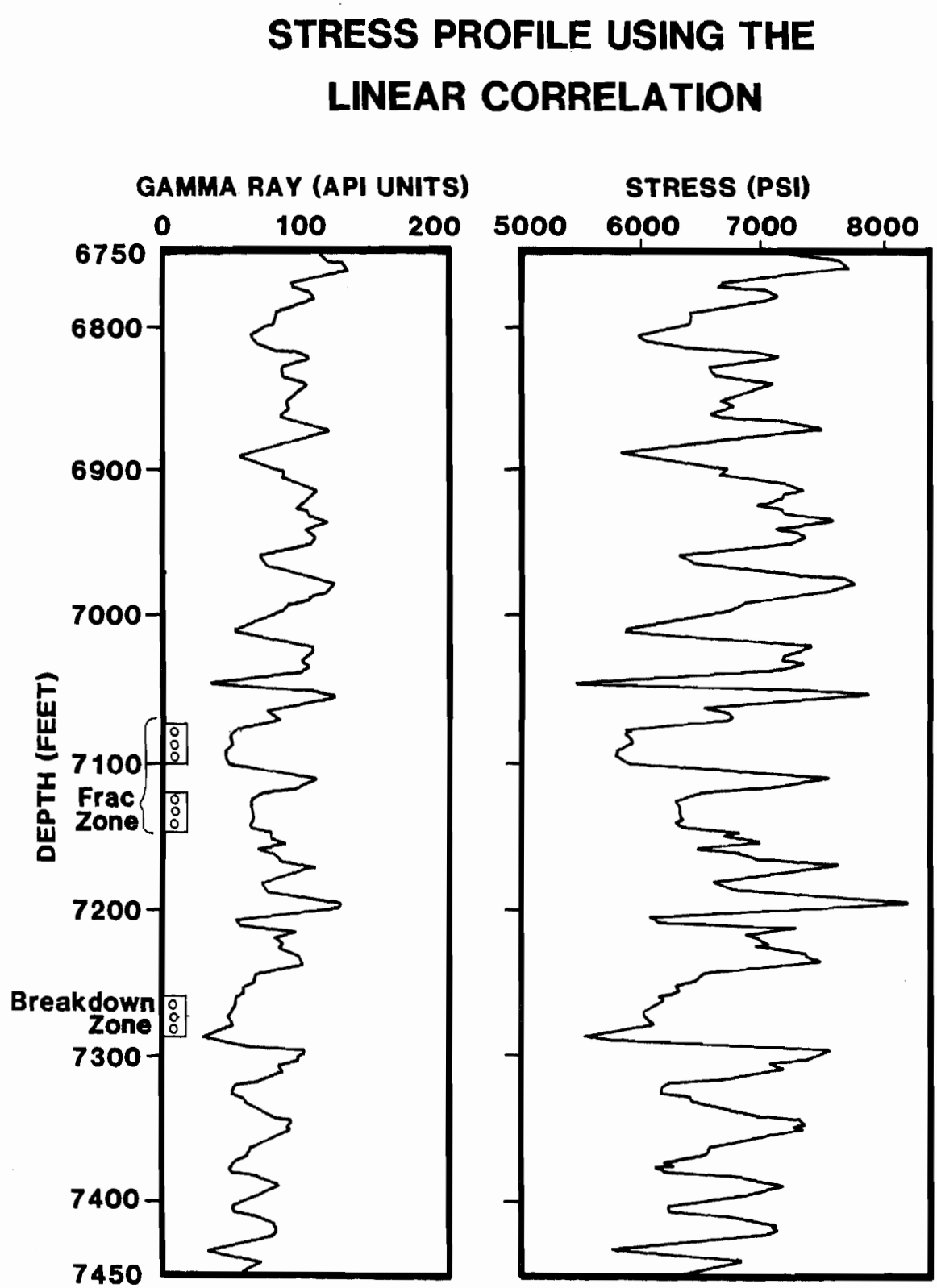


Figure 34: Stress Profile Through the Paludal Zone in MWX-1 Using the Linear K Factor/Gamma Ray Correlation

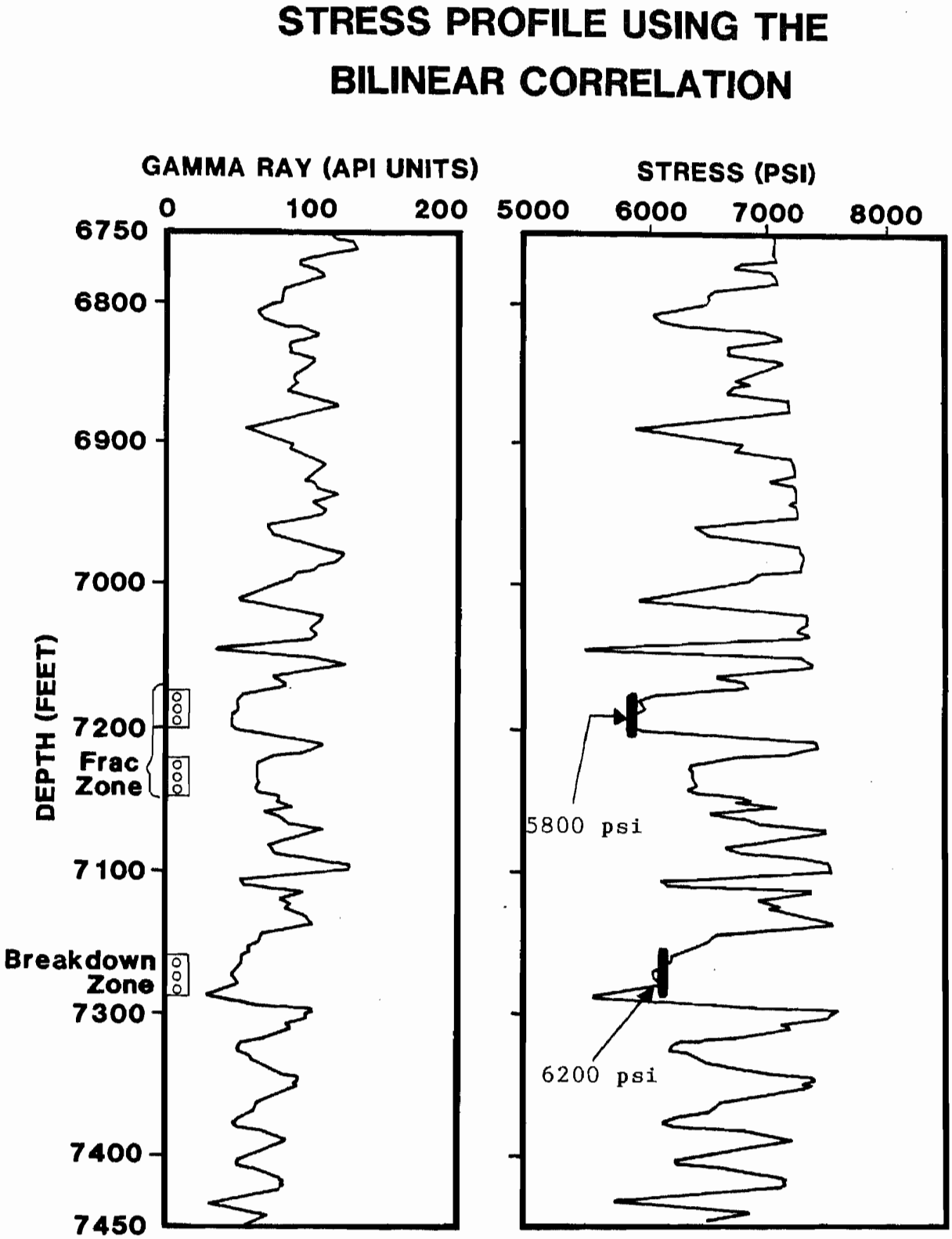


Figure 35: Stress Profile Through the Paludal Zone in MWX-1 Using the Bilinear K Factor/Gamma Ray Correlation, with Large Stress Test Results Highlighted

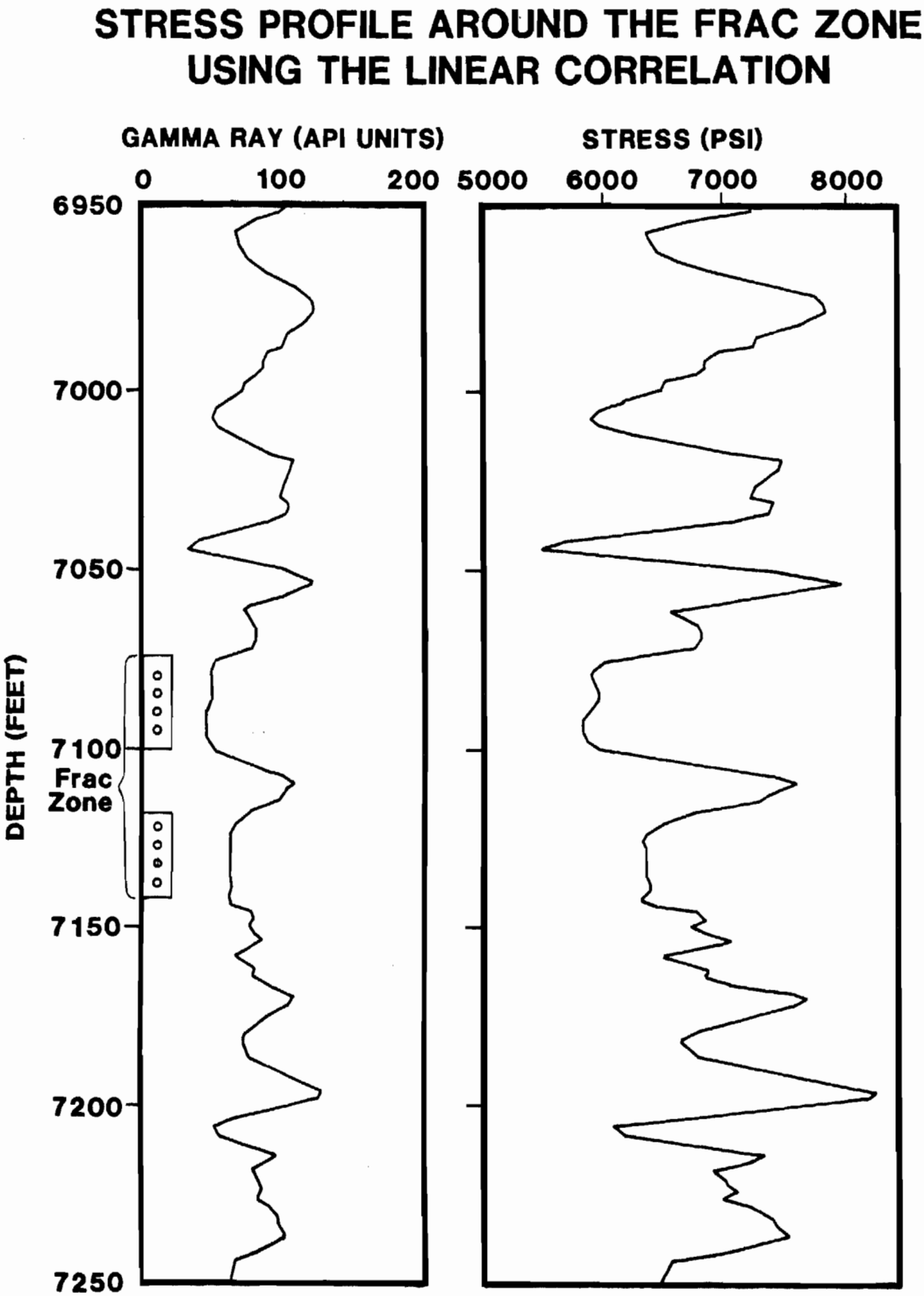


Figure 36: Stress Profile in the Vicinity of the Frac Zone in MWX-1 Using the Linear K Factor/Gamma Ray Correlation

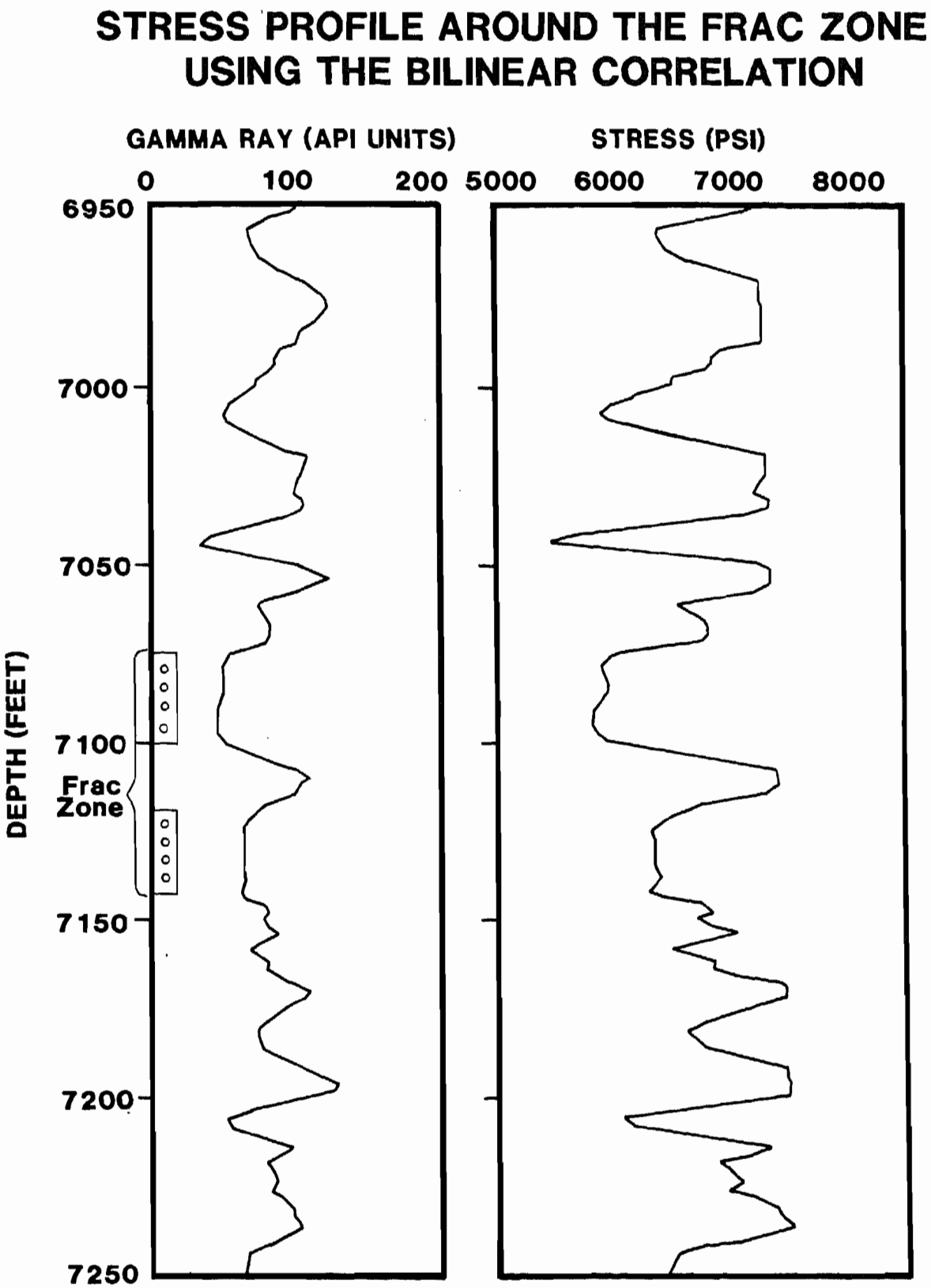


Figure 37: Stress Profile in the Vicinity of the Frac Zone in MWX-1 Using the Bilinear K Factor/Gamma Ray Correlation

Since this data was not included in deriving the lithology correlation or the stress profiles, it is useful to compare the results of these tests to the generated stress profile.

In the frac zone in MWX-1, the first flow-back test yielded a closure stress value of 5900 psi (original Sandia analysis) to 5800 psi (re-analysis discussed above). The average stress across the upper perforated section of the frac zone (the lower stress of the two perforated intervals based on the stress profile) is 5835 psi - clearly excellent agreement. For the second flow-back test conducted in this zone, the original Sandia analysis result was 6100 psi. However, as discussed above, there are several major questions about this test and the result is viewed as dubious. However, the average stress across the lower perforated interval (from the stress profile) is approximately 6400 psi. The fracture modelling will address the question of possible dual closure stress results from the minifrac pressure declines, and it is possible that the higher closure stress indications in these tests reflect closure in the higher stress zone.

The breakdown test in MWX-3, in an equivalent lithology to the MWX-1 frac interval, yielded a closure stress of 5800 psi, in good agreement with the profile results.

The breakdown in MWX-1 was performed over an interval from 7256 ft to 7284 ft. The stress profile through this interval averages approximately 6100 psi, and the original Sandia analysis for this test is ±6300 psi. The detailed pressure data for this test was not available, but qualitative indications from figure 12 suggest a closure stress less than 6300 psi, possibly 6200 psi or less.

These results (5800 psi for the upper zone in the MWX-1 frac interval, and 6200 psi for the MWX-1 breakdown zone) are plotted onto figure 35, which gives the bilinear stress profile for the entire Paludal zone. The good agreement between these values and the stress profiles provides confidence both in the overall stress profiles and in their use for fracture modeling.

Since this data was not included in deriving the lithology correlation or the stress profiles, it is useful to compare the results of these tests to the generated stress profile.

In the frac zone in MWX-1, the first flow-back test yielded a closure stress value of 5900 psi (original Sandia analysis) to 5800 psi (re-analysis discussed above). The average stress across the upper perforated section of the frac zone (the lower stress of the two perforated intervals based on the stress profile) is 5835 psi - clearly excellent agreement. For the second flow-back test conducted in this zone, the original Sandia analysis result was 6100 psi. However, as discussed above, there are several major questions about this test and the result is viewed as dubious. However, the average stress across the lower perforated interval (from the stress profile) is approximately 6400 psi. The fracture modelling will address the question of possible dual closure stress results from the minifrac pressure declines, and it is possible that the higher closure stress indications in these tests reflect closure in the higher stress zone.

The breakdown test in MWX-3, in an equivalent lithology to the MWX-1 frac interval, yielded a closure stress of 5800 psi, in good agreement with the profile results.

The breakdown in MWX-1 was performed over an interval from 7256 ft to 7284 ft. The stress profile through this interval averages approximately 6100 psi, and the original Sandia analysis for this test is ±6300 psi. The detailed pressure data for this test was not available, but qualitative indications from figure 12 suggest a closure stress less than 6300 psi, possibly 6200 psi or less.

These results (5800 psi for the upper zone in the MWX-1 frac interval, and 6200 psi for the MWX-1 breakdown zone) are plotted onto figure 35, which gives the bilinear stress profile for the entire Paludal zone. The good agreement between these values and the stress profiles provides confidence both in the overall stress profiles and in their use for fracture modeling.

CONCLUSIONS

1. Overall results from the NSI reanalysis of data (using "reservoir type" analyses instead of the "ISIP" (Instantaneous Shut In Pressure) method of determining closure stress) from the seven Paludal test zones examined show substantial agreement with previously established results. For this reason, we feel confident that the published stress results from other test zones (e.g., Marine, Fluvial, etc.) are accurate, and can be relied upon in generating further results and conclusions.

2. Although the "ISIP Pick" analysis method used by Sandia to analyze the microfrac tests yielded repeatable results, there is no clear, quantitative method for picking this ISIP. The "reservoir type" analysis method, mainly using the square root of time plot of the pressure decline (for linear flow behavior), is a better method for determining closure stress. These plots consistently provided a more definitive value for closure pressure, and in some instances made otherwise uninterpretable data, interpretable. The plot of the logarithm of the pressure difference (referenced to the pressure just prior to shut-in) versus the logarithm of time (elapsed since shut-in) is also useful for determining wellbore storage effects and their influence on the analysis. In these particular tests, and probably for microfrac stress tests in general, these effects were minor and did not affect the closure stress analysis.

3. Micro-frac stress tests appear to yield repeatable results and are potentially a good test procedure in many situations, particularly for low permeability zones. However, for larger, porous intervals other test procedures are probably preferable. In these cases, poroelastic and other effects mask the ISIP (as in Zone 2P2, where succeeding injections made the ISIP less distinctive); the pump-in/flowback test is preferred in these instances. Also, care must be taken in choosing representative stress test zones, so derived stress results can be tied to specific strata or lithology. In the Paludal section, zone selection considerations could effect final conclusions on the stress determination ability of the microfrac tests. Future work will focus on fracture pressure modelling (attempts to match theoretical results to the observed high treating pressures during the Phase I and Final stimulations). If the stresses derived from analyzing the microfrac tests can not be used to satisfactorily explain this fracturing behavior; then either the usefulness of this type of test, or the widely assumed dominance of in situ stress for fracture height control will have to be questioned.

4. In the Paludal zone of the Mesa Verde, no correlation exists between stress, and either lithology (as expressed by mean gamma ray in the vicinity of a test zone) or sonic log results (used to calculate K factor). This lack of correlation is likely due to both the heterogeneous nature of the Paludal section and the presence of many coal streaks in this section.

5. Large volume stress test results (e.g., tests in the MWX-1 frac zone) showed good agreement with one microfrac test from a similar lithology.

6. Clear indications of increasing closure stress with injection (known as the poroelastic effect or backstress) occurred in one, apparently water saturated zone. Another zone may have exhibited this phenomenon, but there is not enough data currently available to confirm this. It is theorized that there will be no backstress effect in zones with gas saturation, however, this has never been proven. More detailed data from other MWX stress tests will be examined in an attempt to confirm or refute this hypothesis. At this point there are no examples contradicting the hypothesis: e.g., stress tests in impermeable zones showed no backstress and a test in a porous (presumably permeable) water saturated zone definitely displayed backstress. However, there is no conclusive evidence of either the presence or absence of backstress effects in a porous (permeable), gas saturated zone.

7. A correlation exists between stress (K Factor) and lithology (mean gamma ray) when all test zones considered here are examined (4 from the Fluvial section, 11 from the Coastal, 12 From the Paludal, and 11 from the Marine). When data from test zones that have a high standard deviation in gamma ray (indicative of complex, layered lithology) and also from those that are in or near coal seams (which have unusual and as yet unquantified fracturing behavior) are eliminated from consideration, the correlation becomes very strong. Higher gamma ray values, indicating siltier or shalier formations, have higher stress levels; this correlation, thought to exist in many areas, is very linear.

8. This correlation mentioned above may effectively be bi-linear, e.g., for K Factor > 1, the data flattens. In other words, for gamma ray higher than a certain value (approximately 90 API units), measured K factor is roughly equal to 1, which says that closure stress is equal to the overburden pressure. This may be the maximum stress that a microfrac stress test will be able to measure, since at that pressure level, horizontal fracturing may begin. This may indicate that zones with a measured stress equal to the overburden may offer better containment of vertical fractures than the measured stress would indicate, due to either: a) a higher minimum horizontal stress value than the stress value measured by the stress test (which may just yield the vertical stress), which would inhibit vertical growth, or b), the fracture might try to turn horizontal which would effectively limit vertical growth. This bilinear correlation is accurate, with an approximate average error of 200 psi; much of this error comes from one zone where a high stress was measured, where a horizontal fracture probably did not occur, and a high vertical stress was measured (data from this zone fit the linear correlation well). It is currently uncertain whether an extrapolation of the linear correlation for high mean gamma ray values yields actual horizontal stress values; this may not be verifiable.

9. Sonic Log derived K values for the Marine and Fluvial sections show a non 1:1 correlation with measured K values - the stresses derived from this correlation aren't as accurate as those of the gamma ray correlations. Comparing the non-adjusted sonic log K values to published data shows little agreement with a strong linear correlation that exists in other areas. The gamma ray/stress correlation is thought to be more useful for three reasons: a) it is more accurate, by about 30 percent, b) Sonic logs and commercial frac logs (which assume a 1:1 stress correlation which would be erroneous here) are relatively expensive, while gamma ray logs are run routinely on every well that is drilled; they are very inexpensive, and c) when data from the Paludal zone is used for the gamma ray correlation, it's accuracy is unchanged (the coal zones would be an exception to this, and will probably not be included in future stress modeling work) - when Paludal sonic log data is included in the sonic correlation (when it is analyzable, as coals interfere with sonic tools), it adversely affects the accuracy by a factor of nearly 2.

10. Stress profiles were derived for the Paludal zone in MWX-1, for both the linear and bilinear lithology correlation. Large zone stress test data for MWX-1 shows good agreement with these profiles, and the profiles will be used as the basis for pressure/height analysis and fracture modeling in future work.

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APPENDIX A

VOLAN Log sections of the three MWX Wells with stress test zones highlighted, and plots of pressure data from stress tests (for both the seven microfrac stress test zones in MWX-2 and MWX-3 and the flowback tests performed in the Frac Zone of MWX-1) that were re-analyzed by NSI.

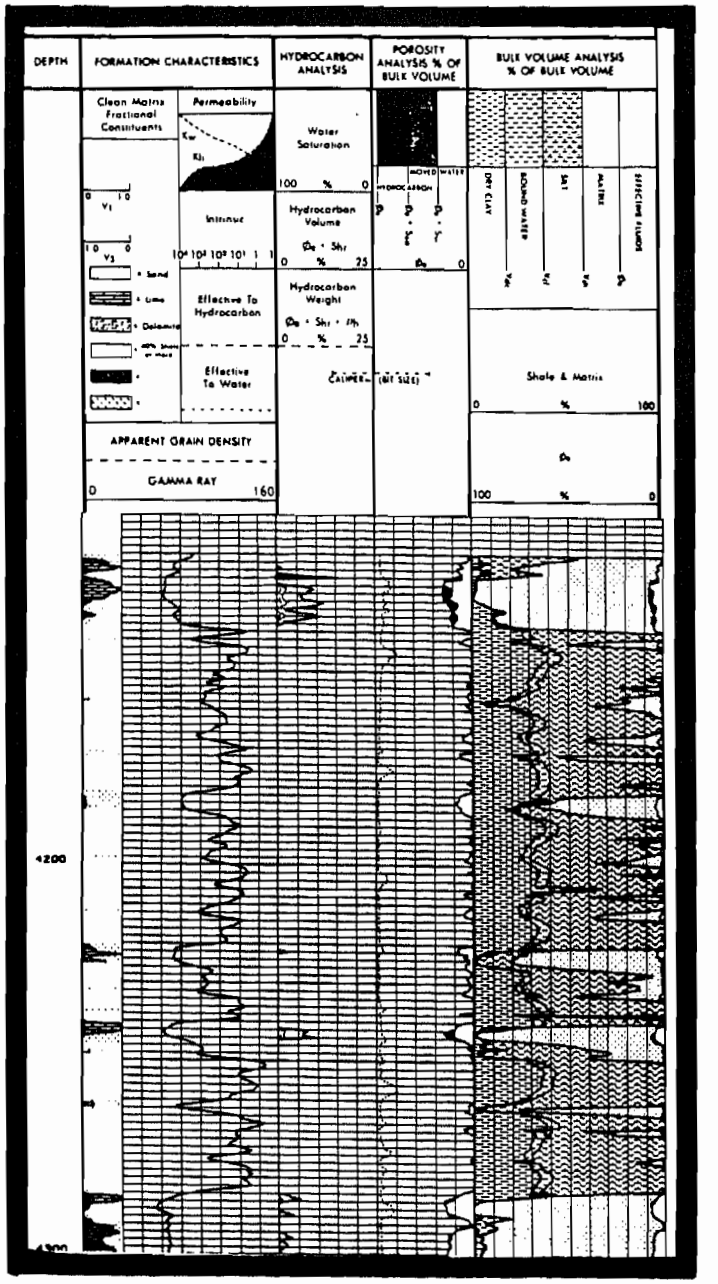

Figure A-1-1a: Column Heading of VOLAN Log Section of MWX-1 (from 6500 ft to 8300 ft).

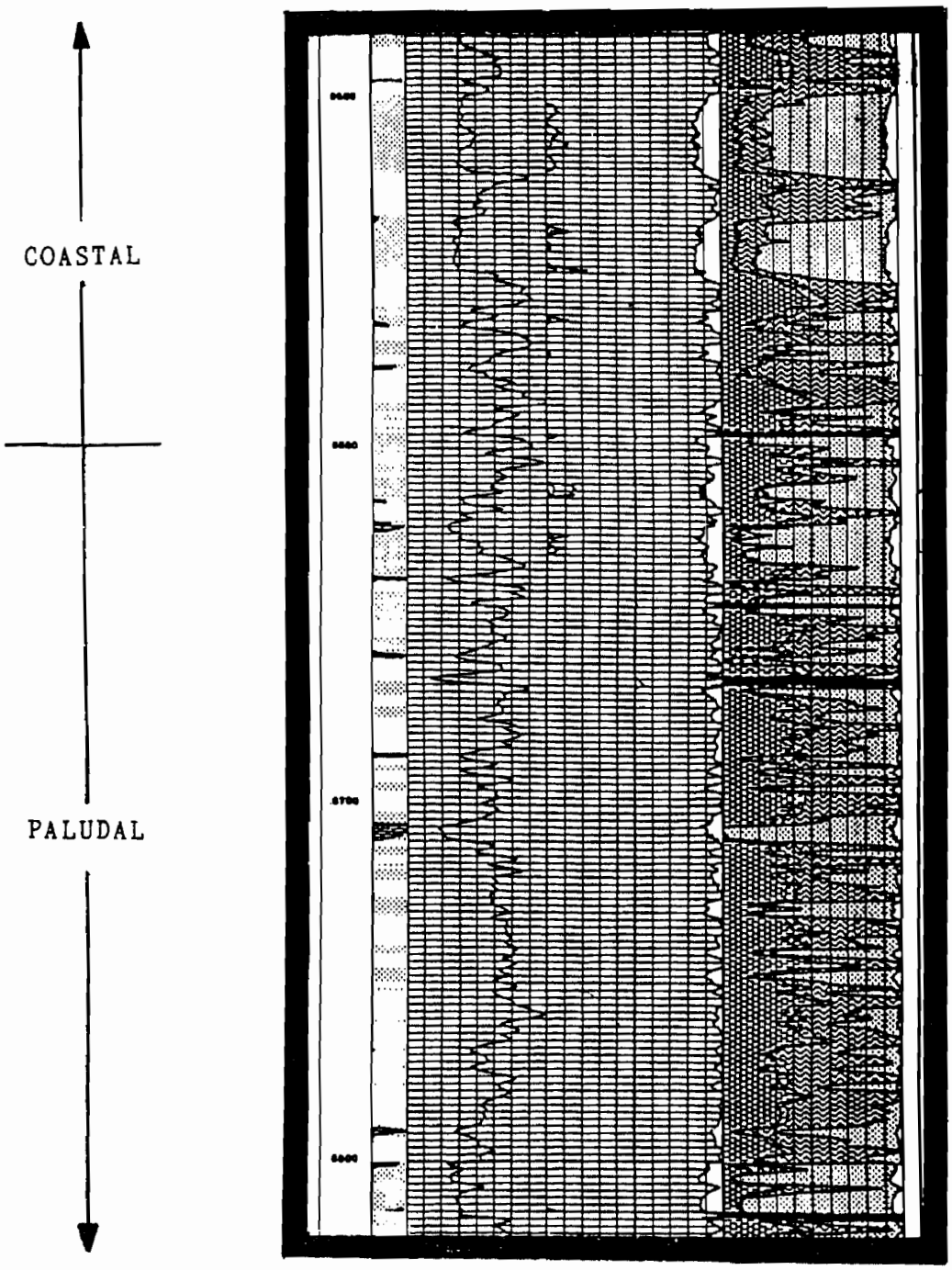

Figure A-2-1b: VOLAN Log Section of MWX-1 from 6500 ft to 6800 ft.

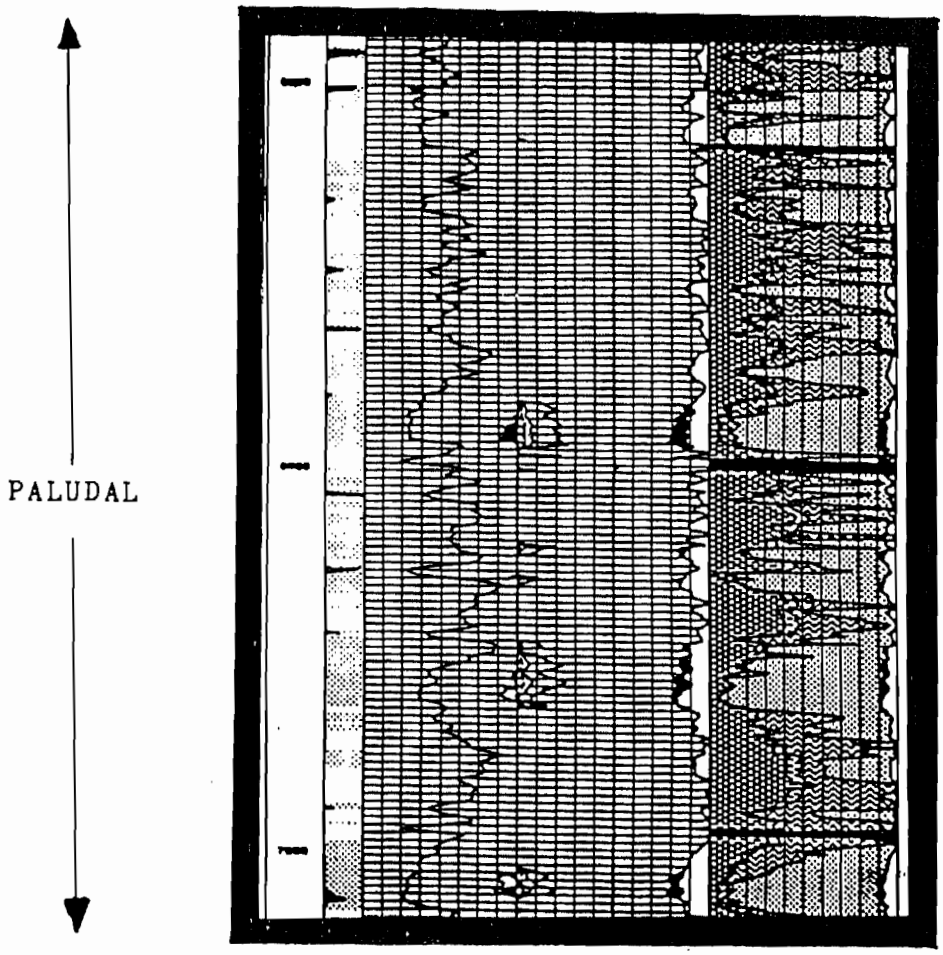

Figure A-1-1c: VOLAN Log Section of MWX-1 from 6800 ft to 7000 ft.

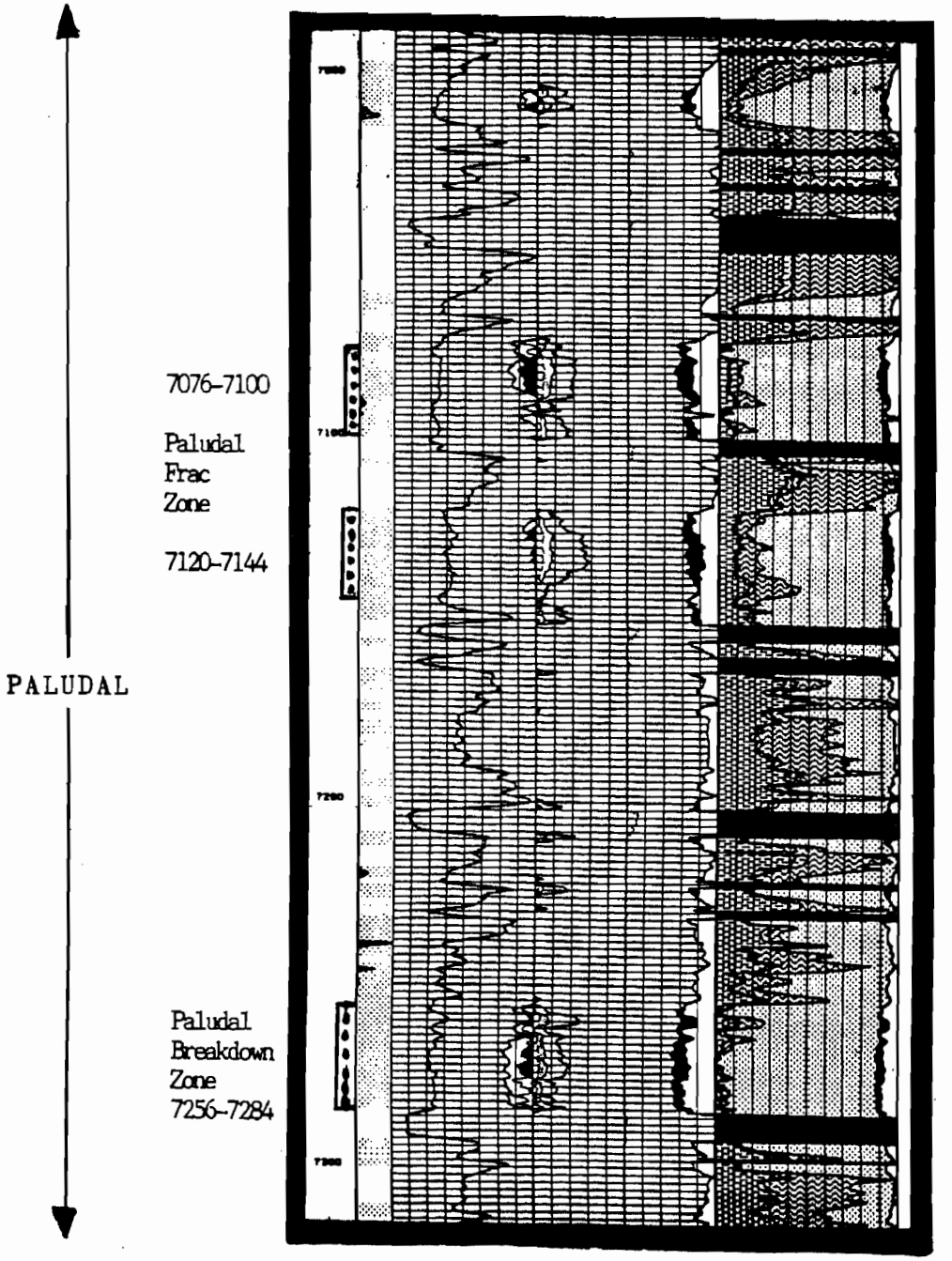

Figure A-1-1d: VOLAN Log Section of MWX-1 from 7000 ft to 7300 ft.

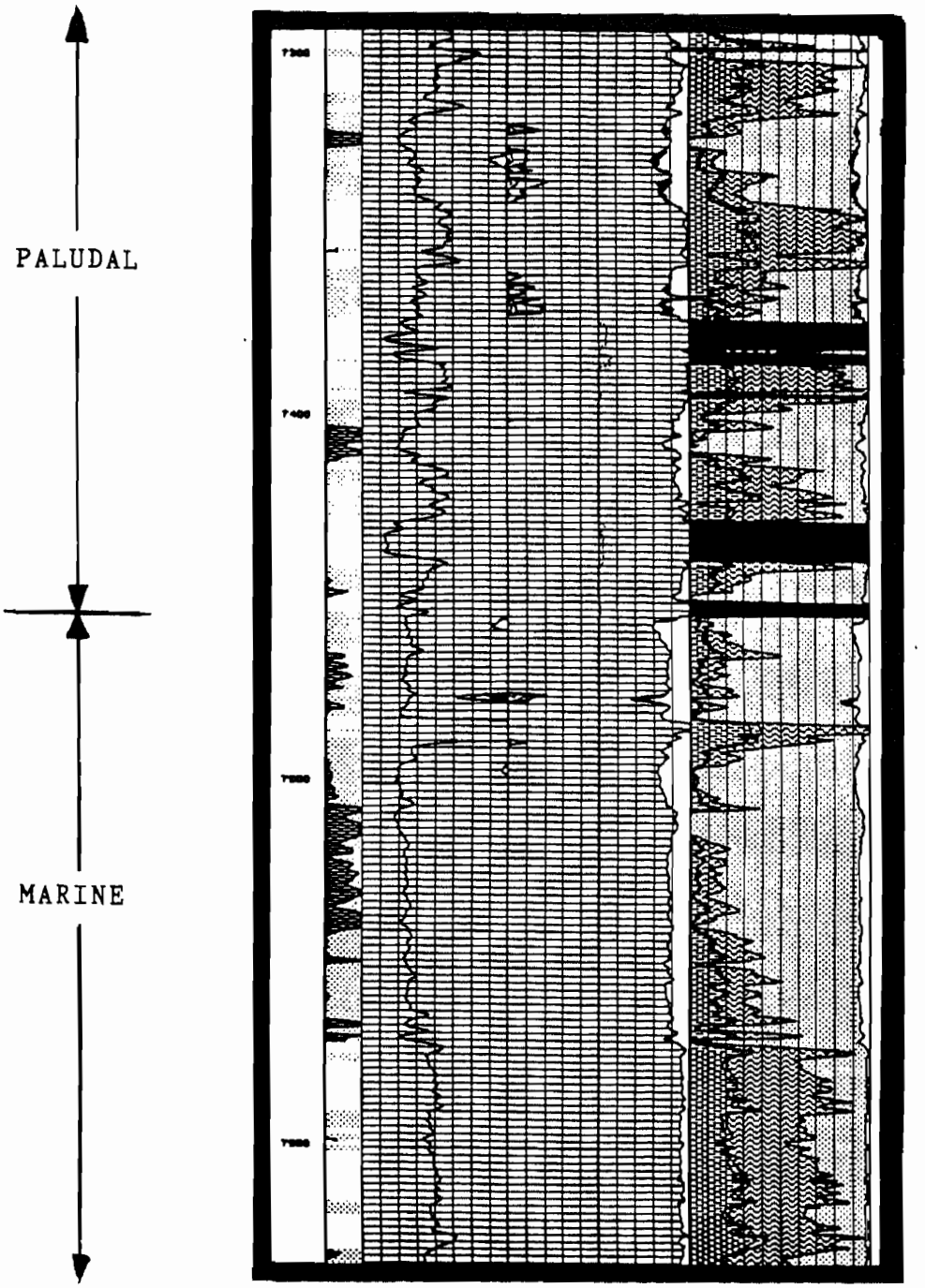

Figure A-1-1e: VOLAN Log Section of MWX-1 from 7300 ft to 7630 ft.

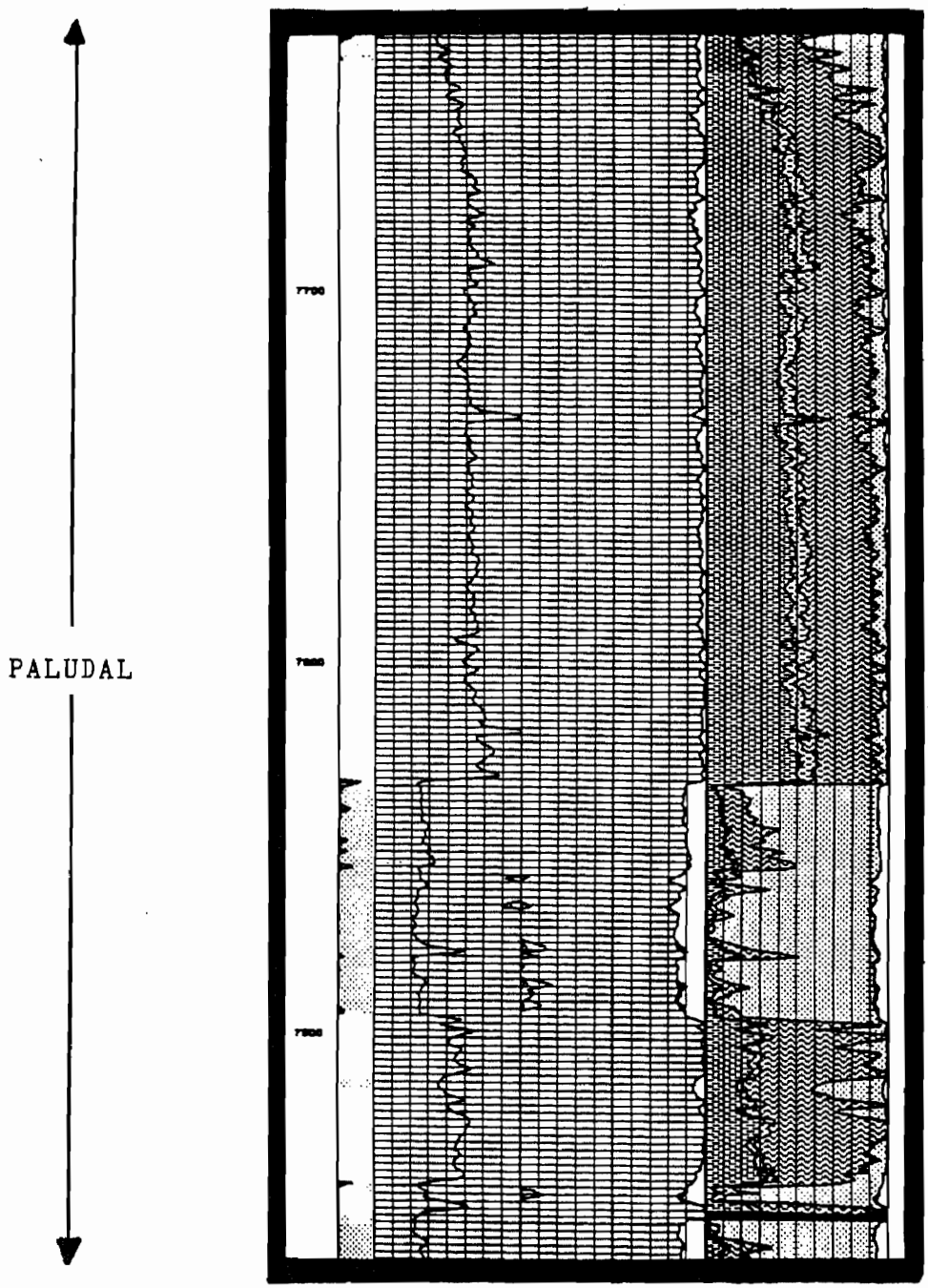

Figure A-1-1f: VOLAN Log Section of MWX-1 from 7630 ft to 7960 ft.

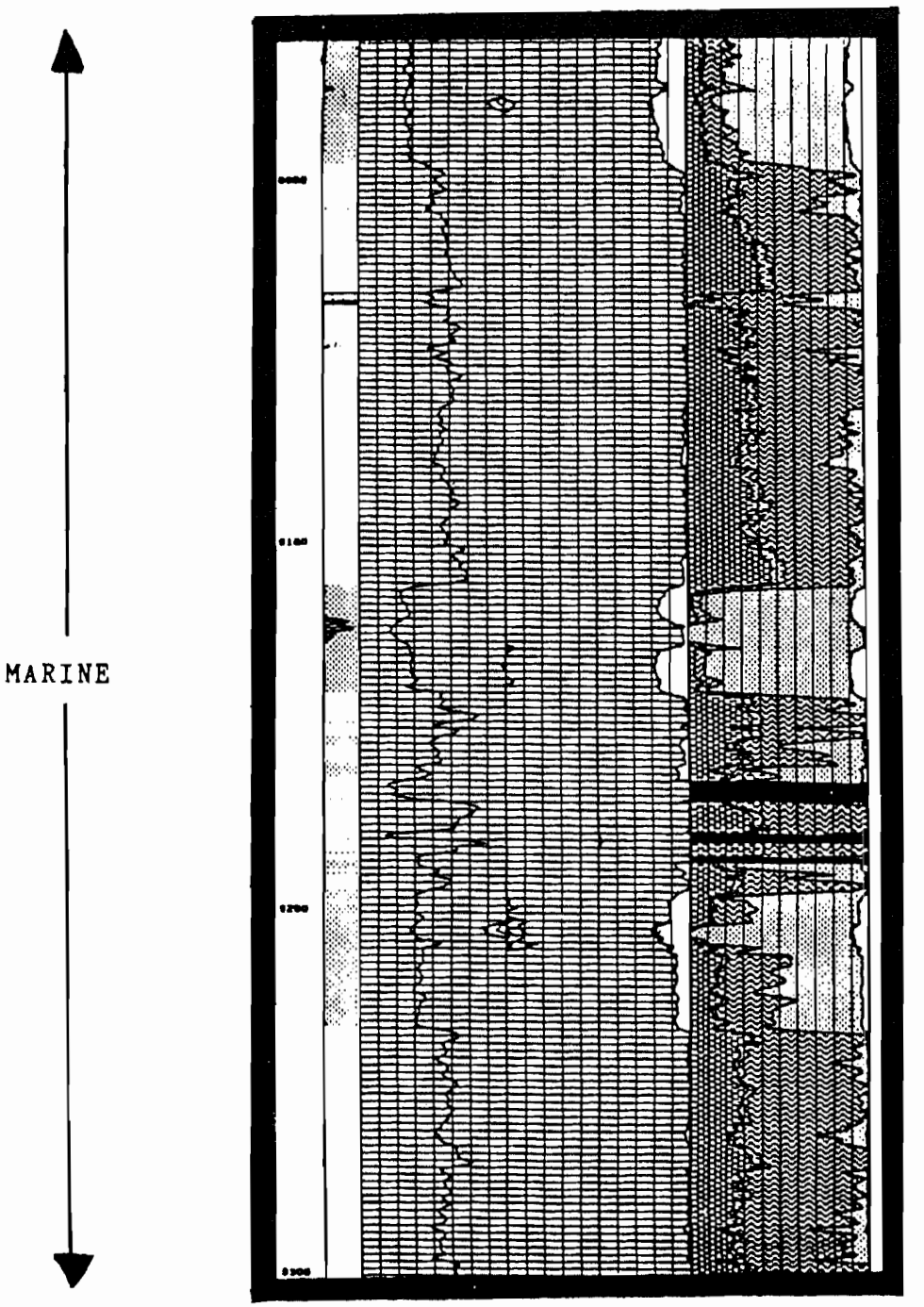

Figure A-1-1g: VOLAN Log Section of MWX-1 from 7960 ft to 8300 ft.

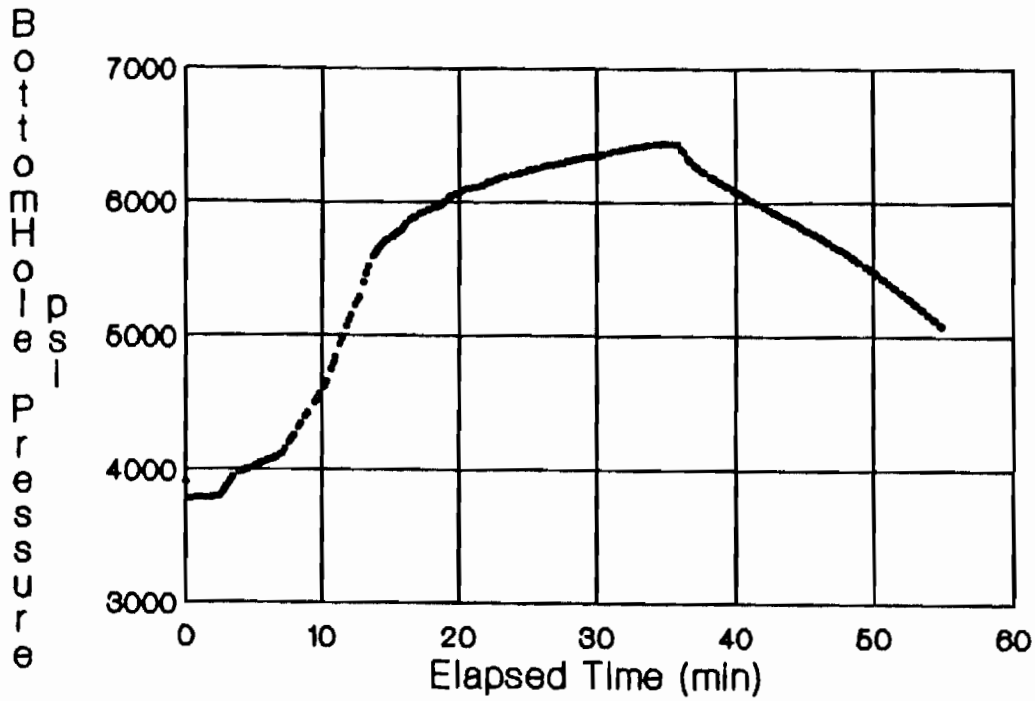

Figure A-1-2: Pressure vs. Time for the Step Rate/Flowback Test in the MWX-1 Frac Zone

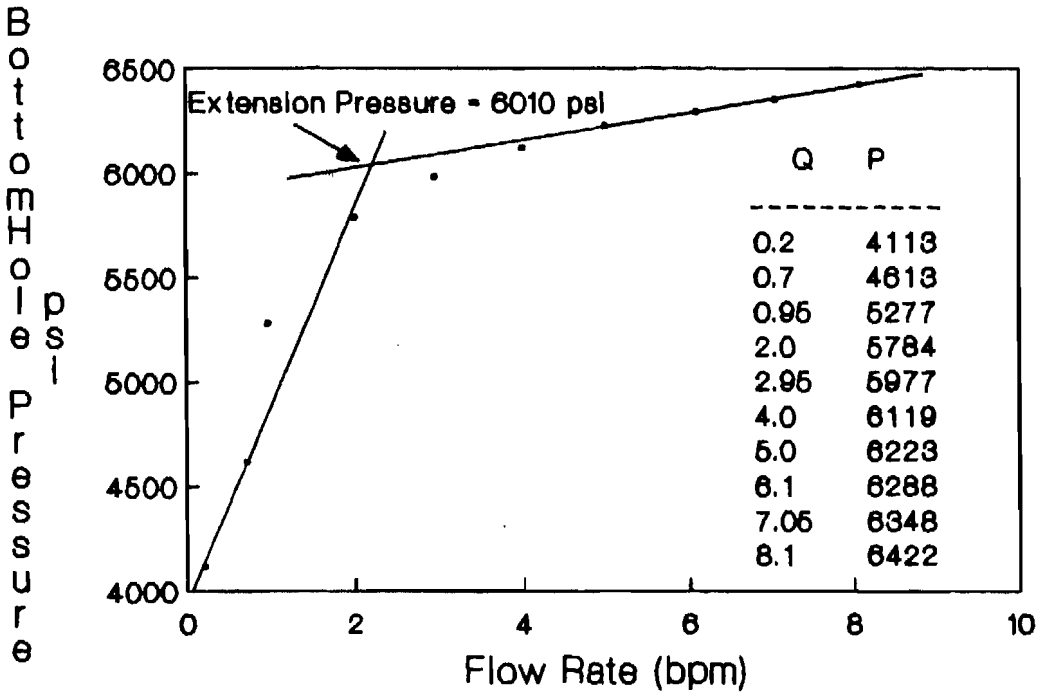

Figure A-1-3: NSI Pressure vs. Rate Analysis of the Step Rate Test

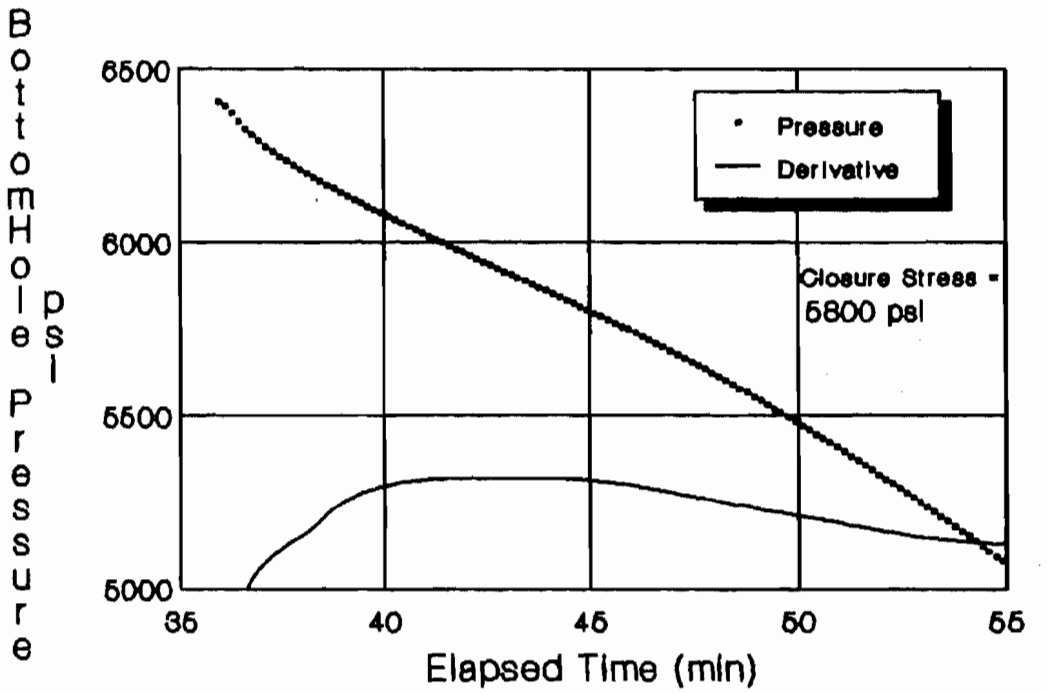

Figure A-1-4: Plot of Pressure and Pressure Curve Derivative vs. Time for the First Flowback Test in the MWX-1 Frac Zone

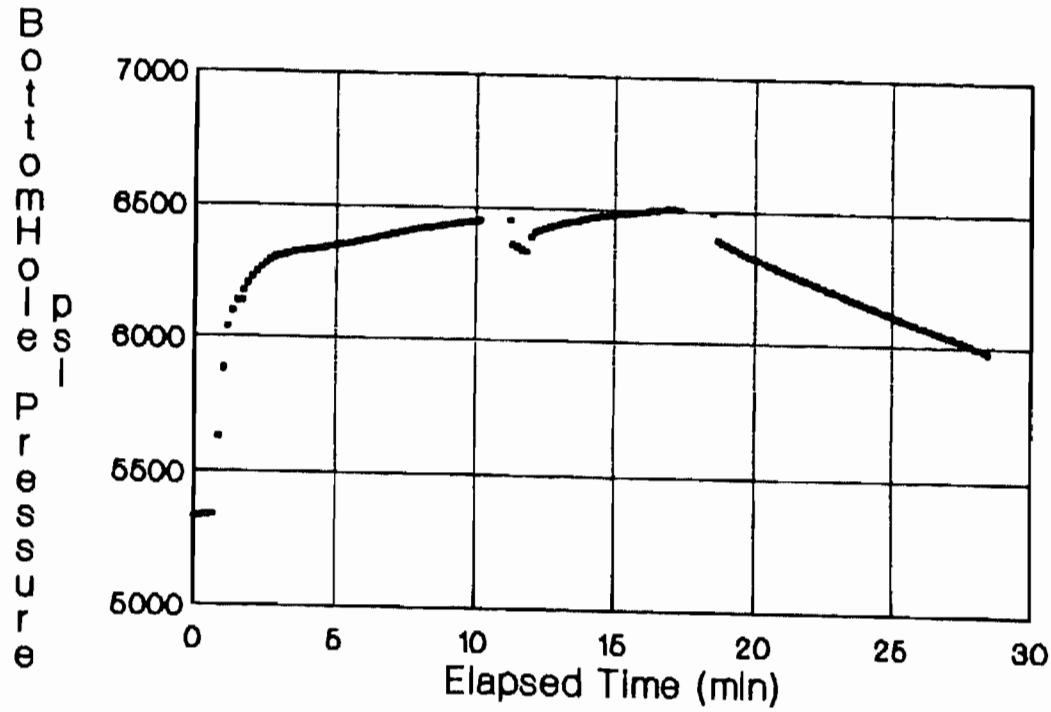

Figure A-1-5: Pressure vs. Time for the Pump-in/Flowback Test in the MWX-1 Frac Zone

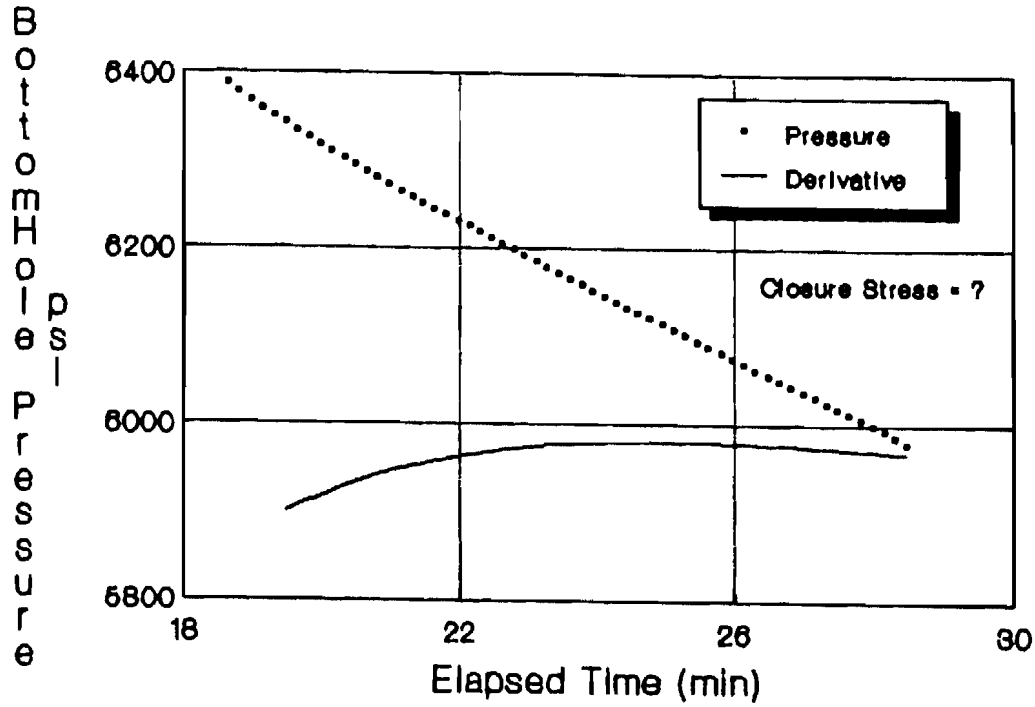

Figure A-1-6: Plot of Pressure and Pressure Curve Derivative vs. Time for the Second Flowback Test in the MWX-1 Frac Zone

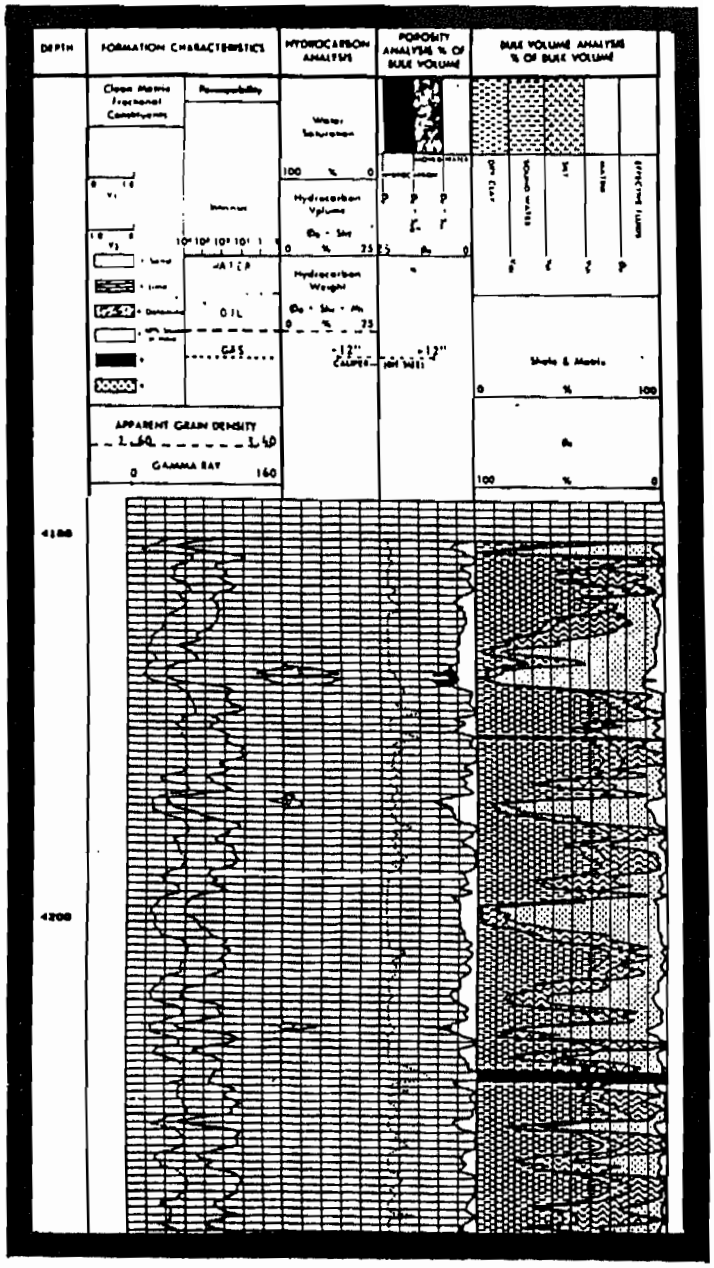

Figure A-2-1a: Column Heading of VOLAN Log Section of MWX-2 (from 5600 ft to 8260 ft).

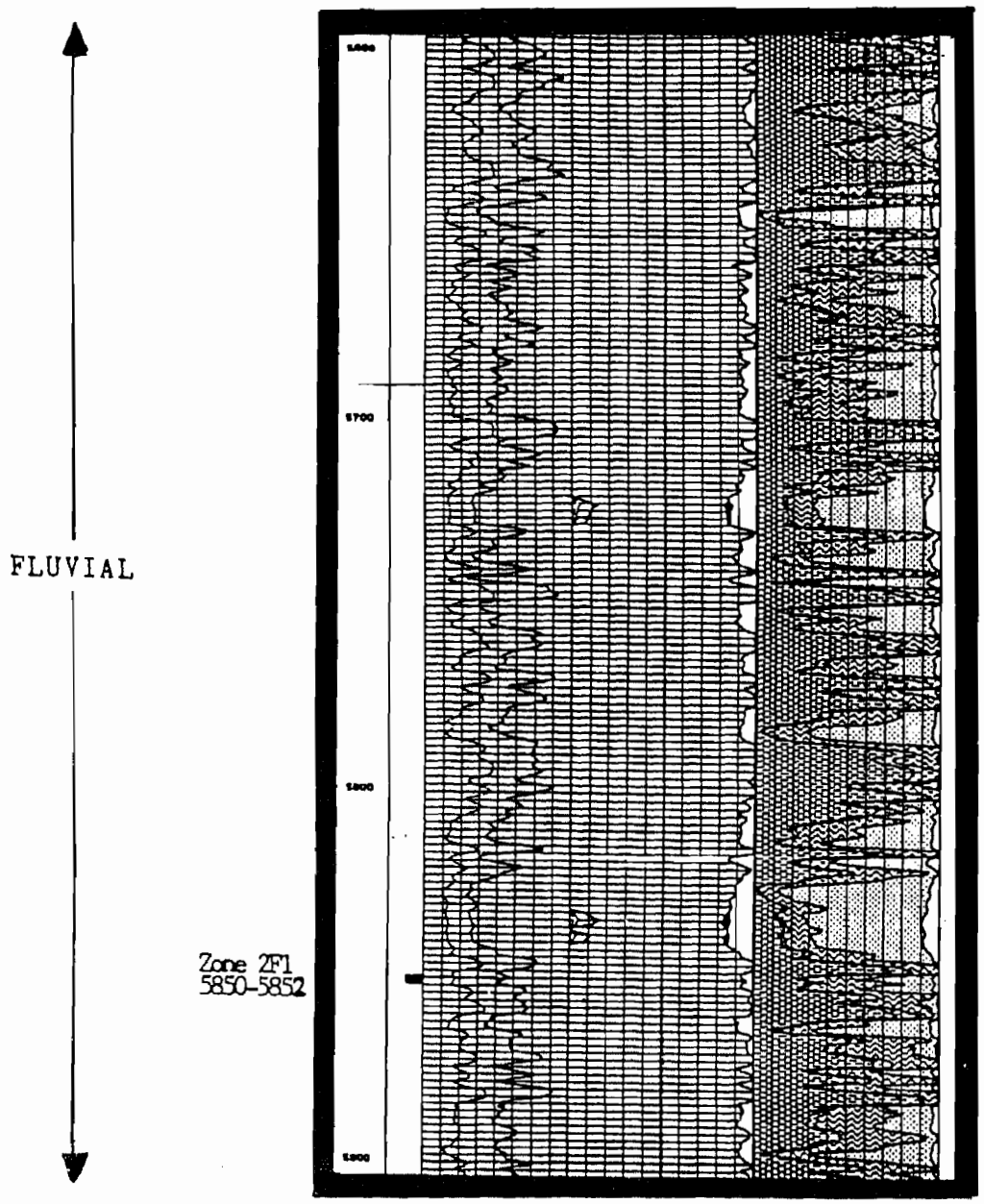

Figure A-2-1b: VOLAN Log Section of MWX-2 from 5600 ft to 5900 ft.

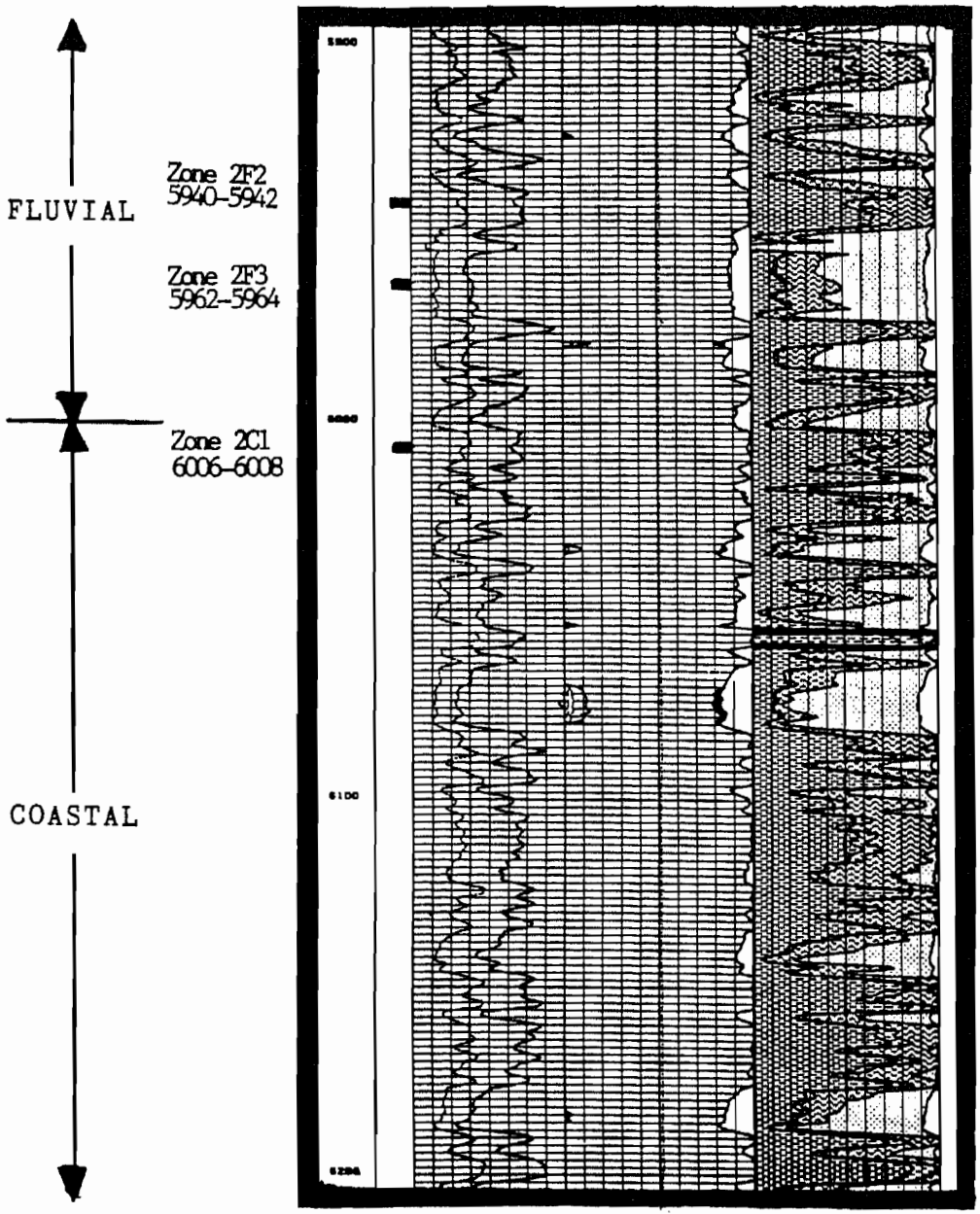

Figure A-2-1c: VOLAN Log Section of MWX-2 from 5900 ft to 6200 ft.

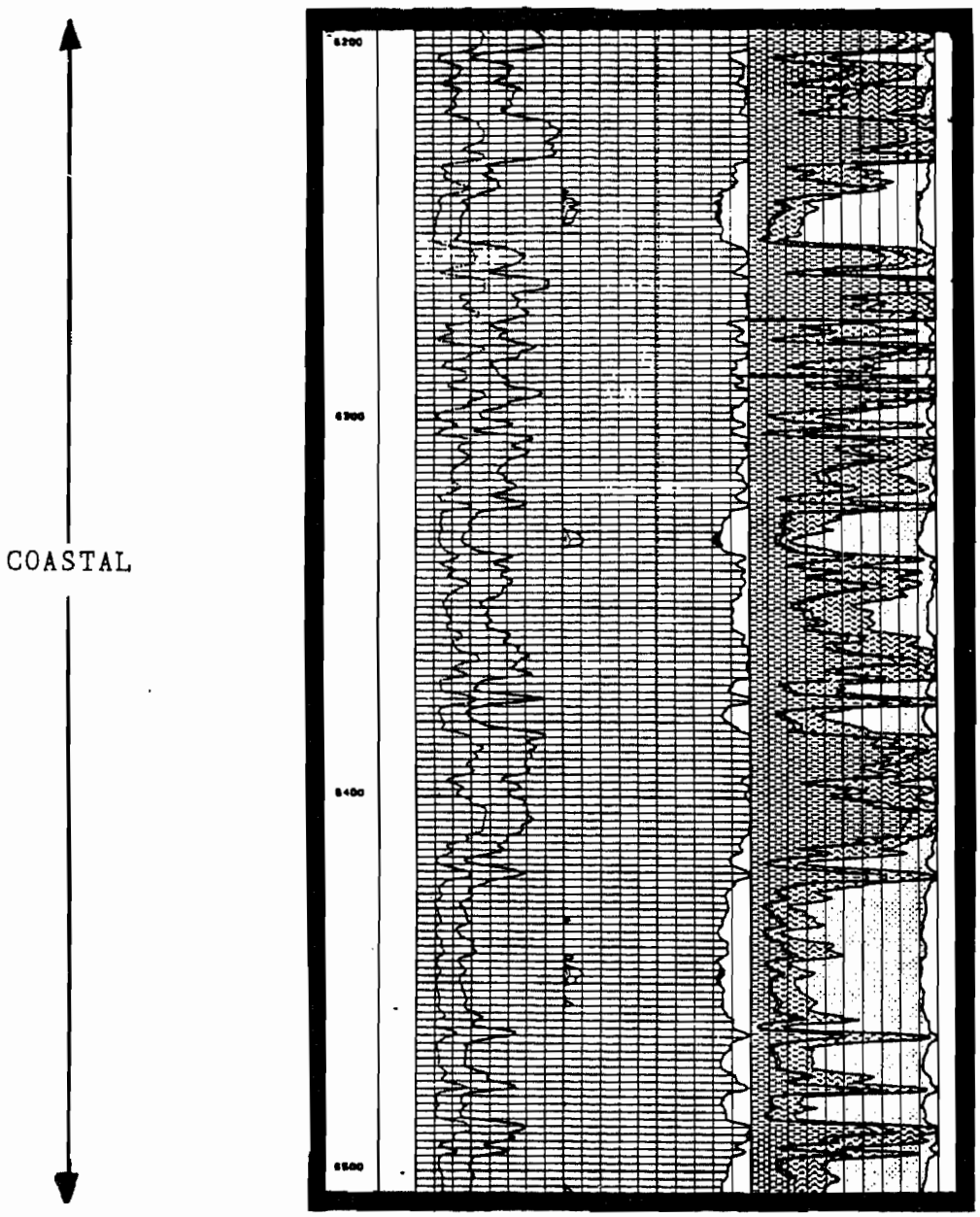

Figure A-2-1d: VOLAN Log Section of MWX-2 from 6200 ft to 6500 ft.

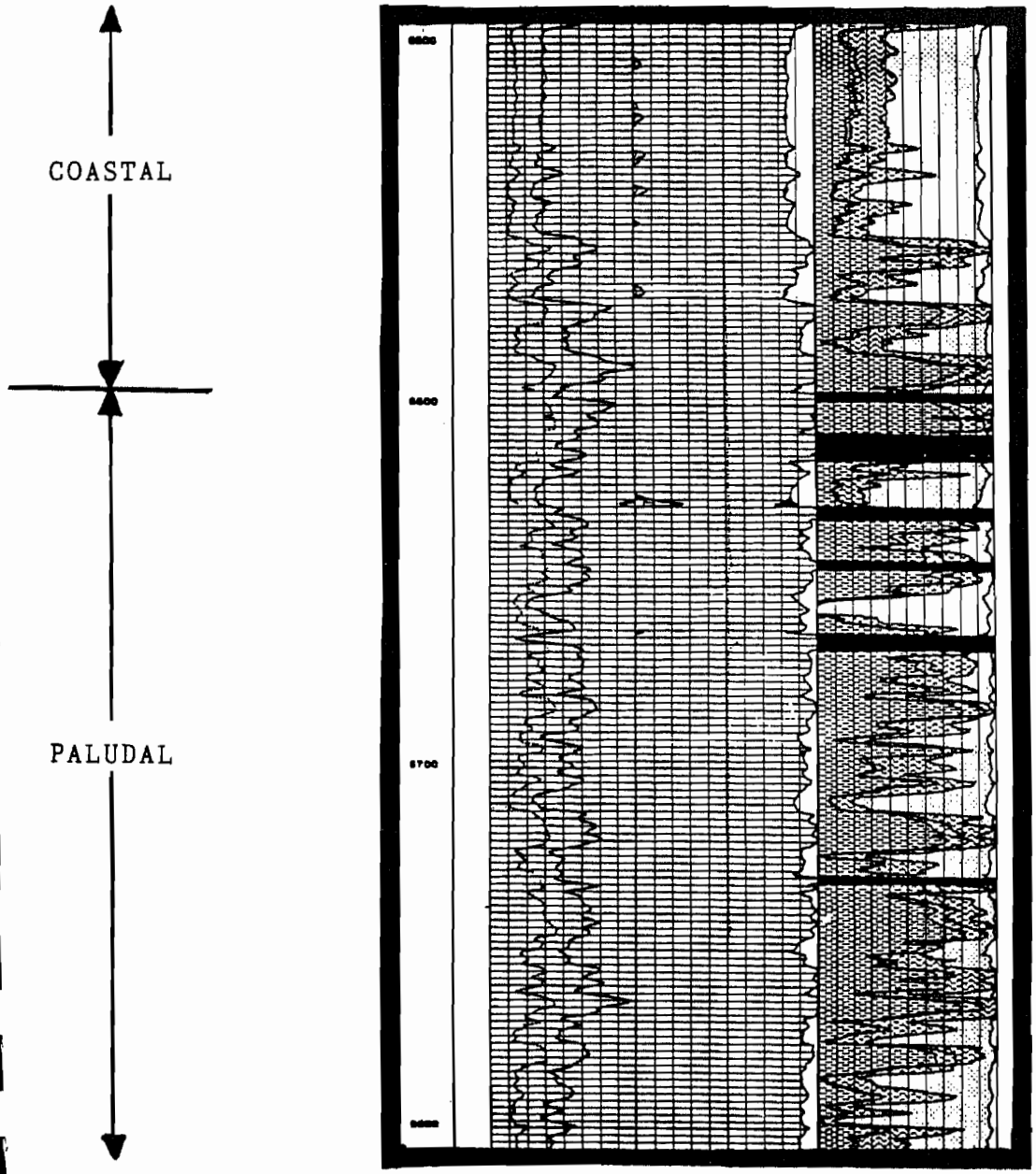

Figure A-2-1e: VOLAN Log Section of MWX-2 from 6500 ft to 6800 ft.

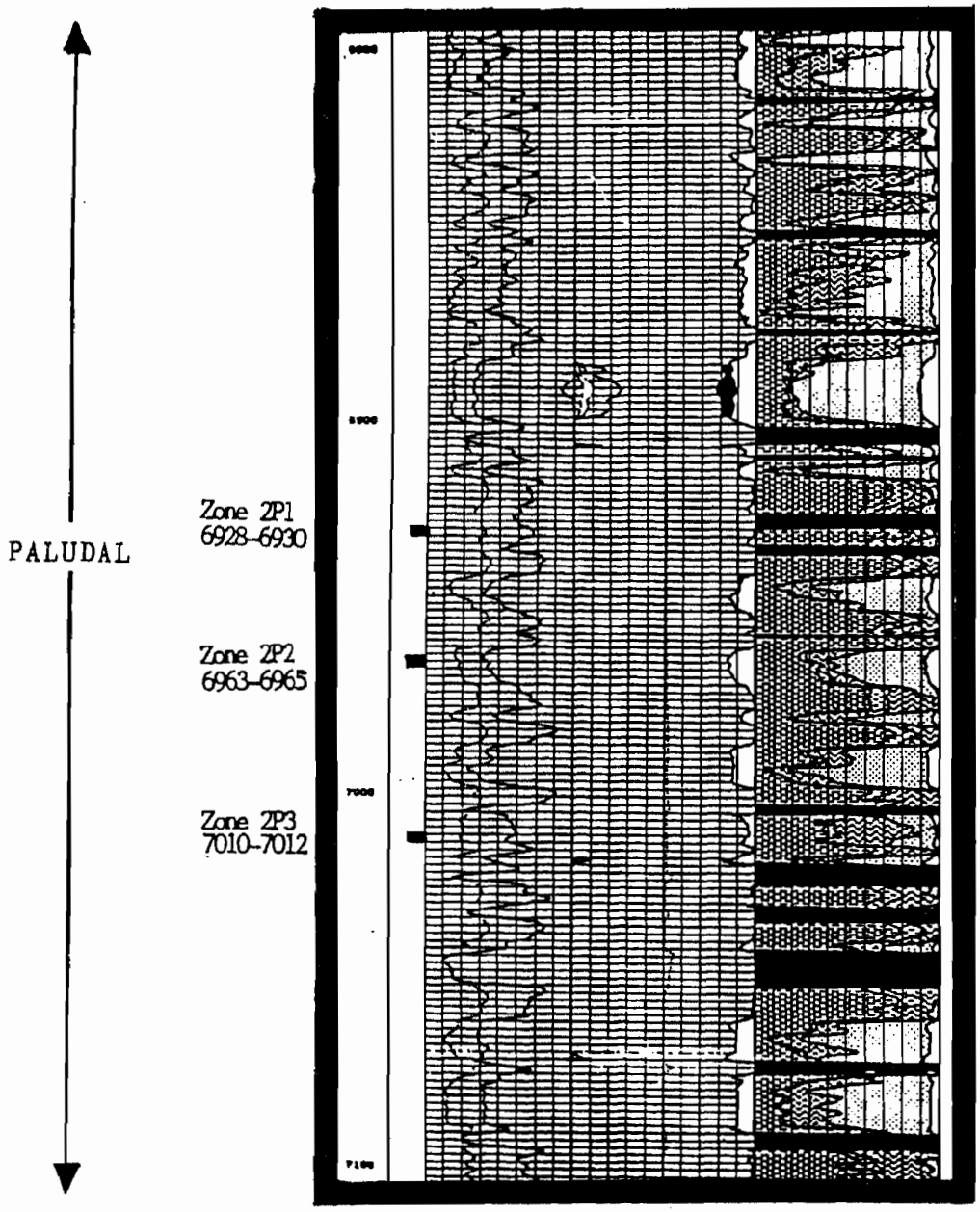

Figure A-2-1f: VOLAN Log Section of MWX-2 from 6800 ft to 7100 ft.

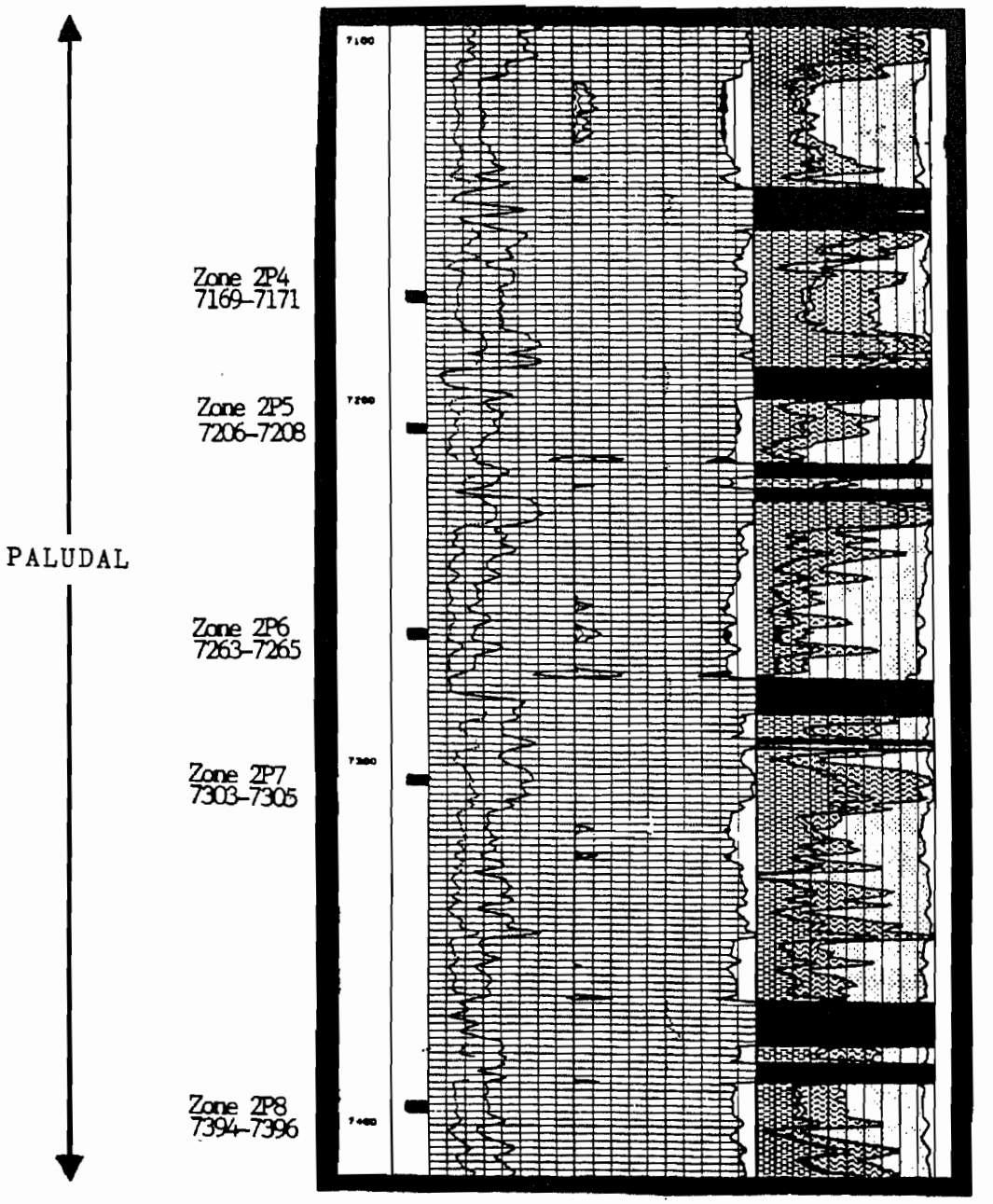

Figure A-2-1g: VOLAN Log Section of MWX-2 from 7100 ft to 7410 ft.

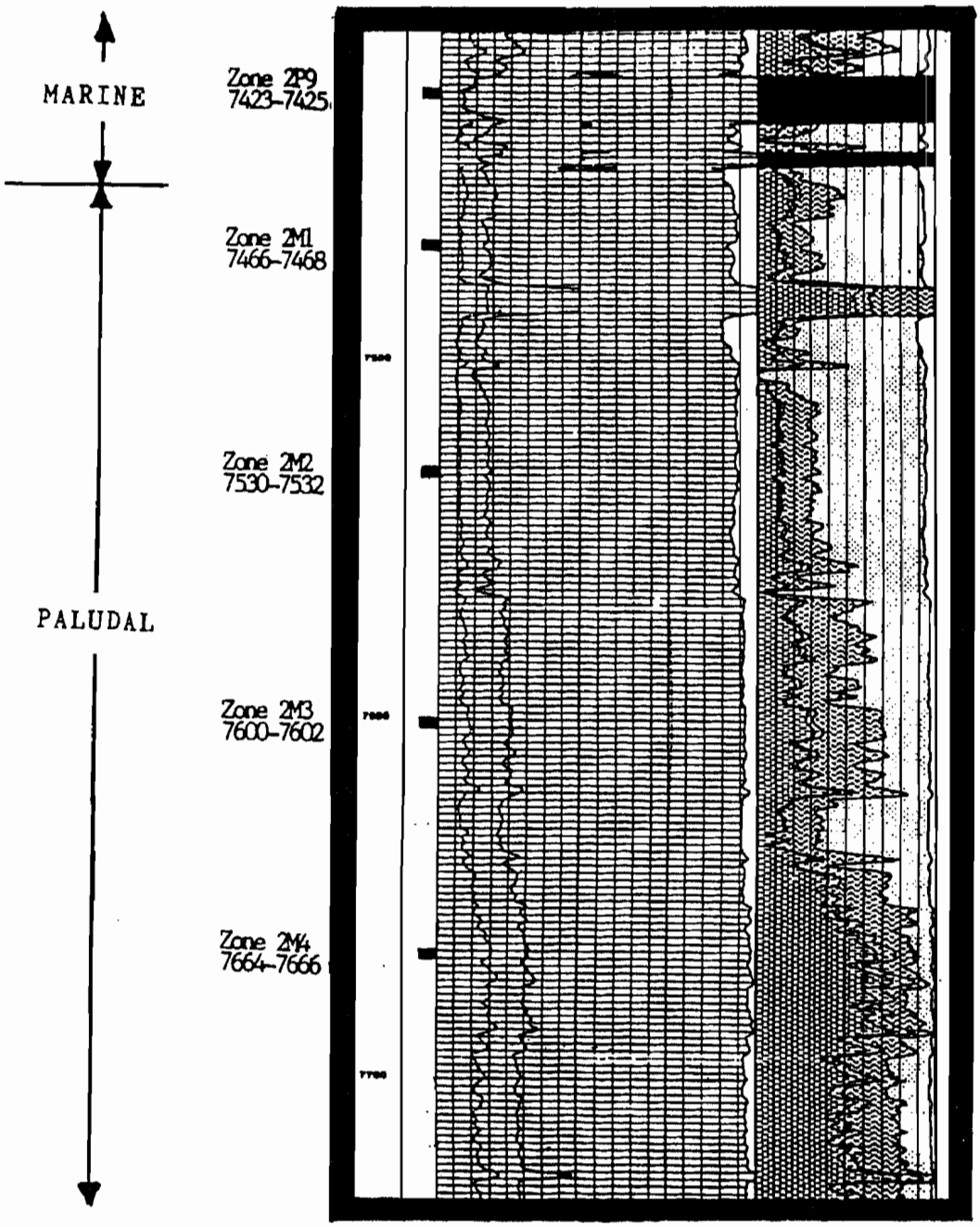

Figure A-2-1h: VOLAN Log Section of MWX-2 from 7410 ft to 7730 ft.

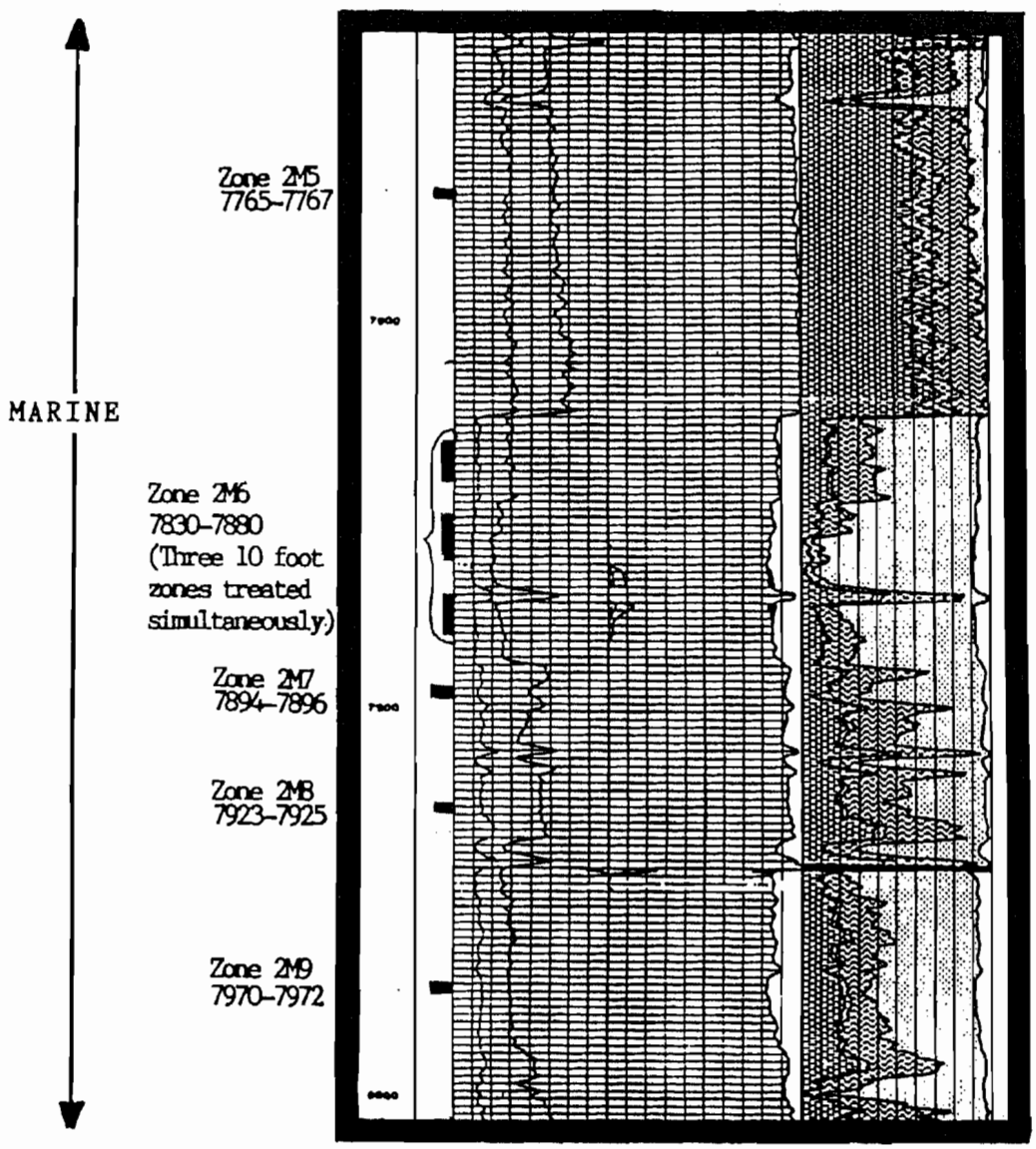

Figure A-2-li: VOLAN Log Section of MWX-2 from 7730 ft to 8000 ft.

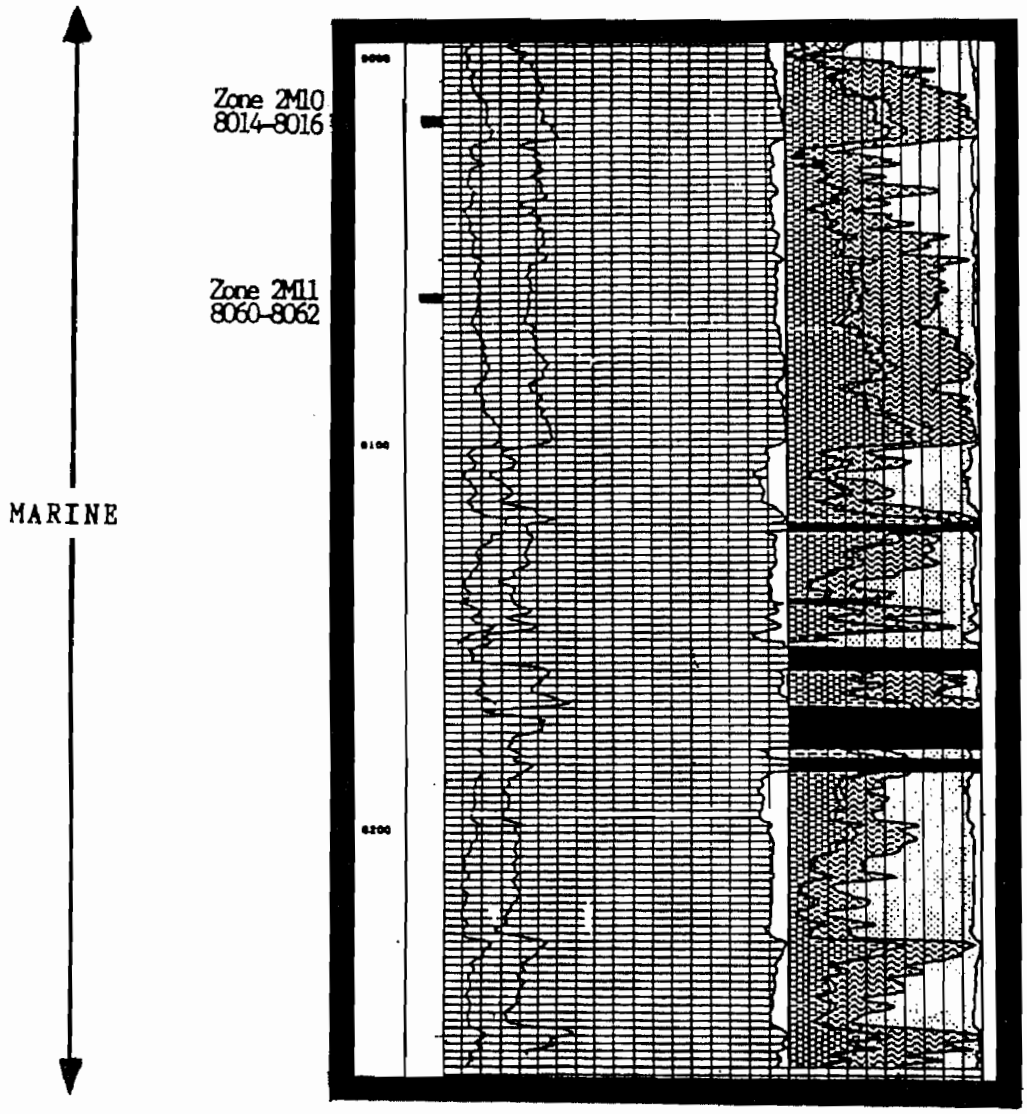

Figure A-2-1j: VOLAN Log Section of MWX-2 from 8000 ft to 8260 ft.

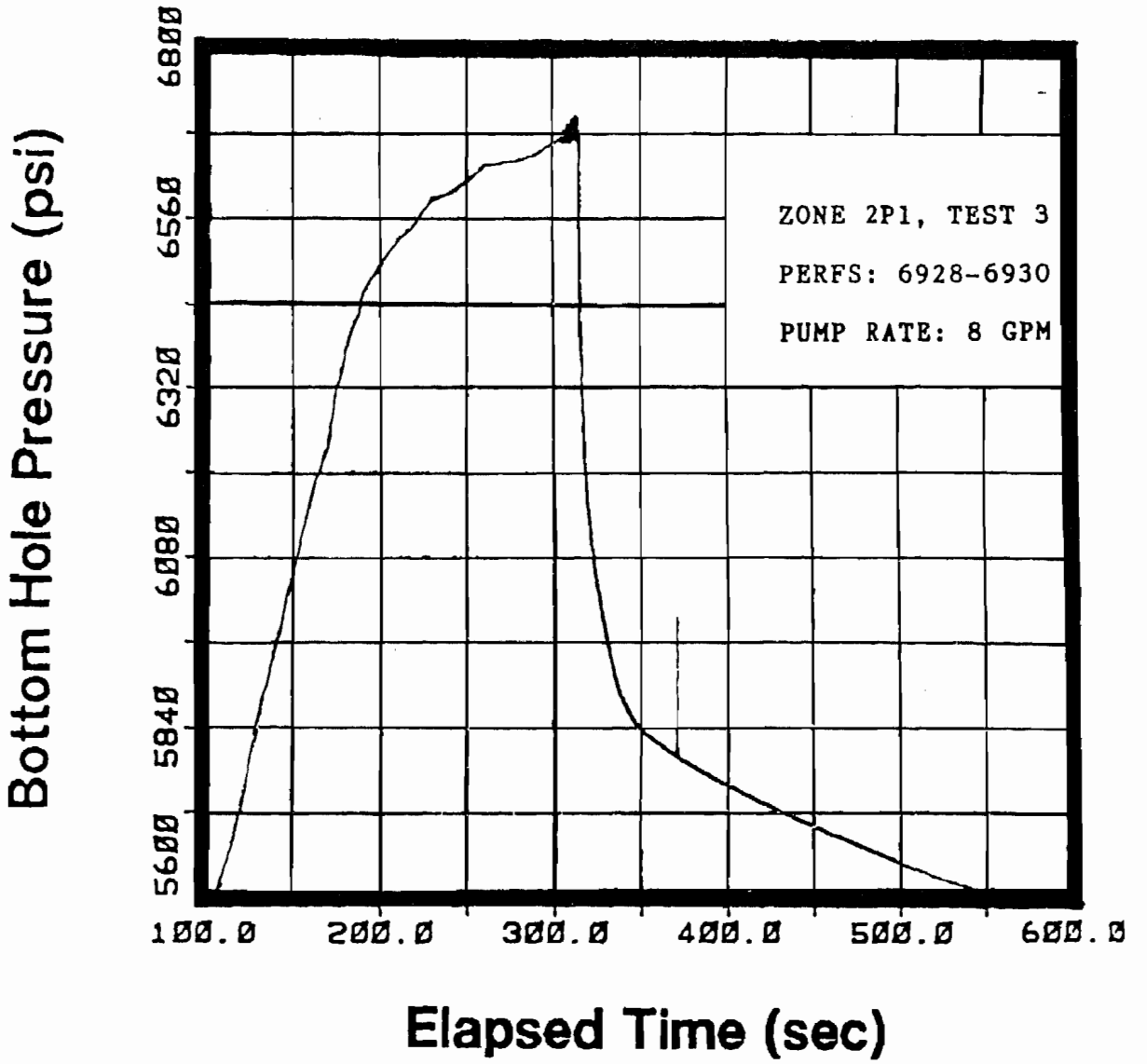

Figure A-2-2: Bottom Hole Pressure vs. Time: Test 3, Zone 2P1

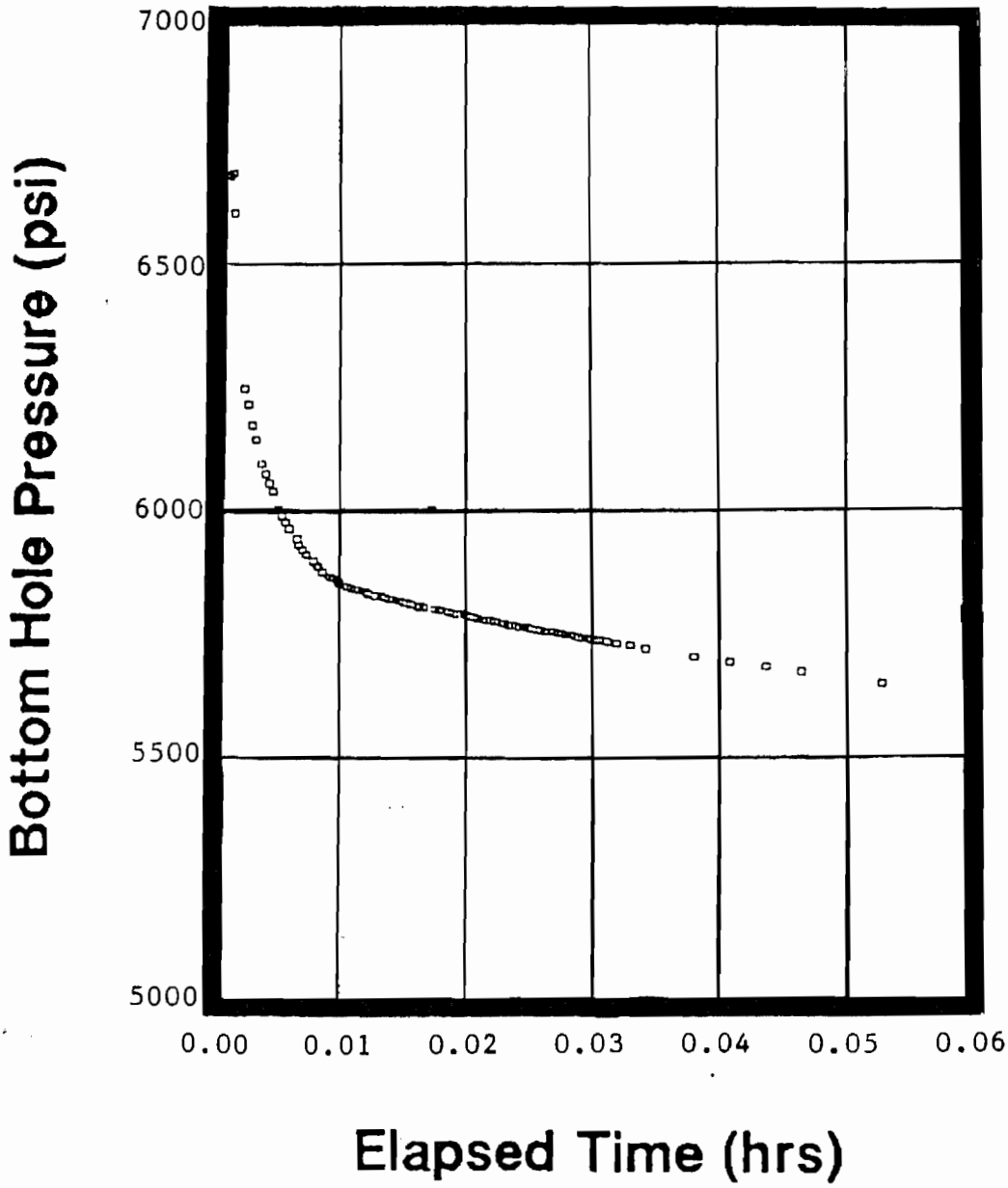

Figure A-2-3: Pressure Decline Plot (vs. Time): Test 3, Zone 2P1

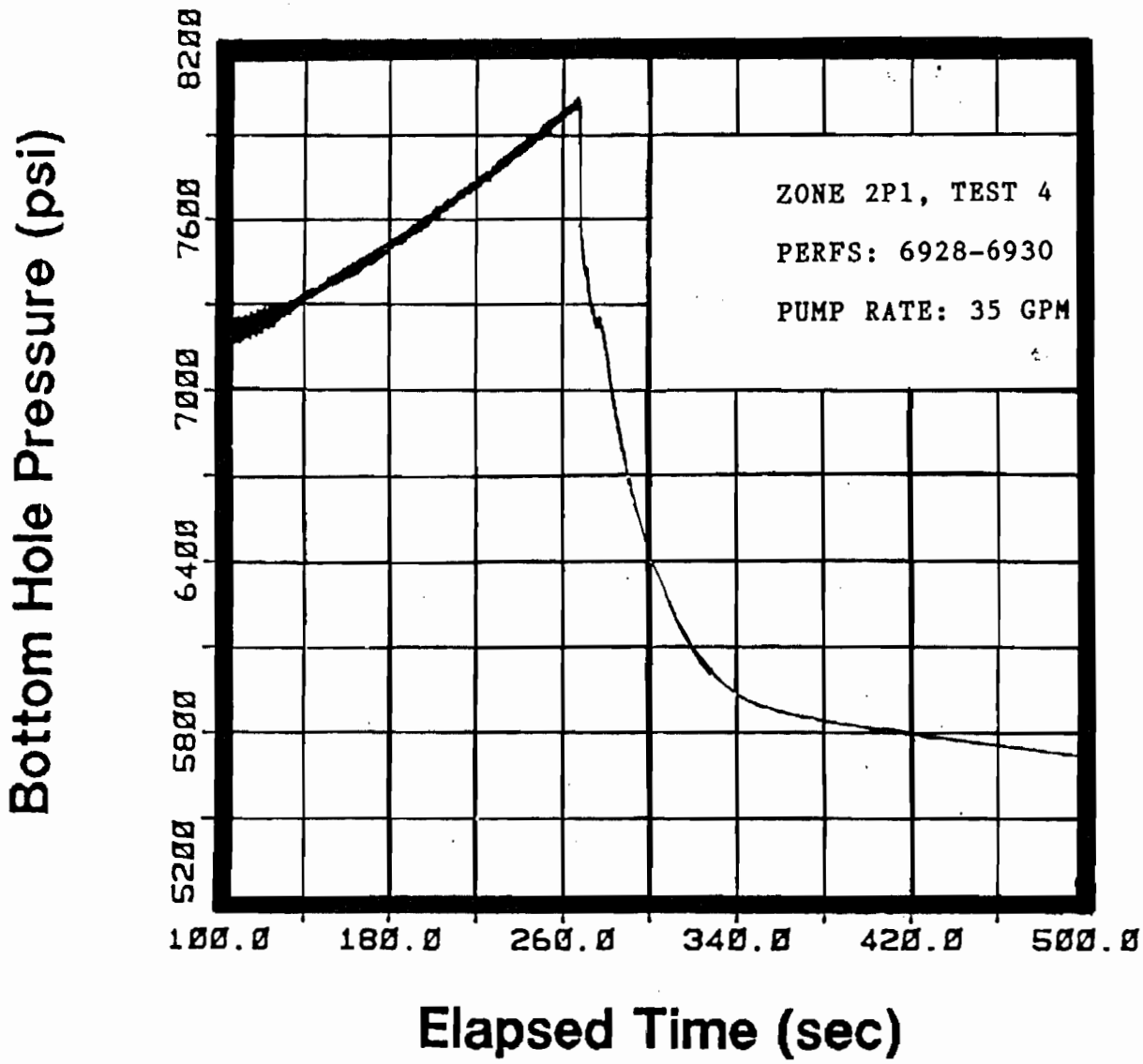

Figure A-2-5: Bottom Hole Pressure vs. Time: Test 4, Zone 2P1

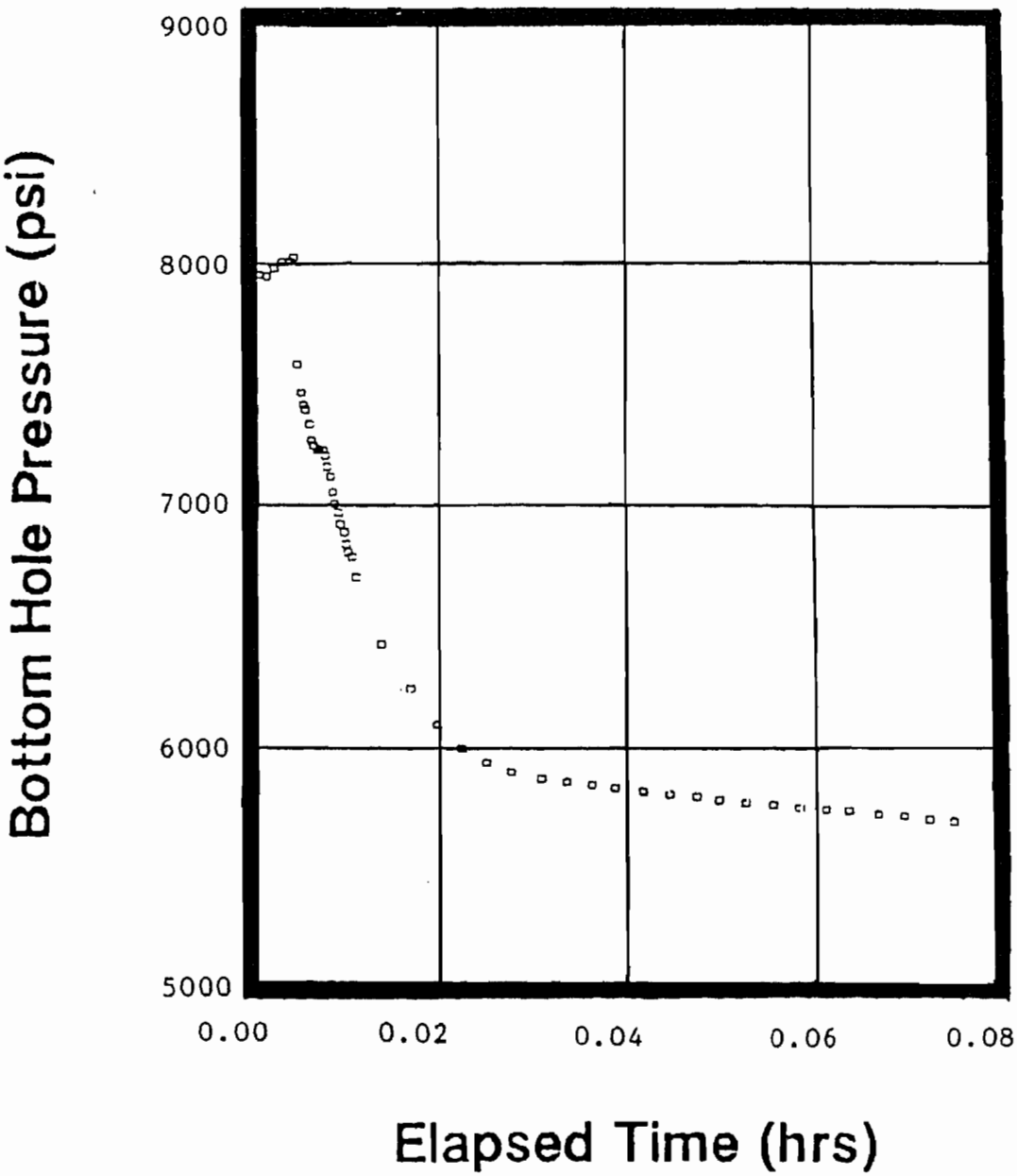

Figure A-2-6: Pressure Decline Plot (vs. Time): Test 4, Zone 2P1

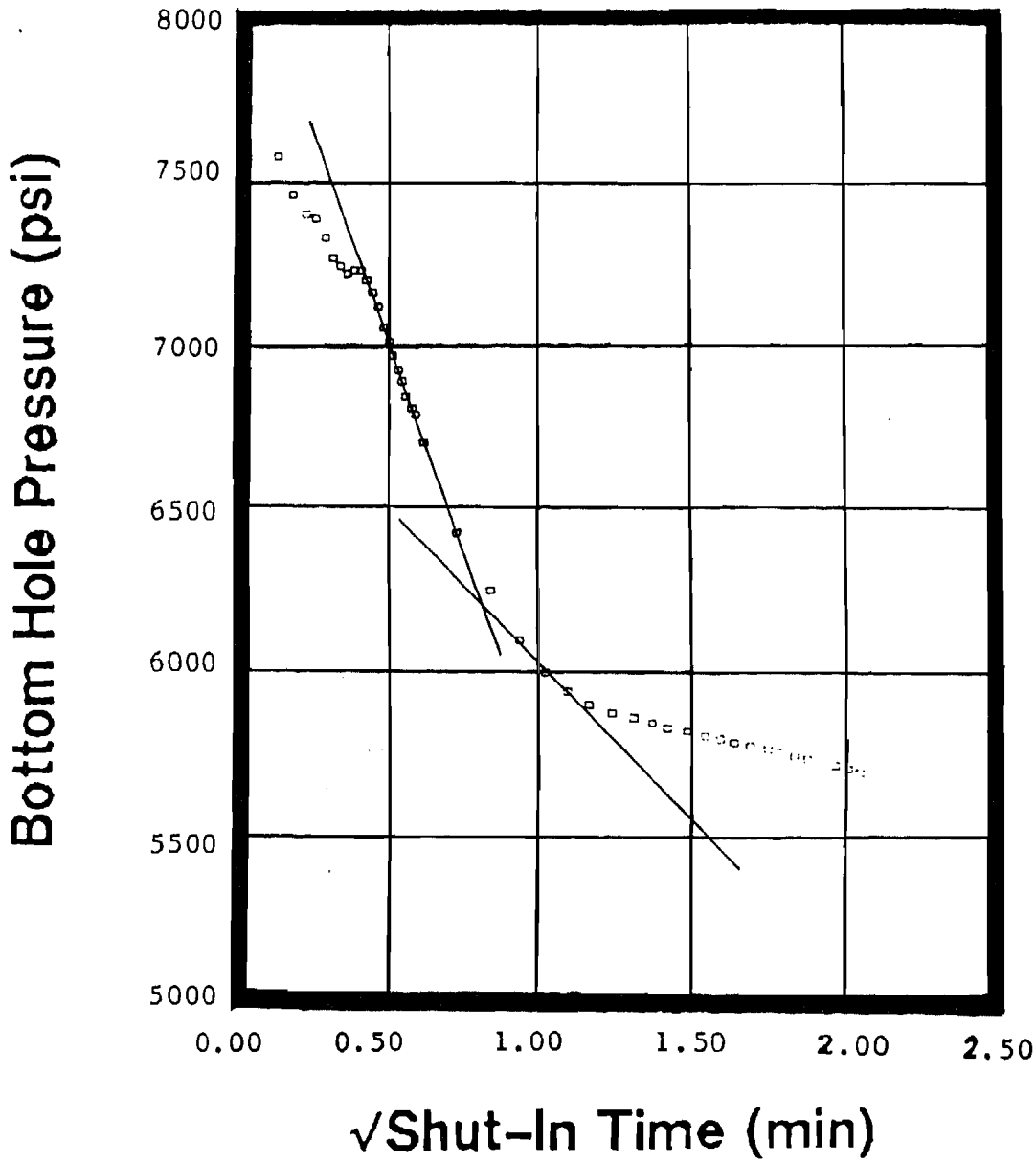

Figure A-2-7: Pressure Decline Plot (vs. Square Root Time): Test 4, Zone 2P1

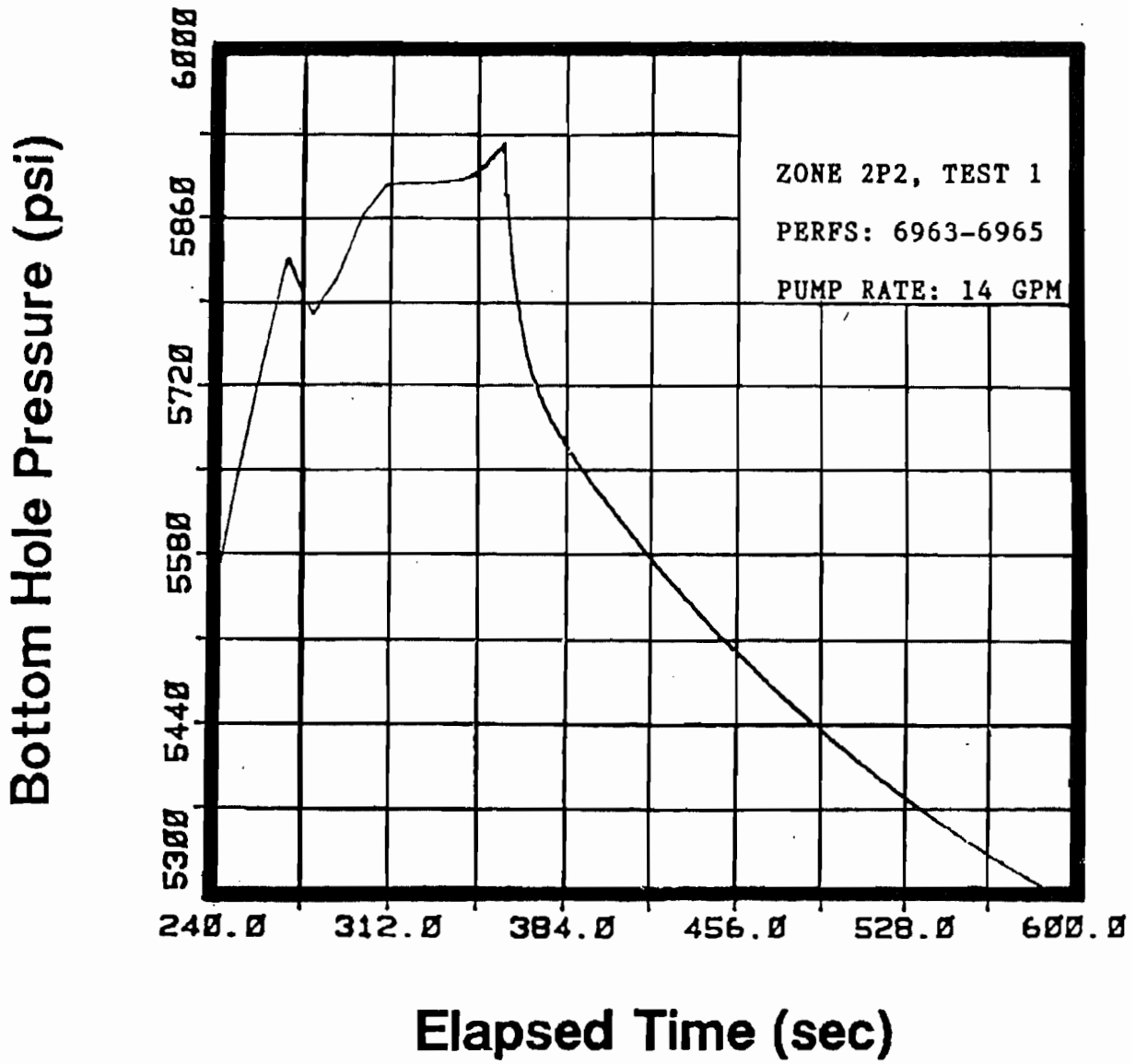

Figure A-2-8: Bottom Hole Pressure vs. Time: Test 1, Zone 2P2

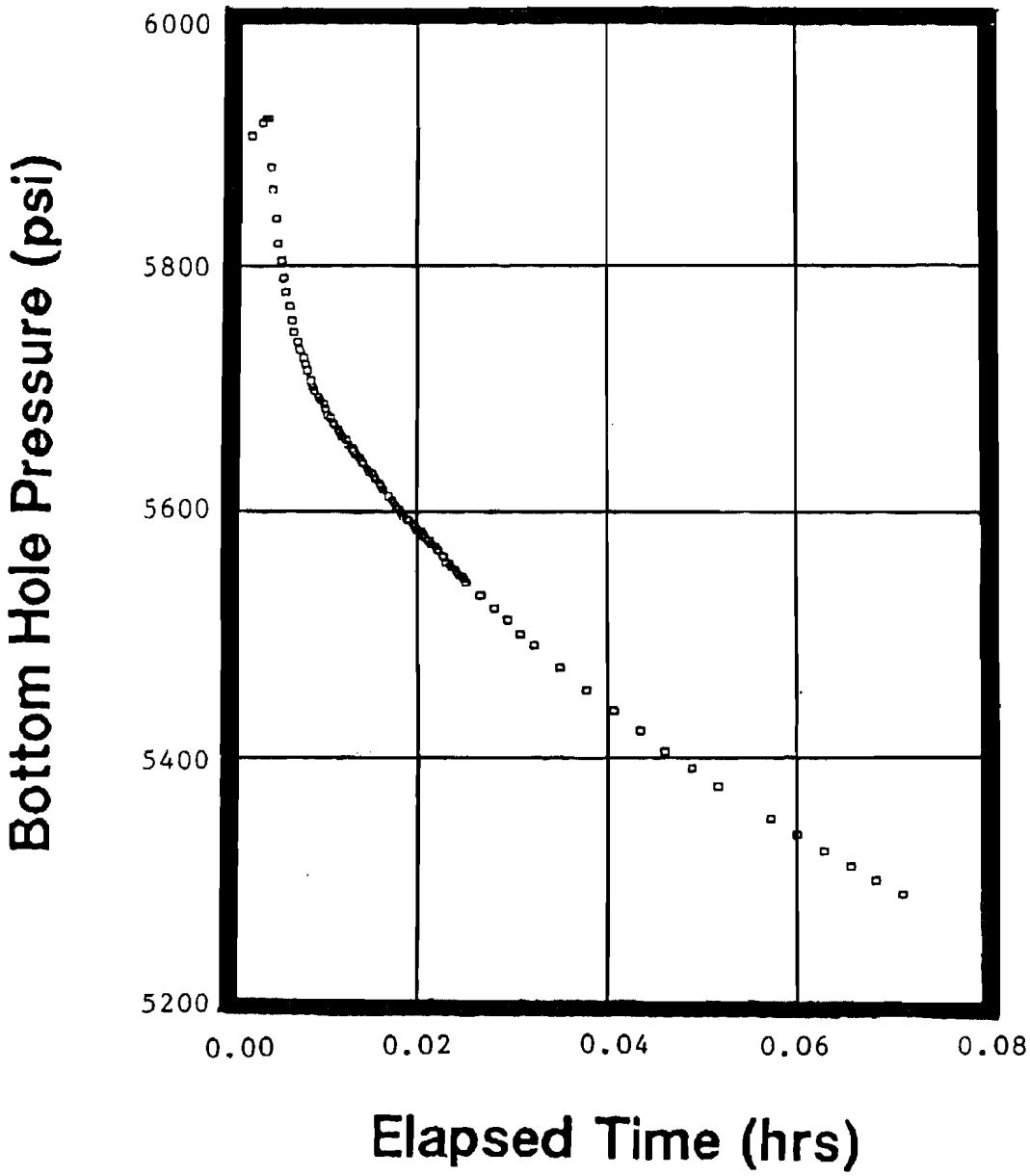

Figure A-2-9: Pressure Decline Plot (vs. Time): Test 1, Zone 2P2

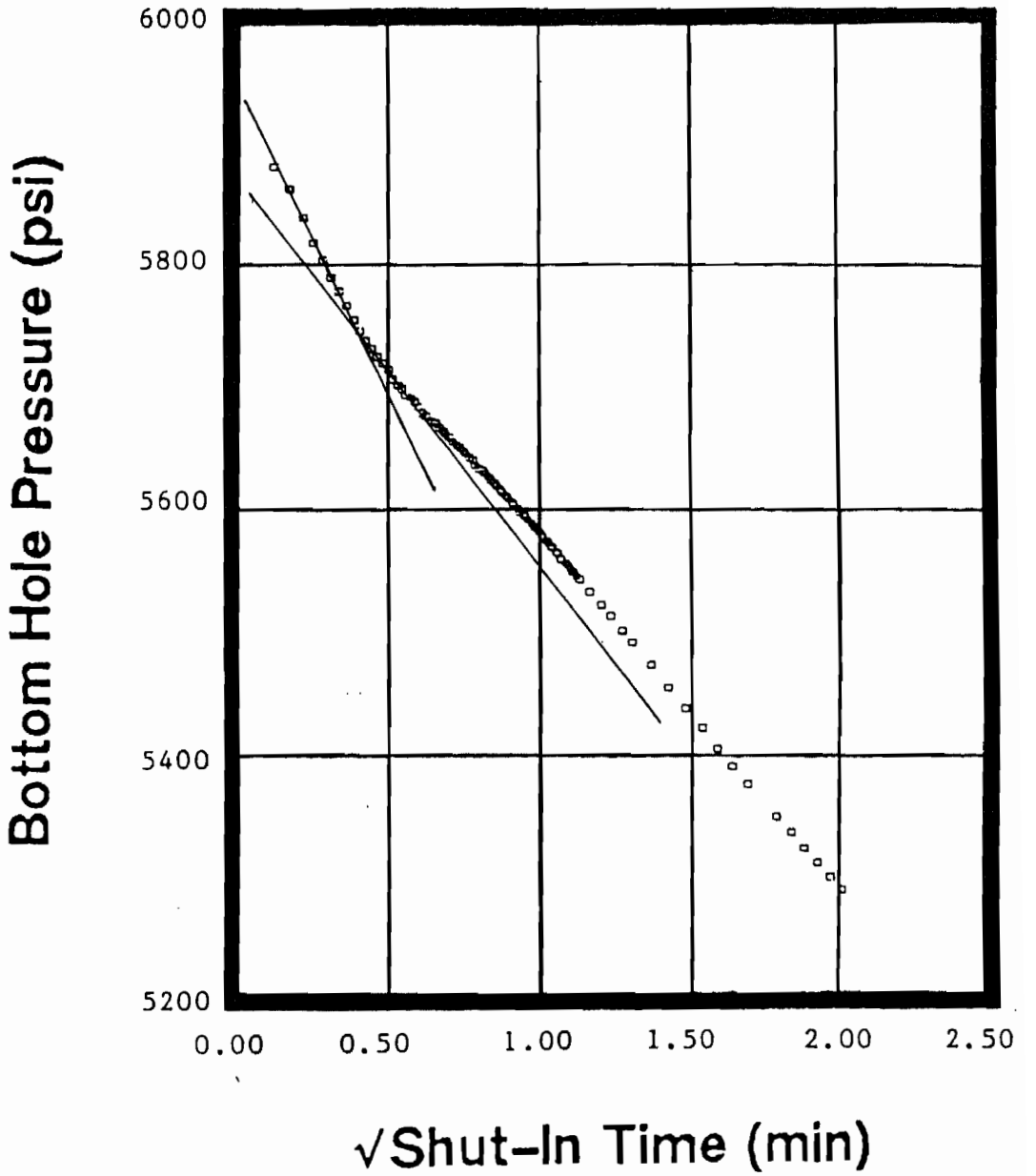

Figure A-2-10: Pressure Decline Plot (vs. Square Root Time): Test 1, Zone 2P2

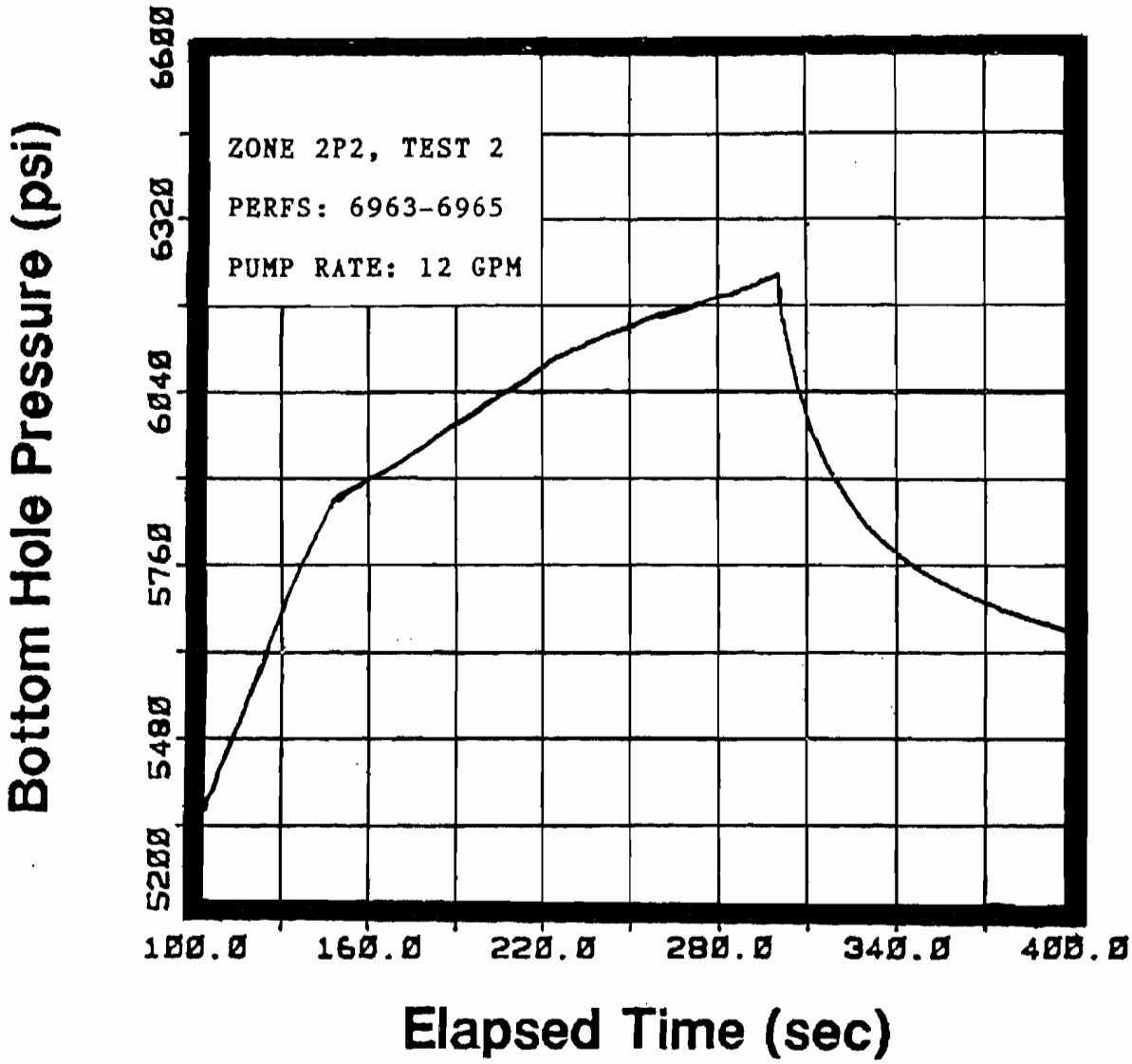

Figure A-2-11: Bottom Hole Pressure vs. Time: Test 2, Zone 2P2

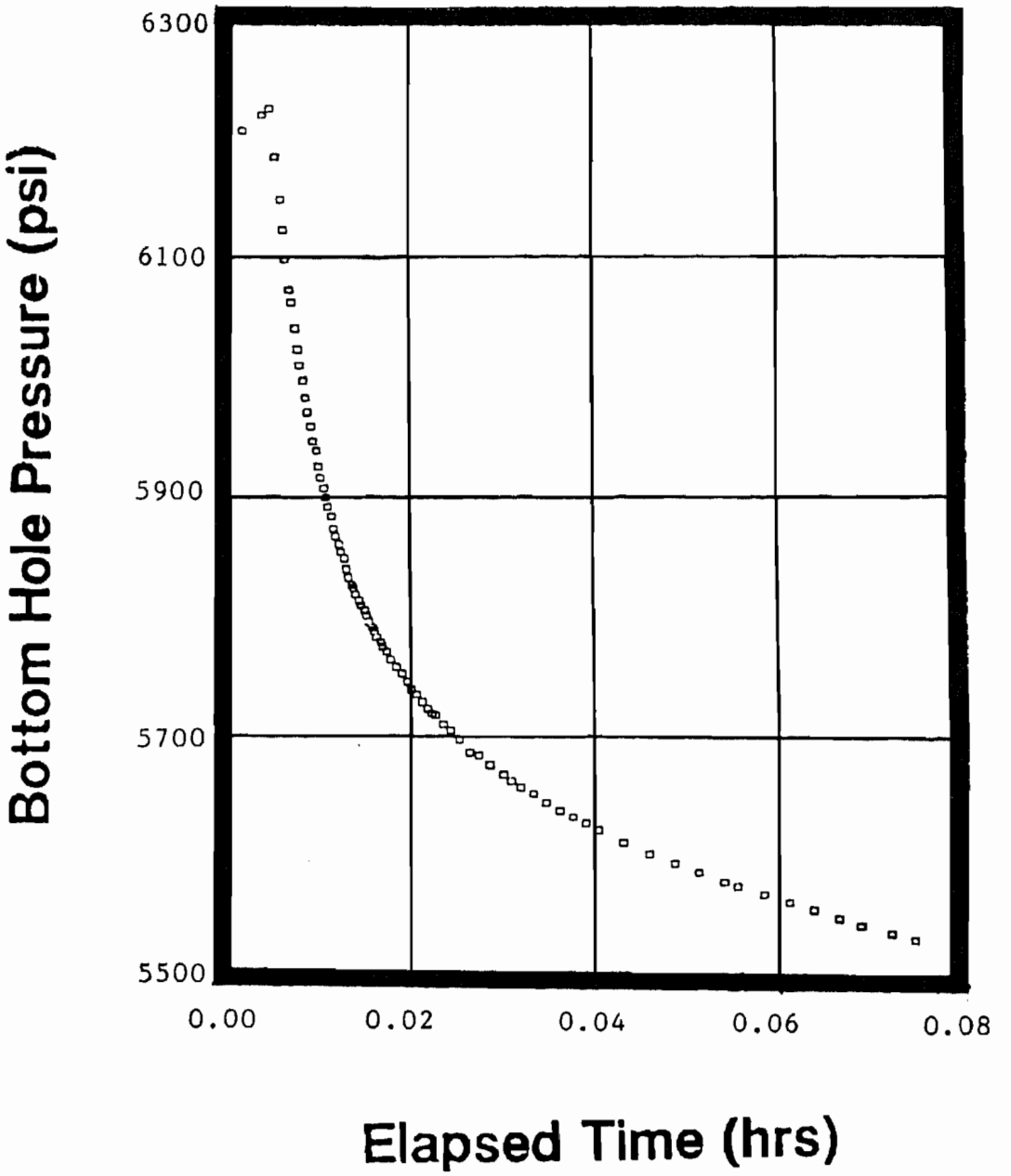

Figure A-2-12: Pressure Decline Plot (vs. Time): Test 2, Zone 2P2

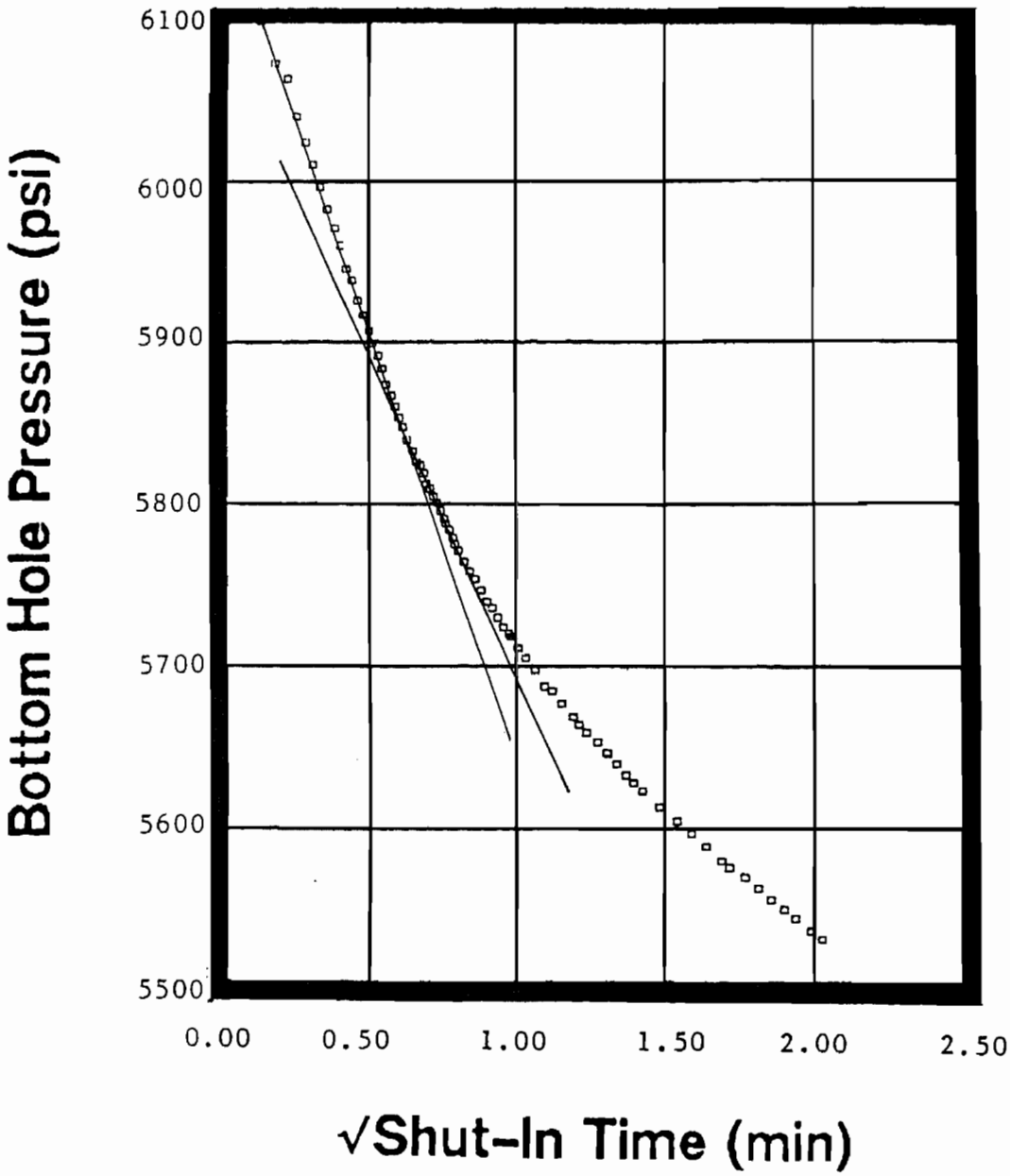

Figure A-2-13: Pressure Decline Plot (vs. Square Root Time): Test 2, Zone 2P2

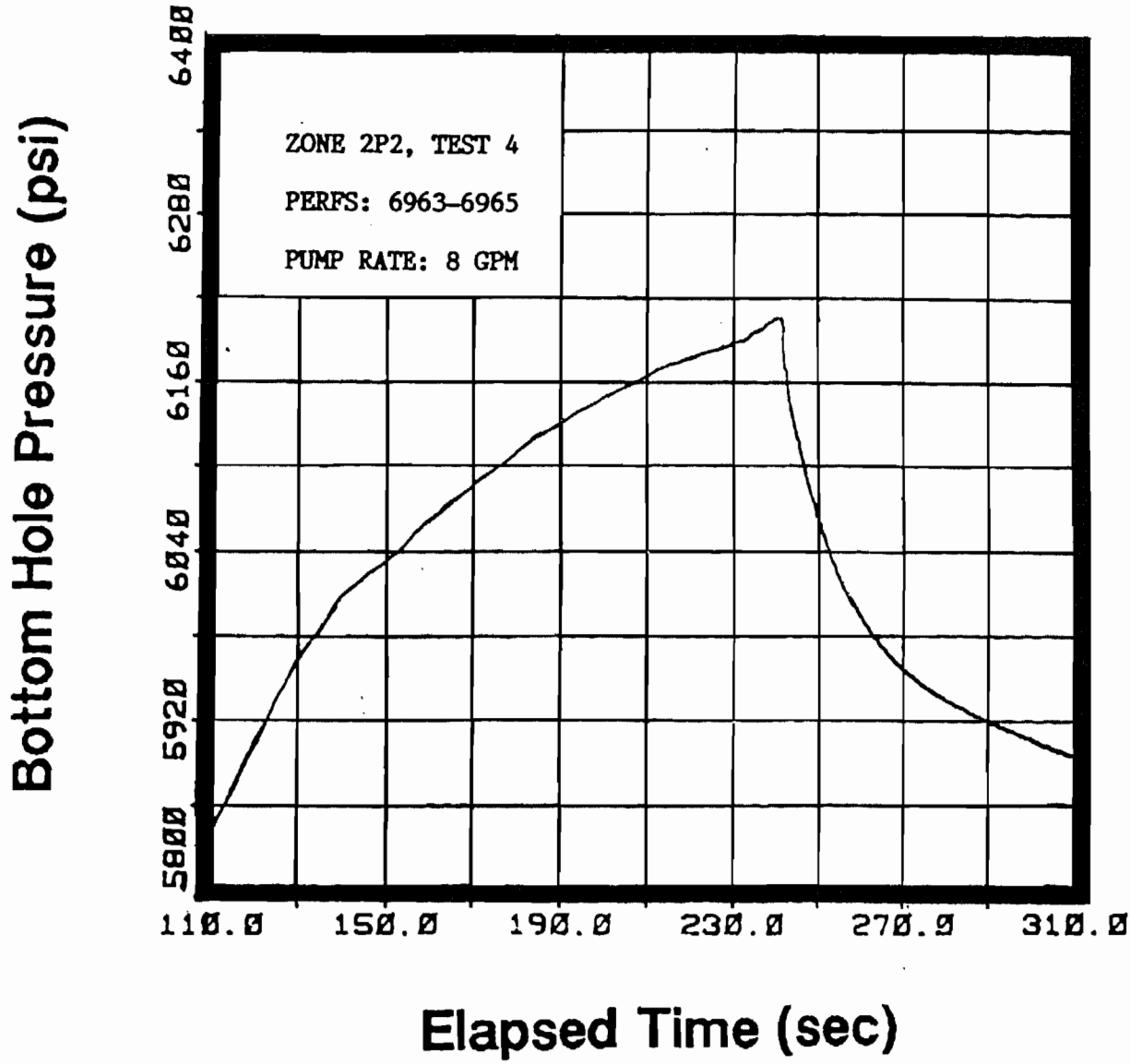

Figure A-2-14: Bottom Hole Pressure vs. Time: Test 4, Zone 2P2

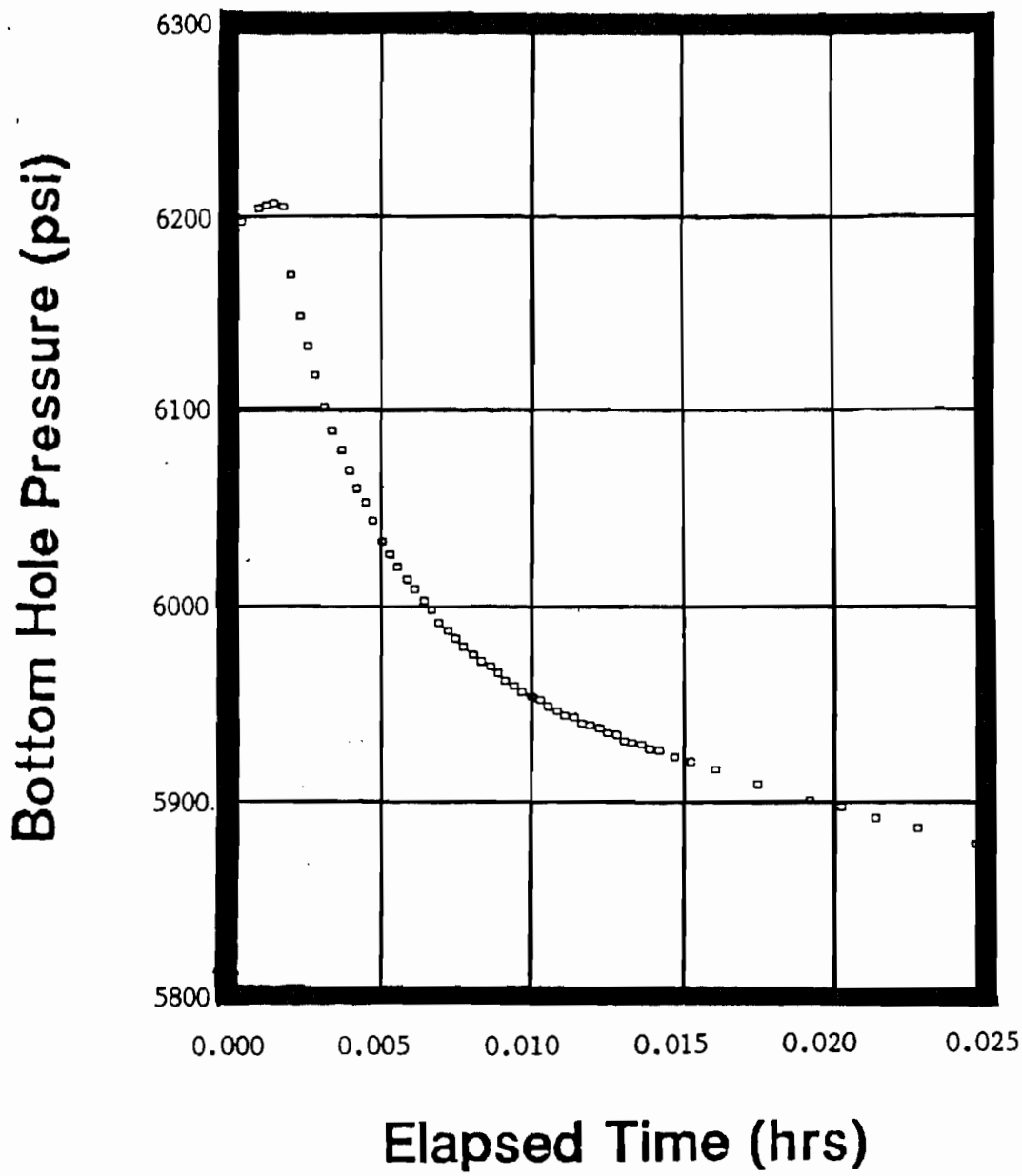

Figure A-2-15: Pressure Decline Plot (vs. Time): Test 4, Zone 2P2

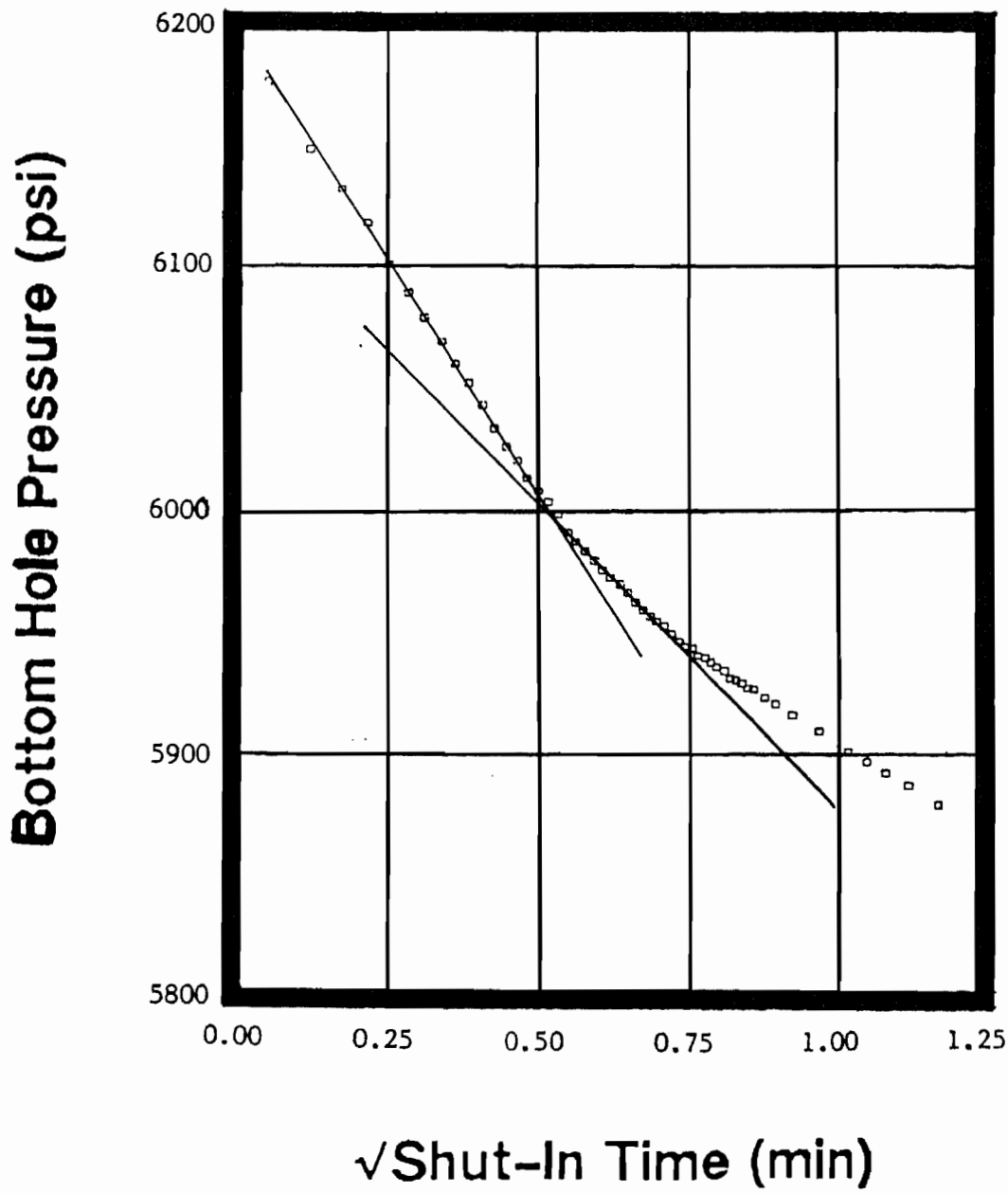

Figure A-2-16: Pressure Decline Plot (vs. Square Root Time): Test 4, Zone 2P2

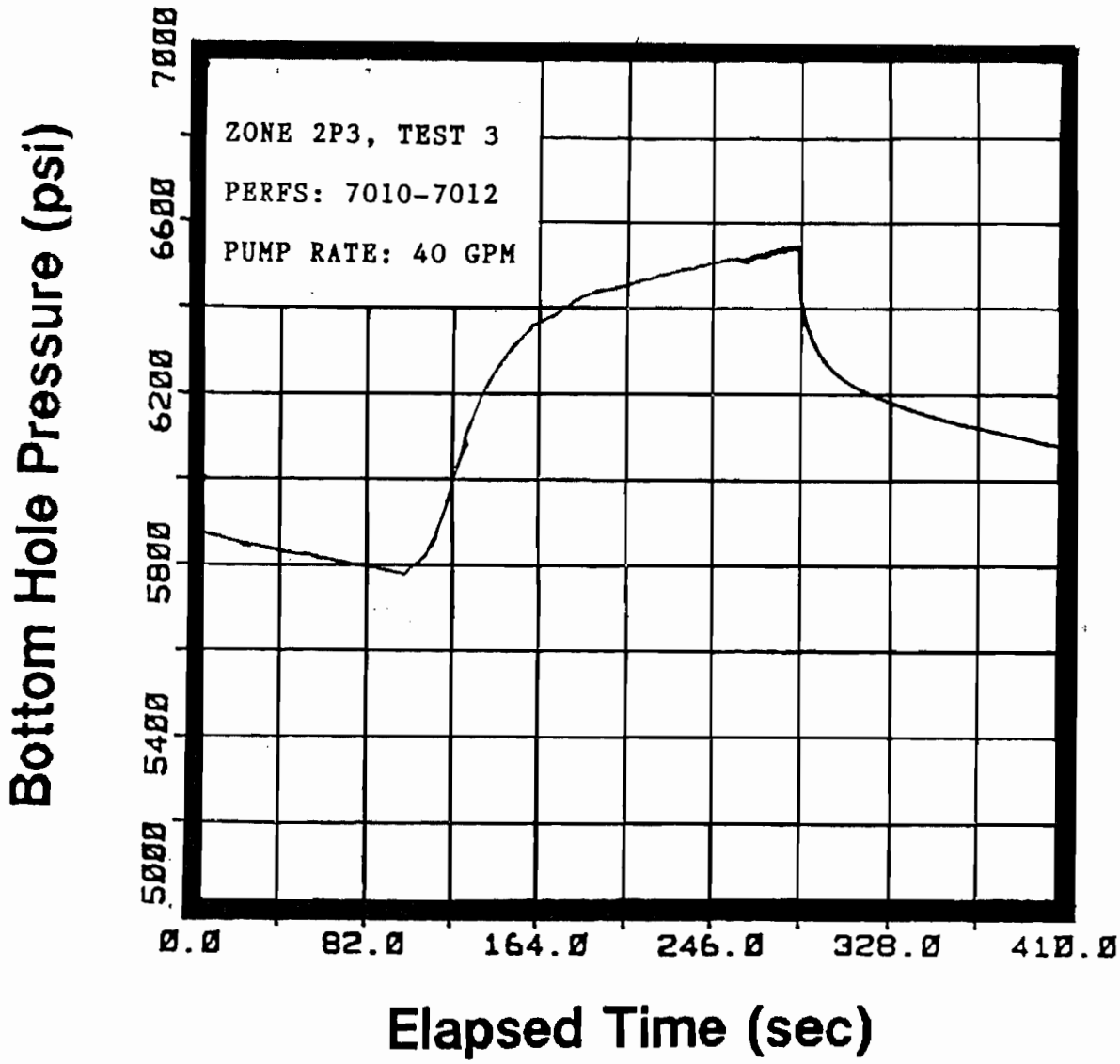

Figure A-2-17: Bottom Hole Pressure vs. Time: Test 3, Zone 2P3

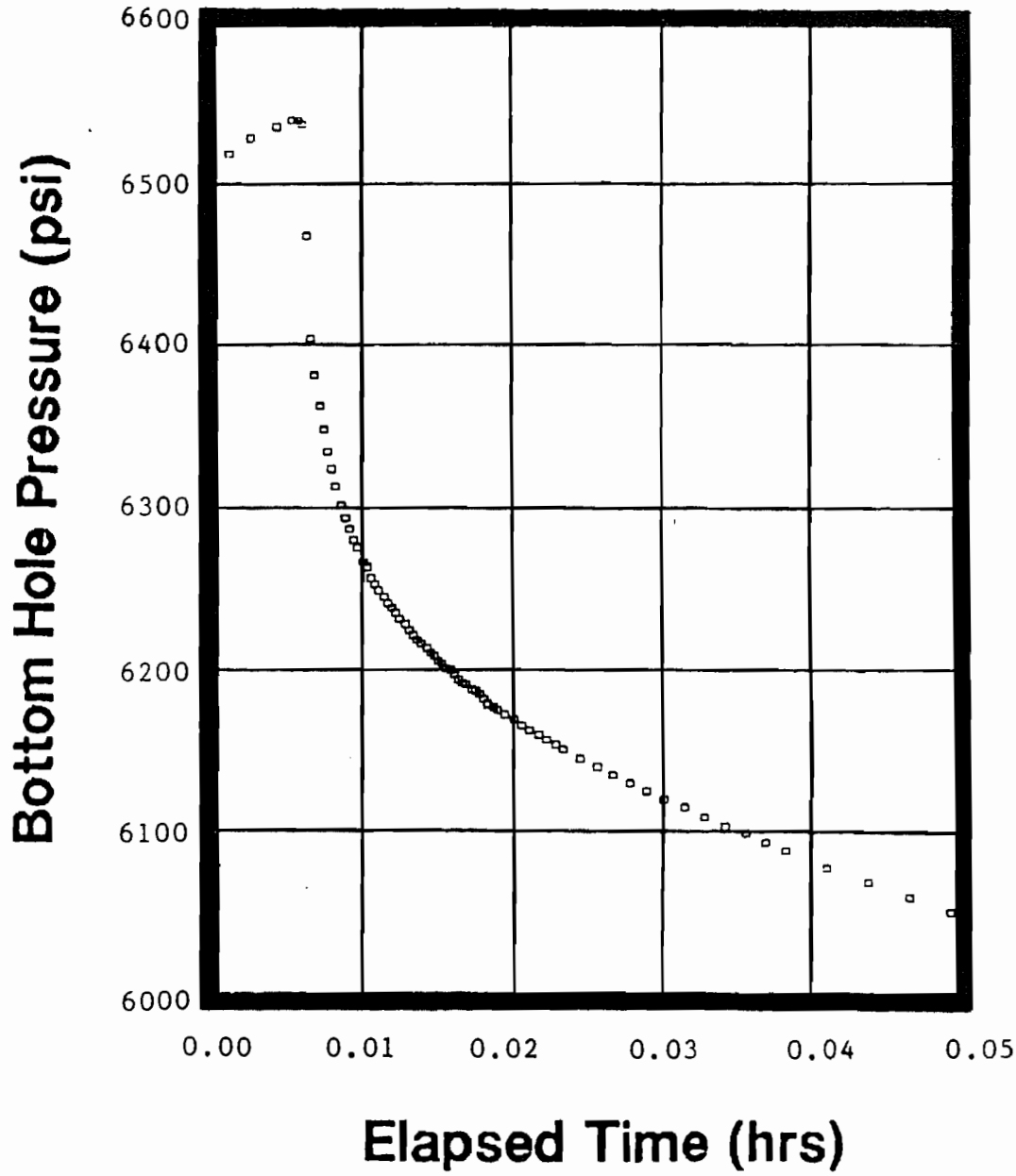

Figure A-2-18: Pressure Decline Plot (vs. Time): Test 3, Zone 2P3

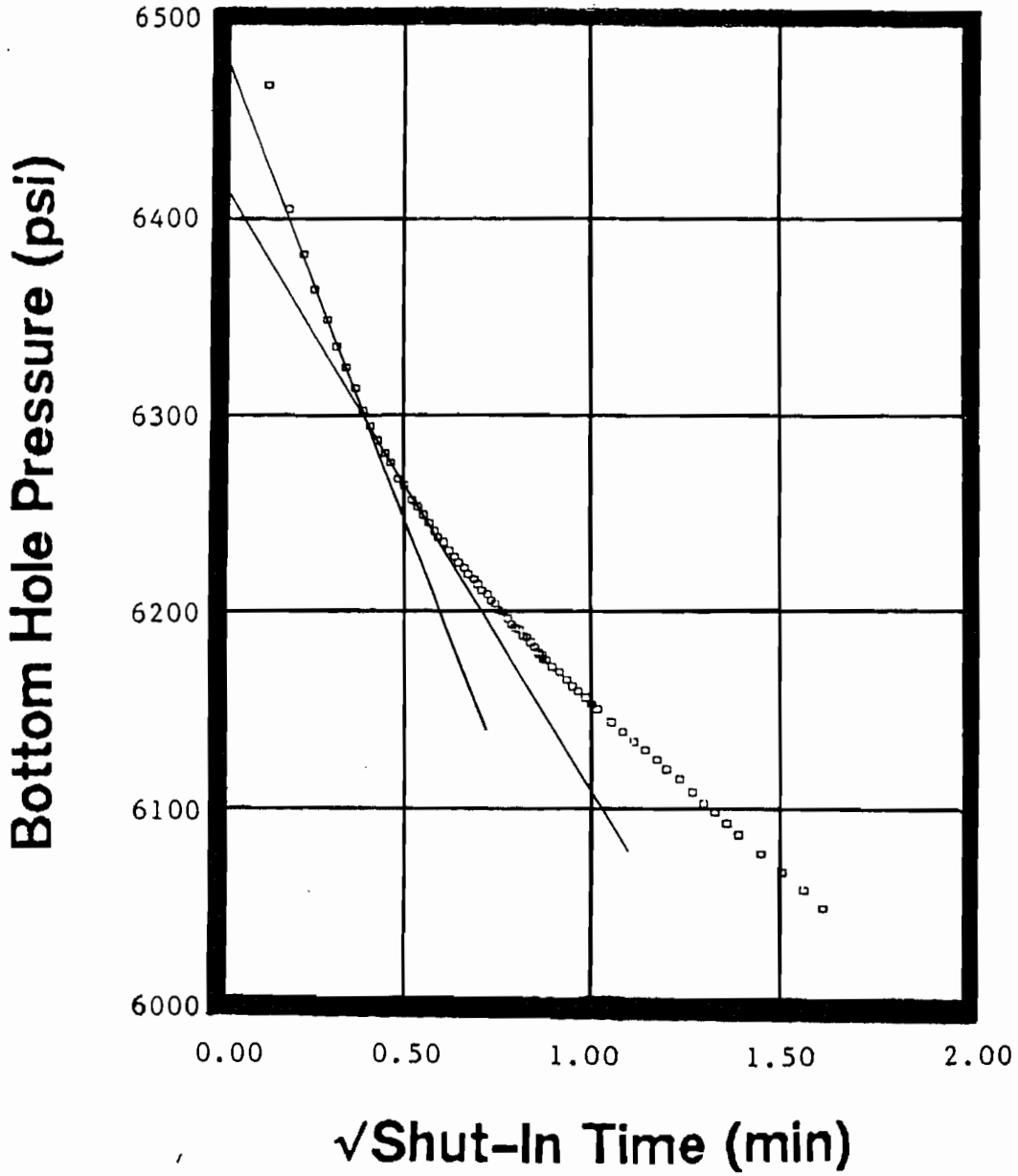

Figure A-2-19: Pressure Decline Plot (vs. Square Root Time): Test 3, Zone 2P3

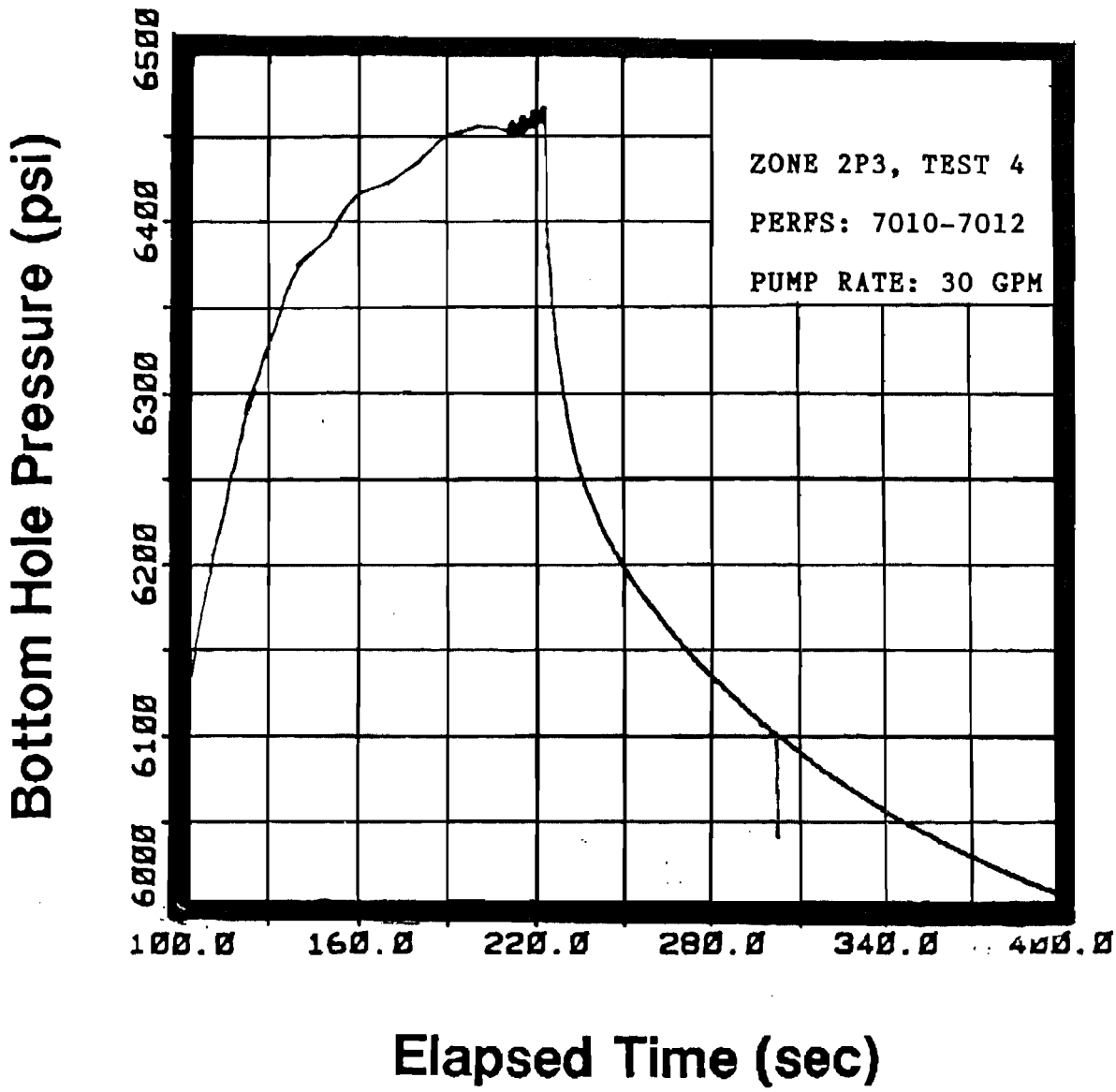

Figure A-2-20: Bottom Hole Pressure vs. Time: Test 4, Zone 2P3

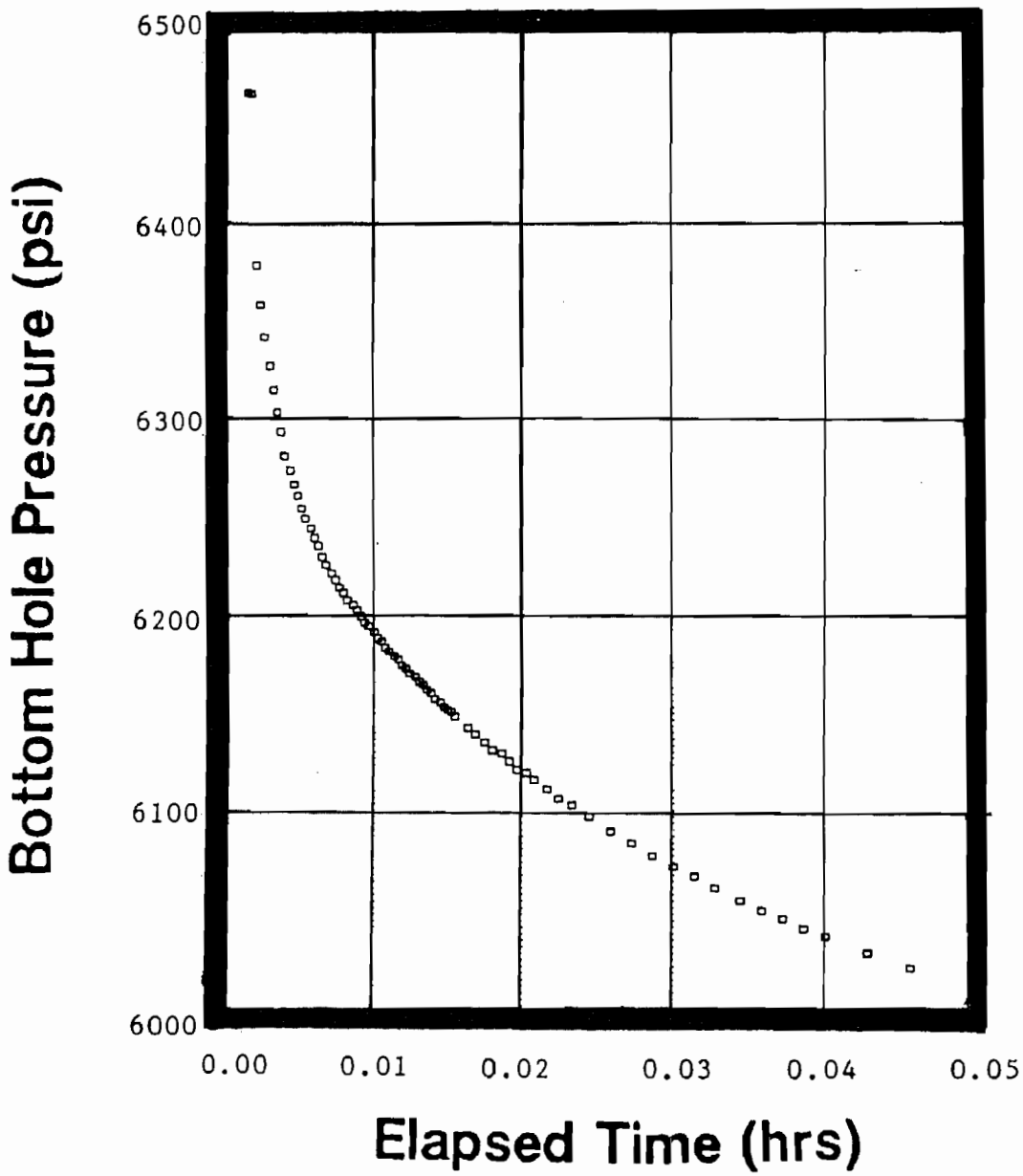

Figure A-2-21: Pressure Decline Plot (vs. Time): Test 4, Zone 2P3

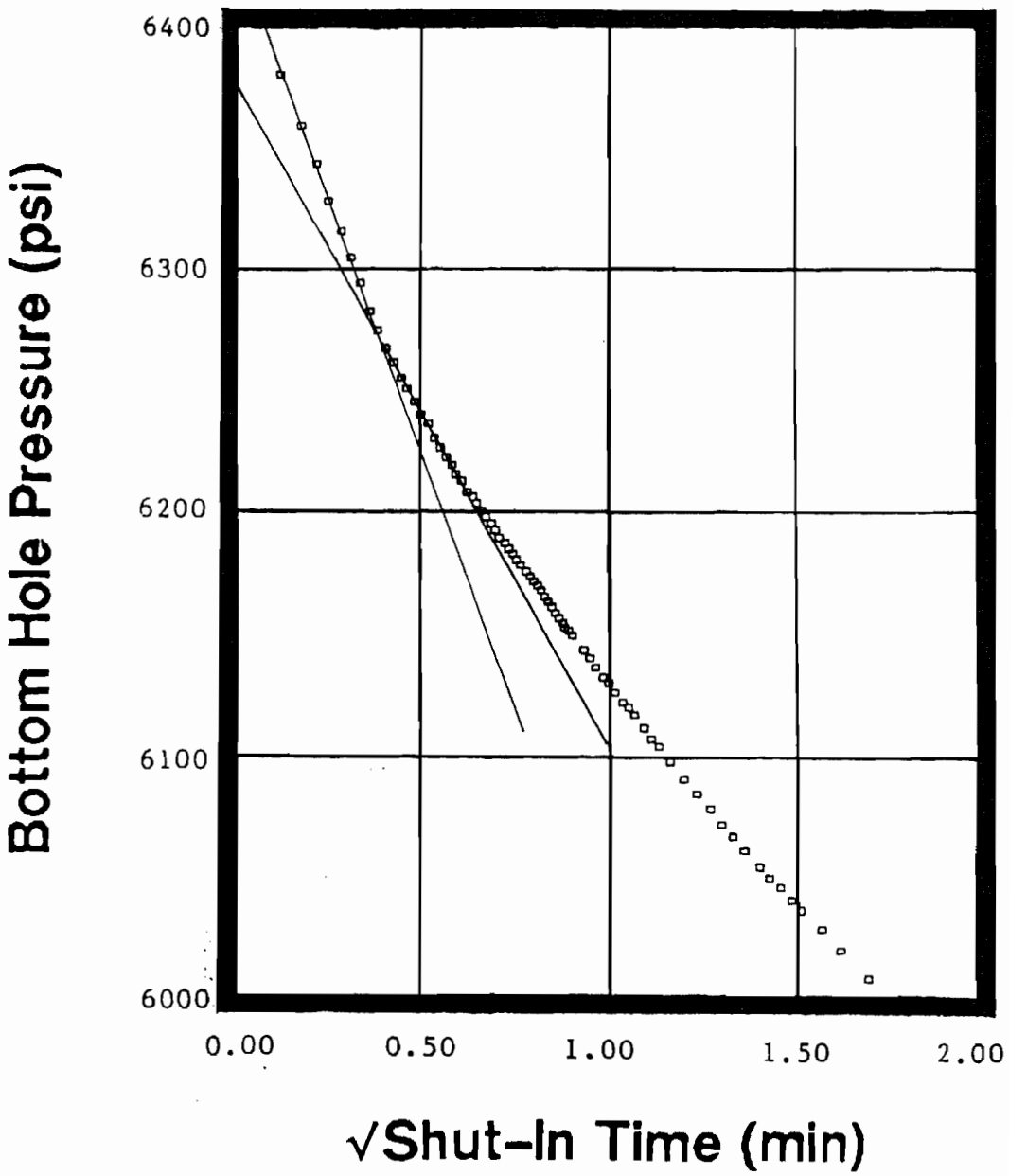

Figure A-2-22: Pressure Decline Plot (vs. Square Root Time): Test 4, Zone 2P3

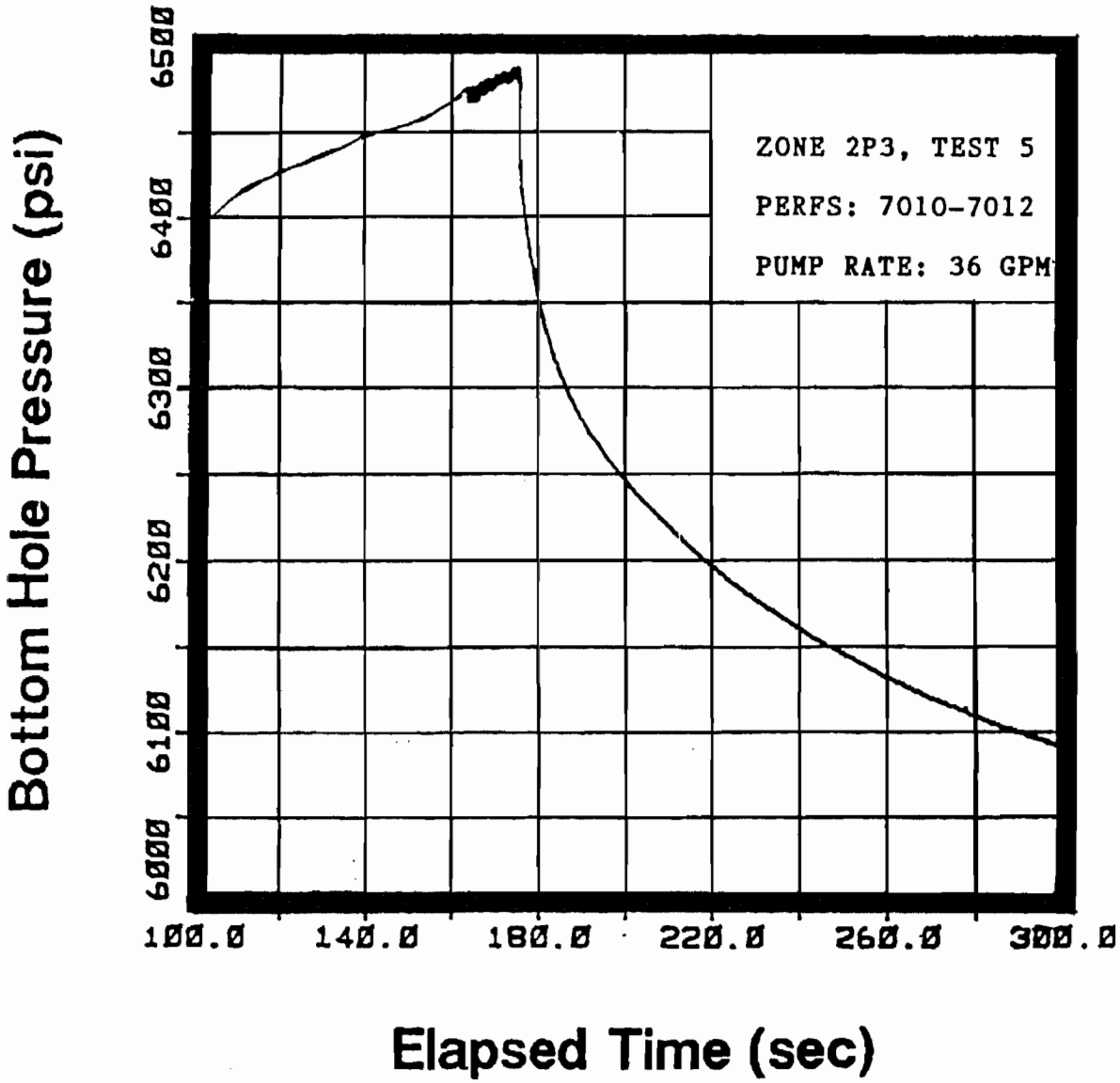

Figure A-2-23: Bottom Hole Pressure vs. Time: Test 5, Zone 2P3

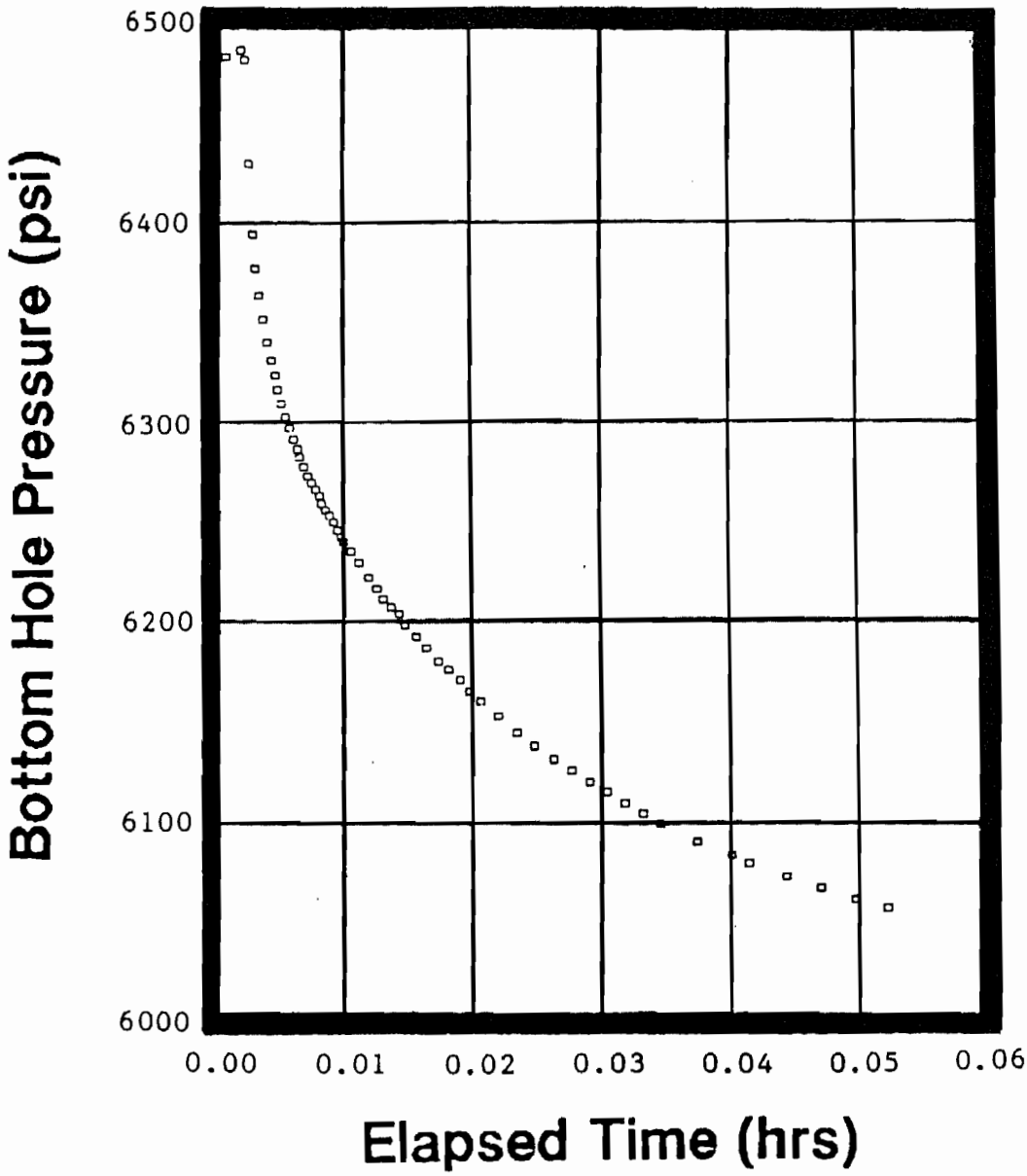

Figure A-2-24: Pressure Decline Plot (vs. Time): Test 5, Zone 2P3

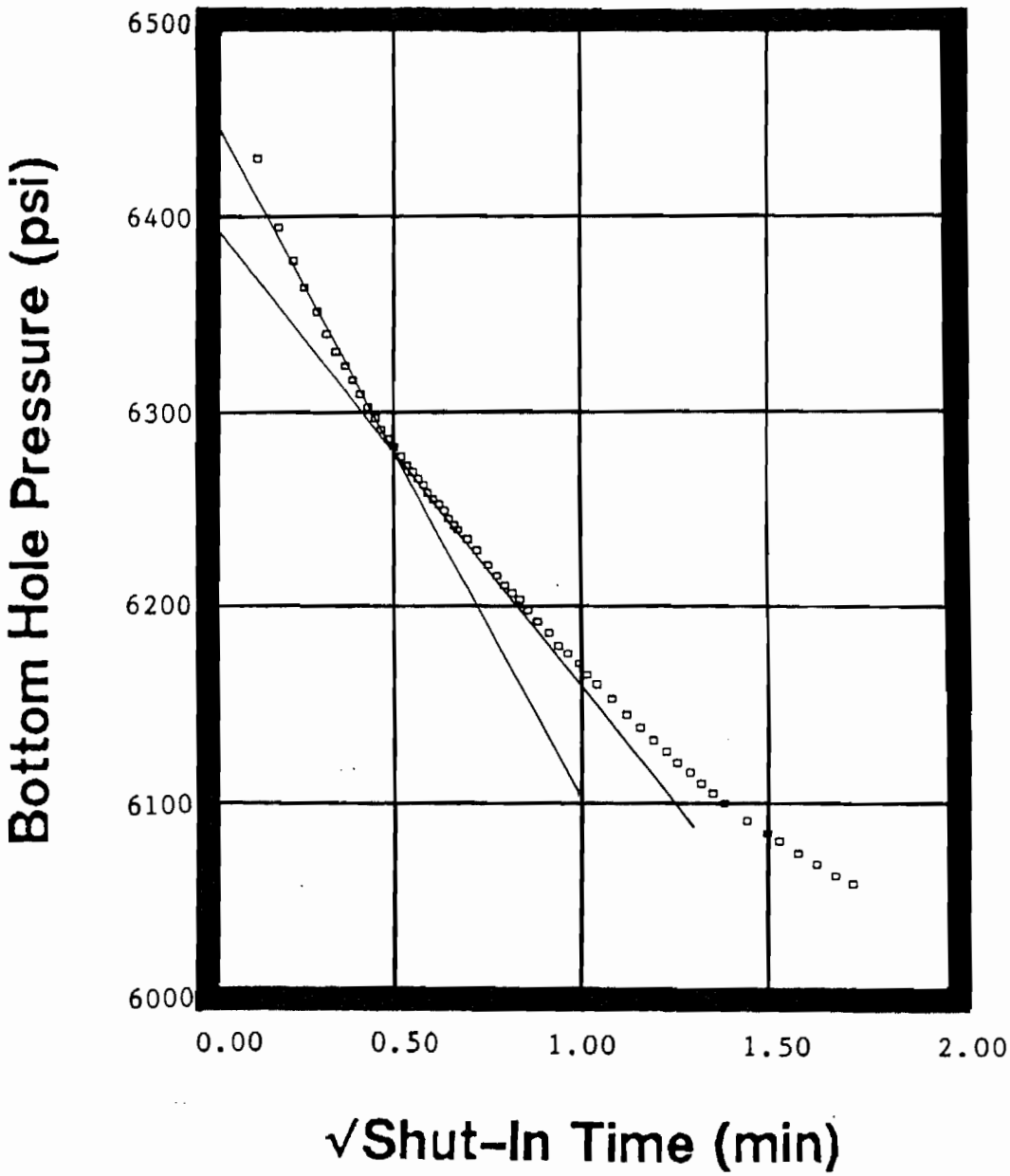

Figure A-2-25: Pressure Decline Plot (vs. Square Root Time): Test 5, Zone 2P3

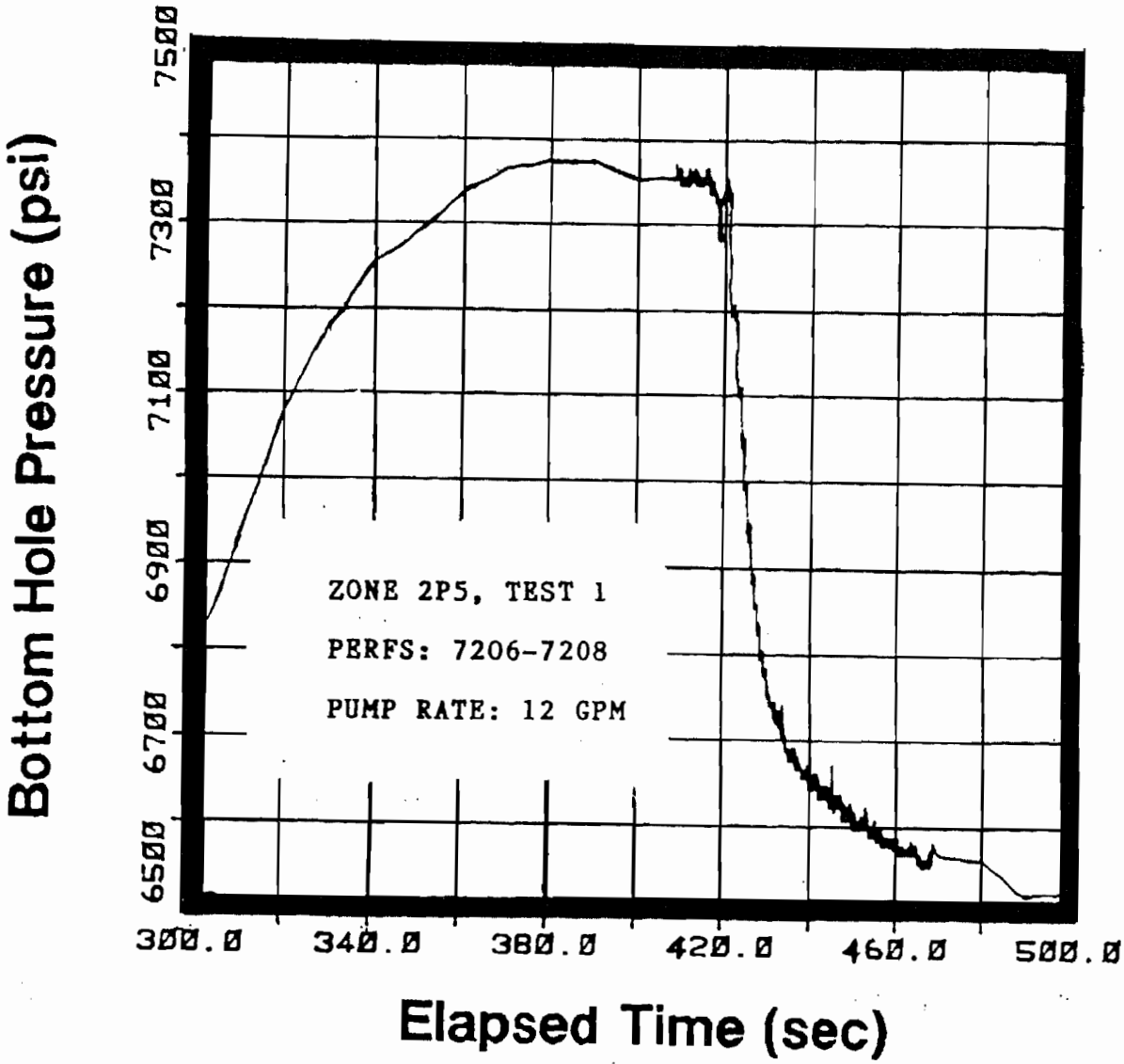

Figure A-2-26: Bottom Hole Pressure vs. Time: Test 1, Zone 2P5

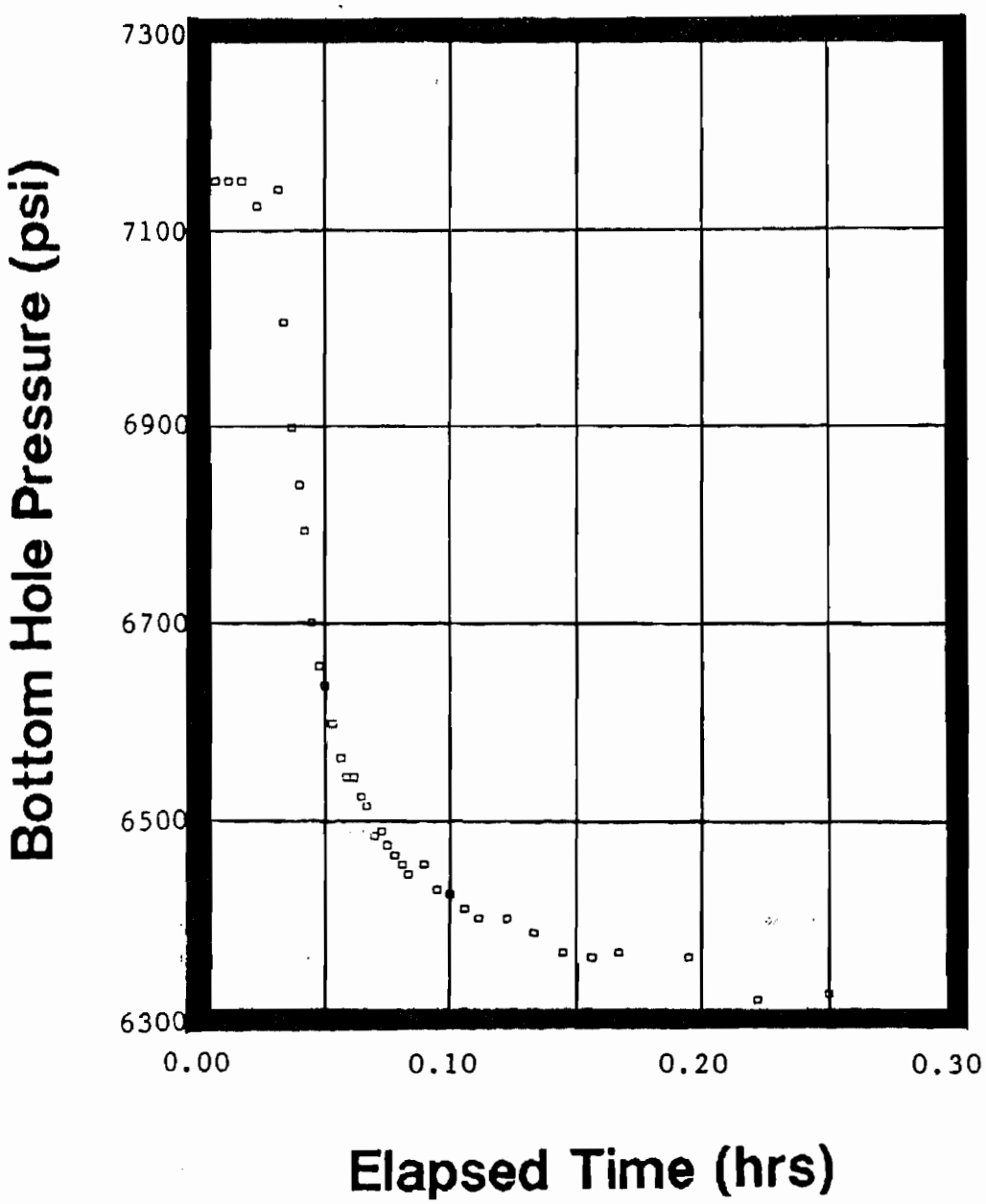

Figure A-2-27: Pressure Decline Plot (vs. Tmie): Test 1, Zone 2P5

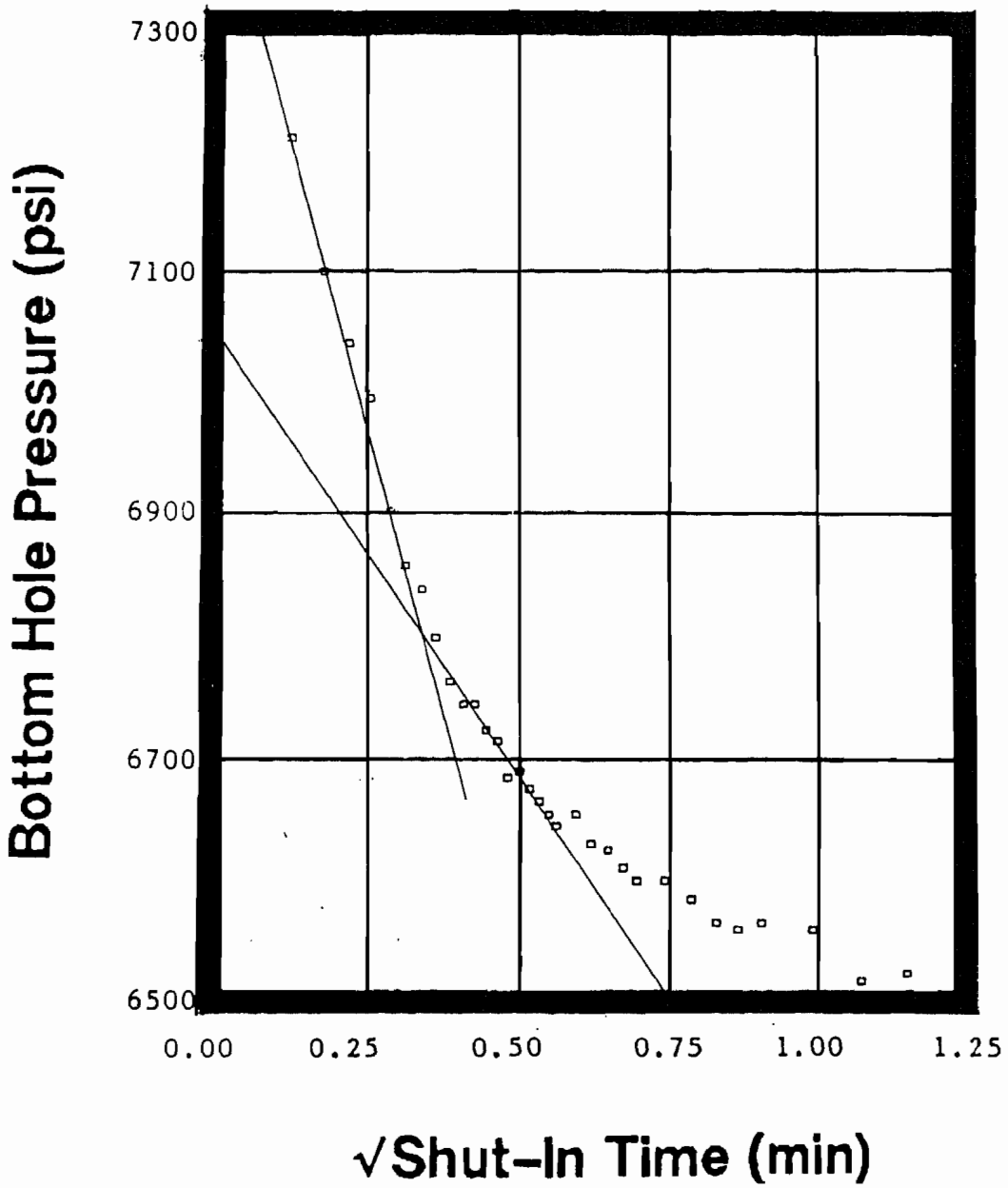

Figure A-2-28: Pressure Decline Plot (vs. Square Root Time): Test 1, Zone 2P5

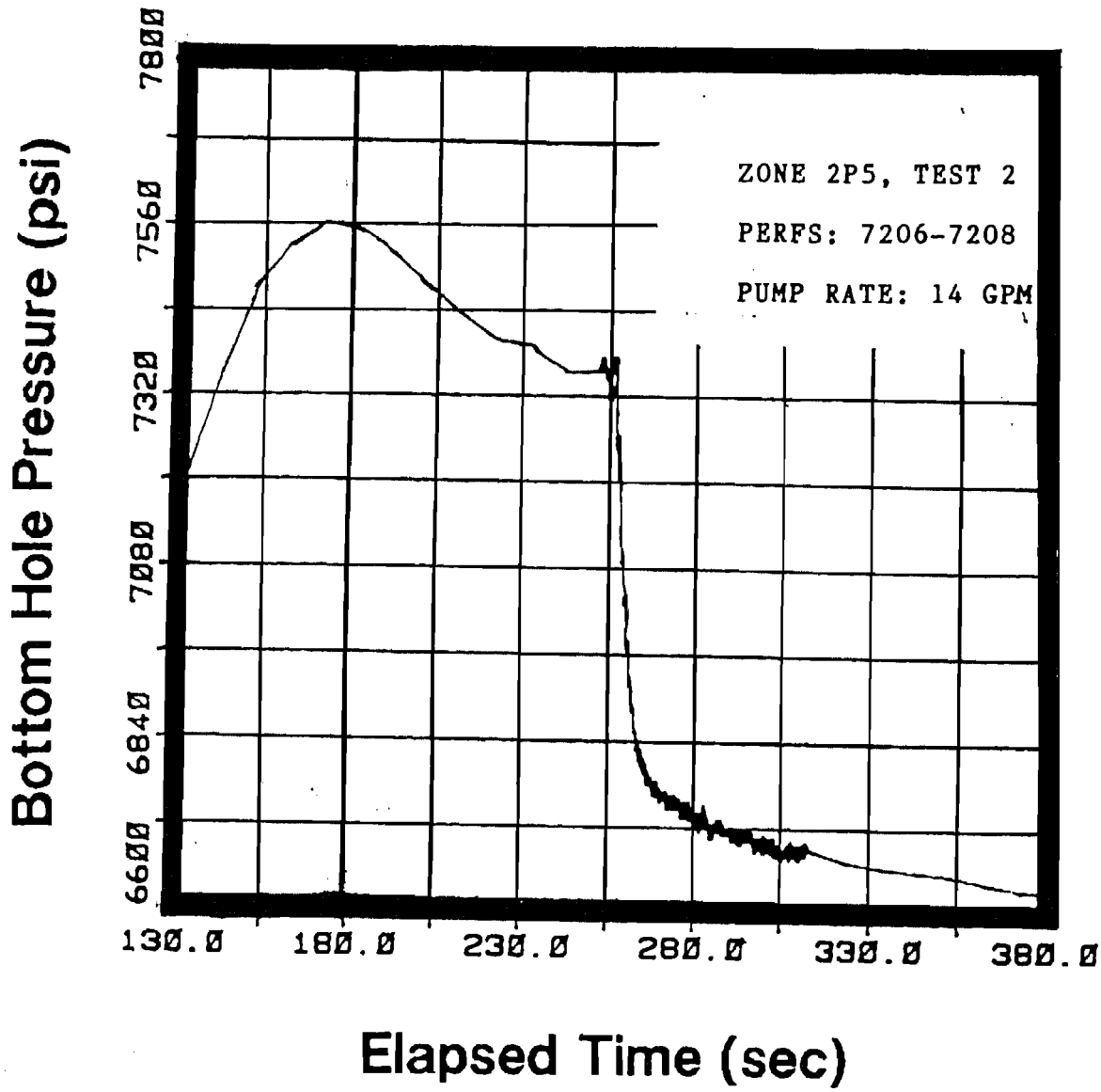

Figure A-2-29: Bottom Hole Pressure vs. Time: Test 2, Zone 2P5

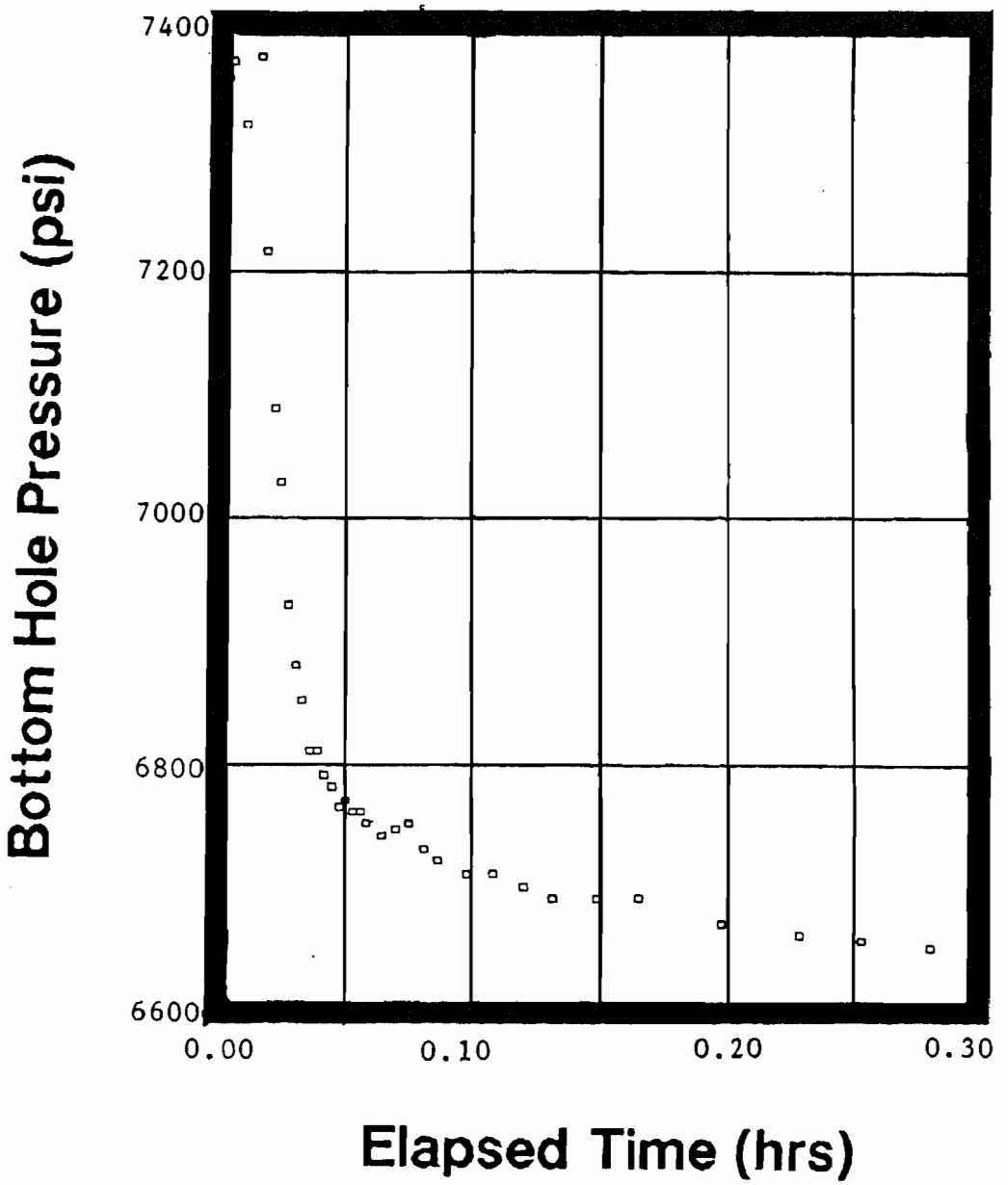

Figure A-2-30: Pressure Decline Plot (vs. Time): Test 2, Zone 2P5

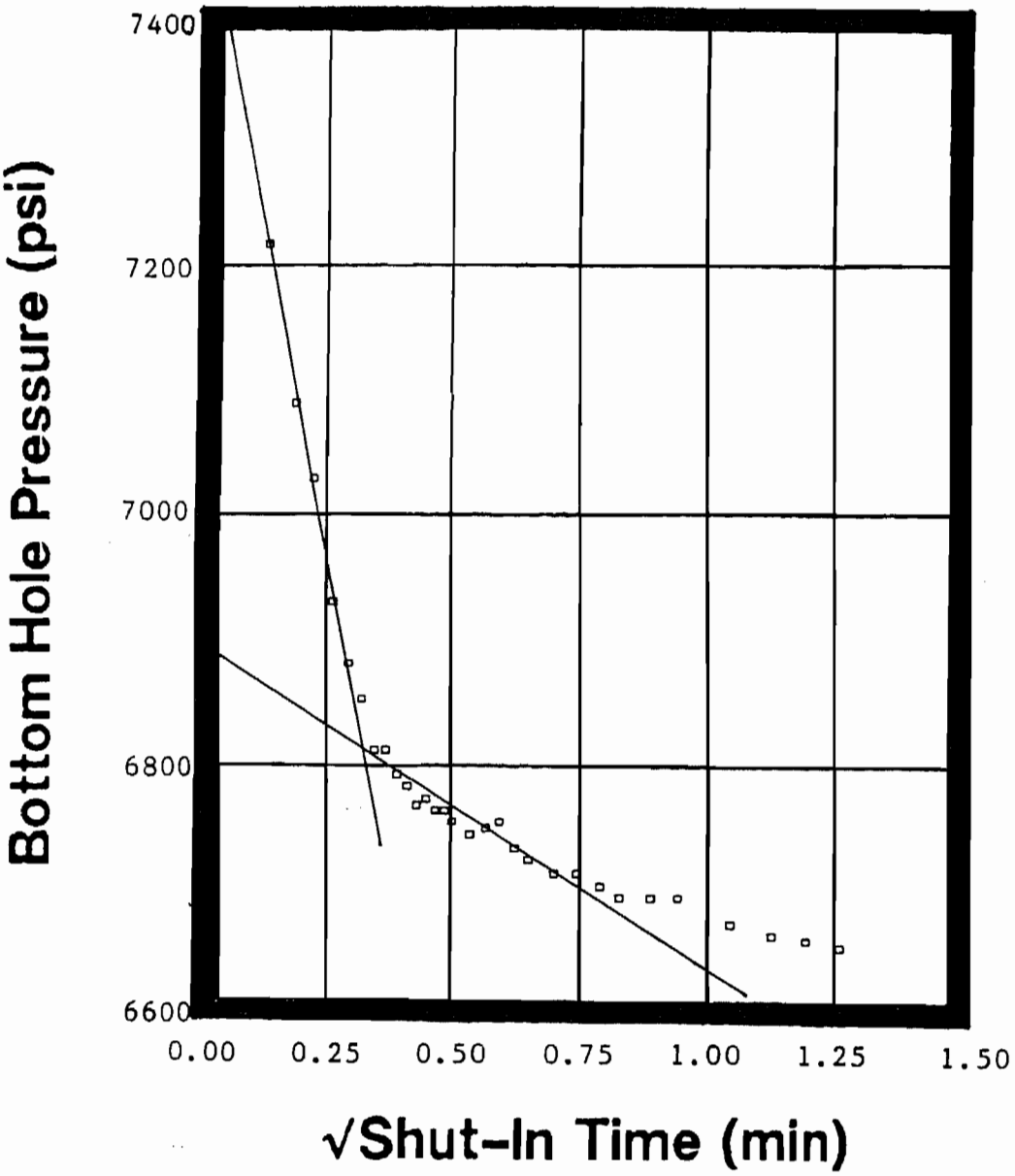

Figure A-2-31: Pressure Decline Plot (vs. Square Root Time): Test 2, Zone 2P5

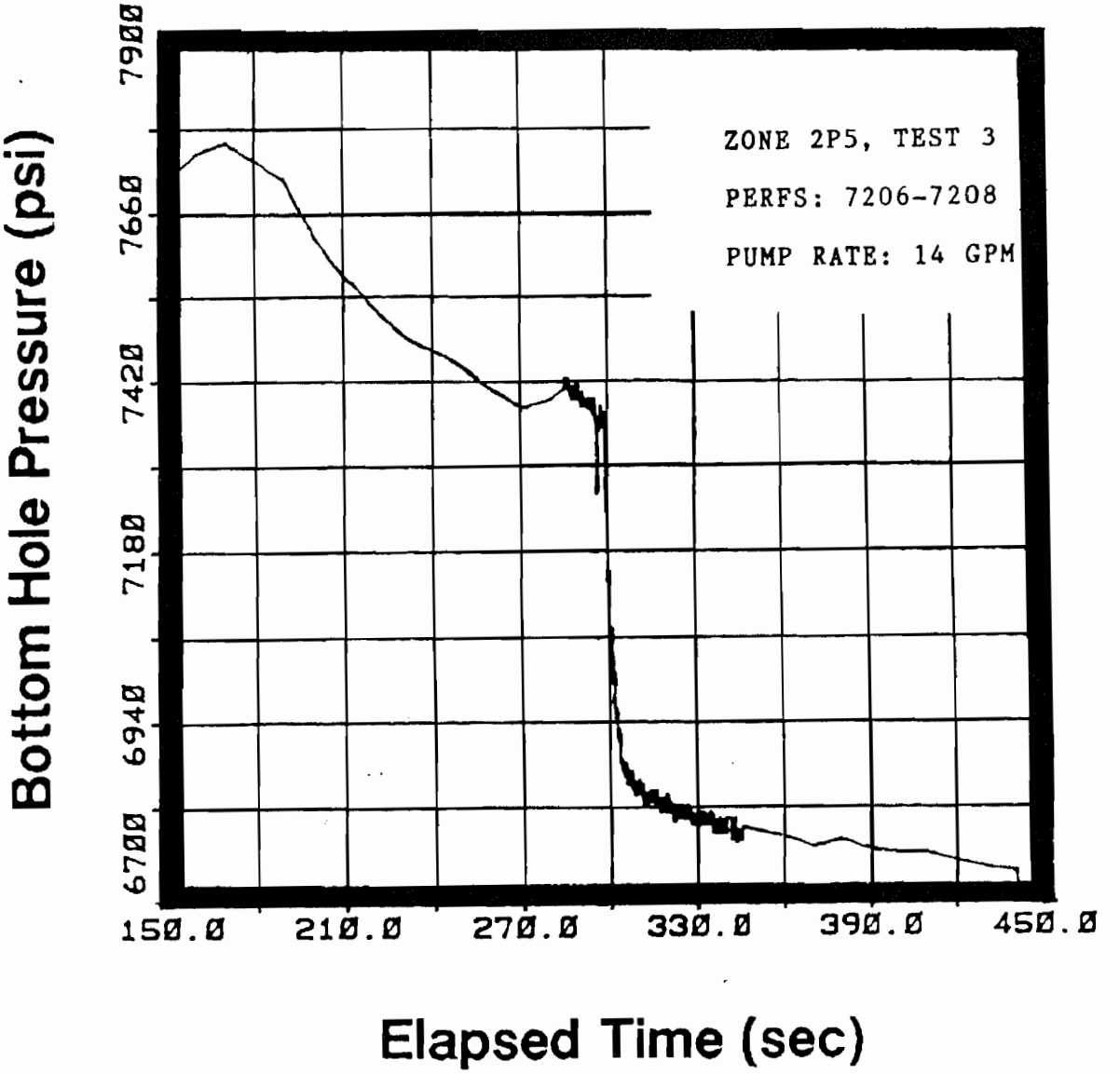

Figure A-2-32: Bottom Hole Pressure vs. Time: Test 3, Zone 2P5

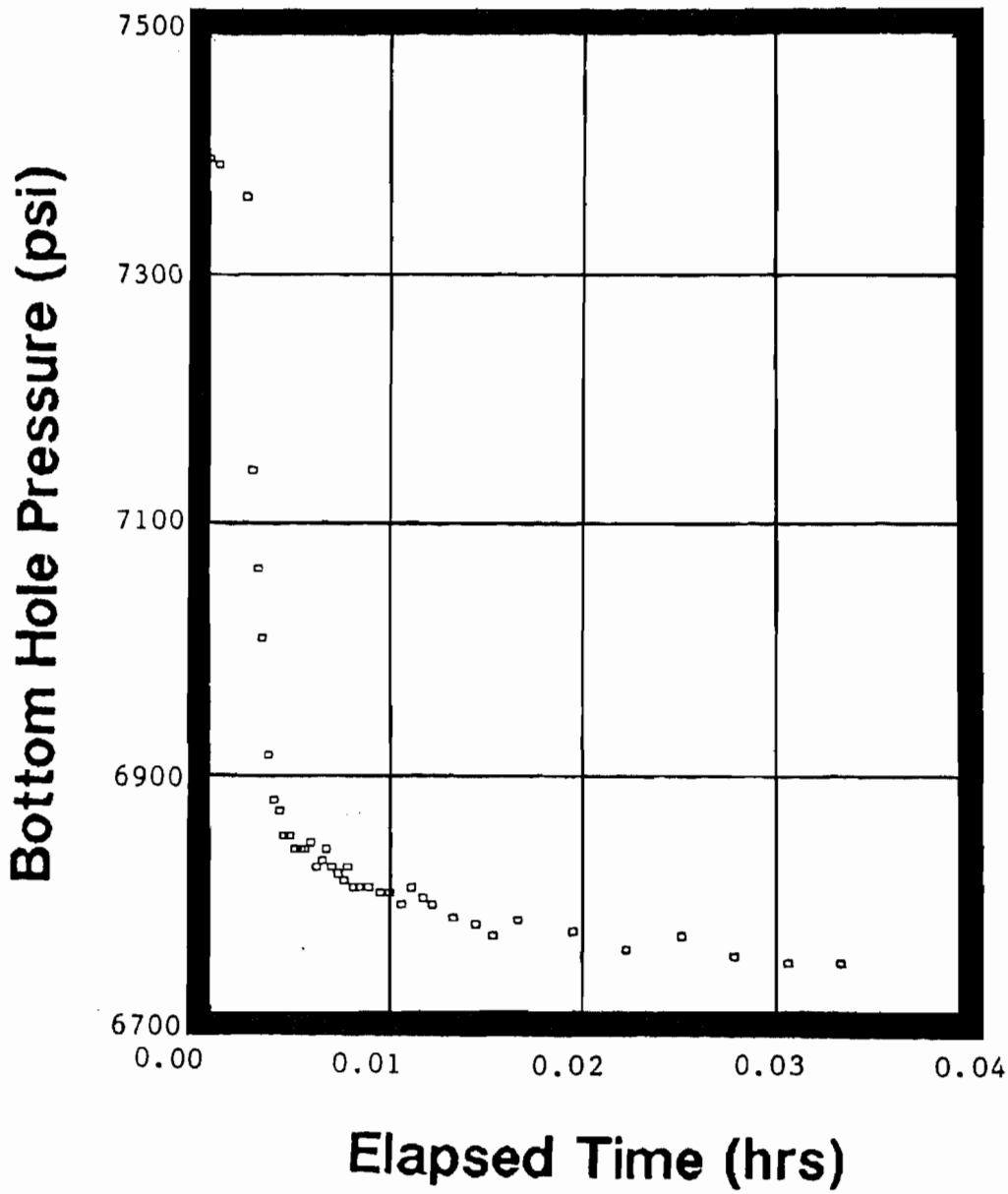

Figure A-2-33: Pressure Decline Plot (vs. Time): Test 3, Zone 2P5

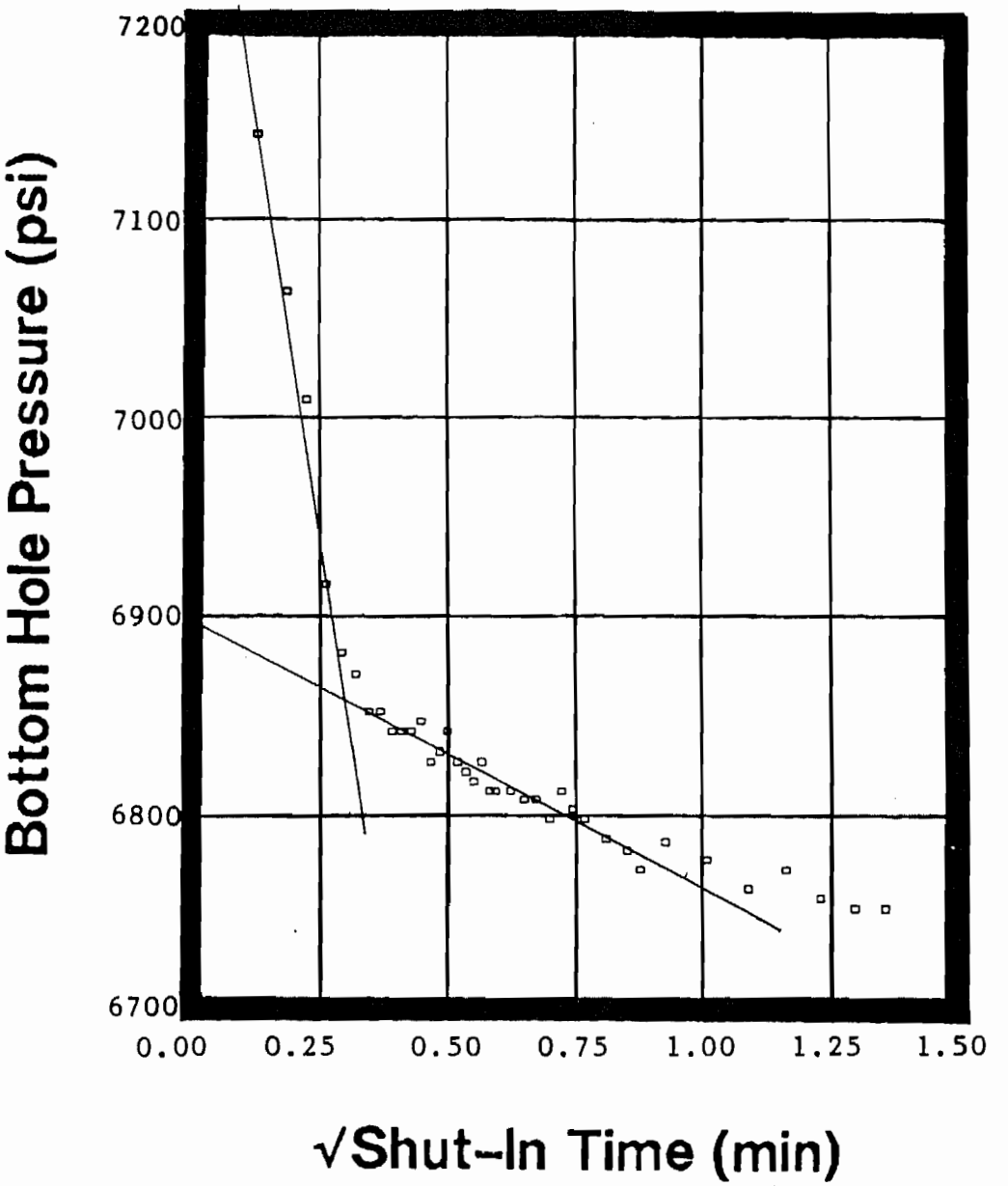

Figure A-2-34: Pressure Decline Plot (vs. Square Root Time): Test 3, Zone 2P5

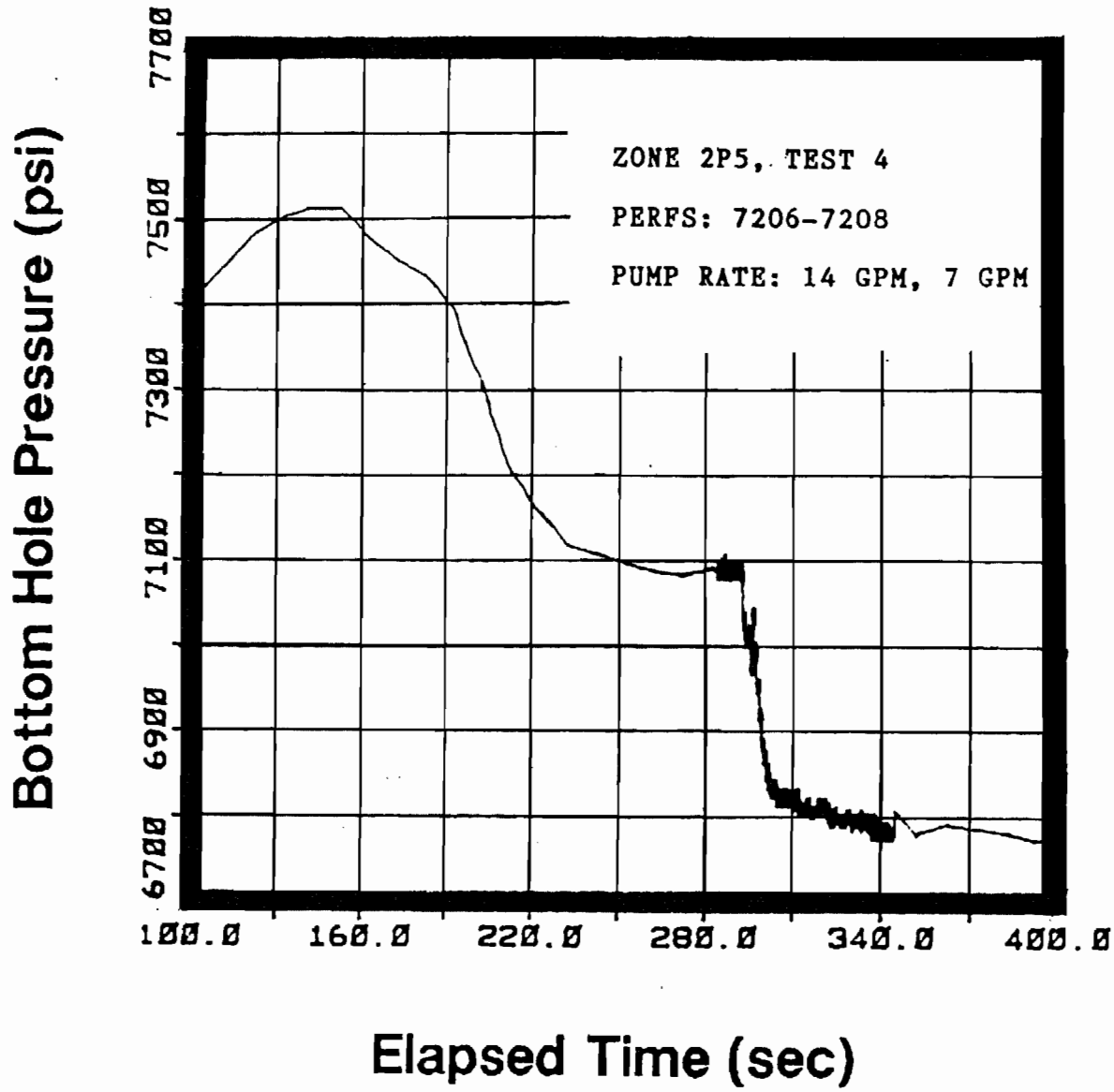

Figure A-2-35: Bottom Hole Pressure vs. Time: Test 4, Zone 2P5

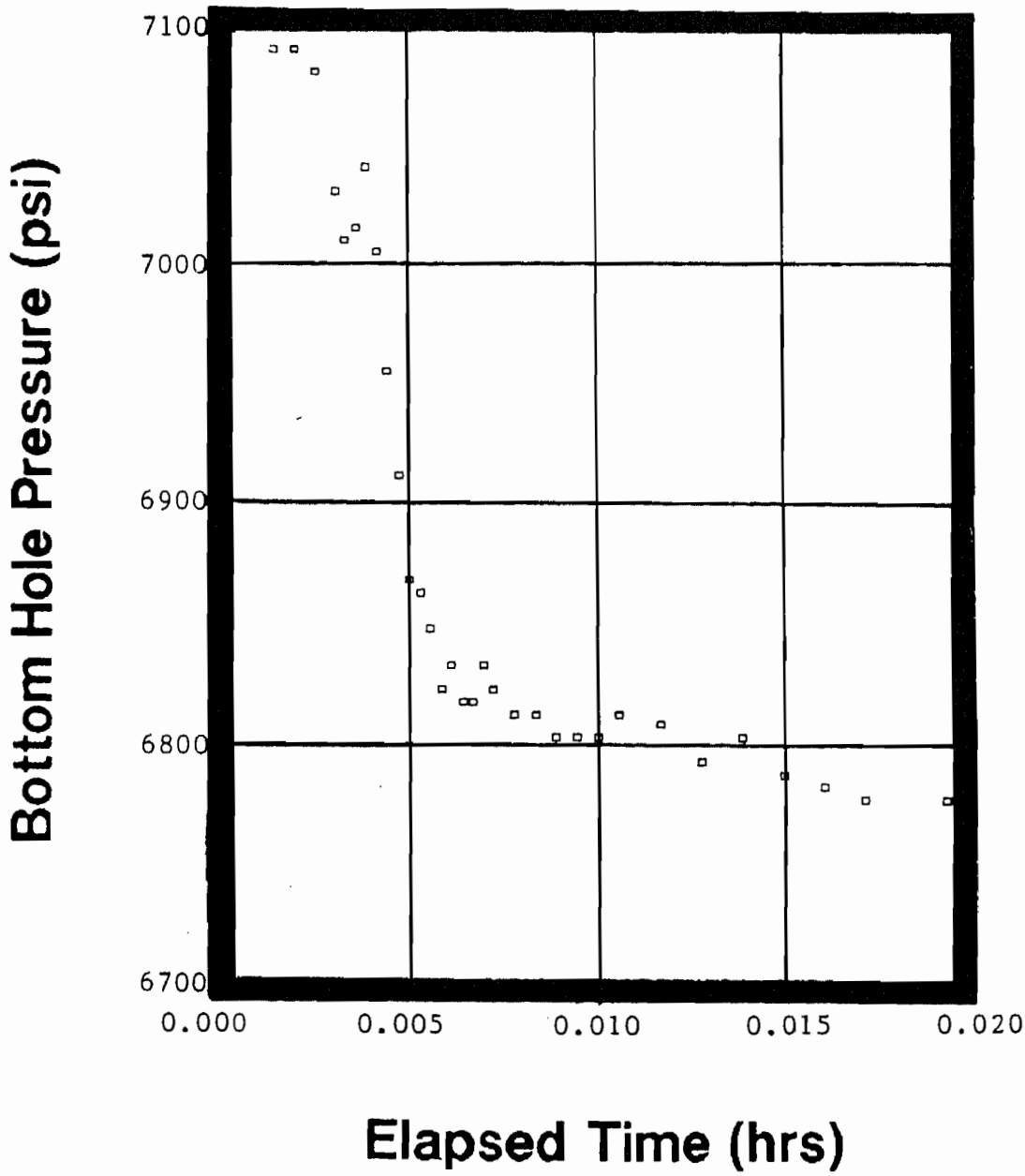

Figure A-2-36: Pressure Decline Plot (vs. Time): Test 4, Zone 2P5

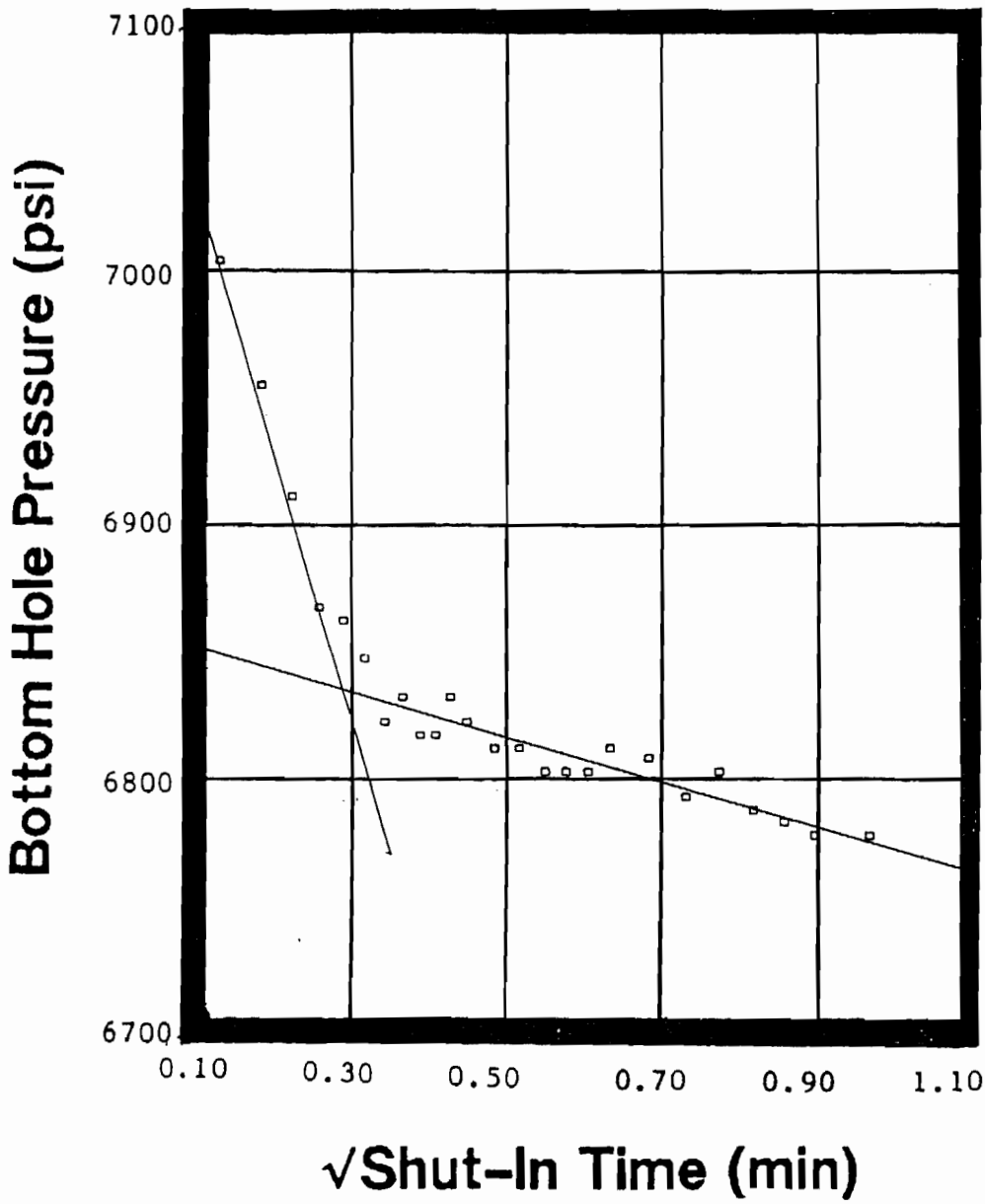

Figure A-2-37: Pressure Decline Plot (vs. Square Root Time): Test 4, Zone 2P5

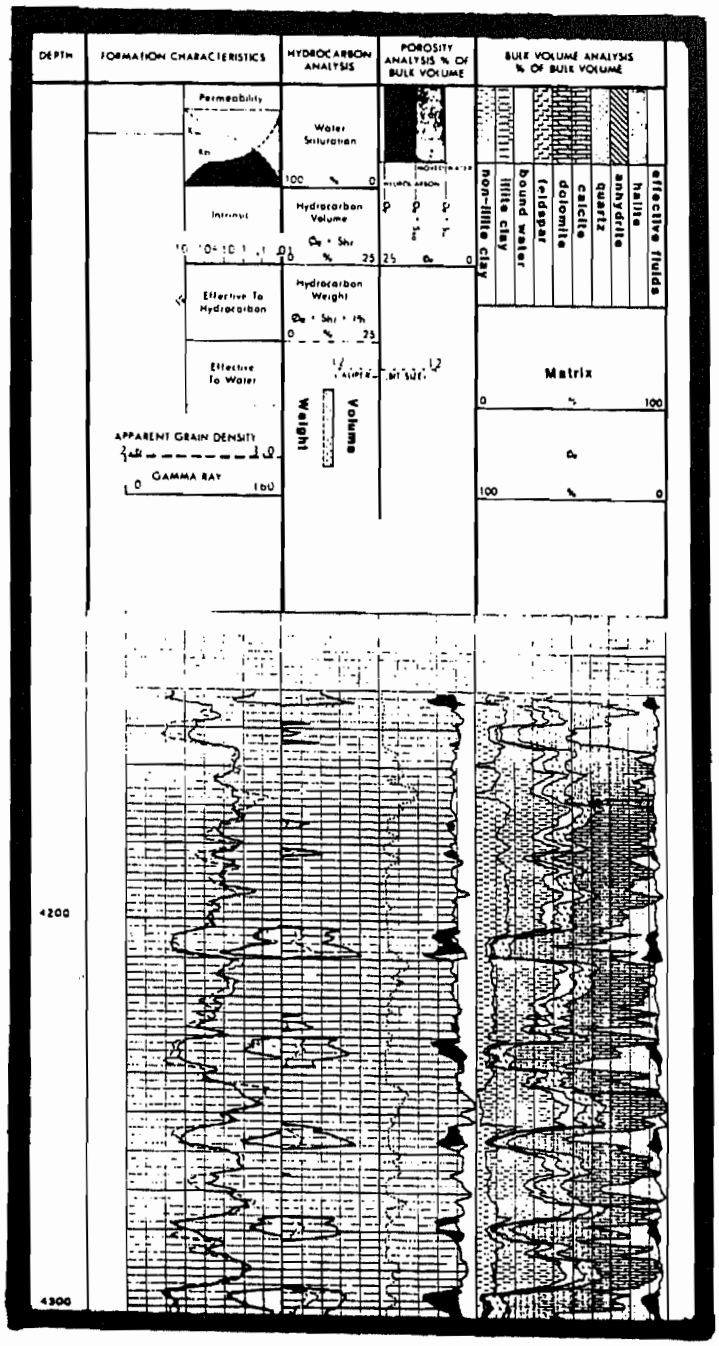

Figure A-3-1a: Column Heading of VOLAN Log Section of MWX-1 (from 5500 ft to 7400 ft).

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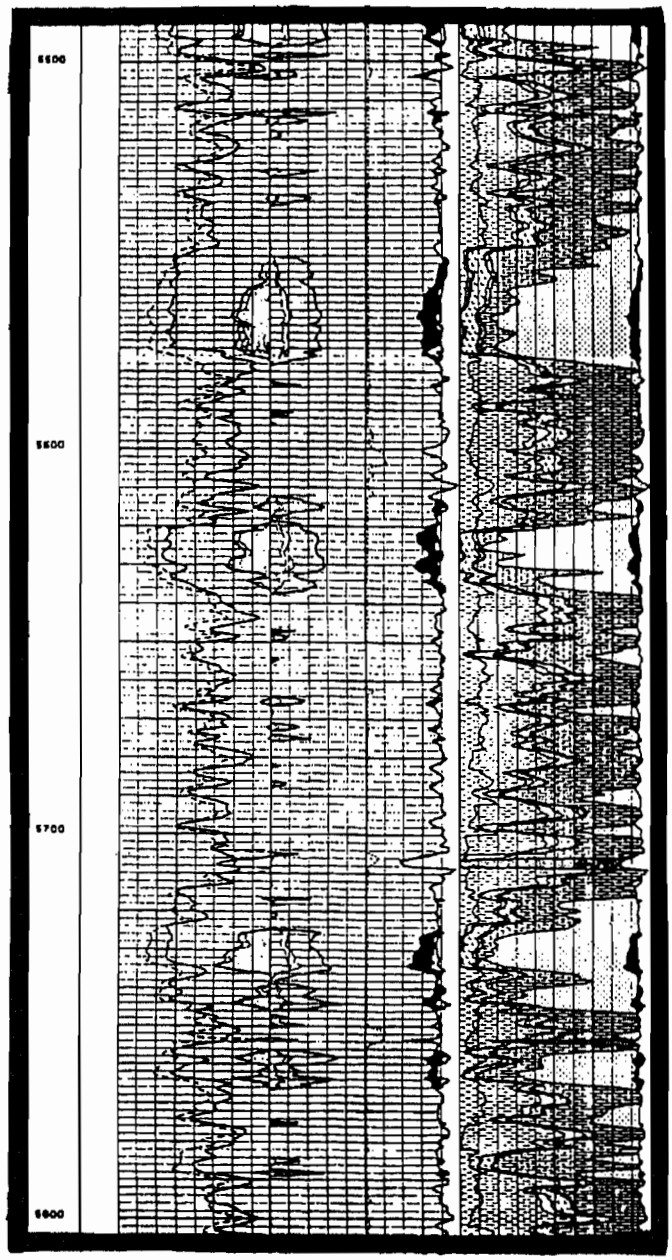

Figure A-3-1b: VOLAN Log Section of MWX-3 from 5500 ft to 5800 ft.

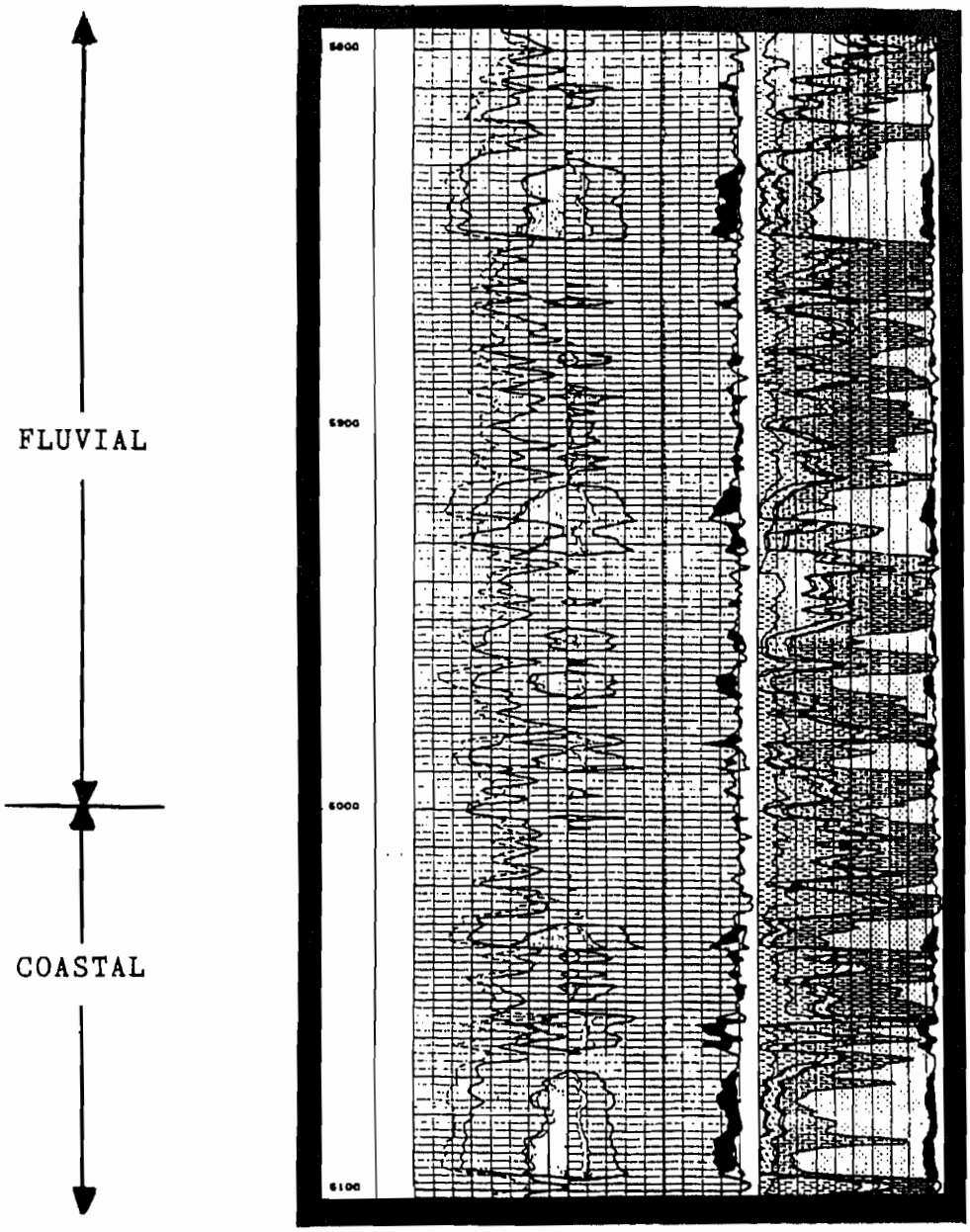

Figure A-3-1c: VOLAN Log Section of MWX-3 from 5800 ft to 6100 ft.

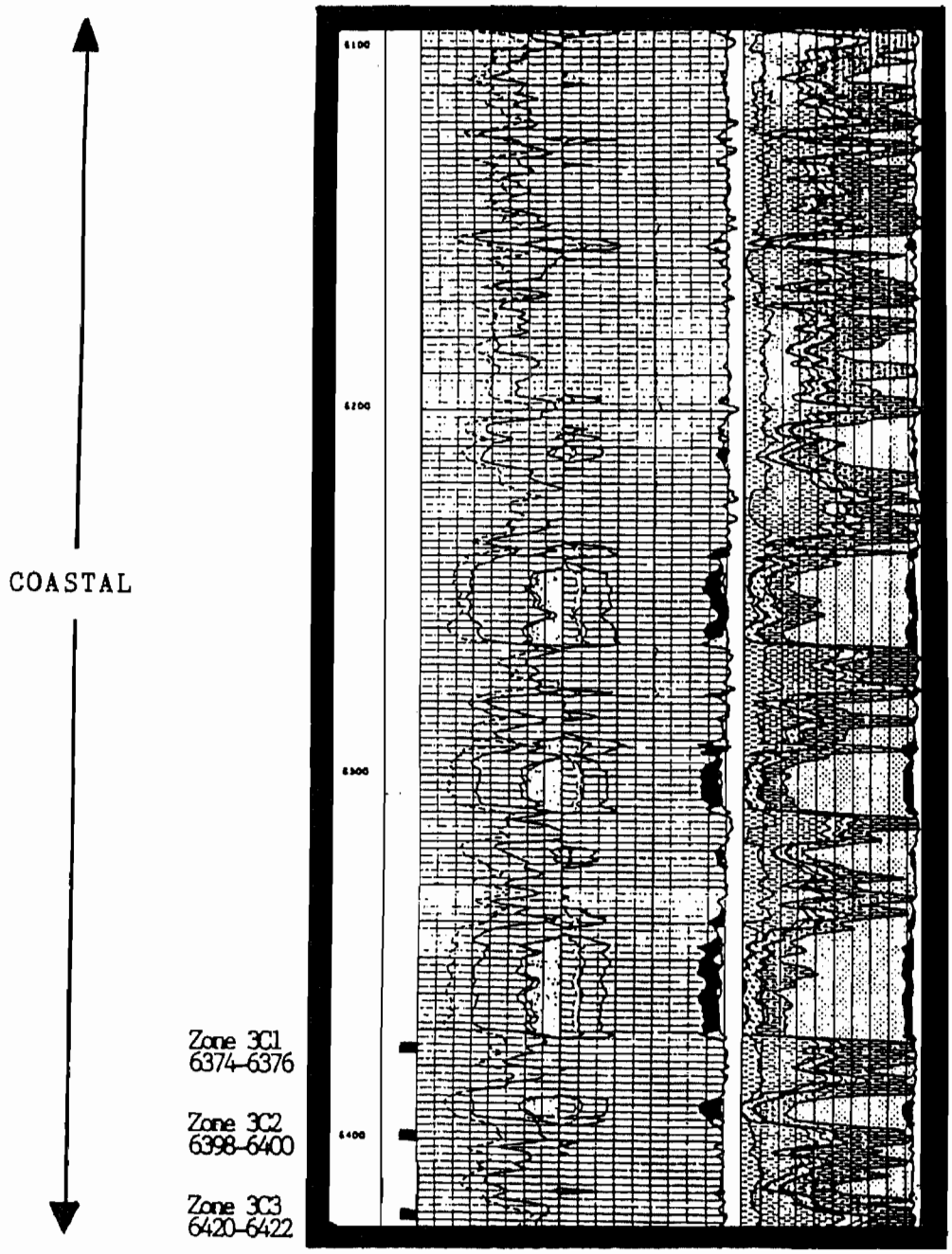

Figure A-3-1d: VOLAN Log Section of MWX-3 from 6100 ft to 6424 ft.

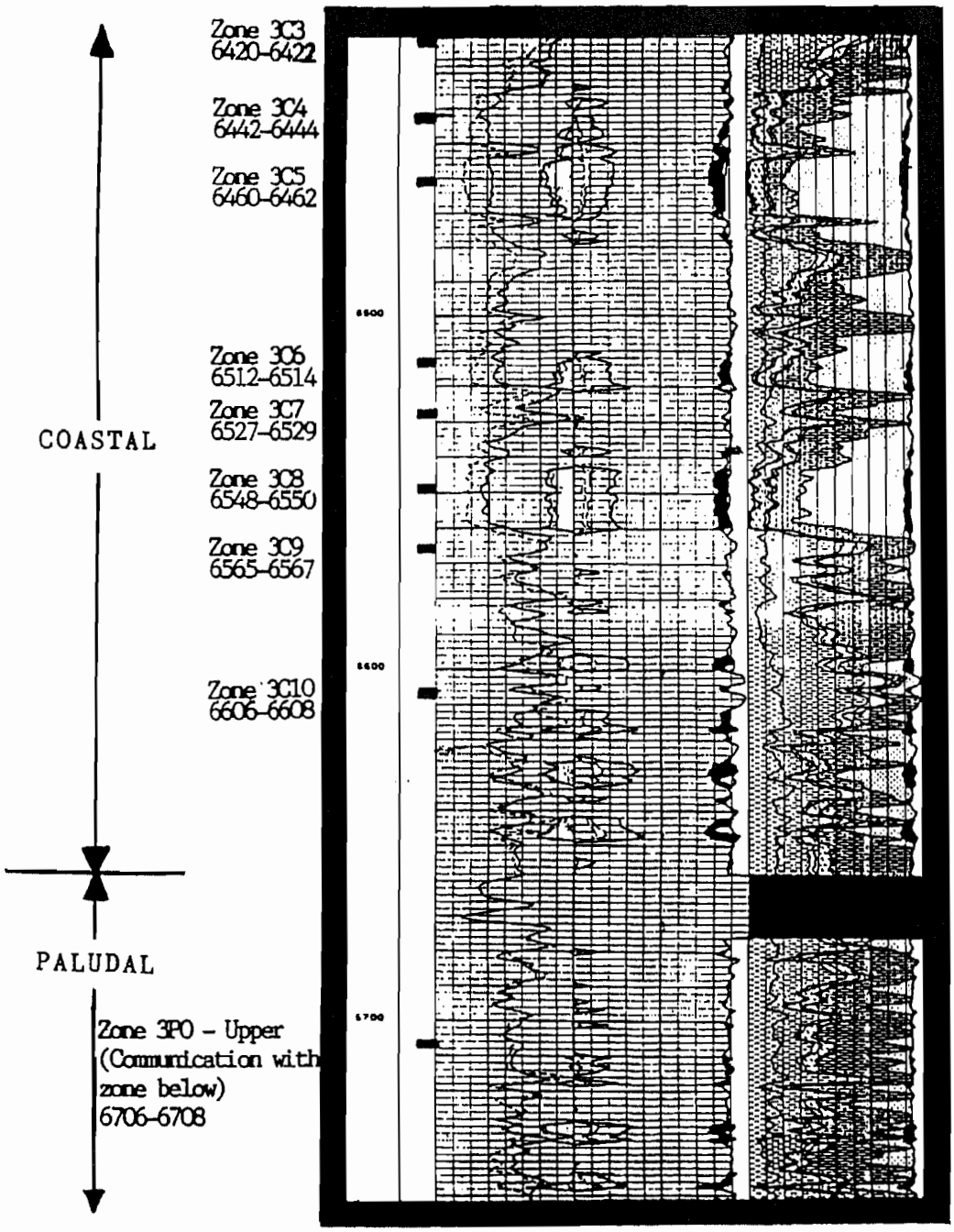

Figure A-3-1e: VOLAN Log Section of MWX-3 from 6420 ft to 6750 ft.

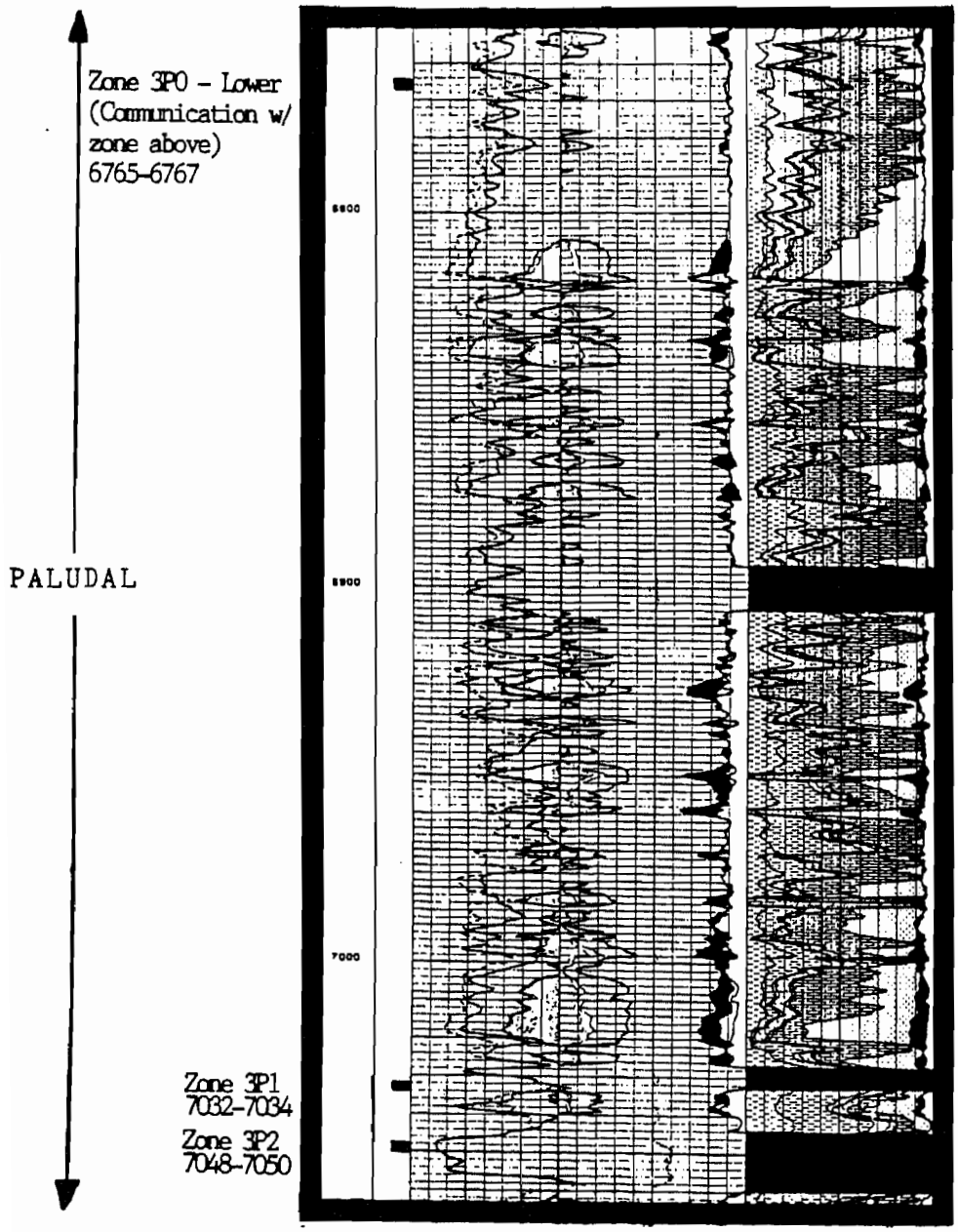

Figure A-3-1f: VOLAN Log Section of MWX-3 from 6750 ft to 7060 ft.

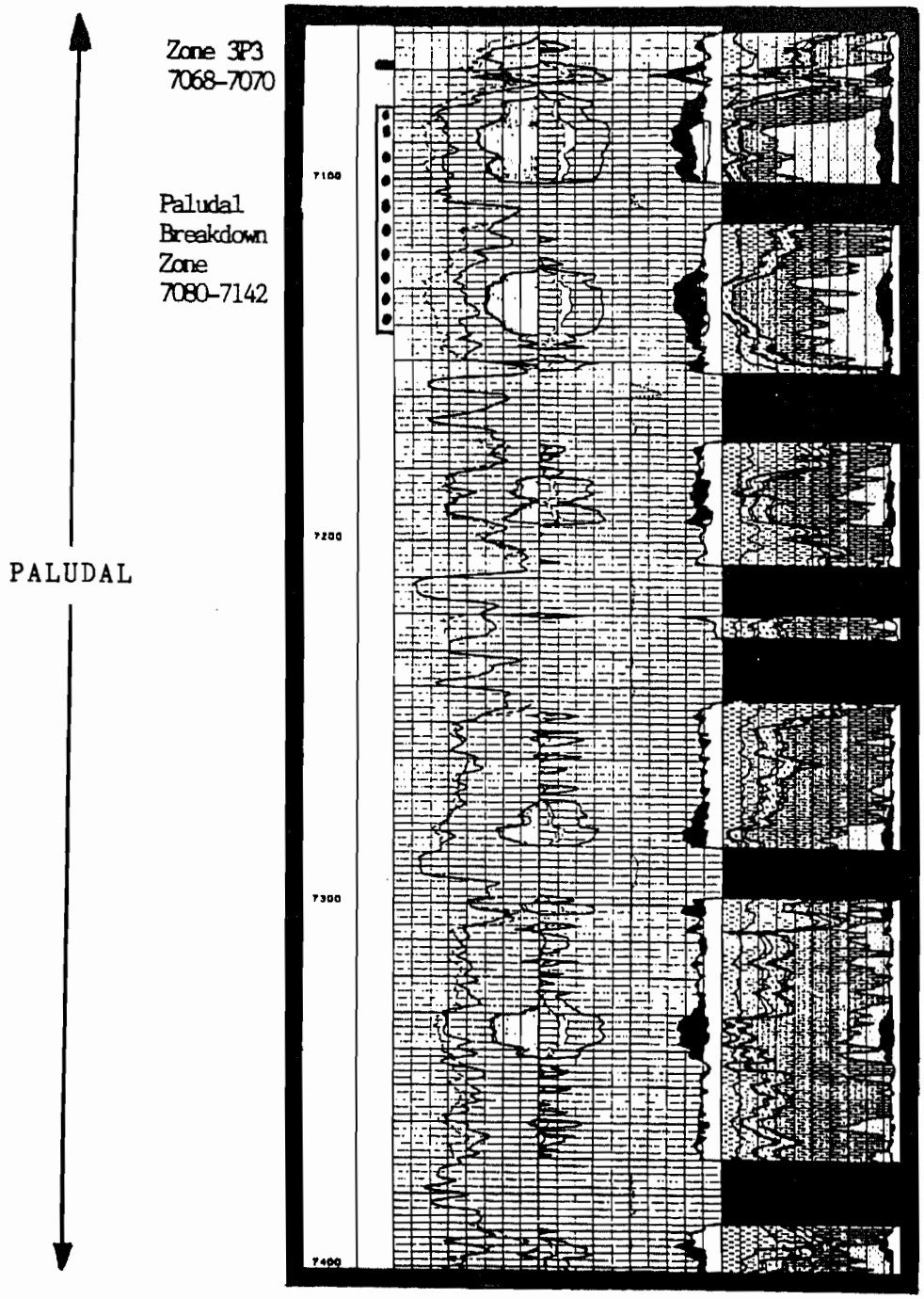

Figure A-3-1g: VOLAN Log Section of MWX-3 from 7060 ft to 7400 ft.

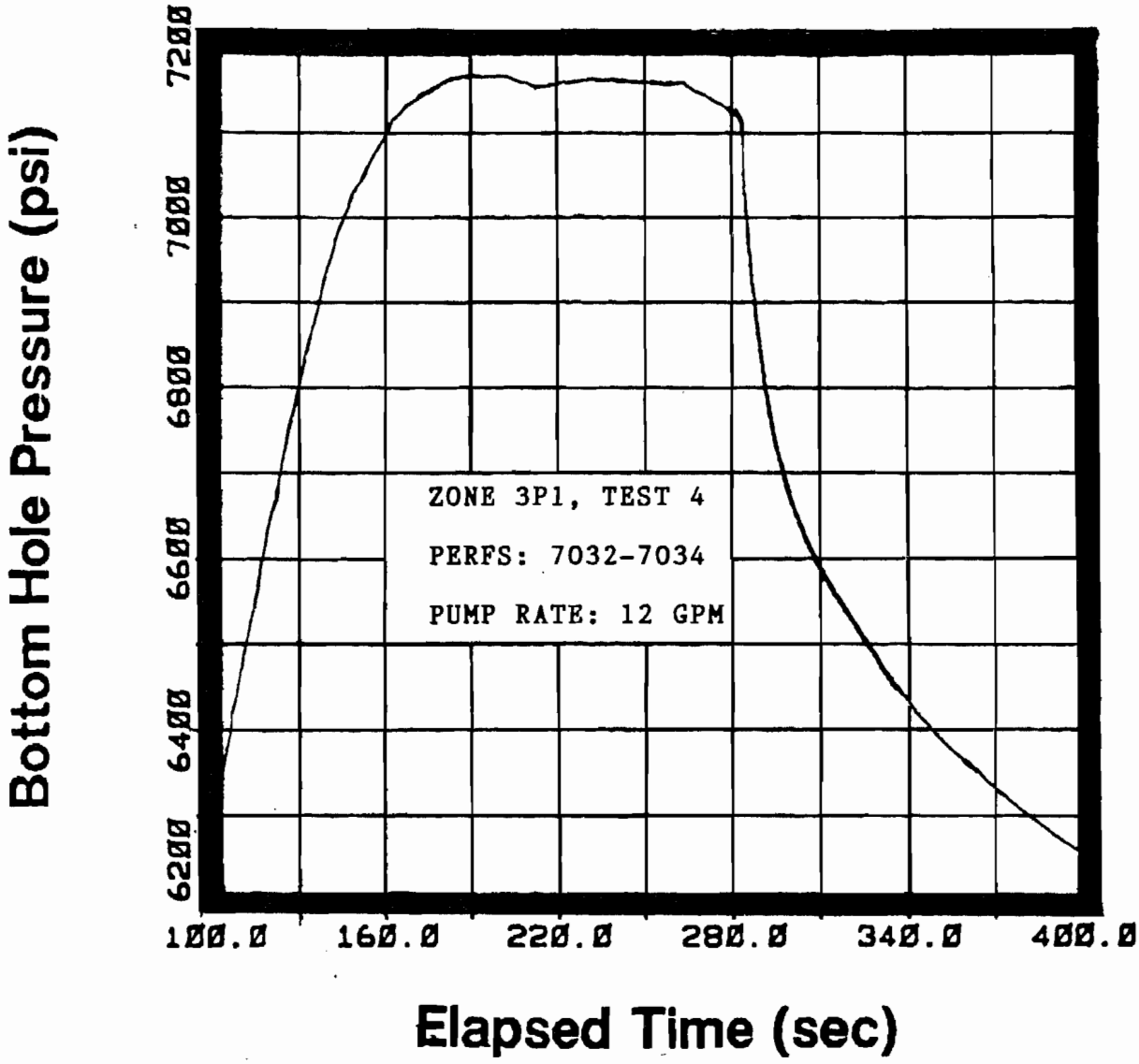

Figure A-3-2: Bottom Hole Pressure vs. Time: Test 4, Zone 3P1

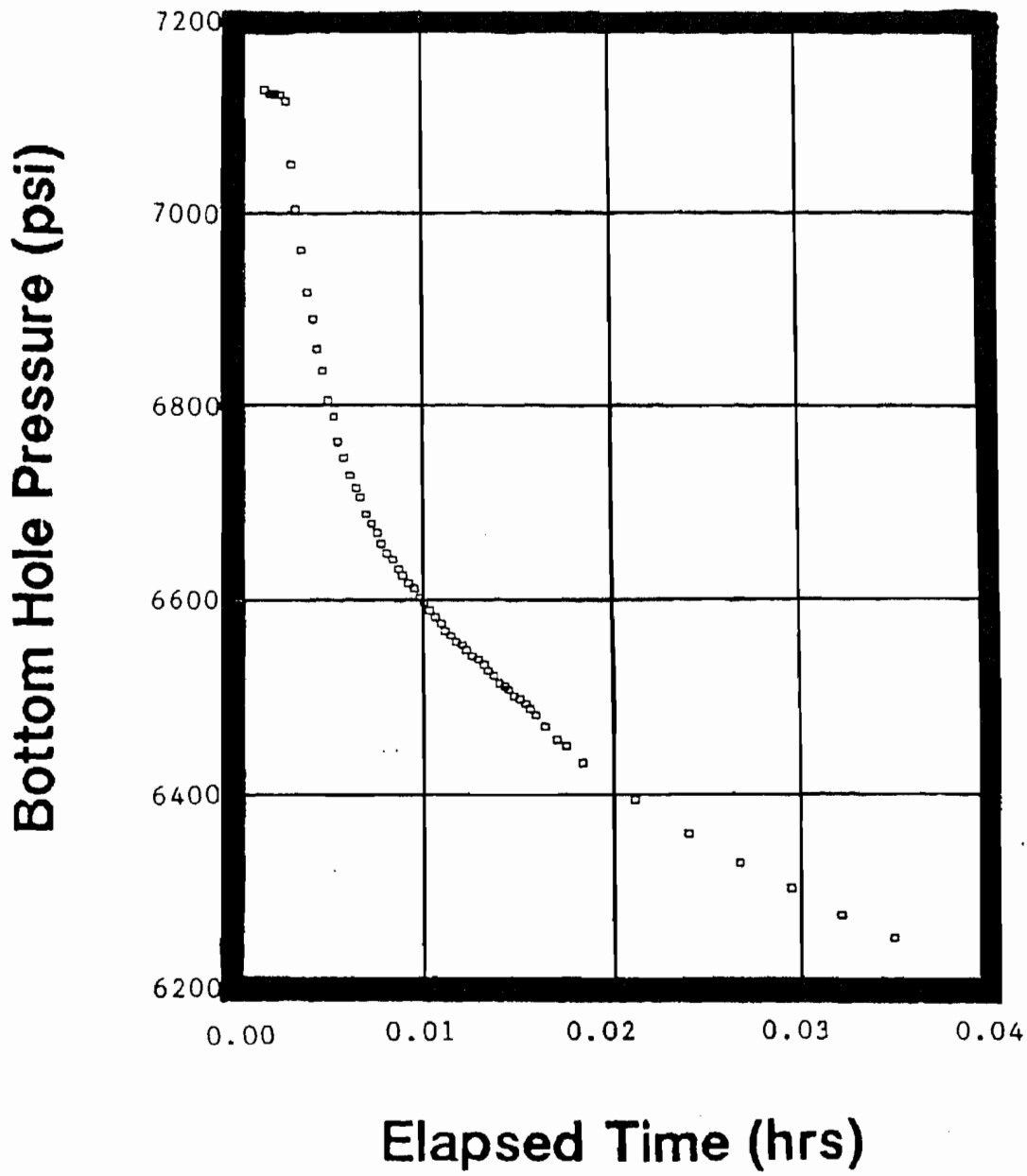

Figure A-3-3: Pressure Decline Plot (vs. Time): Test 4, Zone 3P1

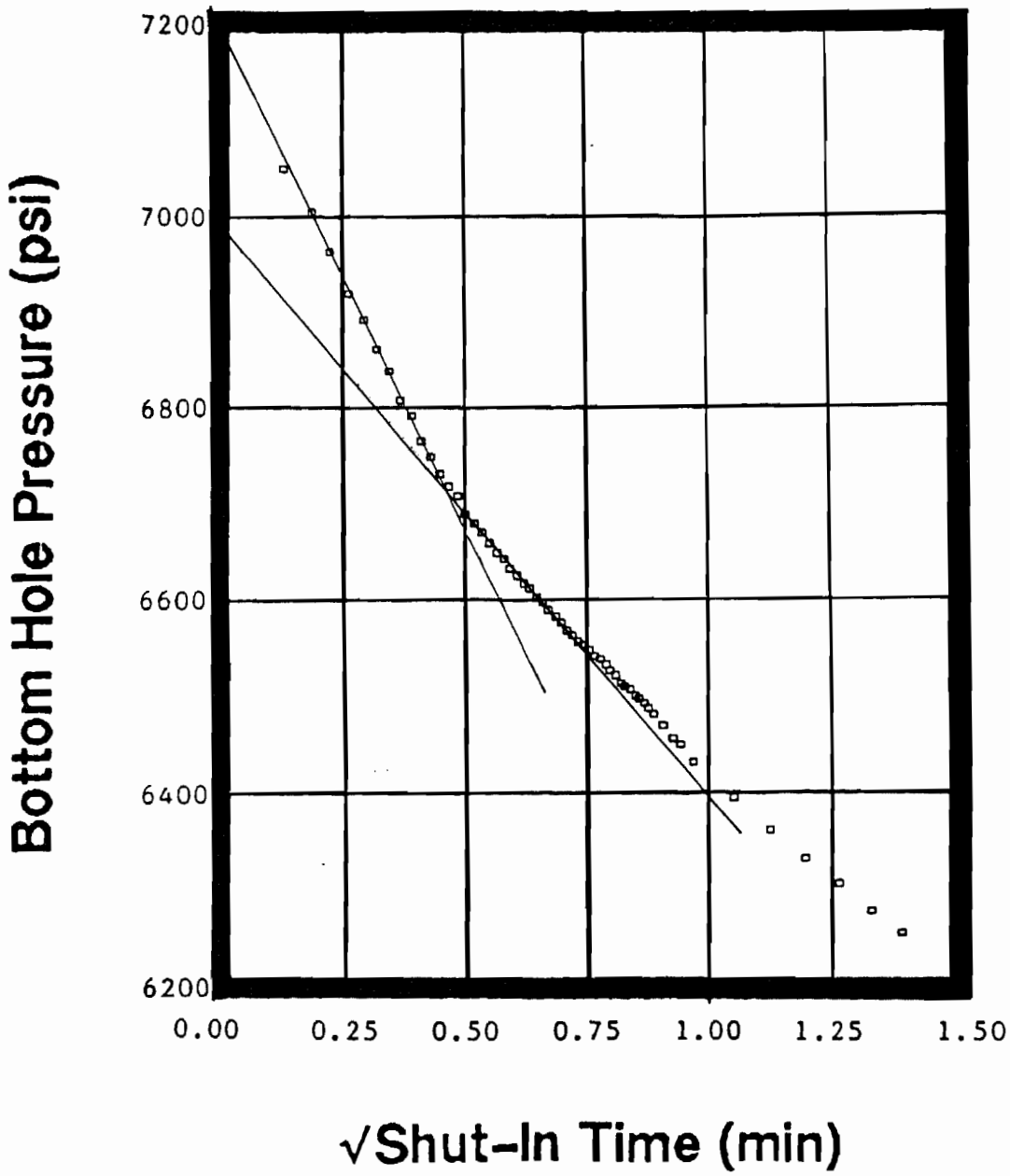

Figure A-3-4: Pressure Decline Plot (vs. Square Root Time): Test 4, Zone 3P1

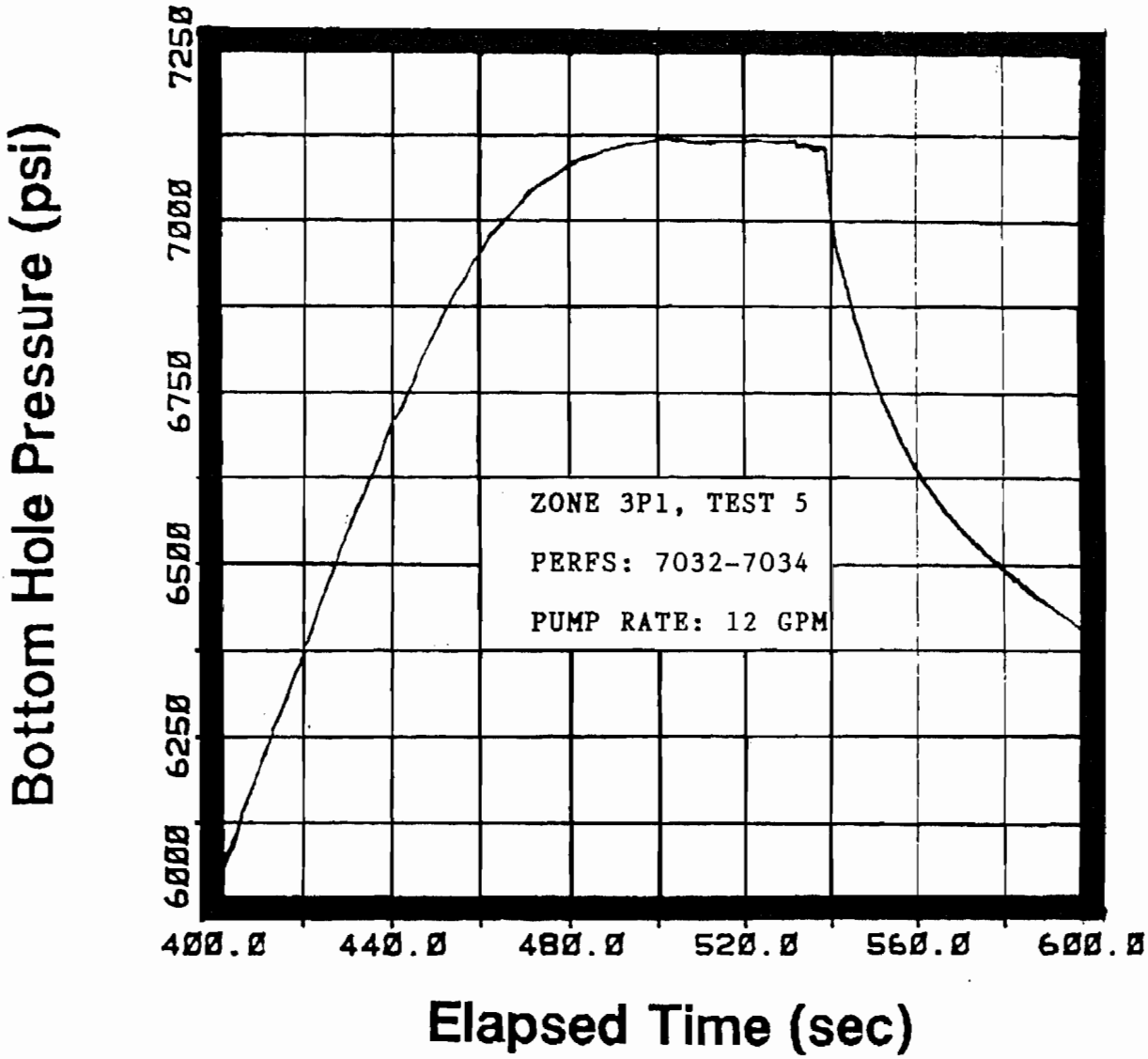

Figure A-3-5: Bottom Hole Pressure vs. Time: Test 5, Zone 3P1

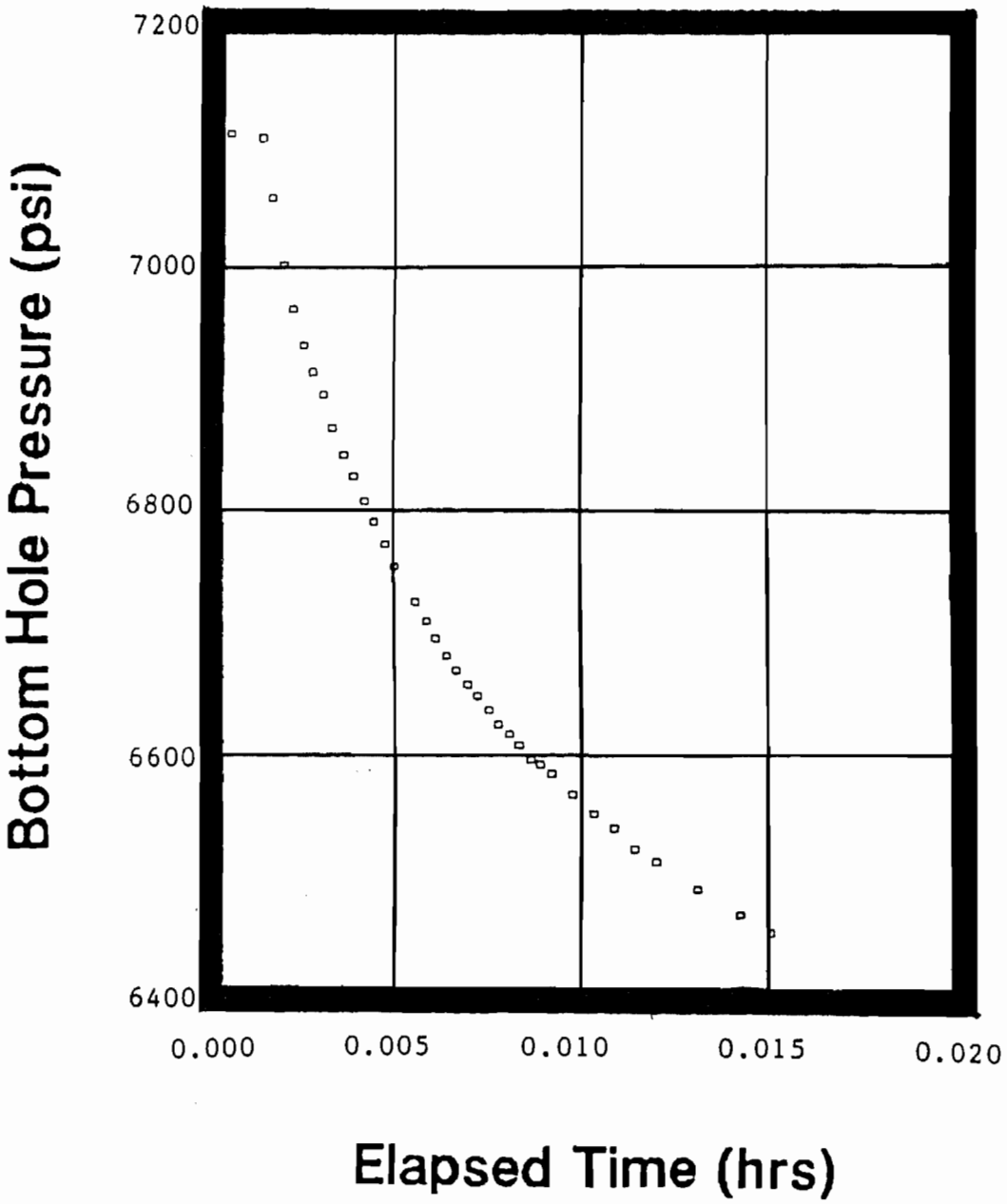

Figure A-3-6: Pressure Decline Plot (vs. Time): Test 5, Zone 3P1

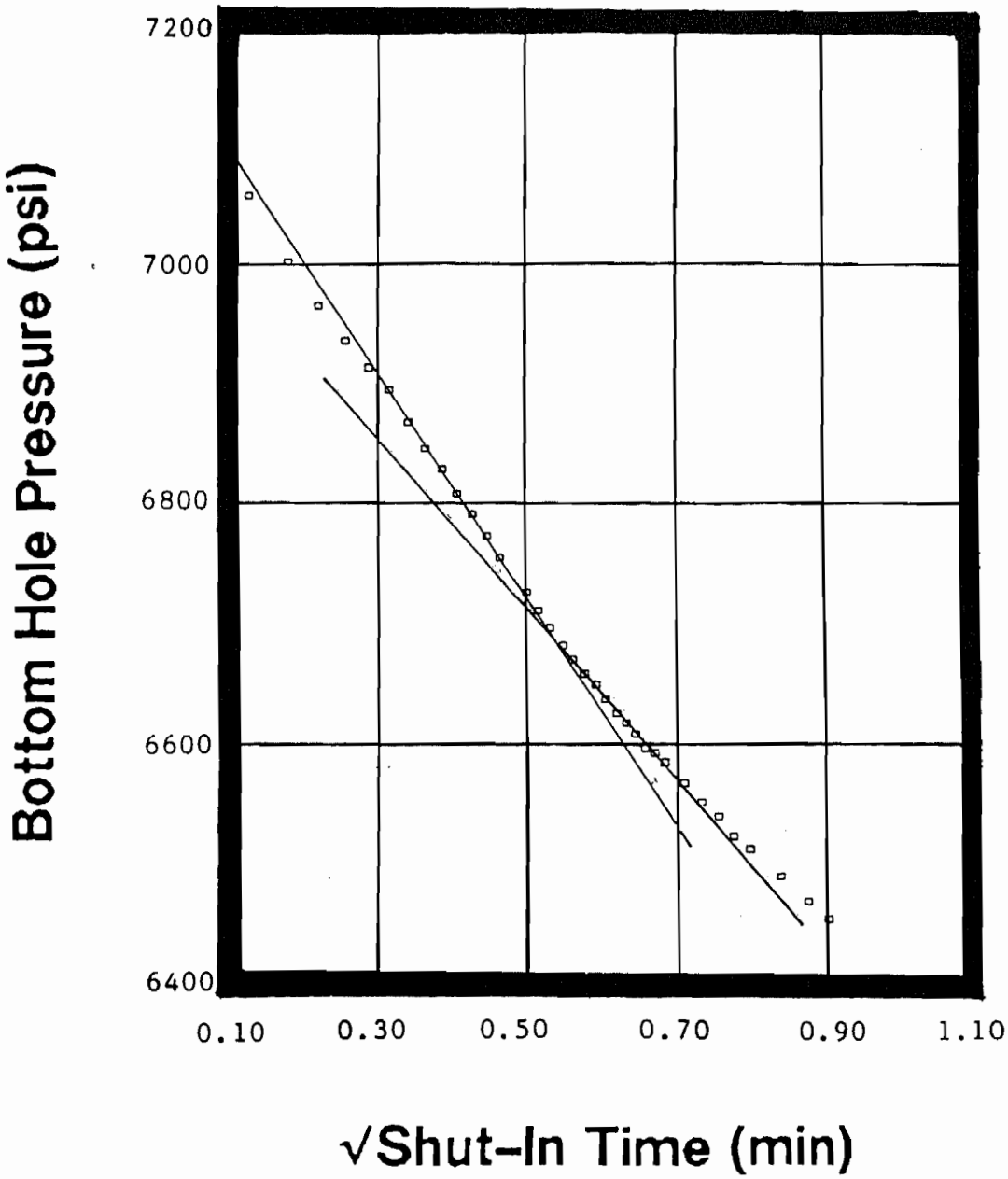

Figure A-3-7: Pressure Decline Plot (vs. Square Root Time): Test 5, Zone 3P1

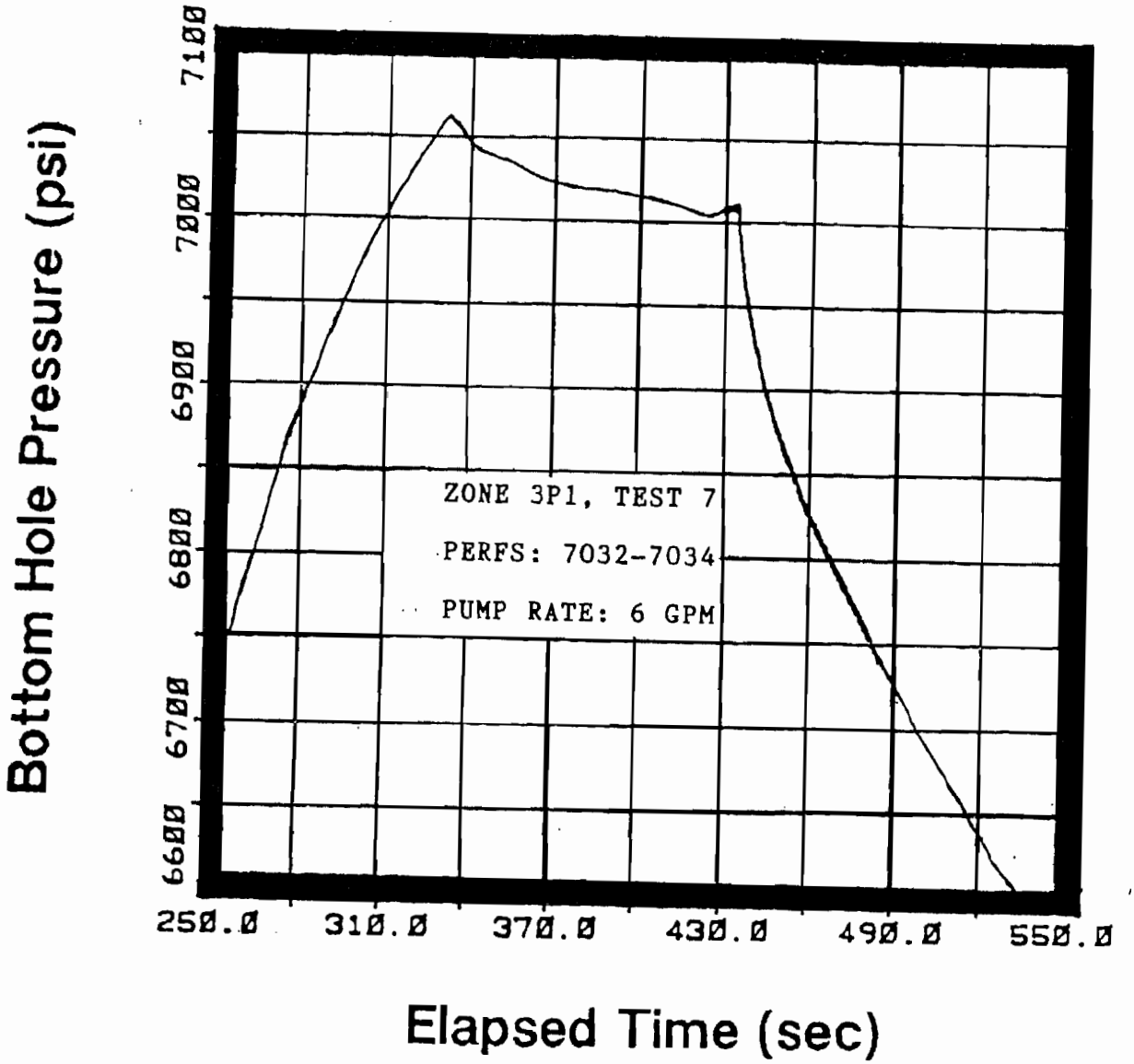

Figure A-3-8: Bottom Hole Pressure vs. Time: Test 7, Zone 3P1

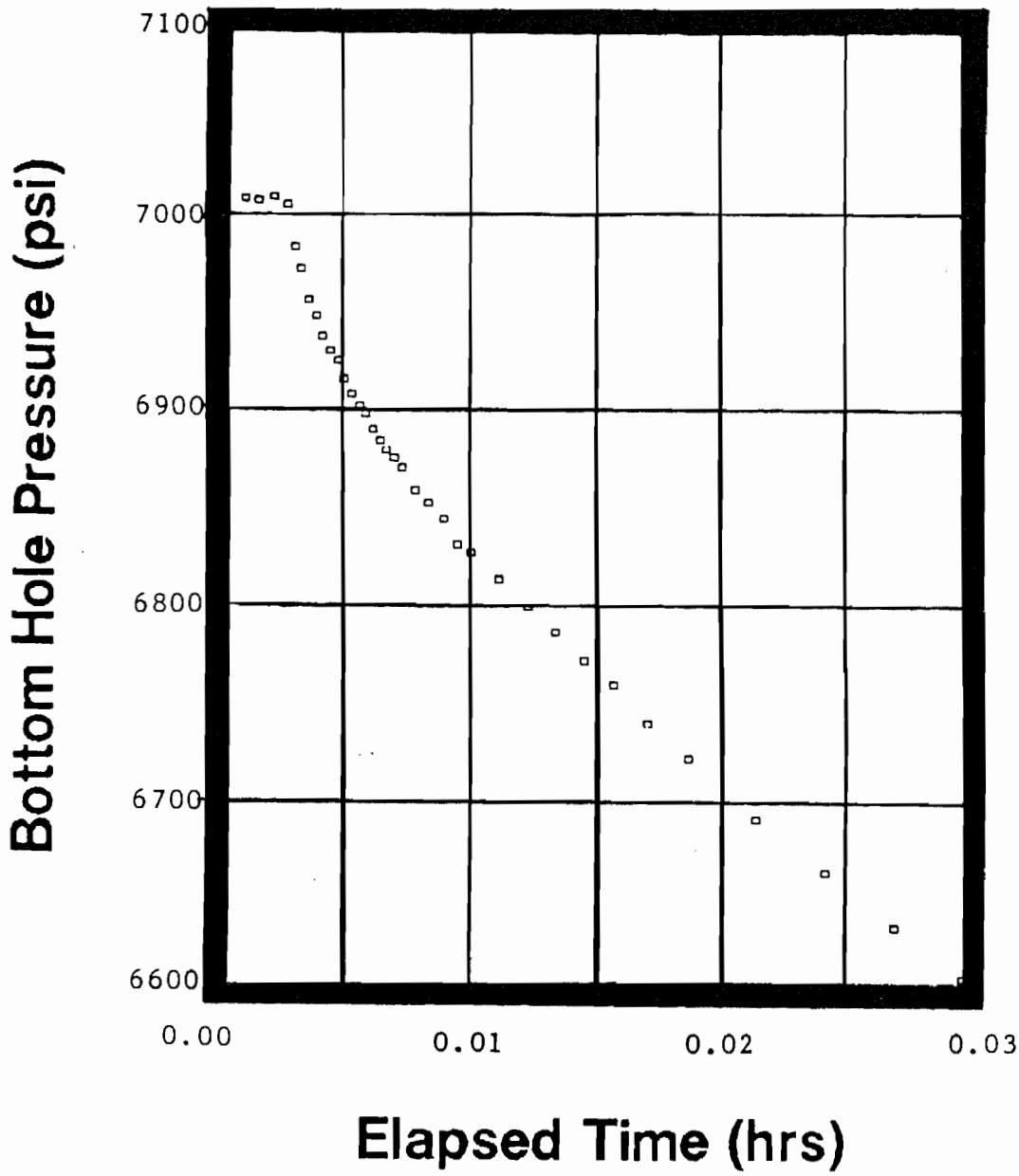

Figure A-3-9: Pressure Decline Plot (vs. Time): Test 7, Zone 3P1

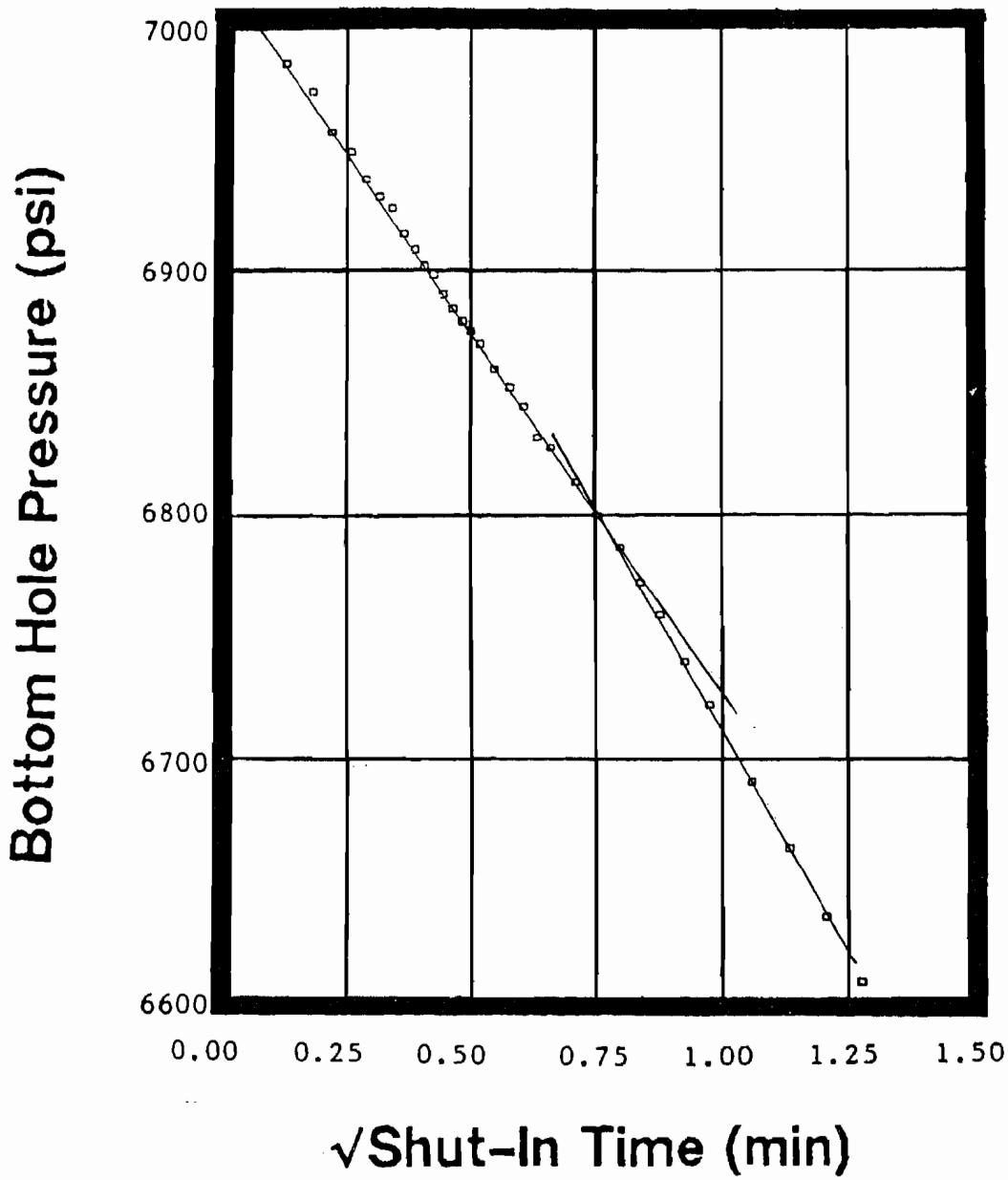

Figure A-3-10: Pressure Decline Plot (vs. Square Root Time): Test 7, Zone 3P1

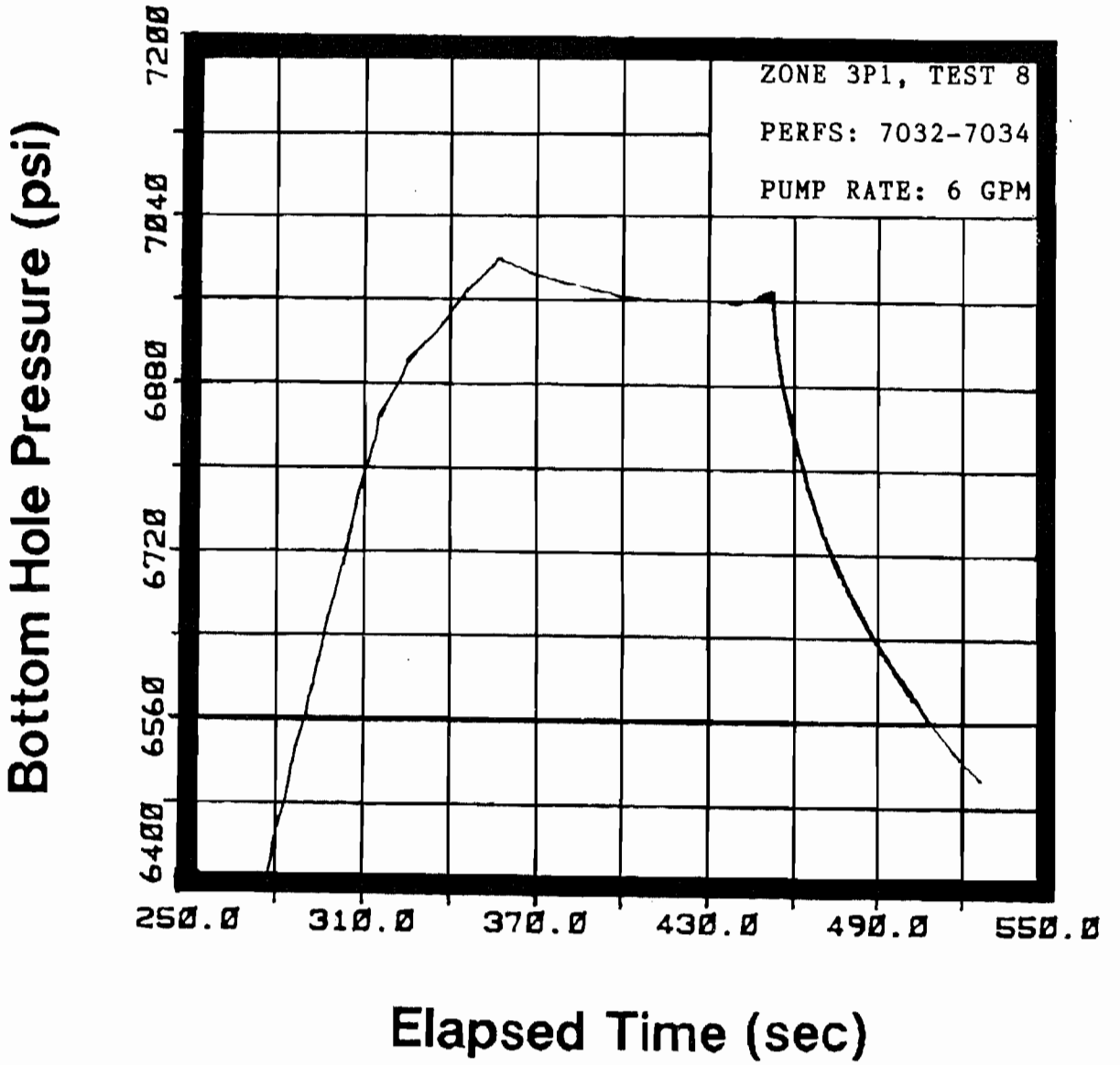

Figure A-3-11: Bottom Hole Pressure vs. Time: Test 8, Zone 3P1

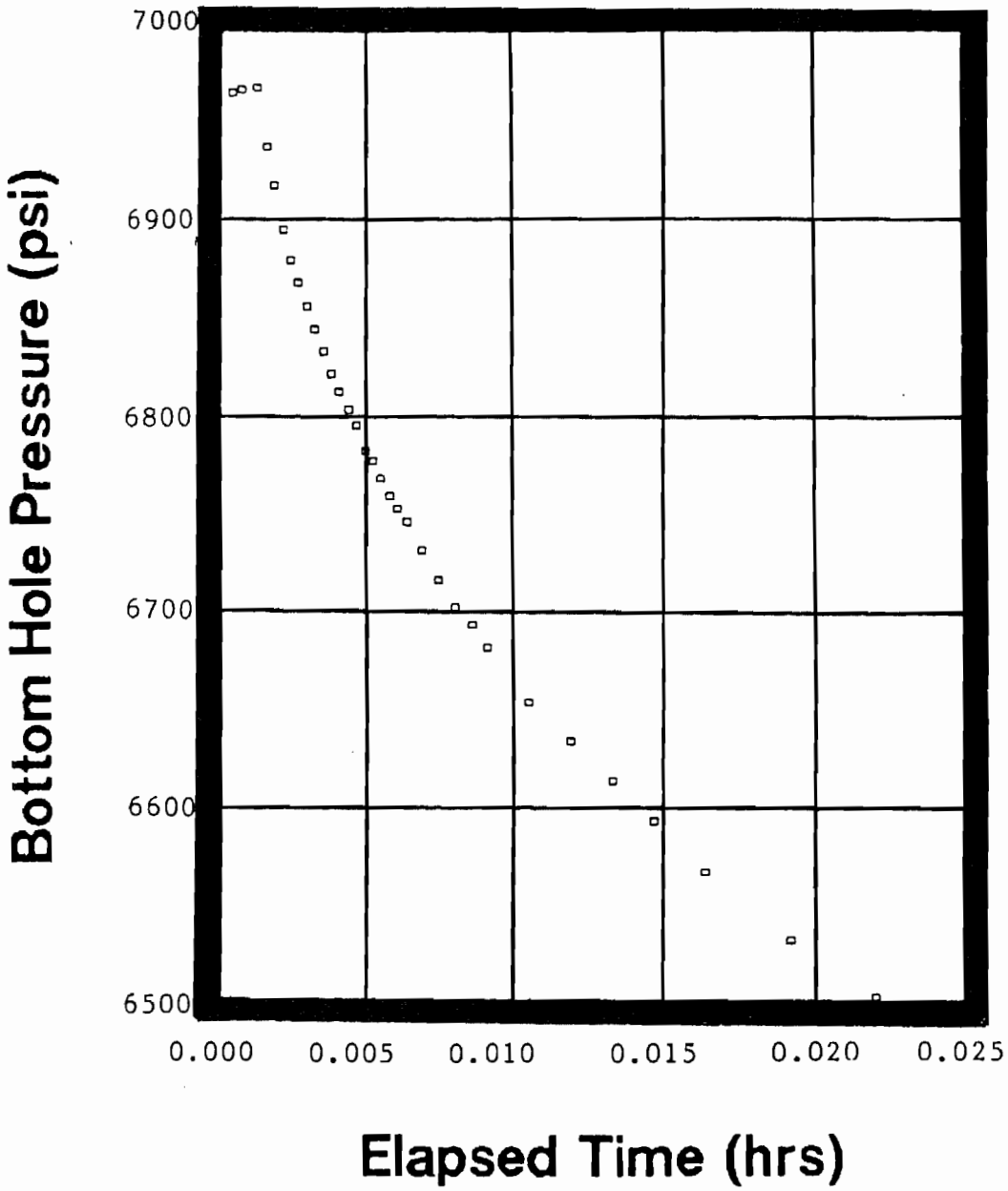

Figure A-3-12: Pressure Decline Plot (vs. Time): Test 8, Zone 3P1

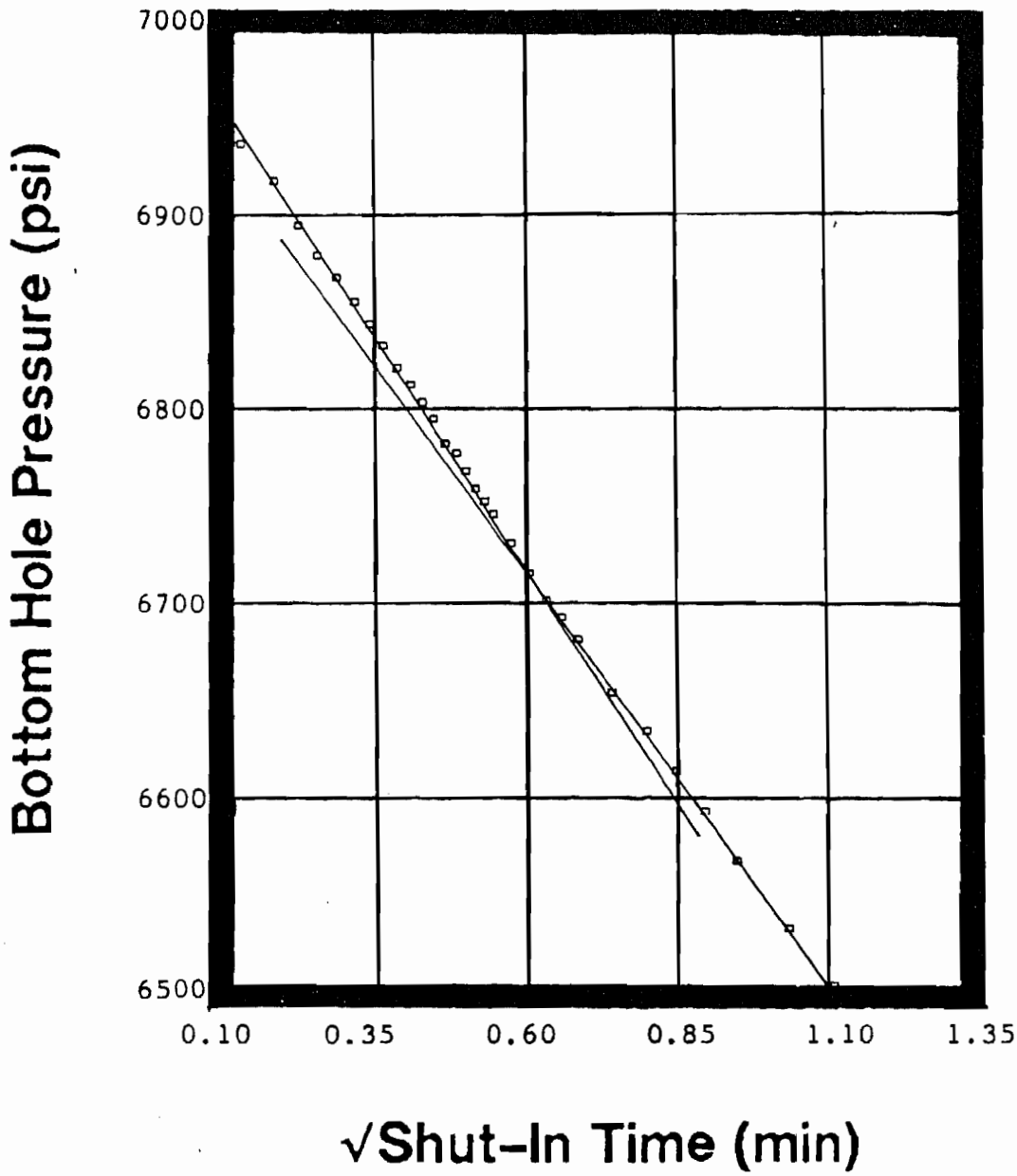

Figure A-3-13: Pressure Decline Plot (vs. Square Root Time): Test 8, Zone 3P1

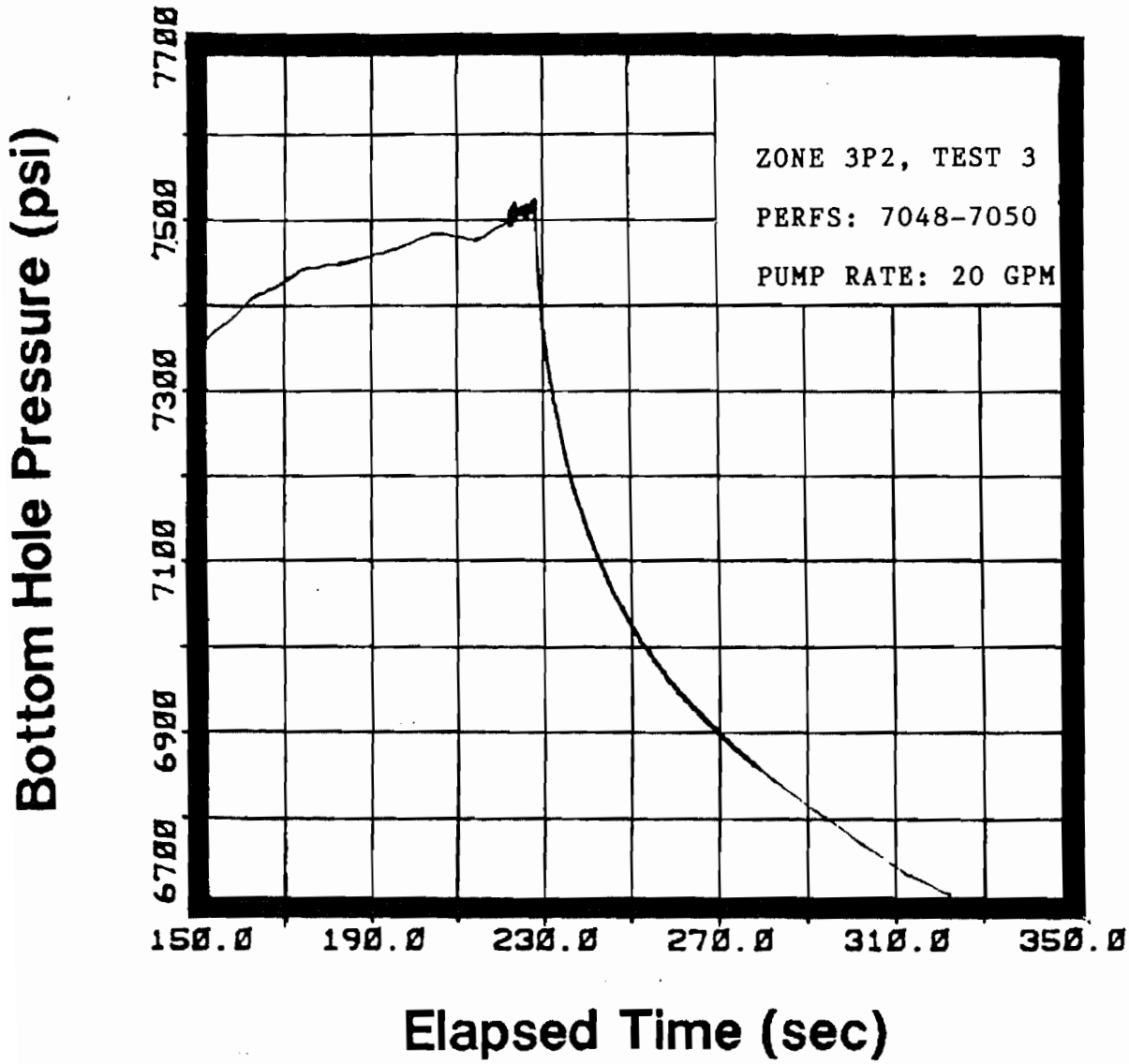

Figure A-3-14: Bottom Hole Pressure vs. Time: Test 3, Zone 3P2

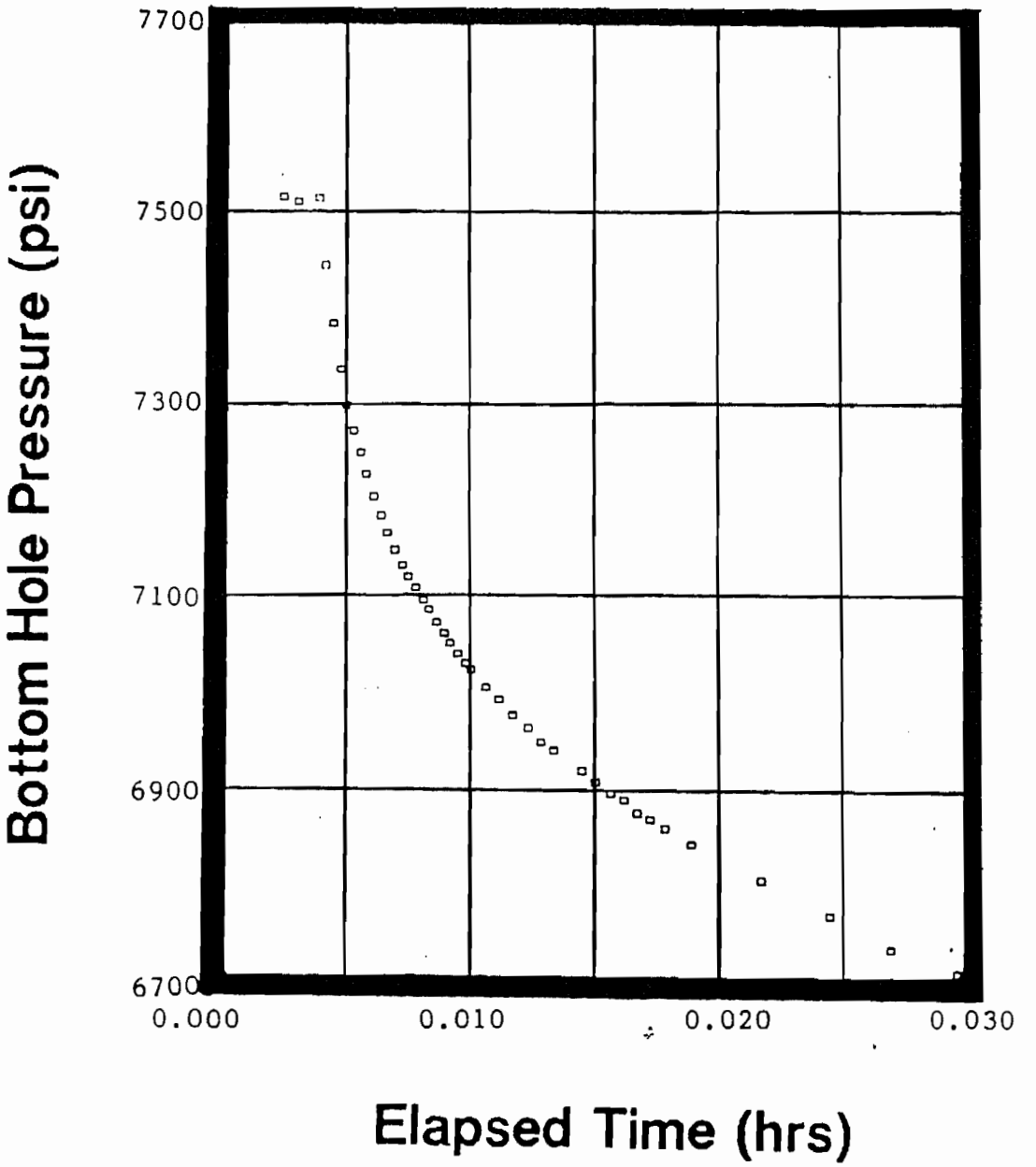

Figure A-3-15: Pressure Decline Plot (vs. Time): Test 3, Zone 3P2

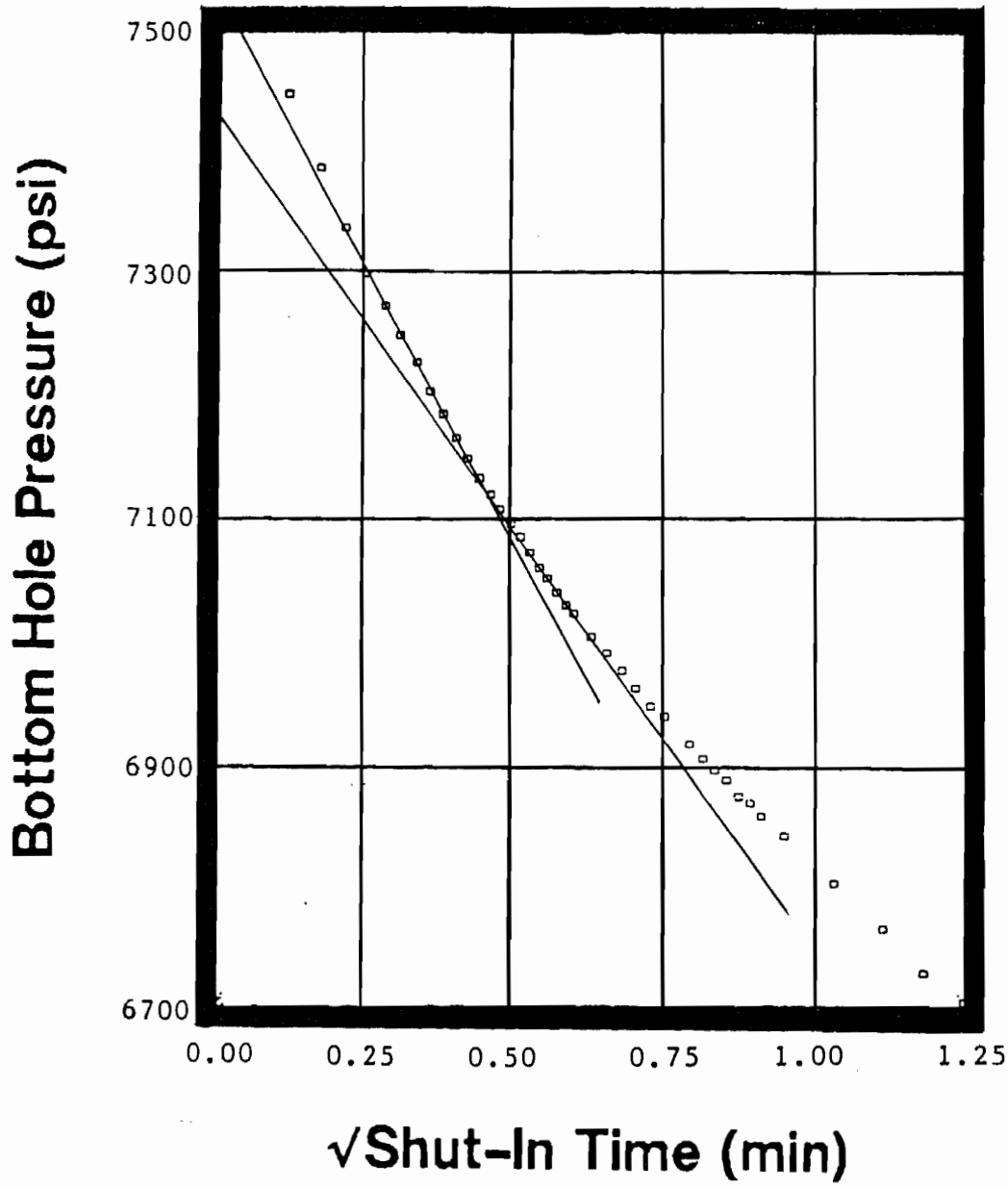

Figure A-3-16: Pressure Decline Plot (vs. Square Root Time): Test 3, Zone 3P2

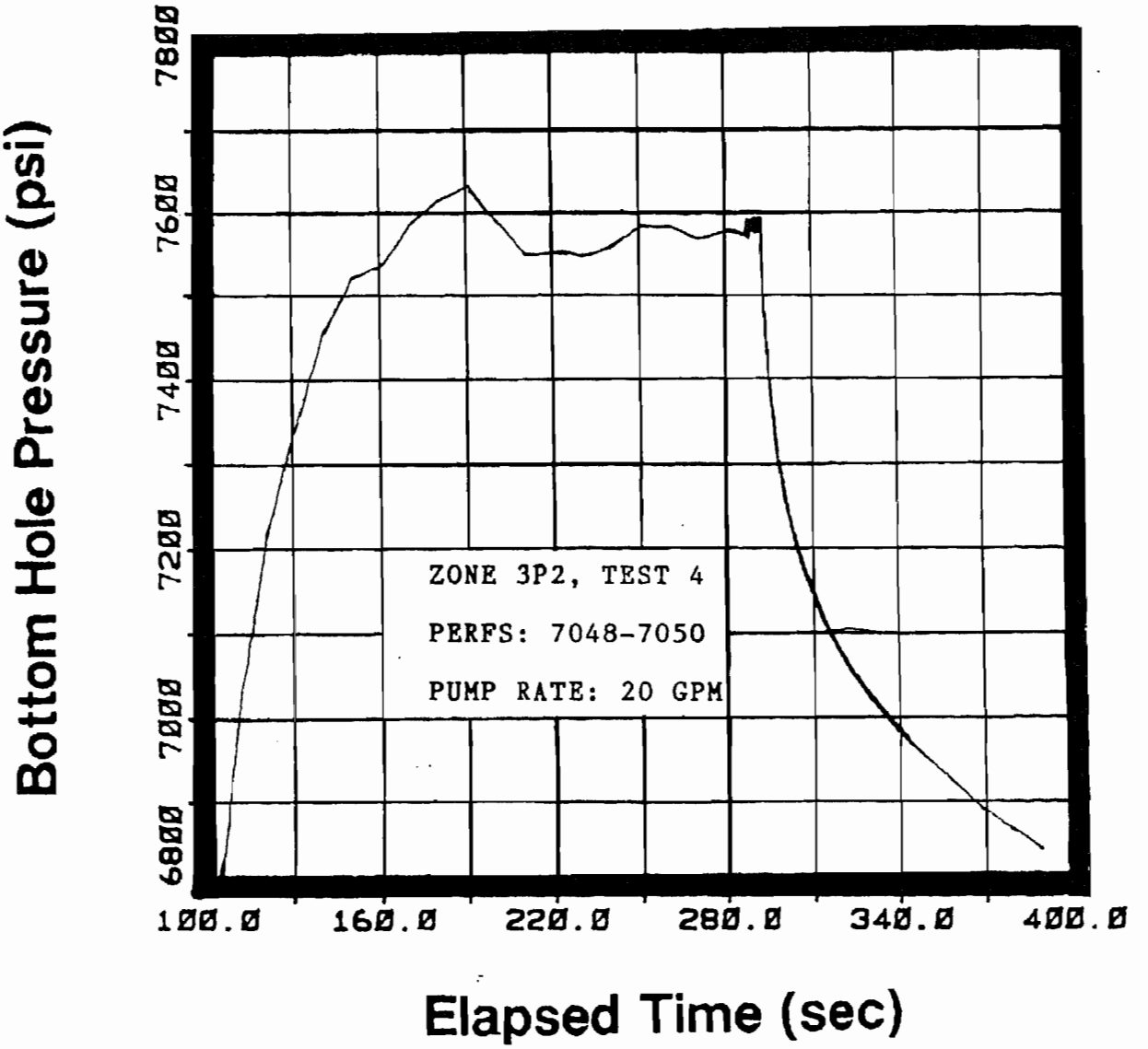

Figure A-3-17: Bottom Hole Pressure vs. Time: Test 4, Zone 3P2

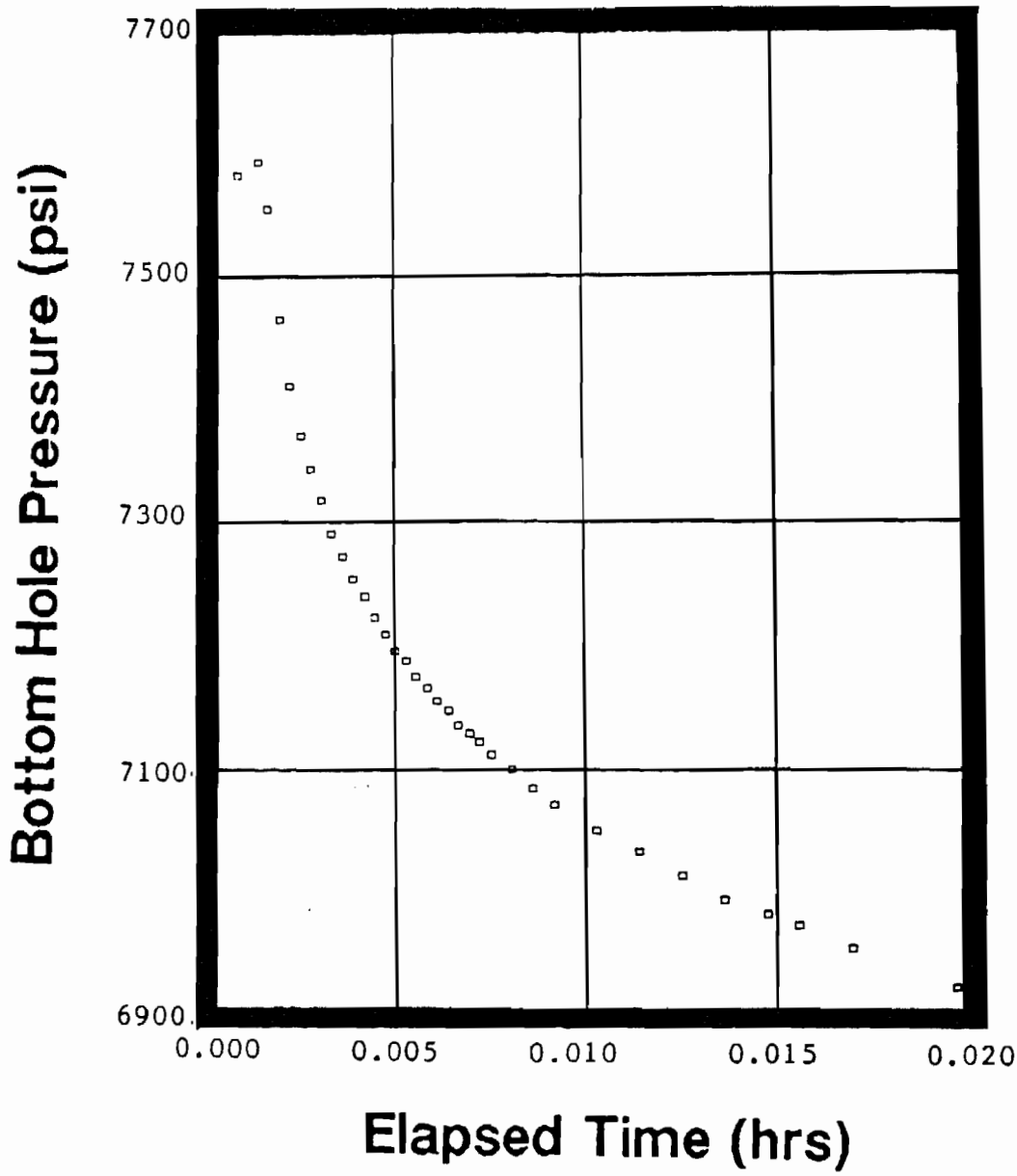

Figure A-3-18: Pressure Decline Plot (vs. Time): Test 4, Zone 3P2

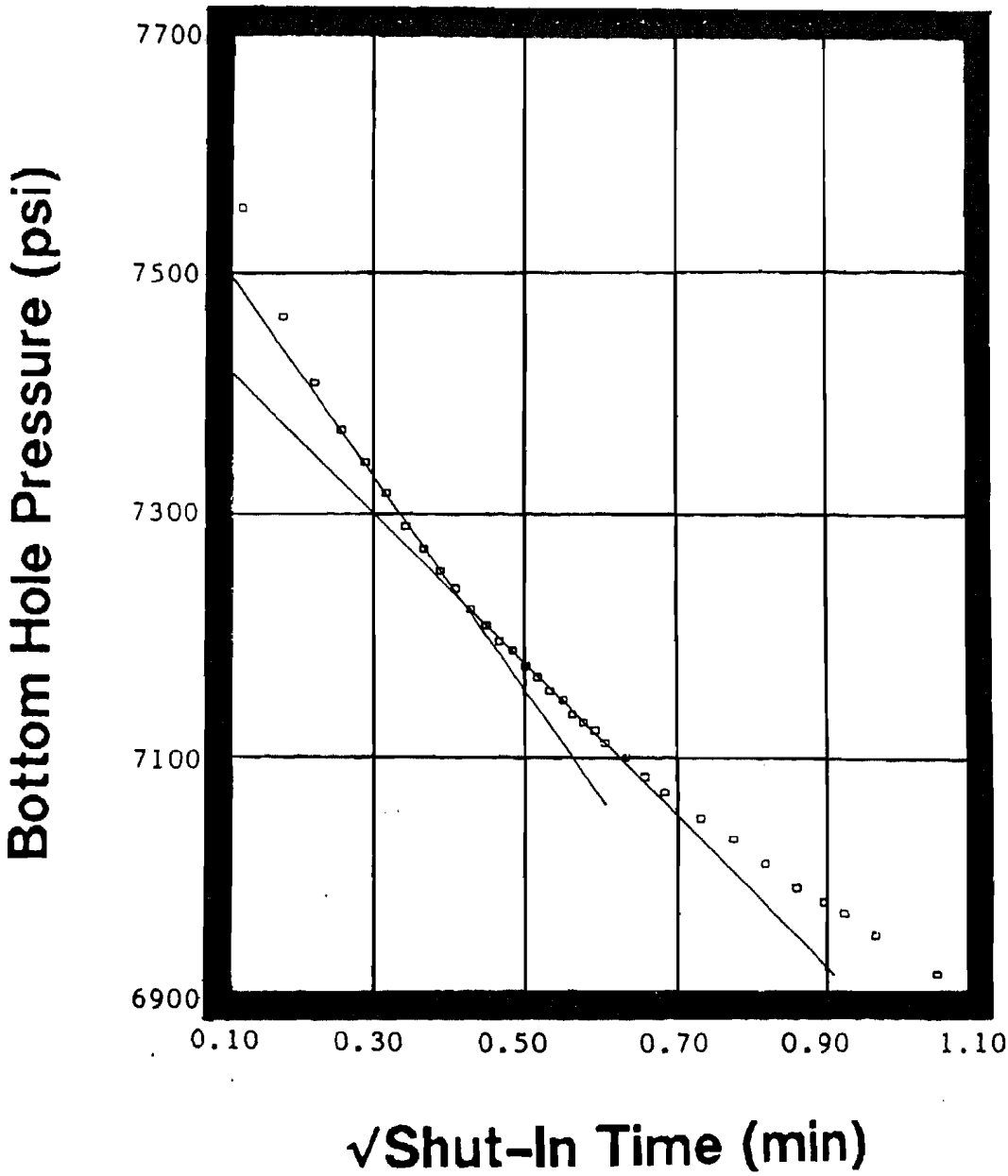

Figure A-3-19: Pressure Decline Plot (vs. Square Root Time): Test 4, Zone 3P2

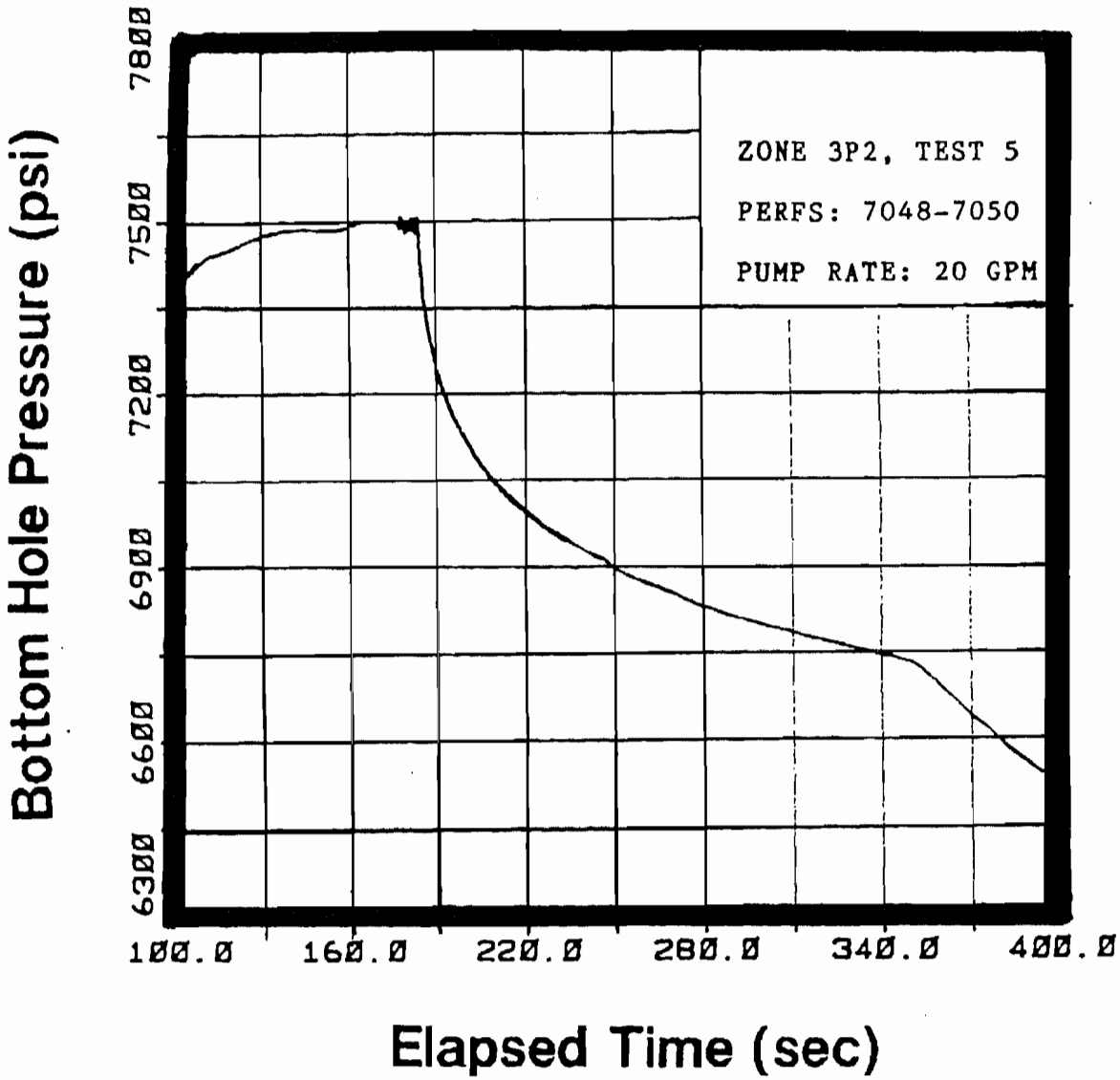

Figure A-3-20: Bottom Hole Pressure vs. Time: Test 5, Zone 3P2

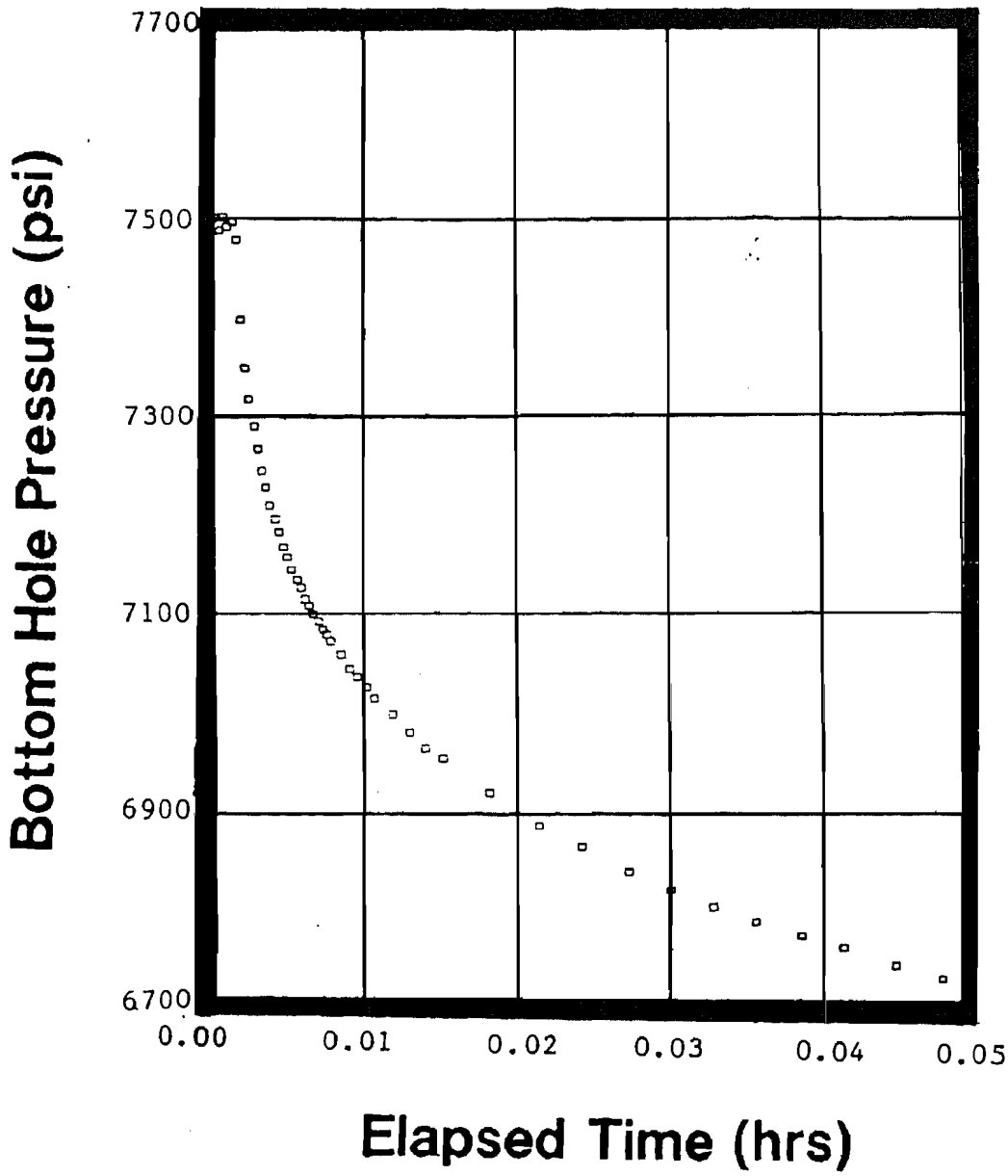

Figure A-3-21: Pressure Decline Plot (vs. Time): Test 5, Zone 3P2

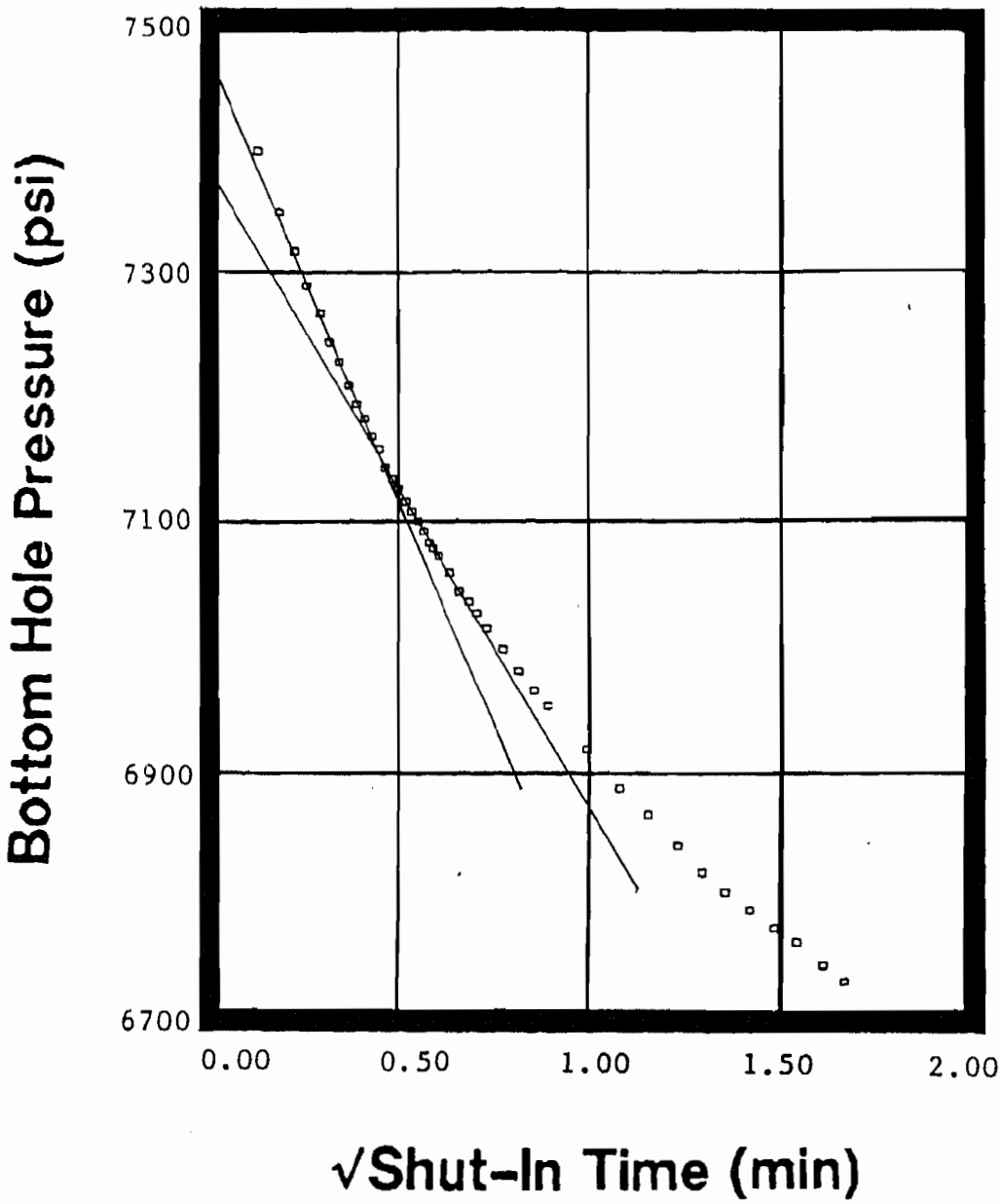

Figure A-3-22: Pressure Decline Plot (vs. Square Root Time): Test 5, Zone 3P2

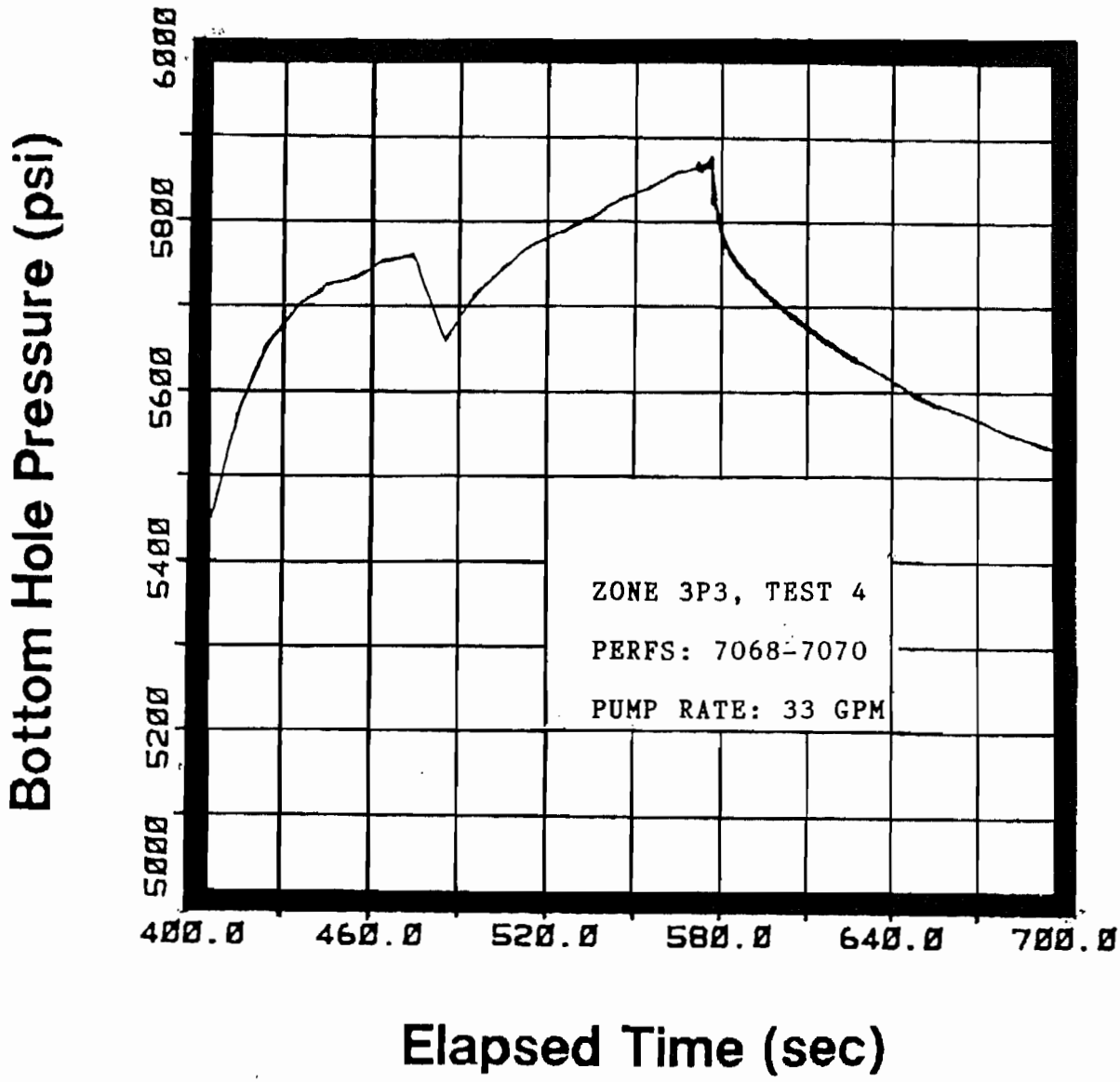

Figure A-3-23: Bottom Hole Pressure vs. Time: Test 4, Zone 3P3

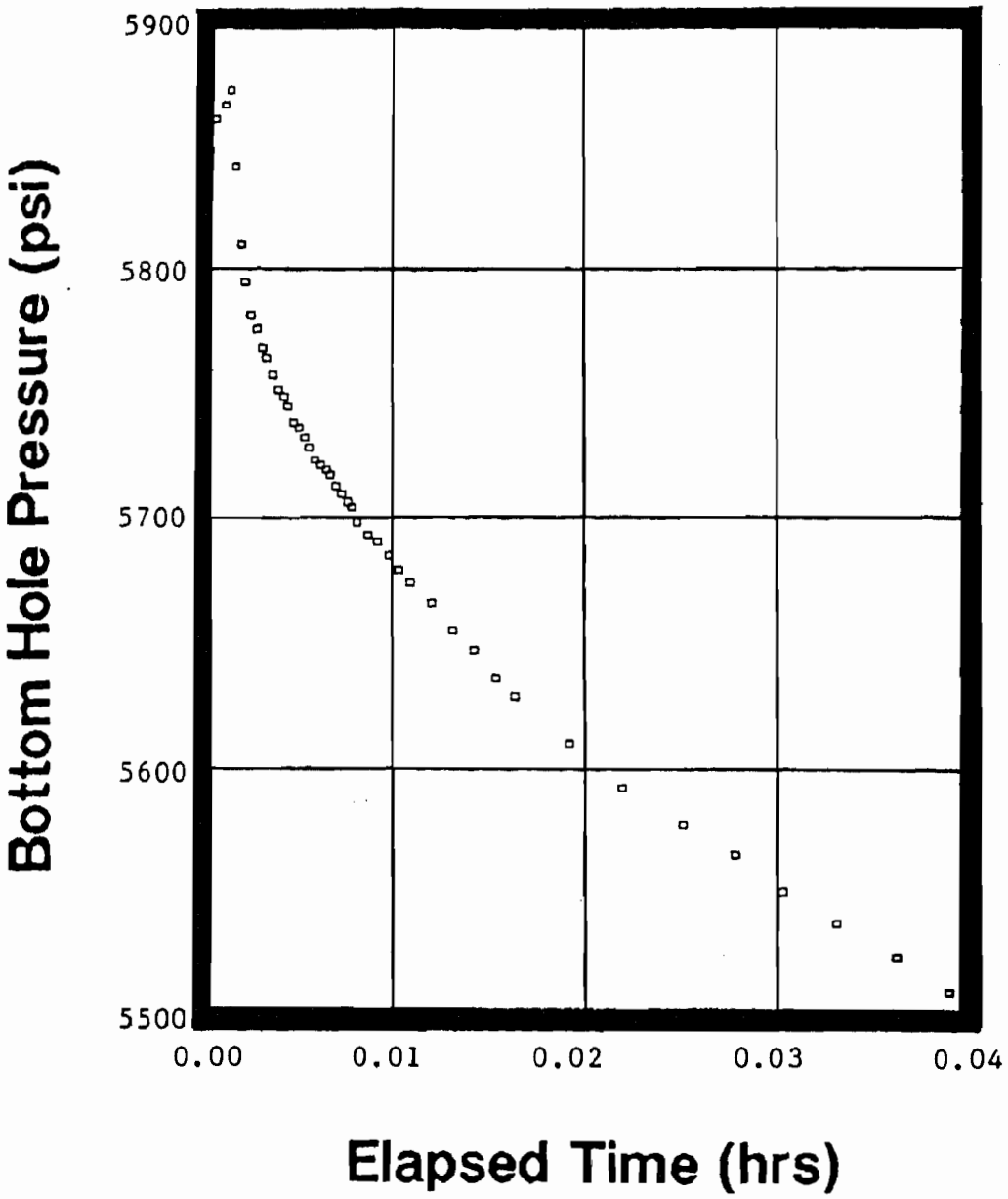

Figure A-3-24: Pressure Decline Plot (vs. Time): Test 4, Zone 3P3

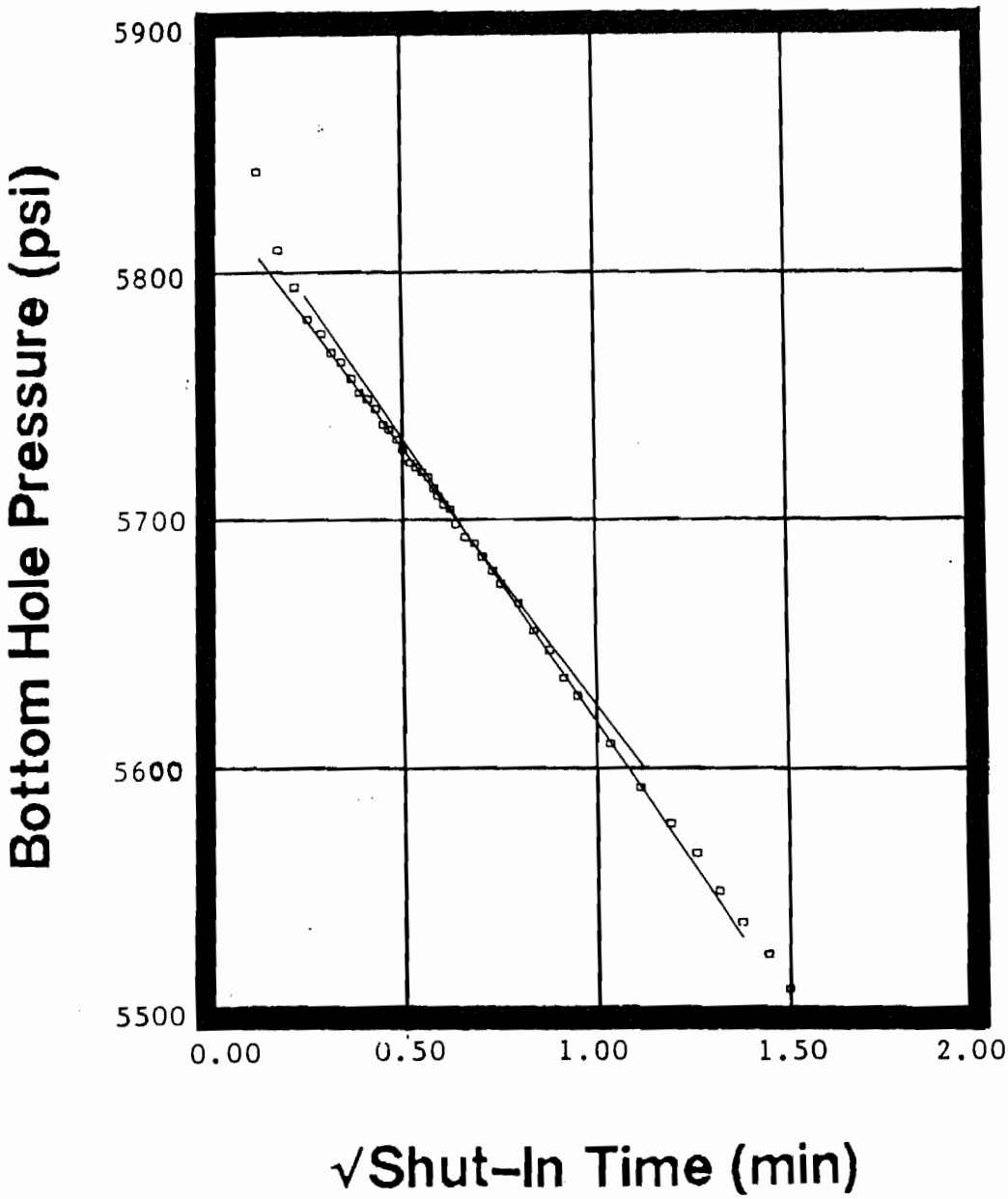

Figure A-3-25: Pressure Decline Plot (vs. Square Root Time): Test 4, Zone 3P3

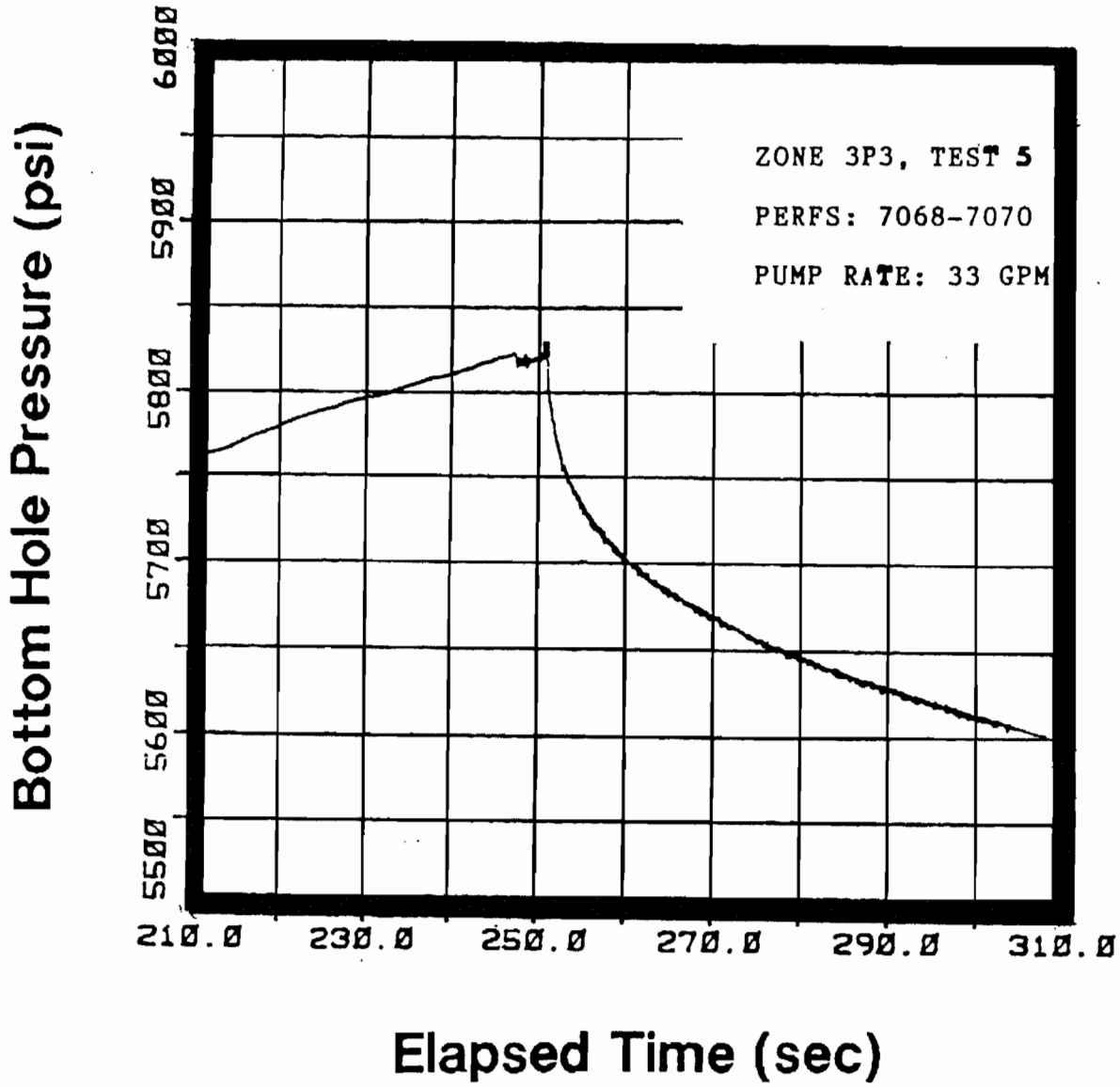

Figure A-3-26: Bottom Hole Pressure vs. Time: Test 5, Zone 3P3

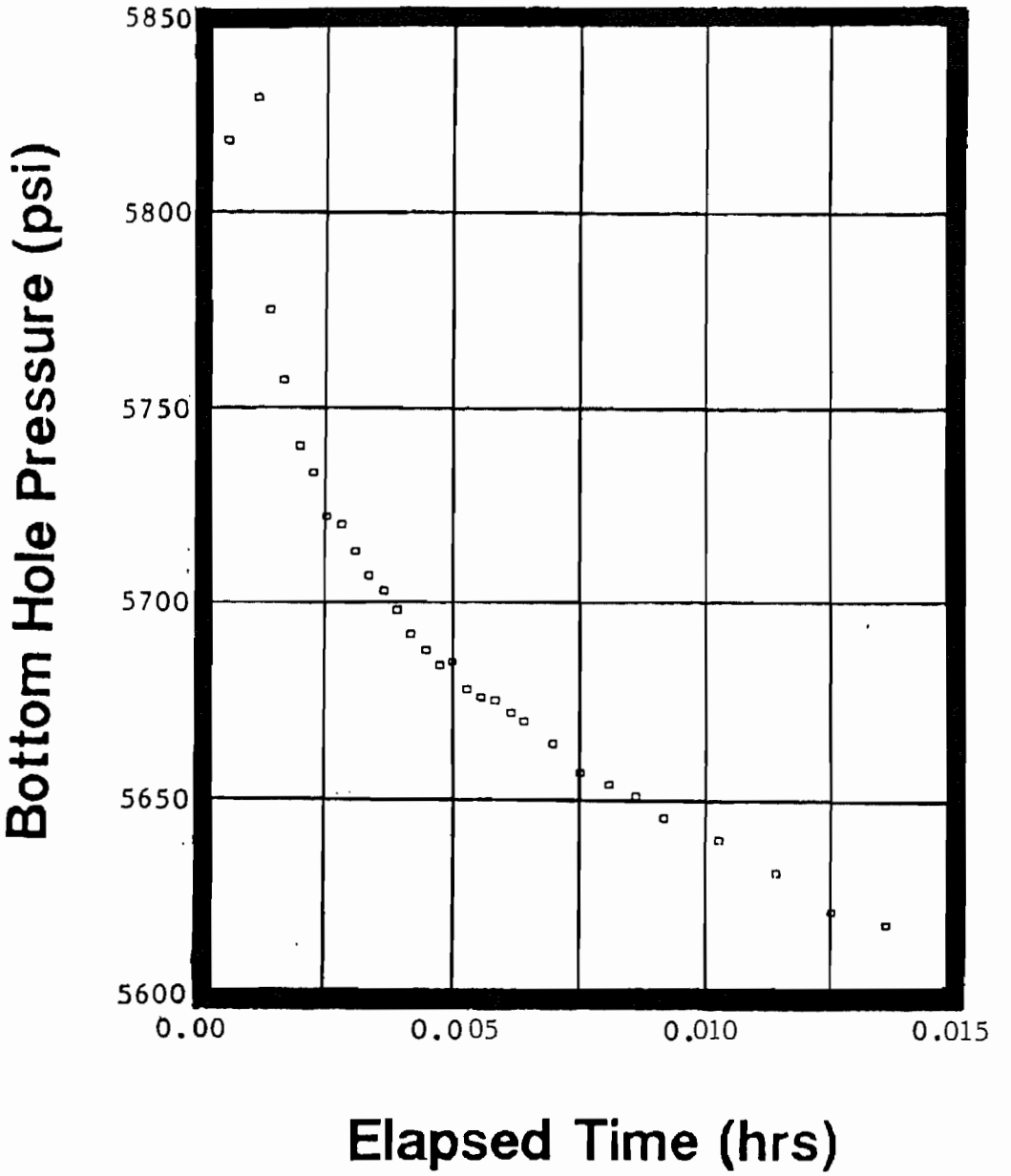

Figure A-3-27: Pressure Decline Plot (vs. Time): Test 5, Zone 3P3

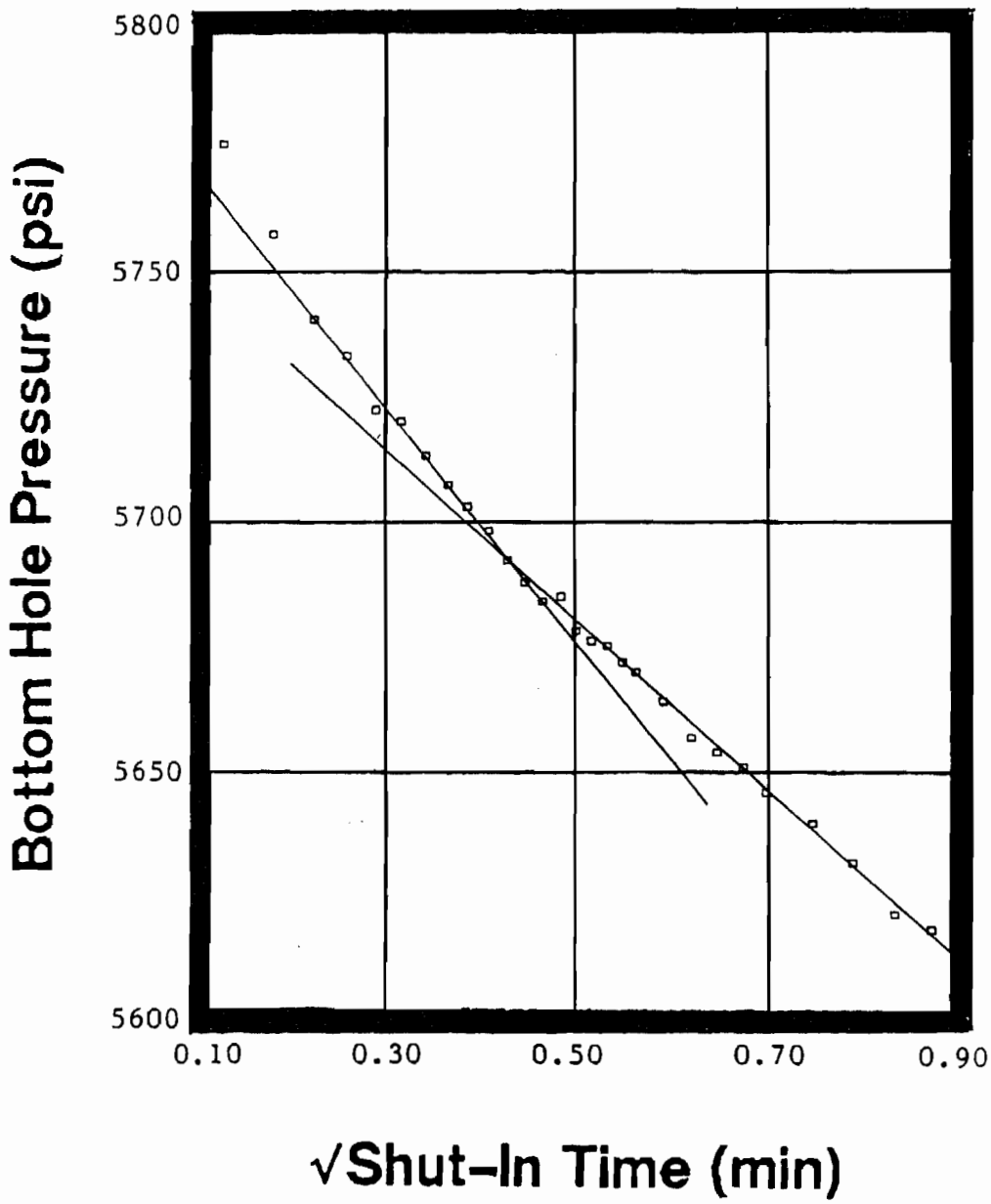

Figure A-3-28: Pressure Decline Plot (vs. Square Root Time): Test 5, Zone 3P3

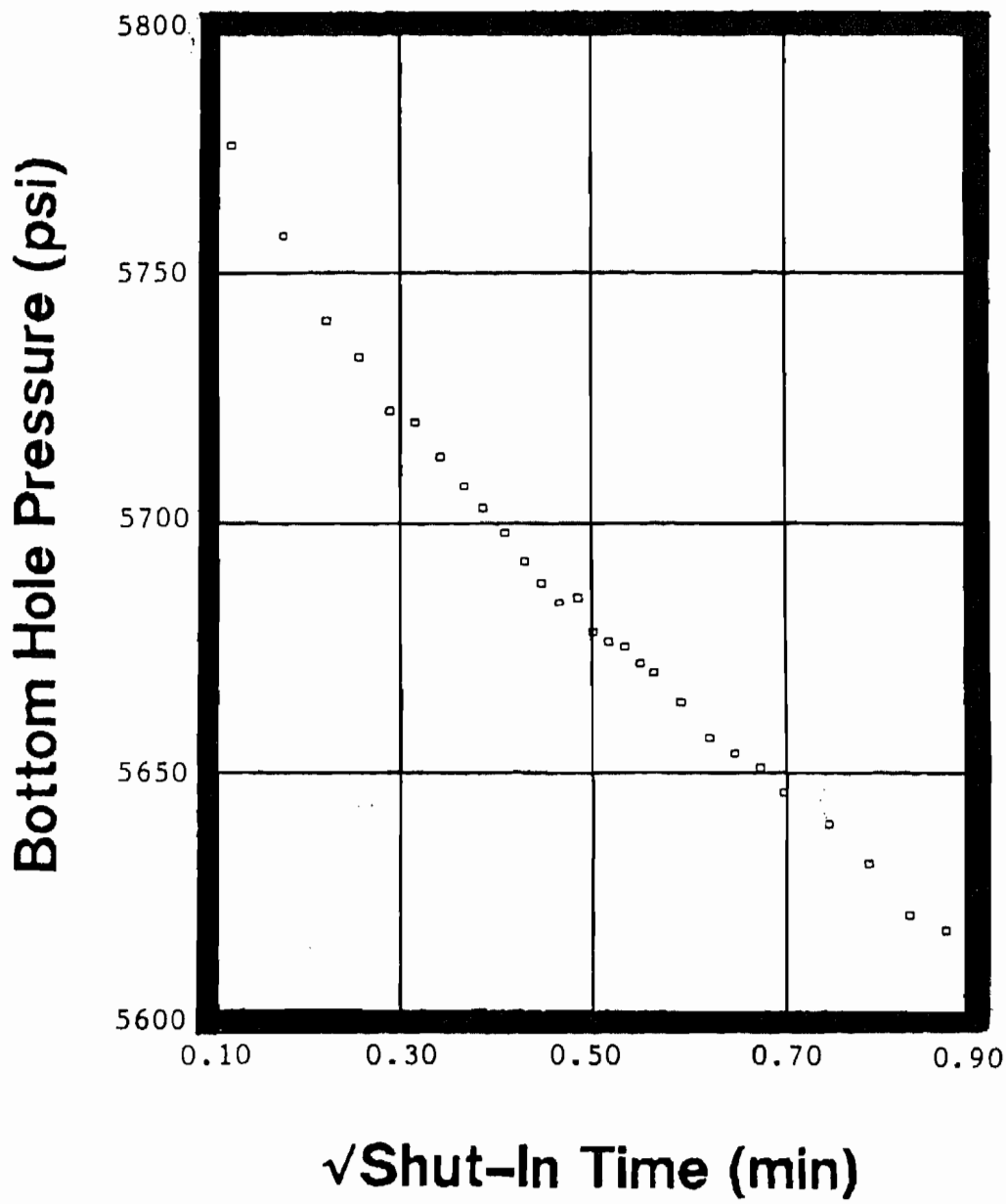

Figure A-3-28: Pressure Decline Plot (vs. Square Root Time): Test 5, Zone 3P3

APPENDIX B

Time - pressure data listings for stress tests (for both the seven microfrac stress test zones in MWX-2 and MWX-3 and the flowback tests performed in the Frac Zone of MWX-1) that were re-analyzed by NSI. Time is given in seconds, pressure in psi.

Zone 2P1, Test 3

T	P	T	P	T	P	T	P
0.00	0.0	311.62	6693.0	328.82	5978.0	346.00	5848.0
9.83	4667.0	311.90	6684.0	329.11	5974.0	346.32	5847.0
19.80	4669.0	312.30	6680.0	329.40	5970.0	346.72	5846.0
29.81	4806.0	312.52	6672.0	329.72	5966.0	346.90	5845.0
39.82	4912.0	312.91	6681.0	330.12	5962.0	347.33	5844.0
49.82	4989.0	313.20	6677.0	330.41	5958.0	347.62	5844.0
59.80	5072.0	313.52	6707.0	330.70	5955.0	347.90	5842.0
69.80	5127.0	313.81	6689.0	331.02	5951.0	348.23	5841.0
79.81	5230.0	314.10	6685.0	331.42	5947.0	348.52	5841.0
89.82	5383.0	314.42	6681.0	331.60	5943.0	348.80	5840.0
99.83	5521.0	314.82	6682.0	332.03	5940.0	349.20	5838.0
109.80	5616.0	315.11	6602.0	332.32	5937.0	349.52	5838.0
119.81	5716.0	315.40	6514.0	332.60	5934.0	349.81	5837.0
129.82	5827.0	315.72	6451.0	332.93	5931.0	350.10	5836.0
139.82	5944.0	316.12	6400.0	333.22	5927.0	350.50	5835.0
149.80	6042.0	316.40	6358.0	333.61	5924.0	350.82	5835.0
159.80	6152.0	316.73	6322.0	333.90	5921.0	351.11	5834.0
169.81	6241.0	317.02	6290.0	334.22	5918.0	351.40	5834.0
179.82	6377.0	317.30	6264.0	334.51	5915.0	351.83	5833.0
189.83	6453.0	317.63	6243.0	334.80	5912.0	352.01	5832.0
199.80	6490.0	318.02	6226.0	335.20	5909.0	352.40	5831.0
209.81	6529.0	318.31	6210.0	335.52	5907.0	352.73	5830.0
219.82	6553.0	318.60	6196.0	335.81	5904.0	353.02	5830.0
229.82	6588.0	318.92	6182.0	336.10	5902.0	353.30	5829.0
239.80	6595.0	319.21	6170.0	336.53	5899.0	353.63	5828.0
244.80	6603.0	319.50	6159.0	336.71	5896.0	353.92	5828.0
249.80	6613.0	319.90	6148.0	337.10	5894.0	354.31	5827.0
259.81	6636.0	320.22	6139.0	337.43	5892.0	354.60	5827.0
269.82	6639.0	320.51	6129.0	337.72	5889.0	354.92	5826.0
279.83	6642.0	320.80	6121.0	338.00	5887.0	355.21	5825.0
289.80	6651.0	321.23	6113.0	338.33	5885.0	355.61	5825.0
299.81	6667.0	321.41	6105.0	338.72	5884.0	355.90	5824.0
304.60	6675.0	321.80	6098.0	339.01	5881.0	356.22	5823.0
304.92	6668.0	322.13	6091.0	339.30	5879.0	356.51	5823.0
305.21	6668.0	322.42	6084.0	339.62	5877.0	356.90	5822.0
305.50	6670.0	322.70	6077.0	339.91	5875.0	357.12	5822.0
305.93	6678.0	323.03	6071.0	340.31	5873.0	357.41	5821.0
306.22	6685.0	323.42	6065.0	340.60	5872.0	357.80	5821.0
306.50	6672.0	323.71	6059.0	340.92	5870.0	358.13	5820.0
306.83	6674.0	324.00	6053.0	341.21	5869.0	358.42	5819.0
307.22	6669.0	324.32	6047.0	341.60	5867.0	358.70	5819.0
307.40	6671.0	324.61	6041.0	341.82	5865.0	359.03	5818.0
307.80	6676.0	325.01	6036.0	342.22	5864.0	359.42	5818.0
308.12	6671.0	325.30	6030.0	342.50	5863.0	359.71	5817.0
308.41	6678.0	325.62	6025.0	342.83	5861.0	360.00	5816.0
308.70	6694.0	325.91	6020.0	343.12	5859.0	360.32	5816.0
309.02	6692.0	326.30	6015.0	343.40	5858.0	360.72	5816.0
309.42	6670.0	326.52	6010.0	343.80	5857.0	360.90	5815.0
309.71	6670.0	326.92	6005.0	344.12	5856.0	361.30	5814.0
310.00	6668.0	327.20	6001.0	344.41	5854.0	361.62	5813.0
310.32	6678.0	327.53	5996.0	344.70	5853.0	362.02	5813.0
310.61	6680.0	327.82	5992.0	345.02	5851.0	362.20	5813.0
311.00	6687.0	328.10	5987.0	345.42	5851.0	362.52	5812.0
311.33	6703.0	328.50	5982.0	345.71	5849.0	362.92	5812.0

T	P	T	P	T	P	T	P
363.20	5812.0	380.41	5784.0	397.62	5761.0	414.83	5739.0
363.53	5811.0	380.70	5783.0	397.91	5760.0	415.12	5739.0
363.82	5810.0	381.10	5783.0	398.20	5760.0	415.40	5738.0
364.10	5810.0	381.31	5783.0	398.52	5759.0	415.73	5738.0
364.50	5809.0	381.71	5782.0	398.92	5759.0	416.02	5738.0
364.82	5808.0	382.00	5782.0	399.20	5758.0	416.41	5737.0
365.11	5808.0	382.43	5781.0	399.53	5758.0	416.70	5737.0
365.40	5807.0	382.61	5780.0	399.82	5757.0	417.02	5736.0
365.72	5807.0	382.90	5780.0	400.21	5757.0	417.31	5736.0
366.01	5807.0	383.33	5780.0	400.50	5757.0	417.60	5735.0
366.41	5806.0	383.62	5779.0	400.82	5756.0	418.00	5735.0
366.70	5806.0	383.90	5779.0	401.11	5756.0	418.32	5735.0
367.02	5805.0	384.23	5778.0	401.51	5755.0	418.61	5735.0
367.31	5804.0	384.52	5778.0	401.72	5755.0	418.90	5734.0
367.60	5804.0	384.91	5777.0	402.01	5755.0	419.33	5734.0
368.03	5803.0	385.20	5777.0	402.41	5754.0	419.51	5734.0
368.32	5803.0	385.52	5777.0	402.70	5754.0	419.90	5733.0
368.60	5803.0	385.81	5776.0	403.02	5753.0	420.23	5733.0
368.93	5802.0	386.21	5775.0	403.31	5753.0	420.52	5733.0
369.22	5802.0	386.50	5775.0	403.60	5753.0	420.80	5732.0
369.61	5801.0	386.82	5775.0	404.03	5753.0	421.13	5732.0
369.90	5800.0	387.11	5775.0	404.32	5752.0	421.42	5731.0
370.22	5800.0	387.50	5774.0	404.60	5751.0	421.81	5731.0
370.51	5799.0	387.72	5774.0	404.93	5751.0	422.10	5731.0
370.91	5799.0	388.01	5773.0	405.32	5751.0	422.42	5730.0
371.12	5997.0	388.40	5772.0	405.50	5750.0	422.71	5729.0
371.52	5798.0	388.73	5772.0	405.90	5750.0	423.11	5730.0
371.81	5798.0	389.02	5772.0	406.22	5750.0	423.40	5729.0
372.10	5797.0	389.30	5771.0	406.51	5749.0	423.72	5728.0
372.42	5797.0	389.63	5771.0	406.80	5749.0	424.01	5728.0
372.71	5796.0	390.02	5771.0	407.12	5748.0	424.40	5728.0
373.10	5795.0	390.31	5770.0	407.52	5748.0	424.62	5728.0
373.43	5794.0	390.60	5770.0	407.81	5748.0	424.91	5727.0
373.72	5794.0	390.92	5769.0	408.10	5747.0	425.30	5727.0
374.00	5794.0	391.32	5768.0	408.42	5747.0	425.63	5727.0
374.33	5793.0	391.50	5768.0	408.71	5746.0	425.92	5726.0
374.72	5792.0	391.90	5768.0	409.10	5746.0	426.20	5726.0
375.01	5792.0	392.22	5768.0	409.43	5746.0	426.53	5726.0
375.30	5792.0	392.51	5767.0	409.72	5745.0	426.92	5725.0
375.62	5791.0	392.80	5767.0	410.00	5745.0	427.21	5725.0
376.02	5791.0	393.12	5766.0	410.40	5744.0	427.50	5724.0
376.20	5790.0	393.52	5766.0	410.62	5744.0	427.82	5724.0
376.60	5789.0	393.80	5766.0	411.01	5744.0	428.22	5724.0
376.92	5789.0	394.13	5765.0	411.30	5743.0	428.40	5723.0
377.21	5789.0	394.42	5765.0	411.62	5743.0	428.80	5723.0
377.50	5788.0	394.70	5764.0	411.91	5743.0	429.12	5722.0
377.82	5788.0	395.10	5764.0	412.20	5742.0	429.41	5722.0
378.22	5787.0	395.42	5763.0	412.52	5742.0	429.70	5722.0
378.50	5786.0	395.71	5763.0	412.92	5742.0	430.02	5721.0
378.83	5786.0	396.00	5763.0	413.21	5741.0	430.42	5721.0
379.12	5786.0	396.40	5762.0	413.50	5740.0	430.70	5721.0
379.40	5785.0	396.61	5761.0	413.82	5740.0	431.03	5720.0
379.80	5785.0	397.01	5761.0	414.22	5740.0	431.32	5720.0
380.12	5784.0	397.30	5761.0	414.50	5740.0	431.60	5720.0

T	P	T	P	T	P	T	P
432.00	5719.0	449.10	5700.0	466.42	5683.0	483.52	5665.0
432.32	5719.0	449.50	5700.0	466.60	5683.0	483.80	5665.0
432.61	5718.0	449.82	5700.0	467.03	5682.0	484.20	5664.0
432.90	5718.0	450.11	5700.0	467.32	5682.0	484.52	5664.0
433.30	5717.0	450.40	5699.0	467.60	5681.0	484.81	5664.0
433.51	5717.0	450.72	5699.0	467.93	5681.0	485.10	5664.0
433.91	5717.0	451.12	5698.0	468.22	5681.0	485.50	5663.0
434.20	5717.0	451.40	5698.0	468.61	5680.0	485.82	5663.0
434.52	5717.0	451.73	5698.0	468.90	5680.0	486.11	5663.0
434.81	5716.0	452.02	5698.0	469.22	5680.0	486.40	5662.0
435.10	5716.0	452.41	5697.0	469.51	5679.0	486.83	5662.0
435.42	5715.0	452.63	5697.0	469.80	5679.0	487.01	5662.0
435.82	5715.0	453.02	5696.0	470.20	5679.0	487.30	5661.0
436.10	5714.0	453.31	5696.0	470.52	5678.0	487.73	5661.0
436.43	5714.0	453.60	5696.0	470.81	5678.0	488.02	5661.0
436.72	5714.0	453.92	5695.0	471.10	5678.0	488.30	5660.0
437.11	5714.0	454.21	5695.0	471.53	5678.0	488.63	5660.0
437.33	5713.0	454.50	5695.0	471.71	5677.0	488.92	5660.0
437.72	5713.0	454.90	5694.0	472.10	5677.0	489.31	5660.0
438.01	5713.0	455.22	5694.0	472.43	5676.0	489.60	5659.0
438.30	5712.0	455.51	5694.0	472.72	5676.0	489.92	5659.0
438.62	5712.0	455.80	5694.0	473.00	5676.0	490.21	5659.0
438.91	5711.0	456.23	5693.0	473.33	5675.0	490.61	5658.0
439.31	5711.0	456.52	5692.0	473.72	5675.0	490.90	5658.0
439.60	5711.0	456.80	5692.0	474.01	5675.0	491.22	5658.0
439.92	5710.0	457.13	5692.0	474.30	5674.0	491.51	5657.0
440.21	5710.0	457.52	5692.0	474.62	5674.0	491.90	5657.0
440.50	5710.0	457.70	5691.0	474.91	5674.0	492.12	5657.0
440.93	5709.0	458.03	5691.0	475.31	5673.0	492.41	5657.0
441.22	5709.0	458.42	5691.0	475.60	5673.0	492.80	5656.0
441.50	5709.0	458.71	5691.0	475.92	5673.0	493.13	5656.0
441.83	5708.0	459.00	5690.0	476.21	5672.0	493.42	5655.0
442.12	5708.0	459.32	5690.0	476.60	5672.0	493.70	5655.0
442.40	5708.0	459.61	5689.0	476.82	5672.0	494.03	5655.0
442.80	5707.0	460.01	5689.0	477.22	5671.0	494.42	5655.0
443.12	5707.0	460.30	5689.0	477.50	5671.0	494.71	5654.0
443.41	5706.0	460.62	5688.0	477.83	5671.0	495.00	5654.0
443.70	5706.0	460.91	5688.0	478.12	5671.0	495.32	5654.0
444.02	5706.0	461.30	5688.0	478.40	5670.0	499.82	5649.0
444.42	5705.0	461.63	5688.0	478.80	5670.0	509.80	5640.0
444.71	5705.0	461.92	5687.0	479.12	5669.0	519.80	5631.0
445.00	5705.0	462.20	5687.0	479.41	5669.0	529.81	5622.0
445.32	5705.0	462.60	5686.0	479.70	5669.0	539.82	5614.0
445.61	5704.0	462.82	5686.0	480.02	5669.0	549.83	5605.0
446.00	5704.0	463.10	5686.0	480.42	5668.0	559.80	5597.0
446.33	5703.0	463.50	5686.0	480.71	5668.0	569.81	5588.0
446.62	5703.0	463.82	5685.0	481.00	5668.0	579.82	5581.0
446.90	5703.0	464.11	5685.0	481.32	5668.0	589.82	5573.0
447.30	5703.0	464.40	5685.0	481.72	5667.0	599.80	4862.0
447.52	5702.0	464.72	5684.0	481.90	5667.0	609.80	4703.0
447.91	5702.0	465.12	5684.0	482.33	5666.0	619.81	4720.0
448.20	5701.0	465.41	5684.0	482.62	5666.0		
448.52	5701.0	465.70	5683.0	482.90	5666.0		
448.81	5701.0	466.02	5683.0	483.23	5666.0		

Zone 2P1, Test 4

T	P	T	P	T	P	T	P
0.00	4775.0	111.49	7254.0	128.70	7299.0	145.91	7343.0
10.01	4777.0	111.82	7187.0	128.99	7271.0	146.20	7364.0
20.02	4781.0	112.10	7253.0	129.31	7288.0	146.59	7345.0
29.99	4870.0	112.39	7236.0	129.60	7296.0	146.81	7354.0
40.00	5433.0	112.79	7178.0	130.00	7256.0	147.10	7364.0
50.00	6361.0	113.11	7272.0	130.28	7308.0	147.49	7355.0
60.01	6860.0	113.40	7219.0	130.61	7291.0	147.82	7371.0
69.98	7011.0	113.69	7199.0	130.90	7268.0	148.10	7358.0
79.99	7068.0	114.01	7271.0	131.29	7305.0	148.39	7352.0
90.00	7177.0	114.30	7198.0	131.51	7278.0	148.72	7377.0
97.49	7194.0	114.70	7234.0	131.90	7303.0	149.11	7356.0
97.81	7145.0	114.98	7259.0	132.19	7303.0	149.40	7375.0
98.21	7214.0	115.31	7194.0	132.52	7264.0	149.69	7370.0
98.39	7178.0	115.60	7264.0	132.80	7311.0	150.01	7363.0
98.71	7154.0	115.99	7246.0	133.09	7297.0	150.41	7389.0
99.11	7225.0	116.32	7189.0	133.42	7291.0	150.59	7364.0
99.40	7168.0	116.60	7281.0	133.81	7312.0	150.98	7374.0
99.68	7172.0	116.89	7231.0	134.10	7281.0	151.31	7377.0
100.01	7224.0	117.29	7218.0	134.39	7310.0	151.60	7367.0
100.30	7163.0	117.50	7273.0	134.71	7313.0	151.88	7397.0
100.69	7193.0	117.79	7213.0	135.11	7287.0	152.21	7374.0
101.02	7213.0	118.19	7264.0	135.40	7318.0	152.60	7370.0
101.30	7156.0	118.51	7258.0	135.68	7302.0	152.89	7393.0
101.59	7226.0	118.80	7198.0	136.01	7304.0	153.22	7373.0
101.99	7202.0	119.09	7283.0	136.30	7324.0	153.50	7402.0
102.20	7149.0	119.41	7244.0	136.58	7297.0	153.79	7380.0
102.60	7238.0	119.81	7217.0	136.91	7320.0	154.19	7373.0
102.89	7185.0	120.10	7285.0	137.30	7318.0	154.51	7408.0
103.21	7180.0	120.38	7228.0	137.59	7301.0	154.80	7380.0
103.50	7244.0	120.71	7251.0	137.92	7332.0	155.09	7401.0
103.79	7166.0	121.10	7273.0	138.20	7314.0	155.48	7391.0
104.18	7195.0	121.28	7217.0	138.49	7318.0	155.70	7374.0
104.51	7233.0	121.72	7277.0	138.89	7329.0	156.10	7416.0
104.80	7172.0	122.00	7264.0	139.21	7312.0	156.38	7388.0
105.08	7227.0	122.40	7214.0	139.50	7339.0	156.71	7401.0
105.41	7216.0	122.62	7293.0	139.79	7325.0	157.00	7404.0
105.80	7163.0	122.90	7254.0	140.18	7316.0	157.28	7382.0
106.09	7252.0	123.30	7247.0	140.51	7339.0	157.72	7425.0
106.42	7204.0	123.59	7288.0	140.80	7326.0	158.00	7396.0
106.70	7171.0	123.91	7229.0	141.08	7338.0	158.29	7393.0
107.10	7256.0	124.20	7284.0	141.52	7332.0	158.62	7418.0
107.32	7182.0	124.49	7281.0	141.70	7320.0	158.90	7391.0
107.71	7207.0	124.88	7221.0	141.98	7350.0	159.30	7429.0
108.00	7248.0	125.21	7293.0	142.42	7331.0	159.59	7400.0
108.29	7165.0	125.50	7265.0	142.70	7339.0	159.91	7401.0
108.61	7237.0	125.78	7258.0	142.99	7344.0	160.20	7435.0
108.90	7227.0	126.22	7292.0	143.32	7323.0	160.60	7391.0
109.19	7171.0	126.40	7242.0	143.60	7354.0	160.81	7431.0
109.58	7258.0	126.79	7283.0	144.00	7347.0	161.21	7412.0
109.91	7214.0	127.12	7288.0	144.29	7335.0	161.50	7406.0
110.20	7182.0	127.40	7246.0	144.61	7354.0	161.78	7444.0
110.48	7265.0	127.69	7297.0	144.90	7336.0	162.11	7399.0
110.92	7202.0	128.02	7275.0	145.30	7355.0	162.40	7434.0
111.20	7213.0	128.30	7261.0	145.51	7355.0	162.68	7425.0

T	P	T	P	T	P	T	P
163.12	7403.0	180.29	7522.0	197.50	7616.0	214.70	7692.0
163.40	7449.0	180.61	7499.0	197.78	7591.0	214.99	7711.0
163.69	7408.0	180.90	7522.0	198.11	7615.0	215.39	7693.0
164.02	7435.0	181.19	7513.0	198.40	7600.0	215.60	7701.0
164.41	7437.0	181.51	7495.0	198.79	7589.0	215.89	7711.0
164.70	7406.0	181.91	7529.0	199.12	7619.0	216.29	7697.0
164.99	7459.0	182.20	7507.0	199.40	7601.0	216.61	7726.0
165.31	7420.0	182.48	7531.0	199.69	7630.0	216.90	7688.0
165.71	7435.0	182.81	7520.0	200.02	7607.0	217.19	7719.0
165.89	7451.0	183.10	7507.0	200.30	7607.0	217.51	7708.0
166.21	7419.0	183.49	7534.0	200.59	7617.0	217.91	7701.0
166.61	7465.0	183.82	7511.0	200.99	7604.0	218.20	7729.0
166.90	7433.0	184.10	7540.0	201.31	7643.0	218.48	7704.0
167.18	7435.0	184.39	7525.0	201.60	7615.0	218.81	7734.0
167.51	7462.0	184.79	7520.0	201.89	7627.0	219.20	7714.0
167.80	7428.0	185.00	7540.0	202.21	7618.0	219.38	7724.0
168.19	7469.0	185.29	7510.0	202.61	7608.0	219.82	7728.0
168.52	7445.0	185.69	7549.0	202.90	7646.0	220.10	7715.0
168.80	7436.0	186.01	7529.0	203.18	7627.0	220.39	7744.0
169.09	7472.0	186.30	7534.0	203.51	7642.0	220.72	7713.0
169.49	7435.0	186.59	7546.0	203.90	7625.0	221.00	7740.0
169.81	7472.0	186.91	7520.0	204.19	7627.0	221.29	7726.0
170.10	7454.0	187.31	7559.0	204.52	7647.0	221.69	7722.0
170.39	7438.0	187.60	7537.0	204.80	7625.0	222.01	7748.0
170.78	7479.0	187.88	7549.0	205.20	7657.0	222.30	7725.0
171.00	7442.0	188.21	7552.0	205.42	7630.0	222.59	7755.0
171.29	7477.0	188.60	7534.0	205.70	7645.0	222.98	7733.0
171.68	7462.0	188.89	7569.0	206.10	7642.0	223.31	7743.0
172.01	7443.0	189.22	7540.0	206.39	7633.0	223.60	7748.0
172.30	7487.0	189.50	7564.0	206.71	7668.0	223.88	7735.0
172.58	7452.0	189.90	7558.0	207.00	7643.0	224.32	7765.0
172.91	7484.0	190.12	7542.0	207.29	7664.0	224.50	7732.0
173.30	7471.0	190.40	7579.0	207.68	7645.0	224.89	7759.0
173.59	7450.0	190.80	7548.0	208.01	7654.0	225.22	7747.0
173.92	7494.0	191.09	7575.0	208.30	7665.0	225.50	7741.0
174.20	7461.0	191.41	7565.0	208.58	7648.0	225.79	7732.0
174.60	7492.0	191.70	7548.0	209.02	7677.0	226.12	7753.0
174.82	7482.0	191.99	7583.0	209.30	7648.0	226.40	7769.0
175.21	7460.0	192.38	7562.0	209.59	7675.0	226.80	7756.0
175.50	7502.0	192.71	7588.0	209.92	7662.0	227.09	7755.0
175.79	7471.0	193.00	7572.0	210.31	7660.0	227.41	7778.0
176.11	7497.0	193.28	7564.0	210.49	7685.0	227.70	7753.0
176.40	7491.0	193.72	7586.0	210.82	7659.0	228.10	7785.0
176.80	7466.0	193.90	7556.0	211.21	7692.0	228.38	7761.0
177.08	7509.0	194.29	7603.0	211.50	7670.0	228.71	7768.0
177.41	7479.0	194.62	7578.0	211.79	7682.0	229.00	7782.0
177.70	7504.0	194.90	7582.0	212.11	7687.0	229.39	7759.0
177.98	7498.0	195.19	7590.0	212.40	7675.0	229.61	7802.0
178.42	7476.0	195.52	7570.0	212.80	7703.0	230.00	7772.0
178.70	7517.0	195.91	7610.0	213.08	7671.0	230.29	7780.0
178.99	7489.0	196.20	7587.0	213.41	7697.0	230.62	7793.0
179.32	7513.0	196.49	7598.0	213.70	7685.0	230.90	7769.0
179.71	7504.0	196.81	7594.0	214.09	7680.0	231.19	7809.0
179.89	7484.0	197.10	7571.0	214.42	7709.0	231.59	7786.0

T	P	T	P	T	P	T	P
231.91	7789.0	249.08	7881.0	266.29	7991.0	283.50	6950.0
232.20	7802.0	249.41	7920.0	266.62	8029.0	283.79	6934.0
232.49	7778.0	249.80	7898.0	266.90	7995.0	284.18	6922.0
232.81	7820.0	249.98	7898.0	267.30	8022.0	284.40	6910.0
233.21	7797.0	250.42	7916.0	267.59	8011.0	284.80	6897.0
233.50	7800.0	250.70	7890.0	267.91	7901.0	285.08	6887.0
233.78	7812.0	250.99	7936.0	268.20	7580.0	285.41	6879.0
234.11	7788.0	251.32	7910.0	268.49	7524.0	285.70	6866.0
234.50	7830.0	251.60	7915.0	268.88	7488.0	285.98	6852.0
234.68	7805.0	251.89	7923.0	269.21	7462.0	286.42	6839.0
235.12	7813.0	252.29	7904.0	269.50	7437.0	286.70	6824.0
235.40	7822.0	252.61	7947.0	269.78	7425.0	286.99	6814.0
235.69	7800.0	252.90	7914.0	270.22	7407.0	287.32	6802.0
236.02	7840.0	253.19	7933.0	270.40	7399.0	287.60	6791.0
236.30	7811.0	253.58	7925.0	270.79	7425.0	288.00	6781.0
236.59	7825.0	253.91	7907.0	271.12	7391.0	288.29	6770.0
236.99	7830.0	254.20	7953.0	271.40	7362.0	288.68	6757.0
237.31	7810.0	254.48	7925.0	271.69	7343.0	290.02	6697.0
237.60	7850.0	254.92	7948.0	272.02	7331.0	299.99	6422.0
237.89	7818.0	255.10	7934.0	272.41	7307.0	310.00	6244.0
238.28	7836.0	255.38	7925.0	272.70	7300.0	320.00	6095.0
238.61	7840.0	255.82	7960.0	272.99	7280.0	330.01	5997.0
238.90	7820.0	256.10	7933.0	273.31	7266.0	339.98	5935.0
239.18	7860.0	256.39	7963.0	273.60	7283.0	349.99	5898.0
239.62	7824.0	256.72	7937.0	274.00	7265.0	360.00	5873.0
239.80	7849.0	257.00	7946.0	274.28	7245.0	370.01	5856.0
240.08	7848.0	257.40	7958.0	274.61	7231.0	380.02	5842.0
240.52	7827.0	257.69	7944.0	274.90	7247.0	389.99	5830.0
240.80	7870.0	258.01	7974.0	275.29	7218.0	400.00	5818.0
241.09	7833.0	258.30	7950.0	275.51	7247.0	410.00	5806.0
241.42	7861.0	258.70	7959.0	275.90	7228.0	420.01	5796.0
241.70	7857.0	258.98	7963.0	276.19	7231.0	429.98	5785.0
242.10	7836.0	259.31	7946.0	276.52	7230.0	439.99	5775.0
242.39	7880.0	259.60	7990.0	276.80	7252.0	450.00	5765.0
242.71	7843.0	259.88	7948.0	277.09	7228.0	460.01	5756.0
243.00	7872.0	260.21	7978.0	277.42	7217.0	470.02	5746.0
243.40	7865.0	260.60	7966.0	277.81	7220.0	479.99	5737.0
243.68	7844.0	260.89	7961.0	278.10	7200.0	490.00	5727.0
244.01	7888.0	261.22	7994.0	278.39	7197.0	500.00	5718.0
244.30	7858.0	261.50	7969.0	278.71	7174.0	510.01	5709.0
244.69	7883.0	261.79	7986.0	279.11	7159.0	519.98	5699.0
244.91	7875.0	262.19	7978.0	279.40	7142.0	529.99	5112.0
245.20	7855.0	262.51	7976.0	279.68	7131.0	540.00	4702.0
245.59	7896.0	262.80	8002.0	280.01	7115.0		
245.92	7871.0	263.09	7973.0	280.40	7096.0		
246.20	7892.0	263.41	8004.0	280.58	7079.0		
246.49	7884.0	263.81	7982.0	280.91	7061.0		
246.82	7867.0	264.10	7993.0	281.30	7052.0		
247.21	7904.0	264.38	8004.0	281.59	7035.0		
247.50	7881.0	264.71	7985.0	281.92	7022.0		
247.79	7905.0	265.10	8018.0	282.20	7008.0		
248.11	7892.0	265.28	7985.0	282.49	6996.0		
248.51	7882.0	265.72	8007.0	282.89	6982.0		
248.80	7910.0	266.00	8005.0	283.21	6965.0		

Zone 2P2, Test 1

T	P	T	P	T	P	T	P
0.00	3021.0	350.03	5903.0	367.60	5750.0	384.80	5668.0
9.00	3019.0	350.42	5903.0	367.92	5747.0	385.13	5667.0
10.01	3018.0	350.71	5904.0	368.21	5745.0	385.42	5666.0
20.02	3020.0	351.00	5905.0	368.60	5742.0	385.70	5665.0
30.02	3044.0	351.32	5905.0	368.82	5739.0	386.03	5664.0
40.00	3077.0	351.61	5907.0	369.22	5737.0	386.42	5663.0
50.00	3116.0	352.01	5907.0	369.50	5735.0	386.71	5662.0
60.01	3157.0	352.30	5908.0	369.83	5733.0	387.00	5661.0
70.02	3195.0	352.62	5909.0	370.12	5730.0	387.32	5660.0
80.03	3318.0	352.91	5909.0	370.40	5728.0	387.72	5659.0
90.00	3444.0	353.30	5910.0	370.80	5726.0	388.01	5658.0
100.01	3575.0	353.63	5911.0	371.12	5724.0	388.30	5657.0
110.02	3707.0	353.92	5911.0	371.41	5722.0	388.62	5656.0
120.02	3840.0	354.20	5912.0	371.70	5720.0	389.02	5655.0
130.00	3966.0	354.60	5913.0	372.02	5718.0	389.20	5655.0
140.00	4107.0	354.82	5913.0	372.42	5716.0	389.52	5654.0
150.01	4255.0	355.50	5915.0	372.71	5714.0	389.92	5653.0
160.02	4387.0	355.82	5916.0	373.00	5713.0	390.20	5652.0
170.03	4544.0	356.11	5916.0	373.32	5711.0	390.53	5651.0
180.00	4711.0	356.40	5916.0	373.72	5710.0	390.82	5650.0
190.01	4864.0	356.72	5917.0	373.90	5708.0	391.10	5649.0
200.02	5016.0	357.12	5918.0	374.33	5706.0	391.50	5649.0
210.02	5174.0	357.41	5919.0	374.62	5704.0	391.82	5648.0
220.00	5303.0	357.70	5919.0	374.90	5703.0	392.11	5647.0
230.00	5422.0	358.02	5920.0	375.23	5702.0	392.40	5646.0
240.01	5541.0	358.42	5921.0	375.52	5700.0	392.80	5645.0
250.02	5648.0	358.70	5879.0	375.91	5699.0	393.01	5644.0
260.03	5747.0	359.03	5880.0	376.20	5698.0	393.41	5643.0
270.00	5827.0	359.32	5880.0	376.52	5696.0	393.70	5642.0
280.01	5778.0	359.71	5877.0	376.81	5695.0	394.13	5642.0
290.02	5810.0	359.93	5870.0	377.10	5694.0	394.31	5641.0
300.02	5862.0	360.22	5862.0	377.50	5693.0	394.60	5640.0
310.00	5887.0	360.61	5854.0	377.82	5691.0	395.03	5639.0
320.00	5889.0	360.90	5846.0	378.11	5690.0	395.32	5638.0
330.01	5888.0	361.22	5838.0	378.40	5689.0	395.60	5637.0
340.02	5891.0	361.51	5831.0	378.83	5688.0	395.93	5636.0
344.41	5894.0	361.80	5824.0	379.01	5687.0	396.22	5635.0
344.70	5894.0	362.20	5818.0	379.40	5685.0	396.61	5635.0
344.92	5895.0	362.52	5814.0	379.73	5684.0	396.90	5634.0
345.31	5895.0	362.81	5809.0	380.02	5683.0	397.22	5633.0
345.60	5895.0	363.10	5804.0	380.30	5682.0	397.51	5632.0
345.92	5896.0	363.53	5799.0	380.63	5681.0	397.91	5631.0
346.21	5896.0	363.71	5794.0	380.92	5680.0	398.12	5631.0
346.50	5897.0	364.10	5789.0	381.31	5678.0	398.52	5630.0
346.90	5897.0	364.43	5786.0	381.60	5678.0	398.81	5629.0
347.22	5898.0	364.82	5782.0	381.92	5677.0	399.20	5628.0
347.51	5899.0	365.00	5777.0	382.21	5676.0	399.42	5627.0
347.80	5899.0	365.33	5774.0	382.61	5675.0	399.71	5627.0
348.23	5900.0	365.72	5770.0	382.90	5674.0	400.10	5626.0
348.41	5901.0	366.01	5766.0	383.22	5672.0	400.43	5625.0
348.80	5901.0	366.30	5762.0	383.51	5671.0	400.72	5624.0
349.13	5901.0	366.62	5759.0	383.90	5671.0	401.00	5623.0
349.42	5901.0	366.91	5757.0	384.12	5670.0	401.33	5622.0
349.70	5902.0	367.31	5754.0	384.41	5668.0	401.72	5621.0

T	P	T	P	T	P	T	P
402.01	5621.0	419.22	5579.0	436.43	5540.0	453.92	5504.0
402.30	5620.0	419.51	5578.0	436.72	5540.0	454.21	5503.0
402.62	5619.0	419.80	5577.0	437.00	5539.0	454.50	5503.0
403.02	5618.0	420.12	5577.0	437.40	5538.0	454.82	5502.0
403.20	5617.0	420.41	5576.0	437.62	5537.0	455.22	5501.0
403.60	5617.0	420.80	5575.0	438.01	5537.0	455.51	5501.0
403.92	5616.0	421.13	5574.0	438.30	5536.0	455.80	5500.0
404.21	5615.0	421.42	5574.0	438.62	5536.0	456.12	5499.0
404.50	5614.0	421.70	5573.0	438.91	5535.0	456.52	5499.0
404.82	5613.0	422.10	5572.0	439.20	5534.0	456.70	5499.0
405.11	5613.0	422.42	5571.0	439.52	5534.0	457.13	5498.0
405.50	5612.0	422.71	5571.0	439.92	5533.0	457.42	5497.0
405.83	5611.0	423.00	5570.0	440.21	5532.0	457.70	5497.0
406.12	5610.0	423.40	5569.0	440.50	5531.0	458.03	5496.0
406.40	5609.0	423.61	5568.0	440.82	5531.0	458.32	5495.0
406.80	5608.0	424.01	5568.0	441.22	5530.0	458.60	5495.0
407.12	5608.0	424.30	5567.0	441.40	5529.0	459.00	5494.0
407.41	5607.0	424.62	5566.0	441.83	5529.0	459.32	5493.0
407.70	5606.0	424.91	5565.0	442.12	5528.0	459.61	5493.0
408.10	5605.0	425.20	5565.0	442.40	5528.0	459.90	5492.0
408.31	5604.0	425.52	5564.0	442.73	5527.0	460.30	5491.0
408.71	5604.0	425.92	5563.0	443.02	5526.0	460.62	5491.0
409.00	5603.0	426.20	5563.0	443.41	5526.0	460.91	5490.0
409.32	5603.0	426.53	5562.0	443.70	5525.0	461.20	5489.0
409.61	5602.0	426.82	5561.0	444.02	5524.0	461.63	5489.0
409.90	5601.0	427.21	5560.0	444.31	5523.0	461.81	5489.0
410.22	5600.0	427.50	5560.0	444.60	5523.0	462.20	5488.0
410.62	5599.0	427.82	5559.0	445.00	5522.0	462.53	5487.0
410.90	5598.0	428.11	5558.0	445.32	5521.0	462.82	5487.0
411.23	5597.0	428.51	5558.0	445.61	5520.0	463.10	5486.0
411.52	5597.0	428.72	5557.0	445.90	5520.0	463.43	5485.0
411.91	5596.0	429.01	5556.0	446.33	5520.0	463.82	5485.0
412.20	5595.0	429.41	5555.0	446.51	5519.0	464.11	5484.0
412.52	5595.0	429.70	5555.0	446.90	5518.0	464.40	5484.0
412.81	5594.0	430.02	5554.0	447.23	5517.0	464.72	5483.0
413.21	5593.0	430.31	5553.0	447.80	5516.0	465.01	5482.0
413.42	5592.0	430.60	5553.0	448.13	5516.0	465.41	5482.0
413.82	5592.0	431.03	5552.0	448.42	5515.0	465.70	5481.0
414.11	5591.0	431.32	5551.0	448.81	5514.0	466.02	5480.0
414.40	5590.0	431.60	5550.0	449.10	5513.0	466.31	5480.0
414.72	5589.0	431.93	5550.0	449.42	5513.0	466.70	5480.0
415.01	5588.0	432.32	5549.0	449.71	5512.0	466.92	5479.0
415.30	5588.0	432.50	5549.0	450.11	5512.0	467.32	5478.0
415.73	5587.0	432.90	5548.0	450.40	5511.0	467.60	5477.0
416.02	5586.0	433.22	5547.0	450.72	5510.0	467.93	5477.0
416.30	5586.0	433.51	5546.0	451.01	5510.0	468.22	5477.0
416.63	5584.0	433.80	5545.0	451.40	5509.0	468.50	5476.0
417.02	5584.0	434.12	5545.0	451.62	5508.0	468.90	5475.0
417.31	5583.0	434.41	5544.0	452.02	5508.0	469.22	5475.0
417.60	5582.0	434.81	5543.0	452.30	5507.0	469.51	5474.0
417.92	5582.0	435.10	5543.0	452.63	5506.0	469.80	5474.0
418.32	5581.0	435.42	5542.0	452.92	5506.0	470.12	5473.0
418.50	5580.0	435.71	5542.0	453.20	5505.0	470.52	5472.0
418.90	5579.0	436.10	5541.0	453.53	5505.0	470.81	5472.0

T	P	T	P	T	P	T	P
471.10	5471.0	488.30	5441.0	505.51	5413.0	523.01	5387.0
471.42	5471.0	488.63	5440.0	505.80	5413.0	523.30	5387.0
471.82	5470.0	488.92	5440.0	506.12	5412.0	523.62	5386.0
472.00	5469.0	489.20	5439.0	506.41	5412.0	524.02	5386.0
472.43	5469.0	489.60	5439.0	506.70	5411.0	524.30	5385.0
472.72	5469.0	489.92	5438.0	507.02	5411.0	524.63	5385.0
473.00	5468.0	490.21	5438.0	507.42	5410.0	524.92	5384.0
473.33	5467.0	490.50	5437.0	507.71	5410.0	525.31	5384.0
473.62	5466.0	490.90	5437.0	508.00	5409.0	525.53	5383.0
473.90	5466.0	491.11	5436.0	508.32	5409.0	525.82	5383.0
474.30	5465.0	491.51	5436.0	508.72	5408.0	526.21	5382.0
474.62	5465.0	491.80	5435.0	509.00	5408.0	526.50	5382.0
474.91	5464.0	492.12	5435.0	509.33	5407.0	526.82	5381.0
475.20	5464.0	492.41	5434.0	509.62	5407.0	527.11	5381.0
475.60	5463.0	492.70	5434.0	510.01	5406.0	527.40	5381.0
475.92	5462.0	493.02	5433.0	510.23	5406.0	527.80	5380.0
476.21	5462.0	493.42	5433.0	510.62	5405.0	528.12	5380.0
476.50	5461.0	493.70	5432.0	510.91	5405.0	528.41	5379.0
476.93	5461.0	494.03	5432.0	511.20	5405.0	528.70	5379.0
477.11	5460.0	494.32	5431.0	511.52	5404.0	529.13	5378.0
477.40	5460.0	494.71	5430.0	511.81	5403.0	529.31	5378.0
477.83	5459.0	495.00	5430.0	512.10	5403.0	529.70	5377.0
478.12	5459.0	495.32	5430.0	512.50	5403.0	530.03	5377.0
478.40	5458.0	495.61	5429.0	512.82	5402.0	530.42	5377.0
478.73	5458.0	496.01	5428.0	513.11	5401.0	530.60	5376.0
479.02	5457.0	496.22	5428.0	513.40	5401.0	530.93	5376.0
479.41	5457.0	496.51	5427.0	513.83	5401.0	531.32	5375.0
479.70	5456.0	496.91	5427.0	514.12	5400.0	531.61	5374.0
480.02	5455.0	497.20	5426.0	514.40	5400.0	531.90	5374.0
480.31	5454.0	497.52	5426.0	514.73	5399.0	532.22	5374.0
480.71	5454.0	497.81	5425.0	515.12	5399.0	532.51	5373.0
480.92	5454.0	498.10	5425.0	515.30	5398.0	532.91	5373.0
481.32	5453.0	498.53	5424.0	515.70	5397.0	533.20	5373.0
481.61	5452.0	498.82	5424.0	516.02	5397.0	533.52	5372.0
481.90	5452.0	499.10	5423.0	516.31	5397.0	533.81	5372.0
482.22	5451.0	499.43	5423.0	516.60	5396.0	534.20	5371.0
482.51	5451.0	499.82	5422.0	516.92	5396.0	534.42	5371.0
482.90	5450.0	500.00	5422.0	517.21	5395.0	534.82	5370.0
483.23	5449.0	500.40	5421.0	517.90	5394.0	535.10	5370.0
483.52	5449.0	500.72	5421.0	518.22	5394.0	540.00	5363.0
483.80	5449.0	501.01	5420.0	518.51	5394.0	550.01	5350.0
484.13	5448.0	501.30	5420.0	518.90	5393.0	560.02	5337.0
484.52	5448.0	501.62	5419.0	519.23	5392.0	570.02	5325.0
484.81	5447.0	502.02	5419.0	519.52	5392.0	580.00	5313.0
485.10	5447.0	502.31	5418.0	519.80	5392.0	590.00	5301.0
485.42	5446.0	502.60	5418.0	520.20	5391.0	600.01	5290.0
485.82	5446.0	502.92	5417.0	520.42	5391.0	609.01	5280.0
486.00	5445.0	503.21	5417.0	520.81	5390.0	610.02	5279.0
486.40	5444.0	503.60	5416.0	521.10	5390.0	620.03	5268.0
486.72	5444.0	503.93	5416.0	521.42	5389.0	630.00	5258.0
487.01	5443.0	504.22	5415.0	521.71	5389.0		
487.30	5443.0	504.50	5415.0	522.00	5388.0		
487.62	5442.0	504.83	5414.0	522.32	5388.0		
488.02	5441.0	505.12	5414.0	522.72	5387.0		

Zone 2P2, Test 2

T	P	T	P	T	P	T	P
0.00	4132.0	296.39	6223.0	313.70	5952.0	330.80	5820.0
10.01	4171.0	296.82	6223.0	313.99	5948.0	331.20	5818.0
20.02	4217.0	297.11	6223.0	314.32	5945.0	331.49	5817.0
29.99	4236.0	297.40	6224.0	314.60	5941.0	331.81	5815.0
40.00	4302.0	297.72	6225.0	315.00	5938.0	332.10	5813.0
50.00	4466.0	298.01	6225.0	315.22	5935.0	332.39	5812.0
60.01	4624.0	298.40	6226.0	315.61	5931.0	332.82	5810.0
70.02	4791.0	298.69	6227.0	315.90	5928.0	333.11	5809.0
79.99	4967.0	299.02	6227.0	316.19	5925.0	333.40	5807.0
90.00	5145.0	299.30	6227.0	316.51	5922.0	333.72	5806.0
100.01	5313.0	299.70	6229.0	316.80	5919.0	334.12	5804.0
110.02	5450.0	299.92	6229.0	317.09	5916.0	334.30	5803.0
119.99	5567.0	300.31	6184.0	317.52	5913.0	334.69	5801.0
130.00	5684.0	300.60	6208.0	317.81	5910.0	335.02	5800.0
140.00	5791.0	300.89	6201.0	318.10	5907.0	335.30	5799.0
150.01	5874.0	301.21	6167.0	318.42	5904.0	335.59	5797.0
160.02	5898.0	301.50	6150.0	318.82	5901.0	335.92	5796.0
169.99	5924.0	301.90	6156.0	319.10	5899.0	336.31	5795.0
180.00	5954.0	302.22	6149.0	319.39	5896.0	336.60	5793.0
190.01	5989.0	302.51	6132.0	319.72	5893.0	336.89	5792.0
200.02	6021.0	302.80	6124.0	320.11	5891.0	337.21	5790.0
209.99	6051.0	303.12	6123.0	320.29	5888.0	337.50	5789.0
220.00	6081.0	303.52	6113.0	320.62	5885.0	337.90	5788.0
230.00	6107.0	303.80	6104.0	321.01	5883.0	338.22	5787.0
240.01	6129.0	304.09	6098.0	321.30	5881.0	338.51	5785.0
250.02	6148.0	304.42	6092.0	321.59	5878.0	338.80	5784.0
259.99	6167.0	304.81	6086.0	321.91	5876.0	339.19	5783.0
270.00	6179.0	304.99	6080.0	322.20	5873.0	339.41	5782.0
280.01	6194.0	305.39	6072.0	322.60	5871.0	339.80	5780.0
288.50	6206.0	305.71	6066.0	322.92	5869.0	340.09	5779.0
288.79	6207.0	306.00	6062.0	323.21	5866.0	340.42	5778.0
289.12	6207.0	306.29	6055.0	323.50	5864.0	340.70	5777.0
289.51	6207.0	306.61	6049.0	323.89	5862.0	340.99	5776.0
289.80	6208.0	306.90	6044.0	324.22	5860.0	341.39	5774.0
290.09	6208.0	307.30	6039.0	324.50	5858.0	341.71	5773.0
290.41	6209.0	307.62	6033.0	324.79	5855.0	342.00	5772.0
290.81	6210.0	307.91	6028.0	325.12	5853.0	342.29	5771.0
290.99	6211.0	308.20	6023.0	325.40	5851.0	342.61	5770.0
291.42	6212.0	308.59	6019.0	325.69	5849.0	343.01	5769.0
291.71	6213.0	308.92	6014.0	326.09	5847.0	343.30	5768.0
292.00	6214.0	309.20	6009.0	326.41	5845.0	343.62	5767.0
292.32	6214.0	309.49	6004.0	326.70	5843.0	343.91	5766.0
292.61	6214.0	309.89	6000.0	326.99	5841.0	344.30	5764.0
292.90	6215.0	310.10	5996.0	327.31	5839.0	344.52	5763.0
293.29	6215.0	310.50	5991.0	327.71	5837.0	344.92	5762.0
293.62	6215.0	310.79	5987.0	328.00	5836.0	345.20	5761.0
293.90	6216.0	311.11	5982.0	328.32	5834.0	345.49	5760.0
294.19	6218.0	311.40	5978.0	328.61	5832.0	345.82	5759.0
294.59	6219.0	311.69	5974.0	329.00	5830.0	346.10	5758.0
294.91	6220.0	312.12	5970.0	329.22	5828.0	346.50	5757.0
295.20	6220.0	312.41	5966.0	329.62	5827.0	346.79	5756.0
295.49	6221.0	312.70	5963.0	329.90	5825.0	347.11	5755.0
295.92	6221.0	313.02	5959.0	330.19	5823.0	347.40	5754.0
296.10	6221.0	313.31	5955.0	330.52	5821.0	347.69	5753.0

T	P	T	P	T	P	T	P
348.12	5753.0	365.22	5710.0	382.50	5678.0	399.60	5653.0
348.41	5751.0	365.51	5709.0	382.79	5678.0	400.00	5653.0
348.70	5750.0	365.90	5708.0	383.11	5677.0	400.32	5652.0
349.02	5750.0	366.19	5708.0	383.40	5677.0	400.61	5652.0
349.42	5748.0	366.52	5707.0	383.69	5676.0	400.90	5651.0
349.60	5748.0	366.80	5706.0	384.01	5676.0	401.22	5650.0
349.99	5747.0	367.20	5706.0	384.30	5675.0	401.62	5651.0
350.32	5746.0	367.49	5705.0	384.70	5675.0	401.90	5650.0
350.60	5745.0	367.81	5705.0	385.02	5674.0	402.19	5650.0
350.89	5744.0	368.10	5704.0	385.31	5674.0	402.52	5649.0
351.22	5743.0	368.39	5703.0	385.60	5673.0	402.91	5649.0
351.50	5742.0	368.71	5703.0	385.92	5673.0	403.09	5648.0
351.90	5742.0	369.00	5702.0	386.32	5672.0	403.49	5648.0
352.19	5741.0	369.40	5701.0	386.60	5672.0	403.81	5647.0
352.51	5739.0	369.72	5701.0	386.89	5671.0	404.10	5647.0
352.80	5739.0	370.01	5700.0	387.22	5671.0	404.39	5647.0
353.20	5738.0	370.30	5700.0	387.61	5670.0	404.71	5646.0
353.52	5737.0	370.62	5699.0	387.79	5670.0	405.00	5646.0
353.81	5736.0	371.02	5699.0	388.19	5669.0	405.40	5645.0
354.10	5735.0	371.30	5697.0	388.51	5669.0	405.72	5645.0
354.42	5735.0	371.59	5697.0	388.80	5669.0	406.01	5645.0
354.71	5734.0	371.92	5697.0	389.09	5668.0	406.30	5644.0
355.00	5733.0	372.31	5696.0	389.41	5667.0	406.69	5644.0
355.39	5732.0	372.60	5695.0	389.81	5667.0	407.02	0.0
355.72	5731.0	372.89	5695.0	390.10	5666.0	407.30	5643.0
356.00	5730.0	373.21	5694.0	390.42	5666.0	407.59	5643.0
356.29	5730.0	373.61	5694.0	390.71	5666.0	407.99	5642.0
356.62	5729.0	373.79	5693.0	391.00	5665.0	408.20	5642.0
357.01	5728.0	374.22	5692.0	391.39	5665.0	408.60	5641.0
357.30	5728.0	374.51	5692.0	391.72	5664.0	408.89	5641.0
357.59	5727.0	374.80	5692.0	392.00	5664.0	409.21	5641.0
357.91	5726.0	375.12	5691.0	392.29	5663.0	409.50	5640.0
358.31	5725.0	375.41	5690.0	392.69	5663.0	409.79	5640.0
358.49	5724.0	375.70	5687.0	392.90	5662.0	410.11	5639.0
358.92	5724.0	376.09	5689.0	393.30	5662.0	410.51	5639.0
359.21	5723.0	376.42	5688.0	393.59	5661.0	410.80	5639.0
359.50	5722.0	376.70	5688.0	393.91	5661.0	411.12	5638.0
359.82	5721.0	376.99	5688.0	394.20	5661.0	411.41	5638.0
360.11	5721.0	377.39	5687.0	394.49	5660.0	411.80	5637.0
360.50	5720.0	377.71	5686.0	394.92	5660.0	412.09	5637.0
360.79	5720.0	378.00	5686.0	395.21	5659.0	412.42	5637.0
361.12	5719.0	378.29	5685.0	395.50	5659.0	412.70	5636.0
361.40	5718.0	378.61	5685.0	395.82	5658.0	412.99	5636.0
361.69	5717.0	378.90	5684.0	396.11	5658.0	413.32	5636.0
362.09	5717.0	379.19	5684.0	396.50	5657.0	413.60	5635.0
362.41	5716.0	379.62	5683.0	396.79	5657.0	414.00	5635.0
362.70	5715.0	379.91	5683.0	397.12	5656.0	414.29	5634.0
362.99	5714.0	380.20	5682.0	397.40	5656.0	414.61	5634.0
363.42	5714.0	380.52	5682.0	397.80	5656.0	414.90	5634.0
363.60	5713.0	380.81	5681.0	398.09	5655.0	415.19	5633.0
364.00	5712.0	381.20	5680.0	398.41	5654.0	415.62	5633.0
364.32	5712.0	381.49	5680.0	398.70	5654.0	415.91	5633.0
364.61	5711.0	381.82	5679.0	399.10	5654.0	416.20	5632.0
364.90	5711.0	382.10	5679.0	399.31	5654.0	416.52	5632.0

T	P	T	P	T	P	T	P
416.92	5632.0	434.02	5614.0	451.30	5599.0	468.40	5585.0
417.10	5631.0	434.30	5614.0	451.51	5599.0	468.72	5585.0
417.49	5630.0	434.70	5613.0	451.91	5598.0	469.12	5585.0
417.82	5630.0	434.99	5613.0	452.20	5598.0	469.40	5584.0
418.10	5630.0	435.31	5613.0	452.52	5598.0	469.69	5585.0
418.39	5630.0	435.60	5613.0	452.81	5598.0	470.02	5584.0
418.72	5629.0	436.00	5612.0	453.10	5597.0	470.41	5584.0
419.11	5629.0	436.21	5612.0	453.49	5597.0	470.59	5583.0
419.40	5629.0	436.61	5612.0	453.82	5597.0	470.99	5583.0
419.69	5628.0	436.90	5611.0	454.10	5597.0	471.31	5583.0
420.01	5628.0	437.22	5611.0	454.39	5596.0	471.60	5583.0
420.30	5627.0	437.51	5611.0	454.72	5596.0	471.89	5583.0
420.70	5627.0	437.80	5610.0	455.11	5596.0	472.21	5582.0
421.02	5627.0	438.19	5610.0	455.40	5596.0	472.61	5582.0
421.31	5627.0	438.52	5610.0	455.69	5595.0	472.90	5582.0
421.60	5626.0	438.80	5610.0	456.01	5595.0	473.22	5582.0
421.99	5626.0	439.09	5609.0	456.41	5595.0	473.51	5582.0
422.21	5626.0	439.42	5609.0	456.59	5595.0	473.80	5581.0
422.60	5625.0	439.81	5609.0	457.02	5595.0	474.19	5581.0
422.89	5625.0	440.10	5608.0	457.31	5594.0	474.52	5581.0
423.22	5625.0	440.39	5608.0	457.60	5594.0	474.80	5580.0
423.50	5624.0	440.71	5608.0	457.92	5594.0	475.09	5580.0
423.79	5624.0	441.11	5608.0	458.21	5593.0	475.49	5580.0
424.12	5623.0	441.29	5607.0	458.50	5593.0	475.81	5580.0
424.51	5623.0	441.72	5607.0	458.89	5593.0	476.10	5579.0
424.80	5623.0	442.01	5607.0	459.22	5593.0	476.39	5579.0
425.09	5623.0	442.30	5607.0	459.50	5592.0	476.82	5579.0
425.41	5623.0	442.62	5606.0	459.79	5592.0	477.00	5579.0
425.81	5622.0	442.91	5606.0	460.19	5591.0	477.40	5579.0
426.10	5622.0	443.30	5606.0	460.51	5592.0	477.72	5578.0
426.42	5622.0	443.59	5606.0	460.80	5591.0	478.01	5578.0
426.71	5621.0	443.92	5605.0	461.09	5591.0	478.30	5578.0
427.00	5621.0	444.20	5605.0	461.41	5591.0	478.62	5577.0
427.32	5620.0	444.49	5605.0	461.70	5591.0	478.91	5578.0
427.72	5620.0	444.89	5605.0	461.99	5590.0	479.30	5577.0
428.00	5620.0	445.21	5604.0	462.42	5590.0	479.70	5577.0
428.29	5620.0	445.50	5604.0	462.71	5590.0	480.71	5576.0
428.62	5619.0	445.79	5604.0	463.00	5590.0	490.00	5570.0
428.90	5619.0	446.22	5603.0	463.32	5589.0	500.00	5563.0
429.19	5618.0	446.40	5603.0	463.61	5589.0	510.01	5556.0
429.59	5618.0	446.80	5603.0	464.00	5589.0	520.02	5550.0
429.91	5618.0	447.12	5602.0	464.29	5589.0	529.99	5544.0
430.20	5618.0	447.41	5602.0	464.62	5588.0	540.00	5537.0
430.49	5617.0	447.70	5602.0	464.90	5588.0	550.01	5532.0
430.92	5617.0	448.02	5602.0	465.30	5588.0	560.02	4413.0
431.21	5617.0	448.31	5601.0	465.59	5588.0	569.99	3907.0
431.50	5617.0	448.70	5601.0	465.91	5587.0	580.00	3635.0
431.82	5616.0	448.99	5601.0	466.20	5587.0	590.00	3760.0
432.11	5616.0	449.32	5601.0	466.49	5587.0	600.01	3809.0
432.40	5616.0	449.60	5600.0	466.81	5587.0		
432.72	5615.0	450.00	5600.0	467.10	5586.0		
433.12	5615.0	450.29	5600.0	467.50	5586.0		
433.40	5614.0	450.61	5600.0	467.82	5586.0		
433.69	5614.0	450.90	5599.0	468.11	5586.0		

Zone 2P2, Test 4

T	P	T	P	T	P	T	P
0.00	4303.0	240.19	6206.0	257.40	6006.0	274.61	5946.0
10.01	4451.0	240.52	6206.0	257.69	6004.0	274.90	5945.0
20.02	4603.0	240.91	6206.0	258.01	6003.0	275.29	5944.0
29.99	4747.0	241.09	6204.0	258.30	6001.0	275.62	5944.0
40.21	4896.0	241.49	6180.0	258.70	5999.0	275.90	5943.0
50.00	5027.0	241.81	6170.0	259.02	5998.0	276.19	5943.0
60.01	5163.0	242.21	6169.0	259.31	5996.0	276.52	5942.0
70.02	5309.0	242.39	6159.0	259.60	5994.0	276.80	5941.0
79.99	5454.0	242.71	6152.0	259.99	5993.0	277.09	5940.0
90.00	5590.0	243.00	6148.0	260.32	5991.0	277.49	5940.0
100.01	5722.0	243.40	6141.0	260.60	5990.0	277.81	5939.0
110.02	5837.0	243.72	6136.0	260.89	5988.0	278.10	5939.0
119.99	5905.0	244.01	6132.0	261.22	5987.0	278.39	5938.0
130.00	5965.0	244.30	6127.0	261.50	5986.0	278.71	5938.0
140.00	6009.0	244.69	6122.0	261.79	5984.0	279.11	5937.0
150.01	6033.0	245.02	6118.0	262.19	5983.0	279.40	5936.0
160.02	6061.0	245.30	6113.0	262.51	5981.0	279.72	5936.0
169.99	6086.0	245.59	6109.0	262.80	5980.0	280.01	5935.0
180.00	6110.0	245.99	6104.0	263.09	5979.0	280.40	5934.0
190.01	6131.0	246.20	6101.0	263.41	5978.0	280.69	5934.0
200.02	6149.0	246.49	6097.0	263.81	5977.0	281.02	5934.0
209.99	6165.0	246.89	6093.0	264.10	5975.0	281.30	5933.0
212.11	6169.0	247.21	6089.0	264.42	5974.0	281.59	5933.0
220.00	6178.0	247.50	6086.0	264.71	5973.0	281.92	5932.0
230.00	6189.0	247.79	6083.0	265.10	5972.0	282.20	5931.0
231.12	6189.0	248.11	6079.0	265.39	5971.0	282.60	5931.0
231.30	6190.0	248.51	6075.0	265.72	5970.0	282.89	5931.0
231.59	6190.0	248.80	6073.0	266.00	5969.0	283.21	5930.0
231.91	6190.0	249.12	6069.0	266.40	5968.0	283.50	5930.0
232.20	6190.0	249.41	6066.0	266.62	5967.0	283.79	5929.0
232.49	6191.0	249.80	6063.0	267.01	5966.0	284.22	5929.0
232.81	6191.0	250.09	6060.0	267.30	5965.0	284.51	5928.0
233.21	6192.0	250.42	6057.0	267.59	5964.0	284.80	5928.0
233.50	6193.0	250.70	6054.0	267.91	5962.0	285.12	5927.0
233.82	6195.0	251.10	6052.0	268.20	5962.0	285.52	5927.0
234.11	6195.0	251.32	6048.0	268.49	5961.0	285.70	5926.0
234.50	6196.0	251.60	6046.0	268.92	5960.0	286.09	5926.0
234.79	6197.0	252.00	6043.0	269.21	5959.0	286.42	5925.0
235.12	6196.0	252.29	6041.0	269.50	5958.0	286.70	5924.0
235.40	6197.0	252.61	6038.0	269.82	5957.0	286.99	5924.0
235.80	6197.0	252.90	6035.0	270.22	5956.0	287.32	5924.0
236.02	6197.0	253.19	6033.0	270.50	5956.0	287.71	5924.0
236.41	6198.0	253.62	6031.0	270.79	5955.0	288.00	5923.0
236.70	6199.0	253.91	6029.0	271.12	5954.0	288.29	5922.0
236.99	6200.0	254.20	6026.0	271.40	5953.0	288.61	5922.0
237.31	6201.0	254.52	6024.0	271.69	5952.0	288.90	5921.0
237.60	6202.0	254.92	6022.0	272.09	5952.0	289.30	5921.0
237.89	6202.0	255.20	6020.0	272.41	5951.0	289.62	5921.0
238.32	6203.0	255.49	6018.0	272.70	5950.0	289.91	5920.0
238.61	6203.0	255.82	6015.0	272.99	5949.0	290.20	5920.0
238.90	6204.0	256.10	6013.0	273.31	5949.0	290.59	5919.0
239.22	6205.0	256.39	6012.0	273.60	5948.0	290.81	5919.0
239.62	6205.0	256.72	6010.0	274.00	5947.0	291.20	5919.0
239.90	6206.0	257.11	6008.0	274.32	5946.0	291.49	5918.0

T	P	T	P	T	P	T	P
291.82	5918.0	308.99	5896.0	326.20	5877.0	343.40	5860.0
292.10	5917.0	309.31	5896.0	326.52	5877.0	343.69	5860.0
292.39	5917.0	309.71	5895.0	326.81	5876.0	344.09	5859.0
292.72	5916.0	309.89	5894.0	327.20	5876.0	344.41	5859.0
293.11	5916.0	310.32	5894.0	327.49	5875.0	344.70	5859.0
293.40	5916.0	310.61	5894.0	327.82	5875.0	344.99	5858.0
293.69	5915.0	310.90	5894.0	328.10	5875.0	345.42	5858.0
294.01	5915.0	311.22	5893.0	328.39	5875.0	345.60	5858.0
294.41	5914.0	311.51	5893.0	328.79	5874.0	346.00	5858.0
294.70	5914.0	311.90	5892.0	329.11	5874.0	346.32	5857.0
295.02	5913.0	312.19	5892.0	329.40	5873.0	346.61	5857.0
295.31	5913.0	312.52	5892.0	329.69	5873.0	346.90	5857.0
295.70	5913.0	312.80	5891.0	330.12	5873.0	347.22	5856.0
295.92	5912.0	313.09	5891.0	330.30	5873.0	347.51	5856.0
296.21	5912.0	313.49	5890.0	330.70	5872.0	347.90	5856.0
296.60	5911.0	313.81	5890.0	331.02	5872.0	348.19	5856.0
296.89	5911.0	314.10	5890.0	331.31	5872.0	348.52	5855.0
297.22	5910.0	314.39	5890.0	331.60	5871.0	348.80	5855.0
297.50	5910.0	314.82	5889.0	331.92	5871.0	349.20	5854.0
297.79	5910.0	315.00	5889.0	332.21	5871.0	349.49	5855.0
298.19	5909.0	315.40	5889.0	332.60	5870.0	349.81	5854.0
298.51	5909.0	315.72	5888.0	332.89	5870.0	350.10	5854.0
298.80	5908.0	316.01	0.0	333.22	5870.0	350.50	5853.0
299.09	5908.0	316.30	5887.0	333.50	5870.0	350.71	5853.0
299.52	5908.0	316.62	5887.0	333.90	5869.0	351.11	5853.0
299.70	5907.0	317.02	5887.0	334.19	5869.0	351.40	5853.0
300.10	5907.0	317.30	5887.0	334.51	5869.0	351.72	5852.0
300.42	5906.0	317.59	5886.0	334.80	5868.0	352.01	5852.0
300.71	5906.0	317.92	5886.0	335.20	5868.0	352.30	5852.0
301.00	5906.0	318.20	5885.0	335.41	5868.0	352.62	5851.0
301.32	5905.0	318.60	5885.0	335.81	5867.0	353.02	5851.0
301.72	5905.0	318.89	5885.0	336.10	5867.0	353.30	5851.0
302.00	5904.0	319.21	5884.0	336.42	5867.0	353.59	5851.0
302.29	5904.0	319.50	5884.0	336.71	5866.0	353.92	5850.0
302.62	5903.0	319.90	5884.0	337.00	5866.0	354.31	5850.0
302.90	5903.0	320.11	5883.0	337.39	5866.0	354.49	5850.0
303.30	5903.0	320.51	5883.0	337.72	5866.0	354.89	5850.0
303.59	5903.0	320.80	5883.0	338.00	5865.0	355.21	5849.0
303.91	5902.0	321.12	5882.0	338.29	5864.0	355.50	5849.0
304.20	5901.0	321.41	5882.0	338.62	5865.0	355.79	5849.0
304.60	5901.0	321.70	5882.0	339.01	5864.0	356.11	5849.0
304.81	5901.0	322.09	5881.0	339.30	5864.0	356.51	5848.0
305.21	5900.0	322.42	5881.0	339.59	5863.0	356.80	5848.0
305.50	5900.0	322.70	5881.0	339.91	5863.0	357.12	5847.0
305.82	5900.0	322.99	5880.0	340.31	5863.0	357.41	5847.0
306.11	5899.0	323.32	5880.0	340.49	5862.0	357.70	5847.0
306.40	5899.0	323.71	5880.0	340.92	5863.0	358.09	5847.0
306.79	5899.0	324.00	5879.0	341.21	5862.0	358.42	5846.0
307.12	5898.0	324.29	5879.0	341.50	5862.0	358.70	5846.0
307.40	5898.0	324.61	5879.0	341.82	5861.0	358.99	5846.0
307.69	5897.0	325.01	5879.0	342.11	5861.0	359.39	5846.0
308.02	5897.0	325.19	5878.0	342.50	5861.0	359.60	5845.0
308.41	5897.0	325.62	5878.0	342.79	5861.0	360.00	5845.0
308.70	5896.0	325.91	5878.0	343.12	5860.0	360.29	5845.0

T	P	T	P	T	P	T	P
360.61	5845.0	377.82	5830.0	394.99	5816.0	412.20	5803.0
360.90	5844.0	378.11	5830.0	395.32	5816.0	412.49	5803.0
361.19	5844.0	378.50	5830.0	395.60	5816.0	412.92	5803.0
361.62	5844.0	378.79	5829.0	396.00	5816.0	413.21	5803.0
361.91	5843.0	379.12	5829.0	396.29	5815.0	413.50	5802.0
362.20	5843.0	379.40	5829.0	396.61	5815.0	413.82	5802.0
362.52	5842.0	379.80	5829.0	396.90	5815.0	414.22	5802.0
362.81	5843.0	380.02	5829.0	397.19	5814.0	414.40	5801.0
363.20	5842.0	380.30	5828.0	397.62	5814.0	414.79	5802.0
363.49	5842.0	380.70	5827.0	397.91	5814.0	415.12	5802.0
363.82	5842.0	380.99	5828.0	398.20	5814.0	415.40	5801.0
364.10	5841.0	381.31	5827.0	398.52	5814.0	415.69	5801.0
364.50	5841.0	381.60	5827.0	398.81	5813.0	416.02	5801.0
364.72	5841.0	381.89	5827.0	399.10	5813.0	416.30	5800.0
365.11	5841.0	382.32	5826.0	399.42	5813.0	416.70	5800.0
365.40	5840.0	382.61	5826.0	399.82	5813.0	416.99	5800.0
365.69	5840.0	382.90	5826.0	400.10	5812.0	417.31	5799.0
366.01	5839.0	383.22	5826.0	400.39	5812.0	417.60	5800.0
366.30	5840.0	383.62	5826.0	400.72	5812.0	418.00	5800.0
366.70	5839.0	383.80	5825.0	401.00	5811.0	418.32	5799.0
367.02	5839.0	384.19	5825.0	401.40	5811.0	418.61	5798.0
367.31	5838.0	384.52	5824.0	401.69	5811.0	418.90	5799.0
367.60	5839.0	384.80	5824.0	402.01	5811.0	419.29	5798.0
367.92	5838.0	385.09	5824.0	402.30	5811.0	419.51	5798.0
368.32	5838.0	385.42	5824.0	402.70	5810.0	419.90	5798.0
368.60	5838.0	385.81	5824.0	402.91	5810.0	420.19	5798.0
368.89	5838.0	386.10	5824.0	403.31	5810.0	420.52	5797.0
369.22	5837.0	386.39	5823.0	403.60	5810.0	420.80	5797.0
369.50	5837.0	386.71	5823.0	403.92	5810.0	421.09	5797.0
369.79	5837.0	387.00	5823.0	404.21	5809.0	421.42	5796.0
370.19	5836.0	387.40	5823.0	404.50	5809.0	421.81	5797.0
370.51	5836.0	387.72	5822.0	404.89	5809.0	430.02	5791.0
370.80	5836.0	388.01	5822.0	405.22	5808.0	439.99	5784.0
371.09	5836.0	388.30	5822.0	405.50	5808.0	450.00	4439.0
371.41	5835.0	388.69	5822.0	405.79	5808.0	460.01	3888.0
371.81	5835.0	388.91	5821.0	406.12	5808.0		
372.10	5835.0	389.30	5821.0	406.51	5807.0		
372.42	5834.0	389.59	5821.0	406.80	5807.0		
372.71	5834.0	389.92	5820.0	407.09	5807.0		
373.00	5834.0	390.20	5820.0	407.41	5807.0		
373.39	5834.0	390.49	5820.0	407.81	5807.0		
373.72	5833.0	390.89	5820.0	408.10	5807.0		
374.00	5833.0	391.21	5820.0	408.42	5806.0		
374.29	5833.0	391.50	5819.0	408.71	5806.0		
374.69	5832.0	391.79	5819.0	409.10	5806.0		
374.90	5833.0	392.11	5819.0	409.32	5805.0		
375.30	5832.0	392.51	5818.0	409.72	5805.0		
375.59	5832.0	392.80	5818.0	410.00	5805.0		
375.91	5832.0	393.12	5818.0	410.29	5805.0		
376.20	5831.0	393.41	5818.0	410.62	5804.0		
376.49	5831.0	393.80	5817.0	410.90	5804.0		
376.81	5831.0	394.02	5817.0	411.19	5804.0		
377.21	5831.0	394.42	5817.0	411.59	5803.0		
377.50	5830.0	394.70	5816.0	411.91	5804.0		

Zone 2P3, Test 3

T	P	T	P	T	P	T	P
0.00	5876.0	266.58	6520.0	283.79	6539.0	301.00	6256.0
9.98	5865.0	266.91	6524.0	284.08	6538.0	301.29	6255.0
19.98	5854.0	267.30	6519.0	284.40	6544.0	301.58	6253.0
29.99	5844.0	267.48	6522.0	284.69	6537.0	301.90	6252.0
40.00	5834.0	267.88	6526.0	285.09	6539.0	302.19	6251.0
50.01	5824.0	268.20	6518.0	285.38	6545.0	302.58	6249.0
59.98	5815.0	268.49	6521.0	285.70	6467.0	302.91	6248.0
69.99	5806.0	268.78	6526.0	285.99	6438.0	303.20	6247.0
80.00	5796.0	269.10	6518.0	286.38	6423.0	303.48	6246.0
90.00	5788.0	269.39	6522.0	286.60	6413.0	303.81	6244.0
99.98	5779.0	269.79	6528.0	287.00	6404.0	304.20	6243.0
109.98	5823.0	270.08	6519.0	287.28	6396.0	304.49	6242.0
119.99	5948.0	270.40	6524.0	287.61	6388.0	304.78	6240.0
130.00	6115.0	270.69	6530.0	287.90	6381.0	305.10	6240.0
140.01	6229.0	271.08	6522.0	288.18	6375.0	305.39	6238.0
149.98	6302.0	271.41	6527.0	288.51	6368.0	305.68	6237.0
159.99	6358.0	271.70	6532.0	288.90	6363.0	306.00	6236.0
170.00	6378.0	271.98	6526.0	289.19	6357.0	306.40	6235.0
180.00	6415.0	272.38	6530.0	289.48	6352.0	306.69	6234.0
189.98	6437.0	272.60	6532.0	289.80	6348.0	306.98	6233.0
199.98	6446.0	272.88	6528.0	290.20	6343.0	307.30	6232.0
209.99	6461.0	273.28	6532.0	290.49	6338.0	307.59	6231.0
220.00	6475.0	273.60	6533.0	290.78	6334.0	307.98	6230.0
230.01	6487.0	273.89	6528.0	291.10	6330.0	308.31	6229.0
239.98	6498.0	274.18	6534.0	291.50	6326.0	308.60	6228.0
249.99	6509.0	274.50	6532.0	291.68	6323.0	308.88	6227.0
257.58	6511.0	274.90	6531.0	292.00	6319.0	309.28	6226.0
257.98	6507.0	275.19	6536.0	292.40	6316.0	309.50	6225.0
258.38	6510.0	275.48	6531.0	292.68	6313.0	309.89	6224.0
258.59	6511.0	275.80	6532.0	293.01	6310.0	310.18	6223.0
258.88	6507.0	276.20	6538.0	293.30	6307.0	310.50	6222.0
259.28	6509.0	276.38	6531.0	293.58	6304.0	310.79	6221.0
259.60	6514.0	276.81	6531.0	293.98	6301.0	311.08	6220.0
259.89	6506.0	277.10	6539.0	294.30	6298.0	311.48	6219.0
260.18	6510.0	277.38	6530.0	294.59	6296.0	311.80	6218.0
260.50	6515.0	277.71	6533.0	294.88	6293.0	312.09	6217.0
260.90	6505.0	278.00	6540.0	295.28	6291.0	312.38	6216.0
261.18	6511.0	278.39	6530.0	295.49	6288.0	312.70	6216.0
261.51	6517.0	278.68	6535.0	295.89	6286.0	313.10	6215.0
261.80	6509.0	279.00	6540.0	296.18	6284.0	313.38	6214.0
262.19	6513.0	279.29	6533.0	296.50	6282.0	313.71	6213.0
262.41	6518.0	279.58	6537.0	296.79	6279.0	314.00	6212.0
262.80	6512.0	279.98	6541.0	297.08	6277.0	314.39	6212.0
263.09	6516.0	280.30	6535.0	297.51	6275.0	314.61	6211.0
263.38	6521.0	280.59	6541.0	297.80	6274.0	315.00	6210.0
263.70	6514.0	280.88	6542.0	298.08	6271.0	315.29	6209.0
263.99	6519.0	281.31	6535.0	298.41	6270.0	315.58	6208.0
264.39	6521.0	281.49	6543.0	298.70	6268.0	315.90	6208.0
264.68	6518.0	281.88	6541.0	299.09	6266.0	316.19	6207.0
265.00	6521.0	282.21	6538.0	299.38	6265.0	316.48	6206.0
265.29	6520.0	282.50	6544.0	299.70	6263.0	316.88	6205.0
265.58	6520.0	282.78	6539.0	299.99	6261.0	317.20	6204.0
266.01	6522.0	283.11	6538.0	300.39	6259.0	317.49	6204.0
266.30	6521.0	283.50	6544.0	300.60	6258.0	317.78	6203.0

T	P	T	P	T	P	T	P
318.21	6202.0	335.31	6168.0	352.48	6142.0	369.69	6122.0
318.39	6201.0	335.60	6167.0	352.80	6142.0	369.98	6122.0
318.78	6200.0	335.99	6167.0	353.09	6141.0	370.41	6121.0
319.11	6200.0	336.28	6166.0	353.49	6141.0	370.59	6121.0
319.40	6199.0	336.60	6165.0	353.78	6140.0	370.88	6120.0
319.68	6199.0	336.89	6165.0	354.10	6140.0	371.31	6120.0
320.01	6198.0	337.29	6165.0	354.39	6140.0	371.60	6119.0
320.40	6197.0	337.58	6164.0	354.68	6139.0	371.88	6119.0
320.69	6196.0	337.90	6164.0	355.11	6139.0	372.21	6119.0
320.98	6196.0	338.19	6163.0	355.40	6139.0	372.50	6118.0
321.30	6195.0	338.58	6163.0	355.68	6138.0	372.89	6118.0
321.59	6194.0	338.80	6162.0	356.01	6138.0	373.18	6118.0
321.99	6193.0	339.09	6161.0	356.40	6137.0	373.50	6117.0
322.28	6193.0	339.48	6161.0	356.58	6137.0	373.79	6117.0
322.60	6192.0	339.81	6160.0	356.98	6137.0	374.08	6117.0
322.89	6191.0	340.10	6160.0	357.30	6136.0	374.40	6116.0
323.28	6190.0	340.38	6160.0	357.59	6136.0	374.80	6116.0
323.50	6190.0	340.71	6159.0	357.88	6135.0	375.09	6116.0
323.90	6190.0	341.10	6159.0	358.20	6135.0	375.38	6115.0
324.18	6189.0	341.39	6158.0	358.49	6135.0	375.70	6115.0
324.51	6188.0	341.68	6157.0	358.89	6134.0	375.99	6114.0
324.80	6187.0	342.00	6157.0	359.18	6133.0	376.28	6114.0
325.08	6187.0	342.40	6156.0	359.50	6133.0	376.71	6114.0
325.41	6186.0	342.58	6156.0	359.79	6133.0	377.00	6113.0
325.80	6186.0	342.98	6156.0	360.18	6133.0	377.28	6113.0
326.09	6185.0	343.30	6155.0	360.51	6132.0	377.61	6113.0
326.38	6184.0	343.59	6154.0	360.80	6132.0	378.00	6114.0
326.70	6184.0	343.88	6154.0	361.08	6131.0	378.18	6112.0
327.10	6182.0	344.20	6154.0	361.48	6131.0	378.58	6112.0
327.39	6182.0	344.60	6153.0	361.70	6130.0	378.90	6111.0
327.68	6181.0	344.88	6153.0	361.98	6130.0	379.19	6111.0
328.00	6181.0	345.21	6152.0	362.38	6130.0	379.48	6111.0
328.40	6180.0	345.50	6152.0	362.70	6130.0	379.80	6110.0
328.58	6180.0	345.78	6151.0	362.99	6129.0	380.09	6110.0
329.01	6179.0	346.18	6151.0	363.28	6129.0	380.49	6109.0
329.30	6178.0	346.50	6151.0	363.60	6128.0	380.78	6109.0
329.58	6178.0	346.79	6150.0	364.00	6128.0	381.10	6109.0
329.91	6177.0	347.08	6150.0	364.29	6127.0	381.39	6108.0
330.20	6177.0	347.48	6149.0	364.58	6127.0	381.78	6108.0
330.48	6176.0	347.69	6149.0	364.90	6127.0	382.11	6108.0
330.88	6175.0	348.09	6148.0	365.30	6127.0	382.40	6107.0
331.20	6175.0	348.38	6148.0	365.48	6126.0	382.68	6107.0
331.49	6174.0	348.70	6147.0	365.91	6126.0	383.08	6106.0
331.78	6174.0	348.99	6147.0	366.20	6125.0	383.30	6106.0
332.18	6173.0	349.28	6146.0	366.48	6125.0	383.58	6106.0
332.50	6172.0	349.60	6146.0	366.81	6125.0	383.98	6106.0
332.79	6172.0	350.00	6146.0	367.10	6124.0	384.30	6105.0
333.08	6172.0	350.28	6145.0	367.38	6124.0	384.59	6105.0
333.51	6171.0	350.61	6145.0	367.78	6124.0	384.88	6104.0
333.69	6170.0	350.90	6144.0	368.10	6124.0	385.20	6104.0
334.08	6170.0	351.29	6144.0	368.39	6123.0	385.60	6104.0
334.41	6169.0	351.58	6143.0	368.68	6123.0	385.89	6103.0
334.70	6169.0	351.90	6143.0	369.08	6122.0	386.18	6103.0
334.98	6168.0	352.19	6143.0	369.29	6122.0	386.50	6103.0

T	P	T	P	T	P	T	P
386.90	6103.0	404.10	6085.0	421.28	6068.0	438.48	6053.0
387.18	6102.0	404.39	6084.0	421.60	6068.0	438.81	6052.0
387.51	6102.0	404.79	6084.0	421.89	6067.0	439.20	6052.0
387.80	6101.0	405.00	6084.0	422.18	6067.0	439.49	6052.0
388.19	6101.0	405.29	6083.0	422.61	6067.0	439.78	6052.0
388.41	6101.0	405.69	6083.0	422.90	6067.0	440.10	6051.0
388.80	6101.0	405.98	6083.0	423.18	6066.0	440.50	6051.0
389.09	6100.0	406.30	6083.0	423.51	6066.0	440.68	6051.0
389.38	6100.0	406.59	6082.0	423.90	6066.0	441.00	6050.0
389.70	6100.0	406.88	6082.0	424.08	6065.0	441.40	6050.0
389.99	6099.0	407.31	6082.0	424.48	6065.0	441.69	6050.0
390.28	6099.0	407.60	6081.0	424.80	6065.0	441.98	6050.0
390.68	6099.0	407.88	6081.0	425.09	6065.0	442.30	6049.0
391.00	6098.0	408.21	6080.0	425.38	6064.0	442.59	6049.0
391.29	6098.0	408.60	6080.0	425.70	6064.0	442.98	6049.0
391.58	6097.0	408.89	6080.0	426.10	6064.0	443.31	6048.0
392.01	6097.0	409.18	6080.0	426.39	6063.0	443.60	6048.0
392.30	6097.0	409.50	6079.0	426.68	6063.0	443.88	6047.0
392.58	6096.0	409.90	6079.0	427.00	6063.0	444.28	6047.0
392.91	6096.0	410.08	6079.0	427.29	6063.0	444.60	6047.0
393.30	6096.0	410.40	6078.0	427.68	6062.0	444.89	6047.0
393.48	6095.0	410.80	6078.0	428.01	6062.0	445.18	6046.0
393.88	6095.0	411.09	6078.0	428.30	6062.0	445.58	6046.0
394.20	6095.0	411.38	6078.0	428.58	6061.0	445.79	6046.0
394.49	6094.0	411.70	6077.0	428.98	6061.0	446.08	6046.0
394.78	6094.0	411.99	6077.0	429.20	6061.0	446.48	6045.0
395.10	6094.0	412.38	6076.0	429.59	6061.0	446.80	6045.0
395.50	6094.0	412.71	6076.0	429.88	6061.0	447.09	6045.0
395.79	6093.0	413.00	6076.0	430.20	6060.0	447.38	6045.0
396.08	6092.0	413.28	6075.0	430.49	6059.0	447.70	6044.0
396.40	6092.0	413.68	6075.0	430.78	6060.0	448.10	6044.0
396.69	6092.0	414.00	6075.0	431.18	6059.0	448.38	6044.0
397.08	6092.0	414.29	6074.0	431.50	6058.0	450.00	6042.0
397.41	6091.0	414.58	0.0	431.79	6059.0	459.98	6034.0
397.70	6091.0	414.98	6074.0	432.08	6058.0	469.98	6026.0
397.98	6091.0	415.19	6073.0	432.40	6058.0	479.99	6018.0
398.38	6090.0	415.59	6073.0	432.80	6058.0	490.00	6011.0
398.60	6090.0	415.88	6073.0	433.08	6057.0		
398.99	6090.0	416.20	6073.0	433.41	6057.0		
399.28	6089.0	416.49	6073.0	433.70	6057.0		
399.60	6089.0	416.78	6072.0	434.09	6057.0		
399.89	6089.0	417.10	6072.0	434.38	6056.0		
400.18	6088.0	417.50	6072.0	434.70	6056.0		
400.58	6088.0	417.78	6071.0	434.99	6056.0		
400.90	6088.0	418.11	6071.0	435.39	6055.0		
401.19	6087.0	418.40	6071.0	435.60	6055.0		
401.48	6087.0	418.79	6070.0	435.89	6055.0		
401.80	6087.0	419.08	6070.0	436.29	6054.0		
402.20	6086.0	419.40	6070.0	436.58	6054.0		
402.48	6086.0	419.69	6070.0	436.90	6054.0		
402.81	6086.0	420.09	6069.0	437.19	6054.0		
403.10	6085.0	420.30	6069.0	437.48	6053.0		
403.49	6085.0	420.59	6068.0	437.91	6053.0		
403.78	6085.0	420.99	6069.0	438.20	6053.0		

Zone 2P3, Test 4

T	P	T	P	T	P	T	P
0.00	4047.0	221.18	6460.0	238.28	6239.0	255.60	6184.0
9.97	4146.0	221.47	6458.0	238.68	6237.0	255.78	6183.0
19.98	4355.0	221.80	6464.0	239.00	6236.0	256.10	6182.0
29.99	4581.0	222.08	6458.0	239.29	6234.0	256.50	6181.0
40.00	4821.0	222.48	6467.0	239.58	6233.0	256.79	6181.0
50.00	5050.0	222.70	6458.0	239.90	6231.0	257.08	6180.0
59.98	5291.0	223.09	6466.0	240.30	6230.0	257.40	6179.0
69.98	5530.0	223.38	6405.0	240.59	6229.0	257.69	6179.0
79.99	5760.0	223.70	6395.0	240.88	6228.0	258.08	6178.0
90.00	5962.0	223.99	6386.0	241.20	6226.0	258.37	6177.0
99.97	6104.0	224.28	6379.0	241.60	6225.0	258.70	6176.0
109.98	6198.0	224.68	6371.0	241.78	6223.0	258.98	6176.0
119.99	6274.0	225.00	6365.0	242.17	6222.0	259.38	6175.0
130.00	6329.0	225.29	6358.0	242.50	6221.0	259.70	6175.0
140.00	6375.0	225.58	6352.0	242.78	6220.0	259.99	6174.0
149.98	6391.0	225.90	6347.0	243.07	6219.0	260.28	6173.0
159.98	6417.0	226.30	6342.0	243.40	6218.0	260.68	6172.0
169.99	6422.0	226.58	6337.0	243.68	6217.0	260.89	6172.0
180.00	6434.0	226.87	6332.0	244.08	6215.0	261.18	6171.0
189.97	6451.0	227.20	6327.0	244.40	6215.0	261.58	6170.0
199.98	6456.0	227.59	6323.0	244.69	6214.0	261.90	6169.0
209.99	6454.0	227.77	6319.0	244.98	6213.0	262.19	6169.0
211.10	6450.0	228.20	6315.0	245.38	6212.0	262.48	6168.0
211.28	6457.0	228.49	6311.0	245.59	6211.0	262.80	6168.0
211.57	6449.0	228.78	6307.0	245.99	6209.0	263.20	6167.0
211.90	6458.0	229.10	6304.0	246.28	6208.0	263.48	6166.0
212.29	6450.0	229.39	6300.0	246.60	6207.0	263.77	6165.0
212.47	6458.0	229.68	6297.0	246.89	6207.0	264.10	6165.0
212.90	6450.0	230.08	6294.0	247.18	6206.0	264.49	6164.0
213.19	6456.0	230.40	6291.0	247.57	6205.0	264.67	6163.0
213.48	6449.0	230.69	6287.0	247.90	6204.0	265.10	6163.0
213.80	6453.0	230.98	6285.0	248.18	6203.0	265.39	6162.0
214.09	6454.0	231.37	6282.0	248.47	6202.0	265.68	6161.0
214.49	6451.0	231.70	6280.0	248.80	6201.0	266.00	6161.0
214.78	6459.0	231.98	6277.0	249.19	6200.0	266.29	6160.0
215.10	6453.0	232.27	6274.0	249.48	6199.0	266.58	6159.0
215.39	6461.0	232.70	6272.0	249.80	6198.0	266.98	6159.0
215.68	6452.0	232.88	6270.0	250.09	6197.0	267.30	6158.0
216.07	6461.0	233.17	6267.0	250.49	6197.0	267.59	6157.0
216.40	6453.0	233.60	6265.0	250.70	6196.0	267.88	6157.0
216.68	6459.0	233.89	6263.0	251.10	6195.0	268.27	6156.0
216.97	6455.0	234.18	6261.0	251.39	6194.0	268.60	6156.0
217.40	6456.0	234.50	6259.0	251.68	6193.0	268.88	6155.0
217.58	6456.0	234.79	6258.0	252.00	6192.0	269.17	6154.0
217.98	6455.0	235.19	6255.0	252.29	6191.0	269.50	6153.0
218.30	6461.0	235.48	6253.0	252.58	6191.0	269.78	6153.0
218.59	6455.0	235.80	6252.0	252.97	6190.0	270.07	6152.0
218.88	6464.0	236.09	6250.0	253.30	6189.0	270.50	6152.0
219.20	6456.0	236.48	6248.0	253.58	6188.0	270.79	6151.0
219.60	6464.0	236.70	6246.0	253.87	6188.0	271.08	6151.0
219.89	6455.0	237.10	6245.0	254.30	6187.0	271.40	6150.0
220.18	6463.0	237.38	6243.0	254.59	6186.0	271.69	6149.0
220.50	6457.0	237.67	6241.0	254.88	6185.0	272.09	6149.0
220.79	6459.0	238.00	6240.0	255.20	6184.0	272.38	6148.0

T	P	T	P	T	P	T	P
272.70	6147.0	289.87	6118.0	306.97	6094.0	324.29	6073.0
272.99	6147.0	290.20	6118.0	307.40	6093.0	324.58	6073.0
273.38	6146.0	290.48	6118.0	307.69	6093.0	324.90	6072.0
273.60	6145.0	290.77	6117.0	307.98	6093.0	325.19	6072.0
274.00	6145.0	291.10	6117.0	308.30	6092.0	325.58	6072.0
274.28	6144.0	291.38	6116.0	308.59	6092.0	325.87	6071.0
274.57	6144.0	291.67	6116.0	308.99	6092.0	326.20	6071.0
274.90	6144.0	292.10	6115.0	309.28	6091.0	326.48	6070.0
275.18	6143.0	292.39	6115.0	309.60	6091.0	326.88	6070.0
275.47	6142.0	292.68	6114.0	309.89	6090.0	327.10	6070.0
275.90	6142.0	293.00	6114.0	310.28	6090.0	327.49	6069.0
276.19	6141.0	293.29	6113.0	310.57	6090.0	327.78	6069.0
276.48	6141.0	293.69	6113.0	310.90	6089.0	328.10	6069.0
276.80	6140.0	293.98	6112.0	311.18	6089.0	328.39	6068.0
277.20	6140.0	294.30	6112.0	311.58	6088.0	328.68	6068.0
277.49	6139.0	294.59	6112.0	311.80	6088.0	329.00	6068.0
277.78	6138.0	294.98	6111.0	312.08	6087.0	329.40	6067.0
278.10	6138.0	295.20	6111.0	312.48	6087.0	329.69	6067.0
278.39	6137.0	295.60	6110.0	312.80	6087.0	329.98	6067.0
278.68	6136.0	295.88	6110.0	313.09	6086.0	330.30	6066.0
279.00	6136.0	296.17	6109.0	313.38	6086.0	330.70	6066.0
279.40	6136.0	296.50	6109.0	313.70	6086.0	330.98	6065.0
279.68	6135.0	296.78	6108.0	314.10	6085.0	331.27	6065.0
279.97	6135.0	297.07	6107.0	314.39	6084.0	331.60	6065.0
280.30	6134.0	297.50	6107.0	314.68	6084.0	331.99	6064.0
280.58	6134.0	297.79	6107.0	315.00	6084.0	332.17	6064.0
280.98	6133.0	298.08	6107.0	315.40	6083.0	332.60	6064.0
281.30	6132.0	298.40	6106.0	315.68	6083.0	332.89	6064.0
281.59	6132.0	298.80	6106.0	315.97	6083.0	333.18	6063.0
281.88	6132.0	299.09	6105.0	316.30	6082.0	333.50	6063.0
282.28	6131.0	299.38	6105.0	316.69	6082.0	333.79	6063.0
282.49	6131.0	299.70	6104.0	316.87	6082.0	334.08	6062.0
282.89	6130.0	300.10	6104.0	317.30	6082.0	334.48	6062.0
283.18	6130.0	300.28	6103.0	317.59	6081.0	334.80	6061.0
283.50	6129.0	300.67	6102.0	317.88	6080.0	335.09	6062.0
283.79	6128.0	301.00	6102.0	318.20	6080.0	335.38	6061.0
284.08	6127.0	301.28	6102.0	318.49	6080.0	335.77	6060.0
284.40	6127.0	301.57	6102.0	318.78	6079.0	336.10	6060.0
284.80	6127.0	301.90	6101.0	319.18	6079.0	336.38	6060.0
285.08	6126.0	302.29	6041.0	319.50	6079.0	336.67	6060.0
285.37	6126.0	302.58	6100.0	319.79	6078.0	337.10	6059.0
285.70	6125.0	302.90	6099.0	320.08	6078.0	337.28	6059.0
286.09	6124.0	303.19	6099.0	320.47	6078.0	337.68	6059.0
286.27	6124.0	303.48	6099.0	320.80	6077.0	338.00	6059.0
286.70	6124.0	303.88	6099.0	321.08	6076.0	338.29	6058.0
286.99	6123.0	304.20	6098.0	321.37	6076.0	338.58	6057.0
287.28	6122.0	304.49	6098.0	321.80	6076.0	338.90	6058.0
287.60	6122.0	304.78	6097.0	321.98	6075.0	339.19	6057.0
287.89	6122.0	305.17	6097.0	322.38	6075.0	339.59	6056.0
288.29	6121.0	305.39	6096.0	322.70	6075.0	339.88	6057.0
288.58	6121.0	305.78	6096.0	322.99	6075.0	340.20	6056.0
288.90	6120.0	306.07	6096.0	323.28	6074.0	340.49	6056.0
289.19	6120.0	306.50	6095.0	323.60	6074.0	340.88	6055.0
289.48	6119.0	306.68	6094.0	323.89	6073.0	341.17	6055.0

T	P	T	P	T	P	T	P
341.50	6055.0	358.78	6039.0	375.88	6025.0	393.19	6012.0
341.78	6055.0	358.99	6038.0	376.20	6025.0	393.37	6012.0
342.18	6054.0	359.28	6038.0	376.60	6025.0	393.70	6012.0
342.40	6054.0	359.68	6038.0	376.88	6024.0	394.09	6012.0
342.79	6053.0	360.00	6038.0	377.17	6024.0	394.38	6011.0
343.08	6053.0	360.29	6038.0	377.50	6024.0	394.70	6011.0
343.40	6053.0	360.58	6038.0	377.89	6024.0	394.99	6011.0
343.69	6053.0	360.90	6037.0	378.07	6023.0	395.28	6011.0
343.98	6052.0	361.30	6036.0	378.50	6023.0	395.68	6010.0
344.38	6052.0	361.58	6037.0	378.79	6023.0	396.00	6010.0
344.70	6052.0	361.87	6036.0	379.08	6023.0	396.29	6010.0
344.99	6051.0	362.20	6036.0	379.40	6022.0	396.58	6010.0
345.28	6051.0	362.59	6036.0	379.69	6022.0	396.97	6010.0
345.60	6051.0	362.77	6036.0	380.09	6022.0	397.19	6009.0
346.00	6051.0	363.20	6035.0	380.38	6022.0	397.58	6009.0
346.28	6050.0	363.49	6035.0	380.70	6021.0	397.87	6009.0
346.57	6050.0	363.78	6035.0	380.99	6021.0	398.20	6009.0
346.90	6050.0	364.10	6035.0	381.28	6021.0	398.48	6008.0
347.29	6050.0	364.39	6034.0	381.67	6021.0	398.77	6008.0
347.47	6049.0	364.79	6034.0	382.00	6020.0	399.10	6008.0
347.90	6049.0	365.08	6034.0	382.28	6020.0	399.49	6008.0
348.19	6048.0	365.40	6034.0	382.57	6020.0	399.78	6008.0
348.48	6048.0	365.69	6033.0	383.00	6019.0	400.10	6007.0
348.80	6048.0	365.98	6033.0	383.18	6019.0	400.39	6007.0
349.09	6047.0	366.37	6033.0	383.58	6019.0	400.79	6007.0
349.49	6047.0	366.70	6032.0	383.90	6019.0	401.08	6006.0
349.78	6047.0	366.98	6032.0	384.19	6019.0	401.40	6007.0
350.10	6047.0	367.27	6032.0	384.48	6018.0	401.69	6006.0
350.39	6047.0	367.70	6032.0	384.80	6018.0	402.48	6005.0
350.68	6046.0	367.88	6031.0	385.09	6018.0	410.00	6000.0
351.07	6046.0	368.28	6031.0	385.49	6018.0	419.98	5995.0
351.40	6046.0	368.60	6031.0	385.78	6017.0		
351.68	6045.0	368.89	6030.0	386.10	6017.0		
351.97	6045.0	369.18	6030.0	386.39	6017.0		
352.40	6045.0	369.50	6030.0	386.78	6017.0		
352.58	6044.0	369.90	6030.0	387.07	6017.0		
352.98	6044.0	370.19	6030.0	387.40	6016.0		
353.30	6044.0	370.48	6029.0	387.68	6016.0		
353.59	6044.0	370.80	6029.0	388.08	6016.0		
353.88	6043.0	371.09	6029.0	388.30	6016.0		
354.20	6043.0	371.48	6029.0	388.69	6015.0		
354.60	6043.0	371.77	6028.0	388.98	6015.0		
354.89	6043.0	372.10	6028.0	389.30	6015.0		
355.18	6042.0	372.38	6028.0	389.59	6015.0		
355.50	6042.0	372.78	6028.0	389.88	6014.0		
355.79	6042.0	373.00	6027.0	390.20	6014.0		
356.18	6041.0	373.39	6027.0	390.60	6014.0		
356.47	6041.0	373.68	6027.0	390.89	6014.0		
356.80	6041.0	374.00	6027.0	391.18	6013.0		
357.08	6041.0	374.29	6026.0	391.50	6013.0		
357.48	6040.0	374.58	6026.0	391.90	6013.0		
357.70	6040.0	374.98	6026.0	392.18	6013.0		
358.09	6040.0	375.30	6026.0	392.47	6013.0		
358.38	6039.0	375.59	6025.0	392.80	6013.0		

Zone 2P3, Test 5

T	P	T	P	T	P	T	P
0.00	5121.0	175.10	6481.0	192.28	6272.0	209.48	6220.0
10.01	5188.0	175.39	6487.0	192.71	6271.0	209.81	6220.0
19.98	5428.0	175.79	6482.0	193.00	6270.0	210.10	6219.0
29.99	5676.0	176.08	6429.0	193.28	6269.0	210.49	6218.0
40.00	5917.0	176.40	6417.0	193.61	6268.0	210.78	6217.0
50.00	6099.0	176.69	6408.0	193.90	6267.0	211.10	6216.0
59.98	6220.0	176.98	6401.0	194.18	6265.0	211.39	6216.0
69.98	6291.0	177.41	6394.0	194.51	6264.0	211.79	6215.0
79.99	6333.0	177.70	6388.0	194.90	6263.0	212.00	6214.0
90.00	6364.0	177.98	6382.0	195.19	6262.0	212.40	6214.0
100.01	6393.0	178.31	6377.0	195.48	6260.0	212.69	6213.0
109.98	6414.0	178.70	6372.0	195.80	6259.0	212.98	6212.0
119.99	6427.0	178.99	6368.0	196.09	6258.0	213.30	6211.0
130.00	6437.0	179.28	6363.0	196.49	6257.0	213.59	6211.0
140.00	6447.0	179.60	6359.0	196.78	6256.0	213.88	6210.0
149.98	6454.0	179.89	6355.0	197.10	6255.0	214.31	6209.0
159.98	6467.0	180.18	6351.0	197.39	6254.0	214.60	6208.0
163.19	6475.0	180.50	6347.0	197.78	6253.0	214.88	6208.0
163.69	6466.0	180.90	6343.0	198.00	6252.0	215.21	6207.0
163.98	6475.0	181.19	6340.0	198.40	6251.0	215.60	6206.0
164.30	6466.0	181.48	6337.0	198.68	6250.0	215.78	6205.0
164.70	6476.0	181.80	6334.0	199.01	6249.0	216.18	6205.0
164.88	6467.0	182.09	6331.0	199.30	6248.0	216.50	6204.0
165.20	6475.0	182.48	6329.0	199.58	6247.0	216.90	6203.0
165.60	6467.0	182.81	6326.0	199.91	6246.0	217.08	6203.0
165.89	6476.0	183.10	6323.0	200.30	6245.0	217.40	6202.0
166.18	6468.0	183.38	6321.0	200.59	6244.0	217.80	6201.0
166.50	6477.0	183.78	6319.0	200.88	6243.0	218.09	6200.0
166.79	6471.0	184.00	6316.0	201.20	6242.0	218.38	6200.0
167.18	6478.0	184.39	6314.0	201.60	6241.0	218.70	6200.0
167.51	6471.0	184.68	6311.0	201.89	6240.0	218.99	6199.0
167.80	6479.0	185.00	6309.0	202.18	6239.0	219.38	6198.0
168.08	6472.0	185.29	6308.0	202.50	6238.0	219.71	6198.0
168.48	6480.0	185.58	6306.0	202.79	6238.0	220.00	6197.0
168.80	6474.0	185.98	6304.0	203.08	6237.0	220.28	6196.0
169.09	6480.0	186.30	6302.0	203.40	6236.0	220.68	6196.0
169.38	6474.0	186.59	6300.0	203.80	6235.0	220.90	6195.0
169.78	6480.0	186.88	6298.0	204.08	6234.0	221.29	6194.0
169.99	6475.0	187.20	6296.0	204.41	6233.0	221.58	6193.0
170.28	6482.0	187.60	6294.0	204.70	6233.0	221.98	6193.0
170.68	6477.0	187.88	6293.0	204.98	6232.0	222.19	6192.0
171.00	6482.0	188.21	6291.0	205.38	6231.0	222.48	6192.0
171.29	6477.0	188.50	6290.0	205.70	6230.0	222.88	6191.0
171.58	6483.0	188.89	6288.0	205.99	6229.0	223.20	6190.0
171.90	6478.0	189.11	6286.0	206.28	6229.0	223.49	6189.0
172.30	6484.0	189.40	6285.0	206.68	6227.0	223.78	6189.0
172.58	6479.0	189.79	6284.0	206.89	6227.0	224.10	6189.0
172.91	6483.0	190.08	6282.0	207.29	6226.0	224.50	6188.0
173.20	6478.0	190.40	6281.0	207.58	6225.0	224.78	6187.0
173.59	6484.0	190.69	6279.0	207.90	6224.0	225.11	6186.0
173.88	6479.0	190.98	6278.0	208.19	6224.0	225.40	6186.0
174.20	6486.0	191.38	6277.0	208.48	6223.0	225.79	6186.0
174.49	6481.0	191.70	6275.0	208.91	6222.0	226.01	6185.0
174.89	6486.0	191.99	6273.0	209.20	6221.0	226.40	6184.0

T	P	T	P	T	P	T	P
226.69	6184.0	243.90	6154.0	261.00	6131.0	278.21	6111.0
226.98	6183.0	244.19	6154.0	261.40	6130.0	278.50	6111.0
227.30	6182.0	244.48	6154.0	261.68	6130.0	278.78	6110.0
227.59	6182.0	244.91	6153.0	262.01	6129.0	279.18	6110.0
227.88	6181.0	245.09	6153.0	262.30	6129.0	279.50	6110.0
228.28	6180.0	245.48	6152.0	262.69	6129.0	279.79	6110.0
228.60	6180.0	245.81	6152.0	262.91	6129.0	280.08	6110.0
228.89	6180.0	246.10	6151.0	263.30	6128.0	280.48	6109.0
229.18	6179.0	246.38	6150.0	263.59	6128.0	280.69	6109.0
229.61	6178.0	246.71	6150.0	263.88	6127.0	281.09	6109.0
229.90	6178.0	247.10	6150.0	264.20	6127.0	281.38	6108.0
230.18	6177.0	247.39	6149.0	264.49	6126.0	281.70	6108.0
230.51	6176.0	247.68	6149.0	264.78	6126.0	281.99	6107.0
230.90	6176.0	248.00	6148.0	265.18	6126.0	282.28	6107.0
231.08	6176.0	248.29	6148.0	265.50	6125.0	282.60	6107.0
231.48	6175.0	248.69	6148.0	265.79	6125.0	283.00	6107.0
231.80	6174.0	248.98	6147.0	266.08	6124.0	283.28	6106.0
232.09	6174.0	249.30	6146.0	266.51	6124.0	283.61	6106.0
232.38	6173.0	249.59	6146.0	266.80	6124.0	283.90	6105.0
232.70	6172.0	249.98	6146.0	267.08	6124.0	284.29	6106.0
232.99	6172.0	250.20	6145.0	267.41	6123.0	284.58	6105.0
233.39	6172.0	250.49	6144.0	267.80	6123.0	284.90	6105.0
233.68	6171.0	250.88	6144.0	267.98	6122.0	285.19	6105.0
234.00	6171.0	251.21	6144.0	268.31	6122.0	285.59	6104.0
234.29	6170.0	251.50	6143.0	268.70	6122.0	285.80	6104.0
234.68	6169.0	251.78	6143.0	268.99	6121.0	286.20	6103.0
235.01	6169.0	252.11	6143.0	269.28	6121.0	286.49	6103.0
235.30	6168.0	252.50	6142.0	269.60	6120.0	286.78	6103.0
235.58	6168.0	252.79	6142.0	269.89	6120.0	287.10	6103.0
235.98	6167.0	253.08	6141.0	270.29	6120.0	287.39	6102.0
236.20	6166.0	253.40	6141.0	270.58	6120.0	287.78	6102.0
236.48	6166.0	253.80	6140.0	270.90	6119.0	288.11	6102.0
236.88	6166.0	253.98	6140.0	271.19	6119.0	288.40	6102.0
237.20	6165.0	254.38	6140.0	271.58	6119.0	288.68	6101.0
237.49	6165.0	254.70	6139.0	271.80	6118.0	289.01	6101.0
237.78	6164.0	254.99	6139.0	272.20	6118.0	289.40	6101.0
238.10	6163.0	255.28	6138.0	272.48	6117.0	289.69	6100.0
238.50	6163.0	255.60	6138.0	272.81	6117.0	289.98	6100.0
238.79	6162.0	255.89	6137.0	273.10	6117.0	290.30	6100.0
239.08	6162.0	256.28	6137.0	273.38	6117.0	290.70	6100.0
239.40	6161.0	256.61	6136.0	273.71	6116.0	290.88	6099.0
239.80	6161.0	256.90	6136.0	274.10	6116.0	291.28	6099.0
239.98	6160.0	257.18	6136.0	274.39	6115.0	291.60	6099.0
240.41	6160.0	257.58	6135.0	274.68	6115.0	291.89	6098.0
240.70	6160.0	257.90	6135.0	275.00	6115.0	292.18	6098.0
240.98	6159.0	258.19	6134.0	275.40	6115.0	292.50	6098.0
241.31	6159.0	258.48	6134.0	275.69	6114.0	292.90	6098.0
241.60	6158.0	258.88	6133.0	275.98	6114.0	293.18	6097.0
241.99	6157.0	259.09	6133.0	276.30	6113.0	293.51	6097.0
242.28	6157.0	259.38	6132.0	276.59	6113.0	293.80	6097.0
242.60	6156.0	259.78	6132.0	276.88	6113.0	294.08	6097.0
242.89	6156.0	260.10	6132.0	277.20	6113.0	294.48	6096.0
243.18	6155.0	260.39	6132.0	277.60	6112.0	294.80	6096.0
243.58	6155.0	260.68	6131.0	277.88	6114.0	295.09	6096.0

T	P	T	P	T	P	T	P
295.38	6096.0	312.59	6082.0	329.80	6071.0	347.08	6061.0
295.78	6095.0	312.88	6082.0	330.19	6071.0	347.40	6061.0
295.99	6095.0	313.31	6082.0	330.48	6070.0	347.69	6061.0
296.39	6095.0	313.60	6082.0	330.80	6071.0	348.08	6060.0
296.68	6094.0	313.88	6081.0	331.09	6070.0	348.30	6061.0
297.11	6094.0	314.21	6081.0	331.49	6070.0	348.70	6061.0
297.29	6094.0	314.50	6081.0	331.78	6070.0	348.98	6060.0
297.58	6094.0	314.89	6081.0	332.10	6069.0	349.31	6060.0
298.01	6093.0	315.18	6080.0	332.39	6070.0	349.60	6060.0
298.30	6093.0	315.50	6080.0	332.78	6069.0	349.88	6060.0
298.58	6093.0	315.79	6080.0	333.00	6069.0	350.21	6060.0
298.91	6092.0	316.19	6079.0	333.29	6069.0	350.60	6059.0
299.20	6092.0	316.48	6080.0	333.68	6068.0	350.89	6059.0
299.59	6092.0	316.80	6080.0	334.01	6069.0	351.18	6059.0
299.88	6092.0	317.09	6079.0	334.30	6069.0	351.50	6059.0
300.20	6091.0	317.38	6079.0	334.58	6068.0	351.90	6059.0
300.49	6091.0	317.70	6079.0	334.91	6068.0	352.19	6059.0
300.89	6091.0	317.99	6078.0	335.30	6068.0	352.48	6059.0
301.10	6091.0	318.38	6078.0	335.59	6068.0	352.80	6058.0
301.50	6090.0	318.71	6078.0	335.88	6068.0	353.09	6058.0
301.79	6090.0	319.00	6078.0	336.20	6067.0	353.38	6058.0
302.08	6090.0	319.28	6078.0	336.60	6067.0	353.70	6058.0
302.40	6090.0	319.61	6078.0	336.78	6067.0	354.10	6058.0
302.69	6089.0	320.00	6077.0	337.18	6067.0	360.00	6055.0
303.08	6089.0	320.29	6077.0	337.50	6066.0		
303.41	6089.0	320.58	6077.0	337.90	6066.0		
303.70	6089.0	320.90	6077.0	338.08	6066.0		
303.98	6088.0	321.30	6076.0	338.40	6066.0		
304.31	6088.0	321.59	6076.0	338.80	6066.0		
304.70	6088.0	321.88	6076.0	339.08	6066.0		
304.99	6088.0	322.20	6076.0	339.41	6066.0		
305.28	6088.0	322.60	6075.0	339.70	6065.0		
305.60	6087.0	322.78	6076.0	339.98	6065.0		
306.00	6087.0	323.21	6075.0	340.38	6065.0		
306.18	6087.0	323.50	6075.0	340.70	6065.0		
306.58	6087.0	323.78	6075.0	340.99	6065.0		
306.90	6086.0	324.11	6075.0	341.28	6064.0		
307.30	6086.0	324.40	6074.0	341.68	6065.0		
307.48	6086.0	324.79	6074.0	342.00	6064.0		
307.80	6086.0	325.08	6074.0	342.29	6064.0		
308.20	6086.0	325.40	6074.0	342.58	6064.0		
308.48	6085.0	325.69	6073.0	342.90	6064.0		
308.81	6085.0	325.98	6073.0	343.19	6063.0		
309.10	6085.0	326.38	6073.0	343.48	6063.0		
309.38	6085.0	326.70	6073.0	343.91	6063.0		
309.78	6084.0	326.99	6073.0	344.20	6063.0		
310.10	6084.0	327.28	6072.0	344.48	6062.0		
310.39	6084.0	327.71	6072.0	344.81	6063.0		
310.68	6084.0	327.89	6072.0	345.10	6062.0		
311.08	6083.0	328.28	6072.0	345.49	6062.0		
311.40	6083.0	328.61	6072.0	345.78	6062.0		
311.69	6083.0	328.90	6072.0	346.10	6062.0		
311.98	6083.0	329.18	6071.0	346.39	6062.0		
312.41	6083.0	329.51	6071.0	346.79	6062.0		

Zone 3P1, Test 4

T	P	T	P	T	P	T	P
0.00	0.0	282.10	7123.0	289.12	6856.0	296.10	6716.0
9.79	5037.0	282.20	7118.0	289.19	6854.0	296.21	6715.0
19.91	5041.0	282.42	7119.0	289.30	6851.0	296.39	6711.0
29.92	5060.0	282.49	7118.0	289.51	6847.0	296.50	6712.0
39.89	5211.0	282.60	7120.0	289.62	6845.0	296.60	6707.0
49.79	5405.0	282.71	7118.0	289.69	6841.0	296.71	6708.0
60.91	5579.0	282.82	7116.0	289.80	6836.0	296.89	6706.0
70.92	5753.0	282.89	7117.0	290.02	6836.0	297.00	6706.0
81.90	5947.0	283.10	7116.0	290.09	6831.0	297.11	6701.0
92.02	6151.0	283.21	7117.0	290.30	6826.0	297.22	6703.0
101.92	6336.0	283.32	7113.0	290.41	6823.0	297.29	6700.0
111.89	6516.0	283.39	7116.0	290.52	6822.0	297.40	6700.0
121.90	6680.0	283.50	7114.0	290.59	6817.0	297.50	6697.0
132.91	6845.0	283.72	7108.0	290.81	6815.0	297.61	6697.0
142.92	6976.0	283.79	7111.0	290.92	6813.0	297.79	6692.0
152.89	7053.0	283.90	7104.0	290.99	6810.0	297.90	6695.0
162.90	7116.0	284.11	7072.0	291.10	6805.0	298.01	6692.0
172.91	7145.0	284.22	7050.0	291.20	6802.0	298.12	6688.0
182.92	7162.0	284.40	7038.0	291.42	6800.0	298.30	6690.0
193.79	7164.0	284.62	7027.0	291.49	6799.0	298.40	6687.0
202.90	7165.0	284.80	7015.0	291.60	6796.0	298.51	6683.0
212.90	7151.0	285.01	7005.0	291.71	6794.0	298.62	6686.0
222.91	7159.0	285.19	7004.0	291.89	6790.0	298.69	6683.0
232.92	7161.0	285.30	6996.0	292.00	6790.0	298.91	6680.0
242.89	7158.0	285.41	6987.0	292.10	6786.0	299.02	6681.0
252.90	7160.0	285.52	6986.0	292.21	6781.0	299.09	6678.0
262.91	7157.0	285.59	6978.0	292.32	6781.0	299.20	6677.0
272.92	7138.0	285.80	6974.0	292.50	6778.0	299.30	6677.0
278.89	7127.0	285.91	6968.0	292.61	6775.0	299.52	6673.0
279.11	7127.0	286.02	6963.0	292.72	6774.0	299.59	6673.0
279.22	7125.0	286.09	6958.0	292.79	6770.0	299.70	6671.0
279.29	7126.0	286.20	6953.0	292.90	6769.0	299.81	6672.0
279.50	7127.0	286.42	6946.0	293.11	6763.0	299.92	6669.0
279.61	7123.0	286.49	6944.0	293.22	6765.0	300.10	6668.0
279.72	7127.0	286.60	6940.0	293.29	6759.0	300.20	6668.0
279.79	7123.0	286.70	6933.0	293.40	6759.0	300.31	6665.0
279.90	7127.0	286.81	6930.0	293.62	6753.0	300.42	6665.0
280.01	7127.0	286.99	6926.0	293.69	6755.0	300.60	6662.0
280.12	7122.0	287.10	6919.0	293.80	6750.0	300.71	6663.0
280.30	7125.0	287.21	6916.0	293.90	6750.0	300.82	6661.0
280.40	7124.0	287.32	6909.0	294.12	6747.0	300.89	6660.0
280.51	7120.0	287.50	6909.0	294.19	6744.0	301.00	6658.0
280.62	7124.0	287.60	6902.0	294.41	6742.0	301.21	6657.0
280.69	7122.0	287.82	6899.0	294.59	6738.0	301.32	6657.0
280.91	7122.0	287.89	6894.0	294.80	6735.0	301.39	6654.0
281.02	7124.0	288.00	6891.0	295.02	6729.0	301.50	6655.0
281.09	7121.0	288.11	6884.0	295.09	6731.0	301.72	6654.0
281.20	7123.0	288.29	6881.0	295.31	6727.0	301.79	6649.0
281.41	7124.0	288.40	6879.0	295.42	6726.0	301.90	6652.0
281.52	7122.0	288.50	6875.0	295.49	6725.0	302.00	6648.0
281.59	7123.0	288.61	6871.0	295.60	6722.0	302.22	6648.0
281.70	7125.0	288.72	6867.0	295.70	6722.0	302.29	6647.0
281.92	7122.0	288.90	6863.0	295.92	6719.0	302.40	6647.0
281.99	7121.0	289.01	6860.0	295.99	6718.0	302.51	6646.0

T	P	T	P	T	P	T	P
302.62	6641.0	309.60	6591.0	316.51	6552.0	323.10	6514.0
302.69	6643.0	309.71	6590.0	316.62	6550.0	323.21	6516.0
302.90	6641.0	309.82	6590.0	316.80	6548.0	323.32	6513.0
303.01	6641.0	309.89	6589.0	316.91	6548.0	323.39	6515.0
303.12	6636.0	310.00	6589.0	317.02	6548.0	323.60	6512.0
303.19	6639.0	310.21	6586.0	317.09	6548.0	323.71	6514.0
303.30	6638.0	310.32	6588.0	317.30	6545.0	323.82	6512.0
303.52	6635.0	310.39	6585.0	317.41	6546.0	323.89	6512.0
303.59	6636.0	310.50	6587.0	317.52	6544.0	324.11	6511.0
303.70	6634.0	310.72	6584.0	317.59	6545.0	324.29	6509.0
303.80	6633.0	310.79	6585.0	317.70	6543.0	324.50	6507.0
304.02	6631.0	310.90	6582.0	317.92	6543.0	324.72	6506.0
304.20	6629.0	311.00	6582.0	317.99	6542.0	324.90	6505.0
304.31	6628.0	311.11	6581.0	318.10	6541.0	325.01	6507.0
304.49	6627.0	311.29	6583.0	318.20	6541.0	325.19	6504.0
304.70	6624.0	311.40	6579.0	318.31	6537.0	325.30	6505.0
304.92	6621.0	311.51	6581.0	318.49	6541.0	325.40	6504.0
305.10	6625.0	311.62	6576.0	318.60	6539.0	325.51	6506.0
305.21	6621.0	311.80	6579.0	318.71	6540.0	325.69	6504.0
305.32	6619.0	311.90	6575.0	318.82	6537.0	325.80	6500.0
305.39	6621.0	312.01	6576.0	319.00	6539.0	325.91	6504.0
305.50	6618.0	312.12	6575.0	319.10	6535.0	326.02	6500.0
305.71	6617.0	312.19	6577.0	319.21	6536.0	326.20	6501.0
305.82	6619.0	312.30	6574.0	319.32	6536.0	326.30	6501.0
305.89	6616.0	312.52	6573.0	319.39	6533.0	326.41	6501.0
306.00	6616.0	312.59	6574.0	319.61	6533.0	326.52	6498.0
306.22	6615.0	312.70	6573.0	319.72	6535.0	326.59	6497.0
306.29	6612.0	312.80	6572.0	319.79	6533.0	326.70	6499.0
306.40	6613.0	313.02	6568.0	319.90	6532.0	326.92	6498.0
306.50	6613.0	313.09	6571.0	320.00	6533.0	326.99	6497.0
306.61	6610.0	313.20	6569.0	320.22	6529.0	327.10	6497.0
306.79	6611.0	313.31	6569.0	320.29	6530.0	327.20	6494.0
306.90	6608.0	313.42	6566.0	320.40	6530.0	327.31	6496.0
307.01	6611.0	313.60	6568.0	320.51	6527.0	327.49	6495.0
307.12	6609.0	313.70	6566.0	320.62	6529.0	327.60	6492.0
307.30	6607.0	313.81	6567.0	320.80	6526.0	327.71	6494.0
307.40	6607.0	313.92	6563.0	320.90	6527.0	327.82	6493.0
307.51	6604.0	314.10	6563.0	321.01	6527.0	328.00	6492.0
307.62	6606.0	314.32	6564.0	321.12	6526.0	328.10	6492.0
307.69	6605.0	314.39	6562.0	321.30	6524.0	328.21	6491.0
307.91	6603.0	314.60	6562.0	321.41	6525.0	328.32	6491.0
308.02	6602.0	314.82	6558.0	321.52	6523.0	328.39	6491.0
308.09	6602.0	315.00	6556.0	321.59	6525.0	328.61	6486.0
308.20	6599.0	315.11	6556.0	321.70	6523.0	328.72	6490.0
308.41	6601.0	315.22	6558.0	321.91	6521.0	328.79	6487.0
308.52	6596.0	315.40	6557.0	322.02	6522.0	328.90	6486.0
308.59	6599.0	315.50	6555.0	322.09	6519.0	329.11	6487.0
308.70	6596.0	315.61	6556.0	322.20	6521.0	329.22	6486.0
308.81	6597.0	315.72	6554.0	322.42	6518.0	329.29	6485.0
308.99	6594.0	315.90	6556.0	322.49	6520.0	329.40	6483.0
309.10	6597.0	316.01	6553.0	322.60	6519.0	329.62	6485.0
309.20	6593.0	316.19	6551.0	322.70	6516.0	329.69	6483.0
309.31	6593.0	316.30	6552.0	322.92	6519.0	329.80	6482.0
309.42	6592.0	316.40	6548.0	322.99	6517.0	329.90	6480.0

T	P	T	P
330.01	6481.0	399.89	6255.0
330.12	6481.0		
330.30	6476.0		
330.41	6480.0		
330.52	6476.0		
330.59	6477.0		
330.80	6475.0		
330.91	6475.0		
331.02	6475.0		
331.09	6471.0		
331.20	6475.0		
331.42	6474.0		
331.49	6469.0		
331.60	6473.0		
331.70	6469.0		
331.92	6467.0		
331.99	6471.0		
332.10	6467.0		
332.21	6469.0		
332.32	6465.0		
332.50	6468.0		
332.60	6465.0		
332.71	6464.0		
332.82	6466.0		
333.00	6463.0		
333.11	6465.0		
333.22	6460.0		
333.29	6464.0		
333.40	6463.0		
333.61	6459.0		
333.72	6462.0		
333.79	6458.0		
333.90	6459.0		
334.12	6459.0		
334.30	6456.0		
334.51	6458.0		
334.62	6453.0		
334.80	6454.0		
334.91	6453.0		
335.09	6454.0		
335.30	6452.0		
335.41	6453.0		
335.52	6450.0		
335.59	6453.0		
335.70	6449.0		
335.81	6451.0		
335.99	6448.0		
336.10	6451.0		
339.91	6433.0		
349.92	6394.0		
359.89	6360.0		
369.90	6331.0		
379.91	6305.0		
389.92	6277.0		

Zone 3P1, Test 5

T	P	T	P	T	P	T	P
0.00	0.0	531.58	7114.0	538.38	7106.0	545.08	6868.0
9.58	4537.0	531.68	7113.0	538.49	7105.0	545.18	6867.0
19.58	4544.0	531.79	7115.0	538.70	7105.0	545.29	6864.0
29.59	4548.0	531.90	7114.0	538.78	7094.0	545.40	6863.0
39.60	4554.0	532.08	7111.0	538.88	7077.0	545.58	6857.0
49.61	4556.0	532.19	7107.0	538.99	7062.0	545.69	6856.0
59.58	4561.0	532.30	7109.0	539.21	7057.0	545.90	6850.0
69.59	4565.0	532.40	7109.0	539.28	7045.0	546.08	6846.0
79.60	4565.0	532.58	7110.0	539.39	7039.0	546.30	6842.0
89.60	4570.0	532.69	7108.0	539.50	7035.0	546.41	6841.0
99.58	4571.0	532.80	7110.0	539.68	7027.0	546.59	6838.0
109.58	4584.0	532.91	7108.0	539.78	7021.0	546.70	6834.0
119.59	4577.0	533.09	7109.0	539.89	7016.0	546.88	6832.0
129.60	4578.0	533.20	7110.0	540.00	7007.0	546.98	6830.0
139.61	4580.0	533.30	7111.0	540.18	7002.0	547.09	6828.0
149.58	4579.0	533.38	7109.0	540.29	6998.0	547.20	6824.0
159.59	4583.0	533.59	7110.0	540.40	6991.0	547.38	6822.0
169.60	4584.0	533.70	7112.0	540.50	6986.0	547.49	6820.0
179.60	4582.0	533.81	7110.0	540.58	6979.0	547.60	6816.0
189.58	4586.0	533.88	7108.0	540.68	6977.0	547.70	6814.0
199.58	4584.0	533.99	7112.0	540.90	6971.0	547.78	6814.0
209.59	4588.0	534.10	7111.0	541.01	6965.0	547.88	6810.0
219.60	4587.0	534.28	7110.0	541.08	6963.0	548.10	6808.0
230.58	4589.0	534.38	7109.0	541.19	6956.0	548.21	6806.0
241.60	4588.0	534.49	7111.0	541.30	6955.0	548.28	6802.0
251.60	4587.0	534.60	7109.0	541.48	6951.0	548.39	6801.0
261.58	4588.0	534.78	7110.0	541.58	6946.0	548.60	6797.0
271.58	4588.0	534.89	7110.0	541.69	6945.0	548.68	6798.0
281.59	4586.0	535.00	7110.0	541.80	6943.0	548.78	6793.0
291.60	4586.0	535.10	7107.0	541.98	6939.0	548.89	6791.0
301.61	4589.0	535.28	7109.0	542.09	6936.0	549.00	6791.0
311.58	4601.0	535.39	7108.0	542.30	6931.0	549.18	6789.0
321.59	4716.0	535.50	7105.0	542.38	6928.0	549.29	6784.0
331.60	4873.0	535.61	7105.0	542.48	6928.0	549.40	6783.0
341.89	5029.0	535.68	7107.0	542.59	6922.0	549.50	6780.0
351.58	5182.0	535.90	7105.0	542.70	6922.0	549.58	6781.0
361.58	5352.0	536.08	7103.0	542.88	6917.0	549.79	6776.0
371.59	5523.0	536.18	7105.0	542.99	6917.0	549.90	6773.0
381.60	5698.0	536.40	7107.0	543.10	6914.0	550.01	6773.0
391.61	5870.0	536.51	7105.0	543.20	6909.0	550.08	6772.0
401.58	6052.0	536.69	7106.0	543.38	6905.0	550.30	6769.0
411.59	6225.0	536.80	7106.0	543.49	6902.0	550.40	6763.0
421.60	6399.0	536.98	7102.0	543.60	6903.0	550.48	6766.0
431.60	6576.0	537.08	7107.0	543.71	6898.0	550.58	6760.0
441.58	6728.0	537.19	7106.0	543.89	6896.0	550.80	6759.0
451.58	6868.0	537.30	7104.0	544.00	6895.0	550.91	6758.0
461.59	6974.0	537.41	7107.0	544.10	6889.0	550.98	6755.0
471.60	7045.0	537.59	7106.0	544.18	6889.0	551.09	6754.0
481.61	7086.0	537.70	7105.0	544.28	6883.0	551.20	6752.0
491.58	7109.0	537.80	7105.0	544.50	6883.0	551.30	6751.0
501.59	7119.0	537.88	7106.0	544.61	6880.0	551.48	6748.0
511.60	7116.0	538.09	7106.0	544.68	6877.0	551.59	6745.0
521.60	7117.0	538.20	7106.0	544.79	6873.0	551.70	6745.0
531.50	7116.0	538.31	7107.0	544.90	6872.0	551.81	6740.0

T	P	T	P	T	P	T	P
551.88	6741.0	558.79	6650.0	565.31	6589.0	572.08	6539.0
552.10	6735.0	558.90	6648.0	565.49	6587.0	572.18	6540.0
552.20	6738.0	559.08	6648.0	565.60	6587.0	572.29	6536.0
552.28	6735.0	559.19	6643.0	565.70	6586.0	572.40	6536.0
552.38	6733.0	559.30	6645.0	565.78	6585.0	572.58	6536.0
552.60	6730.0	559.40	6641.0	565.99	6582.0	572.69	6534.0
552.71	6729.0	559.48	6644.0	566.10	6584.0	572.80	6535.0
552.78	6728.0	559.58	6639.0	566.28	6579.0	572.90	6531.0
552.89	6722.0	559.80	6640.0	566.39	6577.0	573.08	6534.0
553.00	6725.0	559.91	6638.0	566.60	6578.0	573.19	6530.0
553.18	6722.0	559.98	6638.0	566.78	6574.0	573.30	6531.0
553.28	6718.0	560.09	6637.0	566.89	6577.0	573.41	6530.0
553.39	6719.0	560.20	6634.0	567.00	6573.0	573.48	6531.0
553.50	6714.0	560.30	6634.0	567.11	6574.0	573.59	6530.0
553.68	6714.0	560.48	6630.0	567.29	6573.0	573.80	6526.0
553.79	6712.0	560.59	6631.0	567.40	6574.0	573.88	6529.0
553.90	6712.0	560.70	6630.0	567.50	6572.0	573.98	6528.0
554.00	6710.0	560.81	6630.0	567.58	6569.0	574.09	6523.0
554.18	6705.0	560.88	6628.0	567.79	6570.0	574.31	6527.0
554.29	6707.0	561.10	6625.0	567.90	6569.0	574.38	6524.0
554.40	6704.0	561.20	6627.0	568.01	6568.0	574.49	6523.0
554.51	6704.0	561.28	6625.0	568.08	6564.0	574.60	6523.0
554.58	6699.0	561.38	6621.0	568.30	6567.0	574.70	6524.0
554.69	6701.0	561.60	6623.0	568.40	6566.0	574.88	6523.0
554.90	6698.0	561.71	6619.0	568.48	6561.0	574.99	6518.0
554.98	6695.0	561.78	6620.0	568.58	6565.0	575.10	6522.0
555.08	6695.0	561.89	6617.0	568.69	6563.0	575.21	6520.0
555.19	6693.0	562.00	6617.0	568.91	6558.0	575.39	6518.0
555.41	6688.0	562.18	6616.0	568.98	6562.0	575.50	6518.0
555.48	6691.0	562.28	6615.0	569.09	6560.0	575.60	6519.0
555.59	6686.0	562.39	6612.0	569.20	6557.0	575.68	6514.0
555.80	6682.0	562.50	6612.0	569.30	6558.0	575.89	6514.0
555.98	6683.0	562.68	6612.0	569.48	6558.0	576.11	6513.0
556.09	6681.0	562.79	6610.0	569.59	6553.0	576.29	6512.0
556.31	6676.0	562.90	6609.0	569.70	6555.0	576.40	6514.0
556.49	6676.0	563.00	6608.0	569.81	6553.0	576.58	6510.0
556.60	6674.0	563.18	6608.0	569.88	6554.0	576.68	6511.0
556.78	6673.0	563.29	6607.0	569.99	6555.0	576.79	6511.0
556.88	6670.0	563.40	6605.0	570.10	6552.0	576.90	6511.0
556.99	6670.0	563.51	6602.0	570.28	6550.0	577.01	6509.0
557.21	6669.0	563.69	6602.0	570.38	6551.0	577.19	6509.0
557.28	6669.0	563.80	6602.0	570.49	6551.0	577.30	6507.0
557.39	6664.0	563.90	6601.0	570.60	6549.0	577.40	6506.0
557.50	6662.0	563.98	6601.0	570.71	6545.0	577.48	6507.0
557.68	6664.0	564.08	6596.0	570.89	6549.0	577.69	6506.0
557.78	6659.0	564.19	6599.0	571.00	6547.0	577.80	6505.0
557.89	6662.0	564.41	6595.0	571.10	6543.0	577.91	6505.0
558.00	6658.0	564.48	6595.0	571.18	6546.0	577.98	6503.0
558.11	6658.0	564.59	6594.0	571.28	6544.0	578.20	6501.0
558.18	6658.0	564.70	6594.0	571.50	6543.0	578.30	6502.0
558.29	6655.0	564.80	6593.0	571.61	6541.0	578.38	6502.0
558.50	6654.0	564.98	6590.0	571.68	6541.0	578.48	6502.0
558.58	6653.0	565.09	6592.0	571.79	6541.0	578.59	6501.0
558.68	6651.0	565.20	6589.0	572.00	6540.0	578.81	6499.0

T	P	T	P
578.88	6501.0	585.40	6464.0
578.99	6498.0	585.50	6467.0
579.10	6496.0	585.58	6465.0
579.20	6497.0	585.79	6465.0
579.38	6497.0	585.90	6460.0
579.49	6494.0	586.08	6462.0
579.60	6496.0	586.19	6462.0
579.71	6493.0	586.40	6458.0
579.78	6495.0	586.58	6460.0
579.89	6493.0	586.69	6459.0
580.10	6490.0	586.80	6460.0
580.18	6492.0	586.98	6459.0
580.28	6493.0	587.09	6455.0
580.39	6492.0	587.20	6459.0
580.50	6488.0	587.30	6457.0
580.61	6491.0	587.48	6453.0
580.79	6489.0	587.81	6453.0
580.90	6486.0	598.61	6402.0
581.00	6489.0	608.58	6368.0
581.08	6486.0	618.59	6333.0
581.29	6486.0	628.60	6302.0
581.40	6486.0	638.60	6273.0
581.51	6484.0	648.58	6251.0
581.58	6485.0		
581.69	6483.0		
581.90	6484.0		
581.98	6481.0		
582.19	6483.0		
582.30	6478.0		
582.41	6482.0		
582.48	6477.0		
582.59	6481.0		
582.70	6479.0		
582.80	6476.0		
582.98	6478.0		
583.09	6478.0		
583.20	6477.0		
583.31	6475.0		
583.49	6477.0		
583.60	6475.0		
583.70	6474.0		
583.78	6474.0		
583.88	6472.0		
583.99	6473.0		
584.21	6470.0		
584.28	6472.0		
584.39	6469.0		
584.50	6471.0		
584.68	6469.0		
584.78	6469.0		
584.89	6469.0		
585.00	6465.0		
585.11	6469.0		
585.29	6467.0		

Zone 3P1, Test 7

T	P	T	P	T	P	T	P
0.00	0.0	429.91	7008.0	436.79	6958.0	443.48	6905.0
9.22	4217.0	430.09	7008.0	436.90	6961.0	443.59	6902.0
19.19	4214.0	430.20	7006.0	437.11	6956.0	443.70	6905.0
29.20	4248.0	430.31	7007.0	437.18	6957.0	443.81	6904.0
39.20	4274.0	430.42	7010.0	437.29	6956.0	443.99	6900.0
49.21	4353.0	430.49	7010.0	437.40	6955.0	444.10	6902.0
59.18	4455.0	430.70	7008.0	437.51	6954.0	444.20	6902.0
69.19	4554.0	430.81	7010.0	437.69	6949.0	444.31	6900.0
79.20	4648.0	430.88	7010.0	437.80	6952.0	444.49	6897.0
89.21	4759.0	430.99	7007.0	437.90	6947.0	444.60	6898.0
100.19	4877.0	431.10	7010.0	438.01	6948.0	444.71	6899.0
110.20	4991.0	431.32	7010.0	438.19	6946.0	444.82	6896.0
120.20	5108.0	431.39	7010.0	438.30	6947.0	445.00	6898.0
130.21	5231.0	431.50	7008.0	438.41	6945.0	445.10	6897.0
140.18	5357.0	431.60	7009.0	438.52	6942.0	445.28	6893.0
150.19	5482.0	431.78	7009.0	438.70	6944.0	445.50	6892.0
160.20	5613.0	431.89	7008.0	438.80	6942.0	445.61	6893.0
170.21	5747.0	432.00	7010.0	438.91	6937.0	445.72	6891.0
180.22	5870.0	432.11	7009.0	438.98	6940.0	445.79	6889.0
191.20	6018.0	432.22	7008.0	439.09	6937.0	446.00	6891.0
201.20	6144.0	432.40	7010.0	439.31	6937.0	446.11	6890.0
211.21	6270.0	432.50	7010.0	439.42	6936.0	446.18	6889.0
221.18	6394.0	432.61	7008.0	439.49	6936.0	446.29	6889.0
231.19	6511.0	432.68	7011.0	439.60	6932.0	446.51	6888.0
241.20	6618.0	432.90	7009.0	439.70	6933.0	446.62	6886.0
251.21	6725.0	433.01	7007.0	439.88	6932.0	446.69	6887.0
261.22	6785.0	433.12	7009.0	439.99	6929.0	446.80	6886.0
271.19	6841.0	433.19	7009.0	440.10	6930.0	446.90	6884.0
281.20	6892.0	433.30	7007.0	440.21	6930.0	447.08	6884.0
291.20	6938.0	433.51	7009.0	440.32	6926.0	447.19	6884.0
301.21	6978.0	433.58	7009.0	440.50	6927.0	447.30	6882.0
311.29	7009.0	433.69	7009.0	440.60	6926.0	447.41	6883.0
321.19	7038.0	433.80	7010.0	440.71	6923.0	447.59	6881.0
331.20	7062.0	434.02	7006.0	440.78	6923.0	447.70	6880.0
342.22	7041.0	434.09	7011.0	441.00	6925.0	447.80	6881.0
352.19	7036.0	434.20	7007.0	441.11	6923.0	447.91	6877.0
364.21	7025.0	434.30	7001.0	441.29	6921.0	447.98	6880.0
374.18	7020.0	434.48	6995.0	441.40	6917.0	448.20	6879.0
384.19	7019.0	434.59	6993.0	441.50	6921.0	448.31	6875.0
394.20	7017.0	434.81	6990.0	441.61	6917.0	448.42	6879.0
404.21	7015.0	434.99	6987.0	441.79	6917.0	448.49	6876.0
414.22	7010.0	435.20	6984.0	441.90	6917.0	448.70	6875.0
424.19	7004.0	435.38	6978.0	442.01	6915.0	448.81	6876.0
428.62	7009.0	435.49	6980.0	442.12	6915.0	448.88	6873.0
428.80	7008.0	435.60	6978.0	442.19	6914.0	448.99	6874.0
428.90	7009.0	435.71	6972.0	442.40	6911.0	449.21	6875.0
429.01	7008.0	435.82	6975.0	442.51	6911.0	449.32	6871.0
429.08	7009.0	436.00	6972.0	442.58	6912.0	449.39	6872.0
429.19	7008.0	436.10	6967.0	442.69	6908.0	449.50	6872.0
429.41	7008.0	436.21	6970.0	442.91	6910.0	449.60	6870.0
429.52	7005.0	436.28	6967.0	443.02	6908.0	449.78	6870.0
429.59	7008.0	436.50	6962.0	443.09	6907.0	449.89	6870.0
429.70	7008.0	436.61	6965.0	443.20	6907.0	450.00	6870.0
429.80	7006.0	436.72	6963.0	443.30	6907.0	450.11	6869.0

T	P	T	P	T	P	T	P
450.22	6865.0	457.20	6838.0	463.79	6813.0	470.70	6789.0
450.40	6869.0	457.31	6837.0	463.90	6814.0	470.92	6790.0
450.50	6868.0	457.42	6836.0	464.00	6813.0	470.99	6789.0
450.61	6864.0	457.49	6836.0	464.18	6809.0	471.10	6787.0
450.68	6867.0	457.70	6835.0	464.29	6808.0	471.20	6789.0
450.79	6865.0	457.81	6834.0	464.51	6810.0	471.31	6785.0
451.01	6862.0	457.88	6835.0	464.62	6809.0	471.38	6787.0
451.12	6865.0	457.99	6834.0	464.90	6809.0	471.60	6783.0
451.19	6861.0	458.21	6831.0	465.01	6808.0	471.71	6787.0
451.30	6863.0	458.32	6832.0	465.19	6808.0	471.82	6786.0
451.51	6863.0	458.39	6833.0	465.41	6808.0	471.89	6782.0
451.58	6860.0	458.50	6832.0	465.52	6805.0	472.10	6786.0
451.69	6862.0	458.71	6829.0	465.59	6806.0	472.21	6785.0
451.80	6858.0	458.78	6833.0	465.70	6808.0	472.28	6782.0
451.91	6862.0	458.89	6831.0	465.91	6806.0	472.39	6785.0
452.09	6859.0	459.00	6827.0	465.98	6803.0	472.50	6781.0
452.20	6858.0	459.11	6831.0	466.09	6806.0	472.72	6783.0
452.30	6859.0	459.29	6830.0	466.20	6805.0	472.79	6781.0
452.41	6856.0	459.40	6828.0	466.42	6802.0	472.90	6784.0
452.59	6857.0	459.50	6827.0	466.49	6804.0	473.00	6781.0
452.70	6857.0	459.61	6829.0	466.60	6801.0	473.18	6781.0
452.81	6857.0	459.79	6828.0	466.70	6803.0	473.29	6779.0
452.92	6857.0	459.90	6827.0	466.81	6803.0	473.40	6781.0
453.10	6855.0	460.01	6827.0	466.99	6803.0	473.51	6781.0
453.20	6854.0	460.12	6826.0	467.10	6800.0	473.62	6777.0
453.31	6854.0	460.30	6824.0	467.21	6801.0	473.80	6780.0
453.38	6853.0	460.40	6825.0	467.32	6800.0	473.90	6776.0
453.49	6853.0	460.51	6826.0	467.50	6802.0	474.01	6779.0
453.60	6853.0	460.58	6822.0	467.60	6799.0	474.08	6775.0
453.82	6850.0	460.80	6824.0	467.71	6799.0	474.19	6779.0
453.89	6850.0	460.91	6823.0	467.78	6799.0	474.30	6777.0
454.00	6852.0	461.02	6823.0	467.89	6797.0	474.52	6777.0
454.10	6850.0	461.09	6823.0	468.00	6799.0	474.59	6774.0
454.28	6851.0	461.20	6822.0	468.22	6795.0	474.80	6775.0
454.39	6848.0	461.30	6820.0	468.29	6798.0	474.98	6774.0
454.61	6846.0	461.48	6821.0	468.40	6795.0	475.20	6775.0
454.79	6847.0	461.59	6821.0	468.50	6797.0	475.31	6775.0
454.90	6848.0	461.70	6820.0	468.68	6793.0	475.49	6771.0
455.11	6846.0	461.81	6819.0	468.79	6797.0	475.60	6774.0
455.29	6845.0	461.99	6821.0	468.90	6795.0	475.70	6772.0
455.51	6845.0	462.10	6818.0	469.01	6792.0	475.81	6772.0
455.62	6845.0	462.20	6817.0	469.12	6795.0	475.99	6771.0
455.69	6844.0	462.31	6820.0	469.30	6793.0	476.10	6772.0
455.90	6840.0	462.38	6816.0	469.40	6794.0	476.21	6771.0
456.01	6844.0	462.60	6818.0	469.51	6793.0	476.32	6768.0
456.08	6842.0	462.71	6817.0	469.58	6793.0	476.50	6771.0
456.19	6841.0	462.82	6816.0	469.69	6793.0	476.60	6768.0
456.30	6842.0	462.89	6816.0	469.91	6792.0	476.71	6770.0
456.41	6841.0	463.10	6814.0	470.02	6793.0	476.78	6768.0
456.59	6837.0	463.21	6817.0	470.09	6792.0	476.89	6770.0
456.70	6841.0	463.28	6814.0	470.20	6788.0	477.00	6768.0
456.80	6840.0	463.39	6814.0	470.41	6792.0	477.22	6767.0
456.91	6836.0	463.50	6815.0	470.48	6788.0	477.29	6767.0
457.09	6839.0	463.72	6811.0	470.59	6790.0	477.40	6767.0

T	P	T	P
477.50	6767.0	483.98	6745.0
477.68	6763.0	484.20	6743.0
477.79	6767.0	484.31	6743.0
477.90	6764.0	484.49	6743.0
478.01	6763.0	484.60	6740.0
478.12	6765.0	484.81	6742.0
478.30	6762.0	484.99	6741.0
478.40	6764.0	485.21	6740.0
478.51	6763.0	485.32	6742.0
478.58	6762.0	491.18	6722.0
478.69	6763.0	501.19	6691.0
478.91	6759.0	511.20	6664.0
479.02	6763.0	521.32	6636.0
479.09	6759.0	531.22	6610.0
479.20	6761.0	541.19	6591.0
479.41	6758.0	551.20	5670.0
479.48	6760.0		
479.59	6761.0		
479.70	6758.0		
479.92	6759.0		
479.99	6756.0		
480.10	6759.0		
480.20	6755.0		
480.31	6757.0		
480.38	6754.0		
480.60	6757.0		
480.71	6753.0		
480.82	6755.0		
480.89	6755.0		
481.00	6755.0		
481.10	6753.0		
481.28	6754.0		
481.39	6753.0		
481.50	6754.0		
481.61	6753.0		
481.72	6749.0		
481.79	6753.0		
482.00	6749.0		
482.11	6751.0		
482.18	6749.0		
482.29	6751.0		
482.40	6751.0		
482.62	6749.0		
482.69	6749.0		
482.80	6749.0		
482.90	6749.0		
483.08	6745.0		
483.19	6749.0		
483.30	6746.0		
483.41	6747.0		
483.52	6747.0		
483.70	6746.0		
483.80	6745.0		
483.91	6745.0		

Zone 3P1, Test 8

T	P	T	P	T	P	T	P
0.00	0.0	448.42	6964.0	455.29	6890.0	462.10	6812.0
10.12	4064.0	448.49	6965.0	455.40	6890.0	462.20	6811.0
19.62	4060.0	448.60	6962.0	455.62	6889.0	462.31	6808.0
30.60	4052.0	448.81	6964.0	455.69	6885.0	462.42	6809.0
40.61	4047.0	448.92	6965.0	455.80	6884.0	462.60	6808.0
50.62	4072.0	448.99	6963.0	455.90	6883.0	462.71	6804.0
60.52	4128.0	449.10	6964.0	456.01	6879.0	462.82	6804.0
71.60	4208.0	449.21	6966.0	456.19	6879.0	462.89	6805.0
81.61	4273.0	449.39	6966.0	456.30	6878.0	463.10	6803.0
91.62	4358.0	449.50	6966.0	456.41	6876.0	463.21	6802.0
102.60	4449.0	449.60	6964.0	456.52	6875.0	463.32	6802.0
113.69	4548.0	449.71	6967.0	456.70	6871.0	463.39	6800.0
123.59	4640.0	449.82	6967.0	456.80	6872.0	463.61	6797.0
133.60	4736.0	450.00	6966.0	456.91	6868.0	463.72	6798.0
143.60	4835.0	450.11	6965.0	457.02	6867.0	463.79	6797.0
153.61	4941.0	450.29	6965.0	457.09	6868.0	463.90	6792.0
163.62	5048.0	450.40	6967.0	457.31	6863.0	464.00	6795.0
173.59	5153.0	450.50	6964.0	457.42	6863.0	464.11	6793.0
183.60	5268.0	450.72	6966.0	457.49	6862.0	464.22	6793.0
193.61	5382.0	450.90	6966.0	457.60	6858.0	464.29	6789.0
203.51	5498.0	451.12	6966.0	457.81	6859.0	464.51	6790.0
213.59	5620.0	451.19	6963.0	457.92	6856.0	464.62	6786.0
223.60	5739.0	451.40	6968.0	457.99	6857.0	464.69	6789.0
233.60	5865.0	451.51	6966.0	458.10	6855.0	464.80	6787.0
243.61	5987.0	451.62	6967.0	458.32	6851.0	465.01	6782.0
253.62	6111.0	451.69	6968.0	458.39	6852.0	465.12	6785.0
263.59	6238.0	451.91	6965.0	458.50	6850.0	465.19	6782.0
273.60	6364.0	452.02	6967.0	458.60	6848.0	465.30	6781.0
284.51	6499.0	452.09	6966.0	458.71	6849.0	465.41	6779.0
294.59	6617.0	452.20	6969.0	458.82	6844.0	465.59	6782.0
304.60	6734.0	452.30	6966.0	459.00	6844.0	465.70	6779.0
315.61	6847.0	452.41	6961.0	459.11	6844.0	465.80	6778.0
325.69	6902.0	452.59	6954.0	459.22	6841.0	465.91	6776.0
336.60	6936.0	452.70	6952.0	459.29	6841.0	466.02	6777.0
346.61	6972.0	452.81	6945.0	459.50	6838.0	466.20	6774.0
356.62	7000.0	452.99	6939.0	459.61	6839.0	466.31	6773.0
368.60	6986.0	453.10	6937.0	459.72	6837.0	466.42	6773.0
378.61	6977.0	453.20	6933.0	459.79	6834.0	466.49	6772.0
388.62	6971.0	453.42	6928.0	459.90	6835.0	466.70	6771.0
398.59	6964.0	453.49	6924.0	460.12	6832.0	466.81	6768.0
409.61	6961.0	453.60	6926.0	460.19	6828.0	466.92	6770.0
419.62	6960.0	453.71	6922.0	460.30	6831.0	466.99	6767.0
430.09	6960.0	453.89	6916.0	460.40	6828.0	467.10	6768.0
439.60	6957.0	454.00	6917.0	460.62	6829.0	467.32	6766.0
447.12	6962.0	454.10	6912.0	460.69	6826.0	467.39	6765.0
447.30	6963.0	454.21	6911.0	460.91	6825.0	467.50	6764.0
447.41	6962.0	454.39	6910.0	461.09	6821.0	467.60	6762.0
447.52	6962.0	454.50	6905.0	461.20	6820.0	467.71	6762.0
447.70	6962.0	454.61	6904.0	461.41	6820.0	467.89	6762.0
447.80	6964.0	454.72	6902.0	461.52	6817.0	468.00	6759.0
447.91	6961.0	454.79	6901.0	461.59	6817.0	468.11	6759.0
448.02	6963.0	454.90	6899.0	461.70	6815.0	468.22	6760.0
448.20	6963.0	455.11	6894.0	461.92	6813.0	468.29	6757.0
448.31	6964.0	455.22	6895.0	461.99	6812.0	468.50	6756.0

T	P	T	P	T	P	T	P
468.61	6754.0	475.49	6705.0	482.29	6672.0	488.81	6640.0
468.72	6755.0	475.60	6709.0	482.40	6667.0	488.92	6639.0
468.79	6753.0	475.70	6704.0	482.51	6671.0	489.10	6640.0
469.01	6752.0	475.81	6707.0	482.62	6669.0	489.20	6636.0
469.12	6752.0	475.92	6706.0	482.80	6668.0	489.31	6639.0
469.19	6751.0	476.10	6702.0	482.90	6668.0	489.42	6637.0
469.30	6748.0	476.21	6706.0	483.01	6667.0	489.60	6637.0
469.40	6750.0	476.32	6704.0	483.12	6667.0	489.71	6636.0
469.62	6747.0	476.39	6700.0	483.30	6663.0	489.82	6636.0
469.69	6747.0	476.60	6703.0	483.41	6666.0	489.89	6636.0
469.80	6744.0	476.71	6700.0	483.52	6663.0	490.00	6634.0
469.91	6746.0	476.82	6700.0	483.59	6664.0	490.21	6631.0
470.09	6746.0	476.89	6699.0	483.70	6664.0	490.32	6632.0
470.20	6740.0	477.00	6701.0	483.80	6662.0	490.50	6629.0
470.41	6739.0	477.22	6698.0	484.02	6663.0	490.72	6629.0
470.52	6739.0	477.29	6697.0	484.09	6659.0	490.90	6632.0
470.70	6738.0	477.40	6697.0	484.20	6662.0	491.00	6628.0
470.92	6738.0	477.50	6697.0	484.31	6659.0	491.11	6628.0
471.10	6737.0	477.72	6697.0	484.42	6660.0	491.29	6629.0
471.31	6736.0	477.79	6692.0	484.60	6659.0	491.40	6629.0
471.42	6734.0	477.90	6696.0	484.70	6659.0	491.51	6629.0
471.49	6734.0	478.01	6693.0	484.81	6660.0	491.62	6627.0
471.60	6734.0	478.19	6692.0	484.92	6656.0	491.69	6628.0
471.71	6730.0	478.30	6693.0	484.99	6658.0	491.80	6625.0
471.89	6732.0	478.40	6690.0	485.21	6654.0	492.01	6626.0
472.00	6731.0	478.51	6691.0	485.32	6657.0	492.12	6626.0
472.10	6730.0	478.62	6691.0	485.39	6654.0	492.19	6625.0
472.21	6729.0	478.69	6689.0	485.50	6655.0	492.30	6625.0
472.39	6725.0	478.91	6689.0	485.71	6651.0	492.52	6621.0
472.50	6729.0	479.02	6685.0	485.82	6655.0	492.59	6625.0
472.61	6725.0	479.09	6689.0	485.89	6653.0	492.70	6624.0
472.72	6725.0	479.20	6685.0	486.00	6650.0	492.80	6620.0
472.90	6726.0	479.30	6687.0	486.22	6653.0	492.91	6624.0
473.00	6723.0	479.52	6684.0	486.29	6651.0	493.09	6621.0
473.11	6724.0	479.59	6684.0	486.40	6650.0	493.20	6621.0
473.22	6722.0	479.70	6681.0	486.50	6650.0	493.31	6620.0
473.29	6723.0	479.81	6683.0	486.61	6648.0	493.42	6621.0
473.40	6720.0	479.92	6683.0	486.72	6649.0	493.49	6620.0
473.62	6720.0	479.99	6683.0	486.90	6646.0	493.70	6618.0
473.69	6719.0	480.20	6681.0	487.01	6649.0	493.81	6618.0
473.80	6720.0	480.31	6679.0	487.12	6646.0	493.92	6620.0
473.90	6719.0	480.49	6679.0	487.19	6647.0	493.99	6616.0
474.12	6716.0	480.71	6678.0	487.40	6645.0	494.21	6617.0
474.19	6717.0	480.89	6679.0	487.51	6647.0	494.32	6616.0
474.30	6714.0	481.10	6674.0	487.62	6646.0	494.39	6616.0
474.41	6715.0	481.21	6678.0	487.69	6642.0	494.50	6615.0
474.52	6714.0	481.32	6676.0	487.80	6645.0	494.71	6615.0
474.70	6714.0	481.39	6673.0	488.02	6642.0	494.82	6614.0
474.80	6713.0	481.50	6676.0	488.09	6644.0	494.89	6614.0
474.91	6709.0	481.72	6673.0	488.20	6640.0	495.00	6614.0
475.02	6713.0	481.79	6673.0	488.30	6643.0	495.11	6614.0
475.09	6711.0	481.90	6670.0	488.41	6641.0	495.22	6613.0
475.31	6708.0	482.00	6673.0	488.59	6642.0	495.40	6611.0
475.42	6711.0	482.11	6671.0	488.70	6639.0	495.50	6613.0

T	P	T	P
495.61	6610.0	502.49	6586.0
495.72	6609.0	502.60	6584.0
495.90	6612.0	502.81	6584.0
496.01	6610.0	502.92	6582.0
496.12	6609.0	502.99	6582.0
496.19	6609.0	503.10	6583.0
496.30	6608.0	503.32	6582.0
496.51	6608.0	503.39	6582.0
496.62	6605.0	503.50	6583.0
496.69	6608.0	503.60	6582.0
496.80	6605.0	506.59	6568.0
497.02	6605.0	516.60	6534.0
497.09	6606.0	526.61	6505.0
497.20	6604.0		
497.30	6604.0		
497.41	6604.0		
497.59	6605.0		
497.70	6604.0		
497.81	6600.0		
497.92	6603.0		
498.10	6600.0		
498.20	6602.0		
498.31	6598.0		
498.42	6602.0		
498.49	6598.0		
498.60	6600.0		
498.82	6597.0		
498.89	6599.0		
499.00	6597.0		
499.10	6597.0		
499.32	6597.0		
499.39	6598.0		
499.50	6594.0		
499.61	6596.0		
499.72	6592.0		
499.90	6596.0		
500.00	6593.0		
500.11	6595.0		
500.29	6591.0		
500.51	6593.0		
500.69	6593.0		
500.80	6588.0		
501.01	6589.0		
501.19	6591.0		
501.30	6587.0		
501.41	6588.0		
501.59	6588.0		
501.70	6589.0		
501.80	6587.0		
501.91	6587.0		
502.02	6587.0		
502.20	6586.0		
502.31	6587.0		
502.42	6582.0		

Zone 3P2, Test 3

T	P	T	P	T	P	T	P
0.00	0.0	225.79	7512.0	232.38	7290.0	239.29	7146.0
10.01	5628.0	225.90	7504.0	232.60	7284.0	239.51	7145.0
20.20	5601.0	226.01	7512.0	232.70	7283.0	239.58	7139.0
29.99	5581.0	226.08	7509.0	232.78	7278.0	239.69	7141.0
41.00	5554.0	226.30	7516.0	232.88	7275.0	239.90	7137.0
50.98	5535.0	226.40	7500.0	233.10	7272.0	239.98	7137.0
60.98	5512.0	226.48	7507.0	233.21	7269.0	240.08	7132.0
70.99	5682.0	226.58	7516.0	233.28	7266.0	240.19	7134.0
81.00	6107.0	226.69	7510.0	233.39	7263.0	240.30	7129.0
91.01	6513.0	226.91	7508.0	233.50	7261.0	240.41	7130.0
100.98	6795.0	226.98	7511.0	233.68	7256.0	240.59	7128.0
110.99	7016.0	227.09	7514.0	233.78	7253.0	240.70	7124.0
122.00	7171.0	227.20	7508.0	233.89	7249.0	240.80	7125.0
131.98	7252.0	227.30	7511.0	234.00	7249.0	240.88	7122.0
141.98	7316.0	227.48	7512.0	234.18	7245.0	241.09	7120.0
153.00	7368.0	227.59	7518.0	234.29	7241.0	241.20	7120.0
163.01	7410.0	227.70	7509.0	234.40	7238.0	241.31	7117.0
173.81	7442.0	227.81	7514.0	234.50	7236.0	241.38	7113.0
182.99	7450.0	227.88	7521.0	234.58	7234.0	241.49	7114.0
194.00	7463.0	228.10	7513.0	234.68	7229.0	241.70	7112.0
204.98	7484.0	228.20	7519.0	234.90	7227.0	241.78	7109.0
214.99	7474.0	228.28	7522.0	235.01	7226.0	241.88	7110.0
221.90	7498.0	228.49	7518.0	235.08	7222.0	241.99	7105.0
221.98	7496.0	228.60	7488.0	235.19	7219.0	242.21	7108.0
222.19	7502.0	228.78	7471.0	235.40	7218.0	242.28	7104.0
222.30	7512.0	228.89	7453.0	235.48	7212.0	242.39	7101.0
222.41	7491.0	229.10	7443.0	235.58	7212.0	242.50	7103.0
222.48	7499.0	229.18	7433.0	235.69	7210.0	242.60	7101.0
222.59	7510.0	229.28	7426.0	235.80	7205.0	242.78	7099.0
222.80	7512.0	229.39	7416.0	235.98	7204.0	242.89	7095.0
222.88	7493.0	229.50	7406.0	236.09	7203.0	243.00	7096.0
222.98	7500.0	229.68	7402.0	236.20	7199.0	243.11	7092.0
223.09	7514.0	229.79	7395.0	236.30	7198.0	243.29	7093.0
223.31	7510.0	229.90	7385.0	236.48	7194.0	243.40	7092.0
223.38	7505.0	230.00	7383.0	236.59	7194.0	243.50	7089.0
223.49	7504.0	230.08	7373.0	236.70	7192.0	243.58	7089.0
223.60	7519.0	230.29	7370.0	236.81	7186.0	243.79	7088.0
223.70	7498.0	230.40	7361.0	236.88	7187.0	243.90	7082.0
223.88	7504.0	230.51	7360.0	237.10	7184.0	244.01	7085.0
223.99	7511.0	230.58	7352.0	237.20	7183.0	244.08	7083.0
224.10	7512.0	230.80	7349.0	237.28	7179.0	244.30	7081.0
224.21	7510.0	230.90	7341.0	237.38	7178.0	244.40	7080.0
224.39	7508.0	230.98	7340.0	237.60	7175.0	244.48	7079.0
224.50	7508.0	231.08	7335.0	237.71	7172.0	244.58	7074.0
224.60	7506.0	231.30	7329.0	237.78	7171.0	244.69	7077.0
224.68	7505.0	231.41	7326.0	237.89	7170.0	244.80	7075.0
224.89	7510.0	231.48	7321.0	238.00	7165.0	244.98	7071.0
225.00	7510.0	231.59	7316.0	238.10	7165.0	245.09	7073.0
225.11	7505.0	231.70	7312.0	238.28	7162.0	245.20	7071.0
225.18	7507.0	231.80	7308.0	238.50	7160.0	245.30	7069.0
225.29	7514.0	231.98	7305.0	238.68	7156.0	245.48	7066.0
225.40	7508.0	232.09	7298.0	238.79	7154.0	245.59	7067.0
225.58	7511.0	232.20	7298.0	239.00	7148.0	245.70	7063.0
225.68	7511.0	232.31	7291.0	239.18	7149.0	245.81	7064.0

T	P	T	P	T	P	T	P
245.88	7062.0	252.90	7001.0	259.70	6951.0	266.29	6916.0
246.10	7061.0	253.01	7000.0	259.88	6954.0	266.40	6917.0
246.20	7057.0	253.08	6997.0	259.99	6952.0	266.58	6913.0
246.28	7058.0	253.19	6998.0	260.10	6949.0	266.69	6916.0
246.38	7058.0	253.40	6996.0	260.21	6952.0	266.80	6912.0
246.60	7056.0	253.48	6997.0	260.28	6951.0	266.90	6914.0
246.71	7056.0	253.58	6995.0	260.50	6946.0	266.98	6913.0
246.78	7053.0	253.69	6993.0	260.60	6949.0	267.19	6910.0
246.89	7052.0	253.80	6995.0	260.68	6945.0	267.30	6912.0
247.00	7051.0	253.91	6991.0	260.78	6947.0	267.41	6911.0
247.18	7048.0	254.09	6992.0	261.00	6946.0	267.48	6910.0
247.28	7049.0	254.20	6991.0	261.11	6945.0	267.59	6911.0
247.39	7045.0	254.30	6989.0	261.18	6945.0	267.80	6909.0
247.50	7047.0	254.38	6989.0	261.29	6943.0	267.88	6909.0
247.68	7045.0	254.59	6987.0	261.50	6944.0	267.98	6909.0
247.79	7042.0	254.70	6987.0	261.58	6943.0	268.09	6907.0
247.90	7044.0	254.81	6986.0	261.68	6943.0	268.31	6908.0
248.00	7040.0	254.88	6982.0	261.79	6941.0	268.38	6906.0
248.18	7042.0	254.99	6986.0	261.90	6942.0	268.60	6906.0
248.29	7039.0	255.20	6981.0	262.01	6940.0	268.78	6902.0
248.40	7037.0	255.28	6983.0	262.19	6937.0	268.99	6904.0
248.58	7036.0	255.38	6982.0	262.30	6940.0	269.10	6903.0
248.80	7034.0	255.49	6981.0	262.40	6936.0	269.21	6903.0
248.90	7032.0	255.60	6981.0	262.48	6937.0	269.28	6900.0
249.08	7030.0	255.78	6977.0	262.69	6937.0	269.39	6901.0
249.19	7029.0	255.89	6980.0	262.80	6937.0	269.50	6901.0
249.41	7026.0	256.00	6977.0	262.91	6935.0	269.68	6898.0
249.48	7029.0	256.10	6977.0	262.98	6934.0	269.78	6900.0
249.70	7025.0	256.28	6976.0	263.09	6935.0	269.89	6899.0
249.80	7026.0	256.39	6974.0	263.30	6932.0	270.00	6897.0
249.88	7025.0	256.50	6974.0	263.38	6933.0	270.18	6898.0
249.98	7021.0	256.61	6974.0	263.48	6932.0	270.29	6898.0
250.20	7023.0	256.79	6970.0	263.59	6929.0	270.40	6895.0
250.31	7022.0	256.90	6972.0	263.70	6930.0	270.50	6896.0
250.38	7018.0	257.00	6972.0	263.88	6930.0	270.58	6895.0
250.49	7020.0	257.08	6969.0	263.99	6927.0	270.79	6894.0
250.60	7019.0	257.29	6968.0	264.10	6929.0	270.90	6895.0
250.78	7014.0	257.40	6970.0	264.20	6926.0	271.01	6894.0
250.88	7017.0	257.51	6967.0	264.38	6928.0	271.08	6893.0
250.99	7016.0	257.58	6966.0	264.49	6927.0	271.19	6893.0
251.10	7012.0	257.69	6967.0	264.60	6925.0	271.40	6892.0
251.28	7014.0	257.80	6964.0	264.71	6925.0	271.48	6889.0
251.39	7013.0	257.98	6965.0	264.89	6924.0	271.58	6890.0
251.50	7011.0	258.08	6963.0	265.00	6924.0	271.69	6891.0
251.60	7008.0	258.19	6964.0	265.10	6923.0	271.91	6889.0
251.78	7009.0	258.30	6959.0	265.18	6920.0	271.98	6888.0
251.89	7009.0	258.48	6958.0	265.39	6922.0	272.09	6890.0
252.00	7005.0	258.70	6960.0	265.50	6922.0	272.20	6886.0
252.11	7006.0	258.88	6959.0	265.61	6919.0	272.38	6888.0
252.18	7006.0	258.98	6957.0	265.68	6920.0	272.48	6887.0
252.40	7003.0	259.20	6956.0	265.79	6920.0	272.59	6884.0
252.50	7004.0	259.38	6955.0	265.90	6917.0	272.70	6885.0
252.58	7003.0	259.49	6956.0	266.08	6919.0	272.88	6886.0
252.68	6999.0	259.60	6955.0	266.18	6918.0	272.99	6882.0

T	P
273.10	6884.0
273.20	6884.0
273.28	6881.0
273.38	6882.0
273.60	6882.0
273.71	6879.0
273.78	6881.0
273.89	6881.0
274.10	6877.0
274.18	6879.0
274.28	6878.0
274.39	6878.0
274.50	6878.0
274.68	6875.0
274.79	6878.0
274.90	6875.0
275.00	6874.0
275.18	6875.0
275.29	6873.0
275.40	6874.0
275.51	6872.0
275.58	6871.0
275.80	6873.0
275.90	6870.0
275.98	6872.0
276.08	6871.0
276.30	6870.0
276.41	6870.0
276.48	6867.0
276.59	6868.0
276.80	6868.0
276.88	6865.0
276.98	6866.0
277.09	6866.0
277.20	6865.0
277.38	6865.0
277.49	6865.0
277.60	6863.0
277.70	6862.0
277.78	6864.0
277.99	6863.0
278.10	6861.0
282.10	6845.0
292.00	6808.0
302.00	6771.0
311.98	6736.0
321.98	6712.0
331.99	6188.0

Zone 3P2, Test 4

T	P	T	P	T	P	T	P
0.00	0.0	290.41	7575.0	297.00	7342.0	303.91	7212.0
9.00	5402.0	290.59	7581.0	297.11	7339.0	304.09	7208.0
19.01	5378.0	290.70	7580.0	297.22	7335.0	304.20	7206.0
29.02	5412.0	290.81	7592.0	297.40	7332.0	304.31	7207.0
38.99	5516.0	290.92	7589.0	297.50	7326.0	304.42	7202.0
49.00	5550.0	291.10	7574.0	297.61	7326.0	304.49	7205.0
59.90	5426.0	291.20	7580.0	297.72	7322.0	304.60	7202.0
70.99	5310.0	291.31	7581.0	297.90	7316.0	304.81	7198.0
81.00	5743.0	291.42	7590.0	298.01	7317.0	304.92	7200.0
91.01	6259.0	291.49	7589.0	298.12	7311.0	304.99	7195.0
101.02	6662.0	291.60	7584.0	298.19	7310.0	305.10	7196.0
110.99	6986.0	291.82	7580.0	298.30	7308.0	305.32	7195.0
121.00	7219.0	291.89	7578.0	298.40	7303.0	305.39	7193.0
131.00	7341.0	292.00	7591.0	298.62	7302.0	305.50	7192.0
141.01	7457.0	292.10	7592.0	298.69	7300.0	305.60	7188.0
151.02	7522.0	292.32	7585.0	298.80	7294.0	305.71	7190.0
160.99	7536.0	292.39	7581.0	298.91	7294.0	305.89	7189.0
171.00	7586.0	292.50	7580.0	299.09	7289.0	306.00	7187.0
181.01	7614.0	292.61	7588.0	299.20	7290.0	306.11	7184.0
191.02	7632.0	292.72	7591.0	299.30	7286.0	306.22	7185.0
200.99	7587.0	292.90	7562.0	299.52	7282.0	306.29	7181.0
211.00	7548.0	293.00	7553.0	299.70	7278.0	306.50	7181.0
221.00	7551.0	293.11	7537.0	299.92	7274.0	306.61	7180.0
231.01	7547.0	293.22	7524.0	300.10	7271.0	306.72	7179.0
240.91	7557.0	293.29	7510.0	300.20	7268.0	306.79	7175.0
250.99	7583.0	293.51	7499.0	300.42	7262.0	306.90	7177.0
261.00	7583.0	293.62	7491.0	300.49	7264.0	307.01	7175.0
271.01	7568.0	293.69	7480.0	300.60	7262.0	307.12	7173.0
281.02	7577.0	293.80	7473.0	300.82	7256.0	307.30	7172.0
287.21	7572.0	294.01	7463.0	300.89	7258.0	307.40	7171.0
287.32	7577.0	294.12	7459.0	301.00	7253.0	307.51	7170.0
287.50	7578.0	294.19	7450.0	301.10	7253.0	307.62	7166.0
287.60	7586.0	294.30	7443.0	301.21	7251.0	307.69	7168.0
287.71	7590.0	294.52	7437.0	301.39	7247.0	307.91	7164.0
287.82	7577.0	294.59	7431.0	301.50	7246.0	308.02	7166.0
287.89	7578.0	294.70	7426.0	301.61	7245.0	308.09	7162.0
288.00	7574.0	294.80	7419.0	301.72	7243.0	308.20	7163.0
288.22	7586.0	294.91	7414.0	301.79	7239.0	308.41	7161.0
288.29	7589.0	295.02	7408.0	302.00	7239.0	308.52	7158.0
288.40	7584.0	295.20	7401.0	302.11	7235.0	308.59	7160.0
288.50	7569.0	295.31	7400.0	302.22	7236.0	308.70	7155.0
288.61	7579.0	295.42	7394.0	302.29	7232.0	308.92	7158.0
288.72	7577.0	295.49	7386.0	302.40	7232.0	308.99	7155.0
288.90	7589.0	295.70	7385.0	302.62	7230.0	309.10	7155.0
289.01	7587.0	295.81	7378.0	302.69	7227.0	309.20	7151.0
289.12	7582.0	295.92	7376.0	302.80	7226.0	309.42	7154.0
289.19	7579.0	295.99	7368.0	302.90	7224.0	309.49	7148.0
289.40	7581.0	296.10	7369.0	303.12	7222.0	309.60	7149.0
289.51	7587.0	296.32	7364.0	303.19	7221.0	309.82	7149.0
289.69	7585.0	296.39	7360.0	303.30	7220.0	310.00	7147.0
289.80	7578.0	296.50	7354.0	303.41	7217.0	310.10	7146.0
290.02	7580.0	296.60	7352.0	303.59	7217.0	310.32	7142.0
290.09	7591.0	296.71	7349.0	303.70	7212.0	310.39	7144.0
290.30	7588.0	296.89	7343.0	303.80	7214.0	310.50	7139.0

T	P	T	P	T	P	T	P
310.61	7141.0	317.20	7091.0	324.00	7051.0	330.91	7019.0
310.79	7140.0	317.30	7090.0	324.11	7052.0	331.09	7020.0
310.90	7140.0	317.41	7090.0	324.29	7051.0	331.20	7017.0
311.00	7135.0	317.59	7089.0	324.40	7048.0	331.31	7021.0
311.11	7137.0	317.70	7089.0	324.50	7050.0	331.42	7018.0
311.29	7134.0	317.81	7088.0	324.61	7049.0	331.60	7017.0
311.40	7136.0	317.92	7087.0	324.79	7049.0	331.70	7015.0
311.51	7131.0	317.99	7084.0	324.90	7049.0	331.81	7016.0
311.62	7132.0	318.20	7085.0	325.01	7045.0	331.92	7015.0
311.69	7132.0	318.31	7083.0	325.12	7047.0	331.99	7014.0
311.90	7131.0	318.42	7084.0	325.19	7046.0	332.10	7014.0
312.01	7129.0	318.49	7080.0	325.40	7044.0	332.32	7013.0
312.12	7129.0	318.60	7082.0	325.51	7046.0	332.39	7011.0
312.19	7126.0	318.71	7080.0	325.62	7042.0	332.50	7010.0
312.30	7126.0	318.82	7082.0	325.69	7041.0	332.60	7013.0
312.52	7126.0	319.00	7078.0	325.91	7044.0	332.82	7010.0
312.59	7122.0	319.10	7081.0	326.02	7041.0	332.89	7011.0
312.70	7121.0	319.21	7079.0	326.09	7041.0	333.00	7011.0
312.80	7123.0	319.32	7077.0	326.20	7042.0	333.11	7008.0
313.02	7122.0	319.50	7077.0	326.41	7039.0	333.29	7009.0
313.09	7117.0	319.61	7076.0	326.52	7040.0	333.40	7010.0
313.20	7120.0	319.79	7076.0	326.59	7041.0	333.50	7007.0
313.31	7119.0	320.00	7072.0	326.70	7036.0	333.61	7005.0
313.49	7114.0	320.11	7073.0	326.81	7038.0	333.72	7009.0
313.60	7118.0	320.29	7073.0	326.99	7036.0	333.90	7008.0
313.70	7114.0	320.40	7072.0	327.10	7036.0	334.01	7007.0
313.81	7114.0	320.62	7069.0	327.20	7036.0	334.12	7007.0
313.99	7114.0	320.69	7068.0	327.31	7035.0	334.19	7006.0
314.10	7112.0	320.90	7071.0	327.42	7036.0	334.40	7005.0
314.21	7112.0	321.01	7069.0	327.60	7033.0	334.51	7004.0
314.32	7109.0	321.12	7066.0	327.71	7034.0	334.62	7004.0
314.39	7111.0	321.19	7069.0	327.82	7035.0	334.69	7001.0
314.50	7109.0	321.30	7066.0	327.89	7031.0	334.80	7004.0
314.71	7108.0	321.52	7064.0	328.00	7033.0	335.02	7003.0
314.82	7108.0	321.59	7066.0	328.21	7033.0	335.09	7000.0
314.89	7107.0	321.70	7062.0	328.32	7029.0	335.20	7004.0
315.00	7105.0	321.80	7062.0	328.39	7029.0	335.30	6999.0
315.22	7103.0	322.02	7063.0	328.50	7031.0	335.41	7002.0
315.29	7103.0	322.09	7061.0	328.72	7027.0	335.52	7001.0
315.40	7104.0	322.20	7062.0	328.79	7028.0	335.59	7000.0
315.50	7100.0	322.31	7062.0	328.90	7030.0	335.81	7000.0
315.61	7102.0	322.49	7059.0	329.00	7028.0	335.92	6997.0
315.72	7100.0	322.60	7060.0	329.22	7029.0	335.99	7000.0
315.90	7098.0	322.70	7059.0	329.29	7024.0	336.10	6995.0
316.01	7100.0	322.81	7057.0	329.51	7025.0	336.20	6998.0
316.12	7098.0	322.92	7058.0	329.69	7022.0	336.31	6995.0
316.19	7096.0	323.10	7055.0	329.80	7026.0	336.42	6998.0
316.40	7096.0	323.21	7057.0	330.01	7025.0	336.60	6994.0
316.51	7097.0	323.32	7056.0	330.12	7020.0	336.71	6996.0
316.62	7093.0	323.39	7053.0	330.30	7023.0	336.82	6996.0
316.69	7094.0	323.50	7055.0	330.41	7022.0	336.89	6992.0
316.80	7094.0	323.71	7054.0	330.59	7021.0	337.00	6995.0
316.91	7091.0	323.82	7053.0	330.70	7021.0	337.21	6994.0
317.09	7093.0	323.89	7054.0	330.80	7017.0	337.32	6993.0

T	P
337.39	6994.0
337.50	6990.0
337.72	6993.0
337.79	6992.0
337.90	6989.0
338.00	6992.0
338.11	6988.0
338.29	6991.0
338.40	6987.0
338.51	6990.0
338.62	6989.0
338.80	6987.0
338.90	6989.0
339.01	6988.0
339.12	6984.0
339.30	6988.0
339.41	6983.0
339.59	6984.0
339.70	6984.0
339.91	6985.0
340.02	6983.0
340.20	6981.0
340.42	6983.0
340.49	6982.0
340.60	6982.0
340.81	6980.0
340.92	6981.0
340.99	6980.0
341.10	6977.0
341.21	6979.0
341.39	6977.0
341.50	6979.0
341.60	6977.0
341.71	6977.0
341.89	6978.0
342.00	6977.0
342.11	6974.0
342.22	6973.0
342.29	6976.0
342.50	6975.0
342.61	6975.0
342.72	6975.0
342.79	6972.0
343.01	6973.0
343.12	6973.0
343.19	6973.0
343.30	6970.0
348.01	6955.0
358.02	6924.0
369.00	6891.0
379.30	6867.0
389.02	6844.0

Zone 3P2, Test 5

T	P	T	P	T	P	T	P
0.00	0.0	181.62	7494.0	188.53	7276.0	195.01	7166.0
9.32	5183.0	181.73	7504.0	188.60	7275.0	195.23	7163.0
20.41	5179.0	181.80	7495.0	188.71	7270.0	195.41	7163.0
30.42	5332.0	182.02	7490.0	188.93	7267.0	195.62	7159.0
40.32	5720.0	182.12	7491.0	189.00	7265.0	195.73	7160.0
50.40	6164.0	182.23	7493.0	189.11	7263.0	195.80	7156.0
60.41	6540.0	182.30	7500.0	189.22	7261.0	196.02	7156.0
70.42	6903.0	182.52	7504.0	189.32	7256.0	196.13	7155.0
80.42	7144.0	182.63	7495.0	189.50	7256.0	196.20	7153.0
90.43	7310.0	182.70	7479.0	189.61	7250.0	196.31	7152.0
101.41	7389.0	182.81	7494.0	189.72	7250.0	196.52	7149.0
111.42	7440.0	183.02	7495.0	189.83	7248.0	196.63	7150.0
121.43	7457.0	183.13	7503.0	189.90	7242.0	196.70	7149.0
133.31	7479.0	183.20	7501.0	190.12	7242.0	196.81	7146.0
143.42	7486.0	183.31	7489.0	190.22	7240.0	196.92	7147.0
157.43	7486.0	183.53	7488.0	190.33	7236.0	197.10	7142.0
167.40	7500.0	183.60	7494.0	190.40	7236.0	197.21	7143.0
177.12	7495.0	183.71	7499.0	190.62	7232.0	197.32	7142.0
177.23	7485.0	183.82	7505.0	190.73	7233.0	197.42	7141.0
177.30	7489.0	183.92	7499.0	190.80	7228.0	197.60	7139.0
177.52	7493.0	184.03	7477.0	190.91	7227.0	197.71	7137.0
177.62	7507.0	184.21	7461.0	191.12	7226.0	197.82	7136.0
177.73	7500.0	184.32	7449.0	191.23	7223.0	197.93	7137.0
177.80	7493.0	184.43	7436.0	191.30	7221.0	198.00	7133.0
177.91	7487.0	184.50	7428.0	191.41	7217.0	198.22	7132.0
178.13	7496.0	184.72	7417.0	191.52	7218.0	198.32	7131.0
178.20	7498.0	184.82	7407.0	191.63	7213.0	198.50	7131.0
178.31	7505.0	185.00	7395.0	191.81	7213.0	198.61	7127.0
178.42	7500.0	185.22	7386.0	191.92	7211.0	198.72	7127.0
178.63	7489.0	185.33	7378.0	192.02	7208.0	198.83	7128.0
178.70	7490.0	185.51	7368.0	192.13	7205.0	198.90	7124.0
178.81	7494.0	185.72	7360.0	192.31	7206.0	199.12	7124.0
178.92	7499.0	185.83	7357.0	192.42	7201.0	199.22	7124.0
179.10	7500.0	185.90	7353.0	192.53	7201.0	199.33	7120.0
179.21	7494.0	186.12	7346.0	192.60	7200.0	199.40	7121.0
179.32	7477.0	186.23	7343.0	192.71	7196.0	199.62	7121.0
179.42	7489.0	186.30	7336.0	192.92	7196.0	199.73	7118.0
179.53	7494.0	186.41	7335.0	193.03	7193.0	199.80	7117.0
179.60	7498.0	186.52	7329.0	193.10	7194.0	199.91	7117.0
179.82	7496.0	186.73	7326.0	193.21	7189.0	200.12	7114.0
179.93	7487.0	186.80	7323.0	193.32	7190.0	200.23	7114.0
180.00	7487.0	186.91	7317.0	193.43	7187.0	200.30	7114.0
180.11	7489.0	187.02	7315.0	193.50	7187.0	200.41	7112.0
180.32	7497.0	187.20	7309.0	193.72	7186.0	200.63	7111.0
180.43	7498.0	187.31	7308.0	193.82	7184.0	200.70	7110.0
180.50	7493.0	187.42	7305.0	193.93	7180.0	200.81	7110.0
180.61	7483.0	187.52	7299.0	194.00	7181.0	200.92	7109.0
180.72	7485.0	187.70	7298.0	194.11	7176.0	201.02	7106.0
180.90	7488.0	187.81	7294.0	194.33	7177.0	201.13	7105.0
181.01	7500.0	187.92	7291.0	194.40	7173.0	201.31	7105.0
181.12	7495.0	188.03	7288.0	194.51	7176.0	201.42	7105.0
181.22	7488.0	188.10	7285.0	194.62	7171.0	201.53	7103.0
181.40	7483.0	188.21	7281.0	194.83	7170.0	201.60	7102.0
181.51	7490.0	188.42	7278.0	194.90	7171.0	201.82	7102.0

T	P	T	P	T	P	T	P
201.92	7098.0	208.73	7053.0	215.60	7015.0	222.23	6987.0
202.03	7099.0	208.80	7051.0	215.82	7017.0	222.30	6987.0
202.10	7099.0	209.02	7052.0	215.93	7014.0	222.52	6988.0
202.21	7095.0	209.12	7051.0	216.00	7014.0	222.62	6986.0
202.43	7096.0	209.23	7048.0	216.11	7014.0	222.73	6983.0
202.50	7095.0	209.30	7049.0	216.22	7011.0	222.80	6987.0
202.61	7096.0	209.52	7049.0	216.43	7012.0	222.91	6983.0
202.72	7091.0	209.63	7049.0	216.50	7014.0	223.13	6984.0
202.82	7093.0	209.70	7048.0	216.61	7010.0	223.20	6985.0
202.93	7091.0	209.81	7045.0	216.72	7009.0	223.31	6982.0
203.00	7091.0	209.92	7047.0	216.83	7012.0	223.42	6981.0
203.22	7090.0	210.13	7043.0	217.01	7011.0	223.63	6984.0
203.33	7089.0	210.20	7044.0	217.12	7008.0	223.70	6981.0
203.40	7088.0	210.31	7045.0	217.22	7010.0	223.81	6981.0
203.51	7087.0	210.42	7042.0	217.33	7009.0	223.92	6983.0
203.72	7087.0	210.60	7042.0	217.51	7008.0	224.10	6980.0
203.83	7086.0	210.71	7042.0	217.62	7005.0	224.21	6980.0
203.90	7085.0	210.82	7040.0	217.73	7006.0	224.32	6981.0
204.01	7082.0	210.92	7040.0	217.80	7007.0	224.42	6977.0
204.12	7081.0	211.10	7039.0	217.91	7006.0	224.60	6979.0
204.30	7082.0	211.21	7040.0	218.12	7002.0	224.71	6979.0
204.41	7082.0	211.32	7039.0	218.23	7006.0	224.82	6979.0
204.52	7078.0	211.43	7036.0	218.30	7005.0	224.93	6978.0
204.62	7079.0	211.50	7039.0	218.41	7003.0	225.11	6974.0
204.80	7078.0	211.61	7037.0	218.63	7003.0	225.32	6976.0
205.02	7078.0	211.82	7035.0	218.70	7003.0	225.50	6974.0
205.13	7073.0	211.93	7035.0	218.81	7002.0	225.61	6974.0
205.31	7074.0	212.00	7035.0	218.92	7000.0	225.83	6975.0
205.42	7073.0	212.11	7031.0	219.02	7001.0	225.90	6972.0
205.63	7074.0	212.33	7035.0	219.20	7000.0	226.01	6973.0
205.81	7069.0	212.40	7031.0	219.31	7001.0	226.22	6973.0
205.92	7070.0	212.51	7031.0	219.42	7000.0	226.33	6970.0
206.03	7071.0	212.62	7033.0	219.53	6998.0	226.40	6972.0
206.21	7067.0	212.72	7031.0	219.71	7000.0	226.51	6972.0
206.32	7069.0	212.90	7031.0	219.82	6998.0	226.73	6969.0
206.42	7067.0	213.01	7029.0	219.92	6996.0	226.80	6970.0
206.53	7066.0	213.12	7028.0	220.03	6997.0	226.91	6971.0
206.71	7066.0	213.23	7028.0	220.21	6994.0	227.02	6968.0
206.82	7062.0	213.41	7026.0	220.32	6995.0	227.23	6969.0
206.93	7066.0	213.52	7027.0	220.43	6996.0	227.30	6970.0
207.00	7062.0	213.62	7026.0	220.50	6995.0	227.41	6966.0
207.22	7060.0	213.73	7024.0	220.61	6995.0	227.52	6968.0
207.32	7064.0	213.91	7023.0	220.82	6992.0	227.63	6967.0
207.43	7060.0	214.02	7025.0	220.93	6995.0	227.81	6968.0
207.50	7060.0	214.13	7024.0	221.00	6991.0	227.92	6967.0
207.61	7061.0	214.20	7024.0	221.11	6991.0	228.02	6964.0
207.72	7059.0	214.31	7022.0	221.22	6992.0	228.13	6967.0
207.90	7055.0	214.52	7019.0	221.40	6989.0	228.31	6963.0
208.01	7058.0	214.63	7023.0	221.51	6992.0	228.42	6965.0
208.12	7057.0	214.70	7022.0	221.62	6988.0	228.53	6965.0
208.22	7056.0	214.92	7020.0	221.72	6991.0	228.60	6962.0
208.40	7056.0	215.10	7016.0	221.83	6989.0	228.82	6963.0
208.51	7053.0	215.32	7019.0	222.01	6986.0	228.92	6964.0
208.62	7053.0	215.42	7017.0	222.12	6990.0	229.03	6963.0

T	P	T	P
229.10	6960.0	410.40	6477.0
229.21	6962.0	420.41	6443.0
229.32	6962.0	430.31	6408.0
229.50	6960.0	440.42	6371.0
229.61	6961.0	451.40	6337.0
229.72	6960.0	461.41	6294.0
229.82	6960.0	471.42	6250.0
230.00	6960.0	481.43	6216.0
230.11	6959.0	491.40	6187.0
230.22	6957.0	501.41	5459.0
230.33	6959.0	511.42	4564.0
230.40	6959.0	521.42	4129.0
230.62	6958.0	531.43	3776.0
230.72	6954.0		
230.83	6958.0		
230.90	6955.0		
231.12	6955.0		
231.23	6957.0		
231.30	6954.0		
231.41	6955.0		
231.52	6951.0		
231.73	6955.0		
231.80	6954.0		
231.91	6953.0		
232.02	6953.0		
232.20	6953.0		
232.31	6953.0		
232.42	6949.0		
232.52	6952.0		
232.63	6949.0		
232.81	6950.0		
232.92	6950.0		
233.03	6947.0		
233.10	6950.0		
233.21	6946.0		
233.42	6950.0		
233.53	6948.0		
233.93	6947.0		
243.43	6919.0		
254.41	6887.0		
264.42	6866.0		
275.40	6841.0		
285.41	6821.0		
295.42	6805.0		
305.42	6791.0		
316.40	6776.0		
326.41	6765.0		
339.41	6746.0		
350.42	6733.0		
360.43	6687.0		
370.40	6638.0		
380.41	6596.0		
390.42	6555.0		
400.43	6517.0		

Zone 3P3, Test 4

T	P	T	P	T	P	T	P
0.00	2999.0	545.00	5826.0	577.30	5836.0	584.17	5753.0
9.97	3003.0	554.98	5840.0	577.40	5833.0	584.28	5756.0
19.98	3003.0	564.98	5858.0	577.48	5829.0	584.39	5755.0
29.99	3007.0	571.10	5864.0	577.69	5821.0	584.60	5753.0
40.00	3006.0	571.18	5865.0	577.80	5816.0	584.68	5754.0
50.00	3010.0	571.28	5862.0	577.98	5813.0	584.78	5753.0
59.98	3010.0	571.50	5867.0	578.20	5809.0	584.89	5753.0
70.38	3010.0	571.57	5861.0	578.38	5806.0	585.07	5751.0
79.99	3013.0	571.68	5870.0	578.59	5800.0	585.18	5751.0
90.00	3014.0	571.79	5860.0	578.70	5802.0	585.29	5751.0
99.97	3015.0	571.90	5865.0	578.88	5797.0	585.40	5747.0
109.98	3015.0	572.00	5863.0	578.99	5797.0	585.50	5751.0
119.99	3012.0	572.18	5860.0	579.10	5794.0	585.68	5748.0
130.00	3009.0	572.29	5861.0	579.20	5795.0	585.79	5747.0
140.08	3019.0	572.40	5862.0	579.28	5791.0	585.90	5748.0
149.98	3033.0	572.47	5865.0	579.49	5790.0	585.97	5749.0
159.98	3045.0	572.69	5864.0	579.60	5787.0	586.08	5748.0
171.00	3067.0	572.80	5863.0	579.67	5788.0	586.30	5744.0
181.08	3084.0	572.90	5861.0	579.78	5786.0	586.40	5747.0
190.98	3099.0	572.98	5864.0	580.00	5781.0	586.48	5743.0
200.99	3122.0	573.08	5859.0	580.10	5785.0	586.58	5745.0
211.00	3142.0	573.30	5865.0	580.18	5780.0	586.80	5745.0
221.00	3170.0	573.37	5863.0	580.28	5780.0	586.87	5742.0
230.98	3196.0	573.48	5866.0	580.50	5781.0	586.98	5743.0
240.98	3224.0	573.59	5863.0	580.57	5776.0	587.09	5744.0
251.10	3258.0	573.80	5863.0	580.68	5778.0	587.30	5741.0
261.00	3288.0	573.88	5863.0	580.79	5774.0	587.38	5741.0
270.97	3326.0	573.98	5864.0	580.90	5777.0	587.48	5743.0
280.98	3361.0	574.09	5865.0	581.00	5775.0	587.59	5739.0
290.88	3407.0	574.27	5866.0	581.18	5773.0	587.77	5740.0
301.00	3460.0	574.38	5868.0	581.29	5774.0	587.88	5741.0
311.00	3517.0	574.49	5865.0	581.40	5770.0	587.99	5738.0
321.98	3620.0	574.60	5864.0	581.47	5771.0	588.20	5738.0
331.99	3759.0	574.70	5868.0	581.69	5769.0	588.38	5736.0
342.00	3925.0	574.78	5865.0	581.80	5771.0	588.49	5737.0
351.97	4123.0	574.99	5868.0	581.90	5768.0	588.67	5738.0
362.77	4368.0	575.10	5865.0	581.98	5767.0	588.78	5734.0
371.99	4596.0	575.17	5870.0	582.08	5767.0	589.00	5736.0
383.00	4902.0	575.28	5866.0	582.30	5766.0	589.10	5735.0
392.98	5159.0	575.50	5866.0	582.37	5766.0	589.18	5735.0
402.98	5420.0	575.60	5871.0	582.48	5763.0	589.28	5735.0
414.00	5570.0	575.68	5865.0	582.59	5765.0	589.50	5735.0
423.97	5653.0	575.78	5870.0	582.70	5762.0	589.57	5733.0
434.20	5697.0	575.89	5871.0	582.88	5763.0	589.68	5732.0
443.99	5723.0	576.07	5871.0	582.98	5760.0	589.79	5734.0
454.00	5733.0	576.18	5869.0	583.09	5763.0	589.90	5733.0
464.00	5753.0	576.29	5868.0	583.20	5761.0	590.08	5732.0
474.08	5760.0	576.40	5876.0	583.38	5757.0	590.18	5733.0
484.99	5656.0	576.50	5870.0	583.49	5761.0	590.29	5731.0
495.00	5713.0	576.68	5821.0	583.60	5759.0	590.40	5730.0
504.90	5745.0	576.79	5857.0	583.70	5758.0	590.47	5732.0
514.98	5772.0	576.90	5849.0	583.88	5757.0	590.69	5728.0
524.99	5787.0	576.97	5845.0	583.99	5756.0	590.80	5728.0
535.00	5804.0	577.19	5840.0	584.10	5757.0	590.90	5730.0

T	P	T	P	T	P	T	P
590.98	5726.0	597.60	5708.0	604.48	5689.0	611.17	5669.0
591.08	5728.0	597.78	5707.0	604.58	5685.0	611.39	5671.0
591.30	5728.0	598.00	5706.0	604.80	5687.0	611.50	5670.0
591.37	5727.0	598.18	5707.0	604.87	5687.0	611.60	5670.0
591.48	5727.0	598.28	5702.0	604.98	5688.0	611.68	5670.0
591.59	5726.0	598.50	5702.0	605.09	5687.0	611.78	5668.0
591.80	5727.0	598.68	5706.0	605.20	5684.0	611.89	5671.0
591.88	5726.0	598.79	5702.0	605.38	5687.0	612.07	5668.0
591.98	5725.0	598.90	5702.0	605.48	5686.0	612.18	5668.0
592.09	5723.0	599.00	5704.0	605.59	5683.0	612.29	5670.0
592.20	5724.0	599.08	5701.0	605.70	5686.0	612.40	5667.0
592.38	5724.0	599.29	5702.0	605.88	5685.0	612.58	5668.0
592.49	5722.0	599.40	5702.0	605.99	5683.0	612.68	5667.0
592.60	5724.0	599.47	5702.0	606.10	5685.0	612.79	5669.0
592.70	5723.0	599.58	5702.0	606.20	5681.0	612.90	5665.0
592.88	5721.0	599.80	5698.0	606.28	5681.0	612.97	5665.0
592.99	5722.0	599.90	5701.0	606.38	5683.0	613.08	5667.0
593.10	5721.0	599.98	5700.0	606.49	5684.0	613.19	5667.0
593.17	5722.0	600.08	5698.0	606.60	5683.0	613.30	5666.0
593.39	5721.0	600.19	5701.0	606.78	5683.0	613.48	5663.0
593.50	5718.0	600.37	5700.0	606.89	5679.0	613.58	5666.0
593.60	5721.0	600.48	5697.0	607.00	5683.0	613.69	5663.0
593.68	5717.0	600.59	5699.0	607.10	5681.0	613.80	5665.0
593.78	5720.0	600.70	5699.0	607.28	5678.0	613.98	5662.0
594.00	5719.0	600.88	5698.0	607.39	5682.0	614.09	5666.0
594.07	5716.0	600.98	5696.0	607.50	5678.0	614.20	5664.0
594.18	5718.0	601.09	5698.0	607.57	5678.0	614.30	5662.0
594.29	5718.0	601.20	5696.0	607.79	5678.0	614.38	5665.0
594.40	5715.0	601.27	5697.0	608.00	5679.0	614.59	5661.0
594.58	5715.0	601.49	5694.0	608.08	5679.0	614.70	5663.0
594.68	5718.0	601.60	5696.0	608.18	5677.0	614.77	5662.0
594.79	5717.0	601.70	5696.0	608.40	5678.0	614.88	5660.0
594.90	5714.0	601.78	5694.0	608.47	5677.0	614.99	5662.0
595.08	5717.0	601.99	5696.0	608.58	5676.0	615.20	5662.0
595.19	5713.0	602.10	5693.0	608.80	5678.0	615.28	5661.0
595.30	5712.0	602.17	5693.0	608.90	5675.0	615.38	5661.0
595.40	5715.0	602.28	5694.0	608.98	5676.0	615.49	5658.0
595.48	5714.0	602.50	5694.0	609.08	5676.0	615.67	5662.0
595.69	5711.0	602.60	5694.0	609.30	5673.0	615.78	5660.0
595.80	5714.0	602.68	5692.0	609.37	5676.0	615.89	5657.0
595.87	5713.0	602.78	5692.0	609.48	5673.0	616.00	5661.0
595.98	5711.0	602.89	5693.0	609.59	5676.0	616.18	5657.0
596.20	5712.0	603.00	5691.0	609.70	5676.0	616.28	5659.0
596.30	5712.0	603.18	5691.0	609.88	5673.0	616.39	5657.0
596.38	5710.0	603.29	5691.0	609.98	5675.0	616.50	5658.0
596.48	5710.0	603.40	5689.0	610.09	5674.0	616.57	5658.0
596.59	5710.0	603.50	5691.0	610.20	5672.0	616.79	5655.0
596.77	5710.0	603.68	5689.0	610.38	5674.0	616.90	5659.0
596.88	5710.0	603.79	5688.0	610.49	5673.0	617.00	5655.0
596.99	5708.0	603.90	5690.0	610.60	5671.0	617.08	5655.0
597.10	5709.0	603.97	5686.0	610.70	5673.0	617.18	5658.0
597.28	5707.0	604.08	5690.0	610.88	5673.0	617.40	5655.0
597.38	5709.0	604.30	5688.0	610.99	5669.0	617.47	5656.0
597.49	5708.0	604.40	5686.0	611.10	5672.0	617.58	5656.0

T	P	T	P
617.69	5654.0	624.60	5642.0
617.90	5653.0	624.67	5639.0
618.08	5655.0	624.78	5641.0
618.30	5655.0	624.89	5641.0
618.37	5655.0	625.00	5640.0
618.48	5653.0	625.18	5641.0
618.59	5653.0	625.28	5640.0
618.80	5655.0	625.39	5638.0
618.88	5652.0	625.50	5640.0
619.09	5653.0	625.68	5636.0
619.20	5653.0	625.79	5640.0
619.27	5653.0	625.90	5638.0
619.38	5653.0	626.00	5636.0
619.60	5651.0	626.18	5640.0
619.70	5653.0	626.29	5639.0
619.78	5649.0	626.40	5635.0
619.88	5651.0	626.47	5639.0
619.99	5651.0	626.58	5637.0
620.17	5651.0	626.80	5634.0
620.28	5651.0	626.90	5638.0
620.39	5647.0	626.98	5635.0
620.50	5651.0	630.97	5629.0
620.60	5647.0	640.98	5610.0
620.78	5649.0	650.99	5592.0
620.89	5649.0	661.00	5578.0
621.00	5650.0	671.00	5566.0
621.07	5649.0	680.98	5551.0
621.29	5647.0	690.98	5539.0
621.40	5649.0	701.10	5526.0
621.50	5648.0	711.00	5512.0
621.58	5647.0	720.97	5336.0
621.79	5648.0	730.98	5061.0
621.90	5648.0	742.10	5128.0
621.97	5644.0	752.00	5163.0
622.08	5647.0	761.98	5181.0
622.19	5645.0	771.98	5170.0
622.40	5645.0		
622.48	5647.0		
622.58	5644.0		
622.69	5643.0		
622.80	5646.0		
622.98	5645.0		
623.09	5642.0		
623.20	5645.0		
623.30	5644.0		
623.48	5644.0		
623.59	5641.0		
623.70	5644.0		
623.77	5642.0		
623.88	5643.0		
624.10	5643.0		
624.20	5642.0		
624.28	5640.0		
624.38	5641.0		

Zone 3P3, Test 5

T	P	T	P	T	P	T	P
0.00	5077.0	250.88	5822.0	257.69	5714.0	264.49	5683.0
10.01	5066.0	251.10	5829.0	257.90	5714.0	264.60	5686.0
19.98	5053.0	251.21	5802.0	257.98	5712.0	264.71	5685.0
29.99	5041.0	251.28	5799.0	258.08	5713.0	264.89	5681.0
40.00	5029.0	251.39	5795.0	258.19	5711.0	265.00	5685.0
50.00	5012.0	251.50	5790.0	258.41	5710.0	265.10	5682.0
59.98	5007.0	251.68	5783.0	258.48	5711.0	265.18	5683.0
69.98	4994.0	251.78	5781.0	258.59	5707.0	265.39	5683.0
79.99	4977.0	251.89	5775.0	258.70	5708.0	265.50	5681.0
90.00	4972.0	252.00	5775.0	258.88	5709.0	265.61	5683.0
100.01	4960.0	252.11	5771.0	258.98	5705.0	265.68	5679.0
109.98	4948.0	252.29	5768.0	259.09	5707.0	265.90	5682.0
119.99	4934.0	252.40	5766.0	259.20	5707.0	266.00	5678.0
131.51	4923.0	252.50	5764.0	259.31	5704.0	266.08	5680.0
140.98	4912.0	252.58	5762.0	259.38	5705.0	266.18	5680.0
150.98	4900.0	252.79	5754.0	259.60	5703.0	266.29	5680.0
160.99	5067.0	253.01	5757.0	259.70	5705.0	266.40	5679.0
171.00	5340.0	253.08	5754.0	259.78	5702.0	266.58	5678.0
181.01	5559.0	253.19	5753.0	259.88	5700.0	266.69	5679.0
190.98	5678.0	253.40	5749.0	260.10	5703.0	266.80	5676.0
200.99	5733.0	253.48	5747.0	260.21	5700.0	266.90	5678.0
211.00	5761.0	253.69	5747.0	260.28	5700.0	267.08	5676.0
221.98	5784.0	253.80	5745.0	260.39	5701.0	267.19	5676.0
231.98	5799.0	253.98	5744.0	260.50	5700.0	267.30	5677.0
241.99	5813.0	254.09	5740.0	260.68	5700.0	267.41	5675.0
247.39	5823.0	254.20	5742.0	260.78	5699.0	267.48	5677.0
247.61	5818.0	254.30	5741.0	260.89	5697.0	267.70	5675.0
247.68	5815.0	254.48	5737.0	261.00	5698.0	267.80	5674.0
247.79	5820.0	254.59	5739.0	261.18	5698.0	267.88	5676.0
247.90	5816.0	254.70	5737.0	261.29	5696.0	267.98	5672.0
248.00	5817.0	254.81	5732.0	261.40	5697.0	268.09	5675.0
248.18	5819.0	254.99	5735.0	261.50	5693.0	268.31	5673.0
248.29	5816.0	255.10	5733.0	261.58	5697.0	268.38	5675.0
248.40	5818.0	255.20	5729.0	261.79	5693.0	268.49	5671.0
248.51	5822.0	255.28	5732.0	261.90	5695.0	268.60	5670.0
248.69	5816.0	255.38	5728.0	262.01	5692.0	268.70	5673.0
248.80	5815.0	255.60	5729.0	262.08	5694.0	268.78	5673.0
248.90	5820.0	255.71	5728.0	262.30	5694.0	268.88	5673.0
248.98	5818.0	255.78	5726.0	262.40	5691.0	269.10	5672.0
249.19	5818.0	255.89	5727.0	262.48	5694.0	269.21	5670.0
249.30	5819.0	256.00	5722.0	262.58	5691.0	269.28	5672.0
249.41	5818.0	256.18	5725.0	262.80	5689.0	269.39	5668.0
249.48	5819.0	256.28	5723.0	262.91	5690.0	269.50	5670.0
249.59	5820.0	256.39	5720.0	263.09	5688.0	269.68	5669.0
249.80	5819.0	256.50	5723.0	263.30	5689.0	269.78	5667.0
249.88	5819.0	256.61	5720.0	263.38	5690.0	269.89	5668.0
249.98	5821.0	256.79	5720.0	263.48	5686.0	270.00	5670.0
250.09	5820.0	256.90	5718.0	263.70	5688.0	270.18	5669.0
250.20	5818.0	257.00	5720.0	263.81	5688.0	270.29	5668.0
250.38	5823.0	257.08	5718.0	263.88	5688.0	270.40	5668.0
250.49	5821.0	257.29	5715.0	263.99	5688.0	270.50	5667.0
250.60	5820.0	257.40	5718.0	264.10	5684.0	270.68	5669.0
250.70	5830.0	257.51	5716.0	264.28	5687.0	270.79	5667.0
250.78	5825.0	257.58	5712.0	264.38	5686.0	270.90	5664.0

T	P	T	P	T	P	T	P
271.01	5667.0	277.99	5649.0	284.90	5637.0	291.49	5625.0
271.08	5664.0	278.10	5651.0	285.08	5635.0	291.60	5627.0
271.30	5665.0	278.21	5648.0	285.19	5636.0	291.71	5623.0
271.40	5666.0	278.39	5650.0	285.30	5636.0	291.78	5624.0
271.48	5666.0	278.50	5646.0	285.41	5634.0	291.89	5626.0
271.58	5665.0	278.60	5650.0	285.59	5636.0	292.10	5622.0
271.80	5662.0	278.68	5649.0	285.70	5633.0	292.18	5625.0
271.91	5664.0	278.89	5646.0	285.80	5635.0	292.28	5624.0
271.98	5663.0	279.00	5649.0	285.88	5635.0	292.39	5623.0
272.20	5664.0	279.11	5647.0	285.98	5635.0	292.50	5624.0
272.30	5662.0	279.18	5647.0	286.09	5634.0	292.68	5624.0
272.38	5662.0	279.29	5648.0	286.31	5634.0	292.90	5621.0
272.48	5663.0	279.40	5646.0	286.38	5632.0	293.00	5622.0
272.70	5662.0	279.58	5647.0	286.49	5632.0	293.18	5624.0
272.81	5662.0	279.68	5648.0	286.60	5634.0	293.29	5620.0
272.99	5662.0	279.79	5644.0	286.78	5631.0	293.51	5621.0
273.20	5660.0	279.90	5646.0	286.88	5633.0	293.58	5622.0
273.38	5660.0	280.08	5646.0	286.99	5630.0	293.80	5623.0
273.60	5660.0	280.19	5643.0	287.10	5633.0	293.90	5621.0
273.71	5659.0	280.30	5646.0	287.21	5630.0	294.08	5621.0
273.89	5659.0	280.40	5644.0	287.39	5632.0	294.19	5621.0
274.00	5657.0	280.48	5646.0	287.50	5633.0	294.30	5622.0
274.10	5659.0	280.69	5645.0	287.60	5630.0	294.41	5620.0
274.18	5657.0	280.80	5644.0	287.68	5632.0	294.59	5620.0
274.28	5659.0	280.91	5642.0	287.89	5632.0	294.70	5621.0
274.50	5658.0	280.98	5642.0	288.00	5632.0	294.80	5619.0
274.61	5657.0	281.20	5645.0	288.11	5632.0	294.88	5620.0
274.68	5656.0	281.30	5642.0	288.18	5629.0	295.09	5620.0
274.79	5657.0	281.38	5643.0	288.29	5632.0	295.20	5619.0
275.00	5655.0	281.48	5644.0	288.50	5631.0	295.31	5620.0
275.08	5657.0	281.59	5643.0	288.58	5629.0	295.38	5617.0
275.18	5654.0	281.81	5640.0	288.68	5631.0	295.49	5621.0
275.29	5656.0	281.88	5643.0	288.79	5629.0	295.60	5618.0
275.51	5655.0	281.99	5643.0	289.01	5629.0	295.78	5618.0
275.58	5656.0	282.10	5642.0	289.08	5629.0	295.88	5619.0
275.69	5655.0	282.28	5640.0	289.19	5630.0	295.99	5617.0
275.80	5654.0	282.38	5642.0	289.30	5626.0	296.10	5619.0
275.90	5655.0	282.49	5639.0	289.40	5629.0	296.28	5617.0
275.98	5652.0	282.60	5641.0	289.48	5626.0	296.39	5617.0
276.19	5654.0	282.78	5641.0	289.58	5630.0	296.50	5618.0
276.30	5653.0	282.89	5638.0	289.69	5629.0	296.60	5616.0
276.41	5655.0	283.10	5638.0	289.91	5627.0	296.68	5619.0
276.48	5651.0	283.28	5640.0	289.98	5629.0	296.89	5615.0
276.59	5653.0	283.50	5638.0	290.09	5626.0	297.00	5616.0
276.80	5650.0	283.68	5639.0	290.20	5627.0	297.11	5618.0
276.88	5653.0	283.79	5637.0	290.38	5628.0	297.18	5617.0
276.98	5650.0	284.00	5640.0	290.48	5628.0	297.29	5617.0
277.09	5651.0	284.08	5637.0	290.59	5628.0	297.50	5616.0
277.31	5652.0	284.18	5635.0	290.70	5625.0	297.58	5614.0
277.38	5649.0	284.29	5639.0	290.88	5628.0	297.68	5616.0
277.49	5652.0	284.40	5635.0	290.99	5625.0	297.79	5617.0
277.60	5650.0	284.58	5638.0	291.10	5626.0	298.01	5613.0
277.70	5652.0	284.69	5637.0	291.20	5627.0	298.08	5616.0
277.88	5651.0	284.80	5635.0	291.28	5625.0	298.19	5612.0

T	P
298.30	5616.0
298.48	5615.0
298.58	5613.0
298.69	5615.0
298.80	5612.0
298.98	5614.0
299.09	5614.0
299.20	5611.0
299.30	5613.0
299.38	5614.0
299.48	5611.0
299.70	5613.0
299.81	5613.0
299.88	5611.0
299.99	5613.0
300.20	5609.0
300.28	5613.0
300.38	5611.0
300.49	5611.0
300.60	5611.0
300.78	5613.0
300.89	5609.0
301.00	5611.0
301.10	5610.0
301.18	5612.0
301.39	5610.0
301.50	5610.0
301.61	5609.0
301.68	5611.0
301.90	5610.0
302.00	5608.0
302.08	5610.0
302.18	5607.0
302.40	5609.0
302.51	5607.0
302.58	5610.0
302.69	5608.0
302.90	5609.0
302.98	5609.0
303.19	5608.0
303.41	5608.0
303.59	5608.0
303.70	5604.0
303.88	5608.0
303.98	5607.0
307.98	5601.0

Zone 2P5, Test 1

T	P	T	P	T	P	T	P
0.00	4048.0	409.90	7355.0	415.30	7350.0	420.70	7350.0
9.97	4091.0	410.00	7345.0	415.40	7350.0	420.80	7335.0
19.98	4144.0	410.08	7345.0	415.48	7355.0	420.88	7330.0
29.99	4183.0	410.18	7345.0	415.58	7365.0	420.98	7340.0
40.00	4231.0	410.29	7350.0	415.69	7350.0	421.09	7340.0
50.00	4283.0	410.40	7345.0	415.80	7350.0	421.20	7325.0
59.98	4346.0	410.47	7345.0	415.87	7360.0	421.27	7335.0
69.98	4394.0	410.58	7350.0	415.98	7365.0	421.38	7335.0
79.99	4452.0	410.69	7350.0	416.09	7350.0	421.49	7192.0
90.00	4509.0	410.80	7355.0	416.20	7345.0	421.60	7197.0
99.97	4572.0	410.90	7345.0	416.30	7350.0	421.70	7206.0
109.98	4644.0	410.98	7345.0	416.38	7335.0	421.78	7197.0
119.99	4712.0	411.08	7350.0	416.48	7345.0	421.88	7197.0
130.00	4789.0	411.19	7355.0	416.59	7355.0	421.99	7197.0
140.00	4866.0	411.30	7345.0	416.70	7355.0	422.10	7206.0
149.98	4943.0	411.37	7345.0	416.77	7335.0	422.17	7192.0
159.98	5035.0	411.48	7355.0	416.88	7350.0	422.28	7187.0
169.99	5131.0	411.59	7365.0	416.99	7350.0	422.39	7187.0
180.00	5214.0	411.70	7345.0	417.10	7340.0	422.50	7197.0
189.97	5320.0	411.80	7350.0	417.20	7335.0	422.60	7187.0
200.09	5427.0	411.88	7360.0	417.28	7345.0	422.68	7187.0
209.99	5543.0	411.98	7355.0	417.38	7350.0	422.78	7187.0
220.10	5659.0	412.09	7350.0	417.49	7335.0	422.89	7177.0
230.00	5786.0	412.20	7350.0	417.60	7335.0	423.00	7098.0
239.98	5912.0	412.27	7360.0	417.67	7340.0	423.07	7098.0
249.98	6044.0	412.38	7355.0	417.78	7340.0	423.18	7103.0
260.10	6175.0	412.49	7350.0	417.89	7325.0	423.29	7098.0
270.00	6327.0	412.60	7360.0	418.00	7325.0	423.40	7098.0
280.08	6464.0	412.70	7360.0	418.10	7335.0	423.50	7103.0
289.98	6616.0	412.78	7355.0	418.18	7325.0	423.58	7108.0
299.99	6782.0	412.88	7355.0	418.28	7330.0	423.68	7108.0
310.10	6935.0	412.99	7365.0	418.39	7325.0	423.79	7039.0
320.08	7078.0	413.10	7355.0	418.50	7290.0	423.90	7039.0
330.08	7181.0	413.17	7345.0	418.57	7285.0	423.97	7054.0
340.09	7255.0	413.28	7360.0	418.68	7285.0	424.08	7039.0
350.10	7290.0	413.39	7350.0	418.79	7285.0	424.19	7039.0
360.07	7335.0	413.50	7350.0	418.90	7281.0	424.30	7049.0
370.08	7364.0	413.60	7355.0	419.00	7285.0	424.40	7049.0
380.09	7374.0	413.68	7360.0	419.08	7281.0	424.48	7039.0
389.99	7374.0	413.78	7355.0	419.18	7330.0	424.58	6990.0
400.00	7354.0	413.89	7350.0	419.29	7325.0	424.69	6999.0
400.57	7354.0	414.00	7350.0	419.40	7330.0	424.80	6999.0
408.67	7355.0	414.07	7345.0	419.47	7330.0	424.87	6990.0
408.78	7370.0	414.18	7345.0	419.58	7325.0	424.98	6999.0
408.89	7370.0	414.29	7345.0	419.69	7335.0	425.09	6994.0
409.00	7355.0	414.40	7350.0	419.80	7325.0	425.20	6990.0
409.10	7360.0	414.50	7345.0	419.90	7340.0	425.30	6940.0
409.18	7360.0	414.58	7350.0	419.98	7335.0	425.38	6950.0
409.28	7360.0	414.68	7345.0	420.08	7340.0	425.48	6940.0
409.39	7355.0	414.79	7355.0	420.19	7340.0	425.59	6930.0
409.50	7345.0	414.90	7350.0	420.30	7355.0	425.70	6945.0
409.57	7345.0	414.97	7345.0	420.37	7350.0	425.77	6950.0
409.68	7365.0	415.08	7350.0	420.48	7340.0	425.88	6935.0
409.79	7355.0	415.19	7350.0	420.59	7345.0	425.99	6935.0

T	P	T	P	T	P	T	P
426.10	6901.0	431.50	6734.0	436.90	6680.0	442.30	6636.0
426.20	6891.0	431.60	6739.0	437.00	6675.0	442.40	6631.0
426.28	6881.0	431.68	6724.0	437.08	6665.0	442.48	6636.0
426.38	6886.0	431.78	6724.0	437.18	6665.0	442.58	6636.0
426.49	6891.0	431.89	6729.0	437.29	6680.0	442.69	6631.0
426.60	6881.0	432.00	6744.0	437.40	6665.0	442.80	6636.0
426.67	6891.0	432.07	6729.0	437.47	6665.0	442.87	6636.0
426.78	6881.0	432.18	6719.0	437.58	6665.0	442.98	6631.0
426.89	6852.0	432.29	6729.0	437.69	6675.0	443.09	6636.0
427.00	6857.0	432.40	6734.0	437.80	6665.0	443.20	6646.0
427.10	6852.0	432.50	6719.0	437.90	6670.0	443.30	6636.0
427.18	6852.0	432.58	6724.0	437.98	6665.0	443.38	6636.0
427.28	6852.0	432.68	6734.0	438.08	6665.0	443.48	6646.0
427.39	6852.0	432.79	6724.0	438.19	6665.0	443.59	6646.0
427.50	6857.0	432.90	6719.0	438.30	6665.0	443.70	6631.0
427.57	6832.0	432.97	6714.0	438.37	6655.0	443.77	6646.0
427.68	6827.0	433.08	6724.0	438.48	6655.0	443.88	6631.0
427.79	6822.0	433.19	6714.0	438.59	6655.0	443.99	6636.0
427.90	6822.0	433.30	6714.0	438.70	6655.0	444.10	6631.0
428.00	6837.0	433.40	6724.0	438.80	6655.0	444.20	6636.0
428.08	6827.0	433.48	6724.0	438.88	6655.0	444.28	6646.0
428.18	6822.0	433.58	6704.0	438.98	6655.0	444.38	6636.0
428.29	6832.0	433.69	6724.0	439.09	6655.0	444.49	6636.0
428.40	6803.0	433.80	6709.0	439.20	6665.0	444.60	6636.0
428.47	6793.0	433.87	6739.0	439.27	6655.0	444.67	6621.0
428.58	6803.0	433.98	6700.0	439.38	6660.0	444.78	6626.0
428.69	6793.0	434.09	6714.0	439.49	6665.0	444.89	6641.0
428.80	6793.0	434.20	6704.0	439.60	6655.0	445.00	6626.0
428.90	6798.0	434.30	6695.0	439.70	6670.0	445.10	6621.0
428.98	6803.0	434.38	6700.0	439.78	6650.0	445.18	6631.0
429.08	6798.0	434.48	6704.0	439.88	6650.0	445.28	6641.0
429.19	6773.0	434.59	6685.0	439.99	6641.0	445.39	6670.0
429.30	6783.0	434.70	6685.0	440.10	6646.0	445.50	6626.0
429.37	6783.0	434.77	6685.0	440.17	6655.0	445.57	6626.0
429.48	6773.0	434.88	6690.0	440.28	6650.0	445.68	6626.0
429.59	6773.0	434.99	6685.0	440.39	6646.0	445.79	6616.0
429.70	6773.0	435.10	6685.0	440.50	6646.0	445.90	6626.0
429.80	6783.0	435.20	6685.0	440.60	6655.0	446.00	6626.0
429.88	6773.0	435.28	6680.0	440.68	6641.0	446.08	6626.0
429.98	6749.0	435.38	6675.0	440.78	6646.0	446.18	6626.0
430.09	6763.0	435.49	6675.0	440.89	6660.0	446.29	6621.0
430.20	6754.0	435.60	6685.0	441.00	6641.0	446.40	6636.0
430.27	6754.0	435.67	6675.0	441.07	6646.0	446.47	6626.0
430.38	6754.0	435.78	6675.0	441.18	6655.0	446.58	6626.0
430.49	6754.0	435.89	6680.0	441.29	6660.0	446.69	6626.0
430.60	6749.0	436.00	6690.0	441.40	6646.0	446.80	6636.0
430.70	6739.0	436.10	6675.0	441.50	6646.0	446.90	6621.0
430.78	6744.0	436.18	6675.0	441.58	6646.0	446.98	6626.0
430.88	6744.0	436.28	6680.0	441.68	6660.0	447.08	6631.0
430.99	6744.0	436.39	6685.0	441.79	6641.0	447.19	6636.0
431.10	6744.0	436.50	6675.0	441.90	6646.0	447.30	6621.0
431.17	6744.0	436.57	6685.0	441.97	6646.0	447.37	6631.0
431.28	6739.0	436.68	6690.0	442.08	6655.0	447.48	6631.0
431.39	6734.0	436.79	6665.0	442.19	6631.0	447.59	6606.0

T	P	T	P	T	P	T	P
447.70	6611.0	453.10	6601.0	458.50	6577.0	463.90	6577.0
447.80	6616.0	453.20	6597.0	458.60	6577.0	464.00	6567.0
447.88	6626.0	453.28	6611.0	458.68	6577.0	464.08	6567.0
447.98	6606.0	453.38	6597.0	458.78	6587.0	464.18	6577.0
448.09	6611.0	453.49	6601.0	458.89	6577.0	464.29	6567.0
448.20	6626.0	453.60	6601.0	459.00	6577.0	464.40	6567.0
448.27	6616.0	453.67	6597.0	459.07	6582.0	464.47	6577.0
448.38	6611.0	453.78	6587.0	459.18	6587.0	464.58	6577.0
448.49	6606.0	453.89	6592.0	459.29	6577.0	464.69	6567.0
448.60	6621.0	454.00	6601.0	459.40	6577.0	464.80	6567.0
448.70	6611.0	454.10	6592.0	459.50	6587.0	464.90	6577.0
448.78	6611.0	454.18	6587.0	459.58	6572.0	464.98	6577.0
448.88	6616.0	454.28	6587.0	459.68	6577.0	465.08	6567.0
448.99	6616.0	454.39	6601.0	459.79	6577.0	465.19	6557.0
449.10	6606.0	454.50	6587.0	459.90	6577.0	465.30	6567.0
449.17	6606.0	454.57	6587.0	459.97	6572.0	465.37	6557.0
449.28	6621.0	454.68	6601.0	460.08	6577.0	465.48	6557.0
449.39	6606.0	454.79	6601.0	460.19	6582.0	465.59	6557.0
449.50	6611.0	454.90	6587.0	460.30	6587.0	465.70	6567.0
449.60	6616.0	455.00	6587.0	460.40	6582.0	465.80	6557.0
449.68	6626.0	455.08	6606.0	460.48	6587.0	465.88	6557.0
449.78	6606.0	455.18	6597.0	460.58	6567.0	465.98	6557.0
449.89	6601.0	455.29	6587.0	460.69	6567.0	466.09	6562.0
450.00	6601.0	455.40	6597.0	460.80	6577.0	466.20	6552.0
450.07	6597.0	455.47	6592.0	460.87	6577.0	466.27	6562.0
450.18	6606.0	455.58	6582.0	460.98	6567.0	466.38	6562.0
450.29	6601.0	455.69	6587.0	461.09	6567.0	466.49	6557.0
450.40	6601.0	455.80	6601.0	461.20	6567.0	466.60	6557.0
450.50	6616.0	455.90	6587.0	461.30	6567.0	466.70	6552.0
450.58	6597.0	455.98	6587.0	461.38	6567.0	466.78	6562.0
450.68	6597.0	456.08	6587.0	461.48	6572.0	466.88	6557.0
450.79	6597.0	456.19	6597.0	461.59	6577.0	466.99	6557.0
450.90	6597.0	456.30	6587.0	461.70	6577.0	467.10	6557.0
450.97	6606.0	456.37	6587.0	461.77	6567.0	467.17	6562.0
451.08	6601.0	456.48	6601.0	461.88	6567.0	467.28	6557.0
451.19	6601.0	456.59	6582.0	461.99	6567.0	467.39	6562.0
451.30	6597.0	456.70	6582.0	462.10	6567.0	467.50	6567.0
451.40	6601.0	456.80	6577.0	462.20	6567.0	467.60	6567.0
451.48	6606.0	456.88	6592.0	462.28	6567.0	467.68	6552.0
451.58	6606.0	456.98	6577.0	462.38	6572.0	467.78	6557.0
451.69	6597.0	457.09	6577.0	462.49	6567.0	467.89	6567.0
451.80	6601.0	457.20	6577.0	462.60	6572.0	468.00	6572.0
451.87	6606.0	457.27	6587.0	462.67	6567.0	468.07	6562.0
451.98	6611.0	457.38	6577.0	462.78	6572.0	468.18	6557.0
452.09	6601.0	457.49	6582.0	462.89	6567.0	468.29	6567.0
452.20	6597.0	457.60	6582.0	463.00	6567.0	468.40	6557.0
452.30	6606.0	457.70	6587.0	463.10	6577.0	468.50	6562.0
452.38	6606.0	457.78	6577.0	463.18	6577.0	468.58	6567.0
452.48	6597.0	457.88	6577.0	463.28	6567.0	468.79	6581.0
452.59	6606.0	457.99	6582.0	463.39	6567.0	470.09	6567.0
452.70	6611.0	458.10	6587.0	463.50	6577.0	480.10	6562.0
452.77	6597.0	458.17	6577.0	463.57	6577.0	490.10	6520.0
452.88	6621.0	458.28	6582.0	463.68	6567.0	500.08	6527.0
452.99	6597.0	458.39	6577.0	463.79	6582.0	510.08	6513.0

T	P
520.09	6503.0
530.10	6498.0
540.07	6483.0
550.08	6478.0

Zone 2P5, Test 2

T	P	T	P	T	P	T	P
0.00	5669.0	254.59	7350.0	259.99	7044.0	265.39	6817.0
22.90	5698.0	254.70	7350.0	260.10	7029.0	265.50	6793.0
32.90	5737.0	254.81	7325.0	260.21	6970.0	265.61	6793.0
42.88	5727.0	254.88	7315.0	260.28	6965.0	265.68	6808.0
52.88	5742.0	254.99	7315.0	260.39	6970.0	265.79	6798.0
62.89	5854.0	255.10	7320.0	260.50	6965.0	265.90	6793.0
72.90	6063.0	255.20	7320.0	260.60	6980.0	266.00	6793.0
82.91	6253.0	255.28	7320.0	260.68	6980.0	266.08	6808.0
92.88	6469.0	255.38	7320.0	260.78	6970.0	266.18	6793.0
93.49	6464.0	255.49	7315.0	260.89	6930.0	266.29	6783.0
102.89	6645.0	255.60	7374.0	261.00	6930.0	266.40	6778.0
112.90	6861.0	255.71	7355.0	261.11	6916.0	266.51	6798.0
122.90	7043.0	255.78	7365.0	261.18	6921.0	266.58	6778.0
132.88	7216.0	255.89	7370.0	261.29	6930.0	266.69	6783.0
142.88	7354.0	256.00	7370.0	261.40	6921.0	266.80	6783.0
152.89	7473.0	256.10	7365.0	261.50	6911.0	266.90	6783.0
163.01	7533.0	256.18	7374.0	261.58	6916.0	266.98	6783.0
172.91	7562.0	256.28	7374.0	261.68	6891.0	267.08	6783.0
182.99	7553.0	256.39	7365.0	261.79	6881.0	267.19	6783.0
192.89	7518.0	256.50	7365.0	261.90	6891.0	267.30	6783.0
202.90	7473.0	256.61	7374.0	262.01	6881.0	267.41	6783.0
212.90	7434.0	256.68	7365.0	262.08	6886.0	267.48	6783.0
222.88	7399.0	256.79	7355.0	262.19	6881.0	267.59	6788.0
232.88	7394.0	256.90	7374.0	262.30	6886.0	267.70	6783.0
233.50	7384.0	257.00	7374.0	262.40	6881.0	267.80	6773.0
242.89	7354.0	257.08	7251.0	262.48	6857.0	267.88	6773.0
251.78	7355.0	257.18	7246.0	262.58	6852.0	267.98	6783.0
251.89	7355.0	257.29	7261.0	262.69	6857.0	268.09	6768.0
252.00	7355.0	257.40	7256.0	262.80	6852.0	268.20	6773.0
252.11	7360.0	257.51	7246.0	262.91	6852.0	268.31	6763.0
252.18	7355.0	257.58	7246.0	262.98	6852.0	268.38	6768.0
252.29	7365.0	257.69	7266.0	263.09	6852.0	268.49	6763.0
252.40	7355.0	257.80	7246.0	263.20	6827.0	268.60	6783.0
252.50	7355.0	257.90	7206.0	263.30	6832.0	268.70	6783.0
252.58	7365.0	257.98	7206.0	263.38	6827.0	268.78	6778.0
252.68	7374.0	258.08	7216.0	263.48	6832.0	268.88	6763.0
252.79	7365.0	258.19	7206.0	263.59	6842.0	268.99	6763.0
252.90	7355.0	258.30	7206.0	263.70	6832.0	269.10	6773.0
253.01	7370.0	258.41	7197.0	263.81	6837.0	269.21	6763.0
253.08	7374.0	258.48	7206.0	263.88	6832.0	269.28	6783.0
253.19	7365.0	258.59	7088.0	263.99	6822.0	269.39	6768.0
253.30	7365.0	258.70	7088.0	264.10	6812.0	269.50	6768.0
253.40	7355.0	258.80	7098.0	264.20	6812.0	269.60	6763.0
253.48	7360.0	258.88	7098.0	264.28	6827.0	269.68	6773.0
253.58	7360.0	258.98	7088.0	264.38	6827.0	269.78	6773.0
253.69	7355.0	259.09	7088.0	264.49	6817.0	269.89	6763.0
253.80	7360.0	259.20	7098.0	264.60	6822.0	270.00	6763.0
253.91	7360.0	259.31	7098.0	264.71	6827.0	270.11	6773.0
253.98	7350.0	259.38	7029.0	264.78	6803.0	270.18	6758.0
254.09	7350.0	259.49	7029.0	264.89	6803.0	270.29	6758.0
254.20	7350.0	259.60	7039.0	265.00	6812.0	270.40	6754.0
254.30	7345.0	259.70	7029.0	265.10	6812.0	270.50	6768.0
254.38	7345.0	259.78	7034.0	265.18	6803.0	270.58	6758.0
254.48	7350.0	259.88	7039.0	265.28	6812.0	270.68	6758.0

T	P	T	P	T	P	T	P
270.79	6758.0	276.19	6749.0	281.59	6719.0	286.99	6714.0
270.90	6763.0	276.30	6734.0	281.70	6714.0	287.10	6729.0
271.01	6763.0	276.41	6734.0	281.81	6739.0	287.21	6729.0
271.08	6758.0	276.48	6734.0	281.88	6734.0	287.28	6719.0
271.19	6763.0	276.59	6739.0	281.99	6719.0	287.39	6729.0
271.30	6758.0	276.70	6734.0	282.10	6724.0	287.50	6724.0
271.40	6763.0	276.80	6734.0	282.20	6734.0	287.60	6719.0
271.48	6763.0	276.88	6744.0	282.28	6724.0	287.68	6724.0
271.58	6768.0	276.98	6734.0	282.38	6719.0	287.78	6724.0
271.69	6763.0	277.09	6744.0	282.49	6724.0	287.89	6724.0
271.80	6758.0	277.20	6754.0	282.60	6739.0	288.00	6714.0
271.91	6758.0	277.31	6744.0	282.71	6724.0	288.11	6729.0
271.98	6768.0	277.38	6749.0	282.78	6719.0	288.18	6724.0
272.09	6754.0	277.49	6744.0	282.89	6739.0	288.29	6709.0
272.20	6758.0	277.60	6734.0	283.00	6719.0	288.40	6714.0
272.30	6763.0	277.70	6744.0	283.10	6749.0	288.50	6724.0
272.38	6763.0	277.78	6749.0	283.18	6724.0	288.58	6714.0
272.48	6744.0	277.88	6744.0	283.28	6724.0	288.68	6714.0
272.59	6763.0	277.99	6734.0	283.39	6744.0	288.79	6709.0
272.70	6754.0	278.10	6754.0	283.50	6724.0	288.90	6714.0
272.81	6754.0	278.21	6734.0	283.61	6724.0	289.01	6709.0
272.88	6754.0	278.28	6734.0	283.68	6729.0	289.08	6714.0
272.99	6744.0	278.39	6734.0	283.79	6724.0	289.19	6714.0
273.10	6744.0	278.50	6754.0	283.90	6724.0	289.30	6714.0
273.20	6744.0	278.60	6734.0	284.00	6729.0	289.40	6714.0
273.28	6744.0	278.68	6739.0	284.08	6734.0	289.48	6709.0
273.38	6758.0	278.78	6729.0	284.18	6724.0	289.58	6714.0
273.49	6749.0	278.89	6734.0	284.29	6724.0	289.69	6709.0
273.60	6749.0	279.00	6739.0	284.40	6724.0	289.80	6714.0
273.71	6744.0	279.11	6734.0	284.51	6724.0	289.91	6714.0
273.78	6763.0	279.18	6734.0	284.58	6719.0	289.98	6714.0
273.89	6749.0	279.29	6739.0	284.69	6714.0	290.09	6714.0
274.00	6744.0	279.40	6734.0	284.80	6704.0	290.20	6714.0
274.10	6758.0	279.50	6734.0	284.90	6714.0	290.30	6714.0
274.18	6744.0	279.58	6744.0	284.98	6714.0	290.38	6719.0
274.28	6749.0	279.68	6739.0	285.08	6724.0	290.48	6714.0
274.39	6744.0	279.79	6734.0	285.19	6719.0	290.59	6714.0
274.50	6763.0	279.90	6734.0	285.30	6714.0	290.70	6719.0
274.61	6744.0	280.01	6734.0	285.41	6714.0	290.81	6714.0
274.68	6744.0	280.08	6724.0	285.48	6719.0	290.88	6700.0
274.79	6744.0	280.19	6724.0	285.59	6704.0	290.99	6704.0
274.90	6758.0	280.30	6729.0	285.70	6704.0	291.10	6709.0
275.00	6749.0	280.40	6734.0	285.80	6724.0	291.20	6714.0
275.08	6749.0	280.48	6719.0	285.88	6724.0	291.28	6704.0
275.18	6749.0	280.58	6724.0	285.98	6714.0	291.38	6709.0
275.29	6754.0	280.69	6734.0	286.09	6714.0	291.49	6719.0
275.40	6758.0	280.80	6739.0	286.20	6714.0	291.60	6714.0
275.51	6744.0	280.91	6719.0	286.31	6724.0	291.71	6709.0
275.58	6744.0	280.98	6724.0	286.38	6724.0	291.78	6714.0
275.69	6758.0	281.09	6734.0	286.49	6714.0	291.89	6714.0
275.80	6749.0	281.20	6734.0	286.60	6714.0	292.00	6700.0
275.90	6744.0	281.30	6724.0	286.70	6724.0	292.10	6714.0
275.98	6744.0	281.38	6734.0	286.78	6724.0	292.18	6709.0
276.08	6749.0	281.48	6734.0	286.88	6719.0	292.28	6704.0

T	P	T	P	T	P	T	P
292.39	6704.0	297.79	6695.0	303.19	6680.0	308.59	6695.0
292.50	6704.0	297.90	6690.0	303.30	6685.0	308.70	6680.0
292.61	6704.0	298.01	6695.0	303.41	6695.0	308.81	6680.0
292.68	6700.0	298.08	6695.0	303.48	6690.0	308.88	6685.0
292.79	6700.0	298.19	6700.0	303.59	6680.0	308.99	6680.0
292.90	6704.0	298.30	6704.0	303.70	6695.0	309.10	6685.0
293.00	6695.0	298.40	6704.0	303.80	6695.0	309.20	6695.0
293.08	6704.0	298.48	6690.0	303.88	6680.0	309.28	6690.0
293.18	6714.0	298.58	6695.0	303.98	6685.0	309.38	6680.0
293.29	6695.0	298.69	6700.0	304.09	6695.0	309.49	6680.0
293.40	6704.0	298.80	6704.0	304.20	6680.0	309.60	6680.0
293.51	6704.0	298.91	6695.0	304.31	6685.0	309.71	6675.0
293.58	6719.0	298.98	6704.0	304.38	6680.0	309.78	6685.0
293.69	6704.0	299.09	6695.0	304.49	6695.0	309.89	6685.0
293.80	6714.0	299.20	6690.0	304.60	6680.0	310.00	6695.0
293.90	6714.0	299.30	6695.0	304.70	6680.0	310.10	6675.0
293.98	6704.0	299.38	6704.0	304.78	6685.0	310.18	6685.0
294.08	6704.0	299.48	6690.0	304.88	6685.0	310.28	6685.0
294.19	6714.0	299.59	6685.0	304.99	6680.0	310.39	6695.0
294.30	6700.0	299.70	6704.0	305.10	6685.0	310.50	6685.0
294.41	6704.0	299.81	6695.0	305.21	6675.0	310.61	6685.0
294.48	6700.0	299.88	6690.0	305.28	6680.0	310.68	6695.0
294.59	6719.0	299.99	6695.0	305.39	6685.0	310.79	6695.0
294.70	6704.0	300.10	6709.0	305.50	6680.0	310.90	6680.0
294.80	6700.0	300.20	6695.0	305.60	6690.0	311.00	6685.0
294.88	6714.0	300.28	6685.0	305.68	6680.0	311.08	6695.0
294.98	6704.0	300.38	6685.0	305.78	6685.0	311.18	6685.0
295.09	6704.0	300.49	6685.0	305.89	6685.0	311.29	6680.0
295.20	6700.0	300.60	6695.0	306.00	6685.0	311.40	6685.0
295.31	6714.0	300.71	6695.0	306.11	6680.0	311.51	6695.0
295.38	6700.0	300.78	6704.0	306.18	6680.0	311.58	6685.0
295.49	6704.0	300.89	6695.0	306.29	6685.0	311.69	6680.0
295.60	6704.0	301.00	6695.0	306.40	6690.0	311.90	6699.0
295.70	6719.0	301.10	6695.0	306.50	6680.0	312.88	6689.0
295.78	6704.0	301.18	6704.0	306.58	6685.0	322.99	6674.0
295.88	6704.0	301.28	6695.0	306.68	6690.0	333.00	6665.0
295.99	6704.0	301.39	6695.0	306.79	6695.0	342.90	6660.0
296.10	6714.0	301.50	6695.0	306.90	6680.0	352.91	6655.0
296.21	6714.0	301.61	6695.0	307.01	6685.0	362.99	6645.0
296.28	6704.0	301.68	6695.0	307.08	6695.0	373.00	6635.0
296.39	6700.0	301.79	6690.0	307.19	6695.0	383.00	6635.0
296.50	6714.0	301.90	6695.0	307.30	6680.0		
296.60	6704.0	302.00	6704.0	307.40	6685.0		
296.68	6704.0	302.08	6685.0	307.48	6695.0		
296.78	6700.0	302.18	6695.0	307.58	6675.0		
296.89	6695.0	302.29	6704.0	307.69	6685.0		
297.00	6695.0	302.40	6704.0	307.80	6700.0		
297.11	6695.0	302.51	6690.0	307.91	6695.0		
297.18	6700.0	302.58	6704.0	307.98	6680.0		
297.29	6690.0	302.69	6695.0	308.09	6695.0		
297.40	6695.0	302.80	6690.0	308.20	6695.0		
297.50	6685.0	302.90	6704.0	308.30	6680.0		
297.58	6704.0	302.98	6695.0	308.38	6685.0		
297.68	6690.0	303.08	6685.0	308.48	6695.0		

Zone 2P5, Test 3

T	P	T	P	T	P	T	P
0.00	5582.0	287.71	7399.0	293.11	7389.0	298.51	7374.0
0.40	5587.0	287.82	7399.0	293.22	7389.0	298.62	7360.0
10.40	5601.0	287.89	7399.0	293.29	7389.0	298.69	7374.0
20.41	5625.0	288.00	7399.0	293.40	7394.0	298.80	7370.0
30.42	5742.0	288.11	7394.0	293.51	7389.0	298.91	7355.0
40.39	5951.0	288.22	7404.0	293.62	7394.0	299.02	7360.0
41.00	5951.0	288.29	7399.0	293.69	7394.0	299.09	7271.0
50.51	6131.0	288.40	7404.0	293.80	7394.0	299.20	7266.0
60.52	6346.0	288.50	7394.0	293.90	7379.0	299.30	7256.0
70.49	6557.0	288.61	7404.0	294.01	7384.0	299.41	7256.0
80.50	6748.0	288.72	7404.0	294.12	7394.0	299.52	7266.0
90.50	6955.0	288.79	7404.0	294.19	7384.0	299.59	7256.0
100.51	7122.0	288.90	7404.0	294.30	7384.0	299.70	7256.0
110.41	7295.0	289.01	7409.0	294.41	7389.0	299.81	7137.0
120.42	7443.0	289.12	7399.0	294.52	7394.0	299.92	7147.0
130.50	7557.0	289.19	7404.0	294.59	7384.0	299.99	7152.0
140.51	7647.0	289.30	7414.0	294.70	7384.0	300.10	7142.0
150.52	7701.0	289.40	7414.0	294.80	7394.0	300.20	7142.0
160.49	7746.0	289.51	7404.0	294.91	7389.0	300.31	7142.0
170.39	7761.0	289.62	7404.0	295.02	7374.0	300.42	7152.0
180.50	7736.0	289.69	7409.0	295.09	7394.0	300.49	7142.0
190.51	7706.0	289.80	7404.0	295.20	7384.0	300.60	7063.0
200.52	7622.0	289.91	7394.0	295.31	7379.0	300.71	7063.0
210.49	7567.0	290.02	7404.0	295.42	7374.0	300.82	7058.0
220.50	7523.0	290.09	7414.0	295.49	7394.0	300.89	7058.0
230.51	7483.0	290.20	7404.0	295.60	7384.0	301.00	7063.0
240.52	7463.0	290.30	7404.0	295.70	7379.0	301.10	7058.0
250.49	7439.0	290.41	7404.0	295.81	7379.0	301.21	7073.0
260.50	7409.0	290.52	7399.0	295.92	7379.0	301.32	7068.0
270.50	7384.0	290.59	7394.0	295.99	7266.0	301.39	6999.0
280.51	7394.0	290.70	7399.0	296.10	7266.0	301.50	6994.0
285.41	7409.0	290.81	7404.0	296.21	7266.0	301.61	7009.0
285.52	7424.0	290.92	7394.0	296.32	7261.0	301.72	7009.0
285.59	7414.0	290.99	7389.0	296.39	7271.0	301.79	7009.0
285.70	7409.0	291.10	7404.0	296.50	7266.0	301.90	6999.0
285.80	7409.0	291.20	7389.0	296.60	7266.0	302.00	7009.0
285.91	7424.0	291.31	7389.0	296.71	7271.0	302.11	6960.0
286.02	7424.0	291.42	7384.0	296.82	7350.0	302.22	6945.0
286.09	7419.0	291.49	7404.0	296.89	7350.0	302.29	6960.0
286.20	7414.0	291.60	7389.0	297.00	7355.0	302.40	6955.0
286.31	7419.0	291.71	7389.0	297.11	7350.0	302.51	6950.0
286.42	7419.0	291.82	7394.0	297.22	7350.0	302.62	6950.0
286.49	7409.0	291.89	7394.0	297.29	7355.0	302.69	6955.0
286.60	7414.0	292.00	7389.0	297.40	7360.0	302.80	6950.0
286.70	7424.0	292.10	7394.0	297.50	7365.0	302.90	6916.0
286.81	7419.0	292.21	7389.0	297.61	7374.0	303.01	6916.0
286.92	7409.0	292.32	7389.0	297.72	7384.0	303.12	6930.0
286.99	7409.0	292.39	7394.0	297.79	7379.0	303.19	6916.0
287.10	7414.0	292.50	7384.0	297.90	7365.0	303.30	6921.0
287.21	7409.0	292.61	7394.0	298.01	7379.0	303.41	6911.0
287.32	7409.0	292.72	7384.0	298.12	7379.0	303.52	6921.0
287.39	7414.0	292.79	7394.0	298.19	7374.0	303.59	6911.0
287.50	7409.0	292.90	7389.0	298.30	7365.0	303.70	6881.0
287.60	7404.0	293.00	7389.0	298.40	7370.0	303.80	6881.0

T	P	T	P	T	P	T	P
303.91	6881.0	309.31	6852.0	314.71	6832.0	320.11	6812.0
304.02	6881.0	309.42	6852.0	314.82	6837.0	320.22	6812.0
304.09	6881.0	309.49	6842.0	314.89	6842.0	320.29	6827.0
304.20	6886.0	309.60	6852.0	315.00	6827.0	320.40	6817.0
304.31	6881.0	309.71	6857.0	315.11	6842.0	320.51	6827.0
304.42	6876.0	309.82	6852.0	315.22	6842.0	320.62	6817.0
304.49	6871.0	309.89	6852.0	315.29	6827.0	320.69	6812.0
304.60	6876.0	310.00	6842.0	315.40	6832.0	320.80	6812.0
304.70	6871.0	310.10	6857.0	315.50	6842.0	320.90	6812.0
304.81	6876.0	310.21	6837.0	315.61	6837.0	321.01	6812.0
304.92	6871.0	310.32	6842.0	315.72	6827.0	321.12	6812.0
304.99	6876.0	310.39	6852.0	315.79	6822.0	321.19	6812.0
305.10	6871.0	310.50	6837.0	315.90	6842.0	321.30	6822.0
305.21	6862.0	310.61	6842.0	316.01	6822.0	321.41	6817.0
305.32	6876.0	310.72	6852.0	316.12	6822.0	321.52	6803.0
305.39	6881.0	310.79	6847.0	316.19	6827.0	321.59	6812.0
305.50	6862.0	310.90	6842.0	316.30	6832.0	321.70	6822.0
305.60	6871.0	311.00	6847.0	316.40	6827.0	321.80	6803.0
305.71	6876.0	311.11	6852.0	316.51	6832.0	321.91	6798.0
305.82	6871.0	311.22	6837.0	316.62	6827.0	322.02	6812.0
305.89	6862.0	311.29	6832.0	316.69	6822.0	322.09	6812.0
306.00	6852.0	311.40	6827.0	316.80	6817.0	322.20	6803.0
306.11	6862.0	311.51	6837.0	316.91	6817.0	322.31	6798.0
306.22	6852.0	311.62	6822.0	317.02	6817.0	322.42	6822.0
306.29	6862.0	311.69	6832.0	317.09	6812.0	322.49	6812.0
306.40	6862.0	311.80	6837.0	317.20	6827.0	322.60	6803.0
306.50	6862.0	311.90	6832.0	317.30	6827.0	322.70	6803.0
306.61	6852.0	312.01	6827.0	317.41	6812.0	322.81	6812.0
306.72	6862.0	312.12	6832.0	317.52	6822.0	322.92	6812.0
306.79	6862.0	312.19	6832.0	317.59	6817.0	322.99	6812.0
306.90	6852.0	312.30	6827.0	317.70	6822.0	323.10	6808.0
307.01	6852.0	312.41	6827.0	317.81	6832.0	323.21	6817.0
307.12	6867.0	312.52	6827.0	317.92	6822.0	323.32	6822.0
307.19	6852.0	312.59	6822.0	317.99	6812.0	323.39	6812.0
307.30	6847.0	312.70	6827.0	318.10	6827.0	323.50	6803.0
307.40	6847.0	312.80	6827.0	318.20	6822.0	323.60	6817.0
307.51	6871.0	312.91	6832.0	318.31	6822.0	323.71	6803.0
307.62	6857.0	313.02	6832.0	318.42	6822.0	323.82	6808.0
307.69	6852.0	313.09	6832.0	318.49	6827.0	323.89	6812.0
307.80	6852.0	313.20	6832.0	318.60	6822.0	324.00	6808.0
307.91	6862.0	313.31	6832.0	318.71	6822.0	324.11	6803.0
308.02	6842.0	313.42	6842.0	318.82	6832.0	324.22	6808.0
308.09	6852.0	313.49	6827.0	318.89	6822.0	324.29	6817.0
308.20	6852.0	313.60	6832.0	319.00	6812.0	324.40	6803.0
308.30	6842.0	313.70	6842.0	319.10	6827.0	324.50	6803.0
308.41	6842.0	313.81	6842.0	319.21	6827.0	324.61	6803.0
308.52	6837.0	313.92	6827.0	319.32	6812.0	324.72	6822.0
308.59	6842.0	313.99	6832.0	319.39	6817.0	324.79	6803.0
308.70	6837.0	314.10	6842.0	319.50	6837.0	324.90	6803.0
308.81	6842.0	314.21	6832.0	319.61	6822.0	325.01	6803.0
308.92	6842.0	314.32	6832.0	319.72	6817.0	325.12	6803.0
308.99	6847.0	314.39	6842.0	319.79	6812.0	325.19	6803.0
309.10	6842.0	314.50	6837.0	319.90	6832.0	325.30	6803.0
309.20	6842.0	314.60	6832.0	320.00	6812.0	325.40	6803.0

T	P	T	P	T	P	T	P
325.51	6808.0	330.91	6812.0	336.31	6798.0	341.71	6778.0
325.62	6803.0	331.02	6803.0	336.42	6783.0	341.82	6793.0
325.69	6803.0	331.09	6798.0	336.49	6788.0	341.89	6773.0
325.80	6803.0	331.20	6793.0	336.60	6788.0	342.00	6783.0
325.91	6803.0	331.31	6803.0	336.71	6798.0	342.11	6783.0
326.02	6808.0	331.42	6812.0	336.82	6788.0	342.22	6793.0
326.09	6812.0	331.49	6793.0	336.89	6783.0	342.29	6778.0
326.20	6822.0	331.60	6803.0	337.00	6783.0	342.40	6783.0
326.30	6803.0	331.70	6803.0	337.10	6803.0	342.50	6793.0
326.41	6803.0	331.81	6803.0	337.21	6793.0	342.61	6803.0
326.52	6822.0	331.92	6798.0	337.32	6783.0	342.72	6773.0
326.59	6822.0	331.99	6793.0	337.39	6783.0	342.79	6783.0
326.70	6803.0	332.10	6803.0	337.50	6803.0	342.90	6788.0
326.81	6808.0	332.21	6798.0	337.61	6798.0	343.01	6783.0
326.92	6812.0	332.32	6803.0	337.72	6783.0	343.12	6768.0
326.99	6803.0	332.39	6803.0	337.79	6783.0	343.19	6788.0
327.10	6812.0	332.50	6808.0	337.90	6793.0	343.30	6783.0
327.20	6817.0	332.60	6798.0	338.00	6788.0	343.40	6773.0
327.31	6808.0	332.71	6793.0	338.11	6783.0	343.51	6773.0
327.42	6798.0	332.82	6808.0	338.22	6783.0	343.62	6788.0
327.49	6803.0	332.89	6808.0	338.29	6783.0	343.69	6778.0
327.60	6808.0	333.00	6793.0	338.40	6783.0	343.80	6773.0
327.71	6798.0	333.11	6798.0	338.51	6783.0	343.91	6783.0
327.82	6798.0	333.22	6798.0	338.62	6783.0	344.02	6773.0
327.89	6812.0	333.29	6793.0	338.69	6783.0	344.09	6773.0
328.00	6798.0	333.40	6793.0	338.80	6783.0	344.20	6773.0
328.10	6793.0	333.50	6793.0	338.90	6783.0	344.30	6783.0
328.21	6793.0	333.61	6793.0	339.01	6788.0	344.41	6773.0
328.32	6808.0	333.72	6793.0	339.12	6788.0	344.52	6773.0
328.39	6793.0	333.79	6803.0	339.19	6783.0	344.59	6773.0
328.50	6793.0	333.90	6793.0	339.30	6783.0	344.70	6783.0
328.61	6798.0	334.01	6798.0	339.41	6798.0	344.81	6773.0
328.72	6798.0	334.12	6803.0	339.52	6788.0	344.92	6773.0
328.79	6793.0	334.19	6812.0	339.59	6788.0	344.99	6778.0
328.90	6793.0	334.30	6793.0	339.70	6803.0	345.10	6773.0
329.00	6793.0	334.40	6793.0	339.80	6793.0	345.20	6773.0
329.11	6798.0	334.51	6803.0	339.91	6783.0	345.31	6778.0
329.22	6793.0	334.62	6803.0	340.02	6783.0	345.42	6792.0
329.29	6798.0	334.69	6793.0	340.09	6783.0	350.50	6787.0
329.40	6798.0	334.80	6803.0	340.20	6783.0	360.50	6778.0
329.51	6793.0	334.91	6808.0	340.31	6783.0	370.51	6763.0
329.62	6793.0	335.02	6803.0	340.42	6793.0	380.52	6773.0
329.69	6793.0	335.09	6783.0	340.49	6788.0	390.49	6758.0
329.80	6803.0	335.20	6793.0	340.60	6793.0	400.50	6753.0
329.90	6788.0	335.30	6788.0	340.70	6793.0	410.51	6753.0
330.01	6812.0	335.41	6783.0	340.81	6798.0	420.52	6743.0
330.12	6793.0	335.52	6783.0	340.92	6793.0	430.49	6733.0
330.19	6793.0	335.59	6798.0	340.99	6783.0	440.60	6728.0
330.30	6793.0	335.70	6788.0	341.10	6803.0	450.50	6288.0
330.41	6808.0	335.81	6783.0	341.21	6773.0	460.62	5902.0
330.52	6798.0	335.92	6793.0	341.32	6773.0	470.59	5902.0
330.59	6798.0	335.99	6798.0	341.39	6778.0	480.49	5951.0
330.70	6808.0	336.10	6783.0	341.50	6778.0	490.50	6000.0
330.80	6793.0	336.20	6783.0	341.60	6773.0		

Zone 2P5, Test 4

T	P	T	P	T	P	T	P
0.00	6195.0	286.60	7078.0	292.00	7088.0	297.40	6999.0
2.30	6205.0	286.70	7108.0	292.10	7098.0	297.50	6955.0
12.31	6214.0	286.81	7078.0	292.21	7098.0	297.61	6950.0
22.32	6224.0	286.92	7108.0	292.32	7078.0	297.72	6945.0
22.82	6234.0	286.99	7083.0	292.39	7098.0	297.79	6955.0
32.29	6234.0	287.10	7088.0	292.50	7098.0	297.90	6950.0
42.30	6459.0	287.21	7088.0	292.61	7083.0	298.01	6955.0
52.31	6694.0	287.32	7083.0	292.72	7088.0	298.12	6960.0
62.32	6886.0	287.42	7083.0	292.82	7088.0	298.22	6960.0
72.32	7068.0	287.50	7088.0	292.90	7029.0	298.30	6911.0
82.30	7221.0	287.60	7083.0	293.00	7029.0	298.40	6911.0
92.30	7325.0	287.71	7088.0	293.11	7019.0	298.51	6921.0
102.42	7414.0	287.82	7088.0	293.22	7039.0	298.62	6926.0
112.32	7448.0	287.89	7078.0	293.29	7034.0	298.69	6911.0
122.40	7483.0	288.00	7088.0	293.40	7029.0	298.80	6921.0
132.41	7503.0	288.11	7088.0	293.51	7034.0	298.91	6921.0
142.31	7513.0	288.22	7098.0	293.62	7039.0	299.02	6911.0
152.42	7513.0	288.32	7078.0	293.72	7009.0	299.12	6891.0
162.32	7478.0	288.40	7088.0	293.80	7004.0	299.20	6891.0
172.30	7453.0	288.50	7098.0	293.90	7019.0	299.30	6881.0
182.41	7434.0	288.61	7098.0	294.01	7009.0	299.41	6876.0
192.31	7394.0	288.72	7078.0	294.12	6999.0	299.52	6891.0
202.32	7305.0	288.79	7088.0	294.19	6999.0	299.59	6891.0
212.29	7206.0	288.90	7098.0	294.30	7019.0	299.70	6881.0
222.41	7157.0	289.01	7088.0	294.41	6999.0	299.81	6862.0
232.20	7117.0	289.12	7088.0	294.52	7009.0	299.92	6871.0
242.42	7107.0	289.22	7088.0	294.62	7009.0	300.02	6867.0
252.40	7097.0	289.30	7098.0	294.70	7024.0	300.10	6867.0
262.30	7088.0	289.40	7093.0	294.80	7009.0	300.20	6871.0
272.30	7083.0	289.51	7078.0	294.91	7009.0	300.31	6867.0
282.42	7093.0	289.62	7088.0	295.02	7014.0	300.42	6867.0
284.29	7078.0	289.69	7088.0	295.09	7014.0	300.49	6876.0
284.40	7088.0	289.80	7098.0	295.20	6970.0	300.60	6862.0
284.51	7098.0	289.91	7083.0	295.31	6970.0	300.71	6842.0
284.62	7088.0	290.02	7083.0	295.42	6970.0	300.82	6847.0
284.72	7088.0	290.12	7098.0	295.52	6970.0	300.92	6862.0
284.80	7078.0	290.20	7098.0	295.60	6970.0	301.00	6862.0
284.90	7098.0	290.30	7088.0	295.70	6965.0	301.10	6842.0
285.01	7098.0	290.41	7098.0	295.81	6970.0	301.21	6852.0
285.12	7083.0	290.52	7098.0	295.92	6970.0	301.32	6862.0
285.19	7098.0	290.59	7093.0	295.99	7034.0	301.39	6852.0
285.30	7098.0	290.70	7088.0	296.10	7039.0	301.50	6832.0
285.41	7093.0	290.81	7098.0	296.21	7044.0	301.61	6852.0
285.52	7088.0	290.92	7093.0	296.32	7029.0	301.72	6852.0
285.62	7098.0	291.02	7078.0	296.42	7034.0	301.82	6842.0
285.70	7103.0	291.10	7098.0	296.50	7044.0	301.90	6842.0
285.80	7088.0	291.20	7098.0	296.60	7044.0	302.00	6847.0
285.91	7098.0	291.31	7088.0	296.71	6990.0	302.11	6832.0
286.02	7088.0	291.42	7083.0	296.82	6990.0	302.22	6827.0
286.09	7083.0	291.49	7098.0	296.89	6999.0	302.29	6827.0
286.20	7088.0	291.60	7098.0	297.00	7004.0	302.40	6842.0
286.31	7098.0	291.71	7083.0	297.11	6990.0	302.51	6837.0
286.42	7088.0	291.82	7083.0	297.22	6990.0	302.62	6822.0
286.52	7088.0	291.92	7088.0	297.32	6994.0	302.72	6827.0

T	P	T	P	T	P	T	P
302.80	6837.0	308.20	6812.0	313.60	6808.0	319.00	6803.0
302.90	6842.0	308.30	6812.0	313.70	6803.0	319.10	6803.0
303.01	6822.0	308.41	6812.0	313.81	6803.0	319.21	6822.0
303.12	6832.0	308.52	6822.0	313.92	6803.0	319.32	6812.0
303.19	6842.0	308.59	6822.0	313.99	6812.0	319.39	6803.0
303.30	6842.0	308.70	6822.0	314.10	6803.0	319.50	6803.0
303.41	6822.0	308.81	6812.0	314.21	6812.0	319.61	6803.0
303.52	6837.0	308.92	6812.0	314.32	6803.0	319.72	6817.0
303.62	6837.0	309.02	6822.0	314.42	6808.0	319.82	6812.0
303.70	6832.0	309.10	6812.0	314.50	6808.0	319.90	6803.0
303.80	6822.0	309.20	6812.0	314.60	6822.0	320.00	6812.0
303.91	6842.0	309.31	6817.0	314.71	6803.0	320.11	6812.0
304.02	6832.0	309.42	6832.0	314.82	6803.0	320.22	6803.0
304.09	6827.0	309.49	6812.0	314.89	6808.0	320.29	6803.0
304.20	6832.0	309.60	6812.0	315.00	6817.0	320.40	6812.0
304.31	6837.0	309.71	6822.0	315.11	6803.0	320.51	6808.0
304.42	6817.0	309.82	6827.0	315.22	6803.0	320.62	6803.0
304.52	6822.0	309.92	6812.0	315.32	6812.0	320.72	6822.0
304.60	6812.0	310.00	6812.0	315.40	6817.0	320.80	6808.0
304.70	6817.0	310.10	6817.0	315.50	6803.0	320.90	6808.0
304.81	6817.0	310.21	6817.0	315.61	6803.0	321.01	6803.0
304.92	6817.0	310.32	6812.0	315.72	6822.0	321.12	6817.0
304.99	6812.0	310.39	6827.0	315.79	6812.0	321.19	6812.0
305.10	6812.0	310.50	6822.0	315.90	6812.0	321.30	6803.0
305.21	6817.0	310.61	6812.0	316.01	6803.0	321.41	6798.0
305.32	6812.0	310.72	6808.0	316.12	6803.0	321.52	6812.0
305.42	6822.0	310.82	6827.0	316.22	6798.0	321.62	6803.0
305.50	6817.0	310.90	6832.0	316.30	6812.0	321.70	6808.0
305.60	6822.0	311.00	6812.0	316.40	6803.0	321.80	6803.0
305.71	6812.0	311.11	6812.0	316.51	6803.0	321.91	6817.0
305.82	6822.0	311.22	6817.0	316.62	6803.0	322.02	6803.0
305.89	6817.0	311.29	6827.0	316.69	6812.0	322.09	6793.0
306.00	6817.0	311.40	6827.0	316.80	6803.0	322.20	6793.0
306.11	6822.0	311.51	6817.0	316.91	6803.0	322.31	6812.0
306.22	6832.0	311.62	6827.0	317.02	6803.0	322.42	6793.0
306.32	6812.0	311.72	6822.0	317.12	6812.0	322.52	6803.0
306.40	6817.0	311.80	6822.0	317.20	6798.0	322.60	6793.0
306.50	6827.0	311.90	6832.0	317.30	6808.0	322.70	6788.0
306.61	6832.0	312.01	6812.0	317.41	6803.0	322.81	6788.0
306.72	6812.0	312.12	6803.0	317.52	6812.0	322.92	6788.0
306.79	6812.0	312.19	6803.0	317.59	6803.0	322.99	6803.0
306.90	6822.0	312.30	6822.0	317.70	6803.0	323.10	6793.0
307.01	6832.0	312.41	6822.0	317.81	6808.0	323.21	6793.0
307.12	6817.0	312.52	6812.0	317.92	6803.0	323.32	6793.0
307.22	6822.0	312.62	6803.0	318.02	6803.0	323.42	6803.0
307.30	6832.0	312.70	6812.0	318.10	6812.0	323.50	6788.0
307.40	6822.0	312.80	6812.0	318.20	6803.0	323.60	6798.0
307.51	6812.0	312.91	6803.0	318.31	6803.0	323.71	6803.0
307.62	6822.0	313.02	6803.0	318.42	6808.0	323.82	6803.0
307.69	6822.0	313.09	6817.0	318.49	6822.0	323.89	6793.0
307.80	6822.0	313.20	6803.0	318.60	6803.0	324.00	6808.0
307.91	6832.0	313.31	6808.0	318.71	6803.0	324.11	6803.0
308.02	6822.0	313.42	6808.0	318.82	6803.0	324.22	6793.0
308.12	6812.0	313.52	6808.0	318.92	6817.0	324.32	6793.0

T	P	T	P	T	P	T	P
324.40	6812.0	329.80	6793.0	335.20	6788.0	340.60	6778.0
324.50	6793.0	329.90	6803.0	335.30	6793.0	340.70	6778.0
324.61	6793.0	330.01	6783.0	335.41	6803.0	340.81	6783.0
324.72	6803.0	330.12	6793.0	335.52	6783.0	340.92	6793.0
324.79	6803.0	330.19	6793.0	335.59	6788.0	340.99	6773.0
324.90	6793.0	330.30	6798.0	335.70	6788.0	341.10	6778.0
325.01	6793.0	330.41	6788.0	335.81	6798.0	341.21	6783.0
325.12	6803.0	330.52	6793.0	335.92	6788.0	341.32	6788.0
325.22	6803.0	330.62	6788.0	336.02	6788.0	341.42	6773.0
325.30	6793.0	330.70	6793.0	336.10	6793.0	341.50	6783.0
325.40	6798.0	330.80	6788.0	336.20	6803.0	341.60	6783.0
325.51	6803.0	330.91	6788.0	336.31	6788.0	341.71	6788.0
325.62	6793.0	331.02	6803.0	336.42	6788.0	341.82	6778.0
325.69	6793.0	331.09	6788.0	336.49	6803.0	341.89	6783.0
325.80	6798.0	331.20	6793.0	336.60	6783.0	342.00	6793.0
325.91	6798.0	331.31	6793.0	336.71	6778.0	342.11	6778.0
326.02	6793.0	331.42	6803.0	336.82	6783.0	342.22	6773.0
326.12	6788.0	331.52	6788.0	336.92	6793.0	342.32	6793.0
326.20	6793.0	331.60	6788.0	337.00	6778.0	342.40	6793.0
326.30	6793.0	331.70	6793.0	337.10	6773.0	342.50	6778.0
326.41	6793.0	331.81	6803.0	337.21	6783.0	342.61	6783.0
326.52	6793.0	331.92	6788.0	337.32	6803.0	342.72	6788.0
326.59	6798.0	331.99	6793.0	337.39	6788.0	342.79	6783.0
326.70	6788.0	332.10	6803.0	337.50	6793.0	342.90	6773.0
326.81	6793.0	332.21	6788.0	337.61	6803.0	343.01	6778.0
326.92	6793.0	332.32	6788.0	337.72	6798.0	343.12	6783.0
327.02	6803.0	332.42	6788.0	337.82	6783.0	343.22	6773.0
327.10	6788.0	332.50	6793.0	337.90	6803.0	343.30	6783.0
327.20	6793.0	332.60	6793.0	338.00	6798.0	343.40	6778.0
327.31	6798.0	332.71	6798.0	338.11	6778.0	343.51	6778.0
327.42	6803.0	332.82	6803.0	338.22	6778.0	343.62	6783.0
327.49	6793.0	332.89	6798.0	338.29	6793.0	343.69	6778.0
327.60	6788.0	333.00	6793.0	338.40	6783.0	343.80	6783.0
327.71	6793.0	333.11	6793.0	338.51	6783.0	343.91	6773.0
327.82	6803.0	333.22	6808.0	338.62	6773.0	344.02	6778.0
327.92	6793.0	333.32	6803.0	338.72	6793.0	344.12	6778.0
328.00	6793.0	333.40	6783.0	338.80	6783.0	344.20	6778.0
328.10	6808.0	333.50	6803.0	338.90	6773.0	344.41	6807.0
328.21	6803.0	333.61	6803.0	339.01	6783.0	352.30	6778.0
328.32	6793.0	333.72	6788.0	339.12	6798.0	352.91	6782.0
328.39	6803.0	333.79	6788.0	339.19	6773.0	362.41	6792.0
328.50	6793.0	333.90	6798.0	339.30	6783.0	372.31	6787.0
328.61	6793.0	334.01	6788.0	339.41	6778.0	382.32	6782.0
328.72	6793.0	334.12	6793.0	339.52	6778.0	392.40	6773.0
328.82	6808.0	334.22	6793.0	339.62	6783.0	402.41	6773.0
328.90	6793.0	334.30	6803.0	339.70	6773.0	412.31	6763.0
329.00	6793.0	334.40	6788.0	339.80	6783.0		
329.11	6803.0	334.51	6788.0	339.91	6778.0		
329.22	6793.0	334.62	6798.0	340.02	6783.0		
329.29	6793.0	334.69	6793.0	340.09	6793.0		
329.40	6793.0	334.80	6788.0	340.20	6778.0		
329.51	6803.0	334.91	6788.0	340.31	6778.0		
329.62	6803.0	335.02	6803.0	340.42	6783.0		
329.72	6788.0	335.12	6788.0	340.52	6788.0		

STEP RATE/FLOW-BACK TEST
MWX - 1

T	P	T	P	T	P	T	P
0.00	3904.0	546.00	4446.0	1086.00	5950.0	1616.00	6275.0
6.00	3779.0	556.00	4474.0	1096.00	5957.0	1626.00	6278.0
16.00	3780.0	566.00	4501.0	1106.00	5963.0	1636.00	6281.0
26.00	3780.0	576.00	4528.0	1116.00	5970.0	1646.00	6283.0
46.00	3782.0	586.00	4555.0	1126.00	5977.0	1656.00	6285.0
56.00	3783.0	596.00	4584.0	1136.00	5995.0	1666.00	6288.0
66.00	3784.0	606.00	4613.0	1146.00	6017.0	1676.00	6304.0
76.00	3784.0	616.00	4650.0	1156.00	6028.0	1686.00	6304.0
86.00	3785.0	626.00	4693.0	1166.00	6038.0	1696.00	6309.0
96.00	3786.0	636.00	4741.0	1175.00	6047.0	1706.00	6314.0
106.00	3787.0	646.00	4789.0	1186.00	6055.0	1716.00	6318.0
116.00	3788.0	656.00	4836.0	1196.00	6063.0	1726.00	6322.0
126.00	3789.0	666.00	4883.0	1199.00	6063.0	1736.00	6325.0
136.00	3790.0	676.00	4930.0	1206.00	6071.0	1746.00	6329.0
146.00	3790.0	686.00	4976.0	1216.00	6077.0	1756.00	6331.0
156.00	3810.0	696.00	5020.0	1226.00	6083.0	1766.00	6334.0
166.00	3835.0	706.00	5064.0	1236.00	6090.0	1776.00	6336.0
176.00	3861.0	716.00	5106.0	1246.00	6095.0	1786.00	6339.0
186.00	3885.0	726.00	5147.0	1256.00	6100.0	1796.00	6341.0
196.00	3909.0	736.00	5185.0	1266.00	6103.0	1806.00	6343.0
206.00	3935.0	746.00	5219.0	1276.00	6108.0	1816.00	6345.0
216.00	3960.0	756.00	5251.0	1286.00	6112.0	1826.00	6348.0
226.00	3965.0	766.00	5277.0	1296.00	6116.0	1836.00	6354.0
236.00	3977.0	776.00	5320.0	1306.00	6119.0	1846.00	6362.0
246.00	3981.0	786.00	5395.0	1316.00	6133.0	1856.00	6367.0
256.00	3989.0	795.00	5460.0	1326.00	6141.0	1866.00	6371.0
266.00	3996.0	806.00	5511.0	1336.00	6149.0	1876.00	6375.0
276.00	4003.0	816.00	5552.0	1346.00	6156.0	1886.00	6378.0
286.00	4010.0	826.00	5589.0	1356.00	6162.0	1896.00	6381.0
296.00	4018.0	836.00	5616.0	1366.00	6168.0	1906.00	6384.0
306.00	4025.0	846.00	5642.0	1376.00	6174.0	1916.00	6388.0
316.00	4032.0	856.00	5666.0	1385.00	6179.0	1926.00	6391.0
326.00	4039.0	866.00	5685.0	1396.00	6184.0	1936.00	6394.0
336.00	4046.0	876.00	5700.0	1406.00	6189.0	1946.00	6397.0
346.00	4053.0	886.00	5714.0	1416.00	6194.0	1956.00	6401.0
356.00	4061.0	896.00	5727.0	1426.00	6199.0	1966.00	6405.0
366.00	4068.0	906.00	5739.0	1436.00	6202.0	1976.00	6408.0
376.00	4076.0	916.00	5751.0	1446.00	6205.0	1986.00	6411.0
386.00	4083.0	926.00	5762.0	1456.00	6208.0	1996.00	6414.0
396.00	4091.0	936.00	5773.0	1466.00	6211.0	2006.00	6416.0
406.00	4098.0	946.00	5784.0	1476.00	6214.0	2016.00	6419.0
416.00	4105.0	956.00	5809.0	1486.00	6217.0	2026.00	6422.0
426.00	4113.0	966.00	5833.0	1495.00	6223.0	2036.00	6424.0
436.00	4150.0	976.00	5849.0	1506.00	6234.0	2046.00	6427.0
446.00	4175.0	986.00	5862.0	1516.00	6239.0	2056.00	6430.0
456.00	4202.0	996.00	5874.0	1526.00	6244.0	2066.00	6432.0
466.00	4229.0	1006.00	5884.0	1536.00	6248.0	2076.00	6434.0
476.00	4257.0	1016.00	5895.0	1546.00	6252.0	2086.00	6435.0
486.00	4283.0	1026.00	5905.0	1556.00	6255.0	2096.00	6426.0
496.00	4310.0	1036.00	5914.0	1566.00	6259.0	2106.00	6431.0
506.00	4337.0	1046.00	5923.0	1576.00	6262.0	2115.00	6431.0
516.00	4365.0	1056.00	5931.0	1586.00	6266.0	2126.00	6430.0
526.00	4392.0	1066.00	5937.0	1596.00	6269.0	2136.00	6430.0
536.00	4419.0	1076.00	5943.0	1606.00	6272.0	2146.00	6429.0

T	P	T	P	T	P
2156.00	6404.0	2686.00	5811.0	3216.00	5192.0
2166.00	6392.0	2696.00	5802.0	3226.00	5177.0
2176.00	6372.0	2706.00	5792.0	3236.00	5163.0
2186.00	6345.0	2716.00	5783.0	3246.00	5149.0
2196.00	6324.0	2726.00	5774.0	3256.00	5134.0
2206.00	6307.0	2736.00	5764.0	3266.00	5120.0
2216.00	6290.0	2746.00	5754.0	3275.00	5105.0
2226.00	6274.0	2755.00	5745.0	3286.00	5090.0
2236.00	6260.0	2766.00	5735.0	3295.00	5076.0
2246.00	6246.0	2776.00	5725.0		
2256.00	6233.0	2786.00	5715.0		
2266.00	6220.0	2796.00	5704.0		
2276.00	6208.0	2806.00	5694.0		
2286.00	6196.0	2816.00	5683.0		
2296.00	6185.0	2826.00	5673.0		
2306.00	6174.0	2836.00	5662.0		
2316.00	6163.0	2846.00	5652.0		
2326.00	6153.0	2856.00	5641.0		
2336.00	6142.0	2866.00	5631.0		
2346.00	6132.0	2876.00	5620.0		
2356.00	6122.0	2886.00	5609.0		
2366.00	6112.0	2896.00	5598.0		
2376.00	6102.0	2906.00	5587.0		
2386.00	6092.0	2915.00	5575.0		
2396.00	6083.0	2926.00	5564.0		
2400.00	6083.0	2936.00	5552.0		
2406.00	6073.0	2946.00	5540.0		
2416.00	6063.0	2956.00	5529.0		
2426.00	6054.0	2966.00	5517.0		
2436.00	6044.0	2975.00	5505.0		
2446.00	6034.0	2986.00	5493.0		
2456.00	6025.0	2996.00	5481.0		
2466.00	6016.0	2999.00	5481.0		
2476.00	6006.0	3006.00	5469.0		
2486.00	5997.0	3016.00	5457.0		
2496.00	5987.0	3026.00	5444.0		
2506.00	5978.0	3036.00	5432.0		
2516.00	5969.0	3046.00	5419.0		
2526.00	5959.0	3056.00	5407.0		
2536.00	5950.0	3066.00	5394.0		
2546.00	5941.0	3076.00	5381.0		
2556.00	5932.0	3086.00	5368.0		
2566.00	5923.0	3096.00	5354.0		
2576.00	5913.0	3106.00	5341.0		
2586.00	5904.0	3116.00	5328.0		
2595.00	5895.0	3126.00	5315.0		
2606.00	5886.0	3136.00	5301.0		
2616.00	5877.0	3146.00	5288.0		
2626.00	5867.0	3156.00	5275.0		
2636.00	5858.0	3166.00	5261.0		
2646.00	5849.0	3176.00	5247.0		
2656.00	5839.0	3186.00	5234.0		
2666.00	5830.0	3196.00	5220.0		
2676.00	5821.0	3206.00	5206.0		

PUMP-IN/FLOW-BACK TEST
MWX - 1

T	P	T	P	T	P
0.00	5329.0	529.00	6428.0	1179.00	6333.0
10.00	5332.0	539.00	6430.0	1189.00	6325.0
19.00	5335.0	549.00	6433.0	1199.00	6317.0
29.00	5337.0	559.00	6436.0	1208.00	6310.0
39.00	5339.0	569.00	6438.0	1220.00	6302.0
50.00	5628.0	579.00	6441.0	1229.00	6295.0
60.00	5881.0	590.00	6444.0	1239.00	6288.0
69.00	6036.0	600.00	6445.0	1248.00	6280.0
79.00	6097.0	609.00	6449.0	1258.00	6273.0
89.00	6136.0	673.00	6451.0	1269.00	6266.0
98.00	6136.0	678.00	6357.0	1279.00	6259.0
100.00	6172.0	689.00	6348.0	1288.00	6252.0
109.00	6200.0	699.00	6339.0	1298.00	6245.0
119.00	6225.0	709.00	6331.0	1308.00	6238.0
129.00	6246.0	719.00	6389.0	1319.00	6231.0
140.00	6263.0	728.00	6406.0	1329.00	6225.0
150.00	6276.0	739.00	6415.0	1338.00	6218.0
159.00	6288.0	749.00	6421.0	1349.00	6211.0
169.00	6297.0	759.00	6428.0	1358.00	6204.0
179.00	6304.0	768.00	6433.0	1369.00	6198.0
190.00	6309.0	780.00	6438.0	1378.00	6191.0
199.00	6314.0	789.00	6443.0	1389.00	6185.0
209.00	6318.0	798.00	6447.0	1398.00	6178.0
219.00	6321.0	810.00	6452.0	1409.00	6171.0
228.00	6324.0	820.00	6455.0	1419.00	6165.0
240.00	6327.0	829.00	6458.0	1429.00	6159.0
249.00	6329.0	839.00	6463.0	1438.00	6152.0
259.00	6332.0	849.00	6466.0	1449.00	6146.0
270.00	6336.0	860.00	6468.0	1459.00	6139.0
278.00	6338.0	869.00	6473.0	1468.00	6133.0
289.00	6342.0	879.00	6475.0	1478.00	6126.0
299.00	6346.0	889.00	6477.0	1488.00	6120.0
309.00	6347.0	899.00	6480.0	1499.00	6114.0
320.00	6351.0	910.00	6482.0	1509.00	6107.0
330.00	6355.0	919.00	6484.0	1518.00	6101.0
339.00	6358.0	929.00	6485.0	1529.00	6094.0
349.00	6362.0	938.00	6488.0	1538.00	6088.0
359.00	6367.0	950.00	6490.0	1549.00	6082.0
370.00	6371.0	959.00	6491.0	1558.00	6075.0
379.00	6376.0	969.00	6495.0	1568.00	6069.0
389.00	6381.0	978.00	6496.0	1578.00	6062.0
399.00	6384.0	989.00	6498.0	1589.00	6056.0
410.00	6389.0	1000.00	6499.0	1599.00	6050.0
420.00	6393.0	1009.00	6502.0	1608.00	6044.0
429.00	6396.0	1018.00	6503.0	1619.00	6038.0
439.00	6400.0	1028.00	6503.0	1629.00	6032.0
449.00	6403.0	1040.00	6500.0	1639.00	6025.0
460.00	6406.0	1108.00	6491.0	1648.00	6019.0
469.00	6410.0	1119.00	6388.0	1658.00	6012.0
478.00	6413.0	1128.00	6378.0	1668.00	6006.0
489.00	6416.0	1139.00	6368.0	1679.00	5999.0
500.00	6419.0	1149.00	6359.0	1689.00	5993.0
509.00	6422.0	1159.00	6350.0	1698.00	5986.0
519.00	6425.0	1169.00	6342.0	1708.00	5979.0