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GROUNDWATER FLOW SYSTEM IN A MOUNTAINOUS REGION, MOUNT MYRA, VANCOUVER ISLAND, B.C.

A dissertation

Presented in Partial Fulfillment of the Requirements for the

Degree of Doctor of Philosophy

with a

Major in Earth Sciences

in the

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University of Ottawa

By

Martin John Stapinsky

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ABSTRACT

Hydrological research in mountainous watersheds has mainly focused on the relationship between surface hydrological processes and shallow groundwater flow systems. Unfortunately, data on deep groundwater flow systems in mountainous regions are still rudimentary and sparse because of the difficult working conditions. The objectives of this thesis are to collect baseline data on meteorological and hydrological processes; and the geometry and hydrogeological characteristics of the fracture network, in order to improve the knowledge for the development of a site-specific conceptual model of deep groundwater flow systems in British Columbia's mountainous terrain.

To reach the objectives of this project, a monitoring network consisting of surface and underground equipment was installed in the Price Mine area, which is located on the Price Hillside of the *east* flank of Mount Myra, Vancouver Island. Rainfall, air temperature, atmospheric pressure, hydraulic heads in surface and underground drillholes and discharge from mine drifts were measured from August 1994 to June 1997. Also, as part of the project, a structural and hydrogeological mapping of major structural features within Mount Myra's underground workings was carried out to obtain an estimate of the hydrological importance of each geological structure in the Price Mine.

The hydraulic monitoring and the hydrogeological mapping provided information on the hydrogeological characteristics of the fracture network and the hydraulic connections in the vicinity of the Price Mine. The distribution of inflows in the Price Mine indicates that inflow areas are more important closer to the surface and are irregularly distributed deeper in the mountain, even at great depth, mainly near major structural features. Inflows in the mine

drifts are strongly associated with *northwest*, subvertical-striking structures, parallel to the regional foliation. The results also demonstrated the important role of *southwest* shallow-dipping bedding structures in lateral flow. The *northwest*-striking water-bearing structures are parallel to major creeks, which flow into the surface trace of large faults encountered along the flank of the mountain, suggesting a hydraulic connection between deep parts of the mountain and the surface. Values of the bulk hydraulic conductivity were estimated between 10^{-8} and 10^{-7} m/s for the more fractured rocks (surface and fault zones); and values of hydraulic conductivity estimated between 10^{-11} and 10^{-8} m/s are assumed for the more-massive mountain core.

The results have demonstrated the large impact of the rainy season on the hydrogeological system on the Price Hillside. Water levels in drillholes, along with discharge, increase drastically at the beginning of the first severe storms during the fall and maintain high levels until the end of the spring. The correlation and spectral analyses of the hydraulic data have shown the fast response of the hydraulic system following rainfall events; and indicate that a substantial part of the Price Mine outflow is associated with water circulating in the fracture network intersected by the drillholes located in the fault area. The water levels in drillholes located in more-fractured rocks, near large faults, fluctuated more and showed a strong stormflow component as opposed to water in drillholes located in more-massive rock. In the fault areas in particular, the groundwater flow system adjusts to the rainy season by the upgradient displacement of the hinge point, which is the limit between recharge and discharge areas, in order to cope with this substantial increase in winter recharge. Since the change in groundwater flow appears to occur only in the most fractured areas this observation

suggests that the fault zones act as the major flow channels that may control the entire groundwater flow on the Price Hillside.

A conceptual model of the hydrogeological system of the Price Hillside was therefore developed on the basis of the observations made during the course of this project. The Price Hillside of Mount Myra may be divided into at least three hydrogeological domains with distinct hydraulic properties with a similar anisotropy: Domain I, which is the fractured crest near the surface, presents high hydraulic conductivity values; Domain II, which consists in the highly fractured large fault areas extending at great depth, should also present high hydraulic conductivity values; and Domain III, which is the deeper massive core of the mountain, should show low hydraulic conductivity values. It is expected that the change in hydrogeological conditions throughout the mountain creates preferential flowpaths that will control flow patterns and solute migration in the mountain. In groundwater flow systems, such as in the Price Mine area, the accurate interpretation of flowpaths for mineral exploration or environmental purposes should take into account the dominant geological structures and the bedding planes identified as major flow channels. These conclusions are especially critical when preparing conceptual models for numerical modeling for management purposes.

RÉSUMÉ

Les recherches sur l'hydrologie des régions montagneuses ont majoritairement traité de la relation entre les processus hydrologiques de surface et les systèmes d'écoulement souterrain peu profonds. Malheureusement, cela a fait que les données sur les systèmes hydrogéologiques profond en régions montagneuses sont très rudimentaires et dispersées à

cause des difficiles conditions de travail. Les objectifs de cette thèse consistent à recueillir des données de base sur les processus météorologiques et hydrologiques, ainsi que la géométrie et les caractéristiques hydrogéologiques des réseaux de fractures de la roche, afin d'améliorer les connaissances pour le développement de modèles conceptuels des systèmes d'écoulement des eaux souterraines profonds dans les terrains montagneux de la Colombie-Britannique.

Afin de rejoindre les objectifs du projet, un réseau de surveillance a été installé à la surface et sous-terre dans le secteur de la mine Price. Cette dernière est localisée sur le versant Price du flanc *est* du mont Myra sur l'île de Vancouver. La pluviométrie, la température de l'air, la pression atmosphérique, la charge hydraulique mesurée dans des forages de surface et souterrains, ainsi que les débits des eaux d'exhaure minière ont été enregistrés du mois d'août 1994 au mois de juin 1997. Également dans le cadre du projet, une cartographie structurale et hydrologique des principales structures géologiques à l'intérieur de la mine Price du mont Myra a été réalisée afin d'obtenir une évaluation de l'importance hydrologique de toutes les structures géologiques identifiées.

Le suivi hydraulique et la cartographie hydrogéologique ont fourni des informations sur les caractéristiques hydrogéologiques du réseau de fractures et les connections hydrauliques à proximité de la mine Price. La distribution des venues d'eau dans la mine Price indique que ces dernières sont plus importantes près de la surface et sont irrégulièrement distribuées à plus grande profondeur dans la montagne, notamment près des structures géologiques d'importance. Les venues d'eau dans la mine sont fortement associées aux structures géologiques sub-verticales orientées vers le *nord-ouest* et parallèle à la foliation régionale.

Les résultats ont également démontré l'importance pour les écoulements latéraux des structures de litage de faible pendage vers le *sud-ouest*. Les structures hydrogéologiques orientées vers le *nord-ouest* sont parallèles aux ruisseaux principaux qui coulent à l'intérieur de la trace des larges failles observées sur le versant Price, ce qui suggère une connexion hydraulique entre la surface et le système d'écoulement profond. Des valeurs de conductivité hydraulique estimées pour un grand volume de roche sont entre 10^{-8} et 10^{-7} m/s pour les parties les plus fracturées de la roche (surface et zones de faille) et des valeurs entre 10^{-11} and 10^{-8} m/s sont anticipées pour les parties de roche massive.

Les résultats du suivi ont démontré l'impact important de la saison des pluies sur le système hydrogéologique du versant Price. Les niveaux d'eau dans les forages, ainsi que le débit d'exhaure minière augmentent de façon drastique au début des premières tempêtes automnales et maintiennent des niveaux élevés jusqu'à la fin du printemps. Les analyses corrélatoire et spectrale des données hydrauliques ont démontré la réponse rapide du système hydraulique après chaque épisode de pluie, et indiqué qu'une portion importante de l'exhaure minière de la mine Price est associée à l'eau circulant dans les réseaux de fractures interceptés par les forages situés dans les région de failles. Les niveaux d'eau dans les forages localisés dans des roches plus fracturées, soit près des failles, fluctuent davantage et présentent une forte composante d'écoulement de pluies, à l'opposé des forages localisés dans la roche plus massive. Dans le secteur des failles en particulier, le système d'écoulement des eaux souterraines s'ajuste avec la saison des pluies en déplaçant vers l'amont la limite de transition (point charnière) entre la zone de recharge et la zone de décharge afin de pouvoir évacuer tout le volume d'eau excédentaire provenant de la recharge hivernale.

Un modèle conceptuel du système hydrogéologique du versant Price du mont Myra a donc pu être développé sur la base des observations effectuées durant le projet. Le versant Price du mont Myra peut être divisé en trois domaines hydrogéologiques possédant chacun des propriétés hydrauliques distinctes avec une même anisotropie: le domaine I consiste en la couche de roche très fracturée à la surface de la montagne et présente des valeurs de conductivité hydraulique élevée; le domaine II est formé des zones de failles et de roches très fracturées qui s'étendent en profondeur et qui devraient présenter aussi des valeurs de conductivité hydraulique élevée; et le domaine III qui consiste en la partie peu fracturée au centre de la montagne et qui devrait présenter de faibles valeurs de conductivité hydraulique. Il est probable que le changement dans les conditions hydrogéologiques à travers la montagne, responsables des chemins préférentiels d'écoulement, vont contrôler les patrons d'écoulement et la migration des éléments chimiques à travers la montagne. Donc, dans les systèmes d'écoulement comme ceux de la mine Price, l'interprétation précise des patrons d'écoulement pour l'exploration minérale ou à des fins environnementales doit tenir compte des structures géologiques dominantes qui ont été identifiées comme chemins principaux d'écoulement. Ces conclusions sont particulièrement importantes lorsqu'il s'agit d'élaborer des modèles conceptuels à intégrer dans des modèles numériques à des fins de gestion des eaux souterraines.

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CHAPTER I

INTRODUCTION

1.1 Statement of the problem

Approximately twenty percent of the Earth's land surface is occupied by mountainous regions. These regions are mostly untouched and unexplored due to their rugged nature and their natural resources have been seldom discovered and exploited. Among the natural resources, precious and base metal ore deposits are found, as for instance in British Columbia, Canada, where several large ore bodies are currently mined. Mining activities in mountainous regions may have a significant impact on the environment and in particular on the quality of surface and ground waters. These environmental concerns have raised the need for a better understanding of hydrological processes in mountainous terrains.

Hydrological studies in mountainous regions typically addressed surface hydrological processes in terms of watershed management and slope stability and very little emphasis is placed on groundwater resource assessment. Often limited to a few greatly-spaced wells, springs or baseflow streams, hydrogeological data are generally too scattered and rare, to provide sufficient hydraulic head data to determine the piezometric surface configuration and groundwater flow direction. A compounding factor is that hydrogeologic factors may vary greatly according to local topography, geology and climatic conditions. For example, climatic conditions vary greatly with altitude: higher elevations receiving more precipitation. Another example is that very steep slopes promote more runoff leading to less weathering of the surface rocks compared to non-mountainous terrains. In particular, mountainous regions are often

located in zones of active crustal compression or extension, which affects fracture aperture, and consequently hydraulic conductivity. The lack of data and the spatial variability of the physical characteristics create much uncertainty about the hydrogeologic conditions and groundwater flow components encountered in mountainous terrains. Field studies are therefore essential to properly assess hydrogeological systems in mountainous terrains.

The Myra Falls Mining Complex, located on the flanks of Mount Myra in the Strathcona Provincial Park, on Vancouver Island, British Columbia, offers an ideal site for the study of groundwater flow in a mountainous area. Several mining drifts are accessible at different locations and elevations within the mountain. Some of the workings have been mined for several years. Others were used only for exploration purposes, thus providing a less-disturbed "natural" environment for the study of groundwater flow systems in their vicinity. Numerous surface and underground open drillholes are available throughout the site for the monitoring of water level and water pressure. Meteorological data have been recorded on both sides of the mountain for at least three years. These installations provide a good framework to use as an experimental site for the evaluation of hydrogeological processes encountered in mountainous areas.

1.2 Purpose and Objectives

This research thesis is part of a larger project that is funded by a grant from the Federal Government Industrial Partnership Program, with contributions from Westmin Resources Limited, the Geological Survey of Canada and the University of Ottawa. The project's general objective is to characterize the physical and chemical hydrogeological setting at the Myra Falls Mining Complex. The objective of the overall project is to formulate scenarios for

the decommissioning of the mine and to see if hydrogeochemical information can be useful for exploration on this specific site. There are two broad aspects to the project: the environmental and geochemical aspects of the groundwater system, which are presented in Graham Phipps' Ph.D. dissertation (1999); and the physical hydrogeology discussed in this thesis.

As stated previously, there is an urgent need for hydrogeological field data in mountainous terrain. Natural resource development in these sensitive areas requires a better understanding of the groundwater flow systems for proper management and prediction of possible adverse effects. Data gathered on the spatial variability of rock mass hydraulic properties, the groundwater flowpaths and the characteristics of recharge processes of deep groundwater flow systems will complete and, perhaps, improve current conceptual models of groundwater flow in mountainous regions. The gathering of additional baseline information, such as rainfall rates, groundwater levels and the spatial variations in hydraulic properties, will assist in the formulation and implementation of numerical models, which are valuable tools for groundwater management. Additional baseline information will also be useful in mine water management, especially assessing conditions that may favor acid rock drainage and groundwater contamination. Additional information will also be useful in the prediction of water inflows, and dewatering requirements.

The specific objectives of this thesis are: to identify the hydrological processes (rainfall, air temperature, atmospheric pressure) that affect groundwater flow in the Mount Myra massif; to quantify and evaluate the impact of the processes and to evaluate the relationship between them; to identify the main groundwater flowpaths within the mountain using geostatistical

techniques and hydrogeological mapping; and to formulate a conceptual model of the physical hydrogeology of the mountain, and to compare it with existing models. The thesis focuses on the hydrological and hydrogeological processes affecting the groundwater flow on the Price hillside of Mount Myra, in the vicinity of underground openings at the Myra Falls Mining Complex.

In order to meet these objectives, the influence of surface hydrological processes and the hydraulic connectivity in the groundwater flow system are estimated using weather data, water level and water pressure measurements, and discharge measurements from underground workings. The physical system is also characterized by a detailed mapping of underground hydrological conditions to identify the main flowpaths in and around the drifts and to determine their significance. Interpretation of the processes is completed with information collected from available drill logs, geological and structural maps, and geochemical and isotopic analyses. Knowledge of the flowpaths and the components (rainfall, stormflow, baseflow) of the overall water budget is essential for mine water management and hydrogeochemical exploration. The field observations gathered in the numerous surface and underground monitoring sites in the study area allow the elaboration of a conceptual model for the groundwater flow system in Mount Myra, which may improve and/or complete existing models of groundwater flow in mountainous regions.

1.3 Original Contribution

The results of this study have improved current conceptual models of hydrogeological systems in mountainous regions by documenting the spatial variability in hydrogeological conditions; identifying the hydrogeological structures that play a key role in groundwater

flow; and evaluating the influence of meteorological processes on the deep groundwater flow. The study has demonstrated that the approach used here (geostatistical analysis of hydraulic monitoring data and underground hydrogeological mapping) is adequate to characterize and to collect valuable field data on hydrogeological systems in difficult environments, such as mountainous regions.

In particular, as opposed to current conceptual models of groundwater flow systems in mountainous regions, which mainly represent the mountain as a two-layer rock system, this study shows that the Price Hillside of Mount Myra is more accurately represented as at least three principal hydrogeological domains on the basis of underground inflow conditions and their distinct hydraulic responses. In each domain, the groundwater flow is controlled by a series of large-scale hydrologically-active structures, principally faults, which have been identified in specific areas in the course of this project. These faults are assumed to be hydraulically connected with the creeks on the Price Hillside and the influence of the creeks can be observed at great depths within the mountain.

This study demonstrates that large geological structures can have a dominant influence on groundwater flow in mountainous systems. This study is the first to our knowledge to quantify the effects of rainfall during the winter on the deep groundwater circulation patterns at the regional-scale (mountain-scale). By infiltrating through the large fracture zones, winter precipitation, often occurring as rainfall due to the generally mild temperature, modifies considerably the groundwater flow patterns throughout the entire year. The response of the water levels to rainfall is felt differently according to the configuration of the fracture network. Large annual fluctuations have been measured (more than 25 m) mainly in more-

fractured areas; whereas smaller variations were measured in more massive rock areas. The large variations only in specific sections of the hydraulic system can lead to drastic changes in flow directions, especially in the creek areas, where field observations indicated a change from recharge and discharge conditions during the year. This study is the first to record the displacement of the hinge point (limit between recharge and discharge zones) due to the high recharge rate during winter (as seen in mountainous terrains), which has only been previously examined with the use of numerical models.

1.4 Thesis Framework

Given that the primary objective of this thesis is to formulate a hydrogeological conceptual model at the regional scale, the required information can only be inferred from measurements made at much smaller scales. Two "small-scale" systems can be identified here: a) measurements at the local scale in drillholes on the surface of the mountain; and b) measurements in the vicinity of underground openings. These "small-scale" measurements are analyzed with due regard to their location within the overall setting of the site in order to elaborate a conceptual model of the groundwater flow system at the scale of a mountainous region.

First, the physiographic setting of the study area is described on a regional scale in Chapter II. Observations of hydrogeological conditions at the mine showed that groundwater flow is mainly controlled by fractures, joints and faults. It was therefore necessary to examine the physical characteristics, such as the spatial distribution and orientation of the structural features of the rock mass, to explain some of the hydraulic behavior seen at the monitoring

sites. This is described in Chapter III, which discusses the results of a detailed underground mapping of the geological and hydrologically-active structures.

Groundwater level fluctuations in surface open drillholes are analyzed in Chapter IV. The long-term seasonal variations in water level and the short-term hydraulic response are compared to rainfall events, temperature and atmospheric pressure. The spatial and temporal variations in the water level are used to evaluate the influence of the hydrological processes in the different parts of the groundwater flow system in the mountain.

Chapter V describes the measurements made in underground drifts and evaluates the influence of rainfall on the groundwater flow system within the mountain. Water pressure in underground drillholes and discharge variations provide information on the hydraulic system components (stormflow and baseflow) and the hydraulic connection within the deeper groundwater flow system. Information related to the flowpath in the Price hillside is inferred from the analysis of the hydraulic response.

Based on the results of the previous chapters, Chapter VI develops a conceptual model of the groundwater flow system in the Mount Myra massif and compares it to existing models. The spatial and temporal variability in hydraulic responses, and characteristics of the fracture network, such as orientation and flow estimates, are used to evaluate the connection between surface and deeper groundwater flow systems. The magnitude and variability of the water level provide information on the flowpaths and the water table configuration, which indicate the flow directional components and variation in the outflow. Values of hydraulic properties are also estimated as a bulk-estimate of the hydraulic conductivity of the rock mass. The data collected here provide valuable input values of hydraulic properties and a better

representation of groundwater flow, which can in turn be used to develop more accurate numerical models that are essential for managing groundwater in mountainous environments.

The thesis was written in a paper format that was bound by a common introduction (Chapter I) and a common summary and conclusions (Chapter VII). This approach had the unfortunate effect of creating several repetitions in the text. However, the papers that will be produced from the thesis won't have this inconvenient.

CHAPTER II

PHYSICAL SETTING

2.1 Description of the Study Area

The study region is located on the *west* coast of Canada, in central Vancouver Island, British Columbia. The region is characterized by a very rugged topography including mountains that can reach more than 2,000 meters. These mountains are part of the North American Cordillera and are separated from the Coast Range Mountains by the Georgia Depression, which is bounded on the *west* by the Nanaimo Lowlands and on the *east* by the Georgia and Fraser Lowlands. The nearest town, Campbell River, is located 90 km *north* of the study area. Figure 2.1 presents the region investigated.

The study area is located in the Myra Falls mining complex, property of Westmin Resources Limited, within the limits of Strathcona Provincial Park. The landscape is dominated by Mount Myra. The *east* flank, also referred to as the Price Hillside, is bounded by Thelwood Valley and the *northwest* flank is bounded by Myra Valley. Thelwood and Myra creeks flow from each valley, respectively, towards Buttle Lake, located *northeast* of Mount Myra. The investigated part of the study area, the Price Hillside, covers approximately 25 km^2, with elevations ranging from 220 m to 1808 m. Figure 2.2 shows the location of the experimental site and the Westmin Resources property.

The flanks of Mount Myra are predominantly covered by Douglas Fir trees. The *east* side of the mountain is sparsely vegetated due to a forest fire, several decades ago, that destroyed a large area extending from the bottom of Thelwood Valley up to an elevation close to 800 m.

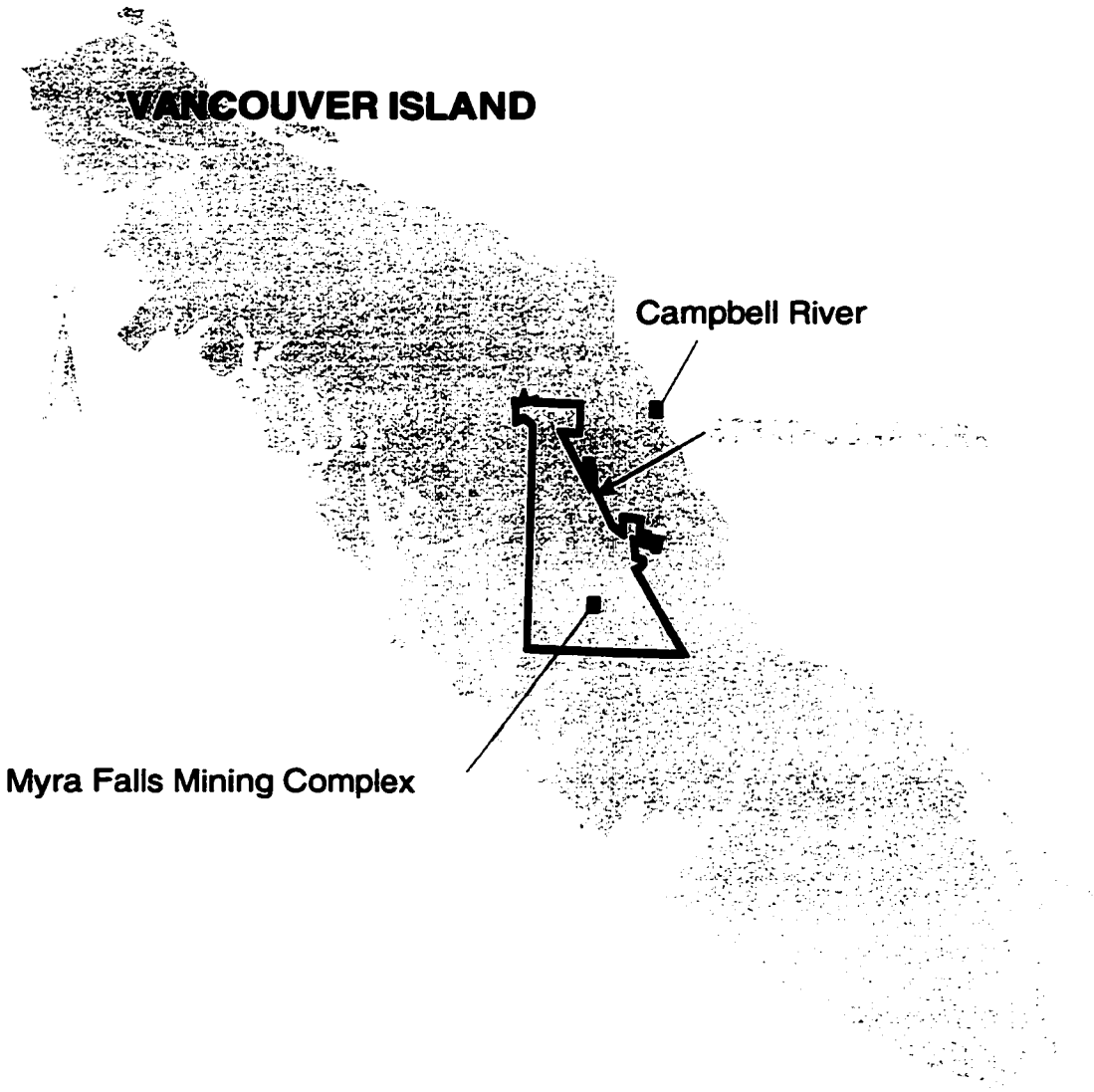


Figure 2.1: Location of study area.

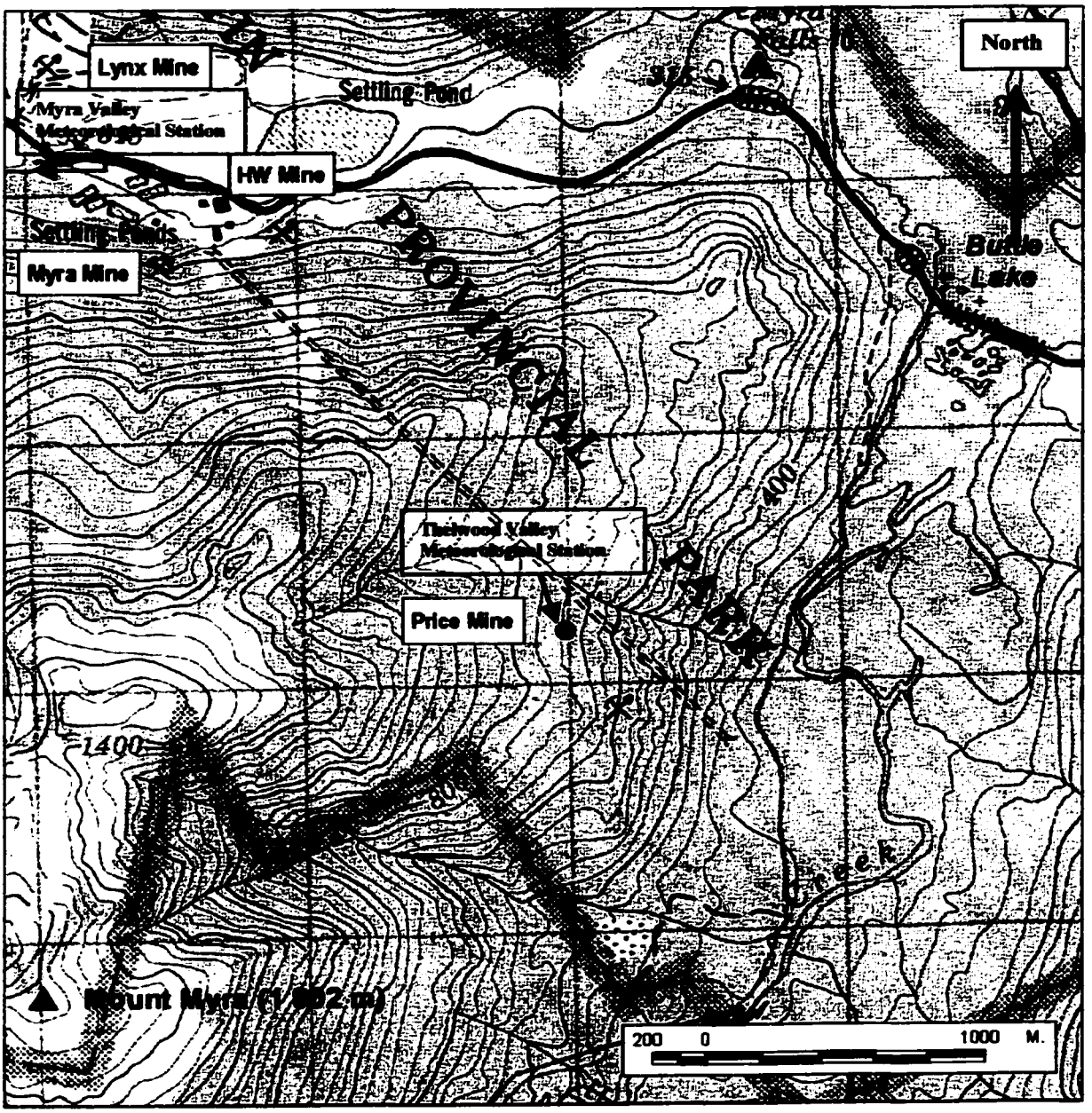


Figure 2.2: Myra Falls mining complex on Mount Myra, Vancouver Island, B.C.

The bedrock outcrops at many places, and is especially apparent in the burned area, showing the presence of large structural features.

2.2 Climate

The *west* coast region of Canada presents several types of climate, ranging from humid to polar, due to its high relief and its proximity to the Pacific Ocean. The topography and the atmospheric pressure variations in this region control the behavior of the Pacific and Arctic air masses that regulate the climate. Pacific air masses, which are predominant throughout the year, progress eastward to reach the first *west* coast mountains, where they are forced to ascend and then cool, losing their moisture as heavy precipitation. Arctic air masses encountered during the winter months are slightly modified as they move southward following longitudinal valleys. In central Vancouver Island, precipitation occurs generally as rainfall in the valleys due to the clement temperature.

The climate in the Mount Myra area is temperate. The coldest month is January and the warmest months are July and August. Figure 2.3 presents monthly daily-averaged air temperatures, recorded between 1979 and 1997 at the Environment Canada weather station in Myra Valley, and between 1994 and 1997 at the weather station on the Price Hillside in Thelwood Valley (see Figure 2.2).

Daily average temperatures recorded in Myra Valley range yearly from -12° C to 27° C, with a mean of 8.7° C. In comparison, a daily mean temperature of 6.7° C was recorded in Thelwood Valley, with minimum and maximum temperatures of -12° C and 25° C, respectively. Temperatures recorded are almost identical in Thelwood Valley and Myra Valley, despite the

distinct characteristics of the monitoring sites: the weather monitoring site used in this study is located at a higher altitude, 711 m, in Thelwood Valley; and the weather monitoring site in Myra Valley is located at an elevation of 348 m and more in the shade (facing *North*).

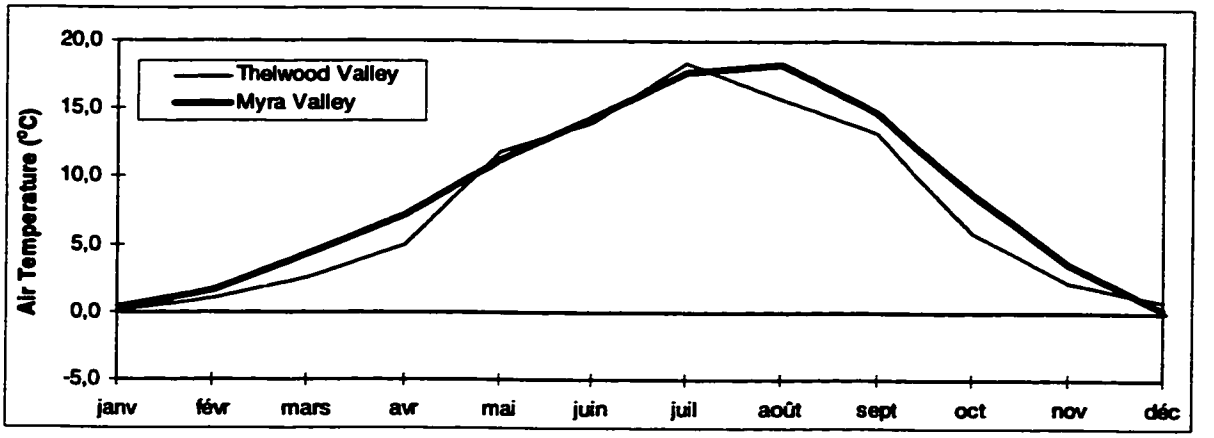


Figure 2.3: Monthly daily-averaged air temperatures recorded between 1979 and 1997 at the Environment Canada weather station in Myra Valley and between 1994 and 1997 at the weather station on the Price Hillside in Thelwood Valley .

The Mount Myra area is characterized by a strong rainy season that lasts from October to April. A large portion of precipitation occurs as rain, because of the generally mild temperatures, and the rest as snow with frequent thaws. Rainfall events often occur as severe winter storms. Snowfall events are more frequent at higher altitude, resulting in a year-long snow cover on the summit of Mount Myra. Also, at these latitudes evapotranspiration exceeds precipitation during summer months (Brown, 1967), but this was not evaluated during this study. The monthly average rainfall rates in Myra Valley are presented in Figure 2.4.

The average annual rainfall recorded between 1979 and 1997 at the Environment Canada weather station in Myra valley is more than 2600 mm. Annual rainfall rates could not be

estimated in Thelwood Valley, because of the failure of the rain gauge during the course of this study.

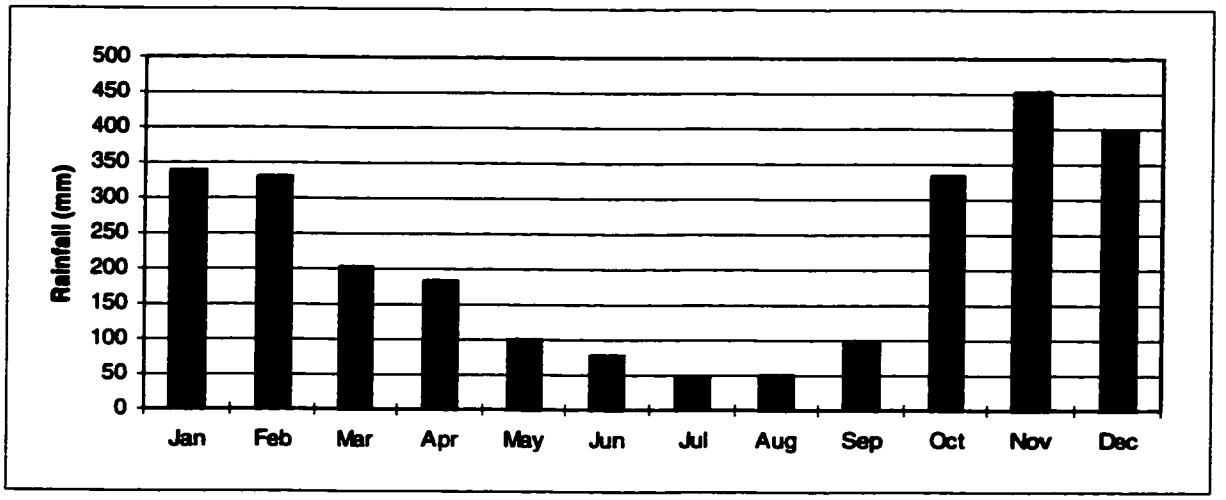


Figure 2.4: Monthly average rainfall recorded between 1979 and 1997 at the Environment Canada weather station in Myra Valley.

The data collected at the Price Hillside and Myra Valley meteorological stations during this study showed that rainfall events are well correlated on both sides of Mount Myra. The detailed correlation analysis between the data is presented in Appendix I. This high degree of correlation allows gaps in the data set on one side of the mountain to be completed by the measurements on the other side, facilitating the interpretation of hydrological processes.

2.3 Geology

2.3.1 Lithology

The geology of the Mount Myra area has been extensively described by Seraphim (1980), Mueller (1980), Walker (1983), and Juras (1987) and is summarized in Figure 2.5. The Mount Myra massif consists of a sequence of volcano-sedimentary rocks of Devonian age.

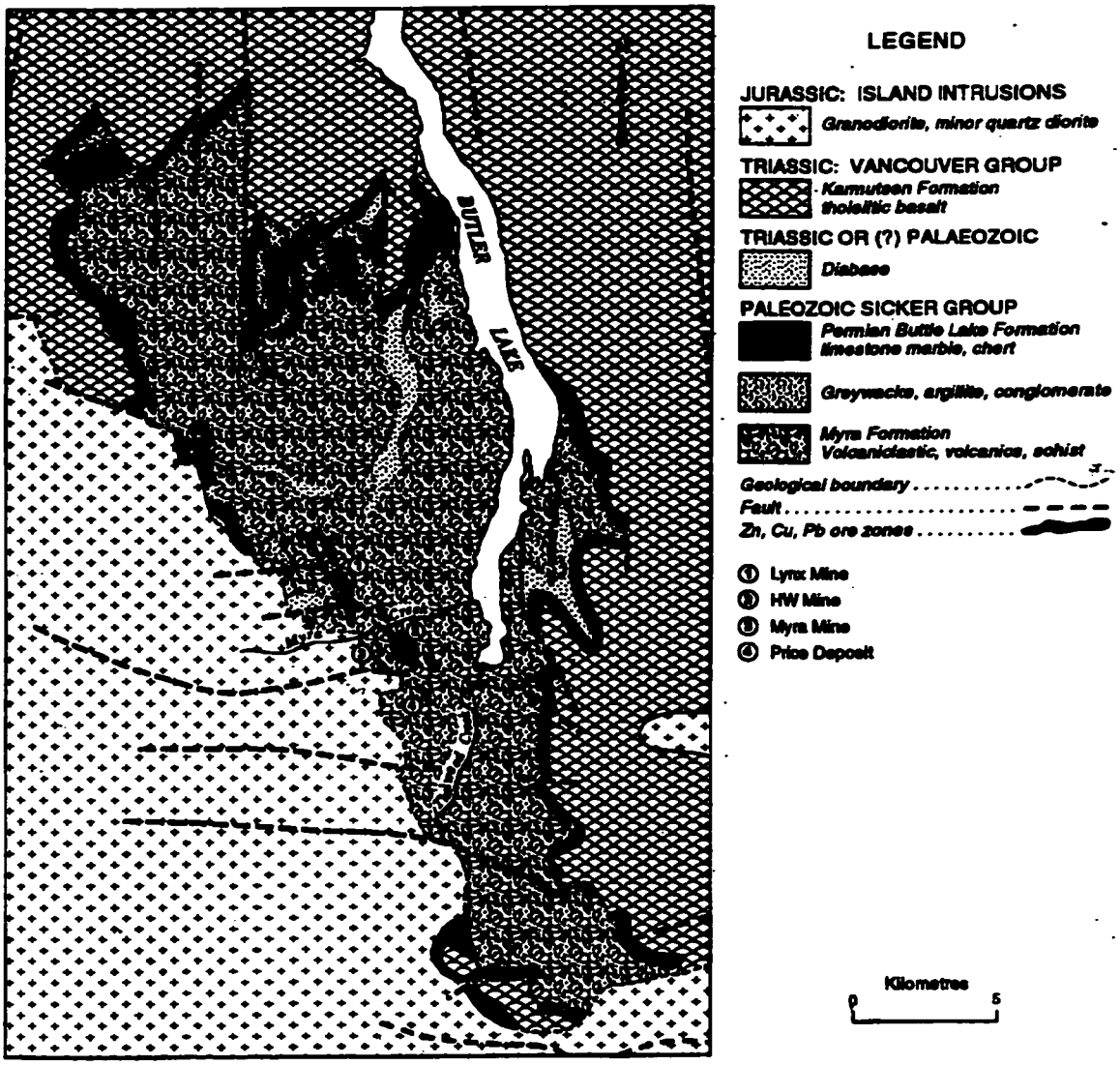


Figure 2.5: Geology of the Mount Myra area (adapted from Mueller, 1980).

The lithologies are part of the Myra and Price Formations from the Sicker Group, the oldest stratigraphic unit recognized on Vancouver Island. These rocks are exposed due to a regional structural uplift to the *south* of Buttle Lake. The volcanic component of the Myra and Price Formations includes basalt, andesite, dacite and rhyolite, which occur as extrusive massive phases and as fragments in extensive volcaniclastic rocks. The volcaniclastic rocks range from fine tuff to coarse breccia. Secondary sediments consist of: black argillite and siltstone; black, green, gray and red chert; and massive sulfide and barite.

Surficial geology mainly features glacial deposits: till and alluvium (Bayrock, 1982). These deposits are restricted to low elevations and valleys. On the mountain flanks, the bedrock outcrops at several places and a thin layer of colluvium resulting from bedrock weathering is present.

2.3.2 Regional and Local Structures

The regional structural history of Vancouver Island in the area of Myra Falls can be summarized as follows (Mueller, 1980; Nixon et al., 1994): 1) A *northeast* trending compression phase with *northwest* striking thrusts and *northwest* trending folds (Mid to Late Jurassic); 2) a *north* trending direct compression phase with *northwest* striking faults and oblique dextral faults (Late Cretaceous); 3) a *northwest - north-northwest* trending extension producing *northeast - east-northeast* striking normal faults and the weak reactivation of wrench faults (Tertiary). These regional features identified by Mueller (1980) and Nixon et al. (1994) are well correlated with the geological structures observed on the mine site. There were no regional-scale measurements made as part of this study.

The structural geology of the Price Hillside area has been investigated by Juras (1987), Reid (1992) and Berry (1995). The Price Hillside is characterized by a *northwest* trending anticline. Several structural elements are easily identified on the mine property: 1) wrench movement dominated by ductile shear zones with anastomosing subvertical zones of strong cleavage with lineation; 2) *north* striking dextral and *west* striking sinistral faults with high angle reverse faults, associated with quartz carbonate veins; 3) *northwest* striking normal faults produced by a *northeast* extension and associated with gouging and breccia.

As part of this project, Hamilton (1995) performed a detailed mapping of structures in the Price Mine levels 4 and 9, located in the Price Hillside. Hamilton's main findings were: 1) shallow *southwest*-dipping bedding planes; 2) early compression structures, represented by a *northwest* - *southeast* foliation; 3) post-foliation brittle-ductile faults, represented by widespread dextral *north* and sinistral *west* faults, and steeply dipping *west*, *northeast* joints; 4) late structures, represented by extensional cracks or tension gashes (*northeast*), quartz-dominated veins and veinlets (*northwest* and *northeast*), and dykes following *northwest* shear and late faults. Figure 2.6 shows on a lower-hemisphere Schmidt stereonet the domains of each of the structural elements identified in the Price Mine with the orientation of the most important structures on the Price Hillside: the Myra-Price Fault and the North Wall Shear. Hamilton's work was complemented here by mapping structures in the Price Mine Level 13, and carrying out a large-scale survey of all joints, fractures and faults in the Price Mine drifts (levels 4, 9 and 13) to identify the hydrological characteristics of these structural features.

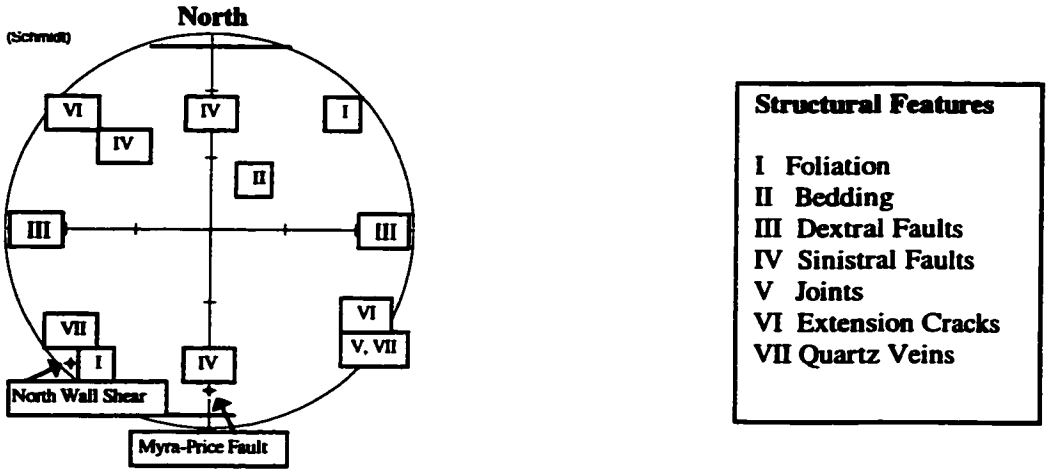


Figure 2.6: Main geological structures observed in the Price Mine area at Myra Falls.

2.4 Mining Activities

The Myra Falls massive sulfide deposits are currently mined for base and precious metals (copper, zinc, silver and gold). The major orebodies on the mine site are located within the rhyolite units in a stratigraphic zone approximately 500 m thick. They consist of lensoidal beds of massive sulfides that have been folded or disrupted to different extents by faults. The principal minerals in the orebodies are pyrite, sphalerite, chalcopyrite, galena and barite. Minor minerals include tennantite, bornite and pyrrhotite, with traces of gold and arsenopyrite.

The mining complex consists of four main sites: The Lynx Mine, located on the *northwest* side of Myra Valley and is no longer in operation; the HW Mine, which is currently mined, below Myra Valley; and the Myra and Price mines, located within the *northwest* and *east* flanks of Mount Myra, respectively. The Myra Mine is no longer in operation, leaving opened stopes and sub-levels; and the Price Mine has been used only for exploration purposes. The

Price Mine has been selected as the primary study area because it is less affected by present mining activities and because it constitutes a relatively self-contained system.

The Price Mine in Thelwood Valley consists of 4 exploration drifts, levels 4, 5, 9, and 13, located at elevations of 626 m, 571 m, 416 m and 238 m, respectively. The length of the Price Mine drifts are: 858 m for Level 4; 675 m for Level 5; 433 m for Level 9; and 3,100 m for Level 13. Level 13 of the Price Mine is connected to Level 13 of the Myra Mine by a service drift that crosses the entire mountain. The lower levels of the Myra Mine are connected to the surface by a decline extending from the portal of level 11 to level 13. Figure 2.7 shows a schematic longitudinal section of the Price and Myra mines.

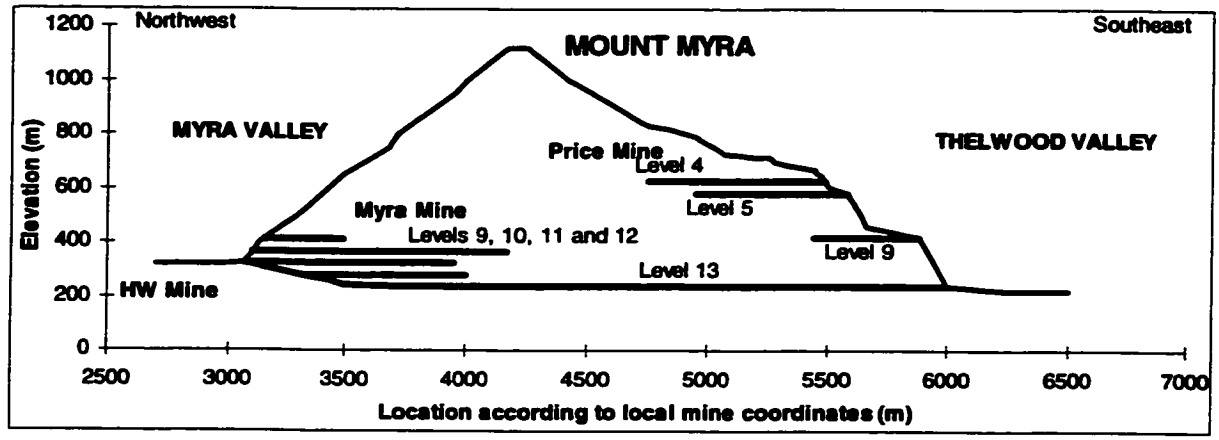


Figure 2.7: Schematic cross-section of Mount Myra showing the location of the mine drifts.

2.5 Surface and Subsurface Hydrology

The Mount Myra area is part of the watershed draining Buttle Lake, Upper and Lower Campbell Lakes and the Campbell River towards the sea. The Thelwood and Myra creeks flowing in the valleys bounding Mount Myra ultimately discharge directly into Buttle Lake. Thelwood and Myra creeks are fed by smaller streams draining off mountain sides.

The surface hydrology of Mount Myra consists of a series of small first-order creeks (see Figure 2.2) and isolated ponds found in impermeable bedrock depressions. The creeks are typically associated with fault zones, where fractured rocks are more easily weathered and eroded. Most of the creeks are perennial; the ephemeral creeks flow from late October to June or July.

The creeks are fed by rainfall and snowmelt waters from the summit. Runoff accounts for an important part of the water losses due to the Cordillera's rugged topography (Brown, 1967). As a result, water from rainfall is rapidly diverted into major fracture zones, where part of the water recharges directly through the coarse material of the creek beds and the other part is discharged into the valley's streams. Snowmelt waters, that flow from the summit of Mount Myra into the creeks, may also recharge the groundwater system, although some water may be lost by direct evaporation. Considering these losses, the main source of groundwater recharge is the heavy winter rainfall, which at high altitudes accumulates as snow.

The quantities of water discharged from all Price and Myra mine adits vary throughout the year. The outflow can easily double between summer and winter. The large outflows observed during winter attest to the importance of the rainy season as a major influence on the groundwater flow system. These topics are discussed in detail in chapter s 5 and 6.

The rocks underlying Mount Myra typically demonstrate a poor potential for groundwater development due to their low primary porosity and hydraulic conductivity. The hydraulic properties of these rocks arise mainly from secondary processes resulting from weathering or tectonic activities. Typical values of hydraulic conductivity for fractured igneous and metamorphic rocks range between 10^{-8} and 10^{-4} m/s and values of hydraulic conductivity for

the rock matrix ranges between 10^{-13} and 10^{-10} m/s (Freeze and Cherry, 1979). Hydraulic testing in surface piezometers installed in mafic dacite units in Myra Valley showed hydraulic conductivity values on the order of 10^{-8} and 10^{-7} m/s (Westmin Resources Limited, 1982). There are no available data on the hydraulic properties of the deeper groundwater flow system in the Price Mine area. However, field observations made in the course of this project and in the Lynx Mine (Northwest Geochem, 1992) have shown that flow conditions, including inflow distribution and yield in the deep parts of the mountains, differ from those observed near the surface, suggesting that hydraulic properties, such as hydraulic conductivity, porosity and storage coefficients, are different within the mountain.

Groundwater inflows in the Myra Falls mines were not reported as a problem, since significant amounts of water are restricted mainly to shallow fracture zones. The mine managers have reported that groundwater is mainly restrained to the surficial material and the upper 120 m of the bedrock (Westmin Resources Limited, 1982; Northwest Geochem, 1992). Inflows encountered during the driving of drifts are associated with fracture zones that are deep within the mountain core. They do not yield considerable amounts of water and their flow usually decreases drastically after a few days. Some exceptions are reported, especially in the central part of the Price Mine Level 13, where drillholes are still flowing at high rates several years after completion. These observations suggest the existence of important flow conduits or hydrogeological structures within the mountain. The possible existence of these structures points to the need to collect more hydrogeological information on the hydraulic behavior and the configuration of the fracture network; which is essential for a better understanding of the groundwater flow system of Mount Myra.

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CHAPTER III

HYDROGEOLOGICAL CHARACTERIZATION OF THE FRACTURE NETWORK WITHIN A MOUNTAINOUS MASSIF, MOUNT MYRA, B.C.

3.1 Introduction

The understanding of fractured-rock hydrogeology has evolved rapidly in the past decade due to concerns about groundwater contamination resulting, for example, from radioactive waste disposal in low-permeability rocks. Countries such as France, Sweden, Switzerland, the United States and Canada have initiated large research programs with large-scale field experiments, leading to a better understanding of groundwater flow and solute transport mechanisms in fractured rocks. These experiments demonstrated the influence exerted by the fracture network geometry and the fracture properties, such as aperture width, orientation, density, spatial distribution, anisotropy, connectivity and channeling, on fractured-rock groundwater flow systems (Barenblatt et al., 1990; Neuman and Neretnieks, 1990; Bear et al., 1993; National Research Council, 1996). Fracture patterns and properties are directly related to stresses imposed on the rock mass by geological processes and, to a much smaller extent, by human activities. A thorough understanding of the geological setting is therefore an essential component in the formulation of a conceptual model for groundwater flow and solute transport in fractured-rock aquifers.

Several conceptual models have been proposed to represent groundwater flow systems in different types of fractured-rock aquifers, such as sedimentary basins, karst, volcanic flows and mountainous regions. Among these environments, there are relatively few studies to

support conceptual models in mountainous regions. Mountainous areas, for one, are often characterized by igneous and metamorphic rocks that have been folded and fractured by large-scale tectonic processes. Hydraulic properties within these massifs can vary considerably depending on the location, depth, types of rocks, and degree of weathering and deformation (Gudefin, 1967; Jamier, 1975; Flerchinger et al., 1992; Shimojima et al., 1993). Typical conceptual models of groundwater flow systems in mountainous regions consist of a fractured layer near the ground surface, underlain by a more massive core (Jamieson and Freeze, 1983; Gerhart, 1984). This model agrees with the concept that hydraulic conductivity in rock masses generally decreases with depth, where inflow zones become restricted to major faults (Raven and Gale, 1986; Gustafson and Krasny, 1994). Site-specific studies are needed in order to accurately evaluate the hydraulic properties of rocks in mountainous environments.

The hydraulic characteristics of fractured-rock aquifers are typically examined through field and modeling studies. Field methods for the characterization of the fracture network included the measurement of fracture orientation, aperture width, trace length, spacing, density and seepage rate (Jamier, 1975; Rouleau, 1984; LaPointe and Hudson, 1985; Dreier et al., 1987; Lachmar, 1993; Mabee and Hardcastle, 1997). Fracture-trace analysis from aerial photographs or satellite imagery has been used to determine the location and orientation of large structural features that could act as local and regional flow channels (Mabee et al., 1994; Gustafsson, 1994). Hydraulic properties, such as hydraulic conductivity, anisotropy and connectivity, have been evaluated directly in open holes with pumping tests (Gernand and Heidtman, 1997) and flowmeters (Paillet et al., 1987). Straddled-packers have been used to investigate discrete fracture zone properties (Barker and Black 1983; Bottomley et al., 1984; Hsieh et al.,1985). Tracer tests have

been used to determine the connectivity between fractures and the direction and velocity of groundwater flow (Abelin et al., 1991a and 1991b). The variability in fracture properties and its influence on fracture-flow was studied with numerical methods (Snow, 1969; Sagar and Runchal, 1982; Long and Witherspoon, 1985; Skinner, 1985; Gomez-Hernandez and Gorelick, 1989; Bradbury and Muldoon, 1994). The overall goal of these studies was to provide more accurate data in order to formulate representative conceptual models of groundwater flow systems in different types of fractured-rock masses.

The interpretation of the results from these studies enabled the representation of groundwater flow systems in fracture networks in three broad categories of conceptual models: networks of discrete fractures (Rouleau and Gale, 1987; Hestir et al., 1987; Long and Billaux, 1987, Cacas et al., 1990), equivalent porous media (Raven, 1985; Davison et al., 1994 a, b) and dual-porosity media (Lachmar, 1989; Desbarats et al., 1998). Only a detailed investigation of the hydrogeological characteristics of a site will allow one to choose between the proposed models.

This study examines the hydrogeological characteristics of the fracture network in a mountainous massif, Mount Myra, located within the limits of the Myra Falls mining complex, on Vancouver Island, B.C., in order to elaborate a conceptual model of the area. The Price Mine of the Myra Falls mining complex provides an ideal site to analyze fractured-rock hydrogeology within a mountainous massif because of an accessible network of underground workings and relatively undisturbed groundwater flow conditions. The mine is located in moderately- to highly-fractured volcano-sedimentary rocks within Mount Myra. This chapter describes the hydrogeological characteristics of the fracture network in the Price Mine. Specifically, it identifies the main hydrogeological structures; evaluates the spatial

variability and spatial distribution of the hydrologically-active fractures within the Mine; and examines the impact of the geometry and characteristics of the hydrologically-active structures on the representation of the groundwater flow system.

3.2 Methodology

The fracture network in the Price Mine was characterized using field approaches similar to those described by Jamier (1975), Rouleau (1984) and Lachmar (1989), with the exception that, because of time constraints, less attention was given to details and fewer parameters were examined. Briefly, the approach consisted in the mapping of only the major structural features crossing the back (ceiling) and ribs (walls) of the drifts (fractures less than 1 meter in length were assumed to originate from blasting). Some fractures could not be easily identified because of a mud coating on the back and ribs in several sections of the drifts, but hydrologically-active fractures could still be located by the dampness of the mud and other signs of water seepage, such as drip marks, stained rock, etc. It was therefore feasible to reliably identify and characterize hydrologically-active fractures and faults throughout the Price Mine.

The parameters recorded during the structural mapping were fracture location, orientation, width estimate, as well as the type of infilling material. Levels 4, 9 and 13 of the Price Mine were mapped and their location is shown in Figure 3.1 in a schematic diagram of the mine workings with the trace of the major geological structures observed in the mine. Measurements were made over the back and both ribs of the drifts in order to intercept the most structures, instead of using a more traditional scanline survey where measurements are made only along a straight line. In the Price Mine, identification of the fracture orientation is

favored in the *northeast* direction relative to the *northwest* direction due to the general Northwest-Southeast orientation of all the main mine drifts. This unavoidable bias was reduced somewhat by making measurements in the few existing lateral drifts. Subhorizontal structures were also underestimated due to the horizontal orientation of the drifts, but some of them were identified by mapping the walls of the drifts. In order to obtain a more complete picture of the fracture network, the structural survey was complemented with the drill logs and structural information available from previous work on the mine site (Juras, 1989; Hamilton, 1995).

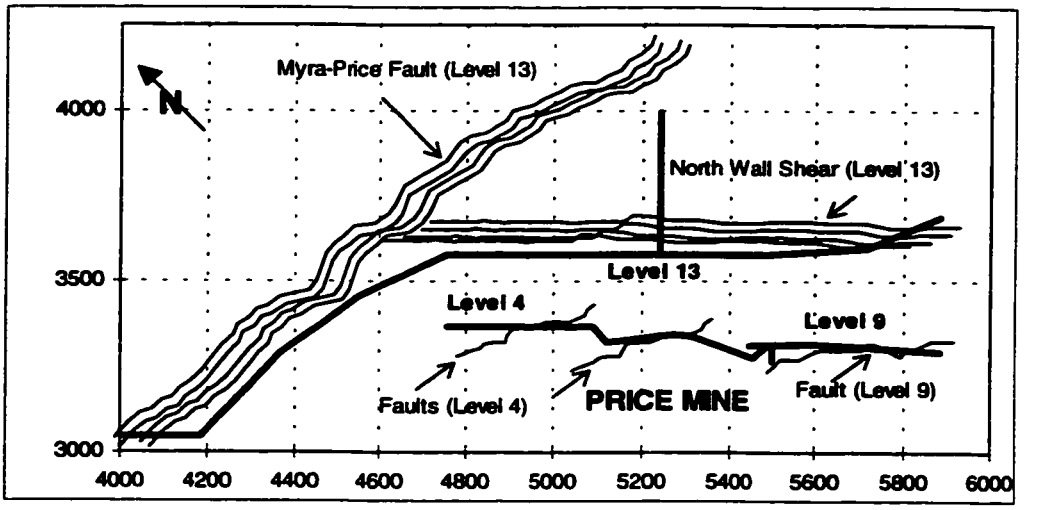


Figure 3.1 : Underground mine workings - Price Mine (planview).

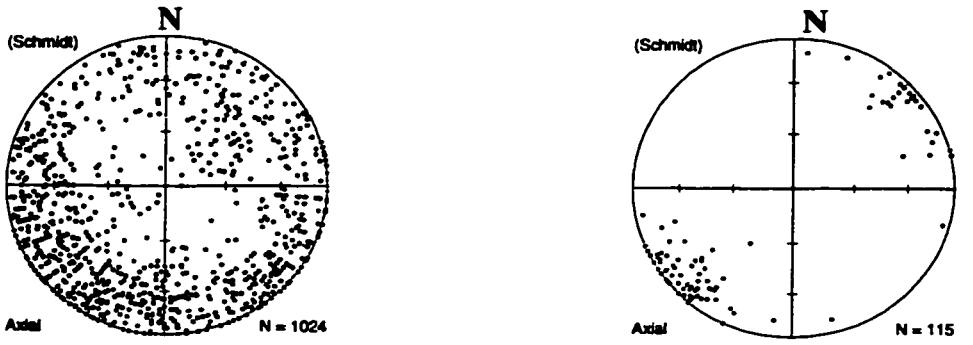
Mapping of hydrologically-active features was done using an ordinal rating, because it was impractical to evaluate groundwater flowrate in individual fractures. A numerical value was given to each fracture:

0 - dry;
1 - dampness;
2 - beading;
3 - dripping;
4 - intensely dripping;
5 - fracture flow.

The hydrological index used here should be interpreted only as a very qualitative description of the flowrate from each fracture since the conditions vary so dramatically throughout the year. Measurements were made during the summer (1994 and 1995), when the hydrogeological regime is not affected by severe winter storms. The severe storms of winter drastically and erratically modify the water flow conditions in the watershed, causing conditions that are not representative of the steady-state baseflow conditions. Mapping performed during the summer will underestimate the amount of hydrologically-active features. Although the mapping approach used here does not account for the seasonal variations of inflow, it was assumed that it would provide an adequate identification of the major hydrologically-active structures in the drifts.

The spatial distribution of fractures in the rock mass was analyzed on the basis of total fracture density. One-dimensional fracture density was defined as the number of fractures intersecting the ceiling of the drift per unit drift length. The drifts were divided into units of approximately 100 meters, where the number of intersecting structures on the back of the drift was counted. The density of hydrologically-active fractures (index of 2, 3, 4, 5 on the hydrological scale) was also counted from the same set of fracture data. Fractures with an index of 1 were not included as hydrologically-active fractures because it was assumed that dampness is not a sufficient indication of active groundwater flow. The fracture density was calculated without accounting for their orientation since the objective was to provide a general representation of the fracture network of the rock mass and because most of the fractures showed a similar preferential orientation in each structural domain.

The orientation of fractures, faults and joints was examined using lower-hemisphere Schmidt stereonets. Fracture orientation (strike and dip) is represented on these plots as the projection on a lower-hemisphere of an axis orthogonal to the fracture plane. This type of plot allows an easy comparison of several fracture sets on the same plot. Figure 3.2 presents lower hemisphere Schmidt stereonets of a) all fractures, joints and veins, and b) all foliation data collected during the course of this study. The complete data set is presented in Appendix II.



A. Fracture, joint, vein measurements **B. Foliation measurements**

Figure 3.2: A) Fracture, joints and veins; and B) foliation data collected in the Price Mine levels 4, 9 and 13.

Fracture aperture estimates and type of infilling material were recorded where feasible during the course of this study; but it is believed that this information is of limited value at this site. Fracture aperture is a poor indicator of "natural" fracture aperture because of the stress release resulting from rock excavation. Also, the identification of the exact nature of the infilling material in fractures was impaired in many areas of the mine by the thick cover of mud on the walls and ceiling of the drifts. Although these parameters are important in detailed studies, it is believed that the information provided by the measurements of fractures aperture and infilling material is less essential here, in the context of a large-scale study, and

since that information (infilling material) is already reported in other documents (mining and geological structure reports).

3.3 Results and Discussion

3.3.1 Inflow Structures in the Price Mine

Origin of Inflows

Underground mining activities are known to considerably modify groundwater systems through changes in hydraulic conductivity, induced by blasting and the removal of rock, and through changes in flow components, due to dewatering. Three principal activities possibly affecting groundwater flow were identified at the Price Mine: the driving of drifts in the rock mass, the ventilation of the mine, and the drilling of exploration holes and rock-bolt holes.

It is well known that the driving of a drift modifies the flow field configuration by changing the rock stress field in the vicinity of the underground opening (Bidaux and Tsang, 1991). Tsang and Witherspoon (1983), Raven and Gale (1985) and Gentier (1990) showed that hydraulic properties are stress dependent. The pressure exerted by the weight of the rock on the back of the drift results in the closure of small, existing fractures, thus reducing hydraulic conductivity and restraining flow to preferential channels, such as large faults or drillholes. Conversely, the rock in the ribs and the floor of the drifts is less affected by this pressure and water can infiltrate more easily through these areas from the surrounding rock mass into the drift (Gale et al., 1976). This was observed near the Myra-Price Fault (Price Mine Level 13 and Myra Mine levels 10 and 11), where in localized areas substantial amounts of water could be found on the floor; while the back and ribs remained dry. The source of this water

could not be ascertained, but it is believed to be from seepage through the floor. Field observations in the deep parts of the Price and Myra Mines have shown that the amount of seepage generally decreases with depth, where it is restricted to areas near major structural features.

Typically, the concentration of stress in the rock from the zone adjacent to an opening decreases farther away from it. Thus, the original undisturbed hydraulic properties of the rocks can only be encountered at a certain distance from the drifts. Abelin et al. (1991a and 1991b) and Yanagizawa et al. (1995) estimated that this distance ranges from a few meters up to 100 m beyond the opening, depending on the tunnel or drift diameter and the petrographic and structural characteristics of the rocks. In the Price Mine, the influenced zone was presumed to be of the same order of magnitude, since its extent has not been measured specifically. The driving of drifts therefore leads to an inflow distribution that may not represent accurately the natural groundwater flow conditions in the Price Mine, although it is believed that it may represent the larger flow channels that are still able to reach the drift.

Ventilation can sometimes remove a substantial quantity of water from walls in underground workings (Raven and Gale, 1986). The effects of mine ventilation can lead to the underestimation of inflow distribution and misinterpretation of the hydrological conditions, especially in areas of low permeability. The volume of water that can be removed by ventilation is primarily a function of the ratio of temperature and humidity of intake air against exhaust air, as well as the volumetric flow rate of circulating air. In Price Mine levels 4 and 9, removal of water from the back and walls by air circulation is unlikely because both drifts are dead ends with no ventilation and therefore with extremely limited air circulation.

In Level 13, a strong draft can be felt at the portal, which undoubtedly removes a sizable amount of water. This amount of water has not been quantified here, but it was obvious that ventilation was not removing all inflows in Level 13 since water could be observed in substantial amounts at many locations along the drift.

Many inflows in the Price Mine are associated to underground drillholes and rock-bolt holes. The drillholes act as preferential channels for the water, thereby depressurizing and perhaps dewatering part of the rock mass in the vicinity of the drillholes. In levels 4, 9 and 13 of the Price Mine, the drillholes with the largest flow were plugged at the beginning of the study in an attempt to limit their influence on the quantity of water coming into the drift. The plugs interrupted most of the flow, but in some instances, water found other paths into the drift. Numerous rock-bolt holes with depths of less than 1 meter were also dripping on the walls and ceilings of the drifts but could not be plugged. The constant presence of water near geological structures in the Price Mine and high water levels measured in nearby surface and underground drillholes indicates that saturated conditions still prevail in the rock mass surrounding the drift, even several years after the driving of the drift.

Based on field observations, the hydraulics of the groundwater flow into the Price Mine drifts appear to be controlled by major fracture zones and anthropogenic features such as drillholes or rock-bolt holes. The presence of leaking drillholes and rock-bolt holes appears to have a strong impact on the drift's water balance. However, at the mine-scale, since flowing rock bolt and drill holes intersect major flow structures close to the drift, it is assumed that the rock mass adjacent to the drift is representative of natural groundwater conditions in the vicinity of the Price Mine (saturated conditions, major inflows distribution, location of

hydrologically-active fractures) and adequate for a detailed analysis of the fracture network's hydrological characteristics.

Inflow Structure Distribution

The spatial distribution of hydrologically-active geological structures in the Price Mine's drifts is presented in a schematic cross-section of Mount Myra in Figure 3.3. The location of the main inflows associated with fractures or faults that are dripping or flowing continuously (3, 4 and 5 on the hydrological scale) is shown as bar graphs on the diagram.

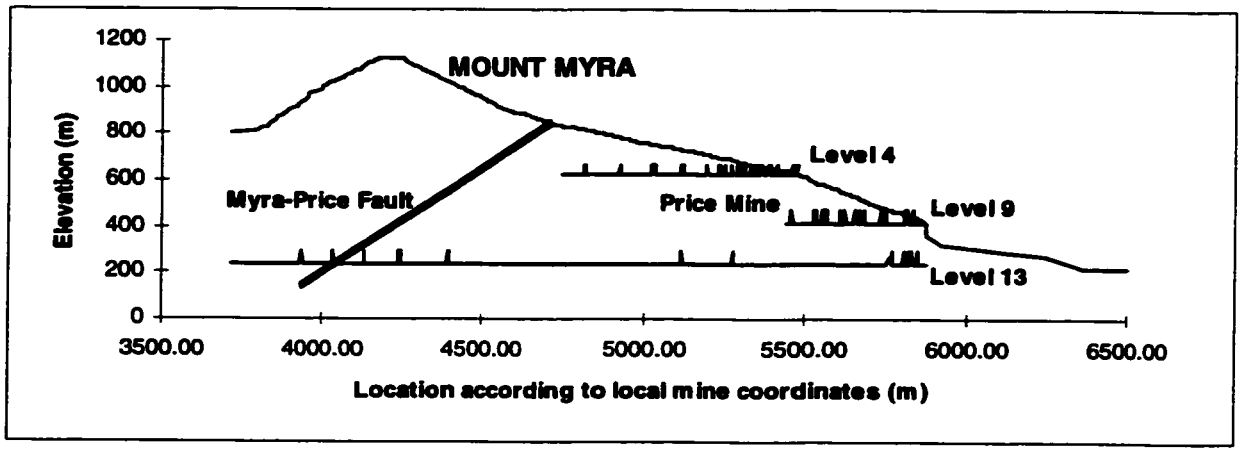


Figure 3.3 : Distribution of geological-structure inflows in the Price Mine.

Based on the field observations made in levels 4, 9 and 13, the inflow structures appear to be more common in the portion of the drift that is closest to the ground surface. This is particularly obvious in levels 4 and 13 and was also reported at Myra Falls in the Lynx Mine (Northwest Geochem, 1993). The inflows in Level 9 are more uniformly spread along the drift probably because the drift follows the plane of a large schistosity zone. The concentration of inflows near the portals appears to be related in part to their location within the mountain. The hydraulic conductivity of the rock mass is expected to be higher near the

ground surface due to increased weathering and stress release resulting from erosion of upper rock layers. The important inflows observed in the more fractured rocks located near the surface in the first part of the drifts could be associated with runoff and interflow or perched water tables or a zone of recharge/discharge of the deeper groundwater flow system.

In the deeper sections of the Price Mine, inflow areas are situated in highly scattered locations, often associated with fracture zones, although there are only a few examples of water flowing in open fractures. The water is usually dripping from the walls and the ceilings of the drifts. Similar underground observations in fractured rock masses were reported in other studies, including Jamier (1975), Lachmar (1989), and Abelin et al. (1991a), where the water inflows were concentrated in a few areas, separated by large dry zones. The distribution of inflows in the deeper sections of the mine appears to coincide with observable large structural features that are intersected by the drift and with less apparent features that are reported in nearby underground drillhole logs.

Inflow Structure Density

The structural and hydrogeological survey conducted in this study identified the location of the major fractures, faults, veins and joints crossing the drifts, from which the fracture density of the rock mass was calculated. The density of all fractures and of hydrologically-active fractures in each of these sections is presented in Figure 3.4. A few zones in Level 13, between 5000 and 5600 m, according to local mine coordinates, may have been poorly characterized because of the thick coating of mud covering the walls of the drift. Conversely, flowing drillholes near some of the structures may have artificially created wet conditions leading to an overestimation of the density of hydrologically-active fractures in some areas.

Despite these localized effects, it is believed that the location of the hydrological structures are representative of the distribution of inflow zones at the mine-scale because of the relatively short length of the drillholes (limited influence) compared to the mountain size.

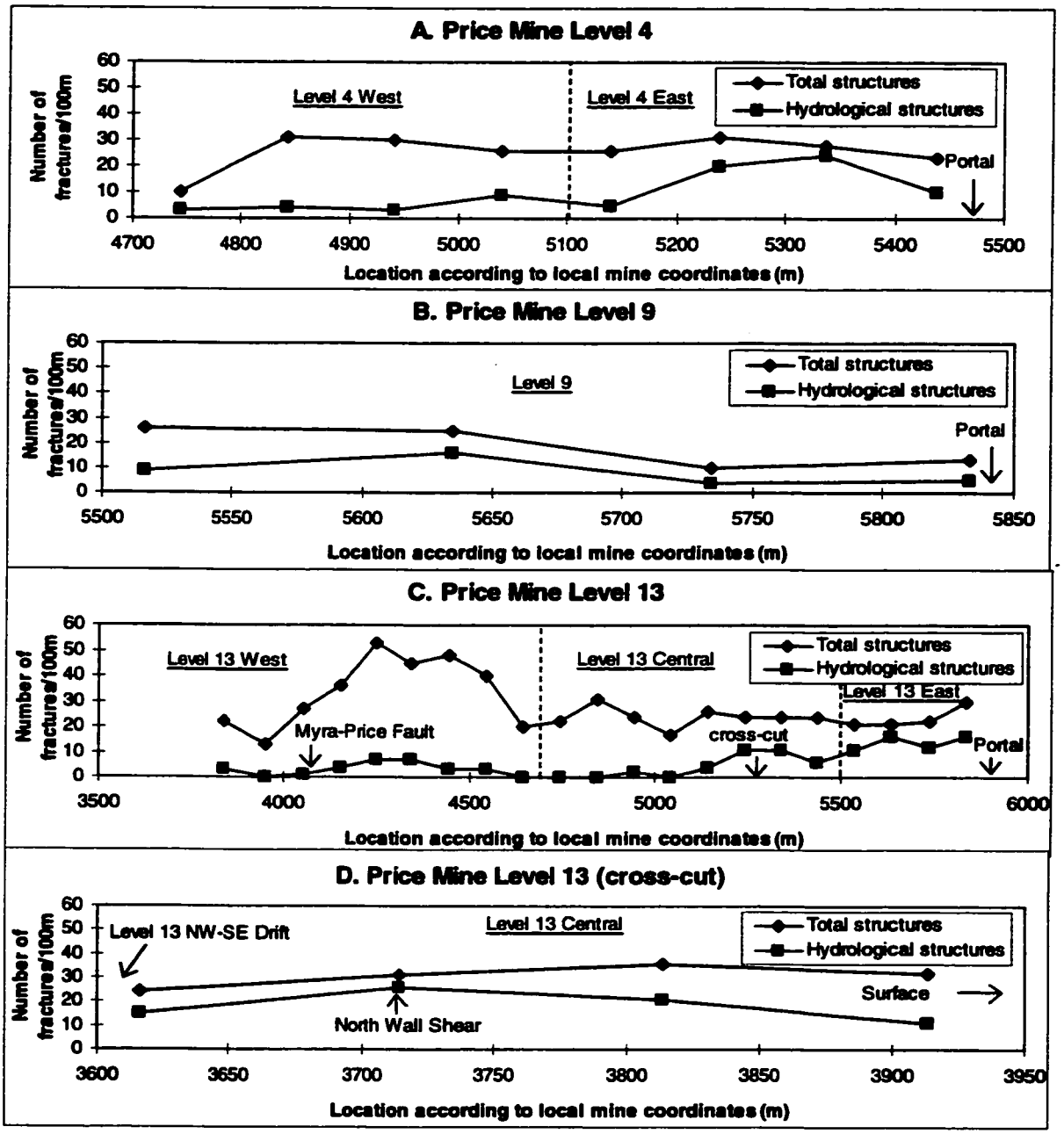


Figure 3.4: Fracture density per 100 m sections measured in the Price Mine underground workings.

Fracture density is generally constant throughout the mountain. The density measured is in the range of 10-30 fractures/100m along the drift. There is an exception in the deeper part of Level 13 (location between 4000m and 4600m), where the density measured varies between 27 and 53 fractures/100m. This area, located in the vicinity of the Myra-Price Fault, corresponds to a different drift orientation to the first section of Level 13, which explains the apparent mismatch of the peak in fracture density with the fault zone in Figure 3.4C. However, the Level 13 cross-cut, which also has a different orientation, did not exhibit the same high fracture density. A reason that may explain the high fracture density measured in this section of Level 13 is the presence of the large Myra-Price Fault, which has displaced a huge volume of rock. This might have greatly influenced the fracture patterns in the surrounding rocks in this part of Level 13. The observations made here show that fracture density can vary depending on the location within the mountain with the implication that hydraulic properties can also vary.

The density of hydrologically-active fractures is generally much smaller than the total fracture density and varies from 0 to 24 fractures/100 m. The density is greater in the first 400 m of drift from the portals, compared to the deeper part of the mountain. In the deeper part of the Price Mine, more hydrologically-active fractures are encountered in the vicinity of the Myra-Price Fault and in the Level 13 cross-cut (*northeast* strike). In Level 13 cross-cut especially, in the central part of the drift near the North Wall Shear area, a large percentage of the structures identified are hydrologically-active fractures. These observations support the affirmation that inflow zones at depth coincide with major structural features. These observations also indicate that not all the fractures are contributing to the groundwater flow,

which suggests that flowpath may have preferential orientation according to the strike and dip of the hydrologically-active fractures.

Hydrogeological Domains

A visual inspection of the fracture density data in Figure 3.4 showed that distinct variations in fracture density and hydrologically-active fracture density occur along the drifts. The drifts were divided into 6 hydrogeological domains according to these locations and based on field observations:

1. Level 4 East: from the portal to coordinate 5100m;
2. Level 4 West: from 5100m to the end of the drift;
3. Level 9 was categorized as a whole domain due to its short length (433m);
4. Level 13 East: from the portal to location 5500m;
5. Level 13 Central: from 5500m to location 4700m and including the cross-cut drift (5242m);
6. Level 13 West: 4700m to location 3800m.

These divisions appear to provide a representation of the domains within the mountain: Levels 4E, 9 and 13E in fractured rocks near the surface; levels 4W and 13C the central part of the mountain; and level 13W the deepest part of the mountain near the Myra-Price Fault and its surroundings.

Hydrologically-active fractures, classified by degree of hydrogeological activity, were plotted in the histograms in Figure 3.5, as frequency of each level of activity. The results, which are presented according to the six hydrogeological domains, give a qualitative estimate of the groundwater conditions in each domain in the Price Mine.

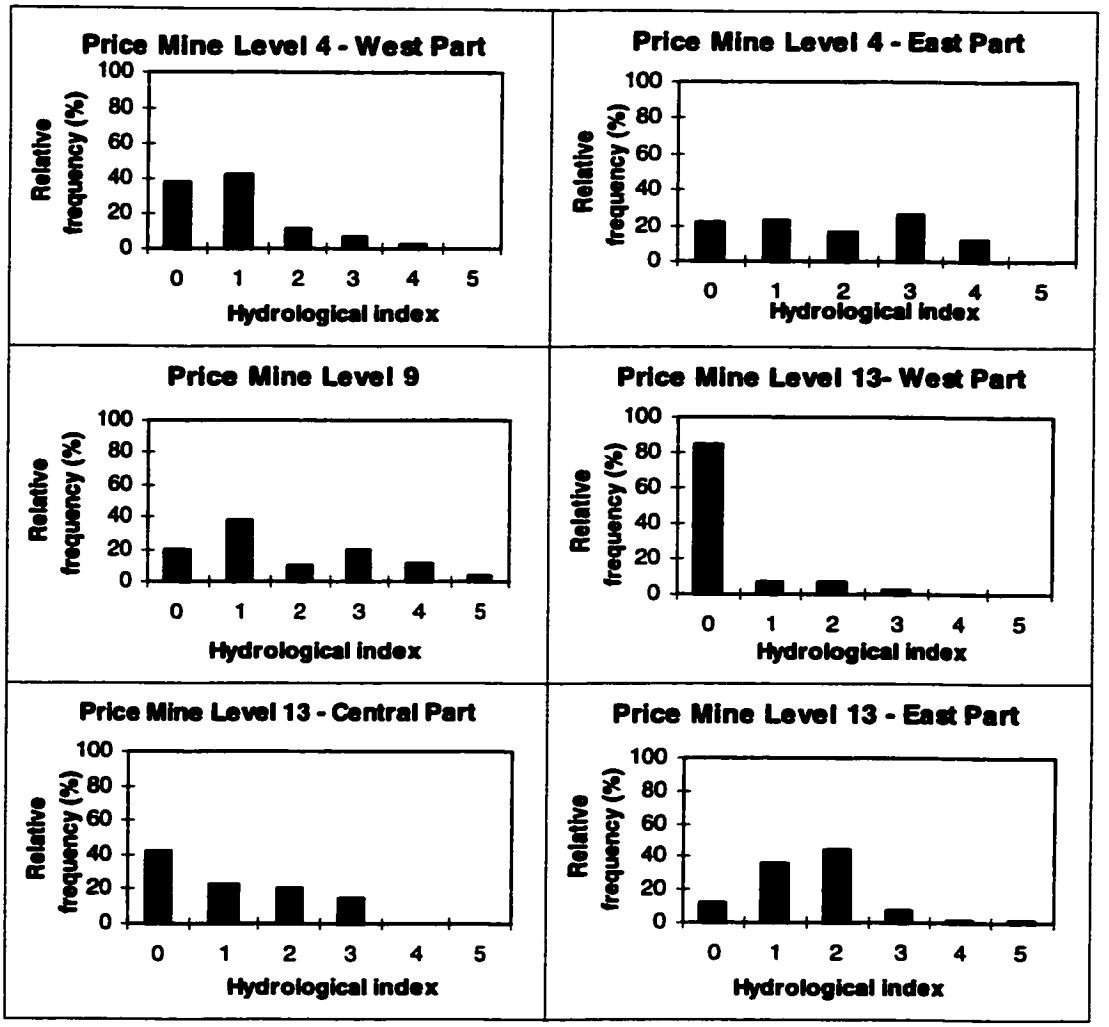


Figure 3.5: Frequency of fractures showing different hydrological characteristics in the Price Mine.

Although signs of water are encountered throughout the mountain, hydrologically-active structures are mainly concentrated in the drift sections near the ground surface, where high flow structures (index 4 and 5) are more common. The histograms clearly indicate that the rocks in the deep *west* parts of levels 4 and 13 have a smaller proportion of hydrologically-active fractures than the rocks near the surface, even if some high-yield fractures (index 4 and 5) were encountered in the deeper part of levels 4 and 13 (more apparent in Figure 3.3). In the deeper sections, water inflows are associated to specific structural features. Dry conditions

are observed in deeper parts in the drifts in spite of the large hydraulic heads measured in nearby drillholes (see Chapter 6). The small number of inflow areas along the drift suggest that seepage mainly comes from natural large flow channels in the deeper part of the mine. As reported by others (Jamier et Freeze, 1983; Gerhart, 1984), at least two distinct groundwater flow domains with specific characteristics may be considered in mountainous massifs: a shallow groundwater flow system and a deeper groundwater flow system. The observations made here agree with this conceptual model.

In order to evaluate if the divisions of the drifts into distinct hydrogeological domains was justified, a series of pair-wise comparisons were made of the ratio of water-bearing structures to the total number of structures. This approach was used by Lachmar (1993) to examine in an underground opening the correlation between discharge rates in water-bearing structures and corresponding structural domains. The proportion of the number of hydrologically-active structures (hydrological index of 2 and more) to the total number of structures in each hydrogeological domain are presented in Table 3.1 The apparent increase in total number of structures in Level 13 is due to the increase in size of the domain over which they were measured.

Hydrogeological domain	Proportion of hydrologically-active structures (%)	Total number of structures
Price Mine Level 4E	55	108
Price Mine Level 4W	20	97
Price Mine Level 9	43	83
Price Mine Level 13E	52	128
Price Mine Level 13C	35	295
Price Mine Level 13W	9	308

Table 3.1 : Proportion of the number of hydrologically-active structures (hydrological index of 2 and more) to the total number structure in each hydrogeological domain in the Price Mine.

The test statistic is a standard normal deviate calculated from the following equation (Miller and Freund, 1977):

$$z = \frac{(x_1/n_1)-(x_2/n_2)}{(p^* (1 - p^*) (1/n_1 + 1/n_2))^{1/2}} \qquad \text{Eq.: 3.1}$$

where: x_i: number of hydrologically-active structures in the ith population
n_i: total number of observations in the ith population
p^*: $(x_1+x_2)/(n_1+n_2)$

The numerator gives the difference between the observed proportion and the denominator the standard error of this difference. The null hypothesis (H_o) tested is that the proportions of hydrologically-active structures in each domain are equal (i.e., $z = 0$). The alternate hypothesis, H_a, is that the proportions of hydrologically-active structures in each domain are not equal. The pair-wise z statistics and the resulting measured significance levels, p, are presented in Table 3.2 A and B, respectively.

The darkened cells in Table 3.2B indicate pair-wise comparisons where the null hypothesis can be rejected at a confidence level of 99% (i.e., p values that are less than 0.01). This confidence level was chosen as a bench mark; the p values in Table 3.2B give the probability of falsely rejecting H_o (= 1 - confidence level). The proportions of hydrologically-active structures in the Price Mine are significantly different along same levels 4 (E and W) and 13 (E and C and W), and, in general, closer to the surface (4E, 9 and 13E). Significant differences could not be seen between structures in the deepest part of the mountain (4W, 13W and 9). Level 9 appears to be a combination of domains related to 4W and 13W and also to 13C. This is understandable because Level 9 has been analyzed as a whole hydrogeological domain that may include characteristics of levels 13C and 13W. The results

from this analysis suggest that the divisions along the drifts are a good representation of the distinct hydrogeological domains. As mentioned earlier, these domains can exhibit distinct hydraulic properties but they can also be hydraulically connected with other sections (levels) of the mountain.

A. Z statistics

	P4E	P4W	P9	P13E	P13C	P13W
P4E	-					
P4W	-5.16	-				
P9	-3.45	1.54	-			
P13E	2.93	10.13	7.61	-		
P13C	-2.83	3.58	1.41	-7.81	-	
P13W	-5.01	0.35	-1.27	-10.08	-3.36	-

B. *p* value (measured significance level)

	P4E	P4W	P9	P13E	P13C	P13W
P4E	-					
P4W		-				
P9		1.2E-01	-			
P13E				-		
P13C			1.6E-01		-	
P13W		7.3E-01	2.0E-01			-

Darkened cells indicate significant differences at the 99% confidence level

Table 3.2 : Pair-wise comparisons of proportions of hydrologically-active fractures: A) z statistics, B) measured significance levels.

Fracture Orientation in the Hydrogeological Domains

The orientations of all the structures identified in the Price Mine were examined for the six hydrogeological domains. Stereonet plots of fracture data are presented in Figure 3.6. The use of statistical methods (Kiraly, 1969; Miller, 1983; Baecher, 1983; Fisher et al., 1985) to separate different domains was not necessary here because several clusters are clearly

identified in the data. Visual inspection of the stereonet plots easily allowed the identification of the dominant structures in the different domains.

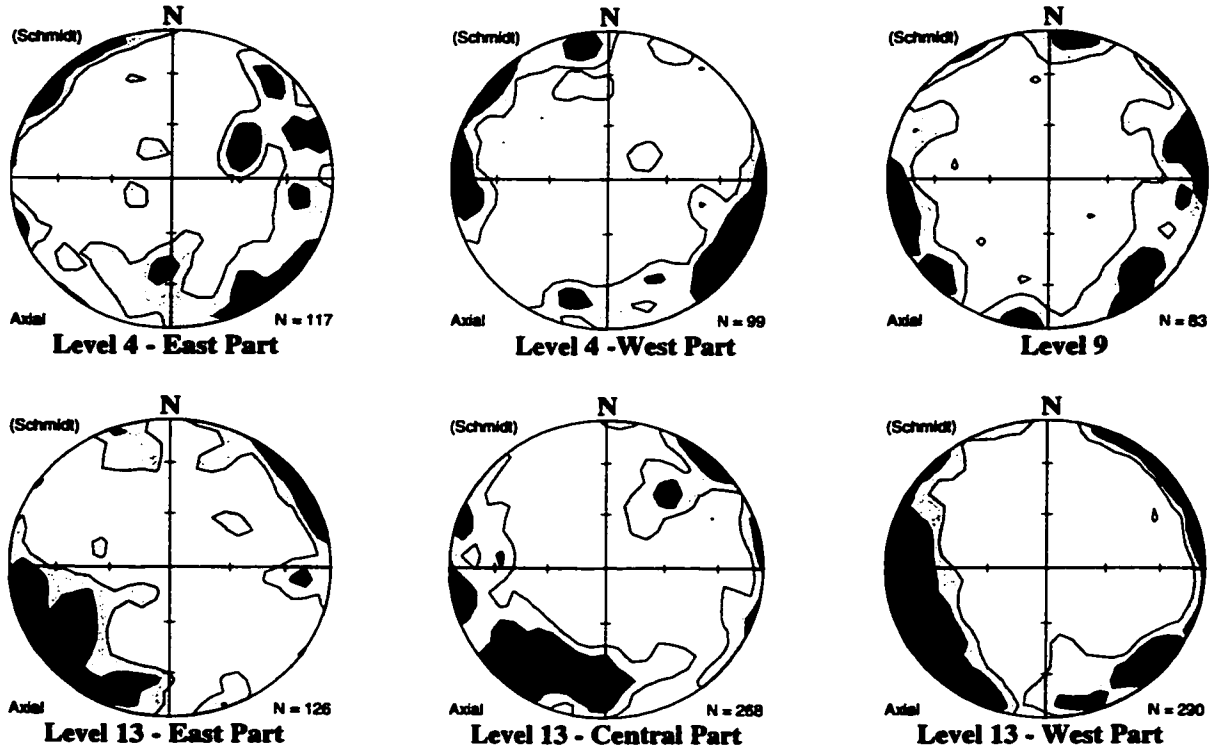


Figure 3.6: Density distribution of structure orientation and dip in the Price Mine.

On the basis of these measurements, each hydrogeological domain was characterized by structures with specific orientation: *northeast* structures and *northwest* shallow-dipping structures in level 4E and 4W; *north* structures in Level 9; *northwest* structures in Level 13E and 13C; and *northeast* and *northwest* structures in Level 13W. Comparing Figure 3.6 with the type of structures defined in the Mount Myra area (Figure 2.6), the structural features encountered in the Price Mine indicate the nature of the tectonic process involved and can be summarized as:

Level 4 - East Part:	Extension cracks, bedding and quartz veins
Level 4 - West Part:	Extension cracks and dextral faults
Level 9:	Foliation, dextral faults, joints and quartz veins
Level 13- East Part:	Foliation
Level 13 - Central Part:	Foliation, dextral faults and quartz veins
Level 13 - West Part:	Foliation, dextral faults, joints and quartz veins

The foliation pattern is encountered in the rocks of almost all parts of the Price Mine: Structures parallel to the foliation (*northwest* trend) are dominant in levels 9 and 13, but not in Level 4. Subvertical structures are the most common in all drifts, but some low angle structures (< 45°) were also measured, especially in Level 4 East and Level 13. Surprisingly, few *northeast* striking fractures were sampled in levels 9 and 13, despite the bias induced by the drift orientation. The *northeast* striking structures should have been more common due to the general Northwest-Southeast orientation of the drift. There seems to be a rotation in the strike of the main structures toward the West with the increase in depth (Level 4 to 9 to 13). The change in the dominant orientation is perhaps indicative of changes in the stress field that could have an impact on hydraulic properties of the rock mass.

In each hydrogeological domain, the orientation of the fractures was associated with the fractures' hydraulic characteristics. The results are presented in Figure 3.7, as lower-hemisphere Schmidt stereonets. The plots show the density distribution contours of hydrologically-active fractures (hydrological index of 2 and more) and the qualitative hydrological index associated to each structure mapped.

Hydrologically-active fractures in the Price Mine levels 4, 9 and 13 show a dominant, distinct *northwest* component similar to the regional foliation. Comparing Figure 3.7 with the structural data in Figure 3.6 indicates that hydrologically-active structures have the same

trend as the majority of the structures mapped, except in Level 9: more hydrologically-active structures in Level 9 are oriented *northwest* as opposed to the generally *north* structural trend. Hydrogeological structures with the same *east-west* trend, as the Myra-Price Fault, are not numerous. Figure 3.7 also indicates that larger flowrate observed from the structures coincide with the preferential orientation. Some *northwest* structures exhibit high flowrates, especially in levels 4E and 9. Several high-flowrate *northeast* structures are also seen in those drifts, which are closer to the surface. Dominant fracture sets and hydrologically-active fracture sets are not always as well correlated (Gernand and Heidtman, 1997; Mabee and Hardcastle, 1997), but as seen in the Price Mine area, the observations made here suggest that the groundwater flow system in the Price Mine is controlled by the dominant fracture network associated with the foliation structures.

Figure 3.7 also indicates the existence of another major flow channel in levels 4 and 13: low dipping faults (<45°). These structures are less commonly observed because fracture sampling is difficult in the vertical direction. High flowrates (hydrological index 4 and 5) are associated with low-dipping structures in levels 4 and 13. This was also confirmed in 1996, when excavation work in a *northeast* extension in the Level 13 cross-cut intersected a saturated low-dipping structure that drained a substantial quantity of water during several days. These structures are mainly associated with bedding planes (Juras, 1987; Hamilton, 1995). From the amount of water observed seeping from bedding planes, these features probably play a controlling role in the groundwater flow system, along with the foliation structures.

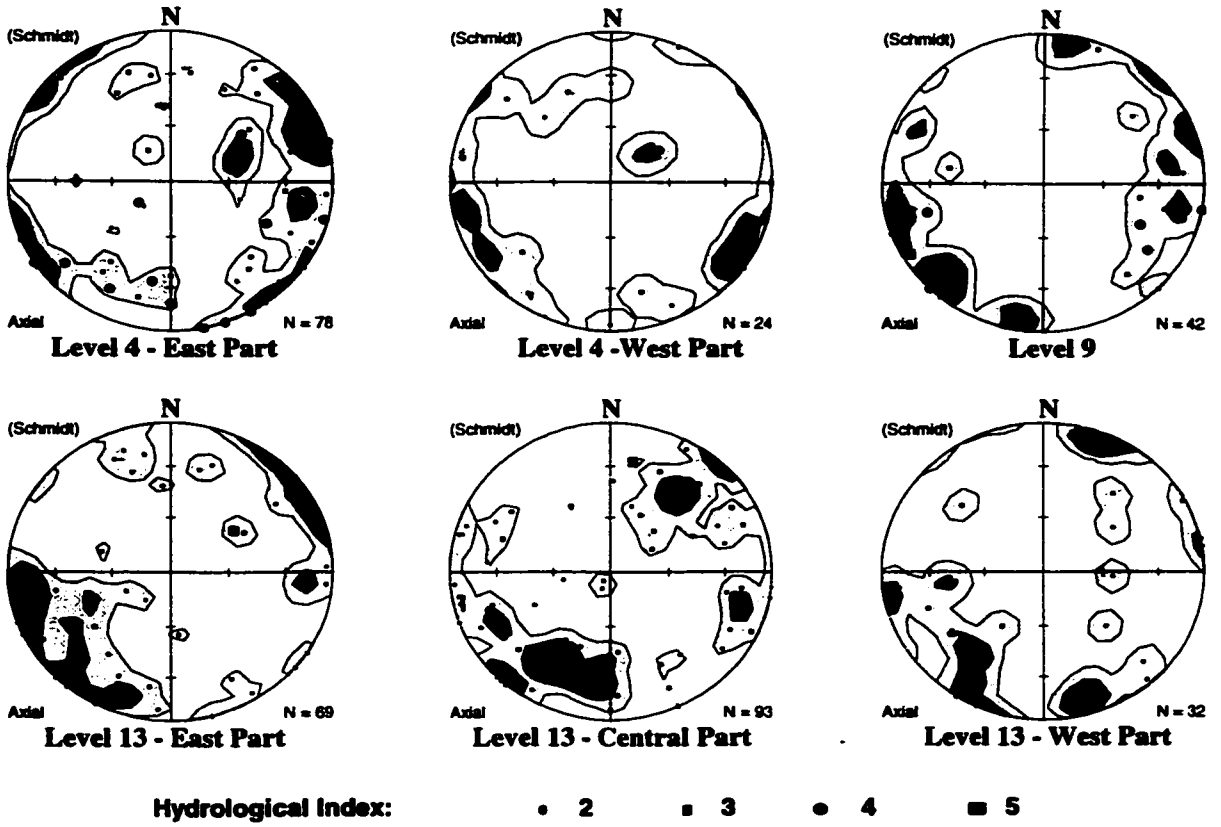


Figure 3.7: Hydrologically-active fracture-orientation density in the Price Mine with the corresponding hydrogeological index.

3.3.2 Hydrological Model of the Rock-Mass

Hydrogeological Domains

Only the fracture network in the rock mass has been studied in this chapter. A correct representation of the system requires the input of hydraulic data, and this topic will be discussed in the following chapters. Nevertheless, the results from the structural and hydrogeological mapping provided a good assessment of the hydrological conditions throughout the mountain and allowed the identification of the main hydrologically-active structures in the Price Mine.

The structural and hydrogeological mapping done in the Price Mine showed that inflow distribution and hydrologically-active fractures present preferential orientation and distinct fracture density related to their location within the mountain. The hydrologically-active fracture-density distribution and the statistical proportions test suggested the existence of distinct hydrogeological domains within the mountain. Most areas of inflow into the drifts are concentrated in the first 400 meters from the portal of the drifts. In the deeper part of the mountain, inflow areas are scattered and are commonly near large structural features.

Based on the higher density of hydrologically-active structures, the rocks in the section of the mountain closer to the ground surface should have a much higher hydraulic conductivity than the rocks in the deeper part of the mountain. Closely-spaced fractures generally enhance porosity and potentially transmissivity. Due to the change in the hydrologically-active fracture density of the rock, from the surface to the deeper part of the mountain, it is reasonable to represent Mount Myra (Price Hillside) as a groundwater flow system composed of two main hydrogeological domains (surface rock and deeper system), perhaps more (because of the significant differences between each domain: see Table 3.2), with a much higher hydraulic conductivity near the surface. This agrees with existing models for mountainous regions (Jamieson and Freeze 1983; Gerhart, 1984; Moore,1992), where a high-permeability crust near the surface surrounds a more massive core.

Flowpath

Many geological structures identified in the fracture network in the area have a *northwest* trend similar to regional structures. In the Price Mine, the North Wall Shear is the largest *northwest* striking structure observed, which was displaced by the later Myra-Price Fault. The

North Wall Shear is related to the youngest shear movement, which may have reactivated some of the earlier structures with the same strike. The results presented in this study clearly indicate that water is preferentially associated with structures with the *northwest* trend, comparable to the North Wall Shear strike.

The *northwest* striking geological structures are subvertical and parallel to some of the large creeks on the Price hillside. The *northwest* striking structures are assumed to be an important flow channel in the Mount Myra's groundwater flow system because several underground exploration holes, drilled perpendicular through these structures, have produced, and are still producing, large inflows in the Price Mine. These geological structures appear to be hydraulically connected to the creeks, which could act as important recharge or discharge areas of the deep groundwater flow system.

Bedding planes also appear to be important flow channels. The bedding planes in the volcano-sedimentary rocks, when encountered, have exhibited large inflows. The discontinuity between the beds, resulting from changes in lithology or granulometry, may represent another preferential flowpath.

The *northwest* striking hydrologically-active structures and bedding planes were encountered at different depths and locations within the mountain (levels 4, 9 and 13), suggesting that they have a major influence over the groundwater flow system of the entire mountain. Also, the large seepage rates from these hydrologically-active structures support the hypothesis that the *northwest* striking hydrologically-active structures and bedding planes are a major control on the overall groundwater flow system. The hydrological conditions (large flowrates observed;

their extent) of the *northwest* striking and bedding planes structures are likely controlling the flow in the deeper groundwater system.

A hydrogeochemical and isotopic study performed by Phipps (1998) in the Myra Falls mining complex demonstrated the importance of *northwest* structures and bedding planes in the deep groundwater flow system. Tritium results indicated that most of the waters sampled underground are recent waters (< 50 years). Phipps also found a distinct isotopic pattern in water sampled along the Price and Myra mines Level 13, reflecting a depletion in ^{18}O values caused by an elevation effect of recharge waters. His results indicated that the groundwater in deeper parts of the mountain (central part) is generally recharged at higher elevation. He also observed similar ^{18}O content in underlying drifts in the Myra Mine levels 10 and 13 (129 m elevation difference between the two drifts) suggesting a direct vertical hydraulic connection. There was an exception however: in the vicinity of the Myra-Price Fault in Level 10 and Level 13, water sampled almost at the same coordinates but at different elevation distinctly indicate recharge from lower elevation in the deeper level. Phipps assumed that channeling in the gouge matrix near the Myra-Price Fault or "short-circuiting" from old mine workings would explain the presence of high-elevation recharge waters directly above low-elevation recharge waters. According to our results, this anomaly may also be explained by groundwater flow along the large low-dipping structures. The hypothesis of recharge waters flowing along the low-dipping structures, as well as direct recharge along subvertical structures, is consistent with the concept of recharge from higher elevation leading to greater depths in the mountain. This suggests that *northwest* striking structures and bedding are the main flow channels in the Price Mine area.

Geological structures with orientations different from the *northwest* striking and bedding planes do not demonstrate a major influence on the groundwater flow system. Very few hydrologically-active structures were identified with an *east-west* trend, similar to that of the Myra-Price Fault. The Myra-Price Fault is characterized, as seen in the Price Mine, by a gouge matrix. Gouge infilling in structures with the same orientation should significantly reduce the permeability of these structures, which would explain the lack of water near the Myra-Price Fault.

Other inflow structures with a *north* and *northeast* trend contribute negligibly to the groundwater inflow in the drifts and are restricted to specific zones (Level 4 portal, end of Level 9). These structures consist mainly of quartz veins, joints and extension cracks. They would have been expected to act also as significant flow channels since they are perpendicular to major creek orientations (*east-west*: Myra-Price Fault; *northwest*: North Wall Shear) and would eventually intersect them. However, this was not observed in the Price Mine, except near the ground surface. *East-west*, *north* and *northeast* oriented geological structures appear to be mainly restricted near the surface, therefore acting only as a minor component of the deep groundwater flow system.

Among the parameters used to analyze flow in fractured rocks (fracture density, aperture width, orientation, infilling material, etc.), perhaps the most important is the connectivity of the system (de Marsily, 1985). Connectivity may be impaired by infilling material, which decreases the hydraulic conductivity of fractures; and by limited extent of the fracture, especially joints. The degree of connectivity within, and between, fracture networks

determines the flow patterns (Sagar and Runchal, 1982; Long and Whitherspoon, 1985; Bradbury and Muldoon, 1997).

The small number of hydrological-active structures with the *east-west*, *north* and *northeast* trend in the Price Mine suggests a poor connection with the creeks and small connectivity within the structures. The reasons are that the structures with an *east-west* trend may have a gouge matrix; whereas *north* and *northeast* trend structures are mainly quartz-calcite veins and joints. The poor connectivity of the *east-west*, *north* and *northeast* structures suggests that they do not represent important flow channels compared to *northwest* structures and bedding planes. At the scale of the mountain, this would represent a strong anisotropy of the hydraulic properties in the *northwest-southeast* and bedding plane direction.

Conceptualization of Groundwater Flow in the Fracture Network

The influence of fracture network geometry and fracture properties on groundwater flow and solute transport has been demonstrated in several field and numerical studies on contaminant transport (Sagar and Runchal, 1982; Smith and Schwartz, 1984; Long and Witherspoon, 1985) and capture zone determination in the vicinity of pumping wells (Bradbury and Muldoon; 1994; Podgorney and Ritzi, 1997; Ophori et al., 1998). These studies showed the complexity of flowpaths in fractured rock masses, where hydraulic responses and contaminant dispersion patterns exhibit great variability in direction.

The preferential orientation in hydrologically-active structures and the change in hydrogeological characteristics (fracture and hydrologically-active fracture density, inflow distribution and rate; open fractures, gouge or quartz infilling) indicate preferential flow

channels and distinct hydrogeological domains in the Price hillside. Taking into account the observations made in this part of the project, subvertical geological structures in the Price hillside seem to have a strong preferential direction toward the *southeast*, suggesting a similar path for groundwater flow; and lateral flow may occur via the less common shallow-dipping bedding structures.

In the Price Mine groundwater flow system, the following guidelines emerge for the interpretation of flowpaths for mineral exploration or environmental purposes. Groundwater solute dispersion patterns in the Price Hillside are expected to be narrow due to the occurrence of numerous subvertical hydrologically-active structures and fast vertical conduits, as confirmed by isotopic analysis (Phipps, 1998); and few subhorizontal bedding planes. Under these conditions, a two-dimensional cross-section approach, with varying hydraulic properties between the surface and the deeper systems, should provide a good estimate of outflow and flowpath in the upper and deeper groundwater flow systems. Two-dimensional plan view approaches may be inadequate since important subvertical flow occurs within the mountain. However, caution must be taken with the two-dimensional cross-section approach because the observations made during this project (see chapters 4 and 6) strongly suggest lateral variation in hydraulic properties. Therefore, transport of contaminants or tracers in specific parts of the hillside can not be assumed to be representative of the entire groundwater flow system. The groundwater flow system investigated here is sufficiently complex to require the use of a 3-dimensional (or pseudo 3D) model to provide a more accurate representation of groundwater flow and solute transport. These conclusions are

especially critical when preparing conceptual models for numerical modeling for management purposes.

3.4 Summary and Conclusions

The objectives of this chapter were to identify the main hydrogeological structures and describe the spatial distribution and orientation of these structures in the Price Mine, located within the *East* flank of Mount Myra. Detailed structural and hydrological mapping of underground structures was carried out in three drifts located at different elevations in the mountain. Structural and hydrological data have shown that distinct hydrogeological domains are easily identified on the basis of fracture density, strike and dip, and proportions of inflow structures. Inflow areas are more important closer to the ground surface and are irregularly distributed deeper in the mountain. Major inflows in the drifts are strongly associated with *northwest* striking structures, parallel to regional foliation, and with shallow-dipping bedding structures. *Northwest* striking, hydrologically-active structures are parallel to major creeks flowing in the surface trace of large faults encountered along the flank of the mountain, suggesting a connection with the surface. Hydrologically-active structures with the *northwest* orientation and shallow-dipping structures were observed throughout the mountain (on different mine levels), which is an indication of a similar flow orientation at depth. Few *north* and *northeast* trending hydrologically-active structures, associated with quartz-calcite veins and limited extent joint sets orthogonal to the main faults or creeks, were identified at depth suggesting a poor connectivity of these structures and a minor role in the deep groundwater system. The groundwater flow system in the Price hillside of Mount Myra may then be characterized as a system composed of two main hydrogeological domains (surface rock and

deeper system) with a strong similar anisotropy but much higher hydraulic conductivity near the surface.

The results of this study showed that paying particular attention to underground hydrological conditions can provide valuable information on the characteristics of the groundwater flow system despite the constraints associated with the experimental setting (drift orientation, dewatering effects, artificial inflows). The main findings about the distribution of inflows (concentrated in the first few hundred meters of the surface), distinct preferential orientation and the spatial relationship with surface creeks, even at great depths, has provided the basis for outlining a conceptual hydrogeological model of the rock mass in a mountainous area.

The hydrogeological conditions observed in the Price Mine originate from local hydraulic variations that are specific to this part of the mountain and therefore preclude extrapolation in other parts of the mountain. This means that detailed hydrogeological studies are necessary in order to evaluate groundwater flow characteristics in other areas of the mountain where future mining development will take place. Further studies should also aim at specifying the hydraulic properties of the specific fracture sets identified during the course of this project. Hydraulic testing and monitoring could assess the degree of anisotropy of the hydraulic properties and the connectivity in the groundwater flow system. The study of water level and hydraulic head variations at different locations will provide more information to specify the components of the Mount Myra's groundwater system. These aspects will be discussed in detail in the following chapters.

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CHAPTER IV

RESPONSE OF WATER LEVEL IN OPEN DRILLHOLES TO RAINFALL, AIR TEMPERATURE AND ATMOSPHERIC PRESSURE FLUCTUATIONS IN MOUNTAINOUS TERRAINS, MOUNT MYRA, VANCOUVER ISLAND, B.C.

4.1 Introduction

Hydrological studies in mountainous regions tend to focus on processes in hillslope aquifers or shallow groundwater flow systems. More specifically, the influence of rainfall and snowmelt on streamflow generation and the recharge of shallow groundwater systems have been examined extensively in terms of slope stability and watershed management (Stephenson and Freeze, 1974; Flerchinger et al., 1992; Jackson and Cundy, 1992; Reid and Iverson, 1992; Deng et al., 1994). The few studies that have addressed the effects of surface hydrological processes on deep groundwater systems in mountainous terrains (Duffy and Al-Hassan, 1988; Forster and Smith, 1988; Chavez et al., 1994) suggested that recharge patterns and flow in deep groundwater systems tend to be complex because of the high degree of spatial variability of many parameters, including local climatic conditions, topography, geology and vegetation cover. This diversity produces a variability in the recharge mechanisms from the surface to the water table, which in turn influences the water table configuration and consequently the deep groundwater circulation patterns. The purpose of this chapter is to examine the relationship between meteorological processes and water level variations in a deep groundwater flow system in a mountainous region.

Groundwater recharge in mountainous terrains occurs mainly from rainfall and snowmelt (Barry, 1981). Rainfall is especially important, due to the orographic effect that produces more precipitation with an increase in elevation. The effect of rainfall on groundwater levels and streamflow generation in mountainous massifs can be very rapid and intense. A study by Moore (1992) on a hillslope aquifer revealed a strong stormflow component, that produced a rapid rise of the water level in shallow piezometers shortly after rainfall events, followed by a smooth recession. Jackson and Cundy (1992) developed a two-dimensional finite-difference model of saturated subsurface hillslope flow, which they tested against piezometric data collected at a site in the Cascade Range in Washington State. In particular, they analyzed the water level variations as a function of rainfall, elevation, hydraulic conductivity and soil porosity. They showed that the characteristics of peaks in the piezometric responses depend mainly on rainfall rate and effective porosity. They also showed that the recession curve was the most influenced by hydraulic conductivity. The results from these studies have demonstrated that rainfall is a major component of the water balance in shallow-hillslope groundwater flow systems.

While rainfall is an important source of groundwater recharge, snowmelt water was also found to contribute significantly to the water balance in mountainous watersheds, especially when the mountain summits are snow-covered all year round. Stephenson and Freeze (1974) used a numerical model to study runoff generation from snowmelt in a small watershed in a mountainous area. They demonstrated that peak runoff came primarily from early snowmelt near the stream, not from the residual snowbank farther up the slope. Subsurface flow during the melting season was estimated to advance only a few tens of meters, even in very permeable formations. In the same area, Flerchinger et al. (1992) and Deng et al. (1994) also investigated

runoff generation and the response of the shallow groundwater system to snowmelt, using piezometers, a weir and snowdrift collectors. They studied the spatial and temporal variability in snowmelt and established its importance as a major recharge process of hillslope aquifers. They showed that the response time to snowmelt of groundwater levels and streamflow was drastically different from year to year: 3 to 5 days to more than 70 days for years with smaller snow accumulation. This was due in part to the fact that recharge of the unconfined hillslope aquifer could change to recharge under confined conditions when the snowdrift is still covering part of the hillslope aquifer. The correlation of water level variations with snowmelt rates demonstrated in these studies the importance of snowmelt in the recharge of shallow groundwater flow systems in mountainous regions.

Although the effects of rainfall and snowmelt on water level variations in hillslope aquifers are significant, their impact on deeper groundwater systems has not been thoroughly investigated, mainly because of the difficult working conditions in mountainous terrains. Jamieson and Freeze (1983) and Forster and Smith (1988) demonstrated with numerical models that the elevation of the water table is a very sensitive indicator of the factors controlling deep groundwater flow in mountainous regions. They showed that, among the parameters influencing recharge of deep groundwater flow systems, the hydraulic conductivity has the most influence on the water table elevation within the mountain. Spatial variability in hydraulic conductivity leads to irregular water table configurations that may result in great variations in the water balance. Therefore, a detailed analysis of water level depths and hydraulic head fluctuations in monitoring wells is essential in order to estimate groundwater flow direction.

Water level monitoring is routinely used in field studies for the investigation of long-term regional water level declines, bank storage, artificial recharge and geotechnical drainage (Freeze and Cherry, 1979). Continuous monitoring allows the construction of water level hydrographs that describe the hydraulic behavior of a specific hydrological system. Hydrograph analysis techniques are usually used for studies of stream and spring discharge rates (Mangin, 1984; Padilla et al., 1994; Mau and Winter, 1997). Only a few studies, mainly in shallow wells, used hydrograph analysis of water levels to estimate groundwater recharge and aquifer hydraulic properties (Johansson, 1987; Das Gupta and Paudyal, 1988; Moore, 1992). Fewer studies addressed water-level fluctuations in deep complex aquifers (Shevenell, 1996) or in mountainous terrains (Halstead, 1969; Prellwitz and Babbitt, 1984). The results of these studies have highlighted the limitations and difficulties of the experimental setting and assumptions necessary to obtain representative hydraulic parameters of aquifers.

Hydrographs have also been examined by geostatistical techniques in order to describe spatial and temporal variations of hydrological processes. Houston (1983) correlated time-series of water levels with rainfall and mine dewatering rates in order to evaluate regional effects (dewatering, wellfield, irrigation, etc.) on a groundwater flow system. Nevulis et al. (1989) used lagged cross-correlation to assess the hydraulic connection within a groundwater system, the interaction with river stages, and the identification of hydraulic barriers. Other studies demonstrated the use of geostatistical techniques in hydrology to describe the relationships between physical parameters, such as atmospheric pressure and water quality (Furbish, 1991; Angelini, 1997), or were concerned with modeling and long-term prediction of the response of hydrological processes (Roesner and Yevdjevich; 1966; Kang et al., 1992;

Padilla et al., 1996). Although geostatistical techniques have proven useful, their interpretation in heterogeneous and discontinuous groundwater flow systems remains difficult, especially when different flow components, such as conduit-, fracture- and matrix-flow, are superposed (Padilla and Pulido-Bosch, 1995). Nevertheless, geostatistical techniques remain a valuable tool for detailed complex time series analysis.

This section of the thesis examines time-series of meteorological processes, assumed to influence the water level in surface open exploration drillholes, in order to gain a better understanding of the deep groundwater flow system in a mountainous massif, namely Mount Myra on Vancouver Island, B.C. Water-level variations in open drillholes are compared with other environmental variables, such as rainfall, air temperature and atmospheric pressure, using cross-correlation and cross-spectral analysis. Annual water-level fluctuations are examined to evaluate the influence of rainfall and snowmelt on the groundwater flow system. The hydraulic response in the drillholes is interpreted according to the location of the drillholes and the main geological structures in the mountain in order to provide a better representation of the groundwater flow system of the hillside.

4.2 Methodology

The monitoring network used in this project was installed in the Price Mine area, also referred to as the Price Hillside, located on the *east* flank of Mount Myra. The monitoring network consisted of a small meteorological station installed at an elevation of 711 m and several surface open exploration drillholes located on the Price Hillside and in the adjacent Thelwood Valley. Figure 4.1 shows the location of the monitoring network components.

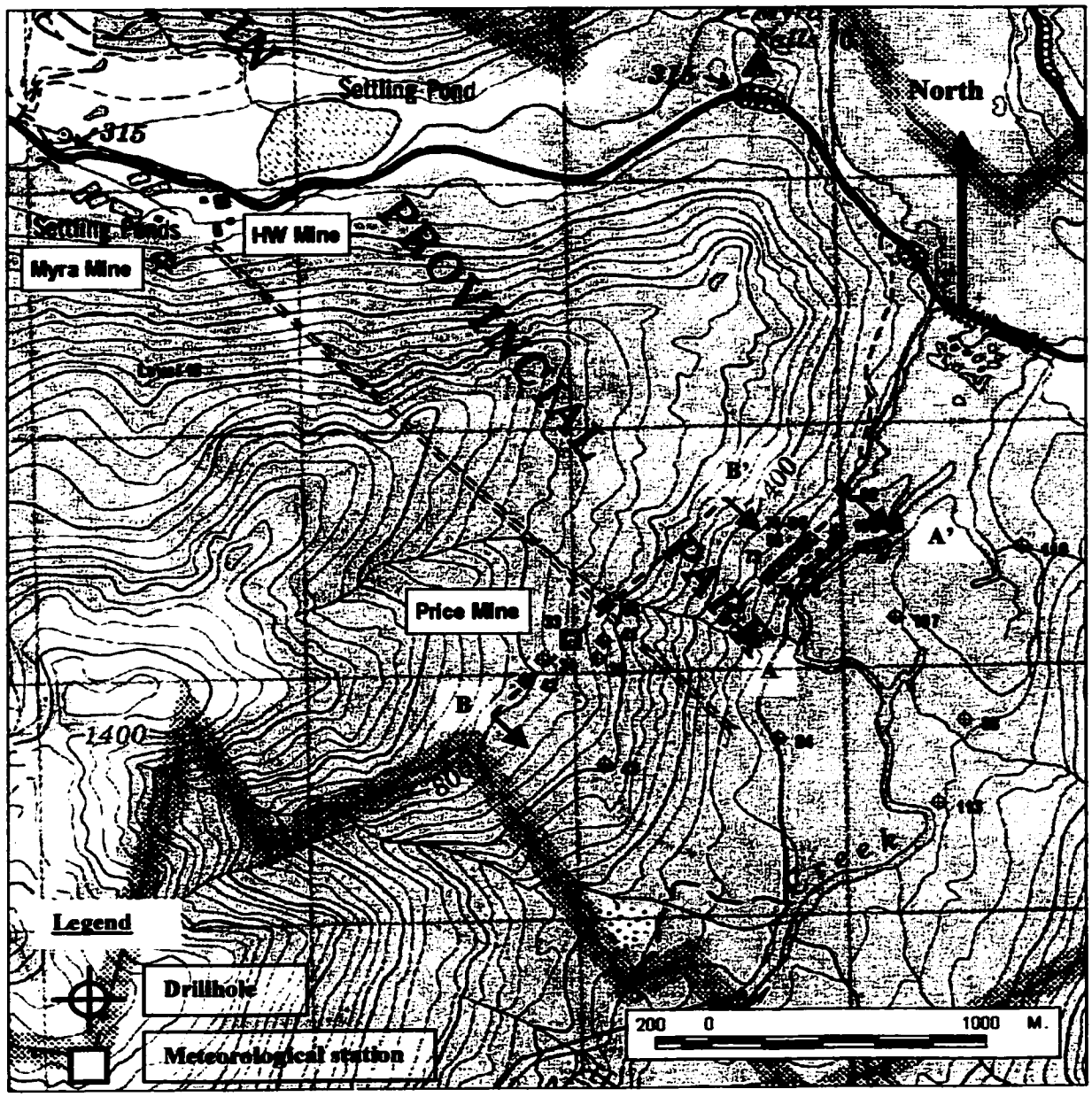


Figure 4.1: Location of the monitoring network on the Price Hillside of Mount Myra and in the adjacent Thelwood Valley.

Rainfall, air temperature and atmospheric pressure data were recorded in a data logger every 6 hours at the meteorological station. The measurements were made from August 1994 to June 1997. Daily measurements of precipitation and temperature were also recorded manually at a weather station operated by Environment Canada in Myra Valley, located on the *west* side of Mount Myra.

Water levels were monitored continually in three deep drillholes on the Price Hillside. Readings were recorded every 6 hours using a pressure transducer connected to a surface datalogger system in PR33 (the same as the meteorological station), which is located at an elevation of 711 m. Downhole dataloggers were installed in PR34, which is located at an elevation of 759 m; and in PR66, located at an elevation of 681 m, in order to monitor water level fluctuations. Water levels were also periodically measured with a water-level tape in a network of 17 surface exploration drillholes. All of the drillholes are open holes in the bedrock with only a short (1.5 m) steel casing at the surface with no grouting around the collar. The locations and traces of some of the drillholes used in this study are shown in Figure 4.2 (see Figure 4.1 for the location of the sections). Some of the drillholes intersect distinct large fracture zones, as described in the exploration drill logs and geological and structural reports provided by the mine geologists.

The main fracture zones described in the exploration geological drill logs are also presented in Figure 4.2 with the assumed location of the major faults observed in the field. Generally, the drillholes located at lower elevations (A) show more fractured zones than the drillholes on the hillside (B). The fault locations were interpolated using drill logs, where heavily fractured cores were described or where the occurrence of gouge was reported, which are

indications of water circulating in the rock; and from surface geological mapping (Juras, 1987). The fractured zones are believed to act as primary flow channels (cf. previous chapter).

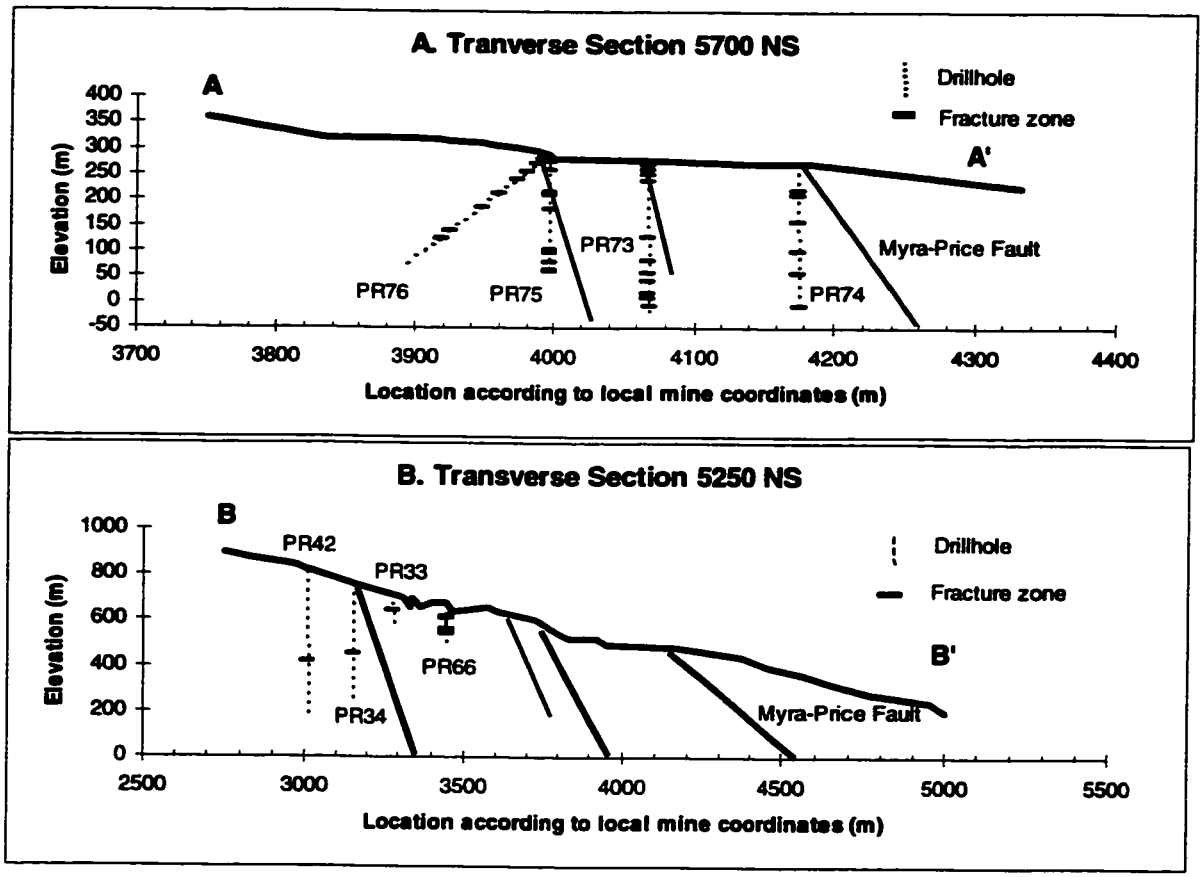


Figure 4.2: Cross-sections along the Price Hillside showing the location of some open drillholes used to monitor water level fluctuations: A) section 5700 NS and B) section 5250 NS. Section locations are indicated on Figure 4.1.

Since the drillholes are open and very deep, they intersect a number of distinct hydraulic features in the fracture network, and, as a result, the water level measured in each drillhole represents a complex and intractable hydraulic interaction between the various hydraulic features that intersect the open hole. The resulting "water level" is therefore not a hydraulic head, but it does nevertheless give an indication of the hydraulic potential, in an average

sense, of the zones intersected by the drillhole. Distinguishing the response of the various hydraulic features encountered in the boreholes would have required the installation of dedicated packers at specific intervals in the drillholes. It was not feasible to do this in this study. Thus, the water-level response to rainfall, snowmelt or atmospheric pressure change, in a drillhole indicates the compounded responses of the various hydraulic features that it intersects.

4.3 Results and Discussion

4.3.1 Meteorological Data

The rainfall, air temperature and atmospheric pressure data recorded on the Price Hillside in this study are shown in Figure 4.3 and given in Appendix III. The interruption in the dataset from March to April 1995 was caused by the failure of the datalogging device: the abundance of snow and rain at the monitoring site caused a continual tripping of the rain gauge, which drained the datalogger batteries. However, to prevent the same problem from reoccurring, the rain gauge was disconnected during the following winter, from November 1995 to April 1996. This enabled us to record short-term temperature, atmospheric pressure and water level variations in PR33. The last interruption in the rainfall data, in November 1996, was the result of the destruction of the rain gauge by a bear. Finally, the rain gauge was reinstalled in April 1997. The interrupted meteorological data from the Price Hillside station was used for short-term comparisons; whereas long-term comparisons were made with the uninterrupted Myra Valley data.

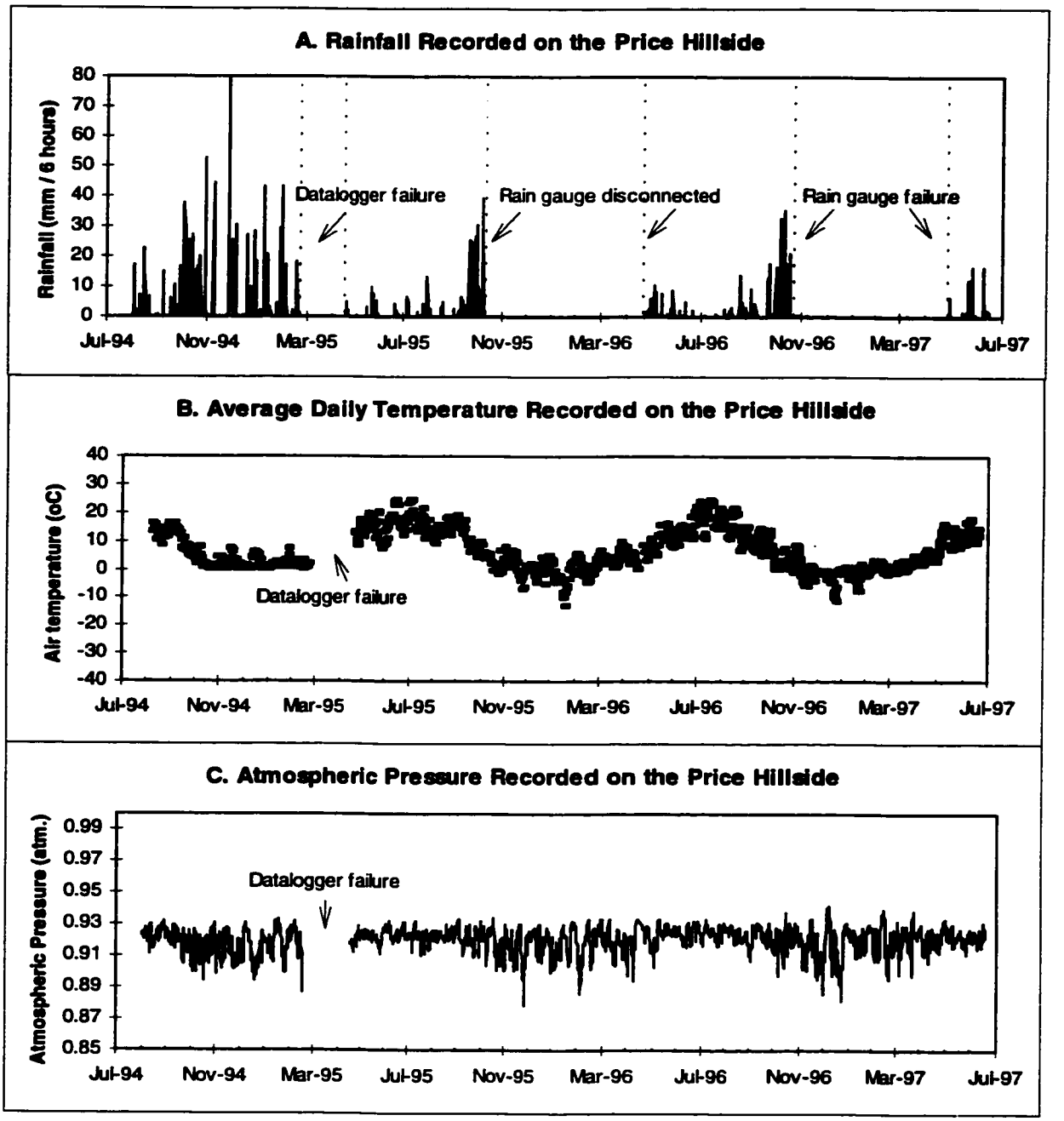


Figure 4.3: A) Rainfall, B) average daily temperature and C) atmospheric pressure recorded at the Price Hillside weather station (08/1994 to 06/1997).

Rainfall

It is well known that the rainy season in mountainous regions creates a major impact on the hydrological system. Rainfall is often responsible for torrential flow in mountain creeks.

Long-term monitoring in the Myra Falls area (see Chapter II) demonstrated the abundant precipitation during the rainy season. The data collected during this study indicate that the rainy season typically begins at the end of October or in early November, with the arrival of the first winter storms, and continues until late April. Normally mild temperatures during the winter often produce precipitation in the form of rainfall. Precipitation events from May to October are more scarce and of smaller intensity. These conditions illustrate the variability of rainfall during the course of the year.

Seasonal rainfall fluctuations could not be observed here because of the rain gauge failures. However, several studies in mountainous terrains discussed in detail long-term rainfall patterns, water-level and discharge variations in order to evaluate the response of the groundwater flow system (Prellwitz and Babbitt, 1984; Kohut et al., 1985; Kang et al., 1998). The more complete rainfall data set from Myra Valley demonstrated the seasonal fluctuations at Myra Falls (see Chapter 2 for description). Here, the primary objective of the study is to obtain information on the groundwater flow system in the Price Hillside from water-level response to meteorological events. Therefore, the emphasis was placed on short-term variations in hydrological processes for the purpose of correlating rainfall events with water-level fluctuations.

Rainfall patterns were analyzed with the autocorrelation and spectral density functions. The functions were calculated for the three longest available series of rainfall data (August 1994 to March 1995; May 1995 to November 1995; May 1996 to November 1996) and are shown in Figure 4.4. The autocorrelograms were truncated for lags greater than 20 days because they only showed white noise and also because autocorrelation estimates at large lags are

progressively less reliable (Mangin, 1984). A complete description of the geostatistical techniques used here can be found in Salas et al. (1980) and in Appendix IV.

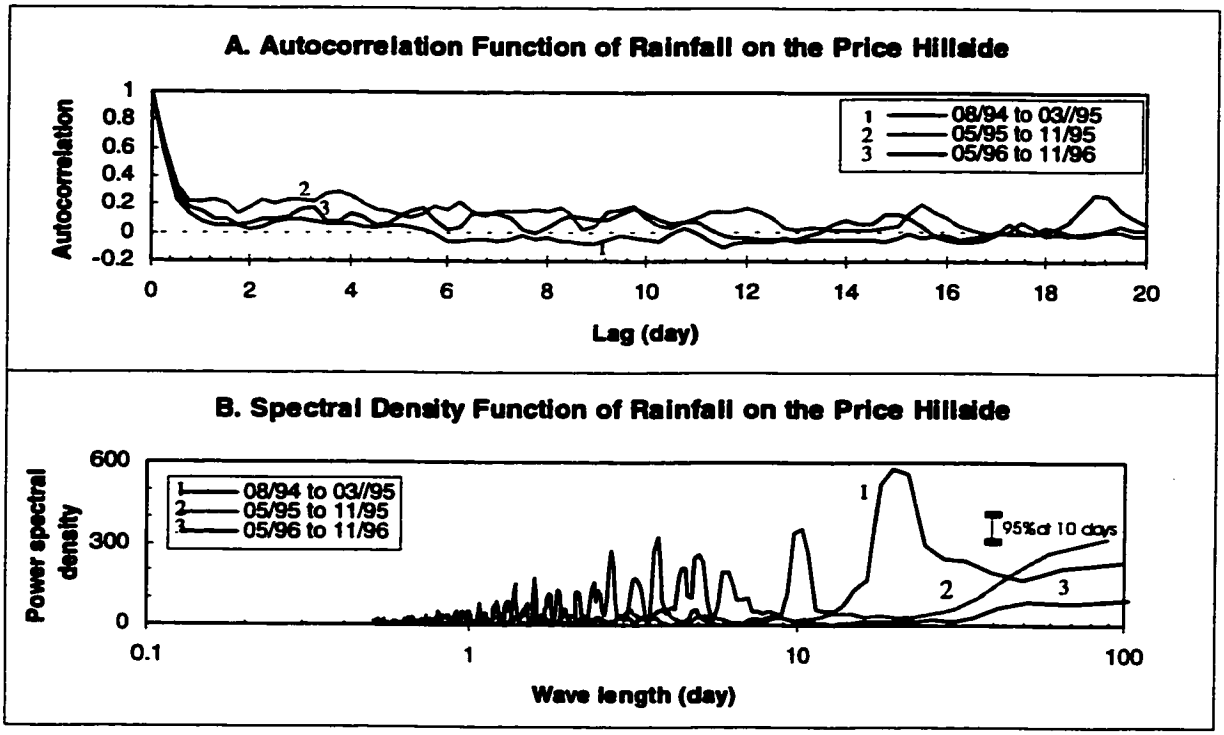


Figure 4.4: A) Autocorrelation and B) spectral density functions of rainfall data recorded at the Price Hillside weather station. The error at spectral density level of 10 days is given in Figure 4.4B.

The autocorrelation function of the rainfall data shows a rapid decline to a value of 0.25 within an average of 12 hours, and white noise thereafter. This is typical of the random nature of rainfall events. The autocorrelogram requires about 2 days to reach a null value, except during the 1995 season where the rainfall data were correlated over a longer period of time. Using an exponential decay function to represent the autocorrelation function produces an average correlation scale (decay constant: λ) of 2.10 days. These results indicate that rainfall events are of short duration even if rainy conditions can prevail for several days. Some small

periodical components are seen for scales of approximately 1 and 2 days in the 1996 series, 4 days in the 1995 series, 20 days in the 1994/95 series.

The spectral density function is a measure of the density of variance as a function of the time-scale (wave length) over which it is measured. It should be noted that power spectra are often presented as a function of frequency, the reciprocal of wave length. The two representations are equivalent: however, using wave length is more meaningful in this study because it carries the connotation of "scale" of measurement. Integrating the spectrum gives the variance at the scale over which the spectrum is integrated. On a log-scale, the power spectra showed a slight increase with scale, typical of the exponentially decaying and covariance function. Here, the power spectra are presented using an arithmetical scale in order to amplify some of the peaks. The error on the spectral density estimation depends on the spectral density; it is constant on a log scale but varies on a linear scale (the relative error is constant but the absolute error varies). An example of the error on the spectral density is given at 10 days for the 1994/95 series in Figure 4.4B. The power spectral density for the winter season (94/95) was generally higher than that of the two summers, indicating (perhaps not surprisingly) that there was more variability in precipitation during the rainy season. The power spectra of the 1994/95 series show the presence of significant periodicities, which appear as several peaks at the corresponding wave length below 7 days and at 10 and 20 days scales; there are no significant peaks in the spectra of the two other series of data for scales larger than 10 days and smaller scales consist mostly of white noise. However, these peaks are likely harmonics caused by the spectral estimator and the sampling interval.

Air Temperature

The patterns of air temperature on the Price Hillside were studied in detail using the autocorrelation and spectral density functions. Temperature variations are cyclical in nature, showing relatively small diurnal cycles superimposed upon much more pronounced seasonal cycles. Cyclical variations are translated into sinusoidal waves in the autocorrelation function and into peaks at the corresponding wave-length in the spectral density function.

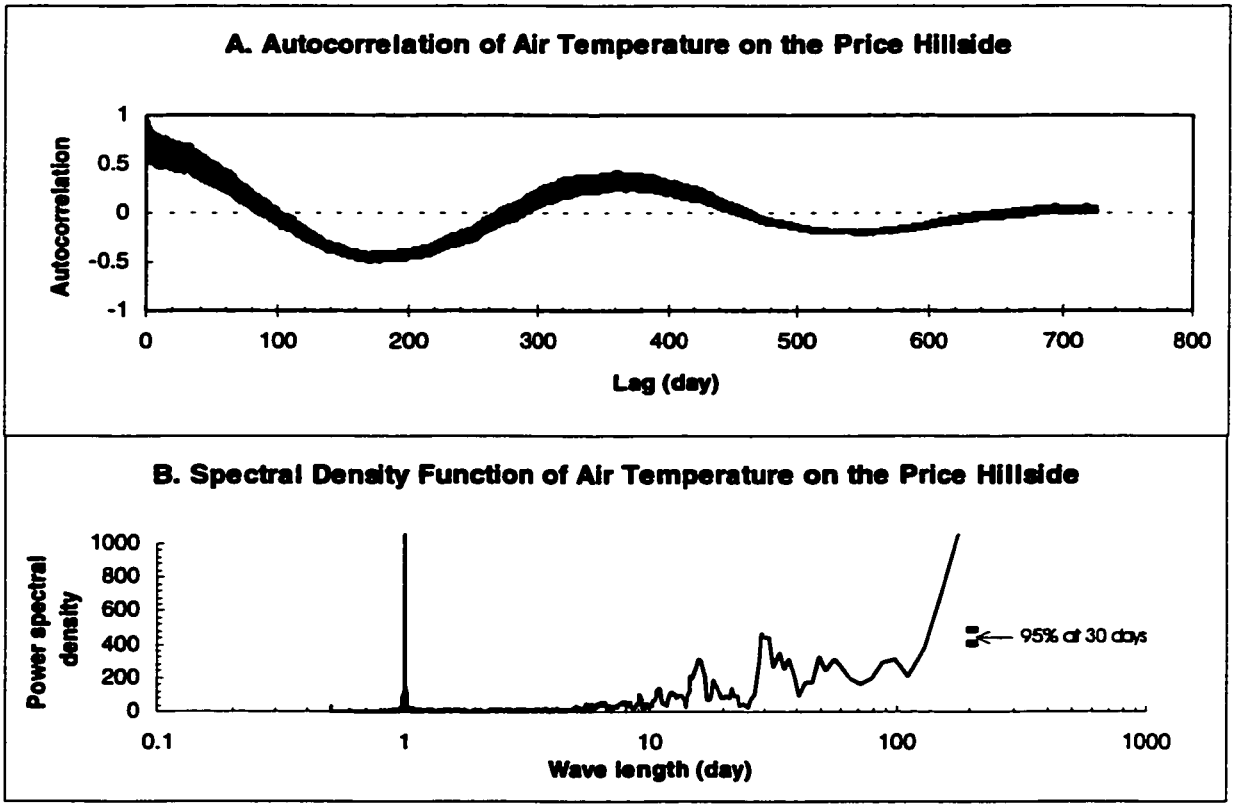


Figure 4.5: A) Autocorrelation and B) spectral density functions of air temperature data recorded at the Price Hillside weather station. The error at spectral density level of 30 days in given in Figure 4.5B.

Figure 4.5a shows the autocorrelation function of the entire data set in order to illustrate the seasonal periodicity. Using the exponential decay function to represent the autocorrelation

function is inappropriate in this case because of the strong periodicities, but the average of the function reaches a null value at approximately 90 days. The annual cycle is clearly seen in the correlogram in Figure 4.5a, with a time lag of approximately 360 days. The daily variations account for the erratic shape in the correlogram.

The power spectrum in Figure 4.5b clearly shows on an arithmetic scale the daily cycles in air temperature and the annual cycle at a large scale (350 days). Small peaks are seen at approximately 15, 30, 50-60 and 90-day scales. As in the rainfall spectra, these peaks are likely harmonics.

Atmospheric Pressure

The autocorrelation and spectral density functions were calculated for the complete atmospheric pressure data set in order to evaluate the seasonal periodicity. The results are shown in Figure 4.6. The autocorrelogram was estimated for lags of 6 hours to 700 days corresponding to the longest complete series of available data, but only the results for time lags smaller than 20 days are shown because the function only demonstrated white noise after 20 days.

The autocorrelation and spectral density functions of the atmospheric pressure data do not display any distinctive feature. The autocorrelation function shows a decline to a null value within an average of 6 days and a correlation scale, λ, of 0.52 days and random noise thereafter, indicating that the displacement of air masses can take place slowly over several days. The spectral density function is typical of an exponentially decaying autocovariance function without any distinct periodical component, although small periodical components at

20- and 40-day scales may be observed (using an arithmetical scale), which may again be associated with harmonics. These results illustrate the random but temporally-correlated nature of atmospheric pressure events. The implications is that if atmospheric pressure fluctuations play a significant role on the hydraulic response, then the effects may have a self-correlated structure at the same temporal scale or at larger scale than the temporal scale of the pressure fluctuations.

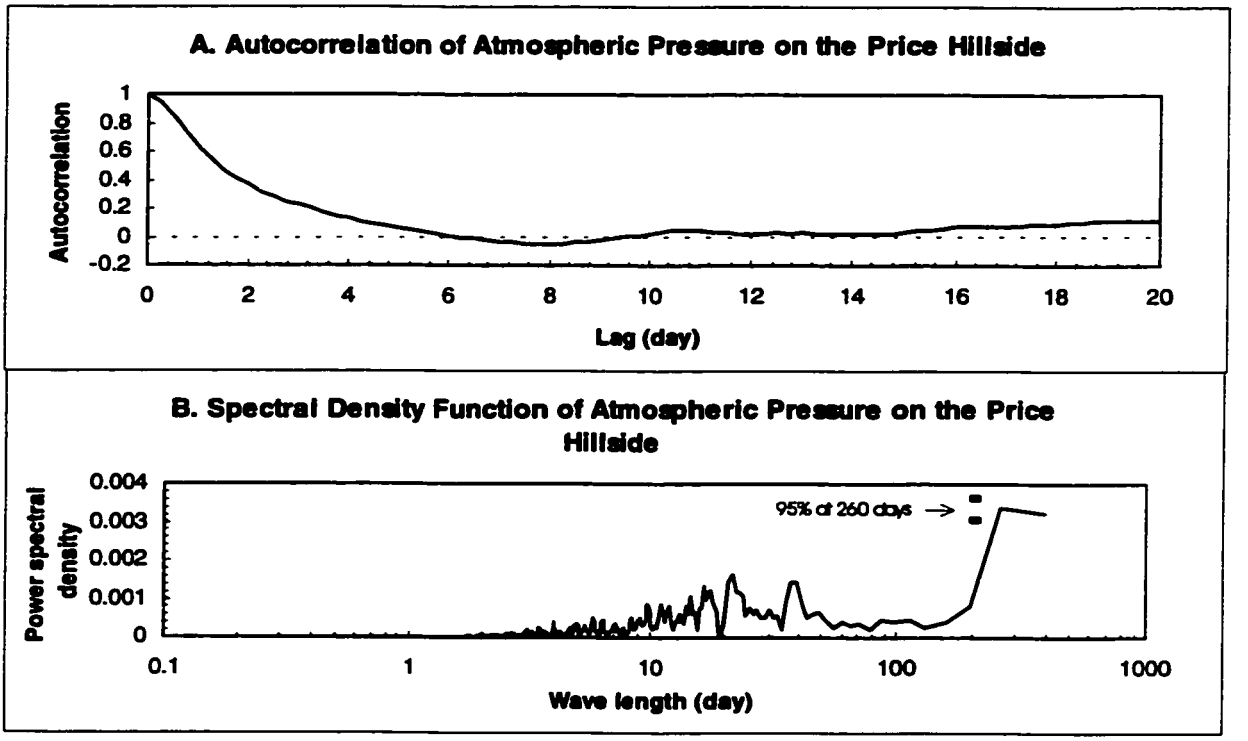


Figure 4.6: A) Autocorrelation and B) spectral density functions of atmospheric pressure data recorded at the Price Hillside weather station. The error at spectral density level of 260 days in given in Figure 4.6B.

4.3.2 Water Level Data

As part of the monitoring program, water levels were periodically measured in open surface drillholes located along the Price Hillside and in Thelwood Valley. The water levels do not

represent year-round fluctuations (except for three drillholes) because access to the monitoring site was restricted to periods from late spring to early fall. A summary of the results of the water level monitoring is presented in Table 4.1 and illustrated in a schematic diagram in Figure 4.7. Figure 4.7 also includes water levels found in some underground drillholes. Water levels in underground drillholes will be discussed in detailed in chapters 5 and 6. The details are given in Appendix III. In this Table and in the following discussion, the term *water level* refers to the elevation above mean sea level of the surface of the water measured in the drillholes, which does not necessarily represent the depth of the water table, nor they represent hydraulic head, except in an averaged sense over the open area. Indeed, the water level in an open drillhole only gives an approximation of the hydraulic head .

The water level variations were quite different depending on the geographical location of the drillholes measured. Most of the data were recorded between late spring and early fall, not during the rainfall season, except for PR33, PR34 and PR66. Some drillholes showed very large water level variations during the year: fluctuations exceeding 15 m were observed in PR34, PR66, PR74, PR95, PR96 and PR97. These drillholes were drilled at high elevations on the Price Hillside, in comparison with the valley floor, and most of them are located near important structural features (except PR34): PR66 is very close to a major creek on the Price Hillside; PR74, PR95, PR96 and PR97 are close to several creeks flowing into fault traces at the surface (see Figure 4.2). Other drillholes (PR33, PR73, PR75, PR76 and PR94) located along the Price Hillside demonstrated water level fluctuations ranging between 4 and 15 m. The rest of the drillholes are located in Thelwood Valley and displayed annual water level fluctuations of less than 2 m. Adjacent drillholes usually have similar water levels and

respond in a similar manner, suggesting that they are hydraulically connected to some extent. The difference in amplitude of the hydraulic response seems to be related in part to the geological and structural characteristics of the rock-mass in the vicinity of each drillhole.

	Drillhole Surface Elevation	Drillhole Length	Water-Level Elevation (08/1995 to 04/1997)					Water-Level Depth (average)
			(average)	(st. dev.)	(max)	(min)	Range	
Identification	m	m	m	m	m	m	m	m
PR33	711,39	151	684,14	4,21	689,50	676,40	13,10	27,25
PR34	758,90	526	666,10	5,46	675,50	655,00	20,50	92,80
PR38	639,78	246	-	-	-	-	-	> 100.0
PR41	609,90	270	-	-	-	-	-	> 100.0
PR42	808,28	621	-	-	-	-	-	> 100.0
PR43	602,50	561	-	-	-	-	-	> 100.0
PR66	680,90	186	671,00	6,82	679,22	656,24	22,98	9,90
PR73	277,70	305	254,87	3,45	260,22	249,87	10,35	22,83
PR74	270,40	282	259,87	7,56	267,33	246,47	20,86	10,53
PR75	291,00	230	280,49	1,34	282,59	278,56	4,03	10,51
PR76	288,70	235	287,08	1,84	288,70	284,18	4,52	1,63
PR84	224,90	269	224,00	0,69	224,90	222,94	1,96	0,90
PR85	222,40	457	222,23	0,22	222,40	221,78	0,62	0,17
PR88	234,80	561	222,29	0,52	222,85	221,51	1,34	12,51
PR92	223,80	466	223,29	0,42	223,74	222,58	1,16	0,51
PR94	275,10	231	238,04	2,34	241,42	234,46	6,96	37,06
PR95	269,90	307	257,50	6,80	264,57	245,83	18,74	12,40
PR96	271,60	261	254,56	5,75	261,29	245,14	16,15	17,04
PR97	270,20	267	255,92	6,32	263,15	246,36	16,79	14,28
PR100	221,90	572	220,95	0,29	221,23	220,52	0,71	0,95
PR103	221,90	549	220,93	0,28	221,24	220,49	0,75	0,97
PR107	223,10	397	220,99	0,21	221,19	220,63	0,56	2,11
PR110	223,80	760	219,35	0,13	219,52	219,13	0,39	4,45
PR113	240,00		234,72	0,40	235,08	234,08	1,00	5,28

n.a.: not available (water level was below the range of the water level tape: > 100 m)

Table 4.1: Water-level variations in the drillholes monitored during this study. The water level in all drillholes was measured between late spring and early fall, except in PR33, PR34 and PR66, where it was measured continuously.

It was also observed that the depth of the water level varies depending on the geographical locations, from near the surface to more than 100 m deep. For instance, at lower elevations on the Price Hillside and in Thelwood Valley, the water levels are near the surface and are sometimes flowing artesian (valley floor). This is typical of discharge areas with upward flow, or of confined groundwater systems. Conversely, the water levels in drillholes located

at higher elevations on the Price Hillside, notably in PR34, PR38, PR41, PR42 and PR43, are more than 90 m deep. These drillholes are also all located far from the major creeks. Although we were not able to measure the depth of the water level in PR38 and PR41 (below 100 m, which was the maximal length of the water-level meter available), their apparent water-level depths appear to correspond with water-level measurements made during the summer in underground drillholes in a mine drift (Level 9) located beneath these surface drillholes: the water levels in PR38 and PR41 are lower than 539 m and 509 m, respectively; and the water levels in drillholes in Level 9 are at approximately 475 m (see Chapter 5). Figure 4.7 illustrates the setting. The water levels in drillholes PR33 (smaller creek not shown in Figure 4.7) and PR66, located near major creeks, are much shallower. During winter months particularly, PR66 has a water level near ground surface and often higher than the elevation of the bottom of the nearby major creek. Ranges in annual water-level fluctuations vary spatially to such an extent that groundwater flow directions may likely change, and possibly even reverse, depending on the time of the year.

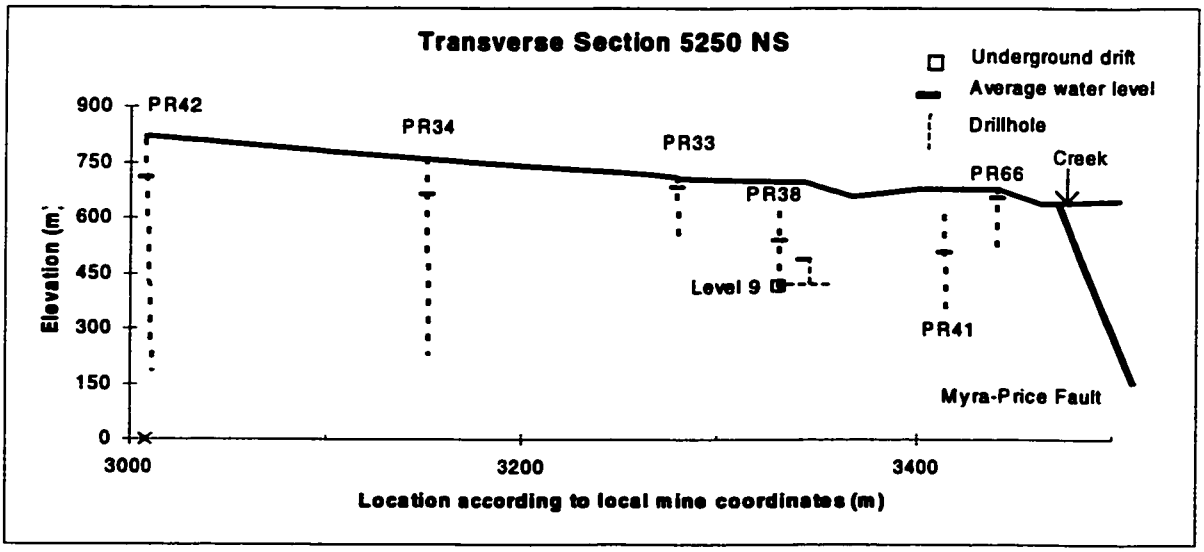


Figure 4.7: Relationship between surface water levels and underground water levels in a large fault area on the Price Hillside.

The variations in water level in three drillholes on the Price Hillside were studied in detail to evaluate the annual and short-term variations. The drillholes monitored are: PR33, which has an intermediate water level and is located in the vicinity of a slightly fractured rock mass; PR34, which has a deep water level and is also located in the vicinity of a slightly fractured rock mass; and PR66, which also has an intermediate water level and is located near a highly fractured rock mass. The results of the water-level monitoring are presented in Figure 4.8. The break seen in the PR66 dataset, from October 1995 to November 1996, is due to the unavailability of data logging equipment. Also, the sudden drop in water level in PR34 in March 1996, followed by a rapid increase in May 1996, is presumed to be related to datalogging malfunction, or to the fact that the drillholes intersect distinct fracture zones with distinct hydraulic responses. These three drillholes are believed to represent each a distinct part of the groundwater flow system on the Price Hillside (massive rock, fractured-rock, location according to a creek).

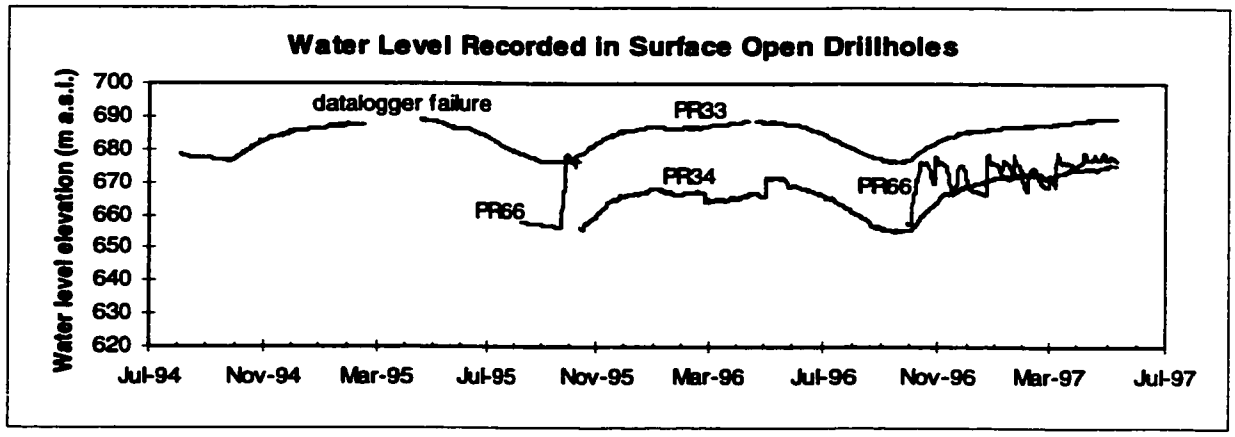


Figure 4.8: Water levels recorded in surface exploration drillholes on the Price Hillside (between 08/1994 to 06/1997).

Mining operations at Myra Falls require blasting every day (at 3:30PM). While blasting can cause large pressure fluctuations in some cases, they are usually high-energy and short-duration events that would not normally be picked up by our monitoring system (except, perhaps, occasionally).

As can be seen in Figure 4.8, water-level variations in the drillholes generally follow an annual cycle. The water levels in PR33 and PR34 fluctuate by about 13.1 m and 20.5 m, respectively, over the course of the year but usually with only minor short-term fluctuations: maximum fluctuations of 0.7 and 1.9 m for 6-hour intervals were recorded in PR33 and PR34, respectively. PR66 shows a very large annual fluctuation (more than 22 m) with an erratic behavior that seems to be restricted mainly to the fall and winter months. The maximum increase recorded in PR66 for 6-hour intervals was 6.8 m. The occurrence of large short-term water-level variations in PR66, in comparison with those in PR33 and PR34, suggests that this part of the mountain is affected differently by rainfall events. The differences between PR66; and PR33 and PR34 are likely the result of differing drillhole characteristics, such as the number and properties of fractures intersected, the depth of the drillhole and also on the characteristics of the rock mass in these areas. These differences could be resolved with further work using detailed packer-test analyses.

In order to decrease the influence of the annual cycle on the short-term water-level fluctuations and meet the requirement of stationarity required in the use of statistical techniques, a transformation was made on the water level data. The data were first transformed into logarithmic values in order to reduce the bias (de-emphasized the importance of large sporadic excursion of data) and yield a more-normal series (Salas et al,

1980; Padilla et al., 1995; Appendix IV). Then, the seasonal component in PR33 and PR34 was removed from the data by subtracting the value measured at a specific time interval from the same specific time interval of an average annual cyclical function in order to obtain a residual value. The cyclical function was calculated using the Fourier transformation of the mean for each time interval of the data, as described in Salas et al. (1980) and in Appendix IV, which produces an average discharge for each 6-hour time interval. In the case of PR66, the residual was obtained by subtracting from a linear regression of the data because of the short duration of the monitoring period. The transformations performed on the data decrease the contamination of the short-term fluctuations by large-scale cycles, which enables the statistical analysis of short-term trends.

The water level variations were examined with the autocorrelation and spectral density functions. The autocorrelation function was calculated using time lags ranging from 6 hours to a maximum of 800 days, except for PR66. The correlograms of water levels in PR33, PR34 and PR66 are presented in full range, even if the autocorrelation estimates have a greater error at large lags. The spectral density function was also calculated for the water level in PR33, PR34 and PR66. The correlograms and the power spectra are shown in Figure 4.9.

The autocorrelation functions shown in Figure 4.9a decrease to a value of 0.1 after 23, 180 and 11 days, in PR33, PR34 and PR66, respectively (correlation times λ of 0.07, 0.006 and 0.21 days, respectively). Small cycles appear in the autocorrelation function of PR33 and PR66 at lags of approximately 60 and 25 days, respectively. The slow decrease in the autocorrelation function is characteristic of a "memory effect", indicating that the effects

produced on the system are correlated over long periods (Mangin, 1984). The memory effect can be ascribed to water storage in the rock mass near the drillholes. The memory effect is very pronounced in PR34 (the deepest drillhole), as opposed to PR33 and PR66. The smooth behavior of the correlograms suggests that water circulating in the vicinity of PR34 seems to be mainly derived from a part of the groundwater system less affected by short-term processes, or the effect is diminished as a result of the configuration of the drillhole (wellbore storage effect). Conversely, in the cases of PR33 and especially PR66, short-term effects on the water level seem to exert a greater influence, explaining the faster decrease in the correlogram.

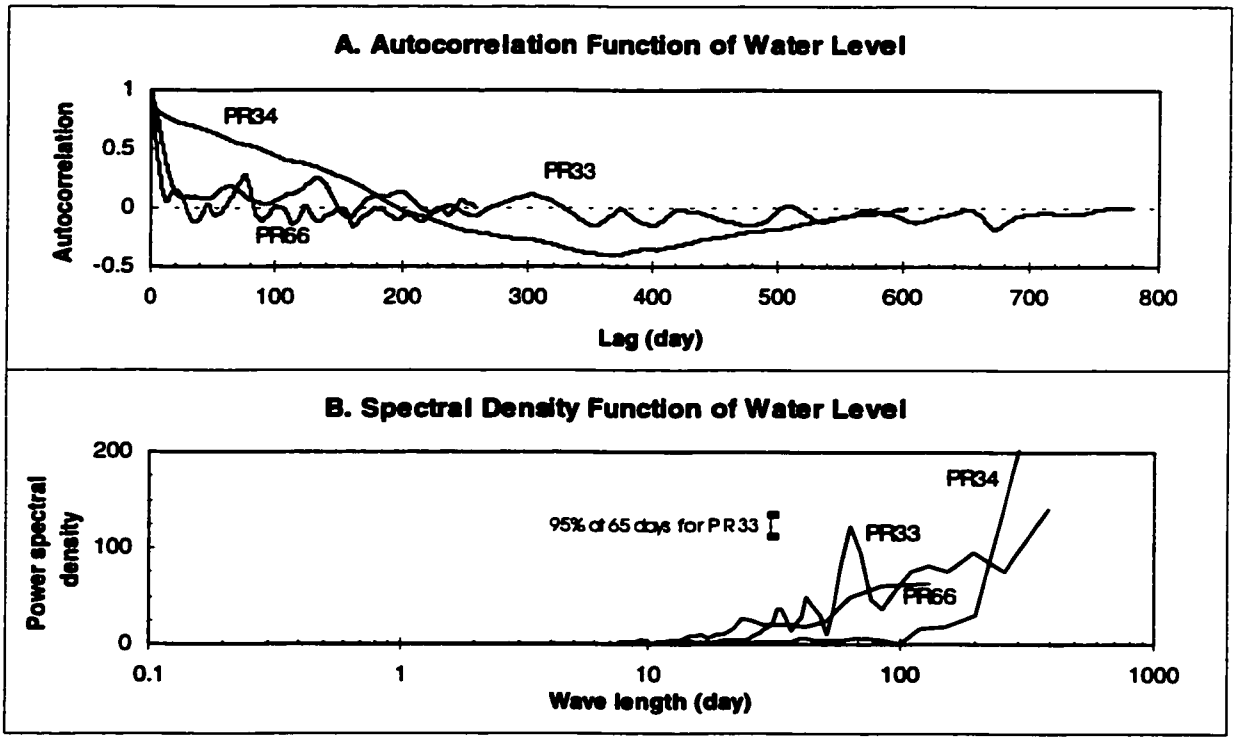


Figure 4.9: A) Autocorrelation and B) power spectral density functions of water levels in surface drillholes PR33, PR34 and PR66.

The spectral density functions of PR33, PR34 and PR66 in Figure 4.9b presented no discernible periodicity on a log scale; however, presenting the results on an arithmetical scale indicates small, but significant, periodical components in PR33 and PR66. The periodicity observed in PR33 (65 days) and PR66 (25 days) autocorrelation functions are shown in the spectra with also minor periodicity in PR33 at 33 and 40 day scales. PR33 and PR66 exhibit more variability compared to PR34 at most scales. In general, the variability increases towards large wave lengths, which supports the hypothesis that water-level fluctuations are influenced by large-cycle seasonal processes (the rainy season).

These results suggest that the factors influencing water levels have different impacts depending on the geological conditions at the monitoring location. The processes influencing the water level are more rapidly felt and dissipated by the groundwater flow system in the rocks surrounding PR33 and PR66, as compared to PR34. Smooth changes in water level, as observed in PR33 and especially in PR34, are typical of a porous medium, or high storage systems, or can be the result of water infiltration through a thick unsaturated zone with small connectivity with the recharge area (Mangin, 1984; Padilla and Pulido-Bosch, 1995; Angelini, 1997). Rapid and large short-term water-level fluctuations are typical of fractured-rock aquifers, where the presence of fast conduits with direct connection with the recharge area greatly influence the hydraulic response (Moore, 1992; Shevenell, 1996). The hydraulic response in PR34 could have been influenced by the great depth of the drillhole, which may have smoothed the response due to the wellbore storage or the intersection of many small fractures (different transmissivity). Although these hypotheses are reasonable, they could not be verified explicitely in this project.

4.3.3 Correlation Between Rainfall Events and Water Level

The interpretation of the data in the previous section suggested that short-term fluctuations of the water level in the drillholes, mainly during the rainy season, may result from specific short-term surface processes. The hydrological process assumed to affect water levels the most in the Myra Falls area is rainfall, which is discussed here. The effect of rainfall events on water levels is first examined qualitatively in this section of the thesis using water level hydrographs, then quantitatively in the following section.

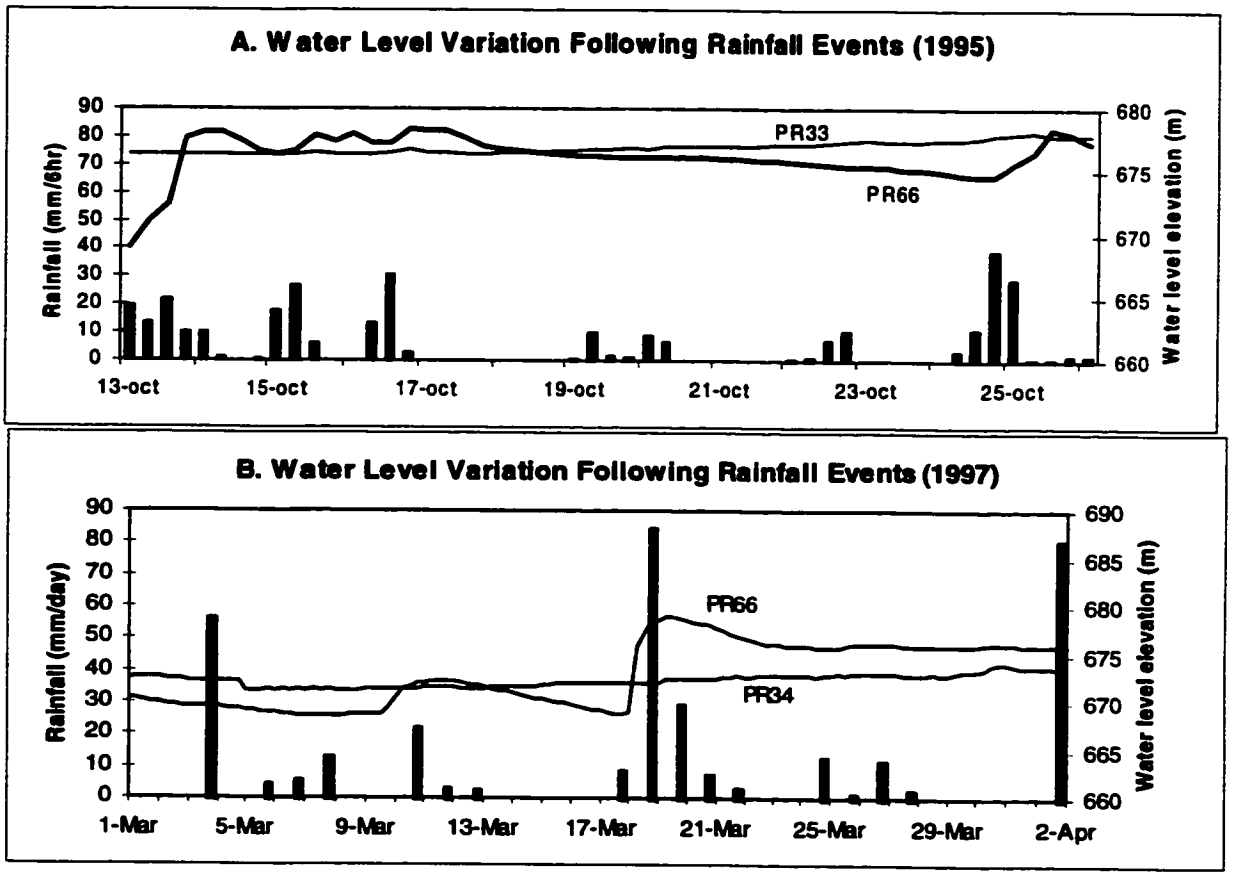


Figure 4.10: Water level variations following rainfall events in surface drillholes on the Price Hillside: A) 09/28/95 to 10/30/95 (Price Hillside rainfall - 6-hour measurements); and B) 03/01/97 to 04/02/97 (Myra Valley rainfall - daily data).

Figure 4.10 presents examples of short-term water level responses to rainfall events in PR33, PR34 and PR66. Figure 4.10a corresponds to late October 1995, at the beginning of the rainy season when water levels usually start to rise in the drillholes, as is particularly obvious in PR66. PR34 was not monitored during that period. Figure 4.10b shows the water level fluctuations in March 1997, at the end of the rainy period (it should be noted that rainfall data could not be obtained from the Price Hillside Meteorological Station during this period because the rain gauge was disconnected in order to enable the recording of the other types of data at the station). The data in Figure 4.10b are from the Myra Valley Meteorological Station, which were found to correlate well with the Price Hillside Meteorological Station albeit with a 12 hour lag (see Chapter 2 and Appendix I). The water level variations in PR33 for the same period are minor, and were not presented in Figure 4.10b to avoid compressing the scale of the chart.

Figure 4.10 illustrates the distinct short-term fluctuations of water levels in PR66, as compared to the fluctuations in PR33 and PR34. PR66 is the most responsive to rainfall events of the three drillholes. Usually, a rapid increase in water level in PR66 is observed shortly after the beginning of rainfall, followed by a short recession in which the water level declines until it reaches the baseflow level. This is more apparent during winter months, when water levels are at their maxima. The water level in PR66 does not always rise following rainfall events (e.g., rainfall events on October 20, 1995, and March 4, 1997): rainfall during the summer and minor rainfall events (Figure 4.10a) usually do not affect water level recordings, suggesting that a minimum amount of rainfall is required for effective recharge. In the case of Figure 4.10b, the rainfall data were from the Myra Valley

meteorological station, which may not always demonstrate identical rainfall conditions to Thelwood Valley. Furthermore, some rainfall events, while of large amplitude, may be of limited areal extent and may only affect very small areas of the groundwater flow system. These limitations may explain why rainfall and water-level fluctuations in PR66 are not always correlated.

Contrary to PR66, the response of the water levels in PR33 and PR34 to rainfall events was very small: only minor short-term water-level fluctuations are seen in the hydrographs. The response of the water level in PR33 to the beginning of the rainy season is expressed as a slight increase in the water level elevation (Figure 4.10a). The groundwater system in the rocks in the vicinity of PR33 and PR34 appears to respond to rainfall only as the result of the annual recharge from the rainy season (Figure 4.8).

The occurrence of distinct recession rates in water-level hydrographs is characteristic of distinct flow components (Shevenell, 1996), namely matrix-flow, fracture-flow and conduit-flow. Matrix flow in an aquifer usually demonstrates a single recession rate, whereas fracture- or conduit-flow in an aquifer can exhibit several recession rates for rainfall events related to the hydraulic properties of each structure (matrix, fractures, conduits). The response to rainfall in PR66 clearly shows two recession rates compared to only one in the PR33 and PR34 water-level hydrographs. The fast recession rate observed in PR66 is probably the result of a stormflow component associated with the more developed fracture network in the geological formations surrounding PR66, which is near a major fault (as evidenced by the presence of a nearby creek and from underground observations). On the other hand, the smooth annual recession observed in PR33 and PR34, which is more like

matrix-flow (or high-storage system), indicates that these drillholes are located in a part of the groundwater flow system that is less affected by stormflow: a less fractured rock or more distant fracture zones, a deeper water table, or greater distance and connectivity from a recharge area. These results suggest the occurrence of at least two distinct hydrogeological domains within the mountain: a massive rock groundwater flow system with a deep to intermediate water level that responds slowly to rainfall events (exemplified by the responses of PR33 and PR34); and a locally highly-fractured groundwater flow system (exemplified in the PR66 response), located near major faults, that responds quickly and less consistently to rainfall events.

The relationship between rainfall and water levels was examined in greater detail using the cross-correlation, cross-spectral density and coherency functions. The cross-correlograms for each available series of rainfall data are presented for all lags in Figure 4.11 in order to maximize the small rainfall data set available on the Price Hillside. This has little effect on the data interpretation since we are interested in the very short time lags, when the water level response to rainfall is very rapid. Figures 4.12 and 4.13 show the co-spectrum, quad-spectrum and coherency spectrum for typical series.

The cross-correlograms show different trends depending on the period and the drillhole considered. The results of the cross-correlation functions given in Figure 4.11 are summarized in Table 4.2, as maximum cross-correlation coefficients with their corresponding time lags. All cross-correlograms show a strong memory effect with a slow decrease. The cross-correlation coefficients measured between rainfall and water level indicate a stronger impact on the water level in PR33 and PR66 when compared to PR34. There are large cross-

correlation coefficients for lags between 10 and 20 days in PR33 and lags less than 15 days in PR66. PR34 displays larger correlations between 13- and 20-day lags, suggesting a similar although smaller response to rainfall events. Periodical components in PR33 and PR34 at 60- and 80-day scales, respectively, may be harmonics, resulting from an artifact of the power spectrum estimation..

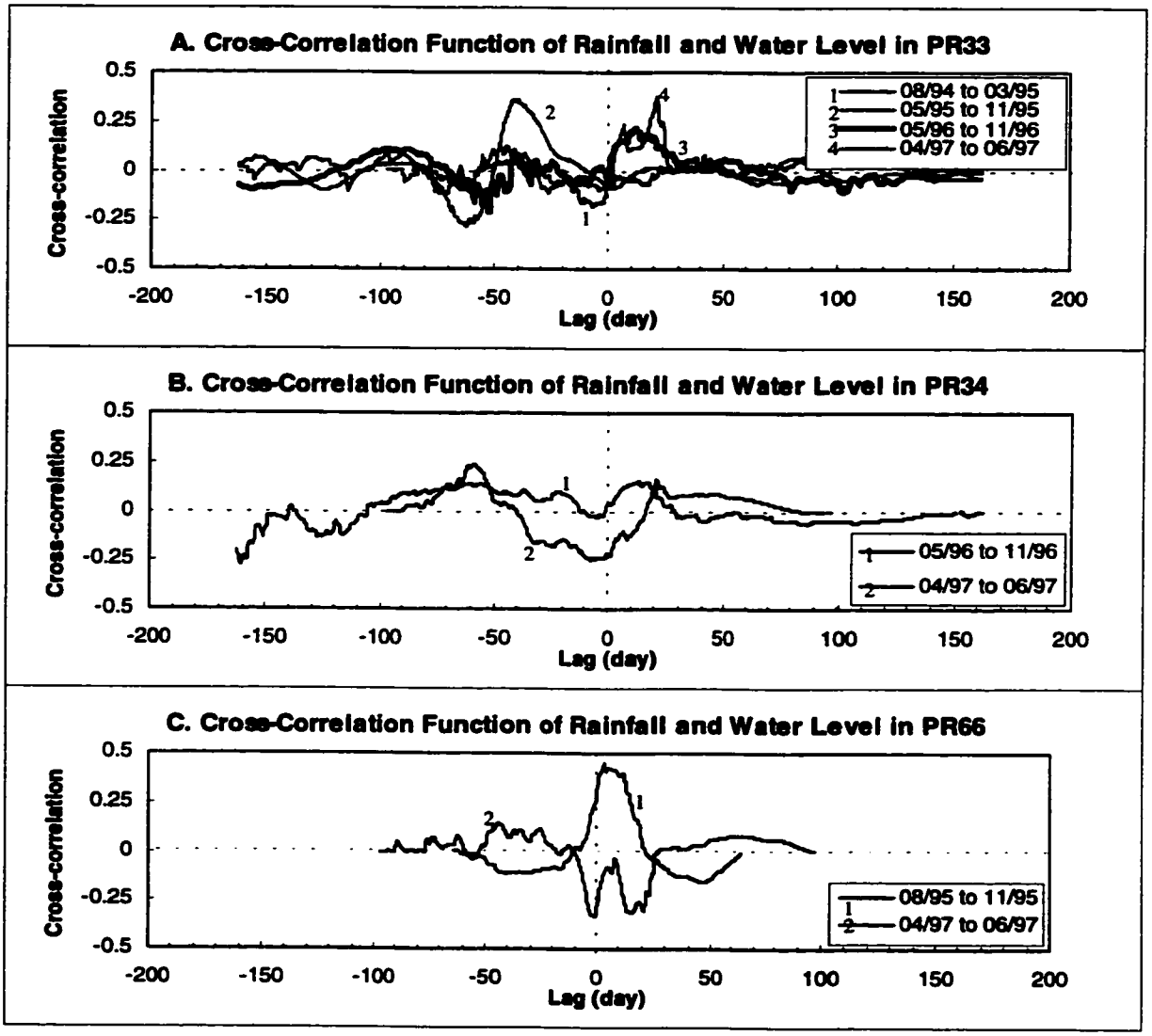


Figure 4.11: Cross-correlation function of rainfall and water levels recorded in PR33, PR34 and PR66.

Unexpectedly, a large positive correlation at a negative time lag, can be observed in the PR33 cross-correlogram. This would indicate that water levels respond before precipitation events, which is counterintuitive. The unexpected correlation can be explained by the periodicity observed in the cross-correlogram; a large periodic effect may propagate cross-correlations at positive and negative lags.

Drill Hole Identification	Time series	Maximum correlation coefficient	Time lag (day)
PR33	94/95	no significant correlation	
	1995	0.361	-40
	1996	0.217	12
	1997	0.234	7
		0.324	21
PR34	1996	0.154	13
	1997	0.227	-61
		0.161	21
PR66	1995	0.454	3.5
	1997	-0.335	-1

Table 4.2: Results of cross-correlation analysis of rainfall and water level measurements in PR33, PR34 and PR66 on the Price Hillside.

The negative correlation calculated in PR66 with the 1997 series may be explained by the small rainfall rate that occurred during the short time of monitoring, which did not represent average annual conditions; and by spatial variability in rainfall events. The differences in the cross-correlograms between longer and shorter series and between different years (see Figure 4.11) indicate a large temporal variability of rainfall events during each hydrological year and from one year to another, and perhaps large spatial variability due to some rainfall events being of limited areal extent, which may affect only specific areas of the groundwater flow system.

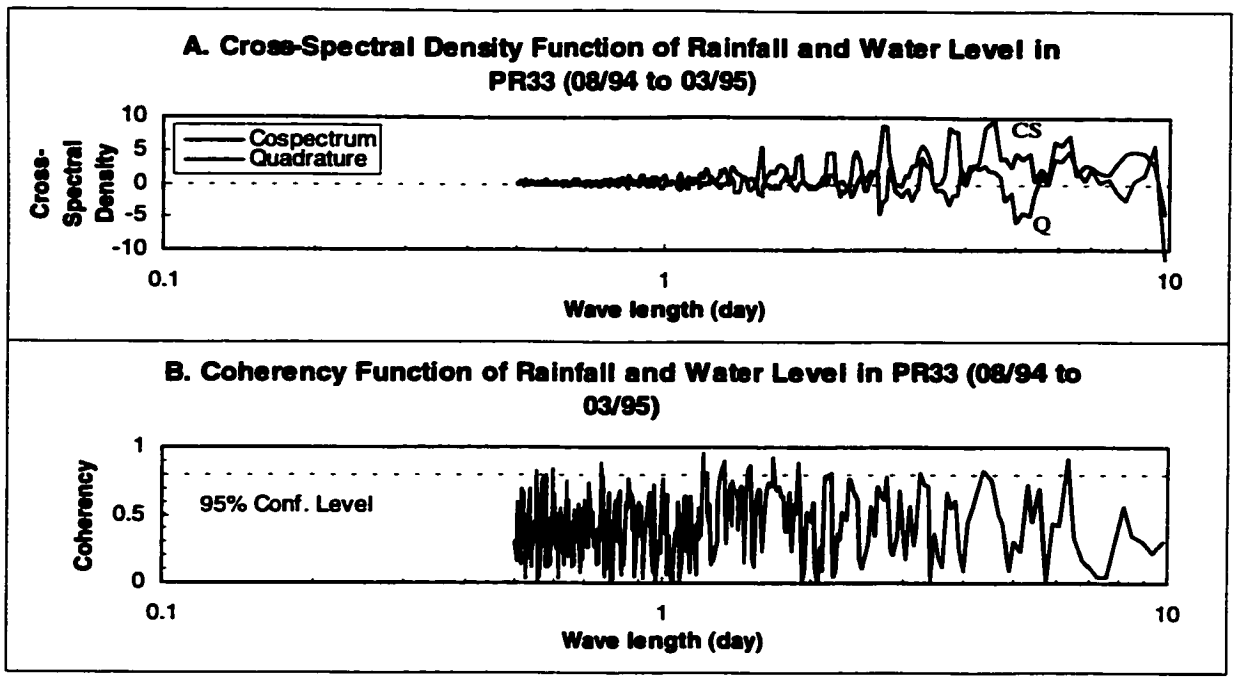


Figure 4.12: A) Cross-spectral density and B) coherency functions of rainfall and water levels recorded in PR33 between 08/94 and 03/95.

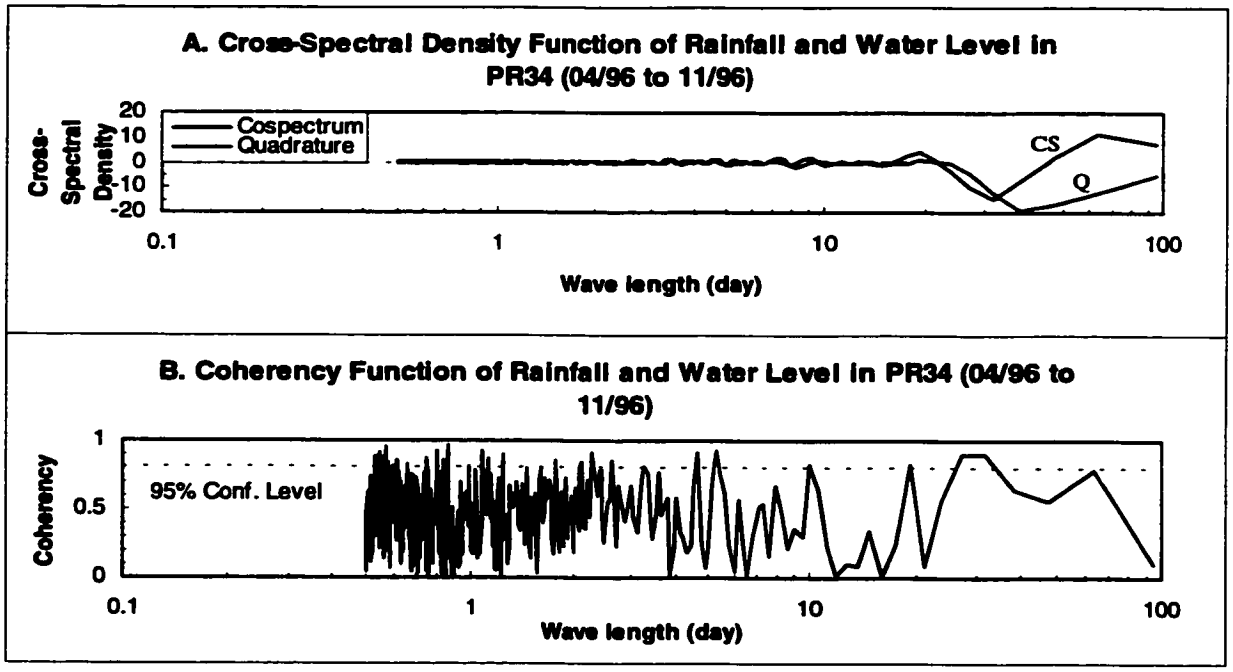


Figure 4.13: A) Cross-spectral density and B) coherency functions of rainfall and water levels recorded in PR34 between 04/96 and 11/96.

The cross-spectral density and coherency functions between rainfall events and water level fluctuations, presented in Figures 4.12 and 4.13, illustrate the variability of the two processes at different scales. Figure 4.12 illustrates, as typical results, enlarged co-, quad- and coherency spectrum for scales less than 10 days; while Figure 4.13 shows typical results for large scales. Long-term seasonal effects could not be estimated here because of the short data sets available.

All cross-spectra display distinct characteristics according to the drillhole and the time series studied. Generally, there are positive in-phase and out-of-phase correlations at scales of 40 days for PR33 and PR34; in-phase and out-of-phase correlations at 30- (negative) and 20-day (positive) scales for PR34; and negative in- and out-of-phase correlations for 17-day scales for PR66. Several small positive correlations at times less than 5 days are significant for PR33, PR34 and PR66; however PR66 loses correlation between 1 and 4 days. In general, the correlations are not always significant according to the coherency spectrums and vary from negative to positive.

The results of the cross-correlation and cross-spectral analysis indicate that rainfall events correspond to short-term water-level fluctuations in all the drillholes, with a few exceptions. The positive correlation estimated with a positive time lag suggest that the effect of rainfall is strongly felt in PR66 within a few days after the event and to a lesser extent several days later in PR33 (except the 1994/95 series) and PR34 (13-21 days). Also, the correlation at small scales indicates a fast, although small, response in these drillholes. The memory effect and lack of a distinct narrow peak in the cross-correlograms suggest that the groundwater flow system, especially near PR33 and PR34, is less directly affected by rain events and has a large

storage capacity due to the great depth of the drillhole or that the pulse of infiltrating water is attenuated due to the depth of water table (Angelini, 1997). In the PR66 area, the correlation is stronger and the memory effect smaller suggesting a faster response, perhaps resulting from a greater connectivity in the more fractured rocks and the small storage in the fractures.

While the influence of rainfall on water levels is obvious in areas where the water level is shallow and in more-fractured rock (PR66), the results presented so far suggest that rainfall events may slightly influence the water level (short-term fluctuations) in deep parts of the mountain (PR34), perhaps as the result of the drillhole configuration (open hole; not isolated from the surface), which may allow some runoff to infiltrate directly into the hole. However, the short-term effects in PR33 and PR34 appear to be attenuated due to the depth of the water level, high-storage from the rock-mass, the location according to the recharge area, or overridden by other important processes in some areas. One process that could have a controlling impact on water level is snowmelt at the summit of Mount Myra in the summer months. The influence of snowmelt that could be associated with air temperature fluctuations, is discussed in the following section.

4.3.4 Correlation Between Air Temperature and Water Level

It is well recognized that snowmelt waters from the summits of mountains can be an important part of groundwater recharge in mountainous terrains during summer months (Flerchinger et al., 1992). An estimate of the snow cover on Mount Myra is about 4 meters at high altitude. The mine managers at Myra Falls noticed daily variations in the quantity of water collected from the mine drifts during the summer, without any precipitation events recorded at all (Mine Environmental Manager, personal communications, 1995). These

variations were not observed in the water level data, partly because the mine integrates a large area (volume) compared to single exploration drillholes that may be more influenced by other overriding processes. Nevertheless, the observations suggest that snowmelt may be a major source of recharge during the summer months, since the summit of Mount Myra is covered with snow almost year-round.

The rate of snow melt depends on several factors, such as air temperature, sunlight exposure, wind velocity, etc. Accurate monitoring of snow-melt rates would have required the use of snowmelt collectors, which were not available for this project. Temperature being one of the major controlling parameters of snowmelt, the study of its variations was assumed to provide some information on snowmelt effects on the groundwater system; particularly because a very small amount of rainfall is received at Myra Falls during the summer months compared to the winter months.

The relationship between air temperature and water level has been evaluated with the cross-correlation, cross-spectral density and coherency functions. The cross-correlation function of air temperature with water levels in PR33, PR34 and PR66 has been calculated for 6-hour to 500-day time-lag intervals. However, only the estimates for lags less than 150 days are presented here, because large lag estimates are less reliable and since the effects are assumed over a hydrological year. The results of the cross-correlation function are shown in Figure 4.14; Figures 4.15 and 4.16 present typical results for the cross-spectral density and coherency functions.

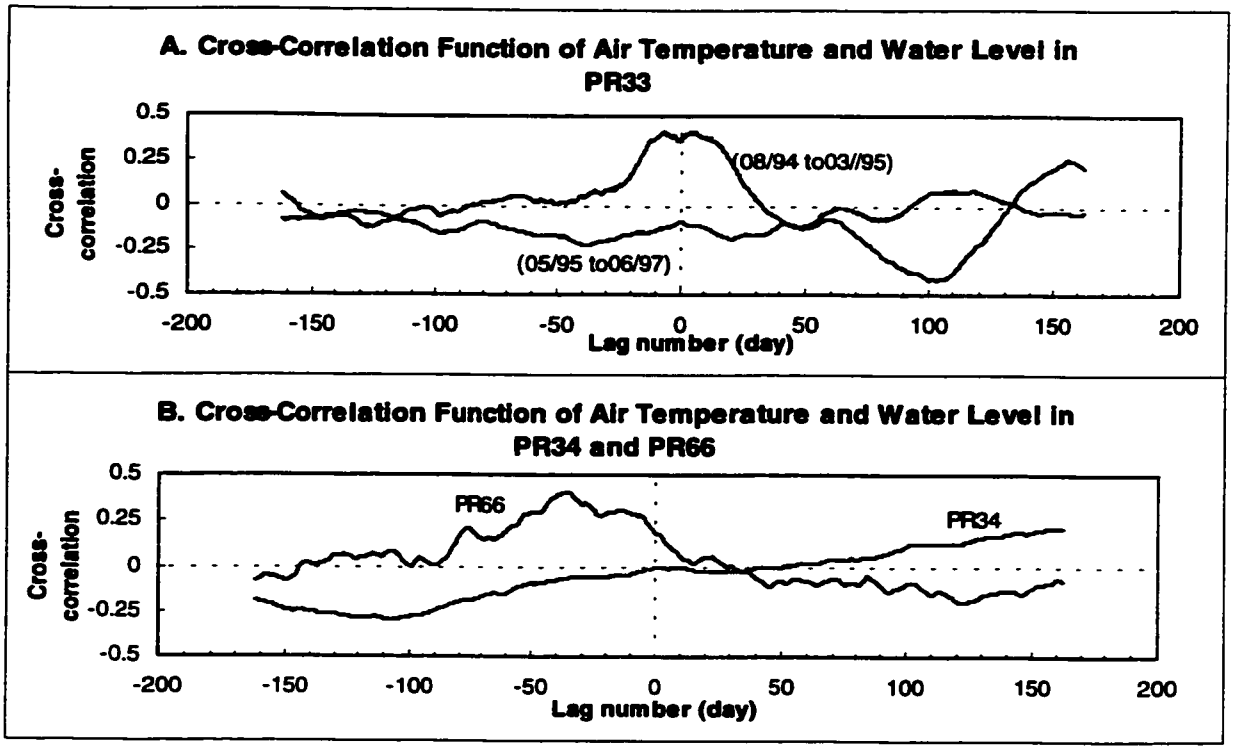


Figure 4.14: Cross-correlation function of air temperature and water levels measured in PR33, PR34 and PR66.

The cross-correlograms in Figure 4.14 indicate a correlation between temperature and water levels in PR33 and PR66. There is a strong positive correlation (0.400) without any time lag in PR33 for data collected during the winter months (08/94 to 03/95), which is followed by a negative correlation for 100-day lags. This indicates that the water level in PR33 is sometimes positively correlated with high-temperature periods and at other times negatively correlated (with a delay of 100 days). Air temperature and PR66 exhibit a positive correlation for -40-day lags. The correlation of air temperature and water level in PR66 prior to the increase suggests that the influence of temperature is not directly associated with water-level fluctuations in PR66. Also seen in the PR33 and PR66 cross-correlograms are small periodicities of approximately 60-70 and 10-20 days, respectively. The cross-correlograms of

PR33 and PR34 for the series of May 1995 to June 1997 (drier period of the year) are monotonic and do not present any significant correlation. The series represent more than 2 year averages, which indicates that there are no correlation in average on long periods. It appears that the influence of air temperature on water levels in PR33 and PR66 is better seen in correlograms of rainy periods of the year.

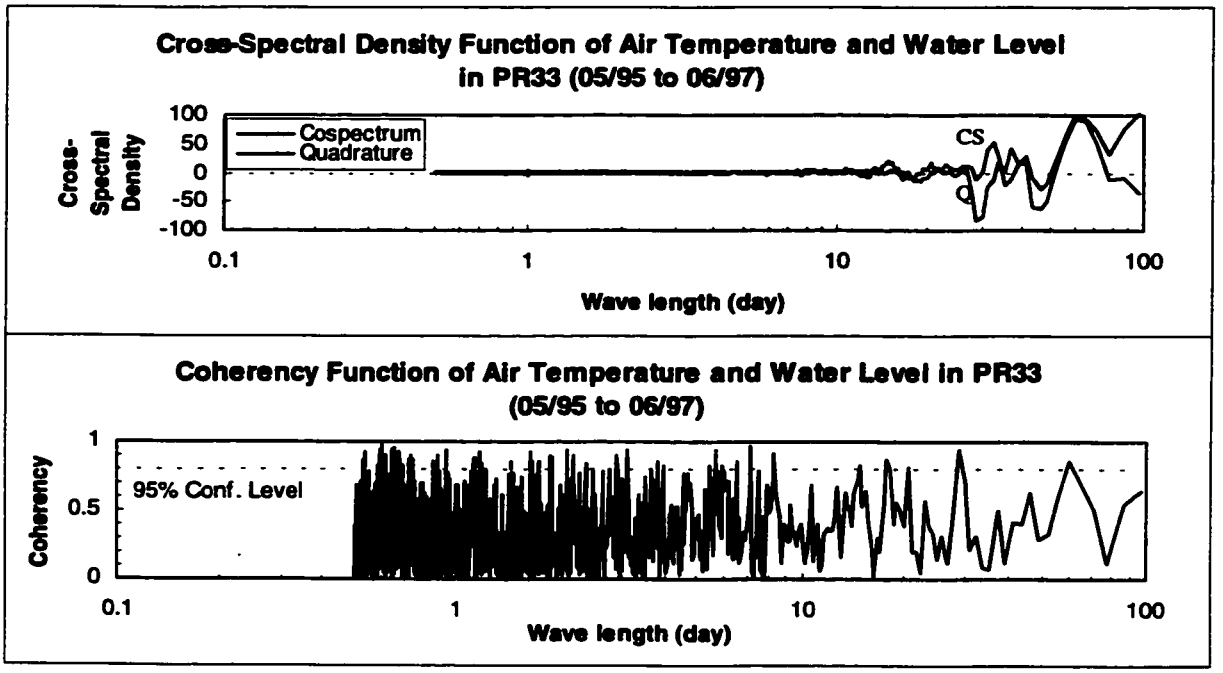


Figure 4.15: Cross-spectral density and coherency functions of air temperature and water levels recorded in PR33 (05/95 to 06/97).

The cross-spectral density and coherency functions indicate that air temperature is significantly correlated with water level, especially at time scales less than 100 days. There are significant in-phase and out-of-phase positive correlations in PR33 and PR34 at a wave length of 60 days; positive in-phase and negative out-of-phase correlations in PR33 at a wave length of 30 days; and in-phase and out-of-phase positive correlations in PR66 at a wave length of 12 days. The coherency spectra display significant correlations and much variability

at smaller scales. The cross-spectrum and quad-spectrum for smaller scales generally show many in- and out-of-phase positive correlation between scales of 1 and 7 days. The daily fluctuation is seen in PR33 and PR66, but was not significant. The results of this analysis indicate preferentially small-scale (less than 60 days) influences of air temperature on water level in all drillholes.

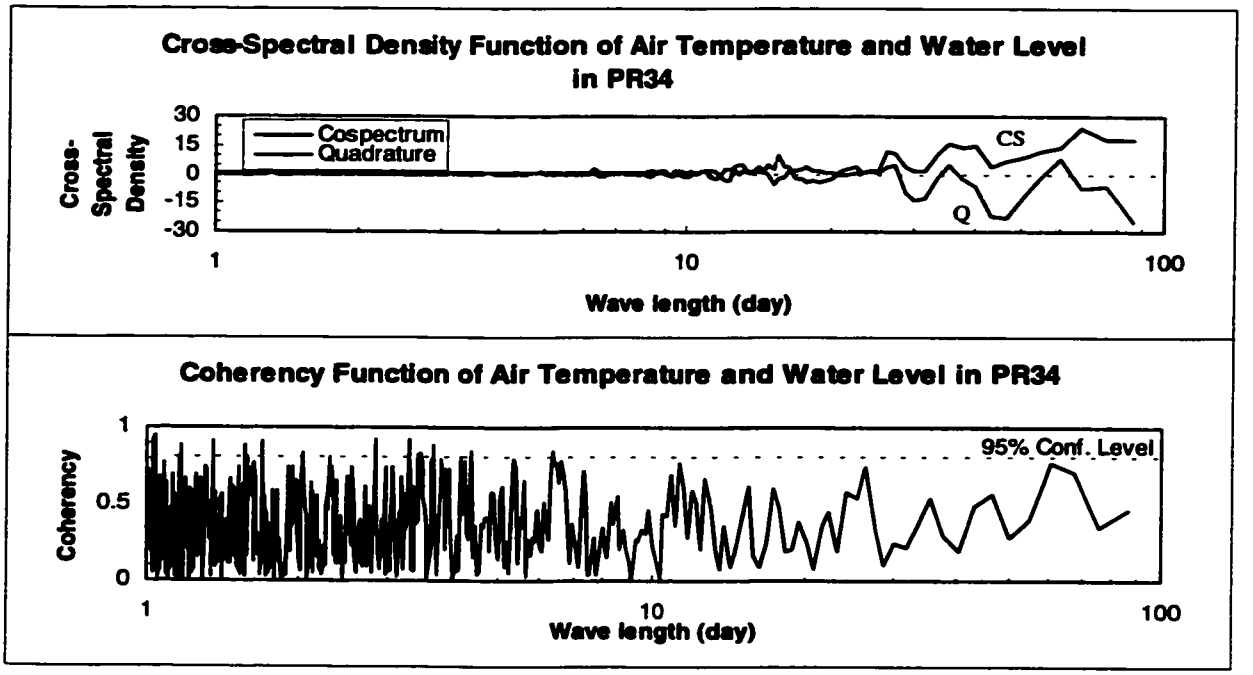


Figure 4.16: Cross-spectral density and coherency functions of rainfall and water levels recorded in PR34.

The analysis of air temperature and water level suggests a relationship between the two parameters; however, the influence on water level ascribed to snowmelt could not be clearly established. The daily (or short-term) influence, as observed in the power spectrum of air temperature (Figure 4.5), is seen in the cross-spectral density (Figure 4.15) and coherency functions, along with the 15-,30-, 60-day cycles (air temperature spectrum). The several significant short-term cycles between 1 and 7 days also suggest that daily air-temperature

fluctuations may have an impact on short-term water-level fluctuations. The results of the analyses indicate that high water levels on the Price Hillside during the winter are generally associated with warmer periods, especially in PR33 and PR66.

The relationship between air temperature and water levels may be confounded by other variables, such as the period of the year monitored, or the location of the drillhole. High-temperature periods during winter produce rainfall events instead of snowfall. This can lead to short-term water-level increases, as particularly indicated by the correlation in PR33 and PR66 (at small scale) for the short-term winter data series, and would not result from snowmelt during higher temperatures. On an annual basis, the high-temperature periods (summer) have lower precipitation, which results in the decrease in water level over several weeks, as seen by the negative in-phase correlation in PR33 at large scale. These characteristic responses in water level fluctuations between all drillholes suggest that the influence of air temperature-related processes may vary depending on the location.

4.3.5 Correlation Between Atmospheric Pressure and Water Level

Groundwater levels respond quickly to pressure changes induced on the system, especially in confined groundwater systems due to the low storage coefficients generally encountered in confined systems compared to the storage coefficients in unconfined systems. As a result, even small pressure perturbations, such as variations in the atmospheric pressure, can have an observable effect on water levels: for instance, the lowering of the water levels with the increase of atmospheric pressure. Atmospheric pressure variations in open drillholes at Myra Falls have been evaluated in great detail by Desbarats et al. (1998), who tested a dual-porosity model to characterize hydraulic properties of the rock mass. The water level

response to changes in atmospheric pressure was also studied at other sites by Weeks (1979), Rojstaczer (1990) and Furbish (1991), in order to evaluate the hydraulic properties of aquifers. These studies demonstrated variations of water level in the order of several tens of centimeters associated with changes in atmospheric pressure. Despite its known influence on water levels, the variations induced by atmospheric pressure may be overridden by the response associated with other processes, such as pumping, recharge, tidal effects in coastal areas, especially since the changes in water levels are usually small, although noticeable. This might be the case in this study considering the major influence of rainfall events observed on the water levels in some drillholes.

The relationship between atmospheric pressure and water level was evaluated in this study despite the possible overriding influence of rainfall. The cross-correlation function of atmospheric pressure with water levels in PR33, PR34 and PR66 has been calculated for 6-hour to 500-day time-lag intervals. Only estimates for 150-day lag are presented in Figure 4.17 because large lag estimates are less reliable and since the rest of the cross-correlograms only showed white noise. The cross-spectral density and coherency functions were also estimated. Typical results are shown in Figures 4.18 and 4.19.

The cross-correlograms indicate a positive correlation between atmospheric pressure and water levels in PR33 (08/94 to 03/95: 0.426) and PR66 (0.222), with time lags of - 3 and - 4 days, respectively, for winter periods, when the weather is characterized by frequent and intense storms. The lag in the cross-correlation is clearly apparent at negative lags. The cross-correlograms of PR33 (05/95 to 06/97) and PR34 for the longer data series do not present any cross-correlation, which indicates that for an annual average there is no correlation. PR33

shows a periodicity in the cross-correlogram in the order of 60 days, while PR66 shows a periodicity of about 20 days (also slightly seen in PR33 longest series). The cross-correlation indicates that the water levels (PR33 and PR66) and atmospheric pressure each follow a period of approximately 20 days with an offset of less than 10 days. Also for PR33, the periodicity has a 60-day cycle, which may indicate a 60-day cycle with a positive correlation at a 60 day offset or a negative correlation at a 30-day offset.

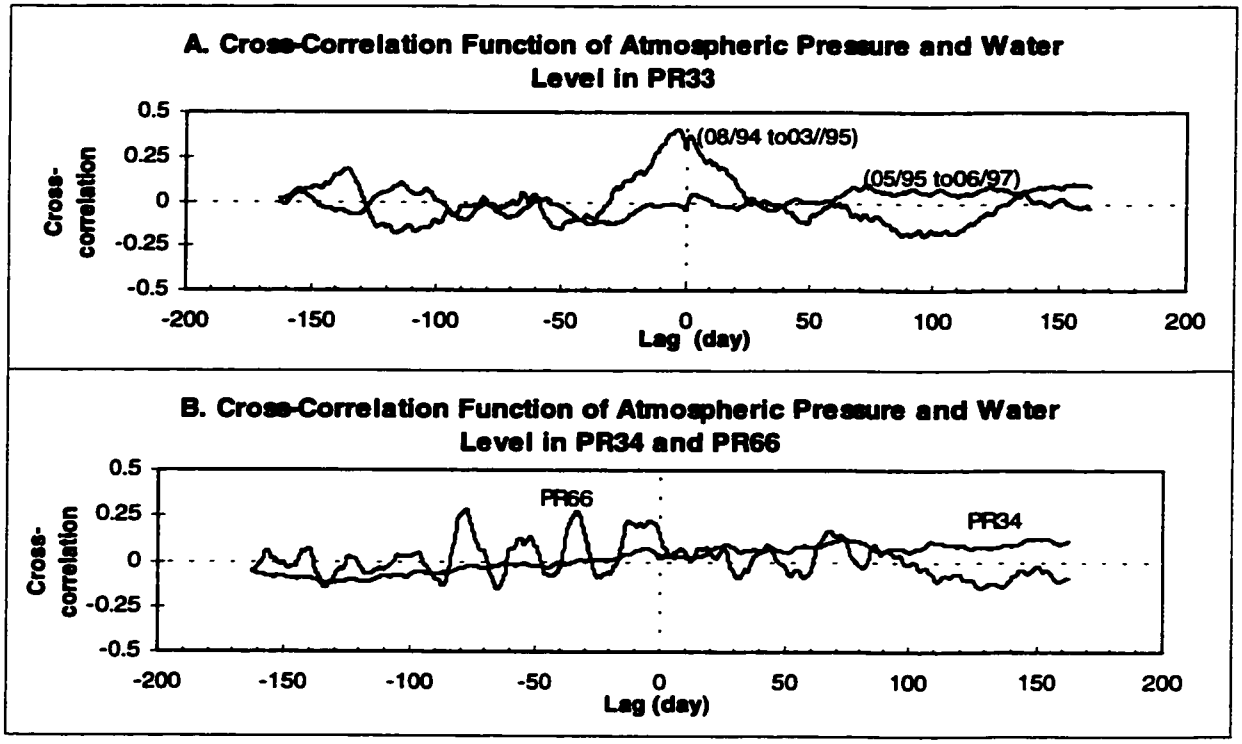


Figure 4.17: Cross-correlation function of atmospheric pressure and water levels measured in PR33, PR34 and PR66.

The cross-spectral density and coherency functions presented in Figure 4.18 and Figure 4.19 illustrate typical results in the correlation between atmospheric pressure and water level at different scales. Generally, there are in-phase positive correlations on scales between 60 and 70 days in PR33, PR34 and PR66 (not all presented here); a positive correlation in PR34 and

PR66 and a negative correlation in PR33 at a 40-day scale; and a negative out-of-phase correlation at 25-day scale in PR66. However, the correlations are not always significant. The coherency spectra also indicate several, mostly negative, in- and out-of-phase significant correlations for scales below 10 days in all three drillholes. Some of these cycles (25, 60 days) correspond to the periodicity observed in the cross-correlograms.

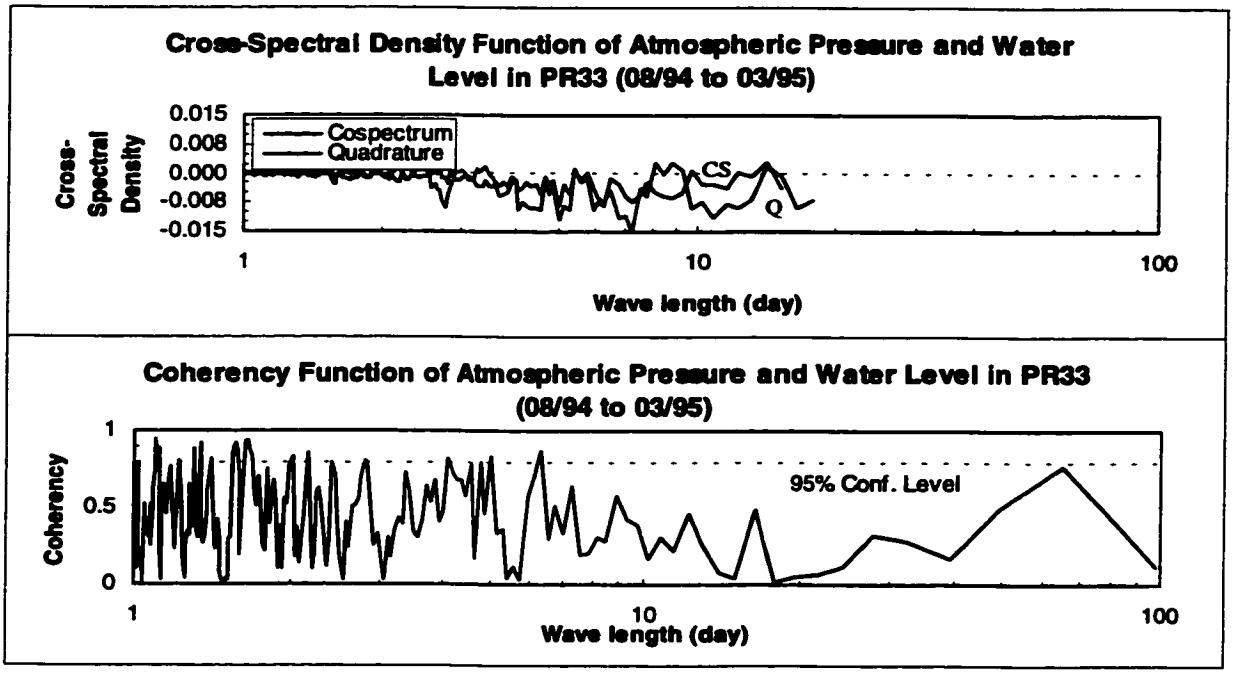


Figure 4.18: Cross-spectral density and coherency functions of atmospheric pressure and water levels recorded in PR33.

The relationship (cycles) between atmospheric pressure and water levels is difficult to explain. However, the several small-scale negative correlations are consistent with the effects anticipated by changes in atmospheric pressure on the water levels (lowering of water levels with increases in atmospheric pressure). The results presented here suggest that atmospheric pressure fluctuations are associated with water level fluctuations in the deep groundwater

flow system on the Price Hillside of Mount Myra. Barometric effects will not influence phreatic systems because in these systems, the groundwater is in contact with the atmosphere.

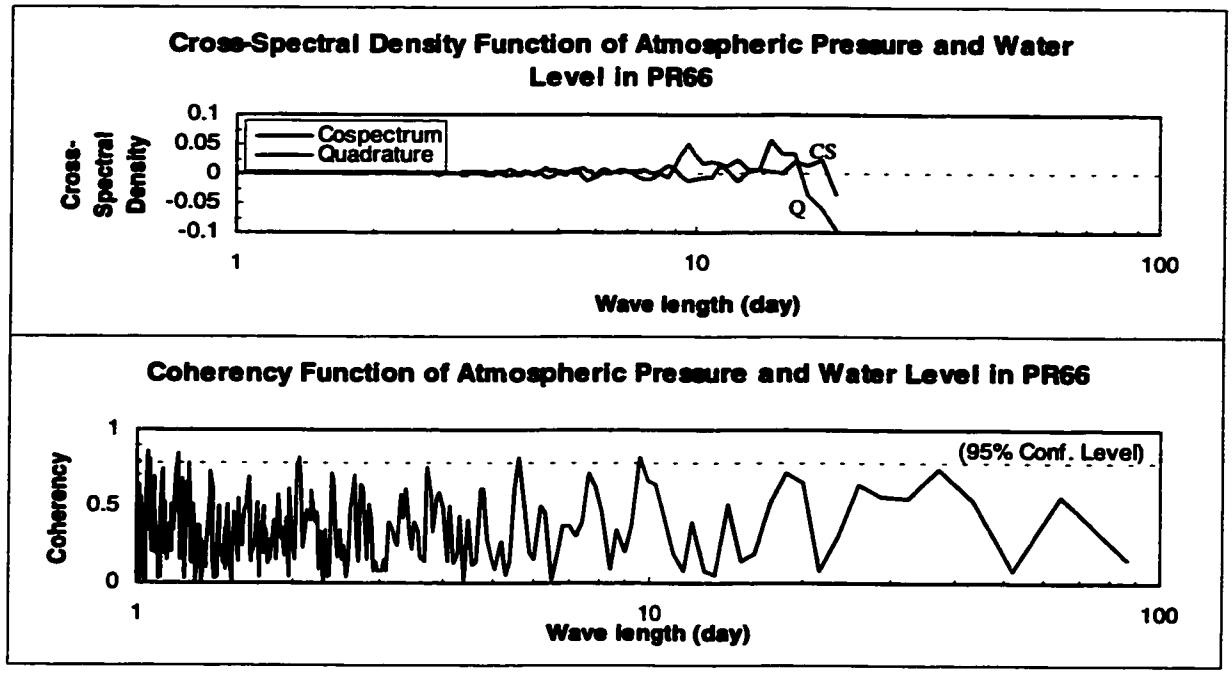


Figure 4.19: Cross-spectral density and coherency functions of atmospheric pressure and water levels recorded in PR66.

4.3.6 Hydrogeological Systems in Mountainous Terrains

Meteorological Processes Influencing Water-Level Response on the Price Hillside

The meteorological parameters and the correlation between them all interact to affect water level in a complex way. Nevertheless, the results obtained from this study have demonstrated some correlations between rainfall, air temperature and atmospheric pressure with water levels in drillholes. Rainfall and air temperature are correlated with large long-term water-level fluctuations in the groundwater flow system on the Price Hillside, while long-term fluctuations attributed to atmospheric pressure variations were found to be negligible. Short-

term influence on water levels was also identified from the correlation of rainfall, air temperature and atmospheric pressure with water levels. The processes (snowmelt, tide) that may be responsible for water-level fluctuations associated with air temperature and atmospheric pressure fluctuations are too complex to be examined with the experimental setting used here in this study; however, the influence observed between rainfall and water levels is more direct.

Rainfall has a dominant and more intuitive short-term and long-term hydrological influence on water level fluctuations that is easier to investigate for the purpose of groundwater flow characterization on the Price Hillside (recharge and discharge areas, flowpaths, etc.). For instance, the water levels in several drillholes on the Price Hillside showed annual fluctuations of more than ten meters, where the most significant increase occurs during the fall following the beginning of the rainy season. In particular, the water level in PR66 fluctuates more than 22 m over the year. The short-term influence of rainfall is also very distinct in PR66, where the water level can rise by several meters after rainfall events, and is followed by a rapid decline. This short-term influence was also confirmed by the high positive cross-correlation coefficients measured between rainfall and water levels with a lag of only a few days; and also by significant typical cyclical components estimated in the order of a multiple of 10-day scales, in the spectra and cross-spectra of rainfall and water levels. A comparable influence could not be attributed to air temperature and atmospheric pressure variations, although these processes demonstrated an influence on water levels.

Annual air temperature fluctuations certainly influence the water level on the Price Hillside. Because the summit of Mount Myra is snow-covered all year (above an elevation of

approximately 1600 m), the gradual melting of snow over the summer is expected to form another substantial source of recharge during the warmer periods of the year, when snowmelt water is channeled towards the large creeks that flow on the hillside. However, this process is probably gradual and could not be identified clearly because of the overriding effects of other processes such as rainfall. Fluctuations of air temperature were correlated with water level fluctuations in PR33, PR34 and PR66. This is especially apparent in the winter data series for PR33 and PR66, where short-term effects were positively correlated with warmer periods during the winter. Also, there was a significant small-scale cycle in the order of 15-day multiples identified in PR33, PR34 and PR66 data that agrees with the hypothesis that air temperature fluctuations induce short-term changes in water levels. These results indicate that the rise in water level typically occurs with warm air temperature periods during the winter, possibly due to snowmelt or due to precipitation occurring as rainfall instead of snow, but more information is required in order to support this hypothesis.

Short-term fluctuations of atmospheric pressure have demonstrated statistically a significant influence on water levels. The large cross-correlation coefficients measured with small lags and the negative correlation identified at small-scale (less than 10 days) support this assumption. Also, a significant cyclical component in the order of a multiple of 10-day scales similar to rainfall was identified, which agrees with the concept that both parameters are closely related. In comparison with rainfall, atmospheric pressure effects are believed to provide less information on the recharge mechanisms and the configuration of the groundwater flow system on the Price Hillside due to their rapidity and the small area of study, which should display a similar influence mostly everywhere in the hydraulic system.

The great influence of rainfall on water levels suggests that this parameter must be regarded as critical in water balance calculations in deep groundwater flow system studies in mountainous regions. On the Price Hillside, the influence of snowmelt was smaller and that of atmospheric pressure, even smaller than that of rainfall, indicating that they could be neglected for regional conceptualization and study of the configuration of the flow system at Myra Falls. Since some correlations and small-scale cycles were measured between water levels and air temperature and atmospheric pressure, it appears that these processes are also influencing the hydraulic response but to a lesser extent than rainfall. This spatial variability in the amplitude of the hydraulic responses suggests a difference in the intensity of the processes, perhaps resulting from a spatial variability in the physical properties, such as slope, hydraulic conductivity, soil thickness, etc., which will influence the infiltration rate (recharge).

Physical Parameters Influencing Water-Level Response to Rainfall on the Price Hillside

According to the results in this study, three major physical factors appear to influence rainfall-induced water-level fluctuations observed in drillholes on the Price Hillside. These are the hydrogeological properties of the rock mass in the vicinity of the drillholes, the drillhole configuration and the water level.

First, in a geological environment such as the one encountered at Myra Falls (Juras, 1987; Hamilton, 1995; see Chapter 3), the heterogeneity and anisotropy of the fracture network will certainly influence the water-level responses. Rainfall waters will rapidly infiltrate the fracture network near the surface through the creeks' permeable beds and also directly through the thin veneer of soil on the hillslope. Drillholes will show responses typical of

fracture-flow, i.e., water level varying greatly over the year (Briz-Kishore and Bhimasankaram, 1981; Kohut et al., 1985) and quick responses to rainfall events (Moore, 1992; Shevenell, 1996) in more fractured areas near faults due to the low storage and high hydraulic conductivity of the fractures. In this study, most of the drillholes located close to major faults or fracture zones (PR66, PR74, PR95 PR96 and PR97) are those that presented the greatest annual water level fluctuations. Also, the typical response (fracture-flow) in PR66 (and confirmed for underground drillholes in drifts located near the fault area – see Chapter 5) suggests the presence of fractured rocks in the vicinity of this drillhole. Conversely, the hydraulic response of water levels in drillholes located in massive rock (PR33 and PR34), located far from the main creeks, varies very smoothly and presents minor short-term effects resulting from rainfall. Thus, the simultaneous occurrence of a strong fracture-flow in some areas of the mountain rock mass, as compared to others, suggests highly heterogeneous (and anisotropic) hydraulic properties of these rocks.

The next parameter that can influence water-level response is the geometry of the drillhole. The storage capacity of the drillhole resulting from the thickness of the water column in the drillhole may be large enough to slow down the hydraulic response to hydrological processes, particularly in low-permeability rocks. Also, as the depth of the drillhole increases, the number of fractures encountered also increases, which can lead to the mixing of different flow systems. Rushton and Howard (1983) and Church and Gramato (1995) demonstrated that flow within open boreholes, which results from hydraulic head differences along the borehole, can lead to misinterpretation of hydraulic and chemical properties. Although the drillhole geometry certainly affects the water-level response, its influence was not examined

specifically in this study, because it would have required to isolate distinct fracture zones by the installation of several packer systems, which was not feasible in this study.

Thirdly, in a deep water-table system, the initial pulse of infiltrating water from the surface has a longer path to travel to reach the water table (small connectivity with the surface), which leads to the attenuation of the pulse by dissipation of the water in the unsaturated zone and its retention on fracture walls and in the rock matrix. This behavior is assumed to occur in PR33, which is located in massive rock (smaller connectivity); and in PR34, which have deeper water tables compared to PR66 (especially PR34). The smooth response in PR33 and PR34 may be caused by the scattering of the infiltrating-water front from the surface along the flow channels and/or the mixing of different flow channels deeper in the groundwater flow system. These conditions may have in fact diminished the effects of hydrological processes such as stormflow. Similar observations about the effects on spring discharge of water infiltrating through a thick unsaturated zone were made in karstic environments by Mangin (1984) and Padilla et al. (1994), where the existence of stormflow was only observed under heavy rainfall conditions. In contrast, waters infiltrating through a narrow fractured unsaturated zone, such as the zone near PR66, would result in a larger stormflow component; the stormflow component in PR66 is mainly observed during the winter period, when water levels are at their maximum, which corresponds to a thinner unsaturated zone. The depth of the water table or the connectivity with the surface (recharge areas) may therefore have an effect on water-level fluctuations.

Among the three causes identified as influencing the water level on the Price Hillside, the geological conditions appear to dominate. The water-level variations observed in PR33 and

PR66 are not consistent with the assumption of a control from the depth of the water table or the drillhole setup because they present similar characteristics (drillholes with approximately the same collar elevation, length and water level), while exhibiting quite different hydraulic behaviors. The major differences between PR33 and PR66 are the distance to a major creek and the quantity of fracture zones reported in the drill logs. PR66, in which a stormflow component was observed, shows more fracture zones and is located closer to a major creek. One would expect that the water level in drillholes located in a more fractured part of the rock mass, near the creeks, would greatly vary following rainfall events due to many open fractures with low storage capacity; and that the more massive rocks located further away from the creeks would be less affected by rainfall events because runoff waters are rapidly diverted towards the creeks. The distinct hydraulic behaviors observed in PR33 and PR34; and the behavior in PR66 strongly suggest that the large faults, especially if hydraulically connected to surface water channels, are dominating groundwater flow channels in the Price Hillside.

In particular, the role of large faults as major groundwater flow channels is illustrated by the large annual water-level variations and shallower water levels observed near these geological structures as opposed to drillholes located in massive rock. The large water-level fluctuations measured in PR66, PR74, PR95, PR96 and PR97, located mainly near major faults, apparently hydraulically connected to the creeks, are indicative of major changes in groundwater outflow from the hillside. The large fluctuations in the fault areas appear to be the response of the hydrogeological system in order to evacuate the substantial amounts of water received during winter months. These fluctuations suggest that the groundwater flow

regime on the Price Hillside may be strongly controlled by the flow in the very fractured-rock areas (faults) since water levels (hydraulic heads) are parameters directly controlling flow patterns (hydraulic gradient).

Hydrogeological System of the Price Hillside

The development of a conceptual model based on the field-measured properties is an essential step in understanding the groundwater flow system and in making predictions. The water-level fluctuation analysis has shown two distinct behaviors, which are assumed to be mainly associated with the characteristics of the rock mass at the location of the drillholes. These typical behaviors were used to formulate a preliminary conceptual model of the groundwater flow system on the Price Hillside.

First, there is a groundwater system located in the vicinity of large creeks, which are often associated with large geological structures, particularly faults. The system exhibits the characteristics of a more highly transmissive fractured-rock environment, showing a fracture-flow hydraulic response and large annual water-level fluctuations. It is fair to assume that more fractured areas, with fractures that are more closely spaced, enhance porosity and transmissivity. The rapid infiltration of water after rainfall events and hydraulic response attest that the creek areas are major flow channels that will have a controlling role in the water balance of the hillside.

Second, there is a groundwater system in areas farther from the creeks within more massive rock. The system is characterized by a smoother hydraulic response. The smooth response, as a result of the depth of the drillhole, the depth of the water level, the smaller connectivity

with the surface (recharge areas), or the smaller transmissivity (due to fewer fractures), suggest that these areas represent a distinct hydrogeological domain. The smaller influence of rainfall, as compared with PR66, is also indicative of a different rate of recharge of the groundwater flow system. The study of the groundwater system on the scale of the mine in a mountainous region can then be addressed as two hydrogeological domains each with distinct hydraulic properties.

Current conceptual models of groundwater flow systems in mountainous regions presume that the mountain is covered everywhere by a uniform fractured surface layer with a less fractured rock mass below, which suggests that a two-dimensional (cross-section) representation of the system is appropriate to study the flow from the summit to the valley. The hydrogeological mapping in the Price Mine (see Chapter 3) supports this hypothesis with observations of noticeable changes in hydrogeological conditions between the surface and deeper parts of the mountain; however, large hydrologically-active fractured areas were also observed to extend at great depth. Thus, the fractured areas of the mountain with higher hydraulic conductivity are certainly influencing the deep groundwater flow system within the mountain (recharge and discharge areas, flow direction). This observation suggests the need to encompass the study of groundwater flow in mountainous regions in a three-dimensional viewpoint.

Rainfall as the major source of recharge of the deep groundwater system is perhaps the dominating element in the water balance in the entire mountain, but its impact is greater near major faults, where water can more easily circulate. The large water-level fluctuations, shallow water level and stormflow component observed in fractured-rock areas, as compared

to massive-rock areas, support the hypothesis of larger changes in the groundwater flow regime in the fault areas, which suggest that large directional-flow variations may also occur in the groundwater flow system on the Price Hillside due to the differential change in hydraulic gradients.

The results in this study suggest that a 3-dimensional approach should strongly be considered to model the two hydrogeological domains when studying groundwater flow in mountainous regions, even at the cost of more complexity. Further studies are needed to provide more precise information on how hydraulic properties vary and to identify hydraulic connection in other areas of Mount Myra. The hydrogeology in the deeper part of Mount Myra, in the vicinity of an underground working, will be discussed in more detail in the next chapter.

4.4 Summary and Conclusions

This chapter described the response of water levels in open-surface drillholes to meteorological processes on the Price Hillside of Mount Myra. It showed that water-level fluctuations in surface drillholes can be instrumental in developing conceptual models of groundwater flow systems in mountainous terrains, such as those of British Columbia. Cross-correlation and cross-spectral analysis demonstrated that they are efficient statistical tools that can be used to compare time series of rainfall, air temperature and atmospheric pressure variations with time series of water level variations in order to improve the understanding of hydrogeological processes. The results showed that the rainy season is responsible for large annual water-level fluctuations and short-term effects in drillholes in the Price Hillside. Air temperature and atmospheric pressure presented significant short-term effects on water levels, but smaller compared to influence of rainfall. The strong rainy season over winter

plays a dominating role in the water balance and flowpath of the groundwater flow system, as seen by its influence on the water level in surface drillholes.

Field observations indicate that in Myra Falls, as in many high relief terrains, rainfall is generally heavy and runoff is quickly diverted towards large surface depressions or major creeks, which are often associated with geological structures such as faults. This leads one to speculate that water infiltrates into the creeks' permeable bed, circulates in the fast channels in the fractured rock mass, and discharges at lower elevations. The recharge of the groundwater system during the rainy season leads to a drastic modification of the groundwater flow regime, as evidenced by the large water-level fluctuations in the drillholes in some specific areas in the mountain. The annual changes in water level are larger (> 15 m) and more rapid following rainfall events in fractured-rock areas near faults, as compared to water-level variations in more-massive rock areas (no stormflow component).

The analysis of water level hydrographs in drillholes on the Price Hillside has provided valuable preliminary information for the development of a conceptual model of the groundwater flow system in the Price Hillside. Two distinct hydrogeological domains were identified within the mountain according to the nature of their hydraulic responses to rainfall (stormflow and smooth flow) and geological setting: first, there is a groundwater system in rocks showing a low storage and potentially high transmissivity, located in the vicinity of large creek; second, there is a groundwater system located in more massive rocks farther from the creeks, and showing a high storage and potentially low transmissivity. Since water-level variations, due to rainfall, are more important in drillholes located in the more fractured rocks near major surface creeks compared to areas with massive rock, the geological conditions of

the rock mass (degree of fracturing) influence the water level and the water-table elevation, which control the groundwater flow patterns on the Price Hillside.

The study of the water level response in drillholes indicates that the fluctuations are representative of specific zones of the groundwater flow system (fault, shear and fractured zone, massive rock mass), despite the fact that the monitoring setup (open drillhole, length) has probably influenced the response to rainfall, snowmelt and other processes observed in the drillholes. The study has shown that the influence of rainfall on water-level fluctuations is very important in the more fractured-rock areas (faults), as compared to massive-rock areas. A more in depth analysis of this role will be discussed in the next chapters. Further studies of water level variations in mountainous regions should attempt to monitor specific intervals in the fracture network and measure some hydraulic properties, in order to clarify the nature of the hydraulic response, evaluate accurately hydraulic connections, and eliminate the limitations due to drillhole setup.

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CHAPTER V

GROUNDWATER FLOW SYSTEM IN THE VICINITY OF UNDERGROUND WORKINGS, THE PRICE MINE, MYRA FALLS MINING COMPLEX, B.C.

5.1 Introduction

The evaluation of groundwater flow conditions in rock masses in the vicinity of underground openings is an important topic, especially for the mining industry. Inflows during the driving of a drift, in addition to being potentially hazardous, can represent substantial amounts of water to pump, treat or dispose of during and after mining (Loufbourow, 1973; Sharp et al., 1977; Williams et al., 1986). In recent years, environmental concerns for the disposal of hazardous- and radioactive waste in deep stable geological formations have generated many research projects examining groundwater flow in the vicinity of underground openings (Cacas et al., 1990; Abelin et al.; 1991; Martin et al., 1992). Mining hydrogeology has greatly benefited from the understanding gained from these projects. However, despite the knowledge gained, the detailed hydrogeological investigation for each new project remains a site-by-site issue because of the diversity of geological settings and mine operating conditions.

Many mines are located in mountainous regions, where hydrogeological information is often difficult to collect before the mine opening. Consequently, the knowledge gained in currently-mined areas is very useful for predicting groundwater conditions in future sites with a similar physical setting. The objective of this chapter is to characterize the hydrogeological regime in the vicinity of underground workings located in a mountainous massif. This study

presents field data that will help improve the understanding of hydrogeology in close proximity to mine workings in mountainous regions.

Although only a few field studies addressed specifically the hydrogeology of underground workings in mountainous regions, several studies examined the characteristics of hydrogeological systems in the vicinity of deep underground workings. For instance, flowrate measurements, chemical analyses and identification of inflow zones along tunnels in mountains were made by Gudefin (1967) and Jamier (1975) in order to evaluate the origin and spatial distribution of inflows. Seepage measurements and tracer tests have been used to evaluate the distribution, the amount of inflow and the groundwater flowpath in underground experimental sites (Lachmar, 1989; Cacas et al., 1990; Abelin et al., 1991). Hydraulic tests in underground drillholes were carried out in order to estimate the hydraulic conductivity of the rock mass and the hydraulic connection within the fracture network (Lachmar, 1989; Abelin et al., 1991; Yanagizawa et al., 1995). The results of these studies demonstrated that inflows in deep groundwater systems are scattered and usually associated with major geological structures. These experiments provided a good representation of local hydrogeological properties of deep groundwater flow systems.

Other types of study were useful to evaluate more large-scale properties of groundwater flow systems in the vicinity of underground workings and the influence of hydrological processes over them. In particular, the analysis of mine or tunnel discharge, that is, the amount of water flowing or being pumped out from a tunnel, has been used to determine the hydrogeological properties of the surrounding rock mass and the components of the groundwater flow system. Discharge hydrographs provide information on the hydraulic conductivity and the geometry

(size and type of geological structures) of the rock mass contributing to the inflows, infiltration rates from the surface, and flowrates in the saturated zone. For example, Goodman et al. (1965) and Sato (1983) developed methods using outflow and hydraulic head measurements to estimate the bulk hydraulic conductivity and the storativity of the rocks surrounding tunnels. Kang et al. (1992) studied long-term outflow hydrographs in a mining region in France and proposed a geostatistical model to improve the forecast of water exhaust from mines. Shimojima et al. (1993) applied hydrograph-analysis techniques on discharge and chemical monitoring data from a tunnel in a mountain to study the effect of rainfall on the total outflow and the characteristics of stormflow and baseflow. All of these studies yield estimates of hydraulic properties for the basis of the representation of deep hydrogeological systems in the vicinity of underground openings.

The understanding of hydrogeological systems in mountainous regions was improved by the interpretation of discharge hydrographs in other hydrological features, such as springs, which act as natural outflow of a groundwater flow system. Lhomme et al. (1996) studied the discharge and water-quality variations of two springs and a river in a mountainous region to obtain preliminary estimate of the groundwater flowpath. They analyzed the relationship between seepage, runoff and groundwater flow with regard to the climate and the nature of the rock. Karst spring discharges can be used as analogs to mine or tunnel outflows since they display the hydraulic response of a hierarchical flow system (caverns/tunnels, conduits/drillholes, fractures, matrix) to different hydrological inputs. In karstic environments, Padilla et al. (1994 and 1995), Zhang et al. (1996) and Angelini (1997) performed correlation and spectral analysis on time series of discharges from several springs in Spain and Italy. Their

results indicated distinct responses according to the site-specific development of the fracture network and demonstrated the benefits gained from the geostatistical approach. Thus, the interpretation of time-series of spring, tunnel- and mine-drift discharge is a useful tool for the development of conceptual models of the hydrology of rock masses.

This section of the thesis examines the rainfall response of the groundwater flow system in the vicinity of underground mine workings, notably the Price Mine, in order to evaluate the degree of hydraulic connectivity in the groundwater flow system. Only rainfall was considered here because it was observed to be the dominant influence on the hydrogeological system in this section of the Price Mine. The Price Mine has only been used for exploration purposes and therefore represents a "less disturbed" flow system than other parts of the Myra Falls Mining Complex. Hydrograph-analysis, used here to identify the contribution of rainfall to the discharge of the mine drift, was performed with simple traditional techniques and also with more advanced cross-correlation and cross-spectral analysis on rainfall, discharge and water level in underground drillholes. The principal objectives are: the identification of the origin of inflows; the assessment of the influence of the inflows on the flow system; and the identification of hydraulic connections within the rock mass. The overall goal is to collect data about outflows that are useful in formulating and implementing acid mine-drainage control strategies, dewatering activities and site closure scenarios at Myra Falls.

5.2 Methodology

The monitoring network used during this project was installed in the Price Mine, located on the *east* flank of Mount Myra (Price Hillside). The monitoring network consisted of a small meteorological station, a v-notch weir and several underground exploration drillholes in the

Price Mine. Figure 5.1 is a schematic cross-section of the Price Mine, showing the location of all monitoring sites.

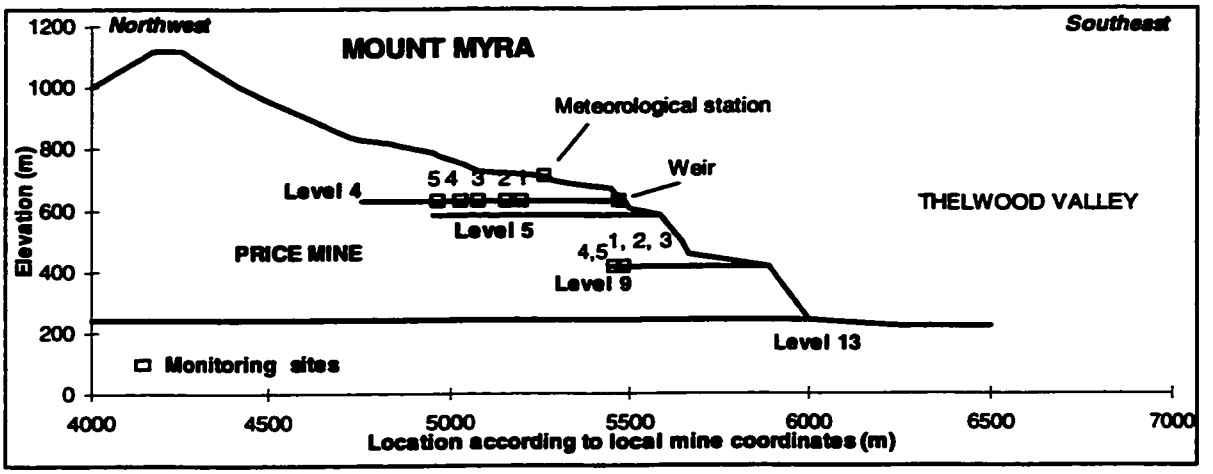


Figure 5.1: Cross-section of Mount Myra showing the location of the monitoring sites.

Precipitation, air temperature and atmospheric pressure data were recorded with a data logger every 6 hours at the meteorological station on the Price hillside. Daily measurements of precipitation and air temperature were also recorded manually at a weather station operated by Environment Canada in Myra Valley, on the *west* side of Mount Myra.

The discharge from the Price Mine Level 4 was monitored using a v-notch weir with a water-level sonic sensor connected to a datalogging device. The water level in the weir was measured automatically every 6 hours. The weir was installed at approximately 50 m from the portal to prevent freezing of the equipment during the winter.

Hydraulic pressure was monitored in open underground drillholes in the vicinity of the Price Mine workings. Six drillholes in Level 4 were equipped with pressure transducers (PR4-1 to 6). Five more drillholes were similarly equipped in Level 9 (PR9-1 to 5). The transducers

were connected to a data logger on each level and measurements were made every 6 hours. The characteristics of the drillholes are summarized in Table 5.1.

PRICE MINE

Identification	Strike	Dip	Length
	N	(°)	(m)
Level 4: 1 (P4-1)	45	5	47,2
Level 4: 2 (P4-2)	45	30	68,6
Level 4: 3 (P4-3)	45	5	65,2
Level 4: 4 (P4-4)	45	35	57,9
Level 4: 5 (P4-5)	45	5	53,0
Level 4: 6 (P4-6)	45	-10	93,6

Identification	Strike	Dip	Length
	N	(°)	(m)
Level 9: 1 (P9-1)	225	0	125,3
Level 9: 2 (P9-2)	45	0	84,7
Level 9: 3 (P9-3)	225	-45	77,4
Level 9: 4 (P9-4)	45	-20	102,4
Level 9: 5 (P9-5)	45	20	112,8

Table 5.1: Characteristics of the underground drillholes monitored in the Price Mine.

According to the geological and structural information in the exploration drill logs provided by the mine geologists, many of the geological structures intersected by the drillholes are large faults or fracture zones, with an orientation perpendicular to the drillhole strike, and apparently connected to surface creeks. This might explain some of the large flows measured from the drillholes before they were plugged. It was also noticed that seepage increased in some areas in the drifts following the closure of the drillholes. This could indicate that water from the fracture network found other paths to infiltrate into the drift, since the underground drillholes used during this study were all open holes, which might have intersected different fracture sets. In this study, it was not practical to isolate specific fracture sets in the drillholes with packers, which would have accurately monitored the hydraulic response in the fracture network. Nevertheless, it is fair to assume that the hydraulic response of a given drillhole is representative of the dominant fracture network intersected by the drillhole, since most of the inflows from the drillholes into the drifts were controlled (leaky drillholes plugged at the beginning of the study). The drillholes monitored were relatively short (< 125 m), and the

number of hydrologically-active fractures and faults intersected by the drillholes was therefore small (see Chapter 3 for hydrologically-active fracture density).

5.3 Results and Discussion

5.3.1 Response of Discharge from the Drift to Rainfall Events

Rainfall and Discharge Data

Rainfall, air temperature and atmospheric pressure data were recorded on the Price Hillside from August 1994 to June 1997, as discussed in detail in Chapter 4. Only the effects of rainfall are analyzed in this section of the thesis because the strong response produced by rainfall on the groundwater flow system was shown to dominate over the influence of air temperature and atmospheric pressure variations in this section of the Price Mine (c.f. Chapter 4). The interruption in rainfall monitoring due to the failure of the datalogging device or disablement of the equipment (see Chapter 4) prevented us from obtaining continuous rainfall data on the Price Hillside during the winter. However, comparison with rainfall data collected in Myra Valley has indicated a good correlation with Thelwood Valley (see Appendix I) and the data set from Myra Valley was used here to describe the annual pattern of the rainy season.

Long-term monitoring in Myra Valley (see Chapter 2) has shown the occurrence of an annual rainy season that influences drastically the hydrological regime in the area. The rainy season typically begins at the end of October or in early November, with the arrival of the first winter storms, and continues until late April. Although snowfall is sizeable, normally mild temperatures during the winter often produce precipitation in the form of rainfall.

Precipitation events from May to October are more scarce and of smaller intensity. The data collected in Myra and Thelwood valleys during the course of this study demonstrated the large influence of rainfall on the hydrogeological system.

The long-term variation of the discharge at the portal of the Price Mine Level 4 was monitored continually from September 1994 to June 1997. Figure 5.2 presents the discharge from Level 4 and rainfall in Myra Valley as a function of time. The rainfall data set recorded in Myra Valley was used here in order to illustrate the typical seasonal rainfall patterns at Myra Falls.

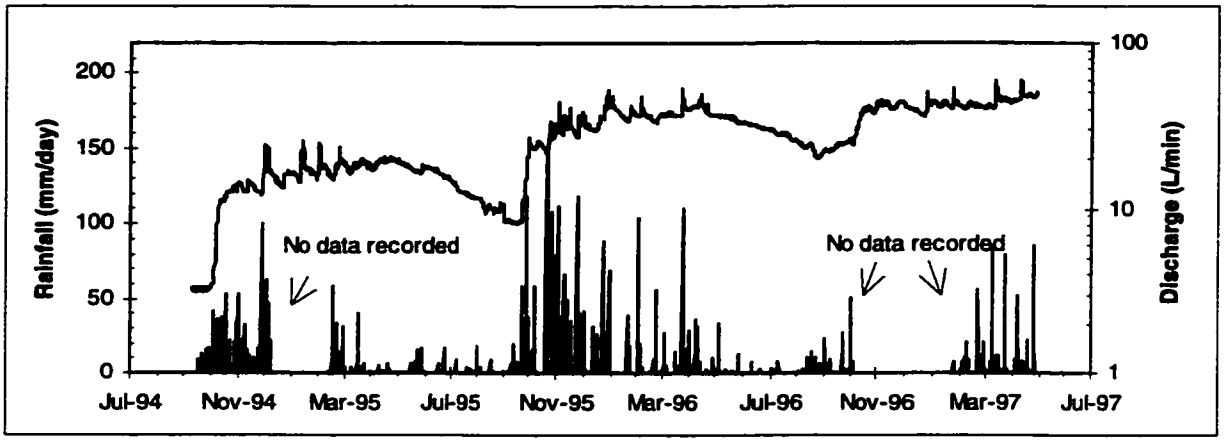


Figure 5.2: Rainfall in the Myra Valley and discharge from the adit of the Price Mine Level 4 (Rainfall measurements were made at one day interval. No data are available between 01/01/1995 to 02/28/1995 and 11/07/96 and 02/03/97).

The discharge presented in Figure 5.2 displays a pronounced seasonal variation, as indicated by the rapid increase of outflow during the Fall. The discharge can double within only a few weeks and maintain a high rate during the fall and winter months. Between September 1994 and June 1997, the average flow rate recorded at the portal of the Price Mine Level 4 was 27 L/min, with a minimum of approximately 10 L/min in October 1995, and a maximum of 59 L/min in April 1997. The lower discharge rate recorded at the beginning of the study

(September 1994) coincides with a period of adjustment of the weir following installation and may not be representative of normal minimal outflow conditions. The small trend in the discharge data may have been caused by a slow, unnoticeable movement of the instrument sensor over the years. Also, the higher bound of the discharge may have been limited by the capacity of the channel near the weir and along the drift to cope with the large stormflow during the winter. Despite these limitations, the discharge monitoring was assumed to be representative to perform statistical analysis of the variability in mine outflows during the course of the year.

Stormflow and Baseflow

The previous section has shown the variability of discharge over the year, which is associated with the rainy season. The short-term influence of rainfall events on the groundwater flow system in the vicinity of the Price Mine Level 4 is addressed in this section. The discussion is only concerned here with discharge data, but similar inferences can be drawn later for water-level fluctuations. Parts of the discharge hydrograph are presented in Figure 5.3 to illustrate the typical rapid response following rainfall events.

The influence of specific rainfall events on discharge is clearly seen in the hydrographs. Two typical recessions are consistently observed in the Price Mine discharge: a stormflow recession and a baseflow recession. The stormflow component can be ascribed to the rapid increase in water level resulting from flow in the fracture network and in the mining structures connected with Level 4 (drillholes, rock bolts) that increases the discharge. The water is released later, after rainfall events, as baseflow from storage in the rock mass.

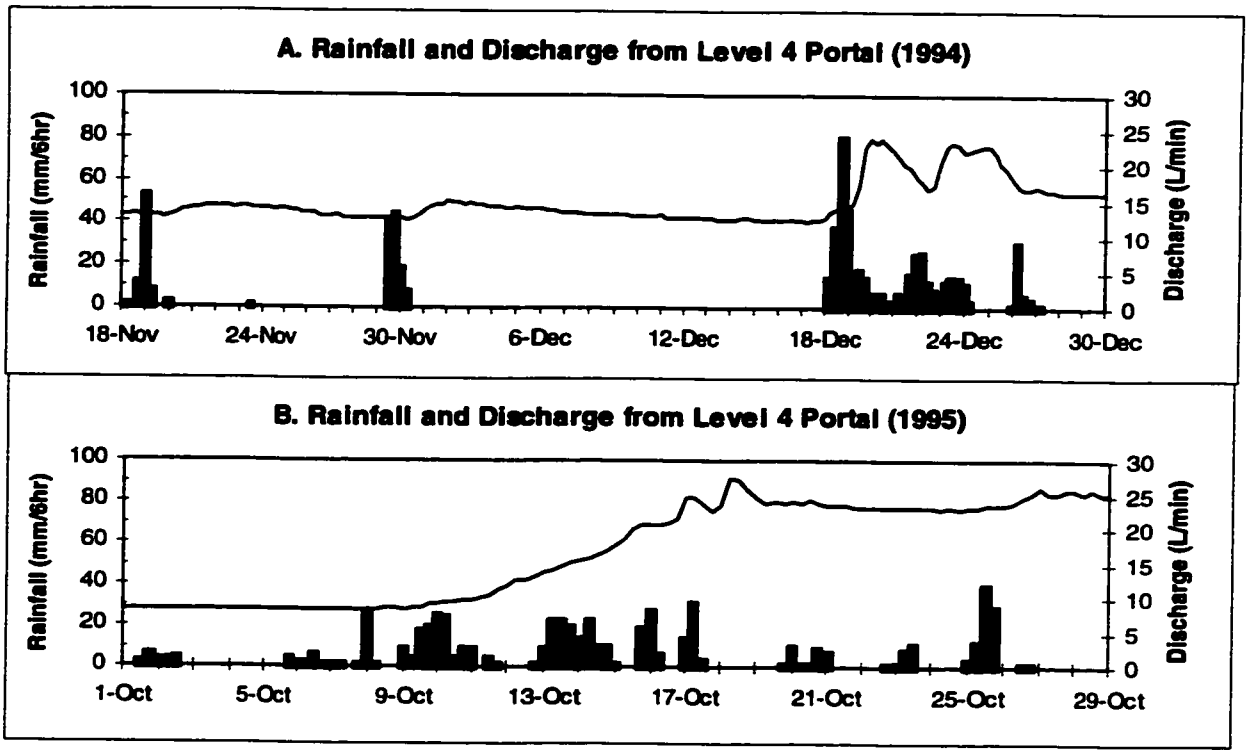


Figure 5.3: Response to rainfall events of discharge at the Price Mine Level 4 portal.

The percentage of total flow measured at the Price Mine Level 4 portal and the duration of the stormflow component is small compared to the baseflow. The maximum increases in discharge recorded after 6-, 12-, 18- and 24-hour periods following rainfall events were 38, 54, 61 and 66% of the initial discharge, respectively (or 9.9, 14.7, 15.6 and 17.5 L/min). However, the discharge peaks last only for short periods (1 to 3 days) before returning to baseflow regime. Similar observations were made by Angelini (1997) on discharge data of two karstic springs in Italy: the groundwater flow system there consisted of a slightly karstified rock mass with a high storage capacity (important baseflow) that rapidly evacuated the stormflow component. The slow release from storage of the groundwater system is shown in our study by the larger baseflow component, as compared to the stormflow component.

The stormflow and baseflow recessions observed in the hydrographs presented in Figure 5.3 can be described using a recession constant. Recession constants are characteristic of the hydrogeological domain and depend on the drainage area and rock properties of the watershed. The evaluation of the recession constant from the discharge hydrograph was made for the stormflow and baseflow recession by measuring the average slope in the decrease of discharge in a semilogarithmic graph. Stormflow recession constants were calculated over several stormflow events. Baseflow recession constants were calculated as an average for each summer recession, using measurements at the beginning and the end of the annual summer recession. Calculation were done using the following equation (Hall, 1969; Moore, 1992):

$$Q = Q_o e^{-\alpha t} \qquad \text{(Eq. 5.1)}$$

where:

Q:	Stormflow or baseflow at time t
Q_o:	Stormflow or baseflow at time 0
α:	Recession constant
t:	Time interval

The calculated values of the stormflow recession constant are in the range of 0.0054 to 0.0093 h^{-1}. An average recession constant of 0.0003 h^{-1} was estimated for the seasonal baseflow recession of the discharge from the Price Mine Level 4, which is more than one order of magnitude smaller than the stormflow recession constant. Values of the baseflow recession constant are at the lower limit of the range estimated by Padilla et al. (1994) for 4 springs in different karst systems in Europe (0.0003 and 0.0010 h^{-1}); close to values estimated from Lhomme et al. (1996) in crystalline rocks (0.0005 h^{-1}); but one order of magnitude lower than those calculated by Shimojima et al. (1993) for the outflow of a mountain tunnel in sedimentary rocks in Japan (0.0031 h^{-1}).

In complex environments, such as fractured or karstic terrain, hydrographs can display more than two distinct recession slopes associated with each specific type of flow in the groundwater system: conduit-, fracture- or matrix-flow (Shevenell, 1996). The variations in the recession rates result from the different types of flow structures (fracture, conduit, matrix) in the groundwater system. A steep slope (large recession constant) in a recession graph is an indication of a faster flow in fractures or conduits where water is rapidly evacuated after rainfall events. Small recession constants are typically associated with either hydrogeological systems equivalent to a porous medium; or an environment with many interconnected fractures; or a thick unsaturated zone that attenuates the effect of a pulse of infiltrating water from rainfall. At Myra Falls, small recession constants are observed, along with a baseflow component that is stronger than the stormflow component, and therefore the fracture network at Myra Falls shows the characteristics in the rock mass in the vicinity of the Price Mine of a moderately to well-developed network of fractures with a slow release from storage.

While the degree of development of the fracture network will determine the storage capacity of the system, the configuration of the system will be responsible for the spatial and temporal variability in the hydraulic responses in the discharge from the adit and in the drillholes. In the following section, the short-term response of the discharge due to stormflow is discussed in detail in order to provide information on the hydraulic connectivity in the fracture network.

5.3.2 Correlation of Rainfall Events with Discharge from Level 4

In order to study the short-term variability of the mine outflow using correlation and spectral analysis, the discharge data were transformed and the annual cycle was filtered out. First, the

data were changed into logarithmic values in order to reduce the bias and yield a more-normal series (Salas et al, 1980; Padilla et al., 1995). Then, a linear trend was removed from the data by subtracting each measurement from the linear regression of the data set. The seasonal component in the discharge data was removed from the data by substracting the value measured at a specific time interval from the average value for the same time interval of the cyclical function. This function was calculated using the Fourier transformation of the mean for each time interval of the data, as described in Salas et al. (1980) and in Appendix IV, which produces a smoothed average discharge for each 6-hour time interval. The data measured were subtracted from the cyclical function to obtain a residual value. The transformation performed on the data was used to reduce the effects of the large long-term fluctuations on the short-term variations.

The autocorrelation was calculated on the discharge data for 6-hour to 900-day intervals. The correlogram is shown in full range, even if the autocorrelation estimates have a greater error at large lags. However, this error was reduced by using a biased estimator that multiplies the unbiased correlogram by a triangular window. The correlogram and power spectrum are presented in Figure 5.4.

The correlogram in Figure 5.4a shows a rapid decline within 20 days and requires about 200 days to reach zero. Using an exponential decay function to represent the autocorrelation function produces an average correlation scale (decay constant: λ) of 0.023 day^{-1}. The decrease of the autocorrelation function over several days is characteristic of a "memory effect", which suggests that discharge fluctuations are slowly processed into the system (see Chapter 4; and Margin, 1984). This behavior can be the result of sizeable storage capacity of

the rock mass in the vicinity of the drift; or because the drift intersects several parts of the groundwater flow system that may respond at different periods; or the result of a low hydraulic conductivity; or both. The discharge correlogram is characterized by a random pattern although it appears that small periodic component can be observed on a scale of approximately 30 to 40 days.

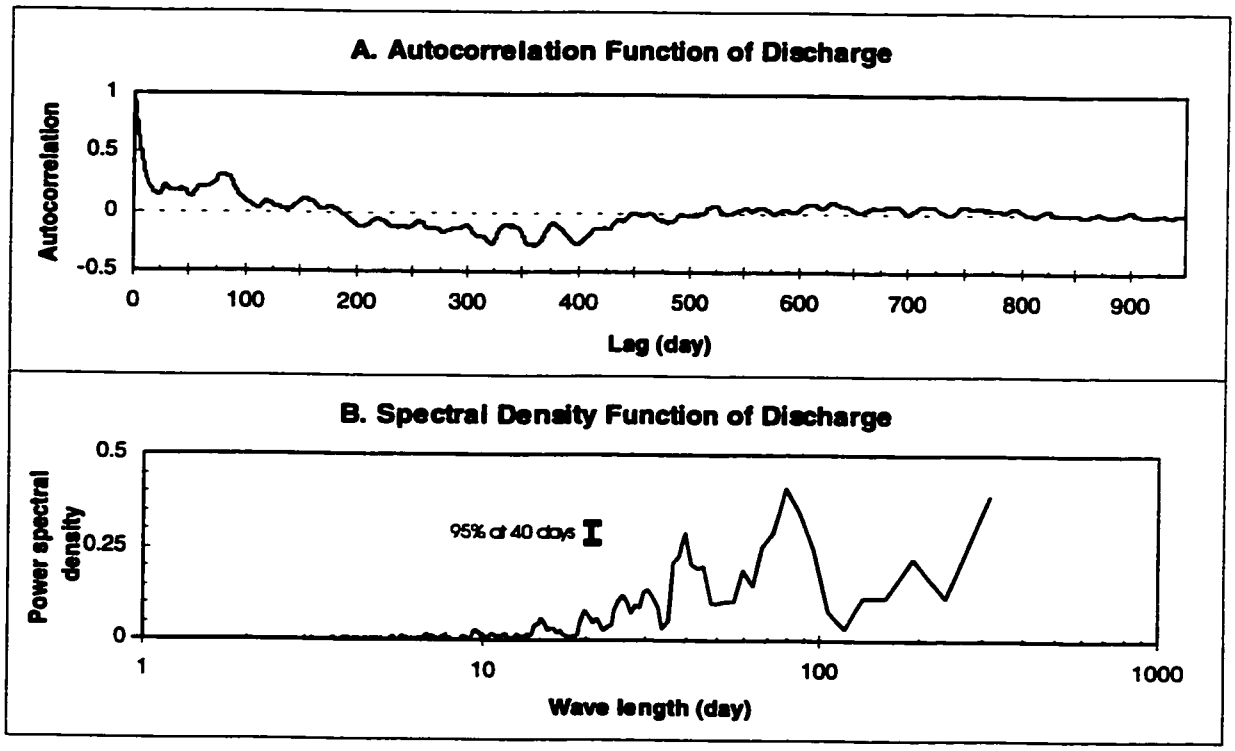


Figure 5.4 A) Autocorrelation and B) spectral density functions of discharge from the Price Mine Level 4.

The power spectrum in Figure 5.4b indicates no large periodic component in the discharge data. Using an arithmetic scale, minor periodic components are amplified for 20-, 40-, 80- and 360-day scales, which are in the same order of magnitude of the cycles in the rainfall spectrum (see Chapter 4). However, the cycles may be the result of aliasing caused by the spectral estimator and the sampling interval. On a log-scale, the spectrum slowly increases

with increasing scale, which corresponds to an exponentially decaying autocorrelation function.

The short-term influence of rainfall on discharge was examined using the cross-correlation and cross-spectral density functions. The cross-correlation function was calculated for 6-hour to 160-day intervals for each available series (10/94 to 03/95, 05/95 to 11/95, 04/96 to 11/96) and is presented in Figure 5.5a. The entire series is presented here to maximize the short periods (due to the rain gauge failure and the disconnection) available for rainfall data on the Price Hillside. Figure 5.5b and 5.5c show examples of the cross-spectral density and coherency functions for portions of the data set. The results of all cross-spectrum and coherency spectrum were similar for the other periods examined.

The cross-correlation function presented in Figure 5.5a shows a positive correlation between rainfall events and the discharge from the Price Mine Level 4 portal, but with a distinct offset. Table 5.2 summarizes the results of the cross-correlation by giving the maximum cross-correlation coefficients with corresponding time lags. The largest correlation of rainfall with discharge from Level 4 has a maximum value between 2- and 7-day lags (48 and 204 hours). The time lag corresponds to the delay between rainfall events and maximum discharge. The occurrence of more and heavier rainfall events during winter may explain the faster (small time-lag) and steeper increase followed by a faster decrease in the discharge observed during the rainy season (08/94 to 03/95 series) because more fractures are solicited, especially near the portal. There is also a periodicity at about 20- to 25-day scale observed in the 1994/95 series.

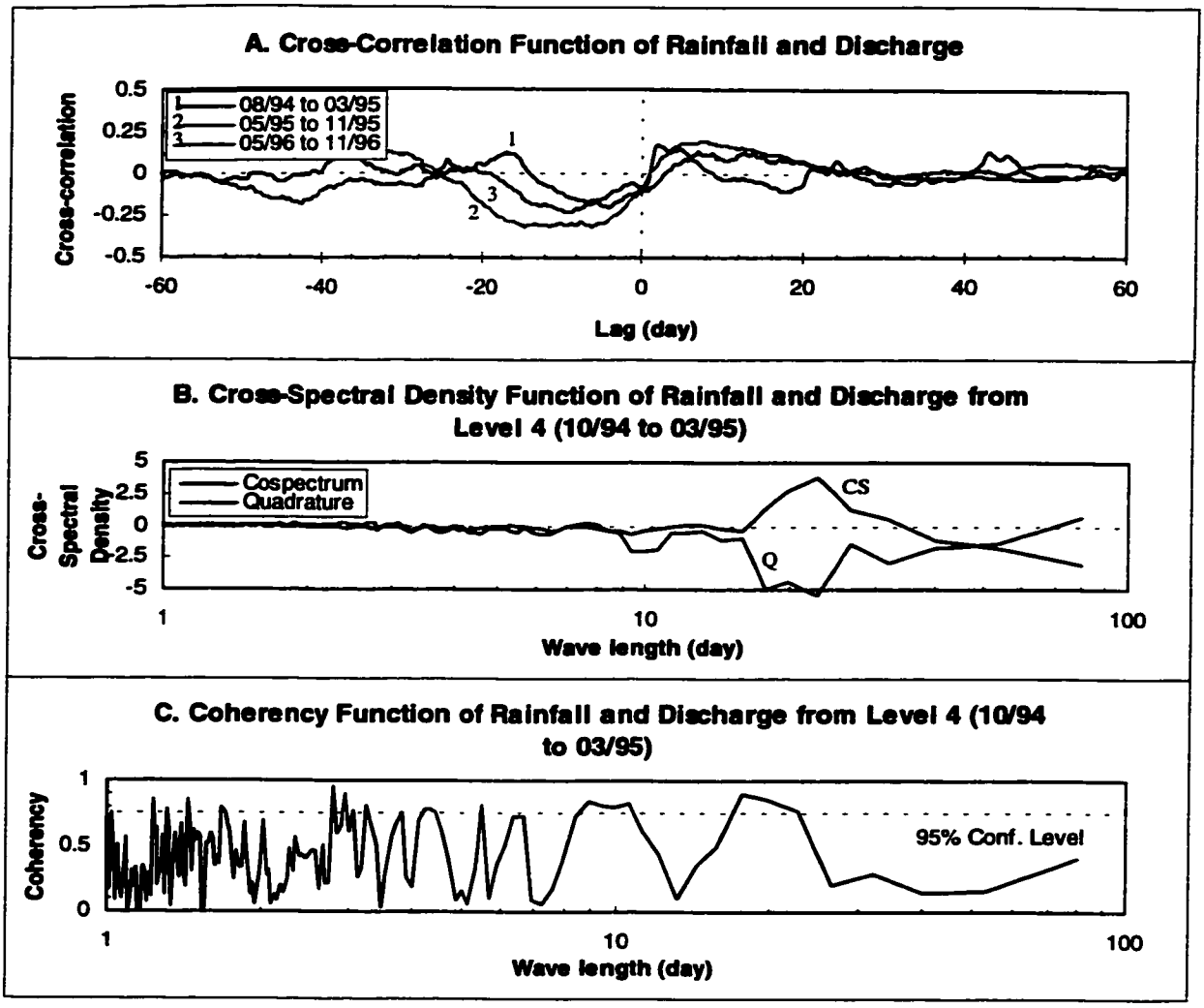


Figure 5.5: A) Cross-correlation, B) cross-spectral density and C) coherency functions of rainfall on the Price Hillside and discharge from the Price Mine Level 4 portal.

Once again, the strong memory effect (slow decrease) observed in the cross-correlograms indicates a slow response which may be due to a large storage capacity and/or low hydraulic conductivity of the hydraulic system in the vicinity of Level 4. The memory effect, the time lags and the low correlation coefficients can be explained by the fact that the drift drains several hydrogeological fracture networks that may not respond simultaneously to specific rainfall events depending on the spatial variability in rainfall. These conditions have for

results to decrease and widen the peak of the cross-correlation function, especially in the summer data series.

RESULTS OF CROSS-CORRELATION ANALYSIS
Rainfall and Discharge from the Price Mine Level 4 Portal

Data Series	Maximum Correlation Coefficient	Time Lag (hours)
08/94 to 03/95	0.170 0.149	48 108
05/95 to 11/95	0.186	138
05/96 to 11/96	0.131 0.124	162 204

Table 5.2: Results of cross-correlation analysis of rainfall and discharge measurements from the Price Mine Levels 4 Portal.

The cross-spectral density function must be examined in light of the coherency, which is essentially the spectral equivalent of the linear correlation coefficient. Figure 5.5b displays an example of cross-spectra. The cross-spectral density function estimates indicate that rainfall and discharge are generally correlated at scales between 10 and 50 days. There is a distinct in-phase positive correlation and an out-of-phase negative correlation observed at a 20-day scale (as in the rainfall spectrum); and a negative, out-of-phase correlation at scales of around 10 days. The coherency-spectra indicate that the correlations are significant (95% confidence level). The co-spectra and quadrature-spectra also show small but significant correlations at small scales (below 10 days): mostly negative in- and out-of-phase correlation. In Figure 5.5b, the peak in the cross-spectra at 20 days indicates that the 2 series corresponds which each other at scales of approximately 20 days. The negative quadrature-spectra indicates that

there is an important out-of-phase correlation between the 2 series at scales of approximately 20 days, produced in this case by a periodicity in the 2 series with a lag of approximately 10 days. The cross-correlation function also displays the same periodicity as the one seen in the cross-correlogram of the 1994/95 rainfall series, which suggests that major rainfall events also produce a peak in the discharge approximately 20 days later.

There appears to be a direct correlation between rainfall and discharge from Level 4 from the cross-correlation and cross-spectral analysis results. As previously observed, the discharge increases shortly after rainfall events; and yet the characteristics of the discharge response demonstrate a slow release from storage of the rock mass surrounding the drifts. This suggests the influence of several distinct hydrogeological domains along Level 4 (see Chapters 3 and 4) with distinct responses to rainfall, which will spread in time the influence of rainfall events on the total discharge measured at the portal. In order to determine the origin of the inflows contributing to the total discharge, the influence of rainfall on the fracture network is examined in the following section using water-level measurements in drillholes located along different mine drifts.

5.3.3 Water Level Response in the Drift to Rainfall Events

Water Level Data

Pressure measurements in all the drilholes studied were transformed into pressure heads and combined with the elevation head to produce water levels, expressed as meters of water above average mean sea level. The results of the water level monitoring are presented in Figure 5.6. The water level fluctuations in P4-6 are not presented because of uncertainties

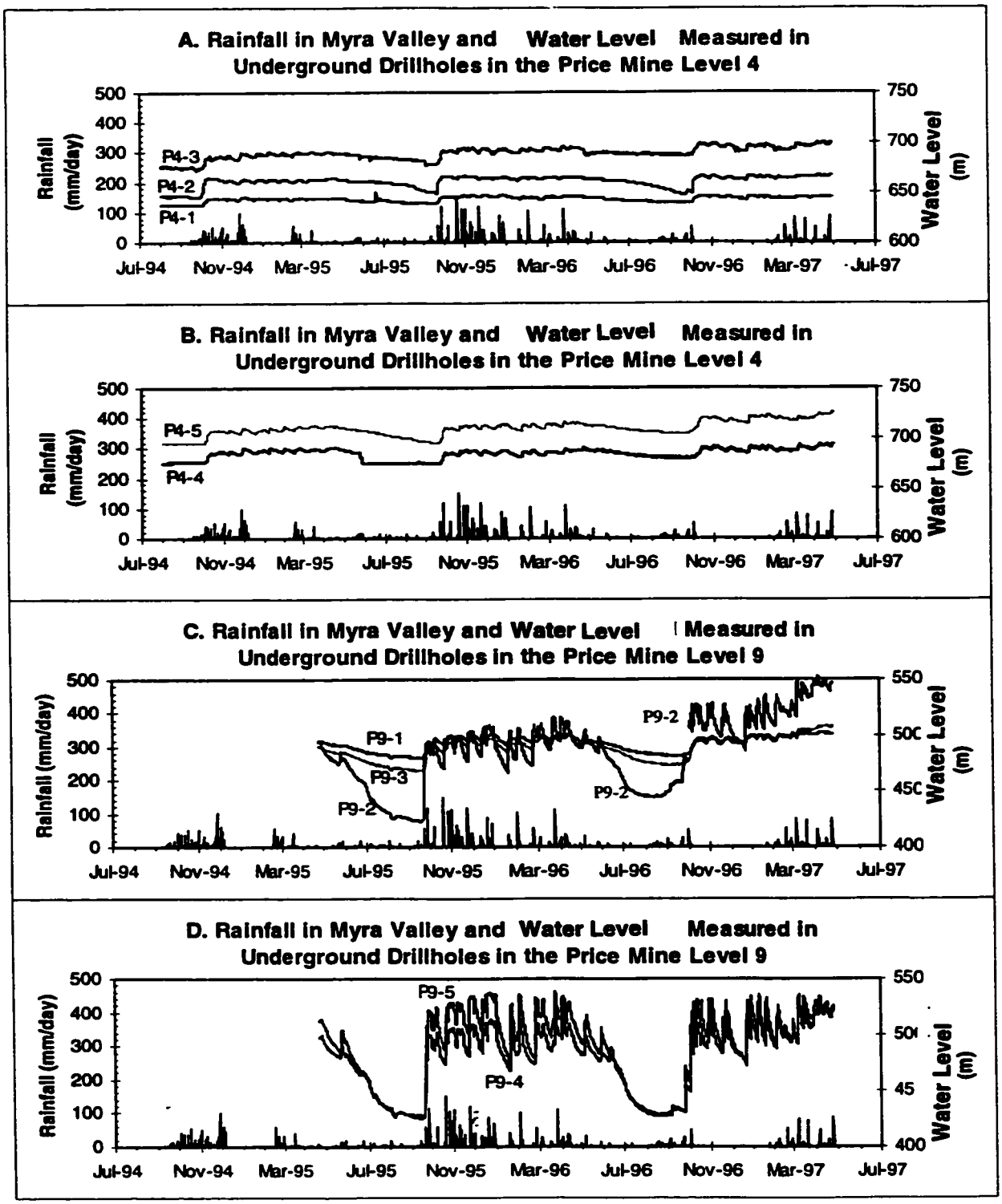


Figure 5.6: Rainfall in Myra Valley and water-level variations in underground drillholes in the Price Mine, expressed as water level in meters. Rainfall data are missing from March to April 1995; November 1995 to April 1996; and November 1996 to April 1997.

associated with the recordings due to important leaks observed around the drillhole collar. Rainfall data from the Myra Valley meteorological station were again used for comparison to illustrate the relationship between rainfall events and water level variations.

Figure 5.6 shows variations similar to those observed in the Price Mine Level 4 discharge hydrograph, namely a large annual seasonal effect and sharp responses following rainfall events (stormflow). Water-level measurements in the drillholes can vary greatly during the course of the year, from a few meters to more than 100 m. There appears to be two distinct groups of drillholes according to the hydraulic response. The first group consists of all the drillholes in Level 4, and drillholes P9-1 and P9-3 in Level 9. They show an average fluctuation of 25.3 m over the year. The second group consists of the drillholes P9-2, P9-4 and P9-5, with an average water-level fluctuation of 114.4 m. The main differences between the two groups are the depth within the mountain and the proximity to a major fault zone, which may explain their distinct annual behavior.

The variability of the water level in the drillholes was analyzed using the autocorrelation and spectral density functions. The water-level measurements were transformed in a similar way to the discharge data in order to decrease the influence of the strong seasonal effects, except that in this case no linear trend was observed. The autocorrelation function was calculated using time lags ranging from 6 hours to a maximum of 900 days. The correlograms are presented in full range in Figure 5.7a, even if the autocorrelation estimates have a greater error at large lags. The spectral density function was calculated for water level in the drillholes and is presented in Figure 5.7b. Since the correlograms and power spectra were all very similar, only typical results are presented here for P4-2, P4-5, P9-1 and P9-4.

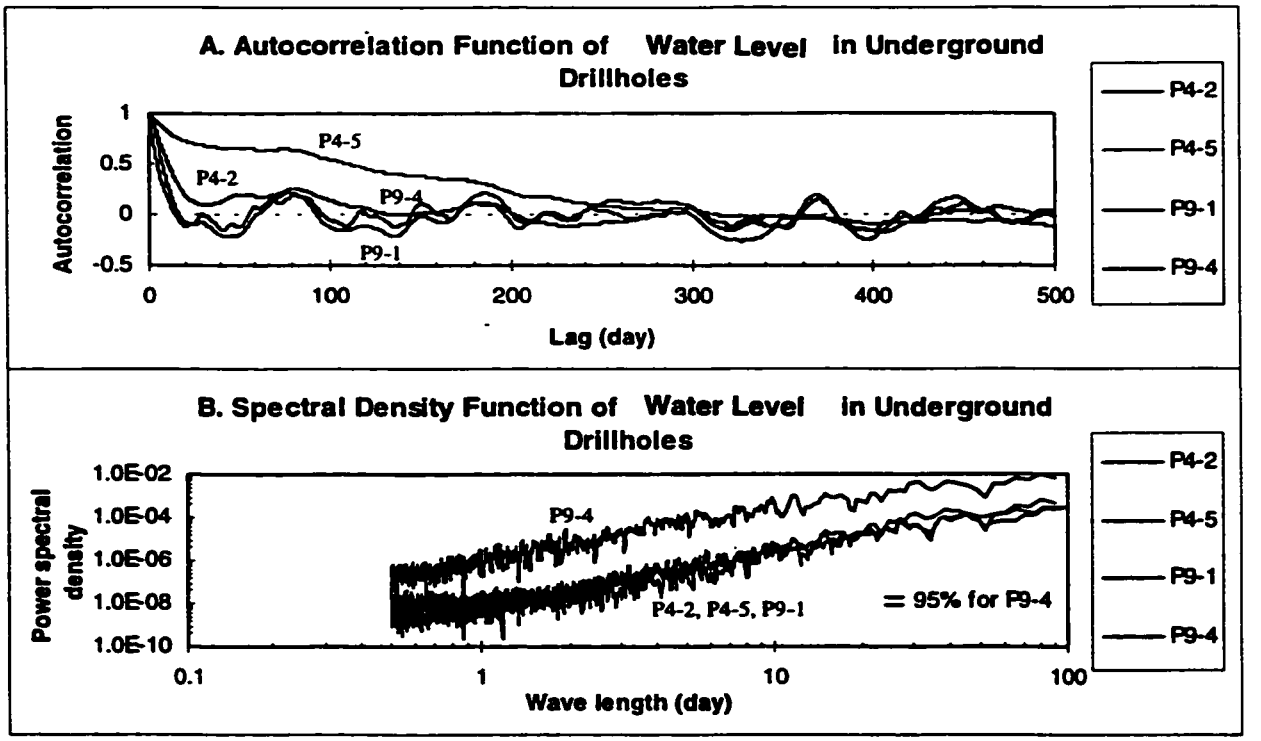


Figure 5.7: A) Autocorrelation and B) spectral density functions of water level in some typical underground drillholes in the Price Mine levels 4 and 9.

Similar conclusions to those made for the discharge data can be drawn about the variability of water levels. The correlograms decrease slowly and require several days to reach a null value and a small periodical component is also observed in the correlograms, especially in P4-2 and P9-1, with a wave length of approximately 40 days. The rate of decrease of the correlograms varies greatly, from approximately 20- to 280-day lags to reach a null value (λ is between 0.006 and 0.164 day). Most of the drillholes display a similar rate of decrease in the autocorrelation function, except the drillholes at the end of Level 4 (P4-4 and P4-5) that showed a very slow decrease. Also, the rest of the drillholes have a rate of decrease similar to the discharge correlogram (i.e., in the order of 0.023 day). The generally slow decrease in the autocorrelation function (memory effect) shows that specific events influencing on the water level are correlated over long periods.

The spectral density functions in Figure 5.7b are monotonic and display no distinct periodic component. The power spectra show higher spectral densities at long wave lengths, which indicates that the influence of seasonal processes was not completely removed from the data. The spectra show mainly random noise (mostly horizontal spectrum) for smaller wave lengths, less than approximately 5 days depending on the drillholes. The power spectra of the P9-4 group (P9-2 and 5) shows significantly more variability at all scales than the others. Performing a Fisher test to compare the variances of the two groups showed that they are significantly different (for example, P9-1 and P9-4 are different at a significance level of p = 99 %). The greater variability in the power spectra of the P9-4 group (P9-2 and 5) results from the larger fluctuations in water level observed during the rainy season, which also indicates a larger influence on water levels in the underground drillholes located in the Price Mine, closer to the fault zone area, apparently connected with major creeks. In general, the shape of the spectra is very similar suggesting that the drillholes may be affected by the same hydrological processes.

Correlation of Rainfall Events and Water Levels in Underground Drillholes

The effects of rainfall on the groundwater system intersected by the drillholes was examined using the cross-correlation, cross-spectral density and coherency functions for each available series (10/94 to 03/95, 05/95 to 11/95, 04/96 to 11/96). The cross-correlation function between rainfall and water level has been calculated for 6-hour to 160-day intervals and the entire available series are presented. The results of the cross-correlation analysis are summarized in Table 5.3, as the highest correlation coefficient with corresponding time lag estimate. Some typical results of the cross-correlation function are presented in Figure 5.8.

The results of the cross-spectral density and coherency functions are presented in Appendix VI because they were very similar to the results between rainfall and discharge (Figure 5.5) and do not provide more relevant information.

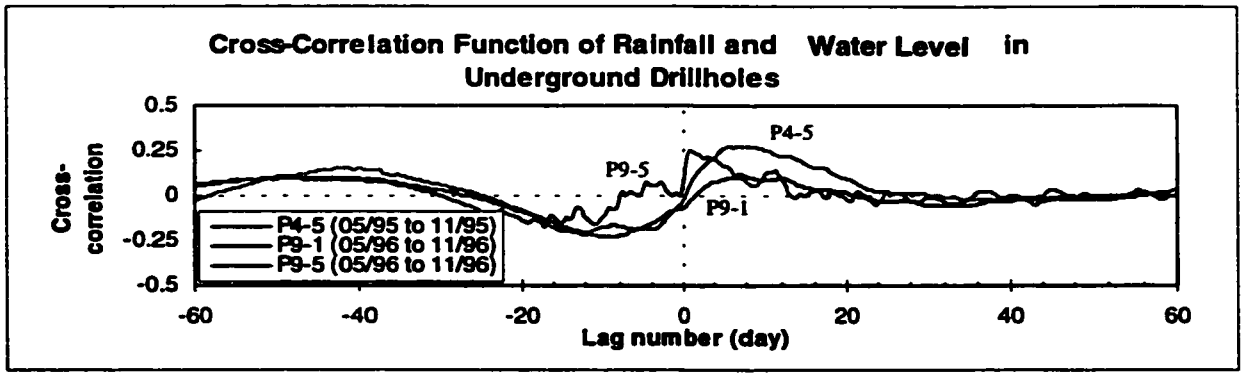


Figure 5.8: Cross-correlation function of rainfall and water level in some drillholes in the Price Mine levels 4 and 9.

RESULTS OF CROSS-CORRELATION ANALYSIS
Rainfall and Water Level in Underground Drillholes

	P4-1		P4-2		P4-3		P4-4		P4-5	
	c.c.	t.l.	c.c.	t.l.	c.c.	t.l.	c.c.	t.l.	c.c.	t.l.
08/94 to 03/95	0.191	150	0.206	156	0.212	60	0.233	87	0.169	90
05/95 to 11/95	0.378	114	0.321	114	0.312	72	0.187	120	0.273	180
05/96 to 11/96	0.224	96	0.233	78	0.217	108	n.s.		0.252	204
	P9-1		P9-2		P9-3		P9-4		P9-5	
	c.c.	t.l.	c.c.	t.l.	c.c.	t.l.	c.c.	t.l.	c.c.	t.l.
05/95 to 11/95	0.206	318	0.138	30	0.194	255	0.206	30	0.207	24
05/96 to 11/96	0.102	156	0.290	18	0.137	132	0.234	24	0.253	18

c.c. : Maximum correlation coefficient
t.l.: Time lag (hours)
n.s.: non significative to a 95% confident level

Table 5.3: Results of cross-correlation analysis of rainfall and water-level measurements in underground drillholes in the Price Mine levels 4 and 9.

The cross-correlograms show that rainfall events are typically followed by an increase in water level in the drillholes. The cross-correlograms all present similar behavior with

maximum correlation coefficients in the range of 0.102 to 0.378 (Table 5.3). The highest correlation coefficients measured are associated with one of two typical time-lag ranges of, specifically, 1 day (18 to 30 hours), and 2.5 to 13 days (60 to 318 hours); with most of the drillhole responses being in the second time-lag range. Only drillholes P9-2, P9-4 and P9-5 systematically show the smaller time lag, indicative of a faster response, which may also suggest that there exists distinct flowpaths in the hydraulic system intersected by the drillholes. In addition, despite the short length of the series, there appears to be a periodical component at approximately 50 days in all drillholes and a small-scale component of 4-8 days in the P9-2 (P9-4 and P9-5) group.

The high correlation coefficients displayed in P9-2, P9-4 and P9-5, as compared to the other drillholes, followed by rapid decreases in the cross-correlation function, is usually a sign of more variability that can be induced by a quick-flow component (Padilla and Bosch, 1995; Angelini, 1997). The faster response and rapid decrease of the cross-correlation function of rainfall and water level in P9-2, P9-4 and P9-5, could be attributed to a part of the groundwater flow system, where the low storage capacity of the fractures intersected will transmit the pressure front very rapidly to the drillholes they intercept.

The results of the cross-spectral density functions (see Appendix VI) indicate that water level are often correlated with rainfall on scales in the order of 20 days. There is an in-phase positive correlation for scales of approximately 20 and 60 days (typical of the rainfall spectrum); and out-of-phase negative correlation for a scale of approximately 50 days, suggesting a shift of approximately 25 days between the series. The correlation decreases after the 80-day scale. Several in-phase and out-of-phase mostly negative correlations are

observed at scales below 10 days. The coherency spectrums generally show that the correlation at scales between 10 and 50 days is significant; at smaller scales (below 7 days) the correlation remains but presents more variability. There is a distinct lack of correlation at approximately 5- and 10-day scales. These results show that rainfall events produce a water level response over short periods (10 to 50 days), but this influence is delayed presumably by the groundwater flow along different channels.

The results of the cross-correlation, cross-spectral density and coherency functions for rainfall and water level are much like those between rainfall and discharge. This indicates that rainfall events on the Price Hillside influence the fracture network and the discharge in a similar manner, which suggests that inflows in the drift may originate from the fractured network intersected by the drillholes. The occurrence of two groups of drillholes, distinguished on the basis of the hydraulic response (time lag) and a statistical test, partly explains the memory effect seen in the discharge correlogram, since the inflow may be delayed from 1 to 13 days in certain parts of the drift. These results suggest that the contribution of the fracture network to discharge vary along the drift. The next section attempts to identify which parts of the hydraulic system most influence the discharge.

5.3.4 Correlation between Discharge and Water Level

The previous section examined the correlation between rainfall and discharge; and between rainfall and water level. The small correlation coefficients, with their corresponding time lags, suggest that the groundwater system in the vicinity of the Price Mine is recharged by waters circulating through distinct groups of channels in the fracture system. This is expected, considering the spatial variability in rainfall, geology (structure) and topography on

the Price Hillside; and the configuration of the drillholes monitored, which intersect probably more than one set of hydrologically-active structures. This part of the thesis analyses the relationship between drillhole responses and the discharge from the adit, which should provide useful information on the hydraulic connection within the fracture network.

The cross-correlation, cross-spectral density and coherency functions were calculated for water levels and discharge from the Price Mine Level 4 portal. The cross-correlation was calculated for 6-hour to 900-day intervals. Only the first 60-day lags are presented here, since we are interested in short-term fluctuations following rainfall events, which may indicate a connection between water levels and discharge. Typical cross-correlograms are presented in Figure 5.9; and typical co-spectra, quadrature-spectra and coherency-spectra are presented in Figure 5.10 and 5.11. The results of the cross-correlation analyses are summarized in Table 5.4, as the highest cross-correlation coefficients associated with corresponding time lag.

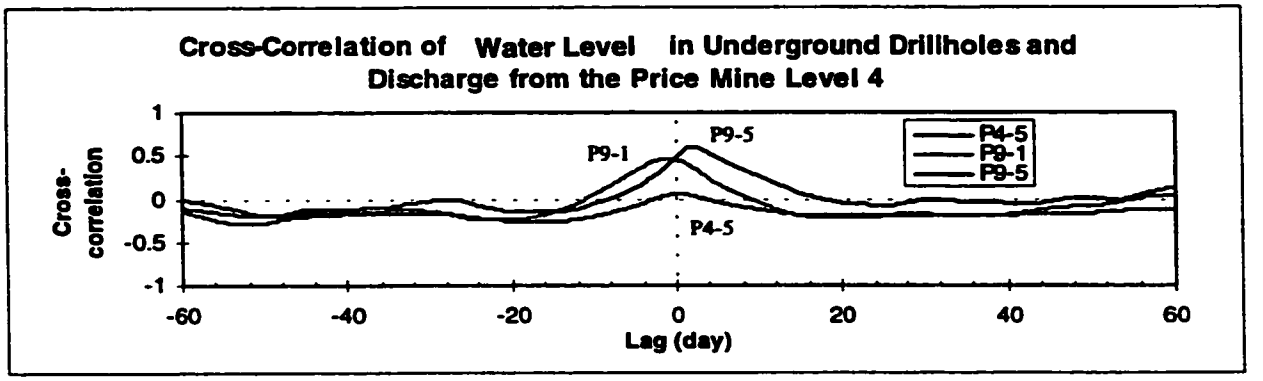


Figure 5.9: Cross-correlation function between water levels in some drillholes in levels 4 and 9 and discharge at the Price Mine Level 4 portal.

RESULTS OF CROSS-CORRELATION ANALYSIS
Water Level and discharge

	P4-1	P4-2	P4-3	P4-4	P4-5
Correlation coefficient	0.452	0.345	0.193	0.090	0.066
Time lag (hours):	12	42	9	0	9
	P9-1	P9-2	P9-3	P9-4	P9-5
Correlation coefficient	0.466	0.050	0.166	0.428	0.603
Time lag (hours):	-21	42	0	42	45

Table 5.4: Results of the cross-correlation analysis of water-level measurements in underground drillholes in the Price Mine levels 4 and 9 and discharge at the portal of Level 4.

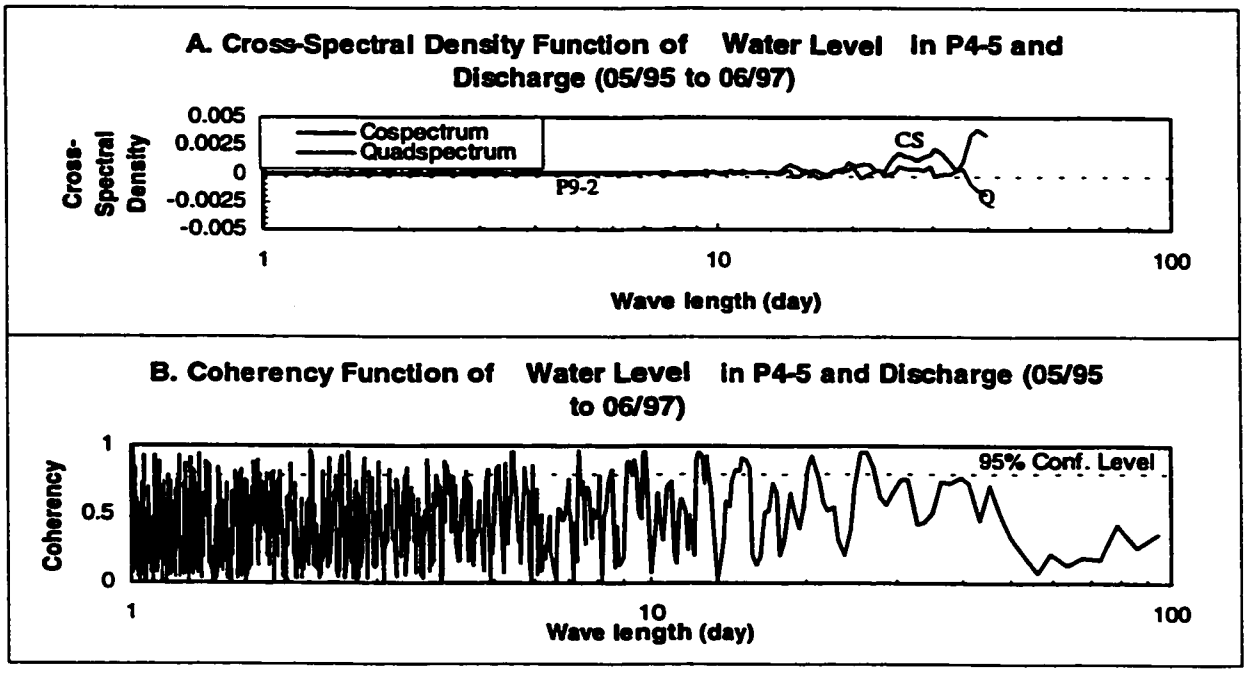


Figure 5.10: A) Cross-spectral density and B) coherency functions of water level in P4-5 and discharge at the Price Mine Level 4 portal.

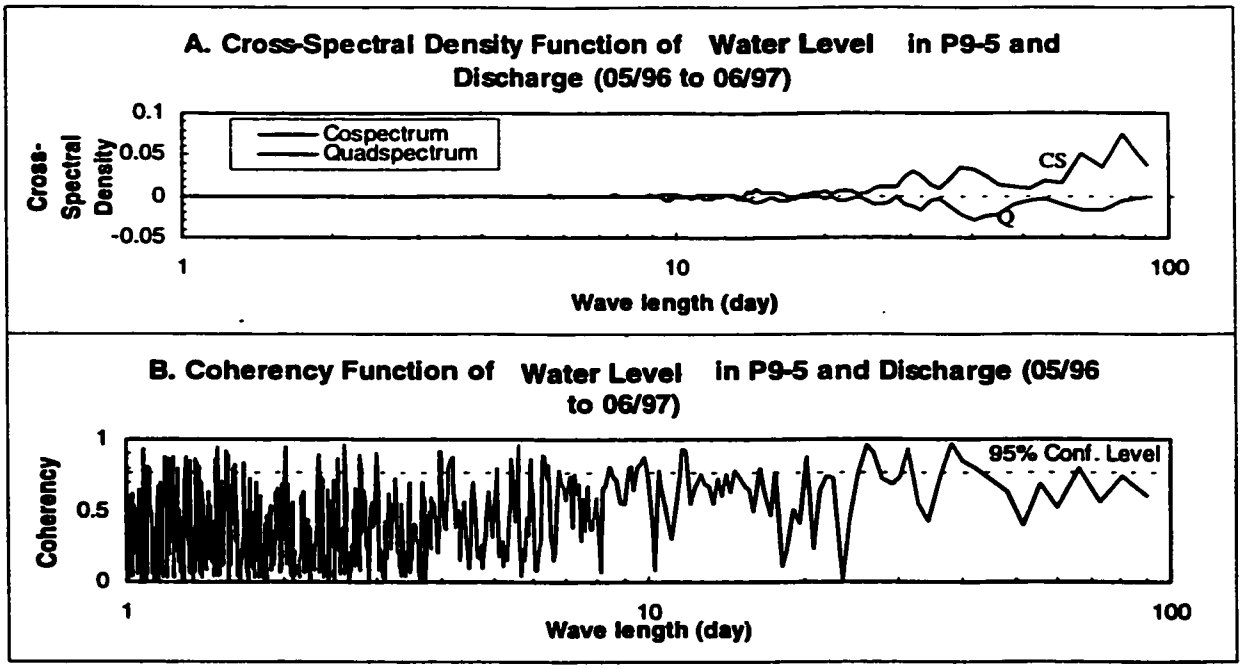


Figure 5.11: A) Cross-spectral density and B) coherency functions of water level in P9-5 and discharge at the Price Mine Level 4 portal.

Three distinct groups of drillholes were identified on the basis of the response time in the groundwater flow system: 1) P4-1, P4-3, P4-4, P4-5, P9-1 and P9-3, which showed a time lag below 12 hours; 2) P4-4 and P4-5, which showed a similar time lag but much smaller correlation coefficients; and 3) P4-2, P9-2 (even if the correlation is small), P9-4 and P9-5, which showed a time lag between 42 and 45 hours. This indicates that the change in water level in the second drillhole group (P4-2, P9-2, P9-4 and P9-5) is measured systematically 42 to 45 hours prior to the response in the discharge from Level 4 and therefore to the rest of the drillholes. These conclusions are also supported by the results of the cross-correlation function between rainfall and water level.

The cross-spectral density functions presented in Figures 5.10 and 5.11 generally show distinct peaks at large scales (between 10 and 80 days). There are in-phase positive

correlations for periodic components of approximately 20, 40 and 80 days in all drillholes (the correlation decreases with the increase in depth along Level 4); and a large negative correlation for more than 300 days only seen in the drillholes in Level 4. For scales smaller than 10 days, several in-phase positive and out-of-phase negative correlations are maintained. In general, the coherency spectrum is more significant (95% confidence) at mostly all scales (smaller than 50 days), suggesting a very similar behavior, except between 50- and 100-day scales. It appears from the small-scale variability that all the drillholes and the discharge display the short-term influence of processes, such as rainfall events.

The results of the correlation and spectral analysis of rainfall, discharge and water level data have allowed the identification of two groups of drillholes on the basis of the hydraulic response, suggesting the occurrence of at least 2 main flow channels in the vicinity of the Price Mine. The study of the specific drillhole configuration (location, orientation) and the geology of the Price Hillside will provide more information in the interpretation of the flowpath within the fracture network in the vicinity of the Price Mine.

5.3.5 Hydrogeological System of the Price Mine

Inflow Areas in the Price Mine

The detailed monitoring of hydraulic response showed that rainfall is a major component of the water balance responsible for the large annual fluctuations and rapid short-term influence in discharge and water level in the vicinity of the underground workings of the Price Mine. The positive correlation coefficients measured between rainfall and the hydraulic response in the drillholes and discharge suggest a response to similar short-term processes, but the delays

in the responses, according to the location of the drillhole, suggest that distinct flow channels or spatial variability contribute to the inflow.

Three main sources of inflow were identified in Level 4, based on field observations; geological and structural data; and discharge and water-level measurements: 1) surface runoff or possibly perched aquifers in the more-fractured, first part of the drift; 2) drillholes that were not sufficiently sealed; and 3) geological structures directly intersected by the drift. Except for the part of the drift near the portal, no single dominant source of inflow could be successfully identified in the deeper part of Level 4. Rather, the outflow from the drift appears to be the cumulative result of many relatively small inflows. However, there was no attempt to evaluate cumulative inflow along the drift.

The following conclusion emerges from the observations made here. It was first suspected that runoff or perched aquifers in the fractured rocks near the portal, were contributing a substantial amount of the water discharging at the portal. The first hundred meters of the drifts show a lot of seepage, compared to the rest of the drift where few signs of direct seepage from geological structures were observed in levels 4 and 9 (mainly as seepage from drillholes intersecting nearby large geological structures). However, the high correlation coefficients calculated between the water levels in the drillholes and the discharge (see Table 5.3) suggest that a large portion of the inflow originates from the fracture systems intersected by the drillholes (Northwest trending in the fault area), especially in areas close to the ground surface (but deeper than the first hundred meters), either directly from the drillholes or from the geological structures intersecting the drift. On the other hand, the drillholes at the end of Level 4 (P4-4 and P4-5) have demonstrated a poor correlation, indicating a smaller

contribution. However, since the correlation exists, it suggests recharge of the deeper groundwater flow system by similar hydrological process, along the *northwest*-trending structures and bedding planes, but changes in the inflow conditions due to the decrease in hydraulic conductivity and connectivity with depth. These observations support the hypothesis that the origin of most of the inflow is, along with the more fractured part of the rock near the surface, the near large fault areas.

The degree to which the fracture network intersects Level 4 and the connectivity of the fractures with the surface are certainly controlling the response of the discharge to rainfall events: the drillholes have presented distinct amplitudes and time lags in their hydraulic responses. The drillholes that have presented the fastest responses to rainfall and the strongest fluctuations seem to intersect a more-fractured part of the rock mass, near the major fault zone area (P9-2, P9-4 and P9-5) apparently connected with the creeks, since the rapid increases in water level following rainfall events are indicative of fracture-flow. The fast responses and large fluctuations in the hydraulic system suggest that the area of the fault represents a major flow channel in the Price Hillside, resulting from a well-developed fracture network, which appears to be hydraulically connected with the drift.

Groundwater Flow in the Vicinity of the Price Mine

As stated in the previous section, the response-time of water levels and discharge in the Price Mine to rainfall varies depending on the geographic location. The large correlation coefficients, with specific time-lag ranges, suggest that at least three major flow domains are present in the vicinity of the Price Mine: 1) the rock mass in the vicinity of P4-1, P4-2, P4-3, P9-1 and P9-3; 2) the rock mass in the vicinity of the drillholes P9-2, 4, 5; and 3) the rock

mass in the deep part of the Price Mine (P4-4 and P4-5). The hydraulic response specific to the groups of drillholes appears to result from the geological setting.

In Chapter 3, several structures were identified in the Price Mine, including: many *northwest*-trending, *north*-dipping hydrological structures, parallel to the regional foliation, along with fewer *southwest*-dipping bedding planes. The location and strike of the drillholes was initially chosen to intersect the major *northwest*-trending shear zones for mineral exploration purposes. All the drillholes in levels 4 and 9 are perpendicular to the dominant *northwest*-trending fracture set and intersect some of the large structures which are presumably connected to surface creeks.

The greatest water-level variations were recorded in drillholes oriented *northeast* towards some of the major creeks (P9-2, P9-4 and P9-5). The drillholes in Level 4 are oriented towards the large creeks, but are located at a higher elevation and deeper in the mountain compared to P9-2, P9-4 and P9-5. They show small water-level variations very similar to the variations in P9-1 and 3, which are striking *southwest*, deeper in the mountain and further *south*, away from the creeks. Figure 5.12 illustrates the drillhole configuration and fracture network configuration described here. According to the location of the drillholes displaying these similar hydraulic responses, i.e., high correlation coefficients and comparable time lag (Level 4 and P9-1 and P9-3), the connection between the groups of drillholes must occur via large *southwest*-dipping structures, such as the bedding planes, (connected in part with the numerous subvertical structures) to account for the distinct behavior of the rest of the drillholes. These observations form the basis of a preliminary interpretation of the

hydrogeological framework on the Price Hillside of Mount Myra attesting to the major role of creeks and bedding planes in the deep groundwater flow system of the Price Mine.

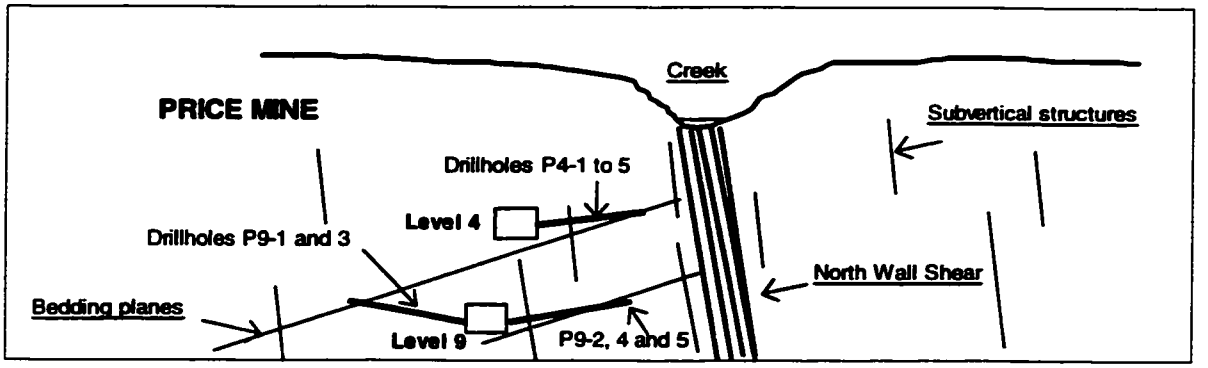


Figure 5.12: Schematic cross-section showing the apparent hydraulic connection between the drillholes in the Price Mine.

Thus, it may be assumed that the water from winter rain is rapidly diverted by runoff on the steep slopes into the creeks, from whence it recharges the dominant *northwest*-trending fracture zones (North Wall Shear). Rain waters quickly infiltrate the well-developed fracture network near the creeks. Afterwards, the water is rapidly processed through the system and the hydraulic parameters return to baseflow levels.

The hydraulic response in the drillholes intersecting the *northwest*-trending geological structures (creeks), presumably the result of torrential flow into the creeks, confirms the existence of a strong stormflow component, even at depth (P4-4 and P4-5). The fastest and largest variations in water level measured in the drillholes P9-2, P9-4 and P9-5, prior to the discharge of Level 4, suggest a more-fractured zone with a more direct connection to the recharge zone (creeks), or a different recharge zone. The response in P9-2, P9-4 and P9-5, which are oriented toward the creek and located at lower elevation, could be explained firstt

by water infiltrating from the major creeks via subvertical structures, then along the *south*-dipping structures, such as bedding planes, observed in this part of the rock mass. The occurrence of fast, distinct, hydraulic *south*-dipping flowpaths is a conceivable explanation for the distinct hydraulic responses (time lag) observed between the groups of drillholes in the data collected in the Price Mine.

In terms of groundwater management at the Price Mine, the identification of the main hydrogeological structures provides valuable information on the geometry of the flow system and on the anticipated inflow during mine development and for mine closure. The observations made here show that *northwest*-striking structures along with the *south*-dipping bedding planes are important channels for groundwater flow in the hydrogeological system in the Price Mine, presumably hydraulically connecting the creeks with the drifts. During the rainy season, a substantial amount of water flows in the groundwater system, in the part of the Price Mine closer to the surface, through the most-fractured rocks, and in fault (creek) areas. In deeper areas of the Price Mine, the short-term influence of rainfall is smaller, although noticeable. Therefore, the observations indicate that mine drifts or drillholes oriented to intersect to the structures can dewater the rock mass more economically. These conditions are better seen closer to the surface and near deep fault areas.

The correlation and spectral analysis of the hydraulic response in the drillholes and the discharge indicates that monitoring water pressure in drillholes is an efficient approach to estimate the amount and variability of future outflow from mine drift and to determine their origin (surface or deeper groundwater system). Drillholes located in the more fractured rock near the surface display fluctuations that are well-correlated with discharge fluctuations, thus

providing a more efficient way to evaluate the fluctuations (with a datalogger) and to corroborate discharge fluctuations (limitations associated with the weir). As expressed by Avery et al. (1999), it is frequently impractical to monitor springs to accurately determine the flow variability. The close correlation between water level and discharge is therefore an efficient tool to predict mine outflow, and perhaps creek discharge rates in difficult environments such as mountainous terrains. Also, it provides information on the geometry of the hydrologically-active fracture network. These conclusions showed that detailed analysis of rainfall, discharge and water-level fluctuations provides a good understanding of the configuration and the water balance of this groundwater flow system.

5.4 Summary and Conclusions

This chapter showed that geostatistical analysis is an efficient tool in order to describe the response to rainfall and the hydraulic connection of the groundwater system in the vicinity of an underground opening at Myra Falls. The effects of rainfall on water levels in drillholes and mine discharge were examined with correlation and spectral analysis. The results showed that the rainy season exerts a major influence on the annual fluctuations of the groundwater flow system; the influence of rainfall events on the discharge and water level demonstrated that stormflow is an important source of inflow in the Price Mine responsible for large short-term fluctuations. Stormflow can represent more than half the discharge rate prior to rainfall events, but it is evacuated rapidly from the groundwater system. The groundwater system is dominated by a baseflow component sustained throughout the year, where a substantial quantity of water is in storage in a well-developed fracture network in the rock mass, in major fault areas.

The analysis showed that since the discharge and water levels are well-correlated, a substantial part of the discharge from the Price Mine Level 4 originates directly from the fracture network intersected by the drillholes in the drifts. The results also show that several distinct hydraulic responses in the fracture network were identified on the basis of the cross-correlation and the time lag of the water-level and discharge fluctuations. The distinct behavior in hydraulic responses depends on the location of the monitoring sites and is related to the fracture network configuration.

The monitoring of the discharge and water level suggests an important control of groundwater flow by *northwest*-oriented structures, but also by bedding planes. The large water-level variations observed following rainfall events in the drillholes indicate that the *northwest*-trending geological structures are very important flow channels, presumably connected to surface creeks. The bedding planes seem to be responsible for the rapid connection of deeper parts of the mountain with the creeks and vertical variations (lateral flow) in the hydraulic system of the rock mass. The interpretation of the responses of the hydraulic system suggests a response to a similar recharge process, presumably rainfall, but with distinct recharge areas or distinct flowpaths; although smaller the influence is felt at great depth in the groundwater flow system. Therefore, particular attention must be paid, especially to geological structures for a complete understanding of the groundwater system in fractured-rock groundwater systems in mountainous regions.

The results of this study are representative of the hydrogeological setting in the vicinity of the Price Mine only. The experimental site used here was initially developed for mine exploration. The drifts were driven parallel to a major fault zone, where orebodies were

expected to be found. The creeks that flow in the surface trace of the faults and in the more fractured rocks in this area are responsible in part for the inflow in the drifts. Observations in surface drillholes located in other parts of the Price Hillside have indicated distinct behavior of the groundwater system, especially in massive rocks. Further studies of mine discharge and hydraulic heads in drillholes located in other parts of the property; and inflow along the drifts should be attempted to provide more data on the spatial and temporal variability of the deeper groundwater flow system for a general conceptual model of the mountain site.

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CHAPTER VI

HYDROGEOLOGY OF THE PRICE HILLSIDE, MOUNT MYRA, VANCOUVER ISLAND, BRITISH COLUMBIA

6.1 Introduction

In Western Canada, mineral resource exploration, development and exploitation is often performed in mountainous regions. Mountainous regions offer a particular challenge to natural resources development because of difficult access. As a further impediment, provincial and federal regulations require environmental impact assessments of future mining activities on surface and ground waters. Unfortunately, data on groundwater flow systems in mountainous regions are still rudimentary and sparse because of the difficult working conditions. The economic incentives and the requirement to meet environmental regulations prior to and during exploitation have spawned the need for a better understanding of surface and underground hydrology in mountainous regions. The objectives of the study described in this thesis are to collect baseline data, such as rainfall rates, air temperature variations, discharge from mine drift, water level and hydraulic head measurements, in order to improve the knowledge of groundwater flow systems in British Columbia's mountainous terrain. This chapter specifically attempts to develop a conceptual model of the hydrogeology of a mountain massif, Mount Myra, located on Vancouver Island, B.C.

Previous hydrological research in mountainous watersheds mainly focused on the relationship between surface hydrological processes and shallow groundwater flow systems (Stephenson and Freeze, 1974; Kirkby, 1978; Flerchinger et al., 1992; Jackson and Cundy, 1992; Reid and Iverson, 1992; Constantz, 1998). These studies have demonstrated the influence of

parameters such as climate, topography and geology, on the hydraulic response of surface and groundwaters in hillslope aquifers. The variability in climatic conditions on hillslopes (orographic effect, sunlight exposure, etc.) is responsible in part for changes in surface rock weathering, which influence infiltration and snowmelt rate (Woo and Steer, 1983; Blazkova, 1990; Deng et al., 1994). Because of steep slopes, which facilitate runoff, only a thin soil cover can generally develop in mountainous regions. However, in large fault areas in mountains, the more-developed fracture network allows the water from rainfall and snowmelt to percolate and infiltrate deeper, resulting in a thicker soil cover that favors recharge of the deeper groundwater flow system. These studies showed that the spatial variability in climate, topography and geology determines the quantity of runoff, the rate of infiltration and the location of recharge areas (Woo and Steer, 1983; Zecharias and Brutsaert, 1988; Deng, 1994), which control the hydraulic response of shallow and deeper groundwater flow systems in mountainous regions.

Contrary to hillslope aquifers, little is known of the hydrogeological processes in deeper groundwater flow systems in mountainous areas. The characteristics of deep groundwater flow systems in mountainous regions have been often studied using numerical approaches, which circumvent the problems associated with field work in difficult-access areas (Jamieson and Freeze, 1983; Gerhart, 1984; Woodbury et al., 1987; Duffy and Al-Hassan, 1988; Forster and Smith, 1988; Chavez et al., 1994; López and Smith, 1995). These studies were made from 2-dimensional viewpoint under the assumption of an equivalent porous-medium continuum for the scale of investigation, because of the few data available to evaluate the spatial variability of hydrogeological conditions in deep flow systems.

For instance, Jamieson and Freeze (1983) used field data and a numerical model to estimate the hydrogeological characteristics of granodiorite and volcanic rocks of Meager Mountain, in British Columbia. They tested various hydrogeological settings against water-table depth, net infiltration and streamflow ranges measured in the area. They concluded that the groundwater flow system is characterized by an intermediate water table position within the mountain core, controlled by the recharge from snowmelt and rainfall during summer, and the discharge to streamflow. The hydraulic-conductivity variation was the parameter that most influences the outflow, which was restricted to the portion of the adjacent valley covered by overburden.

Gerhart (1984) used a numerical model to analyze the water-supply potential of regional flow in a groundwater basin using a simple conceptual model, which consisted of a fractured mantle with higher hydraulic conductivity on hilltops and slopes; and a hydrogeological domain with lower hydraulic conductivity, located deeper in the bedrock. He assumed that groundwater flow on a large-scale was similar to that of a porous medium, even if flow was through secondary openings in the bedrock. He estimated specific hydraulic properties for the two domains, the fractured mantle, and the deeper porous-medium equivalent domain. From this approach, Gerhart evaluated which, among 21 hydrogeological units studied, presented the greatest potential for groundwater development (pumping, irrigation, etc.).

Forster and Smith (1988) studied exhaustively the influence of several parameters, such as topography, geology, climate and thermal regime, on groundwater flow systems in mountainous terrains using a coupled fluid-flow and heat-transfer 2-dimensional numerical model. They quantitatively evaluated the impacts of varying these factors on the groundwater

regime. Their simulation results showed that rock permeability is the major influence on groundwater flow in mountainous environments. They also demonstrated that water-table elevation is a very sensitive indicator of the controlling factors of subsurface flow, because variations in physical properties, particularly the hydraulic conductivity, determine the elevation of the water table from the amount of net infiltration and therefore the total flow of the groundwater system.

The results from the numerical studies highlighted the influence of the variability in lithologies and structures on flowpath and hydraulic properties control in deep groundwater flow systems in mountainous regions. However, only a few field studies investigated the characteristics of flow in deep groundwater systems in mountainous regions in order to support the numerical studies. Field studies consisting of spring- and streamflow monitoring (Lhomme et al., 1996; Angelini, 1997) provided information on the annual variability in outflow from mountainous regions. Seepage measurements in mountain tunnels (Gudefin, 1967; Jamier, 1975; Marinos, 1978) showed that the distribution of inflows is highly scattered across the mountain and associated with large structural features. Other studies, concerned with geothermal systems, demonstrated by geochemical and isotopic analyses that young waters and short flowpaths are common in mountainous terrains (Clark et al., 1982; Clark et al., 1989). Some other field studies reported clear discontinuities observed between surface and deeper groundwater systems, as the upper layer of the mountain massif acting as a perched water table in karstic mountains (Marinos, 1978). These studies assisted with the development of preliminary conceptual models of groundwater flow systems in mountainous terrains.

Typical conceptual models of groundwater flow systems in mountainous regions consist of: 1) a shallow unconfined aquifer with high porosity and permeability, located in the upper part of the bedrock; and 2) a deeper, confined aquifer, with lower secondary porosity and permeability (Jamieson and Freeze, 1983; Gerhart, 1984; Moore, 1992; Chavez et al., 1994). The shallow aquifer can either be hydraulically connected to the deep aquifer or act as a perched aquifer. The development of the two zones results from typical stress release near the surface and the increase in lithostatic pressure on the fractures with depth. This leads to a decrease in the hydraulic conductivity of the rock mass toward the mountain core, restricting groundwater flow to the main fractures and faults. These hydrogeological conditions were reported in several field studies in tunnels and mine workings (Raven and Gale, 1986; Abelin et al., 1991; Banks et al., 1994)

The occurrence of two groundwater domains with distinct hydrogeological characteristics, as proposed in the conceptual models, certainly controls the groundwater flow system. Furthermore, the heterogeneity between the two layers and the anisotropy characteristic of fracture networks indicate that dominant flow channels in the rock mass will control the distribution of recharge/discharge areas, the flux and the directional components of the groundwater flow system. This suggests that groundwater flow systems in mountainous regions may diverge from the equivalent porous medium (EPM) approach. The variability (heterogeneity and anisotropy) observed among the controlling factors (climate, topography and geology) in mountainous terrains indicates the need for detailed studies to validate and complete existing approaches.

The Westmin Resources Myra Falls mining complex, located within Strathcona Provincial Park on Vancouver Island, was selected for a detailed study of a hydrogeological system in a mountainous area. The site is especially well-suited for study because it offers an extensive network of easily-accessible mine workings with numerous surface and underground drillholes. The groundwater flow system in the vicinity of some underground workings, notably the Price Mine located on the *east* flank of Mount Myra, has been examined exhaustively through detailed structural and hydrogeological mapping; meteorological, water-level measurements in drillholes, and discharge monitoring from drifts. The results have provided an understanding of the recharge mechanisms, the geometry of the groundwater flow system and the flowpath. A conceptual model of the groundwater system based on the overall results of the project, is proposed in this chapter, and is compared with existing models to point out where further work is needed.

6.2 Methodology

The monitoring network used in this project was installed in the Price Mine area, located on the *east* flank of Mount Myra. This area is also referred to as the Price Hillside. The monitoring network consisted of surface equipment installed along the Price Hillside and underground equipment installed into some of the Price Mine drifts. Monitoring network equipment was first installed in August 1994, and monitoring continued until June 1997. The location of the monitoring network components has been shown in Figure 4.1 and Figure 5.1. The components of the monitoring network and the methodology have already been described and discussed in detail in the previous chapters, and are summarized here. Figure 6.1 shows the Price Hillside and Price Mine area

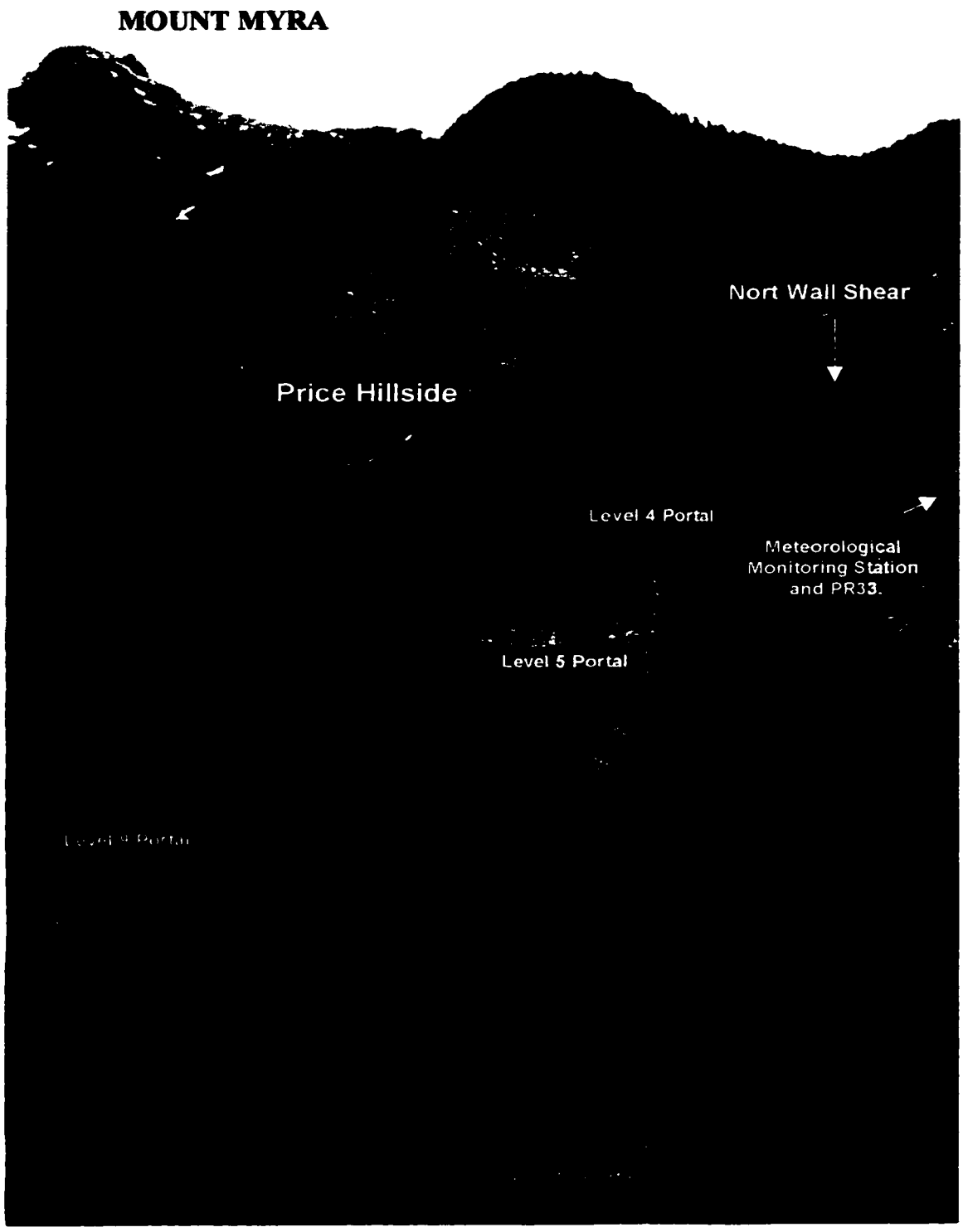


Figure 6.1 : Price Mine and Price Hillside area of Mount Myra.

A small meteorological station was set up at an elevation of 711 m near the location of a surface drillhole, PR33, on the Price Hillside. Rainfall, air temperature and atmospheric pressure data were recorded using a data logger every 6 hours at the meteorological station. Daily measurements of precipitation and air temperature were also recorded manually at a weather station operated by Environment Canada in Myra Valley, on the *west* side of Mount Myra.

Water levels and hydraulic pressures were monitored in a series of surface and underground exploration drillholes in the Price Mine area. Water level fluctuations were monitored continually in three deep drillholes on the Price Hillside. The readings were made every 6 hours in PR33, PR34 and PR66 and recorded on a datalogger system. Water levels were also periodically measured with a water level tape in a network of 17 drillholes located on the Price Hillside and in the adjacent Thelwood Valley. Hydraulic pressures in the vicinity of the Price Mine levels 4 and 9 were monitored four times a day in open underground drillholes (PR4-1 to 5; PR9-1 to 5) with pressure transducers connected to dataloggers. The underground monitoring network was completed with periodical, pressure-head measurements in a series of 16 underground drillholes in the Price Mine levels 5, 9 and 13. All drillholes are open holes in the bedrock and most of them intersect large faults, apparently connected to surface creeks, according to their drill logs. Being open holes, the recordings in each drillhole provide a bulk-estimate of water level encountered in the different parts of the hydraulic field in the fracture network intersected by the drillhole (also see section 4.2). Some characteristics of the surface and underground drillholes are presented in Table 6.1.

Surface Drillholes			Underground Drillholes			
Identification	Drillhole Collar elev. m	Length m	Identification	Drillhole Collar elev. m	Length m	Dip °
PR33	711.4	151	PR4-1	626.4	47	5
PR34	758.9	526	PR4-2	626.4	70	30
PR38	614.5	231	PR4-3	626.4	65	5
PR41	609.9	270	PR4-4	626.4	59	35
PR42	808.3	621	PR4-5	626.4	48	5
PR43	602.5	561	PR5-1	579.7	51	20
PR66	680.9	186	PR9-1	416.1	125	0
PR73	277.7	305	PR9-2	416.1	85	0
PR74	270.4	282	PR9-3	416.1	77	-45
PR75	291.0	230	PR9-4	416.1	116	-20
PR76	288.7	235	PR9-5	416.1	102	20
PR84	224.9	269	PR9-6	416.1	59	90
PR85	222.4	457	PR9-7	416.1	77	55
PR88	234.8	561	PR9-8	416.1	125	-45
PR92	223.8	466	PR9-9	416.1	84	-20
PR94	275.1	231	PR9-10	416.1	66	0
PR95	269.9	307	PR9-11	416.1	102	0
PR96	271.6	261	PR9-12	416.1	128	-45
PR97	270.2	267	PR13-1	238.0	143	0
PR100	221.9	572	PR13-2	238.0	152	30
PR103	221.9	549	PR13-3	238.0	399	0
PR107	223.1	397	PR13-4	238.0	115	0
PR110	223.8	760	PR13-5	238.0	246	0
PR113	240.0	750	PR13-6	238.0	151	30
			PR13-7	238.0	62	30
			PR13-8	238.0	83	0

Table 6.1 : Characteristics of the surface and underground drillholes monitored during the course of this project.

Discharge from the Price Mine Level 4 portal was monitored every 6 hours using a v-notch weir with a water level sonic sensor connected to a datalogging device. The weir was installed approximately 50 m from the portal entrance to prevent freezing of the equipment. Some instantaneous flow measurements where also taken at the adit of the Price Mine levels 9 and 13.

As part of the project, structural and hydrogeological mapping of the fracture network within Mount Myra's underground workings was carried out during the summers of 1994 and 1995, in the Price Mine levels 4, 9 and 13. Measurements were made during the summer, when the hydrogeological regime is not affected by severe winter storms. Severe winter storms cause seepage from everywhere, due to the connectivity of many small fractures in the walls and ceiling of the drift, making the interpretation difficult and less representative of real underground inflow conditions. The fracture network was characterized using similar field approaches to those described by Jamier (1975), Rouleau (1984) and Lachmar (1989). Time limitations restricted data collection to include only major structural features crossing the back (ceiling) and ribs (walls) of the drifts. Fractures less than 1 meter in length were not recorded because their origin was assumed to be related to blasting. The parameters recorded included fracture location, orientation and width, and the type of infilling material. The hydrogeological characterization of the structures was done using an ordinal hydrological rating because it was impractical to evaluate flowrate in individual fractures. A numerical value was given to each identified fracture: 0 - dry; 1 - sign of water; 2 - sign of drops; 3 - dripping; 4 - intensively dripping; 5 - open fracture flow. This approach provided a qualitative estimate of the hydrological importance of each geological structure in the Price Mine.

The hydraulic monitoring and the underground mapping were completed using drill logs and geological information available from previous work on the mine site. The results were also integrated to Phipps' work (1998), who performed a detailed hydrogeochemical study of the Price Mine area as part of the same project. The objective was to obtain a broad picture of the hydrogeological setting of the Price Hillside.

6.3 Results and Discussion

6.3.1 Groundwater Flow System in the Fracture Network

Mountain Hydrogeological Model

Most of the studies of groundwater systems in mountainous regions (Woodbury et al., 1987; Forster and Smith, 1988; López and Smith, 1995) used an equivalent porous medium approach (EPM) to study the flow system. These studies assumed that the rock mass was completely saturated at depth, a condition which is observed in Mount Myra from baseflow and water-level measurements made during the course of the year.

In the case of the Price Hillside, at the mountain- or mine-scale, the EPM approach seems appropriate because of the distinct hydrogeological domains identified in the mountain (see Chapter 3) and the slow release from storage in the rock mass observed from the analysis of the hydraulic responses, notably the memory effect and the short-term stormflow component compared to baseflow (see chapters 4 and 5). The distribution of inflows measured within the Price Mine (Chapter 3) suggests that the rock mass presents distinct hydraulic properties that can be preliminarily divided into two main hydrogeological domains where the groundwater flow is controlled by dominant hydrologically-active structures:

1) the more fractured part of the mountain, mainly close to the surface or near major faults;
2) the deeper part of the mountain, consisting of massive rock.

The first hydrogeological domain occurs within the first few hundred meters of the surface, where more inflow areas were observed compared to the deeper part of the mountain. These

rocks are believed to be more fractured resulting from weathering and stress relief near the surface. The areas near large faults (PR66, Myra-Price Fault and North Wall shear areas in Level 13, shear zone in Level 9) also exhibit more inflows and signs of fracture flow in the underground drillholes, even in the deep part of the mountain. The rock mass in these areas should present large hydraulic conductivity values, or the same order as the values associated with the rocks near the surface. It can usually be assumed that rocks with more fractures are potentially more transmissive and this agrees with the observations made here.

The second hydrogeological domain is the deeper part of the mountain. As indicated by observations made along Level 13 drift, few hydrologically-active structures were reported in that part of the mountain, even if some of these structures are responsible for large inflows (low-dipping structures). The presence of water throughout the mountain suggests that the rock mass in the second domain is saturated at depth and presents lower fractured-rock hydraulic-conductivity values, in comparison with the first hydrogeological domain, but higher than the matrix hydraulic conductivity typically found in this type of rock.

On the basis of inflow observations and the geometry of the fracture network made in the Price Mine, it appears that some modifications should be added to this conceptual model. These observations are described in the following sections.

Hydrogeological Structures

The Price Hillside of Mount Myra is characterized by the surface expression of two large faults, the Myra-Price Fault and the North Wall Shear. These geological structures are part of some of the fracture patterns identified in the area. Several observations strongly suggest that

the creeks, flowing down these two geological structures along the Price Hillside, are hydraulically connected with the deep groundwater flow system and act as major components of the water balance on the Price Hillside, although these observations need to be verified with further work.

In the first place, the creeks are flowing most of the year and therefore represent a substantial source of water during the year. Secondly, most of the underground drillholes, driven perpendicular to the creeks, intersect geological structures with orientations and locations similar to those of the large faults, which present large and permanent flows, although these drillholes may dewater in part the rock mass and increase inflows towards the drifts. These geological structures were also found at great depths in the Price Mine (levels 4, 5, 9 and 13). Thirdly, the hydraulic response in these underground drillholes is typical of fracture-flow, which suggests that the rocks in the creek areas are more fractured, with a stormflow component that attests to the torrential nature of the flow in the creeks after rainfall events. Since the hydrogeological properties of the type of rocks encountered at Myra Falls arise from the degree of fracturing and the connectivity between the fractures, it can be assumed that large fault or fracture zones constitute preferential flow channels.

As discussed in Chapter 3, the structural and hydrological mapping of underground structures identified some of the characteristics of the rock mass in the Price Mine area. The rock mass between the large faults is moderately to highly fractured: the measured fracture density along the mine drifts is in the range of 10-31 fractures/100 m (see Chapter 3). The water-bearing structures are concentrated in the first part of the drift, as most of the inflows were identified in the first 200 to 400 m from the surface (see Figure 3.2). In deeper parts of the mountain,

inflow areas are unevenly distributed and sometimes associated with major structural features. These observations agree with the conceptual model of two hydrogeological domains: the rock-mass near the surface and the deep part of the mountain.

The hydrologically-active structures identified in the drifts have a dominant *northwest* trend with a subvertical dip to the *northeast*, parallel to the large fault encountered on the Price Hillside (North Wall Shear). The *northwest* trending hydrologically-active structures have been identified on different mine levels throughout the mountain. In Level 13, some drillholes driven perpendicular to the direction of these geological structures present very large seepage, sustained year-round. These observations suggest that the groundwater flow system in *northwest*-trending hydrogeological structures are important flow channels that may be hydraulically connected to the creeks and extend to great depths, but they are encountered only in specific areas in the Price Mine.

Bedding-plane structures were also reported to produce large inflows (personal communication, S. Juras, mine geologist). The bedding planes have a shallow dip ($< 45^{o}$) to the *southwest* and occur in a smaller number than subvertical structures. Consequently, only a few of them were identified on the site due to their subhorizontal orientation. These hydrologically-active structures also probably act as important flow channels in the groundwater system in the Price Hillside.

Hydraulic Properties of the Rocks

It was observed visually in the mine drifts that water flowing from the drillholes is an important source of inflow. The drillholes intersect several major hydrological fractures,

transmitting water to some parts of the drift where inflows should naturally be less important or diffuse. An attempt was made to estimate the contribution of seepage from the drillholes. The percentage of discharge associated with seepage from the drillholes in levels 4, 9 and 13, as measured during the summer of 1995, are 25, 5 (probably higher due to seepage from a vertical drillhole located on the drift floor, which was difficult to measure) and 35%, respectively, of the total discharge from each drift measured at the time of the survey. The measurements were made by unplugging the drillholes and, therefore suggest a much smaller contribution of water to the total discharge from the portal when the drillholes are plugged back. The remainder of the water is assumed to originate from seepage of natural geological structures in the drifts. Consequently, a substantial part of the inflow is directly related to geological features.

At the mine-scale, the inflow zones may be considered as representative of the rock-mass hydrogeological conditions, since the drillholes are of small extent and probably intersect only a few hydrologically-active fractures in the vicinity of the drifts. Under these assumptions, the discharge from the mine drifts can then be used to estimate the bulk hydrogeological properties of the rock mass.

In order to obtain a preliminary estimate of the hydraulic properties of the rocks for the development of a conceptual model, an apparent bulk hydraulic conductivity of the rock surrounding levels 4, 9 and 13 was estimated using the approach of Goodman (1965):

$$Q_i = \frac{2 \pi K H_o}{2.3 \log (2H_o/r)} \qquad \text{(Eq.6.1)}$$

where: Q_i: Rate of groundwater inflow per unit length of tunnel ($m^3/s/m$)
H_o: Average water level in drillholes located near the tunnel (m)
K: Hydraulic conductivity (m/s)
r: Radius of the tunnel (m)

and the total flow from the drift is:

$$Q = Q_i \times L \qquad \text{(Eq.6.2)}$$

This approach is only an approximation in this case because it assumes a homogeneous isotropic porous medium, whereas in fact we are dealing with a fractured medium. Nevertheless, at the mine-scale it provides an estimate of the bulk fractured-rock hydraulic conductivity.

The calculations were done according to the minimum and maximum tunnel lengths, L, assumed to contribute to inflows (hydrologically-active fractures and flow on the drift floor, reported in Chapter 3); field observations showed that a minimum of 200 m of drift exhibits much seepage close to the surface, which can be set as the lower boundary. Q is the discharge recorded at the Price Mine levels 4, 9 and 13 portals for the period considered; H_o is the average water level recorded continually (6-h measurements) in each underground drillhole in level 4 and the average water level from periodic measurements in underground drillholes in levels 9 and 13 at the time of the discharge measurement. The results are presented in Table 6.2.

The bulk hydraulic conductivity varied between 8.1×10^{-9} and 1.2×10^{-7} m/s. The results, especially on levels 4 and 9, are only slightly influenced here by the change in length of the drift assumed to contribute to the discharge. The range in bulk hydraulic conductivity calculated for Level 13 is about a factor of 10. The variation of water level along the drifts may also have influenced the bulk hydraulic conductivity estimate, although the water level

were not so different and we use the average water level in all drillholes in the drift. The hydraulic conductivity estimates from the Goodman equation are in the same range as the values obtained from slug tests performed in surface wells on the site in a mafic dacite unit: 10^{-8} to 10^{-7} m/s (Westmin Resources Limited, 1982). This suggests that the values estimated here are a representative estimate of the bulk hydraulic conductivity of the upper or more-fractured part (fault zone) of the rock mass.

Level	Period of measurement	Q m^3/s	r m	H_o m	L m	K m/s
4	10/94 to 06/97	4.6×10^{-4}	1.5	51.5*	200-730	8.1×10^{-9} to 2.9×10^{-8}
9	10/14/96	5.4×10^{-4}	1.5	79.8	200-484	1.0×10^{-8} to 2.5×10^{-8}
13	10/14/96	1.8×10^{-3}	1.5	50.0	200-1400	1.7×10^{-8} to 1.2×10^{-7}

Note: * Average value over the period considered

Table 6.2: Average hydraulic conductivity estimated from the outflow of the Price Mine levels 4, 9 and 13.

Flowfield Configuration

The impact of mining activities was not evaluated during the course of this project, but some conclusions may be drawn from field observations. First, water level measurements in drillholes located in Level 4, 5, 9 and 13 have confirmed that the rock mass is saturated at great depth, despite the drift dewatering effects by leakage from the monitoring drillholes and natural geological structures. Second, the discharge monitoring in Level 4 and periodic measurements at levels 9 and 13 portals has shown that the groundwater flow system sustains a measurable baseflow, even during warmer periods, suggesting an important water storage capacity of the rock mass or a constant input. The saturated conditions at depth suggest that

the water level measured in the drillholes should provide some indication of the "natural" general groundwater flow direction, although it may be influenced by the dewatering of the drift.

Surface Drillholes						Underground Drillholes				
Identification	Water Level Elevation (08/94 to 04/97)				Aver. depth from the land surface to the water level	Identification	Water Level Elevation (08/94 to 04/97)			
	(average) m	(st. dev.) m	(max)	(min)	m		(average) m	(st. dev.) m	(max)	(min)
PR33	684.1	4.2	689.5	676.4	27.3	PR4-1	642.8	2.4	649.2	637.3
PR34	666.1	5.5	675.5	655.0	92.8	PR4-2	660.5	5.5	666.9	645.3
PR38	539.78*	n.a.	n.a.	n.a.	> 100.0	PR4-3	688.8	5.6	700.4	672.3
PR41	509.9*	n.a.	n.a.	n.a.	> 100.0	PR4-4	684.5	5.1	694.0	674.4
PR42	708.28*	n.a.	n.a.	n.a.	> 100.0	PR4-5	709.8	7.0	726.4	694.6
PR43	502.5*	n.a.	n.a.	n.a.	> 100.0	PR5-1	617.0	5.1	621.2	611.4
PR66	671.0	6.8	679.2	656.2	9.9	PR9-1	492.7	6.7	502.8	479.6
PR73	255.6	3.4	260.2	249.9	22.1	PR9-2	486.3	31.8	552.6	423.0
PR74	260.7	6.8	267.3	246.5	9.7	PR9-3	488.5	10.2	509.0	468.0
PR75	280.9	1.5	282.8	278.6	10.1	PR9-4	479.7	28.5	527.7	427.4
PR76	287.5	1.7	288.7	284.2	1.3	PR9-5	489.1	34.8	538.5	425.2
PR84	224.2	0.7	224.9	222.9	0.7	PR9-6	524.8	33.3	570.9	493.5
PR85	222.2	0.2	222.4	221.8	0.2	PR9-7	515.0	38.8	570.9	447.8
PR88	222.3	0.5	222.9	221.5	12.5	PR9-8	424.2	8.9	437.2	416.1
PR92	223.3	0.4	223.7	222.6	0.5	PR9-9	519.0	31.4	570.9	480.8
PR94	238.3	2.4	241.4	234.5	36.8	PR9-10	483.8	58.3	556.8	416.1
PR95	258.7	6.8	265.7	245.8	11.2	PR9-11	454.4	36.8	514.6	416.8
PR96	255.4	5.6	261.3	245.1	16.2	PR9-12	423.4	8.1	437.2	416.1
PR97	256.8	6.1	263.2	246.4	13.4	PR13-1	255.8	5.0	262.6	250.7
PR100	220.9	0.3	221.2	220.5	1.0	PR13-2	297.6	10.5	307.0	274.6
PR103	220.9	0.3	221.2	220.5	1.0	PR13-3	316.7	18.7	350.6	297.8
PR107	221.0	0.2	221.2	220.6	2.1	PR13-4	322.7	20.7	357.6	302.7
PR110	219.3	0.1	219.5	219.1	4.5	PR13-5	288.5	5.3	294.3	283.0
PR113	234.7	0.4	235.1	234.1	5.3	PR13-6	286.2	0.5	286.6	285.9
						PR13-7	258.1	3.5	260.5	255.6
						PR13-8	272.7	4.8	276.7	264.7

n.a.: not available (water level was below the maximum length of the water level tape: 100 m)
*: Maximum water level elevation recorded according to the maximum length of the water level tape

Table 6.3: Water level and depth in surface and underground drillholes on the Price Hillside and in the Price Mine (water level elevation expressed in meters relative to mean seal level).

The results of the monitoring of water level in surface and underground drillholes are summarized in Table 6.3. Being open holes, all the drillholes intersect different parts of the hydraulic field in the fracture network. Therefore at a local-scale, the recordings in each drillhole provide a complex weighted average of the hydraulic heads encountered in several sections of the fracture network, weighted by the local conductivities. Nevertheless, for the

scale of the study (mine-scale), the results of the monitoring are assumed to provide observations representative of the flow-field configuration throughout the Price Hillside.

A qualitative interpretation of the hydraulic gradient was made in an attempt to identify the general groundwater flow direction. Figure 6.2 presents in a cross-section the interpretation of the groundwater flow system in the Price Hillside. Water-level measurements in underground drillholes displayed a dominant southeastward and downward hydraulic gradient in the Price Hillside. Water level measured in underground drillholes on the same level (P4-1 to P4-5: P9-2 with P9-4 and P9-5) showed a flow direction to the *southeast*, downslope; with the exception of the deeper part of Level 13, which displays water levels closer to valley-floor water levels. The water levels seem to join the regional valley-floor water levels, perhaps the regional flow, at the base of the mountain (central part of Level 13). Water level measured in underground drillholes between levels (P4-2 and P5-1; P9-1 and PR41 – also see Chapter 4) have indicated a strong downward hydraulic gradient All the drillholes are assumed to intersect hydrologically-active structures with similar strike and dip (according to the hydrogeological mapping and drillhole logs - discussed in Chapter 3), located in the vicinity of the North Wall Shear, because the drillholes are relatively short (average of 109 m) and are located close to each other. The downward hydraulic gradient may be associated with the fast hydraulic *northwest* conduits near the major faults (creeks). Phipps (1998) demonstrated, through isotopic analyses, the rapid vertical connection between hydrogeological structures in different levels of the Price and Myra mines. The qualitative estimate of the groundwater flow direction from underground drillholes in levels 4, 9 and 13

is probably representative of the groundwater flow direction in the large fault (creek) areas in the Price Hillside, but it also provides an indication of the regional flow.

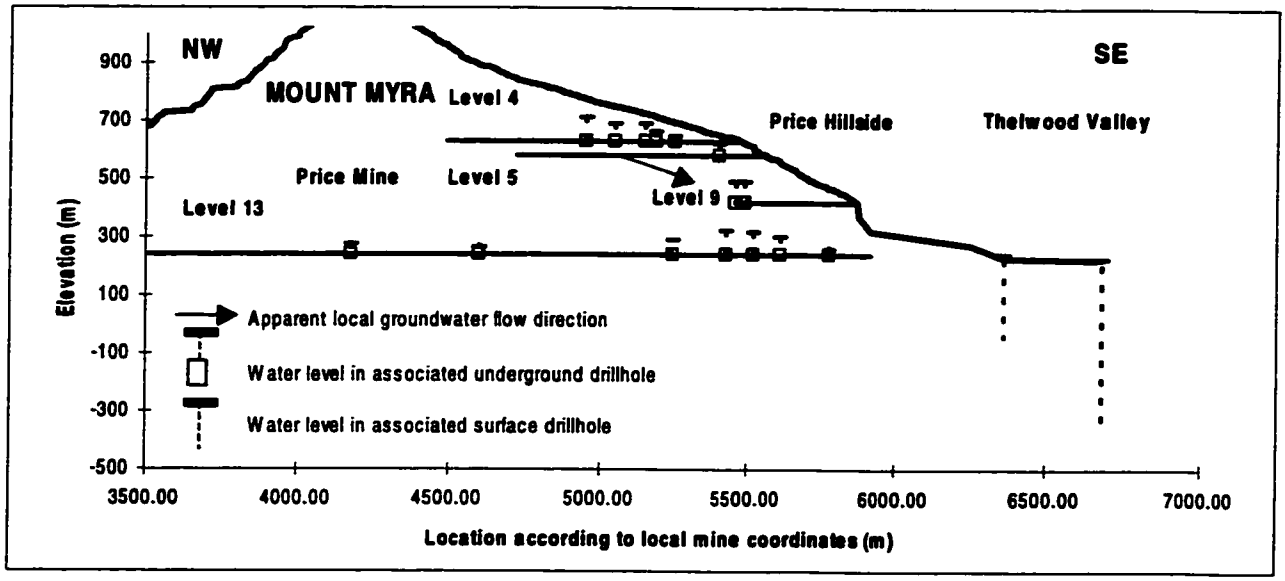


Figure 6.2: Average water level measured in surface and underground drillhole in the Price Mine area.

The water levels in surface drillholes become deeper with increasing distance from the drillholes to the creeks or major fault areas, even at similar surface elevation. Figure 6.3 displays the situation. In particular, shallow water levels were measured in drillholes located near one of the major creeks/faults (PR33 and PR66; PR96 and PR97) compared to drillholes located further away (PR34, PR42 and PR94; PR38 and PR41 in Figure 4.7). Another important observation is that the drillholes located near the creeks (or in fault areas – see previous chapters) exhibit larger water-level fluctuations over the year (PR66; levels 4, 9 and 13). These observations suggest a fast or direct hydraulic connection of the groundwater flow system with the surface, primarily near large faults. These structural features may therefore act as major recharge or discharge conduits.

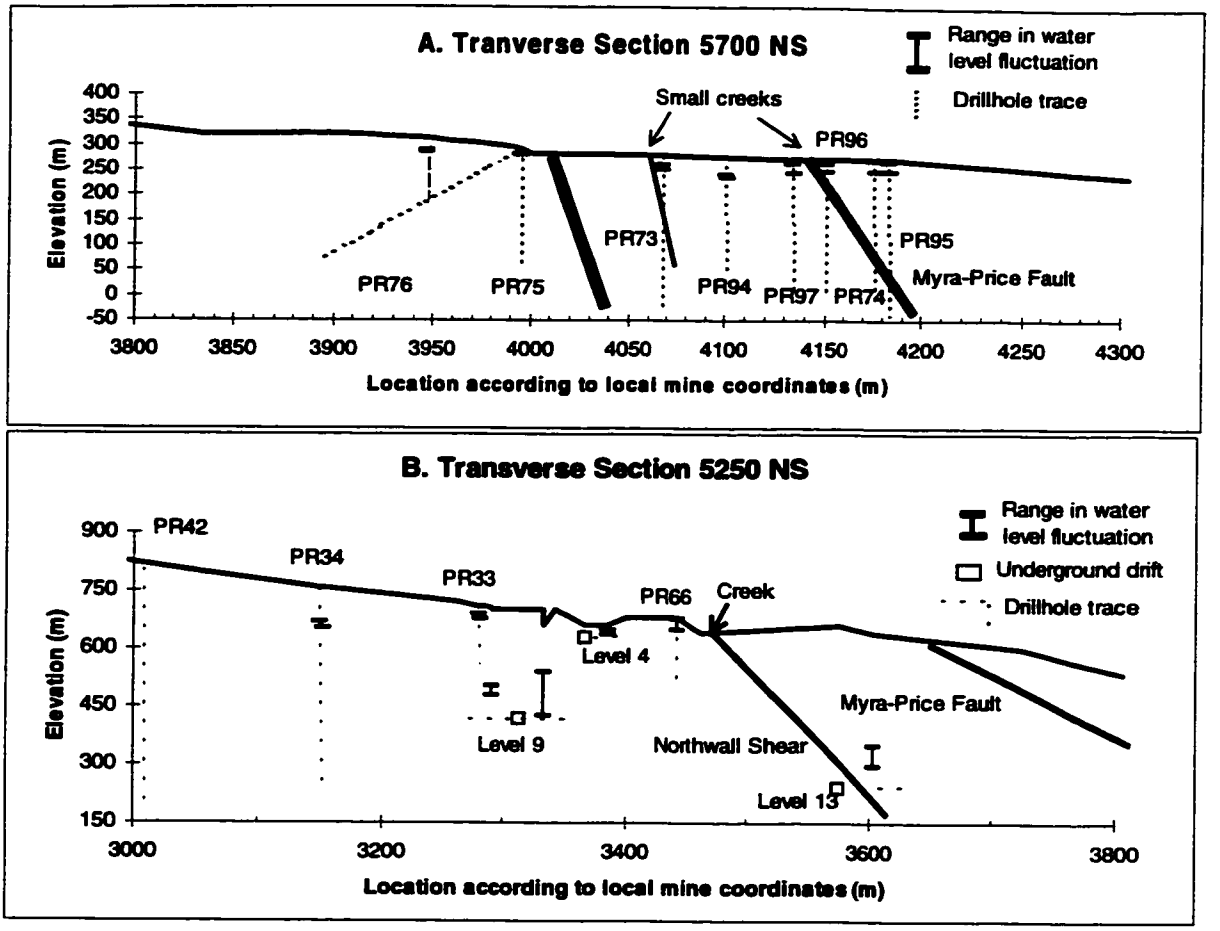


Figure 6.3: Water level fluctuations in the Price Mine and Price Hillside.

As a specific example, water-level fluctuations during the year in PR66 provide some interesting information about the groundwater flow direction and recharge/discharge mechanisms near the large faults (see Chapter 4). PR66, located near a major creek, is a shallow drillhole (186 m) that intersects the upper flow system of the mountain. Water level in PR66 measured during the year averaged a depth of 9.9 m from the surface and fluctuated above and below the elevation of the nearby creek, estimated to be more than 15 m lower than the collar elevation of PR66. The highest water levels in PR66, about two meters from the surface, were recorded during the rainy season; and the lowest water levels, about 30 m

from the surface, at the end of the summer. If the rock mass intersected by PR66 and the creek are hydraulically connected, which is strongly conceivable due to the shallow depth of the drillhole and the proximity of the drillhole to the creek, then the occurrence of nearly-flowing artesian conditions during the fall and winter suggest that this part of the rock may act as a groundwater flow system discharge area during some periods of the year (rainy season). These conditions have not been observed in any other drillhole monitored during the course of this project, although the water level in some underground drillholes located in Level 9 and drilled towards the creek (fault) area have also demonstrated huge fluctuations during the year (> 100 m). It can be inferred from these observations that the groundwater flow system in the fault area may act as a preferential path to evacuate the substantial amount of recharge water to the creek during the rainy season. Figure 6.4 illustrates these conclusions.

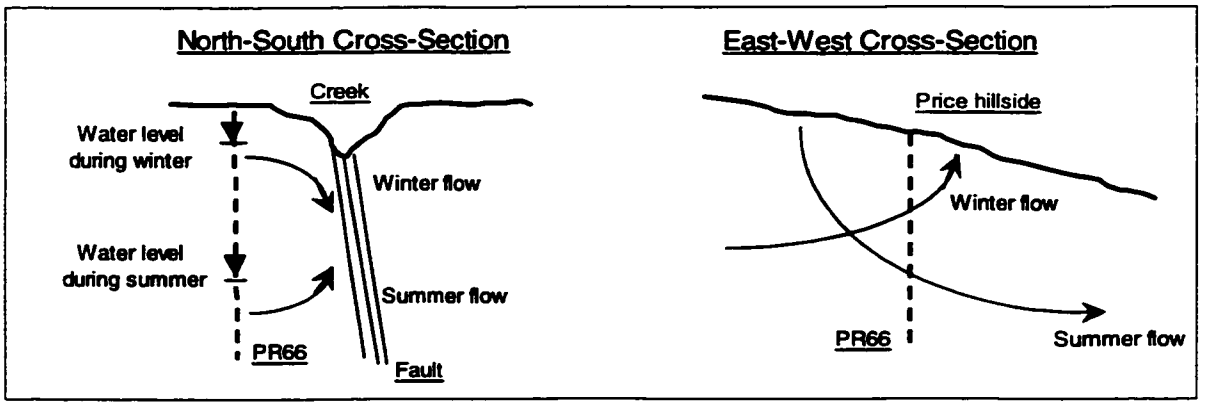


Figure 6.4: Influence of the rainy season (winter) on the groundwater flow in the vicinity of PR66.

Hydraulic Connection

This study has demonstrated the important effect of rainfall on the groundwater flow system (Chapters 4 and 5). Large water-level and discharge fluctuations were measured following

rainfall events in the drillholes and at the portal of the mine drift. The detailed analysis of the hydraulic response to rainfall has indicated distinct flowpaths in the vicinity of the Price Mine.

The hydraulic connection between the different parts of the Price Hillside was evaluated by performing a cross-correlation analysis of the water-level fluctuations measured in all drillholes (surface and underground). Prior to the calculation, the data were transformed to remove the overshadowing influence of trends and seasonal fluctuations (see Chapters 4 and 5 for details). The results are presented in Table 6.4 as a matrix of maximum cross-correlation coefficients with associated time lag. This approach was used together with the geological and structural information for a preliminary evaluation of the hydraulic connection in the groundwater flow system in the Price Hillside.

The results indicate discernible associations in the hydraulic responses from distinct parts of the groundwater flow system. There is a near perfect correlation of the water level between PR33 and PR34. The correlation between PR33 and PR34 and the rest of the drillholes is very small (<0.127). A large correlation (> 0.500) between PR66 and the underground drillholes in levels 4 and 9 is also observed. Some underground drillholes located very close to each other exhibit an excellent correlation with short lags (cross-correlation coefficients: P9-1 and P9-3: 0.852; P9-4 and P9-5: 0.927). The high correlation coefficients, along with the close proximity and the same orientation of these drillholes, suggest that the fracture network in these drillholes is hydraulically connected. The generally high correlation coefficients measured between all the drillholes suggest that they respond to a similar

Identification	PR33		PR34		PR66		P4-1		P4-2		P4-3		P4-4		P4-5		P9-1		P9-2		P9-3		P9-4		P9-5	
	corr.	lag	corr.	lag	corr.	lag	corr.	lag	corr.	lag	corr.	lag	corr.	lag	corr.	lag	corr.	lag	corr.	lag	corr.	lag	corr.	lag	corr.	lag
PR33	1,000	0,0																								
PR34	1,000	0,0	1,000	0,0																						
PR66	0,000	2,0	0,100	2,0	1,000	0,0																				
P4-1	-0,103	0,3	-0,122	0,5	0,051	0,5	1,000	0,0																		
P4-2	0,073	-69,0	0,111	-72,6	0,534	0,0	0,000	-0,0	1,000	0,0																
P4-3	0,100	-67,3	0,127	-67,3	0,000	1,0	0,005	0,0	0,051	1,1	1,000	0,0														
P4-4	0,077	-66,5	0,002	-66,5	0,730	1,3	0,447	0,4	0,403	1,4	0,029	0,1	1,000	0,0												
P4-5	0,087	-67,0	0,114	-67,0	0,727	1,0	0,561	0,0	0,505	1,1	0,011	0,0	0,075	-0,1	1,000	0,0										
P9-1	-0,087	0,1	-0,104	0,1	0,007	0,0	0,730	0,0	0,700	2,4	0,507	0,5	0,562	0,5	0,549	0,0	1,000	0,0								
P9-2	0,000	-73,5	0,007	-70,1	0,504	-0,3	0,354	-2,0	0,373	-1,4	0,730	-2,0	0,002	-1,0	0,000	-1,0	0,005	-3,3	1,000	0,0						
P9-3	0,077	-67,1	0,000	-67,1	0,045	0,1	0,495	0,0	0,518	1,3	0,734	0,0	0,752	-0,3	0,015	0,0	0,052	-0,0	0,000	2,0	1,000	0,0				
P9-4	-0,004	-0,3	-0,003	-0,3	0,052	-0,3	0,700	-1,0	0,720	-0,0	0,527	-2,0	0,458	-1,0	0,511	-1,0	0,033	-3,1	0,754	0,0	0,737	-1,0	1,000	0,0		
P9-5	-0,100	-0,3	-0,125	-0,3	0,000	-0,5	0,700	-1,0	0,700	-1,0	0,401	-2,1	0,317	-2,0	0,301	-1,0	0,700	-3,3	0,573	0,0	0,572	-2,1	0,027	0,0	1,000	0 0

Table 6.4: Matrix of maximum cross-correlation values of water level and hydraulic head recorded in surface and underground drillholes in the Price Mine levels 4 and 9 (the first number is the correlation coefficient and the second number is the corresponding time lag in days).

recharge process, but the delay (time lag) in the response suggests different flowpath lengths and/or possibly different storage capacity of the aquifer in their vicinity.

Despite the large correlation measured between the hydraulic responses in all drillholes, four clusters can be identified on the basis of the time lag. The first cluster consists of P4-1, P4-3, P4-4, P4- 5, P9-1 and P9-3; the second consists of P9-2, P9-4 and P9-5; the third consists of PR66 and P4-2; and the fourth consists of PR33 and PR34. According to the maximum correlation coefficients and time-lag estimates, the groundwater flow system in the vicinity of the P9-2, P9-4 and P9-5 responds more than two days prior to P4-1, P4-3, P4-4, P4- 5, P9-1 and P9-3; and 6 to 24 hours prior to PR66 and P4-2. PR33 and PR34 seem to react independently from the other drillholes. The specificity of the groups was also supported by the results of the cross-correlation function between the discharge in Level 4 and the hydraulic response in the drillholes (Chapter 4 and 5). These results suggest again the occurrence of distinct flow paths in this part of the mountain.

The presence of four distinct groups is likely the result of the configuration of the fracture network. Figure 6.5 shows a schematic representation of the drillhole layout on the Price Hillside, with an inferred configuration of the fracture network. The strike of P9-2, P9-4 and P9-5 is towards the creeks, similar to the strike of the drillholes in Level 4, and should intersect *northwest*-trending *northeast*-dipping geological structures such as those intersected in the drillholes in Level 4. P9-1 and P9-3 are striking *southwest*, further away from the creeks. The hydraulic connection between the drillholes in Level 4 and P9-1 and P9-3 indicates a response to the same hydrological processes, with a direct connection between them. This type of hydraulic connection could be attributed to geological structures, such as

the low *southeast*-dipping bedding planes. The bedding-planes, due to their strike and dip, would be able to connect the drillholes in Level 4 and *southern* drillholes in Level 9, as opposed to the drillholes directly beneath Level 4 (P9-2, P9-4 and P9-5). The close relationship between PR33 and PR34, which are located more than 290 m apart, may also be attributed to the large low-dipping structures observed on the site. The distinct hydraulic response of PR33 and PR34 may result from their location, in massive rock, less connected with the creeks. The observations in this study suggest that the connectivity of the groundwater flow system through large low-dipping structures connected with smaller subvertical structures explains the distinct hydraulic response of the drillholes.

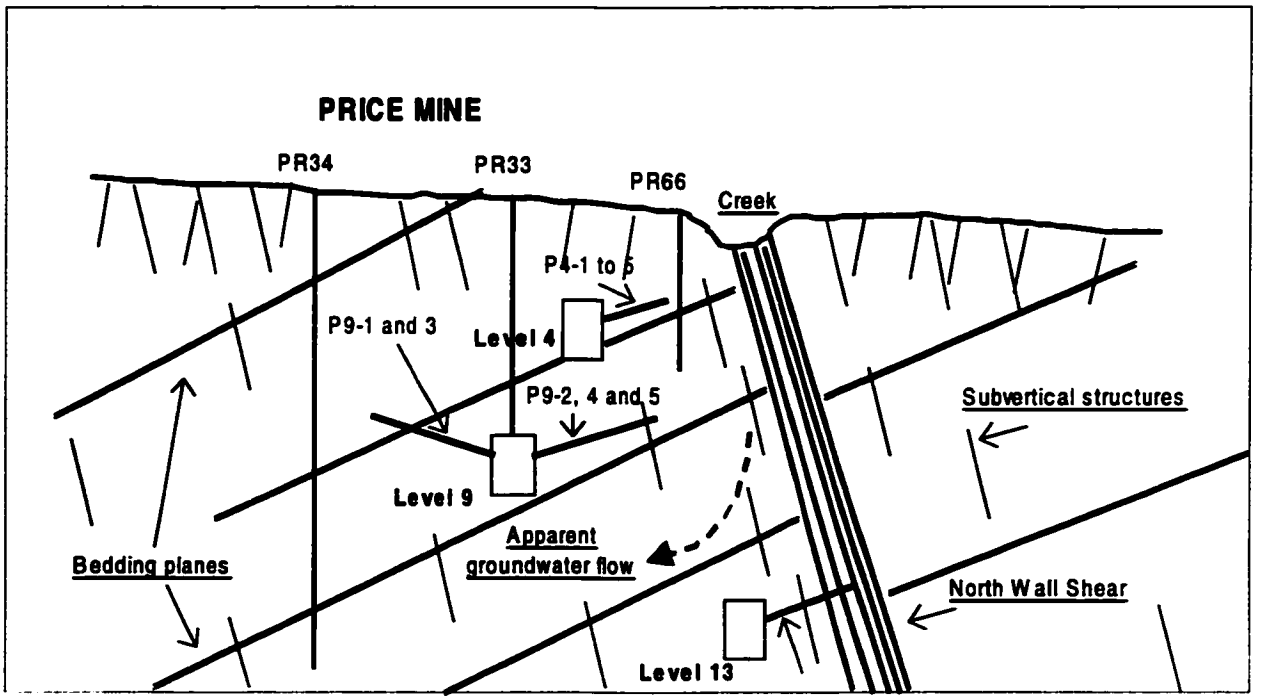


Figure 6.5: Conceptualization of the hydraulic connections on the Price hillside.

6.3.2 Conceptual Model of the Groundwater Flow System in a Mountainous Region

Groundwater Flow in the Price Hillside

This study has demonstrated the strong influence of rainfall on the hydraulic response of the groundwater flow system (Chapters 4 and 5). The rainy season produces an important stress on the groundwater flow system, expressed as a large increase in water level in drillholes and mine discharge at the beginning of the rainy season (late October or early November). The rainfall influence is exerted throughout the winter months but decreases slowly during the periods of low precipitation in the summer. Although the influence of rainfall is seen in all monitoring sites, its amplitude depends on the location within the mine.

For instance, a strong stormflow component following significant rainfall events is observed in PR66, in the drillholes located in levels 4 and 9 in the vicinity of the North Wall Shear, and in the discharge at the portal of the drifts. The stormflow component is more important in surface and underground drillholes that are close to the majors creeks and is believed to be related to the more-fractured nature of the fault areas in the mountain. Conversely, water level variations showed a smooth behavior in more-massive rocks (PR33 and PR34).

The geological structures in the vicinity of the creeks are assumed to act as important flowpaths within the Price Hillside due to the more-transmissive character of fractured rock and since the creek areas are presumably preferentially recharged by diverted runoff waters. The dominant *Northwest*-oriented hydrologically-active structures parallel to the creeks appear to be dominant rapid-recharge flow-channels leading to the deep groundwater system. The structures are subvertical and extend to great depth in the mountain. This is confirmed by

some of the underground drillholes in Level 13 that intersected the structures and presented very large flow. This hypothesis is supported by the findings of Phipps (1999), who used stable isotopes and tritium to identify, in deep parts of Level 13, the occurrence of recent waters (<50 years) recharged at high elevation, thus confirming the existence of fast conduits connected with the surface at high altitude. Phipps' work has also indicated that water sampled near the Myra-Price Fault in superimposed levels had significantly different ^{18}O content suggesting different elevations of recharge areas. The water recharged at higher elevation was sampled in a drift above another drift where water recharged at lower elevation was found. Therefore, it appears that major flowpaths are not only related to the *northwest*-trending subvertical structures, but also to low-dipping structures, such as bedding planes, that promote groundwater flow with a strong lateral component.

The controlling role of the fault zones (*northwest*-trending structures) and the bedding planes on the groundwater flow system is also supported by the lack of hydrologically-active *northeast*-trending structures perpendicular to the creeks (see Chapter 3). This suggests a poor hydraulic connection in the *northeast-southwest* direction that would confine most of the groundwater flow in the creek areas, favoring a more vertical path, as evidenced by the rapid drop in water level observed in drillholes between levels 4, 5, 9 and 13, near major faults, and by deeper water levels far from the major creeks. The control by the *northwest*-trending structures suggests that recharge and discharge areas will be closely associated with these preferential flow channels, which will in turn dictate the configuration of the water table.

On the Price Hillside, the fault zones (which coincide with creeks) appear to greatly influence the water balance of the hillside, since these are areas where groundwater flow (direction) is highly variable. Normally in mountainous regions, discharge occurs at the break in the slope of the hillside, while recharge occurs at higher elevation. The water-level fluctuations in PR66, relative to the bottom of the nearby creek, from a downward to an upward apparent flow direction during the course of the year, and the large water level fluctuations in some underground drillholes in Level 9, are an indication of the great impact of the rainy season on the groundwater flow system because the system has to evacuate more water during winter. This change is referred to as the displacement of the hinge point, which is the limit between the recharge and discharge zone.

Forster and Smith (1988) demonstrated that the location of the hinge point is influenced by the infiltration rate. Therefore, change in the infiltration rate can lead to displacement of the hinge point. The substantial amount of water received during the rainy season rapidly infiltrates the more permeable parts of the system (fault-creek areas). In order to cope with the excess amount of water, the groundwater flow system drastically modifies the directional components of the flow, which leads to a large increase in outflow and the upslope displacement of the hinge point. Thus, the groundwater flow system, especially near major flow channels such as the large faults, may act as recharge or discharge zones depending on the period of the year and the proximity of the hinge point.

Hydrogeological Conceptual Model of Mount Myra

On the basis of the observations made on the Price Hillside, some modifications should be made to current conceptual models of groundwater flow systems in mountainous terrain.

Figure 6.6 presents a conceptualization of the hydrogeological system in the Price Hillside of Mount Myra that may be divided into three domains with distinct hydraulic properties:

Domain I: the fractured crest near the surface, with higher hydraulic conductivity;
Domain II: the highly fractured large fault areas extending at great depth, also with high hydraulic conductivity;
Domain III: the deeper massive core of the mountain, with lower hydraulic conductivity.

In the case of Mount Myra, the discharge measurements from mine drifts provided reasonable estimates of the bulk hydraulic conductivity of the rock mass. The hydraulic conductivity estimates were in the range of 10^{-8} to 10^{-7} m/s for the upper domains (I and II). In comparison, Gerhart (1984) used a range of 3.5×10^{-7} to 1.8×10^{-5} m/s for the upper layer and 1.4×10^{-7} to 8.8×10^{-6} m/s for the lower layer in Triassic sedimentary rocks; and 3.5×10^{-7} to 7.0×10^{-6} m/s for the upper layer and 3.5×10^{-8} to 7.1×10^{-7} m/s for the lower layer in crystalline rock. Jamieson and Freeze (1983) calibrated their numerical model with estimates between 10^{-8} and 10^{-7} m/s in a granodiorite. According to these other studies, the values obtained here are representative of a fractured-rock bulk-hydraulic conductivity. The calculated values from outflow measurements are probably representative of the upper section of the mountain rock mass and fault areas, since most of the inflows are located in this area, and because the values are within the range of results from slug-test performed in surface monitoring wells at Myra Falls.

For the deeper part of the mountain, the use of values close to the matrix hydraulic conductivity (10^{-11} m/s: Freeze and Cherry, 1979) would not be representative because seepage was observed in nearly all sections of the mountain, suggesting a larger hydraulic

conductivity due to the larger inflow rate observed. The higher boundary of hydraulic conductivity reported by Forster and Smith (1988) for deep groundwater flow systems in the Coast Range terrains is about 10^{-7} m/s for mountains with at least a 2 km change in altitude. Consequently, this limit suggests the use of an intermediate hydraulic conductivity between 10^{-11} and 10^{-8} m/s for the deeper part of Mount Myra. However, this assumption was not verified in this study.

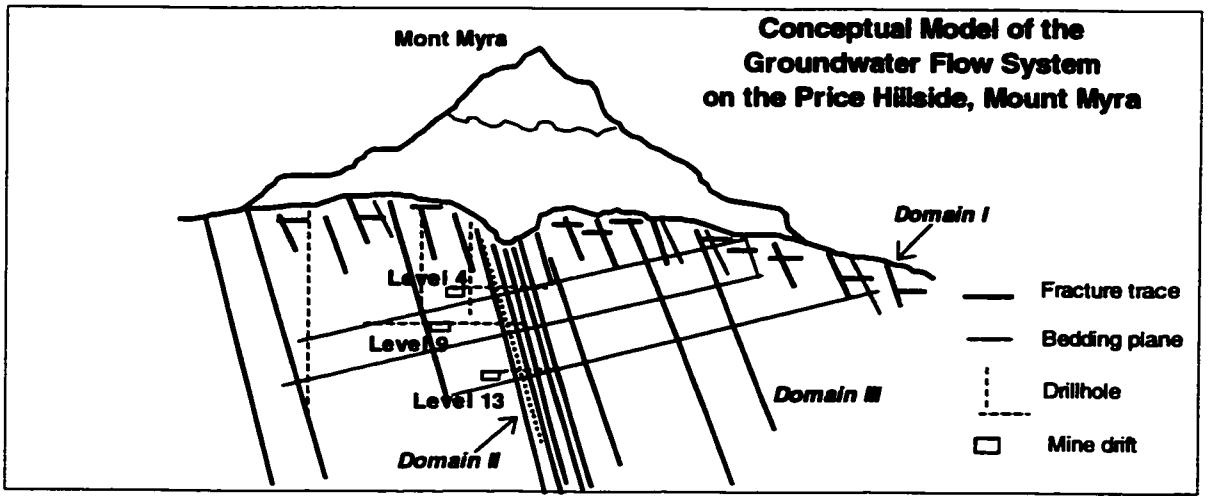


Figure 6.6: *Northeast-Southwest* cross-section showing the conceptual model of Mount Myra's groundwater flow system.

In addition to the heterogeneity of the hydraulic properties of the rock mass within the mountain (three distinct hydrogeological domains), one would also expect a strong anisotropy in the hydraulic properties in the rock mass (hydrologically-active structures), therefore the groundwater flow direction. The anisotropy is associated with the orientation of the major faults on the Price Hillside (North Wall Shear; several clusters of drillholes). The rocks in the vicinity of major geological structures parallel to the creek orientations (subvertical *northwest*-trending structures), especially in Level 13, display large inflows indicating the

extent of the groundwater flow system at great depth. However, rocks in other deeper parts of the mountain, distant from the creeks, are massive and very dry. This in turn justifies the division into two or more hydrogeological domains, laterally, from the faults to the more massive rock, and from the surface to greater depth.

Using a double-porosity approach rather than an equivalent porous medium approach for the entire domain to represent the groundwater flow system of Mount Myra would be more representative, since each domain appears to present distinct hydraulic properties and hydrologically-active structures. The more-fractured nature of the rocks near the surface and close to major faults, and the anisotropy of the hydrologically-active structures in these areas produce distinct major flow channels that appears to control the entire flow system in the Price Hillside. This is exemplified by the amplitude and delay in the hydraulic responses and the change in groundwater flow direction, especially near PR66 and in Level 9. In this regard, a three-dimensional double-porosity approach, as opposed to a two-dimensional approach, should be applied in local sites to accurately evaluate the groundwater flow direction, since properties may vary laterally.

This study showed that deep groundwater flow systems in mountainous terrains are indeed more complex than what has been previously assessed. It demonstrated that significant spatial variability in hydrogeological conditions is the norm at this site and that it will likely control the groundwater flow regime. The overall results of this project have indicate the need for detailed hydrogeological analysis in order to characterize the groundwater flow system for site-specific issues.

6.4 Summary and Conclusions

The objective of this chapter was to elaborate a conceptual model of the groundwater flow system in the Price Hillside of Mount Myra, to compare it to and to complete it with existing conceptual models of groundwater flow systems in mountainous regions. This was done using data collected in a detailed hydrogeological study of groundwater conditions in the vicinity of the Price Mine, located within the *East* flank of Mount Myra. Water-level measurements in drillholes, monitoring discharge fluctuations, and a detailed structural and hydrological mapping of underground structures in three drifts located at different elevations in the mountain have provided information on the hydraulic connections and hydrogeological characteristics of the fracture network.

The distribution of inflows in the Price Mine indicate that inflow areas are more numerous closer to the surface (drift portal) and are irregularly distributed deeper in the mountain, mainly near major structural features. Inflows in the drifts are strongly associated with *northwest*, subvertical-striking structures, parallel to the regional foliation, and with shallow-dipping bedding structures. Hydrologically-active structures with the *northwest* orientation and bedding planes, which were associated with large inflows, were observed throughout the mountain core indicating that groundwater flowpaths extend to great depth but are concentrated in specific areas. The *northwest*-striking, water-bearing structures are parallel to major creeks, which flow into the surface trace of large faults encountered along the flank of the mountain, suggesting a hydraulic connection between deep parts of the mountain and the surface. This was confirmed by the response measured in underground drillholes after rainfall events, where a strong stormflow component is seen in the hydrographs resulting from the

torrential flow into the creeks. The hydraulic monitoring also indicated the important role of bedding planes in lateral flow. The groundwater flow system may therefore be characterized on the mine-scale by a heterogeneity (surface vs depth, massive vs fractured rocks) and a strong anisotropy in hydraulic properties.

The results from this study also demonstrated the large impact of the rainy season on the hydrogeological system on the Price Hillside. Water level in drillholes, along with discharge, increase drastically at the beginning of the first severe storms during the fall and maintain high levels until the end of the spring. The water levels in drillholes located in more-fractured rock fluctuated more and showed a strong stormflow component as opposed to water in drillholes located in more-massive rock. In order to cope with this substantial increase in recharge, the groundwater flow system adjusts by the upgradient displacement of the hinge point, which is the limit between recharge and discharge areas. The change in groundwater flow seems to occur primarily in the most fractured areas, the fault zones, which act as major flow channels.

Observations on the importance of fault zones as dominant flow channel compared to massive rock; the distribution of inflows, concentrated with the first hundred meters of the surface; and the hydraulic connection with surface creeks, even at great depths, provide the basis for outlining a conceptual hydrogeological model of the rock mass in a mountainous area. The mountain's groundwater flow system can be divided into several hydrogeological domains (at least three), with distinct hydraulic properties but similar anisotropy. Values of a bulk hydraulic conductivity estimated between 10^{-8} and 10^{-7} m/s can be assumed at Myra Falls for the more fractured rocks (surface and fault zones), and values of hydraulic

conductivity estimated between 10^{-11} and 10^{-8} m/s for the mountain core. However, the values of hydraulic conductivity still have to be evaluated by detailed hydraulic testing in specific areas in the mountain. The change in hydrogeological conditions throughout the mountain creates preferential flowpaths and distinct hydraulic properties that will control solute migration and inflow at different locations in the mountain.

The observations gathered during the course of this project suggest that geostatistical analysis of hydraulic data, monitoring and hydrogeological mapping in mine-scale hydrogeological studies can provide valuable information on the geometry of the groundwater flow system, and an estimation of hydraulic conductivity and anticipated mine outflow. This study also demonstrated the complexity of hydrogeological systems in mountainous regions. Further studies should aim at specifying the hydraulic properties and hydraulic connection of the specific fracture sets identified during the course of this project. Hydraulic testing could be used to evaluate the degree of anisotropy and range of hydraulic properties. The study of hydraulic-head (water level) hydrographs at different locations could provide more information, which could then be used to specify the components of the Mount Myra groundwater system.

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CHAPTER VII

SUMMARY AND CONCLUSIONS

7.1 Main findings

This study provided new field data on the influence of meteorological processes on the groundwater flow systems in the Price Hillside area; the groundwater flow direction, the hydrogeological domains, the characteristics and geometry of the hydrogeological structures in the Price Mine; and the hydraulic connections between the creeks and the groundwater flow system, in order to elaborate an hydrogeological conceptual model of Mount Myra. The main results are described hereafter.

7.1.1 Influence of the Rainy Season on the Groundwater Flow System in the Price Hillside

This study showed that the rainy season produces large annual fluctuations in the groundwater flow system in the Price Mine area. Water levels in drillholes, along with discharge from mine drifts, increase noticeably at the beginning of the first severe storms during the fall and maintain high levels until the end of the spring. The fluctuations of the hydraulic systems are minimal during the summer. Considering the large annual fluctuation of the hydraulic system, the rainy season appears to exert a major influence on the water balance and flow direction in the groundwater system.

Short-term fluctuations of the discharge and water levels indicated that stormflow induced by specific rainfall events is a major source of inflow in the Price Mine. Stormflow can represent more than half the initial discharge rate, prior to rainfall events, but it is evacuated rapidly

from the groundwater system, and then the system returns to baseflow conditions. The autocorrelation and cross-correlation functions of the data displayed a strong memory effect, which corresponds to a very slow decrease of the function (discharge, water level) supporting the observation that groundwater is slowly released from storage resulting from the spatial and temporal variability of the hydrogeological system in the mine vicinity. Thus, the groundwater system is dominated by a baseflow component sustained throughout the year, which suggests that the substantial quantity of water received during the rainy season flows in a moderately to well-developed fracture network, comparable to a porous medium, in the rock mass in the vicinity of the Price Mine.

The substantial influence of the rainy season on the hydraulic system varies depending on the location. Water-level variations are more important in drillholes located in the more fractured rocks near major surface creeks (like in Level 9 and in PR66). These areas are also characterized by shallow water level, whereas areas with massive rock present deeper water levels and smooth water-level fluctuations over the year. The poor correlation of rainfall with water level in more massive rock also suggests different rates of net infiltration. These conditions (spatial variability in infiltration rate and hydraulic properties) are controlling factors of the water table elevation, which governs the subsurface flow.

The wide variations in water levels, as observed in the most fractured areas on the Price Hillside, the fault zones (creeks), can modify the groundwater system from an upward to downward flow component, which can lead to changes in the location of recharge and discharge zones. This was exemplified in this study by the response observed in a surface drillhole, PR66, and in some underground drillholes in Level 9, which are all located near a

major creek or fracture zones. The water level in PR66 was observed to greatly fluctuate during the year, from an elevation above (winter) to an elevation below (summer) the relative elevation of the bottom of the nearby creek. If the fracture network intersected in the drillhole and the creek are hydraulically connected, the change in the relative elevations (PR66 vs. creek bottom) indicate an inversion in the vertical hydraulic gradient, i.e., a change of the limit (hinge point) between recharge and discharge areas. This suggests that discharge conditions prevail in the PR66 area during the rainy season, as opposed to recharge conditions during the summer months. This study provided field data to support the hypothesis that the groundwater flow system on the Price Hillside in the vicinity of the major faults adjusts to the infiltration rates imposed upon it, as evidenced by the displacement of the hinge point from one season to another.

7.1.2 Hydrologically-Active Structures and Hydrogeological Domains in the Price Mine

The structural and hydrological mapping in the Price Mine has identified distinct hydrogeological domains on the basis of fracture density and spatial distribution, strike and dip, and the spatial distribution of inflow structures. Inflow areas are more important within 200 to 400 m from the ground surface and are irregularly distributed deeper in the mountain, specifically near large faults. The occurrence of more hydrologically-active structures in some areas of the mountain suggests potentially more transmissive rocks. Values of a bulk hydraulic conductivity between 10^{-8} and 10^{-7} m/s were estimated for these rocks from the measurements of the mine outflow at the Price Mine portals (Levels 4, 9 and 13). The drastic change in hydrogeological conditions within the mountain, as documented in this study,

suggests several hydrogeological domains with distinct hydraulic properties and connection between the shallow and the deeper groundwater flow systems.

The hydrogeological domains identified in the Price Mine are dominated by hydrologically-active structures with preferential orientation. Major inflow structures in the mine's drifts are strongly associated with *northwest* striking features, parallel to the regional foliation, and with shallow-dipping bedding structures. The *northwest* striking, hydrologically-active structures are also parallel to major creeks flowing in the surface trace of large faults encountered along the flank of the mountain, suggesting a connection with the surface. The hydrologically-active structures with the *northwest* orientation and shallow-dipping structures were associated with large inflow areas (also drillholes) and they were also observed throughout the mountain (on different mine levels), which is an indication of an important and similar flow orientation at depth. Only a few *north* and *northeast* trending hydrologically-active structures, associated with quartz-calcite veins and limited extent joint sets orthogonal to the main faults or creeks, were identified at depth suggesting a poor connectivity of these structures and a minor role in the deep groundwater system. The groundwater flow system in the Price Hillside of Mount Myra appears to be controlled by a system with a strong anisotropy according to the *northeast* striking structures direction and the bedding planes. The identification of distinct hydrogeological domains and hydrogeological structures with a preferential orientation is strategic information in regard with dewatering aspects (drains, drillholes or dewatering drifts orientation) and expected mine outflow related to mine water management at Myra Falls.

7.1.3 Hydraulic Connection within the Fracture Network in the Vicinity of the Price Mine

The results of the monitoring of hydraulic responses in the drillholes and of the discharge to rainfall events suggests an hydraulic connection between the surface and the deeper groundwater flow system. The large stormflow component following rainfall events observed in the underground drillholes intersecting the *northwest*-trending geological structures indicates that these structures are very important flow channels connected to surface creeks. Time series analysis showed that the discharge and water levels are well-correlated, which suggests that a substantial part of the discharge from the Price Mine Level 4 originates directly from the fracture network intersected by the drillholes in the drifts, specifically those located near the surface and in more-fractured rocks. The excellent correlation between rainfall, water-level measurements and discharge estimated during this project demonstrated that monitoring these parameters is an efficient approach to evaluate or predict mine outflow in mountainous regions.

The response to short-term events varies depending on the location of the monitoring sites, which suggests distinct flowpaths and/or hydraulic properties of the rocks in the Price Hillside. Several distinct hydraulic responses within the fracture network were identified on the basis of correlation and spectral analysis of the data. The correlation coefficients and time lags estimated of the discharge and hydraulic head confirmed the important control of groundwater flow by the *northwest*-oriented structures, but also by bedding planes. The bedding planes would be responsible for the rapid connection to the creeks and vertical variations in the rock mass. The interpretation of these hydraulic responses indicate that distinct recharge areas or distinct flowpaths are found in the Price Hillside.

7.2 Conceptual Model of the Hydrogeological System in the Price Mine Area

The detailed monitoring of the hydraulic system and hydrogeological mapping during this study provided valuable information for the development of conceptual models of groundwater flow systems in mountainous terrains, such as those of British Columbia. The main findings about the spatial variability of hydrogeological conditions (inflows) of the rock mass within the Mountain; the preferential orientations of hydrologically-active structures; the hydraulic connection within the fracture network; the relationship with surface creeks, even at great depths; the drastic change in groundwater flow in the creek areas during the year; assist in outlining a conceptual hydrogeological model of the Price Mine area.

In high relief terrains, rainfall is heavy during the winter months and runoff is quickly diverted towards large surface depressions, which often correspond to geological structures such as faults, where major creeks flow along the flank of the mountain. Water infiltrates into the creek's permeable bed, circulates in the fast channels in the fractured rock mass, and discharges in the creek bed at lower elevations. The recharge of the groundwater system in the more fractured areas during the rainy period can lead to large water-level fluctuations in those areas that can drastically modify the groundwater flow, modifying the limit between recharge and discharge areas in order to cope with the substantial amount of water received during this period.

Most of the studies of groundwater systems in mountainous regions considered the mountain as a homogeneous hydraulic system (Woodbury et al., 1987; Forster and Smith, 1988; López and Smith, 1995). These approaches used a 2-dimensional equivalent porous medium approach (EPM) at a regional scale to study the groundwater flow system. They ascribed

distinct hydraulic properties to a shallow and a deeper groundwater flow system. These studies also assumed that the rock mass was saturated at depth, a condition which is observed in Mount Myra, from discharge (baseflow sustained through the year) and water-level measurements made during the course of the year.

In the case of the Price Hillside, although a dominant anisotropy associated with the orientation of the hydrologically-active structures and bedding planes is observed everywhere in the mountain, a double-porosity approach appears to be appropriate at the mountain- or mine-scale. The identification of distinct hydrogeological domains and distinct hydrologically-active structures in the mountain agrees with this conceptualization. However, according to the distribution of inflows and the geometry of the fracture network observed in the Price Mine, some modifications should be added to current conceptual models of groundwater flow systems in mountainous terrain. Notably, the groundwater flow system in the Price Mine area may be divided into three distinct hydrogeological domains with distinct hydraulic properties:

Domain I: the fractured-rock crest near the surface, with higher hydraulic conductivity;
Domain II: the highly fractured large fault areas extending at great depth, also with higher hydraulic conductivity;
Domain III: the deeper massive core of the mountain, with lower hydraulic conductivity.

Domain I is located within the first few hundred meters of the surface, where more inflow was observed compared to other parts of the mountain. The rocks in that area are assumed to be more fractured resulting from weathering and stress relief near the surface.

Domain II is located near the large faults, at the surface and extends at depth. Domain II exhibits more inflows and signs of fracture flow in the underground drillholes, even in the deep parts of the mountain.

Domain III is located in the deeper part of the mountain. Although signs of water were observed throughout the mountain, only a few hydrologically-active structures were reported in that part of the mountain, even if some of these structures are responsible for large inflows (low-dipping structures).

It can usually be assumed that rocks with more fractures are potentially more transmissive and present larger hydraulic conductivity values than massive rocks. Values of hydraulic conductivity in Domain I and II are expected to be of the same range due to similar inflow conditions observed in the drifts. In the more massive rocks in the deeper part of the Price Mine, Domain III, the rock mass should present a lower fractured-rock hydraulic-conductivity, but due to the presence of water throughout the mountain, the values should be higher than the matrix hydraulic conductivity typically found in this type of rock (10^{-11} m/s: Freeze and Cherry, 1979).

According to some hydrogeological studies made in mountainous regions (Jamieson and Freeze, 1983; Gerhart, 1984; Forster and Smith, 1988), the values obtained here are representative of a fractured-rock bulk-hydraulic conductivity. Consequently, values between 10^{-8} and 10^{-7} m/s can represent a good preliminary estimate of the hydraulic conductivity of Domains I and II, while intermediate hydraulic conductivity values between 10^{-11} and 10^{-8} m/s are assumed to be representative of hydrogeological conditions in the deeper part of Mount Myra.

The spatial distribution of inflows along the drifts and at depth, preferential orientation of hydrologically-active structures, and the displacement of the hinge point resulting from a drastic change in the groundwater flow direction in the fault areas during the rainy season attest to the importance of the geological structures as dominant flow channels that will control the groundwater flow in the Price Mine area. The work performed during this project has raised many questions and uncertainties that demand to be addressed in following studies in order to complete the conceptual model of Mount Myra.

7.3 Further Work

The observations gathered during the course of this project indicate that geostatistical analysis of hydraulic monitoring data and hydrogeological mapping in mine-scale hydrogeological studies provide valuable information on the geometry of the groundwater flow system and estimates of hydrogeological properties for the preliminary analysis of the hydrogeological setting. In the Price Mine, the separation of the mountain into three (or more) hydrogeological domains and the spatial and temporal variations of the hydrological parameters, such as discharge and water level laterally from the faults to the more massive rock, and from the surface to greater depth, suggest the need for a more detailed examination of groundwater flow conditions in the Mount Myra area.

7.3.1 Study of the Changes in Hydrogeological Conditions within the Mountain

The results of this study present the hydrogeological setting in the vicinity of the Price Mine only. The experimental site used here was initially developed for mine exploration. The drifts were driven parallel to a major fault zone, where orebodies were expected to be found. The

creeks that flow in the surface traces of the faults and in the more fractured rocks in this area are responsible in part for the large inflow in the drifts. Observations in surface drillholes located in other parts of the Price Hillside have indicated much different responses of the groundwater flow system, especially in massive rocks. Further studies of mine discharge, inflow distribution along the drifts and water-level fluctuations in drillholes located in other parts of the property should be attempted to provide more data on the variability of the groundwater flow system to complete the conceptual model of the mountain.

In particular, many data were collected in the Myra Mine area, on the *west* flank of Mount Myra. The Myra Mine is located on the opposite side of the Myra-Price Fault and present somewhat different climatic and surface conditions (steeper and well-vegetated slopes; more "*wet*" underground conditions). It should be interesting to evaluate whether the groundwater flow system in the Myra Hillside is correlated and responds similarly to the groundwater flow system in the Price Hillside. A comparison between the hydrologically-active structures in the Myra Mine, the hydraulic monitoring in some drillholes in the Myra Mine levels 9 and 10 and discharge from the Level 10 portal should also indicate the hydraulic connection between the two sides of the mountain. Specifically, the hypothesis that the Myra-Price Fault acts as a barrier or a channel to groundwater flow could be answered from this analysis.

7.3.2 Hydraulic Monitoring and Testing of the Rock Mass

This study has shown that the influence of surface hydrological processes on water-level fluctuations is transmitted differently according to the geological setting (fractured- vs. massive-rock areas). The monitoring design (open drillhole, length of the drillholes) has certainly influenced the response to rainfall, snowmelt and other processes observed in the

drillholes. In order to obtain accurate estimates of hydraulic responses and properties, along with a correct evaluation of the degree of anisotropy and connectivity in the fracture network, hydraulic monitoring and testing should be performed with the use of packer systems installed in specific fracture sets in some drillholes of interest. This would be most interesting in PR66 in order to confirm and quantify the change in the flow field at this location. Further studies of hydraulic head should also attempt to monitor variations and the effect of pressure head fluctuations in these specific fracture sets, especially in Level 9 where large annual fluctuations were measured. Finally, the implementation of several weirs along the Price Mine levels 4, 9 and 13 would provide an accurate estimate of inflows in each hydrogeological domain.

7.3.3 Relationship between Creeks and Groundwater Flow System

The close relationship between the creeks and the deep groundwater flow system has been addressed during this project. The preliminary results showed, from a strong fracture-flow component observed in the hydraulic response of drillholes located in the fault areas (PR66, levels 4 and 9), the influence of rainfall events on the deep groundwater system. Also, the identification of recent waters at great depth suggests a rapid groundwater flow along *northwest*-striking structures and bedding planes. The installation and monitoring of two weirs located along one of the main creeks at higher and lower elevation of the Level 4 Portal should provide pertinent data in order to evaluate the contribution of the creek's flow to the recharge and/or discharge of the groundwater flow system in that part of the mountain by measuring change in flow along the creek. The use of a tracer in the creek followed by the

monitoring at the mine portals could also provide information on the connection between the creeks and the hydrogeological system in the vicinity of the Price Mine.

7.4 Conclusions

This study showed that deep groundwater flow systems in mountainous terrains are indeed more complex than what has been previously assessed. The identification of distinct hydraulic properties and preferential flowpaths within the Price Mine supports the concept of an heterogeneous and anisotropic groundwater flow system. Detailed hydrogeological analysis is therefore required in order to efficiently characterize the groundwater flow system for site-specific issues. While the data set is specific to Myra Falls, the knowledge gained here can nevertheless be applied to elaborate and complete the conceptual model of hydrogeological settings in other mountainous areas.

The conceptual model elaborated during this project formed the basis for the future development of a numerical model of the groundwater flow system in the Price Mine area. The more-fractured nature of the rocks near the surface and close to major faults, and the anisotropy of the hydrologically-active structures in these areas create distinct major flow channels that control the entire flow system in the Price Hillside. These elements should be incorporated in the numerical model of the Mount Myra area. A three-dimensional approach would be required to accurately evaluate the groundwater flow, since the hydrogeological domains appear to have distinct hydraulic properties and because of the evidence of distinct flowpaths in the rock mass.

In groundwater flow systems, such as in the Price Mine area, the accurate interpretation of flowpaths for mineral exploration or environmental purposes should take into account the dominant geological structures and the bedding planes identified as major flow channels. Under these conditions, solute dispersion patterns are controlled by the geological structures and tend to be narrow due to the strong downward hydraulic gradient. Thus, the transport of contaminants or tracers in some parts of the hillside is not representative of all the groundwater flow system in the mountain. These conclusions are especially critical when preparing conceptual models for numerical modeling for management purposes.

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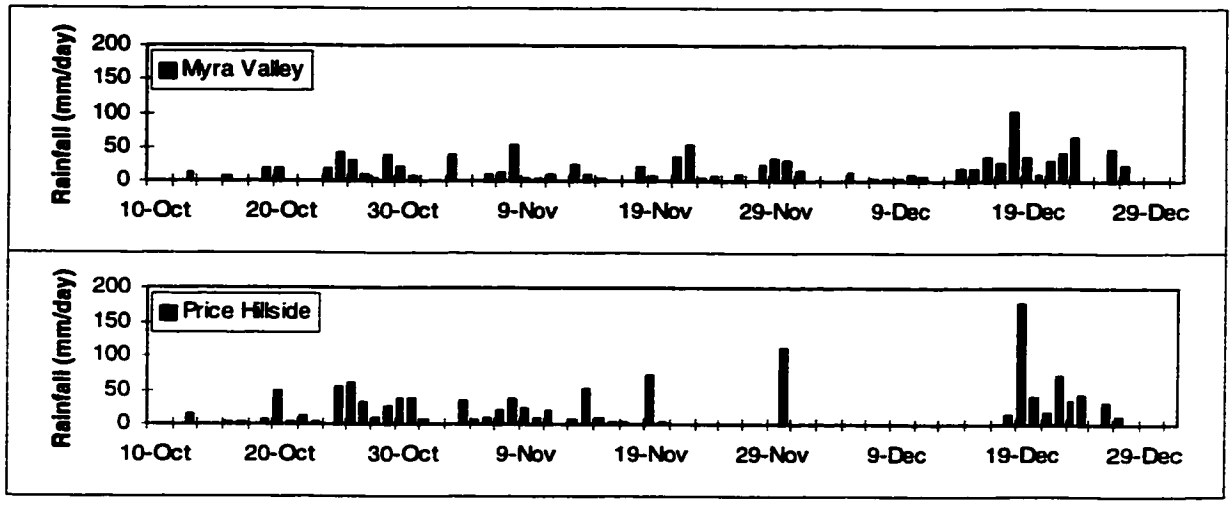
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APPENDIX I
RAINFALL PATTERNS IN THE MOUNT MYRA AREA

RAINFALL PATTERNS IN THE MOUNT MYRA AREA

The seasonal patterns of rainfall on the Price Hillside could not be observed due to the datalogger unavailability during winter and because of the relatively short duration of the study. However, data collected at the Myra Valley meteorological station during the last twenty years showed that the Mount Myra area is characterized by a strong rainy season that lasts from October to April. In order to describe qualitatively long-term rainfall patterns on the Price Hillside, the rainfall data recorded at the Price Hillside meteorological station were compared on a short-term basis to the rainfall data recorded at the Myra Valley meteorological station.

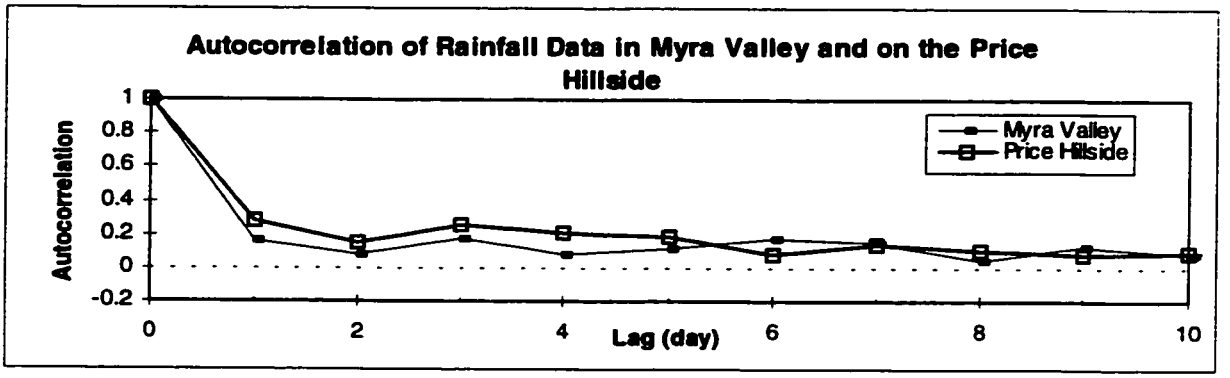
The following Figure shows an example of a portion of the rainfall data set recorded during the same period at the Myra Valley and Price Hillside meteorological stations. All measurements are expressed as daily-mm of rainfall.



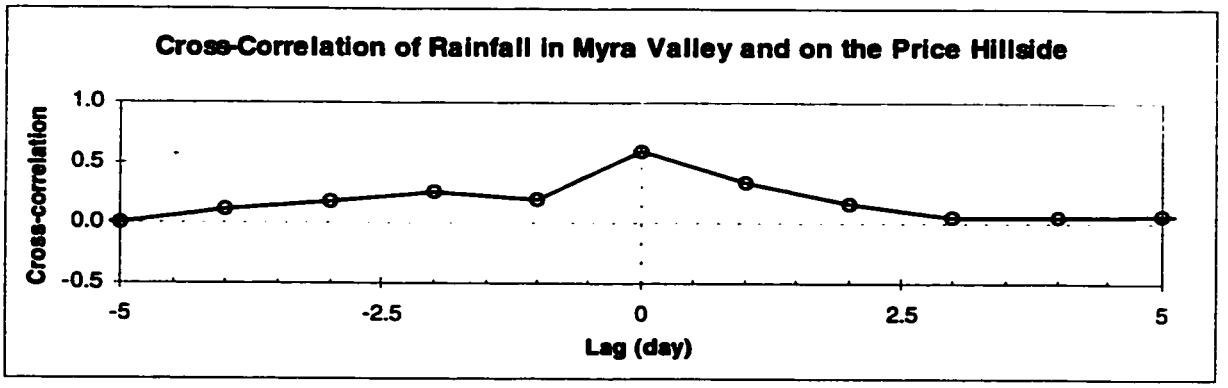
In general, the periods with heavier rainfall in Myra Valley correspond with the periods with heavier rainfall on the Price Hillside. However, the rainfall events appear to be distributed in time differently: rainfall events in the Myra Valley appear to last more days than rainfall events on the Price Hillside, although they indicate smaller intensities. The difference between the two data sets could be the result of microclimatic differences as well as

differences in the experimental settings (different rain gauges; and methods and time of measurement).

In order to examine the short-term variability between rainfall events in Myra Valley and on the Price Hillside, the autocorrelation (ACF) and cross-correlation (CCF) functions have been calculated and are presented in the next two Figures. The correlograms were calculated for 1-day to 175-day lags for the Price Hillside and Myra Valley data sets, which correspond to the longest common data series. The ACF for the Price Hillside and the CCF presented in the Figure are the average of three distinct continuous series. The Figures only present the results for small time lags, since we are interested in very short-term variations.



The Figure shows that the two ACF are almost identical. The functions display a rapid decline within one day and random noise thereafter. This suggests that rainfall events in average do not last for more than one day on either side of Mount Myra.



The results of the CCF indicate that the two series are highly correlated with no time lag. The high degree of correlation suggests that rainfall events on the Price Hillside occur in average the same day in Myra Valley. However, the correlation is not perfect, with a cross-correlation coefficient slightly more than 0.500, which could result from local variations in the weather patterns.

It appears that each side of Mount Myra is subject to similar rainfall events according to the high degree of correlation in the data. Although these conclusions indicate the possibility of short-term comparison, the results from Myra Valley presented here were only used in this project for a qualitative interpretation, since we were concerned by very small short-term fluctuations displayed in the 6-hour time frame of measurement.

APPENDIX II
RESULTS OF THE HYDROGEOLOGICAL MAPPING

Price Mine Level 4						
Location			Orientation		Hydrological	Comments
East	North	Elevation	Strike	Dip	Index	
m	m	m	0-360	0-90	(0 to 5)	
5480	3297	630	90	85	3	
5480	3295	630	115	35	3	gouge
5479	3293	630	90	80	2	
5477	3290	630	320	25	0	
5472	3286	630	94	70	0	
5467	3281	630	275	74	4	gouge 5-10cm
5461	3275	630	275	57	1	
5459	3273	630	110	70	2	gouge
5456	3272	630	110	39	1	
5456	3271	630	110	90	1	
5451	3271	630	175	47	0	side
5447	3271	630	225	45	1	
5442	3273	630	240	85	0	
5419	3284	630	110	70	4	gouge
5403	3292	630	100	50	3	
5400	3293	630	295	81	3	gouge, late
5398		630	112	75	3	gouge, late
5392	3298	630	75	83	1	
5387	3300	630	80	85	1	
5383	3302	630	95	45	1	
5378	3304	630	160	85	3	
5372	3308	630	150	67	3	
5372	3308	630	80	80	3	
5367	3310	630	25	65	3	
5365	3322	630	180	60	3	gouge
5365	3322	630	115	85	3	
5361	3313	630	150	87	4	
5352	3316	630	225	53	3	
5352	3316	630	260	55	3	
5346	3318	630	190	90	0	
5343	3320	630	240	69	3	
5340	3321	630	55	62	3	
5339	3322	630	189	90	2	
5329	3330	630	193	67	2	
5319	3332	630	15	90	4	
5318	3332	630	15	90	4	
5315	3333	630	120	90	4	
5310	3336	630	40	40	3	
5310	3336	630	15	56	3	
5304	3338	630	120	90	4	dip?
5304	3344	630	122	35	3	drift lat.
5304	3345	630	125	75	3	drift lat.
5299	3338	630	350	83	3	
5290	3338	630	120	65	2	dip?
5288	3338	630	112	40	2	dip?

Price Mine Level 4						
Location			Orientation		Hydrological Index	Comments
East	North	Elevation	Strike	Dip		
m	m	m	0-360°	0-90°	(0 to 5)	
5288	3338	630	114	40	2	dip?
5283	3338	630	122	84	2	
5276	3338	630	235	57	4	
5275	3338	630	25	90	4	
5274	3338	630	33	90	4	
5274	3338	630	225	70	4	
5246	3338	630	10	20	3	
5244	3338	630	10	20	3	
5255	3359	630	253	70	4	drift lat.
5252	3360	630	275	40	2	drift lat.
5237	3337	630	35	60	3	
5233	3336	630	180	84	2	
5226	3336	630	120	30	2	
5226	3338	630	74	59	2	
5224	3335	630	148	75	2	
5223	3335	630	143	70	2	
5218	3335	630	110	70	1	
5212	3336	630	150	37	2	
5209	3334	630	202	90	1	
5208	3334	630	198	90	1	
5208	3334	630	220	90	1	
5200	3333	630	224	85	1	
5198	3332	630	140	60	3	
5194	3332	630	353	82	0	
5192	3332	630	110	40	0	
5191	3332	630	210	35	0	
5190	3332	630	210	35	0	
5184	3330	630	170	90	0	
5181	3330	630	350	90	2	
5180	3330	630	165	87	2	
5174	3329	630	234	45	1	
5163	3328	630	255	55	1	gouge
5163	3332	630	260	60	0	
5148	3326	630	220	72	0	15 cm gouge
5139	3325	630	230	53	0	
5137	3324	630	224	48	0	
5136	3327	630	287	20	1	
5136	3325	630	126	65	1	
5132	3324	630	235	62	1	
5110	3321	630	340	86	0	drift
5109	3321	630	142	62	0	drift
5124	3334	630	100	45	4	
		630	280	2	4	artificial flow?
		630	160	5	4	artificial flow?
5119	3335	630	90	75	0	

Price Mine Level 4						
Location			Orientation		Hydrological	Comments
East	North	Elevation	Strike	Dip	Index	
m	m	m	0-360°	0-90°	(0 to 5)	
5119	3335	630	90	75	0	
5118	3336	630	274	74	0	
5115		630	170	84	0	
5118		630	140	71	3	
5112	3343	630	290	70	1	
5104	3352	630	100	62	1	
5094	3363	630	160	70	2	
5092	3364	630	57	15	1	
5090		630	105	49	0	
5090		630	318	82	0	
5079	3368	630	110	70	1	
5070	3368	630	158	85	1	
5252	3360	630	247	55	0	0? s.z. dr.lat.
5252	3360	630	265	75	0	0? s.z. dr.lat.
5226		630	187	85	2	
5200		630	219	74	0	
5052	3368	630	140	82	1	
5050	3368	630	310	90	1	
5048	3368	630	170	83	2	
5043	3368	630	300	90	1	
5041	3368	630	317	90	1	
5040		630	165	78	0	
5035	3368	630	355	74	3	
5034	3368	630	327	84	3	
5029	3368	630	135	90	4	
5026		630	100	30	4	4?
5024	3368	630	310	90	1	
5020	3368	630	155	80	2	
5018	3368	630	180	80	1	
5016	3368	630	180	90	1	
5014	3368	630	310	80	1	
5010	3368	630	195	85	1	
5004	3368	630	130	70	1	
5000	3368	630	225	85	2	
4993	3368	630	45	55	2	2?
4984	3368	630	145	50	1	connecte avec suvant
4984	3368	630	230	45	1	
4980	3368	630	150	50	1	
4970		630	110	20	0	dr. lat.
4968		630	305	80	2	dr.lat.
4968		630	85	85	0	dr.lat.
4968		630	230	76	0	dr.lat.
4967	3368	630	320	85	1	
4966	3368	630	320	85	1	spliced
4966	3368	630	320	85	1	

Price Mine Level 4						
Location			Orientation		Hydrological	Comments
East	North	Elevation	Strike	Dip	Index	
m	m	m	0-360°	0-90°	(0 to 5)	
4960	3368	630	160	85	1	
4958	3368	630	330	80	1	
4953	3368	630	174	80	0	
4953		630	35	80	0	
4949	3368	630	35	83	1	
4945	3368	630	15	75	1	
4944	3368	630	155	60	0	
4942	3368	630	155	56	0	+ 2smalls between
4939	3368	630	40	80	1	
4936	3368	630	170	80	2	
4932	3368	630	310	75	1	
4930	3368	630	300	80	2	
4927	3368	630	155	77	3	minor beside
4923	3368	630	303	70	1	
4923		630	350	72	1	
4918	3368	630	12	85	1	
4915	3368	630	310	65	1	25cm qtz-cal
4913	3368	630	170	85	1	
4907	3368	630	145	85	0	
4906	3368	630	177	85	1	
4897	3368	630	210	90	1	90?
4891	3368	630	176	80	0	
4884	3368	630	160	75	0	
4881	3368	630	172	69	0	
4878	3368	630	150	74	0	
4873	3368	630	222	67	1	large
4865	3368	630	150	75	0	large
4859	3368	630	174	75	0	
4858	3368	630	180	70	0	
4853	3368	630	176	90	1	
4852	3368	630	180	90	1	
4844	3368	630	180	85	0	
4835	3368	630	245	75	0	
4834	3368	630	245	75	0	
4826	3368	630	242	65	1	gouge 50cm
4822	3368	630	235	70	0	
4820	3368	630	20	55	3	10-30cm late ch-qtz
4817	3368	630	70	89	3	
4816	3368	630	30	75	1	
4809	3368	630	180	90	1	set
4807	3368	630	170	90	0	set
4806	3368	630	170	90	0	set
4805	3368	630	170	90	0	set
4802	3368	630	170	90	2	set
4785		630	90	20	2	lat.

Price Mine Level 4						
Location			Orientation		Hydrological	Comments
East	North	Elevation	Strike	Dip	Index	
m	m	m	0-360°	0-90°	(0 to 5)	
4781	3368	630	290	85	1	
4776	3368	630	170	75	2	qtz
4769	3368	630	160	80	0	
4766	3368	630	40	70	0	
4761	3368	630	70	80	0	
4756	3368	630	65	85	0	
4753	3368	630	220	85	0	
5481		626	196	75	0	J
5480		626	196	77	0	J
5477		626	240	75	0	JS
5450	3272	626	30	90	0	J
5413		626	115	85	4	J
5352		626	140	85	3	JS - 3?
5331		626	170	70	0	JS TG
5307		626	315	49	3	J
5299		626	350	82	3	J TG
5288		626	0	85	3	J - TS
5273		626	185	65	3	TG
5214		626	210	75	1	JS
5125		626	182	82	1	JS
5115		626	174	72	0	JS END DRIFT
5124		626	192	60	1	JS
5102		626	192	75	1	JS
5092		626	190	83	1	JS
5078		626	185	84	1	JS
5073		626	175	80	1	JS
4999		626	210	65	3	JS
4968		626	240	70	0	JS DL. BH3
4948		626	32	80	1	JS
4910		626	280	50	0	J
4892		626	335	60	0	JS
4877		626	40	46	0	FRACTURE
4877		626	195	63	0	TG
4877		626	215	65	0	TG
4846		626	25	57	0	JS
4846		626	200	60	0	JS
4807		626	170	90	0	JS
4795		626	200	80	2	JS
4792		626	0	50	2	JS
4787		626	200	60	0	JS

Price Mine Level 9						
Location			Orientations		Hydrological	Comments
East	North	Elevation	Strike	Dip	Index	
m	m	m	0-360°	0-90°	(0 to 5)	
5874	3290	416	275	85	0	large on side, gouge, late
5871	3290	416	148	53	0	
5869	3290	416	175	60	0	
5864	3290	416	115	73	0	
5859	3290	416	140	75	1	
5849		416	95	60	2	
5835	3293	416	115	90	3	
5825	3293	416	160	86	1	
5813	3294	416	240	80	3	80?
5807	3295	416	185	69	3	
5749	3300	416	265	85	3	85????
5749	3300	416	115	85	3	x contact
5739	3301	416	330	78	1	
5733	3302	416	325	50	3	
5721		416	190	85	0	large fract. on the side
5701	3304	416	130	75	2	"x"
5685	3306	416	120	71	1	
5685	3306	416	182	70	1	
5680	3307	416	300	64	4	other sec.fract., rusty, late
5671	3307	416	143	75	3	
5667	3308	416	55	90	1	
5666		416	175	77	1	
5662	3308	416	38	58	1	
5660	3308	416	172	80	1	
5654		416	270	70	5	
5651	3309	416	297	85	2	
5633	3310	416	148	65	2	65?
5625	3311	416	145	90	4	"x"
5624	3311	416	180	90	2	"x"
5620	3312	416	144	50	3	
5610	3312	416	235	75	3	
5610	3312	416	150	77	4	double
5607	3313	416	120	65	4	3 to 4
5602	3313	416	220	90	1	"x"
5602	3313	416	125	90	1	"x"
5596	3314	416	130	90	1	
5575	3315	416	175	30	0	
5566	3315	416	300	74	4	
5564	3315	416	312	80	4	
5556	3315	416	65	85	3	late, 2 sec. fract.
5535	3316	416	160	55	4	
5534	3316	416	170	67	4	
5532	3316	416	270	86	5	late, gouge
5508	3313	416	100	50	1	
5502	3313	416	305	83	1	0 to 1

Price Mine Level 9						
Location			Orientation		Hydrological	Comments
East	North	Elevation	Strike	Dip	Index	
m	m	m	0-360°	0-90°	(0 to 5)	
5491	3313	416	305	85	0	double
5491	3313	416	10	90	1	
5474	3313	416	60	90	1	
5468	3312	416	345	60	1	
5467	3312	416	350	70	1	"split"
5467	3312	416	20	90	1	"split"
5465	3312	416	50	90	4	
5465	3312	416	340	75	3	
5463	3312	416	338	76	3	
5458	3312	416	292	86	1	
5454	3312	416	275	85	1	double
5447	3312	416	280	85	1	
5505	3309	416	305	85	0	
5505	3310	416	125	90	1	
5502	3296	416	45	77	0	
5502	3288	416	237	57	0	
5502	3287	416	100	68	0	
5502	3284	416	265	90	2	
5502	3282	416	50	75	2	
5503	3272	416	193	83	1	
5503	3272	416	270	50	1	
5796		416	290	75	1	"JS"
5791		416	205	70	1	"JS"
5796		416	273	75	3	"FAULT S
5741		416	180	75	1	"JS"
5706		416	190	60	1	"JS"
5654		416	230	80	5	"TENSION
5645		416	125	64	2	"JS"
5618		416	110	80	3	"JS"
5618		416	310	85	3	"JS"
5613		416	55	80	3	"JS"
5593		416	130	90	0	"Q"
5587		416	120	90	0	"Q"
5574		416	320	86	1	"Q TS GA
5574		416	135	90	1	"J"
5567		416	195	72	0	"J"
5526		416	210	80	0	"JS"
5503		416	20	90	0	"JS"

Price Mine Level 13						
Location			Orientation		Hydrological Index	Comments
East	North	Elevation	Strike	Dip		
m	m	m	0-360°	0-90°	(0 to 5)	
3685	5877	238	283	50	0	broken core
3682	5871	238	285	90	1	gouge 1cm
3677	5867	238	330	38	0	
3677	5861	238	275	35	1	
3676	5859	238	275	55	1	0 to 1
3674	5858	238	100	68	2	X
3673	5855	238	290	25	2	X - 1-2cm Q+CL
3670	5851	238	330	90	1	
3667	5846	238	105	44	3	no gouge but Q+CL
3665	5843	238	295	60	1	
	5846	238	70	70	1	
3665	5842	238	292	83	1	
3664	5841	238	330	85	1	Q, 0 to 1
3663	5839	238	285	82	1	1-5cm gouge
3662	5837	238	290	80	1	gouge
	5831	238	218	35	3	broken core .1-.5 cm Q
	5819	238	260	15	1	fault: 1cm gouge
	5819	238	100	40	5	4 to 5
3647	5811	238	285	80	3	fract. zone
	5806	238	115	85	3	fract. zone 15'
3643	5805	238	270	70	3	
3641	5800	238	265	85	2	fract. set
3639	5798	238	287	60	2	fract. set
	5802	238	243	80	2	fract. set
3635	5791	238	333	37	2	1 to 2
3634	5791	238	305	61	2	
3634	5790	238	275	63	2	
	5778	238	355	90	2	joints set, lat. drift
	5771	238	197	70	2	lat. drift
	5770	238	250	66	2	lat. drift
3623	5770	238	277	50	3	2cm gouge
36237	5768	238	98	80	2	1-2cm gouge
3620	5764	238	287	62	3	shear zone 1cm gouge
3612	5750	238	275	60	1	shear zone 1cm gouge
3607	5741	238	285	65	1	5cm Q+CL
3604	5736	238	283	72	0	Shear zone, 1m Wide, 10cm gouge
3601	5730	238	280	70	0	
3601	5730	238	282	56	0	5cm Q+CL
3595	5723	238	297	80	2	joints, 1 to 2
	5721	238	90	81	1	Q+CL, 0 to 1
3594	5719	238	305	70	2	
3593	5716	238	168	90	2	
3592	5704	238	253	90	2	1-2cm Q+CL
3592	5706	238	58	90	1	
3592	5703	238	33	69	2	
3592	5702	238	193	85	2	Q+CL
	5694	238	85	90	2	31-2, 70-95
3590	5692	238	133	85	2	Q+CL
3590	5689	238	293	40	2	58-73 between blocks
3590	5687	238	332	58	1	0 to 1
3589	5682	238			1	end QFP
3589	5678	238	310	75	2	1 to 2, fract. set, Q+CL<1cm
3588	5672	238	65	65	2	
3588	5669	238	295	90	2	3-5cm Q+CL
3588	5665	238	115	85	2	1-2cm Q+CL
3588	5661	238	265	90	2	.5cm Q+CL
3588	5659	238	25	75	2	1 to 2
3586	5646	238	235	67	2	5-7cm Q+CL
3586	5643	238	130	43	1	fract. set
3586	5640	238	145	50	1	joints set

Price Mine Level 13						
Location			Orientation		Hydrological	Comments
East	North	Elevation	Strike	Dip	Index	
m	m	m	0-360°	0-90°	(0 to 5)	
3585	5636	238	140	58	1	joints set
3585	5634	238	140	70	2	1 to 2 .25cm Q
3585	5628	238	140	70	2	Fract. set 50-80'
3584	5619	238	310	80	2	1 to 2 Joints set (JS)
3584	5611	238	30	90	2	
3583	5606	238	140	70	2	15-20cm MAF.DYK, 1-5 cm Q
3583	5604	238	300	75	2	1-3cm Q
3582	5601	238	40	75	1	
3581	5598	238	310	77	2	shear zone 5-10cm Q+Hem
3581	5586	238	255	85	1	
3581	5579	238	120	85	0	joints set
	5572	238	270	90	1	large fract. 260-300'
3580	5576	238	300	45	2	5-10cm Q, 1 to 2
3580	5570	238	25	60	2	X
3579	5560	238	290	45	2	30-50' SPLIT in 2
	5561	238	70	78	1	joints set
	5557	238	85	40	1	.5-1cm Q
3578	5546	238	243	30	1	0 to 1
3576	5534	238	310	80	2	
	5537	238	300	85	2	joints set
3576	5532	238	315	80	2	
3576	5526	238	90	90	2	
3575	5523	238	300	82	2	1-15cm Q+CL
	5519	238	245	66	1	fract. set
	5519	238	140	70	1	joints set
3581	5517	238	60	60	2	LatDrift. 20-30cm Q
3581	5517	238	280	85	1	lat. drift
3584	5517	238	105	87	0	lat. drift Q
3584	5517	238	110	85	0	lat. drift
3587	5517	238	270	65	0	lat. drift
3590	5517	238	245	78	2	.5 cm Gouge, Lat. dr.
3590	5517	238	230	82	2	.5-10cm Q Lat. dr.
	5517	238	265	20	2	
3575	5511	238	120	55	1	0 to 1, 2X, 2cm Q
3574	5505	238	310	80	1	2-5cm Q
3573	5497	238	40	48	2	10-30cm Q
3574	5491	238	140	85	2	10-20 cm Q, 3X
3574	5486	238	250	75	0	.5-1cm Q
3574	5481	238	295	90	0	
3574	5474	238	205	90	1	
3574	5473	238	250	86	2	
3574	5470	238	260	79	0	1-5cm Q
3574	5462	238	200	75	0	
3574	5465	238	80	28	0	20cm Q SIDE
3574	5456	238	265	80	2	
3574	5450	238	230	64	0	1-2cm Q+H
3574	5438	238	20	72	2	1 to 2
3574	5436	238	40	60	1	
3574	5426	238	245	75	2	1-10cm gouge
	5426	238	310	58	1	1cm Q
3574	5417	238	30	10	1	0 to 1
3574	5416	238	230	65	0	X Intersect long. fract.
3574	5410	238	270	85	1	same as previous
3574	5410	238	240	66	1	same as previous
3574	5410	238	10	64	1	same as previous
3574	5410	238	300	50	1	same as previous
3574	5406	238	280	85	1	same as previous
3574	5400	238	160	65	1	.5-1cm Q
3574	5400	238	235	85	1	
3574	5389	238	260	57	2	

Price Mine Level 13						
Location			Orientation		Hydrological	Comments
East	North	Elevation	Strike	Dip	Index	
m	m	m	0-360°	0-90°	(0 to 5)	
3574	5389	238	30	90	2	
3574	5386	238	150	90	2	
3574	5381	238	320	80	2	shear zone
3574	5372	238	140	63	1	.5-1cm Q
3574	5369	238	140	74	1	
3574	5365	238	250	55	1	joints set
3574	5365	238	240	54	1	.5-1cm gouge +Q
3574	5358	238	75	58	1	.5-1cm Q
3574	5353	238	217	90	1	0 to 1
3574	5353	238	312	72	2	1 to 2 , 5-10cm Q Deformed
3574	5349	238	100	40	1	WALL 0.1cm Q
3574	5349	238	210	60	2	1 to 2 .5-1cm gouge
3574	5346	238	15	42	1	0 to 1, .1-.5cm gouge
3574	5345	238	80	54	2	EARLY FRACT. FOL. 10-60'
3574	5342	238	310	20	2	1-3cm Q 1 to 2
3574	5336	238	263	64	2	.1-.5cm gouge
3574	5336	238	358	46	2	10-30cm EARLY Q+C
3574	5326	238	344	74	1	
3574	5326	238	27	44	1	5-10cm EARLY Q
3574	5326	238	255	74	1	
3574	5319	238	320	90	2	joints set <1cm, 1 to 2
3574	5308	238	253	52	2	1-3cm gouge+Q
3574	5302	238	243	75	1	.1-.5cmQ+gouge
3574	5293	238	20	85	1	.1-.5cm gouge
3574	5287	238	83	50	2	3-10cm Q, 1to2 30-65'
3574	5285	238	330	87	2	.1cm Q
3574	5283	238	290	44	2	1-10 cm Q
3574	5282	238	158	87	1	.1cm Q
3574	5280	238	114	76	3	.1-.5cm Q Senestrial. 2-3
3574	5273	238	310	87	2	.1-.5cm Q, 1-2
3574	5270	238	28	65	0	.1 cm
3574	5268	238	307	90	1	.5 cm
3574	5264	238	250	10	2	1-2, 55-80' .5cm Q
3574	5256	238	305	28	1	.5cm, 1-2
3574	5255	238	305	25	2	.5cm Q DOUBLE
3574	5240	238	118	72	1	5-40cm Q FOL. 0-1, 175-205'
3574	5267	238	148	70	2	joints set
	5230	238	192	65	0	.1-1cm Q
	5226	238	345	90	0	0 .1cm Q
	5224	238	226	54	0	1cm Q
	5221	238	353	87	0	5cm Q
	5217	238	330	90	0	1cm Q
	5214	238	325	90	2	20-40cm Q fol., 1-2
	5208	238	200	90	2	joints set
	5203	238	268	90	2	40-100' fol
	5195	238	187	90	0	
	5186	238	212	64	0	joints set
	5186	238	228	90	0	very dry, QFP
	5179	238	195	41	0	.5-1cm Q
	5179	238	333	76	0	.5-1cm Q
	5177	238	24	44	1	.1-.5cm
	5176	238	275	79	1	MAJ SZ ALONG DRIFT
	5173	238	227	81	1	.1-.5cm Q H, 0-1
	5170	238	204	63	1	0-1, .1-.5cm Q H
	5168	238	236	70	1	.5-1cm Q
	5164	238	240	69	2	1-2, .5cm Q H
	5160	238	307	73	1	0-1, .1cm Q
	5157	238	302	85	2	1-2, .5cm G+Q+H
	5156	238	318	64	1	0-1, 2-5cm GQ
	5148	238	270	86	1	0-1, SZ

Price Mine Level 13						
Location			Orientation		Hydrological	Comments
East	North	Elevation	Strike	Dip	Index	
m	m	m	0-360°	0-90°	(0 to 5)	
	5139	238	310	78	0	.5-1cm Q+H+G
	5134	238	320	66	2	1-2, .5cm
	5132	238	328	52	0	.5-1cm QH
	5130	238	320	56	0	.5-1cm Q
	5125	238	240	67	1	0-1, .1-.5cm GH
	5120	238	230	65	3	2-3
	5115	238	65	40	0	0 .1-.5cm
	5113	238	40	82	1	.1-.5cm
	5112	238	270	90	1	4-5, Q 760-815'
	5101	238	310	90	0	0 .1-.5cm GH
	5095	238	275	87	0	5-10cm G 700-730'
	5084	238	255	88	0	.5cm gouge
	5077	238	187	69	0	.1-.5cm
	5075	238	153	90	0	0 .1cm G
	5075	238	238	70	0	0 .5-2cm G
	5072	238	184	72	0	.1-.5cm gouge
	5063	238	180	65	0	.1cm
	5050	238	344	70	0	.1-.5cm gouge
	5048	238	220	65	0	.5-2cm Q+gouge
	5045	238	317	54	0	1-10cm Q
	5043	238	228	64	0	.1-.5cm Q+G
	5022	238	253	76	0	.1cm Q
	5022	238	180	90	0	0 .1-.5cm Q
	5019	238	232	72	0	.5cm Q+G
	5014	238	345	90	0	0 .1cm Q 430-470'
	4997	238	226	76	0	.5-2cm Q
	4995	238	214	46	0	.1-.5cm Q
	4993	238	262	85	0	2-5cm GH
	4988	238	214	62	0	.5cm QG
	4979	238	192	60	0	.1-.5cm gouge
	4979	238	230	88	0	
	4972	238	72	35	0	.1-.5cm gouge
	4967	238	60	90	0	.1-.5cm gouge
3583	4964	238	247	58	2	END DRIFT
3574	4960	238	130	90	0	.1-.5cm gouge
3574	4963	238	270	85	0	FRAC. ALONG DRIFT 270-295'
	4956	238	66	57	0	.1-.5cm gouge
	4955	238	94	74	0	ALONG FOL.
	4947	238	24	75	0	.1-.5cm gouge
	4938	238	242	55	0	.1-.5cm gouge
	4930	238	115	90	0	0 .5cm gouge SHEARED
	4928	238	225	65	0	.1-.5cm gouge
	4929	238	60	65	0	5cm Q TG
	4923	238	297	50	0	.1-.5cm gouge
	4921	238	209	88	0	.1-.5cm gouge
	4918	238	23	84	0	.1-.5cm gouge
	4916	238	301	54	0	joints set
	4908	238	348	60	0	0 .5cm gouge 2X
	4905	238	320	60	0	0 .5cm QG
	4904	238	331	78	0	.5-1cm Q
	4901	238	120	62	2	.5-1cm Q
	4900	238	110	62	2	.5-1cm Q
	4897	238	223	50	0	.5-1cm Q
	4897	238	255	66	0	.5-1cm Q
	4892	238	333	87	0	joints set .5-1cmQ
	4888	238	85	82	0	2 .5cm Q SHEARED
	4884	238	190	48	0	.1cmQ
	4878	238	241	58	0	.5-1 cm gouge
	4877	238	197	68	0	.1-.5cm gouge
	4874	238	8	62	0	.1-.5cm gouge

Price Mine Level 13						
Location			Orientation		Hydrological	Comments
East	North	Elevation	Strike	Dip	Index	
m	m	m	0-360°	0-90°	(0 to 5)	
	4874	238	270	90	0	1-2cm Q ALONG WALL
	4871	238	222	64	0	Gouge 2X
	4866	238	116	90	0	0 .5-1cm Q FRACT
	4864	238	125	87	0	.5-1cm Q
	4863	238	137	62	0	.5-1cm Q
	4862	238	182	87	0	.1cmQ
	4862	238	192	53	0	.1-.5cm GH
	4859	238	270	90	0	0 .5 cm Q
	4857	238	177	90	0	joints set, .1cm Q
	4852	238	80	90	0	.1-.5cm gouge
	4851	238	309	79	0	.1-.5cm gouge
	4845	238	80	45	0	ALONG WALL
	4843	238	339	85	0	joints set
	4842	238	192	87	0	.5cm gouge Q
	4841	238	0	66	0	.1-10cm QG
	4831	238	222	78	0	.1-.5cm gouge
	4827	238	300	73	0	.1cm FRACT
	4825	238	94	52	0	ALONG DRIFT WALL
	4820	238	25	78	0	.1-.5cm gouge
	4819	238	0	90	0	.1-.5cm gouge
	4817	238	300	75	0	
	4813	238	260	89	0	.5-1cm Q
	4810	238	52	90	0	.1-.5cm gouge
	4807	238	280	74	0	.5-1cm gouge 2X
	4797	238	315	58	0	joints set
	4792	238	350	90	0	.5-1cm Q
	4787	238	269	80	0	1 cmQG
	4787	238	257	64	0	1cm QG
	4774	238	218	64	0	.5cm Q
	4764	238	290	87	0	1-5cm QHG FOL
	4763	238	280	65	0	10-20cm QG FOL.
	4753	238	232	62	0	.5-1cm GH
	4752	238	156	72	0	.1-.5cm gouge
	4750	238	212	80	0	.1-.5cm gouge
	4746	238	295	75	0	joints set
3567	4738	238	274	63	0	1cm Q FOL.
3565	4735	238	278	73	0	.5-2cm QGH FOL.
3562	4731	238	277	45	0	1-5cm QGH SZ
3560	4728	238	277	45	0	SZ
3558	4724	238	307	69	0	.1-.5cm QGH
3554	4720	238	100	68	0	.1-.5 cm gouge
3552	4717	238	210	64	0	.5cm ghq
3548	4713	238	262	73	0	sz
3546	4709	238	64	75	0	.1-.5cm qhg
3545	4706	238	135	90	0	frac.
3544	4708	238	260	55	0	.5-1cm gouge
3538	4696	238	347	75	0	.1-.5cm gouge
3540	4673	238	205	80	2	.5cm sch D.L.
3540	4675	238	122	90	2	.5cm Q D.L.
3540	4663	238	268	87	0	SCH. D.L. 275-320°
3542	4651	238	73	40	0	.1cmQ D.L.
3535	4691	238	172	66	0	
3533	4688	238	20	74	0	
3533	4688	238	178	78	0	.5-1cm QG
3531	4683	238	264	86	0	.5-1cm GQ
3529	4681	238	250	85	0	.5-1cm QGSPLIT
3525	4675	238	302	88	0	.5cm Q
3513	4646	238	237	64	0	1-5cm Q very long frac. 480-570', 225-360'
3520	4670	238	116	65	0	.5cm QG SPLICED
3516	4665	238	214	82	0	1-3cm QGH SPLICED

Price Mine Level 13						
Location			Orientation		Hydrological	Comments
East	North	Elevation	Strike	Dip	Index	
m	m	m	0-360°	0-90°	(0 to 5)	
3515	4660	238	350	85	0	.5-1cm Q SPLICED
3515	4660	238	36	82	0	SPLICED
3505	4647	238	34	78	0	.5cm Q SPLICED
3504	4644	238	282	77	0	.1-.5cm Q SPLICED
3500	4638	238	274	90	0	.1cm Q SPLICED
3492	4626	238	249	85	0	1-5cm QH very long fract. 435-480° ,135-220°
3500	4638	238	254	83	0	.5-2cm QH
3488	4621	238	254	83	0	.5-3cm GH
3473	4596	238	162	78	0	
3472	4595	238	262	75	0	.5-1cm Q
3469	4592	238	293	70	0	.1-1cm Q
3469	4590	238	309	67	0	.5-1cm Q
3468	4589	238	309	67	0	.5-1cm Q
3467	4588	238	309	67	0	.5-1cm Q
3466	4586	238	220	83	0	.1-.5 cm GHQ
3458	4578	238	248	88	0	ALONG WALL 330-360°. 000-040°
3460	4576	238	86	90	0	15-20cm QH
3453	4567	238	37	77	0	.1cm GHQ
3451	4564	238	326	68	0	.5-2cm Q very long
3450	4563	238	24	83	0	.5-1cm GQ
3447	4558	238	314	66	0	.1cm Q
3444	4557	238	257	77	1	foliation
3446	4557	238	68	75	1	.5-2cm Q
3442	4549	238	82	76	0	.5-1cm GQ
3438	4546	238	244	87	0	.5-2cm QH
3437	4544	238	274	63	0	.1cm Q
3433	4539	238	324	90	0	.1cm Q
3431	4537	238	285	67	0	.1cm Q
3430	4536	238	274	69	0	
3429	4535	238	294	69	0	
3429	4535	238	315	90	0	.5-2cm Q
3428	4534	238	287	66	0	.1cm Q
3428	4532	238	300	90	0	1-3cm Q 2X
3425	4531	238	312	80	0	.1cm Q
3424	4530	238	328	70	0	.5-1cm Q
3422	4526	238	275	56	0	.5cm G
3421	4525	238	270	80	0	.1-.5cm Q
3420	4523	238	296	66	0	.5-1cm Q
3418	4523	238	243	80	0	LONG CENTER
3411	4514	238	273	75	0	.5cm G
3408	4511	238	275	81	0	
3406	4510	238	180	90	0	
3405	4508	238	280	90	0	90? .1-.5cm GH
3402	4506	238	338	75	0	.1-.5cm GHQ
3402	4504	238	322	66	0	.1-.5cm gouge
3400	4503	238	337	62	0	.5cm Q
3399	4500	238	342	62	0	.1-.5cm gouge
3397	4499	238			0	.1cm G
3394	4497	238	173	80	0	.1cm GQ
3392	4495	238	280	90	0	
3389	4492	238	282	90	0	2-3cm Q
3386	4488	238	232	76	0	.1cm Q
3383	4485	238	186	74	0	.1cm GQ
3382	4482	238	265	76	0	2-5cm Q
3376	4475	238	290	72	0	Joint or bedding
3372	4472	238	288	64	0	.1-.5cm Q
3370	4470	238	345	90	0	.5cm H
3370	4470	238	349	80	0	.5cm GQ
3369	4468	238	330	90	0	1cm
3367	4466	238	4	78	0	.5cm HQ

Price Mine Level 13						
Location			Orientation		Hydrological	Comments
East	North	Elevation	Strike	Dip	Index	
m	m	m	0-360°	0-90°	(0 to 5)	
3366	4464	238	252	76	0	10-30cm Q SZ
3364	4463	238	305	90	0	0.1cm
3363	4461	238	3	76	0	.5cmGHQ
3360	4458	238	280	81	0	.5-1cm Q
3357	4456	238	280	70	0	.5-1cm Q 2X
3357	4456	238	108	87	0	.5-1cm QH
3356	4454	238	257	80	0	2-3cm Q
3355	4452	238	280	90	0	1-2cm Q
3352	4449	238	117	90	0	
3351	4449	238	184	86	2	.5-2cm QHG
3351	4448	238	98	90	0	2-5cm Q
3349	4446	238	347	65	0	.1cm Q
3348	4445	238	160	84	0	.1-.5cm gouge
3347	4444	238	245	90	0	1cm Q HANGING WALL
3346	4443	238			0	.1-.5cm Q
3346	4443	238			0	.1-.5cm Q
3345	4442	238	336	79	0	.5-2cm QH
3345	4441	238	154	54	0	.1-1cm QH
3343	4440	238	4	90	0	1cm QH
3342	4439	238	282	77	0	1-10cm QH
3341	4436	238	334	90	0	.5-1cm QH 2X
3340	4435	238	258	85	0	.5-1cm Q BRAIDED
3338	4433	238	270	90	0	5-10cm Q DISCONT
3335	4429	238	59	88	2	.5-3cm SHEARED SENESTRE
3333	4427	238	180	75	2	.5cm Q SEN 1-2
3332	4426	238	174	78	0	.5cm QH
3324	4420	238	325	87	0	
3321	4420	238	217	88	0	.5-1cm Q LONG
3320	4415	238	170	81	0	.1-.5cm Q
3318	4412	238	177	77	0	
3318	4412	238	250	90	0	
3316	4409	238	170	80	0	.5cm QH
3315	4407	238	262	90	0	90?
3314	4407	238	8	79	0	.5cm QH
3313	4406	238	125	34	0	.1-.5cm Q
3313	4406	238	344	90	0	1-2cm Q
3307	4399	238	353	34	0	.1-.5cm Q
3305	4397	238	193	74	0	
3303	4394	238	345	32	0	2X
3303	4394	238	250	90	2	2-5cm Q DISCONT
3300	4391	238	256	74	3	.5-2cm Q SHEARED
	4389	238			3	R.B. WATER ON FLOOR
3296	4387	238	139	35	2	.5-1cm QH
3293	4383	238	174	74	0	.5cm Q
3288	4379	238	303	87	0	.5-1cm Q
3287	4377	238	258	85	0	1-2cm Q
3283	4373	238	335	25	0	.1-.5cm FLAT FAULT
3282	4371	238	100	43	2	.5cm , 1-2
3281	4370	238	300	90	0	.1-.5cm Q
3280	4369	238	118	28	0	.5cm Q SPLICED
3274	4364	238	326	62	0	.5cm Q
3274	4364	238	286	90	0	.5cm Q
3271	4361	238	309	55	2	1-2cm Q SHEARED 1-2
3270	4361	238	120	23	1	.1-.5cm QH BRAIDED, 0-1
	4356	238			1	R.B
3266	4356	238	232	78	0	foliation
3263	4356	238	240	85	0	.5-1cm Q LONG SPLICED
3261	4353	238	245	67	0	.5-1cm QH
3260	4353	238	90	24	0	
3257	4351	238	270	90	0	2-3cm Q VEINS

Price Mine Level 13						
Location			Orientation		Hydrological	Comments
East	North	Elevation	Strike	Dip	Index	
m	m	m	0-360°	0-90°	(0 to 5)	
3251	4346	238	283	80	0	.5-1cm Q
3249	4345	238	258	90	0	1-10cm Q
3248	4343	238	254	78	0	.1-.5cm QH
3244	4340	238	270	90	0	1-2cm Q
3242	4339	238	258	80	0	.5cm Q SHEARED
3239	4337	238	302	76	0	.5cm Q
3239	4334	238	250	90	1	SHEAR 90?0-1
3236	4334	238	100	67	1	.5cm GQ 0-1
3235	4333	238	94	41	1	.5-1cm Q, 0-1
3231	4330	238	188	80	0	.5-1cm Q
3225	4325	238	248	82	0	1-2cm Q
3223	4324	238	82	53	0	
3220	4322	238	132	75	0	.5cm QH
3220	4321	238	140	72	0	.1cm Q
3217	4318	238	205	68	2	.5-3cm QH 1-2
3217	4318	238	75	77	0	.5cm Q
3213	4318	238	188	88	0	joints set
3208	4313	238	305	90	2	FRACT.Q 90?
3205	4310	238	182	76	0	.5cm Q
3203	4308	238	100	42	0	.5-1cm QH FOL
3198	4305	238	265	79	0	.1-.5cm Q
3196	4301	238	262	80	0	foliation
3193	4300	238	182	81	0	1cm QH
3191	4299	238	97	61	0	.5-1cm Q
3187	4298	238	210	80	2	FOL.WALL WET 1-2
3187	4296	238	96	90	0	2cm Q
3183	4293	238	252	90	0	Q FRACT
3178	4289	238	280	65	0	
3171	4283	238	275	90	0	2-5cm Q
3169	4282	238	280	79	0	.1cm Q
3169	4282	238	165	90	0	.5cm QH
3167	4280	238	112	64	0	5-10cm Q
3165	4279	238	112	64	0	
3160	4275	238	103	90	0	5-25cm FELSIC DYK
3156	4272	238	335	74	0	.1cm Q
3155	4271	238	208	80	0	.1cm Q
3153	4269	238	210	42	0	.5cm QH
3152	4272	238	300	75	0	joints set
3150	4267	238	275	58	0	.1-.5cm QH
	4267	238			0	DDH 35N2 - SOUTH 0
3146	4262	238	275	90	0	1-2cm QH
3145	4261	238	256	75	0	.5-1cm Q
3144	4261	238	295	65	0	.5-5cm HQ
3143	4260	238	338	85	0	1-3cm QH
3139	4258	238	300	78	0	JS
3135	4255	238	317	78	0	.5cm GQ
3134	4254	238	157	53	0	.5cm GQ
3131	4253	238	120	90	0	DISCONT.
3131	4253	238	155	90	0	
3130	4251	238	358	90	0	.5cm H
3127	4249	238	8	74	0	.5cm HQ
3124	4247	238	285	80	0	2X
3124	4246	238	98	10	0	.1cm FLAT FAULT
3120	4243	238	324	64	1	1-2cm Q 0-1
3118	4242	238	106	88	3	1-5cmQ 2X DISC. 2-3
3116	4241	238	308	46	3	1-3cm Q CONTACT 2-3
3114	4238	238	356	57	3	
3111	4237	238	270	67	0	1cm Q 2X
3108	4234	238	270	67	0	5-20cm FELSIC DYK
3107	4233	238	98	65	1	

Price Mine Level 1S						
Location			Orientation		Hydrological Index	Comments
East	North	Elevation	Strike	Dip		
m	m	m	0-360°	0-90°	(0 to 5)	
3104	4231	238	280	59	2	5-7cm Q 2-1
3102	4230	238	310	54	0	1cm Q
3100	4228	238	205	90	0	1-3cm Q DISC
3098	4226	238	205	90	0	1-2cm Q
3097	4225	238	327	71	1	.5-1cm Q
3095	4223	238	179	44	2	1cm GQH
3093	4222	238	268	60	2	.5-1cm GHQ
3090	4220	238	310	50	0	5-10cm QCL
3087	4218	238	275	90	1	.5-1cm Q
3085	4216	238	295	55	1	.5cm Q SHEA-CONT?
3082	4214	238	305	90	0	.5cm QH
3079	4211	238	252	82	1	1cm Q
3077	4211	238	287	62	1	0-1, .1cm Q SHEAR
3074	4208	238	303	90	0	.5-1cm Q 2X
3071	4205	238	194	74	0	.1-.5cm Q
3068	4202	238	310	90	0	.5cm Q 2X
3065	4202	238	0	90	0	DYK DISC
3062	4199	238	305	90	0	DYKE
3059	4196	238	287	60	0	1-2cm Q SHEARED
3058	4196	238	315	65	0	1-5cm Q
3056	4194	238	351	69	0	.5-2cm
3056	4193	238	286	80	0	.5-1cm Q SHEARED
3050	4189	238	282	76	0	.5cm Q SCHEA FRA.
3049	4187	238	358	66	0	.5-1cm Q
3047	4184	238	177	60	0	.5-1cm QH
3045	4185	238	100	85	0	200? FOL.
3047	4184	238	252	68	0	
3047		238			0	DDH DRIPPING
3047	4182	238	199	84	0	.5cm QH
3047	4180	238	208	85	0	.5cm QH
3047	4170	238	268	90	0	ALONG DRIFT Q 650-715'
3047	4177	238	182	80	0	
3048	4174	238	188	75	0	JS
3047	4170	238	214	66	0	.1cm Q 2X
3047	4169	238	185	75	0	1-5cm Q
3045	4161	238	115	84	0	foliation
3045	4158	238	215	78	0	joints set
3048	4151	238	164	74	0	.5-1cm QH
3048	4145	238	296	74	0	1cm QHG SHEARED
3048	4141	238	194	64	0	
3048	4139	238	216	64	0	1-2cm Q
3048	4135	238	296	65	1	
3048	4133	238	260	55	2	.5cm Q 2X
3048	4132	238	258	90	3	.5-1cm Q
3048	4132	238	296	65	3	
3048	4129	238	208	54	0	.5-1cm Q
3048	4128	238	174	72	0	H
	4127	238	175	90	0	.5-1cm Q
	4122	238	205	83	1	.5-1cm QH , 0-1
	4118	238	227	72	1	.5-2cm Q
	4116	238	308	79	2	1-2, .5-1cm QH
	4115	238	324	36	1	.5cm HQ
	4113	238	110	80	1	foliation
	4102	238	305	40	0	0 .5cm H
	4100	238	227	75	0	.5cm QH
	4098	238	320	90	0	
	4094	238	297	20	0	0 .5cm H
	4089	238	290	90	0	foliation
	4083	238	219	36	0	.5cm QH
	4083	238	112	90	0	0 .5cm QH

Price Mine Level 13						
Location			Orientation		Hydrological	Comments
East	North	Elevation	Strike	Dip	Index	
m	m	m	0-360°	0-90°	(0 to 5)	
	4076	238	225	84	0	
	4074	238	221	80	0	joints set
	4071	238	109	75	0	5-10cm QH SHEARED
	4067	238			0	
	4065	238	214	50	0	0 .5cm QH
	4064	238	215	74	0	.5-1cm QH
	4057	238	222	64	0	
	4054	238	208	36	0	.5-1cm QH
3047	4051	238	230	42	0	.1-.5cm QH
3047	4048	238	195	63	0	.5-1cm GHQ
3047	4042	238	212	50	0	WALL SHEARED
	4039	238	310	70	0	SHEAR WALL
	4033	238	260	37	3	FOL SHEAR MYRA PRICE 13150-13380'
3047	4030	238	214	45	0	SHEAR
3047	4023	238	198	55	0	2X
	4022	238	218	56	0	.5-1cm QH
	4019	238	229	58	0	1cm QH
	4014	238	200	61	0	.5-1cm QH
	4013	238	305	90	0	
	4008	238	255	90	0	foliation
	4007	238	280	33	0	
	4001	238	200	83	0	.5-1cm Q
	4000	238	220	72	0	.5cm Q
	3955	238	300	53	0	2cm Q
	3978	238	260	70	0	foliation
	3955	238	316	57	0	.1-.5cm QH
3048	3952	238	292	52	0	.5-1cm Q
3047	3945	238	60	80	0	.5-1cm Q
3047	3938	238	134	8	0	
	3929	238	292	71	0	5-10cm QH
	3932	238			3	DDH+90
	3927	238	327	68	0	.5-2cm QH
	3920	238	332	84	0	.5-1cm Q
	3918	238	33	40	0	1cm QH
	3917	238	45	62	0	.5cm QH 2X
	3912	238	281	75	0	FOL
	3895	238	334	82	0	1-5cm Q OPEN FRACT
	3891	238	328	73	0	.5-1cm Q
	3886	238	270	90	0	LONG SHEAR FRAC 12700-12800'
3048	3888	238	307	90	0	.5-1cm Q
3048	3880	238	260	62	2	.5cm Q SHEAR
	3871	238	65	82	2	foliation
3050	3871	238	55	47	1	0-1
3048	3871	238	84	57	2	.5-1cm Q
3048	3856	238			1	DDH white precipitate
3048	3856	238	194	73	0	JS, 0-1
	3850	238	50	58	0	
	3848	238	58	64	0	1-3cm Q
	3842	238	55	50	0	0 .5-3cm Q
	3839	238	238	47	0	.5-2cm Q
	3831	238	0	90	0	
	3829	238	75	52	0	.5cm Q
	3827	238	57	76	0	.5-1cm Q
	3824	238	145	90	0	0 .5cm Q SENESTRE
	3810	238	318	77	0	.5-1cm Q 2X
	3801	238	325	75	0	
	3797	238	324	76	0	1cm Q
	3795	238	336	71	0	.1-.5cm Q
	3784	238	320	90	0	JS
3578	5243	238	198	59	2	.5cm Q SERIES

Price Mine Level 13						
Location			Orientation		Hydrological	Comments
East	North	Elevation	Strike	Dip	Index	
m	m	m	0-360°	0-90°	(0 to 5)	
3591	5243	238	154	74	2	.5-1cm Q
3596	5243	238	295	90	2	10-30cm SZ Q
3602	5243	238	305	85	2	.5-1cm Q
3604	5243	238	227	48	2	.5-1cm Q
3605	5243	238	260	65	2	5-10cm Q , 1-2
3613	5243	238	247	68	1	.5cm START MORE FOL.
3616	5243	238	258	54	2	2-10cm Q ALONG FOL
3620	5243	238	70	46	1	.5cm gouge , 0-1
3623	5243	238	62	38	2	2-3, .5cm Q
3627	5243	238	260	52	2	.5-10cm gouge
3629	5243	238	70	90	1	1cm gouge IN FOL
3632	5243	238	284	58	1	1-20cmgouge
3633		238	265	62	2	1-10cm gouge31-2
3639		238	290	49	0	20-30cm gouge
3641		238	230	68	1	1-3cm gouge
3645		238	265	48	1	1-3cm gouge
3647		238	47	51	2	1-3cm gouge, end SC.11980'
3653		238	83	50	3	0 .5-1cm gouge 3-2
3655		238	90	35	1	.1-.5cm gouge
3656		238	107	62	1	.5-1cm gouge
3658		238	105	25	3	.5-1cm gouge
3662		238	200	75	3	joints set
3664		238	234	68	3	1-2cm gouge 2X
3667		238	266	90	3	0 .5cm gouge 2-3
3668		238	270	90	3	3-2, MF DYKE
3673		238	225	82	3	3-2, .5cm gouge
3677		238	76	55	2	.5cm Q CLAST
3679		238	242	60	3	0 .5-1cm gouge
3683		238	230	50	2	0 .5-1cm Q+gouge
3685		238	295	70	2	1-2, 5-15cm Q
3689		238	270	85	2	.5cm gouge
3689		238	284	85	0	10-15cm MAF DYK
3693		238	290	78	2	1-2, SC
3696		238	234	68	3	3-2 .5cm gouge
3697		238	315	52	1	0-1, 1-5cm Q
3700		238	268	45	1	0-1, 2-5cm Q
3702		238	260	6	3	3-2, .1-1cm gouge
3709		238			0	SCIS DRY 150-190'
3717		238	248	60	0	5-25cm gouge
3726		238	254	65	3	2-10cm GH 2X 2-4
3729		238	290	64	3	1-10cm Q 2-3
3730		238	252	55	3	.5-2cm Q 2-3
3734		238	270	90	2	0 .1cm G
3737		238	15	42	3	CONG.SET
3737		238	220	45	3	C.S.
3737		238	105	75	3	C.S.
3739		238	257	45	3	.5-1cm Q white precip.
3741		238	246	45	3	.5cm Q 2X
3750		238	284	67	3	.1-.5cm G 2-3
3751		238	261	63	3	1-10cm Q SZ 2-3
3753		238			3	SZ
3753		238	257	72	3	10-60cm DYK FELS
3757		238	258	67	3	.5-2cm Q FOL 2-3
3763		238	110	47	3	2-3, 5-10cm Q DEFORM
	3763	238	70	63	3	.1cm Q CRACK
3766		238	56	64	5	1-15cm GH
3770		238	320	90	1	0-1, 0.5cm Q
3775		238	254	63	2	.5-1cm Q , 1-2
3776		238	280	60	1	0 .5-5cm Q 0-1
3781		238	256	86	1	.1-2cm Q, 0-1

Price Mine Level 13						
Location			Orientation		Hydrological	Comments
East	North	Elevation	Strike	Dip	Index	
m	m	m	0-360°	0-90°	(0 to 5)	
3783		238	153	75	2	02-janv
3785		238	270	75	1	20-40cm MAF DYK DISC
3787		238	50	79	1	joints set
3787		238	330	80	1	joints set
3793		238	270	85	1	5-10cm QCL DISC, 0-1
3798		238	330	56	1	.5cm Q SHEARED
3801		238	273	67	3	2-7cm QCL 2-3
3805		238	75	84	2	1cm QCL 2-1
3807		238	81	64	3	.5cm Q 2-3
3809		238	250	90	1	1cm Q DISC
3812		238	277	66	0	3-7cm DYKE MAF
3816		238	74	62	1	.1cm Q , 0-1
3822		238	334	84	2	.5-1cm Q 1-2
3821		238	340	68	2	J , 1-2
3827		238	257	83	2	2-10cm QH SHEAR , 1-2
3828		238	271	60	1	2-8cm QCL, 0-1
3831		238	259	54	1	.5cm G FRACT , 0-1
3833		238	88	65	2	1cm Q
3840		238	84	82	1	1cm Q, 0-1
3840		238	90	32	2	.1cm QCL , 1-2
3841		238	90	85	0	1-10cm Q DISPLACED
3844		238	172	75	2	.1cm Q DEXTRE ,1-2
3844		238	90	32	3	.1cm Q 2-3
3846		238	226	57	3	.5-3cm QCL
3846		238	321	90	2	0 .5-1cm Q , 1-2
3851		238	88	52	3	.5cm Q , 3-2
3854		238	88	69	3	1-2cm Q 2-3
3859		238	143	70	3	0 .5-2 cm Q DEXTRE 3-2
3859		238	90	90	3	1-10cm QCL DEFORM. 2-3
3860		238	160	85	3	.5cm Q 2-3, 85-65'
3860		238	146	62	2	SERIES MAF DYKE
3866		238	88	55	3	10-20' ALONG J 3X , 3-2
3866		238			3	DDH
3869		238	90	90	1	20-30cm DYK SHEARED , 0-1
3869		238	226	79	1	.5-2cm Q , 0-1
3872		238	230	75	1	1-2cm Q , 0-1
3877		238	348	63	3	.5-2cm Q DEXTRE 2-3
3877		238	79	62	1	2-5cm QCL , 1-2
3880		238	226	65	3	1-3cm QH 2-3
3880		238	222	72	3	1-3cm QH 2-3
3885		238	250	55	0	1-2cm Q CL SHEARED
3887		238	250	55	1	1cm QCL SZ
3888		238	84	47	0	1-2cm Q
3892		238	255	72	0	2-5cm QCL SZ
3896		238	86	57	2	.1cm Q 1-2
3892		238	330	68	1	.1cm Q 1cm Q J , 0-1
3904		238	70	76	1	.5cm Q JS , 0-1
3909		238	73	24	0	.5-1cm Q
3911		238	90	90	1	0 .5-2cm Q , 0-1
3911		238	82	22	0	.1cm Q
3913		238	270	85	0	1-3cm QCL
3915		238	240	50	1	1-3cm Q SERIES , 0-1
3920		238	270	85	2	1cm Q DISC 2X 0-1
3921		238	274	67	1	.1cm Q
3924		238	248	70	0	0 .5-1cm Q
3927		238	282	66	3	20cm QCL SZ 2-3
3932		238	252	78	1	foliation
3933		238	72	35	3	.1-.5cm QG DISC
3935		238	333	60	3	0 .1cm Q SERIES 2-3
3943		238	250	76	0	1cm QCL

Price Mine Level 13						
Location			Orientation		Hydrological	Comments
East	North	Elevation	Strike	Dip	Index	
m	m	m	0-360°	0-90°	(0 to 5)	
3946		238	298	90	0	10-50cm QCL SZ
3949		238	187	60	2	0 .5-2cm Q LONG VEIN , 1-2
3952		238	242	67	2	1 to 2
3958		238	270	52	1	foliation, 0 to 1
	5813	238	270	90	1	lot of gouge
	5816	238	105	83	3	CONTACT 83?
	5805	238	270	70	3	MAF DYK
	5756	238			1	WET SPOT
	5755	238	288	80	1	joints set
	5755	238	27	88	1	joints set
	5652	238			4	Q VEIN
	5610	238	290	90	2	5-10' DYKE
	5334	238	163	72	2	JS 17460-17550 , 1 to 2
3574	5258	238	125	86	1	JS 0 to 1
3574	5258	238	248	60	1	JS 0 to 1
3574	5182	238	264	82	1	foliation
	5151	238			1	DDH SOUTH DRIPPING

APPENDIX III
RESULTS OF THE HYDRAULIC MONITORING

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/6hr	m	m	m
1994-08-25	11:51:12					
1994-08-25	17:51:12					
1994-08-25	23:51:12					
1994-08-26	00:00:00					
1994-08-26	06:00:00			678,56		
1994-08-26	12:00:00			678,55		
1994-08-26	18:00:00			678,53		
1994-08-27	00:00:00	13,17	0	678,51		
1994-08-27	06:00:00	7,88	0	678,49		
1994-08-27	12:00:00	21,40	0	678,47		
1994-08-27	18:00:00	23,36	0	678,46		
1994-08-28	00:00:00	13,72	0	678,43		
1994-08-28	06:00:00	10,96	0	678,38		
1994-08-28	12:00:00	12,93	0,8	678,37		
1994-08-28	18:00:00	15,19	2,4	678,34		
1994-08-29	00:00:00	11,08	0,2	678,33		
1994-08-29	06:00:00	9,95	0	678,29		
1994-08-29	12:00:00	17,51	0	678,27		
1994-08-29	18:00:00	19,35	0,2	678,24		
1994-08-30	00:00:00	12,17	0	678,24		
1994-08-30	06:00:00	8,73	0	678,20		
1994-08-30	12:00:00	20,10	0	678,19		
1994-08-30	18:00:00	22,17	0	678,17		
1994-08-31	00:00:00	13,72	0	678,14		
1994-08-31	06:00:00	9,59	0	678,12		
1994-08-31	12:00:00	14,81	0	678,10		
1994-08-31	18:00:00	21,94	0	678,09		
1994-09-01	00:00:00	13,88	0	678,06		
1994-09-01	06:00:00	8,82	0	678,03		
1994-09-01	12:00:00	18,04	0	677,99		
1994-09-01	18:00:00	17,33	0	677,98		
1994-09-02	00:00:00	9,41	0	677,94		
1994-09-02	06:00:00	5,43	0	677,91		
1994-09-02	12:00:00	13,04	0	677,89		
1994-09-02	18:00:00	13,58	3,6	677,89		
1994-09-03	00:00:00	10,05	7,2	677,85		
1994-09-03	06:00:00	8,40	0,6	677,81		
1994-09-03	12:00:00	10,54	0	677,77		
1994-09-03	18:00:00	13,72	0	677,75		
1994-09-04	00:00:00	10,15	0	677,70		
1994-09-04	06:00:00	6,24	0,2	677,69		
1994-09-04	12:00:00	15,65	0	677,66		
1994-09-04	18:00:00	17,20	0,2	677,66		
1994-09-05	00:00:00	9,54	0	677,63		
1994-09-05	06:00:00	5,87	0	677,60		
1994-09-05	12:00:00	16,87	0	677,55		
1994-09-05	18:00:00	19,96	0	677,55		
1994-09-06	00:00:00	11,27	0	677,53		

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/6hr	m	m	m
1994-09-06	06:00:00	7,35	0	677,51		
1994-09-06	12:00:00	18,82	0	677,48		
1994-09-06	18:00:00	19,90	0	677,47		
1994-09-07	00:00:00	13,15	3,8	677,42		
1994-09-07	06:00:00	11,61	2,8	677,43		
1994-09-07	12:00:00	11,61	23	677,70		
1994-09-07	18:00:00	13,12	15,8	677,44		
1994-09-08	00:00:00	11,63	6,8	677,42		
1994-09-08	06:00:00	8,95	0,2	677,43		
1994-09-08	12:00:00	11,89	2,8	677,42		
1994-09-08	18:00:00	11,66	8,6	677,50		
1994-09-09	00:00:00	8,65	0,2	677,42		
1994-09-09	06:00:00	5,11	0,2	677,42		
1994-09-09	12:00:00	8,28	0	677,41		
1994-09-09	18:00:00	13,04	0	677,41		
1994-09-10	00:00:00	9,67	0	677,39		
1994-09-10	06:00:00	8,27	0	677,37		
1994-09-10	12:00:00	11,82	0	677,38		
1994-09-10	18:00:00	14,15	0	677,36		
1994-09-11	00:00:00	7,99	0	677,34		
1994-09-11	06:00:00	4,39	0	677,33		
1994-09-11	12:00:00	14,71	0,2	677,33		
1994-09-11	18:00:00	15,65	0	677,32		
1994-09-12	00:00:00	8,83	0	677,35		
1994-09-12	06:00:00	7,44	0	677,33		
1994-09-12	12:00:00	13,10	0	677,34		
1994-09-12	18:00:00	16,66	0	677,33		
1994-09-13	00:00:00	10,17	0	677,33		
1994-09-13	06:00:00	10,47	0	677,32		
1994-09-13	12:00:00	13,72	2,2	677,32		
1994-09-13	18:00:00	15,05	6,8	677,32		
1994-09-14	00:00:00	11,16	0,2	677,31		
1994-09-14	06:00:00	8,99	0	677,30		
1994-09-14	12:00:00	10,62	1,4	677,30		
1994-09-14	18:00:00	15,45	0	677,29		
1994-09-15	00:00:00	11,50	0	677,29		
1994-09-15	06:00:00	10,68	0	677,24		
1994-09-15	12:00:00	13,06	0	677,23		
1994-09-15	18:00:00	16,53	0	677,25		
1994-09-16	00:00:00	13,78	0	677,26		
1994-09-16	06:00:00	11,35	0	677,27		
1994-09-16	12:00:00	14,39	0	677,27		
1994-09-16	18:00:00	18,28	0	677,30		
1994-09-17	00:00:00	12,81	0	677,29		
1994-09-17	06:00:00	10,70	0	677,30		
1994-09-17	12:00:00	19,00	0	677,27		
1994-09-17	18:00:00	20,81	0	677,27		
1994-09-18	00:00:00	13,06	0	677,27		

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/6hr	m	m	m
1994-09-18	06:00:00	10,29	0	677,31		
1994-09-18	12:00:00	19,62	0,2	677,29		
1994-09-18	18:00:00	21,44	0	677,32		
1994-09-19	00:00:00	13,15	0	677,30		
1994-09-19	06:00:00	10,70	0	677,32		
1994-09-19	12:00:00	19,60	0	677,31		
1994-09-19	18:00:00	20,81	0	677,33		
1994-09-20	00:00:00	13,48	0	677,31		
1994-09-20	06:00:00	10,66	0	677,33		
1994-09-20	12:00:00	18,92	0	677,31		
1994-09-20	18:00:00	18,81	0	677,33		
1994-09-21	00:00:00	11,12	0,4	677,31		
1994-09-21	06:00:00	8,97	0	677,33		
1994-09-21	12:00:00	20,26	0	677,32		
1994-09-21	18:00:00	21,27	0	677,34		
1994-09-22	00:00:00	12,83	0	677,34		
1994-09-22	06:00:00	10,39	0	677,34		
1994-09-22	12:00:00	21,55	0	677,34		
1994-09-22	18:00:00	21,56	0	677,34		
1994-09-23	00:00:00	13,56	0	677,33		
1994-09-23	06:00:00	10,74	0	677,33		
1994-09-23	12:00:00	20,00	0	677,31		
1994-09-23	18:00:00	20,41	0	677,32		
1994-09-24	00:00:00	11,63	0	677,29		
1994-09-24	06:00:00	9,09	0	677,27		
1994-09-24	12:00:00	21,01	0	677,27		
1994-09-24	18:00:00	21,19	0	677,27		
1994-09-25	00:00:00	12,82	0	677,26		
1994-09-25	06:00:00	9,63	0	677,25		
1994-09-25	12:00:00	17,91	0	677,25		
1994-09-25	18:00:00	19,80	0	677,25		
1994-09-26	00:00:00	11,25	0	677,24		
1994-09-26	06:00:00	7,72	0	677,21		
1994-09-26	12:00:00	14,54	0	677,25		
1994-09-26	18:00:00	17,93	0	677,24		
1994-09-27	00:00:00	11,10	0	677,21		
1994-09-27	06:00:00	9,18	0	677,19		
1994-09-27	12:00:00	19,46	0	677,20		
1994-09-27	18:00:00	18,83	0	677,20		
1994-09-28	00:00:00	12,15	0	677,19		
1994-09-28	06:00:00	11,57	0	677,18		
1994-09-28	12:00:00	13,17	0	677,17		
1994-09-28	18:00:00	18,00	0	677,16		
1994-09-29	00:00:00	12,42	0	677,14		
1994-09-29	06:00:00	9,99	0	677,14		
1994-09-29	12:00:00	16,18	0	677,13		
1994-09-29	18:00:00	17,58	0	677,10		
1994-09-30	00:00:00	13,14	0	677,10		

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/6hr	m	m	m
1994-09-30	06:00:00	11,81	0	677,03		
1994-09-30	12:00:00	11,66	0,2	676,98		
1994-09-30	18:00:00	13,31	3,4	676,98		
1994-10-01	00:00:00	12,67	15,2	676,97		
1994-10-01	06:00:00	9,86	0	676,94		
1994-10-01	12:00:00	14,04	0	676,91		
1994-10-01	18:00:00	12,48	0,2	676,92		
1994-10-02	00:00:00	4,84	0	676,89		
1994-10-02	06:00:00	1,46	0	676,88		
1994-10-02	12:00:00	11,34	0,2	676,86		
1994-10-02	18:00:00	11,47	0	676,87		
1994-10-03	00:00:00	4,18	0	676,85		
1994-10-03	06:00:00	1,43	0	676,86		
1994-10-03	12:00:00	11,98	0	676,86		
1994-10-03	18:00:00	12,29	0	676,88		
1994-10-04	00:00:00	5,43	0	676,85		
1994-10-04	06:00:00	3,91	0	676,90		
1994-10-04	12:00:00	15,85	0	676,89		
1994-10-04	18:00:00	15,41	0	676,92		
1994-10-05	00:00:00	8,95	0	676,88		
1994-10-05	06:00:00	8,12	0	676,88		
1994-10-05	12:00:00	14,64	0	676,86		
1994-10-05	18:00:00	12,82	0	676,86		
1994-10-06	00:00:00	5,05	0	676,82		
1994-10-06	06:00:00	2,65	0	676,82		
1994-10-06	12:00:00	7,74	0	676,78		
1994-10-06	18:00:00	10,98	0	676,80		
1994-10-07	00:00:00	4,78	0	676,77		
1994-10-07	06:00:00	2,36	0	676,78		
1994-10-07	12:00:00	10,94	0	676,80		
1994-10-07	18:00:00	12,93	0,2	676,81		
1994-10-08	00:00:00	7,72	0	676,80		
1994-10-08	06:00:00	5,41	0	676,81		
1994-10-08	12:00:00	8,18	0	676,80		
1994-10-08	18:00:00	12,23	0	676,81		
1994-10-09	00:00:00	9,15	0	676,81		
1994-10-09	06:00:00	7,45	0	676,79		
1994-10-09	12:00:00	8,82	1,4	676,78		
1994-10-09	18:00:00	9,81	6,2	676,78		
1994-10-10	00:00:00	6,09	0,4	676,75		
1994-10-10	06:00:00	3,99	0	676,74		
1994-10-10	12:00:00	5,76	0,2	676,74		
1994-10-10	18:00:00	8,88	0	676,72		
1994-10-11	00:00:00	5,55	0	676,70		
1994-10-11	06:00:00	1,97	0	676,69		
1994-10-11	12:00:00	8,46	0	676,68		
1994-10-11	18:00:00	10,96	0	676,69		
1994-10-12	00:00:00	7,37	0	676,71		

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/8hr	m	m	m
1994-10-12	06:00:00	6,17	0	676,68		
1994-10-12	12:00:00	7,76	0	676,66		
1994-10-12	18:00:00	10,23	0	676,67		
1994-10-13	00:00:00	4,01	0	676,65		
1994-10-13	06:00:00	4,51	0	676,66		
1994-10-13	12:00:00	6,00	1	676,67		
1994-10-13	18:00:00	6,07	10,6	676,71		
1994-10-14	00:00:00	4,47	3,4	676,69		
1994-10-14	06:00:00	2,30	0	676,66		
1994-10-14	12:00:00	8,75	0	676,63		
1994-10-14	18:00:00	7,68	0	676,61		
1994-10-15	00:00:00	1,31	0	676,58		
1994-10-15	06:00:00	-0,61	0	676,56		
1994-10-15	12:00:00	8,56	0	676,54		
1994-10-15	18:00:00	8,46	0,2	676,55		
1994-10-16	00:00:00	3,69	0	676,55		
1994-10-16	06:00:00	2,32	0	676,56		
1994-10-16	12:00:00	11,19	0,8	676,59		
1994-10-16	18:00:00	11,37	0,2	676,61		
1994-10-17	00:00:00	8,42	1	676,55		
1994-10-17	06:00:00	6,94	1,6	676,56		
1994-10-17	12:00:00	6,64	1	676,54		
1994-10-17	18:00:00	6,89	0,2	676,55		
1994-10-18	00:00:00	2,10	0	676,52		
1994-10-18	06:00:00	1,22	0	676,54		
1994-10-18	12:00:00	3,95	0	676,54		
1994-10-18	18:00:00	7,85	0	676,56		
1994-10-19	00:00:00	5,41	0	676,56		
1994-10-19	06:00:00	4,17	0	676,54		
1994-10-19	12:00:00	5,53	0,4	676,52		
1994-10-19	18:00:00	7,49	4	676,52		
1994-10-20	00:00:00	5,17	1,4	676,52		
1994-10-20	06:00:00	5,53	14,4	676,79		
1994-10-20	12:00:00	6,28	12,6	676,73		
1994-10-20	18:00:00	7,16	16,4	676,73		
1994-10-21	00:00:00	4,11	4,6	676,66		
1994-10-21	06:00:00	2,84	1,8	676,67		
1994-10-21	12:00:00	4,08	0	676,70		
1994-10-21	18:00:00	6,28	0	676,74		
1994-10-22	00:00:00	0,98	0,2	676,76		
1994-10-22	06:00:00	0,11	0	676,84		
1994-10-22	12:00:00	2,79	1,8	676,89		
1994-10-22	18:00:00	3,35	8,2	677,00		
1994-10-23	00:00:00	2,65	1,2	676,95		
1994-10-23	06:00:00	2,92	1,2	676,97		
1994-10-23	12:00:00	3,87	0,8	677,02		
1994-10-23	18:00:00	6,92	0	677,03		
1994-10-24	00:00:00	4,31	0	677,07		

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/6hr	m	m	m
1994-10-24	06:00:00	3,70	0	677,08		
1994-10-24	12:00:00	3,08	0	677,12		
1994-10-24	18:00:00	6,05	0	677,13		
1994-10-25	00:00:00	7,67	1,4	677,18		
1994-10-25	06:00:00	7,31	15,8	677,34		
1994-10-25	12:00:00	7,84	0,6	677,30		
1994-10-25	18:00:00	8,08	1,4	677,36		
1994-10-26	00:00:00	7,68	37,6	678,10		
1994-10-26	06:00:00	7,53	29	678,01		
1994-10-26	12:00:00	4,65	1,6	677,63		
1994-10-26	18:00:00	3,27	14,6	678,10		
1994-10-27	00:00:00	4,47	15,6	678,04		
1994-10-27	06:00:00	3,61	11,2	677,93		
1994-10-27	12:00:00	3,55	13,2	678,02		
1994-10-27	18:00:00	4,39	3,6	677,94		
1994-10-28	00:00:00	4,97	2,4	677,97		
1994-10-28	06:00:00	1,64	0,4	678,00		
1994-10-28	12:00:00	0,65	5,2	678,03		
1994-10-28	18:00:00	2,48	1,4	678,04		
1994-10-29	00:00:00	4,87	0,6	678,09		
1994-10-29	06:00:00	0,17	0	678,13		
1994-10-29	12:00:00	0,61	0	678,19		
1994-10-29	18:00:00	1,51	8,8	678,29		
1994-10-30	00:00:00	1,85	16,2	678,61		
1994-10-30	06:00:00	0,18	18,8	678,56		
1994-10-30	12:00:00	0,27	2,4	678,49		
1994-10-30	18:00:00	2,35	4	678,50		
1994-10-31	00:00:00	3,86	11,8	678,61		
1994-10-31	06:00:00	1,17	2,8	678,73		
1994-10-31	12:00:00	0,17	4	678,90		
1994-10-31	18:00:00	2,24	25,4	679,04		
1994-11-01	00:00:00	2,49	4,2	678,98		
1994-11-01	06:00:00	0,29	0,2	678,92		
1994-11-01	12:00:00	0,64	0	678,95		
1994-11-01	18:00:00	3,18	4,2	678,95		
1994-11-02	00:00:00	4,08	0,2	678,99		
1994-11-02	06:00:00	0,53	0	678,99		
1994-11-02	12:00:00	2,96	0	679,04		
1994-11-02	18:00:00	0,08	0	679,02		
1994-11-03	00:00:00	0,13	0	679,08		
1994-11-03	06:00:00	2,36	0	679,11		
1994-11-03	12:00:00	2,67	0	679,18		
1994-11-03	18:00:00	1,54	0	679,23		
1994-11-04	00:00:00	0,21	0	679,34		
1994-11-04	06:00:00	0,03	0,4	679,82		
1994-11-04	12:00:00	0,04	27	679,55		
1994-11-04	18:00:00	2,36	3,8	679,50		
1994-11-05	00:00:00	1,19	4,4	679,53		

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/6hr	m	m	m
1994-11-05	06:00:00	0,27	0	679,55		
1994-11-05	12:00:00	0,21	0,2	679,62		
1994-11-05	18:00:00	0,27	1,6	679,65		
1994-11-06	00:00:00	0,49	4,2	679,73		
1994-11-06	06:00:00	0,03	0,6	679,78		
1994-11-06	12:00:00	0,24	0,2	679,81		
1994-11-06	18:00:00	0,56	1,2	679,83		
1994-11-07	00:00:00	2,05	7,6	679,85		
1994-11-07	06:00:00	0,21	0,2	679,88		
1994-11-07	12:00:00	0,12	0,2	679,93		
1994-11-07	18:00:00	1,63	8,4	679,95		
1994-11-08	00:00:00	3,06	10,8	680,02		
1994-11-08	06:00:00	0,90	2,4	680,09		
1994-11-08	12:00:00	0,51	8,6	680,21		
1994-11-08	18:00:00	0,49	11,6	680,42		
1994-11-09	00:00:00	0,90	15,6	680,76		
1994-11-09	06:00:00	0,15	11,4	680,53		
1994-11-09	12:00:00	0,13	2	680,46		
1994-11-09	18:00:00	0,11	0,6	680,44		
1994-11-10	00:00:00	1,35	8,6	680,43		
1994-11-10	06:00:00	0,33	3,2	680,45		
1994-11-10	12:00:00	0,40	0,2	680,47		
1994-11-10	18:00:00	1,58	1,8	680,51		
1994-11-11	00:00:00	1,99	2,6	680,56		
1994-11-11	06:00:00	0,79	0,8	680,65		
1994-11-11	12:00:00	0,81	1,4	680,73		
1994-11-11	18:00:00	0,90	16,4	681,05		
1994-11-12	00:00:00	1,94	2,8	680,93		
1994-11-12	06:00:00	1,01	0	680,92		
1994-11-12	12:00:00	3,48	0	680,92		
1994-11-12	18:00:00	0,55	0,4	680,92		
1994-11-13	00:00:00	1,35	0	680,94		
1994-11-13	06:00:00	0,13	0	680,96		
1994-11-13	12:00:00	0,75	0	680,98		
1994-11-13	18:00:00	0,42	0	681,02		
1994-11-14	00:00:00	1,90	5,8	681,12		
1994-11-14	06:00:00	0,33	10,4	681,25		
1994-11-14	12:00:00	0,19	19,8	681,40		
1994-11-14	18:00:00	1,08	8,2	681,33		
1994-11-15	00:00:00	2,35	14,4	681,44		
1994-11-15	06:00:00	0,49	5	681,50		
1994-11-15	12:00:00	0,15	0,4	681,53		
1994-11-15	18:00:00	0,27	0,2	681,56		
1994-11-16	00:00:00	0,98	1,6	681,62		
1994-11-16	06:00:00	1,14	0	681,67		
1994-11-16	12:00:00	1,50	0	681,70		
1994-11-16	18:00:00	1,54	0	681,67		
1994-11-17	00:00:00	1,12	2,8	681,72		

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/6hr	m	m	m
1994-11-17	06:00:00	4,76	0	681,72		
1994-11-17	12:00:00	6,51	0	681,72		
1994-11-17	18:00:00	3,00	2	681,69		
1994-11-18	00:00:00	2,65	1	681,70		
1994-11-18	06:00:00	6,23	0	681,71		
1994-11-18	12:00:00	7,05	0	681,78		
1994-11-18	18:00:00	4,03	0	681,81		
1994-11-19	00:00:00	0,89	0,6	681,88		
1994-11-19	06:00:00	0,69	0	681,94		
1994-11-19	12:00:00	0,08	11,2	682,07		
1994-11-19	18:00:00	1,30	52,6	682,72		
1994-11-20	00:00:00	1,68	7,6	682,28		
1994-11-20	06:00:00	1,13	0	682,22		
1994-11-20	12:00:00	2,49	0	682,25		
1994-11-20	18:00:00	1,81	1,6	682,24		
1994-11-21	00:00:00	1,71	0,2	682,28		
1994-11-21	06:00:00	5,01	0	682,30		
1994-11-21	12:00:00	7,17	0	682,35		
1994-11-21	18:00:00	4,46	0	682,39		
1994-11-22	00:00:00	1,32	0	682,46		
1994-11-22	06:00:00	0,96	0	682,52		
1994-11-22	12:00:00	0,61	0	682,58		
1994-11-22	18:00:00	0,37	0	682,63		
1994-11-23	00:00:00	0,30	0	682,72		
1994-11-23	06:00:00	0,40	0	682,77		
1994-11-23	12:00:00	0,87	0	682,72		
1994-11-23	18:00:00	1,03	0	682,70		
1994-11-24	00:00:00	0,29	0	682,74		
1994-11-24	06:00:00	0,99	0,8	682,78		
1994-11-24	12:00:00	0,96	0,2	682,84		
1994-11-24	18:00:00	0,64	0	682,88		
1994-11-25	00:00:00	0,24	0	682,98		
1994-11-25	06:00:00	0,57	0	683,07		
1994-11-25	12:00:00	0,53	0	683,03		
1994-11-25	18:00:00	0,59	0	683,00		
1994-11-26	00:00:00	0,40	0	682,97		
1994-11-26	06:00:00	3,11	0	682,97		
1994-11-26	12:00:00	4,21	0	682,96		
1994-11-26	18:00:00	3,92	0	682,98		
1994-11-27	00:00:00	1,73	0	683,03		
1994-11-27	06:00:00	1,77	0	683,11		
1994-11-27	12:00:00	1,55	0	683,16		
1994-11-27	18:00:00	1,21	0	683,12		
1994-11-28	00:00:00	0,87	0	683,11		
1994-11-28	06:00:00	1,97	0	683,09		
1994-11-28	12:00:00	2,03	0	683,12		
1994-11-28	18:00:00	1,78	0	683,14		
1994-11-29	00:00:00	0,51	0	683,20		

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/6hr	m	m	m
1994-11-29	06:00:00	0,51	0	683,28		
1994-11-29	12:00:00	0,40	0	683,35		
1994-11-29	18:00:00	0,12	0	683,33		
1994-11-30	00:00:00	1,29	0	683,41		
1994-11-30	06:00:00	2,30	41	683,94		
1994-11-30	12:00:00	2,60	44,4	684,14		
1994-11-30	18:00:00	1,47	18,2	683,94		
1994-12-01	00:00:00	0,31	7	683,80		
1994-12-01	06:00:00	0,97	0	683,70		
1994-12-01	12:00:00	1,26	0	683,75		
1994-12-01	18:00:00	1,14	0	683,77		
1994-12-02	00:00:00	0,89	0	683,82		
1994-12-02	06:00:00	1,64	0	683,81		
1994-12-02	12:00:00	3,38	0	683,82		
1994-12-02	18:00:00	3,69	0	683,79		
1994-12-03	00:00:00	4,10	0	683,82		
1994-12-03	06:00:00	6,23	0	683,79		
1994-12-03	12:00:00	8,04	0	683,82		
1994-12-03	18:00:00	8,25	0	683,79		
1994-12-04	00:00:00	7,18	0	683,82		
1994-12-04	06:00:00	9,28	0	683,83		
1994-12-04	12:00:00	0,03	0	683,88		
1994-12-04	18:00:00	8,72	0	683,92		
1994-12-05	00:00:00	7,52	0	683,98		
1994-12-05	06:00:00	8,72	0	684,03		
1994-12-05	12:00:00	7,95	0	684,09		
1994-12-05	18:00:00	6,93	0	684,14		
1994-12-06	00:00:00	3,94	0	684,20		
1994-12-06	06:00:00	4,41	0	684,20		
1994-12-06	12:00:00	4,65	0	684,19		
1994-12-06	18:00:00	3,68	0	684,17		
1994-12-07	00:00:00	2,09	0	684,16		
1994-12-07	06:00:00	2,91	0	684,15		
1994-12-07	12:00:00	3,98	0	684,12		
1994-12-07	18:00:00	4,41	0	684,12		
1994-12-08	00:00:00	1,87	0	684,12		
1994-12-08	06:00:00	1,60	0	684,14		
1994-12-08	12:00:00	1,19	0	684,19		
1994-12-08	18:00:00	0,83	0	684,26		
1994-12-09	00:00:00	0,61	0	684,26		
1994-12-09	06:00:00	2,16	0	684,25		
1994-12-09	12:00:00	3,84	0	684,25		
1994-12-09	18:00:00	3,78	0	684,29		
1994-12-10	00:00:00	2,60	0	684,35		
1994-12-10	06:00:00	2,53	0	684,39		
1994-12-10	12:00:00	2,28	0	684,44		
1994-12-10	18:00:00	1,96	0	684,48		
1994-12-11	00:00:00	1,18	0	684,49		

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/6hr	m	m	m
1994-12-11	06:00:00	1,24	0	684,37		
1994-12-11	12:00:00	1,01	0	684,33		
1994-12-11	18:00:00	0,74	0	684,33		
1994-12-12	00:00:00	0,21	0	684,34		
1994-12-12	06:00:00	0,40	0	684,31		
1994-12-12	12:00:00	0,41	0	684,28		
1994-12-12	18:00:00	0,27	0	684,26		
1994-12-13	00:00:00	0,24	0	684,28		
1994-12-13	06:00:00	0,61	0,2	684,30		
1994-12-13	12:00:00	2,24	0	684,32		
1994-12-13	18:00:00	3,05	0	684,34		
1994-12-14	00:00:00	1,85	0	684,33		
1994-12-14	06:00:00	2,03	0	684,33		
1994-12-14	12:00:00	1,93	0	684,39		
1994-12-14	18:00:00	1,71	0	684,40		
1994-12-15	00:00:00	0,91	0	684,42		
1994-12-15	06:00:00	1,45	0	684,39		
1994-12-15	12:00:00	1,37	0	684,40		
1994-12-15	18:00:00	1,08	0	684,43		
1994-12-16	00:00:00	0,59	0	684,52		
1994-12-16	06:00:00	0,73	0	684,50		
1994-12-16	12:00:00	0,56	0	684,48		
1994-12-16	18:00:00	0,37	0	684,41		
1994-12-17	00:00:00	0,06	0	684,47		
1994-12-17	06:00:00	0,10	0	684,50		
1994-12-17	12:00:00	0,05	0	684,65		
1994-12-17	18:00:00	0,98	0,2	685,17		
1994-12-18	00:00:00	1,17	0,4	684,75		
1994-12-18	06:00:00	0,43	0,2	684,74		
1994-12-18	12:00:00	0,67	0,4	684,90		
1994-12-18	18:00:00	0,97	0,2	684,82		
1994-12-19	00:00:00	1,30	14,2	684,84		
1994-12-19	06:00:00	0,66	37,2	685,23		
1994-12-19	12:00:00	1,38	79,4	685,52		
1994-12-19	18:00:00	1,88	45,6	685,55		
1994-12-20	00:00:00	1,93	15,8	685,24		
1994-12-20	06:00:00	1,13	17,8	685,38		
1994-12-20	12:00:00	1,27	13,8	685,22		
1994-12-20	18:00:00	1,11	6,4	685,17		
1994-12-21	00:00:00	1,74	1,8	685,11		
1994-12-21	06:00:00	0,71	6,4	685,10		
1994-12-21	12:00:00	0,67	2,6	685,10		
1994-12-21	18:00:00	0,24	3	685,08		
1994-12-22	00:00:00	0,81	6	685,13		
1994-12-22	06:00:00	0,41	4,2	685,17		
1994-12-22	12:00:00	0,79	16	685,38		
1994-12-22	18:00:00	0,39	24,8	685,65		
1994-12-23	00:00:00	1,51	25,4	685,77		

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/6hr	m	m	m
1994-12-23	06:00:00	1,92	11,6	685,59		
1994-12-23	12:00:00	1,38	8,6	685,54		
1994-12-23	18:00:00	1,13	2,8	685,49		
1994-12-24	00:00:00	1,39	12	685,59		
1994-12-24	06:00:00	1,08	13,6	685,68		
1994-12-24	12:00:00	1,05	14	685,72		
1994-12-24	18:00:00	0,82	11,4	685,64		
1994-12-25	00:00:00	0,83	3	685,52		
1994-12-25	06:00:00	0,85	0	685,48		
1994-12-25	12:00:00	1,22	0	685,49		
1994-12-25	18:00:00	1,10	0	685,53		
1994-12-26	00:00:00	0,57	0	685,60		
1994-12-26	06:00:00	0,37	0	685,87		
1994-12-26	12:00:00	0,15	0	685,65		
1994-12-26	18:00:00	0,12	1,2	685,59		
1994-12-27	00:00:00	1,21	30,4	685,60		
1994-12-27	06:00:00	0,53	5,4	685,64		
1994-12-27	12:00:00	0,06	3,6	685,70		
1994-12-27	18:00:00	0,15	0,6	685,71		
1994-12-28	00:00:00	0,03	0,8	685,72		
1994-12-28	06:00:00	0,36	0,2	685,69		
1994-12-28	12:00:00	0,88	0	685,63		
1994-12-28	18:00:00	1,28	0	685,59		
1994-12-29	00:00:00	1,37	0	685,56		
1994-12-29	06:00:00	3,03	0	685,55		
1994-12-29	12:00:00	4,03	0	685,56		
1994-12-29	18:00:00	4,76	0	685,58		
1994-12-30	00:00:00	3,48	0	685,62		
1994-12-30	06:00:00	5,26	0	685,62		
1994-12-30	12:00:00	5,50	0	685,68		
1994-12-30	18:00:00	4,07	0	685,68		
1994-12-31	00:00:00	2,18	0	685,72		
1994-12-31	06:00:00	3,92	0	685,70		
1994-12-31	12:00:00	5,28	0	685,72		
1994-12-31	18:00:00	5,04	0	685,72		
1995-01-01	00:00:00	3,68	0	685,75		
1995-01-01	06:00:00	4,39	0	685,73		
1995-01-01	12:00:00	5,26	0	685,79		
1995-01-01	18:00:00	6,11	0	685,75		
1995-01-02	00:00:00	4,60	0	685,77		
1995-01-02	06:00:00	6,32	0	685,75		
1995-01-02	12:00:00	7,32	0	685,79		
1995-01-02	18:00:00	6,28	0	685,79		
1995-01-03	00:00:00	4,70	0	685,84		
1995-01-03	06:00:00	6,32	0	685,82		
1995-01-03	12:00:00	7,11	0	685,83		
1995-01-03	18:00:00	5,88	0	685,84		
1995-01-04	00:00:00	4,03	0	685,86		

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/6hr	m	m	m
1995-01-04	06:00:00	5,63	0	685,84		
1995-01-04	12:00:00	6,50	0	685,86		
1995-01-04	18:00:00	5,72	0	685,88		
1995-01-05	00:00:00	4,19	0	685,87		
1995-01-05	06:00:00	5,89	0	685,91		
1995-01-05	12:00:00	6,32	0	685,90		
1995-01-05	18:00:00	5,06	0	685,89		
1995-01-06	00:00:00	2,75	0,4	685,84		
1995-01-06	06:00:00	4,17	0	685,82		
1995-01-06	12:00:00	3,90	0	685,79		
1995-01-06	18:00:00	4,09	0	685,79		
1995-01-07	00:00:00	2,98	0	685,78		
1995-01-07	06:00:00	3,56	0	685,84		
1995-01-07	12:00:00	4,15	0	685,87		
1995-01-07	18:00:00	4,23	0	685,88		
1995-01-08	00:00:00	1,70	0,2	685,88		
1995-01-08	06:00:00	1,44	0	685,86		
1995-01-08	12:00:00	1,54	0	685,87		
1995-01-08	18:00:00	1,19	0	685,86		
1995-01-09	00:00:00	0,73	0	685,92		
1995-01-09	06:00:00	0,57	0	685,93		
1995-01-09	12:00:00	0,47	0	685,92		
1995-01-09	18:00:00	0,19	0	686,00		
1995-01-10	00:00:00	0,75	15	686,01		
1995-01-10	06:00:00	0,50	27,4	686,26		
1995-01-10	12:00:00	0,49	20,8	686,26		
1995-01-10	18:00:00	0,33	8,6	686,10		
1995-01-11	00:00:00	1,08	10	686,15		
1995-01-11	06:00:00	0,06	3,2	686,10		
1995-01-11	12:00:00	0,01	4,2	686,08		
1995-01-11	18:00:00	0,11	9	686,11		
1995-01-12	00:00:00	1,47	7,4	686,11		
1995-01-12	06:00:00	0,19	1,2	686,08		
1995-01-12	12:00:00	0,24	1	686,08		
1995-01-12	18:00:00	0,01	0,2	686,08		
1995-01-13	00:00:00	1,00	5,2	686,11		
1995-01-13	06:00:00	0,61	3	686,11		
1995-01-13	12:00:00	0,03	0,2	686,13		
1995-01-13	18:00:00	0,04	1,8	686,16		
1995-01-14	00:00:00	0,31	3,8	686,22		
1995-01-14	06:00:00	0,15	10	686,25		
1995-01-14	12:00:00	0,40	0	686,25		
1995-01-14	18:00:00	0,13	0,2	686,25		
1995-01-15	00:00:00	0,96	10,2	686,23		
1995-01-15	06:00:00	0,15	2,4	686,23		
1995-01-15	12:00:00	0,01	1,2	686,21		
1995-01-15	18:00:00	0,45	2,8	686,20		
1995-01-16	00:00:00	1,72	1,6	686,20		

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/8hr	m	m	m
1995-01-16	06:00:00	0,24	0	686,17		
1995-01-16	12:00:00	0,67	0	686,17		
1995-01-16	18:00:00	0,21	0	686,16		
1995-01-17	00:00:00	0,21	0,2	686,19		
1995-01-17	06:00:00	0,81	0	686,19		
1995-01-17	12:00:00	1,05	0	686,24		
1995-01-17	18:00:00	0,79	0	686,28		
1995-01-18	00:00:00	0,15	1,6	686,32		
1995-01-18	06:00:00	0,30	0	686,33		
1995-01-18	12:00:00	0,17	28,6	686,62		
1995-01-18	18:00:00	0,09	19,2	686,47		
1995-01-19	00:00:00	0,65	4,8	686,34		
1995-01-19	06:00:00	0,06	3,6	686,30		
1995-01-19	12:00:00	0,07	18,6	686,49		
1995-01-19	18:00:00	0,79	17,2	686,38		
1995-01-20	00:00:00	1,86	10	686,39		
1995-01-20	06:00:00	0,11	0	686,43		
1995-01-20	12:00:00	0,55	0	686,46		
1995-01-20	18:00:00	0,40	0	686,46		
1995-01-21	00:00:00	1,17	0,2	686,49		
1995-01-21	06:00:00	0,87	0	686,48		
1995-01-21	12:00:00	1,66	0	686,47		
1995-01-21	18:00:00	0,75	0,2	686,48		
1995-01-22	00:00:00	0,27	0	686,49		
1995-01-22	06:00:00	1,56	0	686,50		
1995-01-22	12:00:00	2,70	0	686,51		
1995-01-22	18:00:00	1,85	0,2	686,51		
1995-01-23	00:00:00	0,77	0	686,52		
1995-01-23	06:00:00	1,96	0	686,50		
1995-01-23	12:00:00	2,94	0	686,51		
1995-01-23	18:00:00	2,52	0	686,52		
1995-01-24	00:00:00	0,81	0	686,52		
1995-01-24	06:00:00	1,34	0	686,53		
1995-01-24	12:00:00	1,85	0	686,55		
1995-01-24	18:00:00	1,22	0	686,55		
1995-01-25	00:00:00	0,49	0,2	686,56		
1995-01-25	06:00:00	0,99	0	686,58		
1995-01-25	12:00:00	1,30	0	686,53		
1995-01-25	18:00:00	0,73	0	686,53		
1995-01-26	00:00:00	0,06	2,4	686,53		
1995-01-26	06:00:00	0,15	1	686,53		
1995-01-26	12:00:00	0,05	1,8	686,53		
1995-01-26	18:00:00	0,87	1,6	686,51		
1995-01-27	00:00:00	2,17	0	686,49		
1995-01-27	06:00:00	0,45	0	686,47		
1995-01-27	12:00:00	0,27	0	686,47		
1995-01-27	18:00:00	0,23	0,2	686,47		
1995-01-28	00:00:00	2,28	0	686,50		

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/8hr	m	m	m
1995-01-28	06:00:00	0,90	0,4	686,50		
1995-01-28	12:00:00	0,85	0	686,56		
1995-01-28	18:00:00	1,30	8,6	686,65		
1995-01-29	00:00:00	1,70	7,6	686,72		
1995-01-29	06:00:00	1,56	38	687,16		
1995-01-29	12:00:00	3,30	43,2	687,25		
1995-01-29	18:00:00	2,52	18,8	687,15		
1995-01-30	00:00:00	3,86	0,6	686,88		
1995-01-30	06:00:00	0,01	0	686,80		
1995-01-30	12:00:00	0,18	1,4	686,89		
1995-01-30	18:00:00	1,27	15,8	687,07		
1995-01-31	00:00:00	3,55	6,8	687,03		
1995-01-31	06:00:00	2,27	5	687,01		
1995-01-31	12:00:00	1,41	3,2	687,07		
1995-01-31	18:00:00	2,20	18,8	687,42		
1995-02-01	00:00:00	3,09	20,8	687,51		
1995-02-01	06:00:00	1,78	20,8	687,48		
1995-02-01	12:00:00	2,04	6,2	687,18		
1995-02-01	18:00:00	1,85	3,6	687,09		
1995-02-02	00:00:00	2,65	5,4	687,13		
1995-02-02	06:00:00	0,57	3,2	687,06		
1995-02-02	12:00:00	0,07	0,2	686,99		
1995-02-02	18:00:00	0,10	0	687,00		
1995-02-03	00:00:00	1,86	1	687,04		
1995-02-03	06:00:00	1,03	2,8	687,06		
1995-02-03	12:00:00	1,35	20,6	687,46		
1995-02-03	18:00:00	2,09	0	687,11		
1995-02-04	00:00:00	4,80	0	687,10		
1995-02-04	06:00:00	1,51	0,2	687,12		
1995-02-04	12:00:00	0,50	0	687,15		
1995-02-04	18:00:00	0,67	0	687,16		
1995-02-05	00:00:00	3,55	0	687,16		
1995-02-05	06:00:00	1,30	0	687,16		
1995-02-05	12:00:00	2,50	0	687,17		
1995-02-05	18:00:00	2,66	3,4	687,22		
1995-02-06	00:00:00	3,13	3	687,23		
1995-02-06	06:00:00	1,68	1	687,21		
1995-02-06	12:00:00	1,09	0,2	687,23		
1995-02-06	18:00:00	2,35	0	687,23		
1995-02-07	00:00:00	2,72	0	687,29		
1995-02-07	06:00:00	0,45	0	687,31		
1995-02-07	12:00:00	0,30	0	687,33		
1995-02-07	18:00:00	3,45	0,2	687,34		
1995-02-08	00:00:00	3,54	0	687,37		
1995-02-08	06:00:00	0,19	0	687,37		
1995-02-08	12:00:00	0,91	0	687,16		
1995-02-08	18:00:00	3,30	0	687,13		
1995-02-09	00:00:00	4,15	0	687,22		

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/6hr	m	m	m
1995-02-09	06:00:00	0,18	0	687,21		
1995-02-09	12:00:00	0,41	0	687,25		
1995-02-09	18:00:00	5,63	0	687,25		
1995-02-10	00:00:00	6,41	0	687,25		
1995-02-10	06:00:00	1,09	0	687,24		
1995-02-10	12:00:00	0,10	0	687,28		
1995-02-10	18:00:00	0,82	0	687,29		
1995-02-11	00:00:00	4,47	0	687,34		
1995-02-11	06:00:00	0,37	0	687,34		
1995-02-11	12:00:00	0,19	0	687,33		
1995-02-11	18:00:00	0,29	0	687,32		
1995-02-12	00:00:00	2,05	0	687,35		
1995-02-12	06:00:00	0,49	0	687,34		
1995-02-12	12:00:00	1,26	0	687,35		
1995-02-12	18:00:00	2,67	0	687,31		
1995-02-13	00:00:00	2,34	0	687,32		
1995-02-13	06:00:00	7,15	0	687,28		
1995-02-13	12:00:00	1,19	0	687,32		
1995-02-13	18:00:00	6,28	1,6	687,22		
1995-02-14	00:00:00	4,46	4,4	687,25		
1995-02-14	06:00:00	9,80	0	687,22		
1995-02-14	12:00:00	9,41	0	687,22		
1995-02-14	18:00:00	6,43	0	687,22		
1995-02-15	00:00:00	3,29	0	687,26		
1995-02-15	06:00:00	3,54	0	687,29		
1995-02-15	12:00:00	3,25	0	687,27		
1995-02-15	18:00:00	1,08	0	687,17		
1995-02-16	00:00:00	0,18	4,2	687,09		
1995-02-16	06:00:00	1,13	0,2	687,09		
1995-02-16	12:00:00	1,61	0	687,08		
1995-02-16	18:00:00	1,48	0	687,11		
1995-02-17	00:00:00	0,63	0	687,15		
1995-02-17	06:00:00	0,23	1,2	687,16		
1995-02-17	12:00:00	0,25	19,2	687,22		
1995-02-17	18:00:00	0,18	13,6	687,18		
1995-02-18	00:00:00	1,90	25,6	687,14		
1995-02-18	06:00:00	0,66	6	687,07		
1995-02-18	12:00:00	0,81	10,2	687,13		
1995-02-18	18:00:00	0,66	24,4	687,45		
1995-02-19	00:00:00	2,24	29,6	687,66		
1995-02-19	06:00:00	2,35	1	687,36		
1995-02-19	12:00:00	1,63	3,2	687,31		
1995-02-19	18:00:00	2,30	0	687,27		
1995-02-20	00:00:00	4,53	0	687,29		
1995-02-20	06:00:00	1,90	9,8	687,40		
1995-02-20	12:00:00	3,14	43,6	687,83		
1995-02-20	18:00:00	3,22	27,6	687,86		
1995-02-21	00:00:00	4,25	3	687,61		

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/6hr	m	m	m
1995-02-21	06:00:00	1,21	0	687,49		
1995-02-21	12:00:00	0,75	2,8	687,48		
1995-02-21	18:00:00	1,47	2,2	687,45		
1995-02-22	00:00:00	3,95	2,8	687,48		
1995-02-22	06:00:00	0,57	0	687,54		
1995-02-22	12:00:00	0,56	0	687,52		
1995-02-22	18:00:00	2,52	0	687,53		
1995-02-23	00:00:00	5,46	0	687,55		
1995-02-23	06:00:00	0,77	0	687,56		
1995-02-23	12:00:00	0,42	0	687,59		
1995-02-23	18:00:00	1,31	0	687,61		
1995-02-24	00:00:00	5,13	0	687,63		
1995-02-24	06:00:00	2,44	7	687,67		
1995-02-24	12:00:00	1,54	17,2	687,82		
1995-02-24	18:00:00	2,02	12,6	687,84		
1995-02-25	00:00:00	4,61	4,6	687,84		
1995-02-25	06:00:00	1,37	0,6	687,72		
1995-02-25	12:00:00	0,65	0,8	687,74		
1995-02-25	18:00:00	2,90	0,4	687,74		
1995-02-26	00:00:00	3,06	0	687,76		
1995-02-26	06:00:00	0,89	0,2	687,75		
1995-02-26	12:00:00	1,66	0	687,76		
1995-02-26	18:00:00	0,91	0	687,71		
1995-02-27	00:00:00	0,82	0	687,72		
1995-02-27	06:00:00	1,54	0	687,69		
1995-02-27	12:00:00	3,63	0	687,73		
1995-02-27	18:00:00	0,79	0,2	687,71		
1995-02-28	00:00:00	1,74	0	687,75		
1995-02-28	06:00:00	1,46	0	687,72		
1995-02-28	12:00:00	3,74	0	687,73		
1995-02-28	18:00:00	1,24	0	687,75		
1995-03-01	00:00:00	2,81	0	687,74		
1995-03-01	06:00:00	1,14	0	687,74		
1995-03-01	12:00:00	3,07	0	687,74		
1995-03-01	18:00:00	1,13	0	687,73		
1995-03-02	00:00:00	2,49	0	687,78		
1995-03-02	06:00:00	1,38	0	687,76		
1995-03-02	12:00:00	4,21	0	687,79		
1995-03-02	18:00:00	1,31	0	687,78		
1995-03-03	00:00:00	2,94	0	687,82		
1995-03-03	06:00:00	1,36	0	687,80		
1995-03-03	12:00:00	3,46	0	687,83		
1995-03-03	18:00:00	1,88	0	687,81		
1995-03-04	00:00:00	5,49	0	687,79		
1995-03-04	06:00:00	0,92	0	687,71		
1995-03-04	12:00:00	0,48	0	687,70		
1995-03-04	18:00:00	0,24	1	687,67		
1995-03-05	00:00:00	0,57	0	687,67		

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/6hr	m	m	m
1995-03-05	06:00:00	1,44	0	687,62		
1995-03-05	12:00:00	2,34	0	687,61		
1995-03-05	18:00:00	0,73	2,2	687,57		
1995-03-06	00:00:00	2,88	0	687,58		
1995-03-06	06:00:00	0,23	0	687,52		
1995-03-06	12:00:00	1,26	0	687,50		
1995-03-06	18:00:00	0,95	0,2	687,49		
1995-03-07	00:00:00	0,17	0	687,48		
1995-03-07	06:00:00	1,16	0	687,48		
1995-03-07	12:00:00	1,75	0	687,50		
1995-03-07	18:00:00	0,91	0	687,50		
1995-03-08	00:00:00	3,04	0,2	687,53		
1995-03-08	06:00:00	0,37	0	687,56		
1995-03-08	12:00:00	1,26	0	687,61		
1995-03-08	18:00:00	0,85	0	687,62		
1995-03-09	00:00:00	0,57	7,6	687,61		
1995-03-09	06:00:00	0,04	8,2	687,63		
1995-03-09	12:00:00	0,10	11,4	687,66		
1995-03-09	18:00:00	0,63	18,2	687,81		
1995-03-10	00:00:00					
1995-03-10	06:00:00					
1995-03-10	12:00:00					
1995-03-10	18:00:00					
1995-03-11	00:00:00					
1995-03-11	06:00:00					
1995-03-11	12:00:00					
1995-03-11	18:00:00					
1995-03-12	00:00:00					
1995-03-12	06:00:00					
1995-03-12	12:00:00					
1995-03-12	18:00:00					
1995-03-13	00:00:00					
1995-03-13	06:00:00					
1995-03-13	12:00:00					
1995-03-13	18:00:00					
1995-03-14	00:00:00					
1995-03-14	06:00:00					
1995-03-14	12:00:00					
1995-03-14	18:00:00					
1995-03-15	00:00:00					
1995-03-15	06:00:00					
1995-03-15	12:00:00					
1995-03-15	18:00:00					
1995-03-16	00:00:00					
1995-03-16	06:00:00					
1995-03-16	12:00:00					
1995-03-16	18:00:00					
1995-03-17	00:00:00					

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/6hr	m	m	m
1995-03-17	06:00:00					
1995-03-17	12:00:00					
1995-03-17	18:00:00					
1995-03-18	00:00:00					
1995-03-18	06:00:00					
1995-03-18	12:00:00					
1995-03-18	18:00:00					
1995-03-19	00:00:00					
1995-03-19	06:00:00					
1995-03-19	12:00:00					
1995-03-19	18:00:00					
1995-03-20	00:00:00					
1995-03-20	06:00:00					
1995-03-20	12:00:00					
1995-03-20	18:00:00					
1995-03-21	00:00:00					
1995-03-21	06:00:00					
1995-03-21	12:00:00					
1995-03-21	18:00:00					
1995-03-22	00:00:00					
1995-03-22	06:00:00					
1995-03-22	12:00:00					
1995-03-22	18:00:00					
1995-03-23	00:00:00					
1995-03-23	06:00:00					
1995-03-23	12:00:00					
1995-03-23	18:00:00					
1995-03-24	00:00:00					
1995-03-24	06:00:00					
1995-03-24	12:00:00					
1995-03-24	18:00:00					
1995-03-25	00:00:00					
1995-03-25	06:00:00					
1995-03-25	12:00:00					
1995-03-25	18:00:00					
1995-03-26	00:00:00					
1995-03-26	06:00:00					
1995-03-26	12:00:00					
1995-03-26	18:00:00					
1995-03-27	00:00:00					
1995-03-27	06:00:00					
1995-03-27	12:00:00					
1995-03-27	18:00:00					
1995-03-28	00:00:00					
1995-03-28	06:00:00					
1995-03-28	12:00:00					
1995-03-28	18:00:00					
1995-03-29	00:00:00					

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/8hr	m	m	m
1995-03-29	06:00:00					
1995-03-29	12:00:00					
1995-03-29	18:00:00					
1995-03-30	00:00:00					
1995-03-30	06:00:00					
1995-03-30	12:00:00					
1995-03-30	18:00:00					
1995-03-31	00:00:00					
1995-03-31	06:00:00					
1995-03-31	12:00:00					
1995-03-31	18:00:00					
1995-04-01	00:00:00					
1995-04-01	06:00:00					
1995-04-01	12:00:00					
1995-04-01	18:00:00					
1995-04-02	00:00:00					
1995-04-02	06:00:00					
1995-04-02	12:00:00					
1995-04-02	18:00:00					
1995-04-03	00:00:00					
1995-04-03	06:00:00					
1995-04-03	12:00:00					
1995-04-03	18:00:00					
1995-04-04	00:00:00					
1995-04-04	06:00:00					
1995-04-04	12:00:00					
1995-04-04	18:00:00					
1995-04-05	00:00:00					
1995-04-05	06:00:00					
1995-04-05	12:00:00					
1995-04-05	18:00:00					
1995-04-06	00:00:00					
1995-04-06	06:00:00					
1995-04-06	12:00:00					
1995-04-06	18:00:00					
1995-04-07	00:00:00					
1995-04-07	06:00:00					
1995-04-07	12:00:00					
1995-04-07	18:00:00					
1995-04-08	00:00:00					
1995-04-08	06:00:00					
1995-04-08	12:00:00					
1995-04-08	18:00:00					
1995-04-09	00:00:00					
1995-04-09	06:00:00					
1995-04-09	12:00:00					
1995-04-09	18:00:00					
1995-04-10	00:00:00					

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/6hr	m	m	m
1995-04-10	06:00:00					
1995-04-10	12:00:00					
1995-04-10	18:00:00					
1995-04-11	00:00:00					
1995-04-11	06:00:00					
1995-04-11	12:00:00					
1995-04-11	18:00:00					
1995-04-12	00:00:00					
1995-04-12	06:00:00					
1995-04-12	12:00:00					
1995-04-12	18:00:00					
1995-04-13	00:00:00					
1995-04-13	06:00:00					
1995-04-13	12:00:00					
1995-04-13	18:00:00					
1995-04-14	00:00:00					
1995-04-14	06:00:00					
1995-04-14	12:00:00					
1995-04-14	18:00:00					
1995-04-15	00:00:00					
1995-04-15	06:00:00					
1995-04-15	12:00:00					
1995-04-15	18:00:00					
1995-04-16	00:00:00					
1995-04-16	06:00:00					
1995-04-16	12:00:00					
1995-04-16	18:00:00					
1995-04-17	00:00:00					
1995-04-17	06:00:00					
1995-04-17	12:00:00					
1995-04-17	18:00:00					
1995-04-18	00:00:00					
1995-04-18	06:00:00					
1995-04-18	12:00:00					
1995-04-18	18:00:00					
1995-04-19	00:00:00					
1995-04-19	06:00:00					
1995-04-19	12:00:00					
1995-04-19	18:00:00					
1995-04-20	00:00:00					
1995-04-20	06:00:00					
1995-04-20	12:00:00					
1995-04-20	18:00:00					
1995-04-21	00:00:00					
1995-04-21	06:00:00					
1995-04-21	12:00:00					
1995-04-21	18:00:00					
1995-04-22	00:00:00					

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/6hr	m	m	m
1995-04-22	06:00:00					
1995-04-22	12:00:00					
1995-04-22	18:00:00					
1995-04-23	00:00:00					
1995-04-23	06:00:00					
1995-04-23	12:00:00					
1995-04-23	18:00:00					
1995-04-24	00:00:00					
1995-04-24	06:00:00					
1995-04-24	12:00:00					
1995-04-24	18:00:00					
1995-04-25	00:00:00					
1995-04-25	06:00:00					
1995-04-25	12:00:00					
1995-04-25	18:00:00					
1995-04-26	00:00:00					
1995-04-26	06:00:00					
1995-04-26	12:00:00					
1995-04-26	18:00:00					
1995-04-27	00:00:00					
1995-04-27	06:00:00					
1995-04-27	12:00:00					
1995-04-27	18:00:00					
1995-04-28	00:00:00					
1995-04-28	06:00:00					
1995-04-28	12:00:00					
1995-04-28	18:00:00					
1995-04-29	00:00:00					
1995-04-29	06:00:00					
1995-04-29	12:00:00					
1995-04-29	18:00:00					
1995-04-30	00:00:00					
1995-04-30	06:00:00					
1995-04-30	12:00:00					
1995-04-30	18:00:00					
1995-05-01	00:00:00					
1995-05-01	06:00:00					
1995-05-01	12:00:00					
1995-05-01	18:00:00					
1995-05-02	00:00:00					
1995-05-02	06:00:00					
1995-05-02	12:00:00					
1995-05-02	18:00:00					
1995-05-03	00:00:00					
1995-05-03	06:00:00					
1995-05-03	12:00:00					
1995-05-03	18:00:00					
1995-05-04	00:00:00					

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/6hr	m	m	m
1995-05-04	06:00:00					
1995-05-04	12:00:00					
1995-05-04	18:00:00					
1995-05-05	00:00:00					
1995-05-05	06:00:00					
1995-05-05	12:00:00					
1995-05-05	18:00:00					
1995-05-06	00:00:00					
1995-05-06	06:00:00					
1995-05-06	12:00:00					
1995-05-06	18:00:00					
1995-05-07	00:00:00					
1995-05-07	06:00:00	14,15	0	689,04		
1995-05-07	12:00:00	27,08	0	689,05		
1995-05-07	18:00:00	29,23	0	689,07		
1995-05-08	00:00:00	18,63	0	689,07		
1995-05-08	06:00:00	15,02	0	689,06		
1995-05-08	12:00:00	28,41	0	689,07		
1995-05-08	18:00:00	29,30	0	689,07		
1995-05-09	00:00:00	17,42	0	688,96		
1995-05-09	06:00:00	11,12	0	688,97		
1995-05-09	12:00:00	18,01	0	688,95		
1995-05-09	18:00:00	23,08	0	688,93		
1995-05-10	00:00:00	14,29	0	688,96		
1995-05-10	06:00:00	10,39	0	688,96		
1995-05-10	12:00:00	16,94	0	688,97		
1995-05-10	18:00:00	19,62	0	688,97		
1995-05-11	00:00:00	12,92	0	689,01		
1995-05-11	06:00:00	7,14	0	689,04		
1995-05-11	12:00:00	23,24	0	689,05		
1995-05-11	18:00:00	26,73	0	689,03		
1995-05-12	00:00:00	13,15	0	689,03		
1995-05-12	06:00:00	9,89	0	689,02		
1995-05-12	12:00:00	22,36	0	688,95		
1995-05-12	18:00:00	27,08	0	688,95		
1995-05-13	00:00:00	15,67	0	688,97		
1995-05-13	06:00:00	9,86	0	688,94		
1995-05-13	12:00:00	14,59	0	688,95		
1995-05-13	18:00:00	18,35	0,2	688,93		
1995-05-14	00:00:00	13,70	0	688,95		
1995-05-14	06:00:00	7,35	0	688,94		
1995-05-14	12:00:00	23,48	0	688,97		
1995-05-14	18:00:00	27,93	0	688,95		
1995-05-15	00:00:00	15,23	0	688,98		
1995-05-15	06:00:00	11,70	0,6	688,98		
1995-05-15	12:00:00	20,12	4,2	688,98		
1995-05-15	18:00:00	18,70	3,2	688,98		
1995-05-16	00:00:00	11,12	1	689,02		

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/6hr	m	m	m
1995-05-16	06:00:00	9,12	1,8	689,00		
1995-05-16	12:00:00	12,63	1,6	688,99		
1995-05-16	18:00:00	16,33	1	688,97		
1995-05-17	00:00:00	10,29	0	688,90		
1995-05-17	06:00:00	5,60	0	688,87		
1995-05-17	12:00:00	19,64	0,2	688,84		
1995-05-17	18:00:00	20,21	0	688,86		
1995-05-18	00:00:00	12,93	2,2	688,84		
1995-05-18	06:00:00	7,95	0	688,82		
1995-05-18	12:00:00	22,14	0,4	688,84		
1995-05-18	18:00:00	21,92	0	688,83		
1995-05-19	00:00:00	14,08	0	688,83		
1995-05-19	06:00:00	10,36	0	688,82		
1995-05-19	12:00:00	12,92	1,2	688,80		
1995-05-19	18:00:00	18,15	0	688,84		
1995-05-20	00:00:00	14,32	0	688,86		
1995-05-20	06:00:00	12,04	0	688,83		
1995-05-20	12:00:00	17,23	0	688,81		
1995-05-20	18:00:00	22,93	0,2	688,79		
1995-05-21	00:00:00	14,92	0,8	688,77		
1995-05-21	06:00:00	9,39	0	688,76		
1995-05-21	12:00:00	23,26	0	688,76		
1995-05-21	18:00:00	26,25	0	688,76		
1995-05-22	00:00:00	14,52	0,2	688,76		
1995-05-22	06:00:00	9,69	0	688,73		
1995-05-22	12:00:00	26,33	0	688,69		
1995-05-22	18:00:00	29,49	0	688,68		
1995-05-23	00:00:00	18,13	0	688,65		
1995-05-23	06:00:00	12,65	0	688,62		
1995-05-23	12:00:00	29,88	0	688,61		
1995-05-23	18:00:00	32,17	0	688,60		
1995-05-24	00:00:00	18,86	0	688,59		
1995-05-24	06:00:00	13,17	0	688,55		
1995-05-24	12:00:00	30,56	0	688,53		
1995-05-24	18:00:00	32,57	0	688,49		
1995-05-25	00:00:00	19,14	0	688,51		
1995-05-25	06:00:00	13,93	0	688,49		
1995-05-25	12:00:00	31,33	0	688,48		
1995-05-25	18:00:00	33,98	0	688,46		
1995-05-26	00:00:00	20,93	0	688,46		
1995-05-26	06:00:00	15,97	0	688,42		
1995-05-26	12:00:00	32,69	0	688,41		
1995-05-26	18:00:00	29,66	0	688,37		
1995-05-27	00:00:00	17,62	0	688,36		
1995-05-27	06:00:00	12,63	0	688,33		
1995-05-27	12:00:00	26,53	0	688,31		
1995-05-27	18:00:00	27,93	0	688,28		
1995-05-28	00:00:00	17,29	0	688,28		

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/6hr	m	m	m
1995-05-28	06:00:00	15,16	0	688,25		
1995-05-28	12:00:00	19,68	0	688,24		
1995-05-28	18:00:00	23,85	0	688,21		
1995-05-29	00:00:00	16,85	0	688,21		
1995-05-29	06:00:00	13,88	0	688,18		
1995-05-29	12:00:00	20,78	0	688,18		
1995-05-29	18:00:00	23,85	0	688,14		
1995-05-30	00:00:00	15,68	0,2	688,15		
1995-05-30	06:00:00	12,69	0	688,12		
1995-05-30	12:00:00	20,81	0,2	688,13		
1995-05-30	18:00:00	23,19	0	688,04		
1995-05-31	00:00:00	16,61	0	688,03		
1995-05-31	06:00:00	14,17	2	688,00		
1995-05-31	12:00:00	15,16	0,2	687,97		
1995-05-31	18:00:00	15,25	6,8	687,94		
1995-06-01	00:00:00	12,65	4,2	687,93		
1995-06-01	06:00:00	11,76	0,4	687,91		
1995-06-01	12:00:00	16,71	0,2	687,89		
1995-06-01	18:00:00	18,37	0,2	687,86		
1995-06-02	00:00:00	10,94	0	687,84		
1995-06-02	06:00:00	7,76	0	687,81		
1995-06-02	12:00:00	17,52	0	687,76		
1995-06-02	18:00:00	19,30	0	687,73		
1995-06-03	00:00:00	12,61	0	687,70		
1995-06-03	06:00:00	8,93	0	687,66		
1995-06-03	12:00:00	13,81	0	687,66		
1995-06-03	18:00:00	18,13	0	687,63		
1995-06-04	00:00:00	10,52	0,2	687,57		
1995-06-04	06:00:00	6,73	0	687,59		
1995-06-04	12:00:00	19,98	0	687,52		
1995-06-04	18:00:00	20,89	0	687,52		
1995-06-05	00:00:00	12,13	0	687,47		
1995-06-05	06:00:00	6,48	0	687,45		
1995-06-05	12:00:00	21,41	0	687,40		
1995-06-05	18:00:00	24,76	0	687,39		
1995-06-06	00:00:00	14,65	0	687,32		
1995-06-06	06:00:00	10,90	0	687,29		
1995-06-06	12:00:00	21,02	0	687,26		
1995-06-06	18:00:00	22,34	0	687,26		
1995-06-07	00:00:00	14,94	0	687,25		
1995-06-07	06:00:00	12,02	0	687,20		
1995-06-07	12:00:00	24,39	0	687,18		
1995-06-07	18:00:00	25,44	0	687,12		
1995-06-08	00:00:00	16,19	0	687,11		
1995-06-08	06:00:00	10,49	0	687,09		
1995-06-08	12:00:00	18,48	0	687,07		
1995-06-08	18:00:00	26,76	0	687,01		
1995-06-09	00:00:00	17,64	0,2	686,99		

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/8hr	m	m	m
1995-06-09	06:00:00	14,42	0,2	686,95		
1995-06-09	12:00:00	17,39	0	686,92		
1995-06-09	18:00:00	24,84	0,2	686,88		
1995-06-10	00:00:00	16,71	0	686,88		
1995-06-10	06:00:00	12,51	0	686,85		
1995-06-10	12:00:00	28,08	0	686,83		
1995-06-10	18:00:00	28,78	0	686,79		
1995-06-11	00:00:00	16,98	0	686,78		
1995-06-11	06:00:00	10,94	0	686,73		
1995-06-11	12:00:00	16,64	0	686,70		
1995-06-11	18:00:00	20,37	0	686,64		
1995-06-12	00:00:00	13,14	0	686,64		
1995-06-12	06:00:00	9,03	1,6	686,65		
1995-06-12	12:00:00	10,36	0,2	686,68		
1995-06-12	18:00:00	11,17	1,8	686,65		
1995-06-13	00:00:00	8,89	0,8	686,69		
1995-06-13	06:00:00	8,08	0,8	686,65		
1995-06-13	12:00:00	15,16	0,6	686,68		
1995-06-13	18:00:00	19,21	0,2	686,63		
1995-06-14	00:00:00	13,56	0	686,63		
1995-06-14	06:00:00	9,65	0	686,61		
1995-06-14	12:00:00	14,56	0	686,63		
1995-06-14	18:00:00	17,52	0	686,63		
1995-06-15	00:00:00	12,48	0	686,62		
1995-06-15	06:00:00	10,43	0	686,61		
1995-06-15	12:00:00	14,23	0	686,61		
1995-06-15	18:00:00	20,71	0	686,61		
1995-06-16	00:00:00	14,17	0	686,53		
1995-06-16	06:00:00	10,31	0	686,52		
1995-06-16	12:00:00	23,53	0,4	686,49		
1995-06-16	18:00:00	21,96	0	686,51		
1995-06-17	00:00:00	14,65	0	686,49		
1995-06-17	06:00:00	11,27	0	686,50		
1995-06-17	12:00:00	13,65	0	686,49		
1995-06-17	18:00:00	16,92	0	686,49		
1995-06-18	00:00:00	11,21	0	686,47		
1995-06-18	06:00:00	7,04	0	686,44		
1995-06-18	12:00:00	16,40	0	686,42		
1995-06-18	18:00:00	18,64	0	686,40		
1995-06-19	00:00:00	11,82	0	686,39		
1995-06-19	06:00:00	7,45	0	686,40		
1995-06-19	12:00:00	17,75	0	686,38		
1995-06-19	18:00:00	21,69	0	686,30		
1995-06-20	00:00:00	15,44	0	686,29		
1995-06-20	06:00:00	12,09	4,2	686,29		
1995-06-20	12:00:00	12,47	0,8	686,42		
1995-06-20	18:00:00	17,20	0	686,41		
1995-06-21	00:00:00	8,85	0	686,38		

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/6hr	m	m	m
1995-06-21	06:00:00	6,13	0	686,42		
1995-06-21	12:00:00	17,03	0	686,42		
1995-06-21	18:00:00	15,05	0,2	686,43		
1995-06-22	00:00:00	9,25	0	686,41		
1995-06-22	06:00:00	6,01	0	686,41		
1995-06-22	12:00:00	10,52	0	686,38		
1995-06-22	18:00:00	13,66	0,4	686,37		
1995-06-23	00:00:00	9,27	1	686,34		
1995-06-23	06:00:00	6,56	0	686,38		
1995-06-23	12:00:00	19,26	0	686,37		
1995-06-23	18:00:00	19,42	0,2	686,35		
1995-06-24	00:00:00	9,38	0	686,36		
1995-06-24	06:00:00	6,25	0	686,37		
1995-06-24	12:00:00	9,33	1,8	686,36		
1995-06-24	18:00:00	11,19	13,4	686,35		
1995-06-25	00:00:00	10,27	5,6	686,35		
1995-06-25	06:00:00	8,66	1	686,35		
1995-06-25	12:00:00	11,23	1,6	686,34		
1995-06-25	18:00:00	15,50	0	686,33		
1995-06-26	00:00:00	11,25	0	686,33		
1995-06-26	06:00:00	7,45	0	686,30		
1995-06-26	12:00:00	15,85	0	686,30		
1995-06-26	18:00:00	20,67	0	686,27		
1995-06-27	00:00:00	12,73	0,2	686,26		
1995-06-27	06:00:00	8,59	0,2	686,24		
1995-06-27	12:00:00	18,13	0	686,23		
1995-06-27	18:00:00	19,96	0,2	686,21		
1995-06-28	00:00:00	13,33	2,6	686,21		
1995-06-28	06:00:00	10,52	0	686,16		
1995-06-28	12:00:00	19,35	0	686,18		
1995-06-28	18:00:00	20,53	0,2	686,14		
1995-06-29	00:00:00	12,07	0	686,14		
1995-06-29	06:00:00	7,26	0	686,10		
1995-06-29	12:00:00	14,52	0	686,10		
1995-06-29	18:00:00	18,08	0	686,08		
1995-06-30	00:00:00	10,29	0	686,08		
1995-06-30	06:00:00	6,07	0	686,08		
1995-06-30	12:00:00	12,35	0	686,08		
1995-06-30	18:00:00	17,01	0	686,04		
1995-07-01	00:00:00	11,10	0	686,02		
1995-07-01	06:00:00	8,44	0	685,98		
1995-07-01	12:00:00	18,39	0	685,97		
1995-07-01	18:00:00	21,13	0	685,92		
1995-07-02	00:00:00	12,15	0	685,91		
1995-07-02	06:00:00	7,74	0	685,88		
1995-07-02	12:00:00	17,27	0	685,86		
1995-07-02	18:00:00	19,60	0	685,83		
1995-07-03	00:00:00	10,11	0	685,79		

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/8hr	m	m	m
1995-07-03	06:00:00	8,14	0	685,74		
1995-07-03	12:00:00	12,47	0	685,70		
1995-07-03	18:00:00	16,94	0	685,65		
1995-07-04	00:00:00	11,89	0,2	685,62		
1995-07-04	06:00:00	9,93	0	685,60		
1995-07-04	12:00:00	14,49	0	685,55		
1995-07-04	18:00:00	15,67	0,2	685,53		
1995-07-05	00:00:00	11,39	0	685,50		
1995-07-05	06:00:00	7,02	0	685,48		
1995-07-05	12:00:00	20,44	0	685,43		
1995-07-05	18:00:00	19,68	0	685,44		
1995-07-06	00:00:00	11,16	0	685,40		
1995-07-06	06:00:00	10,15	0	685,38		
1995-07-06	12:00:00	20,86	0	685,34		
1995-07-06	18:00:00	19,87	0	685,32		
1995-07-07	00:00:00	11,50	0	685,27		
1995-07-07	06:00:00	7,90	0	685,23		
1995-07-07	12:00:00	21,77	0	685,20		
1995-07-07	18:00:00	21,86	0	685,15		
1995-07-08	00:00:00	11,41	0	685,12		
1995-07-08	06:00:00	6,86	0	685,09		
1995-07-08	12:00:00	22,24	0	685,05		
1995-07-08	18:00:00	22,55	0	685,04		
1995-07-09	00:00:00	13,08	0	685,01		
1995-07-09	06:00:00	9,43	0	685,00		
1995-07-09	12:00:00	24,19	0	684,99		
1995-07-09	18:00:00	24,83	0	684,98		
1995-07-10	00:00:00	14,47	0	684,94		
1995-07-10	06:00:00	10,56	0	684,88		
1995-07-10	12:00:00	25,13	0	684,85		
1995-07-10	18:00:00	25,69	0	684,81		
1995-07-11	00:00:00	15,65	0	684,81		
1995-07-11	06:00:00	13,22	0	684,77		
1995-07-11	12:00:00	16,40	0,2	684,76		
1995-07-11	18:00:00	15,50	3,2	684,72		
1995-07-12	00:00:00	12,52	0,6	684,70		
1995-07-12	06:00:00	11,10	4,8	684,68		
1995-07-12	12:00:00	15,65	1	684,66		
1995-07-12	18:00:00	16,81	0,6	684,62		
1995-07-13	00:00:00	11,17	0,2	684,60		
1995-07-13	06:00:00	10,09	0,2	684,57		
1995-07-13	12:00:00	11,96	0,8	684,57		
1995-07-13	18:00:00	16,44	0	684,52		
1995-07-14	00:00:00	10,15	0	684,49		
1995-07-14	06:00:00	7,49	0	684,45		
1995-07-14	12:00:00	20,81	0	684,46		
1995-07-14	18:00:00	21,84	0	684,41		
1995-07-15	00:00:00	13,08	0	684,40		

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/8hr	m	m	m
1995-07-15	06:00:00	9,97	0	684,36		
1995-07-15	12:00:00	21,92	0	684,36		
1995-07-15	18:00:00	22,07	0	684,33		
1995-07-16	00:00:00	13,25	0	684,30		
1995-07-16	06:00:00	9,89	0	684,29		
1995-07-16	12:00:00	22,31	0	684,27		
1995-07-16	18:00:00	22,45	0	684,25		
1995-07-17	00:00:00	13,60	0	684,23		
1995-07-17	06:00:00	9,86	0	684,21		
1995-07-17	12:00:00	22,69	0	684,17		
1995-07-17	18:00:00	22,31	0	684,15		
1995-07-18	00:00:00	12,48	0	684,13		
1995-07-18	06:00:00	8,74	0	684,11		
1995-07-18	12:00:00	21,84	0	684,07		
1995-07-18	18:00:00	22,90	0	684,02		
1995-07-19	00:00:00	13,81	0	684,00		
1995-07-19	06:00:00	9,86	0	683,97		
1995-07-19	12:00:00	22,45	0	683,91		
1995-07-19	18:00:00	22,69	0	683,88		
1995-07-20	00:00:00	13,76	0	683,86		
1995-07-20	06:00:00	10,03	0	683,83		
1995-07-20	12:00:00	23,14	0	683,80		
1995-07-20	18:00:00	23,85	0	683,76		
1995-07-21	00:00:00	15,16	0	683,74		
1995-07-21	06:00:00	11,80	0	683,72		
1995-07-21	12:00:00	24,93	0	683,66		
1995-07-21	18:00:00	25,23	0	683,62		
1995-07-22	00:00:00	15,41	0	683,58		
1995-07-22	06:00:00	11,60	0	683,53		
1995-07-22	12:00:00	23,48	0	683,49		
1995-07-22	18:00:00	23,08	0	683,48		
1995-07-23	00:00:00	14,21	0	683,45		
1995-07-23	06:00:00	10,85	0	683,39		
1995-07-23	12:00:00	23,66	0	683,35		
1995-07-23	18:00:00	23,68	0	683,30		
1995-07-24	00:00:00	14,61	0	683,28		
1995-07-24	06:00:00	10,67	0	683,23		
1995-07-24	12:00:00	21,41	0	683,19		
1995-07-24	18:00:00	21,21	0	683,12		
1995-07-25	00:00:00	13,66	0	683,09		
1995-07-25	06:00:00	10,52	0	683,05		
1995-07-25	12:00:00	17,81	0	683,05		
1995-07-25	18:00:00	21,05	0	683,00		
1995-07-26	00:00:00	15,34	0	683,03		
1995-07-26	06:00:00	13,06	3	682,97		
1995-07-26	12:00:00	13,89	0	682,93		
1995-07-26	18:00:00	18,68	0	682,84		
1995-07-27	00:00:00	13,04	0	682,78		

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/hr	m	m	m
1995-07-27	06:00:00	11,37	0	682,70		
1995-07-27	12:00:00	15,67	0	682,66		
1995-07-27	18:00:00	18,94	0	682,63		
1995-07-28	00:00:00	10,88	0	682,59		
1995-07-28	06:00:00	7,21	0	682,57		
1995-07-28	12:00:00	16,02	0	682,57		
1995-07-28	18:00:00	17,93	0	682,54		
1995-07-29	00:00:00	9,47	0	682,50		
1995-07-29	06:00:00	5,39	0	682,46		
1995-07-29	12:00:00	19,90	0	682,42		
1995-07-29	18:00:00	19,71	0	682,37		
1995-07-30	00:00:00	10,98	0	682,34		
1995-07-30	06:00:00	7,65	0	682,29		
1995-07-30	12:00:00	22,02	0	682,25		
1995-07-30	18:00:00	21,84	0	682,23		
1995-07-31	00:00:00	13,17	0	682,21		
1995-07-31	06:00:00	10,25	0	682,18		
1995-07-31	12:00:00	23,53	0	682,16		
1995-07-31	18:00:00	21,86	0	682,11		
1995-08-01	00:00:00	15,33	2,4	682,09		
1995-08-01	06:00:00	11,35	1,6	682,07		
1995-08-01	12:00:00	14,64	0	682,03		
1995-08-01	18:00:00	15,93	0,4	681,98		
1995-08-02	00:00:00	11,12	0	681,95		
1995-08-02	06:00:00	9,69	0	681,91		
1995-08-02	12:00:00	11,03	0,8	681,84		
1995-08-02	18:00:00	12,88	2,4	681,82		
1995-08-03	00:00:00	10,64	0,8	681,76		
1995-08-03	06:00:00	9,93	0	681,74		
1995-08-03	12:00:00	11,04	0,2	681,67		
1995-08-03	18:00:00	12,69	6,6	681,63		
1995-08-04	00:00:00	9,53	0,4	681,61		
1995-08-04	06:00:00	7,56	0	681,58		
1995-08-04	12:00:00	10,52	1,4	681,54		
1995-08-04	18:00:00	13,15	0	681,52		
1995-08-05	00:00:00	8,81	0	681,50		
1995-08-05	06:00:00	5,55	0	681,33		
1995-08-05	12:00:00	8,00	0	681,29		
1995-08-05	18:00:00	11,04	3	681,24		
1995-08-06	00:00:00	8,71	3,6	681,21		
1995-08-06	06:00:00	7,74	3	681,18		
1995-08-06	12:00:00	14,59	0,2	681,14		
1995-08-06	18:00:00	13,29	0	681,09		
1995-08-07	00:00:00	6,07	0	681,06		
1995-08-07	06:00:00	2,88	0	681,04		
1995-08-07	12:00:00	6,41	1,6	680,97		
1995-08-07	18:00:00	8,50	5,6	680,92		
1995-08-08	00:00:00	7,26	3	680,89		

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/8hr	m	m	m
1995-08-08	06:00:00	7,06	2,8	680,85		
1995-08-08	12:00:00	8,49	3,6	680,83		
1995-08-08	18:00:00	11,82	0	680,78		
1995-08-09	00:00:00	7,74	0	680,78		
1995-08-09	06:00:00	5,71	0,2	680,76		
1995-08-09	12:00:00	12,83	0	680,75		
1995-08-09	18:00:00	11,37	0	680,70		
1995-08-10	00:00:00	4,05	0	680,69		
1995-08-10	06:00:00	1,69	0	680,65		
1995-08-10	12:00:00	12,35	0	680,64		
1995-08-10	18:00:00	13,48	0	680,59		
1995-08-11	00:00:00	8,22	0	680,55		
1995-08-11	06:00:00	6,48	0	680,51		
1995-08-11	12:00:00	7,71	0,4	680,47		
1995-08-11	18:00:00	8,22	4	680,42		
1995-08-12	00:00:00	6,75	2	680,38		
1995-08-12	06:00:00	5,98	1,8	680,36		
1995-08-12	12:00:00	8,75	6	680,32		
1995-08-12	18:00:00	11,61	1,2	680,28		
1995-08-13	00:00:00	8,48	0,8	680,25		
1995-08-13	06:00:00	7,49	0,6	680,21		
1995-08-13	12:00:00	8,54	0	680,18		
1995-08-13	18:00:00	10,07	0,8	680,16		
1995-08-14	00:00:00	6,64	25,8	680,14		
1995-08-14	06:00:00	3,79	0,8	680,10		
1995-08-14	12:00:00	7,24	0	680,07		
1995-08-14	18:00:00	10,07	0	680,03		
1995-08-15	00:00:00	6,51	8,2	680,01		
1995-08-15	06:00:00	5,75	4	679,96		
1995-08-15	12:00:00	7,43	17,4	679,93		
1995-08-15	18:00:00	9,95	19,2	679,90		
1995-08-16	00:00:00	6,86	24,8	679,86		
1995-08-16	06:00:00	6,67	24,2	679,84		
1995-08-16	12:00:00	7,14	4,2	679,79		
1995-08-16	18:00:00	7,38	8,2	679,77		
1995-08-17	00:00:00	4,50	8,2	679,74		
1995-08-17	06:00:00	2,26	0	679,69		
1995-08-17	12:00:00	3,89	3,8	679,65		
1995-08-17	18:00:00	7,26	1	679,63		
1995-08-18	00:00:00	3,20	0	679,58		
1995-08-18	06:00:00	2,44	0	679,55		
1995-08-18	12:00:00	9,86	0	679,51		
1995-08-18	18:00:00	8,16	0,8	679,47		
1995-08-19	00:00:00	4,61	8,8	679,65		
1995-08-19	06:00:00	3,85	21,6	679,45		
1995-08-19	12:00:00	5,41	21,6	679,40		
1995-08-19	18:00:00	6,67	19,4	679,40		
1995-08-20	00:00:00	7,26	13,4	679,38		

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/6hr	m	m	m
1995-08-20	06:00:00	10,07	21,6	679,36		
1995-08-20	12:00:00	10,74	10	679,32		
1995-08-20	18:00:00	11,35	10	679,32		
1995-08-21	00:00:00	10,01	1,2	679,30		
1995-08-21	06:00:00	9,39	0	679,27		
1995-08-21	12:00:00	9,59	0,4	679,24		
1995-08-21	18:00:00	8,73	17,8	679,20		
1995-08-22	00:00:00	7,58	26,8	679,19		
1995-08-22	06:00:00	6,94	6	679,16		
1995-08-22	12:00:00	9,39	0	679,14		
1995-08-22	18:00:00	9,55	0	679,11		
1995-08-23	00:00:00	5,69	13,2	679,10		
1995-08-23	06:00:00	4,59	30,6	679,09		
1995-08-23	12:00:00	7,24	3	679,06		
1995-08-23	18:00:00	7,69	0	679,05		
1995-08-24	00:00:00	3,91	0	679,01		
1995-08-24	06:00:00	2,64	0	678,98		
1995-08-24	12:00:00	10,22	0	678,96		
1995-08-24	18:00:00	8,12	0	678,94		
1995-08-25	00:00:00	2,65	0	678,93		
1995-08-25	06:00:00	2,72	0	678,92		
1995-08-25	12:00:00	3,77	0	678,89		
1995-08-25	18:00:00	5,82	0,6	678,88		
1995-08-26	00:00:00	5,25	9,8	678,88		658,13
1995-08-26	06:00:00	4,50	1,4	678,85		658,10
1995-08-26	12:00:00	5,36	1	678,81		658,10
1995-08-26	18:00:00	5,96	8,8	678,78		658,07
1995-08-27	00:00:00	3,43	6,8	678,77		658,07
1995-08-27	06:00:00	2,07	0,2	678,73		658,04
1995-08-27	12:00:00	9,91	0	678,72		658,04
1995-08-27	18:00:00	7,99	0	678,71		658,01
1995-08-28	00:00:00	2,30	0	678,69		658,00
1995-08-28	06:00:00	1,76	0	678,66		657,97
1995-08-28	12:00:00	3,78	0	678,65		657,96
1995-08-28	18:00:00	6,49	0,8	678,63		657,94
1995-08-29	00:00:00	4,64	1,2	678,61		657,94
1995-08-29	06:00:00	4,21	7,4	678,58		657,91
1995-08-29	12:00:00	4,41	10,6	678,55		657,91
1995-08-29	18:00:00	6,72	0,2	678,52		657,88
1995-08-30	00:00:00	3,93	0,2	678,49		657,87
1995-08-30	06:00:00	3,25	0	678,47		657,85
1995-08-30	12:00:00	5,73	0	678,46		657,84
1995-08-30	18:00:00	8,28	0	678,43		657,82
1995-08-31	00:00:00	5,08	3,2	678,41		657,82
1995-08-31	06:00:00	4,49	11	678,38		657,80
1995-08-31	12:00:00	4,45	39,4	678,36		657,79
1995-08-31	18:00:00	8,56	29	678,35		657,77
1995-09-01	00:00:00	5,68	0,4	678,34		657,75

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/6hr	m	m	m
1995-09-01	06:00:00	3,18	0,4	678,31		657,74
1995-09-01	12:00:00	4,18	1,4	678,27		657,72
1995-09-01	18:00:00	5,82	1,4	678,25		657,71
1995-09-02	00:00:00	1,05	0,2	678,24		657,70
1995-09-02	06:00:00	0,17	0	678,21		657,69
1995-09-02	12:00:00	2,64	0	678,17		657,66
1995-09-02	18:00:00	5,75	0	678,15		657,65
1995-09-03	00:00:00	2,01	0	678,14		657,62
1995-09-03	06:00:00	0,09	0	678,10		657,62
1995-09-03	12:00:00	1,68	0	678,08		657,60
1995-09-03	18:00:00	4,29	0	678,04		657,60
1995-09-04	00:00:00	1,56	0	678,03		657,58
1995-09-04	06:00:00	1,21	0	677,98		657,58
1995-09-04	12:00:00	3,93	0	677,95		657,56
1995-09-04	18:00:00	2,64	0,2	677,93		657,56
1995-09-05	00:00:00	-1,40	0	677,89		657,54
1995-09-05	06:00:00	-3,00	0	677,86		657,54
1995-09-05	12:00:00	2,52	0	677,89		657,52
1995-09-05	18:00:00	0,97	0	677,80		657,51
1995-09-06	00:00:00	-1,73	0	677,79		657,50
1995-09-06	06:00:00	-3,54	0	677,76		657,50
1995-09-06	12:00:00	2,97	0	677,75		657,50
1995-09-06	18:00:00	1,27	0	677,71		657,48
1995-09-07	00:00:00	-1,58	0	677,71		657,48
1995-09-07	06:00:00	-3,52	0	677,67		657,47
1995-09-07	12:00:00	2,46	0	677,66		657,47
1995-09-07	18:00:00	0,75	0	677,63		657,45
1995-09-08	00:00:00	-1,71	0	677,62		657,45
1995-09-08	06:00:00	-3,25	0	677,58		657,43
1995-09-08	12:00:00	1,80	0	677,57		657,43
1995-09-08	18:00:00	1,35	0	677,54		657,41
1995-09-09	00:00:00	-0,69	0	677,55		657,41
1995-09-09	06:00:00	-0,88	0	677,51		657,39
1995-09-09	12:00:00	5,15	0	677,49		657,40
1995-09-09	18:00:00	4,26	0	677,47		657,38
1995-09-10	00:00:00	1,54	0	677,46		657,38
1995-09-10	06:00:00	2,70	0	677,41		657,36
1995-09-10	12:00:00	1,85	0	677,39		657,35
1995-09-10	18:00:00	2,49	0	677,35		657,33
1995-09-11	00:00:00	0,50	0	677,34		657,33
1995-09-11	06:00:00	-0,10	0	677,30		657,31
1995-09-11	12:00:00	0,43	0	677,27		657,30
1995-09-11	18:00:00	1,88	0	677,25		657,27
1995-09-12	00:00:00	-1,45	0	677,24		657,27
1995-09-12	06:00:00	-2,91	0	677,20		657,26
1995-09-12	12:00:00	-1,77	0	677,19		657,25
1995-09-12	18:00:00	-0,10	0	677,16		657,25
1995-09-13	00:00:00	-0,37	0	677,14		657,23

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/6hr	m	m	m
1995-09-13	06:00:00	-0,45	0	677,11		657,22
1995-09-13	12:00:00	-0,29	0	677,09		657,21
1995-09-13	18:00:00	0,47	0	677,05		657,20
1995-09-14	00:00:00	5,71	0	677,02		657,20
1995-09-14	06:00:00	8,14	0	676,99		657,18
1995-09-14	12:00:00	8,42	0	676,96		657,18
1995-09-14	18:00:00	5,34	0	676,94		657,17
1995-09-15	00:00:00	0,66	0	676,92		657,18
1995-09-15	06:00:00	-0,73	0	676,89		657,17
1995-09-15	12:00:00	0,73	0	676,86		657,16
1995-09-15	18:00:00	2,36	0	676,84		657,15
1995-09-16	00:00:00	-0,55	0	676,82		657,14
1995-09-16	06:00:00	-1,14	0	676,79		657,14
1995-09-16	12:00:00	-0,95	0	676,72		657,13
1995-09-16	18:00:00	-0,05	0	676,71		657,12
1995-09-17	00:00:00	0,41	0	676,69		657,11
1995-09-17	06:00:00	2,74	0	676,65		657,11
1995-09-17	12:00:00	2,73	0	676,62		657,09
1995-09-17	18:00:00	3,29	0	676,59		657,08
1995-09-18	00:00:00	1,47	0	676,56		657,06
1995-09-18	06:00:00	1,45	0	676,54		657,05
1995-09-18	12:00:00	2,46	0	676,50		657,04
1995-09-18	18:00:00	3,71	0	676,47		657,03
1995-09-19	00:00:00	3,48	0	676,47		657,01
1995-09-19	06:00:00	4,03	0	676,45		657,00
1995-09-19	12:00:00	4,13	0	676,43		656,99
1995-09-19	18:00:00	4,26	0	676,41		656,98
1995-09-20	00:00:00	4,15	0	676,41		656,97
1995-09-20	06:00:00	4,39	0	676,40		656,95
1995-09-20	12:00:00	8,88	0	676,41		656,94
1995-09-20	18:00:00	10,74	0	676,41		656,93
1995-09-21	00:00:00	8,25	0	676,41		656,92
1995-09-21	06:00:00	8,67	0	676,41		656,91
1995-09-21	12:00:00	7,55	0	676,40		656,90
1995-09-21	18:00:00	7,41	0	676,41		656,88
1995-09-22	00:00:00	2,66	0	676,41		656,87
1995-09-22	06:00:00	3,25	0	676,41		656,85
1995-09-22	12:00:00	4,40	0	676,40		656,85
1995-09-22	18:00:00	5,45	0	676,41		656,81
1995-09-23	00:00:00	5,11	0	676,41		656,81
1995-09-23	06:00:00	6,90	0	676,41		656,79
1995-09-23	12:00:00	7,55	0	676,40		656,78
1995-09-23	18:00:00	8,09	0	676,40		656,75
1995-09-24	00:00:00	7,92	0	676,40		656,75
1995-09-24	06:00:00	4,01	0	676,41		656,73
1995-09-24	12:00:00	2,91	0	676,41		656,73
1995-09-24	18:00:00	4,15	0	676,41		656,72
1995-09-25	00:00:00	0,71	0	676,40		656,71

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/hr	m	m	m
1995-09-25	06:00:00	-0,31	0	676,41		656,69
1995-09-25	12:00:00	2,96	0	676,41		656,69
1995-09-25	18:00:00	3,33	0	676,41		656,67
1995-09-26	00:00:00	1,51	0	676,41		656,67
1995-09-26	06:00:00	0,34	0	676,41		656,65
1995-09-26	12:00:00	0,23	0	676,41		656,65
1995-09-26	18:00:00	2,20	0	676,41		656,63
1995-09-27	00:00:00	0,25	0	676,41		656,63
1995-09-27	06:00:00	0,39	0	676,41		656,62
1995-09-27	12:00:00	4,49	0	676,41		656,62
1995-09-27	18:00:00	7,55	0	676,41		656,61
1995-09-28	00:00:00	4,39	0	676,41		656,60
1995-09-28	06:00:00	3,86	0	676,41		656,59
1995-09-28	12:00:00	3,89	0	676,40		656,59
1995-09-28	18:00:00	5,85	0	676,41		656,58
1995-09-29	00:00:00	4,68	0	676,41		656,57
1995-09-29	06:00:00	5,68	0	676,40		656,55
1995-09-29	12:00:00	8,38	0	676,40		656,54
1995-09-29	18:00:00	8,38	0	676,40		656,54
1995-09-30	00:00:00	5,49	0	676,41		656,53
1995-09-30	06:00:00	4,82	0	676,40		656,52
1995-09-30	12:00:00	5,03	0	676,40		656,51
1995-09-30	18:00:00	5,21	0	676,41		656,51
1995-10-01	00:00:00	4,34	0	676,40		656,50
1995-10-01	06:00:00	3,25	0	676,40		656,50
1995-10-01	12:00:00	2,82	0	676,40		656,48
1995-10-01	18:00:00	2,64	0	676,40		656,48
1995-10-02	00:00:00	0,83	0	676,40		656,47
1995-10-02	06:00:00	0,29	0	676,40		656,47
1995-10-02	12:00:00	2,30	0	676,40		656,46
1995-10-02	18:00:00	1,99	0	676,40		656,45
1995-10-03	00:00:00	0,61	0	676,41		656,45
1995-10-03	06:00:00	1,38	0	676,40		656,45
1995-10-03	12:00:00	0,71	0	676,41		656,43
1995-10-03	18:00:00	1,38	0	676,41		656,43
1995-10-04	00:00:00	1,72	0	676,41		656,43
1995-10-04	06:00:00	3,38	0	676,40		656,42
1995-10-04	12:00:00	5,88	0	676,40		656,42
1995-10-04	18:00:00	7,90	0	676,40		656,41
1995-10-05	00:00:00	7,63	0	676,41		656,33
1995-10-05	06:00:00	8,08	0	676,40		656,31
1995-10-05	12:00:00	6,35	0	676,40		656,30
1995-10-05	18:00:00	3,73	0	676,40		656,30
1995-10-06	00:00:00	2,36	0	676,40		656,29
1995-10-06	06:00:00	2,49	0	676,40		656,27
1995-10-06	12:00:00	2,43	0	676,40		656,27
1995-10-06	18:00:00	2,86	0	676,40		656,25
1995-10-07	00:00:00	0,97	0	676,41		656,25

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/6hr	m	m	m
1995-10-07	06:00:00	-0,53	0	676,40		656,24
1995-10-07	12:00:00	-0,57	0	676,40		656,27
1995-10-07	18:00:00	-0,25	0	676,40		656,26
1995-10-08	00:00:00	-0,55	0	676,41		656,26
1995-10-08	06:00:00	-1,08	0	676,40		656,29
1995-10-08	12:00:00	-1,21	0	676,40		656,35
1995-10-08	18:00:00	-0,56	0	676,40		656,36
1995-10-09	00:00:00	-0,77	0	676,41		656,38
1995-10-09	06:00:00	-0,61	0	676,40		656,39
1995-10-09	12:00:00	-0,43	0	676,40		656,43
1995-10-09	18:00:00	-0,27	0	676,40		656,50
1995-10-10	00:00:00	-0,69	0	676,41		656,75
1995-10-10	06:00:00	-2,46	0	676,40		657,19
1995-10-10	12:00:00	-1,64	0	676,40		658,70
1995-10-10	18:00:00	-2,37	0	676,40		660,79
1995-10-11	00:00:00	-4,60	0	676,40		662,41
1995-10-11	06:00:00	-4,78	0	676,40		663,49
1995-10-11	12:00:00	-4,39	0	676,40		664,60
1995-10-11	18:00:00	-2,77	0	676,40		665,57
1995-10-12	00:00:00	-3,13	0	676,40		666,17
1995-10-12	06:00:00	-2,55	0	676,40		666,73
1995-10-12	12:00:00	-1,89	0	676,40		667,22
1995-10-12	18:00:00	-0,57	0	676,41		667,51
1995-10-13	00:00:00	-1,16	0	676,40		667,65
1995-10-13	06:00:00	-2,45	0	676,40		667,75
1995-10-13	12:00:00	-3,18	0	676,41		667,85
1995-10-13	18:00:00	-4,25	0	676,40		668,99
1995-10-14	00:00:00	-6,73	0	676,40		671,01
1995-10-14	06:00:00	-7,42	0	676,40		672,45
1995-10-14	12:00:00	-7,03	0	676,41		677,64
1995-10-14	18:00:00	-6,86	0	676,41		678,14
1995-10-15	00:00:00	-7,23	0	676,41		678,08
1995-10-15	06:00:00	-7,11	0	676,41		677,47
1995-10-15	12:00:00	-6,49	0	676,41		676,70
1995-10-15	18:00:00	-4,57	0	676,41		676,38
1995-10-16	00:00:00	-2,53	0	676,45		676,69
1995-10-16	06:00:00	-1,44	0	676,50		677,87
1995-10-16	12:00:00	-0,88	0	676,40		677,44
1995-10-16	18:00:00	0,85	0	676,42		677,96
1995-10-17	00:00:00	0,75	0	676,42		677,32
1995-10-17	06:00:00	0,83	0	676,58		677,31
1995-10-17	12:00:00	1,27	0	676,74		678,41
1995-10-17	18:00:00	2,66	0	676,49		678,21
1995-10-18	00:00:00	1,47	0	676,46		678,23
1995-10-18	06:00:00	1,45	0	676,45		677,65
1995-10-18	12:00:00	1,81	0	676,46		676,97
1995-10-18	18:00:00	1,47	0	676,48		676,75
1995-10-19	00:00:00	1,01	0	676,52		676,59

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/6hr	m	m	m
1995-10-19	06:00:00	1,03	0	676,56		676,49
1995-10-19	12:00:00	1,22	0	676,64		676,40
1995-10-19	18:00:00	1,80	0	676,69		676,32
1995-10-20	00:00:00	0,98	0	676,76		676,26
1995-10-20	06:00:00	0,79	0	676,82		676,19
1995-10-20	12:00:00	0,18	0	676,83		676,15
1995-10-20	18:00:00	0,50	0	676,82		676,11
1995-10-21	00:00:00	0,19	0	677,00		676,12
1995-10-21	06:00:00	0,19	0	676,98		676,11
1995-10-21	12:00:00	0,92	0	676,96		676,09
1995-10-21	18:00:00	1,17	0	677,00		676,07
1995-10-22	00:00:00	-0,27	0	677,01		676,03
1995-10-22	06:00:00	-0,37	0	677,02		675,96
1995-10-22	12:00:00	0,01	0	677,08		675,91
1995-10-22	18:00:00	1,63	0	677,12		675,81
1995-10-23	00:00:00	0,63	0	677,19		675,70
1995-10-23	06:00:00	0,87	0	677,24		675,58
1995-10-23	12:00:00	1,11	0	677,35		675,41
1995-10-23	18:00:00	2,28	0	677,48		675,41
1995-10-24	00:00:00	1,58	0	677,40		675,34
1995-10-24	06:00:00	1,08	0	677,40		675,18
1995-10-24	12:00:00	1,78	0	677,44		675,10
1995-10-24	18:00:00	3,79	0	677,47		674,98
1995-10-25	00:00:00	1,31	0	677,53		674,82
1995-10-25	06:00:00	1,17	0	677,58		674,67
1995-10-25	12:00:00	1,49	0	677,84		674,60
1995-10-25	18:00:00	3,41	0	678,07		675,60
1995-10-26	00:00:00	1,39	0	678,15		676,56
1995-10-26	06:00:00	0,85	0	677,91		678,37
1995-10-26	12:00:00	1,08	0	677,91		678,02
1995-10-26	18:00:00	2,91	0	677,93		677,29
1995-10-27	00:00:00	1,14	0	677,98		676,82
1995-10-27	06:00:00	0,74	0	678,01		676,60
1995-10-27	12:00:00	1,08	0	678,06		676,52
1995-10-27	18:00:00	2,44	0	678,12		676,44
1995-10-28	00:00:00	1,01	0	678,18		676,38
1995-10-28	06:00:00	0,63	0	678,23		676,31
1995-10-28	12:00:00	0,96	0	678,27		676,26
1995-10-28	18:00:00	2,20	0	678,32		676,23
1995-10-29	00:00:00	0,60	0	678,37		676,18
1995-10-29	06:00:00	-0,23	0	678,40		676,14
1995-10-29	12:00:00	-0,55	0	678,42		676,08
1995-10-29	18:00:00	-0,49	0	678,48		
1995-10-30	00:00:00	-0,95	0	678,53		
1995-10-30	06:00:00	-2,09	0	678,56		
1995-10-30	12:00:00	-3,61	0	678,62		
1995-10-30	18:00:00	-2,12	0	678,66	655,87	
1995-10-31	00:00:00	-4,44	0	678,71	655,75	

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/6hr	m	m	m
1995-10-31	06:00:00	-5,38	0	678,75	655,72	
1995-10-31	12:00:00	-5,52	0	678,76	655,75	
1995-10-31	18:00:00	-2,94	0	678,78	655,79	
1995-11-01	00:00:00	-4,70	0	678,80	655,69	
1995-11-01	06:00:00	-4,53	0	678,83	655,60	
1995-11-01	12:00:00	-2,94	0	678,84	655,62	
1995-11-01	18:00:00	-1,24	0	678,87	655,74	
1995-11-02	00:00:00	-1,18	0	678,91	655,78	
1995-11-02	06:00:00	-1,08	0	678,92	655,92	
1995-11-02	12:00:00	-0,91	0	678,97	656,32	
1995-11-02	18:00:00	-0,41	0	678,99	656,29	
1995-11-03	00:00:00	-0,37	0	679,01	656,29	
1995-11-03	06:00:00	-0,24	0	679,01	656,42	
1995-11-03	12:00:00	0,37	0	679,05	656,52	
1995-11-03	18:00:00	0,92	0	679,09	656,69	
1995-11-04	00:00:00	0,11	0	679,16	656,74	
1995-11-04	06:00:00	-0,10	0	679,22	656,86	
1995-11-04	12:00:00	1,21	0	679,31	657,09	
1995-11-04	18:00:00	2,68	0	679,39	657,29	
1995-11-05	00:00:00	1,33	0	679,39	657,33	
1995-11-05	06:00:00	0,55	0	679,37	657,40	
1995-11-05	12:00:00	0,33	0	679,40	657,38	
1995-11-05	18:00:00	1,56	0	679,42	657,40	
1995-11-06	00:00:00	0,50	0	679,46	657,49	
1995-11-06	06:00:00	-0,41	0	679,46	657,64	
1995-11-06	12:00:00	-0,25	0	679,49	657,58	
1995-11-06	18:00:00	2,79	0	679,51	657,54	
1995-11-07	00:00:00	1,22	0	679,56	657,62	
1995-11-07	06:00:00	1,09	0	679,61	657,78	
1995-11-07	12:00:00	1,53	0	679,70	657,78	
1995-11-07	18:00:00	4,53	0	679,81	658,00	
1995-11-08	00:00:00	4,31	0	680,05	657,77	
1995-11-08	06:00:00	4,45	0	680,17	657,90	
1995-11-08	12:00:00	4,82	0	680,34	657,81	
1995-11-08	18:00:00	4,23	0	680,30	657,77	
1995-11-09	00:00:00	2,91	0	680,18	657,67	
1995-11-09	06:00:00	0,24	0	680,16	657,65	
1995-11-09	12:00:00	0,56	0	680,21	657,69	
1995-11-09	18:00:00	0,19	0	680,24	657,83	
1995-11-10	00:00:00	-0,65	0	680,29	657,82	
1995-11-10	06:00:00	-0,96	0	680,32	657,98	
1995-11-10	12:00:00	-1,83	0	680,36	658,07	
1995-11-10	18:00:00	-1,99	0	680,42	658,35	
1995-11-11	00:00:00	-3,46	0	680,58	658,39	
1995-11-11	06:00:00	-5,67	0	680,80	658,44	
1995-11-11	12:00:00	-6,14	0	680,82	658,39	
1995-11-11	18:00:00	-3,69	0	680,83	658,48	
1995-11-12	00:00:00	-3,35	0	680,77	658,45	

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/6hr	m	m	m
1995-11-12	06:00:00	-2,06	0	680,71	658,49	
1995-11-12	12:00:00	0,00	0	680,74	658,56	
1995-11-12	18:00:00	2,86	0	680,79	658,67	
1995-11-13	00:00:00	3,33	0	680,86	658,61	
1995-11-13	06:00:00	2,90	0	681,02	658,68	
1995-11-13	12:00:00	3,27	0	680,97	658,73	
1995-11-13	18:00:00	3,20	0	681,01	658,86	
1995-11-14	00:00:00	2,10	0	681,26	658,83	
1995-11-14	06:00:00	0,82	0	681,30	658,94	
1995-11-14	12:00:00	2,15	0	681,31	659,00	
1995-11-14	18:00:00	2,92	0	681,30	659,11	
1995-11-15	00:00:00	1,74	0	681,34	659,25	
1995-11-15	06:00:00	0,47	0	681,40	659,35	
1995-11-15	12:00:00	1,24	0	681,53	659,40	
1995-11-15	18:00:00	2,24	0	681,67	659,38	
1995-11-16	00:00:00	1,01	0	681,53	659,42	
1995-11-16	06:00:00	0,49	0	681,53	659,38	
1995-11-16	12:00:00	1,64	0	681,55	659,48	
1995-11-16	18:00:00	4,18	0	681,60	659,58	
1995-11-17	00:00:00	4,39	0	681,84	659,79	
1995-11-17	06:00:00	5,01	0	681,91	659,88	
1995-11-17	12:00:00	5,75	0	682,01	660,12	
1995-11-17	18:00:00	6,10	0	682,14	660,30	
1995-11-18	00:00:00	4,02	0	682,30	660,31	
1995-11-18	06:00:00	2,92	0	682,33	660,22	
1995-11-18	12:00:00	2,86	0	682,17	660,29	
1995-11-18	18:00:00	4,50	0	682,05	660,45	
1995-11-19	00:00:00	3,64	0	682,05	660,49	
1995-11-19	06:00:00	4,45	0	682,04	660,56	
1995-11-19	12:00:00	4,08	0	682,10	660,68	
1995-11-19	18:00:00	4,40	0	682,12	660,79	
1995-11-20	00:00:00	2,15	0	682,19	660,80	
1995-11-20	06:00:00	1,21	0	682,23	660,89	
1995-11-20	12:00:00	1,74	0	682,29	660,97	
1995-11-20	18:00:00	2,26	0	682,33	661,11	
1995-11-21	00:00:00	4,13	0	682,39	661,18	
1995-11-21	06:00:00	3,68	0	682,42	661,30	
1995-11-21	12:00:00	2,01	0	682,48	661,29	
1995-11-21	18:00:00	3,73	0	682,49	661,36	
1995-11-22	00:00:00	0,25	0	682,53	661,51	
1995-11-22	06:00:00	-0,77	0	682,60	661,53	
1995-11-22	12:00:00	-0,97	0	682,57	661,46	
1995-11-22	18:00:00	-0,45	0	682,60	661,50	
1995-11-23	00:00:00	-1,45	0	682,64	661,45	
1995-11-23	06:00:00	-3,50	0	682,67	661,73	
1995-11-23	12:00:00	-4,23	0	682,95	661,76	
1995-11-23	18:00:00	-2,03	0	683,03	661,80	
1995-11-24	00:00:00	-3,13	0	683,04	661,83	

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/6hr	m	m	m
1995-11-24	06:00:00	-3,96	0	682,96	662,00	
1995-11-24	12:00:00	-4,07	0	683,01	662,13	
1995-11-24	18:00:00	-2,60	0	683,21	662,28	
1995-11-25	00:00:00	-4,59	0	683,33	662,21	
1995-11-25	06:00:00	-6,73	0	683,28	662,30	
1995-11-25	12:00:00	-4,51	0	683,37	662,34	
1995-11-25	18:00:00	-2,83	0	683,40	662,38	
1995-11-26	00:00:00	-4,74	0	683,41	662,38	
1995-11-26	06:00:00	-5,25	0	683,42	662,53	
1995-11-26	12:00:00	-4,35	0	683,33	662,38	
1995-11-26	18:00:00	-3,11	0	683,32	662,40	
1995-11-27	00:00:00	-3,81	0	683,34	662,44	
1995-11-27	06:00:00	-4,13	0	683,36	662,60	
1995-11-27	12:00:00	-5,06	0	683,43	662,78	
1995-11-27	18:00:00	-1,85	0	683,63	662,87	
1995-11-28	00:00:00	-5,54	0	683,67	662,90	
1995-11-28	06:00:00	-4,69	0	683,69	663,11	
1995-11-28	12:00:00	-3,25	0	683,76	663,23	
1995-11-28	18:00:00	-1,77	0	683,89	663,25	
1995-11-29	00:00:00	-3,69	0	683,94	663,15	
1995-11-29	06:00:00	-4,03	0	683,96	663,26	
1995-11-29	12:00:00	-3,11	0	684,08	663,71	
1995-11-29	18:00:00	-1,37	0	684,11	663,82	
1995-11-30	00:00:00	-1,79	0	684,18	663,85	
1995-11-30	06:00:00	-2,36	0	684,18	663,84	
1995-11-30	12:00:00	-2,85	0	684,17	663,86	
1995-11-30	18:00:00	-1,03	0	684,13	663,89	
1995-12-01	00:00:00	-2,06	0	684,13	663,99	
1995-12-01	06:00:00	-4,04	0	684,17	663,97	
1995-12-01	12:00:00	-4,82	0	684,17	664,04	
1995-12-01	18:00:00	-2,51	0	684,16	664,05	
1995-12-02	00:00:00	-3,54	0	684,21	664,21	
1995-12-02	06:00:00	-4,61	0	684,21	664,18	
1995-12-02	12:00:00	-3,79	0	684,17	664,16	
1995-12-02	18:00:00	-1,58	0	684,17	664,15	
1995-12-03	00:00:00	-3,75	0	684,17	664,19	
1995-12-03	06:00:00	-5,45	0	684,19	664,21	
1995-12-03	12:00:00	-4,59	0	684,27	664,30	
1995-12-03	18:00:00	-4,70	0	684,36	664,47	
1995-12-04	00:00:00	-7,87	0	684,46	664,40	
1995-12-04	06:00:00	-8,58	0	684,41	664,30	
1995-12-04	12:00:00	-8,94	0	684,34	664,25	
1995-12-04	18:00:00	-5,63	0	684,29	664,28	
1995-12-05	00:00:00	-9,55	0	684,30	664,30	
1995-12-05	06:00:00	-11,36	0	684,32	664,41	
1995-12-05	12:00:00	-9,05	0	684,38	664,47	
1995-12-05	18:00:00	-8,38	0	684,40	664,61	
1995-12-06	00:00:00	-14,22	0	684,45	664,58	

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/6hr	m	m	m
1995-12-06	06:00:00	-16,23	0	684,45	664,64	
1995-12-06	12:00:00	-11,63	0	684,49	664,72	
1995-12-06	18:00:00	-7,85	0	684,50	664,81	
1995-12-07	00:00:00	-11,37	0	684,55	664,79	
1995-12-07	06:00:00	-11,87	0	684,56	664,71	
1995-12-07	12:00:00	-6,80	0	684,59	664,38	
1995-12-07	18:00:00	-2,83	0	684,57	664,44	
1995-12-08	00:00:00	-7,00	0	684,58	664,34	
1995-12-08	06:00:00	-8,90	0	684,58	664,46	
1995-12-08	12:00:00	-4,99	0	684,61	664,47	
1995-12-08	18:00:00	-2,11	0	684,63	664,56	
1995-12-09	00:00:00	-6,19	0	684,68	664,60	
1995-12-09	06:00:00	-8,90	0	684,70	664,70	
1995-12-09	12:00:00	-6,04	0	684,75	664,79	
1995-12-09	18:00:00	-2,93	0	684,78	664,89	
1995-12-10	00:00:00	-6,76	0	684,84	664,96	
1995-12-10	06:00:00	-7,15	0	685,02	665,16	
1995-12-10	12:00:00	-7,01	0	685,11	665,24	
1995-12-10	18:00:00	-3,54	0	685,20	665,19	
1995-12-11	00:00:00	-4,55	0	685,22	665,19	
1995-12-11	06:00:00	-4,03	0	685,24	665,40	
1995-12-11	12:00:00	-2,55	0	685,20	665,39	
1995-12-11	18:00:00	-0,74	0	685,20	665,37	
1995-12-12	00:00:00	-0,73	0	685,22	665,44	
1995-12-12	06:00:00	0,15	0	685,22	665,57	
1995-12-12	12:00:00	1,03	0	685,33	665,72	
1995-12-12	18:00:00	1,19	0	685,49	665,96	
1995-12-13	00:00:00	1,01	0	685,51	665,87	
1995-12-13	06:00:00	1,53	0	685,42	665,58	
1995-12-13	12:00:00	1,58	0	685,34	665,48	
1995-12-13	18:00:00	3,04	0	685,28	665,49	
1995-12-14	00:00:00	3,13	0	685,31	665,53	
1995-12-14	06:00:00	2,02	0	685,33	665,64	
1995-12-14	12:00:00	1,35	0	685,43	665,67	
1995-12-14	18:00:00	2,68	0	685,44	665,59	
1995-12-15	00:00:00	1,63	0	685,46	665,64	
1995-12-15	06:00:00	1,80	0	685,46	665,88	
1995-12-15	12:00:00	2,13	0	685,47	665,91	
1995-12-15	18:00:00	5,19	0	685,47	665,88	
1995-12-16	00:00:00	0,65	0	685,37	665,75	
1995-12-16	06:00:00	-0,95	0	685,35	665,69	
1995-12-16	12:00:00	-0,23	0	685,39	665,75	
1995-12-16	18:00:00	0,00	0	685,41	665,73	
1995-12-17	00:00:00	-1,44	0	685,43	665,80	
1995-12-17	06:00:00	-3,48	0	685,46	665,75	
1995-12-17	12:00:00	-1,22	0	685,53	665,77	
1995-12-17	18:00:00	-0,21	0	685,63	665,84	
1995-12-18	00:00:00	-0,97	0	685,65	666,15	

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/6hr	m	m	m
1995-12-18	06:00:00	-1,32	0	685,76	666,08	
1995-12-18	12:00:00	0,19	0	685,76	665,99	
1995-12-18	18:00:00	2,05	0	685,72	665,90	
1995-12-19	00:00:00	0,61	0	685,66	665,78	
1995-12-19	06:00:00	1,13	0	685,66	665,78	
1995-12-19	12:00:00	3,20	0	685,68	665,77	
1995-12-19	18:00:00	7,14	0	685,69	665,85	
1995-12-20	00:00:00	1,77	0	685,72	665,94	
1995-12-20	06:00:00	0,69	0	685,70	666,06	
1995-12-20	12:00:00	7,39	0	685,74	666,09	
1995-12-20	18:00:00	7,29	0	685,75	666,09	
1995-12-21	00:00:00	2,36	0	685,79	665,99	
1995-12-21	06:00:00	1,30	0	685,79	666,09	
1995-12-21	12:00:00	8,99	0	685,82	666,07	
1995-12-21	18:00:00	8,88	0	685,84	666,14	
1995-12-22	00:00:00	2,86	0	685,89	666,07	
1995-12-22	06:00:00	1,45	0	685,87	666,18	
1995-12-22	12:00:00	8,52	0	685,87	666,08	
1995-12-22	18:00:00	8,74	0	685,85	666,10	
1995-12-23	00:00:00	2,90	0	685,89	665,99	
1995-12-23	06:00:00	1,33	0	685,88	666,09	
1995-12-23	12:00:00	8,65	0	685,90	666,11	
1995-12-23	18:00:00	9,21	0	685,91	666,28	
1995-12-24	00:00:00	5,36	0	685,93	666,21	
1995-12-24	06:00:00	2,98	0	685,92	666,31	
1995-12-24	12:00:00	3,64	0	685,93	666,28	
1995-12-24	18:00:00	5,23	0	685,92	666,34	
1995-12-25	00:00:00	4,55	0	685,94	666,26	
1995-12-25	06:00:00	3,73	0	685,94	666,29	
1995-12-25	12:00:00	4,01	0	685,93	666,31	
1995-12-25	18:00:00	3,85	0	685,95	666,37	
1995-12-26	00:00:00	2,11	0	685,96	666,31	
1995-12-26	06:00:00	0,89	0	685,97	666,40	
1995-12-26	12:00:00	1,24	0	685,98	666,39	
1995-12-26	18:00:00	4,21	0	685,99	666,39	
1995-12-27	00:00:00	1,11	0	685,98	666,42	
1995-12-27	06:00:00	0,15	0	686,00	666,42	
1995-12-27	12:00:00	0,31	0	686,00	666,50	
1995-12-27	18:00:00	0,43	0	686,02	666,52	
1995-12-28	00:00:00	-0,30	0	686,04	666,53	
1995-12-28	06:00:00	-0,53	0	686,03	666,52	
1995-12-28	12:00:00	-0,51	0	686,04	666,57	
1995-12-28	18:00:00	1,39	0	686,06	666,62	
1995-12-29	00:00:00	-1,30	0	686,16	666,69	
1995-12-29	06:00:00	-3,85	0	686,14	666,65	
1995-12-29	12:00:00	-2,65	0	686,24	666,62	
1995-12-29	18:00:00	-1,32	0	686,20	666,57	
1995-12-30	00:00:00	-1,78	0	686,23	666,59	

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/6hr	m	m	m
1995-12-30	06:00:00	-2,53	0	686,19	666,59	
1995-12-30	12:00:00	-1,05	0	686,20	666,71	
1995-12-30	18:00:00	0,13	0	686,25	666,67	
1995-12-31	00:00:00	-1,55	0	686,31	666,57	
1995-12-31	06:00:00	-1,93	0	686,20	666,32	
1995-12-31	12:00:00	-1,29	0	686,14	666,28	
1995-12-31	18:00:00	0,13	0	686,09	666,33	
1996-01-01	00:00:00	-1,93	0	686,09	666,35	
1996-01-01	06:00:00	-2,91	0	686,11	666,36	
1996-01-01	12:00:00	-1,91	0	686,17	666,35	
1996-01-01	18:00:00	-0,41	0	686,17	666,52	
1996-01-02	00:00:00	-3,84	0	686,25	666,59	
1996-01-02	06:00:00	-7,52	0	686,35	666,64	
1996-01-02	12:00:00	-4,04	0	686,42	666,69	
1996-01-02	18:00:00	-1,64	0	686,45	666,92	
1996-01-03	00:00:00	-2,60	0	686,58	666,92	
1996-01-03	06:00:00	-3,52	0	686,59	666,88	
1996-01-03	12:00:00	-3,53	0	686,51	666,70	
1996-01-03	18:00:00	-1,85	0	686,45	666,62	
1996-01-04	00:00:00	-5,38	0	686,46	666,61	
1996-01-04	06:00:00	-8,29	0	686,42	666,67	
1996-01-04	12:00:00	-1,79	0	686,42	666,67	
1996-01-04	18:00:00	-0,59	0	686,39	666,71	
1996-01-05	00:00:00	-4,15	0	686,38	666,68	
1996-01-05	06:00:00	-7,56	0	686,37	666,75	
1996-01-05	12:00:00	-1,16	0	686,38	666,75	
1996-01-05	18:00:00	0,53	0	686,39	666,87	
1996-01-06	00:00:00	-1,70	0	686,44	666,89	
1996-01-06	06:00:00	-3,69	0	686,44	667,01	
1996-01-06	12:00:00	1,77	0	686,47	667,10	
1996-01-06	18:00:00	2,96	0	686,61	667,03	
1996-01-07	00:00:00	-0,43	0	686,63	666,90	
1996-01-07	06:00:00	-1,62	0	686,61	667,04	
1996-01-07	12:00:00	3,46	0	686,64	666,97	
1996-01-07	18:00:00	4,21	0	686,68	667,10	
1996-01-08	00:00:00	-0,63	0	686,69	667,05	
1996-01-08	06:00:00	-0,89	0	686,67	667,20	
1996-01-08	12:00:00	-0,63	0	686,71	667,21	
1996-01-08	18:00:00	-0,47	0	686,72	667,23	
1996-01-09	00:00:00	-1,03	0	686,73	666,94	
1996-01-09	06:00:00	-1,48	0	686,73	666,99	
1996-01-09	12:00:00	-1,75	0	686,80	666,98	
1996-01-09	18:00:00	-1,10	0	686,76	666,99	
1996-01-10	00:00:00	-2,04	0	686,77	666,98	
1996-01-10	06:00:00	-3,75	0	686,70	667,01	
1996-01-10	12:00:00	0,31	0	686,68	667,09	
1996-01-10	18:00:00	2,26	0	686,77	667,19	
1996-01-11	00:00:00	0,39	0	686,83	667,23	

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/6hr	m	m	m
1996-01-11	06:00:00	-0,30	0	686,85	667,35	
1996-01-11	12:00:00	0,27	0	686,88	667,36	
1996-01-11	18:00:00	2,82	0	686,89	667,41	
1996-01-12	00:00:00	0,13	0	686,89	667,46	
1996-01-12	06:00:00	-0,29	0	686,89	667,53	
1996-01-12	12:00:00	0,41	0	686,91	667,61	
1996-01-12	18:00:00	1,47	0	686,93	667,65	
1996-01-13	00:00:00	0,50	0	686,94	667,70	
1996-01-13	06:00:00	0,11	0	687,02	667,73	
1996-01-13	12:00:00	0,87	0	687,00	667,73	
1996-01-13	18:00:00	2,28	0	687,01	667,75	
1996-01-14	00:00:00	1,86	0	686,99	667,82	
1996-01-14	06:00:00	2,73	0	686,99	667,84	
1996-01-14	12:00:00	3,20	0	687,00	668,01	
1996-01-14	18:00:00	5,13	0	687,03	668,11	
1996-01-15	00:00:00	2,34	0	687,16	668,12	
1996-01-15	06:00:00	2,18	0	687,16	668,21	
1996-01-15	12:00:00	4,50	0	687,22	668,23	
1996-01-15	18:00:00	6,39	0	687,23	668,09	
1996-01-16	00:00:00	2,54	0	687,19	668,05	
1996-01-16	06:00:00	1,66	0	687,08	667,98	
1996-01-16	12:00:00	8,71	0	687,06	668,02	
1996-01-16	18:00:00	8,38	0	687,08	667,96	
1996-01-17	00:00:00	0,83	0	687,08	667,96	
1996-01-17	06:00:00	-0,24	0	687,02	667,92	
1996-01-17	12:00:00	6,65	0	687,01	667,92	
1996-01-17	18:00:00	8,91	0	686,97	667,87	
1996-01-18	00:00:00	0,90	0	686,99	667,79	
1996-01-18	06:00:00	-0,69	0	686,97	667,96	
1996-01-18	12:00:00	5,23	0	687,04	668,07	
1996-01-18	18:00:00	8,34	0	687,08	668,19	
1996-01-19	00:00:00	2,07	0	687,16	668,17	
1996-01-19	06:00:00	1,01	0	687,11	668,20	
1996-01-19	12:00:00	12,15	0	687,08	668,16	
1996-01-19	18:00:00	10,92	0	687,03	668,20	
1996-01-20	00:00:00	3,58	0	687,00	668,09	
1996-01-20	06:00:00	0,82	0	686,98	668,24	
1996-01-20	12:00:00	7,14	0	687,05	668,19	
1996-01-20	18:00:00	7,71	0	687,08	668,19	
1996-01-21	00:00:00	0,83	0	687,09	668,04	
1996-01-21	06:00:00	0,31	0	687,02	668,05	
1996-01-21	12:00:00	1,56	0	686,95	667,91	
1996-01-21	18:00:00	5,61	0	686,89	667,96	
1996-01-22	00:00:00	1,68	0	686,87	667,75	
1996-01-22	06:00:00	0,21	0	686,82	667,80	
1996-01-22	12:00:00	7,84	0	686,85	667,78	
1996-01-22	18:00:00	9,37	0	686,87	667,87	
1996-01-23	00:00:00	3,02	0	686,90	667,79	

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/6hr	m	m	m
1996-01-23	06:00:00	1,96	0	686,88	667,90	
1996-01-23	12:00:00	5,32	0	686,89	667,98	
1996-01-23	18:00:00	9,27	0	686,87	668,04	
1996-01-24	00:00:00	4,17	0	686,87	668,01	
1996-01-24	06:00:00	1,85	0	686,85	667,79	
1996-01-24	12:00:00	0,67	0	686,84	667,71	
1996-01-24	18:00:00	1,85	0	686,80	667,65	
1996-01-25	00:00:00	0,31	0	686,78	667,59	
1996-01-25	06:00:00	0,03	0	686,75	667,56	
1996-01-25	12:00:00	1,72	0	686,74	667,60	
1996-01-25	18:00:00	5,93	0	686,72	667,63	
1996-01-26	00:00:00	1,54	0	686,71	667,51	
1996-01-26	06:00:00	0,34	0	686,70	667,63	
1996-01-26	12:00:00	4,67	0	686,68	667,58	
1996-01-26	18:00:00	7,79	0	686,68	667,59	
1996-01-27	00:00:00	2,72	0	686,70	667,67	
1996-01-27	06:00:00	0,67	0	686,72	667,72	
1996-01-27	12:00:00	6,39	0	686,74	667,66	
1996-01-27	18:00:00	8,12	0	686,75	667,49	
1996-01-28	00:00:00	0,74	0	686,73	667,51	
1996-01-28	06:00:00	-0,96	0	686,71	667,42	
1996-01-28	12:00:00	6,44	0	686,66	667,32	
1996-01-28	18:00:00	8,27	0	686,62	667,22	
1996-01-29	00:00:00	0,85	0	686,59	667,18	
1996-01-29	06:00:00	-1,99	0	686,56	667,22	
1996-01-29	12:00:00	3,95	0	686,52	667,22	
1996-01-29	18:00:00	5,01	0	686,48	667,07	
1996-01-30	00:00:00	-0,93	0	686,46	667,08	
1996-01-30	06:00:00	-3,35	0	686,42	667,09	
1996-01-30	12:00:00	4,09	0	686,42	667,13	
1996-01-30	18:00:00	8,54	0	686,41	667,07	
1996-01-31	00:00:00	0,65	0	686,44	666,93	
1996-01-31	06:00:00	-1,12	0	686,42	667,00	
1996-01-31	12:00:00	6,09	0	686,44	667,05	
1996-01-31	18:00:00	8,89	0	686,40	667,04	
1996-02-01	00:00:00	1,66	0	686,41	667,07	
1996-02-01	06:00:00	-0,56	0	686,38	667,19	
1996-02-01	12:00:00	6,39	0	686,38	667,19	
1996-02-01	18:00:00	6,41	0	686,34	667,13	
1996-02-02	00:00:00	-0,51	0	686,32	666,98	
1996-02-02	06:00:00	-3,11	0	686,28	667,00	
1996-02-02	12:00:00	5,79	0	686,27	666,99	
1996-02-02	18:00:00	7,67	0	686,24	666,97	
1996-02-03	00:00:00	1,94	0	686,24	667,15	
1996-02-03	06:00:00	-0,57	0	686,21	667,06	
1996-02-03	12:00:00	7,77	0	686,22	667,06	
1996-02-03	18:00:00	8,93	0	686,26	667,18	
1996-02-04	00:00:00	0,15	0	686,27	667,12	

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/6hr	m	m	m
1996-02-04	06:00:00	-1,81	0	686,25	667,10	
1996-02-04	12:00:00	1,58	0	686,21	667,00	
1996-02-04	18:00:00	4,63	0	686,16	667,07	
1996-02-05	00:00:00	0,83	0	686,17	667,09	
1996-02-05	06:00:00	-0,10	0	686,20	666,95	
1996-02-05	12:00:00	0,75	0	686,29	666,79	
1996-02-05	18:00:00	2,36	0	686,27	666,73	
1996-02-06	00:00:00	1,11	0	686,35	666,52	
1996-02-06	06:00:00	1,17	0	686,29	666,54	
1996-02-06	12:00:00	3,46	0	686,30	666,42	
1996-02-06	18:00:00	4,45	0	686,33	666,37	
1996-02-07	00:00:00	-0,15	0	686,39	666,27	
1996-02-07	06:00:00	-1,83	0	686,35	666,29	
1996-02-07	12:00:00	2,38	0	686,29	666,30	
1996-02-07	18:00:00	4,57	0	686,29	666,43	
1996-02-08	00:00:00	0,97	0	686,39	666,44	
1996-02-08	06:00:00	-0,05	0	686,42	666,49	
1996-02-08	12:00:00	1,85	0	686,46	666,27	
1996-02-08	18:00:00	5,11	0	686,45	666,19	
1996-02-09	00:00:00	2,15	0	686,44	666,15	
1996-02-09	06:00:00	1,00	0	686,35	666,20	
1996-02-09	12:00:00	4,35	0	686,28	666,14	
1996-02-09	18:00:00	5,57	0	686,23	666,18	
1996-02-10	00:00:00	3,64	0	686,23	666,24	
1996-02-10	06:00:00	5,13	0	686,23	666,22	
1996-02-10	12:00:00	6,32	0	686,26	666,28	
1996-02-10	18:00:00	6,83	0	686,29	666,39	
1996-02-11	00:00:00	5,79	0	686,31	666,37	
1996-02-11	06:00:00	2,13	0	686,31	666,39	
1996-02-11	12:00:00	9,33	0	686,31	666,35	
1996-02-11	18:00:00	12,79	0	686,31	666,26	
1996-02-12	00:00:00	6,65	0	686,31	666,23	
1996-02-12	06:00:00	6,92	0	686,33	666,13	
1996-02-12	12:00:00	10,20	0	686,34	666,17	
1996-02-12	18:00:00	13,22	0	686,34	666,14	
1996-02-13	00:00:00	6,19	0	686,34	666,18	
1996-02-13	06:00:00	3,81	0	686,37	666,20	
1996-02-13	12:00:00	14,23	0	686,40	666,21	
1996-02-13	18:00:00	15,68	0	686,39	666,15	
1996-02-14	00:00:00	7,99	0	686,42	666,21	
1996-02-14	06:00:00	6,65	0	686,42	666,22	
1996-02-14	12:00:00	8,74	0	686,40	666,28	
1996-02-14	18:00:00	11,17	0	686,42	666,24	
1996-02-15	00:00:00	5,88	0	686,44	666,28	
1996-02-15	06:00:00	3,77	0	686,42	666,31	
1996-02-15	12:00:00	6,92	0	686,44	666,42	
1996-02-15	18:00:00	10,67	0	686,46	666,43	
1996-02-16	00:00:00	3,87	0	686,49	666,40	

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/6hr	m	m	m
1996-02-16	06:00:00	1,78	0	686,49	666,43	
1996-02-16	12:00:00	5,94	0	686,50	666,44	
1996-02-16	18:00:00	6,76	0	686,49	666,49	
1996-02-17	00:00:00	2,59	0	686,52	666,50	
1996-02-17	06:00:00	1,27	0	686,53	666,65	
1996-02-17	12:00:00	4,27	0	686,56	666,58	
1996-02-17	18:00:00	8,59	0	686,63	666,66	
1996-02-18	00:00:00	4,23	0	686,68	666,74	
1996-02-18	06:00:00	1,74	0	686,71	666,80	
1996-02-18	12:00:00	6,80	0	686,76	666,72	
1996-02-18	18:00:00	9,93	0	686,75	666,78	
1996-02-19	00:00:00	5,52	0	686,81	666,73	
1996-02-19	06:00:00	3,48	0	686,82	666,82	
1996-02-19	12:00:00	8,18	0	686,83	666,83	
1996-02-19	18:00:00	9,75	0	686,83	666,98	
1996-02-20	00:00:00	6,33	0	686,87	666,78	
1996-02-20	06:00:00	5,11	0	686,89	666,95	
1996-02-20	12:00:00	8,57	0	686,92	666,89	
1996-02-20	18:00:00	11,50	0	686,85	666,97	
1996-02-21	00:00:00	6,86	0	686,86	666,84	
1996-02-21	06:00:00	4,05	0	686,79	666,66	
1996-02-21	12:00:00	5,71	0	686,72	666,58	
1996-02-21	18:00:00	5,76	0	686,70	666,62	
1996-02-22	00:00:00	2,17	0	686,69	666,56	
1996-02-22	06:00:00	0,35	0	686,65	666,61	
1996-02-22	12:00:00	8,03	0	686,64	666,72	
1996-02-22	18:00:00	5,39	0	686,67	666,82	
1996-02-23	00:00:00	1,39	0	686,73	666,81	
1996-02-23	06:00:00	0,18	0	686,70	666,81	
1996-02-23	12:00:00	3,09	0	686,70	666,82	
1996-02-23	18:00:00	5,14	0	686,68	666,82	
1996-02-24	00:00:00	0,97	0	686,68	666,75	
1996-02-24	06:00:00	0,15	0	686,66	666,71	
1996-02-24	12:00:00	2,15	0	686,65	666,70	
1996-02-24	18:00:00	4,73	0	686,61	666,71	
1996-02-25	00:00:00	1,53	0	686,61	666,81	
1996-02-25	06:00:00	-0,05	0	686,62	666,82	
1996-02-25	12:00:00	6,83	0	686,61	666,86	
1996-02-25	18:00:00	9,41	0	686,61	666,90	
1996-02-26	00:00:00	2,88	0	686,62	666,98	
1996-02-26	06:00:00	-0,17	0	686,63	666,98	
1996-02-26	12:00:00	9,95	0	686,66	667,01	
1996-02-26	18:00:00	13,14	0	686,69	667,03	
1996-02-27	00:00:00	7,24	0	686,68	667,08	
1996-02-27	06:00:00	4,80	0	686,68	666,94	
1996-02-27	12:00:00	5,15	0	686,68	666,88	
1996-02-27	18:00:00	5,46	0	686,67	666,81	
1996-02-28	00:00:00	4,68	0	686,68	666,80	

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/6hr	m	m	m
1996-02-28	06:00:00	3,25	0	686,68	666,80	
1996-02-28	12:00:00	7,35	0	686,69	666,71	
1996-02-28	18:00:00	6,97	0	686,67	666,67	
1996-02-29	00:00:00	3,77	0	686,67	666,65	
1996-02-29	06:00:00	0,89	0	686,64	666,65	
1996-02-29	12:00:00	4,73	0	686,65	666,65	
1996-02-29	18:00:00	8,57	0	686,64	666,56	
1996-03-01	00:00:00	3,43	0	686,65	666,53	
1996-03-01	06:00:00	2,02	0	686,63	666,63	
1996-03-01	12:00:00	0,79	0	686,65	666,66	
1996-03-01	18:00:00	2,62	0	686,65	666,74	
1996-03-02	00:00:00	0,96	0	686,68	666,73	
1996-03-02	06:00:00	0,13	0	686,67	666,81	
1996-03-02	12:00:00	2,01	0	686,72	666,87	
1996-03-02	18:00:00	6,52	0	686,73	666,97	
1996-03-03	00:00:00	1,33	0	686,77	666,98	
1996-03-03	06:00:00	-0,96	0	686,75	667,02	
1996-03-03	12:00:00	2,01		686,80	667,04	
1996-03-03	18:00:00	6,52		686,80	667,21	
1996-03-04	00:00:00	1,33		686,84	667,19	
1996-03-04	06:00:00	-0,96		686,83	667,24	
1996-03-04	12:00:00	2,01		686,82	667,16	
1996-03-04	18:00:00	6,52		686,77	667,19	
1996-03-05	00:00:00	1,33		686,77	667,08	
1996-03-05	06:00:00	-0,96		686,72	667,05	
1996-03-05	12:00:00	2,01		686,70	666,93	
1996-03-05	18:00:00	6,52		686,63	666,80	
1996-03-06	00:00:00	1,33		686,60	666,64	
1996-03-06	06:00:00	-0,96		686,57	666,66	
1996-03-06	12:00:00	2,01		686,57	666,67	
1996-03-06	18:00:00	6,52		686,54	666,77	
1996-03-07	00:00:00	1,33		686,56	666,72	
1996-03-07	06:00:00	-0,96		686,57	666,72	
1996-03-07	12:00:00	2,01		686,60	666,65	
1996-03-07	18:00:00	6,52		686,60	666,70	
1996-03-08	00:00:00	1,33		686,60	666,62	
1996-03-08	06:00:00	-0,96		686,61	666,74	
1996-03-08	12:00:00	2,01		686,63	666,73	
1996-03-08	18:00:00	6,52		686,63	666,91	
1996-03-09	00:00:00	1,33		686,75	666,94	
1996-03-09	06:00:00	-0,96		686,78	667,02	
1996-03-09	12:00:00	2,01		686,84	667,03	
1996-03-09	18:00:00	6,52		686,87	667,07	
1996-03-10	00:00:00	1,33		686,89	667,01	
1996-03-10	06:00:00	-0,96		686,91	667,05	
1996-03-10	12:00:00	2,01		686,94	667,03	
1996-03-10	18:00:00	6,52		686,98	666,96	
1996-03-11	00:00:00	4,95	0,2	687,01	666,90	

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/6hr	m	m	m
1996-03-11	06:00:00	0,24	0	687,02	666,90	
1996-03-11	12:00:00	14,39	0	687,03	664,99	
1996-03-11	18:00:00	14,71	0	687,04	664,02	
1996-03-12	00:00:00	4,90	0	687,05	664,00	
1996-03-12	06:00:00	0,31	0,2	687,04	664,04	
1996-03-12	12:00:00	6,80	0	687,03	664,12	
1996-03-12	18:00:00	11,81	0	687,04	664,07	
1996-03-13	00:00:00	3,54	0	687,06	664,17	
1996-03-13	06:00:00	0,74	0	687,05	664,23	
1996-03-13	12:00:00	9,95	0	687,04	664,28	
1996-03-13	18:00:00	10,56	0	687,05	664,40	
1996-03-14	00:00:00	4,03	0,8	687,08	664,51	
1996-03-14	06:00:00	0,51	0,2	687,08	664,33	
1996-03-14	12:00:00	2,40	0,8	687,10	664,47	
1996-03-14	18:00:00	7,29	1,4	687,13	664,42	
1996-03-15	00:00:00	2,17	1,6	687,20	664,84	
1996-03-15	06:00:00	-1,19	0	687,21	664,87	
1996-03-15	12:00:00	2,92	0,2	687,20	664,85	
1996-03-15	18:00:00	9,37	0	687,13	664,87	
1996-03-16	00:00:00	3,79	0	687,18	664,92	
1996-03-16	06:00:00	0,25	0	687,16	664,99	
1996-03-16	12:00:00	6,30	0	687,19	664,93	
1996-03-16	18:00:00	11,34	0	687,20	664,92	
1996-03-17	00:00:00	5,23	0	687,23	663,94	
1996-03-17	06:00:00	2,92	0	687,23	664,05	
1996-03-17	12:00:00	4,72	1	687,24	664,13	
1996-03-17	18:00:00	7,08	1,6	687,25	664,23	
1996-03-18	00:00:00	5,08	0,8	687,31	664,19	
1996-03-18	06:00:00	4,41	3	687,28	664,34	
1996-03-18	12:00:00	8,27	0,6	687,32	664,37	
1996-03-18	18:00:00	12,86	0	687,35	664,57	
1996-03-19	00:00:00	9,86	2,4	687,45	664,55	
1996-03-19	06:00:00	7,37	6	687,45	664,56	
1996-03-19	12:00:00	11,41	3	687,49	664,49	
1996-03-19	18:00:00	15,16	0	687,45	664,53	
1996-03-20	00:00:00	8,75	0,2	687,45	664,48	
1996-03-20	06:00:00	5,15	0	687,44	664,38	
1996-03-20	12:00:00	15,20	0	687,43	664,29	
1996-03-20	18:00:00	12,95	0	687,42	664,42	
1996-03-21	00:00:00	3,78	0	687,45	664,43	
1996-03-21	06:00:00	0,67	0	687,46	664,55	
1996-03-21	12:00:00	13,81	0	687,48	664,46	
1996-03-21	18:00:00	14,29	0	687,49	664,49	
1996-03-22	00:00:00	6,01	0,2	687,58	664,47	
1996-03-22	06:00:00	2,42	0,8	687,58	664,65	
1996-03-22	12:00:00	11,25	0,2	687,57	664,66	
1996-03-22	18:00:00	14,99	0	687,54	664,79	
1996-03-23	00:00:00	6,48	0	687,58	664,65	

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/6hr	m	m	m
1996-03-23	06:00:00	4,40	3	687,53	664,65	
1996-03-23	12:00:00	6,44	1,2	687,52	664,64	
1996-03-23	18:00:00	9,59	5,4	687,50	664,70	
1996-03-24	00:00:00	5,64	7,4	687,56	664,68	
1996-03-24	06:00:00	3,83	10,4	687,54	664,71	
1996-03-24	12:00:00	9,21	3,4	687,51	664,64	
1996-03-24	18:00:00	11,66	0,4	687,50	664,64	
1996-03-25	00:00:00	6,03	0,6	687,49	664,68	
1996-03-25	06:00:00	4,17	0	687,49	664,72	
1996-03-25	12:00:00	8,97	0,4	687,47	664,84	
1996-03-25	18:00:00	9,86	5,4	687,50	664,96	
1996-03-26	00:00:00	4,92	1	687,55	665,09	
1996-03-26	06:00:00	2,07	0	687,60	665,11	
1996-03-26	12:00:00	3,78	8,4	687,62	665,06	
1996-03-26	18:00:00	8,42	1,8	687,64	664,96	
1996-03-27	00:00:00	3,97	0,2	687,68	664,94	
1996-03-27	06:00:00	1,47	0	687,67	664,89	
1996-03-27	12:00:00	6,56	0	687,65	664,83	
1996-03-27	18:00:00	11,68	0	687,62	664,86	
1996-03-28	00:00:00	7,29	0,4	687,59	664,88	
1996-03-28	06:00:00	4,64	0,2	687,58	664,78	
1996-03-28	12:00:00	8,81	0,2	687,59	664,73	
1996-03-28	18:00:00	13,35	0,2	687,61	664,76	
1996-03-29	00:00:00	8,41	1	687,64	664,84	
1996-03-29	06:00:00	4,27	0	687,61	664,78	
1996-03-29	12:00:00	16,53	0	687,60	664,79	
1996-03-29	18:00:00	19,04	0	687,60	664,85	
1996-03-30	00:00:00	12,15	0	687,60	664,76	
1996-03-30	06:00:00	8,67	0	687,58	664,73	
1996-03-30	12:00:00	19,89	0	687,56	664,69	
1996-03-30	18:00:00	22,00	0	687,54	664,79	
1996-03-31	00:00:00	12,48	0	687,54	664,82	
1996-03-31	06:00:00	9,41	0,6	687,56	664,86	
1996-03-31	12:00:00	19,18	0,8	687,58	664,96	
1996-03-31	18:00:00	21,44	0	687,61	665,06	
1996-04-01	00:00:00	9,41	0	687,65	665,06	
1996-04-01	06:00:00	3,25	0	687,64	664,62	
1996-04-01	12:00:00	16,74	0	687,70	664,44	
1996-04-01	18:00:00	20,48	0	687,69	664,61	
1996-04-02	00:00:00	8,57	0	687,69	664,55	
1996-04-02	06:00:00	3,37	0	687,58	664,27	
1996-04-02	12:00:00	17,38	0	687,56	664,16	
1996-04-02	18:00:00	15,99	0	687,54	664,28	
1996-04-03	00:00:00	8,16	7,8	687,55	664,29	
1996-04-03	06:00:00	4,85	0	687,54	664,26	
1996-04-03	12:00:00	17,40	0,2	687,59	664,17	
1996-04-03	18:00:00	17,83	0	687,54	664,26	
1996-04-04	00:00:00	8,75	0,8	687,55	664,25	

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/6hr	m	m	m
1996-04-04	06:00:00	3,43	0	687,51	664,37	
1996-04-04	12:00:00	17,95	0	687,54	664,48	
1996-04-04	18:00:00	15,71	0,2	687,53	664,65	
1996-04-05	00:00:00	8,20	0	687,57	664,69	
1996-04-05	06:00:00	6,21	0	687,61	664,79	
1996-04-05	12:00:00	11,19	0	687,67	664,81	
1996-04-05	18:00:00	17,04	0	687,71	665,00	
1996-04-06	00:00:00	7,74	0	687,81	664,99	
1996-04-06	06:00:00	2,88	0	687,85	665,07	
1996-04-06	12:00:00	18,11	0	687,85	665,06	
1996-04-06	18:00:00	19,71	0	687,87	665,21	
1996-04-07	00:00:00	10,15	0,2	687,92	665,12	
1996-04-07	06:00:00	6,86	0	687,92	665,24	
1996-04-07	12:00:00	11,47	0	687,94	665,22	
1996-04-07	18:00:00	17,23	0	687,96	665,34	
1996-04-08	00:00:00	12,19	0,2	687,98	665,36	
1996-04-08	06:00:00	9,86	0	687,96	665,36	
1996-04-08	12:00:00	15,15	0	687,97	665,45	
1996-04-08	18:00:00	22,24	0	687,97	665,37	
1996-04-09	00:00:00	15,82	1	687,99	665,32	
1996-04-09	06:00:00	9,86	0	688,00	665,44	
1996-04-09	12:00:00	19,32	0	687,99	665,29	
1996-04-09	18:00:00	20,23	0	688,00	665,14	
1996-04-10	00:00:00	11,65	0	687,99	665,10	
1996-04-10	06:00:00	8,89	0,6	687,99	665,14	
1996-04-10	12:00:00	14,92	0	687,97	665,19	
1996-04-10	18:00:00	18,57	0	687,97	665,21	
1996-04-11	00:00:00	8,52	0	687,99	665,28	
1996-04-11	06:00:00	2,86	0	687,99	665,31	
1996-04-11	12:00:00	19,00	0	688,02	665,44	
1996-04-11	18:00:00	22,47	0	688,06	665,43	
1996-04-12	00:00:00	14,42	0,2	688,07	665,37	
1996-04-12	06:00:00	9,77	2,6	688,06	665,34	
1996-04-12	12:00:00	14,88	0	688,03	665,34	
1996-04-12	18:00:00	19,71	0	688,00	665,22	
1996-04-13	00:00:00	9,57	0,2	688,00	665,16	
1996-04-13	06:00:00	4,80	0	687,96	664,98	
1996-04-13	12:00:00	14,71	0	687,96	664,97	
1996-04-13	18:00:00	16,71	0	687,97	664,96	
1996-04-14	00:00:00	6,99	0	688,00	664,96	
1996-04-14	06:00:00	3,45	0	687,99	664,95	
1996-04-14	12:00:00	12,61	0	688,03	664,89	
1996-04-14	18:00:00	11,57	7	688,05	664,93	
1996-04-15	00:00:00	6,54	6,6	688,07	665,03	
1996-04-15	06:00:00	4,63	1,6	688,07	665,13	
1996-04-15	12:00:00	9,99	0,2	688,13	665,18	
1996-04-15	18:00:00	12,37	3,6	688,17	665,26	
1996-04-16	00:00:00	7,31	0,6	688,23	665,30	

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/8hr	m	m	m
1996-04-16	06:00:00	6,15	2,6	688,23	665,41	
1996-04-16	12:00:00	8,57	8,4	688,28	665,36	
1996-04-16	18:00:00	10,29	8,8	688,28	665,39	
1996-04-17	00:00:00	6,37	1	688,27	665,28	
1996-04-17	06:00:00	3,79	0	688,23	665,28	
1996-04-17	12:00:00	14,04	0	688,21	665,24	
1996-04-17	18:00:00	16,83	0	688,22	665,27	
1996-04-18	00:00:00	7,99	0	688,23	665,26	
1996-04-18	06:00:00	3,05	0	688,24	665,27	
1996-04-18	12:00:00	14,49	0	688,24	665,18	
1996-04-18	18:00:00	19,46	0	688,20	665,24	
1996-04-19	00:00:00	10,23	0	688,21	665,15	
1996-04-19	06:00:00	4,97	0	688,21	665,31	
1996-04-19	12:00:00	19,30	0	688,28	665,20	
1996-04-19	18:00:00	21,46	0	688,30	665,28	
1996-04-20	00:00:00	11,80	0	688,30	665,39	
1996-04-20	06:00:00	5,87	0	688,30	665,50	
1996-04-20	12:00:00	18,06	0	688,32	665,46	
1996-04-20	18:00:00	20,63	0	688,32	665,59	
1996-04-21	00:00:00	9,99	0	688,35	665,49	
1996-04-21	06:00:00	6,80	0	688,35	665,58	
1996-04-21	12:00:00	13,85	0	688,36	665,58	
1996-04-21	18:00:00	15,71	0	688,38	665,68	
1996-04-22	00:00:00	6,10	0	688,42	665,68	
1996-04-22	06:00:00	3,99	0	688,41	665,76	
1996-04-22	12:00:00	19,49	0	688,43	665,80	
1996-04-22	18:00:00	19,44	0	688,46	665,86	
1996-04-23	00:00:00	7,67	0	688,47	665,97	
1996-04-23	06:00:00	3,21	0	688,48	666,05	
1996-04-23	12:00:00	10,17	0,6	688,52	666,07	
1996-04-23	18:00:00	14,49	2,2	688,56	666,10	
1996-04-24	00:00:00	5,76	1	688,61	665,99	
1996-04-24	06:00:00	1,25	0	688,54	665,57	
1996-04-24	12:00:00	18,37	0	688,51	665,71	
1996-04-24	18:00:00	21,18	0	688,46	665,75	
1996-04-25	00:00:00	11,19	0	688,45	665,77	
1996-04-25	06:00:00	4,59	0	688,46	665,86	
1996-04-25	12:00:00	20,21	0	688,51	665,98	
1996-04-25	18:00:00	23,31	0	688,58	665,95	
1996-04-26	00:00:00	11,08	0	688,54	665,98	
1996-04-26	06:00:00	5,06	0	688,56	665,96	
1996-04-26	12:00:00	22,11	0	688,57	665,96	
1996-04-26	18:00:00	25,59	0	688,57	665,99	
1996-04-27	00:00:00	13,15	0,6	688,57	666,01	
1996-04-27	06:00:00	7,24	0,2	688,58	665,89	
1996-04-27	12:00:00	23,12	0	688,57	665,98	
1996-04-27	18:00:00	18,96	0,6		665,96	
1996-04-28	00:00:00	11,16	0		665,96	

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/6hr	m	m	m
1996-04-28	06:00:00	7,29	0		665,99	
1996-04-28	12:00:00	20,08	0		665,98	
1996-04-28	18:00:00	20,89	0		665,96	
1996-04-29	00:00:00	12,48	0		666,27	
1996-04-29	06:00:00	8,65	0		666,30	
1996-04-29	12:00:00	9,86	0		666,64	
1996-04-29	18:00:00	13,43	0		666,50	
1996-04-30	00:00:00	10,23	0,2		666,40	
1996-04-30	06:00:00	8,63	3,2		666,43	
1996-04-30	12:00:00	12,14	4,8		666,41	
1996-04-30	18:00:00	17,31	0		666,52	
1996-05-01	00:00:00	13,02	0		666,52	
1996-05-01	06:00:00	8,54	0		666,60	
1996-05-01	12:00:00	16,92	0		666,58	
1996-05-01	18:00:00	22,19	0		666,62	
1996-05-02	00:00:00	12,86	0		666,63	
1996-05-02	06:00:00	8,57	0		666,68	
1996-05-02	12:00:00	16,92	0		666,61	
1996-05-02	18:00:00	21,96	0		666,64	
1996-05-03	00:00:00	13,80	0		666,62	
1996-05-03	06:00:00	10,20	0,2		666,67	
1996-05-03	12:00:00	14,32	0		666,59	
1996-05-03	18:00:00	19,58	0		666,63	
1996-05-04	00:00:00	9,86	0		666,58	
1996-05-04	06:00:00	7,39	0		666,74	
1996-05-04	12:00:00	10,85	0		666,70	
1996-05-04	18:00:00	15,31	0		666,66	
1996-05-05	00:00:00	10,64	0		666,66	
1996-05-05	06:00:00	4,73	0	688,65	666,70	
1996-05-05	12:00:00	13,52	0	688,68	666,69	
1996-05-05	18:00:00	21,37	0	688,67	666,66	
1996-05-06	00:00:00	13,45	0	688,66	666,75	
1996-05-06	06:00:00	10,41	0	688,66	666,75	
1996-05-06	12:00:00	13,81	0	688,67	666,76	
1996-05-06	18:00:00	17,79	0	688,65	666,72	
1996-05-07	00:00:00	13,93	0	688,66	666,79	
1996-05-07	06:00:00	11,27	0	688,64	666,77	
1996-05-07	12:00:00	22,51	0	688,68	666,75	
1996-05-07	18:00:00	26,17	0	688,65	666,61	
1996-05-08	00:00:00	15,61	0	688,62	666,56	
1996-05-08	06:00:00	11,31	0	688,61	666,53	
1996-05-08	12:00:00	17,11	0	688,59	666,30	
1996-05-08	18:00:00	16,10	2,4	688,55	665,99	
1996-05-09	00:00:00	10,56	0,4	688,54	666,02	
1996-05-09	06:00:00	7,80	0	688,53	665,95	
1996-05-09	12:00:00	11,89	0	688,52	665,96	
1996-05-09	18:00:00	16,01	0	688,53	665,94	
1996-05-10	00:00:00	9,47	0	688,52	665,96	

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/6hr	m	m	m
1996-05-10	06:00:00	5,41	0	688,52	665,92	
1996-05-10	12:00:00	15,93	0	688,50	665,94	
1996-05-10	18:00:00	19,04	0	688,48	665,90	
1996-05-11	00:00:00	9,37	0	688,47	665,87	
1996-05-11	06:00:00	3,39	0	688,45	665,87	
1996-05-11	12:00:00	13,62	0	688,45	665,88	
1996-05-11	18:00:00	18,61	0	688,46	665,91	
1996-05-12	00:00:00	9,53	0	688,48	665,89	
1996-05-12	06:00:00	4,78	0	688,46	665,88	
1996-05-12	12:00:00	22,05	0	688,45	665,83	
1996-05-12	18:00:00	25,99	0	688,43	665,88	
1996-05-13	00:00:00	14,73	0	688,43	665,82	
1996-05-13	06:00:00	9,86	0	688,44	665,87	
1996-05-13	12:00:00	27,08	0	688,45	665,81	
1996-05-13	18:00:00	30,43	0	688,45	665,89	
1996-05-14	00:00:00	17,70	0	688,45	665,85	
1996-05-14	06:00:00	12,61	0	688,46	665,92	
1996-05-14	12:00:00	28,95	0	688,47	665,84	
1996-05-14	18:00:00	29,65	0	688,43	665,88	
1996-05-15	00:00:00	16,81	0	688,43	665,81	
1996-05-15	06:00:00	9,25	0	688,42	665,85	
1996-05-15	12:00:00	23,84	0	688,42	665,69	
1996-05-15	18:00:00	26,01	0	688,37	665,70	
1996-05-16	00:00:00	15,15	0	688,39	665,69	
1996-05-16	06:00:00	8,25	0	688,37	665,78	
1996-05-16	12:00:00	22,86	0	688,38	665,72	
1996-05-16	18:00:00	25,71	0	688,36	671,27	
1996-05-17	00:00:00	14,04	0	688,36	671,62	
1996-05-17	06:00:00	9,11	0	688,35	671,62	
1996-05-17	12:00:00	25,66	0	688,39	671,47	
1996-05-17	18:00:00	29,03	0	688,37	671,48	
1996-05-18	00:00:00	16,73	0	688,38	671,47	
1996-05-18	06:00:00	11,10	0	688,36	671,41	
1996-05-18	12:00:00	28,78	0	688,35	671,31	
1996-05-18	18:00:00	30,82	0	688,35	671,16	
1996-05-19	00:00:00	17,66	0	688,33	671,11	
1996-05-19	06:00:00	12,09	0	688,31	671,17	
1996-05-19	12:00:00	30,08	0	688,32	671,14	
1996-05-19	18:00:00	32,37	0	688,31	671,05	
1996-05-20	00:00:00	19,40	0	688,31	671,00	
1996-05-20	06:00:00	13,43	0	688,32	671,18	
1996-05-20	12:00:00	30,73	0	688,35	671,19	
1996-05-20	18:00:00	32,53	0	688,38	671,20	
1996-05-21	00:00:00	18,88	0	688,40	671,25	
1996-05-21	06:00:00	12,52	0	688,42	671,25	
1996-05-21	12:00:00	29,66	0	688,46	671,29	
1996-05-21	18:00:00	30,49	0	688,48	671,34	
1996-05-22	00:00:00	17,48	0	688,50	671,40	

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/6hr	m	m	m
1996-05-22	06:00:00	9,86	0	688,51	671,41	
1996-05-22	12:00:00	22,17	0	688,48	671,30	
1996-05-22	18:00:00	24,64	0	688,46	671,19	
1996-05-23	00:00:00	12,86	0	688,43	671,24	
1996-05-23	06:00:00	8,34	0	688,43	671,25	
1996-05-23	12:00:00	22,28	0	688,41	671,29	
1996-05-23	18:00:00	22,31	0	688,41	671,32	
1996-05-24	00:00:00	11,17	0	688,40	671,38	
1996-05-24	06:00:00	7,05	0	688,40	671,40	
1996-05-24	12:00:00	10,98	0	688,42	671,45	
1996-05-24	18:00:00	16,53	0,4	688,38	671,48	
1996-05-25	00:00:00	10,68	0,8	688,48	671,58	
1996-05-25	06:00:00	7,99	0,2	688,37	671,60	
1996-05-25	12:00:00	10,52	0,6	688,42	671,45	
1996-05-25	18:00:00	14,73	0,4	688,42	671,34	
1996-05-26	00:00:00	10,43	0,2	688,42	671,40	
1996-05-26	06:00:00	9,21	0	688,42	671,52	
1996-05-26	12:00:00	13,00	0	688,40	671,59	
1996-05-26	18:00:00	18,70	0	688,37	671,58	
1996-05-27	00:00:00	14,29	0	688,35	671,57	
1996-05-27	06:00:00	10,92	0	688,35	671,56	
1996-05-27	12:00:00	23,46	0	688,34	671,54	
1996-05-27	18:00:00	24,81	0	688,34	671,62	
1996-05-28	00:00:00	14,86	0	688,34	671,61	
1996-05-28	06:00:00	10,52	0	688,34	671,59	
1996-05-28	12:00:00	26,28	0	688,33	671,53	
1996-05-28	18:00:00	28,29	0	688,32	671,61	
1996-05-29	00:00:00	16,87	0	688,31	671,44	
1996-05-29	06:00:00	11,50	0	688,31	671,53	
1996-05-29	12:00:00	28,49	0	688,31	671,35	
1996-05-29	18:00:00	30,08	0	688,29	671,40	
1996-05-30	00:00:00	17,72	0	688,28	671,30	
1996-05-30	06:00:00	12,04	0	688,27	671,41	
1996-05-30	12:00:00	30,47	0	688,23	671,33	
1996-05-30	18:00:00	31,65	0	688,21	671,38	
1996-05-31	00:00:00	19,08	0	688,23	671,21	
1996-05-31	06:00:00	13,58	0	688,20	671,28	
1996-05-31	12:00:00	30,19	0	688,18	671,20	
1996-05-31	18:00:00	31,72	0	688,15	671,21	
1996-06-01	00:00:00	20,21	0	688,14	671,15	
1996-06-01	06:00:00	14,14	0	688,14	671,19	
1996-06-01	12:00:00	30,68	0	688,16	671,12	
1996-06-01	18:00:00	31,68	0	688,12	671,15	
1996-06-02	00:00:00	19,42	0	688,07	671,14	
1996-06-02	06:00:00	14,02	0	688,03	671,17	
1996-06-02	12:00:00	31,72	0	688,05	671,14	
1996-06-02	18:00:00	32,41	0	688,00	671,19	
1996-06-03	00:00:00	21,91	0	688,03	671,25	

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/6hr	m	m	m
1996-06-03	06:00:00	16,68	0	688,03	671,28	
1996-06-03	12:00:00	27,11	0	688,07	671,21	
1996-06-03	18:00:00	29,66	0	688,06	671,16	
1996-06-04	00:00:00	19,40	0	688,05	671,16	
1996-06-04	06:00:00	13,45	0	688,05	671,15	
1996-06-04	12:00:00	29,33	0	688,02	671,07	
1996-06-04	18:00:00	28,57	0	687,97	670,91	
1996-06-05	00:00:00	15,11	0	687,94	670,86	
1996-06-05	06:00:00	9,04	0	687,93	670,59	
1996-06-05	12:00:00	24,64	0	687,89	670,37	
1996-06-05	18:00:00	25,85	0	687,87	670,32	
1996-06-06	00:00:00	14,02	0	687,87	670,45	
1996-06-06	06:00:00	7,90	0	687,87	670,41	
1996-06-06	12:00:00	24,36	0	687,86	670,34	
1996-06-06	18:00:00	25,42	0	687,84	670,72	
1996-06-07	00:00:00	15,11	0	687,82	670,72	
1996-06-07	06:00:00	9,91	0	687,80	669,56	
1996-06-07	12:00:00	20,28	0	687,77	669,02	
1996-06-07	18:00:00	15,16	1	687,76	669,04	
1996-06-08	00:00:00	10,82	0,2	687,73	669,05	
1996-06-08	06:00:00	8,57	0	687,70	668,85	
1996-06-08	12:00:00	20,21	0,2	687,67	668,85	
1996-06-08	18:00:00	21,19	0	687,66	668,72	
1996-06-09	00:00:00	12,48	0	687,63	668,61	
1996-06-09	06:00:00	9,61	0	687,62	668,61	
1996-06-09	12:00:00	21,30	0	687,62	668,45	
1996-06-09	18:00:00	20,43	0	687,61	668,37	
1996-06-10	00:00:00	13,10	0	687,58	668,33	
1996-06-10	06:00:00	11,35	0	687,56	668,55	
1996-06-10	12:00:00	15,27	0	687,56	668,60	
1996-06-10	18:00:00	18,81	0	687,56	668,70	
1996-06-11	00:00:00	11,49	0	687,56	668,78	
1996-06-11	06:00:00	5,60	0	687,52	668,73	
1996-06-11	12:00:00	22,31	0	687,53	668,74	
1996-06-11	18:00:00	23,88	0	687,52	668,81	
1996-06-12	00:00:00	13,78	0	687,54	668,82	
1996-06-12	06:00:00	8,57	0	687,54	668,91	
1996-06-12	12:00:00	23,74	0	687,56	668,84	
1996-06-12	18:00:00	24,67	0	687,56	668,82	
1996-06-13	00:00:00	15,01	0	687,57	668,89	
1996-06-13	06:00:00	10,36	0	687,56	669,01	
1996-06-13	12:00:00	26,05	0	687,55	669,01	
1996-06-13	18:00:00	28,24	0	687,52	669,17	
1996-06-14	00:00:00	17,48	0	687,53	669,16	
1996-06-14	06:00:00	12,43	0	687,49	669,16	
1996-06-14	12:00:00	28,56	0	687,49	669,20	
1996-06-14	18:00:00	28,84	0	687,48	669,26	
1996-06-15	00:00:00	16,35	0	687,49	669,27	

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/8hr	m	m	m
1996-06-15	06:00:00	10,47	0	687,50	669,37	
1996-06-15	12:00:00	26,86	0	687,52	669,26	
1996-06-15	18:00:00	28,82	0	687,49	669,12	
1996-06-16	00:00:00	17,88	0	687,50	669,06	
1996-06-16	06:00:00	12,48	0	687,47	669,14	
1996-06-16	12:00:00	26,14	0	687,48	669,18	
1996-06-16	18:00:00	29,96	0	687,49	669,30	
1996-06-17	00:00:00	20,03	0	687,52	669,34	
1996-06-17	06:00:00	14,45	0	687,50	669,39	
1996-06-17	12:00:00	18,68	0	687,50	669,24	
1996-06-17	18:00:00	17,60	2,6	687,48	668,94	
1996-06-18	00:00:00	12,48	0,2	687,45	668,58	
1996-06-18	06:00:00	8,12	0	687,41	668,55	
1996-06-18	12:00:00	22,68	0	687,41	668,52	
1996-06-18	18:00:00	24,44	0	687,40	668,49	
1996-06-19	00:00:00	14,73	0	687,42	668,41	
1996-06-19	06:00:00	10,52	0	687,39	668,40	
1996-06-19	12:00:00	26,19	0	687,39	668,36	
1996-06-19	18:00:00	27,93	0	687,39	668,37	
1996-06-20	00:00:00	17,42	0	687,39	668,39	
1996-06-20	06:00:00	12,09	0	687,39	668,37	
1996-06-20	12:00:00	25,51	0	687,38	668,40	
1996-06-20	18:00:00	25,89	0	687,39	668,39	
1996-06-21	00:00:00	15,05	0	687,36	668,45	
1996-06-21	06:00:00	10,56	0	687,36	668,34	
1996-06-21	12:00:00	14,43	0	687,33	668,30	
1996-06-21	18:00:00	17,75	1,2	687,30	668,25	
1996-06-22	00:00:00	13,37	1	687,26	668,32	
1996-06-22	06:00:00	10,85	0,4	687,27	668,25	
1996-06-22	12:00:00	16,88	0	687,25	668,22	
1996-06-22	18:00:00	16,66	0,2	687,24	668,15	
1996-06-23	00:00:00	10,75	0	687,23	668,17	
1996-06-23	06:00:00	8,88	0	687,21	668,22	
1996-06-23	12:00:00	20,81	0	687,21	668,20	
1996-06-23	18:00:00	17,31	2,2	687,18	668,15	
1996-06-24	00:00:00	11,82	0	687,16	668,07	
1996-06-24	06:00:00	6,99	0	687,14	668,12	
1996-06-24	12:00:00	18,57	0	687,10	668,08	
1996-06-24	18:00:00	19,66	0	687,08	668,06	
1996-06-25	00:00:00	11,68	0	687,04	668,07	
1996-06-25	06:00:00	8,97	1,8	687,01	668,09	
1996-06-25	12:00:00	11,21	3,2	687,01	668,11	
1996-06-25	18:00:00	15,45	0	687,00	668,13	
1996-06-26	00:00:00	10,19	0	686,98	668,11	
1996-06-26	06:00:00	7,68	0	686,97	668,07	
1996-06-26	12:00:00	13,33	0	686,95	668,08	
1996-06-26	18:00:00	17,68	0	686,93	668,14	
1996-06-27	00:00:00	10,04	0	686,91	668,11	

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/8hr	m	m	m
1996-06-27	06:00:00	6,17	0	686,90	668,06	
1996-06-27	12:00:00	12,21	0	686,87	667,90	
1996-06-27	18:00:00	15,78	0	686,83	667,87	
1996-06-28	00:00:00	11,50	1,2	686,79	667,77	
1996-06-28	06:00:00	8,87	0	686,76	667,76	
1996-06-28	12:00:00	20,55	0	686,73	667,66	
1996-06-28	18:00:00	23,08	0	686,66	667,69	
1996-06-29	00:00:00	14,32	0,2	686,65	667,60	
1996-06-29	06:00:00	10,67	0	686,59	667,65	
1996-06-29	12:00:00	24,98	0	686,55	667,62	
1996-06-29	18:00:00	25,71	0	686,54	667,68	
1996-06-30	00:00:00	15,85	0	686,57	667,65	
1996-06-30	06:00:00	11,37	0	686,54	667,79	
1996-06-30	12:00:00	25,94	0	686,53	667,78	
1996-06-30	18:00:00	27,08	0	686,49	667,93	
1996-07-01	00:00:00	17,22	0	686,48	667,94	
1996-07-01	06:00:00	12,32	0	686,45	667,82	
1996-07-01	12:00:00	26,84	0	686,44	667,69	
1996-07-01	18:00:00	28,13	0	686,40	667,48	
1996-07-02	00:00:00	18,82	0	686,41	667,47	
1996-07-02	06:00:00	13,65	0	686,39	667,46	
1996-07-02	12:00:00	24,81	0	686,40	667,43	
1996-07-02	18:00:00	29,38	0	686,35	667,40	
1996-07-03	00:00:00	20,08	0	686,34	667,38	
1996-07-03	06:00:00	17,40	0	686,31	667,43	
1996-07-03	12:00:00	24,39	0	686,28	667,39	
1996-07-03	18:00:00	24,25	0	686,11	667,28	
1996-07-04	00:00:00	16,23	0	686,07	667,26	
1996-07-04	06:00:00	13,62	0	686,04	667,22	
1996-07-04	12:00:00	22,68	0	685,99	667,23	
1996-07-04	18:00:00	23,79	0	685,95	667,13	
1996-07-05	00:00:00	17,23	0	685,91	667,21	
1996-07-05	06:00:00	13,72	0	685,91	667,15	
1996-07-05	12:00:00	23,17	0	685,88	667,25	
1996-07-05	18:00:00	24,98	0	685,85	667,20	
1996-07-06	00:00:00	17,40	4,2	685,84	667,15	
1996-07-06	06:00:00	13,65	9,2	685,82	667,05	
1996-07-06	12:00:00	12,93	13,8	686,01	667,06	
1996-07-06	18:00:00	15,16	3,6	686,01	667,00	
1996-07-07	00:00:00	11,50	2,4	685,99	667,03	
1996-07-07	06:00:00	8,11	0,2	685,98	666,95	
1996-07-07	12:00:00	17,58	0	685,95	666,94	
1996-07-07	18:00:00	17,91	0,2	685,93	666,94	
1996-07-08	00:00:00	12,92	0	685,92	666,92	
1996-07-08	06:00:00	8,91	0	685,89	666,91	
1996-07-08	12:00:00	19,01	0	685,86	666,90	
1996-07-08	18:00:00	20,55	0	685,84	666,88	
1996-07-09	00:00:00	12,15	0	685,80	666,83	

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/8hr	m	m	m
1996-07-09	06:00:00	7,24	0	685,76	666,76	
1996-07-09	12:00:00	19,21	0	685,71	666,70	
1996-07-09	18:00:00	19,21	0	685,67	666,67	
1996-07-10	00:00:00	11,94	2,8	685,62	666,56	
1996-07-10	06:00:00	8,56	0	685,58	666,50	
1996-07-10	12:00:00	13,15	0	685,54	666,41	
1996-07-10	18:00:00	15,71	5,2	685,51	666,44	
1996-07-11	00:00:00	6,52	1,2	685,49	666,47	
1996-07-11	06:00:00	3,70	0	685,46	666,49	
1996-07-11	12:00:00	6,89	2,4	685,44	666,47	
1996-07-11	18:00:00	10,41	1	685,32	666,55	
1996-07-12	00:00:00	8,87	0	685,31	666,51	
1996-07-12	06:00:00	7,22	0	685,27	666,52	
1996-07-12	12:00:00	10,39	0,2	685,27	666,47	
1996-07-12	18:00:00	14,14	0	685,23	666,49	
1996-07-13	00:00:00	7,04	0	685,22	666,43	
1996-07-13	06:00:00	5,71	0,2	685,17	666,45	
1996-07-13	12:00:00	8,03	3,6	685,14	666,34	
1996-07-13	18:00:00	11,29	2,2	685,08	666,35	
1996-07-14	00:00:00	9,51	1,8	685,08	666,24	
1996-07-14	06:00:00	9,31	1,2	685,02	666,29	
1996-07-14	12:00:00	11,45	2	685,00	666,19	
1996-07-14	18:00:00	13,99	0,4	684,97	666,14	
1996-07-15	00:00:00	11,34	1	684,94	666,05	
1996-07-15	06:00:00	10,60	1,6	684,89	666,03	
1996-07-15	12:00:00	13,39	0	684,87	665,98	
1996-07-15	18:00:00	16,33	0	684,81	665,98	
1996-07-16	00:00:00	11,45	0	684,77	665,87	
1996-07-16	06:00:00	9,11	0	684,71	665,82	
1996-07-16	12:00:00	19,18	0	684,69	665,76	
1996-07-16	18:00:00	19,42	0	684,63	665,77	
1996-07-17	00:00:00	10,25	0,2	684,60	665,26	
1996-07-17	06:00:00	6,62	0	684,53	665,24	
1996-07-17	12:00:00	18,52	0	684,50	665,16	
1996-07-17	18:00:00	19,12	0	684,43	665,09	
1996-07-18	00:00:00	11,19	0	684,41	665,18	
1996-07-18	06:00:00	8,18	0	684,34	665,47	
1996-07-18	12:00:00	19,34	0	684,27	665,53	
1996-07-18	18:00:00	21,05	0	684,23	665,43	
1996-07-19	00:00:00	11,45	0	684,18	665,44	
1996-07-19	06:00:00	8,99	0	684,14	665,47	
1996-07-19	12:00:00	19,23	0	684,10	665,47	
1996-07-19	18:00:00	19,71	0	684,04	665,52	
1996-07-20	00:00:00	12,65	0	684,03	665,25	
1996-07-20	06:00:00	10,43	0	684,00	665,25	
1996-07-20	12:00:00	10,86	4,2	683,96	665,20	
1996-07-20	18:00:00	12,48	4,8	683,91	665,19	
1996-07-21	00:00:00	9,83	8,4	683,88	665,27	

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/6hr	m	m	m
1996-07-21	06:00:00	8,22	9,6	683,84	665,23	
1996-07-21	12:00:00	12,01	1,2	683,81	665,23	
1996-07-21	18:00:00	11,35	5,6	683,76	665,22	
1996-07-22	00:00:00	6,58	0,4	683,71	665,25	
1996-07-22	06:00:00	6,24	1,6	683,67	665,18	
1996-07-22	12:00:00	11,99	0	683,64	665,06	
1996-07-22	18:00:00	12,79	0	683,64	665,01	
1996-07-23	00:00:00	7,43	0	683,61	664,95	
1996-07-23	06:00:00	4,17	0	683,58	665,15	
1996-07-23	12:00:00	11,99	0	683,52	665,33	
1996-07-23	18:00:00	12,48	1	683,49	665,37	
1996-07-24	00:00:00	7,52	0,2	683,46	665,30	
1996-07-24	06:00:00	6,39	0	683,42	665,21	
1996-07-24	12:00:00	14,75	0	683,43	665,29	
1996-07-24	18:00:00	16,46	0	683,42	665,30	
1996-07-25	00:00:00	8,81	0	683,37	665,31	
1996-07-25	06:00:00	6,40	0	683,33	665,32	
1996-07-25	12:00:00	8,44	2,4	683,27	665,31	
1996-07-25	18:00:00	10,66	4,6	683,21	665,09	
1996-07-26	00:00:00	9,12	1,6	683,19	664,83	
1996-07-26	06:00:00	7,86	0,2	683,14	664,61	
1996-07-26	12:00:00	14,86	0	683,11	664,53	
1996-07-26	18:00:00	14,10	0	683,05	664,55	
1996-07-27	00:00:00	7,02	0	683,05	664,18	
1996-07-27	06:00:00	5,43	0	682,98	664,15	
1996-07-27	12:00:00	7,79	2	682,94	664,07	
1996-07-27	18:00:00	10,51	1,2	682,89	664,09	
1996-07-28	00:00:00	5,19	0,8	682,86	664,01	
1996-07-28	06:00:00	1,46	0,2	682,84	664,02	
1996-07-28	12:00:00	8,25	0,2	682,81	663,89	
1996-07-28	18:00:00	11,66	0	682,72	663,93	
1996-07-29	00:00:00	4,13	0,6	682,70	663,74	
1996-07-29	06:00:00	0,41	0	682,62	663,75	
1996-07-29	12:00:00	10,90	0	682,59	663,66	
1996-07-29	18:00:00	10,82	0	682,53	663,69	
1996-07-30	00:00:00	3,50	0	682,51	663,64	
1996-07-30	06:00:00	0,51	0,2	682,47	663,75	
1996-07-30	12:00:00	9,75	0	682,44	663,69	
1996-07-30	18:00:00	12,17	0	682,39	663,67	
1996-07-31	00:00:00	6,30	0	682,36	663,54	
1996-07-31	06:00:00	4,35	0	682,31	663,52	
1996-07-31	12:00:00	13,62	0	682,28	663,53	
1996-07-31	18:00:00	14,12	0	682,23	663,48	
1996-08-01	00:00:00	5,80	0	682,22	663,52	
1996-08-01	06:00:00	3,66	0	682,16	663,54	
1996-08-01	12:00:00	10,11	0	682,15	663,48	
1996-08-01	18:00:00	14,86	0	682,12	663,25	
1996-08-02	00:00:00	8,44	0	682,08	663,20	

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/8hr	m	m	m
1996-08-02	06:00:00	7,00	0	682,03	663,08	
1996-08-02	12:00:00	18,75	0	681,99	663,17	
1996-08-02	18:00:00	18,46	0	681,96	663,09	
1996-08-03	00:00:00	11,39	0	681,92	663,05	
1996-08-03	06:00:00	8,57	0	681,86	662,99	
1996-08-03	12:00:00	17,62	0	681,82	662,98	
1996-08-03	18:00:00	16,48	0	681,75	662,89	
1996-08-04	00:00:00	10,64	0	681,69	662,89	
1996-08-04	06:00:00	10,43	0	681,67	662,84	
1996-08-04	12:00:00	19,14	0	681,65	662,84	
1996-08-04	18:00:00	18,04	0,2	681,61	662,78	
1996-08-05	00:00:00	11,50	0	681,58	662,77	
1996-08-05	06:00:00	10,27	0	681,55	662,65	
1996-08-05	12:00:00	11,17	0	681,47	662,60	
1996-08-05	18:00:00	14,69	0	681,43	662,50	
1996-08-06	00:00:00	9,09	0	681,39	662,44	
1996-08-06	06:00:00	5,53	0	681,34	662,38	
1996-08-06	12:00:00	7,31	0	681,30	662,35	
1996-08-06	18:00:00	10,01	0	681,26	662,32	
1996-08-07	00:00:00	2,60	0	681,24	662,28	
1996-08-07	06:00:00	-1,10	0	681,21	662,25	
1996-08-07	12:00:00	9,03	0	681,18	662,32	
1996-08-07	18:00:00	10,54	0,2	681,14	662,34	
1996-08-08	00:00:00	4,98	0	681,11	662,22	
1996-08-08	06:00:00	3,60	0	681,06	662,20	
1996-08-08	12:00:00	6,24	0,8	681,03	662,19	
1996-08-08	18:00:00	8,65	2,2	680,99	662,14	
1996-08-09	00:00:00	7,44	4,2	680,97	662,12	
1996-08-09	06:00:00	8,04	10,6	680,92	662,09	
1996-08-09	12:00:00	10,58	13	680,89	661,98	
1996-08-09	18:00:00	13,10	1,2	680,85	661,91	
1996-08-10	00:00:00	10,96	4,8	680,84	661,86	
1996-08-10	06:00:00	9,86	18	680,80	661,84	
1996-08-10	12:00:00	10,39	1	680,78	661,71	
1996-08-10	18:00:00	12,43	0	680,73	661,73	
1996-08-11	00:00:00	6,48	0	680,71	661,66	
1996-08-11	06:00:00	4,21	0	680,67	661,59	
1996-08-11	12:00:00	7,52	0	680,64	661,31	
1996-08-11	18:00:00	11,08	0	680,56	661,23	
1996-08-12	00:00:00	6,13	0	680,52	661,12	
1996-08-12	06:00:00	6,09	1,2	680,47	661,14	
1996-08-12	12:00:00	8,41	0,4	680,45	661,08	
1996-08-12	18:00:00	10,60	0,2	680,40	661,03	
1996-08-13	00:00:00	9,01	0,4	680,38	661,00	
1996-08-13	06:00:00	8,34	0	680,34	661,03	
1996-08-13	12:00:00	9,85	0	680,33	661,01	
1996-08-13	18:00:00	11,84	0	680,28	661,01	
1996-08-14	00:00:00	8,11	0	680,25	660,85	

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/6hr	m	m	m
1996-08-14	06:00:00	6,56	0,2	680,21	660,75	
1996-08-14	12:00:00	13,88	0	680,19	660,67	
1996-08-14	18:00:00	15,23	0	680,14	660,63	
1996-08-15	00:00:00	10,25	0	680,11	660,54	
1996-08-15	06:00:00	8,83	0	680,06	660,52	
1996-08-15	12:00:00	19,90	0	680,03	660,49	
1996-08-15	18:00:00	17,23	0	680,00	660,52	
1996-08-16	00:00:00	12,52	0	679,98	660,57	
1996-08-16	06:00:00	11,01	0	679,94	660,52	
1996-08-16	12:00:00	11,68	2,2	679,89	660,55	
1996-08-16	18:00:00	12,43	3,6	679,85	660,54	
1996-08-17	00:00:00	6,52	0	679,83	660,57	
1996-08-17	06:00:00	3,95	0,2	679,79	660,56	
1996-08-17	12:00:00	12,79	0	679,76	660,58	
1996-08-17	18:00:00	10,52	0	679,73	660,54	
1996-08-18	00:00:00	4,57	0	679,71	660,52	
1996-08-18	06:00:00	4,05	0	679,68	660,52	
1996-08-18	12:00:00	5,27	5,6	679,65	660,51	
1996-08-18	18:00:00	6,00	14,4	679,59	660,42	
1996-08-19	00:00:00	5,21	12,4	679,55	660,50	
1996-08-19	06:00:00	5,25	12	679,51	660,44	
1996-08-19	12:00:00	6,11	6,2	679,50	660,33	
1996-08-19	18:00:00	9,54	0	679,47	660,24	
1996-08-20	00:00:00	5,25	0,8	679,43	660,22	
1996-08-20	06:00:00	3,71	16,6	679,41	660,13	
1996-08-20	12:00:00	5,85	11	679,36	660,02	
1996-08-20	18:00:00	6,76	4,8	679,34	659,92	
1996-08-21	00:00:00	2,74	0	679,30	659,97	
1996-08-21	06:00:00	1,21	0,4	679,27	659,86	
1996-08-21	12:00:00	5,47	1,6	679,22	659,81	
1996-08-21	18:00:00	4,80	0	679,21	659,78	
1996-08-22	00:00:00	-1,03	0	679,18	659,79	
1996-08-22	06:00:00	-2,90	0	679,16	659,72	
1996-08-22	12:00:00	0,24	0	679,13	659,70	
1996-08-22	18:00:00	5,08	0,2	679,09	659,62	
1996-08-23	00:00:00	2,13	0,4	679,06	659,42	
1996-08-23	06:00:00	1,62	0	679,03	659,40	
1996-08-23	12:00:00	0,81	2,8	678,98	659,31	
1996-08-23	18:00:00	0,49	0,6	678,95	659,27	
1996-08-24	00:00:00	0,81	7	678,92	659,26	
1996-08-24	06:00:00	1,06	32,8	678,89	659,25	
1996-08-24	12:00:00	2,73	16,4	678,86	659,16	
1996-08-24	18:00:00	2,64	5,6	678,85	659,08	
1996-08-25	00:00:00	-0,33	0,2	678,83	659,02	
1996-08-25	06:00:00	-2,34	0	678,80	659,06	
1996-08-25	12:00:00	5,11	2,4	678,78	658,98	
1996-08-25	18:00:00	2,65	0	678,73	659,04	
1996-08-26	00:00:00	-1,13	0	678,68	658,96	

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/6hr	m	m	m
1996-08-26	06:00:00	-1,99	0	678,64	658,95	
1996-08-26	12:00:00	1,15	0	678,61	658,80	
1996-08-26	18:00:00	4,03	0,2	678,53	658,86	
1996-08-27	00:00:00	2,32	4	678,51	658,76	
1996-08-27	06:00:00	2,09	18	678,44	658,78	
1996-08-27	12:00:00	3,99	35,6	678,43	658,63	
1996-08-27	18:00:00	5,15	6,2	678,38	658,66	
1996-08-28	00:00:00	3,05	0,4	678,37	658,53	
1996-08-28	06:00:00	1,14	0,6	678,31	658,51	
1996-08-28	12:00:00	3,41	0,4	678,30	658,37	
1996-08-28	18:00:00	6,15	0,6	678,24	658,36	
1996-08-29	00:00:00	0,66	0	678,23	658,25	
1996-08-29	06:00:00	0,96	4,4	678,18	658,26	
1996-08-29	12:00:00	2,18	5,6	678,16	658,24	
1996-08-29	18:00:00	2,98	17,6	678,12	658,08	
1996-08-30	00:00:00	2,36	8,6	677,96	658,01	
1996-08-30	06:00:00	2,20	1,8	677,92	658,04	
1996-08-30	12:00:00	1,11	2,2	677,91	657,95	
1996-08-30	18:00:00	3,69	0,8	677,85	657,84	
1996-08-31	00:00:00	1,06	0,2	677,82	657,68	
1996-08-31	06:00:00	-0,33	0	678,05	657,35	
1996-08-31	12:00:00	0,15	0,2	678,03	657,30	
1996-08-31	18:00:00	2,38	0	677,99	657,24	
1996-09-01	00:00:00	-0,53	0	677,97	657,05	
1996-09-01	06:00:00	-1,37	0	677,96	656,82	
1996-09-01	12:00:00	0,83	0,2	677,93	656,76	
1996-09-01	18:00:00	5,93	0	677,90	656,70	
1996-09-02	00:00:00	4,18	0,4	677,87	656,76	
1996-09-02	06:00:00	4,53	1	677,85	656,79	
1996-09-02	12:00:00	6,40	2	677,81	656,76	
1996-09-02	18:00:00	9,86	2,6	677,80	656,58	
1996-09-03	00:00:00	8,32	21,2	677,77	656,52	
1996-09-03	06:00:00	7,90	8,8	677,75	656,53	
1996-09-03	12:00:00	6,58	4,4	677,72	656,57	
1996-09-03	18:00:00	6,72	0	677,69	656,50	
1996-09-04	00:00:00	2,88	0,6	677,66	656,49	
1996-09-04	06:00:00	0,29	0,2	677,64	656,48	
1996-09-04	12:00:00	6,67	0	677,62	656,48	
1996-09-04	18:00:00	3,35	0	677,60	656,47	
1996-09-05	00:00:00	-0,64	0	677,57	656,54	
1996-09-05	06:00:00	-1,91	0	677,55	656,56	
1996-09-05	12:00:00	4,09	0	677,51	656,37	
1996-09-05	18:00:00	2,90	0	677,50	656,24	
1996-09-06	00:00:00	-0,24	0	677,46	656,29	
1996-09-06	06:00:00	-0,71	0	677,43	656,39	
1996-09-06	12:00:00	6,92	0	677,41	656,47	
1996-09-06	18:00:00	6,28	0	677,40	656,55	
1996-09-07	00:00:00	2,10	0	677,39	656,57	

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/6hr	m	m	m
1996-09-07	06:00:00	0,77	0	677,36	656,52	
1996-09-07	12:00:00	6,03	0	677,33	656,52	
1996-09-07	18:00:00	6,65	0	677,31	656,57	
1996-09-08	00:00:00	2,27	0	677,30	656,58	
1996-09-08	06:00:00	2,52	0	677,28	656,56	
1996-09-08	12:00:00	3,35	0	677,27	656,46	
1996-09-08	18:00:00	5,31	0	677,24	656,47	
1996-09-09	00:00:00	4,23	0,2	677,23	656,35	
1996-09-09	06:00:00	1,43	0,4	677,34	656,34	
1996-09-09	12:00:00	1,13	0,2	677,40	656,06	
1996-09-09	18:00:00	1,22	0	677,27	656,09	
1996-09-10	00:00:00	-0,01	0,2	677,27	656,02	
1996-09-10	06:00:00	-1,70	0	677,24	656,10	
1996-09-10	12:00:00	2,54	0,2	677,25	656,05	
1996-09-10	18:00:00	1,22	0,2	677,21	656,14	
1996-09-11	00:00:00	-0,79	0,2	677,27	656,06	
1996-09-11	06:00:00	-0,71	0,2	677,20	656,07	
1996-09-11	12:00:00	0,31	0,2	677,23	655,99	
1996-09-11	18:00:00	2,28	0,2	677,24	656,01	
1996-09-12	00:00:00	1,37	0,2	677,14	655,98	
1996-09-12	06:00:00	0,89	0,2	676,96	655,98	
1996-09-12	12:00:00	2,26	0,2	676,92	655,89	
1996-09-12	18:00:00	1,72	0	676,88	655,90	
1996-09-13	00:00:00	-0,85	0,4	676,87	655,84	
1996-09-13	06:00:00	-1,52	0,4	676,85	655,86	
1996-09-13	12:00:00	-0,64	0	676,75	655,77	
1996-09-13	18:00:00	-0,12	0	676,77	655,73	
1996-09-14	00:00:00	-0,10	0	676,72	655,74	
1996-09-14	06:00:00	3,46	0	676,72	655,94	
1996-09-14	12:00:00	7,31	0,4	676,55	655,97	
1996-09-14	18:00:00	9,41	0	676,62	655,90	
1996-09-15	00:00:00	7,95	0,2	676,70	655,92	
1996-09-15	06:00:00	6,83	0	676,69	655,88	
1996-09-15	12:00:00	9,86	0	676,71	655,82	
1996-09-15	18:00:00	8,83	0	676,73	655,74	
1996-09-16	00:00:00	5,88	0	676,72	655,66	
1996-09-16	06:00:00	4,73	0	676,67	655,71	
1996-09-16	12:00:00	5,64	0	676,66	655,71	
1996-09-16	18:00:00	7,55	0	676,68	655,65	
1996-09-17	00:00:00	5,66	0	676,66	655,62	
1996-09-17	06:00:00	4,33	0	676,64	655,57	
1996-09-17	12:00:00	6,99	0	676,62	655,61	
1996-09-17	18:00:00	8,67	0	676,63	655,59	
1996-09-18	00:00:00	7,74	0	676,78	655,67	
1996-09-18	06:00:00	7,43	0	676,55	655,61	
1996-09-18	12:00:00	7,67	0	676,46	655,68	
1996-09-18	18:00:00	8,34	0	676,54	655,61	
1996-09-19	00:00:00	4,09	0	676,53	655,65	

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/6hr	m	m	m
1996-09-19	06:00:00	2,76	0	676,57	655,54	
1996-09-19	12:00:00	3,99	0	676,55	655,52	
1996-09-19	18:00:00	6,67	0	676,59	655,47	
1996-09-20	00:00:00	4,03	0	676,48	655,51	
1996-09-20	06:00:00	3,29	0	676,44	655,46	
1996-09-20	12:00:00	3,55	0	676,44	655,56	
1996-09-20	18:00:00	5,32	0	676,45	655,59	
1996-09-21	00:00:00	2,36	0	676,45	655,54	
1996-09-21	06:00:00	1,80	0	676,45	655,56	
1996-09-21	12:00:00	1,15	0	676,43	655,52	
1996-09-21	18:00:00	2,70	0	676,46	655,53	
1996-09-22	00:00:00	0,83	0	676,47	655,53	
1996-09-22	06:00:00	-0,67	0	676,40	655,48	
1996-09-22	12:00:00	-1,24	0	676,37	655,39	
1996-09-22	18:00:00	-0,81	0,2	676,35	655,41	
1996-09-23	00:00:00	-1,70	0,2	676,46	655,44	
1996-09-23	06:00:00	-3,48	0,6	676,67	655,26	
1996-09-23	12:00:00	-3,02	0	676,64	655,24	
1996-09-23	18:00:00	-1,08	0	676,65	655,36	
1996-09-24	00:00:00	-3,25	0	676,65	655,22	
1996-09-24	06:00:00	-4,45	0	676,64	655,35	
1996-09-24	12:00:00	-4,28	0	676,61	655,24	
1996-09-24	18:00:00	-2,49	0	676,61	655,25	
1996-09-25	00:00:00	-4,04	0	676,59	655,15	
1996-09-25	06:00:00	-5,01	0	676,57	655,18	
1996-09-25	12:00:00	-5,25	0	676,58	655,14	
1996-09-25	18:00:00	-3,02	0	676,58	655,30	
1996-09-26	00:00:00	-4,87	0	676,63	655,34	
1996-09-26	06:00:00	-5,77	0	676,60	655,46	
1996-09-26	12:00:00	-3,88	0	676,59	655,38	
1996-09-26	18:00:00	-2,52	0	676,59	655,39	
1996-09-27	00:00:00	-5,23	0	676,59	655,33	
1996-09-27	06:00:00	-6,28	0	676,56	655,38	
1996-09-27	12:00:00	-6,51	0	676,58	655,30	
1996-09-27	18:00:00	-3,79	0	676,55	655,35	
1996-09-28	00:00:00	-5,35	0	676,57	655,34	
1996-09-28	06:00:00	-6,24	0	676,55	655,33	
1996-09-28	12:00:00	-6,21	0	676,54	655,25	
1996-09-28	18:00:00	-4,39	0	676,55	655,30	
1996-09-29	00:00:00	-5,67	0	676,55	655,32	
1996-09-29	06:00:00	-6,25	0	676,54	655,28	
1996-09-29	12:00:00	-6,38	0	676,52	655,34	
1996-09-29	18:00:00	-5,10	0	676,52	655,35	
1996-09-30	00:00:00	-4,92	0	676,53	655,33	
1996-09-30	06:00:00	-4,13	0	676,54	655,24	
1996-09-30	12:00:00	-2,80	0	676,55	655,24	
1996-09-30	18:00:00	-0,85	0	676,54	655,19	
1996-10-01	00:00:00	-0,53	0	676,55	655,13	

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/Hr	m	m	m
1996-10-01	06:00:00	-0,67	0	676,52	655,02	
1996-10-01	12:00:00	0,29	0	676,50	655,02	
1996-10-01	18:00:00	1,31	0	676,50	654,99	
1996-10-02	00:00:00	0,10	0	676,53	655,05	
1996-10-02	06:00:00	0,04	0	676,51	655,03	
1996-10-02	12:00:00	0,82	0	676,50	655,07	
1996-10-02	18:00:00	1,96	0	676,50	655,07	
1996-10-03	00:00:00	1,78	0	676,49	655,09	
1996-10-03	06:00:00	1,47	0	676,47	655,05	
1996-10-03	12:00:00	1,15	0	676,46	655,27	
1996-10-03	18:00:00	1,19	0	676,52	655,36	
1996-10-04	00:00:00	0,09	0	676,55	655,47	
1996-10-04	06:00:00	-0,43	0	676,59	655,54	
1996-10-04	12:00:00	0,92	0	676,62	655,54	
1996-10-04	18:00:00	-0,03	0	676,66	655,45	
1996-10-05	00:00:00	-1,48	0	676,45	655,36	
1996-10-05	06:00:00	-3,03	0	676,47	655,30	
1996-10-05	12:00:00	-2,01	0	676,47	655,31	
1996-10-05	18:00:00	-0,10	0	676,50	655,32	
1996-10-06	00:00:00	0,42	0	676,53	655,34	
1996-10-06	06:00:00	0,24	0	676,57	655,36	
1996-10-06	12:00:00	0,94	0	676,60	655,36	
1996-10-06	18:00:00	1,30	0	676,59	655,43	
1996-10-07	00:00:00	0,67	0,2	676,64	655,44	
1996-10-07	06:00:00	-0,03	0,2	676,66	655,47	
1996-10-07	12:00:00	0,67	0	676,68	655,44	
1996-10-07	18:00:00	-0,40	0	676,70	655,42	
1996-10-08	00:00:00	-1,58	0	676,72	655,32	
1996-10-08	06:00:00	-1,36	0	676,74	655,35	
1996-10-08	12:00:00	-0,95	0	676,75	655,38	
1996-10-08	18:00:00	-0,56	0	676,76	655,49	
1996-10-09	00:00:00	-3,56	0	676,81	655,47	
1996-10-09	06:00:00	-5,63	0	676,82	655,51	
1996-10-09	12:00:00	-4,35	0	676,86	655,47	657,68
1996-10-09	18:00:00	-1,75	0	676,86	655,59	657,67
1996-10-10	00:00:00	-1,93	0	676,91	655,54	657,64
1996-10-10	06:00:00	-1,48	0	676,91	655,60	657,62
1996-10-10	12:00:00	-0,49	0	676,93	655,53	657,60
1996-10-10	18:00:00	0,00	0	676,90	655,53	657,58
1996-10-11	00:00:00	-0,29	0	676,92	655,50	657,54
1996-10-11	06:00:00	-0,33	0	676,91	655,66	657,54
1996-10-11	12:00:00	-0,36	0	676,96	655,65	657,54
1996-10-11	18:00:00	0,03	0	677,00	655,69	657,53
1996-10-12	00:00:00	-0,45	0	676,95	655,65	657,49
1996-10-12	06:00:00	-0,65	0	676,96	655,73	657,48
1996-10-12	12:00:00	-0,53	0	677,02	655,74	657,45
1996-10-12	18:00:00	-0,30	0	677,00	655,80	657,48
1996-10-13	00:00:00	-0,83	0	677,11	655,78	657,59

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/6hr	m	m	m
1996-10-13	06:00:00	-0,97	0	677,12	655,81	657,88
1996-10-13	12:00:00	-0,85	0	677,17	655,79	658,71
1996-10-13	18:00:00	-0,24	0	677,18	655,77	659,84
1996-10-14	00:00:00	-1,29	0	677,25	655,74	660,65
1996-10-14	06:00:00	-1,77	0	677,27	655,88	661,33
1996-10-14	12:00:00	-1,77	0	677,41	656,07	662,12
1996-10-14	18:00:00	-1,05	0	677,46	656,06	663,40
1996-10-15	00:00:00	-1,44	0	677,49	656,04	664,54
1996-10-15	06:00:00	-1,21	0	677,51	656,20	665,31
1996-10-15	12:00:00	-0,81	0	677,59	656,34	665,83
1996-10-15	18:00:00	-0,49	0	677,90	656,33	666,20
1996-10-16	00:00:00	-0,41	0	677,87	656,40	666,44
1996-10-16	06:00:00	-0,37	0	677,91	656,34	666,61
1996-10-16	12:00:00	-0,17	0	677,94	656,59	666,67
1996-10-16	18:00:00	0,03	0	677,94	656,67	666,75
1996-10-17	00:00:00	-0,55	0	678,04	656,78	666,82
1996-10-17	06:00:00	-0,87	0	678,10	656,92	666,89
1996-10-17	12:00:00	-0,75	0	678,21	657,23	667,01
1996-10-17	18:00:00	-0,40	0	678,36	657,37	667,10
1996-10-18	00:00:00	-0,48	0	678,44	657,50	667,17
1996-10-18	06:00:00	-1,13	0	678,45	657,10	667,97
1996-10-18	12:00:00	-0,89	0	678,41	656,90	669,52
1996-10-18	18:00:00	-0,83	0	678,46	657,17	670,38
1996-10-19	00:00:00	-1,29	0	678,50	657,33	670,86
1996-10-19	06:00:00	-0,88	0	678,55	657,28	671,09
1996-10-19	12:00:00	-0,67	0	678,52	657,53	671,19
1996-10-19	18:00:00	-0,08	0	678,57	657,48	671,17
1996-10-20	00:00:00	-1,05	0	678,62	657,54	671,05
1996-10-20	06:00:00	-1,37	0	678,65	657,66	670,89
1996-10-20	12:00:00	-0,69	0	678,68	657,81	670,74
1996-10-20	18:00:00	-0,16	0	678,73	657,97	670,60
1996-10-21	00:00:00	-0,33	0	678,80	658,11	670,49
1996-10-21	06:00:00	-0,30	0	678,88	658,35	670,46
1996-10-21	12:00:00	-0,13	0	678,98	658,50	671,55
1996-10-21	18:00:00	-0,01	0	679,06	658,60	673,71
1996-10-22	00:00:00	-0,59	0	679,11	658,65	675,91
1996-10-22	06:00:00	-1,52	0	679,17	658,72	676,56
1996-10-22	12:00:00	-2,01	0	679,27	658,75	676,14
1996-10-22	18:00:00	-1,68	0	679,30	658,90	675,95
1996-10-23	00:00:00	-3,74	0	679,37	658,94	675,87
1996-10-23	06:00:00	-4,70	0	679,37	659,14	675,83
1996-10-23	12:00:00	-3,63	0	679,45	659,31	675,81
1996-10-23	18:00:00	-1,55	0	679,55	659,66	676,15
1996-10-24	00:00:00	-2,14	0	679,69	659,77	676,16
1996-10-24	06:00:00	-2,73	0	679,73	659,94	676,11
1996-10-24	12:00:00	-2,22	0	679,75	659,96	676,12
1996-10-24	18:00:00	-0,79	0	679,78	660,10	676,11
1996-10-25	00:00:00	-1,99	0	679,82	660,08	676,10

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/6hr	m	m	m
1996-10-25	06:00:00	-1,52	0	679,84	660,17	676,09
1996-10-25	12:00:00	-1,05	0	679,87	660,08	676,06
1996-10-25	18:00:00	-0,57	0	679,84	660,06	676,03
1996-10-26	00:00:00	-1,03	0	679,85	659,99	676,00
1996-10-26	06:00:00	-0,93	0	679,84	660,12	675,97
1996-10-26	12:00:00	-0,80	0	679,91	660,03	675,94
1996-10-26	18:00:00	-0,21	0	679,94	660,16	675,91
1996-10-27	00:00:00	-0,83	0	680,02	660,24	675,86
1996-10-27	06:00:00	-1,08	0	680,10	660,27	675,82
1996-10-27	12:00:00	-1,21	0	680,16	660,36	675,78
1996-10-27	18:00:00	-0,91	0	680,21	660,62	675,73
1996-10-28	00:00:00	-1,75	0	680,31	660,78	675,85
1996-10-28	06:00:00	-2,52	0	680,41	660,96	675,93
1996-10-28	12:00:00	-3,19	0	680,44	661,15	675,99
1996-10-28	18:00:00	-3,56	0	680,49	661,27	676,01
1996-10-29	00:00:00	-4,61	0	680,56	661,27	676,01
1996-10-29	06:00:00	-5,06	0	680,54	661,22	676,00
1996-10-29	12:00:00	-4,77	0	680,55	661,24	675,96
1996-10-29	18:00:00	-3,84	0	680,56	661,34	675,92
1996-10-30	00:00:00	-4,44	0	680,61	661,37	675,82
1996-10-30	06:00:00	-4,46	0	680,67	661,41	675,71
1996-10-30	12:00:00	-4,44	0	680,73	661,45	675,57
1996-10-30	18:00:00	-3,60	0	680,77	661,56	675,47
1996-10-31	00:00:00	-4,04	0	680,82	661,63	675,34
1996-10-31	06:00:00	-4,39	0	680,83	661,70	675,22
1996-10-31	12:00:00	-4,55	0	680,87	661,82	675,09
1996-10-31	18:00:00	-4,89	0	680,88	661,85	674,97
1996-11-01	00:00:00	-7,46	0	680,91	661,96	674,84
1996-11-01	06:00:00	-7,97	0	680,95	662,03	674,74
1996-11-01	12:00:00	-8,18	0	680,99	662,15	674,60
1996-11-01	18:00:00	-7,65	0	681,05	662,24	674,49
1996-11-02	00:00:00	-9,14	0	681,11	662,33	674,36
1996-11-02	06:00:00	-9,96	0	681,20	662,41	674,19
1996-11-02	12:00:00	-9,68	0	681,24	662,53	674,01
1996-11-02	18:00:00	-8,24	0	681,29	662,63	673,81
1996-11-03	00:00:00	-10,01	0	681,35	662,74	673,57
1996-11-03	06:00:00	-10,33	0	681,41	662,80	673,28
1996-11-03	12:00:00	-10,08	0	681,41	662,90	672,95
1996-11-03	18:00:00	-9,37	0	681,43	662,93	672,58
1996-11-04	00:00:00	-10,77	0	681,48	662,90	672,17
1996-11-04	06:00:00	-11,23	0	681,48	662,89	671,79
1996-11-04	12:00:00	-10,77	0	681,47	662,94	671,36
1996-11-04	18:00:00	-9,96	0	681,45	663,00	671,04
1996-11-05	00:00:00	-8,85	0	681,49	663,04	670,80
1996-11-05	06:00:00	-5,83	0	681,50	663,12	670,54
1996-11-05	12:00:00	-6,40	0	681,56	663,21	670,25
1996-11-05	18:00:00	-3,17	0	681,61	663,28	669,97
1996-11-06	00:00:00	-2,37	0	681,69	663,34	669,83

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/6hr	m	m	m
1996-11-06	06:00:00	-1,86	0	681,74	663,50	669,85
1996-11-06	12:00:00	-0,95	0	681,81	663,49	669,93
1996-11-06	18:00:00	-0,43	0	681,82	663,51	669,95
1996-11-07	00:00:00	-0,53	0	681,82	663,42	669,93
1996-11-07	06:00:00	-0,16	0	681,84	663,47	669,90
1996-11-07	12:00:00	0,06	0	681,89	663,55	669,87
1996-11-07	18:00:00	0,56	0	681,96	663,75	669,81
1996-11-08	00:00:00	-0,03	0	682,12	663,79	669,76
1996-11-08	06:00:00	-0,01	0	682,11	663,94	671,45
1996-11-08	12:00:00	0,27	0	682,19	663,98	674,38
1996-11-08	18:00:00	0,39	0	682,24	664,06	677,91
1996-11-09	00:00:00	-0,19	0	682,30	664,06	677,65
1996-11-09	06:00:00	-0,83	0	682,36	664,18	677,05
1996-11-09	12:00:00	-0,97	0	682,43	664,15	676,54
1996-11-09	18:00:00	-0,36	0	682,48	664,30	676,30
1996-11-10	00:00:00	-0,85	0	682,53	664,36	676,15
1996-11-10	06:00:00	-0,83	0	682,55	664,53	676,07
1996-11-10	12:00:00	-0,65	0	682,65	664,64	675,98
1996-11-10	18:00:00	-0,07	0	682,68	664,73	675,91
1996-11-11	00:00:00	-0,59	0	682,74	664,73	675,86
1996-11-11	06:00:00	-1,06	0	682,76	664,91	675,82
1996-11-11	12:00:00	-1,70	0	682,79	664,99	675,77
1996-11-11	18:00:00	-0,61	0	682,82	665,11	675,74
1996-11-12	00:00:00	-0,83	0	682,85	665,12	675,74
1996-11-12	06:00:00	-0,55	0	682,83	665,25	675,80
1996-11-12	12:00:00	-0,23	0	682,88	665,33	675,90
1996-11-12	18:00:00	0,11	0	682,94	665,40	676,27
1996-11-13	00:00:00	-0,08	0	683,01	665,45	676,19
1996-11-13	06:00:00	-0,08	0	683,04	665,49	676,18
1996-11-13	12:00:00	0,11	0	683,09	665,67	676,17
1996-11-13	18:00:00	0,74	0	683,12	665,71	676,17
1996-11-14	00:00:00	-0,01	0	683,16	665,75	676,14
1996-11-14	06:00:00	0,00	0	683,21	665,81	676,10
1996-11-14	12:00:00	0,37	0	683,26	665,91	676,06
1996-11-14	18:00:00	1,01	0	683,31	665,95	676,02
1996-11-15	00:00:00	0,34	0	683,35	666,01	675,98
1996-11-15	06:00:00	0,23	0	683,40	666,05	675,98
1996-11-15	12:00:00	0,25	0	683,43	666,16	675,96
1996-11-15	18:00:00	1,15	0	683,48	666,24	675,94
1996-11-16	00:00:00	0,24	0	683,53	666,36	675,89
1996-11-16	06:00:00	0,10	0	683,57	666,39	675,87
1996-11-16	12:00:00	0,77	0	683,64	666,50	675,81
1996-11-16	18:00:00	1,62	0	683,67	666,44	675,75
1996-11-17	00:00:00	0,49	0	683,67	666,46	675,68
1996-11-17	06:00:00	0,06	0	683,68	666,51	675,60
1996-11-17	12:00:00	0,06	0	683,69	666,58	675,49
1996-11-17	18:00:00	0,37	0	683,70	666,57	675,38
1996-11-18	00:00:00	-0,77	0	683,69	666,61	675,23

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/6hr	m	m	m
1996-11-18	06:00:00	-0,74	0	683,70	666,60	675,05
1996-11-18	12:00:00	-0,49	0	683,71	666,66	674,86
1996-11-18	18:00:00	-0,13	0	683,75	666,74	674,66
1996-11-19	00:00:00	-0,74	0	683,76	666,77	674,47
1996-11-19	06:00:00	-1,36	0	683,80	666,68	674,29
1996-11-19	12:00:00	-0,61	0	683,86	666,72	674,07
1996-11-19	18:00:00	-0,71	0	683,89	666,79	673,78
1996-11-20	00:00:00	-1,73	0	683,89	666,61	673,45
1996-11-20	06:00:00	-3,09	0	683,86	666,52	673,01
1996-11-20	12:00:00	-1,96	0	683,82	666,55	672,55
1996-11-20	18:00:00	-1,42	0	683,82	666,64	672,04
1996-11-21	00:00:00	-3,03	0	683,86	666,60	671,59
1996-11-21	06:00:00	-4,31	0	683,85	666,64	671,12
1996-11-21	12:00:00	-2,83	0	683,89	666,70	670,77
1996-11-21	18:00:00	-1,83	0	683,93	666,87	670,45
1996-11-22	00:00:00	-3,90	0	683,98	666,89	670,11
1996-11-22	06:00:00	-4,18	0	683,99	666,95	669,75
1996-11-22	12:00:00	-3,69	0	684,02	666,87	669,42
1996-11-22	18:00:00	-2,06	0	684,00	666,91	669,14
1996-11-23	00:00:00	-0,97	0	684,02	666,84	668,90
1996-11-23	06:00:00	-0,37	0	683,98	666,92	668,72
1996-11-23	12:00:00	0,01	0	684,03	666,94	668,52
1996-11-23	18:00:00	0,34	0	684,07	667,04	668,38
1996-11-24	00:00:00	-0,31	0	684,03	667,02	668,19
1996-11-24	06:00:00	-0,40	0	684,06	667,04	668,07
1996-11-24	12:00:00	-0,21	0	684,09	667,01	667,95
1996-11-24	18:00:00	0,00	0	684,09	667,06	667,82
1996-11-25	00:00:00	0,13	0	684,10	666,95	667,69
1996-11-25	06:00:00	0,63	0	684,04	666,96	667,59
1996-11-25	12:00:00	0,67	0	684,04	666,91	667,47
1996-11-25	18:00:00	1,58	0	684,02	666,96	667,38
1996-11-26	00:00:00	0,69	0	684,05	666,43	667,29
1996-11-26	06:00:00	0,39	0	684,07	666,47	667,23
1996-11-26	12:00:00	0,81	0	684,12	666,55	667,15
1996-11-26	18:00:00	1,83	0	684,15	666,64	667,10
1996-11-27	00:00:00	-0,13	0	684,22	666,64	667,07
1996-11-27	06:00:00	-0,48	0	684,27	666,77	667,16
1996-11-27	12:00:00	-0,21	0	684,33	666,92	667,46
1996-11-27	18:00:00	1,22	0	684,37	667,05	668,03
1996-11-28	00:00:00	-0,17	0	684,48	666,96	668,42
1996-11-28	06:00:00	-0,80	0	684,51	666,91	668,65
1996-11-28	12:00:00	-0,29	0	684,50	666,91	668,81
1996-11-28	18:00:00	0,77	0	684,46	667,01	668,91
1996-11-29	00:00:00	-0,49	0	684,46	667,02	668,97
1996-11-29	06:00:00	-1,08	0	684,45	667,00	668,99
1996-11-29	12:00:00	-0,55	0	684,48	667,19	669,00
1996-11-29	18:00:00	-0,31	0	684,53	667,17	668,99
1996-11-30	00:00:00	-1,77	0	684,60	667,21	668,93

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/6hr	m	m	m
1996-11-30	06:00:00	-4,44	0	684,63	667,26	668,89
1996-11-30	12:00:00	-4,86	0	684,67	667,44	668,91
1996-11-30	18:00:00	-3,63	0	684,80	667,61	669,05
1996-12-01	00:00:00	-5,08	0	684,91	667,64	670,84
1996-12-01	06:00:00	-5,58	0	684,91	667,64	673,10
1996-12-01	12:00:00	-6,67	0	684,86	667,55	674,02
1996-12-01	18:00:00	-5,72	0	684,79	667,39	674,42
1996-12-02	00:00:00	-7,35	0	684,79	667,48	674,70
1996-12-02	06:00:00	-8,24	0	684,85	667,62	674,91
1996-12-02	12:00:00	-7,62	0	684,94	667,70	675,01
1996-12-02	18:00:00	-5,38	0	685,01	667,73	675,03
1996-12-03	00:00:00	-8,13	0	684,99	667,77	675,03
1996-12-03	06:00:00	-9,04	0	685,00	667,96	675,03
1996-12-03	12:00:00	-7,88	0	684,98	668,10	675,02
1996-12-03	18:00:00	-5,33	0	685,03	668,03	675,01
1996-12-04	00:00:00	-5,12	0	685,05	668,15	675,01
1996-12-04	06:00:00	-4,33	0	685,13	668,37	675,01
1996-12-04	12:00:00	-2,94	0	685,26	668,49	675,23
1996-12-04	18:00:00	-0,81	0	685,36	668,62	675,23
1996-12-05	00:00:00	-0,43	0	685,35	668,57	675,26
1996-12-05	06:00:00	0,11	0	685,33	668,60	675,28
1996-12-05	12:00:00	0,73	0	685,32	668,42	675,31
1996-12-05	18:00:00	1,58	0	685,32	668,45	675,29
1996-12-06	00:00:00	1,27	0	685,32	668,44	675,25
1996-12-06	06:00:00	2,60	0	685,34	668,23	675,21
1996-12-06	12:00:00	1,96	0	685,34	668,40	675,14
1996-12-06	18:00:00	2,90	0	685,33	668,53	675,06
1996-12-07	00:00:00	0,97	0	685,31	668,46	674,95
1996-12-07	06:00:00	-0,03	0	685,28	668,57	674,83
1996-12-07	12:00:00	0,97	0	685,34	668,63	674,67
1996-12-07	18:00:00	3,32	0	685,39	668,70	674,49
1996-12-08	00:00:00	0,47	0	685,37	668,63	674,31
1996-12-08	06:00:00	0,56	0	685,34	668,67	674,15
1996-12-08	12:00:00	0,55	0	685,38	668,69	673,92
1996-12-08	18:00:00	1,76	0	685,41	668,75	673,65
1996-12-09	00:00:00	-0,53	0	685,42	668,57	673,35
1996-12-09	06:00:00	-1,58	0	685,41	668,86	672,97
1996-12-09	12:00:00	-0,88	0	685,47	668,90	672,61
1996-12-09	18:00:00	0,23	0	685,51	669,03	672,22
1996-12-10	00:00:00	-0,31	0	685,57	669,08	671,84
1996-12-10	06:00:00	-0,47	0	685,61	669,20	671,48
1996-12-10	12:00:00	-0,31	0	685,65	669,06	671,02
1996-12-10	18:00:00	0,98	0	685,55	669,06	670,74
1996-12-11	00:00:00	-0,40	0	685,54	668,99	670,43
1996-12-11	06:00:00	-0,71	0	685,46	668,94	670,15
1996-12-11	12:00:00	-0,74	0	685,45	668,90	669,89
1996-12-11	18:00:00	-0,47	0	685,45	668,92	669,63
1996-12-12	00:00:00	-1,96	0	685,50	668,89	669,38

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/6hr	m	m	m
1996-12-24	06:00:00	0,31	0	685,68	669,62	666,83
1996-12-24	12:00:00	1,68	0	685,73	669,56	666,79
1996-12-24	18:00:00	4,26	0	685,75	669,62	666,77
1996-12-25	00:00:00	0,73	0	685,81	669,65	666,74
1996-12-25	06:00:00	0,21	0	685,80	669,71	666,72
1996-12-25	12:00:00	0,10	0	685,82	669,75	666,68
1996-12-25	18:00:00	0,43	0	685,81	669,80	666,67
1996-12-26	00:00:00	0;15	0	685,87	669,85	666,64
1996-12-26	06:00:00	-0,10	0	685,92	669,96	666,65
1996-12-26	12:00:00	0,01	0	685,97	670,05	666,61
1996-12-26	18:00:00	1,69	0	686,00	670,14	666,60
1996-12-27	00:00:00	0,27	0	686,02	670,11	666,57
1996-12-27	06:00:00	-0,57	0	686,02	670,27	666,53
1996-12-27	12:00:00	0,18	0	686,02	670,25	666,47
1996-12-27	18:00:00	2,52	0	685,96	670,22	666,43
1996-12-28	00:00:00	-0,07	0	685,91	670,06	666,39
1996-12-28	06:00:00	-0,64	0	685,87	670,02	666,35
1996-12-28	12:00:00	3,71	0	685,84	670,01	666,32
1996-12-28	18:00:00	3,66	0	685,83	669,98	666,31
1996-12-29	00:00:00	-0,36	0	685,84	670,03	666,31
1996-12-29	06:00:00	-1,32	0	685,86	670,18	666,30
1996-12-29	12:00:00	2,65	0	685,95	670,36	666,27
1996-12-29	18:00:00	3,14	0	686,01	670,29	666,22
1996-12-30	00:00:00	-0,07	0	685,97	670,19	666,17
1996-12-30	06:00:00	-0,69	0	685,88	670,06	666,13
1996-12-30	12:00:00	5,57	0	685,84	670,18	666,10
1996-12-30	18:00:00	4,80	0	685,90	670,15	666,06
1996-12-31	00:00:00	0,43	0	685,87	670,28	666,04
1996-12-31	06:00:00	-0,53	0	685,91	670,10	666,03
1996-12-31	12:00:00	6,72	0	685,88	670,30	666,08
1996-12-31	18:00:00	6,75	0	685,88	670,65	666,38
1997-01-01	00:00:00	2,28	0	686,03	670,81	667,06
1997-01-01	06:00:00	0,11	0	686,11	670,91	670,20
1997-01-01	12:00:00	2,20	0	686,13	670,79	673,71
1997-01-01	18:00:00	6,46	0	686,01	670,67	678,12
1997-01-02	00:00:00	1,53	0	686,05	670,77	678,19
1997-01-02	06:00:00	-0,40	0	686,11	670,84	678,28
1997-01-02	12:00:00	3,25	0	686,13	670,86	678,41
1997-01-02	18:00:00	5,09	0	686,13	670,60	678,51
1997-01-03	00:00:00	-0,12	0	686,15	670,59	678,38
1997-01-03	06:00:00	-2,30	0	686,12	670,79	678,01
1997-01-03	12:00:00	1,93	0	686,10	670,55	677,56
1997-01-03	18:00:00	2,17	0	686,08	670,47	677,03
1997-01-04	00:00:00	-1,32	0	686,07	670,72	676,61
1997-01-04	06:00:00	-3,46	0	686,10	670,76	676,30
1997-01-04	12:00:00	-1,05	0	686,11	670,79	676,08
1997-01-04	18:00:00	1,31	0	686,12	670,84	675,89
1997-01-05	00:00:00	0,06	0	686,11	670,79	675,79

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/6hr	m	m	m
1997-01-05	06:00:00	-0,29	0	686,11	670,83	675,72
1997-01-05	12:00:00	0,13	0	686,13	670,84	675,67
1997-01-05	18:00:00	0,83	0	686,13	670,87	675,63
1997-01-06	00:00:00	0,11	0	686,18	670,94	675,57
1997-01-06	06:00:00	-0,07	0	686,23	671,12	675,57
1997-01-06	12:00:00	0,21	0	686,28	671,16	676,34
1997-01-06	18:00:00	1,54	0	686,30	671,26	676,39
1997-01-07	00:00:00	-0,12	0	686,33	670,95	676,19
1997-01-07	06:00:00	-0,47	0	686,31	670,95	676,13
1997-01-07	12:00:00	-0,40	0	686,34	670,94	676,07
1997-01-07	18:00:00	0,69	0	686,34	671,31	676,05
1997-01-08	00:00:00	-1,34	0	686,37	671,25	676,01
1997-01-08	06:00:00	-2,82	0	686,37	671,36	675,99
1997-01-08	12:00:00	-2,11	0	686,42	671,35	675,96
1997-01-08	18:00:00	-0,25	0	686,42	671,38	675,94
1997-01-09	00:00:00	-0,69	0	686,47	671,29	675,93
1997-01-09	06:00:00	-0,95	0	686,47	671,25	675,92
1997-01-09	12:00:00	-0,73	0	686,50	671,14	675,91
1997-01-09	18:00:00	-0,23	0	686,50	671,32	675,91
1997-01-10	00:00:00	-0,53	0	686,54	671,37	675,89
1997-01-10	06:00:00	-0,49	0	686,53	671,45	675,88
1997-01-10	12:00:00	-0,01	0	686,55	671,45	675,86
1997-01-10	18:00:00	0,87	0	686,54	671,57	675,84
1997-01-11	00:00:00	0,06	0	686,54	671,56	675,79
1997-01-11	06:00:00	-0,21	0	686,56	671,53	675,78
1997-01-11	12:00:00	2,15	0	686,60	671,58	675,74
1997-01-11	18:00:00	1,72	0	686,60	671,54	675,71
1997-01-12	00:00:00	-0,45	0	686,62	671,50	675,66
1997-01-12	06:00:00	-0,87	0	686,61	671,44	675,61
1997-01-12	12:00:00	1,08	0	686,59	671,41	675,55
1997-01-12	18:00:00	1,49	0	686,58	671,39	675,48
1997-01-13	00:00:00	0,13	0	686,60	671,50	675,39
1997-01-13	06:00:00	0,27	0	686,61	671,56	675,31
1997-01-13	12:00:00	0,43	0	686,64	671,65	675,20
1997-01-13	18:00:00	0,75	0,2	686,65	671,53	675,07
1997-01-14	00:00:00	-0,03	0,6	686,64	671,54	674,93
1997-01-14	06:00:00	-0,47	0,2	686,66	671,47	674,77
1997-01-14	12:00:00	3,87	0	686,65	671,50	674,63
1997-01-14	18:00:00	2,48	0	686,64	671,40	674,48
1997-01-15	00:00:00	-0,12	0	686,65	671,43	674,36
1997-01-15	06:00:00	-0,48	0	686,64	671,44	674,20
1997-01-15	12:00:00	-0,29	0	686,64	671,46	674,02
1997-01-15	18:00:00	1,14	0	686,65	671,48	673,84
1997-01-16	00:00:00	-0,31	0	686,65	671,48	673,59
1997-01-16	06:00:00	-1,21	0	686,64	671,47	673,32
1997-01-16	12:00:00	1,11	0	686,63	671,53	672,98
1997-01-16	18:00:00	1,35	0	686,67	671,61	672,63
1997-01-17	00:00:00	-0,36	0	686,69	671,66	672,24

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/8hr	m	m	m
1997-01-17	06:00:00	-0,69	0	686,71	671,72	672,20
1997-01-17	12:00:00	0,25	0	686,71	671,76	672,68
1997-01-17	18:00:00	1,63	0	686,70	671,72	673,44
1997-01-18	00:00:00	-0,24	0	686,69	671,65	673,84
1997-01-18	06:00:00	-0,88	0	686,69	671,70	674,11
1997-01-18	12:00:00	0,17	0	686,74	671,81	674,30
1997-01-18	18:00:00	1,53	0	686,79	671,94	674,37
1997-01-19	00:00:00	-0,77	0	686,84	671,90	674,45
1997-01-19	06:00:00	-1,29	0	686,85	671,95	674,92
1997-01-19	12:00:00	-1,19	0	686,87	671,93	675,29
1997-01-19	18:00:00	-0,27	0	686,88	672,01	675,75
1997-01-20	00:00:00	-1,48	0	686,92	671,61	675,96
1997-01-20	06:00:00	-3,25	0	686,93	671,50	676,84
1997-01-20	12:00:00	-0,21	0	686,97	671,84	676,78
1997-01-20	18:00:00	1,14	0	686,97	672,03	676,59
1997-01-21	00:00:00	-0,48	0	686,97	671,80	676,49
1997-01-21	06:00:00	-0,63	0	686,95	672,02	676,35
1997-01-21	12:00:00	-0,25	0	686,96	671,97	676,26
1997-01-21	18:00:00	-0,10	0	686,94	672,03	676,19
1997-01-22	00:00:00	-0,16	0	686,95	671,97	676,12
1997-01-22	06:00:00	0,09	0	686,93	672,03	676,06
1997-01-22	12:00:00	0,97	0	686,96	672,05	676,03
1997-01-22	18:00:00	1,49	0	686,94	672,14	676,00
1997-01-23	00:00:00	0,92	0	686,98	672,11	675,97
1997-01-23	06:00:00	1,37	0	686,98	672,17	675,96
1997-01-23	12:00:00	3,20	0	686,98	672,17	675,92
1997-01-23	18:00:00	4,19	0	686,96	671,21	675,88
1997-01-24	00:00:00	1,38	0,2	686,94	671,20	675,84
1997-01-24	06:00:00	0,29	0,4	686,91	671,20	675,80
1997-01-24	12:00:00	1,97	0,2	686,89	671,21	675,77
1997-01-24	18:00:00	3,18	0	686,89	671,25	675,73
1997-01-25	00:00:00	0,35	0	686,92	671,28	675,69
1997-01-25	06:00:00	-0,24	0	686,94	671,36	675,64
1997-01-25	12:00:00	0,13	0	687,01	671,39	675,55
1997-01-25	18:00:00	1,58	0,2	687,02	671,45	675,49
1997-01-26	00:00:00	-0,13	0,2	687,03	671,40	675,36
1997-01-26	06:00:00	-0,43	0,2	687,00	671,34	675,22
1997-01-26	12:00:00	1,13	0,2	686,96	671,18	675,07
1997-01-26	18:00:00	2,98	0	686,91	671,26	674,89
1997-01-27	00:00:00	0,45	0	686,89	671,10	674,70
1997-01-27	06:00:00	-0,85	0	686,88	671,23	674,51
1997-01-27	12:00:00	4,85	0	686,91	671,48	674,31
1997-01-27	18:00:00	3,95	0	686,93	671,68	674,12
1997-01-28	00:00:00	0,55	0	686,97	671,63	673,84
1997-01-28	06:00:00	0,25	0	686,94	671,60	673,50
1997-01-28	12:00:00	1,78	0	686,89	671,59	673,04
1997-01-28	18:00:00	4,61	0	686,87	671,38	672,56
1997-01-29	00:00:00	2,20	0	686,85	671,40	672,01

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/8hr	m	m	m
1997-01-29	06:00:00	1,81	0	686,86	671,55	671,57
1997-01-29	12:00:00	2,62	0	686,89	671,54	671,42
1997-01-29	18:00:00	5,49	0	686,91	671,63	672,65
1997-01-30	00:00:00	1,46	0	687,01	671,83	674,43
1997-01-30	06:00:00	0,21	0	687,11	672,20	678,59
1997-01-30	12:00:00	5,82	0	687,13	672,34	678,89
1997-01-30	18:00:00	4,47	0	687,11	671,97	678,67
1997-01-31	00:00:00	0,18	0	687,11	672,01	678,47
1997-01-31	06:00:00	-1,22	0	687,14	672,18	678,11
1997-01-31	12:00:00	-0,25	0	687,17	672,55	677,76
1997-01-31	18:00:00	0,67	0	687,18	672,58	677,32
1997-02-01	00:00:00	-0,29	0	687,20	672,58	676,86
1997-02-01	06:00:00	-0,71	0	687,20	672,79	676,53
1997-02-01	12:00:00	1,78	0	687,18	672,30	676,35
1997-02-01	18:00:00	3,37	0	687,15	672,25	676,25
1997-02-02	00:00:00	0,74	0	687,13	672,21	676,16
1997-02-02	06:00:00	0,15	0	687,14	672,10	676,07
1997-02-02	12:00:00	0,19	0	687,15	672,09	676,00
1997-02-02	18:00:00	0,42	0	687,15	672,08	675,95
1997-02-03	00:00:00	0,13	0	687,13	672,04	675,92
1997-02-03	06:00:00	-0,08	0	687,13	671,91	675,89
1997-02-03	12:00:00	1,05	0	687,14	671,81	675,86
1997-02-03	18:00:00	1,15	0	687,16	671,97	675,82
1997-02-04	00:00:00	0,15	0	687,18	671,93	675,79
1997-02-04	06:00:00	-0,29	0	687,17	671,89	675,76
1997-02-04	12:00:00	2,81	0	687,16	671,77	675,70
1997-02-04	18:00:00	3,02	0	687,15	671,78	675,66
1997-02-05	00:00:00	-0,17	0	687,18	671,77	675,61
1997-02-05	06:00:00	-1,45	0	687,13	671,87	675,56
1997-02-05	12:00:00	5,09	0	687,16	671,87	675,48
1997-02-05	18:00:00	4,39	0	687,16	671,94	675,40
1997-02-06	00:00:00	0,43	0	687,15	671,96	675,30
1997-02-06	06:00:00	-0,64	0	687,15	672,40	675,19
1997-02-06	12:00:00	6,17	0	687,18	672,44	675,05
1997-02-06	18:00:00	4,39	0	687,19	672,45	674,88
1997-02-07	00:00:00	1,19	0	687,20	672,41	674,67
1997-02-07	06:00:00	0,15	0	687,18	672,45	674,49
1997-02-07	12:00:00	7,51	0	687,18	672,41	674,30
1997-02-07	18:00:00	3,69	0	687,16	672,45	674,12
1997-02-08	00:00:00	-0,47	0	687,20	672,35	673,88
1997-02-08	06:00:00	-2,03	0	687,20	672,35	673,63
1997-02-08	12:00:00	4,95	0	687,22	672,36	673,27
1997-02-08	18:00:00	4,31	0	687,20	672,39	672,83
1997-02-09	00:00:00	-0,21	0	687,20	672,37	672,36
1997-02-09	06:00:00	-1,66	0	687,18	672,39	671,82
1997-02-09	12:00:00	6,27	0	687,19	672,39	671,35
1997-02-09	18:00:00	5,43	0	687,17	672,38	670,95
1997-02-10	00:00:00	0,18	0	687,20	672,37	670,55

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/6hr	m	m	m
1997-02-10	06:00:00	-1,36	0	687,18	672,30	670,23
1997-02-10	12:00:00	7,60	0	687,18	672,31	669,94
1997-02-10	18:00:00	6,37	0	687,18	672,25	669,67
1997-02-11	00:00:00	0,61	0	687,18	672,33	669,39
1997-02-11	06:00:00	-0,87	0	687,20	672,47	669,15
1997-02-11	12:00:00	9,49	0	687,20	672,62	668,97
1997-02-11	18:00:00	8,59	0	687,25	672,67	668,80
1997-02-12	00:00:00	2,07	0	687,28	672,69	668,61
1997-02-12	06:00:00	-0,08	0	687,27	672,52	668,42
1997-02-12	12:00:00	9,86	0	687,16	672,45	668,26
1997-02-12	18:00:00	9,47	0	687,09	672,33	668,13
1997-02-13	00:00:00	1,76	0	687,06	672,33	668,03
1997-02-13	06:00:00	-0,55	0	687,07	672,28	667,95
1997-02-13	12:00:00	10,19	0	687,08	672,25	667,87
1997-02-13	18:00:00	7,71	0	687,06	672,14	667,80
1997-02-14	00:00:00	1,17	0	687,05	672,20	667,73
1997-02-14	06:00:00	0,53	0	687,07	672,23	667,67
1997-02-14	12:00:00	8,52	0	687,10	672,27	667,64
1997-02-14	18:00:00	10,25	0	687,11	672,27	667,66
1997-02-15	00:00:00	2,20	0	687,13	672,31	667,74
1997-02-15	06:00:00	-0,31	0	687,15	672,33	667,95
1997-02-15	12:00:00	7,68	0	687,12	672,33	668,87
1997-02-15	18:00:00	10,52	0	687,14	672,31	669,72
1997-02-16	00:00:00	3,18	0	687,18	672,31	670,54
1997-02-16	06:00:00	1,24	0	687,22	672,41	671,24
1997-02-16	12:00:00	4,35	0	687,29	672,46	671,67
1997-02-16	18:00:00	7,79	0	687,34	672,52	671,88
1997-02-17	00:00:00	2,35	0	687,36	672,46	672,16
1997-02-17	06:00:00	0,41	0	687,35	672,47	672,79
1997-02-17	12:00:00	2,38	0	687,30	672,39	673,16
1997-02-17	18:00:00	3,97	0	687,27	672,35	673,35
1997-02-18	00:00:00	1,08	0	687,25	672,27	673,56
1997-02-18	06:00:00	0,00	0	687,27	672,38	673,73
1997-02-18	12:00:00	4,65	0	687,30	672,41	673,81
1997-02-18	18:00:00	8,67	0	687,36	672,55	673,85
1997-02-19	00:00:00	3,20	0	687,41	672,48	673,82
1997-02-19	06:00:00	1,63	0	687,39	672,55	673,91
1997-02-19	12:00:00	3,97	0	687,40	672,51	674,01
1997-02-19	18:00:00	5,71	0	687,37	672,39	674,09
1997-02-20	00:00:00	3,00	0	687,37	672,38	674,15
1997-02-20	06:00:00	2,15	0	687,32	672,37	674,26
1997-02-20	12:00:00	5,11	0	687,28	672,33	674,32
1997-02-20	18:00:00	5,77	0	687,27	672,29	674,38
1997-02-21	00:00:00	1,58	0	687,29	672,22	674,41
1997-02-21	06:00:00	0,31	0	687,26	672,29	674,43
1997-02-21	12:00:00	6,81	0	687,29	672,23	674,43
1997-02-21	18:00:00	9,01	0	687,29	672,30	674,43
1997-02-22	00:00:00	1,15	0	687,31	672,21	674,42

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/6hr	m	m	m
1997-02-22	06:00:00	0,09	0	687,28	672,25	674,38
1997-02-22	12:00:00	8,79	0	687,32	672,22	674,29
1997-02-22	18:00:00	11,08	0	687,30	672,26	674,21
1997-02-23	00:00:00	1,93	0	687,34	672,25	674,15
1997-02-23	06:00:00	-0,53	0	687,33	672,30	674,06
1997-02-23	12:00:00	1,25	0	687,36	672,31	673,89
1997-02-23	18:00:00	6,62	0	687,35	672,31	673,73
1997-02-24	00:00:00	2,35	0	687,40	672,28	673,66
1997-02-24	06:00:00	0,90	0	687,32	672,30	673,51
1997-02-24	12:00:00	7,77	0	687,36	672,33	673,27
1997-02-24	18:00:00	8,01	0	687,38	672,36	673,03
1997-02-25	00:00:00	1,29	0	687,41	672,27	672,92
1997-02-25	06:00:00	-0,91	0	687,44	672,27	672,81
1997-02-25	12:00:00	11,56	0	687,51	672,48	672,62
1997-02-25	18:00:00	11,93	0	687,52	671,99	672,42
1997-02-26	00:00:00	2,28	0	687,54	671,99	672,25
1997-02-26	06:00:00	-0,53	0	687,55	672,28	672,16
1997-02-26	12:00:00	13,25	0	687,58	672,53	672,00
1997-02-26	18:00:00	10,22	0	687,59	672,59	671,84
1997-02-27	00:00:00	3,35	0	687,61	672,64	671,67
1997-02-27	06:00:00	1,58	0	687,62	672,64	671,49
1997-02-27	12:00:00	11,72	0	687,63	672,58	671,33
1997-02-27	18:00:00	11,89	0	687,59	672,53	671,17
1997-02-28	00:00:00	2,79	0	687,56	672,54	671,01
1997-02-28	06:00:00	0,13	0	687,54	672,54	670,88
1997-02-28	12:00:00	13,58	0	687,53	672,55	670,73
1997-02-28	18:00:00	12,11	0	687,52	672,36	670,60
1997-03-01	00:00:00	4,61	0	687,53	672,46	670,49
1997-03-01	06:00:00	2,50	0	687,58	672,57	670,39
1997-03-01	12:00:00	5,14	0	687,65	672,67	670,23
1997-03-01	18:00:00	6,94	0	687,66	672,57	670,09
1997-03-02	00:00:00	3,52	0	687,64	672,57	669,97
1997-03-02	06:00:00	2,88	0	687,60	672,51	669,85
1997-03-02	12:00:00	6,71	0	687,56	672,49	669,72
1997-03-02	18:00:00	8,17	0	687,51	672,40	669,63
1997-03-03	00:00:00	1,39	0	687,47	672,33	669,60
1997-03-03	06:00:00	-0,43	0	687,44	672,29	669,62
1997-03-03	12:00:00	9,16	0	687,42	672,25	669,64
1997-03-03	18:00:00	9,73	0	687,40	672,25	669,61
1997-03-04	00:00:00	3,32	0	687,40	672,19	669,55
1997-03-04	06:00:00	1,39	0	687,37	672,25	669,49
1997-03-04	12:00:00	5,17	0	687,44	672,29	669,41
1997-03-04	18:00:00	9,38	0	687,42	672,29	669,32
1997-03-05	00:00:00	3,37	0	687,44	671,14	669,23
1997-03-05	06:00:00	-0,15	0	687,45	671,21	669,16
1997-03-05	12:00:00	9,03	0	687,48	671,26	669,08
1997-03-05	18:00:00	9,86	0	687,48	671,34	669,01
1997-03-06	00:00:00	3,21	0	687,54	671,31	668,91

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/6hr	m	m	m
1997-03-06	06:00:00	1,13	0	687,48	671,35	668,82
1997-03-06	12:00:00	2,64	0	687,51	671,29	668,72
1997-03-06	18:00:00	6,64	0	687,47	671,37	668,64
1997-03-07	00:00:00	2,49	0	687,50	671,30	668,57
1997-03-07	06:00:00	-0,71	0	687,51	671,39	668,54
1997-03-07	12:00:00	12,35	0	687,54	671,25	668,50
1997-03-07	18:00:00	11,31	0	687,41	671,37	668,53
1997-03-08	00:00:00	2,11	0	687,40	671,28	668,57
1997-03-08	06:00:00	-0,74	0	687,39	671,29	668,65
1997-03-08	12:00:00	7,72	0	687,43	671,27	668,71
1997-03-08	18:00:00	10,20	0	687,44	671,31	668,79
1997-03-09	00:00:00	3,83	0	687,53	671,33	668,81
1997-03-09	06:00:00	1,90	0	687,55	671,45	668,83
1997-03-09	12:00:00	2,02	0	687,52	671,36	668,88
1997-03-09	18:00:00	6,99	0	687,48	671,44	669,41
1997-03-10	00:00:00	2,86	0	687,44	671,44	670,66
1997-03-10	06:00:00	1,30	0	687,41	671,45	671,39
1997-03-10	12:00:00	3,73	0	687,44	671,42	671,73
1997-03-10	18:00:00	5,37	0	687,49	671,48	671,95
1997-03-11	00:00:00	3,00	0	687,54	671,53	672,14
1997-03-11	06:00:00	2,15	0	687,58	671,57	672,29
1997-03-11	12:00:00	6,40	0	687,59	671,62	672,28
1997-03-11	18:00:00	7,12	0	687,68	671,56	672,25
1997-03-12	00:00:00	3,13	0	687,69	671,56	672,17
1997-03-12	06:00:00	1,45	0	687,67	671,52	672,06
1997-03-12	12:00:00	8,25	0	687,66	671,51	671,93
1997-03-12	18:00:00	10,04	0	687,62	671,43	671,81
1997-03-13	00:00:00	3,68	0,2	687,61	671,51	671,65
1997-03-13	06:00:00	1,17	0,2	687,61	671,55	671,48
1997-03-13	12:00:00	10,82	0	687,59	671,59	671,31
1997-03-13	18:00:00	12,42	0	687,56	671,56	671,16
1997-03-14	00:00:00	3,11	0	687,59	671,58	671,00
1997-03-14	06:00:00	0,15	0	687,61	671,56	670,83
1997-03-14	12:00:00	16,23	6,8	687,64	671,58	670,67
1997-03-14	18:00:00	13,95	0	687,66	671,66	670,49
1997-03-15	00:00:00	5,53	0	687,71	671,79	670,35
1997-03-15	06:00:00	2,65	0	687,76	671,92	670,21
1997-03-15	12:00:00	17,39	0	687,82	672,00	670,06
1997-03-15	18:00:00	15,97	0	687,88	672,03	669,91
1997-03-16	00:00:00	4,68	0	687,87	672,04	669,73
1997-03-16	06:00:00	1,31	0	687,81	672,03	669,55
1997-03-16	12:00:00	16,92	0	687,76	672,00	669,41
1997-03-16	18:00:00	17,25	0	687,72	671,95	669,26
1997-03-17	00:00:00	5,64	0	687,72	671,97	669,12
1997-03-17	06:00:00	2,17	0	687,70	671,99	668,98
1997-03-17	12:00:00	20,81	0	687,68	671,94	668,87
1997-03-17	18:00:00	19,14	0	687,66	672,02	668,77
1997-03-18	00:00:00	6,69	0	687,67	671,97	669,03

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/8hr	m	m	m
1997-03-18	06:00:00	3,32	0	687,69	672,04	675,82
1997-03-18	12:00:00	23,46	0	687,76	671,95	677,18
1997-03-18	18:00:00	22,28	0	687,75	671,96	678,47
1997-03-19	00:00:00	9,59	0	687,79	672,02	678,65
1997-03-19	06:00:00	4,80	0	687,83	672,37	679,04
1997-03-19	12:00:00	21,58	0	687,86	672,37	679,00
1997-03-19	18:00:00	22,00	0	687,86	672,43	678,80
1997-03-20	00:00:00	10,04	0	687,88	672,44	678,60
1997-03-20	06:00:00	6,60	0	687,88	672,53	678,45
1997-03-20	12:00:00	23,88	0	687,91	672,47	678,25
1997-03-20	18:00:00	23,48	0	687,86	672,52	678,07
1997-03-21	00:00:00	9,83	0	687,88	672,50	677,79
1997-03-21	06:00:00	5,36	0	687,89	672,64	677,47
1997-03-21	12:00:00	22,87	0	687,93	672,72	677,13
1997-03-21	18:00:00	22,07	0	687,97	672,77	677,03
1997-03-22	00:00:00	9,86	0	687,96	672,68	676,71
1997-03-22	06:00:00	6,80	0	687,95	672,73	676,47
1997-03-22	12:00:00	16,88	0	687,99	672,80	676,29
1997-03-22	18:00:00	20,57	0	688,02	672,89	676,21
1997-03-23	00:00:00	7,90	0	688,05	672,81	676,14
1997-03-23	06:00:00	4,02	0	688,03	672,87	676,05
1997-03-23	12:00:00	16,81	0	688,03	672,80	675,95
1997-03-23	18:00:00	18,83	0	688,00	672,85	675,94
1997-03-24	00:00:00	7,52	0	688,03	672,83	675,89
1997-03-24	06:00:00	2,79	0	688,01	672,84	675,85
1997-03-24	12:00:00	21,53	0	688,03	672,74	675,82
1997-03-24	18:00:00	22,11	0	688,02	672,84	675,81
1997-03-25	00:00:00	9,21	0	688,04	672,91	675,79
1997-03-25	06:00:00	4,43	0	688,06	672,99	675,78
1997-03-25	12:00:00	21,26	0	688,12	672,95	676,00
1997-03-25	18:00:00	17,05	0	688,12	673,03	676,20
1997-03-26	00:00:00	8,69	0	688,17	673,05	676,08
1997-03-26	06:00:00	3,50	0	688,16	673,07	676,11
1997-03-26	12:00:00	20,39	0	688,20	673,07	676,13
1997-03-26	18:00:00	17,75	0	688,19	673,04	676,11
1997-03-27	00:00:00	7,90	0	688,20	673,04	676,06
1997-03-27	06:00:00	3,39	0	688,17	672,99	676,04
1997-03-27	12:00:00	17,66	0	688,17	672,91	676,02
1997-03-27	18:00:00	8,42	0	688,17	672,85	675,99
1997-03-28	00:00:00	5,01	0,2	688,21	672,80	675,94
1997-03-28	06:00:00	3,99	0	688,18	672,87	675,91
1997-03-28	12:00:00	8,25	0	688,14	673,05	675,88
1997-03-28	18:00:00	13,06	0,2	688,11	672,88	675,86
1997-03-29	00:00:00	5,90	0,2	688,12	672,87	675,84
1997-03-29	06:00:00	3,64	0	688,16	673,08	675,84
1997-03-29	12:00:00	9,79	1,4	688,20	673,19	675,86
1997-03-29	18:00:00	13,15	0,2	688,21	673,23	675,96
1997-03-30	00:00:00	7,76	0,4	688,24	673,29	676,02

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/6hr	m	m	m
1997-03-30	06:00:00	4,85	0	688,28	673,56	676,04
1997-03-30	12:00:00	15,87	0	688,32	673,88	676,06
1997-03-30	18:00:00	19,18	0	688,35	674,03	676,06
1997-03-31	00:00:00	9,21	0	688,38	674,07	676,04
1997-03-31	06:00:00	4,90	0	688,31	673,82	676,02
1997-03-31	12:00:00	21,75	0	688,19	673,75	676,01
1997-03-31	18:00:00	21,88	0	688,16	673,71	676,01
1997-04-01	00:00:00	11,08	0	688,12	673,71	675,98
1997-04-01	06:00:00	5,88	0	688,08	673,70	675,96
1997-04-01	12:00:00	21,13	0	688,08	673,63	675,93
1997-04-01	18:00:00	23,12	0	688,07	673,52	675,92
1997-04-02	00:00:00	11,80	0	688,10	673,57	675,87
1997-04-02	06:00:00	8,36	0	688,11	673,82	675,81
1997-04-02	12:00:00	10,07	0,2	688,15	673,94	675,75
1997-04-02	18:00:00	14,25	0,2	688,18	674,10	675,72
1997-04-03	00:00:00	11,17	0	688,24	674,20	675,75
1997-04-03	06:00:00	9,20	0	688,29	674,27	675,70
1997-04-03	12:00:00	12,48	0,2	688,31	674,24	675,67
1997-04-03	18:00:00	16,92	1	688,31	674,27	675,71
1997-04-04	00:00:00	12,86	0	688,31	674,21	675,68
1997-04-04	06:00:00	10,20	1	688,30	674,24	675,61
1997-04-04	12:00:00	13,39	1,8	688,30	674,22	675,52
1997-04-04	18:00:00	19,35	0	688,29	674,28	675,47
1997-04-05	00:00:00	11,68	0	688,50	674,18	675,37
1997-04-05	06:00:00	6,72	0	688,46	674,22	675,21
1997-04-05	12:00:00	14,49	0,2	688,54	674,12	675,04
1997-04-05	18:00:00	14,23	5,8	688,50	674,22	674,93
1997-04-06	00:00:00	11,61	10,6	688,54	674,22	674,87
1997-04-06	06:00:00	10,36	12,2	688,52	674,29	674,75
1997-04-06	12:00:00	12,77	0,4	688,57	674,19	674,62
1997-04-06	18:00:00	13,65	1	688,52	674,28	674,61
1997-04-07	00:00:00	8,88	4,8	688,55	674,21	674,66
1997-04-07	06:00:00	6,17	7	688,52	674,22	674,58
1997-04-07	12:00:00	7,60	12,4	688,52	674,18	674,53
1997-04-07	18:00:00	9,86	11,4	688,49	674,21	674,56
1997-04-08	00:00:00	6,88	2,4	688,54	674,21	674,74
1997-04-08	06:00:00	5,51	1,4	688,52	674,25	674,75
1997-04-08	12:00:00	13,65	0,2	688,55	674,19	674,72
1997-04-08	18:00:00	16,77	0	688,55	674,21	674,80
1997-04-09	00:00:00	11,21	0	688,58	674,21	674,94
1997-04-09	06:00:00	8,59	4,2	688,55	674,23	674,97
1997-04-09	12:00:00	9,86	6	688,58	674,01	674,96
1997-04-09	18:00:00	11,60	16,4	688,58	674,04	675,12
1997-04-10	00:00:00	8,63	4,2	688,59	674,10	675,29
1997-04-10	06:00:00	6,72	12,4	688,59	674,12	675,34
1997-04-10	12:00:00	11,04	1,8	688,60	674,15	675,34
1997-04-10	18:00:00	14,29	0	688,60	674,14	675,52
1997-04-11	00:00:00	7,28	0	688,62	674,19	675,64

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/6hr	m	m	m
1997-04-11	06:00:00	2,81	0	688,62	673,92	675,68
1997-04-11	12:00:00	18,57	0	688,65	673,87	675,69
1997-04-11	18:00:00	17,93	0	688,65	673,85	675,79
1997-04-12	00:00:00	8,89	0	688,69	673,94	675,84
1997-04-12	06:00:00	6,48	0	688,70	673,96	675,86
1997-04-12	12:00:00	10,13	0	688,73	674,01	675,87
1997-04-12	18:00:00	12,88	0	688,75	674,02	675,90
1997-04-13	00:00:00	7,65	0,4	688,78	674,18	675,92
1997-04-13	06:00:00	5,34	0	688,85	674,18	675,94
1997-04-13	12:00:00	9,93	0,2	688,85	674,19	675,95
1997-04-13	18:00:00	14,21	0	688,82	673,90	675,98
1997-04-14	00:00:00	8,52	0	688,82	673,87	676,00
1997-04-14	06:00:00	3,45	0	688,79	673,78	676,03
1997-04-14	12:00:00	16,83	0	688,79	673,74	676,04
1997-04-14	18:00:00	19,04	0	688,77	673,63	676,08
1997-04-15	00:00:00	9,05	0	688,80	673,65	676,11
1997-04-15	06:00:00	3,86	0	688,79	673,83	676,16
1997-04-15	12:00:00	20,71	0	688,80	673,83	676,42
1997-04-15	18:00:00	22,40	0	688,84	673,85	676,96
1997-04-16	00:00:00	11,33	0	688,88	673,83	678,42
1997-04-16	06:00:00	7,84	0	688,92	674,11	679,22
1997-04-16	12:00:00	23,14	0	688,96	674,16	679,16
1997-04-16	18:00:00	24,19	0	688,92	674,11	679,05
1997-04-17	00:00:00	14,81	0	688,91	674,09	679,04
1997-04-17	06:00:00	10,84	0	688,90	674,07	678,94
1997-04-17	12:00:00	12,25	0,2	688,90	674,03	678,83
1997-04-17	18:00:00	16,52	0	688,88	674,08	678,76
1997-04-18	00:00:00	9,21	0	688,92	674,23	678,58
1997-04-18	06:00:00	4,50	0	688,93	674,32	678,35
1997-04-18	12:00:00	21,46	0	688,97	674,29	678,07
1997-04-18	18:00:00	21,05	0	689,00	674,37	677,91
1997-04-19	00:00:00	12,88	0	689,02	674,30	677,53
1997-04-19	06:00:00	8,75	0	689,02	674,35	677,23
1997-04-19	12:00:00	20,81	0	689,04	674,35	677,04
1997-04-19	18:00:00	23,12	0	689,03	674,41	677,14
1997-04-20	00:00:00	13,47	0	689,04	674,45	677,01
1997-04-20	06:00:00	9,03	0	689,05	674,45	676,85
1997-04-20	12:00:00	24,98	0	689,00	674,36	676,86
1997-04-20	18:00:00	25,92	0	688,90	674,37	677,04
1997-04-21	00:00:00	16,29	0	688,88	674,24	676,85
1997-04-21	06:00:00	11,80	0	688,89	674,19	676,81
1997-04-21	12:00:00	20,98	0	688,91	674,13	676,79
1997-04-21	18:00:00	21,77	0	688,91	674,18	676,83
1997-04-22	00:00:00	12,79	0	688,98	674,18	676,78
1997-04-22	06:00:00	9,03	0	688,98	674,26	676,76
1997-04-22	12:00:00	12,64	0,2	689,01	674,35	676,75
1997-04-22	18:00:00	16,10	0	689,03	674,45	676,76
1997-04-23	00:00:00	12,89	0	689,07	674,56	676,84

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/6hr	m	m	m
1997-04-23	06:00:00	11,56	16,4	689,07	674,65	676,83
1997-04-23	12:00:00	16,60	0,8	689,02	674,58	676,88
1997-04-23	18:00:00	13,52	2,4	689,00	674,63	676,98
1997-04-24	00:00:00	9,47	11,4	689,03	674,61	676,93
1997-04-24	06:00:00	7,24	5,8	688,98	674,61	676,93
1997-04-24	12:00:00	10,84	0,4	689,00	674,59	676,94
1997-04-24	18:00:00	14,65	0,2	688,98	674,63	676,96
1997-04-25	00:00:00	8,25	0,2	689,02	674,64	676,99
1997-04-25	06:00:00	5,29	0	689,04	674,19	677,01
1997-04-25	12:00:00	11,89	0	689,07	673,86	676,99
1997-04-25	18:00:00	15,83	0	689,06	674,12	677,08
1997-04-26	00:00:00	8,83	0	689,10	674,61	677,22
1997-04-26	06:00:00	3,91	0,2	689,13	674,09	677,26
1997-04-26	12:00:00	14,00	0	689,17	673,87	677,56
1997-04-26	18:00:00	12,69	0,2	689,17	673,79	678,13
1997-04-27	00:00:00	9,12	0,6	689,17	673,86	678,74
1997-04-27	06:00:00	7,41	1,2	689,18	673,79	678,64
1997-04-27	12:00:00	9,93	0,4	689,17	673,82	678,47
1997-04-27	18:00:00	12,92	2,2	689,17	673,77	678,36
1997-04-28	00:00:00	8,93	0,2	689,17	673,76	678,13
1997-04-28	06:00:00	6,71	0	689,19	673,76	677,79
1997-04-28	12:00:00	11,29	0	689,19	673,78	677,44
1997-04-28	18:00:00	12,81	0,8	689,20	673,65	677,29
1997-04-29	00:00:00	9,97	1,6	689,21	673,70	677,17
1997-04-29	06:00:00	8,12	0	689,19	673,68	677,11
1997-04-29	12:00:00	12,77	0	689,14	673,73	677,06
1997-04-29	18:00:00	17,83	0	689,13	673,63	677,04
1997-04-30	00:00:00	11,84	0	689,15	673,72	677,00
1997-04-30	06:00:00	7,35	0	689,17	673,82	676,98
1997-04-30	12:00:00	17,93	0	689,18	673,92	676,94
1997-04-30	18:00:00	19,92	0	689,17	674,18	676,91
1997-05-01	00:00:00	12,23	0	689,13	674,07	676,90
1997-05-01	06:00:00	8,97	0,2	689,12	674,07	676,88
1997-05-01	12:00:00			689,10	674,07	676,86
1997-05-01	18:00:00			689,10	674,11	676,85
1997-05-02	00:00:00			689,10	674,21	676,84
1997-05-02	06:00:00			689,10	674,32	676,83
1997-05-02	12:00:00			689,14	674,40	676,80
1997-05-02	18:00:00			689,16	674,43	676,78
1997-05-03	00:00:00			689,18	674,46	676,77
1997-05-03	06:00:00			689,19	674,47	676,80
1997-05-03	12:00:00			689,16	674,39	676,86
1997-05-03	18:00:00			689,13	674,39	676,90
1997-05-04	00:00:00			689,14	674,35	676,92
1997-05-04	06:00:00			689,16	674,39	676,98
1997-05-04	12:00:00			689,16	674,30	677,07
1997-05-04	18:00:00			689,14	674,48	677,34
1997-05-05	00:00:00			689,19	674,52	677,95

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/8hr	m	m	m
1997-05-05	06:00:00			689,21	674,65	678,82
1997-05-05	12:00:00			689,23	674,48	679,06
1997-05-05	18:00:00			689,23	674,62	679,00
1997-05-06	00:00:00			689,26	674,56	678,97
1997-05-06	06:00:00			689,27	674,55	679,06
1997-05-06	12:00:00			689,29	674,65	679,00
1997-05-06	18:00:00			689,24	674,79	678,95
1997-05-07	00:00:00			689,25	674,62	678,83
1997-05-07	06:00:00			689,21	674,74	678,62
1997-05-07				689,22	674,66	678,38
1997-05-07				689,23	674,56	678,17
1997-05-08				689,31	674,70	677,93
1997-05-08				689,29	674,85	677,61
1997-05-08				689,31	674,81	677,37
1997-05-08				689,31	674,79	677,30
1997-05-09				689,31	674,77	677,25
1997-05-09				689,30	674,79	677,20
1997-05-09				689,31	674,77	677,17
1997-05-09				689,28	674,77	677,16
1997-05-10				689,30	674,95	677,16
1997-05-10				689,28	674,97	677,16
1997-05-10				689,31	675,05	677,14
1997-05-10				689,31	675,11	677,13
1997-05-11				689,35	675,14	677,13
1997-05-11				689,36	675,13	677,14
1997-05-11				689,36	675,26	677,13
1997-05-11				689,37	675,28	677,14
1997-05-12				689,39	675,33	677,15
1997-05-12				689,41	675,36	677,16
1997-05-12				689,42	675,40	677,17
1997-05-12				689,44	675,42	677,20
1997-05-13				689,42	675,45	677,27
1997-05-13				689,42	675,43	677,47
1997-05-13				689,41	675,43	677,72
1997-05-13				689,41	675,38	677,71
1997-05-14				689,41	675,41	677,71
1997-05-14				689,42	675,37	677,79
1997-05-14				689,45	675,37	677,77
1997-05-14				689,43	675,27	677,67
1997-05-15				689,41	675,26	677,59
1997-05-15				689,42	675,23	677,59
1997-05-15				689,40	675,27	677,55
1997-05-15				689,38	675,29	677,44
1997-05-16				689,38	675,20	677,36
1997-05-16				689,38	675,17	677,31
1997-05-16				689,35	675,11	677,26
1997-05-16				689,34	675,06	677,22
1997-05-17				689,36	675,19	677,17

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/hr	m	m	m
1997-05-17				689,38	675,26	677,13
1997-05-17				689,37	675,21	677,10
1997-05-17				689,35	675,24	677,06
1997-05-18				689,35	675,21	677,01
1997-05-18				689,33	675,24	676,97
1997-05-18				689,31	675,05	676,93
1997-05-18				689,32	675,12	676,89
1997-05-19				689,35	675,14	676,85
1997-05-19				689,35	675,25	676,81
1997-05-19				689,36	675,25	676,77
1997-05-19				689,37	675,30	676,74
1997-05-20				689,35	675,21	676,70
1997-05-20				689,31	675,20	676,66
1997-05-20				689,28	675,12	676,63
1997-05-20				689,26	675,11	676,59
1997-05-21				689,24	674,98	676,56
1997-05-21				689,21	675,01	676,52
1997-05-21				689,20	675,10	676,47
1997-05-21				689,17	674,92	676,53
1997-05-22				689,18	674,79	676,44
1997-05-22				689,18	674,75	676,38
1997-05-22				689,19	674,72	676,33
1997-05-22				689,21	674,74	676,27
1997-05-23				689,22	674,70	676,19
1997-05-23				689,19	674,71	676,12
1997-05-23				689,20	674,69	676,00
1997-05-23				689,20	674,66	675,87
1997-05-24				689,22	674,65	675,79
1997-05-24				689,21	674,55	675,70
1997-05-24				689,19	674,51	675,63
1997-05-24				689,19	674,48	675,52
1997-05-25				689,18	674,48	675,42
1997-05-25				689,17	674,48	675,32
1997-05-25				689,18	674,51	675,19
1997-05-25				689,17	674,54	675,09
1997-05-26				689,17	674,65	674,97
1997-05-26				689,16	674,64	674,84
1997-05-26				689,16	674,64	674,70
1997-05-26				689,13	674,52	674,53
1997-05-27				689,17	674,54	674,39
1997-05-27				689,13	674,42	674,25
1997-05-27				689,10	674,43	674,14
1997-05-27				689,07	674,49	674,03
1997-05-28				689,05	674,52	673,95
1997-05-28				689,07	674,53	673,84
1997-05-28				689,08	674,56	673,72
1997-05-28				689,08	674,48	673,59
1997-05-29				689,07	674,53	673,45

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/6hr	m	m	m
1997-05-29				689,07	674,53	673,29
1997-05-29				688,97	674,51	673,11
1997-05-29				688,97	674,48	672,84
1997-05-30				688,96	674,42	672,52
1997-05-30				688,97	674,37	672,20
1997-05-30				688,95	674,38	671,88
1997-05-30				688,95	674,42	671,61
1997-05-31				688,97	674,31	671,32
1997-05-31				688,97	674,26	671,20
1997-05-31				689,01	674,16	671,24
1997-05-31				689,00	674,12	671,20
1997-06-01				689,00	674,05	671,16
1997-06-01				689,02	674,07	671,02
1997-06-01				689,01	674,04	671,07
1997-06-01				689,00	674,10	671,74
1997-06-02				689,07	674,08	672,71
1997-06-02				689,07	674,13	673,22
1997-06-02				689,11	673,98	673,51
1997-06-02				689,12	674,10	673,74
1997-06-03				689,16	674,15	673,88
1997-06-03				689,18	674,26	674,00
1997-06-03				689,21	674,44	674,05
1997-06-03				689,19	674,49	674,12
1997-06-04				689,22	674,33	674,44
1997-06-04				689,19	674,15	674,77
1997-06-04				689,20	674,01	675,21
1997-06-04				689,19	674,00	675,51
1997-06-05				689,19	673,80	675,69
1997-06-05				689,17	674,08	675,76
1997-06-05				689,21	674,08	675,77
1997-06-05				689,20	674,09	675,78
1997-06-06				689,23	674,10	675,77
1997-06-06				689,24	674,17	675,77
1997-06-06				689,25	674,15	675,75
1997-06-06				689,24	674,37	675,73
1997-06-07				689,25	674,18	675,72
1997-06-07				689,22	674,13	675,71
1997-06-07				689,24	674,07	675,67
1997-06-07				689,24	674,04	675,65
1997-06-08				689,22	674,07	675,61
1997-06-08				689,22	674,02	675,59
1997-06-08				689,19	674,01	675,55
1997-06-08				689,18	673,99	675,52
1997-06-09				689,19	673,97	675,46
1997-06-09				689,19	674,16	675,42
1997-06-09				689,19	673,91	675,34
1997-06-09				689,20	673,88	675,26
1997-06-10				689,20	673,96	675,20

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/8hr	m	m	m
1997-06-10				689,19	673,99	675,11
1997-06-10				689,18	674,04	675,00
1997-06-10				689,16	673,87	674,87
1997-06-11				689,15	673,94	674,72
1997-06-11				689,15	673,77	674,54
1997-06-11				689,12	673,76	674,37
1997-06-11				689,11	673,65	674,21
1997-06-12				689,09	673,68	674,04
1997-06-12				689,05	673,65	673,86
1997-06-12				689,02	673,65	673,67
1997-06-12				689,01	673,61	673,43
1997-06-13				688,97	673,73	673,19
1997-06-13				688,95	673,73	672,91
1997-06-13				688,94	673,64	672,56
1997-06-13				688,94	673,67	672,07
1997-06-14				688,93	673,64	671,62
1997-06-14				688,91	673,64	671,26
1997-06-14				688,90	673,63	670,93
1997-06-14				688,88	673,67	670,58
1997-06-15				688,86	673,64	670,30
1997-06-15				688,84	673,66	670,07
1997-06-15				688,83	673,60	669,85
1997-06-15				688,80	673,61	669,61
1997-06-16				688,79	673,55	669,36
1997-06-16				688,79	673,55	669,13
1997-06-16				688,76	673,47	668,95
1997-06-16				688,75	673,54	668,78
1997-06-17				688,75	673,54	668,63
1997-06-17				688,73	673,60	668,57
1997-06-17				688,75	673,56	669,44
1997-06-17				688,74	673,60	670,21
1997-06-18				688,77	673,58	670,54
1997-06-18				688,76	673,58	671,02
1997-06-18				688,73	673,45	671,66
1997-06-18				688,71	673,45	672,01
1997-06-19				688,72	673,41	672,20
1997-06-19				688,74	673,44	672,28
1997-06-19				688,75	673,33	672,25
1997-06-19				688,76	673,39	672,19
1997-06-20				688,79	673,47	672,07
1997-06-20				688,77	673,67	671,97
1997-06-20				688,81	673,76	671,84
1997-06-20				688,81	673,85	671,72
1997-06-21				688,84	674,00	671,59
1997-06-21				688,84	673,93	671,48
1997-06-21				688,87	673,87	671,37
1997-06-21				688,86	673,85	671,26
1997-06-22				688,86	673,82	671,18

Date	Time	Air Temperature	Rainfall	Water Level		
				PR33	PR34	PR66
yy-mm-dd	hh:mm:ss	°C	mm/6hr	m	m	m
1997-06-22				688,84	673,81	671,12
1997-06-22				688,84	673,83	671,02
1997-06-22				688,83	673,80	670,94
1997-06-23				688,83	673,71	670,82
1997-06-23				688,81	673,66	670,74
1997-06-23				688,82	673,62	670,63
1997-06-23				688,79	673,58	670,51
1997-06-24				688,79	673,63	670,39
1997-06-24				688,79	673,61	670,28
1997-06-24				688,79	673,66	670,16
1997-06-24				688,81	673,62	670,03
1997-06-25				688,85	673,73	669,74
1997-06-25				688,87	673,74	669,57
1997-06-25				688,88	674,14	

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 3				
		P4-1	P4-2	P4-3	P4-4	P4-5	P3-1	P3-2	P3-3	P3-4	P3-5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1994-08-25	11:51:12	637,66	646,43		675,45	695,85					
1994-08-25	17:51:12	637,66	646,49	675,34	675,56	695,85					
1994-08-25	23:51:12	637,66	646,49	675,85	675,69	695,85					
1994-08-26	00:00:00	637,66	646,49	675,69	675,56	695,56					
1994-08-26	06:00:00	637,66	646,49	675,93	675,69	695,64					
1994-08-26	12:00:00	637,57	646,49	676,15	675,69	695,64					
1994-08-26	18:00:00	637,57	646,49	676,15	675,64	695,56					
1994-08-27	00:00:00	637,66	646,49	676,04	675,69	695,75					
1994-08-27	06:00:00	637,66	646,49	676,04	675,69	695,75					
1994-08-27	12:00:00	637,66	646,49	676,15	675,69	695,75					
1994-08-27	18:00:00	637,57	646,43	675,93	675,69	695,56					
1994-08-28	00:00:00	637,66	646,49	675,85	675,69	695,64					
1994-08-28	06:00:00	637,66	646,43	675,85	675,69	695,64					
1994-08-28	12:00:00	637,57	646,43	675,93	675,69	695,64					
1994-08-28	18:00:00	637,44	646,43	675,69	675,69	695,64					
1994-08-29	00:00:00	637,66	646,43	675,93	675,69	695,75					
1994-08-29	06:00:00	637,44	646,35	675,93	675,69	695,64					
1994-08-29	12:00:00	637,66	646,43	676,04	675,69	695,75					
1994-08-29	18:00:00	637,57	646,35	675,85	675,69	695,64					
1994-08-30	00:00:00	637,66	646,43	676,26	675,69	695,75					
1994-08-30	06:00:00	637,57	646,25	675,93	675,69	695,56					
1994-08-30	12:00:00	637,44	646,25	675,93	675,69	695,56					
1994-08-30	18:00:00	637,57	646,35	676,55	675,69	695,64					
1994-08-31	00:00:00	637,57	646,35	676,61	675,69	695,64					
1994-08-31	06:00:00	637,57	646,25	676,36	675,69	695,64					
1994-08-31	12:00:00	637,44	646,25	676,47	675,69	695,64					
1994-08-31	18:00:00	637,36	646,25	676,36	675,69	695,56					
1994-09-01	00:00:00	637,44	646,14	676,36	675,69	695,56					
1994-09-01	06:00:00	637,44	646,14	676,36	675,85	695,56					
1994-09-01	12:00:00	637,36	646,14	676,26	675,85	695,64					
1994-09-01	18:00:00	637,36	646,25	676,26	675,69	695,64					
1994-09-02	00:00:00	637,44	646,03	676,26	675,69	695,56					
1994-09-02	06:00:00	637,44	646,25	676,26	675,85	695,56					
1994-09-02	12:00:00	637,36	646,03	675,69	675,85	695,42					
1994-09-02	18:00:00	637,44	646,25	676,04	675,93	695,56					
1994-09-03	00:00:00	637,25	645,92	675,69	675,69	695,42					
1994-09-03	06:00:00	637,25	645,92	675,69	675,85	695,42					
1994-09-03	12:00:00	637,36	646,14	676,04	675,93	695,56					
1994-09-03	18:00:00	637,36	646,14	676,04	675,93	695,56					
1994-09-04	00:00:00	637,57	646,25	676,15	675,85	695,56					
1994-09-04	06:00:00	637,44	646,14	676,26	675,85	695,56					
1994-09-04	12:00:00	637,44	646,14	676,15	675,69	695,48					
1994-09-04	18:00:00	637,57	646,25	676,26	675,93	695,64					
1994-09-05	00:00:00	637,44	646,03	675,85	675,69	695,48					
1994-09-05	06:00:00	637,66	646,14	675,93	675,85	695,64					
1994-09-05	12:00:00	637,44	646,03	675,69	675,69	695,48					
1994-09-05	18:00:00	637,44	646,14	675,85	675,93	695,56					
1994-09-06	00:00:00	637,57	646,14	675,69	675,85	695,48					
1994-09-06	06:00:00	637,44	645,92	675,69	675,69	695,42					
1994-09-06	12:00:00	637,57	646,03	675,69	675,85	695,48					
1994-09-06	18:00:00	637,44	645,92	675,69	675,85	695,48					
1994-09-07	00:00:00	637,44	645,92	675,69	675,69	695,42					
1994-09-07	06:00:00	637,44	646,03	675,85	675,85	695,48					
1994-09-07	12:00:00	637,36	645,82	675,34	675,69	695,21					
1994-09-07	18:00:00	637,36	645,92	675,13	675,69	695,21					
1994-09-08	00:00:00	637,44	645,92	675,34	675,69	695,32					
1994-09-08	06:00:00	637,36	645,92	675,34	675,85	695,32					
1994-09-08	12:00:00	637,36	646,14	675,45	675,85	695,32					
1994-09-08	18:00:00	637,36	646,25	675,56	675,85	695,32					
1994-09-09	00:00:00	637,44	646,35	675,64	675,85	695,32					

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 9				
		P4-1	P4-2	P4-3	P4-4	P4-5	P9-1	P9-2	P9-3	P9-4	P9-5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1994-09-09	06:00:00	637,44	646,35	675,64	675,85	695,32					
1994-09-09	12:00:00	637,57	646,49	675,69	675,85	695,42					
1994-09-09	18:00:00	637,57	646,59	675,69	675,85	695,42					
1994-09-10	00:00:00	637,66	646,89	675,69	675,85	695,56					
1994-09-10	06:00:00	637,57	647,00	675,69	675,93	695,56					
1994-09-10	12:00:00	637,66	647,21	675,69	675,93	695,56					
1994-09-10	18:00:00	637,57	647,10	675,69	675,85	695,48					
1994-09-11	00:00:00	637,76	647,21	675,69	675,93	695,64					
1994-09-11	06:00:00	637,66	647,21	675,69	675,85	695,56					
1994-09-11	12:00:00	637,66	647,21	675,69	675,85	695,64					
1994-09-11	18:00:00	637,66	647,21	675,69	675,93	695,64					
1994-09-12	00:00:00	637,66	646,89	675,69	675,85	695,56					
1994-09-12	06:00:00	637,76	647,00	675,69	676,04	695,75					
1994-09-12	12:00:00	637,66	646,89	675,69	675,93	695,75					
1994-09-12	18:00:00	637,57	646,78	675,69	675,93	695,75					
1994-09-13	00:00:00	637,66	646,78	675,69	676,04	695,75					
1994-09-13	06:00:00	637,57	646,67	675,69	675,85	695,75					
1994-09-13	12:00:00	637,76	646,78	675,69	676,15	695,85					
1994-09-13	18:00:00	637,76	646,78	675,69	676,04	695,75					
1994-09-14	00:00:00	637,76	646,89	675,69	676,15	695,85					
1994-09-14	06:00:00	637,66	646,67	675,69	675,93	695,85					
1994-09-14	12:00:00	637,57	646,67	675,69	676,04	695,85					
1994-09-14	18:00:00	637,66	646,78	675,69	675,93	695,85					
1994-09-15	00:00:00	637,76	646,78	675,69	676,04	695,85					
1994-09-15	06:00:00	637,66	646,67	675,69	676,04	695,85					
1994-09-15	12:00:00	637,66	646,67	675,85	675,93	695,85					
1994-09-15	18:00:00	637,76	646,67	675,69	675,93	695,85					
1994-09-16	00:00:00	637,87	646,67	675,93	676,04	695,85					
1994-09-16	06:00:00	637,76	646,67	675,69	675,93	695,85					
1994-09-16	12:00:00	637,66	646,59	675,69	676,04	695,96					
1994-09-16	18:00:00	637,76	646,59	675,56	676,04	695,85					
1994-09-17	00:00:00	637,66	646,59	675,56	676,04	695,85					
1994-09-17	06:00:00	637,57	646,59	675,56	676,04	695,96					
1994-09-17	12:00:00	637,57	646,59	675,56	676,04	695,85					
1994-09-17	18:00:00	637,66	646,67	675,64	676,04	695,96					
1994-09-18	00:00:00	637,76	646,59	675,69	676,04	695,96					
1994-09-18	06:00:00	637,76	646,67	675,69	676,04	695,96					
1994-09-18	12:00:00	637,57	646,67	675,56	676,04	695,96					
1994-09-18	18:00:00	637,76	646,67	674,70	676,15	696,07					
1994-09-19	00:00:00	637,76	646,78	674,94	676,04	695,96					
1994-09-19	06:00:00	637,66	646,59	674,86	676,04	695,96					
1994-09-19	12:00:00	637,66	646,67	674,86	676,04	695,96					
1994-09-19	18:00:00	637,66	646,67	675,02	676,04	695,96					
1994-09-20	00:00:00	637,66	646,59	675,13	676,04	695,96					
1994-09-20	06:00:00	637,76	646,78	675,34	676,04	695,96					
1994-09-20	12:00:00	637,66	646,67	675,45	676,04	695,96					
1994-09-20	18:00:00	637,57	646,67	675,34	676,04	695,96					
1994-09-21	00:00:00	637,66	646,78	675,34	675,93	695,96					
1994-09-21	06:00:00	637,76	646,67	675,64	676,04	695,96					
1994-09-21	12:00:00	637,76	646,67	675,56	676,04	695,96					
1994-09-21	18:00:00	637,66	646,67	675,45	676,04	695,85					
1994-09-22	00:00:00	637,66	646,67	675,45	675,93	695,96					
1994-09-22	06:00:00	637,57	646,59	675,69	675,93	695,96					
1994-09-22	12:00:00	637,76	646,67	675,69	676,04	696,07					
1994-09-22	18:00:00	637,57	646,59	675,69	676,04	695,85					
1994-09-23	00:00:00	637,66	646,59	675,64	675,93	695,85					
1994-09-23	06:00:00	637,66	646,59	675,69	676,04	695,85					
1994-09-23	12:00:00	637,76	646,67	674,08	676,04	695,85					
1994-09-23	18:00:00	637,57	646,59	674,38	676,04	695,85					
1994-09-24	00:00:00	637,66	646,67	673,95	676,04	695,85					

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 9				
		P4:1	P4:2	P4:3	P4:4	P4:5	P9:1	P9:2	P9:3	P9:4	P9:5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1994-09-24	06:00:00	637,57	646,59	674,19	676,04	695,85					
1994-09-24	12:00:00	637,66	646,67	674,30	676,04	695,75					
1994-09-24	18:00:00	637,57	646,59	674,08	676,04	695,75					
1994-09-25	00:00:00	637,66	646,59	674,38	676,04	695,75					
1994-09-25	06:00:00	637,66	646,49	673,95	676,04	695,75					
1994-09-25	12:00:00	637,57	646,49	674,19	676,04	695,75					
1994-09-25	18:00:00	637,66	646,59	674,00	676,26	695,85					
1994-09-26	00:00:00	637,76	646,49	674,30	676,04	695,75					
1994-09-26	06:00:00	637,66	646,49	674,30	676,04	695,64					
1994-09-26	12:00:00	637,57	646,49	674,51	676,04	695,64					
1994-09-26	18:00:00	637,57	646,49	675,02	676,15	695,64					
1994-09-27	00:00:00	637,66	646,49	675,13	676,15	695,64					
1994-09-27	06:00:00	637,66	646,49	674,94	676,15	695,64					
1994-09-27	12:00:00	637,57	646,49	674,94	676,15	695,64					
1994-09-27	18:00:00	637,44	646,43	674,94	676,15	695,56					
1994-09-28	00:00:00	637,57	646,43	675,34	676,15	695,56					
1994-09-28	06:00:00	637,57	646,49	675,34	676,15	695,64					
1994-09-28	12:00:00	637,44	646,43	675,24	676,15	695,64					
1994-09-28	18:00:00	637,57	646,35	675,34	676,04	695,64					
1994-09-29	00:00:00	637,66	646,43	675,34	676,04	695,64					
1994-09-29	06:00:00	637,57	646,35	675,34	676,15	695,75					
1994-09-29	12:00:00	637,57	646,35	675,34	676,15	695,64					
1994-09-29	18:00:00	637,57	646,35	675,34	676,04	695,64					
1994-09-30	00:00:00	637,57	646,35	675,34	676,15	695,64					
1994-09-30	06:00:00	637,44	646,25	675,24	676,15	695,64					
1994-09-30	12:00:00	637,44	646,25	675,56	676,04	695,56					
1994-09-30	18:00:00	637,57	646,35	675,56	676,15	695,64					
1994-10-01	00:00:00	637,44	646,25	675,13	676,04	695,64					
1994-10-01	06:00:00	637,57	646,25	675,24	676,04	695,64					
1994-10-01	12:00:00	637,57	646,25	675,24	676,04	695,56					
1994-10-01	18:00:00	637,57	646,35	675,45	676,15	695,64					
1994-10-02	00:00:00	637,66	646,35	675,24	676,04	695,64					
1994-10-02	06:00:00	637,57	646,35	675,56	676,15	695,64					
1994-10-02	12:00:00	637,66	646,35	675,34	676,04	695,64					
1994-10-02	18:00:00	637,66	646,35	674,86	676,15	695,64					
1994-10-03	00:00:00	637,66	646,43	675,02	676,04	695,56					
1994-10-03	06:00:00	637,66	646,35	675,24	676,15	695,75					
1994-10-03	12:00:00	637,57	646,35	675,24	676,15	695,64					
1994-10-03	18:00:00	637,57	646,35	675,45	676,15	695,56					
1994-10-04	00:00:00	637,57	646,25	675,24	676,15	695,48					
1994-10-04	06:00:00	637,57	646,25	675,34	676,15	695,56					
1994-10-04	12:00:00	637,57	646,35	675,13	676,15	695,48					
1994-10-04	18:00:00	637,44	646,25	675,13	676,15	695,48					
1994-10-05	00:00:00	637,44	646,14	675,24	676,04	695,32					
1994-10-05	06:00:00	637,36	646,14	675,24	676,04	695,48					
1994-10-05	12:00:00	637,36	646,03	675,13	676,04	695,42					
1994-10-05	18:00:00	637,57	646,03	675,34	676,26	695,56					
1994-10-06	00:00:00	637,44	645,92	675,13	676,04	695,42					
1994-10-06	06:00:00	637,44	645,82	675,34	676,04	695,56					
1994-10-06	12:00:00	637,44	645,82	675,34	675,93	695,48					
1994-10-06	18:00:00	637,44	645,82	675,56	676,04	695,56					
1994-10-07	00:00:00	637,57	645,82	675,45	676,15	695,56					
1994-10-07	06:00:00	637,57	645,82	675,69	676,04	695,48					
1994-10-07	12:00:00	637,57	645,82	676,26	676,04	695,56					
1994-10-07	18:00:00	637,44	645,82	675,69	676,04	695,56					
1994-10-08	00:00:00	637,57	645,82	675,69	676,04	695,48					
1994-10-08	06:00:00	637,44	645,74	675,69	676,04	695,42					
1994-10-08	12:00:00	637,44	645,74	675,69	676,04	695,42					
1994-10-08	18:00:00	637,44	645,74	675,69	676,04	695,42					
1994-10-09	00:00:00	637,44	645,74	676,04	676,04	695,42					

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 9				
		P4-1	P4-2	P4-3	P4-4	P4-5	P9-1	P9-2	P9-3	P9-4	P9-5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1994-10-09	06:00:00	637,44	645,65	675,85	676,04	695,32					
1994-10-09	12:00:00	637,44	645,65	675,85	676,04	695,32					
1994-10-09	18:00:00	637,44	645,65	675,85	676,15	695,42					
1994-10-10	00:00:00	637,44	645,74	675,85	676,04	695,32					
1994-10-10	06:00:00	637,44	645,74	675,85	676,04	695,21					
1994-10-10	12:00:00	637,44	645,65	675,85	675,93	695,21					
1994-10-10	18:00:00	637,44	645,65	675,69	676,04	695,32					
1994-10-11	00:00:00	637,57	645,65	675,69	676,04	695,32					
1994-10-11	06:00:00	637,44	645,65	675,85	675,93	695,13					
1994-10-11	12:00:00	637,44	645,74	675,69	676,04	695,21					
1994-10-11	18:00:00	637,44	645,65	675,69	676,04	695,21					
1994-10-12	00:00:00	637,36	645,60	675,69	676,04	695,21					
1994-10-12	06:00:00	637,36	645,65	675,69	676,04	695,21					
1994-10-12	12:00:00	637,36	645,65	675,69	676,04	695,13					
1994-10-12	18:00:00	637,44	645,65	675,69	676,15	695,21					
1994-10-13	00:00:00	637,44	645,60	675,69	676,04	695,13					
1994-10-13	06:00:00	637,36	645,49	675,69	676,04	695,13					
1994-10-13	12:00:00	637,36	645,49	675,69	676,04	694,99					
1994-10-13	18:00:00	637,36	645,39	675,69	676,15	694,91					
1994-10-14	00:00:00	637,25	645,39	675,69	676,04	694,91					
1994-10-14	06:00:00	637,25	645,49	675,45	676,04	694,81					
1994-10-14	12:00:00	637,25	645,49	675,56	676,15	694,70					
1994-10-14	18:00:00	637,25	645,49	675,64	676,15	694,70					
1994-10-15	00:00:00	637,36	645,49	672,47	676,15	694,70					
1994-10-15	06:00:00	637,36	645,49	672,28	676,04	694,81					
1994-10-15	12:00:00	637,36	645,60	672,28	676,04	694,81					
1994-10-15	18:00:00	637,36	645,49	672,28	676,04	694,70					
1994-10-16	00:00:00	637,44	645,60	672,79	675,93	694,81					
1994-10-16	06:00:00	637,44	645,60	673,14	675,93	694,91					
1994-10-16	12:00:00	637,36	645,49	673,14	675,85	694,91					
1994-10-16	18:00:00	637,36	645,49	673,33	675,93	694,81					
1994-10-17	00:00:00	637,36	645,39	673,22	675,85	694,81					
1994-10-17	06:00:00	637,36	645,49	673,44	675,93	694,81					
1994-10-17	12:00:00	637,36	645,39	673,95	675,93	694,81					
1994-10-17	18:00:00	637,36	645,39	673,65	675,93	694,70					
1994-10-18	00:00:00	637,44	645,49	674,00	675,93	694,70					
1994-10-18	06:00:00	637,36	645,39	674,00	675,93	694,70					
1994-10-18	12:00:00	637,36	645,39	674,00	675,93	694,70					
1994-10-18	18:00:00	637,36	645,49	674,30	675,93	694,70					
1994-10-19	00:00:00	637,36	645,39	674,19	676,04	694,62					
1994-10-19	06:00:00	637,36	645,39	674,19	675,93	694,62					
1994-10-19	12:00:00	637,25	645,39	674,30	675,85	694,62					
1994-10-19	18:00:00	637,36	645,39	674,38	676,04	694,62					
1994-10-20	00:00:00	637,36	645,31	674,30	676,04	694,62					
1994-10-20	06:00:00	637,36	645,31	674,19	676,04	694,62					
1994-10-20	12:00:00	637,25	645,31	674,00	675,93	694,56					
1994-10-20	18:00:00	637,25	645,31	674,08	675,93	694,62					
1994-10-21	00:00:00	637,36	645,49	674,30	676,04	694,62					
1994-10-21	06:00:00	637,44	645,65	674,00	675,93	694,62					
1994-10-21	12:00:00	637,57	646,14	673,52	675,93	694,70					
1994-10-21	18:00:00	637,76	646,59	674,38	676,04	694,70					
1994-10-22	00:00:00	637,92	647,10	674,51	676,04	694,81					
1994-10-22	06:00:00	637,87	647,35	674,59	676,04	694,99					
1994-10-22	12:00:00	637,92	647,64	674,59	676,04	694,91					
1994-10-22	18:00:00	637,87	647,86	674,81	676,04	694,99					
1994-10-23	00:00:00	637,92	648,04	674,86	676,15	695,13					
1994-10-23	06:00:00	637,92	648,21	674,81	676,15	695,21					
1994-10-23	12:00:00	637,92	648,21	674,94	676,15	695,32					
1994-10-23	18:00:00	637,92	648,66	675,02	676,36	695,48					
1994-10-24	00:00:00	637,92	648,88	675,13	676,26	695,48					

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 9				
		P4-1	P4-2	P4-3	P4-4	P4-5	P9-1	P9-2	P9-3	P9-4	P9-5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1994-10-24	06:00:00	637,92	649,09	675,24	676,26	695,56					
1994-10-24	12:00:00	637,92	649,22	675,34	676,36	695,56					
1994-10-24	18:00:00	637,92	649,22	674,86	676,47	695,75					
1994-10-25	00:00:00	637,92	649,30	674,86	676,26	695,75					
1994-10-25	06:00:00	637,92	649,41	675,02	676,36	695,85					
1994-10-25	12:00:00	638,03	649,73	675,13	676,36	696,07					
1994-10-25	18:00:00	638,11	649,98	675,34	676,47	696,26					
1994-10-26	00:00:00	638,65	651,80	675,56	676,61	696,31					
1994-10-26	06:00:00	639,29	654,97	676,15	676,79	696,85					
1994-10-26	12:00:00	639,83	657,14	676,79	677,12	697,49					
1994-10-26	18:00:00	640,45	658,86	677,46	677,41	698,14					
1994-10-27	00:00:00	641,20	660,12	678,40	677,76	699,07					
1994-10-27	06:00:00	641,33	660,77	679,16	678,40	699,85					
1994-10-27	12:00:00	641,65	661,49	680,42	679,16	700,79					
1994-10-27	18:00:00	641,98	661,92	681,17	680,20	701,65					
1994-10-28	00:00:00	642,22	662,19	681,81	681,06	702,51					
1994-10-28	06:00:00	642,51	662,30	682,43	681,68	703,13					
1994-10-28	12:00:00	642,51	662,86	682,70	682,03	703,18					
1994-10-28	18:00:00	642,73	663,24	683,32	682,54	703,85					
1994-10-29	00:00:00	642,81	663,45	683,85	682,59	704,09					
1994-10-29	06:00:00	642,92	663,56	683,48	682,70	704,28					
1994-10-29	12:00:00	642,92	663,56	683,85	682,91	704,68					
1994-10-29	18:00:00	642,92	663,72	684,07	683,00	704,90					
1994-10-30	00:00:00	642,92	663,72	684,18	683,13	704,79					
1994-10-30	06:00:00	643,02	663,91	684,31	683,32	705,03					
1994-10-30	12:00:00	643,02	663,91	684,31	683,42	705,33					
1994-10-30	18:00:00	643,08	664,23	684,18	683,64	705,89					
1994-10-31	00:00:00	643,08	664,23	684,07	683,75	705,97					
1994-10-31	06:00:00	643,02	664,10	684,31	683,96	705,89					
1994-10-31	12:00:00	643,08	664,10	684,42	684,26	706,30					
1994-10-31	18:00:00	643,08	664,23	684,93	684,31	706,51					
1994-11-01	00:00:00	643,16	664,42	685,03	684,50	706,64					
1994-11-01	06:00:00	643,16	664,53	685,54	684,82	706,97					
1994-11-01	12:00:00	643,16	664,58	685,36	685,03	707,18					
1994-11-01	18:00:00	643,27	664,66	685,76	684,93	707,26					
1994-11-02	00:00:00	643,27	664,74	685,87	684,93	707,26					
1994-11-02	06:00:00	643,37	664,74	686,03	685,12	707,48					
1994-11-02	12:00:00	643,27	664,85	685,76	685,12	707,48					
1994-11-02	18:00:00	643,37	664,85	685,12	685,25	707,53					
1994-11-03	00:00:00	643,37	665,06	685,36	685,17	707,53					
1994-11-03	06:00:00	643,37	664,95	685,76	685,36	707,53					
1994-11-03	12:00:00	643,16	664,74	685,36	685,03	707,37					
1994-11-03	18:00:00	643,16	664,74	685,87	685,17	707,48					
1994-11-04	00:00:00	643,16	664,66	687,48	685,12	707,26					
1994-11-04	06:00:00	643,16	664,58	685,87	685,12	707,48					
1994-11-04	12:00:00	643,27	664,58	683,64	685,12	707,48					
1994-11-04	18:00:00	643,37	664,58	682,32	685,17	707,53					
1994-11-05	00:00:00	643,37	664,66	682,70	685,17	707,48					
1994-11-05	06:00:00	643,37	664,53	682,54	684,61	707,69					
1994-11-05	12:00:00	643,37	664,42	683,00	684,61	707,69					
1994-11-05	18:00:00	643,27	664,42	683,00	684,71	707,69					
1994-11-06	00:00:00	643,27	664,31	683,32	684,82	707,69					
1994-11-06	06:00:00	643,08	664,10	683,13	684,71	707,61					
1994-11-06	12:00:00	643,27	664,23	683,42	684,82	707,69					
1994-11-06	18:00:00	643,27	664,02	683,32	684,71	707,53					
1994-11-07	00:00:00	643,37	664,10	683,64	684,71	707,53					
1994-11-07	06:00:00	643,37	663,91	683,32	684,71	707,48					
1994-11-07	12:00:00	643,37	663,80	683,56	684,82	707,37					
1994-11-07	18:00:00	643,37	663,91	683,48	684,82	707,37					
1994-11-08	00:00:00	643,45	663,80	683,32	684,82	707,37					

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 9				
		P4-1	P4-2	P4-3	P4-4	P4-5	P9-1	P9-2	P9-3	P9-4	P9-5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1994-11-08	06:00:00	643,27	663,72	683,32	684,61	707,37					
1994-11-08	12:00:00	643,37	663,72	683,32	684,61	707,37					
1994-11-08	18:00:00	643,16	663,56	682,70	684,71	707,37					
1994-11-09	00:00:00	643,27	663,67	683,48	684,93	707,53					
1994-11-09	06:00:00	643,45	663,72	683,85	685,25	707,91					
1994-11-09	12:00:00	643,45	663,80	684,31	685,46	708,23					
1994-11-09	18:00:00	643,45	663,80	684,31	685,54	708,23					
1994-11-10	00:00:00	643,67	664,02	683,96	685,76	708,36					
1994-11-10	06:00:00	643,45	663,80	683,13	685,76	708,31					
1994-11-10	12:00:00	643,67	663,80	683,64	686,03	708,47					
1994-11-10	18:00:00	643,67	663,80	683,85	686,03	708,47					
1994-11-11	00:00:00	643,67	663,80	684,26	686,03	708,36					
1994-11-11	06:00:00	643,59	663,72	684,18	686,03	708,36					
1994-11-11	12:00:00	643,45	663,72	684,50	686,14	708,12					
1994-11-11	18:00:00	643,45	663,72	684,31	686,14	708,23					
1994-11-12	00:00:00	643,59	663,72	684,42	686,22	708,31					
1994-11-12	06:00:00	643,45	663,67	684,71	686,14	708,23					
1994-11-12	12:00:00	643,45	663,67	684,71	686,14	708,23					
1994-11-12	18:00:00	643,67	663,72	684,07	686,22	708,36					
1994-11-13	00:00:00	643,67	663,72	684,50	686,22	708,31					
1994-11-13	06:00:00	643,59	663,67	684,93	686,22	708,23					
1994-11-13	12:00:00	643,67	663,56	685,17	686,32	708,31					
1994-11-13	18:00:00	643,67	663,56	684,82	686,22	708,23					
1994-11-14	00:00:00	643,59	663,56	685,12	686,22	708,12					
1994-11-14	06:00:00	643,59	663,45	684,93	686,32	708,23					
1994-11-14	12:00:00	643,59	663,45	685,97	686,14	708,23					
1994-11-14	18:00:00	643,67	663,56	686,54	686,43	708,36					
1994-11-15	00:00:00	643,78	663,56	686,43	686,54	708,36					
1994-11-15	06:00:00	643,67	663,45	686,03	686,65	708,55					
1994-11-15	12:00:00	643,67	663,56	685,97	686,75	708,66					
1994-11-15	18:00:00	643,67	663,45	685,87	686,83	708,55					
1994-11-16	00:00:00	643,78	663,56	686,03	686,97	708,55					
1994-11-16	06:00:00	643,78	663,45	686,03	686,97	708,66					
1994-11-16	12:00:00	643,67	663,37	686,03	686,97	708,47					
1994-11-16	18:00:00	643,78	663,37	686,14	687,08	708,47					
1994-11-17	00:00:00	643,78	663,37	685,76	686,97	708,36					
1994-11-17	06:00:00	643,67	663,16	685,97	686,89	708,36					
1994-11-17	12:00:00	643,88	663,37	686,03	686,89	708,31					
1994-11-17	18:00:00	643,88	663,24	686,03	686,89	708,31					
1994-11-18	00:00:00	643,88	663,16	685,36	686,65	708,01					
1994-11-18	06:00:00	643,78	663,16	685,17	686,54	708,01					
1994-11-18	12:00:00	643,78	662,94	685,46	686,32	707,91					
1994-11-18	18:00:00	643,88	662,94	685,54	686,43	707,91					
1994-11-19	00:00:00	643,78	662,81	685,46	686,22	707,61					
1994-11-19	06:00:00	643,59	662,62	685,25	686,14	707,53					
1994-11-19	12:00:00	643,45	662,62	685,25	686,03	707,61					
1994-11-19	18:00:00	643,59	662,73	686,03	686,22	707,80					
1994-11-20	00:00:00	643,78	662,73	686,03	686,22	707,91					
1994-11-20	06:00:00	643,78	662,81	686,32	686,43	708,23					
1994-11-20	12:00:00	643,94	663,05	686,22	686,75	708,36					
1994-11-20	18:00:00	643,94	662,94	686,65	686,83	708,36					
1994-11-21	00:00:00	644,02	662,94	686,75	686,83	708,47					
1994-11-21	06:00:00	644,10	663,05	685,76	686,97	708,55					
1994-11-21	12:00:00	644,10	662,94	686,43	686,97	708,47					
1994-11-21	18:00:00	644,10	662,94	686,43	687,08	708,47					
1994-11-22	00:00:00	644,10	662,86	686,54	686,97	708,36					
1994-11-22	06:00:00	644,02	662,86	686,43	687,08	708,36					
1994-11-22	12:00:00	644,02	662,81	686,22	686,97	708,31					
1994-11-22	18:00:00	643,94	662,73	686,32	686,89	708,01					
1994-11-23	00:00:00	644,02	662,62	686,03	686,97	708,01					

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 9				
		P4-1	P4-2	P4-3	P4-4	P4-5	P9-1	P9-2	P9-3	P9-4	P9-5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1995-05-07	06:00:00	644,31	663,72	690,08	690,19	711,66					
1995-05-07	12:00:00	644,31	663,72	690,08	690,19	711,66					
1995-05-07	18:00:00	644,20	663,72	689,87	690,19	711,66					
1995-05-08	00:00:00	644,10	663,67	687,83	690,08	711,56					
1995-05-08	06:00:00	644,10	663,72	688,34	690,08	711,66					
1995-05-08	12:00:00	644,10	663,67	688,61	690,08	711,66					
1995-05-08	18:00:00	644,20	663,56	688,69	690,08	711,66					
1995-05-09	00:00:00	644,10	663,67	689,19	690,08	711,66					
1995-05-09	06:00:00	644,10	663,67	689,30	690,08	711,66					
1995-05-09	12:00:00	644,10	663,67	689,38	690,08	711,74					
1995-05-09	18:00:00	644,10	663,67	689,44	690,19	711,74					
1995-05-10	00:00:00	644,10	663,67	689,44	690,08	711,80					
1995-05-10	06:00:00	644,10	663,67	689,44	690,19	711,80					
1995-05-10	12:00:00	644,02	663,67	689,57	690,19	711,80					
1995-05-10	18:00:00	644,10	663,56	689,57	690,19	711,80					
1995-05-11	00:00:00	644,02	663,56	689,38	690,30	711,74					
1995-05-11	06:00:00	644,02	663,56	689,44	690,30	711,80					
1995-05-11	12:00:00	643,94	663,67	689,44	690,30	711,80					
1995-05-11	18:00:00	644,10	663,45	689,44	690,35	711,80					
1995-05-12	00:00:00	644,10	663,45	689,57	690,30	711,80					
1995-05-12	06:00:00	644,10	663,45	689,57	690,30	711,74					
1995-05-12	12:00:00	644,02	663,45	689,68	690,30	711,74					
1995-05-12	18:00:00	644,20	663,56	689,57	690,19	711,80					
1995-05-13	00:00:00	644,10	663,45	689,79	690,08	711,66					
1995-05-13	06:00:00	644,10	663,37	689,57	690,00	711,56					
1995-05-13	12:00:00	644,20	663,45	689,44	690,08	711,66					
1995-05-13	18:00:00	644,20	663,45	689,57	690,00	711,66	495,94	493,38	490,79	497,84	512,30
1995-05-14	00:00:00	644,20	663,37	689,57	689,79	711,56	495,73	493,38	491,00	498,22	512,99
1995-05-14	06:00:00	644,20	663,45	689,68	689,87	711,56	495,82	494,08	490,62	498,94	513,77
1995-05-14	12:00:00	644,02	663,24	689,44	689,68	711,34	495,65	494,36	490,57	498,90	513,90
1995-05-14	18:00:00	644,20	663,24	689,57	689,68	711,56	495,79	493,94	490,40	498,71	513,35
1995-05-15	00:00:00	644,02	663,16	689,44	689,57	711,45	495,73	493,64	490,29	498,02	513,27
1995-05-15	06:00:00	644,02	663,16	689,44	689,57	711,45	495,79	494,08	490,65	498,36	513,61
1995-05-15	12:00:00	643,94	663,16	689,44	689,44	711,23	495,73	494,28	490,01	499,17	513,82
1995-05-15	18:00:00	643,88	663,16	689,44	689,44	711,45	495,59	494,19	490,11	499,02	513,73
1995-05-16	00:00:00	643,94	663,05	689,57	689,44	711,34	495,73	494,08	489,55	498,51	513,10
1995-05-16	06:00:00	643,88	662,94	689,57	689,44	711,13	495,77	494,45	489,71	499,63	513,57
1995-05-16	12:00:00	643,88	662,94	689,57	689,44	711,05	495,48	494,14	490,27	499,67	513,47
1995-05-16	18:00:00	643,78	662,86	689,57	689,44	711,05	495,51	493,77	489,42	498,44	512,77
1995-05-17	00:00:00	643,78	662,86	689,44	689,44	711,05	495,59	493,89	490,18	498,40	512,77
1995-05-17	06:00:00	643,88	662,86	689,44	689,44	711,05	495,51	494,10	490,27	499,21	512,88
1995-05-17	12:00:00	643,88	662,86	689,44	689,44	711,05	495,55	493,91	489,63	498,64	512,61
1995-05-17	18:00:00	643,78	662,81	689,44	689,44	711,05	495,39	493,38	489,67	498,17	512,27
1995-05-18	00:00:00	643,88	662,86	689,30	689,44	711,05	495,69	493,33	489,75	497,66	511,66
1995-05-18	06:00:00	643,78	662,81	689,19	689,44	710,97	495,51	492,68	489,46	497,37	511,41
1995-05-18	12:00:00	643,88	662,81	689,44	689,44	710,91	495,51	492,77	489,95	497,15	511,27
1995-05-18	18:00:00	643,78	662,81	689,44	689,44	710,91	495,39	492,18	489,37	496,29	510,54
1995-05-19	00:00:00	643,78	662,73	689,38	689,30	710,80	495,59	491,74	489,12	496,02	510,16
1995-05-19	06:00:00	643,78	662,81	689,44	689,38	710,80	495,11	491,19	489,42	495,09	509,84
1995-05-19	12:00:00	643,78	662,81	689,44	689,30	710,80	495,13	490,79	489,37	494,66	509,39
1995-05-19	18:00:00	643,78	662,73	688,77	689,30	710,80	495,05	490,11	488,38	494,19	509,17
1995-05-20	00:00:00	643,67	662,73	688,87	689,19	710,70	495,00	489,58	489,40	494,02	508,88
1995-05-20	06:00:00	643,59	662,62	689,09	689,19	710,62	495,11	489,09	488,57	493,03	508,66
1995-05-20	12:00:00	643,59	662,62	689,44	689,09	710,48	494,82	488,57	488,57	492,73	508,44
1995-05-20	18:00:00	643,59	662,62	689,38	689,09	710,48	494,86	488,35	488,78	492,47	508,26
1995-05-21	00:00:00	643,45	662,62	689,38	688,55	710,62	494,93	488,05	488,82	491,91	507,62
1995-05-21	06:00:00	643,45	662,62	689,30	688,44	710,48	494,79	487,88	489,12	491,91	506,85
1995-05-21	12:00:00	643,37	662,41	689,38	688,26	710,29	494,86	487,71	487,99	491,40	506,78
1995-05-21	18:00:00	643,45	662,41	689,38	688,34	710,40	494,62	487,54	488,35	491,36	506,16
1995-05-22	00:00:00	643,37	662,41	689,38	688,34	710,40	494,53	487,23	488,98	491,23	505,58

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 9				
		P4-1	P4-2	P4-3	P4-4	P4-5	P9-1	P9-2	P9-3	P9-4	P9-5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1995-05-22	06:00:00	643,37	662,30	689,38	688,34	710,40	494,53	487,00	488,40	490,77	505,10
1995-05-22	12:00:00	643,27	662,30	689,38	688,26	710,29	494,40	486,62	488,05	490,35	504,48
1995-05-22	18:00:00	643,27	662,30	689,44	688,26	710,19	494,40	486,28	487,88	490,15	504,07
1995-05-23	00:00:00	643,37	662,30	689,09	688,12	710,19	494,42	486,62	488,05	490,05	503,59
1995-05-23	06:00:00	643,37	662,19	688,98	688,04	710,19	494,22	485,97	488,17	490,01	502,86
1995-05-23	12:00:00	643,16	661,98	689,19	688,04	710,08	494,28	485,99	487,95	490,15	503,04
1995-05-23	18:00:00	643,27	662,11	689,30	688,12	710,19	493,89	485,77	487,74	489,71	502,30
1995-05-24	00:00:00	643,27	661,98	689,30	688,04	710,08	494,02	485,27	487,74	489,46	501,65
1995-05-24	06:00:00	643,16	661,98	689,09	687,93	710,08	493,91	485,30	487,14	488,74	501,08
1995-05-24	12:00:00	643,08	661,98	689,09	687,93	710,08	493,64	485,11	487,65	488,55	500,92
1995-05-24	18:00:00	643,08	661,98	689,09	687,83	710,08	493,84	484,65	487,69	488,78	500,66
1995-05-25	00:00:00	643,08	661,98	688,98	687,75	710,08	493,77	484,77	486,86	488,26	500,02
1995-05-25	06:00:00	643,08	661,98	689,09	687,75	710,08	493,53	484,43	486,93	488,89	499,72
1995-05-25	12:00:00	643,08	661,98	688,98	687,75	710,03	493,53	483,93	487,02	488,38	499,23
1995-05-25	18:00:00	643,08	661,98	688,87	687,75	710,08	493,55	483,93	487,74	487,74	499,34
1995-05-26	00:00:00	643,08	661,98	688,77	687,69	710,08	493,49	483,74	486,62	487,49	498,69
1995-05-26	06:00:00	643,02	661,98	688,77	687,69	710,08	493,55	483,66	487,02	487,18	498,17
1995-05-26	12:00:00	643,02	661,98	688,26	687,59	710,03	493,55	483,45	487,00	486,49	497,72
1995-05-26	18:00:00	643,02	661,92	688,44	687,59	710,08	493,55	482,98	487,10	487,54	497,88
1995-05-27	00:00:00	643,02	661,92	688,44	687,40	710,08	493,16	482,98	487,00	487,02	497,66
1995-05-27	06:00:00	643,02	661,92	688,44	687,48	710,08	493,21	482,94	486,97	486,76	496,97
1995-05-27	12:00:00	642,92	661,92	688,61	687,40	710,08	493,21	482,56	486,66	486,41	496,76
1995-05-27	18:00:00	643,02	661,92	688,69	687,26	710,08	493,29	482,56	486,57	485,97	496,89
1995-05-28	00:00:00	642,92	661,92	688,69	687,26	710,08	493,07	482,45	486,84	486,41	496,24
1995-05-28	06:00:00	642,92	661,81	688,04	687,26	710,08	493,03	482,56	486,51	486,41	496,11
1995-05-28	12:00:00	642,81	661,81	687,93	687,08	710,08	493,16	482,08	486,57	486,07	496,20
1995-05-28	18:00:00	642,92	661,81	688,12	687,18	710,08	492,98	482,08	486,68	485,69	496,13
1995-05-29	00:00:00	642,81	661,71	688,12	687,18	710,08	492,85	481,69	486,04	485,99	495,65
1995-05-29	06:00:00	642,73	661,63	688,12	687,08	710,08	492,85	481,34	486,68	484,82	495,22
1995-05-29	12:00:00	642,59	661,71	688,12	686,97	710,03	492,77	481,57	486,49	485,24	494,82
1995-05-29	18:00:00	642,73	661,71	688,26	686,97	710,03	492,60	481,54	486,51	485,66	495,13
1995-05-30	00:00:00	642,59	661,63	688,12	686,89	710,03	492,77	481,37	486,28	485,60	494,45
1995-05-30	06:00:00	642,51	661,49	688,12	686,89	709,92	492,57	481,47	486,76	485,07	494,28
1995-05-30	12:00:00	642,51	661,49	688,26	686,83	709,92	492,77	481,47	486,20	485,30	494,58
1995-05-30	18:00:00	642,51	661,63	688,26	686,89	709,81	492,53	480,83	485,77	485,39	493,77
1995-05-31	00:00:00	642,51	661,49	688,12	686,83	709,81	492,73	480,83	486,04	484,74	493,71
1995-05-31	06:00:00	642,41	661,41	688,04	686,65	709,73	492,64	480,40	485,83	484,35	493,49
1995-05-31	12:00:00	642,41	661,49	688,34	686,75	709,73	492,51	479,20	485,77	483,06	491,85
1995-05-31	18:00:00	642,41	661,41	688,04	686,65	709,81	492,51	479,53	485,77	483,08	492,27
1995-06-01	00:00:00	642,41	661,41	688,04	686,54	709,60	492,47	479,64	486,20	483,22	492,64
1995-06-01	06:00:00	642,41	661,41	688,04	686,75	709,73	492,53	479,57	485,49	483,54	492,18
1995-06-01	12:00:00	642,30	661,41	688,04	686,75	709,60	492,57	479,44	485,81	483,45	491,74
1995-06-01	18:00:00	642,30	661,30	687,83	686,65	709,52	492,43	479,12	485,35	483,25	491,85
1995-06-02	00:00:00	642,30	661,41	687,83	686,65	709,52	492,04	479,33	485,47	483,49	491,62
1995-06-02	06:00:00	642,16	661,30	687,75	686,54	709,41	492,00	479,10	485,14	483,22	491,23
1995-06-02	12:00:00	642,22	661,30	687,93	686,65	709,41	491,88	478,85	485,47	482,94	491,06
1995-06-02	18:00:00	642,22	661,20	687,93	686,54	709,41	492,18	478,85	485,44	482,94	490,69
1995-06-03	00:00:00	642,22	661,30	688,04	686,54	709,41	492,16	478,93	485,66	483,15	490,79
1995-06-03	06:00:00	642,16	661,30	687,93	686,43	709,41	492,13	478,64	485,77	482,33	490,15
1995-06-03	12:00:00	642,16	661,20	688,04	686,43	709,41	492,16	478,41	485,44	482,19	490,09
1995-06-03	18:00:00	642,16	661,20	687,08	686,54	709,30	491,71	478,17	485,30	482,33	489,63
1995-06-04	00:00:00	642,16	661,30	686,97	686,43	709,22	491,82	477,75	485,27	482,37	489,71
1995-06-04	06:00:00	642,08	661,20	687,08	686,32	709,22	491,91	477,73	485,03	481,47	488,89
1995-06-04	12:00:00	642,08	661,12	687,26	686,43	709,22	491,91	477,69	484,43	482,05	488,74
1995-06-04	18:00:00	642,08	661,12	687,40	686,22	709,17	491,65	477,41	485,11	481,31	488,40
1995-06-05	00:00:00	642,08	661,12	687,69	686,32	709,22	491,85	477,35	484,77	481,91	488,68
1995-06-05	06:00:00	641,98	661,06	687,59	686,14	709,09	491,67	477,73	484,90	481,40	489,15
1995-06-05	12:00:00	642,08	661,12	687,75	686,22	709,17	491,58	477,93	485,52	482,21	489,51
1995-06-05	18:00:00	641,98	661,12	687,40	686,14	709,09	491,88	478,07	485,07	482,33	489,32
1995-06-06	00:00:00	642,08	661,20	687,59	686,14	709,17	491,62	477,59	485,16	482,56	489,42

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 9				
		P4-1	P4-2	P4-3	P4-4	P4-5	P9-1	P9-2	P9-3	P9-4	P9-5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1995-06-06	06:00:00	641,98	661,12	687,59	686,14	709,09	491,53	477,73	485,11	481,99	489,15
1995-06-06	12:00:00	641,98	661,12	687,48	686,03	709,17	491,62	477,35	485,24	481,09	488,64
1995-06-06	18:00:00	641,98	661,12	687,26	686,03	709,09	491,50	477,41	484,79	481,34	488,38
1995-06-07	00:00:00	641,98	661,12	687,40	686,03	709,09	491,82	477,22	485,16	481,54	488,13
1995-06-07	06:00:00	641,87	661,12	687,08	686,03	708,98	491,48	476,75	484,28	481,23	487,99
1995-06-07	12:00:00	641,98	661,12	687,26	686,03	708,98	491,53	476,92	484,62	480,85	487,57
1995-06-07	18:00:00	641,98	661,12	687,26	686,03	708,87	491,53	476,45	484,86	480,51	487,52
1995-06-08	00:00:00	642,16	661,20	687,48	686,03	708,98	491,33	476,23	484,26	481,04	487,30
1995-06-08	06:00:00	641,87	661,06	687,48	686,03	708,87	491,28	476,19	484,79	480,16	486,62
1995-06-08	12:00:00	641,98	661,12	687,48	686,03	708,87	491,23	475,93	484,56	480,24	486,46
1995-06-08	18:00:00	641,98	661,06	687,26	686,03	708,76	491,33	476,07	484,45	480,63	486,28
1995-06-09	00:00:00	641,98	661,06	687,18	686,03	708,66	491,11	475,73	484,09	480,20	486,51
1995-06-09	06:00:00	641,87	661,06	687,26	686,03	708,66	491,23	475,73	484,56	479,80	485,49
1995-06-09	12:00:00	641,76	661,06	687,26	685,97	708,55	491,14	475,42	484,51	479,47	485,16
1995-06-09	18:00:00	641,87	661,06	687,08	685,97	708,55	491,14	475,04	484,43	479,78	484,96
1995-06-10	00:00:00	641,76	661,12	686,97	685,87	708,66	490,79	475,04	483,49	479,66	484,69
1995-06-10	06:00:00	641,76	661,06	687,08	685,76	708,55	490,77	474,48	484,12	479,75	484,28
1995-06-10	12:00:00	641,76	661,12	687,08	685,76	708,55	490,93	474,37	483,79	479,70	483,87
1995-06-10	18:00:00	641,76	661,06	686,97	685,76	708,47	490,79	474,29	483,76	479,12	484,18
1995-06-11	00:00:00	641,76	661,06	686,97	685,68	708,47	490,79	474,67	484,22	479,64	485,30
1995-06-11	06:00:00	641,76	661,06	687,18	685,76	708,55	490,79	475,63	484,39	480,51	485,94
1995-06-11	12:00:00	641,76	661,06	687,08	685,76	708,47	490,79	476,04	484,05	481,00	486,62
1995-06-11	18:00:00	641,76	661,06	687,26	685,76	708,47	491,02	476,02	483,93	480,71	486,62
1995-06-12	00:00:00	641,65	661,06	686,75	685,68	708,47	490,79	476,15	484,09	480,79	486,84
1995-06-12	06:00:00	641,65	661,06	686,89	685,54	708,47	490,79	476,28	483,57	480,24	487,00
1995-06-12	12:00:00	641,55	661,06	686,89	685,54	708,36	490,79	476,37	483,74	480,28	486,84
1995-06-12	18:00:00	641,65	660,98	686,89	685,68	708,36	490,79	476,32	484,35	481,09	487,23
1995-06-13	00:00:00	641,65	660,98	686,89	685,46	708,36	490,62	477,10	483,36	482,16	488,40
1995-06-13	06:00:00	641,55	660,98	686,97	685,54	708,36	490,79	478,17	483,93	482,81	490,43
1995-06-13	12:00:00	641,55	661,06	686,97	685,46	708,36	490,86	480,40	483,93	484,62	496,39
1995-06-13	18:00:00	641,55	660,98	687,08	685,54	708,36	491,19	485,14	484,51	489,09	504,54
1995-06-14	00:00:00	641,65	660,98	686,97	685,36	708,31	491,16	485,83	484,45	489,75	504,38
1995-06-14	06:00:00	641,76	660,98	687,08	685,54	708,36	491,33	484,86	484,90	488,91	502,78
1995-06-14	12:00:00	641,55	660,77	686,89	680,53	708,31	491,23	483,79	485,03	487,82	501,62
1995-06-14	18:00:00	641,65	660,88	687,08	680,87	708,36	491,23	483,19	484,79	487,00	501,26
1995-06-15	00:00:00	641,65	660,88	687,18	680,42	708,23	491,28	482,37	485,24	486,24	500,15
1995-06-15	06:00:00	641,76	660,88	687,26	680,53	708,31	491,50	481,60	485,03	485,83	499,34
1995-06-15	12:00:00	641,55	660,77	686,89	678,16	708,31	491,50	481,23	485,00	485,27	498,19
1995-06-15	18:00:00	641,55	660,88	686,83	675,69	708,36	491,67	481,00	484,77	484,12	496,83
1995-06-16	00:00:00	641,55	660,88	686,83	675,69	708,23	491,53	480,58	485,00	483,98	496,55
1995-06-16	06:00:00	641,47	660,77	686,83	675,69	708,12	491,33	479,80	485,24	482,98	495,89
1995-06-16	12:00:00	641,55	660,66	684,82	675,45	708,12	491,50	479,53	484,79	483,02	495,05
1995-06-16	18:00:00	641,47	660,66	684,93	675,45	708,01	491,31	479,24	485,14	482,56	494,14
1995-06-17	00:00:00	641,55	660,77	685,12	675,45	708,01	491,48	478,90	484,51	482,29	493,84
1995-06-17	06:00:00	641,47	660,66	682,59	675,45	707,91	491,40	478,55	484,69	481,91	493,55
1995-06-17	12:00:00	641,47	660,77	685,12	675,45	708,01	491,19	478,48	484,86	481,02	492,60
1995-06-17	18:00:00	641,33	660,66	685,03	675,34	707,80	491,16	478,48	484,90	481,73	493,19
1995-06-18	00:00:00	641,47	660,66	685,17	675,34	708,01	491,16	479,75	484,45	482,49	495,22
1995-06-18	06:00:00	641,33	660,66	685,25	675,34	708,01	491,06	479,98	484,26	482,56	495,55
1995-06-18	12:00:00	641,33	660,66	685,17	675,45	708,01	491,31	479,86	484,39	483,19	495,17
1995-06-18	18:00:00	641,33	660,66	685,25	675,34	707,91	491,00	479,62	485,00	482,89	495,11
1995-06-19	00:00:00	641,55	660,77	685,46	675,45	708,01	491,33	479,75	484,65	482,94	494,06
1995-06-19	06:00:00	641,47	660,66	685,46	675,45	707,91	491,28	479,27	484,45	482,81	493,68
1995-06-19	12:00:00	641,47	660,77	685,68	675,45	708,01	491,31	479,15	484,51	481,99	493,16
1995-06-19	18:00:00	641,33	660,66	685,54	675,34	707,91	491,11	478,85	484,28	482,29	493,05
1995-06-20	00:00:00	641,47	660,77	685,68	675,34	707,91	491,19	478,81	484,35	481,71	492,51
1995-06-20	06:00:00	641,33	660,66	685,97	675,34	707,69	491,16	478,48	484,56	481,99	492,08
1995-06-20	12:00:00	641,33	660,66	686,03	675,34	707,80	491,11	478,51	484,18	481,27	491,78
1995-06-20	18:00:00	641,33	660,66	685,97	675,45	707,69	491,00	477,91	485,07	481,09	491,31
1995-06-21	00:00:00	641,33	660,66	686,03	675,34	707,69	491,02	477,73	484,45	481,00	490,89

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 9				
		P4-1	P4-2	P4-3	P4-4	P4-5	P9-1	P9-2	P9-3	P9-4	P9-5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1995-06-21	06:00:00	641,33	660,66	686,03	675,34	707,69	491,16	477,22	484,35	480,11	490,45
1995-06-21	12:00:00	641,33	660,55	686,14	675,34	707,69	490,93	477,24	484,18	479,94	489,46
1995-06-21	18:00:00	641,33	660,66	686,03	675,56	707,69	490,79	476,62	483,98	479,80	489,42
1995-06-22	00:00:00	641,33	660,66	686,03	675,56	707,69	491,02	476,23	484,65	479,27	488,86
1995-06-22	06:00:00	641,33	660,55	686,03	675,56	707,61	490,98	475,85	484,43	479,50	487,91
1995-06-22	12:00:00	641,33	660,55	686,03	675,45	707,53	490,89	475,46	483,74	478,62	487,78
1995-06-22	18:00:00	641,33	660,66	686,14	675,45	707,61	490,79	475,46	483,71	478,81	487,14
1995-06-23	00:00:00	641,33	660,66	686,03	675,56	707,53	490,79	475,33	484,09	478,51	486,86
1995-06-23	06:00:00	641,33	660,77	686,03	675,56	707,61	490,69	474,78	483,79	478,55	486,34
1995-06-23	12:00:00	641,33	660,55	686,03	675,34	707,48	490,69	474,44	483,74	478,07	485,94
1995-06-23	18:00:00	641,33	660,55	686,03	675,24	707,48	490,79	474,37	483,66	477,69	485,73
1995-06-24	00:00:00	641,33	660,55	685,97	675,34	707,48	490,60	474,20	483,93	478,04	485,27
1995-06-24	06:00:00	641,33	660,55	685,97	675,34	707,37	490,57	473,87	483,66	477,48	484,51
1995-06-24	12:00:00	641,33	660,66	685,97	675,45	707,37	490,45	473,67	483,32	477,06	484,09
1995-06-24	18:00:00	641,33	660,55	686,03	675,45	707,37	490,62	473,44	483,87	477,00	483,66
1995-06-25	00:00:00	641,33	660,55	686,03	675,45	707,26	490,40	472,92	483,02	476,35	483,22
1995-06-25	06:00:00	641,33	660,55	686,03	675,45	707,26	490,11	472,46	483,49	475,50	482,60
1995-06-25	12:00:00	641,33	660,55	685,97	675,56	707,18	490,27	472,41	483,36	475,63	482,19
1995-06-25	18:00:00	641,33	660,55	685,97	675,64	707,18	490,29	471,86	483,36	475,73	481,52
1995-06-26	00:00:00	641,33	660,45	686,03	675,64	707,26	490,01	471,86	483,15	475,69	481,31
1995-06-26	06:00:00	641,33	660,45	686,03	675,56	707,18	490,29	471,65	482,89	475,16	481,16
1995-06-26	12:00:00	641,33	660,45	686,03	675,56	707,18	489,77	471,47	483,02	474,74	480,88
1995-06-26	18:00:00	641,33	660,55	686,03	675,69	707,26	489,77	471,40	482,81	474,50	480,54
1995-06-27	00:00:00	641,33	660,55	685,97	675,56	707,05	489,84	471,12	482,89	474,50	480,40
1995-06-27	06:00:00	641,33	660,45	685,97	675,56	706,97	489,71	471,00	482,85	474,40	479,80
1995-06-27	12:00:00	641,28	660,55	685,87	675,69	706,97	489,88	470,49	483,29	474,09	479,78
1995-06-27	18:00:00	641,28	660,45	685,97	675,64	706,86	489,95	470,66	483,11	473,40	479,57
1995-06-28	00:00:00	641,28	660,45	685,87	675,64	706,86	489,84	470,14	483,22	473,32	479,33
1995-06-28	06:00:00	641,33	660,45	685,97	675,64	706,75	489,60	470,01	482,72	473,36	478,76
1995-06-28	12:00:00	641,28	660,45	685,97	675,64	706,75	489,42	469,76	482,69	472,94	478,43
1995-06-28	18:00:00	641,33	660,45	685,76	675,69	706,64	489,42	469,49	482,64	472,38	478,09
1995-06-29	00:00:00	641,28	660,45	685,87	675,64	706,64	489,58	469,46	482,29	472,75	477,73
1995-06-29	06:00:00	641,33	660,55	685,76	675,69	706,75	489,51	468,91	482,56	471,65	477,52
1995-06-29	12:00:00	641,28	660,55	685,76	675,69	706,64	489,37	468,79	481,99	471,06	477,06
1995-06-29	18:00:00	641,33	660,36	685,68	675,64	706,64	489,32	468,57	482,37	471,51	476,89
1995-06-30	00:00:00	641,28	660,36	685,68	675,69	706,59	489,40	468,35	482,21	471,42	476,70
1995-06-30	06:00:00	641,28	660,45	685,54	675,69	706,64	489,26	467,98	482,25	470,40	476,58
1995-06-30	12:00:00	641,33	660,45	681,68	675,69	706,59	489,28	467,61	482,29	470,71	476,23
1995-06-30	18:00:00	641,28	660,36	682,11	675,69	706,59	488,95	467,50	482,56	470,66	475,82
1995-07-01	00:00:00	641,20	660,36	682,54	675,69	706,40	488,98	467,16	481,77	470,18	475,42
1995-07-01	06:00:00	641,28	660,45	682,59	675,69	706,51	488,57	467,09	482,12	470,54	475,13
1995-07-01	12:00:00	641,28	660,36	682,59	675,69	706,40	488,78	466,44	481,95	469,89	474,67
1995-07-01	18:00:00	641,20	660,36	683,13	675,69	706,30	488,57	466,34	481,40	468,79	474,37
1995-07-02	00:00:00	641,20	660,26	682,91	675,69	706,30	488,60	466,22	481,91	469,51	474,00
1995-07-02	06:00:00	641,20	660,26	683,00	675,69	706,19	488,68	465,79	481,37	468,74	473,97
1995-07-02	12:00:00	641,09	660,36	683,00	675,69	706,08	488,64	465,66	481,87	469,04	473,79
1995-07-02	18:00:00	641,09	660,26	683,13	675,69	706,08	488,40	465,53	481,37	468,23	473,15
1995-07-03	00:00:00	641,09	660,26	683,32	675,69	705,97	488,52	465,31	481,18	468,65	473,02
1995-07-03	06:00:00	641,09	660,26	683,32	675,69	706,08	488,40	465,21	481,31	468,27	472,94
1995-07-03	12:00:00	640,98	660,26	683,21	675,69	705,97	488,43	465,14	481,99	468,40	472,54
1995-07-03	18:00:00	641,09	660,26	683,32	675,69	705,97	488,22	464,66	481,43	467,77	472,46
1995-07-04	00:00:00	641,09	660,26	683,48	675,69	705,97	488,05	464,63	481,00	467,80	472,43
1995-07-04	06:00:00	641,09	660,26	683,42	675,69	705,89	488,10	464,33	480,74	467,63	471,82
1995-07-04	12:00:00	640,98	660,26	685,17	675,69	705,89	488,22	464,21	481,31	467,24	471,54
1995-07-04	18:00:00	640,98	660,26	684,61	675,69	705,89	488,10	464,12	480,83	466,99	471,82
1995-07-05	00:00:00	640,98	660,26	684,50	675,69	705,76	488,17	463,56	480,34	467,20	471,40
1995-07-05	06:00:00	640,88	660,26	684,31	675,69	705,76	488,02	463,56	480,51	467,47	471,04
1995-07-05	12:00:00	641,09	660,36	684,50	675,69	705,89	487,95	463,48	481,00	466,24	471,06
1995-07-05	18:00:00	640,88	660,26	684,31	675,69	705,65	487,95	463,31	480,44	466,22	470,92
1995-07-06	00:00:00	640,88	660,26	684,50	675,69	705,65	487,71	463,24	480,37	466,22	470,57

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 8				
		P4-1	P4-2	P4-3	P4-4	P4-5	P8-1	P8-2	P8-3	P8-4	P8-5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1995-07-06	06:00:00	640,88	660,26	684,42	675,69	705,54	487,74	462,96	480,71	465,79	470,32
1995-07-06	12:00:00	640,77	660,26	684,50	675,69	705,54	487,82	462,62	480,96	466,27	470,20
1995-07-06	18:00:00	640,66	660,26	684,31	675,69	705,46	487,71	462,44	480,28	465,88	469,97
1995-07-07	00:00:00	640,66	660,20	684,31	675,69	705,33	487,86	462,15	480,31	465,57	469,35
1995-07-07	06:00:00	640,77	660,20	683,75	675,69	705,46	487,60	461,93	480,16	465,14	469,18
1995-07-07	12:00:00	640,77	660,26	683,85	675,69	705,54	487,54	461,93	480,28	464,50	469,33
1995-07-07	18:00:00	640,66	660,20	683,85	675,69	705,33	487,40	461,71	479,53	464,28	468,63
1995-07-08	00:00:00	640,88	660,26	683,96	675,69	705,54	487,35	461,43	480,20	465,07	468,61
1995-07-08	06:00:00	640,77	660,26	683,85	675,64	705,25	487,54	461,23	480,28	463,98	468,44
1995-07-08	12:00:00	640,58	660,20	683,75	675,64	705,14	487,37	460,69	479,90	464,52	468,40
1995-07-08	18:00:00	640,66	660,20	683,75	675,64	705,14	487,35	460,81	480,16	464,04	467,94
1995-07-09	00:00:00	640,66	660,12	683,85	675,69	705,03	487,30	460,73	479,90	464,12	467,80
1995-07-09	06:00:00	640,66	660,12	683,64	675,64	705,03	487,14	460,69	479,80	463,66	467,61
1995-07-09	12:00:00	640,58	660,12	683,64	675,64	705,03	487,10	460,08	479,53	463,74	467,68
1995-07-09	18:00:00	649,22	658,94	685,54	675,64	706,64	486,89	460,03	479,80	464,72	467,41
1995-07-10	00:00:00	645,09	659,51	685,17	675,69	706,30	486,89	460,08	479,80	464,45	467,26
1995-07-10	06:00:00	643,37	659,51	684,18	675,64	706,19	486,76	460,00	479,75	464,77	466,72
1995-07-10	12:00:00	642,81	659,69	684,61	675,64	705,97	487,06	459,86	479,53	464,15	467,20
1995-07-10	18:00:00	642,51	659,80	684,61	675,64	705,89	486,80	459,82	479,64	464,52	467,24
1995-07-11	00:00:00	642,41	659,91	684,61	675,64	705,81	486,97	459,82	479,64	464,18	467,41
1995-07-11	06:00:00	642,41	660,02	684,71	675,64	705,81	486,66	460,12	479,80	464,89	467,24
1995-07-11	12:00:00	642,51	660,02	684,71	675,64	705,76	486,66	460,12	478,64	464,66	467,47
1995-07-11	18:00:00	642,59	660,02	684,61	675,64	705,76	486,66	460,16	478,90	464,54	467,47
1995-07-12	00:00:00	642,59	660,12	684,61	675,64	705,65	486,80	460,08	478,90	464,50	467,43
1995-07-12	06:00:00	642,59	660,02	684,61	675,64	705,54	486,68	459,86	478,90	464,35	467,29
1995-07-12	12:00:00	642,81	660,20	684,71	675,69	705,65	486,66	459,82	479,15	464,18	466,86
1995-07-12	18:00:00	642,73	660,12	684,82	675,56	705,46	486,57	459,54	479,12	464,38	466,90
1995-07-13	00:00:00	642,81	660,20	684,61	675,56	705,33	486,41	459,57	478,51	464,33	466,47
1995-07-13	06:00:00	642,81	660,12	684,71	675,64	705,33	486,41	459,38	479,20	463,78	466,64
1995-07-13	12:00:00	642,81	660,20	684,71	675,64	705,14	486,28	459,17	478,68	463,74	466,30
1995-07-13	18:00:00	642,81	660,20	684,71	675,56	705,14	486,41	459,00	479,01	463,48	466,14
1995-07-14	00:00:00	643,02	660,20	684,50	675,56	705,14	486,18	458,80	478,93	463,31	465,55
1995-07-14	06:00:00	643,02	660,12	684,71	675,64	705,03	486,24	458,88	479,01	463,48	465,74
1995-07-14	12:00:00	642,92	660,20	684,50	675,56	704,95	486,51	458,71	478,60	463,24	465,79
1995-07-14	18:00:00	642,92	660,20	684,50	675,56	704,95	486,11	458,34	478,30	463,31	465,53
1995-07-15	00:00:00	643,08	660,20	684,31	675,45	704,90	486,18	458,24	478,12	463,08	465,31
1995-07-15	06:00:00	642,92	660,12	684,42	675,56	704,90	486,24	457,95	478,41	462,87	465,18
1995-07-15	12:00:00	643,02	660,12	684,71	675,56	704,90	486,18	457,95	478,12	463,08	465,03
1995-07-15	18:00:00	642,81	660,12	684,61	675,64	704,68	486,07	457,81	478,60	462,46	464,77
1995-07-16	00:00:00	642,92	660,02	684,82	675,69	704,68	486,04	457,79	478,30	462,94	464,58
1995-07-16	06:00:00	642,92	660,12	684,82	675,69	704,68	486,16	457,61	478,43	462,46	464,24
1995-07-16	12:00:00	642,81	660,02	684,71	675,69	704,60	485,97	457,44	478,04	462,11	463,90
1995-07-16	18:00:00	642,73	660,02	684,82	675,69	704,39	485,85	457,12	477,57	462,11	463,69
1995-07-17	00:00:00	642,73	660,12	684,71	675,69	704,39	485,83	457,12	477,82	461,93	463,61
1995-07-17	06:00:00	642,59	660,02	684,71	675,64	704,28	485,73	456,82	477,69	461,71	463,39
1995-07-17	12:00:00	642,59	659,91	684,61	675,69	704,28	485,81	456,48	478,12	461,12	463,20
1995-07-17	18:00:00	642,59	659,91	684,61	675,69	704,17	485,69	456,29	477,61	461,03	462,80
1995-07-18	00:00:00	642,59	659,91	684,61	675,69	704,17	485,55	456,21	477,73	460,54	462,35
1995-07-18	06:00:00	642,51	659,80	684,61	675,69	704,04	485,44	455,76	477,24	460,42	462,22
1995-07-18	12:00:00	642,51	659,80	684,71	675,69	704,04	485,44	455,25	477,75	459,57	461,46
1995-07-18	18:00:00	642,51	659,80	684,50	675,69	703,96	485,30	455,06	477,35	459,13	461,33
1995-07-19	00:00:00	642,41	659,69	684,50	675,69	703,85	485,47	454,79	477,39	459,48	461,03
1995-07-19	06:00:00	642,41	659,69	684,50	675,69	703,75	485,49	454,53	476,79	459,19	460,54
1995-07-19	12:00:00	642,41	659,69	684,61	675,69	703,75	485,20	454,32	477,10	459,19	460,08
1995-07-19	18:00:00	642,30	659,69	684,61	675,69	703,64	485,11	453,88	476,89	458,32	459,69
1995-07-20	00:00:00	642,30	659,69	684,61	675,69	703,64	485,27	453,56	477,06	458,15	459,35
1995-07-20	06:00:00	642,30	659,69	684,50	675,69	703,53	485,27	452,95	476,62	457,44	458,88
1995-07-20	12:00:00	642,22	659,59	684,42	675,64	703,53	485,24	452,57	476,42	457,20	458,45
1995-07-20	18:00:00	642,22	659,59	684,61	675,69	703,53	485,16	452,26	476,45	457,07	457,67
1995-07-21	00:00:00	642,08	659,51	684,42	675,64	703,18	484,86	451,67	476,07	455,91	457,28

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 9				
		P4-1	P4-2	P4-3	P4-4	P4-5	P9-1	P9-2	P9-3	P9-4	P9-5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1995-07-21	06:00:00	642,16	659,51	684,31	675,69	703,18	484,79	451,11	476,72	455,11	456,56
1995-07-21	12:00:00	642,08	659,59	684,42	675,69	703,18	484,69	450,38	476,02	454,88	455,91
1995-07-21	18:00:00	642,08	659,59	684,50	675,64	703,18	484,90	450,08	476,79	454,73	455,41
1995-07-22	00:00:00	642,08	659,59	684,42	675,64	703,18	484,74	449,57	476,04	454,24	454,90
1995-07-22	06:00:00	642,08	659,51	684,26	675,64	703,18	484,86	449,05	476,28	453,33	454,41
1995-07-22	12:00:00	641,98	659,59	684,31	675,64	703,18	484,62	448,44	476,07	453,17	453,70
1995-07-22	18:00:00	641,98	659,43	684,26	675,45	703,18	484,56	448,06	475,63	452,45	452,99
1995-07-23	00:00:00	642,08	659,51	684,31	675,64	703,18	484,51	447,50	476,49	451,78	452,26
1995-07-23	06:00:00	641,87	659,43	684,31	675,64	703,18	484,60	446,81	475,90	451,61	451,44
1995-07-23	12:00:00	641,98	659,43	684,07	675,56	703,18	484,22	446,17	475,66	451,13	450,75
1995-07-23	18:00:00	641,87	659,43	684,26	675,56	703,18	484,43	445,60	475,66	450,24	450,21
1995-07-24	00:00:00	641,87	659,43	684,07	675,56	703,13	484,48	445,21	475,55	449,79	449,35
1995-07-24	06:00:00	641,87	659,43	684,18	675,56	703,13	484,48	444,74	475,42	448,86	448,89
1995-07-24	12:00:00	641,76	659,43	684,18	675,56	703,02	484,26	444,15	475,08	448,10	448,20
1995-07-24	18:00:00	641,76	659,43	684,26	675,56	703,02	484,35	443,76	475,42	448,24	448,06
1995-07-25	00:00:00	641,65	659,43	684,18	675,56	703,02	484,12	443,46	474,99	447,25	447,50
1995-07-25	06:00:00	641,76	659,37	684,07	675,56	702,83	484,26	442,88	475,46	447,12	447,12
1995-07-25	12:00:00	641,65	659,43	683,96	675,45	702,83	484,14	442,82	474,99	446,81	446,62
1995-07-25	18:00:00	641,65	659,26	683,96	675,45	702,83	484,31	442,51	475,18	446,42	446,47
1995-07-26	00:00:00	641,55	659,37	683,85	675,45	702,70	484,01	442,13	475,25	445,94	445,82
1995-07-26	06:00:00	641,47	659,26	683,96	675,45	702,62	483,93	441,96	475,21	445,94	445,68
1995-07-26	12:00:00	641,55	659,26	684,07	675,45	702,62	484,05	441,49	475,13	445,17	445,11
1995-07-26	18:00:00	641,55	659,26	684,18	675,45	702,62	484,05	441,45	475,29	445,14	445,00
1995-07-27	00:00:00	641,47	659,26	684,07	675,45	702,51	483,93	441,09	475,42	445,11	444,65
1995-07-27	06:00:00	641,33	659,16	684,07	675,34	702,51	484,01	441,05	475,25	445,30	445,00
1995-07-27	12:00:00	641,55	659,26	684,07	675,34	702,51	483,91	441,51	474,90	445,00	445,73
1995-07-27	18:00:00	641,47	659,26	684,26	675,34	702,51	484,14	441,92	474,09	445,60	446,42
1995-07-28	00:00:00	641,47	659,26	684,18	675,34	702,51	483,87	442,26	474,31	446,03	446,81
1995-07-28	06:00:00	641,33	659,26	683,96	675,24	702,40	483,91	442,59	474,74	446,81	447,12
1995-07-28	12:00:00	641,33	659,26	683,96	675,24	702,32	483,87	442,78	474,61	447,46	447,04
1995-07-28	18:00:00	641,33	659,16	683,85	675,34	702,32	483,74	442,68	474,44	446,71	447,08
1995-07-29	00:00:00	641,33	659,26	683,85	675,34	702,32	483,83	442,56	475,08	446,67	446,59
1995-07-29	06:00:00	641,33	659,26	684,07	675,24	702,32	484,12	442,22	474,90	446,07	446,20
1995-07-29	12:00:00	641,33	659,26	684,31	675,24	702,32	483,93	441,99	474,44	445,62	445,62
1995-07-29	18:00:00	641,33	659,16	684,42	675,34	702,32	483,76	441,57	474,31	445,44	445,34
1995-07-30	00:00:00	641,33	659,26	684,31	675,24	702,32	483,76	441,37	474,64	445,48	444,76
1995-07-30	06:00:00	641,33	659,16	684,50	675,24	702,32	483,87	440,84	474,31	445,44	444,42
1995-07-30	12:00:00	641,33	659,16	684,71	675,13	702,27	483,87	440,50	474,57	444,26	444,04
1995-07-30	18:00:00	641,28	659,16	684,61	675,24	702,27	483,74	440,11	474,20	444,06	443,71
1995-07-31	00:00:00	641,28	659,08	684,50	675,24	702,27	483,57	439,73	474,48	443,76	443,22
1995-07-31	06:00:00	641,20	659,08	684,31	675,02	702,08	483,66	439,51	474,25	443,51	442,70
1995-07-31	12:00:00	641,20	658,94	684,61	675,02	702,08	483,59	439,38	474,31	443,42	442,47
1995-07-31	18:00:00	641,20	658,94	685,03	675,13	702,08	483,71	439,08	473,67	443,22	442,09
1995-08-01	00:00:00	641,09	658,94	684,93	675,24	702,08	483,79	438,79	474,29	442,86	441,83
1995-08-01	06:00:00	640,98	658,86	684,82	675,13	701,97	483,62	438,71	473,67	442,26	441,51
1995-08-01	12:00:00	640,98	658,86	684,71	675,24	701,97	483,66	438,27	474,31	442,09	441,32
1995-08-01	18:00:00	640,98	658,75	684,71	675,13	701,87	483,43	438,18	474,04	441,83	441,13
1995-08-02	00:00:00	640,98	658,65	684,71	675,13	701,87	483,54	437,73	473,29	441,92	441,05
1995-08-02	06:00:00	640,88	658,75	684,42	675,13	701,76	483,49	437,84	473,91	441,49	440,62
1995-08-02	12:00:00	640,88	658,65	684,50	675,13	701,87	483,62	437,62	474,09	441,71	440,67
1995-08-02	18:00:00	640,88	658,65	684,42	675,02	701,76	483,49	437,49	474,31	441,54	440,29
1995-08-03	00:00:00	640,88	658,54	684,18	675,13	701,76	483,43	437,33	473,62	441,18	440,20
1995-08-03	06:00:00	640,77	658,54	683,96	675,02	701,57	483,36	437,04	472,92	441,05	439,95
1995-08-03	12:00:00	640,88	658,54	684,07	675,13	701,65	483,43	437,15	474,25	441,26	439,68
1995-08-03	18:00:00	640,77	658,54	683,96	675,02	701,57	483,29	436,81	473,70	440,71	439,55
1995-08-04	00:00:00	640,77	658,54	684,18	675,13	701,65	483,32	436,60	473,95	440,64	439,42
1995-08-04	06:00:00	640,66	658,54	684,07	675,02	701,57	483,54	436,60	473,23	440,50	439,31
1995-08-04	12:00:00	640,66	658,54	684,07	675,02	701,57	483,19	436,46	473,97	440,20	439,04
1995-08-04	18:00:00	640,66	658,49	684,07	675,02	701,46	483,08	436,21	473,67	440,03	439,12
1995-08-05	00:00:00	640,66	658,49	683,96	675,02	701,57	483,22	436,13	473,87	439,93	438,74

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 9				
		P4-1	P4-2	P4-3	P4-4	P4-5	P9-1	P9-2	P9-3	P9-4	P9-5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1995-08-05	06:00:00	640,58	658,49	684,07	675,02	701,46	483,15	436,04	473,81	439,45	438,58
1995-08-05	12:00:00	640,50	658,41	683,96	675,02	701,46	483,41	435,82	473,49	439,76	438,71
1995-08-05	18:00:00	640,50	658,41	684,07	675,02	701,46	483,11	435,59	473,46	439,17	438,35
1995-08-06	00:00:00	640,45	658,19	683,48	674,86	701,33	483,19	435,68	473,40	439,45	438,05
1995-08-06	06:00:00	640,45	658,19	683,64	675,02	701,33	483,22	435,35	473,57	439,00	438,14
1995-08-06	12:00:00	640,45	658,19	683,75	675,02	701,33	483,02	435,52	473,15	438,41	437,66
1995-08-06	18:00:00	640,45	658,08	683,75	675,02	701,33	483,19	435,31	473,49	439,17	437,84
1995-08-07	00:00:00	640,45	658,08	683,64	675,02	701,33	483,06	435,03	473,15	438,27	437,62
1995-08-07	06:00:00	640,45	658,19	683,75	675,02	701,22	482,98	434,95	473,32	438,47	437,42
1995-08-07	12:00:00	640,34	658,19	683,75	674,94	701,22	483,06	434,70	472,88	438,79	437,11
1995-08-07	18:00:00	640,45	658,19	683,85	675,02	701,22	482,81	434,45	473,60	438,51	437,15
1995-08-08	00:00:00	640,45	658,08	683,75	675,02	701,33	483,08	434,45	472,98	438,01	436,76
1995-08-08	06:00:00	640,45	658,19	683,75	675,02	701,22	483,19	434,31	472,54	437,56	436,70
1995-08-08	12:00:00	640,34	658,19	683,64	674,94	701,12	483,11	434,09	472,92	437,42	436,16
1995-08-08	18:00:00	640,45	658,08	683,75	674,94	701,22	482,85	433,93	472,94	437,38	436,26
1995-08-09	00:00:00	640,34	658,08	683,64	674,86	701,22	482,89	433,93	472,94	437,33	436,09
1995-08-09	06:00:00	640,34	658,08	683,75	674,94	701,12	483,06	433,77	472,92	437,15	436,02
1995-08-09	12:00:00	640,23	658,08	683,64	674,86	701,01	482,98	433,74	473,27	436,46	436,02
1995-08-09	18:00:00	640,23	658,08	683,75	674,94	701,01	482,69	433,58	472,94	437,15	435,82
1995-08-10	00:00:00	640,23	657,87	683,56	674,94	701,01	482,60	433,54	472,98	437,11	435,91
1995-08-10	06:00:00	640,15	657,87	683,56	674,94	700,90	482,89	433,63	472,64	436,64	435,91
1995-08-10	12:00:00	640,15	657,87	683,56	674,86	700,90	482,64	433,33	472,64	436,68	435,82
1995-08-10	18:00:00	640,15	657,98	683,48	674,94	700,79	482,85	433,58	472,88	436,76	435,82
1995-08-11	00:00:00	640,23	657,87	683,48	674,94	700,90	482,69	433,29	472,98	436,70	435,55
1995-08-11	06:00:00	640,23	657,87	683,42	674,94	700,90	482,81	433,47	472,94	436,76	435,55
1995-08-11	12:00:00	640,15	657,87	683,48	674,86	700,90	482,72	433,17	472,43	436,64	435,35
1995-08-11	18:00:00	640,23	657,79	683,48	674,94	700,90	482,64	433,24	472,88	436,26	435,35
1995-08-12	00:00:00	640,15	657,79	683,48	674,94	700,79	482,56	433,12	472,54	436,09	435,29
1995-08-12	06:00:00	640,15	657,79	683,56	674,86	700,90	482,60	432,97	472,64	436,76	435,12
1995-08-12	12:00:00	640,02	657,79	683,48	674,86	700,79	482,74	433,06	471,92	436,09	435,17
1995-08-12	18:00:00	640,15	657,79	683,56	674,94	700,90	482,56	432,91	472,38	436,00	434,97
1995-08-13	00:00:00	640,15	657,71	683,48	674,81	700,79	482,56	432,74	472,88	436,42	434,80
1995-08-13	06:00:00	640,15	657,71	683,56	674,86	700,79	482,77	432,71	472,64	436,50	434,74
1995-08-13	12:00:00	640,02	657,71	683,48	674,81	700,79	482,56	432,55	472,78	435,82	434,53
1995-08-13	18:00:00	640,15	657,71	683,48	674,86	700,71	482,69	432,47	472,26	436,39	434,39
1995-08-14	00:00:00	640,02	657,65	683,48	674,81	700,71	482,81	432,21	472,34	435,68	434,35
1995-08-14	06:00:00	639,83	657,55	683,32	674,81	700,63	482,45	432,25	471,78	435,82	434,28
1995-08-14	12:00:00	639,94	657,55	683,42	674,86	700,63	482,42	432,12	472,24	435,42	434,14
1995-08-14	18:00:00	639,83	657,44	683,42	674,81	700,63	482,56	431,99	472,07	435,42	434,28
1995-08-15	00:00:00	639,83	657,55	683,32	674,81	700,63	482,56	431,95	472,58	435,38	433,74
1995-08-15	06:00:00	639,83	657,44	683,32	674,86	700,58	482,49	431,79	472,71	434,87	433,71
1995-08-15	12:00:00	639,83	657,44	683,42	674,81	700,58	482,45	431,65	472,34	435,26	433,63
1995-08-15	18:00:00	639,83	657,44	683,32	674,81	700,58	482,49	431,54	471,82	434,87	433,43
1995-08-16	00:00:00	639,83	657,44	683,21	674,81	700,58	482,56	431,56	471,86	434,66	433,41
1995-08-16	06:00:00	639,83	657,36	683,13	674,81	700,47	482,42	431,44	472,15	434,80	433,24
1995-08-16	12:00:00	639,72	657,22	683,13	674,70	700,36	482,56	431,26	471,92	434,74	433,26
1995-08-16	18:00:00	639,83	657,36	683,00	674,81	700,36	482,49	431,26	472,43	434,70	433,12
1995-08-17	00:00:00	639,94	657,36	683,00	674,81	700,36	482,33	430,89	472,12	435,08	432,81
1995-08-17	06:00:00	639,83	657,44	682,91	674,81	700,28	482,54	430,92	472,20	434,28	432,89
1995-08-17	12:00:00	639,94	657,36	683,00	674,81	700,36	482,37	431,01	472,54	434,06	432,85
1995-08-17	18:00:00	639,83	657,22	682,59	674,59	700,28	482,37	430,86	471,86	433,97	432,85
1995-08-18	00:00:00	640,02	657,36	682,91	674,70	700,36	482,45	430,92	472,15	434,14	432,81
1995-08-18	06:00:00	639,94	657,36	682,91	674,70	700,28	482,56	430,84	471,65	434,31	432,43
1995-08-18	12:00:00	639,83	657,22	682,91	674,70	700,28	482,42	430,68	471,17	433,74	432,60
1995-08-18	18:00:00	639,83	657,22	682,81	674,70	700,15	482,21	430,66	472,38	434,35	432,57
1995-08-19	00:00:00	639,83	657,22	682,81	674,70	700,15	482,29	430,59	472,29	433,84	432,25
1995-08-19	06:00:00	639,83	657,22	682,91	674,70	700,15	482,25	430,50	472,20	433,58	432,25
1995-08-19	12:00:00	639,94	657,22	683,00	674,70	700,28	482,29	430,52	471,99	434,23	432,12
1995-08-19	18:00:00	639,94	657,22	683,00	674,70	700,15	482,08	430,33	471,99	434,28	431,92
1995-08-20	00:00:00	639,83	657,14	682,91	674,81	700,07	482,39	430,38	471,78	434,31	432,39

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 9				
		P4-1	P4-2	P4-3	P4-4	P4-5	P9-1	P9-2	P9-3	P9-4	P9-5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1995-08-20	06:00:00	639,83	657,14	682,59	674,59	700,07	482,16	430,33	471,56	433,84	432,17
1995-08-20	12:00:00	639,64	657,04	682,59	674,59	699,96	482,21	430,46	471,92	433,58	432,09
1995-08-20	18:00:00	639,72	657,14	682,59	674,59	699,96	482,29	430,42	471,82	433,24	432,37
1995-08-21	00:00:00	639,72	657,14	682,59	674,70	699,96	482,37	430,72	471,42	434,09	432,68
1995-08-21	06:00:00	639,72	657,14	682,59	674,70	699,96	482,12	430,92	471,86	434,28	433,26
1995-08-21	12:00:00	639,64	657,04	682,59	674,51	699,85	481,82	431,23	471,09	434,06	433,77
1995-08-21	18:00:00	639,83	657,14	682,59	674,59	699,85	481,18	430,33	470,75	432,97	432,85
1995-08-22	00:00:00	639,72	657,14	682,59	674,59	699,85	480,44	429,50	470,03	432,43	431,68
1995-08-22	06:00:00	639,72	657,14	682,70	674,59	699,85	480,00	428,86	469,07	431,26	431,18
1995-08-22	12:00:00	639,72	657,04	682,70	674,59	699,85	479,80	427,97	468,63	430,33	430,10
1995-08-22	18:00:00	639,72	657,14	682,59	674,70	699,74	479,90	427,56	468,44	430,22	429,59
1995-08-23	00:00:00	639,72	657,14	682,59	674,70	699,74	479,86	427,14	468,63	429,89	429,14
1995-08-23	06:00:00	639,64	657,04	682,59	674,70	699,74	480,20	426,68	469,29	429,37	428,69
1995-08-23	12:00:00	639,64	657,04	682,59	674,59	699,74	480,44	426,54	469,01	429,12	428,26
1995-08-23	18:00:00	639,72	657,04	682,54	674,70	699,74	480,51	426,20	469,11	428,82	427,97
1995-08-24	00:00:00	639,72	657,04	682,54	674,70	699,74	480,37	425,78	469,16	428,90	427,58
1995-08-24	06:00:00	639,72	657,04	682,54	674,70	699,74	480,49	425,61	470,06	428,40	427,67
1995-08-24	12:00:00	639,64	656,93	682,43	674,59	699,74	480,68	425,23	469,80	428,66	427,28
1995-08-24	18:00:00	639,64	656,93	682,59	674,70	699,74	480,85	425,13	469,51	428,45	426,94
1995-08-25	00:00:00	639,83	657,14	682,54	674,81	699,74	480,85	424,97	470,06	428,31	426,88
1995-08-25	06:00:00	639,64	656,85	682,54	674,70	699,74	481,16	424,65	470,20	428,82	426,73
1995-08-25	12:00:00	639,64	656,85	682,43	674,59	699,74	481,16	424,68	470,40	428,73	426,80
1995-08-25	18:00:00	639,64	656,85	682,54	674,70	699,74	481,31	424,82	470,86	428,48	427,28
1995-08-26	00:00:00	639,64	656,85	682,43	674,59	699,69	481,31	424,97	470,89	428,80	427,31
1995-08-26	06:00:00	639,64	656,80	682,59	674,70	699,61	481,40	425,00	470,38	428,62	427,56
1995-08-26	12:00:00	639,64	656,85	682,43	674,70	699,50	481,27	425,23	471,12	428,45	427,97
1995-08-26	18:00:00	639,64	656,85	682,54	674,70	699,61	481,27	425,53	471,38	428,28	428,22
1995-08-27	00:00:00	639,64	656,85	682,54	674,59	699,50	481,27	425,57	471,12	428,96	428,62
1995-08-27	06:00:00	639,64	656,58	682,54	674,59	699,40	481,47	426,02	471,04	428,90	428,82
1995-08-27	12:00:00	639,64	656,69	682,54	674,70	699,50	481,47	426,15	471,17	429,20	428,96
1995-08-27	18:00:00	639,64	656,69	682,54	674,59	699,50	481,43	426,29	470,89	429,31	429,20
1995-08-28	00:00:00	639,64	656,69	682,43	674,51	699,50	481,34	426,68	471,21	429,37	429,42
1995-08-28	06:00:00	639,64	656,58	682,43	674,70	699,40	481,65	426,68	471,00	429,46	429,50
1995-08-28	12:00:00	639,64	656,50	682,43	674,59	699,29	481,57	426,94	470,89	429,76	429,42
1995-08-28	18:00:00	639,64	656,50	682,43	674,59	699,40	481,54	427,06	471,04	429,50	429,62
1995-08-29	00:00:00	639,59	656,50	682,43	674,59	699,29	481,47	427,14	470,38	429,50	429,89
1995-08-29	06:00:00	639,48	656,50	682,54	674,59	699,29	481,43	427,23	470,89	429,89	429,85
1995-08-29	12:00:00	639,59	656,36	682,43	674,59	699,18	481,60	427,40	471,04	430,19	429,97
1995-08-29	18:00:00	639,59	656,36	682,43	674,51	699,18	481,77	427,58	471,04	430,02	430,02
1995-08-30	00:00:00	639,64	656,36	682,54	674,59	699,29	481,47	427,75	471,06	430,27	430,22
1995-08-30	06:00:00	639,48	656,29	682,43	674,51	699,07	481,65	427,67	471,56	430,31	430,27
1995-08-30	12:00:00	639,59	656,29	682,43	674,59	699,18	481,52	427,67	470,75	430,33	430,31
1995-08-30	18:00:00	639,59	656,29	682,54	674,59	699,18	481,85	427,91	471,23	430,89	430,33
1995-08-31	00:00:00	639,59	656,29	682,43	674,51	699,07	481,47	428,05	471,12	430,84	430,59
1995-08-31	06:00:00	639,48	656,18	682,43	674,59	699,07	481,95	427,94	470,96	431,03	430,46
1995-08-31	12:00:00	639,48	656,07	682,54	674,59	699,18	481,69	428,09	470,78	431,03	430,52
1995-08-31	18:00:00	639,48	656,07	682,54	674,51	699,07	481,71	427,84	471,21	430,92	430,52
1995-09-01	00:00:00	639,37	655,99	682,43	674,51	699,07	481,71	428,09	471,12	430,68	430,52
1995-09-01	06:00:00	639,37	655,99	682,43	674,59	698,99	481,71	428,11	471,42	431,26	430,66
1995-09-01	12:00:00	639,37	655,99	682,43	674,59	698,99	481,57	428,09	471,38	431,03	430,63
1995-09-01	18:00:00	639,37	655,99	682,43	674,51	698,99	481,69	428,09	470,52	430,38	430,55
1995-09-02	00:00:00	639,37	655,99	682,32	674,51	698,91	481,60	428,01	471,34	431,10	430,55
1995-09-02	06:00:00	639,37	655,99	682,43	674,59	698,99	481,54	428,17	471,23	430,63	430,63
1995-09-02	12:00:00	639,37	655,94	682,11	674,51	698,91	481,57	428,14	471,21	430,80	430,42
1995-09-02	18:00:00	639,48	655,85	682,03	674,59	698,99	481,54	428,17	471,04	430,84	430,46
1995-09-03	00:00:00	639,37	655,64	681,81	674,59	698,91	481,65	428,11	471,12	430,96	430,55
1995-09-03	06:00:00	639,29	655,53	681,92	674,51	698,86	481,52	428,22	470,57	430,55	430,33
1995-09-03	12:00:00	639,29	655,10	681,92	674,51	698,91	481,65	428,11	470,20	430,80	430,33
1995-09-03	18:00:00	639,29	655,10	681,92	674,51	698,75	481,57	427,94	470,54	430,72	430,50
1995-09-04	00:00:00	639,37	654,97	682,03	674,59	698,91	481,31	427,97	470,66	430,63	430,46

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 9				
		P4-1	P4-2	P4-3	P4-4	P4-5	P9-1	P9-2	P9-3	P9-4	P9-5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1995-09-04	06:00:00	639,29	654,75	681,92	674,51	698,75	481,47	428,01	471,04	430,55	430,55
1995-09-04	12:00:00	639,16	654,54	682,03	674,51	698,75	481,52	428,09	470,38	430,66	430,38
1995-09-04	18:00:00	639,29	654,54	682,03	674,51	698,86	481,52	427,77	470,57	430,68	430,31
1995-09-05	00:00:00	639,29	654,43	682,03	674,59	698,86	481,23	427,84	470,52	430,27	430,27
1995-09-05	06:00:00	639,37	654,43	682,11	674,38	698,75	481,31	427,88	470,96	430,59	430,22
1995-09-05	12:00:00	639,16	654,43	682,11	674,51	698,86	481,37	427,75	471,04	430,84	430,10
1995-09-05	18:00:00	639,37	654,43	682,11	674,51	698,75	481,40	427,75	470,78	430,31	430,02
1995-09-06	00:00:00	639,37	654,35	682,11	674,51	698,75	481,34	427,53	470,57	430,33	429,97
1995-09-06	06:00:00	639,29	654,27	682,11	674,51	698,75	481,34	427,64	470,92	430,31	430,16
1995-09-06	12:00:00	638,78	652,63	682,03	675,69	697,57	481,40	427,44	470,32	430,19	429,80
1995-09-06	18:00:00	638,97	652,93	681,92	676,04	697,57	481,23	427,53	470,92	430,16	430,06
1995-09-07	00:00:00	639,08	653,06	681,81	676,15	697,57	481,40	427,48	470,40	430,06	429,72
1995-09-07	06:00:00	639,08	652,93	681,92	676,15	697,57	481,43	427,40	470,36	430,27	429,55
1995-09-07	12:00:00	639,08	652,93	681,92	676,04	697,49	481,16	427,28	470,45	429,62	429,72
1995-09-07	18:00:00	639,08	652,85	681,92	676,15	697,49	481,18	427,28	470,03	430,33	429,69
1995-09-08	00:00:00	639,08	652,93	681,81	676,04	697,49	481,34	427,23	470,03	430,10	429,72
1995-09-08	06:00:00	639,08	652,85	681,92	676,04	697,38	481,52	427,02	470,45	430,10	429,64
1995-09-08	12:00:00	638,97	652,74	681,81	675,93	697,38	481,16	426,94	469,89	429,62	429,72
1995-09-08	18:00:00	639,08	652,74	682,03	675,93	697,38	481,18	427,18	470,27	429,69	429,72
1995-09-09	00:00:00	639,08	652,63	681,92	675,93	697,38	481,16	427,06	469,97	429,37	429,72
1995-09-09	06:00:00	639,08	652,63	681,92	675,93	697,28	481,23	426,98	470,54	429,83	429,37
1995-09-09	12:00:00	638,86	652,55	681,81	675,69	697,20	481,31	427,02	470,49	429,69	429,17
1995-09-09	18:00:00	639,08	652,55	682,11	675,85	697,28	481,04	426,80	470,01	429,72	429,37
1995-09-10	00:00:00	638,97	652,55	681,92	675,69	697,20	481,13	426,80	469,72	428,96	429,09
1995-09-10	06:00:00	639,08	652,50	681,92	675,85	697,20	481,18	426,64	470,20	429,29	429,14
1995-09-10	12:00:00	638,97	652,55	681,92	675,69	697,20	481,04	426,71	469,72	429,48	428,93
1995-09-10	18:00:00	639,08	652,50	681,81	675,85	697,20	481,27	426,94	470,20	428,96	429,00
1995-09-11	00:00:00	638,97	652,50	681,81	675,69	697,14	481,18	426,56	470,20	429,12	429,04
1995-09-11	06:00:00	638,97	652,50	681,81	675,69	697,14	481,02	426,59	470,66	429,04	428,96
1995-09-11	12:00:00	638,97	652,50	681,73	675,69	697,20	481,18	426,68	470,01	429,42	429,04
1995-09-11	18:00:00	639,08	652,42	681,73	675,69	697,20	481,02	426,46	470,06	429,55	428,73
1995-09-12	00:00:00	639,08	652,42	681,81	675,69	697,14	481,16	426,71	470,20	429,14	428,86
1995-09-12	06:00:00	638,97	652,42	681,68	675,69	697,14	481,02	426,51	469,63	428,93	428,66
1995-09-12	12:00:00	638,97	652,42	681,68	675,69	697,14	481,04	426,46	470,14	429,20	428,66
1995-09-12	18:00:00	638,97	652,42	681,73	675,69	697,14	481,00	426,42	470,36	429,09	428,80
1995-09-13	00:00:00	638,97	652,20	681,60	675,69	697,06	480,92	426,20	470,18	428,52	428,73
1995-09-13	06:00:00	638,97	652,31	681,60	675,69	697,14	481,13	426,22	469,72	428,86	428,73
1995-09-13	12:00:00	638,97	652,20	681,73	675,69	697,06	480,79	426,20	469,72	428,93	428,80
1995-09-13	18:00:00	639,08	652,20	681,68	675,69	696,95	480,92	426,22	469,49	428,62	428,73
1995-09-14	00:00:00	638,97	652,10	681,68	675,69	696,95	481,04	426,05	470,20	428,60	428,48
1995-09-14	06:00:00	638,97	652,10	681,68	675,69	696,95	481,09	426,08	469,63	428,48	428,45
1995-09-14	12:00:00	638,97	651,99	681,73	675,69	696,95	480,88	426,11	469,80	428,60	428,45
1995-09-14	18:00:00	638,86	651,88	681,60	675,69	696,85	480,74	426,02	469,42	428,40	428,43
1995-09-15	00:00:00	638,86	651,88	681,73	675,69	696,85	480,92	425,85	470,01	428,90	428,26
1995-09-15	06:00:00	638,86	651,80	681,68	675,69	696,85	480,85	425,87	470,03	428,96	428,40
1995-09-15	12:00:00	638,86	651,69	681,60	675,69	696,74	480,79	426,05	469,67	428,43	428,26
1995-09-15	18:00:00	638,86	651,69	681,68	675,69	696,74	480,83	425,61	469,46	428,52	427,97
1995-09-16	00:00:00	638,97	651,69	681,60	675,69	696,85	480,71	425,57	470,18	428,28	427,97
1995-09-16	06:00:00	638,86	651,69	681,68	675,69	696,74	480,68	425,69	469,63	428,86	427,80
1995-09-16	12:00:00	638,78	651,64	681,68	675,69	696,63	480,68	425,71	469,42	428,69	428,14
1995-09-16	18:00:00	638,86	651,69	681,60	675,69	696,63	480,68	425,43	469,51	428,43	428,05
1995-09-17	00:00:00	638,86	651,69	681,68	675,69	696,74	480,83	425,71	469,59	428,43	427,80
1995-09-17	06:00:00	638,86	651,53	681,68	675,69	696,63	480,63	425,35	469,46	428,28	427,67
1995-09-17	12:00:00	638,86	651,53	681,60	675,69	696,63	480,83	425,23	468,95	427,75	427,80
1995-09-17	18:00:00	638,86	651,53	681,60	675,69	696,63	480,83	425,23	469,59	428,56	427,84
1995-09-18	00:00:00	638,97	651,53	681,60	675,69	696,63	480,63	425,26	469,37	428,66	427,53
1995-09-18	06:00:00	638,86	651,43	681,60	675,69	696,52	480,68	425,13	469,37	428,17	427,58
1995-09-18	12:00:00	638,86	651,35	681,73	675,69	696,63	480,74	425,03	469,18	428,31	427,36
1995-09-18	18:00:00	638,97	651,43	681,68	675,69	696,52	480,58	424,97	469,59	428,22	427,58
1995-09-19	00:00:00	638,97	651,21	681,73	675,69	696,63	480,63	424,82	469,04	427,88	427,58

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 9				
		P4-1	P4-2	P4-3	P4-4	P4-5	P9-1	P9-2	P9-3	P9-4	P9-5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1995-09-19	06:00:00	638,86	651,21	681,73	675,69	696,52	480,58	424,82	469,29	428,22	427,28
1995-09-19	12:00:00	638,86	651,21	681,73	675,69	696,52	480,49	424,82	469,04	427,94	427,25
1995-09-19	18:00:00	638,86	651,21	681,81	675,69	696,52	480,66	424,80	469,49	428,60	427,25
1995-09-20	00:00:00	638,97	651,13	681,73	675,69	696,52	480,74	424,82	469,18	428,40	427,06
1995-09-20	06:00:00	638,97	651,21	681,92	675,69	696,63	480,34	424,65	469,24	428,22	427,14
1995-09-20	12:00:00	638,86	651,13	681,92	675,69	696,44	480,31	424,71	469,07	428,26	427,06
1995-09-20	18:00:00	638,97	651,13	681,81	675,69	696,52	480,49	424,55	469,04	428,28	427,02
1995-09-21	00:00:00	638,86	651,02	681,92	675,69	696,52	480,37	424,51	469,11	427,94	426,98
1995-09-21	06:00:00	638,86	650,92	681,92	675,69	696,44	480,49	424,46	469,37	427,77	426,54
1995-09-21	12:00:00	638,78	650,92	681,92	675,69	696,44	480,37	424,42	469,16	428,26	426,80
1995-09-21	18:00:00	638,86	650,84	681,92	675,69	696,31	480,54	424,46	469,07	428,22	426,77
1995-09-22	00:00:00	638,73	650,78	681,81	675,64	696,31	480,20	424,32	468,95	428,14	426,56
1995-09-22	06:00:00	638,78	650,84	680,20	675,69	696,31	480,20	424,11	469,07	428,56	426,88
1995-09-22	12:00:00	638,73	650,78	678,59	675,69	696,31	480,49	424,32	468,79	428,43	426,68
1995-09-22	18:00:00	638,73	650,70	676,90	675,69	696,31	480,31	424,38	469,04	428,01	426,71
1995-09-23	00:00:00	638,73	650,70	677,20	675,69	696,31	480,28	424,18	469,42	428,11	426,71
1995-09-23	06:00:00	638,73	650,59	677,30	675,69	696,31	480,51	424,21	469,35	427,94	426,56
1995-09-23	12:00:00	638,73	650,59	677,55	675,69	696,26	480,31	424,11	468,74	427,97	426,40
1995-09-23	18:00:00	638,73	650,49	677,55	675,69	696,31	480,44	423,97	468,79	428,26	426,64
1995-09-24	00:00:00	638,73	650,38	677,84	675,69	696,26	480,20	423,95	468,77	428,22	426,42
1995-09-24	06:00:00	638,73	650,38	677,97	675,69	696,31	480,20	424,04	469,01	428,01	426,38
1995-09-24	12:00:00	638,65	650,27	677,97	675,69	696,18	480,14	423,87	468,79	428,43	426,40
1995-09-24	18:00:00	638,73	650,27	678,06	675,69	696,26	480,34	424,08	469,42	428,26	426,26
1995-09-25	00:00:00	638,73	650,38	678,06	675,69	696,26	480,16	423,95	469,18	427,94	426,22
1995-09-25	06:00:00	638,73	650,17	678,16	675,69	696,26	480,37	423,83	469,24	427,77	426,26
1995-09-25	12:00:00	638,65	650,17	677,97	675,69	696,18	480,11	423,91	468,77	427,80	426,29
1995-09-25	18:00:00	638,73	650,08	677,97	675,69	696,18	480,31	423,95	468,79	428,09	426,11
1995-09-26	00:00:00	638,73	650,08	678,06	675,64	696,18	480,14	423,83	468,74	428,01	426,11
1995-09-26	06:00:00	638,65	649,98	678,16	675,69	696,07	480,28	423,69	468,61	427,71	426,11
1995-09-26	12:00:00	638,65	649,98	678,16	675,69	695,96	480,24	423,78	469,07	428,09	426,22
1995-09-26	18:00:00	638,73	649,98	678,27	675,69	695,96	480,20	423,74	468,70	428,52	425,91
1995-09-27	00:00:00	638,65	649,92	678,16	675,69	695,85	479,86	423,74	468,79	427,84	426,34
1995-09-27	06:00:00	638,78	649,98	678,27	675,69	695,96	480,02	423,69	468,46	427,42	426,08
1995-09-27	12:00:00	638,73	649,98	678,27	675,69	695,96	479,94	423,66	468,79	427,97	425,95
1995-09-27	18:00:00	638,73	649,92	678,27	675,69	695,85	480,16	423,58	468,61	428,45	425,91
1995-09-28	00:00:00	638,73	649,92	678,32	675,64	695,96	479,94	423,49	468,27	428,11	425,82
1995-09-28	06:00:00	638,65	649,84	678,40	675,64	695,85	480,00	423,53	468,70	427,88	426,05
1995-09-28	12:00:00	638,73	649,84	678,40	675,64	695,96	480,02	423,58	467,98	427,75	425,82
1995-09-28	18:00:00	638,65	649,73	678,40	675,56	695,75	480,11	423,66	468,74	428,01	425,73
1995-09-29	00:00:00	638,78	649,84	678,40	675,64	695,96	479,98	423,45	468,77	427,75	425,61
1995-09-29	06:00:00	638,73	649,84	678,48	675,64	695,85	480,00	423,45	468,87	427,75	425,65
1995-09-29	12:00:00	638,78	649,92	678,70	675,69	695,96	479,94	423,31	468,32	428,22	425,39
1995-09-29	18:00:00	638,73	649,63	678,40	675,64	695,85	479,90	423,31	468,46	427,80	425,69
1995-09-30	00:00:00	638,78	649,73	678,40	675,64	695,75	480,14	423,39	468,77	428,22	425,57
1995-09-30	06:00:00	638,65	649,73	678,40	675,64	695,75	479,90	423,18	468,15	428,05	425,71
1995-09-30	12:00:00	638,73	649,73	678,48	675,64	695,75	480,02	423,29	468,27	427,80	425,43
1995-09-30	18:00:00	638,73	649,73	678,59	675,64	695,75	479,90	423,31	468,49	428,66	425,53
1995-10-01	00:00:00	638,78	649,84	678,59	675,64	695,75	479,94	423,35	468,35	428,52	425,26
1995-10-01	06:00:00	638,73	649,73	678,59	675,64	695,75	479,98	423,39	468,32	428,01	425,39
1995-10-01	12:00:00	638,73	649,63	678,70	675,64	695,75	480,07	423,22	468,79	428,28	425,57
1995-10-01	18:00:00	638,73	649,63	678,70	675,64	695,64	479,90	423,35	468,87	428,28	425,69
1995-10-02	00:00:00	638,73	649,63	678,59	675,56	695,64	480,02	423,29	468,79	428,11	425,43
1995-10-02	06:00:00	638,65	649,52	678,59	675,56	695,56	480,16	423,18	468,46	428,17	425,43
1995-10-02	12:00:00	638,73	649,52	678,70	675,56	695,56	479,80	423,05	468,15	427,77	425,69
1995-10-02	18:00:00	638,73	649,41	678,59	675,56	695,48	479,80	423,11	468,63	427,75	425,37
1995-10-03	00:00:00	638,73	649,52	678,70	675,56	695,56	479,80	423,01	468,23	428,11	425,51
1995-10-03	06:00:00	638,73	649,52	678,59	675,56	695,48	479,80	423,26	468,65	427,88	425,26
1995-10-03	12:00:00	638,73	649,52	678,59	675,45	695,48	479,70	423,05	468,77	428,14	425,35
1995-10-03	18:00:00	638,78	649,52	678,81	675,56	695,56	479,66	423,05	468,57	428,11	425,23
1995-10-04	00:00:00	638,78	649,52	678,59	675,56	695,56	479,94	423,18	468,40	428,26	425,48

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 9				
		P4-1	P4-2	P4-3	P4-4	P4-5	P9-1	P9-2	P9-3	P9-4	P9-5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1994-11-23	06:00:00	643,94	662,73	686,22	686,89	707,91					
1994-11-23	12:00:00	643,88	662,62	686,22	686,75	707,69					
1994-11-23	18:00:00	643,88	662,51	686,03	686,65	707,53					
1994-11-24	00:00:00	643,94	662,51	686,14	686,65	707,53					
1994-11-24	06:00:00	643,78	662,30	686,03	686,43	707,37					
1994-11-24	12:00:00	643,67	662,11	686,03	686,32	707,18					
1994-11-24	18:00:00	643,67	662,11	685,17	686,32	707,18					
1994-11-25	00:00:00	643,67	662,11	685,25	686,22	706,97					
1994-11-25	06:00:00	643,59	661,98	685,54	686,22	706,86					
1994-11-25	12:00:00	643,59	661,98	685,54	686,14	706,86					
1994-11-25	18:00:00	643,37	661,98	685,25	686,03	706,64					
1994-11-26	00:00:00	643,45	661,92	685,12	685,97	706,64					
1994-11-26	06:00:00	643,37	661,81	685,17	685,87	706,64					
1994-11-26	12:00:00	643,45	661,92	685,36	685,97	706,64					
1994-11-26	18:00:00	643,37	661,71	685,25	685,87	706,64					
1994-11-27	00:00:00	643,27	661,63	685,36	685,76	706,64					
1994-11-27	06:00:00	643,08	661,30	685,25	685,46	706,40					
1994-11-27	12:00:00	643,16	661,41	685,12	685,46	706,51					
1994-11-27	18:00:00	643,08	661,30	685,12	685,25	706,40					
1994-11-28	00:00:00	643,16	661,30	685,17	685,25	706,30					
1994-11-28	06:00:00	643,08	661,12	684,71	685,12	706,19					
1994-11-28	12:00:00	643,08	661,06	684,82	685,12	706,08					
1994-11-28	18:00:00	643,02	661,06	684,61	685,03	705,97					
1994-11-29	00:00:00	643,08	661,06	684,50	685,12	706,08					
1994-11-29	06:00:00	642,92	660,88	684,50	685,03	705,89					
1994-11-29	12:00:00	642,92	660,77	684,50	684,93	705,89					
1994-11-29	18:00:00	642,81	660,66	684,50	684,93	705,81					
1994-11-30	00:00:00	642,81	660,66	684,61	684,82	705,76					
1994-11-30	06:00:00	642,73	660,55	684,82	684,82	705,89					
1994-11-30	12:00:00	643,08	661,06	685,25	685,12	706,30					
1994-11-30	18:00:00	643,37	661,49	685,87	685,54	706,86					
1994-12-01	00:00:00	643,59	661,81	686,32	686,14	707,53					
1994-12-01	06:00:00	643,78	661,92	686,83	686,65	708,12					
1994-12-01	12:00:00	643,88	661,98	687,18	687,18	708,36					
1994-12-01	18:00:00	643,94	662,11	687,48	687,48	708,66					
1994-12-02	00:00:00	643,94	661,98	687,08	687,48	708,47					
1994-12-02	06:00:00	644,10	662,19	687,40	687,69	708,66					
1994-12-02	12:00:00	644,10	662,30	687,40	687,59	708,47					
1994-12-02	18:00:00	644,20	662,41	687,26	687,69	708,47					
1994-12-03	00:00:00	644,31	662,51	686,89	687,59	708,36					
1994-12-03	06:00:00	644,20	662,51	686,89	687,48	708,36					
1994-12-03	12:00:00	644,42	662,62	687,18	687,48	708,36					
1994-12-03	18:00:00	644,31	662,62	686,54	687,26	708,36					
1994-12-04	00:00:00	644,53	662,62	686,83	687,18	708,36					
1994-12-04	06:00:00	644,20	662,51	686,89	687,08	708,23					
1994-12-04	12:00:00	644,31	662,51	686,89	686,89	708,12					
1994-12-04	18:00:00	644,31	662,41	686,75	686,89	708,23					
1994-12-05	00:00:00	644,10	662,19	686,65	686,75	707,80					
1994-12-05	06:00:00	644,10	662,11	686,65	686,65	707,69					
1994-12-05	12:00:00	644,20	662,11	686,65	686,75	707,69					
1994-12-05	18:00:00	643,94	661,98	686,54	686,43	707,53					
1994-12-06	00:00:00	644,02	661,98	686,43	686,32	707,48					
1994-12-06	06:00:00	644,02	661,98	686,32	686,14	707,37					
1994-12-06	12:00:00	644,10	661,98	686,43	686,32	707,48					
1994-12-06	18:00:00	644,02	661,98	685,87	686,03	707,26					
1994-12-07	00:00:00	644,02	661,92	684,42	686,03	707,26					
1994-12-07	06:00:00	643,94	661,92	684,61	686,03	707,18					
1994-12-07	12:00:00	643,94	661,81	684,93	686,03	707,05					
1994-12-07	18:00:00	643,94	661,71	684,61	686,03	707,05					
1994-12-08	00:00:00	643,88	661,63	683,96	685,97	706,97					

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 9				
		P4-1	P4-2	P4-3	P4-4	P4-5	P9-1	P9-2	P9-3	P9-4	P9-5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1994-12-08	06:00:00	643,67	661,41	684,07	685,68	706,75					
1994-12-08	12:00:00	643,78	661,30	684,31	685,76	706,75					
1994-12-08	18:00:00	643,67	661,20	684,31	685,54	706,64					
1994-12-09	00:00:00	643,67	661,20	684,31	685,68	706,64					
1994-12-09	06:00:00	643,59	661,12	684,18	685,54	706,64					
1994-12-09	12:00:00	643,45	661,06	684,18	685,36	706,59					
1994-12-09	18:00:00	643,45	661,06	684,31	685,46	706,59					
1994-12-10	00:00:00	643,45	660,98	684,26	685,36	706,51					
1994-12-10	06:00:00	643,27	660,88	684,26	685,25	706,40					
1994-12-10	12:00:00	643,08	660,55	684,07	685,17	706,19					
1994-12-10	18:00:00	643,08	660,55	684,26	685,17	706,19					
1994-12-11	00:00:00	643,08	660,45	683,96	685,12	705,97					
1994-12-11	06:00:00	643,08	660,45	684,18	685,25	706,08					
1994-12-11	12:00:00	643,02	660,36	683,75	685,17	705,97					
1994-12-11	18:00:00	643,02	660,36	682,24	685,12	705,97					
1994-12-12	00:00:00	642,92	660,26	682,59	685,03	705,89					
1994-12-12	06:00:00	643,02	660,26	682,91	685,03	705,89					
1994-12-12	12:00:00	643,02	660,26	683,13	685,03	705,89					
1994-12-12	18:00:00	643,02	660,26	683,13	684,82	705,81					
1994-12-13	00:00:00	642,73	660,12	683,13	684,71	705,76					
1994-12-13	06:00:00	642,81	660,12	683,21	684,71	705,65					
1994-12-13	12:00:00	642,73	660,02	683,32	684,61	705,54					
1994-12-13	18:00:00	642,81	660,12	683,32	684,71	705,54					
1994-12-14	00:00:00	642,59	659,91	683,21	684,61	705,33					
1994-12-14	06:00:00	642,73	660,02	683,32	684,71	705,46					
1994-12-14	12:00:00	642,59	659,80	683,32	684,71	705,33					
1994-12-14	18:00:00	642,51	659,80	683,21	684,61	705,25					
1994-12-15	00:00:00	642,51	659,69	683,32	684,50	705,14					
1994-12-15	06:00:00	642,41	659,69	683,56	684,50	705,14					
1994-12-15	12:00:00	642,30	659,59	683,42	684,42	704,95					
1994-12-15	18:00:00	642,30	659,51	683,32	684,42	704,95					
1994-12-16	00:00:00	642,30	659,51	683,21	684,42	704,95					
1994-12-16	06:00:00	642,30	659,51	683,32	684,42	705,03					
1994-12-16	12:00:00	642,22	659,51	683,21	684,31	704,95					
1994-12-16	18:00:00	642,22	659,43	683,13	684,31	704,95					
1994-12-17	00:00:00	642,16	659,43	683,13	684,26	704,90					
1994-12-17	06:00:00	642,22	659,43	683,21	684,26	704,95					
1994-12-17	12:00:00	642,22	659,51	683,21	684,31	705,03					
1994-12-17	18:00:00	642,73	660,12	684,26	684,61	705,46					
1994-12-18	00:00:00	643,02	660,26	684,61	684,71	705,81					
1994-12-18	06:00:00	643,27	660,77	685,17	685,25	706,51					
1994-12-18	12:00:00	643,59	661,06	685,68	685,68	706,75					
1994-12-18	18:00:00	643,78	661,30	686,14	686,03	707,18					
1994-12-19	00:00:00	644,02	661,63	686,65	686,32	707,61					
1994-12-19	06:00:00	644,10	661,81	686,65	687,08	708,23					
1994-12-19	12:00:00	644,31	661,98	687,83	687,93	709,09					
1994-12-19	18:00:00	644,42	661,98	688,55	689,09	710,03					
1994-12-20	00:00:00	644,42	661,98	688,98	689,57	710,40					
1994-12-20	06:00:00	644,53	662,19	689,38	690,30	710,70					
1994-12-20	12:00:00	644,63	662,30	689,44	690,35	710,91					
1994-12-20	18:00:00	644,72	662,41	689,79	690,51	710,91					
1994-12-21	00:00:00	644,77	662,73	689,87	690,51	710,80					
1994-12-21	06:00:00	644,77	662,81	689,68	690,43	710,62					
1994-12-21	12:00:00	644,77	662,94	689,57	690,30	710,48					
1994-12-21	18:00:00	644,77	662,94	689,38	690,08	710,19					
1994-12-22	00:00:00	644,77	662,94	689,44	690,08	710,08					
1994-12-22	06:00:00	644,77	662,94	688,98	689,87	710,03					
1994-12-22	12:00:00	644,77	663,05	689,19	689,87	710,03					
1994-12-22	18:00:00	644,77	662,94	689,30	690,00	710,03					
1994-12-23	00:00:00	644,77	662,94	689,44	690,19	710,29					

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 9				
		P4-1	P4-2	P4-3	P4-4	P4-5	P9-1	P9-2	P9-3	P9-4	P9-5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1994-12-23	06:00:00	644,77	663,05	689,44	690,51	710,70					
1994-12-23	12:00:00	644,77	663,16	689,44	690,62	710,80					
1994-12-23	18:00:00	644,77	663,05	689,44	690,62	710,80					
1994-12-24	00:00:00	644,77	663,05	689,44	690,62	710,70					
1994-12-24	06:00:00	644,77	663,16	689,57	690,62	710,62					
1994-12-24	12:00:00	644,77	663,16	689,57	690,73	710,80					
1994-12-24	18:00:00	644,88	663,16	689,44	690,62	710,91					
1994-12-25	00:00:00	644,98	663,24	689,38	690,62	710,80					
1994-12-25	06:00:00	644,98	663,37	689,44	690,51	710,70					
1994-12-25	12:00:00	644,98	663,24	689,44	690,35	710,48					
1994-12-25	18:00:00	644,88	663,16	689,30	690,19	710,19					
1994-12-26	00:00:00	644,98	663,24	689,30	690,08	710,08					
1994-12-26	06:00:00	644,98	663,24	689,30	690,00	710,03					
1994-12-26	12:00:00	644,98	663,24	689,30	689,87	709,81					
1994-12-26	18:00:00	644,88	663,16	688,98	689,68	709,73					
1994-12-27	00:00:00	644,98	663,24	688,98	689,68	709,60					
1994-12-27	06:00:00	644,77	663,16	688,87	689,44	709,41					
1994-12-27	12:00:00	644,77	663,05	688,87	689,44	709,30					
1994-12-27	18:00:00	644,77	662,94	688,26	689,44	709,22					
1994-12-28	00:00:00	644,88	663,05	688,26	689,44	709,22					
1994-12-28	06:00:00	644,77	662,94	688,44	689,38	709,09					
1994-12-28	12:00:00	644,77	662,94	688,44	689,19	708,98					
1994-12-28	18:00:00	644,88	662,94	688,61	689,09	708,98					
1994-12-29	00:00:00	644,77	663,05	688,55	688,87	708,76					
1994-12-29	06:00:00	644,77	662,94	688,55	688,77	708,76					
1994-12-29	12:00:00	644,88	662,94	687,93	688,69	708,66					
1994-12-29	18:00:00	644,77	662,86	687,83	688,55	708,55					
1994-12-30	00:00:00	644,77	662,73	687,83	688,34	708,47					
1994-12-30	06:00:00	644,77	662,86	687,93	688,55	708,36					
1994-12-30	12:00:00	644,72	662,73	687,75	688,12	708,23					
1994-12-30	18:00:00	644,72	662,62	687,75	688,12	708,12					
1994-12-31	00:00:00	644,63	662,51	687,69	687,93	707,80					
1994-12-31	06:00:00	644,72	662,51	687,75	687,83	707,91					
1994-12-31	12:00:00	644,53	662,41	687,48	687,75	707,69					
1994-12-31	18:00:00	644,53	662,30	687,26	687,75	707,61					
1995-01-01	00:00:00	644,42	662,11	687,08	687,48	707,48					
1995-01-01	06:00:00	644,42	662,11	687,08	687,40	707,48					
1995-01-01	12:00:00	644,31	661,98	687,18	687,26	707,37					
1995-01-01	18:00:00	644,31	661,98	687,08	687,18	707,37					
1995-01-02	00:00:00	644,10	661,98	686,89	686,89	707,26					
1995-01-02	06:00:00	644,02	661,98	686,89	686,89	707,05					
1995-01-02	12:00:00	644,02	661,92	686,83	686,83	707,18					
1995-01-02	18:00:00	643,88	661,81	686,75	686,75	706,97					
1995-01-03	00:00:00	643,88	661,71	686,54	686,54	706,86					
1995-01-03	06:00:00	643,78	661,49	686,54	686,54	706,64					
1995-01-03	12:00:00	643,67	661,49	686,83	686,32	706,64					
1995-01-03	18:00:00	643,67	661,30	686,65	686,32	706,64					
1995-01-04	00:00:00	643,67	661,20	686,43	686,22	706,64					
1995-01-04	06:00:00	643,59	661,20	686,54	686,14	706,59					
1995-01-04	12:00:00	643,37	661,06	686,22	686,03	706,51					
1995-01-04	18:00:00	643,37	661,06	686,22	686,03	706,40					
1995-01-05	00:00:00	643,27	660,98	686,03	685,97	706,30					
1995-01-05	06:00:00	643,16	660,77	686,14	685,97	706,30					
1995-01-05	12:00:00	643,08	660,77	686,03	685,97	706,19					
1995-01-05	18:00:00	643,08	660,66	685,87	685,97	706,08					
1995-01-06	00:00:00	643,08	660,66	685,87	685,87	705,97					
1995-01-06	06:00:00	643,08	660,55	685,68	685,76	705,97					
1995-01-06	12:00:00	643,02	660,55	685,76	685,76	705,97					
1995-01-06	18:00:00	643,02	660,36	685,76	685,54	705,89					
1995-01-07	00:00:00	642,92	660,36	685,87	685,54	705,81					

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 3				
		P4-1	P4-2	P4-3	P4-4	P4-5	P9-1	P9-2	P9-3	P9-4	P9-5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1995-01-07	06:00:00	642,73	660,26	685,76	685,46	705,65					
1995-01-07	12:00:00	642,73	660,26	685,87	685,54	705,76					
1995-01-07	18:00:00	642,59	660,20	685,68	685,36	705,46					
1995-01-08	00:00:00	642,59	660,20	685,76	685,46	705,54					
1995-01-08	06:00:00	642,51	660,12	685,68	685,36	705,46					
1995-01-08	12:00:00	642,51	660,02	685,68	685,36	705,46					
1995-01-08	18:00:00	642,51	660,02	685,36	685,25	705,25					
1995-01-09	00:00:00	642,41	660,02	685,36	685,17	705,25					
1995-01-09	06:00:00	642,30	659,91	685,25	685,17	705,25					
1995-01-09	12:00:00	642,41	659,91	685,25	685,17	705,33					
1995-01-09	18:00:00	642,41	660,12	685,36	685,25	705,65					
1995-01-10	00:00:00	642,51	660,20	685,36	685,17	705,54					
1995-01-10	06:00:00	642,73	660,26	685,54	685,25	705,76					
1995-01-10	12:00:00	642,92	660,66	685,68	685,46	705,89					
1995-01-10	18:00:00	643,02	660,98	686,03	685,76	706,51					
1995-01-11	00:00:00	643,16	661,20	686,32	686,03	706,64					
1995-01-11	06:00:00	643,37	661,41	686,83	686,43	707,18					
1995-01-11	12:00:00	643,59	661,63	687,26	686,97	707,53					
1995-01-11	18:00:00	643,88	661,81	687,48	687,26	707,80					
1995-01-12	00:00:00	643,88	661,92	687,75	687,59	708,12					
1995-01-12	06:00:00	643,94	661,98	687,93	687,75	708,31					
1995-01-12	12:00:00	644,02	661,98	688,12	687,83	708,36					
1995-01-12	18:00:00	644,02	662,11	688,34	688,04	708,47					
1995-01-13	00:00:00	644,02	661,98	688,44	688,04	708,55					
1995-01-13	06:00:00	644,02	662,11	688,34	688,12	708,55					
1995-01-13	12:00:00	644,02	662,19	687,75	688,12	708,47					
1995-01-13	18:00:00	644,02	662,19	687,93	688,12	708,47					
1995-01-14	00:00:00	644,02	662,30	688,04	688,26	708,55					
1995-01-14	06:00:00	644,02	662,19	688,04	688,26	708,47					
1995-01-14	12:00:00	644,02	662,19	688,04	688,26	708,36					
1995-01-14	18:00:00	643,94	662,11	687,75	688,12	708,36					
1995-01-15	00:00:00	644,10	662,19	688,12	688,12	708,36					
1995-01-15	06:00:00	644,10	662,19	688,12	688,26	708,47					
1995-01-15	12:00:00	643,94	662,19	688,12	688,04	708,36					
1995-01-15	18:00:00	644,02	662,11	688,04	688,04	708,36					
1995-01-16	00:00:00	644,10	662,19	688,34	688,12	708,36					
1995-01-16	06:00:00	644,02	662,19	688,26	688,04	708,98					
1995-01-16	12:00:00	644,02	662,19	687,93	688,04	708,87					
1995-01-16	18:00:00	644,10	662,19	687,93	688,04	708,98					
1995-01-17	00:00:00	644,02	662,19	688,12	687,83	708,76					
1995-01-17	06:00:00	644,02	662,19	688,12	687,93	708,87					
1995-01-17	12:00:00	643,94	662,11	687,83	687,83	708,66					
1995-01-17	18:00:00	643,94	661,98	687,75	687,83	708,55					
1995-01-18	00:00:00	643,94	661,98	687,59	687,75	708,36					
1995-01-18	06:00:00	643,88	661,98	687,59	687,75	708,35					
1995-01-18	12:00:00	643,78	661,98	687,48	687,75	708,47					
1995-01-18	18:00:00	643,88	661,98	687,75	687,75	708,66					
1995-01-19	00:00:00	644,02	661,98	687,75	687,69	708,66					
1995-01-19	06:00:00	644,10	662,11	687,93	687,75	708,76					
1995-01-19	12:00:00	644,20	662,11	687,93	687,75	708,98					
1995-01-19	18:00:00	644,20	662,19	688,26	687,83	709,17					
1995-01-20	00:00:00	644,31	662,30	688,34	688,12	709,30					
1995-01-20	06:00:00	644,20	662,30	688,61	688,26	709,41					
1995-01-20	12:00:00	644,20	662,30	688,61	688,34	709,52					
1995-01-20	18:00:00	644,20	662,30	688,61	688,55	709,73					
1995-01-21	00:00:00	644,31	662,30	688,44	688,55	709,73					
1995-01-21	06:00:00	644,20	662,30	688,44	688,55	709,60					
1995-01-21	12:00:00	644,20	662,30	688,55	688,44	709,52					
1995-01-21	18:00:00	644,20	662,30	688,61	688,44	709,41					
1995-01-22	00:00:00	644,20	662,30	688,55	688,44	709,30					

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 3				
		P4-1	P4-2	P4-3	P4-4	P4-5	P3-1	P3-2	P3-3	P3-4	P3-5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1995-01-22	06:00:00	644,20	662,30	688,44	688,34	709,17					
1995-01-22	12:00:00	644,20	662,19	687,83	688,34	709,17					
1995-01-22	18:00:00	644,20	662,30	687,83	688,26	708,98					
1995-01-23	00:00:00	644,10	662,19	687,75	688,12	708,76					
1995-01-23	06:00:00	643,94	662,11	687,75	688,04	708,66					
1995-01-23	12:00:00	643,88	662,11	687,75	687,93	708,55					
1995-01-23	18:00:00	643,88	661,98	687,75	687,83	708,47					
1995-01-24	00:00:00	643,88	661,98	687,75	687,75	708,36					
1995-01-24	06:00:00	643,78	661,98	687,75	687,69	708,23					
1995-01-24	12:00:00	643,67	661,98	687,69	687,69	708,23					
1995-01-24	18:00:00	643,67	661,98	687,48	687,48	707,91					
1995-01-25	00:00:00	643,59	661,92	687,40	687,40	707,80					
1995-01-25	06:00:00	643,45	661,81	687,26	687,26	707,69					
1995-01-25	12:00:00	643,45	661,71	687,40	687,18	707,61					
1995-01-25	18:00:00	643,45	661,71	687,40	687,26	707,53					
1995-01-26	00:00:00	643,27	661,49	687,26	687,08	707,37					
1995-01-26	06:00:00	643,16	661,41	687,08	686,97	707,37					
1995-01-26	12:00:00	643,16	661,20	687,08	686,83	707,26					
1995-01-26	18:00:00	643,16	661,30	687,26	686,83	707,26					
1995-01-27	00:00:00	643,08	661,20	687,26	686,65	707,05					
1995-01-27	06:00:00	643,08	661,12	687,26	686,65	707,05					
1995-01-27	12:00:00	643,08	661,06	687,18	686,54	706,97					
1995-01-27	18:00:00	643,08	661,06	686,97	686,54	706,97					
1995-01-28	00:00:00	642,92	660,98	686,97	686,22	706,75					
1995-01-28	06:00:00	642,81	660,77	686,83	686,32	706,75					
1995-01-28	12:00:00	642,81	660,77	686,89	686,22	706,64					
1995-01-28	18:00:00	642,81	660,55	686,75	686,22	706,64					
1995-01-29	00:00:00	642,73	660,66	686,83	686,03	706,75					
1995-01-29	06:00:00	642,81	660,88	687,26	686,32	707,26					
1995-01-29	12:00:00	643,08	661,20	688,26	687,26	708,23					
1995-01-29	18:00:00	643,37	661,71	689,44	688,61	709,41					
1995-01-30	00:00:00	643,45	661,81	689,79	689,38	709,92					
1995-01-30	06:00:00	643,67	661,98	689,44	689,44	710,08					
1995-01-30	12:00:00	643,67	661,98	689,87	689,79	710,08					
1995-01-30	18:00:00	643,88	661,98	689,44	689,87	710,19					
1995-01-31	00:00:00	643,78	661,98	689,44	689,87	710,19					
1995-01-31	06:00:00	643,78	661,98	689,44	690,08	710,29					
1995-01-31	12:00:00	643,88	662,19	689,68	690,19	710,40					
1995-01-31	18:00:00	643,88	662,19	689,79	690,30	710,48					
1995-02-01	00:00:00	644,02	662,19	690,08	690,51	710,91					
1995-02-01	06:00:00	644,02	662,30	690,43	690,94	711,34					
1995-02-01	12:00:00	644,10	662,51	690,73	691,05	711,56					
1995-02-01	18:00:00	644,02	662,62	690,30	691,13	711,56					
1995-02-02	00:00:00	644,20	662,62	690,19	691,05	711,45					
1995-02-02	06:00:00	644,20	662,73	690,08	690,83	711,23					
1995-02-02	12:00:00	644,42	662,81	690,19	690,73	710,91					
1995-02-02	18:00:00	644,31	662,81	689,87	690,62	710,62					
1995-02-03	00:00:00	644,20	662,62	689,57	690,35	710,40					
1995-02-03	06:00:00	644,10	662,73	689,57	690,30	710,19					
1995-02-03	12:00:00	644,20	662,73	689,57	690,19	710,08					
1995-02-03	18:00:00	644,42	662,81	689,68	690,30	710,08					
1995-02-04	00:00:00	644,31	662,73	689,57	690,00	710,08					
1995-02-04	06:00:00	644,20	662,81	689,57	689,68	710,08					
1995-02-04	12:00:00	644,10	662,73	689,87	689,68	710,03					
1995-02-04	18:00:00	644,10	662,73	689,44	689,57	709,81					
1995-02-05	00:00:00	644,02	662,62	689,38	689,44	709,73					
1995-02-05	06:00:00	643,94	662,62	689,44	689,44	709,60					
1995-02-05	12:00:00	643,94	662,62	689,38	689,44	709,60					
1995-02-05	18:00:00	643,88	662,51	689,30	689,44	709,52					
1995-02-06	00:00:00	643,88	662,51	689,09	689,38	709,41					

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 9				
		P4-1	P4-2	P4-3	P4-4	P4-5	P9-1	P9-2	P9-3	P9-4	P9-5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1995-02-06	06:00:00	643,78	662,62	689,09	689,30	709,30					
1995-02-06	12:00:00	643,88	662,62	689,30	689,30	709,30					
1995-02-06	18:00:00	643,78	662,51	689,19	689,09	709,30					
1995-02-07	00:00:00	643,88	662,62	689,19	689,09	709,41					
1995-02-07	06:00:00	643,88	662,62	689,19	689,09	709,30					
1995-02-07	12:00:00	643,78	662,51	688,87	688,98	709,30					
1995-02-07	18:00:00	643,78	662,51	688,87	688,98	709,30					
1995-02-08	00:00:00	643,78	662,51	688,61	688,98	709,30					
1995-02-08	06:00:00	643,67	662,41	688,61	688,98	709,30					
1995-02-08	12:00:00	643,67	662,41	688,87	688,87	709,22					
1995-02-08	18:00:00	643,67	662,41	688,69	688,87	709,17					
1995-02-09	00:00:00	643,78	662,41	688,77	688,77	709,17					
1995-02-09	06:00:00	643,59	662,19	688,61	688,61	708,98					
1995-02-09	12:00:00	643,59	662,19	688,69	688,61	708,87					
1995-02-09	18:00:00	643,67	662,30	688,87	688,61	708,76					
1995-02-10	00:00:00	643,78	662,30	688,77	688,55	708,76					
1995-02-10	06:00:00	643,67	662,19	688,55	688,44	708,87					
1995-02-10	12:00:00	643,67	662,30	688,55	688,44	708,87					
1995-02-10	18:00:00	643,59	662,11	688,26	688,12	708,66					
1995-02-11	00:00:00	643,45	662,11	688,12	688,04	708,47					
1995-02-11	06:00:00	643,59	661,98	688,26	688,12	708,66					
1995-02-11	12:00:00	643,45	661,98	688,26	688,04	708,47					
1995-02-11	18:00:00	643,37	661,98	688,26	687,83	708,47					
1995-02-12	00:00:00	643,27	661,98	688,12	687,83	708,36					
1995-02-12	06:00:00	643,16	661,98	688,26	687,75	708,36					
1995-02-12	12:00:00	643,16	661,98	688,04	687,75	708,36					
1995-02-12	18:00:00	643,16	661,98	687,93	687,75	708,31					
1995-02-13	00:00:00	643,16	661,98	687,75	687,75	708,36					
1995-02-13	06:00:00	643,16	661,92	687,93	687,69	708,31					
1995-02-13	12:00:00	643,08	661,92	687,75	687,59	708,23					
1995-02-13	18:00:00	643,08	661,81	687,83	687,59	708,23					
1995-02-14	00:00:00	643,08	661,81	687,75	687,48	708,12					
1995-02-14	06:00:00	643,08	661,81	687,93	687,48	708,23					
1995-02-14	12:00:00	643,02	661,71	687,75	687,18	708,01					
1995-02-14	18:00:00	643,08	661,71	687,83	687,26	708,01					
1995-02-15	00:00:00	643,02	661,49	687,75	686,97	707,69					
1995-02-15	06:00:00	642,92	661,41	687,59	687,08	707,80					
1995-02-15	12:00:00	642,81	661,41	687,59	687,08	707,69					
1995-02-15	18:00:00	642,92	661,41	687,69	686,97	707,69					
1995-02-16	00:00:00	642,92	661,41	687,59	686,89	707,61					
1995-02-16	06:00:00	642,92	661,30	687,59	686,83	707,61					
1995-02-16	12:00:00	642,81	661,30	687,48	686,75	707,91					
1995-02-16	18:00:00	642,73	661,12	687,40	686,75	707,91					
1995-02-17	00:00:00	642,73	661,12	687,26	686,54	707,69					
1995-02-17	06:00:00	642,51	660,98	687,18	686,54	707,61					
1995-02-17	12:00:00	642,51	660,88	686,89	686,54	707,53					
1995-02-17	18:00:00	642,59	660,88	687,08	686,43	707,61					
1995-02-18	00:00:00	642,59	660,98	687,08	686,32	707,69					
1995-02-18	06:00:00	642,59	660,98	687,18	686,43	707,80					
1995-02-18	12:00:00	642,59	660,98	687,08	686,22	707,61					
1995-02-18	18:00:00	642,73	661,06	687,18	686,32	707,91					
1995-02-19	00:00:00	642,92	661,30	687,69	686,54	708,36					
1995-02-19	06:00:00	643,08	661,41	687,93	686,97	708,76					
1995-02-19	12:00:00	643,16	661,81	688,55	687,26	709,22					
1995-02-19	18:00:00	643,16	661,81	689,44	687,59	709,52					
1995-02-20	00:00:00	643,27	661,92	689,68	687,83	709,73					
1995-02-20	06:00:00	643,16	661,98	689,79	688,04	710,03					
1995-02-20	12:00:00	643,37	661,98	690,19	688,69	710,29					
1995-02-20	18:00:00	643,37	661,98	691,05	689,44	711,13					
1995-02-21	00:00:00	643,67	662,11	691,29	690,19	711,80					

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 9				
		P4-1	P4-2	P4-3	P4-4	P4-5	P9-1	P9-2	P9-3	P9-4	P9-5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1995-02-21	06:00:00	643,67	662,19	691,18	690,62	712,42					
1995-02-21	12:00:00	643,78	662,30	691,37	690,73	712,60					
1995-02-21	18:00:00	643,78	662,41	691,37	690,73	712,42					
1995-02-22	00:00:00	643,88	662,41	691,13	690,73	712,20					
1995-02-22	06:00:00	643,88	662,51	691,05	690,62	711,91					
1995-02-22	12:00:00	643,88	662,62	691,05	690,51	711,80					
1995-02-22	18:00:00	643,78	662,51	690,62	690,30	711,56					
1995-02-23	00:00:00	643,88	662,62	690,43	690,19	711,56					
1995-02-23	06:00:00	643,78	662,73	690,35	690,00	711,23					
1995-02-23	12:00:00	643,67	662,51	686,89	689,87	711,13					
1995-02-23	18:00:00	643,78	662,62	687,48	689,79	710,97					
1995-02-24	00:00:00	643,59	662,41	687,40	689,68	710,80					
1995-02-24	06:00:00	643,59	662,41	687,48	689,57	710,80					
1995-02-24	12:00:00	643,59	662,30	687,59	689,44	710,62					
1995-02-24	18:00:00	643,78	662,51	687,75	689,44	710,70					
1995-02-25	00:00:00	643,78	662,51	687,93	689,44	710,80					
1995-02-25	06:00:00	643,78	662,62	688,34	689,44	710,97					
1995-02-25	12:00:00	643,78	662,62	688,44	689,57	711,13					
1995-02-25	18:00:00	643,78	662,51	688,61	689,57	711,05					
1995-02-26	00:00:00	643,78	662,51	688,77	689,68	710,97					
1995-02-26	06:00:00	643,88	662,73	688,98	689,79	711,05					
1995-02-26	12:00:00	643,78	662,73	688,77	689,57	710,97					
1995-02-26	18:00:00	643,67	662,51	688,87	689,57	710,91					
1995-02-27	00:00:00	643,67	662,51	688,77	689,44	710,80					
1995-02-27	06:00:00	643,59	662,41	688,69	689,44	710,91					
1995-02-27	12:00:00	643,67	662,51	688,77	689,44	710,70					
1995-02-27	18:00:00	643,59	662,51	688,55	689,44	710,62					
1995-02-28	00:00:00	643,45	662,41	688,44	689,38	710,40					
1995-02-28	06:00:00	643,78	662,51	688,34	689,44	710,62					
1995-02-28	12:00:00	643,59	662,41	688,12	689,30	710,40					
1995-02-28	18:00:00	643,59	662,41	687,93	689,19	710,29					
1995-03-01	00:00:00	643,45	662,30	687,83	688,98	710,08					
1995-03-01	06:00:00	643,59	662,30	687,93	689,09	710,19					
1995-03-01	12:00:00	643,37	662,11	687,83	688,77	710,08					
1995-03-01	18:00:00	643,37	662,11	687,93	688,69	710,08					
1995-03-02	00:00:00	643,27	662,11	687,75	688,61	710,03					
1995-03-02	06:00:00	643,27	661,98	687,69	688,55	709,92					
1995-03-02	12:00:00	643,08	661,98	687,48	688,26	709,60					
1995-03-02	18:00:00	643,08	661,98	687,69	688,34	709,73					
1995-03-03	00:00:00	643,08	661,98	687,75	688,12	710,08					
1995-03-03	06:00:00	643,02	661,92	687,75	688,12	710,03					
1995-03-03	12:00:00	642,92	661,92	687,69	687,93	709,73					
1995-03-03	18:00:00	642,81	661,71	687,59	687,93	709,73					
1995-03-04	00:00:00	642,81	661,71	687,48	687,83	709,60					
1995-03-04	06:00:00	642,73	661,63	687,26	687,75	709,41					
1995-03-04	12:00:00	642,73	661,49	687,26	687,69	709,41					
1995-03-04	18:00:00	642,73	661,63	687,40	687,69	709,30					
1995-03-05	00:00:00	642,59	661,30	687,18	687,48	709,22					
1995-03-05	06:00:00	642,59	661,41	687,40	687,48	709,41					
1995-03-05	12:00:00	642,73	661,41	687,48	687,40	709,30					
1995-03-05	18:00:00	642,51	661,30	687,40	687,18	709,22					
1995-03-06	00:00:00	642,51	661,20	687,26	687,18	709,17					
1995-03-06	06:00:00	642,41	661,20	687,26	687,08	709,17					
1995-03-06	12:00:00	642,51	661,20	687,40	687,08	709,22					
1995-03-06	18:00:00	642,30	661,12	687,18	686,89	709,09					
1995-03-07	00:00:00	642,30	661,06	687,18	686,83	709,09					
1995-03-07	06:00:00	642,22	660,98	687,08	686,83	708,98					
1995-03-07	12:00:00	642,22	660,98	686,83	686,65	708,87					
1995-03-07	18:00:00	642,16	660,88	686,83	686,65	708,76					
1995-03-08	00:00:00	642,16	660,88	686,75	686,65	708,55					

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 9				
		P4-1	P4-2	P4-3	P4-4	P4-5	P9-1	P9-2	P9-3	P9-4	P9-5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1995-03-08	06:00:00	642,08	660,77	686,89	686,43	708,55					
1995-03-08	12:00:00	641,87	660,66	686,75	686,43	708,47					
1995-03-08	18:00:00	641,76	660,55	686,32	686,43	708,36					
1995-03-09	00:00:00	641,87	660,55	686,32	686,43	709,41					
1995-03-09	06:00:00	641,76	660,45	686,43	686,22	709,22					
1995-03-09	12:00:00	641,65	660,36	686,32	686,22	709,22					
1995-03-09	18:00:00	641,65	659,26	686,22	686,14	707,91					
1995-03-10	00:00:00	642,08	659,69	686,75	686,32	708,31					
1995-03-10	06:00:00	642,30	660,02	687,18	686,75	708,76					
1995-03-10	12:00:00	642,41	660,26	687,75	687,18	709,22					
1995-03-10	18:00:00	642,81	660,45	687,83	687,75	710,03					
1995-03-11	00:00:00	642,81	660,66	688,12	688,26	710,08					
1995-03-11	06:00:00	643,02	660,77	688,55	688,69	710,40					
1995-03-11	12:00:00	643,08	660,88	688,69	688,87	710,70					
1995-03-11	18:00:00	643,16	661,06	688,87	689,09	710,91					
1995-03-12	00:00:00	643,27	661,20	689,19	689,19	711,13					
1995-03-12	06:00:00	643,45	661,41	689,19	689,30	711,34					
1995-03-12	12:00:00	643,37	661,41	688,98	689,38	711,23					
1995-03-12	18:00:00	643,59	661,49	689,19	689,38	711,34					
1995-03-13	00:00:00	643,37	661,49	689,19	689,38	711,23					
1995-03-13	06:00:00	643,37	661,63	689,09	689,38	711,34					
1995-03-13	12:00:00	643,37	661,49	689,19	689,30	711,23					
1995-03-13	18:00:00	643,45	661,71	689,19	689,38	711,34					
1995-03-14	00:00:00	643,45	661,71	689,38	689,38	711,45					
1995-03-14	06:00:00	643,37	661,81	689,44	689,44	711,74					
1995-03-14	12:00:00	643,45	661,71	689,57	689,57	711,80					
1995-03-14	18:00:00	643,45	661,92	689,79	690,00	712,20					
1995-03-15	00:00:00	643,59	661,92	690,00	690,30	712,52					
1995-03-15	06:00:00	643,78	661,98	690,43	690,51	712,85					
1995-03-15	12:00:00	643,94	661,98	690,73	690,83	713,25					
1995-03-15	18:00:00	643,88	662,11	690,73	690,94	713,25					
1995-03-16	00:00:00	643,94	662,11	690,62	690,83	713,17					
1995-03-16	06:00:00	643,94	662,11	690,73	690,94	713,17					
1995-03-16	12:00:00	643,88	662,19	690,62	690,83	713,03					
1995-03-16	18:00:00	644,02	662,19	690,43	690,83	712,95					
1995-03-17	00:00:00	643,88	662,11	690,51	690,62	712,60					
1995-03-17	06:00:00	643,88	662,19	690,35	690,62	712,42					
1995-03-17	12:00:00	643,78	662,11	690,19	690,43	712,42					
1995-03-17	18:00:00	643,78	662,11	690,08	690,43	712,20					
1995-03-18	00:00:00	643,78	662,11	690,00	690,30	711,99					
1995-03-18	06:00:00	643,67	661,98	689,87	690,19	711,91					
1995-03-18	12:00:00	643,67	662,11	689,79	690,08	711,80					
1995-03-18	18:00:00	643,67	662,19	689,79	690,00	711,80					
1995-03-19	00:00:00	643,67	662,11	689,79	689,87	711,80					
1995-03-19	06:00:00	643,67	661,98	689,87	689,79	711,80					
1995-03-19	12:00:00	643,59	661,98	690,19	689,79	711,80					
1995-03-19	18:00:00	643,59	661,98	690,00	689,68	711,80					
1995-03-20	00:00:00	643,37	661,98	689,68	689,57	711,74					
1995-03-20	06:00:00	643,37	661,98	689,68	689,68	711,66					
1995-03-20	12:00:00	643,37	661,98	689,44	689,57	711,74					
1995-03-20	18:00:00	643,37	661,98	689,44	689,44	711,56					
1995-03-21	00:00:00	643,27	661,92	689,44	689,44	711,56					
1995-03-21	06:00:00	643,27	661,98	689,44	689,57	711,66					
1995-03-21	12:00:00	643,27	661,98	689,44	689,44	711,66					
1995-03-21	18:00:00	643,27	661,98	689,44	689,44	711,56					
1995-03-22	00:00:00	643,27	661,92	689,44	689,44	711,56					
1995-03-22	06:00:00	643,27	661,92	689,38	689,38	711,45					
1995-03-22	12:00:00	643,27	661,92	689,30	689,38	711,45					
1995-03-22	18:00:00	643,45	661,98	689,38	689,30	711,45					
1995-03-23	00:00:00	643,37	661,92	689,19	689,09	711,23					

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 9				
		P4-1	P4-2	P4-3	P4-4	P4-5	P9-1	P9-2	P9-3	P9-4	P9-5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1995-03-23	06:00:00	643,16	661,92	689,09	689,09	711,23					
1995-03-23	12:00:00	643,16	661,81	689,09	688,98	711,13					
1995-03-23	18:00:00	643,16	661,92	689,09	688,87	711,05					
1995-03-24	00:00:00	643,27	661,92	688,98	688,77	711,05					
1995-03-24	06:00:00	643,27	661,81	688,98	688,69	711,05					
1995-03-24	12:00:00	643,27	661,92	688,98	688,61	711,05					
1995-03-24	18:00:00	643,27	661,92	688,98	688,55	710,97					
1995-03-25	00:00:00	643,37	661,81	688,98	688,34	710,97					
1995-03-25	06:00:00	643,37	661,81	688,87	688,26	710,97					
1995-03-25	12:00:00	643,37	661,71	688,77	688,26	710,91					
1995-03-25	18:00:00	643,27	661,71	688,87	688,04	710,91					
1995-03-26	00:00:00	643,27	661,63	688,98	688,04	710,80					
1995-03-26	06:00:00	643,16	661,49	688,87	687,83	710,70					
1995-03-26	12:00:00	643,16	661,49	688,87	687,75	710,80					
1995-03-26	18:00:00	643,16	661,49	688,61	687,75	710,62					
1995-03-27	00:00:00	643,08	661,49	689,30	687,75	710,70					
1995-03-27	06:00:00	643,08	661,41	689,30	687,75	710,62					
1995-03-27	12:00:00	643,08	661,30	689,09	687,69	710,62					
1995-03-27	18:00:00	643,08	661,41	688,98	687,69	710,40					
1995-03-28	00:00:00	643,08	661,30	688,87	687,48	710,40					
1995-03-28	06:00:00	643,08	661,30	688,69	687,48	710,62					
1995-03-28	12:00:00	643,08	661,30	688,61	687,40	710,40					
1995-03-28	18:00:00	643,08	661,20	688,61	687,40	710,40					
1995-03-29	00:00:00	643,08	661,20	688,61	687,26	710,40					
1995-03-29	06:00:00	643,02	661,20	688,61	687,26	710,40					
1995-03-29	12:00:00	642,92	661,12	688,44	687,08	710,29					
1995-03-29	18:00:00	643,02	661,12	688,69	687,08	710,48					
1995-03-30	00:00:00	643,08	661,30	688,69	687,08	710,48					
1995-03-30	06:00:00	643,08	661,30	688,55	687,18	710,70					
1995-03-30	12:00:00	643,08	661,41	688,61	687,18	710,80					
1995-03-30	18:00:00	643,08	661,41	688,61	687,26	710,91					
1995-03-31	00:00:00	643,08	661,41	688,55	687,18	710,97					
1995-03-31	06:00:00	643,16	661,41	688,44	687,26	711,13					
1995-03-31	12:00:00	643,08	661,49	688,55	687,26	711,23					
1995-03-31	18:00:00	643,16	661,63	688,69	687,48	711,45					
1995-04-01	00:00:00	643,16	661,71	688,77	687,48	711,45					
1995-04-01	06:00:00	643,16	661,81	688,98	687,75	711,66					
1995-04-01	12:00:00	643,16	661,81	689,19	687,75	711,80					
1995-04-01	18:00:00	643,27	661,98	689,38	687,93	711,80					
1995-04-02	00:00:00	643,27	661,98	689,44	688,04	711,80					
1995-04-02	06:00:00	643,37	661,98	689,38	688,26	711,99					
1995-04-02	12:00:00	643,37	661,98	689,44	688,34	711,91					
1995-04-02	18:00:00	643,45	661,98	689,44	688,34	712,09					
1995-04-03	00:00:00	643,45	661,98	689,57	688,44	712,09					
1995-04-03	06:00:00	643,37	661,98	689,57	688,55	712,09					
1995-04-03	12:00:00	643,37	661,98	689,57	688,44	712,09					
1995-04-03	18:00:00	643,45	662,11	689,57	688,61	712,09					
1995-04-04	00:00:00	643,45	662,11	689,57	688,61	712,09					
1995-04-04	06:00:00	643,45	662,11	689,68	688,69	712,09					
1995-04-04	12:00:00	643,45	662,11	689,68	688,77	712,20					
1995-04-04	18:00:00	643,59	662,19	689,87	688,69	712,20					
1995-04-05	00:00:00	643,67	662,30	689,79	688,87	712,20					
1995-04-05	06:00:00	643,59	662,19	689,87	688,87	712,31					
1995-04-05	12:00:00	643,67	662,19	689,87	688,98	712,31					
1995-04-05	18:00:00	643,59	662,30	689,87	688,98	712,31					
1995-04-06	00:00:00	643,59	662,30	689,87	688,98	712,31					
1995-04-06	06:00:00	643,59	662,19	689,87	689,09	712,20					
1995-04-06	12:00:00	643,59	662,19	690,00	689,09	712,20					
1995-04-06	18:00:00	643,45	662,19	690,19	689,09	712,09					
1995-04-07	00:00:00	643,45	662,19	690,08	689,19	712,20					

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 9				
		P4-1	P4-2	P4-3	P4-4	P4-5	P9-1	P9-2	P9-3	P9-4	P9-5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1995-04-07	06:00:00	643,45	662,19	690,00	689,09	712,09					
1995-04-07	12:00:00	643,59	662,19	690,00	689,19	712,20					
1995-04-07	18:00:00	643,67	662,30	690,30	689,19	712,20					
1995-04-08	00:00:00	643,78	662,41	690,00	689,44	712,42					
1995-04-08	06:00:00	643,78	662,51	690,43	689,44	712,74					
1995-04-08	12:00:00	643,88	662,62	690,35	689,57	712,95					
1995-04-08	18:00:00	643,94	662,73	690,08	689,87	713,17					
1995-04-09	00:00:00	644,02	662,73	690,35	690,00	713,36					
1995-04-09	06:00:00	644,02	662,81	690,35	690,08	713,36					
1995-04-09	12:00:00	644,10	662,86	690,43	690,19	713,46					
1995-04-09	18:00:00	644,10	662,86	690,35	690,08	713,25					
1995-04-10	00:00:00	644,10	662,86	690,43	690,00	713,17					
1995-04-10	06:00:00	643,94	662,94	690,51	689,87	713,17					
1995-04-10	12:00:00	643,94	662,86	690,51	689,87	713,03					
1995-04-10	18:00:00	643,94	662,81	690,51	689,79	712,95					
1995-04-11	00:00:00	644,02	662,86	690,30	689,68	712,95					
1995-04-11	06:00:00	644,02	662,86	690,19	689,68	712,85					
1995-04-11	12:00:00	644,02	662,94	689,87	689,68	712,74					
1995-04-11	18:00:00	644,10	662,86	689,68	689,44	712,74					
1995-04-12	00:00:00	644,10	662,81	689,68	689,44	712,66					
1995-04-12	06:00:00	644,02	662,81	689,44	689,44	712,52					
1995-04-12	12:00:00	643,94	662,81	689,44	689,44	712,42					
1995-04-12	18:00:00	643,94	662,62	689,38	689,44	712,31					
1995-04-13	00:00:00	643,88	662,62	689,38	689,38	712,09					
1995-04-13	06:00:00	643,78	662,62	689,44	689,38	711,99					
1995-04-13	12:00:00	643,78	662,51	689,19	689,19	711,80					
1995-04-13	18:00:00	643,94	662,62	688,98	689,19	711,80					
1995-04-14	00:00:00	643,88	662,51	688,77	689,09	711,80					
1995-04-14	06:00:00	644,02	662,51	688,87	688,98	711,91					
1995-04-14	12:00:00	643,78	662,73	688,98	688,98	711,91					
1995-04-14	18:00:00	643,67	662,62	689,19	688,87	711,80					
1995-04-15	00:00:00	643,67	662,41	689,09	688,69	711,74					
1995-04-15	06:00:00	643,78	662,51	689,19	688,77	711,74					
1995-04-15	12:00:00	643,67	662,51	688,98	688,61	711,66					
1995-04-15	18:00:00	643,67	662,51	689,19	688,61	711,66					
1995-04-16	00:00:00	643,67	662,41	689,09	688,55	711,56					
1995-04-16	06:00:00	643,67	662,30	688,98	688,55	711,56					
1995-04-16	12:00:00	643,59	662,30	689,09	688,44	711,45					
1995-04-16	18:00:00	643,59	662,30	689,30	688,44	711,45					
1995-04-17	00:00:00	643,37	662,19	689,19	688,26	711,23					
1995-04-17	06:00:00	643,37	661,98	688,77	688,12	711,23					
1995-04-17	12:00:00	643,37	662,11	688,87	688,26	711,23					
1995-04-17	18:00:00	643,37	662,11	688,98	688,12	711,23					
1995-04-18	00:00:00	643,45	662,11	689,19	688,12	711,23					
1995-04-18	06:00:00	643,59	662,19	689,44	688,12	711,45					
1995-04-18	12:00:00	643,37	662,11	689,44	688,04	711,34					
1995-04-18	18:00:00	643,45	662,11	689,38	687,93	711,23					
1995-04-19	00:00:00	643,59	662,19	689,44	687,93	711,23					
1995-04-19	06:00:00	643,45	662,11	689,38	687,93	711,13					
1995-04-19	12:00:00	643,45	661,98	689,30	687,83	711,05					
1995-04-19	18:00:00	643,37	662,11	689,30	687,83	711,05					
1995-04-20	00:00:00	643,37	661,98	689,09	687,75	710,97					
1995-04-20	06:00:00	643,27	661,98	689,19	687,83	710,97					
1995-04-20	12:00:00	643,37	661,98	689,09	687,75	710,97					
1995-04-20	18:00:00	643,37	662,11	689,19	687,75	710,97					
1995-04-21	00:00:00	643,67	662,19	689,30	687,75	711,05					
1995-04-21	06:00:00	643,45	661,98	689,19	687,69	711,05					
1995-04-21	12:00:00	643,45	662,11	689,19	687,69	710,97					
1995-04-21	18:00:00	643,45	661,98	689,38	687,69	710,97					
1995-04-22	00:00:00	643,59	661,98	689,09	687,59	711,13					

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 9				
		P4-1	P4-2	P4-3	P4-4	P4-5	P9-1	P9-2	P9-3	P9-4	P9-5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1995-04-22	06:00:00	643,45	661,98	687,93	687,59	711,13					
1995-04-22	12:00:00	643,45	662,11	688,26	687,69	711,23					
1995-04-22	18:00:00	643,59	662,19	688,44	687,69	711,23					
1995-04-23	00:00:00	643,59	662,11	688,55	687,69	711,23					
1995-04-23	06:00:00	643,59	662,11	688,55	687,59	711,23					
1995-04-23	12:00:00	643,45	662,11	688,61	687,75	711,23					
1995-04-23	18:00:00	643,59	662,19	688,69	687,69	711,45					
1995-04-24	00:00:00	643,59	662,30	688,87	687,75	711,56					
1995-04-24	06:00:00	643,59	662,30	688,98	687,75	711,56					
1995-04-24	12:00:00	643,59	662,41	689,19	687,93	711,66					
1995-04-24	18:00:00	643,59	662,30	689,19	688,04	711,74					
1995-04-25	00:00:00	643,67	662,51	689,38	688,26	711,80					
1995-04-25	06:00:00	643,78	662,62	689,44	688,55	711,99					
1995-04-25	12:00:00	643,67	662,73	689,44	688,77	711,99					
1995-04-25	18:00:00	643,78	662,81	689,44	688,98	712,09					
1995-04-26	00:00:00	643,88	662,81	689,68	689,09	712,20					
1995-04-26	06:00:00	643,78	662,86	689,79	689,30	712,31					
1995-04-26	12:00:00	643,78	662,94	689,79	689,38	712,42					
1995-04-26	18:00:00	643,94	662,94	690,00	689,44	712,52					
1995-04-27	00:00:00	643,94	663,05	689,87	689,44	712,60					
1995-04-27	06:00:00	643,94	663,16	690,08	689,57	712,60					
1995-04-27	12:00:00	644,02	663,37	690,00	689,87	712,74					
1995-04-27	18:00:00	644,10	663,24	690,08	689,79	712,74					
1995-04-28	00:00:00	644,10	663,24	690,43	689,87	712,95					
1995-04-28	06:00:00	644,20	663,45	690,30	690,08	712,85					
1995-04-28	12:00:00	644,10	663,45	690,35	690,19	712,85					
1995-04-28	18:00:00	644,20	663,45	690,73	690,30	713,03					
1995-04-29	00:00:00	644,20	663,45	690,83	690,35	713,03					
1995-04-29	06:00:00	644,20	663,56	691,05	690,35	713,17					
1995-04-29	12:00:00	644,10	663,56	690,73	690,43	713,03					
1995-04-29	18:00:00	644,42	664,53	691,13	690,62	712,66					
1995-04-30	00:00:00	644,31	664,23	690,83	690,51	712,42					
1995-04-30	06:00:00	644,31	664,10	690,73	690,62	712,20					
1995-04-30	12:00:00	644,42	664,23	690,62	690,62	712,09					
1995-04-30	18:00:00	644,42	664,02	691,05	690,73	712,09					
1995-05-01	00:00:00	644,42	664,02	690,35	690,73	711,99					
1995-05-01	06:00:00	644,31	664,02	690,43	690,83	712,09					
1995-05-01	12:00:00	644,31	664,02	690,62	690,83	711,99					
1995-05-01	18:00:00	644,42	663,91	690,73	690,83	711,99					
1995-05-02	00:00:00	644,42	663,80	690,73	690,73	711,91					
1995-05-02	06:00:00	644,31	663,80	690,73	690,83	711,99					
1995-05-02	12:00:00	644,42	663,80	690,94	690,73	711,91					
1995-05-02	18:00:00	644,53	663,91	691,05	690,83	711,99					
1995-05-03	00:00:00	644,53	663,80	690,94	690,73	711,99					
1995-05-03	06:00:00	644,42	663,80	690,94	690,62	711,91					
1995-05-03	12:00:00	644,42	663,80	690,83	690,62	711,80					
1995-05-03	18:00:00	644,42	663,91	690,51	690,62	711,91					
1995-05-04	00:00:00	644,53	663,80	690,62	690,62	711,91					
1995-05-04	06:00:00	644,42	663,80	690,62	690,62	711,80					
1995-05-04	12:00:00	644,42	663,80	690,62	690,51	711,80					
1995-05-04	18:00:00	644,42	663,72	690,62	690,43	711,80					
1995-05-05	00:00:00	644,42	663,72	690,35	690,43	711,80					
1995-05-05	06:00:00	644,42	663,72	690,43	690,43	711,80					
1995-05-05	12:00:00	644,31	663,72	690,43	690,43	711,74					
1995-05-05	18:00:00	644,42	663,80	689,87	690,43	711,80					
1995-05-06	00:00:00	644,42	663,72	689,68	690,35	711,80					
1995-05-06	06:00:00	644,31	663,72	690,00	690,30	711,66					
1995-05-06	12:00:00	644,31	663,72	689,79	690,30	711,74					
1995-05-06	18:00:00	644,31	663,72	690,00	690,19	711,66					
1995-05-07	00:00:00	644,31	663,67	690,00	690,19	711,66					

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 9				
		P4-1	P4-2	P4-3	P4-4	P4-5	P9-1	P9-2	P9-3	P9-4	P9-5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1995-10-04	06:00:00	638,73	649,52	678,59	675,56	695,48	479,80	423,18	468,23	428,11	425,35
1995-10-04	12:00:00	638,78	649,41	678,59	675,45	695,48	479,80	423,05	468,23	428,05	425,53
1995-10-04	18:00:00	638,78	649,41	678,70	675,45	695,48	479,80	423,29	468,12	428,11	425,69
1995-10-05	00:00:00	638,78	649,41	678,59	675,45	695,42	479,80	423,22	468,46	427,94	425,78
1995-10-05	06:00:00	638,73	649,30	678,32	675,45	695,48	479,80	423,26	468,52	427,58	425,82
1995-10-05	12:00:00	638,73	649,30	678,40	675,45	695,42	479,80	423,61	468,19	427,75	426,40
1995-10-05	18:00:00	638,65	649,22	678,32	675,45	695,42	479,80	423,58	468,35	428,48	426,54
1995-10-06	00:00:00	638,73	649,22	678,32	675,34	695,42	479,80	423,53	468,12	427,58	426,29
1995-10-06	06:00:00	638,73	649,22	678,32	675,56	695,42	479,78	423,78	468,35	428,05	426,20
1995-10-06	12:00:00	638,73	649,22	678,40	675,45	695,42	479,66	423,78	468,61	428,35	426,51
1995-10-06	18:00:00	638,78	649,14	678,27	675,56	695,42	479,80	423,80	468,19	427,67	426,15
1995-10-07	00:00:00	638,73	649,09	678,16	675,34	695,32	479,80	423,80	468,27	428,22	426,22
1995-10-07	06:00:00	638,78	649,14	678,27	675,45	695,42	479,78	423,97	468,12	428,05	426,51
1995-10-07	12:00:00	638,73	649,09	678,27	675,45	695,32	479,70	423,66	468,35	428,01	426,42
1995-10-07	18:00:00	638,78	649,09	678,32	675,45	695,21	479,66	423,58	468,32	427,53	426,05
1995-10-08	00:00:00	638,73	649,09	678,32	675,45	695,32	479,80	423,69	468,32	428,17	426,22
1995-10-08	06:00:00	638,78	649,09	678,32	675,56	695,32	479,75	423,61	468,52	428,09	426,20
1995-10-08	12:00:00	638,78	649,14	678,40	675,56	695,32	479,64	423,91	468,61	428,01	426,40
1995-10-08	18:00:00	638,73	649,14	678,40	675,56	695,32	479,62	423,83	468,01	427,84	426,64
1995-10-09	00:00:00	638,78	649,22	678,32	675,45	695,21	479,80	424,97	468,01	428,48	430,86
1995-10-09	06:00:00	638,78	649,30	678,40	675,45	695,21	479,78	426,94	468,44	429,29	433,63
1995-10-09	12:00:00	638,78	649,30	678,32	675,45	695,21	479,66	429,31	468,40	430,63	436,50
1995-10-09	18:00:00	638,78	649,41	678,32	675,56	695,32	479,78	431,83	468,49	433,58	442,56
1995-10-10	00:00:00	638,97	649,98	678,32	675,56	695,32	479,78	449,57	469,16	448,72	494,53
1995-10-10	06:00:00	639,37	652,85	678,48	675,64	695,48	479,90	471,69	470,06	474,31	502,53
1995-10-10	12:00:00	639,94	657,14	678,91	675,69	695,75	480,00	480,51	469,97	483,91	506,98
1995-10-10	18:00:00	640,58	660,02	679,26	675,69	696,31	480,37	482,33	470,27	485,60	506,25
1995-10-11	00:00:00	641,09	660,26	679,88	675,69	696,74	480,63	483,43	470,45	487,35	507,79
1995-10-11	06:00:00	641,33	660,77	680,42	675,85	697,28	480,96	484,09	471,09	488,74	507,27
1995-10-11	12:00:00	641,55	661,30	680,87	676,15	697,79	481,34	483,62	471,78	487,78	505,39
1995-10-11	18:00:00	641,98	661,81	681,38	676,55	698,14	481,77	482,56	471,82	486,80	503,52
1995-10-12	00:00:00	642,30	661,98	681,73	676,69	698,65	481,99	481,18	473,18	485,24	501,22
1995-10-12	06:00:00	642,59	662,30	681,92	677,12	699,07	482,49	479,50	473,95	483,93	498,48
1995-10-12	12:00:00	642,92	662,62	682,59	677,46	699,61	482,85	477,79	474,20	481,43	496,83
1995-10-12	18:00:00	643,08	663,05	683,00	677,65	699,74	482,77	476,19	474,64	479,80	495,55
1995-10-13	00:00:00	643,08	663,24	683,56	677,97	699,96	483,43	474,31	475,66	478,43	494,79
1995-10-13	06:00:00	643,08	663,45	683,96	678,16	700,28	483,87	475,21	476,35	479,90	501,62
1995-10-13	12:00:00	643,37	663,72	684,31	678,40	700,79	484,09	489,32	477,45	493,03	521,33
1995-10-13	18:00:00	643,78	663,91	685,03	678,81	701,46	484,74	491,88	478,24	495,69	521,46
1995-10-14	00:00:00	644,31	664,31	686,03	679,16	702,62	485,03	492,27	479,15	496,49	521,25
1995-10-14	06:00:00	644,63	664,66	686,89	679,88	703,42	485,69	492,77	479,57	496,66	521,62
1995-10-14	12:00:00	644,72	664,74	687,48	680,87	704,60	485,99	493,05	481,23	497,61	521,71
1995-10-14	18:00:00	644,77	665,28	689,19	681,73	705,65	486,76	493,74	481,13	498,88	521,36
1995-10-15	00:00:00	644,88	665,41	689,44	682,43	706,64	486,86	493,71	482,16	498,10	521,36
1995-10-15	06:00:00	644,98	665,41	689,44	682,70	707,18	487,44	493,55	482,56	499,09	521,20
1995-10-15	12:00:00	644,98	665,41	689,87	683,13	707,80	487,95	493,60	482,89	498,64	520,89
1995-10-15	18:00:00	645,09	665,17	689,79	683,32	708,12	488,17	493,41	483,49	498,51	520,39
1995-10-16	00:00:00	645,17	665,41	690,30	683,56	708,47	488,64	494,22	483,59	499,04	521,54
1995-10-16	06:00:00	645,31	665,52	691,05	684,07	709,09	489,26	494,56	484,96	499,21	521,36
1995-10-16	12:00:00	645,31	665,73	691,18	684,31	709,60	489,42	494,36	484,69	499,72	521,22
1995-10-16	18:00:00	645,39	665,95	691,37	684,50	710,03	490,01	494,06	484,79	499,37	521,03
1995-10-17	00:00:00	645,39	666,03	691,29	684,82	710,08	490,53	494,40	485,60	499,63	520,85
1995-10-17	06:00:00	645,39	665,95	691,48	684,82	710,19	490,79	494,40	485,99	499,57	520,89
1995-10-17	12:00:00	645,49	666,03	692,04	685,25	710,70	491,00	494,76	486,76	500,42	521,16
1995-10-17	18:00:00	645,49	666,14	692,42	685,54	710,97	491,40	494,49	486,49	499,91	521,01
1995-10-18	00:00:00	645,60	666,24	691,18	685,87	711,13	491,74	494,45	486,68	499,72	520,47
1995-10-18	06:00:00	645,60	665,82	691,48	685,87	711,23	492,31	494,14	487,40	500,42	520,13
1995-10-18	12:00:00	645,60	666,14	691,37	685,97	711,34	492,34	493,41	487,37	499,04	518,68
1995-10-18	18:00:00	645,60	666,24	691,80	685,97	711,23	492,81	491,58	487,99	497,28	515,73
1995-10-19	00:00:00	645,60	666,30	691,37	685,97	711,13	493,16	489,71	488,22	495,55	512,55

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 9				
		P4-1	P4-2	P4-3	P4-4	P4-5	P9-1	P9-2	P9-3	P9-4	P9-5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1995-10-19	06:00:00	645,49	666,14	691,48	685,76	711,05	493,16	488,05	487,65	493,11	509,64
1995-10-19	12:00:00	645,60	666,14	691,29	685,76	710,80	493,45	485,90	487,86	491,06	507,29
1995-10-19	18:00:00	645,49	666,03	692,04	685,68	710,62	493,55	484,22	487,52	489,02	505,41
1995-10-20	00:00:00	645,39	665,95	691,91	685,36	710,48	493,71	482,81	487,74	488,02	504,44
1995-10-20	06:00:00	645,39	665,95	691,59	685,25	710,40	493,55	482,77	487,71	488,57	506,50
1995-10-20	12:00:00	645,31	665,82	691,29	685,17	710,40	493,71	484,65	487,99	489,81	508,50
1995-10-20	18:00:00	645,39	665,82	691,18	685,12	710,29	493,77	484,56	488,24	489,97	507,67
1995-10-21	00:00:00	645,60	665,95	691,13	685,03	710,19	493,91	486,57	487,60	491,95	512,61
1995-10-21	06:00:00	645,31	665,82	691,05	684,93	710,08	494,24	491,62	487,57	497,17	519,53
1995-10-21	12:00:00	645,31	666,03	691,13	684,71	710,08	494,24	492,31	488,26	497,66	518,58
1995-10-21	18:00:00	645,39	666,03	691,18	684,71	710,08	494,28	491,11	488,40	496,29	514,98
1995-10-22	00:00:00	645,31	666,03	691,18	684,61	710,08	494,42	488,78	487,99	494,19	511,27
1995-10-22	06:00:00	645,17	665,82	691,13	684,61	710,08	494,42	487,23	488,40	492,27	508,91
1995-10-22	12:00:00	645,17	665,82	690,94	684,50	710,03	494,56	485,55	487,88	490,79	507,06
1995-10-22	18:00:00	645,17	665,73	691,18	684,50	710,03	494,53	484,45	488,68	489,71	505,64
1995-10-23	00:00:00	644,98	665,63	691,13	684,42	709,92	494,58	483,54	488,17	487,91	504,67
1995-10-23	06:00:00	644,98	665,52	691,05	684,42	709,92	494,58	482,64	488,05	487,23	503,98
1995-10-23	12:00:00	644,88	665,52	691,13	684,31	709,81	494,49	482,03	488,24	486,07	504,75
1995-10-23	18:00:00	644,88	665,52	691,05	684,31	709,81	494,62	488,64	488,57	493,07	516,99
1995-10-24	00:00:00	644,98	665,52	690,83	684,31	709,81	494,79	492,31	488,40	496,66	519,23
1995-10-24	06:00:00	644,88	665,41	691,05	684,31	709,81	494,76	491,78	488,60	496,59	516,35
1995-10-24	12:00:00	644,77	665,41	690,94	684,31	709,73	494,97	490,45	489,09	494,74	512,97
1995-10-24	18:00:00	644,88	665,41	691,05	684,31	709,81	494,93	488,30	488,38	492,87	510,84
1995-10-25	00:00:00	644,98	665,41	691,05	684,31	709,60	494,93	487,37	488,52	492,02	509,12
1995-10-25	06:00:00	644,88	665,36	690,83	684,31	709,52	495,17	486,54	488,64	490,98	508,22
1995-10-25	12:00:00	644,77	665,36	690,94	684,31	709,73	495,13	490,57	488,98	494,53	521,36
1995-10-25	18:00:00	644,88	665,41	691,29	684,71	710,08	495,11	496,46	488,98	501,93	525,37
1995-10-26	00:00:00	644,98	665,52	691,59	685,36	710,48	495,39	497,17	489,58	502,35	524,99
1995-10-26	06:00:00	645,17	665,73	691,99	685,97	711,05	495,59	497,66	489,97	502,33	524,55
1995-10-26	12:00:00	645,39	665,82	692,23	686,03	711,23	495,89	497,11	489,84	502,69	524,21
1995-10-26	18:00:00	645,49	665,95	692,55	686,14	711,23	495,89	497,45	490,62	502,78	524,15
1995-10-27	00:00:00	645,49	665,95	692,74	686,14	711,23	496,07	496,64	490,45	501,65	523,59
1995-10-27	06:00:00	645,60	666,03	692,74	686,14	711,23	496,29	495,44	490,40	500,75	521,12
1995-10-27	12:00:00	645,49	665,95	692,42	686,14	711,13	496,39	494,19	490,79	498,94	518,54
1995-10-27	18:00:00	645,60	666,14	692,12	686,22	711,13	496,66	492,00	490,79	496,97	515,52
1995-10-28	00:00:00	645,60	666,14	692,55	686,14	711,05	496,20	490,29	490,79	495,59	512,92
1995-10-28	06:00:00	645,49	665,95	692,55	686,03	710,97	496,29	488,26	490,79	493,49	510,72
1995-10-28	12:00:00	645,49	665,95	692,34	686,03	710,91	496,29	487,14	490,93	491,78	509,17
1995-10-28	18:00:00	645,49	665,82	692,34	686,03	710,62	496,13	485,69	490,73	490,35	507,50
1995-10-29	00:00:00	645,60	665,95	692,34	685,97	710,62	496,29	484,94	490,18	489,92	506,68
1995-10-29	06:00:00	645,49	665,82	692,04	685,76	710,48	496,29	483,91	490,62	488,47	506,13
1995-10-29	12:00:00	645,49	665,82	691,69	685,76	710,29	496,20	482,81	490,05	487,30	505,27
1995-10-29	18:00:00	645,39	665,73	691,99	685,68	710,29	495,85	482,05	489,42	485,99	504,97
1995-10-30	00:00:00	645,39	665,82	691,99	685,46	710,08	495,96	480,92	489,71	484,82	504,62
1995-10-30	06:00:00	645,31	665,63	691,69	685,25	710,08	495,77	480,20	488,95	484,28	503,94
1995-10-30	12:00:00	645,31	665,63	691,48	685,25	710,08	495,79	479,78	489,19	483,93	503,38
1995-10-30	18:00:00	645,17	665,41	691,69	685,12	709,92	495,51	478,98	489,55	483,19	502,78
1995-10-31	00:00:00	645,17	665,41	691,48	685,12	709,81	495,44	478,55	488,86	482,33	501,52
1995-10-31	06:00:00	645,17	665,41	691,18	684,93	709,73	495,13	477,99	489,02	481,99	500,42
1995-10-31	12:00:00	645,09	665,36	691,48	684,82	709,60	495,05	477,06	488,60	480,68	498,99
1995-10-31	18:00:00	644,98	665,28	691,37	684,71	709,41	494,79	476,58	488,05	480,14	498,00
1995-11-01	00:00:00	644,88	665,17	691,18	684,61	709,41	494,86	476,32	488,43	480,58	497,17
1995-11-01	06:00:00	644,77	664,95	690,94	684,42	709,22	494,91	476,19	488,02	479,47	496,72
1995-11-01	12:00:00	644,77	664,95	690,73	684,42	709,22	494,49	475,87	487,95	479,80	496,46
1995-11-01	18:00:00	644,77	664,66	690,73	684,31	709,09	494,45	475,46	487,23	479,15	495,48
1995-11-02	00:00:00	644,77	664,53	690,83	684,18	709,09	494,19	475,39	487,23	478,78	494,76
1995-11-02	06:00:00	644,77	664,53	690,43	684,18	708,87	494,08	474,74	487,78	478,37	493,94
1995-11-02	12:00:00	644,77	664,53	690,83	684,18	708,76	494,06	474,14	486,86	478,30	493,55
1995-11-02	18:00:00	644,77	664,42	691,37	684,07	708,76	493,77	473,91	487,02	477,61	492,60
1995-11-03	00:00:00	644,77	664,23	690,73	683,85	708,55	493,55	473,46	487,02	477,06	492,04

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 3				
		P4-1	P4-2	P4-3	P4-4	P4-5	P3-1	P3-2	P3-3	P3-4	P3-5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1995-11-03	06:00:00	644,63	664,10	690,51	683,75	708,55	493,55	473,36	486,66	477,28	491,36
1995-11-03	12:00:00	644,53	664,02	690,35	683,64	708,36	493,41	472,94	486,16	476,19	490,43
1995-11-03	18:00:00	644,53	664,02	690,43	683,64	708,36	493,41	472,26	486,72	475,53	489,63
1995-11-04	00:00:00	644,31	663,91	690,35	683,56	708,31	493,03	472,09	485,85	475,98	489,24
1995-11-04	06:00:00	644,20	663,72	690,30	683,48	708,12	493,11	471,69	485,94	475,69	488,95
1995-11-04	12:00:00	644,10	663,72	690,08	683,42	708,12	492,77	471,82	486,04	475,35	488,38
1995-11-04	18:00:00	644,10	663,72	690,00	683,42	708,01	493,07	471,54	485,97	474,74	487,49
1995-11-05	00:00:00	644,10	663,67	689,87	683,32	707,91	492,43	471,40	485,30	475,08	487,49
1995-11-05	06:00:00	644,10	663,67	690,00	683,32	708,01	492,68	471,40	485,55	475,13	487,49
1995-11-05	12:00:00	643,88	663,56	689,68	683,13	707,80	492,47	471,38	485,00	474,37	487,86
1995-11-05	18:00:00	643,94	663,56	689,79	683,00	707,69	492,16	471,29	485,30	475,13	488,05
1995-11-06	00:00:00	643,94	663,45	689,87	682,91	707,69	492,22	471,23	485,16	475,04	487,69
1995-11-06	06:00:00	643,88	663,56	689,79	682,91	707,69	492,31	471,23	485,30	475,29	487,57
1995-11-06	12:00:00	643,88	663,45	689,79	682,91	707,53	491,91	471,26	484,79	475,13	487,82
1995-11-06	18:00:00	643,88	663,45	689,57	682,91	707,53	492,00	471,56	485,30	474,78	487,74
1995-11-07	00:00:00	643,78	663,37	689,44	682,70	707,48	491,58	470,96	485,00	474,90	486,80
1995-11-07	06:00:00	643,67	663,24	689,44	682,70	707,48	491,48	470,62	484,26	473,67	486,68
1995-11-07	12:00:00	643,59	663,16	689,44	682,59	707,26	491,67	470,57	484,62	474,20	486,04
1995-11-07	18:00:00	643,67	663,16	689,44	682,59	707,48	491,67	470,40	484,77	473,81	486,37
1995-11-08	00:00:00	643,88	663,37	689,68	682,81	707,80	491,82	489,51	485,73	493,68	521,50
1995-11-08	06:00:00	644,31	663,80	691,18	684,18	709,17	492,22	494,70	486,07	498,77	524,12
1995-11-08	12:00:00	644,72	664,42	692,74	685,97	710,70	492,85	495,79	486,46	500,25	524,94
1995-11-08	18:00:00	644,98	664,74	693,30	686,75	711,74	493,05	496,89	486,89	501,26	525,33
1995-11-09	00:00:00	645,17	665,17	693,62	686,89	711,91	493,29	496,59	487,14	501,42	525,35
1995-11-09	06:00:00	645,39	665,28	693,52	686,97	711,99	493,53	497,19	487,82	501,52	525,10
1995-11-09	12:00:00	645,39	665,36	693,71	686,89	711,80	493,55	496,99	487,82	501,42	524,18
1995-11-09	18:00:00	645,39	665,41	693,41	686,75	711,74	494,02	495,77	488,78	501,28	522,76
1995-11-10	00:00:00	645,60	665,41	693,30	686,83	711,66	494,02	494,42	488,55	499,02	519,87
1995-11-10	06:00:00	645,60	665,52	693,20	686,75	711,45	494,22	492,77	489,46	497,24	517,04
1995-11-10	12:00:00	645,65	665,52	693,09	686,65	711,23	494,14	490,79	489,09	496,11	514,46
1995-11-10	18:00:00	645,49	665,52	692,42	686,43	710,97	494,49	489,09	489,15	494,58	512,72
1995-11-11	00:00:00	645,60	665,41	692,63	686,22	710,97	494,49	489,40	488,89	493,68	514,98
1995-11-11	06:00:00	645,49	665,41	692,74	686,14	710,91	494,82	497,06	489,97	501,60	527,00
1995-11-11	12:00:00	645,74	665,52	692,74	686,22	710,97	494,74	498,48	490,15	503,52	527,57
1995-11-11	18:00:00	645,74	665,63	692,90	686,22	711,13	495,11	499,04	490,01	504,03	527,60
1995-11-12	00:00:00	645,82	665,73	692,90	686,43	711,34	495,44	499,30	490,62	504,54	527,64
1995-11-12	06:00:00	645,92	665,73	693,01	686,43	711,45	495,62	499,04	490,62	504,75	527,35
1995-11-12	12:00:00	645,92	665,73	693,84	686,54	711,66	495,48	499,17	490,93	503,98	526,53
1995-11-12	18:00:00	645,92	665,73	693,41	686,43	711,66	495,79	498,02	490,69	503,67	525,46
1995-11-13	00:00:00	645,82	665,73	693,20	686,43	711,56	496,02	498,05	490,89	502,91	524,68
1995-11-13	06:00:00	645,74	665,73	693,41	686,54	711,56	496,29	498,86	491,74	503,75	526,96
1995-11-13	12:00:00	645,82	665,73	693,20	686,54	711,45	496,35	499,04	491,44	504,01	526,79
1995-11-13	18:00:00	645,82	665,63	693,09	686,43	711,66	496,29	499,09	491,88	504,38	526,83
1995-11-14	00:00:00	645,92	665,95	693,41	686,83	711,80	496,52	500,11	492,04	504,87	528,12
1995-11-14	06:00:00	646,03	666,03	693,95	687,08	712,09	496,81	500,06	492,18	504,93	528,12
1995-11-14	12:00:00	646,03	666,03	693,71	687,26	712,42	497,06	500,02	492,31	506,07	528,06
1995-11-14	18:00:00	646,14	666,03	693,84	687,26	712,60	497,19	499,97	492,47	505,22	528,54
1995-11-15	00:00:00	646,14	666,03	693,71	687,26	712,42	497,28	499,91	492,27	505,91	527,23
1995-11-15	06:00:00	646,03	665,95	693,95	687,26	712,52	497,37	499,23	492,81	504,84	526,70
1995-11-15	12:00:00	646,14	665,95	693,76	687,40	712,52	497,37	499,47	492,98	505,24	527,85
1995-11-15	18:00:00	646,25	666,14	693,76	687,40	712,52	497,66	499,97	493,38	505,24	527,90
1995-11-16	00:00:00	646,35	666,14	693,95	687,48	712,60	497,79	499,81	492,43	505,47	527,99
1995-11-16	06:00:00	646,25	666,14	693,95	687,40	712,60	498,00	500,06	493,16	505,61	527,21
1995-11-16	12:00:00	646,35	666,24	693,95	687,40	712,60	498,14	499,17	492,51	505,01	526,43
1995-11-16	18:00:00	646,25	666,14	693,71	686,97	712,42	498,05	497,88	493,55	503,59	524,34
1995-11-17	00:00:00	646,14	666,03	693,84	686,97	712,20	498,26	499,43	493,64	505,31	527,38
1995-11-17	06:00:00	646,25	666,14	693,95	687,26	712,42	498,36	499,86	493,41	505,91	528,15
1995-11-17	12:00:00	646,35	666,24	694,27	687,69	712,85	498,57	499,74	493,38	505,89	528,19
1995-11-17	18:00:00	646,25	666,14	694,91	688,12	713,52	498,36	500,32	493,77	506,72	528,67
1995-11-18	00:00:00	646,43	666,30	695,21	688,55	714,24	498,74	500,75	494,06	505,91	528,75

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 9				
		P4-1	P4-2	P4-3	P4-4	P4-5	P9-1	P9-2	P9-3	P9-4	P9-5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1995-11-18	06:00:00	646,43	666,30	695,48	688,44	714,56	499,47	500,42	494,32	506,44	528,32
1995-11-18	12:00:00	646,49	666,38	695,21	688,34	714,38	499,04	500,08	494,70	506,37	527,57
1995-11-18	18:00:00	646,49	666,46	695,32	688,26	714,03	499,21	499,26	494,58	505,27	527,12
1995-11-19	00:00:00	646,49	666,46	694,81	687,93	713,70	499,13	499,43	494,49	505,82	526,79
1995-11-19	06:00:00	646,49	666,67	694,91	687,93	713,52	499,13	499,43	495,35	504,36	526,23
1995-11-19	12:00:00	646,49	666,46	694,35	687,75	713,25	499,17	498,14	494,45	503,55	525,10
1995-11-19	18:00:00	646,49	666,46	694,46	687,59	713,03	499,23	496,81	495,11	502,61	523,00
1995-11-20	00:00:00	646,43	666,38	693,30	687,26	712,66	499,34	495,17	494,06	500,32	519,65
1995-11-20	06:00:00	646,43	666,30	693,30	687,08	712,31	499,13	493,03	494,49	498,44	517,12
1995-11-20	12:00:00	646,35	666,30	693,09	686,97	711,99	499,34	491,00	494,40	496,29	514,98
1995-11-20	18:00:00	646,25	666,14	693,09	686,89	711,91	499,02	489,42	494,08	494,93	512,92
1995-11-21	00:00:00	646,25	666,14	693,01	686,75	711,66	498,74	487,99	493,49	492,85	511,41
1995-11-21	06:00:00	646,14	666,03	692,90	686,54	711,56	498,48	487,10	493,41	492,02	510,58
1995-11-21	12:00:00	645,92	665,95	692,90	686,43	711,23	498,51	486,46	493,21	491,23	510,16
1995-11-21	18:00:00	646,03	665,82	692,63	686,22	711,05	498,71	485,35	493,11	489,75	509,29
1995-11-22	00:00:00	645,92	665,82	692,55	686,03	710,91	498,22	484,56	493,05	488,78	509,42
1995-11-22	06:00:00	646,03	665,82	692,12	686,03	710,91	498,26	486,49	492,36	490,69	514,30
1995-11-22	12:00:00	646,14	665,73	692,12	685,97	710,62	498,10	490,29	492,81	494,74	518,63
1995-11-22	18:00:00	646,25	665,73	692,23	685,97	710,62	498,19	491,23	492,47	495,77	518,06
1995-11-23	00:00:00	646,14	665,63	692,04	685,68	710,29	497,86	490,65	492,16	494,93	516,73
1995-11-23	06:00:00	646,14	665,52	691,59	685,68	710,40	497,88	490,05	492,18	494,02	515,71
1995-11-23	12:00:00	645,92	665,41	691,80	685,68	710,62	497,68	497,19	492,77	501,79	529,58
1995-11-23	18:00:00	646,14	665,63	692,63	686,22	711,34	497,61	499,97	492,53	504,48	529,84
1995-11-24	00:00:00	646,14	665,82	693,01	686,75	711,80	497,86	499,97	492,91	504,87	529,71
1995-11-24	06:00:00	646,14	665,95	694,56	686,97	712,42	497,97	499,89	493,24	504,80	529,08
1995-11-24	12:00:00	646,03	665,82	694,13	687,08	712,31	497,92	499,81	493,16	504,75	528,54
1995-11-24	18:00:00	646,14	665,95	694,05	687,18	712,42	498,00	499,74	493,55	504,54	528,91
1995-11-25	00:00:00	646,03	665,82	692,63	687,26	712,52	498,22	500,23	493,33	505,17	529,58
1995-11-25	06:00:00	646,14	665,95	693,30	687,69	712,74	498,22	500,23	494,24	504,54	529,11
1995-11-25	12:00:00	646,14	666,03	693,62	687,69	712,85	498,36	500,02	493,97	504,54	529,17
1995-11-25	18:00:00	646,25	665,95	693,71	687,75	713,03	498,22	499,77	494,70	504,71	528,29
1995-11-26	00:00:00	646,25	666,14	693,95	687,75	713,03	498,74	499,72	494,66	504,71	528,54
1995-11-26	06:00:00	646,35	666,14	694,05	687,75	713,03	498,82	499,67	495,05	504,48	528,19
1995-11-26	12:00:00	646,35	666,24	694,27	687,75	713,17	498,71	499,81	494,56	504,54	527,99
1995-11-26	18:00:00	646,43	666,24	694,35	687,75	713,03	498,90	499,13	494,10	504,03	527,09
1995-11-27	00:00:00	646,43	666,24	694,05	687,48	712,85	498,94	498,22	494,74	503,52	525,58
1995-11-27	06:00:00	646,35	666,24	694,35	687,40	712,66	498,64	496,81	494,53	502,01	523,55
1995-11-27	12:00:00	646,25	666,14	693,95	687,40	712,60	498,99	495,22	494,91	500,42	521,46
1995-11-27	18:00:00	646,25	666,03	693,71	687,08	712,31	498,94	495,73	494,97	500,39	522,95
1995-11-28	00:00:00	646,25	665,95	693,20	686,97	712,09	498,99	496,07	495,11	501,45	523,61
1995-11-28	06:00:00	646,35	665,95	693,09	686,89	711,99	498,99	496,99	494,93	502,15	524,30
1995-11-28	12:00:00	646,43	665,95	693,20	686,83	711,91	499,04	498,05	494,86	503,04	526,39
1995-11-28	18:00:00	646,43	665,95	693,30	686,83	711,91	499,13	499,04	494,86	504,14	527,46
1995-11-29	00:00:00	646,43	665,95	693,52	686,97	712,09	499,09	498,94	495,51	504,54	527,40
1995-11-29	06:00:00	646,43	665,95	693,71	687,08	712,31	499,21	499,39	494,93	504,48	527,55
1995-11-29	12:00:00	646,43	665,95	694,27	687,59	712,74	499,13	499,63	495,65	504,54	527,90
1995-11-29	18:00:00	646,43	666,14	694,35	687,83	713,25	499,43	499,86	495,62	504,97	527,99
1995-11-30	00:00:00	646,49	665,52	694,62	688,04	713,52	499,34	499,77	496,39	505,27	528,09
1995-11-30	06:00:00	646,49	665,63	694,81	688,04	713,62	499,86	499,43	495,69	504,59	527,90
1995-11-30	12:00:00	646,49	665,73	694,81	688,12	713,62	499,77	499,47	496,35	504,93	527,55
1995-11-30	18:00:00	646,49	665,73	694,70	688,04	713,52	499,89	499,26	496,29	504,59	527,00
1995-12-01	00:00:00	646,59	665,73	694,56	687,93	713,52	499,94	499,23	495,94	504,67	526,79
1995-12-01	06:00:00	646,49	665,73	694,70	687,83	713,25	500,11	499,13	496,43	503,75	526,72
1995-12-01	12:00:00	646,49	665,63	694,13	687,75	713,03	499,67	498,26	496,49	504,14	526,26
1995-12-01	18:00:00	646,49	665,73	693,76	687,75	712,74	499,97	497,31	496,55	502,09	523,83
1995-12-02	00:00:00	646,49	665,73	693,62	687,59	712,66	499,89	495,69	495,96	501,45	521,39
1995-12-02	06:00:00	646,49	665,63	693,62	687,26	712,42	500,08	493,71	496,13	499,60	518,45
1995-12-02	12:00:00	646,43	665,52	693,52	687,08	712,20	499,51	492,27	495,59	497,37	516,27
1995-12-02	18:00:00	646,43	665,63	693,30	686,89	711,99	499,74	490,79	496,13	496,64	514,52
1995-12-03	00:00:00	646,43	665,73	693,01	686,75	711,80	499,57	488,98	495,22	493,49	512,47

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 9				
		P4-1	P4-2	P4-3	P4-4	P4-5	P9-1	P9-2	P9-3	P9-4	P9-5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1995-12-03	06:00:00	646,35	665,63	693,01	686,54	711,74	499,86	488,02	494,97	492,18	511,01
1995-12-03	12:00:00	646,14	665,41	692,74	686,22	711,34	499,17	486,72	494,49	491,23	510,63
1995-12-03	18:00:00	646,14	665,41	692,55	686,22	711,23	499,09	486,11	494,53	490,79	510,01
1995-12-04	00:00:00	646,14	665,41	692,34	686,03	711,05	498,99	486,28	494,56	490,79	510,04
1995-12-04	06:00:00	646,14	665,28	692,34	686,03	710,91	498,99	485,85	494,49	490,77	510,20
1995-12-04	12:00:00	646,14	665,36	692,34	685,97	710,80	498,99	485,55	494,02	489,51	509,51
1995-12-04	18:00:00	646,14	665,36	692,23	685,76	710,80	498,64	485,24	494,32	489,19	508,99
1995-12-05	00:00:00	646,03	665,28	691,91	685,68	710,70	498,60	484,60	493,29	488,30	508,88
1995-12-05	06:00:00	646,03	665,17	691,80	685,46	710,62	498,36	483,93	493,33	487,57	508,61
1995-12-05	12:00:00	645,82	665,06	691,69	685,25	710,48	498,30	483,19	493,53	487,20	508,50
1995-12-05	18:00:00	645,82	664,95	691,48	685,17	710,29	498,19	482,54	493,33	486,41	508,57
1995-12-06	00:00:00	645,74	664,95	691,80	685,03	710,19	498,02	482,08	493,24	485,27	508,39
1995-12-06	06:00:00	645,65	664,74	691,18	684,93	710,08	498,00	481,69	493,19	484,74	508,22
1995-12-06	12:00:00	645,60	664,23	691,18	684,82	710,08	497,72	481,18	493,53	484,82	508,48
1995-12-06	18:00:00	645,49	663,80	691,29	684,71	710,08	497,75	481,00	493,21	484,26	508,39
1995-12-07	00:00:00	645,39	663,72	690,83	684,50	709,81	497,54	480,79	492,60	484,18	507,50
1995-12-07	06:00:00	645,31	663,56	690,94	684,42	709,81	497,37	480,49	492,34	484,35	506,76
1995-12-07	12:00:00	645,17	663,45	690,83	684,31	709,73	497,31	480,11	492,16	483,74	506,55
1995-12-07	18:00:00	645,17	663,45	690,83	684,31	709,73	497,06	480,14	491,67	483,76	505,73
1995-12-08	00:00:00	645,17	663,45	691,05	684,26	709,73	497,11	479,80	492,02	483,36	504,87
1995-12-08	06:00:00	645,17	663,24	690,83	684,18	709,52	496,81	479,66	491,65	482,85	504,01
1995-12-08	12:00:00	644,98	663,16	690,35	683,96	709,41	496,72	479,20	491,14	482,37	503,00
1995-12-08	18:00:00	645,17	663,05	690,43	683,96	709,52	496,52	478,95	491,82	482,29	502,30
1995-12-09	00:00:00	644,88	662,86	690,30	683,75	709,22	496,29	478,55	491,14	481,71	501,79
1995-12-09	06:00:00	644,77	662,86	688,77	683,64	709,09	496,15	478,41	490,15	481,13	501,35
1995-12-09	12:00:00	644,77	662,81	688,87	683,64	708,87	495,85	477,82	491,06	481,09	500,60
1995-12-09	18:00:00	644,72	662,73	688,87	683,56	708,76	495,82	477,75	490,31	480,16	499,72
1995-12-10	00:00:00	644,72	662,62	689,09	683,48	708,66	495,62	477,24	490,79	480,24	499,55
1995-12-10	06:00:00	644,63	662,73	689,30	683,48	708,87	495,51	478,81	490,11	481,73	507,29
1995-12-10	12:00:00	644,72	662,81	689,30	683,48	708,98	495,65	496,20	490,89	499,67	530,65
1995-12-10	18:00:00	644,88	663,05	689,87	683,96	709,73	495,99	499,17	491,44	503,11	531,86
1995-12-11	00:00:00	645,17	663,24	690,94	684,93	710,48	496,13	500,32	491,82	504,21	532,83
1995-12-11	06:00:00	645,17	663,56	691,48	685,76	711,23	496,52	501,05	492,18	505,24	532,90
1995-12-11	12:00:00	645,49	663,67	691,99	686,14	711,74	496,55	501,45	492,81	505,41	532,76
1995-12-11	18:00:00	645,60	663,72	692,42	686,22	711,91	496,55	501,79	493,21	506,30	533,18
1995-12-12	00:00:00	645,65	663,80	692,55	686,32	711,80	496,59	501,79	493,55	506,16	533,26
1995-12-12	06:00:00	645,65	663,91	692,55	686,43	711,80	496,94	501,79	493,74	506,64	532,96
1995-12-12	12:00:00	645,65	663,80	692,55	686,54	711,80	496,85	501,56	493,74	505,89	532,79
1995-12-12	18:00:00	645,65	663,72	692,85	686,65	711,80	496,99	502,26	493,60	507,50	533,82
1995-12-13	00:00:00	645,74	663,72	692,55	686,83	711,91	497,06	503,04	494,58	506,98	533,61
1995-12-13	06:00:00	645,82	663,72	692,74	686,89	712,09	497,41	502,65	494,62	507,34	533,65
1995-12-13	12:00:00	645,92	663,91	692,85	686,97	712,42	497,57	503,17	494,58	507,99	534,09
1995-12-13	18:00:00	646,03	664,02	692,90	686,97	712,42	497,50	503,00	494,74	508,14	533,90
1995-12-14	00:00:00	646,14	664,23	692,90	687,08	712,60	497,68	503,07	495,48	508,64	534,16
1995-12-14	06:00:00	646,03	664,10	692,90	687,08	712,60	498,02	503,38	494,93	509,08	533,95
1995-12-14	12:00:00	646,14	664,23	693,01	687,26	712,66	498,05	503,07	494,97	509,08	534,26
1995-12-14	18:00:00	646,25	664,23	693,09	687,26	712,85	498,22	503,59	495,44	508,79	534,37
1995-12-15	00:00:00	646,43	664,31	693,62	687,40	713,03	498,57	503,72	495,79	508,31	534,32
1995-12-15	06:00:00	646,43	664,53	693,84	687,59	713,17	498,71	503,42	495,39	508,95	534,71
1995-12-15	12:00:00	646,49	664,42	694,05	687,59	713,36	498,64	503,72	496,46	508,82	534,37
1995-12-15	18:00:00	646,49	664,58	694,05	687,59	713,52	498,94	503,98	496,20	509,55	534,16
1995-12-16	00:00:00	646,49	664,58	693,95	687,69	713,52	499,04	503,69	496,11	508,57	534,09
1995-12-16	06:00:00	646,49	664,53	694,46	687,48	713,52	499,21	503,04	496,52	508,88	533,09
1995-12-16	12:00:00	646,49	664,58	694,27	687,48	713,36	499,30	501,79	496,29	506,76	530,51
1995-12-16	18:00:00	646,49	664,58	694,27	687,18	713,17	499,57	499,97	496,11	504,67	527,43
1995-12-17	00:00:00	646,43	664,58	694,05	687,18	712,85	499,21	497,48	496,99	502,35	523,88
1995-12-17	06:00:00	646,43	664,53	693,76	686,97	712,66	499,21	495,11	496,64	499,55	521,16
1995-12-17	12:00:00	646,35	664,53	693,52	686,83	712,42	499,30	493,53	495,30	498,14	519,16
1995-12-17	18:00:00	646,25	664,53	693,52	686,75	712,20	499,04	493,94	495,82	498,30	520,51
1995-12-18	00:00:00	646,25	664,42	693,09	686,65	711,99	499,02	495,09	495,62	499,43	522,62

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 9				
		P4-1	P4-2	P4-3	P4-4	P4-5	P9-1	P9-2	P9-3	P9-4	P9-5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1995-12-18	06:00:00	646,35	664,53	693,30	686,65	711,99	499,34	500,80	495,59	504,40	532,66
1995-12-18	12:00:00	646,43	664,58	693,30	686,65	711,99	499,26	503,17	495,27	507,96	533,26
1995-12-18	18:00:00	646,35	664,58	693,41	686,54	712,20	499,57	503,04	495,65	507,62	533,52
1995-12-19	00:00:00	646,43	664,53	693,62	686,65	712,20	499,57	503,22	495,69	507,72	532,62
1995-12-19	06:00:00	646,49	664,58	693,62	686,75	712,31	499,57	502,43	495,89	507,37	531,29
1995-12-19	12:00:00	646,49	664,58	693,62	686,75	712,20	499,81	501,42	495,30	506,07	529,95
1995-12-19	18:00:00	646,49	664,66	693,20	686,65	712,20	499,43	500,42	495,39	504,89	528,12
1995-12-20	00:00:00	646,43	664,58	693,41	686,54	712,09	499,57	499,81	496,07	504,40	527,21
1995-12-20	06:00:00	646,49	664,66	693,20	686,54	712,09	499,57	499,04	495,96	503,64	526,09
1995-12-20	12:00:00	646,35	664,58	693,01	686,43	711,91	499,57	498,00	495,39	502,47	524,82
1995-12-20	18:00:00	646,49	664,58	693,09	686,54	711,80	499,39	497,03	495,69	502,22	523,30
1995-12-21	00:00:00	646,43	664,58	693,01	686,32	711,74	499,34	496,49	495,05	501,26	522,35
1995-12-21	06:00:00	646,35	664,53	692,90	686,22	711,74	499,21	495,59	494,97	500,15	520,59
1995-12-21	12:00:00	646,25	664,42	692,90	686,14	711,56	499,23	494,66	495,59	499,67	519,74
1995-12-21	18:00:00	646,43	664,58	692,90	686,22	711,56	499,21	493,91	494,91	498,60	518,34
1995-12-22	00:00:00	646,25	664,53	692,85	686,03	711,23	498,99	493,24	494,28	497,28	517,93
1995-12-22	06:00:00	646,14	664,42	693,41	686,03	711,23	499,09	493,16	495,39	497,24	517,21
1995-12-22	12:00:00	646,03	664,31	693,20	685,87	711,13	498,74	492,53	494,62	496,24	516,35
1995-12-22	18:00:00	646,03	664,31	693,01	685,87	711,13	498,74	492,18	494,91	495,73	515,88
1995-12-23	00:00:00	646,03	664,31	692,90	685,68	711,05	498,60	491,71	493,94	495,59	515,41
1995-12-23	06:00:00	645,92	664,31	692,90	685,54	710,91	498,86	491,02	493,97	494,97	515,35
1995-12-23	12:00:00	645,92	664,23	692,90	685,46	710,91	498,57	490,57	494,40	494,02	515,02
1995-12-23	18:00:00	645,92	664,23	692,85	685,36	710,91	498,40	490,45	494,56	493,64	514,76
1995-12-24	00:00:00	645,82	664,10	692,63	685,25	710,80	498,10	489,75	494,08	493,36	513,87
1995-12-24	06:00:00	645,82	664,02	692,74	685,12	710,70	498,26	489,09	493,74	492,34	513,47
1995-12-24	12:00:00	645,82	663,91	692,55	685,03	710,62	497,84	488,72	493,24	491,95	513,18
1995-12-24	18:00:00	645,82	663,91	692,55	684,93	710,62	497,66	487,88	493,49	490,77	512,68
1995-12-25	00:00:00	645,74	663,91	692,23	684,71	710,40	497,79	487,02	493,68	490,05	512,72
1995-12-25	06:00:00	645,74	663,80	692,34	684,71	710,40	497,50	486,34	493,41	489,42	512,42
1995-12-25	12:00:00	645,65	663,72	691,80	684,61	710,29	497,50	485,83	492,51	488,13	511,99
1995-12-25	18:00:00	645,65	663,72	691,29	684,50	710,29	497,24	485,20	493,03	487,74	511,10
1995-12-26	00:00:00	645,49	663,72	691,29	684,31	710,08	497,15	484,74	492,22	487,35	510,28
1995-12-26	06:00:00	645,39	663,72	691,29	684,31	710,08	496,99	484,35	491,95	487,35	509,39
1995-12-26	12:00:00	645,39	663,67	691,37	684,26	710,08	496,89	484,12	492,13	486,68	508,70
1995-12-26	18:00:00	645,39	663,56	691,37	684,18	710,03	496,64	483,76	492,18	486,24	507,79
1995-12-27	00:00:00	645,31	663,56	691,37	684,07	710,03	496,64	483,59	491,78	485,99	506,89
1995-12-27	06:00:00	645,17	663,37	691,37	683,96	709,81	496,55	483,25	491,31	485,64	506,16
1995-12-27	12:00:00	645,09	663,37	691,29	683,85	709,73	496,15	483,02	491,71	486,18	505,24
1995-12-27	18:00:00	644,98	663,16	691,29	683,85	709,73	496,29	482,49	491,31	485,64	504,71
1995-12-28	00:00:00	645,09	663,16	691,18	683,75	709,60	495,89	482,05	490,98	485,73	504,10
1995-12-28	06:00:00	644,88	663,16	688,12	683,56	709,52	495,82	481,82	491,19	484,43	503,34
1995-12-28	12:00:00	644,88	663,05	688,98	683,56	709,52	495,79	481,54	491,53	484,09	502,98
1995-12-28	18:00:00	644,77	662,86	689,57	683,56	709,30	495,59	481,31	491,02	484,05	502,53
1995-12-29	00:00:00	644,77	662,81	689,44	683,48	709,30	495,44	481,60	490,79	484,01	503,22
1995-12-29	06:00:00	644,77	662,81	689,57	683,42	709,22	495,39	484,77	490,69	486,76	511,24
1995-12-29	12:00:00	644,77	662,81	689,68	683,42	709,30	495,55	492,22	491,50	495,00	523,34
1995-12-29	18:00:00	644,77	662,86	689,57	683,32	709,52	495,62	498,69	491,58	500,94	529,75
1995-12-30	00:00:00	644,88	662,94	689,79	683,42	709,60	495,59	501,14	491,58	503,86	531,59
1995-12-30	06:00:00	644,98	663,16	689,87	683,42	709,81	495,89	501,14	492,00	503,75	529,58
1995-12-30	12:00:00	644,88	663,16	690,08	683,48	709,92	496,07	500,50	492,16	503,42	527,03
1995-12-30	18:00:00	644,88	663,24	690,43	683,56	710,08	496,11	499,72	491,82	501,79	526,37
1995-12-31	00:00:00	645,09	663,24	686,83	683,75	710,08	496,27	500,06	492,51	503,34	527,26
1995-12-31	06:00:00	645,17	663,37	687,48	683,96	710,29	496,64	500,83	493,21	504,07	527,40
1995-12-31	12:00:00	645,31	663,45	687,75	684,07	710,48	496,59	500,63	493,55	503,75	525,58
1995-12-31	18:00:00	645,31	663,45	687,59	684,18	710,62	496,83	499,55	493,16	502,56	524,21
1996-01-01	00:00:00	645,39	663,67	689,38	684,26	710,70	496,72	498,36	492,64	501,98	522,14
1996-01-01	06:00:00	645,39	663,67	689,38	684,31	710,80	496,69	497,06	492,98	500,88	520,85
1996-01-01	12:00:00	645,39	663,67	689,38	684,31	710,80	496,64	496,85	493,84	500,08	520,56
1996-01-01	18:00:00	645,31	663,67	689,79	684,31	711,05	496,89	496,55	494,02	499,94	520,39
1996-01-02	00:00:00	645,31	663,67	689,79	684,31	710,97	496,97	497,57	493,29	500,77	521,54

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 9				
		P4-1	P4-2	P4-3	P4-4	P4-5	P9-1	P9-2	P9-3	P9-4	P9-5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1996-01-02	06:00:00	645,39	663,67	689,79	684,31	711,05	497,24	499,72	493,45	503,00	526,00
1996-01-02	12:00:00	645,39	663,72	690,19	684,31	711,05	497,41	503,84	493,74	507,29	532,66
1996-01-02	18:00:00	645,31	663,72	690,30	684,42	711,13	497,33	505,75	494,10	508,70	533,98
1996-01-03	00:00:00	645,39	663,72	690,43	684,61	711,23	497,68	507,46	494,08	510,77	535,55
1996-01-03	06:00:00	645,49	663,80	690,43	684,93	711,56	497,75	507,48	494,10	510,88	535,38
1996-01-03	12:00:00	645,65	663,72	690,83	685,12	711,74	497,84	506,92	494,19	510,80	533,95
1996-01-03	18:00:00	645,74	663,91	691,18	685,46	711,99	498,22	505,82	494,74	509,64	532,21
1996-01-04	00:00:00	645,82	663,80	691,29	685,46	711,91	497,88	504,07	495,00	508,66	530,21
1996-01-04	06:00:00	645,82	663,91	691,59	685,54	711,99	498,30	502,91	495,11	507,12	527,99
1996-01-04	12:00:00	645,82	663,91	691,69	685,54	711,99	498,05	501,08	494,79	504,54	525,37
1996-01-04	18:00:00	645,92	664,02	692,12	685,68	711,99	498,26	499,63	494,93	503,17	522,57
1996-01-05	00:00:00	645,92	664,10	692,12	685,68	711,91	498,26	497,66	494,58	501,65	520,25
1996-01-05	06:00:00	645,92	664,02	691,99	685,68	711,91	498,10	496,20	494,62	499,23	518,28
1996-01-05	12:00:00	645,82	664,10	691,91	685,54	711,80	498,10	494,82	494,42	498,44	517,17
1996-01-05	18:00:00	645,82	664,02	691,69	685,46	711,80	497,97	493,53	494,24	496,89	516,01
1996-01-06	00:00:00	645,74	664,02	691,59	685,36	711,74	498,02	492,68	493,55	495,30	515,32
1996-01-06	06:00:00	645,65	663,91	691,59	685,25	711,66	498,02	491,71	493,94	494,66	514,90
1996-01-06	12:00:00	645,65	664,02	691,69	685,17	711,66	497,88	490,77	493,45	494,06	514,70
1996-01-06	18:00:00	645,74	664,02	692,23	685,46	711,91	498,02	504,87	494,24	509,53	536,45
1996-01-07	00:00:00	645,74	664,02	692,63	685,97	712,42	498,17	507,29	494,58	511,41	537,26
1996-01-07	06:00:00	645,92	664,10	692,90	686,32	712,95	498,30	507,72	495,51	511,73	537,30
1996-01-07	12:00:00	645,92	664,10	693,01	686,54	713,25	498,82	508,16	494,93	512,13	537,05
1996-01-07	18:00:00	646,03	664,23	693,09	686,75	713,36	498,69	508,50	495,11	511,57	537,22
1996-01-08	00:00:00	646,03	664,31	693,30	686,89	713,46	498,90	508,10	494,86	512,33	537,47
1996-01-08	06:00:00	646,03	664,23	693,62	686,97	713,52	498,88	507,99	495,25	512,17	537,34
1996-01-08	12:00:00	646,14	664,42	691,80	687,18	713,52	499,23	508,10	496,43	512,77	537,38
1996-01-08	18:00:00	646,14	664,53	692,42	687,48	713,62	499,26	508,44	496,20	512,51	538,11
1996-01-09	00:00:00	646,25	664,53	692,42	687,59	713,81	499,26	508,10	496,27	512,77	537,34
1996-01-09	06:00:00	646,25	664,42	692,74	687,59	714,03	499,57	507,96	496,46	512,77	536,65
1996-01-09	12:00:00	646,35	664,53	692,85	687,59	713,81	499,39	507,59	496,29	512,42	536,50
1996-01-09	18:00:00	646,49	664,53	692,74	687,69	713,81	499,55	507,50	496,29	512,63	536,34
1996-01-10	00:00:00	646,49	664,53	691,80	687,59	713,70	499,72	507,29	496,43	511,75	535,85
1996-01-10	06:00:00	646,49	664,53	692,04	687,48	713,62	499,97	506,92	496,97	511,57	535,03
1996-01-10	12:00:00	646,49	664,58	691,99	687,26	713,52	499,77	505,86	497,31	510,33	534,21
1996-01-10	18:00:00	646,49	664,66	692,23	687,40	713,52	499,81	507,81	496,85	512,75	537,00
1996-01-11	00:00:00	646,49	664,66	692,63	687,48	713,92	500,25	508,39	496,69	513,27	536,85
1996-01-11	06:00:00	646,49	664,74	692,90	687,83	714,38	500,02	508,66	497,48	512,85	537,26
1996-01-11	12:00:00	646,59	664,85	693,09	688,04	714,67	500,50	508,31	497,24	513,43	536,74
1996-01-11	18:00:00	646,49	664,85	693,09	687,83	714,56	500,42	508,31	496,94	512,77	536,65
1996-01-12	00:00:00	646,59	664,85	693,52	687,83	714,56	500,71	508,14	497,37	512,97	536,41
1996-01-12	06:00:00	646,49	664,85	693,41	687,75	714,38	500,54	507,88	497,19	512,68	536,32
1996-01-12	12:00:00	646,49	664,85	693,09	687,75	714,13	500,75	507,27	497,50	511,70	534,76
1996-01-12	18:00:00	646,49	664,85	693,01	687,59	713,70	500,50	505,44	496,89	510,04	532,90
1996-01-13	00:00:00	646,49	664,74	692,90	687,48	713,52	500,39	504,54	497,06	509,35	531,89
1996-01-13	06:00:00	646,43	664,85	692,90	687,26	713,52	500,50	505,52	497,28	510,25	533,82
1996-01-13	12:00:00	646,43	664,85	692,85	687,18	713,46	500,63	506,46	496,66	510,70	534,50
1996-01-13	18:00:00	646,43	664,85	692,55	687,18	713,17	500,71	506,27	497,11	510,63	533,92
1996-01-14	00:00:00	646,43	664,74	692,63	686,97	713,03	500,60	505,31	496,55	510,33	532,62
1996-01-14	06:00:00	646,35	664,74	692,74	686,89	712,95	500,50	504,36	496,55	508,66	531,01
1996-01-14	12:00:00	646,25	664,66	692,55	686,83	712,74	500,42	502,86	496,29	507,06	528,91
1996-01-14	18:00:00	646,14	664,58	692,23	686,75	712,60	500,58	502,30	496,89	507,29	530,05
1996-01-15	00:00:00	646,14	664,66	692,55	686,97	712,60	500,54	506,78	496,46	510,97	535,31
1996-01-15	06:00:00	646,25	664,66	692,74	686,97	712,85	500,66	507,27	496,59	511,70	535,66
1996-01-15	12:00:00	646,14	664,58	692,90	687,18	713,03	500,92	507,09	497,03	511,61	535,63
1996-01-15	18:00:00	646,35	664,66	693,01	687,59	713,36	500,71	507,29	496,97	511,59	535,33
1996-01-16	00:00:00	646,35	664,66	693,20	687,69	713,52	500,94	507,12	497,31	512,10	535,42
1996-01-16	06:00:00	646,43	664,74	693,62	687,75	713,62	500,63	506,92	497,45	511,90	534,71
1996-01-16	12:00:00	646,43	664,66	693,52	687,69	713,62	500,83	505,82	497,06	510,04	532,87
1996-01-16	18:00:00	646,43	664,74	693,20	687,59	713,52	500,71	504,18	496,43	509,05	529,91
1996-01-17	00:00:00	646,35	664,74	693,09	687,48	713,46	500,80	502,39	496,46	507,02	527,57

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 9				
		P4-1	P4-2	P4-3	P4-4	P4-5	P9-1	P9-2	P9-3	P9-4	P9-5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1996-01-17	06:00:00	646,35	664,74	693,01	687,40	713,36	500,42	499,91	496,76	504,40	524,46
1996-01-17	12:00:00	646,25	664,74	692,90	687,18	713,17	500,77	498,02	496,49	502,53	522,05
1996-01-17	18:00:00	646,43	664,95	692,90	687,18	713,17	500,58	496,11	496,81	499,89	519,67
1996-01-18	00:00:00	646,25	664,85	692,74	686,89	712,74	500,39	494,74	496,20	499,21	517,50
1996-01-18	06:00:00	646,14	664,66	692,63	686,75	712,60	500,28	493,71	496,29	497,54	516,90
1996-01-18	12:00:00	645,92	664,58	692,34	686,54	712,42	499,94	492,47	496,07	495,82	515,90
1996-01-18	18:00:00	645,92	664,53	692,04	686,43	712,09	499,89	492,02	494,42	495,11	515,41
1996-01-19	00:00:00	645,92	664,53	692,04	686,32	711,91	499,63	491,02	494,93	494,36	515,35
1996-01-19	06:00:00	646,03	664,53	692,12	686,22	711,80	499,74	490,23	494,82	493,55	514,63
1996-01-19	12:00:00	645,92	664,42	691,29	686,03	711,66	499,60	489,42	494,86	492,68	513,90
1996-01-19	18:00:00	645,92	664,42	691,48	686,03	711,66	499,30	488,68	494,49	491,85	513,53
1996-01-20	00:00:00	645,82	664,42	691,48	685,76	711,45	498,94	488,10	494,22	491,06	512,97
1996-01-20	06:00:00	645,74	664,23	691,18	685,68	711,34	498,99	487,57	493,94	490,69	512,68
1996-01-20	12:00:00	645,65	664,10	691,18	685,68	711,23	498,54	486,80	493,55	489,67	511,90
1996-01-20	18:00:00	645,65	664,02	691,18	685,54	711,13	498,71	486,76	493,41	489,42	511,59
1996-01-21	00:00:00	645,65	664,02	691,13	685,36	710,91	498,40	486,04	493,05	488,55	510,25
1996-01-21	06:00:00	645,60	663,91	691,13	685,25	710,91	498,05	485,64	493,41	488,35	509,35
1996-01-21	12:00:00	645,49	663,80	691,13	685,12	710,91	497,68	485,55	493,03	488,24	508,52
1996-01-21	18:00:00	645,49	663,72	691,13	685,03	710,91	497,68	485,16	492,57	487,35	507,67
1996-01-22	00:00:00	645,49	663,72	691,05	684,82	710,70	497,57	485,03	492,73	487,65	507,50
1996-01-22	06:00:00	645,39	663,72	691,05	684,71	710,62	497,61	484,69	492,60	487,49	506,30
1996-01-22	12:00:00	645,31	663,67	691,05	684,50	710,62	497,19	484,28	492,27	486,86	505,52
1996-01-22	18:00:00	645,31	663,56	690,83	684,31	710,40	497,11	483,91	491,82	486,04	504,59
1996-01-23	00:00:00	645,31	663,45	690,62	684,26	710,19	497,03	483,36	491,40	485,97	504,21
1996-01-23	06:00:00	645,17	663,24	690,73	684,18	710,19	496,52	483,25	491,53	485,49	502,98
1996-01-23	12:00:00	645,09	663,16	690,62	684,18	710,08	496,43	482,91	490,77	485,30	502,83
1996-01-23	18:00:00	645,09	663,05	690,51	684,07	710,08	496,13	482,85	490,79	485,52	501,93
1996-01-24	00:00:00	644,88	662,94	690,35	683,85	710,08	496,29	482,25	490,35	484,31	501,52
1996-01-24	06:00:00	644,77	662,94	690,30	683,85	710,03	496,13	481,91	490,98	484,14	501,01
1996-01-24	12:00:00	644,88	662,86	690,19	683,64	710,03	496,20	481,82	490,79	483,87	500,32
1996-01-24	18:00:00	644,77	662,81	690,19	683,64	709,92	495,42	481,52	489,55	483,11	499,34
1996-01-25	00:00:00	644,77	662,73	690,19	683,48	709,81	495,65	480,96	490,65	482,45	498,86
1996-01-25	06:00:00	644,77	662,73	690,00	683,42	709,81	495,44	480,34	489,77	482,33	498,22
1996-01-25	12:00:00	644,77	662,73	690,19	683,32	709,73	495,55	480,24	489,97	482,25	497,66
1996-01-25	18:00:00	644,77	662,62	690,00	683,32	709,73	495,00	480,07	489,60	482,29	496,72
1996-01-26	00:00:00	644,72	662,62	689,87	683,21	709,60	495,00	479,12	489,24	481,27	494,40
1996-01-26	06:00:00	644,63	662,51	689,79	683,13	709,60	495,00	478,76	489,81	480,92	493,68
1996-01-26	12:00:00	644,53	662,51	689,87	683,13	709,52	494,82	478,55	489,42	480,31	493,16
1996-01-26	18:00:00	644,53	662,41	689,87	683,00	709,41	494,70	478,07	489,09	480,49	492,87
1996-01-27	00:00:00	644,42	662,30	689,79	682,91	709,22	494,40	478,04	488,89	479,80	492,36
1996-01-27	06:00:00	644,31	662,30	689,44	682,81	709,17	494,53	477,48	489,19	479,80	491,65
1996-01-27	12:00:00	644,20	662,19	689,44	682,81	709,09	494,40	477,06	488,30	479,10	490,93
1996-01-27	18:00:00	644,10	662,11	689,44	682,59	709,09	494,40	477,06	488,43	478,85	490,79
1996-01-28	00:00:00	644,10	662,11	689,44	682,59	709,09	494,14	476,72	488,38	479,50	489,97
1996-01-28	06:00:00	644,02	662,11	689,44	682,59	709,09	493,97	476,37	488,55	478,78	489,32
1996-01-28	12:00:00	644,02	662,11	689,44	682,59	708,98	493,53	475,77	488,74	477,95	488,91
1996-01-28	18:00:00	644,02	661,98	689,44	682,59	708,98	493,97	475,59	488,38	478,21	488,52
1996-01-29	00:00:00	644,10	661,98	689,44	682,59	708,87	493,71	475,69	488,38	478,09	488,05
1996-01-29	06:00:00	644,02	661,98	689,44	682,59	708,76	493,60	475,55	488,35	477,61	487,54
1996-01-29	12:00:00	644,02	661,98	689,44	682,54	708,87	493,55	474,95	487,69	476,87	487,10
1996-01-29	18:00:00	644,02	661,98	689,44	682,43	708,87	493,45	474,74	487,99	476,56	486,62
1996-01-30	00:00:00	644,02	661,98	689,44	682,43	708,87	493,45	474,44	487,26	476,49	486,18
1996-01-30	06:00:00	643,88	661,98	689,79	682,32	708,76	493,19	474,20	487,86	476,32	485,30
1996-01-30	12:00:00	643,88	661,98	689,57	682,24	708,87	493,11	473,79	486,93	476,23	485,47
1996-01-30	18:00:00	643,88	661,98	689,44	682,32	708,76	492,71	473,60	487,02	475,01	484,62
1996-01-31	00:00:00	643,78	661,98	689,44	682,24	708,66	492,94	473,18	487,06	475,04	484,22
1996-01-31	06:00:00	643,78	661,98	689,44	682,11	708,66	492,94	472,78	486,57	474,31	483,83
1996-01-31	12:00:00	643,67	661,98	689,38	682,03	708,55	492,53	472,24	487,23	474,37	483,25
1996-01-31	18:00:00	643,59	661,98	689,38	681,92	708,55	492,47	471,86	487,02	472,94	482,69
1996-02-01	00:00:00	643,59	661,92	688,98	681,81	708,36	492,47	471,62	486,84	473,27	481,95

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 9				
		P4-1	P4-2	P4-3	P4-4	P4-5	P9-1	P9-2	P9-3	P9-4	P9-5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1996-02-01	06:00:00	643,59	661,92	689,19	682,03	708,47	492,47	471,29	486,66	472,54	481,18
1996-02-01	12:00:00	643,37	661,81	689,09	681,92	708,36	492,31	470,54	487,00	471,69	480,66
1996-02-01	18:00:00	643,45	661,92	689,09	681,92	708,36	492,02	470,20	486,80	471,26	480,63
1996-02-02	00:00:00	643,37	661,81	689,09	681,81	708,31	492,02	469,89	486,32	471,56	479,86
1996-02-02	06:00:00	643,37	661,81	688,98	681,81	708,31	491,74	469,59	486,34	471,21	479,47
1996-02-02	12:00:00	643,27	661,71	688,87	681,68	708,23	491,71	469,42	486,34	471,06	478,93
1996-02-02	18:00:00	643,27	661,81	688,98	681,73	708,23	491,78	468,95	485,52	470,40	479,10
1996-02-03	00:00:00	643,16	661,71	688,87	681,68	708,12	491,78	468,77	486,07	470,38	478,55
1996-02-03	06:00:00	643,27	661,71	688,77	681,68	708,01	491,74	468,57	485,90	469,18	478,04
1996-02-03	12:00:00	643,08	661,63	688,69	681,60	707,91	491,44	468,19	485,64	469,67	477,59
1996-02-03	18:00:00	643,16	661,63	688,69	681,60	707,91	491,44	467,92	485,27	468,79	477,45
1996-02-04	00:00:00	643,08	661,49	688,55	681,60	707,80	491,06	467,43	485,16	468,79	476,56
1996-02-04	06:00:00	643,08	661,49	688,55	681,49	707,69	491,16	467,24	485,81	468,74	476,66
1996-02-04	12:00:00	643,08	661,49	688,55	681,38	707,69	491,14	466,92	485,20	468,79	476,19
1996-02-04	18:00:00	643,08	661,49	688,55	681,49	707,80	490,79	466,82	485,07	467,98	475,87
1996-02-05	00:00:00	643,02	661,41	688,44	681,28	707,53	490,79	466,10	485,24	467,92	475,29
1996-02-05	06:00:00	643,02	661,30	688,44	681,38	707,61	490,79	466,03	484,96	467,36	474,95
1996-02-05	12:00:00	643,08	661,41	688,34	681,28	707,61	490,86	467,20	484,79	468,79	481,13
1996-02-05	18:00:00	643,37	661,81	688,69	681,49	707,91	491,19	493,41	485,97	495,13	517,72
1996-02-06	00:00:00	642,08	661,98	689,44	681,73	706,59	491,06	496,89	486,04	499,67	519,50
1996-02-06	06:00:00	642,51	662,51	690,19	682,32	708,31	492,04	499,47	486,54	502,30	523,17
1996-02-06	12:00:00	643,02	662,81	691,05	683,21	709,60	492,43	500,63	487,18	504,18	524,48
1996-02-06	18:00:00	643,37	663,16	691,48	683,96	710,62	492,87	502,53	488,02	505,91	526,96
1996-02-07	00:00:00	643,45	663,37	691,69	684,31	711,34	493,29	502,05	488,60	505,27	525,41
1996-02-07	06:00:00	643,78	663,67	692,04	685,03	711,99	493,49	502,69	489,12	506,42	526,09
1996-02-07	12:00:00	643,94	663,72	692,42	685,25	712,60	493,80	503,34	489,95	507,02	527,88
1996-02-07	18:00:00	643,94	663,72	692,74	685,76	712,95	493,97	502,15	490,05	505,91	523,00
1996-02-08	00:00:00	644,10	663,80	692,90	685,97	713,17	494,45	500,11	490,09	504,71	519,65
1996-02-08	06:00:00	644,10	663,91	692,90	686,03	713,25	494,79	503,17	490,93	507,15	525,06
1996-02-08	12:00:00	644,20	664,02	692,90	686,03	713,36	495,00	503,84	491,50	508,39	527,40
1996-02-08	18:00:00	644,31	664,02	692,74	686,22	713,46	495,13	503,64	491,91	507,88	525,49
1996-02-09	00:00:00	644,31	664,10	692,85	686,22	713,36	495,42	502,65	492,39	506,58	523,88
1996-02-09	06:00:00	644,31	664,31	693,01	686,22	713,52	495,89	501,39	492,22	506,07	521,12
1996-02-09	12:00:00	644,31	664,31	692,90	686,32	713,52	496,29	498,51	492,47	503,11	515,76
1996-02-09	18:00:00	644,42	664,42	692,85	686,22	713,46	496,13	496,99	492,94	501,35	515,06
1996-02-10	00:00:00	644,63	664,53	692,90	686,14	713,46	496,72	494,62	493,11	498,77	511,41
1996-02-10	06:00:00	644,42	664,53	692,90	686,14	713,46	496,55	491,88	493,03	496,46	506,94
1996-02-10	12:00:00	644,42	664,53	692,90	686,14	713,25	496,76	489,40	492,94	493,71	503,84
1996-02-10	18:00:00	644,42	664,31	692,74	686,03	713,17	496,76	488,10	492,53	491,91	504,18
1996-02-11	00:00:00	644,63	664,42	692,63	686,03	713,03	496,72	486,68	492,87	490,23	502,47
1996-02-11	06:00:00	644,53	664,42	692,63	686,03	712,85	496,94	485,30	492,77	488,47	501,39
1996-02-11	12:00:00	644,42	664,42	692,42	686,03	712,74	496,81	484,14	492,57	487,99	500,28
1996-02-11	18:00:00	644,42	664,31	692,42	685,76	712,66	496,83	482,54	492,13	486,34	499,04
1996-02-12	00:00:00	644,42	664,23	692,34	685,68	712,66	496,81	481,34	492,47	484,65	498,64
1996-02-12	06:00:00	644,31	664,23	692,23	685,46	712,52	496,81	480,51	492,02	484,48	498,19
1996-02-12	12:00:00	644,31	664,23	692,23	685,46	712,52	496,72	479,80	492,51	483,11	497,03
1996-02-12	18:00:00	644,20	664,10	691,59	685,25	712,31	496,66	479,24	492,18	482,42	495,59
1996-02-13	00:00:00	644,20	664,02	691,59	685,25	712,31	496,64	478,64	492,00	482,03	495,27
1996-02-13	06:00:00	644,10	664,02	691,37	685,17	712,09	496,55	478,48	491,85	482,05	495,77
1996-02-13	12:00:00	644,10	664,02	691,59	685,12	711,99	496,59	478,81	492,13	482,12	495,69
1996-02-13	18:00:00	644,02	663,91	691,48	685,03	711,91	496,43	478,43	491,11	481,95	494,93
1996-02-14	00:00:00	644,02	663,80	691,29	684,82	711,80	496,52	478,30	491,88	481,77	495,42
1996-02-14	06:00:00	643,94	663,80	691,37	684,82	711,80	496,39	478,68	491,33	481,65	495,89
1996-02-14	12:00:00	643,94	663,80	691,37	684,61	711,80	496,24	478,81	491,53	481,99	496,49
1996-02-14	18:00:00	643,94	663,72	691,18	684,50	711,74	496,27	479,15	491,74	481,52	497,17
1996-02-15	00:00:00	643,94	663,67	691,13	684,50	711,66	496,11	479,12	491,00	482,29	496,99
1996-02-15	06:00:00	643,88	663,72	691,13	684,42	711,56	496,27	479,75	491,16	482,91	498,17
1996-02-15	12:00:00	643,88	663,67	691,05	684,31	711,56	496,13	480,58	491,16	483,45	499,74
1996-02-15	18:00:00	643,88	663,56	690,83	684,31	711,45	496,20	480,68	491,23	483,08	499,86
1996-02-16	00:00:00	643,67	663,45	690,83	684,26	711,23	495,94	480,68	490,79	483,43	500,06

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 9				
		P4-1	P4-2	P4-3	P4-4	P4-5	P9-1	P9-2	P9-3	P9-4	P9-5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1996-02-16	06:00:00	643,59	663,24	690,73	684,26	711,23	495,77	481,13	490,79	484,60	500,58
1996-02-16	12:00:00	643,45	663,24	690,83	684,18	711,23	495,96	481,37	490,98	484,28	500,42
1996-02-16	18:00:00	643,59	663,37	690,83	684,18	711,23	495,96	482,16	491,00	484,86	502,43
1996-02-17	00:00:00	643,45	663,24	690,62	684,18	711,13	495,77	481,87	491,48	484,31	502,05
1996-02-17	06:00:00	643,45	663,16	690,62	684,07	711,13	496,11	485,30	491,16	487,49	510,01
1996-02-17	12:00:00	643,37	663,16	690,73	683,96	711,05	495,89	487,74	491,67	490,45	513,32
1996-02-17	18:00:00	643,37	663,05	690,73	684,18	711,23	496,02	494,45	491,58	496,52	523,97
1996-02-18	00:00:00	643,37	663,16	691,05	684,18	711,23	495,89	502,49	492,13	504,73	532,38
1996-02-18	06:00:00	643,37	663,24	691,29	684,42	711,56	496,07	505,06	491,91	507,29	534,76
1996-02-18	12:00:00	643,67	663,56	691,80	685,03	711,99	496,15	506,07	492,77	508,66	535,55
1996-02-18	18:00:00	643,94	663,72	692,74	686,03	712,85	496,66	506,85	492,77	508,64	535,29
1996-02-19	00:00:00	643,94	663,72	693,30	686,75	713,52	496,83	506,92	493,36	509,67	535,33
1996-02-19	06:00:00	644,20	664,02	694,05	687,48	714,24	496,85	506,76	493,53	508,22	534,60
1996-02-19	12:00:00	644,20	664,02	694,05	687,69	714,38	496,97	506,16	494,10	507,92	533,90
1996-02-19	18:00:00	644,42	664,02	694,05	687,75	714,46	497,17	506,16	493,55	508,33	533,48
1996-02-20	00:00:00	644,31	664,02	694,05	687,75	714,32	497,24	505,52	493,55	508,52	533,09
1996-02-20	06:00:00	644,20	664,10	693,84	687,75	714,24	497,45	505,24	493,97	507,29	532,11
1996-02-20	12:00:00	644,31	664,23	693,76	687,75	714,03	497,50	505,13	493,97	507,79	532,07
1996-02-20	18:00:00	644,31	664,10	693,84	687,75	714,03	497,33	505,10	494,66	507,72	532,27
1996-02-21	00:00:00	644,31	664,10	693,84	687,69	714,03	497,86	504,54	494,62	507,02	531,41
1996-02-21	06:00:00	644,42	664,23	693,62	687,59	713,92	498,02	503,25	494,32	506,30	529,05
1996-02-21	12:00:00	644,53	664,31	693,52	687,48	713,92	498,14	502,01	494,82	504,97	525,93
1996-02-21	18:00:00	644,63	664,42	693,52	687,26	713,70	497,97	500,15	494,93	502,67	522,45
1996-02-22	00:00:00	644,53	664,31	693,41	687,18	713,70	498,36	497,72	494,42	500,06	519,23
1996-02-22	06:00:00	644,53	664,42	693,52	686,97	713,52	498,22	495,96	494,08	498,57	516,48
1996-02-22	12:00:00	644,42	664,31	692,90	686,97	713,52	498,17	493,94	494,45	496,29	514,26
1996-02-22	18:00:00	644,42	664,23	692,90	686,83	713,46	498,36	492,68	493,91	495,25	512,75
1996-02-23	00:00:00	644,53	664,42	692,90	686,83	713,46	498,17	491,62	494,19	493,91	511,61
1996-02-23	06:00:00	644,31	664,23	692,74	686,65	713,03	498,34	490,65	493,55	492,64	510,58
1996-02-23	12:00:00	644,42	664,23	692,74	686,43	712,95	498,19	489,40	493,77	492,02	509,53
1996-02-23	18:00:00	644,42	664,23	692,63	686,22	712,85	498,10	488,64	493,29	490,27	508,66
1996-02-24	00:00:00	644,42	664,23	692,63	686,03	712,74	498,17	487,69	493,49	489,28	507,72
1996-02-24	06:00:00	644,42	664,23	692,55	686,03	712,60	498,34	486,68	493,36	488,10	507,48
1996-02-24	12:00:00	644,42	664,10	692,42	686,03	712,52	498,22	486,24	493,94	487,82	507,29
1996-02-24	18:00:00	644,20	664,02	692,23	685,87	712,31	497,86	485,44	492,77	486,54	506,07
1996-02-25	00:00:00	644,31	664,02	691,91	685,87	712,42	498,14	484,90	493,21	486,20	504,62
1996-02-25	06:00:00	644,10	663,91	691,99	685,54	712,20	497,68	484,51	493,05	486,28	503,22
1996-02-25	12:00:00	644,31	664,10	691,91	685,54	712,20	497,72	484,05	492,73	485,85	502,49
1996-02-25	18:00:00	644,10	664,02	691,91	685,46	711,99	497,54	483,29	492,39	484,94	501,35
1996-02-26	00:00:00	644,10	663,91	692,34	685,25	711,91	497,37	482,89	492,73	483,98	499,97
1996-02-26	06:00:00	643,94	663,80	692,12	685,12	711,74	497,24	482,42	492,18	483,74	499,51
1996-02-26	12:00:00	643,94	663,80	691,80	685,12	711,80	497,31	481,99	491,95	483,15	498,36
1996-02-26	18:00:00	643,94	663,72	691,91	684,93	711,66	496,83	481,65	492,13	483,41	497,37
1996-02-27	00:00:00	643,94	663,72	692,63	684,82	711,66	496,69	481,43	492,04	482,12	496,99
1996-02-27	06:00:00	643,88	663,67	692,12	684,71	711,56	496,69	481,18	491,28	482,56	496,29
1996-02-27	12:00:00	643,78	663,56	692,12	684,50	711,45	496,72	481,13	491,48	481,95	495,44
1996-02-27	18:00:00	643,78	663,56	691,99	684,42	711,34	496,59	480,63	491,19	481,73	495,11
1996-02-28	00:00:00	643,88	663,45	691,13	684,42	711,34	496,29	480,44	491,62	481,73	494,62
1996-02-28	06:00:00	643,78	663,45	691,18	684,31	711,23	496,24	480,14	490,79	481,09	494,36
1996-02-28	12:00:00	643,67	663,37	691,18	684,26	711,23	496,43	479,80	490,79	481,18	493,53
1996-02-28	18:00:00	643,67	663,24	691,37	684,18	711,13	496,02	479,33	490,98	480,58	492,39
1996-02-29	00:00:00	643,59	663,24	691,18	684,18	711,05	496,07	478,76	490,73	480,20	491,65
1996-02-29	06:00:00	643,45	663,05	691,18	684,07	710,97	495,85	478,51	489,95	480,14	491,11
1996-02-29	12:00:00	643,45	663,05	691,18	683,96	710,97	495,96	478,24	490,65	479,10	490,77
1996-02-29	18:00:00	643,45	663,05	691,18	683,75	710,91	495,73	477,95	490,27	478,68	490,05
1996-03-01	00:00:00	643,37	662,94	691,18	683,75	710,80	495,77	477,52	490,29	478,81	488,95
1996-03-01	06:00:00	643,37	662,81	691,13	683,64	710,80	495,73	477,06	490,31	478,41	488,47
1996-03-01	12:00:00	643,27	662,81	691,05	683,64	710,70	495,39	476,75	489,77	478,24	487,74
1996-03-01	18:00:00	643,16	662,81	691,18	683,56	710,62	495,27	476,58	489,92	478,04	487,37
1996-03-02	00:00:00	643,08	662,73	691,05	683,56	710,62	495,17	476,42	489,97	477,79	486,86

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 9				
		P4-1	P4-2	P4-3	P4-4	P4-5	P9-1	P9-2	P9-3	P9-4	P9-5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1996-03-02	06:00:00	643,08	662,51	691,05	683,48	710,48	495,13	476,56	489,92	477,91	486,11
1996-03-02	12:00:00	643,08	662,41	690,94	683,48	710,29	494,93	475,85	489,28	476,92	485,60
1996-03-02	18:00:00	643,02	662,41	690,83	683,48	710,29	495,11	475,55	489,67	476,35	485,60
1996-03-03	00:00:00	642,92	662,30	690,51	683,32	710,19	494,70	475,50	489,12	477,19	485,24
1996-03-03	06:00:00	642,81	662,19	690,30	683,42	710,19	494,79	475,29	489,19	476,87	484,79
1996-03-03	12:00:00	642,81	662,11	690,35	683,21	710,08	494,70	475,13	489,60	476,45	484,79
1996-03-03	18:00:00	642,73	662,11	690,35	683,32	710,08	494,42	474,90	488,98	477,15	484,39
1996-03-04	00:00:00	642,73	662,11	690,35	683,21	710,08	494,40	475,16	489,02	475,82	484,22
1996-03-04	06:00:00	642,59	661,98	690,35	683,21	710,03	494,28	474,95	489,12	476,70	483,91
1996-03-04	12:00:00	642,59	661,98	690,43	683,13	709,92	494,19	474,67	488,78	475,90	483,49
1996-03-04	18:00:00	642,73	661,98	690,51	683,00	710,03	494,40	474,31	488,72	476,07	483,43
1996-03-05	00:00:00	642,73	661,98	690,35	683,00	709,92	493,84	474,31	488,43	475,55	482,85
1996-03-05	06:00:00	642,59	661,98	690,43	683,00	709,92	493,97	474,25	488,95	475,77	482,72
1996-03-05	12:00:00	642,59	661,98	690,30	682,91	709,81	493,89	474,31	487,95	475,46	481,82
1996-03-05	18:00:00	642,73	661,98	690,51	682,91	709,92	493,97	474,00	488,64	475,35	481,99
1996-03-06	00:00:00	642,81	661,98	690,30	682,81	709,92	493,60	473,70	488,30	475,39	481,54
1996-03-06	06:00:00	642,81	661,98	690,35	682,81	709,92	493,53	473,62	488,24	474,61	481,13
1996-03-06	12:00:00	642,81	661,98	690,35	682,70	709,81	493,60	473,79	488,26	474,90	480,92
1996-03-06	18:00:00	642,73	661,98	690,43	682,70	709,81	493,41	473,36	487,86	475,18	480,85
1996-03-07	00:00:00	642,73	661,98	690,35	682,70	709,73	493,68	473,23	487,99	475,08	480,63
1996-03-07	06:00:00	642,73	661,98	690,51	682,70	709,73	493,60	473,40	488,47	475,33	480,51
1996-03-07	12:00:00	642,51	661,98	690,35	682,59	709,52	493,45	473,15	487,60	474,99	479,86
1996-03-07	18:00:00	642,59	661,98	690,43	682,59	709,60	493,55	473,07	487,82	474,44	479,86
1996-03-08	00:00:00	642,59	661,98	690,43	682,59	709,52	493,33	472,94	487,44	474,25	479,78
1996-03-08	06:00:00	642,59	661,92	690,43	682,59	709,52	493,55	472,58	487,57	474,29	479,50
1996-03-08	12:00:00	642,51	661,98	690,43	682,59	709,52	493,53	472,67	487,40	473,36	479,40
1996-03-08	18:00:00	642,51	661,92	690,35	682,59	709,52	493,29	472,67	487,71	473,79	479,57
1996-03-09	00:00:00	642,51	661,92	690,35	682,54	709,41	493,49	472,78	487,49	474,31	479,36
1996-03-09	06:00:00	642,51	661,92	690,35	682,59	709,52	493,16	478,90	488,38	479,80	496,72
1996-03-09	12:00:00	642,73	661,98	690,43	682,54	709,73	493,60	494,66	488,64	494,14	522,18
1996-03-09	18:00:00	643,02	661,98	690,83	682,59	709,92	493,94	504,40	489,12	504,48	530,74
1996-03-10	00:00:00	643,27	662,41	691,05	682,70	710,08	494,24	505,58	489,60	506,10	530,81
1996-03-10	06:00:00	643,59	662,73	690,43	682,91	710,62	494,49	505,44	490,79	505,89	529,28
1996-03-10	12:00:00	643,67	662,94	691,18	683,21	710,97	495,09	506,42	490,79	506,25	531,11
1996-03-10	18:00:00	643,88	663,05	691,48	683,56	711,13	495,30	507,29	490,29	507,85	531,66
1996-03-11	00:00:00	644,02	663,45	692,23	684,18	711,80	495,96	508,31	491,91	509,60	532,57
1996-03-11	06:00:00	644,10	663,67	692,63	684,50	712,20	496,24	509,02	491,95	509,84	532,79
1996-03-11	12:00:00	644,31	663,72	692,90	685,03	712,66	496,52	509,35	492,47	510,25	532,41
1996-03-11	18:00:00	644,31	663,80	693,30	685,25	712,95	496,94	508,99	493,21	510,54	532,38
1996-03-12	00:00:00	644,53	664,02	693,52	685,68	713,36	496,94	508,95	494,28	510,37	531,89
1996-03-12	06:00:00	644,53	664,10	693,62	685,76	713,52	497,68	509,12	493,84	510,04	530,13
1996-03-12	12:00:00	644,53	664,31	693,62	685,97	713,52	497,68	507,12	494,58	508,10	527,85
1996-03-12	18:00:00	644,63	664,31	693,84	686,03	713,52	497,97	505,35	493,45	507,15	525,14
1996-03-13	00:00:00	644,72	664,31	693,84	686,03	713,52	498,19	503,67	494,66	505,69	523,38
1996-03-13	06:00:00	644,72	664,31	693,76	686,03	713,62	498,48	502,67	494,02	504,24	521,71
1996-03-13	12:00:00	644,77	664,42	693,71	686,03	713,62	498,60	500,96	494,66	502,81	519,02
1996-03-13	18:00:00	644,72	664,53	693,71	686,03	713,62	498,14	499,94	494,56	501,39	517,24
1996-03-14	00:00:00	644,72	664,42	693,76	686,03	713,52	498,57	499,63	494,14	500,77	517,26
1996-03-14	06:00:00	644,63	664,42	693,52	685,97	713,52	498,64	499,30	494,19	500,42	516,52
1996-03-14	12:00:00	644,63	664,42	693,71	685,97	713,52	498,94	498,77	494,08	500,50	516,13
1996-03-14	18:00:00	644,63	664,31	693,76	685,97	713,52	498,94	500,39	494,40	501,56	519,67
1996-03-15	00:00:00	644,72	664,42	693,52	685,97	713,52	499,09	504,36	494,24	505,64	526,72
1996-03-15	06:00:00	644,72	664,31	693,52	685,87	713,52	499,21	507,76	494,82	509,25	530,13
1996-03-15	12:00:00	644,77	664,42	693,76	685,97	713,52	498,99	507,76	495,00	509,02	529,33
1996-03-15	18:00:00	644,72	664,42	693,76	685,87	713,52	499,37	506,30	495,00	507,72	526,88
1996-03-16	00:00:00	644,72	664,31	693,76	685,87	713,52	499,43	505,44	495,35	506,60	525,10
1996-03-16	06:00:00	644,72	664,42	693,76	686,03	713,62	499,21	504,07	495,42	505,41	522,79
1996-03-16	12:00:00	644,72	664,42	693,76	685,97	713,52	499,57	502,67	494,56	503,52	520,98
1996-03-16	18:00:00	644,77	664,31	693,76	686,03	713,52	499,13	501,48	495,00	502,01	518,93
1996-03-17	00:00:00	644,72	664,31	693,30	686,03	713,52	499,21	500,63	496,07	500,94	517,68

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 9				
		P4-1	P4-2	P4-3	P4-4	P4-5	P9-1	P9-2	P9-3	P9-4	P9-5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1996-03-17	06:00:00	644,77	664,31	693,71	686,03	713,52	499,57	499,86	497,15	500,39	516,13
1996-03-17	12:00:00	644,72	664,31	693,71	685,97	713,52	499,30	499,02	496,29	499,57	515,54
1996-03-17	18:00:00	644,77	664,31	693,76	686,03	713,52	499,37	498,22	496,81	498,05	515,06
1996-03-18	00:00:00	644,72	664,23	693,71	685,97	713,46	499,39	498,30	497,03	497,86	516,35
1996-03-18	06:00:00	644,63	664,10	693,41	685,76	713,36	499,13	498,88	496,55	498,44	516,73
1996-03-18	12:00:00	644,63	664,23	693,20	685,76	713,36	499,26	498,54	496,20	497,86	516,27
1996-03-18	18:00:00	644,53	664,10	693,09	685,76	713,25	499,47	498,17	496,55	498,10	516,01
1996-03-19	00:00:00	644,53	664,02	693,20	685,68	713,17	499,21	498,88	495,77	498,44	517,89
1996-03-19	06:00:00	644,63	664,10	692,90	685,76	713,17	499,04	501,96	496,29	501,42	522,24
1996-03-19	12:00:00	644,53	664,10	693,09	685,68	713,17	499,13	504,31	496,07	504,54	525,68
1996-03-19	18:00:00	644,72	664,10	693,09	685,68	713,25	499,21	506,46	496,29	505,86	527,85
1996-03-20	00:00:00	644,63	664,02	693,01	685,68	713,03	499,37	508,57	496,66	508,02	529,98
1996-03-20	06:00:00	644,72	664,02	693,01	685,76	713,46	499,37	508,39	496,94	508,19	529,33
1996-03-20	12:00:00	644,72	664,10	693,20	685,68	713,46	499,21	507,48	496,29	506,94	527,09
1996-03-20	18:00:00	644,77	664,23	692,12	685,76	713,52	499,37	508,91	497,48	508,66	530,78
1996-03-21	00:00:00	644,77	664,10	692,23	685,76	713,52	499,34	510,84	496,89	510,04	532,03
1996-03-21	06:00:00	644,77	664,31	692,55	685,97	713,70	499,47	510,20	496,85	509,39	530,60
1996-03-21	12:00:00	644,63	664,23	692,74	685,97	713,70	499,39	508,50	496,49	507,81	528,19
1996-03-21	18:00:00	644,72	664,31	692,63	686,03	714,03	499,67	506,92	496,43	506,25	525,58
1996-03-22	00:00:00	644,72	664,23	692,42	686,03	714,13	499,67	505,64	497,45	504,67	524,52
1996-03-22	06:00:00	644,63	664,23	692,12	686,03	714,13	499,47	504,73	496,69	504,40	523,04
1996-03-22	12:00:00	644,53	664,23	692,23	686,03	714,03	499,47	503,72	497,19	502,83	520,98
1996-03-22	18:00:00	644,53	664,23	692,55	686,03	714,13	499,57	503,07	497,11	502,47	519,71
1996-03-23	00:00:00	644,63	664,23	692,55	686,03	714,03	499,74	503,07	497,45	502,30	519,91
1996-03-23	06:00:00	644,63	664,31	692,90	686,03	714,03	499,39	501,93	496,66	501,98	518,98
1996-03-23	12:00:00	644,53	664,23	692,85	686,03	713,70	499,60	501,22	497,15	500,60	517,34
1996-03-23	18:00:00	644,63	664,23	692,90	686,03	713,81	499,51	500,46	496,49	500,15	516,27
1996-03-24	00:00:00	644,63	664,23	692,55	686,03	713,70	499,39	499,86	497,24	499,51	515,63
1996-03-24	06:00:00	644,53	664,23	692,55	685,97	713,52	499,37	499,72	496,55	498,99	515,54
1996-03-24	12:00:00	644,53	664,23	692,63	685,97	713,70	499,63	498,82	496,66	498,71	514,46
1996-03-24	18:00:00	644,53	664,10	692,74	685,97	713,62	499,57	498,34	496,46	497,84	514,35
1996-03-25	00:00:00	644,63	664,10	692,85	685,87	713,52	499,63	497,68	496,55	496,46	513,61
1996-03-25	06:00:00	644,63	664,10	692,74	685,76	713,52	499,21	497,31	496,11	495,99	513,35
1996-03-25	12:00:00	644,53	664,10	692,55	685,68	713,52	499,04	496,43	496,27	495,05	512,33
1996-03-25	18:00:00	644,53	664,02	692,42	685,68	713,46	498,88	495,27	495,62	494,02	511,57
1996-03-26	00:00:00	644,53	664,02	692,55	685,54	713,36	498,86	494,53	495,82	492,77	511,57
1996-03-26	06:00:00	644,42	664,02	692,55	685,54	713,25	498,94	493,89	495,51	492,36	511,41
1996-03-26	12:00:00	644,31	663,91	692,42	685,46	713,17	498,77	493,53	495,59	491,67	511,14
1996-03-26	18:00:00	644,10	663,80	692,34	685,36	713,03	498,40	492,91	495,69	491,40	510,77
1996-03-27	00:00:00	644,20	663,72	692,12	685,25	712,85	498,40	492,81	495,17	490,79	509,72
1996-03-27	06:00:00	644,10	663,80	692,12	685,25	712,85	498,26	492,85	494,56	490,65	509,21
1996-03-27	12:00:00	644,10	663,80	692,12	685,17	712,74	498,05	492,51	494,14	490,45	508,36
1996-03-27	18:00:00	644,02	663,72	691,99	685,12	712,74	497,97	492,18	494,36	489,63	507,54
1996-03-28	00:00:00	644,02	663,67	691,99	685,03	712,60	497,84	491,53	494,24	489,28	506,72
1996-03-28	06:00:00	644,02	663,56	691,80	684,82	712,31	497,92	491,33	493,77	489,77	505,64
1996-03-28	12:00:00	644,02	663,56	691,80	684,71	712,42	497,61	491,23	494,56	489,19	504,87
1996-03-28	18:00:00	644,02	663,45	691,69	684,61	712,31	497,41	490,73	493,55	487,71	504,07
1996-03-29	00:00:00	643,94	663,37	691,80	684,61	712,31	497,15	490,60	493,74	487,49	503,55
1996-03-29	06:00:00	643,94	663,37	691,69	684,50	712,20	497,19	490,05	493,41	487,60	503,07
1996-03-29	12:00:00	643,88	663,24	691,59	684,42	712,09	496,94	490,01	493,38	487,54	502,49
1996-03-29	18:00:00	643,78	663,16	691,59	684,42	711,99	496,72	489,97	493,45	487,44	501,96
1996-03-30	00:00:00	643,78	663,16	691,48	684,31	711,99	496,89	489,84	493,05	486,93	501,84
1996-03-30	06:00:00	643,78	663,05	691,59	684,31	711,91	496,55	489,58	492,91	487,30	501,05
1996-03-30	12:00:00	643,78	662,94	691,29	684,31	711,80	496,39	489,40	492,18	486,32	500,83
1996-03-30	18:00:00	643,78	662,94	691,18	684,26	711,80	496,46	489,24	492,53	486,97	500,42
1996-03-31	00:00:00	643,59	662,86	691,13	684,07	711,80	496,24	488,60	492,81	486,20	499,86
1996-03-31	06:00:00	643,59	662,81	691,29	684,07	711,80	496,13	488,64	492,00	485,94	499,55
1996-03-31	12:00:00	643,37	662,73	691,29	684,07	711,66	496,11	488,13	492,18	485,94	498,77
1996-03-31	18:00:00	643,27	662,73	691,18	684,07	711,56	495,79	487,54	492,04	485,60	498,60
1996-04-01	00:00:00	643,27	662,62	691,18	684,07	711,56	495,79	487,26	491,62	485,39	497,68

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 9				
		P4-1	P4-2	P4-3	P4-4	P4-5	P9-1	P9-2	P9-3	P9-4	P9-5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1996-04-01	06:00:00	643,16	662,62	691,18	683,96	711,45	495,73	487,26	491,78	484,65	497,54
1996-04-01	12:00:00	643,16	662,51	691,18	683,85	711,45	495,62	487,44	491,82	484,90	498,30
1996-04-01	18:00:00	643,27	662,51	691,13	683,96	711,56	495,48	489,77	491,85	488,05	503,42
1996-04-02	00:00:00	643,27	662,51	691,05	683,75	711,23	495,79	494,82	492,18	492,31	512,13
1996-04-02	06:00:00	643,37	662,62	691,18	683,85	711,56	495,77	496,46	492,47	494,53	513,35
1996-04-02	12:00:00	643,37	662,62	691,18	683,64	711,34	495,73	496,29	491,95	494,10	512,51
1996-04-02	18:00:00	643,59	662,73	691,18	683,85	711,56	495,77	495,42	492,18	493,41	510,50
1996-04-03	00:00:00	643,59	662,73	691,18	683,75	711,66	495,82	494,53	492,22	492,22	509,90
1996-04-03	06:00:00	643,59	662,73	691,18	683,85	711,66	495,62	493,97	493,11	491,85	509,39
1996-04-03	12:00:00	643,59	662,73	691,29	683,75	711,66	495,85	493,24	491,88	491,00	508,26
1996-04-03	18:00:00	643,59	662,81	691,48	683,85	711,74	495,79	492,73	492,57	490,79	507,92
1996-04-04	00:00:00	643,59	662,73	691,29	683,75	711,66	495,69	492,47	492,53	490,05	507,18
1996-04-04	06:00:00	643,67	662,73	691,48	683,85	711,80	495,79	492,47	492,57	489,92	507,15
1996-04-04	12:00:00	643,59	662,73	691,48	683,75	711,74	495,62	492,73	492,60	489,95	507,06
1996-04-04	18:00:00	643,67	662,73	691,37	683,96	711,74	495,85	492,91	492,81	490,79	507,37
1996-04-05	00:00:00	643,78	662,81	691,29	683,85	711,80	495,65	494,62	493,21	491,95	512,47
1996-04-05	06:00:00	643,88	662,86	691,69	683,96	711,99	495,89	509,86	493,77	508,16	535,93
1996-04-05	12:00:00	644,02	663,24	692,04	684,31	712,60	496,20	514,26	494,08	511,59	537,13
1996-04-05	18:00:00	644,31	663,56	693,20	685,54	713,62	496,35	515,63	494,42	513,27	537,65
1996-04-06	00:00:00	644,63	663,80	694,70	687,26	715,23	496,97	516,69	494,82	514,17	538,50
1996-04-06	06:00:00	644,77	664,10	695,56	688,12	716,36	497,06	516,78	495,35	515,15	537,91
1996-04-06	12:00:00	644,77	664,23	695,85	688,55	716,68	497,57	516,09	495,85	513,99	537,36
1996-04-06	18:00:00	644,77	664,31	695,75	688,61	716,79	497,68	515,90	495,79	514,59	537,13
1996-04-07	00:00:00	644,77	664,42	695,75	688,61	716,58	498,10	515,90	496,89	514,07	536,65
1996-04-07	06:00:00	644,77	664,53	695,64	688,55	716,36	498,10	515,06	496,59	513,61	536,05
1996-04-07	12:00:00	644,77	664,53	695,42	688,44	716,25	498,34	515,35	496,49	514,03	535,89
1996-04-07	18:00:00	644,77	664,53	695,42	688,55	716,17	498,54	515,04	497,33	514,03	535,80
1996-04-08	00:00:00	644,88	664,42	695,42	688,44	715,93	498,77	514,98	497,45	514,33	535,80
1996-04-08	06:00:00	644,88	664,53	694,81	688,55	715,93	499,04	514,56	497,48	513,10	534,46
1996-04-08	12:00:00	644,98	664,53	694,81	688,44	715,83	499,17	512,97	496,85	511,57	531,92
1996-04-08	18:00:00	644,88	664,53	694,70	688,34	715,61	499,13	511,35	497,79	510,01	529,71
1996-04-09	00:00:00	644,98	664,53	694,62	688,26	715,53	499,13	510,42	497,54	509,72	529,01
1996-04-09	06:00:00	644,98	664,58	694,56	688,12	715,42	499,57	509,86	497,66	508,02	527,51
1996-04-09	12:00:00	644,98	664,58	694,27	688,04	715,23	499,43	508,19	497,54	507,29	525,88
1996-04-09	18:00:00	644,98	664,58	694,13	688,04	715,18	499,34	507,85	497,28	506,50	524,64
1996-04-10	00:00:00	644,88	664,58	694,27	687,93	715,07	499,60	507,12	497,17	505,10	523,72
1996-04-10	06:00:00	644,98	664,53	694,35	687,93	714,97	499,74	506,13	497,31	504,38	522,10
1996-04-10	12:00:00	645,09	664,53	694,13	687,83	714,89	499,63	505,27	497,68	503,59	520,56
1996-04-10	18:00:00	645,09	664,53	693,76	687,83	714,75	499,60	503,89	497,37	501,96	518,54
1996-04-11	00:00:00	645,09	664,53	693,76	687,75	714,67	499,57	502,49	496,85	501,28	517,47
1996-04-11	06:00:00	644,88	664,53	693,71	687,69	714,56	499,37	502,05	497,37	501,26	516,52
1996-04-11	12:00:00	644,77	664,31	693,52	687,59	714,46	499,34	501,56	496,11	500,28	514,86
1996-04-11	18:00:00	644,77	664,23	693,62	687,48	714,32	499,39	500,58	496,20	499,63	514,70
1996-04-12	00:00:00	644,77	664,23	693,30	687,48	714,03	499,02	500,25	496,46	498,54	514,38
1996-04-12	06:00:00	644,88	664,31	693,01	687,26	714,24	499,26	500,06	496,13	498,05	514,17
1996-04-12	12:00:00	644,77	664,23	693,20	687,18	714,24	498,82	499,77	495,69	498,48	514,07
1996-04-12	18:00:00	644,77	664,23	692,85	687,08	714,13	499,04	499,77	495,62	498,44	514,38
1996-04-13	00:00:00	644,77	664,23	692,85	686,97	714,13	499,04	500,19	495,85	498,44	514,84
1996-04-13	06:00:00	644,77	664,10	692,85	686,83	714,03	498,71	500,96	496,20	499,04	515,71
1996-04-13	12:00:00	644,98	664,23	692,85	686,75	714,03	498,64	501,22	495,89	499,09	515,83
1996-04-13	18:00:00	644,98	664,10	692,90	686,65	714,03	498,51	500,58	495,35	498,99	514,72
1996-04-14	00:00:00	644,98	664,02	692,90	686,43	713,81	498,30	500,28	495,51	498,51	513,77
1996-04-14	06:00:00	644,98	664,02	692,90	686,43	713,92	498,34	499,81	495,55	497,68	513,35
1996-04-14	12:00:00	644,77	664,02	692,90	686,32	713,81	497,97	499,26	495,13	497,45	513,23
1996-04-14	18:00:00	644,77	663,91	692,63	686,32	713,70	498,02	498,90	495,17	497,03	512,38
1996-04-15	00:00:00	644,77	663,80	692,90	686,22	713,70	497,97	498,34	494,56	496,24	512,22
1996-04-15	06:00:00	644,77	663,80	692,74	686,14	713,81	497,88	504,07	494,91	501,98	523,88
1996-04-15	12:00:00	644,77	663,80	692,85	686,03	713,81	497,97	512,13	495,39	509,12	533,78
1996-04-15	18:00:00	644,72	663,72	692,85	686,03	713,62	497,92	514,50	495,79	511,39	533,82
1996-04-16	00:00:00	644,72	663,72	692,74	686,14	713,62	498,19	513,23	495,55	510,45	531,41

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 9				
		P4-1	P4-2	P4-3	P4-4	P4-5	P9-1	P9-2	P9-3	P9-4	P9-5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1996-04-16	06:00:00	644,77	663,72	692,85	686,32	713,92	498,51	512,92	496,27	509,97	531,16
1996-04-16	12:00:00	644,77	663,72	692,55	686,43	713,92	498,34	512,38	495,69	509,77	529,66
1996-04-16	18:00:00	644,77	663,72	692,85	686,65	714,03	498,14	512,30	495,85	509,29	528,84
1996-04-17	00:00:00	644,77	663,72	692,90	686,65	713,92	498,60	515,06	496,69	512,42	534,29
1996-04-17	06:00:00	644,77	664,10	693,01	686,89	714,38	498,57	515,88	496,29	513,49	534,97
1996-04-17	12:00:00	644,88	664,10	693,30	687,08	714,56	498,77	515,73	497,15	513,10	534,26
1996-04-17	18:00:00	644,98	664,23	693,62	687,48	714,97	498,90	514,86	496,97	511,90	532,53
1996-04-18	00:00:00	645,09	664,31	693,71	687,59	715,07	499,17	514,42	497,37	512,68	533,04
1996-04-18	06:00:00	645,09	664,42	693,95	687,69	715,23	499,17	513,77	497,28	511,07	532,16
1996-04-18	12:00:00	645,09	664,42	694,05	687,75	715,23	499,04	513,05	497,11	510,80	530,51
1996-04-18	18:00:00	645,17	664,53	694,27	687,83	715,42	499,47	513,23	497,48	510,70	530,94
1996-04-19	00:00:00	645,31	664,58	694,13	687,83	715,61	499,17	513,39	497,75	511,45	531,46
1996-04-19	06:00:00	645,17	664,58	694,27	687,93	715,74	499,77	513,10	498,34	510,12	530,13
1996-04-19	12:00:00	645,31	664,58	694,35	687,93	715,83	499,86	512,30	497,97	509,55	528,45
1996-04-19	18:00:00	645,39	664,66	694,46	687,83	715,93	499,72	511,27	498,54	508,57	526,92
1996-04-20	00:00:00	645,31	664,58	694,46	687,83	715,83	499,77	511,05	498,30	508,66	527,03
1996-04-20	06:00:00	645,17	664,53	694,35	687,75	715,74	500,11	510,33	497,54	507,85	525,49
1996-04-20	12:00:00	645,31	664,58	694,62	687,75	715,74	500,23	508,02	498,30	506,13	521,20
1996-04-20	18:00:00	645,31	664,58	694,46	687,75	715,61	500,15	506,50	498,05	504,36	519,67
1996-04-21	00:00:00	645,39	664,58	694,35	687,75	715,42	500,08	506,25	497,92	504,10	519,14
1996-04-21	06:00:00	645,17	664,66	694,13	687,75	715,23	500,25	505,39	498,82	502,61	518,01
1996-04-21	12:00:00	645,17	664,53	694,27	687,69	715,23	500,50	504,48	498,05	501,79	516,39
1996-04-21	18:00:00	645,17	664,58	693,95	687,59	715,07	500,15	503,25	497,41	501,14	514,76
1996-04-22	00:00:00	645,31	664,66	694,13	687,48	715,18	499,91	502,49	497,88	500,63	514,03
1996-04-22	06:00:00	645,17	664,66	693,76	687,48	715,07	499,91	501,28	497,68	498,60	512,42
1996-04-22	12:00:00	644,98	664,42	693,62	687,26	714,89	500,23	500,75	497,19	498,88	511,59
1996-04-22	18:00:00	644,98	664,31	693,41	687,18	714,75	500,08	501,93	497,31	499,86	514,98
1996-04-23	00:00:00	644,98	664,42	693,52	687,08	714,75	500,25	507,29	497,61	504,71	521,76
1996-04-23	06:00:00	644,98	664,31	693,41	687,08	714,75	500,06	507,72	498,05	505,22	521,62
1996-04-23	12:00:00	644,88	664,31	693,20	686,97	714,89	499,77	506,37	497,03	504,36	519,30
1996-04-23	18:00:00	644,77	664,23	693,20	686,97	714,89	499,81	504,75	497,28	502,26	517,95
1996-04-24	00:00:00	644,88	664,23	693,01	687,08	714,97	500,15	509,67	498,00	507,29	529,28
1996-04-24	06:00:00	644,88	664,23	693,30	687,08	714,89	500,42	512,10	497,72	510,12	529,78
1996-04-24	12:00:00	645,17	664,53	693,62	687,40	715,23	500,15	512,27	497,50	510,04	529,66
1996-04-24	18:00:00	645,09	664,42	693,84	687,59	715,53	500,23	512,27	497,84	510,37	529,05
1996-04-25	00:00:00	645,39	664,66	694,35	687,75	715,83	500,28	511,96	498,48	510,04	529,11
1996-04-25	06:00:00	645,31	664,74	694,35	687,93	715,93	500,42	510,93	498,26	508,79	527,51
1996-04-25	12:00:00	645,29	664,73	694,30	687,94	715,87	500,28	510,16	499,37	508,75	526,37
1996-04-25	18:00:00	645,28	664,71	694,26	687,94	715,81	500,46	510,88	498,34	508,75	527,51
1996-04-26	00:00:00	645,26	664,70	694,21	687,95	715,75	500,71	511,79	498,77	509,35	529,45
1996-04-26	06:00:00	645,25	664,68	694,16	687,95	715,69	500,46	511,90	499,17	510,08	528,91
1996-04-26	12:00:00	645,23	664,67	694,12	687,95	715,63	500,58	511,73	498,90	509,19	528,59
1996-04-26	18:00:00	645,22	664,66	694,07	687,96	715,57	500,77	511,87	499,09	508,66	528,15
1996-04-27	00:00:00	645,20	664,64	694,02	687,96	715,51	500,77	511,75	499,04	509,42	528,43
1996-04-27	06:00:00	645,19	664,63	693,98	687,97	715,45	501,05	511,05	499,39	509,17	526,86
1996-04-27	12:00:00	645,18	664,62	693,93	687,97	715,39	501,05	509,60	499,04	507,72	524,94
1996-04-27	18:00:00	645,16	664,60	693,89	687,98	715,33	501,35	507,96	499,39	505,61	523,14
1996-04-28	00:00:00	645,15	664,59	693,84	687,98	715,27	501,08	508,70	499,23	505,73	523,67
1996-04-28	06:00:00	645,13	664,57	693,79	687,98	715,21	501,05	507,62	499,60	505,39	522,27
1996-04-28	12:00:00	645,12	664,56	693,75	687,99	715,15	501,08	506,00	498,99	503,00	519,65
1996-04-28	18:00:00	645,10	664,55	693,70	687,99	715,09	501,35	504,18	499,37	501,96	517,38
1996-04-29	00:00:00	645,09	664,53	693,65	688,00	715,03	501,05	503,72	498,90	501,35	517,61
1996-04-29	06:00:00	645,07	664,52	693,61	688,00	714,97	501,45	503,46	498,90	501,42	516,65
1996-04-29	12:00:00	645,06	664,51	693,56	688,01	714,91	501,42	502,83	499,37	500,25	514,86
1996-04-29	18:00:00	645,04	664,49	693,51	688,01	714,85	501,22	502,22	499,55	498,77	514,70
1996-04-30	00:00:00	645,03	664,48	693,47	688,01	714,79	500,92	503,29	498,54	500,39	516,99
1996-04-30	06:00:00	645,02	664,46	693,42	688,02	714,73	500,83	503,75	498,64	501,01	516,27
1996-04-30	12:00:00	645,00	664,45	693,38	688,02	714,67	500,71	503,36	498,40	500,28	515,35
1996-04-30	18:00:00	644,99	664,44	693,33	688,03	714,61	500,80	501,79	498,34	499,72	513,57
1996-05-01	00:00:00	644,97	664,42	693,28	688,03	714,55	500,66	501,62	498,77	498,74	512,92

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 3				
		P4-1	P4-2	P4-3	P4-4	P4-5	P3-1	P3-2	P3-3	P3-4	P3-5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1996-05-01	06:00:00	644,96	664,41	693,24	688,04	714,49	500,80	500,83	499,04	497,92	512,59
1996-05-01	12:00:00	644,94	664,40	693,19	688,04	714,43	500,39	500,28	498,34	497,15	511,75
1996-05-01	18:00:00	644,93	664,38	693,14	688,04	714,37	500,08	499,60	497,88	496,15	511,53
1996-05-02	00:00:00	644,91	664,37	693,10	688,05	714,31	500,11	499,09	497,68	495,65	511,01
1996-05-02	06:00:00	644,90	664,35	693,05	688,05	714,25	499,94	498,77	497,61	494,93	511,14
1996-05-02	12:00:00	644,88	664,34	693,00	688,06	714,19	499,72	498,64	497,50	494,62	511,05
1996-05-02	18:00:00	644,87	664,33	692,96	688,06	714,13	499,60	497,66	498,10	494,08	510,58
1996-05-03	00:00:00	644,86	664,31	692,91	688,06	714,07	499,26	497,17	497,06	493,03	510,84
1996-05-03	06:00:00	644,84	664,30	692,86	688,07	714,01	499,04	496,29	496,43	492,77	510,28
1996-05-03	12:00:00	644,83	664,29	692,82	688,07	713,95	499,17	496,07	496,69	491,91	510,16
1996-05-03	18:00:00	644,81	664,27	692,77	688,08	713,88	498,86	495,73	496,99	491,71	510,04
1996-05-04	00:00:00	644,80	664,26	692,73	688,08	713,82	498,82	495,44	496,15	491,00	509,19
1996-05-04	06:00:00	644,78	664,24	692,68	688,09	713,76	498,71	495,51	496,27	490,86	509,21
1996-05-04	12:00:00	644,77	664,23	692,63	688,09	713,70	498,44	495,65	495,69	490,57	508,61
1996-05-04	18:00:00	644,77	664,10	691,99	690,32	714,24	498,54	495,13	495,59	490,27	508,39
1996-05-05	00:00:00	644,77	664,23	692,25	690,16	714,24	497,88	494,66	495,42	490,65	507,48
1996-05-05	06:00:00	644,63	664,02	692,29	690,61	714,13	498,02	494,32	495,22	490,01	506,89
1996-05-05	12:00:00	644,63	663,91	692,15	690,50	713,81	497,92	494,06	495,22	489,46	506,04
1996-05-05	18:00:00	644,53	663,80	692,29	690,20	713,92	497,84	493,80	495,00	488,89	505,58
1996-05-06	00:00:00	644,63	663,72	691,99	689,92	713,92	497,45	494,08	494,93	489,09	504,93
1996-05-06	06:00:00	644,42	663,72	692,17	689,92	713,62	497,48	493,45	494,91	488,05	504,21
1996-05-06	12:00:00	644,31	663,72	691,90	689,77	713,52	497,15	493,38	494,28	488,05	503,84
1996-05-06	18:00:00	644,42	663,67	691,99	689,50	713,52	497,37	492,77	494,42	487,44	503,00
1996-05-07	00:00:00	644,53	663,45	691,90	689,08	713,46	496,85	492,57	493,94	487,40	502,69
1996-05-07	06:00:00	644,63	663,56	691,99	689,28	713,52	497,06	492,60	493,94	487,52	502,05
1996-05-07	12:00:00	644,42	663,45	692,12	689,15	713,46	496,64	492,22	493,55	486,37	501,65
1996-05-07	18:00:00	644,42	663,24	691,87	689,66	713,25	496,49	492,00	493,38	486,97	501,62
1996-05-08	00:00:00	644,42	663,24	691,70	688,67	713,25	496,55	491,95	493,24	487,10	500,80
1996-05-08	06:00:00	644,53	663,37	691,39	689,42	713,36	496,29	491,50	493,45	486,41	499,81
1996-05-08	12:00:00	644,63	663,24	691,82	689,50	713,36	496,29	491,67	493,38	486,34	499,89
1996-05-08	18:00:00	644,42	663,05	691,34	689,08	713,03	496,07	491,78	493,05	485,83	499,55
1996-05-09	00:00:00	644,53	663,16	691,26	689,11	713,25	496,13	491,40	493,19	485,94	499,04
1996-05-09	06:00:00	644,53	663,05	687,25	689,15	713,17	496,02	491,36	493,07	485,73	498,99
1996-05-09	12:00:00	644,53	663,05	687,22	689,20	712,95	495,77	491,48	492,94	485,24	499,04
1996-05-09	18:00:00	644,31	662,86	687,05	688,21	712,85	496,07	491,33	492,36	485,77	498,69
1996-05-10	00:00:00	644,42	662,94	687,61	688,73	712,95	495,73	490,93	492,57	485,52	498,14
1996-05-10	06:00:00	644,42	662,86	687,82	688,60	713,03	495,59	490,65	492,51	484,94	497,57
1996-05-10	12:00:00	644,31	662,94	688,17	688,60	712,85	495,55	490,40	492,04	484,48	496,97
1996-05-10	18:00:00	644,20	662,81	688,54	688,78	712,85	495,62	490,01	492,34	484,05	496,39
1996-05-11	00:00:00	644,20	662,81	689,15	688,67	712,85	495,42	489,71	492,36	484,51	496,29
1996-05-11	06:00:00	644,02	662,62	686,41	688,51	712,52	495,11	489,42	492,64	483,49	494,97
1996-05-11	12:00:00	644,02	662,81	687,22	688,51	712,66	495,55	489,32	492,18	483,57	494,91
1996-05-11	18:00:00	643,88	662,62	686,67	687,91	712,42	495,35	488,68	491,88	482,98	493,77
1996-05-12	00:00:00	643,94	662,62	686,34	687,87	712,42	494,82	488,55	491,14	482,81	493,55
1996-05-12	06:00:00	643,78	662,51	686,58	688,12	712,31	494,82	488,13	491,65	482,72	492,68
1996-05-12	12:00:00	643,88	662,62	686,96	688,29	712,31	494,62	488,30	491,44	482,49	493,16
1996-05-12	18:00:00	643,88	662,51	687,69	688,05	712,31	494,74	488,52	492,36	482,56	492,71
1996-05-13	00:00:00	643,78	662,51	687,49	688,03	712,31	494,56	488,10	490,86	482,56	492,36
1996-05-13	06:00:00	643,67	662,30	686,72	687,82	712,09	494,74	488,10	491,06	482,16	492,18
1996-05-13	12:00:00	643,67	662,41	686,28	687,17	712,20	494,66	488,05	491,19	482,08	491,95
1996-05-13	18:00:00	643,67	662,41	686,12	688,09	712,09	494,45	488,68	491,31	482,94	493,49
1996-05-14	00:00:00	643,45	662,19	686,65	687,99	711,91	494,49	490,23	490,89	483,71	495,55
1996-05-14	06:00:00	643,45	662,11	686,58	687,71	711,91	494,45	490,57	491,82	484,09	495,82
1996-05-14	12:00:00	643,37	662,11	687,09	687,45	711,91	494,36	490,45	491,53	484,39	495,69
1996-05-14	18:00:00	643,67	662,19	687,17	687,34	711,99	494,24	490,73	490,79	484,79	495,48
1996-05-15	00:00:00	643,45	662,11	687,00	687,58	711,80	494,36	490,40	490,79	483,54	494,74
1996-05-15	06:00:00	643,45	662,11	687,25	687,34	711,80	494,32	490,18	491,00	483,11	494,32
1996-05-15	12:00:00	643,45	662,11	687,52	687,34	711,91	494,28	490,01	491,19	483,25	493,94
1996-05-15	18:00:00	643,45	662,11	687,40	687,25	711,80	494,19	489,63	491,00	483,29	493,38
1996-05-16	00:00:00	643,45	661,98	686,67	687,58	711,74	494,08	489,37	491,00	482,91	492,94

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 9				
		P4-1	P4-2	P4-3	P4-4	P4-5	P9-1	P9-2	P9-3	P9-4	P9-5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1996-05-16	06:00:00	643,37	661,98	687,00	687,87	711,74	494,14	489,28	490,11	482,49	492,81
1996-05-16	12:00:00	643,37	661,98	687,30	687,36	711,80	493,80	489,12	490,60	482,89	492,22
1996-05-16	18:00:00	643,37	661,98	687,49	687,25	711,74	493,77	488,95	490,43	482,72	492,47
1996-05-17	00:00:00	643,27	661,98	687,69	687,36	711,74	493,97	488,74	489,92	482,19	492,02
1996-05-17	06:00:00	643,16	661,98	687,45	687,52	711,74	493,84	488,95	490,62	482,39	492,04
1996-05-17	12:00:00	643,16	661,98	687,58	687,65	711,74	493,64	488,68	490,29	481,85	492,13
1996-05-17	18:00:00	643,27	661,98	687,87	687,25	711,80	493,55	488,52	490,29	482,05	491,91
1996-05-18	00:00:00	643,08	661,98	687,61	687,17	711,45	493,49	488,74	490,57	482,45	492,13
1996-05-18	06:00:00	643,16	661,98	687,75	687,02	711,66	493,64	489,42	490,01	482,64	493,19
1996-05-18	12:00:00	643,08	661,98	687,61	686,96	711,56	493,80	493,55	490,01	486,72	502,43
1996-05-18	18:00:00	643,27	661,98	688,03	687,49	711,66	493,94	499,09	490,45	491,88	511,07
1996-05-19	00:00:00	643,27	661,98	687,87	686,79	711,56	494,08	500,92	491,28	493,71	512,38
1996-05-19	06:00:00	643,37	661,98	688,39	687,09	711,80	494,08	500,92	491,33	493,45	512,38
1996-05-19	12:00:00	643,45	661,98	687,75	686,79	711,80	494,08	500,58	491,36	492,87	510,88
1996-05-19	18:00:00	643,37	661,98	687,91	687,13	711,74	494,40	499,81	491,00	492,04	509,51
1996-05-20	00:00:00	643,45	662,11	688,60	686,75	711,74	494,28	500,23	491,40	493,55	511,24
1996-05-20	06:00:00	643,45	661,98	688,54	687,36	711,74	494,49	501,05	492,22	493,77	512,17
1996-05-20	12:00:00	643,59	662,11	687,36	688,03	711,74	494,66	501,10	492,31	493,91	511,90
1996-05-20	18:00:00	643,67	662,11	687,75	686,67	711,80	494,70	502,33	493,16	495,13	515,79
1996-05-21	00:00:00	643,88	662,19	688,67	687,45	711,91	494,74	505,01	492,36	498,14	518,28
1996-05-21	06:00:00	643,67	662,11	688,47	687,00	711,80	494,93	505,69	492,73	498,88	517,61
1996-05-21	12:00:00	643,78	662,19	688,12	687,22	711,99	495,30	505,22	492,85	497,57	516,21
1996-05-21	18:00:00	643,78	662,19	688,71	687,36	711,99	494,93	503,89	492,39	496,72	514,80
1996-05-22	00:00:00	643,78	662,30	688,37	687,05	712,09	495,27	503,29	493,03	495,62	513,53
1996-05-22	06:00:00	643,88	662,41	688,73	687,52	712,20	495,42	502,65	493,11	495,42	512,59
1996-05-22	12:00:00	643,94	662,30	688,47	687,71	712,42	495,09	501,84	493,41	494,66	511,49
1996-05-22	18:00:00	643,94	662,30	688,60	686,62	712,31	495,25	500,71	493,71	493,91	510,72
1996-05-23	00:00:00	644,02	662,41	689,15	688,25	712,60	495,44	500,25	493,91	493,11	510,20
1996-05-23	06:00:00	644,02	662,41	689,06	687,78	712,52	495,62	500,06	492,94	492,18	509,55
1996-05-23	12:00:00	644,10	662,51	688,94	687,36	712,66	495,62	499,43	493,45	490,86	509,05
1996-05-23	18:00:00	644,10	662,41	689,45	688,12	712,60	495,82	498,86	493,19	491,28	508,50
1996-05-24	00:00:00	644,20	662,51	689,40	687,61	712,85	495,59	498,40	494,06	491,11	507,27
1996-05-24	06:00:00	644,10	662,51	689,08	687,65	712,85	495,85	497,97	493,19	490,53	506,16
1996-05-24	12:00:00	644,02	662,41	689,40	687,61	712,66	495,99	497,72	493,11	489,60	505,52
1996-05-24	18:00:00	644,10	662,41	688,05	687,91	712,85	495,96	497,37	493,74	489,42	505,01
1996-05-25	00:00:00	644,02	662,30	687,61	688,21	712,60	495,79	497,19	493,03	489,02	503,75
1996-05-25	06:00:00	643,94	662,30	688,12	687,65	712,66	495,85	496,29	493,49	488,52	502,91
1996-05-25	12:00:00	643,88	662,30	688,25	687,87	712,74	495,96	496,15	493,29	488,86	502,33
1996-05-25	18:00:00	643,94	662,30	688,37	686,96	712,66	495,94	495,96	493,55	488,05	501,77
1996-05-26	00:00:00	643,94	662,30	689,20	688,37	712,95	495,94	495,77	493,11	487,88	501,10
1996-05-26	06:00:00	643,88	662,30	688,73	687,61	712,74	495,79	495,59	492,57	487,49	500,23
1996-05-26	12:00:00	644,02	662,41	689,40	688,21	713,03	495,51	495,30	492,64	487,37	499,89
1996-05-26	18:00:00	643,94	662,19	688,90	688,09	712,85	495,59	494,93	492,60	486,97	499,51
1996-05-27	00:00:00	643,88	662,11	689,45	688,34	712,66	495,85	494,36	492,73	486,37	498,60
1996-05-27	06:00:00	643,94	662,19	689,08	688,60	712,85	495,62	494,62	492,71	485,60	498,17
1996-05-27	12:00:00	643,88	662,11	689,20	687,65	712,60	495,59	493,60	492,36	486,11	497,31
1996-05-27	18:00:00	643,88	662,19	689,28	687,65	712,74	495,48	493,53	493,33	485,11	496,97
1996-05-28	00:00:00	643,88	662,11	689,36	688,05	712,60	495,39	493,21	492,31	484,94	496,64
1996-05-28	06:00:00	643,88	662,11	688,98	688,03	712,60	495,27	492,73	492,60	484,86	496,20
1996-05-28	12:00:00	643,88	662,11	689,11	688,12	712,74	495,30	492,85	492,22	484,62	496,11
1996-05-28	18:00:00	643,78	661,98	688,85	687,49	712,60	495,17	492,98	492,36	485,03	496,15
1996-05-29	00:00:00	643,78	661,98	688,78	687,40	712,52	495,13	492,85	491,71	485,24	496,29
1996-05-29	06:00:00	643,59	661,98	688,78	687,78	712,52	495,30	492,43	492,31	484,82	495,69
1996-05-29	12:00:00	643,67	661,98	689,15	687,69	712,66	495,09	492,71	491,53	484,43	495,65
1996-05-29	18:00:00	643,67	661,98	688,94	688,12	712,42	495,22	492,53	492,22	484,39	495,17
1996-05-30	00:00:00	643,67	661,98	688,73	687,45	712,60	495,00	492,39	492,02	484,22	495,13
1996-05-30	06:00:00	643,45	661,98	688,85	688,05	712,52	494,93	492,08	492,02	484,86	494,56
1996-05-30	12:00:00	643,59	661,98	689,40	687,34	712,60	494,91	491,95	491,85	484,26	494,42
1996-05-30	18:00:00	643,59	661,98	689,06	687,65	712,60	494,79	491,95	491,58	483,36	493,89
1996-05-31	00:00:00	643,45	661,98	689,40	687,69	712,31	494,70	491,16	492,00	483,08	493,84

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 9				
		P4-1	P4-2	P4-3	P4-4	P4-5	P9-1	P9-2	P9-3	P9-4	P9-5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1996-05-31	06:00:00	643,45	661,98	688,98	688,17	712,52	494,70	491,11	491,11	483,36	493,55
1996-05-31	12:00:00	643,37	661,98	688,73	687,22	712,31	494,62	490,89	491,53	482,64	493,11
1996-05-31	18:00:00	643,45	661,98	689,45	687,65	712,31	494,53	491,16	491,62	483,25	492,81
1996-06-01	00:00:00	643,45	661,98	689,15	687,49	712,42	494,45	491,11	490,86	482,89	492,18
1996-06-01	06:00:00	643,37	661,98	689,20	687,75	712,31	494,58	490,73	490,89	482,94	492,04
1996-06-01	12:00:00	643,27	661,98	689,11	687,36	712,20	494,42	490,73	491,23	482,25	491,74
1996-06-01	18:00:00	643,45	661,98	689,42	686,92	712,42	494,32	490,77	490,79	482,49	491,65
1996-06-02	00:00:00	643,45	661,98	689,31	687,52	712,09	494,42	490,65	491,16	482,03	491,06
1996-06-02	06:00:00	643,27	661,98	689,36	687,40	712,09	494,02	490,62	491,06	482,42	490,79
1996-06-02	12:00:00	643,37	661,98	689,23	687,58	712,31	494,32	490,23	490,65	482,21	490,48
1996-06-02	18:00:00	643,27	661,98	689,42	686,67	712,20	494,24	489,97	490,18	481,87	490,11
1996-06-03	00:00:00	643,27	661,98	689,02	687,71	712,09	494,02	489,63	490,77	481,09	489,92
1996-06-03	06:00:00	643,16	661,92	689,20	688,60	711,91	494,19	489,58	490,93	480,85	489,42
1996-06-03	12:00:00	643,16	661,81	688,71	687,61	711,91	493,89	489,28	490,79	480,96	489,32
1996-06-03	18:00:00	643,08	661,92	689,70	687,52	711,91	493,77	489,40	490,60	480,44	488,74
1996-06-04	00:00:00	643,16	661,98	688,94	687,65	711,99	494,06	488,60	490,31	480,68	488,40
1996-06-04	06:00:00	643,08	661,81	689,42	686,75	711,80	494,02	488,57	490,62	480,16	488,17
1996-06-04	12:00:00	643,08	661,81	689,66	687,52	711,80	493,74	488,17	490,23	480,02	487,44
1996-06-04	18:00:00	643,08	661,92	689,42	687,02	711,80	493,74	488,02	490,15	480,24	487,10
1996-06-05	00:00:00	643,08	661,92	689,36	687,05	711,80	493,55	487,78	490,79	479,80	487,23
1996-06-05	06:00:00	643,08	661,81	688,94	687,45	711,80	493,74	487,69	490,11	479,47	487,10
1996-06-05	12:00:00	643,08	661,92	689,40	686,79	711,80	493,49	487,30	490,01	479,20	486,51
1996-06-05	18:00:00	643,02	661,81	689,70	686,75	711,80	493,41	487,35	489,63	478,98	486,16
1996-06-06	00:00:00	643,02	661,81	689,20	686,67	711,80	493,53	486,97	490,11	478,48	486,11
1996-06-06	06:00:00	643,02	661,71	689,02	686,96	711,80	493,45	486,86	489,81	478,37	485,94
1996-06-06	12:00:00	643,02	661,71	689,70	686,79	711,74	493,49	486,68	490,53	478,30	485,16
1996-06-06	18:00:00	643,02	661,81	689,31	686,32	711,80	493,53	486,20	489,51	478,48	485,00
1996-06-07	00:00:00	643,08	661,81	689,87	687,65	711,80	493,24	486,11	489,81	478,24	485,03
1996-06-07	06:00:00	643,02	661,71	689,54	686,53	711,80	493,24	486,18	489,95	478,68	484,43
1996-06-07	12:00:00	643,02	661,71	689,45	687,13	711,74	493,05	485,69	489,75	477,69	484,82
1996-06-07	18:00:00	643,02	661,81	689,66	686,45	711,80	492,81	485,69	489,42	477,69	484,60
1996-06-08	00:00:00	642,92	661,63	689,57	686,45	711,66	493,03	485,35	489,67	476,95	484,05
1996-06-08	06:00:00	642,81	661,63	688,98	686,41	711,56	492,71	484,82	489,63	476,95	483,93
1996-06-08	12:00:00	642,92	661,71	688,98	686,03	711,74	492,94	485,07	489,71	476,72	483,93
1996-06-08	18:00:00	642,81	661,63	689,23	686,67	711,45	492,57	485,03	489,12	477,22	483,41
1996-06-09	00:00:00	642,92	661,63	689,15	687,30	711,56	492,57	484,82	488,89	476,28	482,98
1996-06-09	06:00:00	642,73	661,49	689,15	686,49	711,45	492,53	484,79	489,28	476,62	483,36
1996-06-09	12:00:00	642,81	661,49	689,11	686,67	711,45	492,77	485,00	488,78	477,45	484,14
1996-06-09	18:00:00	642,73	661,49	689,36	686,67	711,45	492,60	485,60	489,58	477,24	484,56
1996-06-10	00:00:00	642,81	661,49	689,70	686,65	711,45	492,73	485,99	489,09	477,61	485,24
1996-06-10	06:00:00	642,59	661,49	689,40	686,72	711,34	492,81	486,68	489,58	478,21	486,16
1996-06-10	12:00:00	642,51	661,41	688,78	686,15	711,23	492,81	487,26	489,07	478,09	487,37
1996-06-10	18:00:00	642,81	661,63	689,36	686,65	711,45	492,73	488,55	489,63	479,29	489,71
1996-06-11	00:00:00	642,81	661,63	689,36	685,99	711,45	493,16	494,76	490,01	485,69	504,36
1996-06-11	06:00:00	642,81	661,63	689,23	686,62	711,34	493,21	497,79	490,45	489,37	507,59
1996-06-11	12:00:00	642,73	661,49	688,94	686,49	711,34	493,21	497,68	489,84	488,35	506,33
1996-06-11	18:00:00	642,73	661,49	689,70	686,67	711,34	493,19	496,43	489,95	487,71	505,44
1996-06-12	00:00:00	642,73	661,49	689,45	685,99	711,23	493,53	494,76	490,05	485,64	504,36
1996-06-12	06:00:00	642,81	661,63	689,40	686,79	711,45	493,49	493,77	490,43	485,66	503,86
1996-06-12	12:00:00	642,51	661,41	690,00	686,62	711,23	493,68	492,87	490,79	485,24	502,95
1996-06-12	18:00:00	642,73	661,49	689,15	686,67	711,45	493,68	492,87	490,43	484,45	502,13
1996-06-13	00:00:00	642,59	661,49	689,20	686,28	711,23	493,55	492,51	490,62	483,98	501,26
1996-06-13	06:00:00	642,59	661,49	689,40	686,28	711,34	493,49	492,31	490,69	483,41	500,32
1996-06-13	12:00:00	642,59	661,30	689,23	685,65	711,13	493,41	491,50	490,79	483,54	499,74
1996-06-13	18:00:00	642,59	661,41	689,08	685,89	711,13	493,49	491,31	490,79	483,36	498,94
1996-06-14	00:00:00	642,73	661,41	689,45	686,67	711,05	493,36	491,31	491,00	483,08	498,44
1996-06-14	06:00:00	642,73	661,41	689,54	686,37	711,13	493,64	491,36	490,77	482,33	497,66
1996-06-14	12:00:00	642,73	661,41	689,70	686,28	711,13	493,68	490,79	490,43	482,37	496,72
1996-06-14	18:00:00	642,59	661,41	689,20	685,99	711,05	493,33	490,23	490,57	481,87	496,55
1996-06-15	00:00:00	642,51	661,41	689,42	686,20	710,97	493,45	489,88	490,45	481,60	496,15

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 9				
		P4-1	P4-2	P4-3	P4-4	P4-5	P9-1	P9-2	P9-3	P9-4	P9-5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1996-06-15	06:00:00	642,51	661,30	689,70	686,37	711,05	493,55	489,77	490,18	481,40	495,62
1996-06-15	12:00:00	642,51	661,30	689,54	685,99	710,97	493,29	489,46	490,60	481,40	495,30
1996-06-15	18:00:00	642,59	661,30	689,83	686,83	710,97	493,19	488,95	490,09	481,34	494,62
1996-06-16	00:00:00	642,59	661,30	689,66	685,80	710,97	493,21	488,64	490,40	481,52	494,45
1996-06-16	06:00:00	642,59	661,30	689,50	685,76	710,91	493,45	488,22	490,27	480,71	494,08
1996-06-16	12:00:00	642,41	661,30	689,20	686,67	710,91	493,11	488,13	490,53	481,31	493,19
1996-06-16	18:00:00	642,51	661,30	689,36	685,99	710,91	493,36	488,02	490,01	480,79	492,73
1996-06-17	00:00:00	642,51	661,20	688,98	685,69	710,91	493,05	487,74	490,18	480,83	492,18
1996-06-17	06:00:00	642,51	661,20	689,40	685,65	710,80	493,19	487,30	490,48	480,71	491,74
1996-06-17	12:00:00	642,51	661,20	688,78	686,07	710,91	493,16	487,06	489,42	480,92	491,31
1996-06-17	18:00:00	642,51	661,30	689,74	685,93	710,91	493,29	486,89	489,75	481,18	491,14
1996-06-18	00:00:00	642,51	661,30	689,40	685,99	710,91	492,94	486,62	489,77	481,04	490,45
1996-06-18	06:00:00	642,51	661,20	689,83	685,65	710,80	493,05	486,41	489,51	480,31	490,27
1996-06-18	12:00:00	642,41	661,20	689,15	685,96	710,80	493,11	486,20	490,29	480,44	489,97
1996-06-18	18:00:00	642,41	661,20	689,77	685,20	710,70	493,05	485,30	488,91	480,07	489,71
1996-06-19	00:00:00	642,41	661,30	689,23	685,59	710,70	493,07	485,35	489,42	480,44	489,37
1996-06-19	06:00:00	642,41	661,20	689,02	685,46	710,70	492,94	485,27	489,81	479,80	489,15
1996-06-19	12:00:00	642,51	661,30	689,31	685,99	710,80	492,85	484,79	489,15	480,07	489,02
1996-06-19	18:00:00	642,51	661,30	689,66	685,99	710,80	492,87	484,96	489,07	479,47	488,26
1996-06-20	00:00:00	642,30	661,20	689,45	685,59	710,48	492,77	484,62	489,40	478,93	487,54
1996-06-20	06:00:00	642,30	661,12	689,06	685,85	710,48	492,73	484,48	489,55	478,68	487,54
1996-06-20	12:00:00	642,22	661,20	689,36	685,72	710,40	492,68	484,18	488,91	478,43	486,97
1996-06-20	18:00:00	642,30	661,12	689,31	685,00	710,62	492,60	483,66	488,74	478,37	486,68
1996-06-21	00:00:00	642,41	661,30	689,20	684,91	710,62	492,27	483,36	489,12	478,55	486,28
1996-06-21	06:00:00	642,16	661,12	688,78	685,46	710,40	492,43	483,11	489,26	478,37	485,99
1996-06-21	12:00:00	642,22	661,12	689,15	685,38	710,29	492,36	483,02	489,19	477,31	485,49
1996-06-21	18:00:00	642,22	661,12	688,85	685,63	710,29	492,36	482,42	488,64	477,39	485,24
1996-06-22	00:00:00	642,41	661,20	689,28	685,63	710,40	492,57	482,33	489,37	476,79	484,74
1996-06-22	06:00:00	642,30	661,12	688,85	684,70	710,29	492,16	482,05	489,19	477,10	484,31
1996-06-22	12:00:00	642,41	661,20	688,05	685,04	710,40	492,18	481,27	488,91	476,58	483,91
1996-06-22	18:00:00	642,41	661,12	688,47	684,42	710,29	492,34	481,23	488,64	476,11	483,62
1996-06-23	00:00:00	642,30	661,12	688,85	685,04	710,19	492,18	481,13	488,95	476,04	483,43
1996-06-23	06:00:00	642,30	661,12	688,51	685,08	710,19	492,18	480,74	488,64	476,07	483,06
1996-06-23	12:00:00	642,22	661,06	688,94	685,55	710,08	491,88	480,40	488,47	482,56	482,81
1996-06-23	18:00:00	642,22	661,12	687,69	684,61	710,19	492,04	480,00	488,64	483,36	482,45
1996-06-24	00:00:00	642,30	661,06	688,12	685,72	710,19	492,00	480,02	488,22	484,86	482,03
1996-06-24	06:00:00	642,16	661,06	688,05	684,97	710,08	491,88	479,86	488,78	487,44	482,05
1996-06-24	12:00:00	642,16	661,06	688,34	684,61	710,08	492,00	479,44	488,13	487,54	481,34
1996-06-24	18:00:00	642,16	661,06	688,54	685,69	710,08	491,88	479,10	488,17	487,44	480,92
1996-06-25	00:00:00	642,16	661,06	688,73	685,08	710,08	491,53	479,33	488,47	487,14	481,27
1996-06-25	06:00:00	642,08	660,98	688,51	684,91	710,03	491,67	479,47	488,02	486,97	481,04
1996-06-25	12:00:00	641,98	661,06	688,05	685,34	710,08	491,74	478,98	488,22	488,43	481,37
1996-06-25	18:00:00	641,98	660,88	688,42	685,43	710,03	491,71	478,93	488,40	488,60	481,02
1996-06-26	00:00:00	641,98	660,88	688,67	685,46	710,03	491,50	478,90	488,05	488,24	480,79
1996-06-26	06:00:00	641,98	660,98	688,73	684,74	710,03	491,53	478,41	487,86	487,78	480,54
1996-06-26	12:00:00	641,98	661,06	688,78	684,61	710,08	491,50	478,51	488,02	487,95	480,54
1996-06-26	18:00:00	641,76	660,77	687,75	684,97	709,81	491,40	478,43	487,91	487,95	480,20
1996-06-27	00:00:00	641,87	660,88	687,78	685,43	710,03	491,58	478,30	488,05	487,99	479,86
1996-06-27	06:00:00	641,76	660,88	688,39	684,70	709,92	491,33	478,37	487,35	487,14	479,80
1996-06-27	12:00:00	641,76	660,88	688,39	684,97	709,81	491,28	478,24	488,10	486,46	479,57
1996-06-27	18:00:00	641,76	660,77	687,75	684,67	709,81	491,40	478,33	487,44	486,11	479,50
1996-06-28	00:00:00	641,76	660,88	689,02	684,87	709,81	491,28	477,48	487,54	485,30	478,90
1996-06-28	06:00:00	641,76	660,88	688,39	684,04	709,81	491,44	477,61	488,05	485,30	478,62
1996-06-28	12:00:00	641,87	660,98	688,54	685,12	709,81	491,40	477,22	487,65	483,98	478,55
1996-06-28	18:00:00	641,76	660,88	689,06	684,94	709,73	491,33	477,28	487,54	482,94	478,43
1996-06-29	00:00:00	641,76	660,77	689,23	684,74	709,73	491,11	477,00	487,14	482,74	477,82
1996-06-29	06:00:00	641,76	660,88	688,73	684,59	709,60	491,58	476,49	487,52	480,49	477,69
1996-06-29	12:00:00	641,87	660,98	688,73	684,67	709,81	491,14	476,56	487,18	480,20	477,41
1996-06-29	18:00:00	641,65	660,77	688,54	684,70	709,60	490,98	476,21	487,57	478,85	477,06
1996-06-30	00:00:00	641,65	660,77	688,71	684,61	709,52	491,23	476,19	486,97	476,58	476,95

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 9				
		P4-1	P4-2	P4-3	P4-4	P4-5	P9-1	P9-2	P9-3	P9-4	P9-5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1996-06-30	06:00:00	641,65	660,77	688,51	684,47	709,52	490,89	476,02	487,65	475,08	476,45
1996-06-30	12:00:00	641,55	660,66	688,67	684,61	709,30	490,79	475,53	486,80	474,99	475,98
1996-06-30	18:00:00	641,55	660,66	688,05	684,61	709,41	490,89	475,50	487,00	473,57	476,02
1996-07-01	00:00:00	641,65	660,66	688,71	684,04	709,30	490,79	475,42	486,62	472,46	475,73
1996-07-01	06:00:00	641,76	660,77	688,94	684,42	709,52	490,65	474,90	487,26	472,07	475,73
1996-07-01	12:00:00	641,55	660,77	688,21	684,61	709,41	490,79	474,95	486,41	472,07	474,99
1996-07-01	18:00:00	641,65	660,66	688,73	684,47	709,30	490,69	474,67	487,35	470,89	474,82
1996-07-02	00:00:00	641,65	660,66	688,21	684,74	709,22	490,79	474,12	487,00	470,49	474,57
1996-07-02	06:00:00	641,55	660,55	688,73	684,25	709,30	490,65	474,09	486,72	471,09	474,31
1996-07-02	12:00:00	641,47	660,55	688,63	684,70	709,22	490,53	474,00	486,84	469,83	474,04
1996-07-02	18:00:00	641,33	660,36	688,37	684,50	709,17	490,60	473,57	486,11	469,86	473,60
1996-07-03	00:00:00	641,33	660,45	688,05	684,00	709,17	490,15	473,57	486,86	469,46	473,46
1996-07-03	06:00:00	641,33	660,36	687,99	683,92	709,09	490,48	473,10	486,28	469,80	473,15
1996-07-03	12:00:00	641,33	660,45	688,29	684,47	709,09	490,43	472,94	486,34	469,16	472,88
1996-07-03	18:00:00	641,33	660,45	688,63	684,59	709,17	490,11	473,27	486,93	468,65	472,12
1996-07-04	00:00:00	641,33	660,45	688,12	684,61	709,17	490,29	472,78	486,46	468,32	472,94
1996-07-04	06:00:00	641,33	660,45	688,09	683,90	709,09	490,53	472,80	486,28	468,79	472,29
1996-07-04	12:00:00	641,33	660,36	688,09	683,74	709,09	490,23	472,26	486,28	468,09	471,78
1996-07-04	18:00:00	641,33	660,45	688,12	684,27	708,98	490,40	472,12	486,34	467,92	471,56
1996-07-05	00:00:00	641,33	660,36	688,54	684,00	708,98	490,09	472,15	486,16	467,50	471,17
1996-07-05	06:00:00	641,33	660,45	688,78	683,62	709,09	490,05	471,95	486,34	467,26	471,06
1996-07-05	12:00:00	641,47	660,45	688,71	683,97	709,17	490,11	471,51	486,84	466,86	470,86
1996-07-05	18:00:00	641,33	660,45	688,73	684,00	708,98	490,09	471,09	485,90	467,09	470,62
1996-07-06	00:00:00	641,33	660,45	688,21	684,21	709,09	490,01	471,47	485,97	466,47	470,20
1996-07-06	06:00:00	641,33	660,45	688,25	683,74	709,09	489,71	470,92	485,55	466,58	470,03
1996-07-06	12:00:00	641,33	660,36	688,37	684,04	708,87	489,77	470,69	486,04	465,69	469,69
1996-07-06	18:00:00	641,33	660,26	688,63	684,27	708,87	489,71	470,09	485,73	465,27	469,04
1996-07-07	00:00:00	641,33	660,26	688,73	683,74	708,76	489,55	470,20	485,97	464,89	469,04
1996-07-07	06:00:00	641,33	660,36	688,37	683,83	708,87	489,88	469,69	485,85	464,68	468,79
1996-07-07	12:00:00	641,28	660,26	688,05	683,37	708,76	489,71	469,63	485,85	465,61	468,23
1996-07-07	18:00:00	641,28	660,26	688,47	683,24	708,66	489,40	470,09	485,35	465,21	468,15
1996-07-08	00:00:00	641,33	660,26	688,54	683,92	708,87	489,46	470,01	485,60	464,35	467,50
1996-07-08	06:00:00	641,20	660,26	688,60	683,79	708,55	489,46	469,24	485,49	463,64	466,99
1996-07-08	12:00:00	641,28	660,26	688,25	684,21	708,76	489,09	468,61	485,94	463,94	466,86
1996-07-08	18:00:00	641,20	660,20	688,47	683,53	708,47	489,26	468,09	485,30	463,13	466,10
1996-07-09	00:00:00	641,20	660,20	688,34	683,83	708,47	489,09	468,15	484,86	463,08	465,99
1996-07-09	06:00:00	641,28	660,20	688,21	683,53	708,47	489,26	467,85	485,03	463,11	465,86
1996-07-09	12:00:00	641,28	660,26	688,25	683,59	708,66	489,02	467,43	485,14	461,83	465,23
1996-07-09	18:00:00	641,20	660,20	688,09	683,57	708,36	489,02	467,43	484,86	461,77	464,68
1996-07-10	00:00:00	641,20	660,12	688,29	683,18	708,36	489,15	466,90	485,27	461,91	464,52
1996-07-10	06:00:00	641,20	660,20	687,82	683,90	708,36	489,02	466,95	485,03	461,37	464,35
1996-07-10	12:00:00	641,20	660,26	688,42	683,70	708,55	488,95	466,39	484,86	461,06	463,64
1996-07-10	18:00:00	641,09	660,12	688,17	683,18	708,36	489,02	465,95	484,86	460,77	463,20
1996-07-11	00:00:00	641,28	660,20	688,39	683,53	708,47	488,78	465,95	484,45	460,56	462,96
1996-07-11	06:00:00	641,09	660,20	687,45	683,48	708,36	488,78	465,57	484,51	459,91	462,29
1996-07-11	12:00:00	641,20	660,12	687,49	682,84	708,55	488,74	465,18	484,65	459,61	461,83
1996-07-11	18:00:00	641,09	660,02	687,36	683,22	708,36	488,55	464,77	484,43	459,48	461,63
1996-07-12	00:00:00	641,09	660,02	687,99	683,01	708,31	488,35	464,72	484,51	458,58	461,23
1996-07-12	06:00:00	641,20	660,12	687,49	683,24	708,36	488,43	464,28	484,60	459,02	461,12
1996-07-12	12:00:00	641,09	660,02	687,78	682,94	708,36	488,24	464,04	483,66	458,55	460,33
1996-07-12	18:00:00	641,09	659,91	687,40	683,22	708,31	488,26	463,43	484,01	458,00	460,12
1996-07-13	00:00:00	640,98	659,80	687,13	683,40	708,36	488,26	463,24	483,66	457,81	459,19
1996-07-13	06:00:00	640,88	659,80	687,61	683,14	708,31	488,10	462,99	484,22	457,58	458,83
1996-07-13	12:00:00	640,77	659,69	688,05	683,32	708,23	488,05	462,78	483,71	456,72	458,80
1996-07-13	18:00:00	640,77	659,69	688,51	683,18	708,23	488,02	462,09	483,66	456,65	458,07
1996-07-14	00:00:00	640,88	659,59	687,02	683,10	708,23	488,22	461,83	483,62	456,21	457,61
1996-07-14	06:00:00	640,77	659,59	687,95	682,76	708,12	488,05	461,53	483,08	455,45	457,16
1996-07-14	12:00:00	640,77	659,59	687,30	683,59	708,12	487,91	461,06	483,43	455,65	456,65
1996-07-14	18:00:00	640,77	659,59	687,30	682,59	708,12	487,44	460,69	482,91	454,53	455,96
1996-07-15	00:00:00	640,77	659,59	687,82	683,14	708,01	487,60	460,08	483,87	454,07	455,49

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 9				
		P4-1	P4-2	P4-3	P4-4	P4-5	P9-1	P9-2	P9-3	P9-4	P9-5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1996-07-15	06:00:00	640,66	659,69	687,69	682,97	708,01	487,54	459,48	483,25	453,70	454,32
1996-07-15	12:00:00	640,58	659,59	687,91	682,54	707,91	487,57	459,19	482,94	452,95	453,38
1996-07-15	18:00:00	640,77	659,59	687,58	682,71	707,91	487,30	458,85	483,22	452,41	453,13
1996-07-16	00:00:00	640,77	659,59	687,45	682,56	708,01	487,26	458,17	483,43	452,15	452,31
1996-07-16	06:00:00	640,88	659,69	687,52	683,05	708,12	487,49	457,90	483,06	451,78	451,63
1996-07-16	12:00:00	640,66	659,51	687,36	682,42	707,91	487,37	458,07	482,54	451,49	450,99
1996-07-16	18:00:00	640,77	659,51	687,82	682,90	707,91	487,14	457,44	482,69	450,55	450,51
1996-07-17	00:00:00	640,58	659,43	687,69	683,01	707,69	487,35	456,94	482,56	449,86	450,24
1996-07-17	06:00:00	640,58	659,43	687,82	682,29	707,80	487,00	456,41	482,74	449,66	449,57
1996-07-17	12:00:00	640,58	659,43	687,65	682,34	707,69	487,26	456,68	481,91	448,89	449,09
1996-07-17	18:00:00	640,66	659,43	687,99	682,76	707,80	486,97	456,41	482,37	449,23	448,96
1996-07-18	00:00:00	640,58	659,37	687,45	682,54	707,69	487,18	456,04	482,45	448,38	448,44
1996-07-18	06:00:00	640,58	659,37	687,99	683,10	707,69	487,10	455,87	482,54	447,69	447,90
1996-07-18	12:00:00	640,66	659,43	687,75	682,64	707,80	486,86	455,65	482,45	447,73	447,16
1996-07-18	18:00:00	640,58	659,26	687,71	682,42	707,69	487,02	455,15	482,03	447,21	446,81
1996-07-19	00:00:00	640,66	659,26	687,87	682,54	707,69	486,76	454,83	482,05	447,16	446,50
1996-07-19	06:00:00	640,77	659,37	687,99	682,80	707,80	486,66	454,66	481,85	446,79	445,90
1996-07-19	12:00:00	640,66	659,26	687,36	682,64	707,61	486,76	454,07	482,39	446,81	445,82
1996-07-19	18:00:00	640,66	659,16	687,49	682,29	707,61	486,68	453,81	481,02	446,33	445,44
1996-07-20	00:00:00	640,66	659,16	687,75	682,97	707,53	486,46	453,70	481,54	446,54	445,04
1996-07-20	06:00:00	640,66	659,16	687,52	682,25	707,61	486,84	453,17	481,57	445,77	444,88
1996-07-20	12:00:00	640,66	659,16	687,34	681,86	707,61	486,46	453,01	481,60	445,17	444,42
1996-07-20	18:00:00	640,66	659,08	687,87	682,08	707,61	486,57	452,85	481,16	445,38	444,06
1996-07-21	00:00:00	640,66	658,94	687,65	682,25	707,48	486,54	452,54	481,54	444,42	443,97
1996-07-21	06:00:00	640,50	658,94	688,03	682,16	707,53	486,51	452,26	481,34	444,42	443,39
1996-07-21	12:00:00	640,58	659,08	688,34	682,29	707,53	486,51	452,31	481,18	444,19	443,42
1996-07-21	18:00:00	640,58	658,94	687,71	681,81	707,61	486,34	452,26	481,16	444,62	443,28
1996-07-22	00:00:00	640,77	658,86	687,58	681,72	707,53	486,41	451,84	481,13	444,04	442,82
1996-07-22	06:00:00	640,58	658,75	687,45	682,59	707,48	486,16	451,96	481,18	443,71	442,70
1996-07-22	12:00:00	640,58	658,75	687,71	682,56	707,48	486,46	452,13	480,83	443,12	442,56
1996-07-22	18:00:00	640,50	658,65	687,99	682,34	707,48	486,07	451,53	480,20	442,95	442,30
1996-07-23	00:00:00	640,50	658,54	687,40	681,81	707,48	486,32	451,61	480,51	443,54	442,43
1996-07-23	06:00:00	640,50	658,54	687,40	682,37	707,48	486,16	451,27	480,58	442,70	442,17
1996-07-23	12:00:00	640,50	658,54	687,75	681,95	707,37	486,07	451,37	480,07	443,04	441,96
1996-07-23	18:00:00	640,45	658,54	687,69	682,34	707,37	486,04	451,11	480,58	443,19	441,96
1996-07-24	00:00:00	640,50	658,49	687,40	682,16	707,26	486,20	451,27	480,34	443,08	441,79
1996-07-24	06:00:00	640,50	658,54	687,91	682,16	707,48	486,07	451,19	480,02	442,78	441,85
1996-07-24	12:00:00	640,50	658,30	687,69	682,56	707,26	485,97	451,15	480,51	442,90	441,37
1996-07-24	18:00:00	640,50	658,30	687,40	682,20	707,18	485,83	451,06	479,80	442,33	441,37
1996-07-25	00:00:00	640,58	658,41	687,40	682,12	707,37	485,81	450,72	480,83	442,09	441,15
1996-07-25	06:00:00	640,50	658,19	687,49	682,54	707,05	485,83	450,77	479,70	442,22	440,98
1996-07-25	12:00:00	640,58	658,30	687,61	681,86	707,26	485,81	450,64	479,86	441,87	440,64
1996-07-25	18:00:00	640,58	658,19	687,22	681,59	707,26	485,69	450,51	479,27	441,15	440,47
1996-07-26	00:00:00	640,58	657,98	687,30	682,12	707,18	485,81	450,75	479,80	440,81	439,99
1996-07-26	06:00:00	640,50	658,19	687,22	681,99	707,26	485,47	450,38	479,80	441,15	439,95
1996-07-26	12:00:00	640,50	658,19	687,00	681,81	707,18	485,60	450,24	479,36	440,81	439,64
1996-07-26	18:00:00	640,45	657,98	686,67	682,08	706,97	485,64	450,12	479,64	440,64	439,26
1996-07-27	00:00:00	640,50	658,08	687,34	682,37	707,05	485,47	450,16	478,85	440,11	438,96
1996-07-27	06:00:00	640,45	657,87	687,30	682,45	706,86	485,35	449,99	479,36	439,76	438,82
1996-07-27	12:00:00	640,45	657,87	687,17	681,86	706,86	485,49	449,86	479,29	440,29	438,21
1996-07-27	18:00:00	640,45	657,87	687,22	681,86	706,86	485,35	449,82	479,06	439,59	438,14
1996-07-28	00:00:00	640,45	657,87	687,52	681,86	706,86	485,52	449,55	479,50	439,10	437,66
1996-07-28	06:00:00	640,45	657,87	687,36	681,42	707,05	485,35	449,38	479,33	439,00	437,62
1996-07-28	12:00:00	640,45	657,87	687,36	681,92	706,86	485,24	448,83	478,95	438,71	437,38
1996-07-28	18:00:00	640,50	657,79	687,91	681,68	707,05	485,11	448,86	478,90	438,58	437,18
1996-07-29	00:00:00	640,45	657,79	687,49	681,26	706,97	485,30	448,75	478,76	438,56	436,81
1996-07-29	06:00:00	640,50	657,79	687,45	682,12	707,05	485,30	448,62	478,60	438,44	436,56
1996-07-29	12:00:00	640,45	657,79	687,52	681,92	706,75	485,20	448,44	478,85	438,14	436,50
1996-07-29	18:00:00	640,50	657,79	687,61	681,47	706,97	484,90	448,38	478,55	438,09	436,42
1996-07-30	00:00:00	640,45	657,71	687,91	682,08	706,86	485,20	448,18	478,93	437,96	436,21

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 3				
		P4-1	P4-2	P4-3	P4-4	P4-5	P3-1	P3-2	P3-3	P3-4	P3-5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1996-07-30	06:00:00	640,45	657,71	687,78	681,84	706,86	485,30	448,20	478,51	437,42	436,18
1996-07-30	12:00:00	640,34	657,55	687,95	681,42	706,64	485,24	448,14	478,55	437,79	435,88
1996-07-30	18:00:00	640,45	657,65	687,71	681,39	706,75	485,20	448,14	478,41	438,27	435,96
1996-07-31	00:00:00	640,45	657,65	687,65	681,68	706,75	484,96	447,90	478,60	437,62	435,82
1996-07-31	06:00:00	640,45	657,55	687,99	681,26	706,75	485,07	447,60	478,62	437,38	435,76
1996-07-31	12:00:00	640,45	657,55	687,75	681,39	706,64	484,82	447,86	478,21	437,49	435,42
1996-07-31	18:00:00	640,45	657,44	687,87	681,72	706,64	485,07	447,73	477,95	436,98	435,52
1996-08-01	00:00:00	640,34	657,44	687,49	680,84	706,64	484,86	447,50	478,41	437,02	435,38
1996-08-01	06:00:00	640,34	657,44	687,75	681,08	706,64	484,69	447,41	478,21	437,18	435,14
1996-08-01	12:00:00	640,23	657,44	687,36	681,19	706,64	484,90	447,52	477,61	436,53	434,95
1996-08-01	18:00:00	640,34	657,44	687,71	681,56	706,75	484,74	447,60	477,69	436,70	434,80
1996-08-02	00:00:00	640,34	657,44	688,39	681,51	706,64	484,74	448,33	478,43	436,18	434,80
1996-08-02	06:00:00	640,23	657,22	688,03	681,19	706,64	484,69	447,46	478,48	435,91	434,95
1996-08-02	12:00:00	640,15	657,14	687,99	681,53	706,64	484,39	447,25	477,93	435,91	434,23
1996-08-02	18:00:00	640,34	657,44	687,91	680,99	706,75	484,62	447,21	478,09	435,82	434,28
1996-08-03	00:00:00	640,23	657,22	687,78	681,42	706,59	484,77	447,16	478,09	436,21	434,43
1996-08-03	06:00:00	640,23	657,36	687,87	682,12	706,64	484,77	447,00	477,69	435,91	434,11
1996-08-03	12:00:00	640,02	657,22	687,69	680,70	706,59	484,74	446,81	477,95	435,82	433,97
1996-08-03	18:00:00	640,15	657,14	688,73	680,82	706,64	484,51	446,81	477,48	435,72	433,81
1996-08-04	00:00:00	640,23	657,14	688,47	681,56	706,64	484,56	446,67	477,73	435,76	434,19
1996-08-04	06:00:00	640,02	657,14	688,60	681,77	706,59	484,45	446,62	477,22	435,29	433,74
1996-08-04	12:00:00	639,94	657,04	688,12	680,99	706,51	484,22	446,81	477,48	435,03	433,77
1996-08-04	18:00:00	640,02	657,04	687,71	681,22	706,59	484,45	447,08	476,79	435,03	433,54
1996-08-05	00:00:00	640,02	656,93	687,52	681,86	706,59	484,31	446,95	477,59	434,80	433,61
1996-08-05	06:00:00	639,94	656,93	687,58	681,34	706,51	484,28	446,75	477,19	435,35	433,17
1996-08-05	12:00:00	639,94	656,93	687,61	681,39	706,51	484,43	446,50	477,15	435,42	433,08
1996-08-05	18:00:00	640,02	656,93	688,05	681,39	706,64	484,31	446,54	477,52	434,95	433,08
1996-08-06	00:00:00	640,02	656,93	687,99	681,26	706,64	484,43	446,29	476,89	434,97	432,85
1996-08-06	06:00:00	640,02	656,85	687,65	681,39	706,51	484,31	446,29	477,24	434,74	432,91
1996-08-06	12:00:00	640,02	656,85	687,99	681,34	706,59	484,28	446,47	477,15	434,95	432,89
1996-08-06	18:00:00	640,02	656,85	688,12	681,34	706,59	484,39	446,64	476,75	435,03	432,94
1996-08-07	00:00:00	640,02	656,85	688,47	681,26	706,59	484,31	446,42	476,66	434,45	432,64
1996-08-07	06:00:00	639,94	656,69	687,82	681,34	706,51	484,28	446,33	477,15	434,45	432,74
1996-08-07	12:00:00	640,15	656,80	688,17	681,86	706,59	484,35	446,37	477,15	434,53	432,71
1996-08-07	18:00:00	639,94	656,69	687,99	681,16	706,51	484,31	446,10	476,70	434,45	432,34
1996-08-08	00:00:00	640,02	656,80	687,99	680,92	706,59	484,09	446,33	477,22	433,93	432,47
1996-08-08	06:00:00	639,94	656,69	688,47	681,30	706,51	484,22	446,03	477,04	434,09	432,55
1996-08-08	12:00:00	639,94	656,58	688,39	680,87	706,51	484,26	446,17	476,92	434,45	432,06
1996-08-08	18:00:00	639,94	656,58	687,91	680,92	706,51	484,18	446,07	476,83	433,81	431,95
1996-08-09	00:00:00	639,94	656,58	688,09	681,26	706,51	484,05	446,33	476,58	433,47	431,87
1996-08-09	06:00:00	639,94	656,50	687,75	680,82	706,40	484,22	445,96	476,70	433,63	431,99
1996-08-09	12:00:00	639,94	656,36	688,09	680,66	706,40	484,18	445,94	476,70	433,54	431,68
1996-08-09	18:00:00	639,94	656,29	687,71	681,16	706,30	484,09	445,90	476,49	433,41	431,70
1996-08-10	00:00:00	639,94	656,29	688,03	680,75	706,30	483,93	445,86	477,04	433,08	431,61
1996-08-10	06:00:00	639,72	656,18	687,91	681,08	706,19	484,05	445,86	476,72	433,08	431,52
1996-08-10	12:00:00	639,83	656,07	687,75	680,99	706,19	483,87	445,57	476,37	433,67	431,44
1996-08-10	18:00:00	639,83	655,99	687,36	680,66	706,19	483,87	446,07	477,04	433,24	431,44
1996-08-11	00:00:00	639,72	655,99	687,13	680,79	706,08	483,93	445,62	476,21	432,89	431,20
1996-08-11	06:00:00	639,72	655,94	687,36	680,44	706,19	483,91	445,65	476,53	432,94	430,96
1996-08-11	12:00:00	639,72	655,99	687,40	680,82	706,19	483,66	445,62	475,85	432,77	430,80
1996-08-11	18:00:00	639,83	656,07	687,69	681,42	706,30	483,91	445,52	476,19	432,37	430,86
1996-08-12	00:00:00	639,83	655,99	688,29	680,44	706,30	483,76	445,48	476,19	432,71	430,80
1996-08-12	06:00:00	639,94	655,94	687,49	681,53	706,19	483,66	445,60	475,85	432,34	430,59
1996-08-12	12:00:00	639,83	655,94	687,78	681,12	706,30	483,66	445,44	476,02	432,34	430,68
1996-08-12	18:00:00	639,83	655,85	687,34	680,48	706,19	483,83	445,34	476,04	432,37	430,38
1996-08-13	00:00:00	639,94	655,85	687,58	680,84	706,19	483,79	445,28	475,73	432,06	430,59
1996-08-13	06:00:00	639,83	655,75	687,36	681,51	706,19	483,74	445,30	475,69	432,06	430,38
1996-08-13	12:00:00	639,94	655,75	687,30	681,19	706,19	483,76	445,34	476,37	432,06	429,97
1996-08-13	18:00:00	639,83	655,64	687,09	681,08	706,19	483,74	445,21	476,07	431,54	430,31
1996-08-14	00:00:00	639,94	655,75	687,00	681,05	706,19	483,49	445,17	475,63	431,95	430,10

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 3				
		P4-1	P4-2	P4-3	P4-4	P4-5	P9-1	P9-2	P9-3	P9-4	P9-5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1996-08-14	06:00:00	639,83	655,64	687,22	680,75	706,08	483,74	445,38	476,28	431,79	429,72
1996-08-14	12:00:00	639,72	655,53	687,02	680,75	705,97	483,36	445,42	475,69	431,61	429,99
1996-08-14	18:00:00	639,72	655,53	686,92	680,57	706,08	483,71	445,11	475,55	431,65	429,64
1996-08-15	00:00:00	639,83	655,64	686,67	680,84	706,08	483,59	445,21	475,85	432,04	429,34
1996-08-15	06:00:00	639,72	655,43	687,30	681,59	706,08	483,62	445,60	475,77	431,92	429,69
1996-08-15	12:00:00	639,72	655,32	686,67	680,48	705,97	483,62	445,65	475,33	431,37	429,72
1996-08-15	18:00:00	639,83	655,43	687,09	680,54	706,08	483,57	445,44	475,42	431,48	429,50
1996-08-16	00:00:00	639,83	655,43	686,72	680,50	705,97	483,45	445,52	475,46	431,37	429,42
1996-08-16	06:00:00	639,83	655,32	687,22	680,79	705,97	483,45	445,73	475,33	430,76	429,37
1996-08-16	12:00:00	639,72	655,32	687,02	680,54	705,89	483,57	445,26	475,87	431,20	429,25
1996-08-16	18:00:00	639,72	655,32	687,05	680,36	706,08	483,25	445,04	475,50	430,68	429,09
1996-08-17	00:00:00	639,64	655,10	686,96	680,96	705,97	483,43	445,00	475,66	431,70	429,09
1996-08-17	06:00:00	639,72	655,10	687,36	680,70	705,97	483,43	444,91	475,63	430,33	428,90
1996-08-17	12:00:00	639,72	655,10	687,36	681,19	706,08	483,15	445,34	475,50	430,76	429,00
1996-08-17	18:00:00	639,72	655,10	687,25	681,59	706,19	483,11	445,14	475,18	430,63	428,96
1996-08-18	00:00:00	639,83	655,10	687,17	681,19	705,97	483,54	445,08	475,25	430,59	428,80
1996-08-18	06:00:00	639,64	655,10	687,13	680,84	705,89	483,41	445,08	475,53	430,80	428,86
1996-08-18	12:00:00	639,64	655,10	687,36	680,44	705,97	483,15	445,00	475,25	430,72	428,77
1996-08-18	18:00:00	639,72	655,10	687,49	680,70	705,89	483,22	444,76	475,87	429,89	428,62
1996-08-19	00:00:00	639,64	655,05	687,00	680,75	705,89	483,06	444,70	475,42	430,06	428,56
1996-08-19	06:00:00	639,64	654,86	687,13	680,54	705,89	483,43	444,65	475,08	430,63	428,62
1996-08-19	12:00:00	639,64	654,75	686,96	681,30	705,89	483,15	444,40	475,13	430,06	428,60
1996-08-19	18:00:00	639,64	654,86	687,69	680,50	705,81	483,06	444,59	475,25	430,33	428,66
1996-08-20	00:00:00	639,64	654,65	687,36	680,36	705,81	483,15	444,57	475,13	430,27	428,35
1996-08-20	06:00:00	639,64	654,54	686,75	680,92	705,81	483,15	444,54	475,33	430,80	428,35
1996-08-20	12:00:00	639,72	654,65	687,22	680,50	705,89	483,11	444,59	475,08	430,06	428,26
1996-08-20	18:00:00	639,64	654,43	687,30	680,79	705,81	483,45	444,45	475,50	430,14	428,35
1996-08-21	00:00:00	639,72	654,43	687,45	680,70	705,81	483,15	444,74	474,70	429,99	427,97
1996-08-21	06:00:00	639,64	654,35	687,00	680,92	705,81	483,22	444,28	475,08	429,85	428,11
1996-08-21	12:00:00	639,64	654,43	687,05	681,64	705,89	483,08	444,36	475,01	429,93	428,17
1996-08-21	18:00:00	639,64	654,27	687,61	680,57	705,81	483,22	444,45	474,70	430,10	428,09
1996-08-22	00:00:00	639,64	654,22	687,17	681,12	705,76	483,08	444,32	475,18	430,06	427,97
1996-08-22	06:00:00	639,64	654,11	687,00	681,19	705,76	482,89	444,40	474,95	429,83	428,01
1996-08-22	12:00:00	639,64	654,11	687,09	680,50	705,81	483,06	444,45	475,13	429,37	427,77
1996-08-22	18:00:00	639,64	654,11	686,92	680,50	705,76	483,08	444,40	475,18	430,16	428,14
1996-08-23	00:00:00	639,64	654,11	687,36	680,70	705,76	483,08	444,42	474,74	429,17	428,11
1996-08-23	06:00:00	639,59	653,92	687,05	680,57	705,65	482,98	444,36	474,44	429,62	427,80
1996-08-23	12:00:00	639,64	654,00	687,09	681,12	705,76	483,15	444,36	474,90	429,76	427,58
1996-08-23	18:00:00	639,64	653,92	687,40	680,54	705,65	482,74	444,26	474,82	429,50	427,84
1996-08-24	00:00:00	639,64	654,00	687,36	680,84	705,76	482,91	444,28	474,74	429,09	427,75
1996-08-24	06:00:00	639,59	653,79	687,45	680,57	705,65	482,91	444,65	474,70	429,14	427,53
1996-08-24	12:00:00	639,64	653,79	687,45	680,50	705,76	482,81	444,36	474,53	429,04	427,77
1996-08-24	18:00:00	639,64	653,79	687,61	680,82	705,65	482,94	444,19	474,70	429,20	427,58
1996-08-25	00:00:00	639,64	653,60	687,25	680,50	705,54	482,81	444,49	474,95	429,09	427,64
1996-08-25	06:00:00	639,59	653,49	686,96	680,66	705,46	482,81	444,36	474,78	429,37	427,64
1996-08-25	12:00:00	639,64	653,41	687,00	680,39	705,33	482,74	444,36	474,31	429,00	427,58
1996-08-25	18:00:00	639,59	653,41	687,30	680,50	705,54	482,64	444,24	475,21	429,25	427,58
1996-08-26	00:00:00	639,59	653,41	687,36	680,13	705,46	482,64	444,62	474,90	429,31	427,58
1996-08-26	06:00:00	639,59	653,41	687,13	680,54	705,54	482,72	444,28	474,84	429,29	427,42
1996-08-26	12:00:00	639,59	653,36	687,22	680,50	705,46	482,56	444,42	474,74	428,62	427,40
1996-08-26	18:00:00	639,59	653,25	686,67	680,44	705,33	482,69	444,45	474,90	429,00	427,56
1996-08-27	00:00:00	639,59	653,36	686,96	680,36	705,33	482,77	444,57	474,25	429,46	427,71
1996-08-27	06:00:00	639,48	653,14	687,05	680,16	705,25	482,72	444,49	474,31	429,12	427,64
1996-08-27	12:00:00	639,59	653,25	687,17	680,13	705,25	482,56	444,57	474,31	429,17	427,58
1996-08-27	18:00:00	639,59	653,06	687,05	680,02	705,14	482,60	444,62	474,37	428,82	427,58
1996-08-28	00:00:00	639,64	653,25	687,05	680,57	705,33	482,56	444,59	474,57	429,12	427,53
1996-08-28	06:00:00	639,64	653,14	686,88	680,66	705,33	482,69	444,91	474,61	428,43	427,58
1996-08-28	12:00:00	639,48	652,93	686,58	680,66	705,03	482,69	444,74	474,50	429,04	427,58
1996-08-28	18:00:00	639,64	653,06	686,65	680,48	705,25	482,72	445,94	474,31	428,86	427,44
1996-08-29	00:00:00	639,64	652,93	686,65	680,50	705,14	482,69	444,88	474,04	428,90	427,44

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 9				
		P4-1	P4-2	P4-3	P4-4	P4-5	P9-1	P9-2	P9-3	P9-4	P9-5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1996-08-29	06:00:00	639,64	652,74	687,36	680,54	705,14	482,64	444,79	474,31	428,86	427,56
1996-08-29	12:00:00	639,64	652,85	686,83	680,23	705,14	482,56	444,91	474,04	428,90	427,64
1996-08-29	18:00:00	639,64	652,74	686,79	680,50	705,14	482,56	444,93	474,12	428,73	427,67
1996-08-30	00:00:00	639,59	652,63	686,75	680,57	704,95	482,49	444,93	473,87	428,60	427,75
1996-08-30	06:00:00	639,59	652,50	686,92	680,06	704,95	482,33	444,54	474,25	428,96	427,56
1996-08-30	12:00:00	639,64	652,63	687,02	680,50	704,95	482,56	444,70	473,95	428,69	427,77
1996-08-30	18:00:00	639,64	652,55	686,53	680,39	704,95	482,33	444,84	474,12	428,60	427,77
1996-08-31	00:00:00	639,64	652,55	686,75	680,13	704,95	482,25	444,93	474,57	428,28	427,67
1996-08-31	06:00:00	639,64	652,50	687,36	680,39	704,95	482,56	445,04	473,91	429,25	427,75
1996-08-31	12:00:00	639,64	652,50	686,92	679,93	704,95	482,37	445,11	473,87	428,77	427,67
1996-08-31	18:00:00	639,64	652,42	686,49	679,63	704,95	482,39	444,93	474,31	429,12	427,75
1996-09-01	00:00:00	639,72	652,50	686,49	680,50	704,95	482,45	445,00	474,29	428,48	427,77
1996-09-01	06:00:00	639,64	652,31	686,58	680,31	704,90	482,25	444,91	474,09	428,69	427,84
1996-09-01	12:00:00	639,64	652,50	686,88	680,87	704,95	482,45	445,00	474,40	428,86	427,88
1996-09-01	18:00:00	639,64	652,31	686,65	680,31	704,90	482,39	445,21	473,70	428,28	427,94
1996-09-02	00:00:00	639,64	652,20	686,62	680,62	704,90	482,42	445,17	473,87	428,80	428,05
1996-09-02	06:00:00	639,59	652,10	686,79	680,48	704,79	482,39	445,00	473,67	429,09	428,05
1996-09-02	12:00:00	639,59	652,20	686,92	680,44	704,79	482,49	445,26	473,95	428,62	427,88
1996-09-02	18:00:00	639,59	652,10	686,75	679,93	704,68	482,12	445,04	473,67	428,80	427,94
1996-09-03	00:00:00	639,59	651,99	686,83	679,81	704,68	482,19	445,11	473,62	428,60	428,09
1996-09-03	06:00:00	639,59	651,99	687,13	679,97	704,68	482,25	445,44	473,81	429,04	428,01
1996-09-03	12:00:00	639,59	651,99	686,20	680,36	704,68	482,19	445,48	474,14	428,86	428,40
1996-09-03	18:00:00	639,48	651,88	686,92	680,54	704,60	482,21	445,34	473,79	428,62	428,09
1996-09-04	00:00:00	639,48	651,80	686,67	680,50	704,47	482,21	445,42	474,31	428,96	428,48
1996-09-04	06:00:00	639,37	651,69	686,75	680,54	704,47	482,05	445,68	473,91	428,11	428,40
1996-09-04	12:00:00	639,48	651,69	686,88	680,13	704,60	481,95	445,73	473,53	428,14	428,28
1996-09-04	18:00:00	639,37	651,69	686,88	680,96	704,60	482,12	446,13	473,49	428,31	428,35
1996-09-05	00:00:00	639,59	651,69	686,83	680,44	704,60	482,16	445,77	473,40	428,01	428,22
1996-09-05	06:00:00	639,48	651,69	686,41	680,27	704,47	482,25	445,62	473,83	428,90	428,35
1996-09-05	12:00:00	639,37	651,69	686,67	680,16	704,39	482,16	445,79	473,87	428,56	428,35
1996-09-05	18:00:00	639,37	651,69	687,00	680,02	704,39	482,03	446,33	473,97	428,96	428,31
1996-09-06	00:00:00	639,37	651,69	686,75	680,31	704,39	482,05	446,17	473,81	428,69	428,26
1996-09-06	06:00:00	639,37	651,64	687,05	680,02	704,39	482,05	445,96	473,32	428,60	428,17
1996-09-06	12:00:00	639,29	651,53	687,00	680,75	704,39	482,08	445,82	472,88	428,26	428,28
1996-09-06	18:00:00	639,37	651,64	686,62	680,44	704,39	482,21	446,20	473,70	428,17	428,28
1996-09-07	00:00:00	639,48	651,53	686,67	680,50	704,90	481,95	446,29	473,62	428,40	428,28
1996-09-07	06:00:00	639,37	651,53	686,72	680,16	704,79	482,08	446,03	473,95	428,62	428,01
1996-09-07	12:00:00	639,37	651,53	686,88	680,75	704,68	482,12	446,33	474,04	428,52	428,22
1996-09-07	18:00:00	639,37	651,53	686,67	679,81	704,79	482,08	446,20	473,23	428,77	428,26
1996-09-08	00:00:00	639,48	651,43	686,92	679,86	704,79	482,12	446,81	474,14	428,52	428,09
1996-09-08	06:00:00	639,37	651,35	686,67	679,81	704,79	481,91	446,75	473,12	428,66	428,31
1996-09-08	12:00:00	639,29	651,21	686,79	680,50	704,68	481,87	446,81	473,44	428,56	428,48
1996-09-08	18:00:00	639,37	651,21	686,62	680,27	704,79	481,77	446,71	473,57	428,52	428,31
1996-09-09	00:00:00	639,29	651,35	686,62	680,31	704,68	481,87	446,81	472,80	428,28	428,66
1996-09-09	06:00:00	639,29	651,13	687,05	680,23	704,68	481,99	447,04	473,91	428,73	428,62
1996-09-09	12:00:00	639,48	651,21	687,13	680,36	704,68	481,99	446,88	473,44	428,62	428,86
1996-09-09	18:00:00	639,37	651,02	687,09	680,16	704,60	481,71	447,76	474,14	428,14	429,14
1996-09-10	00:00:00	639,29	651,02	686,32	680,36	704,47	481,82	447,64	473,53	428,73	429,46
1996-09-10	06:00:00	639,37	651,02	687,02	680,50	704,60	481,91	447,76	473,27	429,04	429,72
1996-09-10	12:00:00	639,37	651,02	686,41	680,75	704,68	481,95	448,02	473,10	428,22	429,89
1996-09-10	18:00:00	639,29	650,84	686,58	680,13	704,47	481,77	448,49	473,53	429,04	430,16
1996-09-11	00:00:00	639,16	650,84	687,09	680,10	704,47	481,91	448,62	473,60	429,34	430,19
1996-09-11	06:00:00	639,16	650,84	686,34	680,16	704,47	482,08	448,72	473,74	428,56	430,22
1996-09-11	12:00:00	639,16	650,78	686,32	680,50	704,39	481,77	448,79	473,74	429,37	430,42
1996-09-11	18:00:00	639,16	650,78	686,03	680,70	704,39	481,82	448,96	473,02	429,04	430,42
1996-09-12	00:00:00	639,16	650,78	686,67	680,79	704,39	481,73	448,96	472,88	429,00	430,33
1996-09-12	06:00:00	639,08	650,70	687,17	680,13	704,39	481,71	449,38	473,62	429,14	430,59
1996-09-12	12:00:00	639,08	650,59	686,88	680,82	704,28	481,85	449,23	473,36	429,34	430,14
1996-09-12	18:00:00	639,08	650,70	686,88	680,44	704,39	481,60	449,13	473,70	429,37	430,33
1996-09-13	00:00:00	639,08	650,70	686,72	680,06	704,39	481,57	449,30	472,60	429,17	429,80

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 9				
		P4-1	P4-2	P4-3	P4-4	P4-5	P9-1	P9-2	P9-3	P9-4	P9-5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1996-09-13	06:00:00	639,08	650,59	686,72	679,76	704,39	481,43	449,57	472,98	428,93	430,02
1996-09-13	12:00:00	639,08	650,70	686,41	679,48	704,28	481,60	449,21	473,46	429,37	429,76
1996-09-13	18:00:00	639,08	650,59	686,15	679,93	704,39	481,85	449,26	473,32	428,90	429,69
1996-09-14	00:00:00	639,08	650,49	686,07	680,44	704,39	481,69	449,51	473,18	428,26	429,83
1996-09-14	06:00:00	638,97	650,38	686,45	679,81	704,28	481,54	449,66	473,23	428,31	429,62
1996-09-14	12:00:00	638,86	650,17	686,53	679,86	704,17	481,52	449,47	473,07	428,56	429,64
1996-09-14	18:00:00	639,08	650,17	685,99	680,44	704,39	481,71	449,66	472,78	429,17	429,48
1996-09-15	00:00:00	638,97	649,98	686,34	679,79	704,17	481,54	449,57	472,98	428,60	429,59
1996-09-15	06:00:00	638,97	649,92	686,79	680,02	704,17	481,52	449,99	473,46	429,09	429,62
1996-09-15	12:00:00	639,08	649,98	686,41	679,46	704,17	481,43	449,79	473,44	428,35	429,85
1996-09-15	18:00:00	638,97	649,98	686,79	679,89	704,28	481,43	449,90	473,53	428,56	429,80
1996-09-16	00:00:00	639,08	649,98	686,79	680,16	704,39	481,65	450,16	473,18	429,09	430,16
1996-09-16	06:00:00	638,97	649,63	687,02	680,62	704,09	481,60	450,95	473,44	429,50	432,17
1996-09-16	12:00:00	639,08	649,63	686,67	680,27	704,28	481,57	452,45	473,07	429,93	434,66
1996-09-16	18:00:00	639,08	649,52	686,72	680,23	704,28	481,69	454,11	473,23	431,70	435,82
1996-09-17	00:00:00	639,16	649,52	686,67	680,10	704,39	481,57	454,76	473,53	432,85	436,56
1996-09-17	06:00:00	639,08	649,30	686,79	679,93	704,28	481,43	455,04	473,46	433,58	436,73
1996-09-17	12:00:00	639,16	649,09	686,32	680,02	704,17	481,65	455,49	473,53	434,39	436,50
1996-09-17	18:00:00	639,16	648,79	686,32	680,02	704,28	481,60	455,83	473,29	434,23	436,18
1996-09-18	00:00:00	639,16	648,66	686,12	679,79	704,39	481,77	455,69	473,46	433,84	435,82
1996-09-18	06:00:00	639,16	648,47	686,83	680,06	704,60	481,54	455,62	473,29	433,77	435,46
1996-09-18	12:00:00	639,16	648,21	686,45	680,10	704,47	481,71	455,45	473,62	433,77	435,29
1996-09-18	18:00:00	639,16	648,21	686,41	679,86	704,28	481,69	455,39	473,70	433,47	434,92
1996-09-19	00:00:00	639,08	648,21	686,32	679,81	704,39	481,65	455,32	473,62	433,29	434,50
1996-09-19	06:00:00	639,08	648,21	686,62	680,10	704,39	481,57	455,19	473,40	433,24	434,11
1996-09-19	12:00:00	639,16	648,21	686,34	679,79	704,47	481,52	455,19	473,53	432,91	433,97
1996-09-19	18:00:00	639,08	648,21	686,58	679,41	704,39	481,60	455,36	473,44	432,81	434,19
1996-09-20	00:00:00	639,08	648,21	686,45	679,76	704,39	481,85	455,69	473,40	432,74	433,71
1996-09-20	06:00:00	639,16	648,21	686,32	680,50	704,60	481,52	455,19	473,67	432,57	433,67
1996-09-20	12:00:00	638,97	648,21	686,49	680,06	704,47	481,57	455,53	473,32	433,08	433,95
1996-09-20	18:00:00	639,08	648,21	686,23	680,13	704,47	481,57	455,62	473,91	432,81	433,97
1996-09-21	00:00:00	639,08	648,21	686,79	679,76	704,60	481,52	455,74	473,46	433,08	434,39
1996-09-21	06:00:00	639,08	648,21	686,45	679,81	704,47	481,57	455,93	473,12	432,71	434,53
1996-09-21	12:00:00	638,97	648,21	686,37	679,81	704,39	481,54	456,13	473,18	433,08	434,87
1996-09-21	18:00:00	639,08	648,21	686,37	679,89	704,47	481,91	456,25	473,46	433,47	434,66
1996-09-22	00:00:00	639,16	648,21	686,37	680,16	704,47	481,47	456,13	473,91	433,17	434,53
1996-09-22	06:00:00	639,08	648,21	686,23	679,59	704,47	481,52	456,62	473,74	433,71	434,97
1996-09-22	12:00:00	639,08	648,21	686,37	680,48	704,60	481,77	456,34	474,17	433,21	434,92
1996-09-22	18:00:00	639,08	648,21	686,75	679,97	704,47	481,73	457,98	474,09	433,93	435,12
1996-09-23	00:00:00	639,16	648,21	686,72	679,86	704,47	481,52	458,00	473,74	433,58	435,03
1996-09-23	06:00:00	639,16	648,21	686,62	679,76	704,60	481,71	458,21	473,97	433,08	434,95
1996-09-23	12:00:00	639,16	648,21	686,23	679,86	704,60	481,85	458,67	473,60	433,37	434,74
1996-09-23	18:00:00	639,16	648,21	686,62	679,25	704,47	481,71	458,55	473,95	433,67	434,78
1996-09-24	00:00:00	639,16	648,21	686,45	680,13	704,47	481,77	458,48	473,53	433,71	434,53
1996-09-24	06:00:00	639,16	648,15	686,72	679,81	704,47	481,69	458,45	473,02	433,37	434,70
1996-09-24	12:00:00	639,08	648,04	686,88	679,97	704,47	481,54	458,48	473,87	433,29	434,66
1996-09-24	18:00:00	639,16	648,04	686,67	679,63	704,68	481,87	458,55	473,67	433,41	434,64
1996-09-25	00:00:00	639,08	648,04	686,67	679,76	704,68	481,91	457,95	473,53	432,89	434,39
1996-09-25	06:00:00	638,97	647,86	686,65	679,25	705,33	481,71	458,34	473,91	433,33	434,11
1996-09-25	12:00:00	638,97	647,86	686,88	679,72	704,90	481,77	458,24	473,60	433,26	434,23
1996-09-25	18:00:00	638,97	647,72	686,75	679,37	704,79	481,85	458,11	473,60	433,71	434,23
1996-09-26	00:00:00	638,97	647,86	686,72	679,93	704,60	481,52	457,81	473,79	433,08	433,95
1996-09-26	06:00:00	639,08	647,86	687,34	679,72	704,79	481,85	457,70	474,00	432,85	434,01
1996-09-26	12:00:00	639,08	647,86	686,23	679,72	704,90	481,85	457,81	473,79	432,81	433,54
1996-09-26	18:00:00	638,97	647,72	686,45	680,06	704,95	481,87	457,61	474,29	433,01	433,67
1996-09-27	00:00:00	639,08	647,86	686,83	679,93	704,79	481,82	457,41	473,67	432,23	433,17
1996-09-27	06:00:00	638,97	647,64	686,58	679,86	704,79	481,69	457,74	473,74	432,71	433,08
1996-09-27	12:00:00	638,86	647,64	686,83	680,02	704,68	481,87	457,64	473,81	432,71	432,85
1996-09-27	18:00:00	638,97	647,53	686,62	680,31	704,79	481,57	457,61	474,17	432,71	433,17
1996-09-28	00:00:00	638,86	647,53	686,41	679,76	704,68	481,91	458,17	473,91	432,51	433,06

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 9				
		P4-1	P4-2	P4-3	P4-4	P4-5	P9-1	P9-2	P9-3	P9-4	P9-5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1996-09-28	06:00:00	639,16	647,64	686,53	680,16	704,90	481,87	458,15	474,14	433,06	432,81
1996-09-28	12:00:00	638,97	647,43	686,15	679,59	704,79	481,65	458,80	473,60	432,81	432,97
1996-09-28	18:00:00	638,86	647,35	685,99	679,97	704,79	481,57	458,11	473,79	432,09	432,74
1996-09-29	00:00:00	638,97	647,43	686,65	679,72	704,90	481,40	458,62	473,44	431,99	432,81
1996-09-29	06:00:00	638,97	647,35	685,93	680,16	704,79	481,65	458,34	473,53	431,48	432,91
1996-09-29	12:00:00	638,86	647,29	686,12	680,10	704,68	481,60	458,55	474,61	432,23	432,85
1996-09-29	18:00:00	638,86	647,29	686,03	680,02	704,79	481,52	458,34	473,53	432,25	432,71
1996-09-30	00:00:00	638,86	647,21	685,65	680,06	704,47	481,52	458,37	473,81	432,60	432,85
1996-09-30	06:00:00	638,78	647,10	685,85	679,25	704,60	481,47	458,21	474,04	432,25	432,57
1996-09-30	12:00:00	638,78	646,89	685,72	680,19	704,39	481,40	458,45	473,57	431,61	432,51
1996-09-30	18:00:00	638,86	647,10	685,99	679,81	704,60	481,43	458,37	474,44	432,23	432,23
1996-10-01	00:00:00	638,86	647,10	686,23	679,97	704,47	481,82	458,62	473,44	431,87	432,30
1996-10-01	06:00:00	638,97	647,10	685,93	679,97	704,47	481,60	458,97	473,70	432,39	432,21
1996-10-01	12:00:00	638,97	647,00	686,20	679,41	704,60	481,52	458,69	473,95	431,79	432,09
1996-10-01	18:00:00	638,97	647,00	685,99	679,21	704,39	481,77	458,11	473,62	432,21	432,04
1996-10-02	00:00:00	638,97	646,89	686,07	680,50	704,47	481,57	458,21	473,74	431,65	432,09
1996-10-02	06:00:00	638,86	646,78	686,07	679,97	704,47	481,77	458,15	473,67	432,39	431,95
1996-10-02	12:00:00	638,78	646,67	686,20	679,41	704,47	481,71	457,98	474,31	431,20	431,79
1996-10-02	18:00:00	638,78	646,67	686,45	679,89	704,39	481,57	457,61	473,70	431,68	431,79
1996-10-03	00:00:00	638,97	646,78	686,07	679,59	704,60	481,65	458,37	473,74	431,79	431,87
1996-10-03	06:00:00	638,78	646,59	686,34	679,25	704,39	481,69	458,21	473,81	431,15	431,65
1996-10-03	12:00:00	638,86	646,49	686,32	680,16	704,47	481,47	458,00	473,79	431,70	431,44
1996-10-03	18:00:00	638,86	646,59	686,20	679,54	704,47	481,69	457,95	473,70	431,06	431,44
1996-10-04	00:00:00	638,78	646,49	686,58	679,67	704,28	481,47	457,95	473,91	431,54	431,23
1996-10-04	06:00:00	638,86	646,67	685,99	679,46	704,39	481,40	458,17	473,83	430,86	431,35
1996-10-04	12:00:00	638,78	646,89	685,93	679,59	704,39	481,69	458,45	473,81	430,46	432,91
1996-10-04	18:00:00	638,97	647,29	686,12	679,76	704,47	481,47	464,63	473,70	436,56	453,05
1996-10-05	00:00:00	638,97	648,21	686,37	679,81	704,39	481,57	473,29	474,31	445,08	468,87
1996-10-05	06:00:00	638,97	649,22	686,03	679,09	704,47	481,82	477,24	474,04	449,99	471,92
1996-10-05	12:00:00	639,16	649,98	686,45	680,23	704,68	481,85	478,51	474,48	450,99	471,95
1996-10-05	18:00:00	639,16	650,17	686,45	680,19	704,60	481,82	479,15	474,04	451,29	471,04
1996-10-06	00:00:00	639,29	650,59	686,20	679,97	704,79	481,99	479,53	474,14	452,45	470,24
1996-10-06	06:00:00	639,16	650,78	686,62	679,81	704,90	481,69	479,40	474,74	452,61	468,87
1996-10-06	12:00:00	639,16	650,84	686,65	679,54	705,65	482,29	479,40	474,61	452,54	467,94
1996-10-06	18:00:00	639,16	650,84	686,67	679,81	705,65	482,12	479,80	475,29	452,17	467,43
1996-10-07	00:00:00	639,48	650,92	686,79	680,10	705,89	482,21	479,80	475,21	453,17	466,60
1996-10-07	06:00:00	639,16	650,78	686,83	680,16	705,81	482,08	479,80	474,84	452,71	466,30
1996-10-07	12:00:00	639,29	650,78	686,96	680,10	705,97	482,05	479,98	475,53	453,33	465,99
1996-10-07	18:00:00	639,29	650,70	687,09	680,19	706,08	482,25	479,70	475,01	453,01	465,86
1996-10-08	00:00:00	639,37	650,59	686,72	680,23	705,97	482,42	479,80	475,87	452,61	464,97
1996-10-08	06:00:00	639,16	650,38	686,65	680,13	705,89	482,42	479,80	475,69	453,35	464,63
1996-10-08	12:00:00	639,16	650,27	686,96	680,19	705,89	482,21	479,47	475,77	453,47	464,28
1996-10-08	18:00:00	639,16	650,17	687,09	679,81	705,97	482,56	479,57	475,73	453,21	463,90
1996-10-09	00:00:00	639,08	650,08	687,00	679,86	705,89	482,33	479,29	476,42	452,87	463,56
1996-10-09	06:00:00	639,08	649,98	687,05	679,76	705,97	482,56	478,90	475,85	452,31	463,08
1996-10-09	12:00:00	638,97	649,92	687,36	680,66	705,97	482,45	478,78	475,85	452,17	463,08
1996-10-09	18:00:00	638,97	649,84	686,88	679,67	705,89	482,69	478,90	476,21	452,21	462,22
1996-10-10	00:00:00	638,97	649,84	687,09	680,10	705,97	482,69	478,62	476,37	451,75	461,91
1996-10-10	06:00:00	638,97	649,73	687,09	680,50	706,08	482,81	478,43	476,37	451,19	461,63
1996-10-10	12:00:00	638,97	649,52	687,09	680,19	706,19	482,69		476,42	451,37	460,77
1996-10-10	18:00:00	638,97	649,30	686,96	679,86	706,08	482,91		476,66	450,68	460,00
1996-10-11	00:00:00	639,08	649,30	687,13	680,19	706,30	483,02		476,11	450,33	459,24
1996-10-11	06:00:00	638,97	649,14	687,34	680,44	706,30	482,77		476,62	449,66	458,69
1996-10-11	12:00:00	638,97	648,98	687,00	680,02	706,30	482,77		476,75	449,66	457,86
1996-10-11	18:00:00	639,08	648,88	687,25	680,66	707,61	483,02		476,35	449,07	457,67
1996-10-12	00:00:00	638,97	648,79	687,17	680,31	707,37	482,94		477,06	448,44	457,12
1996-10-12	06:00:00	638,97	648,58	686,83	680,50	707,37	483,06		476,79	448,62	457,20
1996-10-12	12:00:00	638,78	648,37	687,40	680,50	707,18	482,81		477,06	448,41	456,79
1996-10-12	18:00:00	638,86	648,21	686,72	680,44	707,18	483,25		477,04	448,96	456,16
1996-10-13	00:00:00	638,97	648,21	686,72	680,50	707,05	483,02		477,06	448,86	456,04

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 9				
		P4-1	P4-2	P4-3	P4-4	P4-5	P9-1	P9-2	P9-3	P9-4	P9-5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1996-10-13	06:00:00	638,97	648,88	687,49	679,97	707,26	483,08		477,22	452,41	474,40
1996-10-13	12:00:00	639,37	650,78	687,17	680,06	707,26	483,41	507,92	477,75	479,29	506,85
1996-10-13	18:00:00	639,72	654,27	687,34	680,10	707,61	483,49	512,44	478,30	486,72	508,36
1996-10-14	00:00:00	639,94	656,85	687,95	679,93	707,53	483,87	509,47	478,07	485,55	504,44
1996-10-14	06:00:00	640,23	658,08	688,05	680,57	707,80	484,14	505,91	478,78	483,08	500,50
1996-10-14	12:00:00	640,58	658,94	687,99	680,39	708,76	484,48	511,24	479,70	488,89	515,23
1996-10-14	18:00:00	641,09	659,91	688,54	680,82	708,98	485,03	517,72	480,68	496,13	521,36
1996-10-15	00:00:00	641,47	660,36	688,85	680,50	709,22	485,39	518,63	481,23	497,75	519,23
1996-10-15	06:00:00	641,87	660,77	689,57	680,96	709,81	485,69	517,17	481,99	496,89	515,88
1996-10-15	12:00:00	642,08	661,12	689,70	681,05	710,03	486,32	515,04	482,56	495,51	512,51
1996-10-15	18:00:00	642,30	661,41	690,10	681,12	710,08	486,84	513,10	483,71	492,87	508,64
1996-10-16	00:00:00	642,51	661,81	689,96	681,81	710,29	487,10	510,91	484,26	491,58	506,33
1996-10-16	06:00:00	642,59	661,92	690,10	682,37	710,70	487,54	509,25	485,00	489,97	504,07
1996-10-16	12:00:00	642,81	661,98	690,46	682,37	710,91	487,78	507,50	485,39	487,69	503,72
1996-10-16	18:00:00	643,02	661,98	690,93	682,64	711,13	487,91	505,89	485,44	486,51	504,03
1996-10-17	00:00:00	643,08	662,11	690,84	682,56	711,34	488,52	504,36	485,77	484,96	503,94
1996-10-17	06:00:00	643,08	662,11	691,13	683,14	711,34	488,55	503,00	486,80	483,71	503,11
1996-10-17	12:00:00	643,02	662,19	691,53	682,76	711,45	488,82	502,39	486,20	482,89	501,52
1996-10-17	18:00:00	643,02	662,19	691,48	684,30	711,45	488,89	501,79	486,97	482,49	500,88
1996-10-18	00:00:00	643,08	662,11	691,82	683,40	711,74	489,42	501,72	486,49	483,22	500,94
1996-10-18	06:00:00	643,16	662,30	691,70	683,05	711,99	489,63	509,77	488,10	491,28	519,30
1996-10-18	12:00:00	643,45	662,51	691,73	683,48	712,52	489,88	522,82	488,55	503,89	528,93
1996-10-18	18:00:00	643,78	662,94	692,75	683,18	713,17	490,27	527,64	488,13	505,13	528,84
1996-10-19	00:00:00	644,02	663,16	692,90	684,00	713,52	490,79	527,76	488,72	505,10	526,53
1996-10-19	06:00:00	644,10	663,37	693,36	684,13	714,03	490,93	523,88	489,02	504,14	523,28
1996-10-19	12:00:00	644,20	663,45	693,24	684,61	714,46	491,48	520,89	489,60	501,68	519,47
1996-10-19	18:00:00	644,31	663,67	694,28	684,61	714,89	491,71	517,98	489,42	498,88	515,06
1996-10-20	00:00:00	644,31	663,72	694,23	684,83	715,23	492,00	515,48	490,18	496,39	512,13
1996-10-20	06:00:00	644,42	663,72	693,84	685,00	715,42	492,47	513,32	490,35	494,76	509,53
1996-10-20	12:00:00	644,53	663,80	694,48	685,46	715,61	492,60	511,70	490,53	493,05	507,46
1996-10-20	18:00:00	644,53	663,80	694,28	685,46	715,74	493,05	510,28	491,31	491,44	506,42
1996-10-21	00:00:00	644,53	663,80	694,78	685,46	715,93	492,81	509,19	490,53	490,31	505,58
1996-10-21	06:00:00	644,53	663,91	694,31	685,43	716,09	493,16	508,10	490,79	489,42	505,61
1996-10-21	12:00:00	644,72	663,91	694,35	685,85	716,58	493,36	518,38	491,71	500,19	528,54
1996-10-21	18:00:00	644,88	664,23	694,99	686,03	716,93	493,53	525,54	492,13	507,29	530,70
1996-10-22	00:00:00	645,09	664,53	695,69	687,02	717,49	494,40	527,06	492,31	508,66	531,68
1996-10-22	06:00:00	645,17	664,58	696,37	687,36	718,00	494,36	527,81	492,71	508,91	531,24
1996-10-22	12:00:00	645,31	664,74	696,29	687,87	718,43	494,79	526,74	492,51	508,95	530,15
1996-10-22	18:00:00	645,17	664,74	696,54	687,99	718,67	494,79	525,58	492,85	507,22	528,06
1996-10-23	00:00:00	645,31	664,74	697,10	688,47	718,78	494,97	524,15	493,05	506,68	525,71
1996-10-23	06:00:00	645,60	664,95	696,62	688,05	718,97	495,25	522,18	493,55	504,84	523,51
1996-10-23	12:00:00	645,60	664,85	696,87	688,73	719,18	495,65	521,50	493,89	503,67	521,67
1996-10-23	18:00:00	645,60	664,74	696,71	688,09	719,07	495,48	522,05	494,32	504,62	524,32
1996-10-24	00:00:00	645,60	664,85	697,19	688,34	719,18	495,79	526,53	494,36	508,64	530,15
1996-10-24	06:00:00	645,65	664,74	697,44	689,02	719,48	496,07	526,92	493,97	509,81	530,18
1996-10-24	12:00:00	645,60	664,85	697,65	689,63	719,82	496,20	526,51	494,66	509,12	529,87
1996-10-24	18:00:00	645,65	664,95	697,90	689,36	720,04	496,46	526,35	494,97	508,50	528,19
1996-10-25	00:00:00	645,74	664,95	697,82	690,00	720,04	496,35	525,03	495,48	507,34	526,61
1996-10-25	06:00:00	645,82	664,95	698,25	689,40	720,33	496,72	523,25	494,91	506,33	523,78
1996-10-25	12:00:00	645,82	665,17	697,79	689,96	720,33	496,49	521,29	495,35	504,21	520,70
1996-10-25	18:00:00	645,82	665,06	698,12	689,63	720,33	496,46	519,10	495,39	501,08	517,08
1996-10-26	00:00:00	645,82	665,06	697,99	690,05	720,23	496,83	517,29	495,27	500,36	514,42
1996-10-26	06:00:00	645,92	665,28	697,32	690,10	720,39	496,89	515,83	495,62	498,17	512,68
1996-10-26	12:00:00	645,82	665,28	697,27	689,83	720,23	496,76	514,35	495,42	496,81	510,77
1996-10-26	18:00:00	645,82	665,36	696,71	689,66	720,33	496,99	513,23	495,55	495,99	510,04
1996-10-27	00:00:00	645,82	665,41	696,62	689,83	720,33	496,85	511,75	495,00	494,53	508,64
1996-10-27	06:00:00	645,74	665,28	696,50	690,10	720,12	496,85	510,93	494,91	493,11	507,92
1996-10-27	12:00:00	645,65	665,06	697,23	689,77	720,04	496,52	509,55	494,19	491,50	507,22
1996-10-27	18:00:00	645,74	665,06	696,76	690,10	720,04	496,43	508,66	494,19	490,79	506,94
1996-10-28	00:00:00	645,74	665,06	696,98	689,36	719,91	496,49	508,88	493,94	490,86	507,59

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 9				
		P4-1	P4-2	P4-3	P4-4	P4-5	P9-1	P9-2	P9-3	P9-4	P9-5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1996-10-28	06:00:00	645,60	664,95	696,76	689,31	719,91	496,46	517,78	494,02	500,46	528,12
1996-10-28	12:00:00	645,49	664,85	697,06	689,28	719,82	496,29	525,49	494,56	508,44	530,94
1996-10-28	18:00:00	645,65	664,95	697,23	690,08	719,91	496,69	525,17	494,32	508,91	530,30
1996-10-29	00:00:00	645,65	664,95	696,98	689,42	719,91	496,66	524,38	495,13	508,44	528,88
1996-10-29	06:00:00	645,74	664,95	697,65	689,08	720,12	497,15	523,17	495,30	507,29	527,06
1996-10-29	12:00:00	645,74	664,95	696,98	689,92	720,39	496,94	522,18	495,51	505,41	524,12
1996-10-29	18:00:00	645,60	664,85	697,53	689,63	720,33	497,03	519,71	494,76	504,38	521,16
1996-10-30	00:00:00	645,65	665,06	696,98	690,05	720,33	497,06	518,28	495,27	502,13	518,28
1996-10-30	06:00:00	645,39	664,85	697,70	689,87	720,33	497,06	516,41	495,65	500,42	516,01
1996-10-30	12:00:00	645,49	664,85	696,98	689,45	720,33	496,83	514,84	495,30	499,17	514,17
1996-10-30	18:00:00	645,49	664,95	697,14	689,74	720,23	497,11	514,15	495,27	497,61	513,10
1996-10-31	00:00:00	645,60	664,95	697,30	689,45	720,23	496,99	512,75	495,35	496,39	511,93
1996-10-31	06:00:00	645,39	664,95	696,71	689,50	720,12	496,59	511,59	494,86	495,30	510,42
1996-10-31	12:00:00	645,49	664,85	697,02	689,63	720,12	496,85	510,37	494,56	493,80	509,64
1996-10-31	18:00:00	645,39	664,85	696,64	689,42	719,91	496,69	509,25	494,91	493,64	508,61
1996-11-01	00:00:00	645,49	664,95	697,02	689,42	719,91	496,81	508,70	494,70	492,31	508,10
1996-11-01	06:00:00	645,31	664,66	696,54	690,00	719,72	496,52	507,72	494,40	491,14	506,44
1996-11-01	12:00:00	645,31	664,74	696,79	689,50	719,72	496,29	506,78	494,56	492,00	506,04
1996-11-01	18:00:00	645,31	664,66	696,79	689,20	719,72	496,29	506,60	494,42	491,50	504,89
1996-11-02	00:00:00	645,17	664,58	695,65	689,40	719,48	496,29	505,91	494,32	490,86	504,36
1996-11-02	06:00:00	645,17	664,53	695,26	689,40	719,40	496,13	505,39	493,64	490,40	502,65
1996-11-02	12:00:00	645,09	664,42	695,46	689,08	719,40	496,07	505,31	493,74	490,48	501,79
1996-11-02	18:00:00	644,88	664,42	695,30	689,11	719,07	496,13	504,10	493,21	489,42	500,46
1996-11-03	00:00:00	644,77	664,10	695,94	688,81	718,86	495,69	503,98	493,64	489,28	500,25
1996-11-03	06:00:00	644,77	664,10	695,60	688,73	718,86	495,69	503,42	492,39	489,12	499,21
1996-11-03	12:00:00	644,77	664,02	695,30	688,85	718,97	495,59	503,50	493,11	488,47	499,39
1996-11-03	18:00:00	644,77	663,91	695,33	688,12	718,67	495,39	503,42	493,29	488,82	499,57
1996-11-04	00:00:00	644,77	663,72	695,41	688,90	718,67	495,17	503,98	492,81	489,58	499,97
1996-11-04	06:00:00	644,63	663,72	695,54	688,81	718,54	495,17	504,27	492,43	489,24	499,51
1996-11-04	12:00:00	644,63	663,72	695,74	688,42	718,54	495,13	504,36	492,73	489,37	499,34
1996-11-04	18:00:00	644,72	663,72	695,57	687,34	718,54	494,79	503,89	493,33	489,02	498,94
1996-11-05	00:00:00	644,63	663,67	695,69	688,73	718,43	494,82	503,75	492,13	488,43	498,74
1996-11-05	06:00:00	644,63	663,56	695,99	688,09	718,54	494,82	503,15	492,57	488,35	498,17
1996-11-05	12:00:00	644,53	663,45	696,27	687,82	718,43	494,56	503,34	492,08	488,57	497,68
1996-11-05	18:00:00	644,31	663,24	695,69	688,51	718,21	494,74	503,72	491,65	488,30	497,45
1996-11-06	00:00:00	644,20	663,24	695,60	688,03	718,11	494,49	503,15	492,31	487,88	497,11
1996-11-06	06:00:00	644,20	663,37	695,41	687,40	718,21	494,56	503,98	491,74	489,07	499,63
1996-11-06	12:00:00	644,20	663,24	695,96	687,91	718,21	494,42	507,92	492,00	492,81	508,06
1996-11-06	18:00:00	644,42	663,37	695,46	687,75	718,43	494,42	510,37	491,85	494,82	510,28
1996-11-07	00:00:00	644,42	663,45	695,46	688,12	718,32	494,66	510,16	491,74	494,91	510,67
1996-11-07	06:00:00	644,53	663,37	695,46	687,95	718,32	494,86	510,12	492,36	494,36	508,70
1996-11-07	12:00:00	644,42	663,45	695,30	687,52	718,21	494,66	509,29	492,47	493,68	507,48
1996-11-07	18:00:00	644,42	663,37	695,26	687,95	718,21	494,66	508,61	492,18	492,57	506,55
1996-11-08	00:00:00	644,31	663,24	695,60	687,71	718,11	494,79	507,72	492,53	492,47	505,86
1996-11-08	06:00:00	644,53	663,45	695,99	687,75	718,67	495,11	519,87	493,16	504,48	529,36
1996-11-08	12:00:00	644,77	663,72	696,76	687,52	719,07	495,35	525,41	493,41	510,04	531,68
1996-11-08	18:00:00	644,88	664,10	696,67	689,42	719,61	495,55	526,66	494,36	511,96	531,68
1996-11-09	00:00:00	645,17	664,42	696,98	690,37	720,23	495,96	527,21	494,36	511,83	531,38
1996-11-09	06:00:00	645,39	664,85	697,53	690,54	720,68	496,07	527,51	494,93	512,30	531,76
1996-11-09	12:00:00	645,49	664,95	698,16	690,00	720,90	496,29	527,21	495,05	512,59	531,04
1996-11-09	18:00:00	645,49	664,85	697,90	690,37	720,90	496,52	526,39	495,22	512,08	530,18
1996-11-10	00:00:00	645,60	665,06	696,98	690,96	720,90	496,59	525,06	495,77	510,45	527,30
1996-11-10	06:00:00	645,65	665,06	697,14	691,46	721,01	496,83	523,76	495,89	508,66	525,17
1996-11-10	12:00:00	645,60	665,06	697,10	690,58	721,01	496,69	521,50	496,29	506,85	522,31
1996-11-10	18:00:00	645,60	665,06	696,29	690,44	720,90	496,89	519,67	495,42	505,22	519,27
1996-11-11	00:00:00	645,49	664,95	697,19	690,81	720,68	496,97	518,10	495,27	503,17	517,08
1996-11-11	06:00:00	645,60	664,95	696,87	690,70	720,58	497,19	522,41	495,30	501,18	514,72
1996-11-11	12:00:00	645,49	664,95	696,98	690,58	720,50	496,97	517,84	495,82	500,46	513,35
1996-11-11	18:00:00	645,49	664,95	697,87	690,10	720,39	497,17	516,48	495,79	498,44	512,61
1996-11-12	00:00:00	645,60	665,06	696,98	690,28	720,39	496,99	514,80	495,27	498,00	511,39

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 9				
		P4-1	P4-2	P4-3	P4-4	P4-5	P9-1	P9-2	P9-3	P9-4	P9-5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1996-11-12	06:00:00	645,60	664,85	697,48	690,58	719,18	497,11	515,79	495,65	499,04	515,52
1996-11-12	12:00:00	645,49	664,85	697,14	689,42	718,97	497,06	520,56	495,89	504,18	523,88
1996-11-12	18:00:00	645,60	664,85	697,44	690,46	719,29	497,15	525,74	495,55	509,33	530,32
1996-11-13	00:00:00	645,60	664,95	697,60	690,46	719,18	497,19	527,16	495,59	512,08	531,38
1996-11-13	06:00:00	645,65	664,95	697,79	690,44	719,53	497,50	527,55	496,24	512,03	531,01
1996-11-13	12:00:00	645,65	665,06	698,01	690,16	719,61	497,54	527,00	496,69	512,03	530,01
1996-11-13	18:00:00	645,74	665,06	697,67	690,37	719,61	497,79	525,88	496,69	510,54	527,64
1996-11-14	00:00:00	645,65	665,17	698,43	690,79	719,72	497,66	524,12	496,13	509,42	524,21
1996-11-14	06:00:00	645,74	665,17	698,35	691,15	719,82	497,79	522,53	496,66	507,62	522,05
1996-11-14	12:00:00	645,65	665,17	698,16	691,48	719,82	497,79	520,81	496,64	505,31	519,36
1996-11-14	18:00:00	645,74	665,28	697,99	691,30	719,82	497,86	518,84	496,29	503,86	517,26
1996-11-15	00:00:00	645,65	665,06	697,67	690,24	719,61	497,79	517,61	496,55	501,79	515,23
1996-11-15	06:00:00	645,60	665,17	697,65	690,88	719,40	497,61	516,44	496,43	501,35	513,73
1996-11-15	12:00:00	645,60	665,06	697,95	690,54	719,40	497,72	515,59	496,29	500,08	512,27
1996-11-15	18:00:00	645,60	665,06	697,82	690,28	719,29	497,41	514,50	496,27	498,88	511,27
1996-11-16	00:00:00	645,60	665,06	697,67	690,70	719,18	497,57	529,28	496,59	497,68	510,70
1996-11-16	06:00:00	645,49	664,95	697,19	690,24	719,07	497,50	518,76	496,11	496,66	510,04
1996-11-16	12:00:00	645,49	664,85	697,56	690,41	718,97	497,48	515,76	496,20	496,85	509,35
1996-11-16	18:00:00	645,39	664,74	697,87	690,16	718,86	497,24	514,35	495,99	495,09	508,75
1996-11-17	00:00:00	645,31	664,74	696,79	690,10	718,78	497,31	513,13	496,29	494,49	508,84
1996-11-17	06:00:00	645,17	664,53	697,56	690,00	718,67	496,99	511,96	495,73	494,40	508,39
1996-11-17	12:00:00	645,17	664,53	697,44	690,10	718,67	497,06	511,14	496,15	493,19	507,50
1996-11-17	18:00:00	645,09	664,53	696,58	690,10	718,62	496,97	511,41	495,65	492,04	507,15
1996-11-18	00:00:00	645,31	664,53	696,98	690,08	718,62	496,85	510,25	495,05	492,27	506,16
1996-11-18	06:00:00	644,98	664,42	696,67	688,94	718,43	496,81	509,25	495,09	491,65	505,39
1996-11-18	12:00:00	644,77	664,23	696,41	689,50	718,32	496,72	509,17	494,82	491,44	505,04
1996-11-18	18:00:00	644,77	664,10	696,46	689,02	718,21	496,55	508,64	494,82	491,19	504,14
1996-11-19	00:00:00	644,77	663,91	696,34	689,45	718,11	496,39	507,85	494,97	490,79	503,42
1996-11-19	06:00:00	644,77	663,91	696,54	689,15	718,00	496,24	507,34	494,76	490,09	502,35
1996-11-19	12:00:00	644,63	663,80	696,11	688,63	717,84	496,24	507,29	494,49	489,92	501,96
1996-11-19	18:00:00	644,63	663,72	695,57	688,73	717,79	496,24	506,58	494,91	489,67	501,65
1996-11-20	00:00:00	644,72	663,72	696,76	688,21	717,79	496,29	506,27	494,36	489,92	500,46
1996-11-20	06:00:00	644,63	663,72	695,99	688,47	717,68	495,79	505,86	493,60	489,92	500,15
1996-11-20	12:00:00	644,53	663,67	695,90	688,51	717,57	495,77	505,24	494,40	489,32	499,63
1996-11-20	18:00:00	644,53	663,56	695,94	688,37	717,49	495,99	505,10	493,64	489,95	498,94
1996-11-21	00:00:00	644,53	663,56	695,07	687,95	717,49	495,48	504,54	493,11	489,55	498,51
1996-11-21	06:00:00	644,31	663,37	695,41	688,39	717,28	495,73	504,62	492,94	489,12	497,88
1996-11-21	12:00:00	644,42	663,37	694,90	688,67	717,17	495,39	503,89	492,94	489,46	497,33
1996-11-21	18:00:00	644,20	663,16	695,04	688,34	716,93	495,30	503,98	493,33	488,40	496,35
1996-11-22	00:00:00	644,31	663,16	695,07	688,25	716,93	494,97	503,15	493,49	488,13	496,29
1996-11-22	06:00:00	644,20	663,16	695,07	688,29	716,93	494,97	502,78	493,05	487,52	495,44
1996-11-22	12:00:00	644,10	663,05	695,54	688,21	716,93	494,86	502,47	492,94	487,60	494,93
1996-11-22	18:00:00	644,10	662,94	694,90	687,71	716,93	494,97	501,93	492,57	486,72	494,32
1996-11-23	00:00:00	644,10	662,94	695,20	687,65	716,87	494,93	501,79	492,39	487,18	493,74
1996-11-23	06:00:00	644,02	662,86	695,33	687,95	716,68	494,45	501,39	492,22	486,54	493,24
1996-11-23	12:00:00	643,88	662,81	695,16	687,09	716,68	494,28	501,22	492,64	485,94	492,60
1996-11-23	18:00:00	643,88	662,86	695,24	688,03	716,58	494,40	501,28	491,78	486,54	492,27
1996-11-24	00:00:00	643,88	662,81	694,48	687,36	716,58	494,42	501,62	492,27	485,85	492,04
1996-11-24	06:00:00	643,88	662,73	694,90	687,58	716,47	494,36	501,14	492,31	485,55	490,93
1996-11-24	12:00:00	643,67	662,62	694,69	686,96	716,09	494,14	500,66	491,62	485,44	490,65
1996-11-24	18:00:00	643,67	662,73	694,92	687,22	716,17	494,08	500,08	491,53	485,30	489,84
1996-11-25	00:00:00	643,67	662,62	694,35	687,36	716,04	493,74	499,55	491,19	484,79	489,24
1996-11-25	06:00:00	643,67	662,62	694,56	687,13	716,04	493,80	499,43	491,40	484,62	488,72
1996-11-25	12:00:00	643,78	662,62	694,99	687,17	716,09	493,64	499,23	491,19	484,69	488,35
1996-11-25	18:00:00	643,78	662,62	694,90	686,65	716,04	493,80	498,88	491,53	484,35	488,05
1996-11-26	00:00:00	643,67	662,62	694,73	687,61	715,93	493,53	498,82	491,33	483,83	487,49
1996-11-26	06:00:00	643,59	662,41	694,56	687,34	715,74	493,74	498,36	491,00	483,66	487,10
1996-11-26	12:00:00	643,45	662,41	694,90	686,62	715,61	493,49	497,97	491,36	483,71	486,97
1996-11-26	18:00:00	643,45	662,41	694,65	686,58	715,74	493,45	498,14	491,00	484,31	486,80
1996-11-27	00:00:00	643,45	662,41	694,56	687,40	715,53	493,21	498,17	491,14	483,83	487,06

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 9				
		P4-1	P4-2	P4-3	P4-4	P4-5	P9-1	P9-2	P9-3	P9-4	P9-5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1996-11-27	06:00:00	643,37	662,19	694,01	686,58	715,74	493,24	500,50	491,31	485,81	494,86
1996-11-27	12:00:00	643,45	662,41	693,89	686,83	715,74	493,45	511,45	491,36	496,49	513,35
1996-11-27	18:00:00	643,45	662,51	693,45	686,58	715,74	493,45	514,80	491,23	500,23	515,44
1996-11-28	00:00:00	643,59	662,51	693,96	686,67	715,53	493,55	514,72	491,74	501,01	513,39
1996-11-28	06:00:00	643,67	662,62	694,39	686,67	715,83	493,55	513,47	492,04	499,63	511,45
1996-11-28	12:00:00	643,78	662,62	694,61	686,92	715,93	493,94	512,92	492,39	498,17	509,51
1996-11-28	18:00:00	643,78	662,81	694,56	686,49	715,53	494,14	511,96	492,60	497,66	508,50
1996-11-29	00:00:00	643,88	662,73	694,44	687,45	715,61	494,08	511,35	492,87	496,27	507,76
1996-11-29	06:00:00	643,94	662,94	694,65	687,58	715,83	494,06	510,39	492,64	495,82	507,42
1996-11-29	12:00:00	643,88	662,81	694,90	687,75	715,74	494,36	510,04	492,64	495,09	507,12
1996-11-29	18:00:00	643,88	662,86	694,48	687,25	715,93	494,42	509,33	493,33	494,74	506,68
1996-11-30	00:00:00	643,88	662,81	694,56	687,22	715,93	494,56	508,66	493,11	493,80	506,10
1996-11-30	06:00:00	643,88	662,94	694,65	686,67	715,83	494,62	508,57	493,55	493,68	505,77
1996-11-30	12:00:00	643,78	662,81	694,73	687,02	715,93	494,45	507,92	493,29	493,68	505,58
1996-11-30	18:00:00	643,78	662,81	694,92	687,65	716,04	494,70	508,44	493,71	493,21	507,59
1996-12-01	00:00:00	644,02	663,16	694,90	687,45	716,17	494,93	523,34	494,24	508,70	529,91
1996-12-01	06:00:00	644,20	663,45	695,26	688,47	716,58	495,44	526,61	494,82	512,55	530,63
1996-12-01	12:00:00	644,63	663,72	695,65	688,21	717,28	495,17	527,57	495,27	512,77	530,49
1996-12-01	18:00:00	644,77	664,10	696,34	687,99	717,68	496,02	527,00	495,55	512,44	528,15
1996-12-02	00:00:00	644,88	664,42	696,34	688,42	718,11	496,02	525,97	495,44	511,57	526,13
1996-12-02	06:00:00	644,77	664,42	696,50	689,02	718,32	496,27	523,95	495,89	509,21	522,65
1996-12-02	12:00:00	644,98	664,53	697,19	689,23	718,54	496,29	522,27	496,49	507,88	519,87
1996-12-02	18:00:00	644,88	664,53	696,46	689,77	718,43	496,64	520,09	496,29	506,44	517,08
1996-12-03	00:00:00	644,98	664,53	697,32	689,70	718,62	496,76	518,51	496,29	503,46	514,63
1996-12-03	06:00:00	644,88	664,66	696,98	689,23	718,32	496,64	516,81	496,29	502,15	513,13
1996-12-03	12:00:00	644,88	664,66	697,06	689,02	718,62	496,89	515,79	496,20	500,39	511,75
1996-12-03	18:00:00	644,88	664,66	697,30	689,74	718,54	496,72	514,17	495,62	499,26	510,20
1996-12-04	00:00:00	644,98	664,74	697,53	689,77	718,54	496,43	512,85	496,20	497,61	509,17
1996-12-04	06:00:00	644,88	664,66	697,10	689,57	718,32	496,89	511,73	495,51	497,28	508,14
1996-12-04	12:00:00	644,77	664,58	696,76	689,36	718,21	496,89	511,19	496,13	495,99	507,50
1996-12-04	18:00:00	644,77	664,53	697,02	689,66	718,32	496,72	512,33	495,94	497,61	512,33
1996-12-05	00:00:00	644,77	664,53	696,98	689,92	718,32	496,94	518,51	496,46	503,75	520,98
1996-12-05	06:00:00	644,98	664,53	696,87	688,73	718,43	496,94	520,39	495,48	505,22	520,85
1996-12-05	12:00:00	644,77	664,53	696,76	689,63	718,32	497,15	519,83	496,29	505,64	519,06
1996-12-05	18:00:00	644,77	664,42	696,71	689,08	718,32	497,17	518,96	495,85	504,89	516,75
1996-12-06	00:00:00	644,88	664,53	697,14	688,71	718,32	497,24	517,43	496,29	502,91	514,72
1996-12-06	06:00:00	644,77	664,31	696,87	689,02	718,32	497,31	516,69	496,83	501,22	512,77
1996-12-06	12:00:00	644,77	664,42	696,92	688,63	718,21	497,17	515,54	496,29	500,60	511,45
1996-12-06	18:00:00	644,77	664,31	696,41	688,90	718,11	497,37	514,17	496,24	498,60	510,04
1996-12-07	00:00:00	644,77	664,42	696,58	689,40	718,32	497,45	512,99	496,35	497,50	509,35
1996-12-07	06:00:00	644,77	664,31	696,64	688,78	718,21	497,48	511,96	496,13	496,52	508,52
1996-12-07	12:00:00	644,72	664,23	696,58	689,06	717,92	497,41	511,41	496,13	495,77	507,15
1996-12-07	18:00:00	644,77	664,10	695,85	689,28	717,79	497,19	511,01	495,65	495,55	505,91
1996-12-08	00:00:00	644,77	664,23	696,29	689,08	718,00	497,17	510,37	495,96	495,25	504,62
1996-12-08	06:00:00	644,72	664,02	696,20	688,25	718,00	497,15	509,77	495,85	493,97	504,14
1996-12-08	12:00:00	644,63	663,91	696,11	688,73	717,92	497,11	509,21	495,62	493,91	503,07
1996-12-08	18:00:00	644,63	663,91	696,20	689,08	717,84	496,94	508,64	495,13	493,74	501,79
1996-12-09	00:00:00	644,42	663,72	696,29	688,34	717,68	496,94	508,06	494,76	493,55	501,22
1996-12-09	06:00:00	644,42	663,72	696,03	688,51	717,68	496,85	507,59	495,55	492,73	500,32
1996-12-09	12:00:00	644,20	663,72	695,94	688,39	717,57	496,72	506,60	495,35	491,95	499,55
1996-12-09	18:00:00	644,20	663,72	695,54	688,71	717,57	496,55	506,04	495,13	491,82	498,60
1996-12-10	00:00:00	644,02	663,56	695,60	688,54	717,17	496,49	505,47	494,58	491,28	497,88
1996-12-10	06:00:00	644,10	663,56	695,60	688,47	717,28	496,15	504,73	494,66	490,69	497,37
1996-12-10	12:00:00	643,94	663,37	696,03	687,82	717,06	496,27	504,07	494,36	489,92	496,55
1996-12-10	18:00:00	643,94	663,37	695,94	688,03	717,17	496,29	503,84	494,53	489,58	495,73
1996-12-11	00:00:00	644,02	663,24	695,65	687,87	716,93	495,94	503,94	494,42	489,15	495,44
1996-12-11	06:00:00	644,02	663,37	695,65	687,61	717,17	496,27	503,17	494,02	488,72	494,42
1996-12-11	12:00:00	643,94	663,16	695,33	687,75	716,93	495,79	502,83	493,91	488,68	493,91
1996-12-11	18:00:00	644,02	663,16	695,60	687,82	716,93	495,55	502,86	494,08	488,05	494,02
1996-12-12	00:00:00	643,88	662,94	695,24	687,40	716,87	495,73	502,39	493,64	488,72	493,55

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 9				
		P4-1	P4-2	P4-3	P4-4	P4-5	P9-1	P9-2	P9-3	P9-4	P9-5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1996-12-12	06:00:00	643,88	662,94	695,60	687,52	716,93	495,51	502,09	494,02	487,60	492,91
1996-12-12	12:00:00	643,94	663,05	695,96	687,45	716,93	495,62	501,79	493,60	488,35	492,13
1996-12-12	18:00:00	643,94	662,94	695,26	687,30	716,93	495,59	501,14	493,55	487,78	491,62
1996-12-13	00:00:00	643,88	662,94	695,60	687,25	716,87	495,44	501,05	493,41	487,14	491,11
1996-12-13	06:00:00	643,67	662,86	695,37	686,72	716,87	495,48	500,63	492,87	487,52	490,73
1996-12-13	12:00:00	643,78	662,86	693,19	687,52	716,87	495,13	500,42	493,21	486,18	490,40
1996-12-13	18:00:00	643,88	662,86	693,75	686,79	716,93	495,25	499,97	493,11	486,54	489,42
1996-12-14	00:00:00	643,94	662,86	693,71	687,65	716,93	495,22	499,55	493,29	486,76	488,78
1996-12-14	06:00:00	643,88	662,86	692,90	687,36	716,87	495,00	499,47	493,29	485,66	488,38
1996-12-14	12:00:00	643,88	662,86	693,52	687,22	716,68	495,09	499,72	492,98	485,64	488,17
1996-12-14	18:00:00	643,78	662,81	693,89	687,71	716,58	494,93	498,86	493,29	485,07	487,57
1996-12-15	00:00:00	643,78	662,81	694,09	686,67	716,68	494,79	498,30	493,05	484,39	486,97
1996-12-15	06:00:00	643,59	662,73	694,01	686,83	716,36	495,00	497,79	492,91	484,28	486,97
1996-12-15	12:00:00	643,59	662,73	693,55	687,36	716,36	494,86	497,19	492,04	483,66	486,34
1996-12-15	18:00:00	643,59	662,73	693,84	687,13	716,36	494,45	497,31	492,51	483,98	485,60
1996-12-16	00:00:00	643,59	662,73	690,93	686,37	716,25	494,74	496,69	492,68	483,32	485,35
1996-12-16	06:00:00	643,45	662,62	691,39	687,02	716,25	494,45	496,49	492,04	483,43	485,20
1996-12-16	12:00:00	643,59	662,62	690,67	686,79	716,17	494,62	496,59	491,88	483,41	485,47
1996-12-16	18:00:00	643,37	662,62	689,83	686,72	716,09	494,56	496,72	492,18	483,43	485,30
1996-12-17	00:00:00	643,45	662,73	692,75	686,23	716,09	494,19	496,89	492,31	483,22	485,49
1996-12-17	06:00:00	643,37	662,51	692,94	686,88	715,93	494,42	497,17	492,08	484,22	485,27
1996-12-17	12:00:00	643,45	662,62	693,02	687,02	715,83	494,62	496,97	492,57	482,91	485,24
1996-12-17	18:00:00	643,27	662,51	691,53	686,41	715,61	494,40	496,39	492,91	483,71	485,20
1996-12-18	00:00:00	643,27	662,51	692,33	687,00	715,53	494,24	496,29	492,71	483,15	485,07
1996-12-18	06:00:00	643,08	662,41	691,04	686,53	715,42	494,53	496,29	492,00	483,66	485,07
1996-12-18	12:00:00	643,08	662,41	691,13	685,85	715,32	494,58	496,29	492,47	483,22	484,74
1996-12-18	18:00:00	643,08	662,41	691,87	686,58	715,23	494,49	495,65	492,08	482,77	484,14
1996-12-19	00:00:00	643,08	662,30	691,95	685,96	715,18	494,32	495,51	492,22	482,85	483,59
1996-12-19	06:00:00	643,08	662,30	691,84	686,53	715,23	494,28	495,65	492,31	482,45	483,74
1996-12-19	12:00:00	643,08	662,30	692,12	686,45	715,32	494,32	495,30	492,18	482,54	483,32
1996-12-19	18:00:00	642,92	662,19	692,63	686,23	715,23	494,08	495,09	492,94	482,25	483,22
1996-12-20	00:00:00	643,02	662,30	692,72	686,07	715,23	494,22	494,76	492,22	481,31	482,98
1996-12-20	06:00:00	642,81	662,11	692,55	686,96	715,18	494,10	494,42	492,31	481,71	482,77
1996-12-20	12:00:00	642,81	661,98	692,38	686,41	715,07	494,24	494,40	492,51	481,37	483,06
1996-12-20	18:00:00	642,92	662,11	689,42	686,15	715,18	494,32	494,56	492,47	481,91	483,57
1996-12-21	00:00:00	642,81	662,11	689,77	686,79	715,07	494,02	495,05	491,78	481,95	483,19
1996-12-21	06:00:00	642,73	661,98	690,08	686,67	714,97	494,22	494,91	492,36	481,37	483,66
1996-12-21	12:00:00	642,73	661,98	690,00	686,28	715,07	493,71	495,00	492,02	481,82	483,57
1996-12-21	18:00:00	642,81	661,98	690,44	686,34	715,07	494,22	494,86	492,68	482,42	483,36
1996-12-22	00:00:00	642,59	661,98	690,10	686,20	714,97	494,08	494,62	492,34	481,82	483,29
1996-12-22	06:00:00	642,81	661,98	690,37	685,63	715,23	493,97	494,62	492,39	481,82	483,15
1996-12-22	12:00:00	642,81	661,98	690,61	686,23	715,23	494,14	494,76	492,60	481,04	482,81
1996-12-22	18:00:00	642,81	661,98	690,81	685,93	715,07	494,06	494,40	492,68	481,99	482,56
1996-12-23	00:00:00	642,81	661,98	690,46	685,89	715,23	494,10	494,40	492,36	481,43	482,94
1996-12-23	06:00:00	642,81	661,98	690,67	685,85	715,07	494,10	494,62	492,71	481,57	482,56
1996-12-23	12:00:00	642,92	662,11	690,44	685,69	715,23	494,14	494,24	492,18	481,04	482,16
1996-12-23	18:00:00	642,92	662,11	691,09	685,99	715,18	494,08	493,91	492,71	480,79	482,12
1996-12-24	00:00:00	643,02	662,19	691,04	685,96	715,23	494,40	493,91	493,07	481,65	481,91
1996-12-24	06:00:00	643,02	662,11	690,81	685,46	715,23	493,97	493,77	492,51	481,00	481,65
1996-12-24	12:00:00	642,92	662,19	690,84	685,25	715,23	494,02	493,45	492,53	480,44	481,09
1996-12-24	18:00:00	643,02	662,19	690,58	685,99	715,32	493,97	493,38	492,18	480,63	481,13
1996-12-25	00:00:00	642,81	662,11	690,67	685,31	715,23	493,80	493,16	492,13	480,24	480,88
1996-12-25	06:00:00	642,81	661,98	690,81	685,85	715,23	494,02	493,07	492,57	480,28	480,54
1996-12-25	12:00:00	642,73	662,11	691,04	685,99	715,07	493,77	492,57	492,34	480,51	480,37
1996-12-25	18:00:00	642,81	662,11	690,96	685,31	715,23	493,84	492,47	492,43	479,75	480,00
1996-12-26	00:00:00	642,59	661,98	690,81	685,65	715,18	493,91	491,78	491,71	479,53	479,64
1996-12-26	06:00:00	642,59	661,98	690,93	685,93	715,07	493,74	491,48	492,02	479,44	479,33
1996-12-26	12:00:00	642,51	661,98	690,20	685,43	715,07	493,64	491,23	491,14	479,24	479,20
1996-12-26	18:00:00	642,41	661,98	690,58	685,51	715,18	493,64	490,98	491,40	478,78	478,85
1996-12-27	00:00:00	642,41	661,98	690,28	685,80	714,56	493,41	490,93	491,23	478,72	478,60

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 9				
		P4-1	P4-2	P4-3	P4-4	P4-5	P9-1	P9-2	P9-3	P9-4	P9-5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1996-12-27	06:00:00	642,30	661,98	690,28	685,63	714,89	493,49	490,79	491,36	478,30	477,95
1996-12-27	12:00:00	642,51	661,98	690,32	685,31	715,18	493,33	491,16	491,65	478,33	477,95
1996-12-27	18:00:00	642,41	661,92	690,70	685,00	715,18	493,24	491,16	491,50	477,91	477,22
1996-12-28	00:00:00	642,51	661,98	690,54	685,51	714,89	493,05	491,33	491,36	477,95	477,22
1996-12-28	06:00:00	642,51	661,98	690,58	684,83	714,97	493,33	491,36	491,19	477,61	477,04
1996-12-28	12:00:00	642,51	661,98	690,61	685,38	715,18	493,16	490,27	491,19	476,75	476,35
1996-12-28	18:00:00	642,41	661,98	690,81	685,38	715,07	493,33	489,95	490,79	477,19	476,04
1996-12-29	00:00:00	642,41	661,98	690,74	685,17	715,07	493,11	489,42	491,02	477,06	475,85
1996-12-29	06:00:00	642,16	661,81	690,74	684,70	714,89	493,11	489,15	491,33	476,37	475,69
1996-12-29	12:00:00	642,16	661,71	690,10	685,31	714,75	492,81	488,86	491,28	475,69	475,46
1996-12-29	18:00:00	642,16	661,81	690,67	684,42	714,89	492,98	487,95	490,79	475,50	474,84
1996-12-30	00:00:00	642,22	661,71	690,24	685,34	714,89	492,60	488,13	491,19	475,77	474,64
1996-12-30	06:00:00	642,16	661,71	690,32	685,25	714,75	492,77	487,69	490,69	475,53	474,31
1996-12-30	12:00:00	642,22	661,81	690,74	684,91	714,46	492,34	486,97	490,48	474,74	473,83
1996-12-30	18:00:00	642,16	661,71	690,84	685,46	714,89	492,43	486,41	490,69	474,57	473,67
1996-12-31	00:00:00	642,16	661,81	690,54	685,34	714,89	492,18	486,04	490,27	474,40	473,49
1996-12-31	06:00:00	642,08	661,71	690,37	685,25	714,67	492,22	486,66	490,09	473,60	473,07
1996-12-31	12:00:00	642,22	661,81	690,50	685,38	714,89	492,22	485,81	490,40	473,83	472,88
1996-12-31	18:00:00	642,16	661,71	690,41	685,17	714,89	492,18	487,65	490,11	476,11	477,48
1997-01-01	00:00:00	642,30	661,98	691,04	685,17	714,75	492,18	502,22	490,60	490,35	508,36
1997-01-01	06:00:00	642,73	662,19	691,39	685,20	715,42	492,60	515,54	491,82	503,55	523,47
1997-01-01	12:00:00	643,16	662,81	692,33	686,67	716,68	493,16	518,42	491,88	508,10	525,37
1997-01-01	18:00:00	643,78	663,45	693,21	686,92	717,92	493,55	519,99	492,43	509,86	526,53
1997-01-02	00:00:00	644,20	663,72	693,66	688,25	718,97	493,74	521,29	492,87	510,91	527,76
1997-01-02	06:00:00	644,42	664,10	694,92	688,85	719,61	494,24	522,45	493,71	512,55	529,11
1997-01-02	12:00:00	644,63	664,31	694,92	689,31	720,39	494,66	524,15	494,66	514,12	530,56
1997-01-02	18:00:00	644,77	664,53	695,33	689,66	720,90	494,93	524,68	494,86	514,76	530,49
1997-01-03	00:00:00	644,88	664,66	695,74	690,20	721,33	495,35	524,97	495,35	515,02	530,63
1997-01-03	06:00:00	645,09	664,85	695,57	690,74	721,62	495,82	524,85	496,29	515,71	530,09
1997-01-03	12:00:00	645,17	665,06	696,46	690,58	721,95	496,43	523,78	496,59	514,59	527,88
1997-01-03	18:00:00	645,31	664,95	696,87	690,81	721,84	496,46	522,74	497,61	512,77	524,90
1997-01-04	00:00:00	645,39	665,17	696,62	691,01	721,76	496,76	520,87	496,46	510,22	522,18
1997-01-04	06:00:00	645,49	665,06	696,64	690,44	721,76	496,99	518,28	497,06	507,81	518,96
1997-01-04	12:00:00	645,49	665,28	696,50	691,15	721,54	497,24	516,09	496,83	505,96	516,21
1997-01-04	18:00:00	645,49	665,36	696,20	691,48	721,54	497,50	514,15	497,28	504,24	513,82
1997-01-05	00:00:00	645,39	665,28	696,41	691,09	721,33	497,41	512,68	497,03	501,98	512,27
1997-01-05	06:00:00	645,39	665,17	695,99	690,81	721,25	497,41	511,19	497,11	500,42	511,39
1997-01-05	12:00:00	645,49	665,36	696,37	690,67	721,25	497,79	509,81	497,17	499,51	510,20
1997-01-05	18:00:00	645,39	665,17	696,15	690,61	721,01	497,72	508,50	496,94	497,86	509,53
1997-01-06	00:00:00	645,39	665,28	696,34	690,61	721,11	497,66	507,64	496,72	497,24	508,22
1997-01-06	06:00:00	645,31	665,28	695,99	690,79	721,01	497,61	506,92	496,29	495,85	508,66
1997-01-06	12:00:00	645,39	665,17	696,54	690,44	721,11	497,88	506,10	496,52	495,25	508,10
1997-01-06	18:00:00	645,31	665,06	695,74	690,54	720,90	498,14	514,38	496,55	503,64	526,13
1997-01-07	00:00:00	645,49	665,28	696,07	690,50	721,01	498,10	525,33	497,54	513,67	534,41
1997-01-07	06:00:00	645,39	665,17	695,60	689,83	721,11	498,36	526,51	497,75	515,83	533,65
1997-01-07	12:00:00	645,39	665,28	695,41	690,24	721,11	498,30	525,66	497,68	515,54	532,38
1997-01-07	18:00:00	645,60	665,36	696,07	690,24	721,19	498,88	525,28	497,86	514,93	530,63
1997-01-08	00:00:00	645,49	665,28	695,94	690,44	721,19	498,88	523,78	497,66	514,07	528,63
1997-01-08	06:00:00	645,49	665,36	695,94	690,81	721,44	498,90	523,25	497,97	512,75	527,46
1997-01-08	12:00:00	645,49	665,28	695,50	689,80	721,25	498,77	521,88	498,94	511,70	525,49
1997-01-08	18:00:00	645,49	665,36	695,65	690,10	721,33	499,34	520,70	498,44	510,84	523,83
1997-01-09	00:00:00	645,31	665,28	695,96	690,61	721,25	498,90	520,04	498,34	509,21	522,76
1997-01-09	06:00:00	645,31	665,28	695,60	690,84	721,25	499,30	519,40	498,71	508,84	522,14
1997-01-09	12:00:00	645,31	665,36	695,54	690,20	721,25	499,34	519,79	498,60	508,70	522,01
1997-01-09	18:00:00	645,39	665,28	695,60	690,32	721,25	499,47	519,67	499,26	509,77	522,24
1997-01-10	00:00:00	645,17	665,28	695,77	690,58	720,90	499,47	519,36	499,04	508,88	521,03
1997-01-10	06:00:00	645,31	665,28	695,90	690,24	721,11	499,37	519,02	498,54	508,33	520,25
1997-01-10	12:00:00	645,17	665,17	695,60	690,10	721,11	499,43	518,98	499,04	507,79	519,14
1997-01-10	18:00:00	645,17	665,17	695,24	690,41	721,01	499,74	517,98	499,34	507,62	518,63
1997-01-11	00:00:00	645,17	665,28	695,37	690,44	721,19	499,67	517,58	498,69	506,37	517,72

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 9				
		P4-1	P4-2	P4-3	P4-4	P4-5	P9-1	P9-2	P9-3	P9-4	P9-5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1997-01-11	06:00:00	645,17	665,17	695,57	689,66	721,19	499,94	517,26	498,94	506,37	517,78
1997-01-11	12:00:00	644,98	664,95	694,92	690,10	721,11	499,74	516,90	498,82	506,25	517,17
1997-01-11	18:00:00	644,98	664,95	694,90	690,67	721,11	499,72	516,09	498,48	505,35	517,04
1997-01-12	00:00:00	644,88	664,85	695,30	690,05	721,11	499,67	516,31	498,54	505,47	516,41
1997-01-12	06:00:00	644,88	664,95	695,26	689,66	721,11	499,67	515,54	498,99	504,80	515,79
1997-01-12	12:00:00	644,88	664,85	695,26	689,92	721,11	499,67	514,72	498,19	503,86	515,06
1997-01-12	18:00:00	644,88	664,85	695,46	690,20	721,01	499,81	514,50	498,05	503,00	513,94
1997-01-13	00:00:00	644,88	664,85	694,65	690,32	720,79	499,55	513,87	497,92	502,39	513,05
1997-01-13	06:00:00	644,88	664,85	694,65	689,80	720,90	499,67	512,88	498,19	501,72	512,72
1997-01-13	12:00:00	644,77	664,66	694,92	689,54	720,58	499,57	512,22	498,02	500,46	512,59
1997-01-13	18:00:00	644,77	664,74	694,86	689,87	720,50	499,26	511,30	498,10	499,91	511,24
1997-01-14	00:00:00	644,77	664,74	694,58	689,70	720,39	499,23	511,05	497,75	499,57	510,91
1997-01-14	06:00:00	644,77	664,66	694,52	689,20	720,39	499,09	510,45	497,31	498,88	509,97
1997-01-14	12:00:00	644,77	664,66	695,16	688,73	720,39	499,04	510,25	497,19	497,97	508,84
1997-01-14	18:00:00	644,72	664,42	695,07	689,11	720,39	498,99	509,33	497,06	497,86	508,14
1997-01-15	00:00:00	644,77	664,53	694,48	688,78	720,39	498,90	509,51	497,54	497,41	506,94
1997-01-15	06:00:00	644,77	664,53	694,61	689,45	720,39	498,94	508,79	496,94	496,94	506,25
1997-01-15	12:00:00	644,72	664,31	694,61	689,57	720,33	498,77	508,61	496,69	496,49	505,24
1997-01-15	18:00:00	644,63	664,23	694,73	688,71	720,12	498,34	508,50	496,81	496,20	504,54
1997-01-16	00:00:00	644,53	664,10	694,73	688,85	720,33	498,48	507,62	496,55	495,48	503,80
1997-01-16	06:00:00	644,53	664,10	694,99	688,63	720,33	498,02	507,02	496,29	495,30	503,07
1997-01-16	12:00:00	644,42	664,10	695,07	688,73	720,23	498,02	506,92	496,11	494,62	502,05
1997-01-16	18:00:00	644,20	663,91	695,60	688,60	720,12	497,75	506,55	496,07	494,10	501,39
1997-01-17	00:00:00	644,31	663,80	694,61	688,71	720,12	497,68	506,42	496,66	493,64	500,19
1997-01-17	06:00:00	644,20	663,80	694,69	688,71	720,12	497,37	505,73	495,69	493,77	499,91
1997-01-17	12:00:00	644,20	663,80	694,58	688,12	720,12	497,31	508,39	495,94	496,81	508,61
1997-01-17	18:00:00	644,42	663,91	695,26	688,63	720,39	497,68	521,03	496,39	509,90	528,93
1997-01-18	00:00:00	644,53	664,02	695,26	688,37	720,39	497,68	524,97	496,49	513,64	529,36
1997-01-18	06:00:00	644,53	664,23	695,26	688,73	720,39	497,97	525,21	496,46	513,35	527,51
1997-01-18	12:00:00	644,53	664,31	695,33	688,78	720,68	498,05	524,08	496,81	512,88	525,21
1997-01-18	18:00:00	644,53	664,42	695,46	689,23	720,58	498,05	523,21	497,37	511,66	523,30
1997-01-19	00:00:00	644,53	664,42	695,60	688,05	720,90	498,10	523,76	497,61	511,53	522,62
1997-01-19	06:00:00	644,63	664,58	695,94	688,67	721,11	498,14	529,33	497,50	516,31	532,79
1997-01-19	12:00:00	644,72	664,66	695,85	689,36	721,19	498,44	532,21	498,36	519,47	534,76
1997-01-19	18:00:00	644,77	664,85	695,90	689,20	721,62	498,74	532,24	497,97	520,56	535,47
1997-01-20	00:00:00	644,77	664,95	696,11	689,66	721,76	498,99	532,16	499,04	520,25	534,76
1997-01-20	06:00:00	644,77	665,06	696,64	690,05	722,11	499,13	531,50	499,04	520,33	534,07
1997-01-20	12:00:00	644,88	665,17	695,99	690,41	722,29	499,37	530,94	498,64	519,71	532,76
1997-01-20	18:00:00	644,88	665,36	695,74	690,67	722,40	499,39	529,84	499,23	517,61	531,38
1997-01-21	00:00:00	644,98	665,28	696,76	690,37	722,48	499,43	529,21	499,26	518,28	529,54
1997-01-21	06:00:00	644,98	665,17	697,06	690,96	722,40	499,72	528,97	499,67	517,04	528,93
1997-01-21	12:00:00	645,09	665,28	696,98	691,53	722,40	499,86	528,19	499,77	514,98	527,26
1997-01-21	18:00:00	645,17	665,36	697,14	691,18	722,48	500,02	526,92	500,08	514,84	525,35
1997-01-22	00:00:00	645,09	665,28	697,27	690,88	722,29	499,77	524,99	499,57	512,59	523,00
1997-01-22	06:00:00	645,17	665,28	696,98	691,26	722,62	500,06	523,30	499,72	510,88	520,33
1997-01-22	12:00:00	644,98	665,17	697,19	690,81	722,29	500,11	521,56	500,02	508,64	518,28
1997-01-22	18:00:00	645,17	665,17	696,98	690,96	722,29	499,89	520,04	499,23	507,64	516,55
1997-01-23	00:00:00	644,98	665,17	696,67	690,58	722,11	499,97	518,88	499,23	506,33	515,28
1997-01-23	06:00:00	645,09	665,06	696,76	691,43	722,19	499,94	517,61	499,57	505,31	514,17
1997-01-23	12:00:00	644,98	665,06	696,96	690,93	722,11	499,63	517,17	499,34	504,38	513,23
1997-01-23	18:00:00	645,17	665,06	696,79	691,15	722,11	499,91	515,93	498,71	503,42	512,17
1997-01-24	00:00:00	645,09	665,06	696,34	690,08	721,76	499,74	514,84	498,88	501,89	511,39
1997-01-24	06:00:00	645,09	665,17	696,37	690,61	721,95	499,72	514,72	498,48	501,60	510,58
1997-01-24	12:00:00	644,98	664,95	696,34	690,08	721,76	499,63	513,39	498,34	500,58	510,20
1997-01-24	18:00:00	644,88	664,95	696,71	690,10	721,54	499,47	512,88	497,57	500,06	509,53
1997-01-25	00:00:00	644,98	664,95	695,94	690,00	721,44	499,39	512,33	497,88	499,21	508,52
1997-01-25	06:00:00	644,77	664,95	696,11	689,63	721,33	499,34	512,08	498,22	498,99	508,02
1997-01-25	12:00:00	644,77	664,66	696,46	689,83	721,25	499,04	511,30	497,84	497,84	506,94
1997-01-25	18:00:00	644,77	664,66	696,03	689,66	721,19	498,69	511,19	497,79	498,14	505,89
1997-01-26	00:00:00	644,72	664,58	696,62	689,08	721,01	498,90	510,16	497,66	497,11	504,84

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 9				
		P4-1	P4-2	P4-3	P4-4	P4-5	P9-1	P9-2	P9-3	P9-4	P9-5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1997-01-26	06:00:00	644,72	664,53	696,29	689,63	721,01	498,69	510,22	496,99	497,68	504,54
1997-01-26	12:00:00	644,77	664,58	695,77	689,80	721,01	498,48	509,51	497,19	496,66	503,38
1997-01-26	18:00:00	644,77	664,53	696,37	689,66	721,01	498,54	509,47	496,76	496,39	502,30
1997-01-27	00:00:00	644,77	664,42	695,77	689,31	720,90	498,30	508,61	497,03	495,85	501,68
1997-01-27	06:00:00	644,53	664,31	695,94	688,71	720,68	498,48	507,62	496,15	495,00	500,60
1997-01-27	12:00:00	644,53	664,31	695,60	689,06	720,68	497,79	507,48	495,65	494,36	500,32
1997-01-27	18:00:00	644,42	664,10	695,60	689,08	720,58	497,75	506,72	496,29	493,84	499,26
1997-01-28	00:00:00	644,53	664,02	695,60	688,67	720,50	497,48	506,92	496,07	492,68	498,44
1997-01-28	06:00:00	644,31	663,91	695,50	688,25	720,58	497,17	506,55	496,29	492,85	497,72
1997-01-28	12:00:00	644,42	663,91	694,92	688,54	720,58	497,15	505,41	495,89	492,94	497,17
1997-01-28	18:00:00	644,31	663,80	694,65	688,71	720,58	496,89	505,96	495,79	492,81	496,13
1997-01-29	00:00:00	644,20	663,72	694,69	688,54	720,39	496,94	505,75	495,30	492,02	495,73
1997-01-29	06:00:00	644,10	663,72	694,28	688,60	720,50	496,99	504,89	495,00	490,98	495,00
1997-01-29	12:00:00	644,10	663,72	694,35	688,29	720,39	496,66	505,22	495,00	490,79	494,58
1997-01-29	18:00:00	644,10	663,72	694,44	688,17	720,39	496,49	508,44	495,69	495,44	508,06
1997-01-30	00:00:00	644,10	663,72	695,33	688,29	720,50	496,76	524,82	496,20	512,63	529,26
1997-01-30	06:00:00	644,20	664,10	695,60	688,98	721,19	496,89	533,74	496,27	516,78	530,87
1997-01-30	12:00:00	644,63	664,58	696,98	690,05	722,19	497,28	535,52	496,27	517,89	532,00
1997-01-30	18:00:00	644,63	664,66	697,10	691,04	723,13	497,79	536,54	497,31	519,32	532,66
1997-01-31	00:00:00	644,77	664,95	698,01	691,73	723,66	498,00	536,16	497,75	520,16	532,83
1997-01-31	06:00:00	644,77	665,17	697,90	691,99	723,80	498,34	535,66	497,79	520,04	532,19
1997-01-31	12:00:00	644,77	665,17	697,82	691,48	723,80	498,69	535,68	498,44	519,40	531,38
1997-01-31	18:00:00	644,88	665,36	697,87	692,63	723,80	498,74	534,09	499,02	518,48	529,33
1997-02-01	00:00:00	644,98	665,36	698,40	691,73	723,74	498,82	532,49	498,64	516,52	526,66
1997-02-01	06:00:00	644,88	665,41	697,99	691,73	723,56	499,02	531,32	498,64	515,44	524,01
1997-02-01	12:00:00	644,88	665,41	697,99	692,17	723,45	499,09	529,28	499,04	513,13	521,67
1997-02-01	18:00:00	644,88	665,41	697,44	691,46	723,13	499,04	527,90	498,90	511,41	520,13
1997-02-02	00:00:00	644,98	665,41	697,67	691,99	722,97	499,26	527,46	498,88	510,08	518,65
1997-02-02	06:00:00	644,88	665,41	697,19	690,96	722,91	499,47	525,63	498,64	508,84	517,24
1997-02-02	12:00:00	644,98	665,41	697,02	690,93	722,91	499,13	524,42	498,57	508,10	515,67
1997-02-02	18:00:00	644,88	665,36	697,23	691,09	722,70	499,39	523,28	498,90	505,91	515,06
1997-02-03	00:00:00	644,98	665,36	697,30	691,18	722,62	499,51	522,18	498,82	506,58	513,64
1997-02-03	06:00:00	644,98	665,36	697,06	690,28	722,48	499,30	521,09	498,19	505,04	512,77
1997-02-03	12:00:00	644,88	665,28	696,64	691,22	722,29	499,43	520,16	498,48	503,80	512,22
1997-02-03	18:00:00	644,88	665,28	696,62	690,93	722,29	499,26	519,87	498,44	503,42	511,41
1997-02-04	00:00:00	644,77	665,17	696,98	690,08	722,11	499,04	518,93	498,51	502,53	510,72
1997-02-04	06:00:00	644,77	665,28	697,23	690,16	722,11	499,30	518,34	498,60	501,10	510,58
1997-02-04	12:00:00	644,77	665,17	696,76	690,32	721,95	499,17	517,93	498,02	500,92	509,93
1997-02-04	18:00:00	644,77	665,17	696,54	690,16	721,95	499,26	517,54	498,48	500,36	509,21
1997-02-05	00:00:00	644,77	665,06	696,15	690,00	721,54	499,04	516,81	497,45	500,02	508,52
1997-02-05	06:00:00	644,77	665,06	695,82	689,77	721,84	498,90	516,61	498,30	498,71	507,81
1997-02-05	12:00:00	644,77	665,06	695,54	689,66	721,76	498,74	516,58	497,68	498,54	507,12
1997-02-05	18:00:00	644,77	665,06	695,99	690,00	721,54	498,74	516,13	497,97	497,45	506,64
1997-02-06	00:00:00	644,72	664,74	696,24	689,54	721,44	498,71	515,63	497,66	497,97	505,35
1997-02-06	06:00:00	644,72	664,74	696,11	689,92	721,44	498,60	514,63	497,33	497,17	504,54
1997-02-06	12:00:00	644,53	664,66	695,60	689,31	721,19	498,36	515,04	496,97	496,52	503,69
1997-02-06	18:00:00	644,53	664,58	695,41	689,28	721,19	498,34	514,80	497,37	496,49	503,04
1997-02-07	00:00:00	644,42	664,53	695,65	689,02	721,01	498,22	514,17	496,39	495,79	502,19
1997-02-07	06:00:00	644,42	664,53	695,60	688,98	721,11	498,05	514,01	496,85	496,07	501,39
1997-02-07	12:00:00	644,42	664,53	695,60	688,54	721,01	498,10	513,77	496,27	495,44	501,26
1997-02-07	18:00:00	644,42	664,31	695,99	688,67	720,90	497,86	513,49	496,24	494,82	500,39
1997-02-08	00:00:00	644,20	664,10	695,77	688,63	720,79	497,66	513,57	496,39	494,49	499,43
1997-02-08	06:00:00	644,10	664,10	695,60	688,05	720,68	497,57	512,77	496,39	494,14	499,39
1997-02-08	12:00:00	644,10	664,10	695,26	688,12	720,58	497,37	513,18	496,15	494,10	498,86
1997-02-08	18:00:00	644,02	664,02	695,57	688,12	720,58	497,33	513,32	495,39	493,77	498,00
1997-02-09	00:00:00	643,94	664,02	695,60	688,51	720,39	497,31	512,75	495,85	493,55	497,66
1997-02-09	06:00:00	643,88	663,80	695,24	688,73	720,39	496,89	512,59	495,59	493,11	496,66
1997-02-09	12:00:00	643,88	663,72	695,24	688,17	720,39	497,06	512,77	495,27	492,68	496,29
1997-02-09	18:00:00	643,88	663,72	695,90	688,17	720,39	496,94	511,99	495,22	492,60	495,48
1997-02-10	00:00:00	643,78	663,72	694,90	687,52	720,33	496,85	511,41	495,39	491,62	494,79

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 9				
		P4-1	P4-2	P4-3	P4-4	P4-5	P9-1	P9-2	P9-3	P9-4	P9-5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1997-02-10	06:00:00	643,67	663,72	694,73	687,99	720,23	496,69	511,07	494,76	491,36	494,62
1997-02-10	12:00:00	643,67	663,72	694,81	688,21	720,33	496,29	510,67	495,25	491,23	493,97
1997-02-10	18:00:00	643,67	663,67	694,35	688,25	720,12	496,43	510,42	494,86	490,89	493,77
1997-02-11	00:00:00	643,59	663,56	694,52	687,91	719,82	496,24	510,16	495,00	491,48	493,38
1997-02-11	06:00:00	643,59	663,56	694,48	688,05	720,04	496,24	510,12	494,58	490,35	492,57
1997-02-11	12:00:00	643,37	663,37	694,73	687,58	719,61	496,02	509,12	494,24	490,62	492,13
1997-02-11	18:00:00	643,27	663,45	694,21	687,78	719,72	496,15	509,53	494,19	489,92	491,82
1997-02-12	00:00:00	643,16	663,37	694,92	687,25	719,53	496,02	509,02	494,36	489,63	491,67
1997-02-12	06:00:00	643,27	663,37	695,07	687,95	719,61	495,82	509,02	493,71	489,24	490,89
1997-02-12	12:00:00	643,37	663,37	695,24	687,75	719,48	495,69	508,66	494,10	489,63	490,31
1997-02-12	18:00:00	643,27	663,37	695,30	687,40	719,48	495,69	508,66	494,24	489,28	490,05
1997-02-13	00:00:00	643,37	663,24	695,12	686,62	719,29	495,73	507,92	493,53	488,30	489,40
1997-02-13	06:00:00	643,27	663,16	694,48	687,61	719,18	495,42	507,99	494,08	488,72	488,82
1997-02-13	12:00:00	643,16	663,16	690,61	686,65	719,18	495,59	507,76	493,89	488,38	488,57
1997-02-13	18:00:00	643,27	663,16	691,53	687,05	719,29	495,13	508,10	493,64	488,13	488,13
1997-02-14	00:00:00	643,16	663,16	690,93	687,13	719,18	495,39	507,92	494,49	488,40	487,74
1997-02-14	06:00:00	643,08	663,05	690,93	687,05	719,07	495,25	507,27	493,94	487,69	487,40
1997-02-14	12:00:00	643,08	663,05	691,01	687,05	719,07	495,27	508,16	494,49	487,82	487,37
1997-02-14	18:00:00	643,08	663,05	691,26	687,00	718,86	494,82	508,48	494,22	487,57	487,44
1997-02-15	00:00:00	643,08	663,05	691,39	687,22	718,97	494,97	508,84	494,86	487,95	487,78
1997-02-15	06:00:00	643,08	663,05	691,48	686,49	718,67	494,91	509,72	494,10	489,26	490,35
1997-02-15	12:00:00	643,16	663,24	691,53	686,83	719,07	495,11	515,20	495,11	494,53	502,81
1997-02-15	18:00:00	643,16	663,24	691,01	686,65	718,78	495,39	523,64	495,48	502,47	514,98
1997-02-16	00:00:00	643,37	663,45	690,10	686,45	718,67	495,27	528,15	495,82	506,92	519,18
1997-02-16	06:00:00	643,45	663,67	691,34	687,09	718,86	495,85	530,18	496,46	509,47	520,33
1997-02-16	12:00:00	643,45	663,56	691,22	686,92	719,07	495,96	530,21	496,29	509,72	520,18
1997-02-16	18:00:00	643,59	663,72	690,67	687,34	719,40	496,20	530,01	496,85	509,81	519,23
1997-02-17	00:00:00	643,67	663,91	690,79	687,58	719,53	496,43	530,43	497,72	509,81	520,68
1997-02-17	06:00:00	643,78	663,80	690,84	686,79	719,61	496,76	534,07	497,48	513,70	526,06
1997-02-17	12:00:00	643,88	664,02	691,95	687,09	719,82	497,28	535,38	498,19	515,90	526,53
1997-02-17	18:00:00	643,94	664,10	691,99	687,34	720,39	497,45	535,72	499,04	515,32	525,03
1997-02-18	00:00:00	644,10	664,53	692,59	687,95	720,39	497,66	534,95	498,64	514,90	523,55
1997-02-18	06:00:00	644,10	664,53	692,17	687,40	720,58	498,02	534,09	499,34	514,30	522,57
1997-02-18	12:00:00	644,02	664,58	692,86	687,82	720,79	498,34	532,79	499,43	513,15	520,85
1997-02-18	18:00:00	644,02	664,58	692,72	688,42	720,79	498,54	531,96	499,26	512,47	519,30
1997-02-19	00:00:00	644,20	664,66	692,84	687,91	721,01	498,86	531,41	499,57	510,56	517,93
1997-02-19	06:00:00	644,02	664,66	692,72	688,17	721,01	498,77	530,65	500,02	510,37	516,96
1997-02-19	12:00:00	644,10	664,74	692,63	688,71	721,11	498,69	530,81	499,74	510,22	516,27
1997-02-19	18:00:00	644,20	664,74	693,19	688,73	721,01	498,82	530,13	500,23	509,08	515,28
1997-02-20	00:00:00	644,31	664,85	693,55	688,29	720,79	499,04	529,71	500,63	508,22	514,26
1997-02-20	06:00:00	644,42	664,85	693,36	688,29	720,79	499,04	529,87	500,28	507,29	513,82
1997-02-20	12:00:00	644,53	664,95	693,75	688,37	721,01	499,23	529,61	500,25	506,64	513,10
1997-02-20	18:00:00	644,42	664,74	693,55	688,73	720,90	499,37	529,14	500,15	505,75	512,17
1997-02-21	00:00:00	644,63	664,85	693,28	688,39	720,90	499,17	527,43	500,42	505,47	511,57
1997-02-21	06:00:00	644,53	664,74	691,73	688,78	720,68	499,67	526,79	500,77	504,71	511,01
1997-02-21	12:00:00	644,63	664,85	692,59	688,85	720,58	499,37	526,37	499,97	503,34	510,28
1997-02-21	18:00:00	644,63	664,74	692,33	687,82	720,50	499,55	525,79	500,19	503,38	509,51
1997-02-22	00:00:00	644,53	664,66	692,79	688,71	720,39	499,57	523,88	500,54	502,05	509,05
1997-02-22	06:00:00	644,53	664,66	692,49	688,67	720,39	499,34	524,08	500,19	502,15	508,91
1997-02-22	12:00:00	644,53	664,66	691,99	687,69	720,39	499,30	523,92	500,46	501,39	507,76
1997-02-22	18:00:00	644,53	664,66	692,17	687,91	720,39	499,72	522,65	500,32	500,80	507,06
1997-02-23	00:00:00	644,42	664,53	692,49	687,99	720,39	499,26	522,62	499,43	500,02	505,89
1997-02-23	06:00:00	644,31	664,53	692,42	687,45	720,39	499,39	522,82	499,77	500,06	505,35
1997-02-23	12:00:00	644,42	664,53	692,51	687,87	720,23	499,23	521,39	499,51	499,17	504,62
1997-02-23	18:00:00	644,31	664,42	692,51	687,71	718,86	499,13	521,46	499,23	499,02	503,55
1997-02-24	00:00:00	644,42	664,42	692,86	687,58	718,97	499,17	521,22	499,43	499,04	502,91
1997-02-24	06:00:00	644,20	664,31	692,79	687,49	719,53	499,17	520,63	499,21	498,54	502,22
1997-02-24	12:00:00	644,10	664,31	693,07	688,51	719,48	498,94	520,43	499,47	498,30	502,19
1997-02-24	18:00:00	644,20	664,31	693,02	687,78	719,40	498,74	520,18	499,17	498,00	501,79
1997-02-25	00:00:00	644,02	664,10	692,94	687,36	719,18	498,82	520,87	499,47	497,54	501,72

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 9				
		P4-1	P4-2	P4-3	P4-4	P4-5	P9-1	P9-2	P9-3	P9-4	P9-5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1997-02-25	06:00:00	643,94	664,02	692,86	687,91	719,18	498,69	520,87	499,09	497,86	501,79
1997-02-25	12:00:00	643,88	664,02	692,75	687,58	719,18	498,40	520,98	499,02	498,30	502,65
1997-02-25	18:00:00	643,94	664,10	692,46	687,61	718,86	498,88	521,97	499,04	498,99	503,75
1997-02-26	00:00:00	643,94	664,02	692,42	687,82	718,67	498,64	522,95	499,30	499,47	504,89
1997-02-26	06:00:00	643,78	663,80	692,86	687,69	718,86	498,51	523,78	499,74	499,86	506,68
1997-02-26	12:00:00	643,67	663,91	692,29	687,87	718,97	498,60	523,97	499,67	500,88	508,16
1997-02-26	18:00:00	643,78	663,91	692,75	687,49	718,78	498,54	524,68	499,43	501,72	508,64
1997-02-27	00:00:00	643,67	663,91	692,79	687,52	718,86	498,77	524,08	499,51	500,92	508,82
1997-02-27	06:00:00	643,67	663,80	692,59	687,52	718,86	498,82	523,61	499,63	501,01	508,39
1997-02-27	12:00:00	643,67	663,91	692,94	687,30	718,67	498,74	523,92	499,94	500,39	508,10
1997-02-27	18:00:00	643,78	664,02	692,86	686,83	718,97	498,82	522,49	500,06	500,02	507,62
1997-02-28	00:00:00	643,88	664,02	692,17	697,36	718,97	498,86	522,38	499,63	500,02	507,18
1997-02-28	06:00:00	643,78	663,91	692,55	687,91	718,86	498,90	521,97	499,72	499,26	506,55
1997-02-28	12:00:00	643,78	663,91	692,46	688,03	719,07	498,74	520,73	499,89	499,39	506,27
1997-02-28	18:00:00	643,78	664,02	691,48	687,58	718,86	498,57	521,20	499,91	498,74	505,89
1997-03-01	00:00:00	643,78	663,91	691,46	687,49	718,86	498,69	521,16	499,47	497,79	504,59
1997-03-01	06:00:00	643,59	663,80	691,53	687,36	718,97	498,54	521,03	499,39	498,22	504,18
1997-03-01	12:00:00	643,59	663,91	691,48	687,95	718,86	498,30	520,59	499,63	497,97	503,72
1997-03-01	18:00:00	643,59	663,91	691,70	687,52	718,86	498,54	520,89	499,57	497,68	503,34
1997-03-02	00:00:00	643,59	663,80	691,61	687,40	718,67	498,05	521,39	499,60	497,41	502,61
1997-03-02	06:00:00	643,59	663,80	692,07	687,91	718,78	498,30	520,51	499,21	497,79	502,15
1997-03-02	12:00:00	643,59	663,72	691,73	687,52	718,78	498,17	521,36	499,72	496,94	501,98
1997-03-02	18:00:00	643,45	663,80	692,15	687,05	718,67	498,05	520,16	499,51	496,81	501,35
1997-03-03	00:00:00	643,67	663,91	692,07	687,58	718,78	497,97	520,18	499,43	496,20	501,65
1997-03-03	06:00:00	643,67	663,91	692,25	687,69	718,78	498,19	521,25	499,34	497,45	501,79
1997-03-03	12:00:00	643,78	663,91	692,17	687,69	718,78	498,14	521,03	499,39	497,33	501,84
1997-03-03	18:00:00	643,67	663,91	692,25	686,92	718,67	498,10	521,80	499,81	497,61	501,79
1997-03-04	00:00:00	643,67	663,80	692,67	687,71	718,62	497,86	520,56	499,17	497,37	501,48
1997-03-04	06:00:00	643,67	663,91	692,33	687,36	718,67	497,88	519,85	499,94	496,97	500,88
1997-03-04	12:00:00	643,59	663,80	692,38	687,71	718,54	498,17	520,56	499,63	497,11	500,23
1997-03-04	18:00:00	643,59	664,02	692,33	686,92	718,43	497,79	519,67	499,57	496,81	499,43
1997-03-05	00:00:00	643,59	664,02	692,72	687,61	718,32	497,92	519,02	499,63	495,77	498,90
1997-03-05	06:00:00	643,59	663,80	692,51	687,13	718,11	497,75	518,93	499,77	495,77	498,71
1997-03-05	12:00:00	643,45	663,72	692,15	686,75	718,11	497,79	520,01	499,17	494,24	498,51
1997-03-05	18:00:00	643,37	663,72	692,72	687,22	717,84	497,79	518,14	499,55	494,82	497,61
1997-03-06	00:00:00	643,37	663,72	692,75	687,69	717,79	497,68	518,38	499,43	494,42	497,06
1997-03-06	06:00:00	643,37	663,72	692,51	686,67	717,35	497,68	516,90	499,72	493,74	496,46
1997-03-06	12:00:00	643,16	663,72	692,33	686,53	717,17	497,68	517,21	499,30	493,64	495,44
1997-03-06	18:00:00	643,37	663,72	692,46	686,88	717,28	497,84	517,26	498,90	493,45	495,42
1997-03-07	00:00:00	643,08	663,72	691,99	686,41	716,93	497,54	517,12	499,30	493,19	494,86
1997-03-07	06:00:00	643,16	663,67	692,72	687,82	716,93	497,54	517,04	499,04	493,07	494,58
1997-03-07	12:00:00	643,16	663,72	692,17	687,09	716,93	497,28	517,41	498,94	493,89	494,36
1997-03-07	18:00:00	643,45	663,72	692,55	686,92	717,06	497,31	516,81	499,04	492,77	494,19
1997-03-08	00:00:00	643,37	663,80	692,42	687,69	716,93	497,15	516,92	499,13	493,36	494,28
1997-03-08	06:00:00	643,37	663,72	692,86	686,75	716,93	497,17	517,29	498,86	492,98	494,24
1997-03-08	12:00:00	643,37	663,72	692,84	686,32	716,93	497,37	518,10	498,48	493,33	494,45
1997-03-08	18:00:00	643,27	663,72	692,72	686,83	716,87	497,28	517,89	499,13	493,05	494,74
1997-03-09	00:00:00	643,16	663,72	692,07	687,02	716,68	497,15	517,84	499,09	493,77	494,74
1997-03-09	06:00:00	643,16	663,67	691,99	687,09	716,79	497,37	517,50	499,21	493,55	494,28
1997-03-09	12:00:00	643,08	663,72	692,17	687,05	716,87	497,15	517,54	499,23	492,98	493,97
1997-03-09	18:00:00	643,27	663,72	692,42	687,09	716,87	497,61	518,63	499,30	495,39	497,79
1997-03-10	00:00:00	643,45	663,91	692,63	686,83	716,93	497,66	526,88	500,25	502,43	512,77
1997-03-10	06:00:00	643,67	664,23	692,51	687,82	717,17	497,72	529,75	500,42	506,13	514,42
1997-03-10	12:00:00	643,67	664,23	692,90	686,88	717,06	498,14	530,65	500,36	506,16	514,21
1997-03-10	18:00:00	643,67	664,42	692,94	687,49	717,57	498,44	530,18	501,22	505,58	513,35
1997-03-11	00:00:00	643,78	664,31	693,36	687,30	717,57	498,54	530,25	500,39	505,13	512,77
1997-03-11	06:00:00	643,78	664,42	693,52	687,36	717,57	498,77	529,61	500,94	504,44	512,22
1997-03-11	12:00:00	643,78	664,53	693,59	686,96	717,79	498,88	529,49	501,72	504,18	511,41
1997-03-11	18:00:00	643,67	664,42	693,21	687,02	717,79	499,02	528,57	501,22	503,42	510,01
1997-03-12	00:00:00	643,88	664,42	694,09	687,30	718,00	499,21	527,46	501,65	502,78	509,21

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 9				
		P4-1	P4-2	P4-3	P4-4	P4-5	P9-1	P9-2	P9-3	P9-4	P9-5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1997-03-12	06:00:00	643,78	664,53	693,32	687,02	717,92	499,17	527,23	501,48	502,43	508,61
1997-03-12	12:00:00	643,94	664,66	693,49	687,69	718,00	499,51	526,66	501,22	501,14	507,54
1997-03-12	18:00:00	643,94	664,58	693,52	687,82	718,21	499,23	526,02	501,79	500,42	506,58
1997-03-13	00:00:00	644,02	664,58	693,55	687,58	718,21	499,34	525,71	501,79	500,23	505,41
1997-03-13	06:00:00	643,94	664,58	693,71	688,03	718,00	499,17	524,90	501,72	500,19	504,52
1997-03-13	12:00:00	644,02	664,58	693,89	687,22	718,00	499,43	524,30	501,52	499,67	503,42
1997-03-13	18:00:00	643,94	664,53	693,52	686,96	717,57	499,43	523,64	500,88	498,82	502,30
1997-03-14	00:00:00	643,94	664,53	693,62	687,61	717,35	499,57	523,25	500,83	498,10	501,26
1997-03-14	06:00:00	643,88	664,53	693,84	686,96	717,79	499,34	522,76	501,52	497,79	500,80
1997-03-14	12:00:00	643,88	664,31	694,09	687,34	717,57	499,37	522,41	501,08	496,97	500,06
1997-03-14	18:00:00	643,67	664,31	693,87	687,25	717,49	499,13	521,54	501,05	496,99	499,13
1997-03-15	00:00:00	643,78	664,31	693,75	687,40	717,57	498,99	520,70	500,83	495,94	498,36
1997-03-15	06:00:00	643,67	664,23	693,55	687,36	717,57	498,94	520,35	500,88	495,17	497,84
1997-03-15	12:00:00	643,45	664,10	693,11	687,75	717,06	498,82	519,87	500,94	494,66	496,81
1997-03-15	18:00:00	643,37	664,10	693,52	687,22	717,17	498,57	519,47	500,58	494,42	496,29
1997-03-16	00:00:00	643,45	664,02	693,59	687,99	717,17	498,36	519,02	500,25	494,06	495,85
1997-03-16	06:00:00	643,37	664,02	693,79	687,09	716,93	498,26	518,84	500,46	493,60	495,00
1997-03-16	12:00:00	643,37	663,80	693,45	688,05	716,79	498,17	518,28	500,77	493,55	494,79
1997-03-16	18:00:00	643,27	663,80	693,36	687,13	716,58	498,00	518,12	499,97	493,55	493,97
1997-03-17	00:00:00	643,37	663,91	693,07	687,52	716,93	497,88	517,78	499,94	492,53	493,24
1997-03-17	06:00:00	643,37	663,72	693,32	686,96	716,79	497,75	517,29	499,63	492,31	492,64
1997-03-17	12:00:00	643,37	663,80	693,45	687,99	716,79	497,48	516,96	499,63	491,71	492,02
1997-03-17	18:00:00	643,45	663,80	693,52	687,05	716,68	497,31	516,85	499,67	491,16	491,36
1997-03-18	00:00:00	643,37	663,72	693,19	687,25	716,47	497,19	516,35	499,47	491,16	491,06
1997-03-18	06:00:00	643,45	663,91	694,17	687,05	717,06	497,45	529,91	499,94	505,82	526,53
1997-03-18	12:00:00	643,88	664,53	695,24	688,12	718,11	497,79	542,85	499,94	517,95	532,16
1997-03-18	18:00:00	644,20	664,85	695,99	689,02	719,07	498,48	544,51	501,96	520,13	532,87
1997-03-19	00:00:00	644,31	665,28	696,20	690,41	720,23	498,69	545,62	501,39	521,73	533,38
1997-03-19	06:00:00	644,72	665,41	697,82	690,81	721,01	499,04	547,09	502,26	523,78	535,72
1997-03-19	12:00:00	644,77	665,41	697,99	691,82	721,44	499,23	547,78	503,07	523,67	535,89
1997-03-19	18:00:00	644,77	665,63	698,35	692,94	721,76	499,86	547,78	504,01	524,34	535,89
1997-03-20	00:00:00	644,88	665,95	698,60	692,33	721,25	499,81	547,99	503,52	523,78	535,47
1997-03-20	06:00:00	644,98	666,03	698,56	692,86	721,62	500,39	548,15	504,54	524,60	535,38
1997-03-20	12:00:00	645,09	666,24	697,90	693,15	721,62	500,50	547,56	504,18	524,68	534,87
1997-03-20	18:00:00	645,09	666,14	698,73	692,86	721,11	500,83	546,70	504,54	523,51	533,04
1997-03-21	00:00:00	645,31	666,30	698,40	692,17	721,25	500,94	545,76	504,38	522,18	531,11
1997-03-21	06:00:00	645,17	666,24	698,60	692,55	721,11	501,14	544,03	504,97	520,73	529,26
1997-03-21	12:00:00	644,98	666,30	698,73	692,29	720,79	501,39	542,11	505,10	518,65	526,83
1997-03-21	18:00:00	645,17	666,30	698,43	692,67	720,50	501,62	540,83	505,58	516,41	524,30
1997-03-22	00:00:00	645,09	666,24	698,29	691,87	720,39	501,79	539,43	505,22	515,32	523,21
1997-03-22	06:00:00	645,09	666,30	698,32	692,21	720,39	501,72	538,80	504,84	514,07	521,29
1997-03-22	12:00:00	645,09	666,38	698,12	692,17	720,33	501,68	536,78	504,84	512,77	519,53
1997-03-22	18:00:00	644,98	666,30	697,79	691,57	720,23	501,79	536,10	505,44	511,79	518,10
1997-03-23	00:00:00	644,98	666,24	697,56	691,43	719,91	501,52	534,97	504,44	510,63	516,78
1997-03-23	06:00:00	645,09	666,24	697,23	691,61	719,48	501,48	534,54	504,62	509,97	516,39
1997-03-23	12:00:00	645,09	666,24	696,64	691,48	719,29	501,72	534,07	504,84	508,50	515,54
1997-03-23	18:00:00	645,09	666,03	697,02	690,28	719,48	501,52	533,48	504,80	508,75	514,80
1997-03-24	00:00:00	645,09	666,14	697,10	691,15	719,40	501,60	532,62	504,44	507,85	514,56
1997-03-24	06:00:00	645,17	666,03	697,10	691,13	719,29	501,60	532,49	504,67	507,29	514,76
1997-03-24	12:00:00	645,09	665,95	697,30	690,44	719,29	501,56	532,32	503,94	506,64	513,99
1997-03-24	18:00:00	645,09	665,95	697,14	690,67	719,29	501,48	532,00	504,03	505,82	513,82
1997-03-25	00:00:00	645,09	665,82	697,32	690,20	719,07	501,48	530,74	504,03	505,82	513,32
1997-03-25	06:00:00	644,88	665,63	696,98	690,41	718,67	501,18	531,86	503,94	506,00	514,15
1997-03-25	12:00:00	644,98	665,73	697,06	690,20	719,07	501,14	532,16	504,18	506,25	515,54
1997-03-25	18:00:00	644,88	665,63	696,34	690,20	718,97	501,18	536,65	504,18	511,39	524,68
1997-03-26	00:00:00	645,09	665,73	696,76	690,10	719,18	501,26	545,26	504,48	520,43	534,26
1997-03-26	06:00:00	644,98	665,63	696,84	690,08	719,48	501,56	546,75	504,31	521,36	533,40
1997-03-26	12:00:00	644,98	665,63	696,84	690,46	719,61	501,45	545,76	504,38	520,59	531,66
1997-03-26	18:00:00	644,98	665,63	697,99	690,10	719,72	501,60	545,43	505,04	520,51	530,05
1997-03-27	00:00:00	644,98	665,63	697,48	690,10	719,82	501,79	544,20	505,47	519,23	528,93

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 9				
		P4-1	P4-2	P4-3	P4-4	P4-5	P9-1	P9-2	P9-3	P9-4	P9-5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1997-03-27	06:00:00	644,98	665,63	697,06	691,26	719,91	501,77	543,91	504,67	518,84	526,96
1997-03-27	12:00:00	644,88	665,63	697,48	690,46	719,91	501,77	542,75	505,35	517,21	525,37
1997-03-27	18:00:00	644,98	665,63	697,10	690,10	720,04	501,72	541,98	504,80	516,07	524,18
1997-03-28	00:00:00	644,98	665,52	696,84	690,96	720,04	501,60	540,83	505,24	514,67	522,41
1997-03-28	06:00:00	644,98	665,52	696,98	690,81	719,91	501,79	539,63	505,13	513,82	520,53
1997-03-28	12:00:00	645,09	665,63	697,53	690,32	720,04	501,77	538,30	504,75	512,92	519,10
1997-03-28	18:00:00	644,98	665,63	696,98	691,04	719,91	501,77	537,22	504,73	511,61	517,98
1997-03-29	00:00:00	645,09	665,63	697,27	690,44	719,82	501,68	536,74	504,97	510,25	517,26
1997-03-29	06:00:00	644,98	665,52	697,40	690,54	719,48	501,56	535,82	504,31	510,08	516,35
1997-03-29	12:00:00	644,88	665,52	696,96	690,44	718,67	501,28	535,72	504,07	509,42	516,96
1997-03-29	18:00:00	644,77	665,52	696,79	690,10	719,29	501,18	537,34	505,17	511,35	520,29
1997-03-30	00:00:00	644,88	665,52	696,84	690,10	719,29	501,39	541,63	504,48	516,01	526,09
1997-03-30	06:00:00	644,77	665,41	696,96	690,10	719,29	501,62	543,18	504,89	517,98	527,40
1997-03-30	12:00:00	644,77	665,41	696,71	690,10	719,07	501,72	542,96	504,40	516,96	525,88
1997-03-30	18:00:00	644,77	665,41	696,92	689,66	719,07	501,62	541,83	504,54	516,07	523,97
1997-03-31	00:00:00	644,77	665,41	695,99	690,24	718,67	501,65	540,70	504,93	514,76	522,65
1997-03-31	06:00:00	644,77	665,41	696,24	690,74	718,78	501,79	540,63	505,13	514,70	522,45
1997-03-31	12:00:00	644,77	665,41	696,67	689,31	718,86	501,79	540,27	505,24	514,07	520,70
1997-03-31	18:00:00	644,77	665,52	696,54	689,66	719,07	501,79	540,01	504,75	514,07	519,65
1997-04-01	00:00:00	644,98	665,41	696,29	689,70	718,97	501,89	538,34	504,62	511,87	518,23
1997-04-01	06:00:00	644,88	665,52	696,11	689,54	718,86	501,65	537,95	504,67	511,45	517,64
1997-04-01	12:00:00	644,98	665,63	696,41	690,41	719,18	501,93	536,97	504,71	510,67	516,75
1997-04-01	18:00:00	644,88	665,52	696,67	689,28	718,97	501,52	536,20	503,98	510,33	515,54
1997-04-02	00:00:00	644,88	665,41	696,11	690,00	719,07	501,93	535,76	504,54	509,08	514,72
1997-04-02	06:00:00	644,77	665,41	696,07	689,96	719,07	501,56	534,95	505,22	508,50	515,23
1997-04-02	12:00:00	644,77	665,41	696,79	689,23	718,67	501,65	534,32	504,54	507,37	514,98
1997-04-02	18:00:00	644,77	665,41	696,07	689,42	718,78	501,68	533,56	504,54	507,42	513,23
1997-04-03	00:00:00	644,72	665,36	695,90	688,71	718,78	501,65	533,06	504,54	506,25	513,70
1997-04-03	06:00:00	644,72	665,28	696,07	688,63	718,21	501,62	533,26	504,38	507,54	514,12
1997-04-03	12:00:00	644,77	665,36	696,34	689,15	718,78	501,45	534,58	504,07	508,22	516,52
1997-04-03	18:00:00	644,72	665,36	695,96	688,90	718,97	501,42	535,45	504,93	509,35	517,76
1997-04-04	00:00:00	644,77	665,36	695,94	688,81	718,78	501,18	536,16	504,38	510,04	518,34
1997-04-04	06:00:00	644,63	665,17	695,65	688,73	719,29	501,31	536,41	504,40	510,54	518,10
1997-04-04	12:00:00	644,63	665,28	696,07	688,54	719,18	501,39	536,16	504,80	509,72	517,84
1997-04-04	18:00:00	644,63	665,28	695,74	689,45	719,07	501,31	536,16	504,21	509,19	517,10
1997-04-05	00:00:00	644,63	665,28	696,03	688,78	719,48	501,31	535,82	504,48	509,53	516,21
1997-04-05	06:00:00	644,42	665,17	695,60	688,90	719,72	501,26	535,72	504,44	508,64	515,90
1997-04-05	12:00:00	644,53	665,17	695,99	688,21	719,48	500,88	535,00	503,67	508,33	514,98
1997-04-05	18:00:00	644,63	665,28	695,99	689,15	719,07	501,22	534,46	504,54	508,22	514,84
1997-04-06	00:00:00	644,53	665,17	696,24	689,08	719,61	500,96	534,37	504,24	507,64	514,42
1997-04-06	06:00:00	644,42	665,17	695,94	688,63	719,48	501,08	534,76	504,14	507,62	514,84
1997-04-06	12:00:00	644,42	665,17	695,99	688,73	719,07	500,83	534,50	504,14	507,27	514,70
1997-04-06	18:00:00	644,42	665,06	695,96	688,34	719,53	500,71	534,07	504,54	507,54	513,94
1997-04-07	00:00:00	644,31	665,06	695,74	688,71	719,40	500,71	534,32	503,50	507,34	514,35
1997-04-07	06:00:00	644,31	665,06	696,29	687,91	719,61	500,77	535,63	503,75	507,62	515,52
1997-04-07	12:00:00	644,31	665,06	695,60	688,71	719,07	500,77	535,93	503,38	508,75	515,83
1997-04-07	18:00:00	644,31	665,06	695,94	688,85	719,29	500,94	535,17	503,34	508,44	515,88
1997-04-08	00:00:00	644,31	665,06	696,07	688,39	719,53	500,50	536,65	503,34	508,75	518,10
1997-04-08	06:00:00	644,42	665,17	695,60	689,28	719,91	500,60	539,11	503,98	511,01	521,01
1997-04-08	12:00:00	644,31	665,17	695,90	688,60	719,72	500,60	540,27	503,80	512,55	521,36
1997-04-08	18:00:00	644,42	665,36	695,69	688,54	720,12	500,80	540,36	504,54	512,68	521,54
1997-04-09	00:00:00	644,42	665,28	695,94	688,25	719,91	500,71	541,73	504,54	514,80	523,61
1997-04-09	06:00:00	644,42	665,28	696,29	688,60	718,67	500,42	543,18	504,36	515,67	524,85
1997-04-09	12:00:00	644,42	665,28	696,27	688,29	719,61	500,58	543,91	503,94	516,27	525,10
1997-04-09	18:00:00	644,53	665,41	696,15	689,50	720,39	500,75	544,09	504,24	516,09	524,82
1997-04-10	00:00:00	644,53	665,36	696,64	688,81	719,53	500,77	544,91	504,93	517,50	526,30
1997-04-10	06:00:00	644,63	665,41	696,54	688,85	720,39	500,66	546,16	504,48	519,02	528,71
1997-04-10	12:00:00	644,63	665,41	696,62	689,20	720,50	500,96	546,24	504,89	519,65	528,15
1997-04-10	18:00:00	644,53	665,41	696,34	688,73	720,39	500,75	546,30	504,52	519,23	527,81
1997-04-11	00:00:00	644,63	665,41	696,54	689,15	720,68	500,77	547,33	504,80	520,59	529,80

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 3				
		P4-1	P4-2	P4-3	P4-4	P4-5	P9-1	P9-2	P9-3	P9-4	P9-5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1997-04-11	06:00:00	644,72	665,52	696,92	689,36	720,79	500,75	548,29	505,17	521,62	530,83
1997-04-11	12:00:00	644,72	665,52	696,62	689,74	720,79	500,94	548,68	504,71	520,68	529,61
1997-04-11	18:00:00	644,72	665,52	696,64	688,85	721,01	500,80	547,88	505,06	520,63	528,91
1997-04-12	00:00:00	644,77	665,52	697,56	688,81	721,19	500,83	547,56	505,56	521,29	529,28
1997-04-12	06:00:00	644,72	665,52	696,54	689,42	720,90	501,05	548,38	505,39	521,85	530,32
1997-04-12	12:00:00	644,72	665,63	697,06	689,40	721,01	500,96	548,46	505,13	521,39	529,36
1997-04-12	18:00:00	644,63	665,63	697,10	690,10	721,33	500,88	547,67	504,52	521,39	528,29
1997-04-13	00:00:00	644,63	665,63	696,96	689,20	721,19	500,77	547,67	505,41	521,09	528,06
1997-04-13	06:00:00	644,63	665,73	697,60	689,45	721,25	500,88	547,27	505,24	521,09	527,72
1997-04-13	12:00:00	644,63	665,63	697,06	690,24	721,19	501,01	546,75	505,73	520,53	527,26
1997-04-13	18:00:00	644,63	665,73	697,60	690,46	721,25	500,88	546,03	505,35	520,09	525,41
1997-04-14	00:00:00	644,63	665,73	697,70	690,10	721,44	500,96	545,76	505,75	519,10	525,14
1997-04-14	06:00:00	644,77	665,95	697,30	690,08	721,76	500,96	545,23	504,89	519,40	524,68
1997-04-14	12:00:00	644,72	665,82	697,36	690,41	721,33	501,28	544,98	504,87	518,63	523,72
1997-04-14	18:00:00	644,77	666,03	696,87	689,96	721,84	500,92	544,37	506,07	518,54	522,93
1997-04-15	00:00:00	644,72	666,03	696,96	690,10	721,76	501,08	544,37	505,41	518,58	523,34
1997-04-15	06:00:00	644,77	666,03	696,79	690,58	721,95	500,96	544,89	505,13	518,58	524,42
1997-04-15	12:00:00	644,77	666,03	697,53	690,67	721,84	501,08	546,28	505,47	520,53	528,32
1997-04-15	18:00:00	644,77	666,03	697,14	690,41	722,05	501,22	550,99	506,46	525,28	533,74
1997-04-16	00:00:00	644,77	666,14	697,65	690,58	722,29	501,31	551,73	505,91	526,53	534,74
1997-04-16	06:00:00	644,77	666,38	698,29	691,57	723,74	501,45	552,20	506,58	527,74	534,43
1997-04-16	12:00:00	644,88	666,38	699,08	692,38	724,23	501,65	552,62	507,29	526,79	534,16
1997-04-16	18:00:00	645,09	666,38	698,68	692,29	724,68	501,62	552,07	506,94	526,74	534,24
1997-04-17	00:00:00	645,17	666,57	699,58	693,28	724,76	501,72	551,86	507,29	526,86	534,09
1997-04-17	06:00:00	645,31	666,67	700,05	692,86	724,87	501,89	551,90	507,29	526,92	533,74
1997-04-17	12:00:00	645,49	666,89	699,93	693,24	724,87	502,05	551,56	507,29	526,23	533,23
1997-04-17	18:00:00	645,39	666,78	699,97	692,90	724,68	501,93	551,40	507,18	526,70	533,38
1997-04-18	00:00:00	645,39	666,78	699,97	693,24	723,80	502,33	551,26	507,29	525,68	532,49
1997-04-18	06:00:00	645,49	666,78	699,72	693,36	724,63	502,49	550,18	507,81	524,64	531,76
1997-04-18	12:00:00	645,39	666,67	699,02	693,41	724,33	502,39	549,02	507,29	523,78	529,36
1997-04-18	18:00:00	645,31	666,57	699,04	693,41	724,12	502,53	547,53	507,29	522,18	527,85
1997-04-19	00:00:00	645,31	666,67	699,16	692,86	723,80	502,56	546,62	506,85	521,22	526,83
1997-04-19	06:00:00	645,31	666,67	698,85	693,15	723,74	502,49	545,76	507,54	521,20	526,20
1997-04-19	12:00:00	645,31	666,57	698,90	693,02	723,66	502,47	544,89	507,27	519,67	524,34
1997-04-19	18:00:00	645,39	666,46	699,42	692,84	723,56	502,49	543,87	507,29	518,28	522,87
1997-04-20	00:00:00	645,39	666,46	698,94	692,67	723,56	502,49	543,44	507,46	518,76	523,09
1997-04-20	06:00:00	645,49	666,46	699,04	692,59	723,23	502,78	543,87	507,50	518,88	523,44
1997-04-20	12:00:00	645,65	666,57	698,60	692,15	723,34	502,26	544,09	507,12	518,88	522,79
1997-04-20	18:00:00	645,65	666,46	698,82	692,17	723,05	502,53	543,78	507,29	518,34	523,28
1997-04-21	00:00:00	645,60	666,46	698,60	691,73	722,80	502,35	545,53	507,62	519,60	525,33
1997-04-21	06:00:00	645,65	666,46	699,02	692,03	722,80	502,49	545,86	507,42	520,56	525,63
1997-04-21	12:00:00	645,74	666,57	698,85	692,29	722,91	502,35	544,94	507,42	520,39	523,83
1997-04-21	18:00:00	645,65	666,38	698,70	692,59	722,97	502,53	543,69	507,29	518,88	523,07
1997-04-22	00:00:00	645,60	666,38	698,70	691,87	722,70	502,30	544,47	507,29	519,36	523,34
1997-04-22	06:00:00	645,60	666,30	698,73	691,82	722,97	502,39	544,23	507,34	519,53	523,78
1997-04-22	12:00:00	645,49	666,30	698,01	691,48	722,70	502,15	543,96	507,29	519,02	522,70
1997-04-22	18:00:00	645,49	666,14	698,47	691,70	722,62	502,26	542,91	507,62	517,98	521,80
1997-04-23	00:00:00	645,39	666,03	698,47	691,82	722,80	502,19	544,26	507,88	519,71	523,97
1997-04-23	06:00:00	645,49	666,14	698,60	692,33	722,91	501,79	547,39	507,85	523,00	528,45
1997-04-23	12:00:00	645,49	666,24	698,82	691,90	723,05	501,79	547,74	507,79	522,87	528,15
1997-04-23	18:00:00	645,60	666,24	698,98	692,42	723,34	502,13	548,02	507,92	523,47	528,15
1997-04-24	00:00:00	645,60	666,14	698,35	692,38	723,34	501,79	548,18	507,96	523,34	528,41
1997-04-24	06:00:00	645,60	666,24	699,04	692,49	723,23	502,15	547,69	508,22	523,78	527,90
1997-04-24	12:00:00	645,65	666,24	698,73	691,53	723,45	501,96	546,81	507,67	522,65	526,39
1997-04-24	18:00:00	645,74	666,24	699,28	691,84	723,45	501,79	546,24	507,79	522,14	525,21
1997-04-25	00:00:00	645,92	666,38	699,70	692,46	723,80	502,01	545,99	508,19	522,41	526,35
1997-04-25	06:00:00	645,74	666,30	699,62	691,84	723,66	501,98	546,16	508,39	522,95	526,23
1997-04-25	12:00:00	645,74	666,38	699,39	691,77	723,80	501,79	545,46	508,16	521,71	525,17
1997-04-25	18:00:00	645,74	666,30	699,39	692,51	723,74	501,79	545,76	508,10	521,03	524,01
1997-04-26	00:00:00	645,82	666,30	699,72	691,53	723,74	501,79	545,86	508,31	522,05	526,43

Date	Time	Hydraulic Head									
		Price Mine Level 4					Price Mine Level 9				
		P4-1	P4-2	P4-3	P4-4	P4-5	P9-1	P9-2	P9-3	P9-4	P9-5
mm/dd/yy	hh:mm:ss	m	m	m	m	m	m	m	m	m	m
1997-04-26	06:00:00	645,82	666,38	699,45	693,49	723,80	501,89	546,67	507,46	522,49	526,74
1997-04-26	12:00:00	645,82	666,30	699,28	692,38	723,80	501,62	547,36	507,29	523,88	528,49
1997-04-26	18:00:00	645,74	666,30	699,49	692,67	723,80	501,79	548,33	508,31	523,44	528,54
1997-04-27	00:00:00	645,74	666,38	699,76	692,46	723,93	501,79	548,38	508,14	523,64	528,84
1997-04-27	06:00:00	645,74	666,46	699,58	692,84	724,01	501,48	548,21	508,50	523,38	527,74
1997-04-27	12:00:00	645,65	666,38	699,97	693,02	723,93	501,77	547,50	508,66	523,78	528,03
1997-04-27	18:00:00	645,74	666,38	700,35	692,99	724,12	501,68	546,59	507,92	522,10	526,30
1997-04-28	00:00:00	645,82	666,57	699,81	693,15	724,01	501,79	546,40	508,26	522,05	525,51
1997-04-28	06:00:00	645,65	666,38	699,76	693,55	723,80	501,77	545,32	509,02	520,68	524,90
1997-04-28	12:00:00	645,74	666,46	699,32	693,19	723,80	501,60	544,69	508,31	520,56	523,88
1997-04-28	18:00:00	645,65	666,38	699,02	693,32	723,80	501,56	543,61	507,29	518,34	521,73
1997-04-29	00:00:00	645,65	666,38	699,39	692,86	723,80	501,68	543,20	507,92	518,65	522,01
1997-04-29	06:00:00	645,60	666,24	699,54	693,02	723,66	501,77	543,18	507,85	519,14	521,73
1997-04-29	12:00:00	645,60	666,30	699,45	691,99	723,66	501,65	542,58	508,64	518,63	520,85
1997-04-29	18:00:00	645,49	666,14	699,08	691,70	723,34	501,48	541,81	508,44	517,29	519,91
1997-04-30	00:00:00	645,60	666,24	699,25	692,46	723,66	501,42	542,52	507,79	517,95	521,03
1997-04-30	06:00:00	645,39	666,14	698,21	692,17	723,34	501,42	542,41	507,54	517,76	520,47
1997-04-30	12:00:00	645,39	666,14	697,14	692,38	723,23	501,48	541,78	507,48	517,29	519,56
1997-04-30	18:00:00	645,39	666,03	698,25	691,99	723,34	501,39	540,27	507,02	515,83	518,28
1997-05-01	00:00:00	645,39	666,14	698,43	692,03	723,34	501,35	540,47	507,34	516,21	518,88
1997-05-01	06:00:00	645,39	666,14	697,90	691,99	723,23	501,48	540,83	506,72	516,55	519,27
1997-05-01	12:00:00	645,39	666,14	698,16	691,53	723,56	501,39	540,49	507,29	516,35	518,28
1997-05-01	18:00:00	645,39	666,03	698,04	692,07	723,66	501,56	540,83	507,37	516,35	517,84
1997-05-02	00:00:00	645,39	666,03	698,35	691,04	723,34	501,35	541,35	507,62	517,21	519,18
1997-05-02	06:00:00	645,49	666,14	697,95	691,48	723,23	501,22	541,73	506,68	517,54	519,18
1997-05-02	12:00:00	645,39	666,03	697,70	691,34	723,05	501,05	540,70	507,29	517,24	518,28
1997-05-02	18:00:00	645,49	666,14	698,12	691,57	723,05	501,10	539,32	507,46	515,52	516,85
1997-05-03	00:00:00	645,31	666,03	696,67	691,04	723,05	500,92	538,98	506,98	514,98	516,27
1997-05-03	06:00:00	645,39	666,03	696,71	692,07	723,45	501,22	540,78	506,94	516,65	518,82
1997-05-03	12:00:00	645,39	665,95	696,46	691,34	723,05	500,80	544,05	506,94	520,51	524,32
1997-05-03	18:00:00	645,39	666,03	696,87	691,39	723,34	500,96	545,41	507,27	521,09	524,46
1997-05-04	00:00:00	645,31	666,03	696,98	690,81	722,91	500,75	546,16	507,15	521,16	525,17
1997-05-04	06:00:00	645,39	666,03	697,06	691,57	722,97	501,08	545,29	507,18	521,01	523,88
1997-05-04	12:00:00	645,49	666,14	697,60	691,99	723,34	500,92	545,23	507,12	521,29	524,80
1997-05-04	18:00:00	645,60	666,14	697,60	692,33	723,66	501,28	545,76	507,67	521,97	524,90
1997-05-05	00:00:00	645,60	666,14	697,70	691,53	723,56	500,96	545,96	507,12	522,74	525,49
1997-05-05	06:00:00	645,49	666,30	697,48	692,33	723,80	501,10	546,79	507,79	522,79	525,79
1997-05-05	12:00:00	645,60	666,46	698,56	692,94	726,40	501,31	546,84	508,10	522,49	525,85
1997-05-05	18:00:00	645,74	666,57	699,39	693,49	725,84	501,28	546,92	507,85	522,45	525,66
1997-05-06	00:00:00	645,74	666,67	699,08	693,21	725,73	501,35	547,01	508,36	522,91	525,83
1997-05-06	06:00:00	645,82	666,78	699,39	694,01	725,62	501,48	547,12	508,91	523,00	525,66
1997-05-06	12:00:00	645,74	666,78	699,16	693,59	725,62					
1997-05-06	18:00:00	645,82	666,89	699,72	693,21	726,05					
1997-05-07	00:00:00	645,92	666,89	699,12	693,79	725,84					
1997-05-07	06:00:00	645,92	666,89	699,32	693,75	725,62					

APPENDIX IV
STATISTICAL ANALYSES PERFORMED DURING THIS PROJECT

STATISTICAL TESTS PERFORMED DURING THIS PROJECT

Proportion Test

A series of pair-wise comparisons was made of the ratio of water-bearing structures to the total number of structures in order to evaluate the relationship between the hydrogeological domains. The statistic test is a standard normal deviate calculated from the following equation (Miller and Freund, 1977; p.255):

$$z = \frac{(x_1/n_1)-(x_2/n_2)}{(p^* (1 - p^*) (1/n_1 + 1/n_2))^{1/2}}$$

where, x_i: number of hydrologically-active structures in the ith population
n_i: total number of observations in the ith population
p^*: $(x_1+x_2)/(n_1+n_2)$

The numerator gives the difference between the observed proportions and the denominator the standard error of this difference. The null hypothesis (H_o) tested is that the proportions of hydrologically-active structures in each domain are equal (i.e. $z = o$). The alternate hypothesis, H_a, is that the proportions of hydrologically-active structures in each domain are not equal. The test gives the pair-wise z statistics and the resulting measured significance levels, p, at a confidence level of 99% (i.e. p values that are less than 0.01).

Fisher Test - Two Samples for Variances

The F-Test usually serves to compare two experimental variances. The F statistic is given from the ratio between two random variables χ_1^2 and χ_2^2, each following a khi-squared with ν_1 and ν_2 degrees of freedom, respectively:

$$F(\nu_1, \nu_2) = \frac{\chi_1^2 / \nu_1}{\chi_2^2 / \nu_2}$$

The test gives the pair-wise F statistics and the resulting measured significance levels, p, at a confidence level of 95% (i.e. p values that are less than 0.05).

TIME SERIES ANALYSIS

The series of data collected during the course of this project were studied using several type of statistical analysis. The complete mathematical description of each statistical function used can be found in Salas et al. (1980). The following sections only describe the purpose of each statistical function used in this project, along with typical interpretations for each function.

Since many of these statistical functions have values that are increasingly imprecise as the lag increases, it is common to use a biased estimator. The biased estimator decreases the weight on the statistical function as the lag increases, by multiplying the unbiased estimator by a triangular window with value 1 at lag 0 and value 0 at the largest lag. The biased estimators were used for the current analyses.

Autocorrelation Function (ACF)

The autocorrelation function (ACF) gives an indication of the degree of correlation between pairs of measurements of the same series separated by a given distance (lag). The ACF is the autocovariance normalized by the variance. Typically, a series of data will show in the correlogram larger correlation at small lags followed by a decrease in the autocorrelogram as the lag increases.

Cross-Correlation Function (CCF)

The cross-correlation function (CCF) gives an indication of the degree of correlation between pairs of two series of measurements separated by a given distance (lag). The CCF is the cross-covariance normalized by the product of the standard deviations.

Spectral Density Function (SDF)

The spectral density function can be interpreted as the density of variance associated with each frequency of measurement. It gives the variability of a series of data as a function of frequency. The integrated spectrumhas units of variance; thus, if the entire spectrum is integrated, the result is the overall variance; while integration over a frequency range gives the portion of the overall variance contributed by that frequency range. In the power spectrum, a flat line represents "white" or random noise, and a peak indicates a periodic component at the corresponding frequency.

Cross-Spectral Density Function (CSDF)

The cross-spectral density function (CSDF) describes how two series of variables co-vary. The cross-spectrum is composed of a real component, the co-spectrum, and an imaginary component, the quadrature-spectrum. They give the degree of in-phase and out-of-phase covariance, respectively. The co-spectrum measures the covariance between the two cosine components of the functions and the covariance between the two sine components, that is the

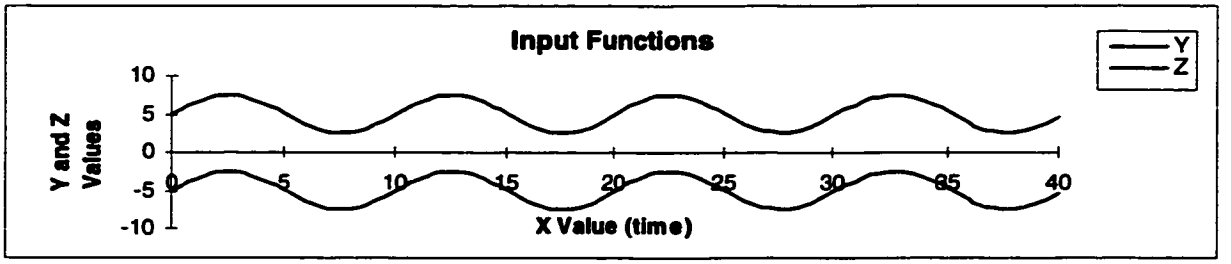
covariance between the in-phase components. The quad-spectrum measures the covariance between the sine and cosine components, that is the out-of-phase components.

Coherency Function (CF)

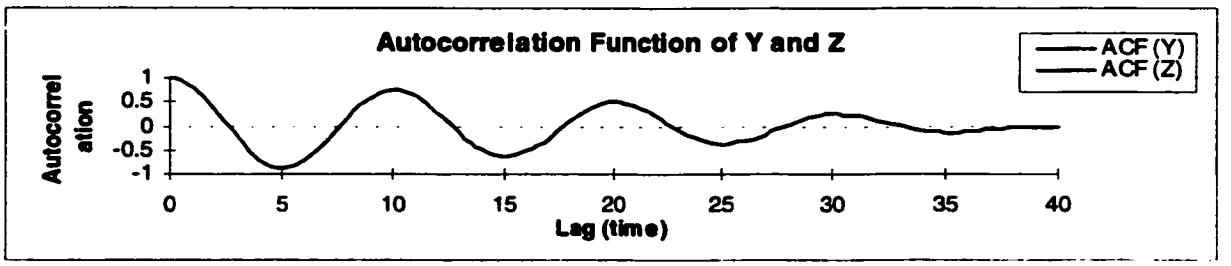
The coherency spectrum can be interpreted as the spectral equivalent of the correlation coefficient. It is the normalized cross-spectrum. The coherency spectrum gives the degree of linear correlation between two variables as a function of frequency or scale.

Interpretation of the results obtained

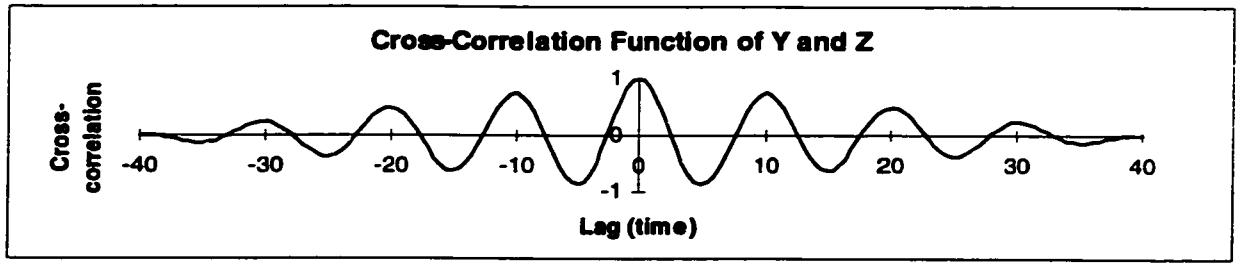
In order to discuss what factor may influence the results of the different statistical functions, some examples are presented hereafter. For instance, the following Figure shows, as a base case, two sinusoidal functions (Y and Z) with the same wave length and amplitude, but different means. The autocorrelation (ACF), cross-correlation (CCF), spectral density (SDF), cross-spectral density (CSDF) and coherency (CF) functions of Y and Z are also presented and discussed.



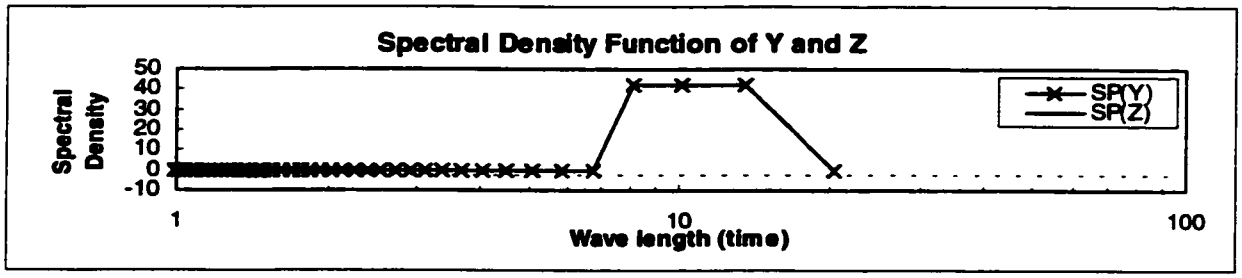
These functions can easily represent annual discharge and water-level fluctuations in a drillhole. In this example, the two parameters demonstrate a same synchronized response to similar processes. They have the same wave length of 10 with an amplitude of 2.5. Only the means of Y and Z are different. Since all the spatial correlation functions are based on mean-removed perturbations, the different means have no effect.



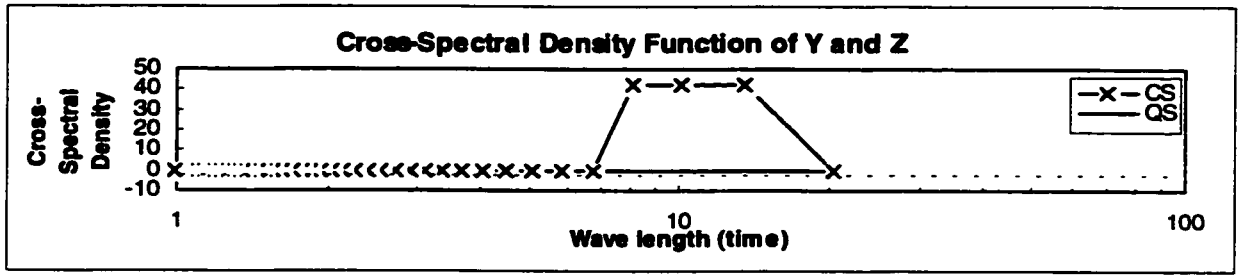
In the base case, the biased autocorrelation functions of Y and Z are identical, since the wave length of the two functions are the same, which indicates fluctuations at the same moments.



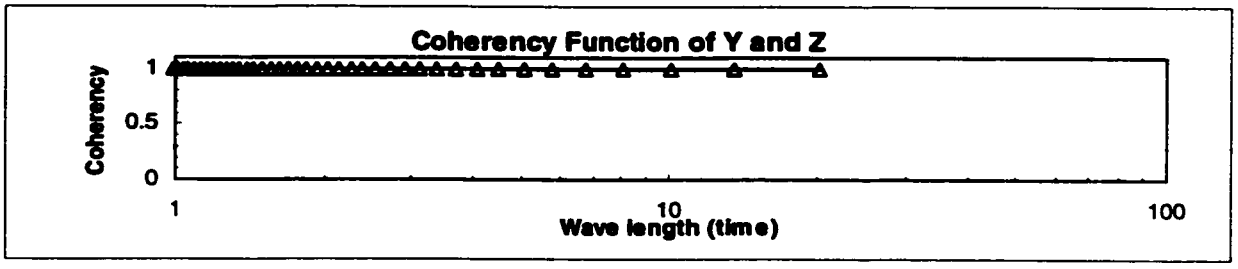
The biaised cross-correlation function shows a maximum positive correlation at 0-time lag and all lag multiple of the wave length (10), since the two functions vary exactly the same. The functions are negatively correlated when they are delayed by half the wave length (5), which corresponds to opposite maximum and minimum values for each function.



The power spectra of Y and Z are identical, since they have the same periodicity with a same wave length (10).

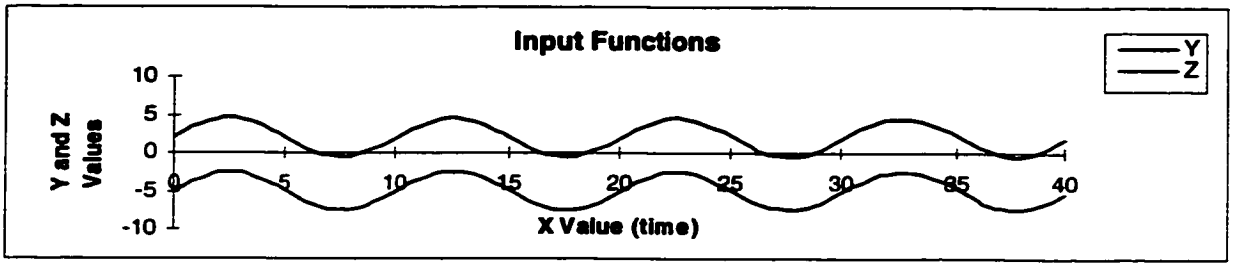


The cross spectrum of Y and Z shows an in-phase periodicity at a wave length of 10, because their variations are synchronized. The quadrature-spectrum indicates no out-of-phase correlation.

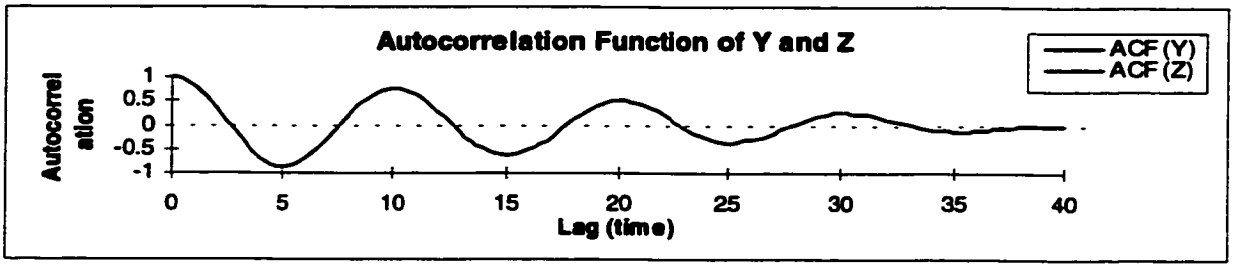


The coherency function indicates that the Y and Z are perfectly correlated at all wave lengths.

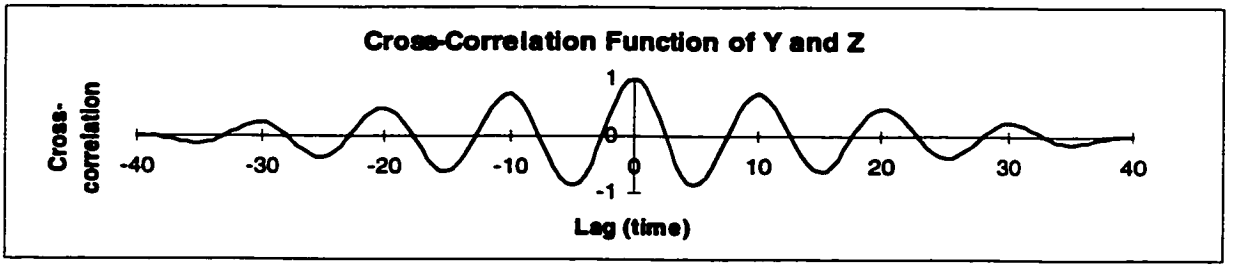
Effect of changing the mean of Y



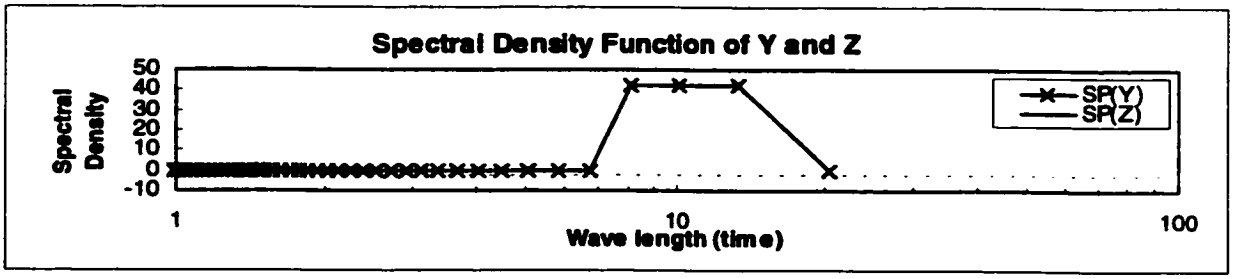
In this case, the mean of Y was changed to evaluate the effects on the geostatistical functions. Y and Z are still fluctuating the same way as the base case.



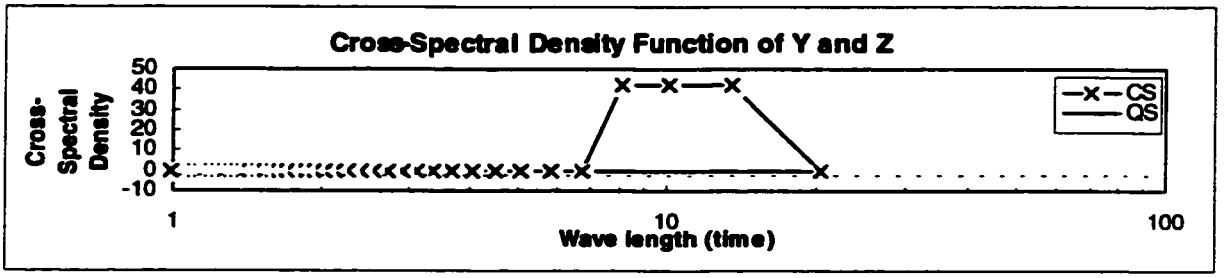
The Figure shows that there is no effect on the ACF from changing the mean of Y. The ACF is only concerned by the change (perturbation) from the mean, and not by the function (Y) itself. The ACF are decreasing according to an identical mode because Y and Z still have the same wave length.



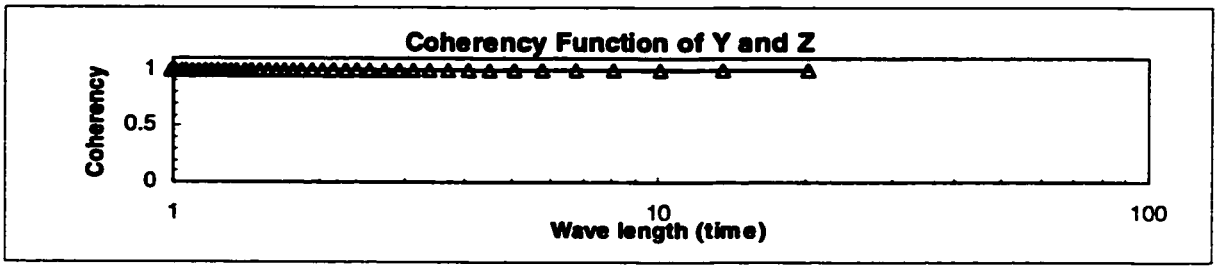
The Figure shows that there is also no effect on the CCF from changing the mean of Y. The CCF is only concerned by the change (perturbation) from the mean between Y and Z.



The SDF is not influenced by a change in the mean. It is only based on the periodicity and the amplitude of Y and Z, which are the same here.

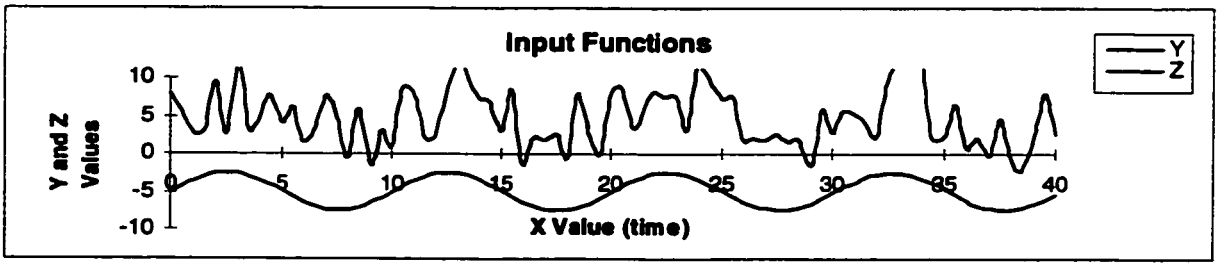


The CSDF is not influenced by a change in the mean. Like the SDF, it is based on the periodicity and the amplitude of the functions, which are the same here. The Figure also shows the in-phase correlation (Co-spectrum) at wave length of 10 with no out-of-phase correlation (Quad-spectrum).

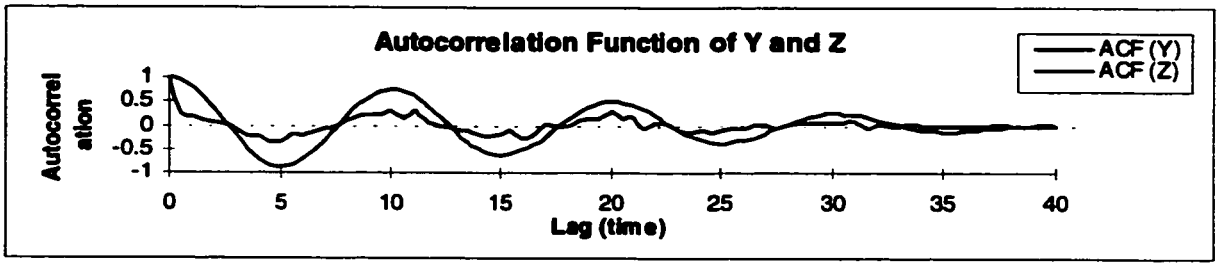


The coherency function indicates that the Y and Z remain correlated at all wave lengths.

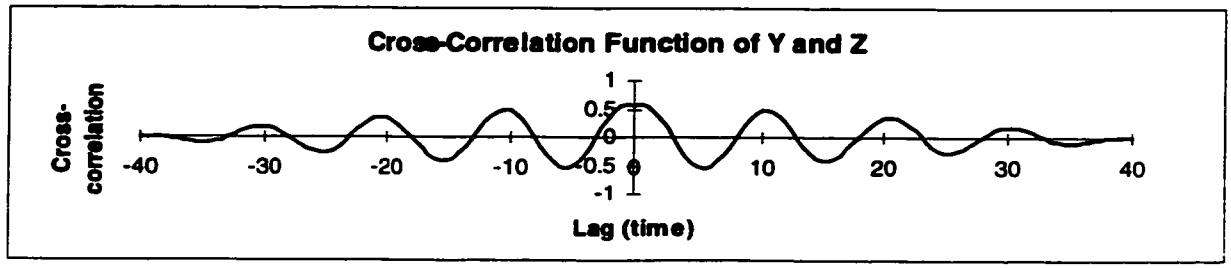
Effect of randomizing the mean of Y



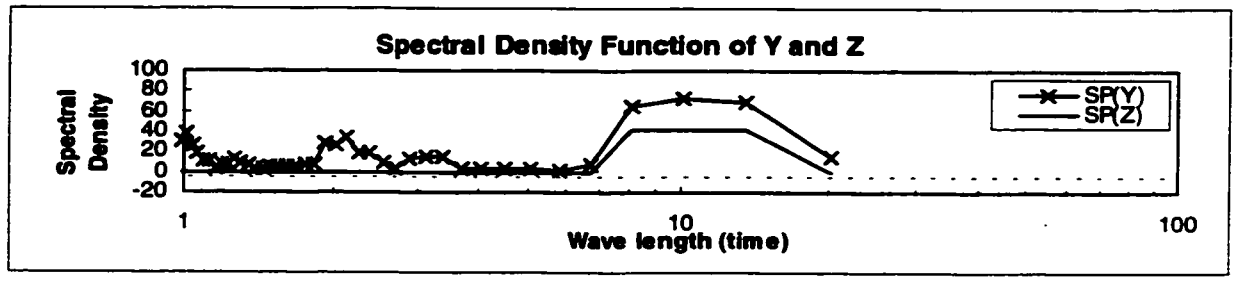
A random component was introduced in Y, while Z remained the same.



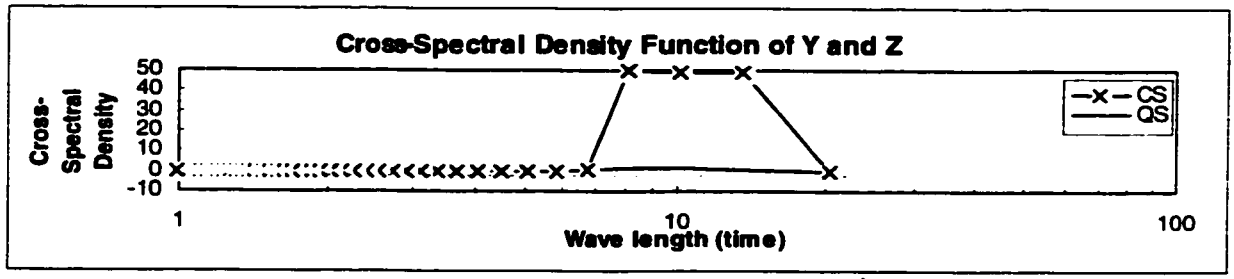
The introduction of a random component in Y has for results a faster decay of the ACF. Since the variation about the mean is proportional to the mean, the degree of jaggedness will increase with the mean, and the ACF will decay more quickly for larger means. The periodicity is still observed in Y's ACF, as a decaying cosine wave.



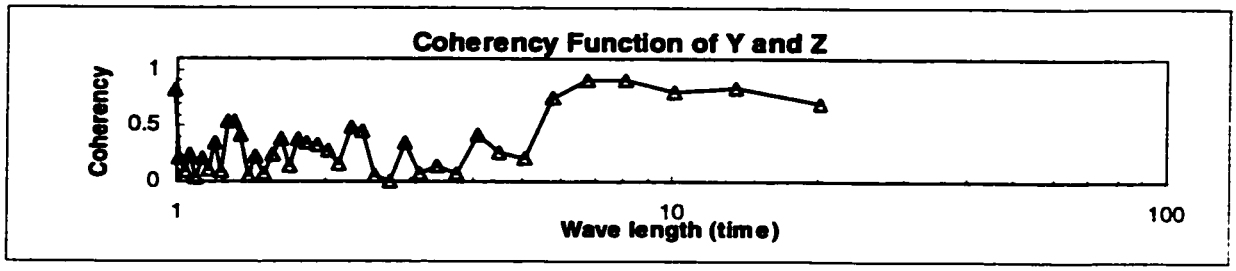
The CCF has the same form because the periodicity for a wave length of 10 remains. However, the degree of correlation is less since the variance has increased.



The power spectrum of Y shows more variability than the power spectrum of Z due to the introduction of the random component. The 10-day wave length periodicity is seen in Y and Z spectra, but in the case of Y, there are also small-scale (2 scale) correlations resulting of the small-scale variability.

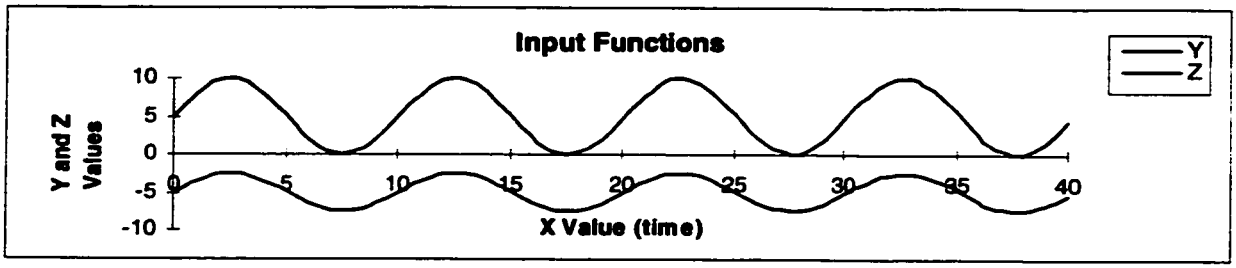


The CSDF shows the in-phase positive correlation (Co-spectrum) at wave length of 10 with also a small out-of-phase positive correlation (Quad-spectrum).

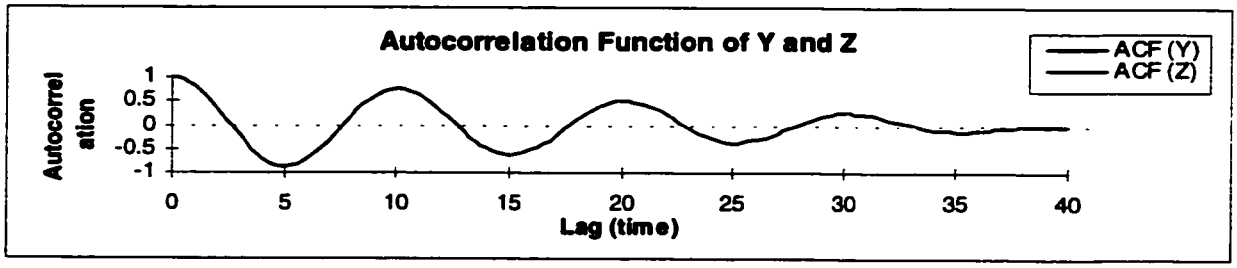


The coherency is preserved at large scales (more than 6), but is partially lost at small scales, which indicates that Y and Z are more correlated at large wave lengths.

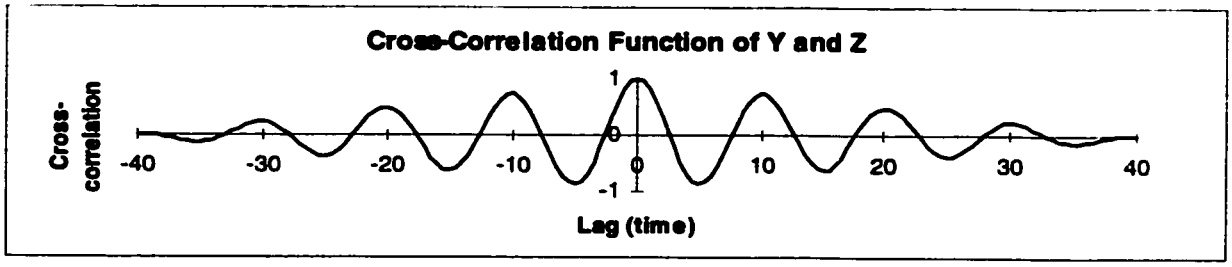
Effect of changing the amplitude of the large-scale wave for Y



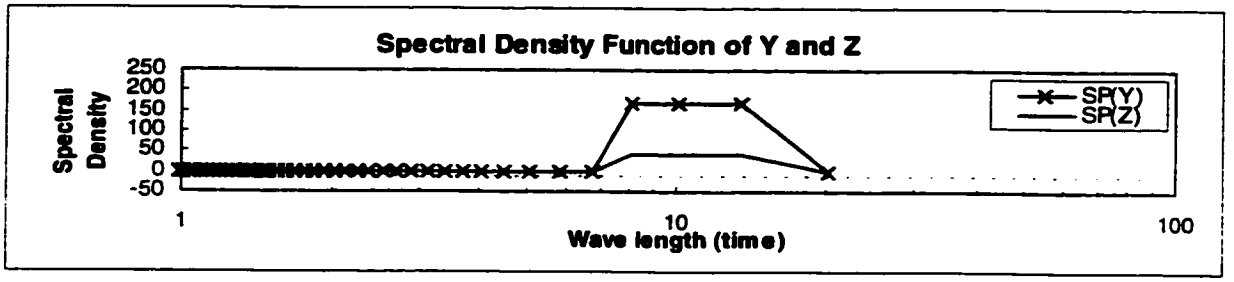
In this example, the amplitude of Y was increased from 2.5 to 5, while the wave length remained the same.



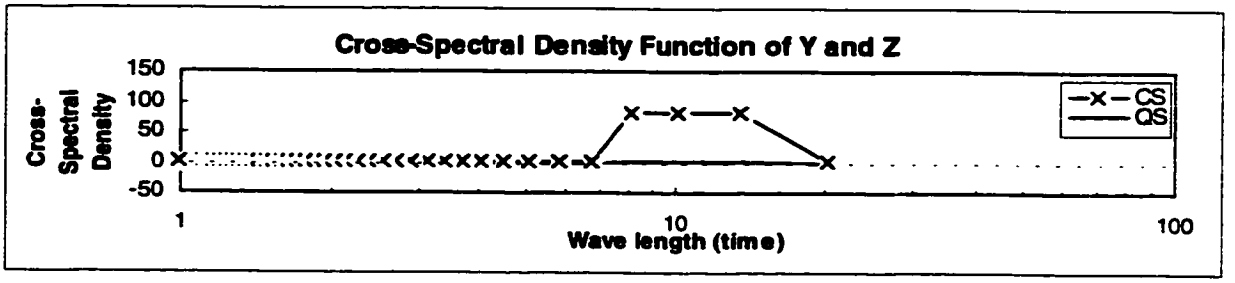
The Figure shows that there is no effect on the ACF from changing the amplitude of Y. The ACF is only concerned by the change (perturbation) from the mean, and not by the function (Y) itself, and the ACF is covariance normalized by the variance. The ACF are decreasing according to an identical mode because Y and Z still have the same wave length.



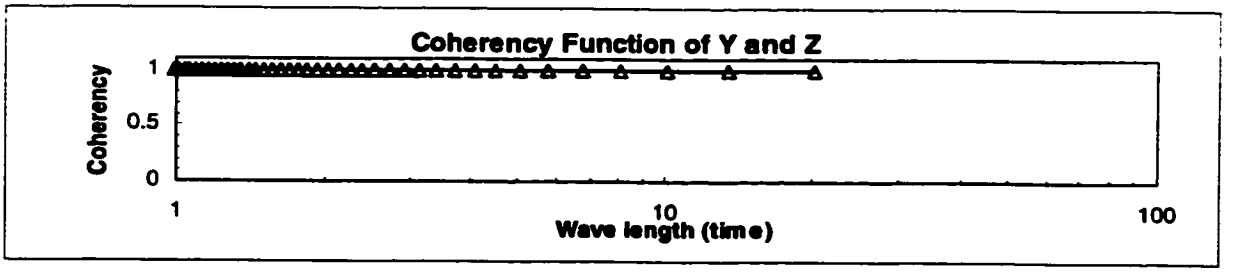
The Figure shows that there is also no effect on the CCF from changing the amplitude of Y. The CCF is only concerned by the change (perturbation) from the mean between Y and Z.



The effect resulting from the increase in the amplitude of Y on its power spectra is to introduce more variability in the power spectra of Y compared to the power spectra of Z (higher values of the power-spectral density function). The 10-day wave length periodicity is seen in Y and Z spectra.

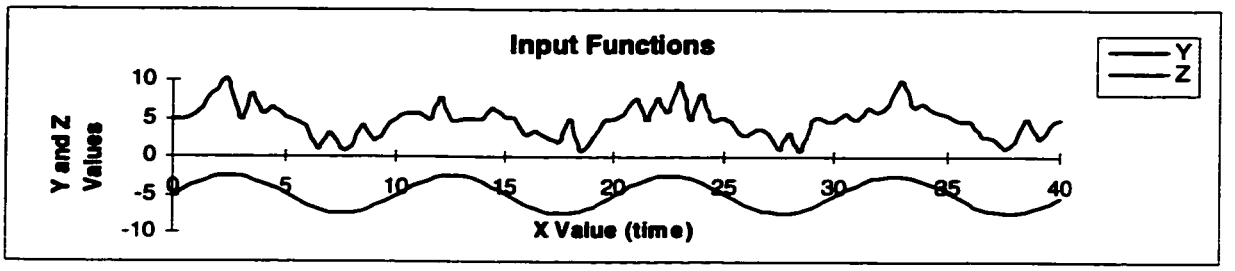


The only effect resulting from the increase in the amplitude of Y on the CSDF is to introduce more variability in the cross-spectrum. The 10-day wave length periodicity is seen in Y and Z spectra.

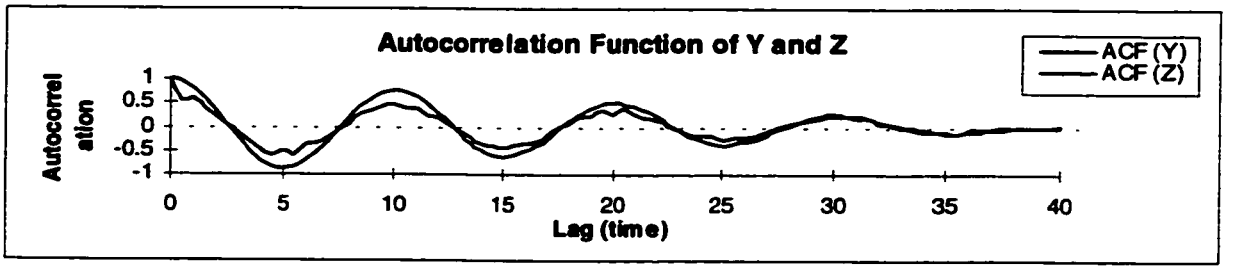


The coherency function indicates that the Y and Z remain correlated at all wave lengths.

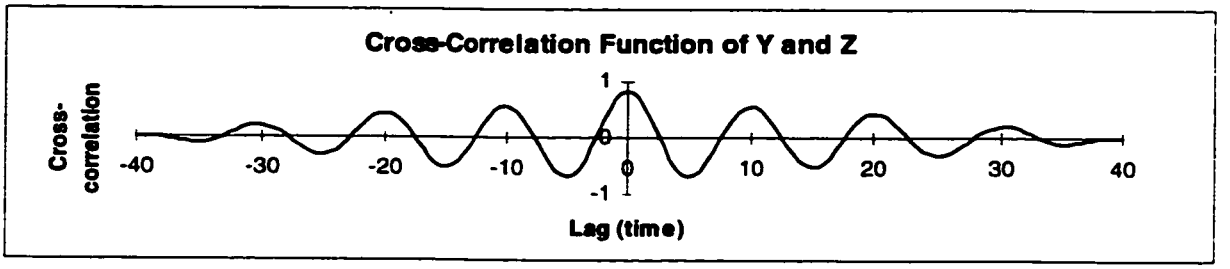
Effect of a random amplitude of the large-scale wave for Y



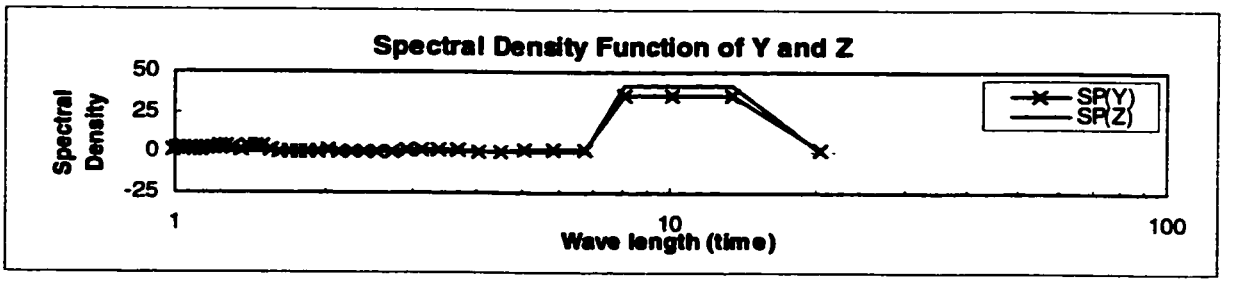
In this case, the randomness was introduced in the amplitude of the sine wave of Y instead of in the mean.



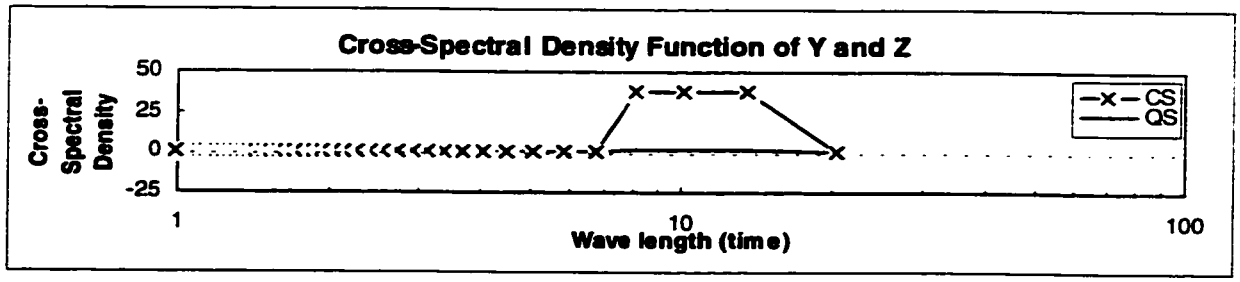
Since the sine wave character of Y (with a 10-day wave length) is more preserved here, the ACF will also be more preserved. Therefore, the ACF of Y and Z remain very similar.



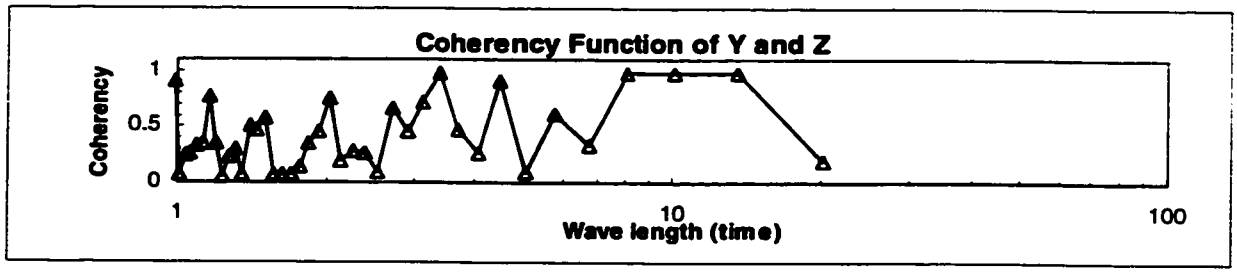
Also, since the sine wave character of Y (with a 10-day wave length) is more preserved here, the CCF will also be more preserved, but with a smaller correlation than for the base case.



The power spectra of Y indicates that the large-scale correlation is preserved, but is somewhat smaller than the base case. Small-scale variability is also seen in Y (1.2 scale).

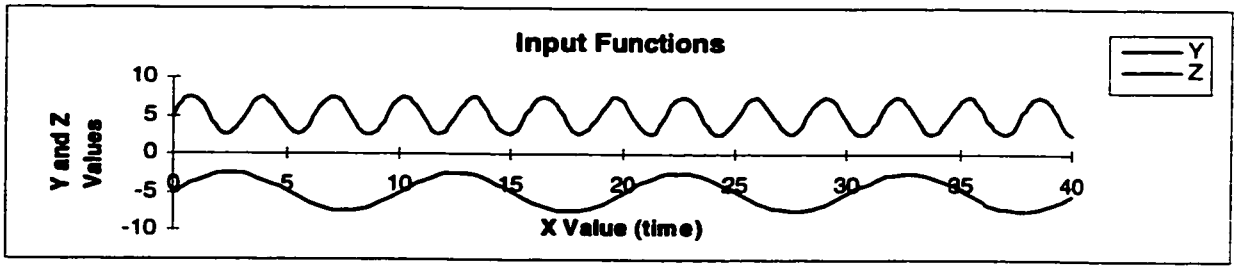


The cross-correlation between Y and Z is highest when the sine waves are in-phase at large scale. There is no out-of-phase correlation seen between the two series.

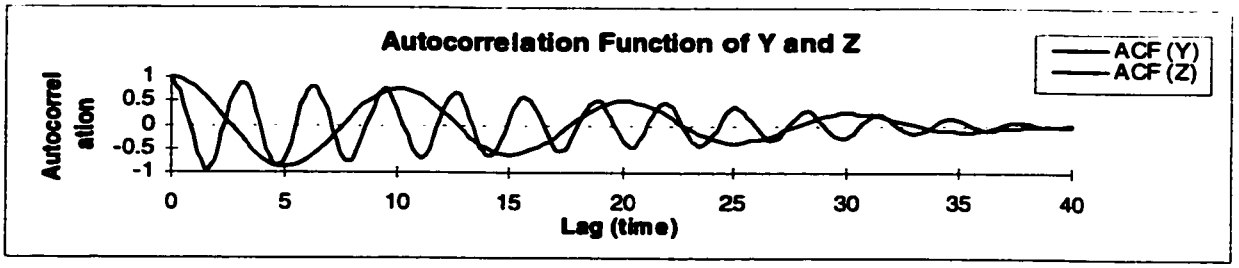


The coherency is lost at small scales, but well-preserved at scales around 10, since the periodicity was well-observed in Y and Z.

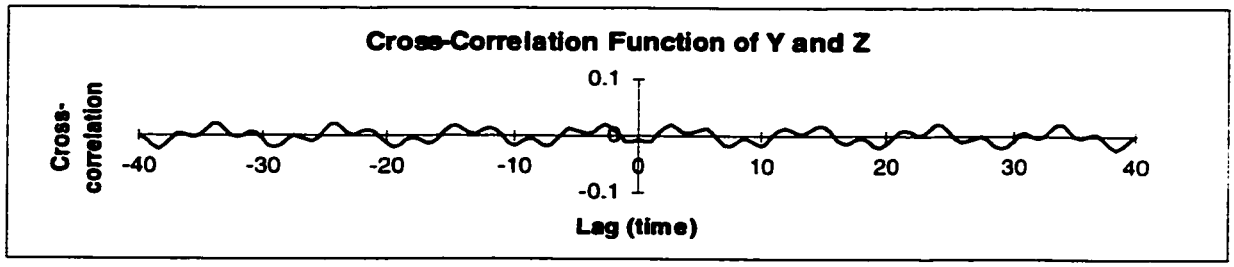
Effect of changing the wave length of the large-scale wave for Y



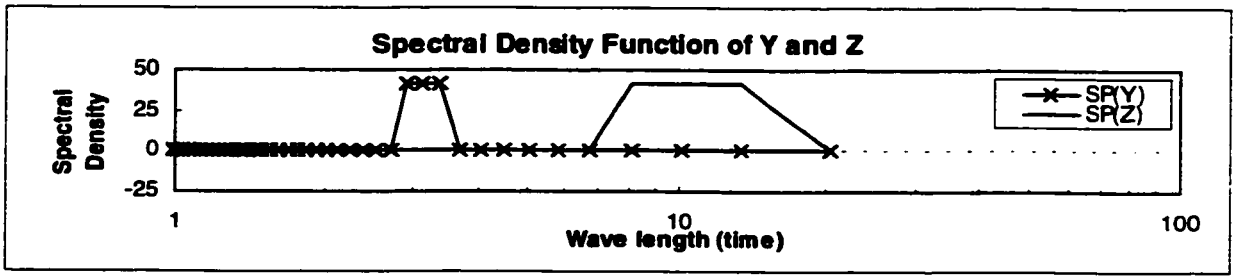
This case discusses the effect of decreasing the wave length of Y.



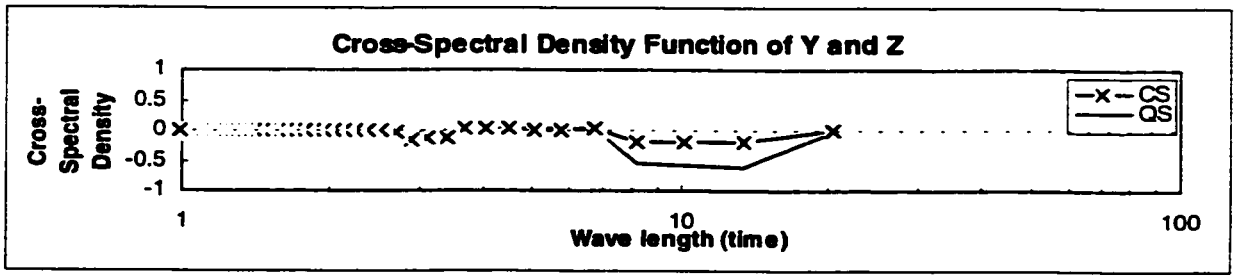
The decrease in the wave length of Y has for results a faster decay of the ACF with more correlation at smaller lags than previously seen in the base case. The short-term periodicity modifies the ACF of Y.



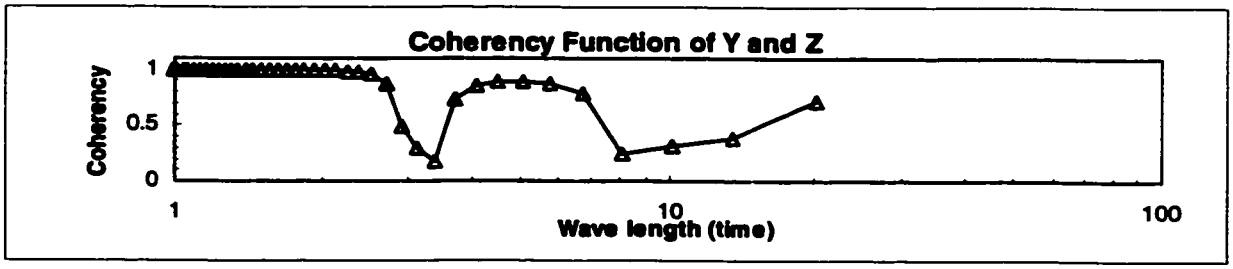
The decrease in the wave length of Y has for results that the CCF are mostly uncorrelated.



The power spectra for Y presents now a small-scale correlation for a smaller wave length around 3, while the power spectra for Z displays the periodicity at 10.

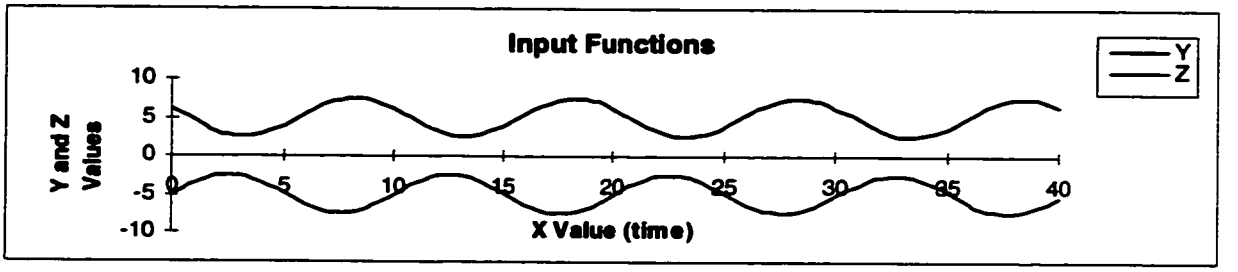


The CSDF indicates an out-of-phase negative correlation between Y and Z (10 scale). There are only minor in-phase negative correlation at wave lengths of approximately 3 and 10.

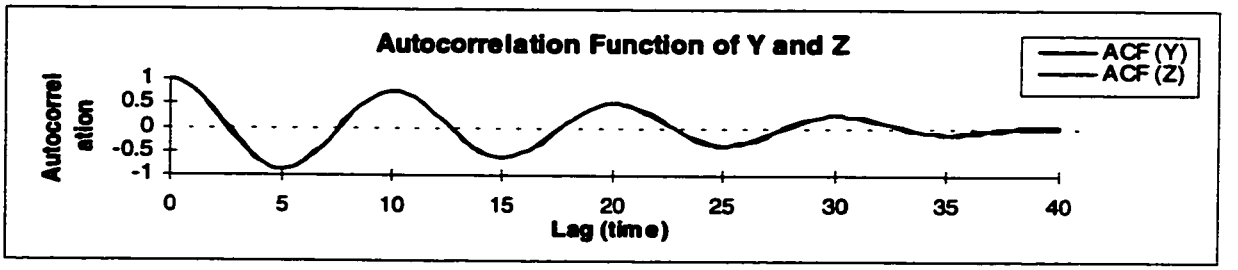


The coherency-spectrum shows that the 2 series appear to be correlated at almost all scales, except at wave lengths of approximately 3 and 10; however confidence intervals on the coherency would show that the high correlations are, in fact, not significant.

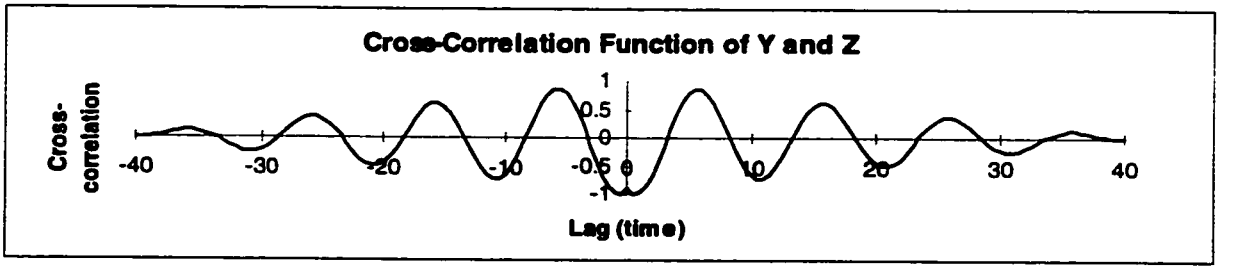
Effect of shifting Y to the right



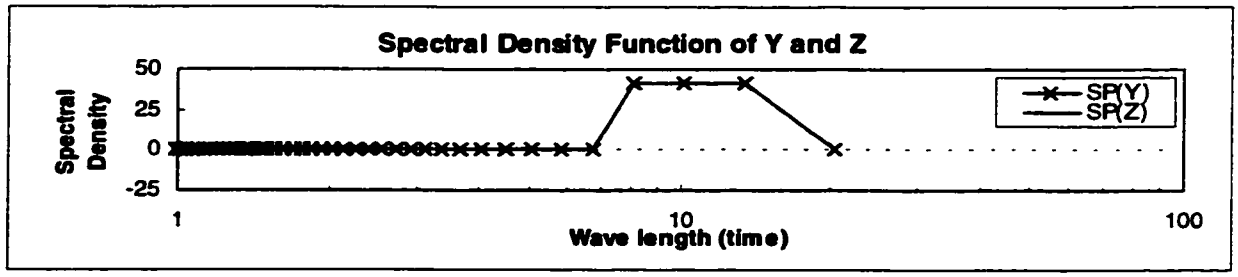
The influence of a delay between two identical sine functions was evaluated here by shifting Y of several units to the right. This case would be typical of the time lag occurring between influence of river stage variations on a deep groundwater flow system.



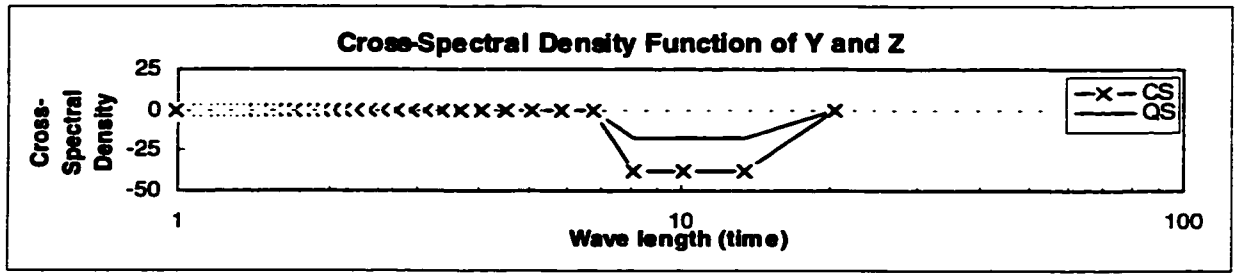
The Figure shows that there is no effect on the ACF from the shifting of Y. The ACF is only concerned by the change (perturbation) from the mean, and not by the time of measurement.



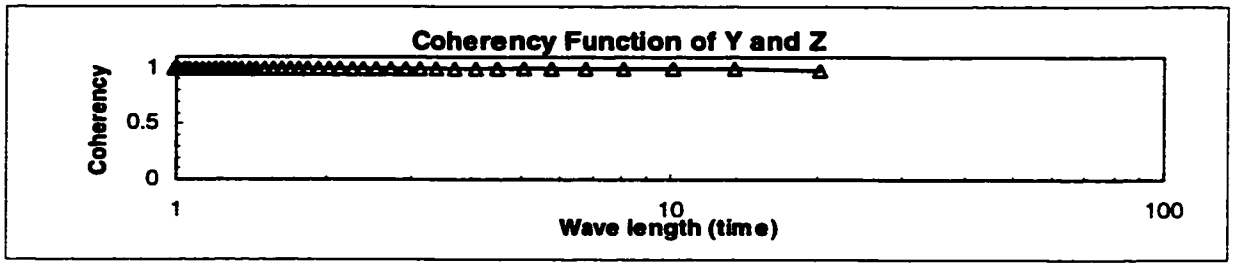
This shifting of Y has for result the shifting of the CCF. The shape of the CCF is identical to the base case, but the CCF is now best correlated to lags that correspond to the shift value. The two functions are now negatively correlated at 0 lag.



The power spectra of Y remains almost identical to the base case, since shifting the sine function does not change the periodicity of each function.

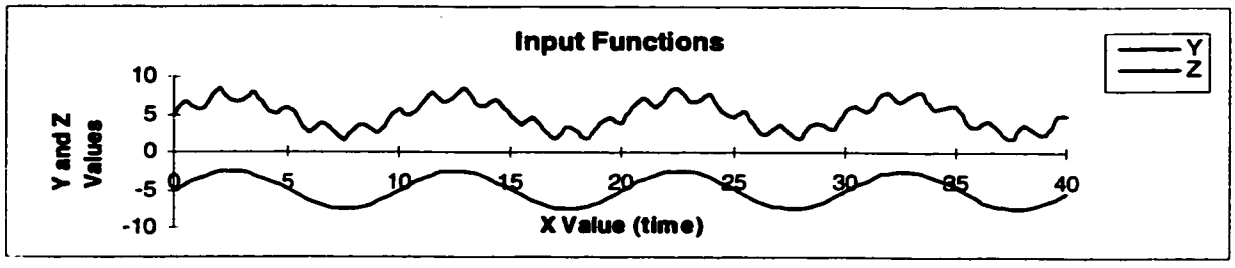


The cross-spectrum indicates a large in-phase negative correlation between Y and Z at wave lengths of approximately 10. The quad-spectrum shows a smaller negative out-of-phase correlation also at wave lengths of approximately 10.

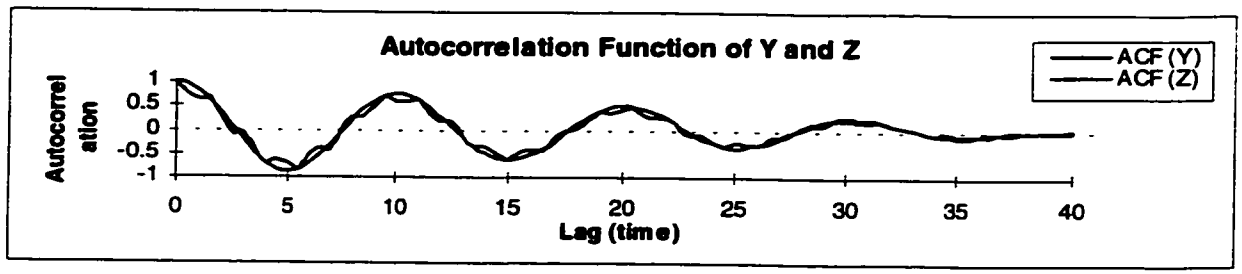


The CF indicates that the Y and Z remain correlated at all wave lengths.

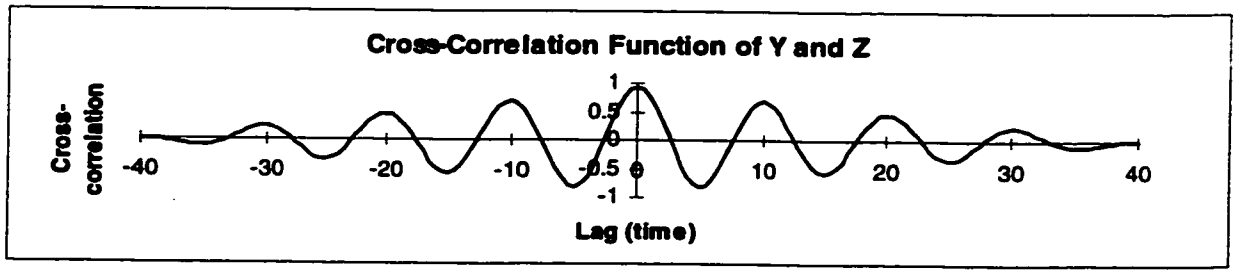
Effect of a small-scale deterministic variability in Y



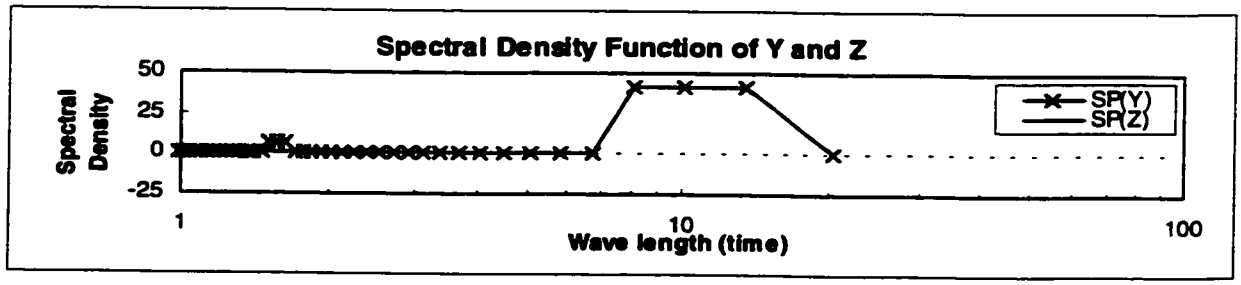
In this case, a small-scale deterministic variability was introduced in Y.



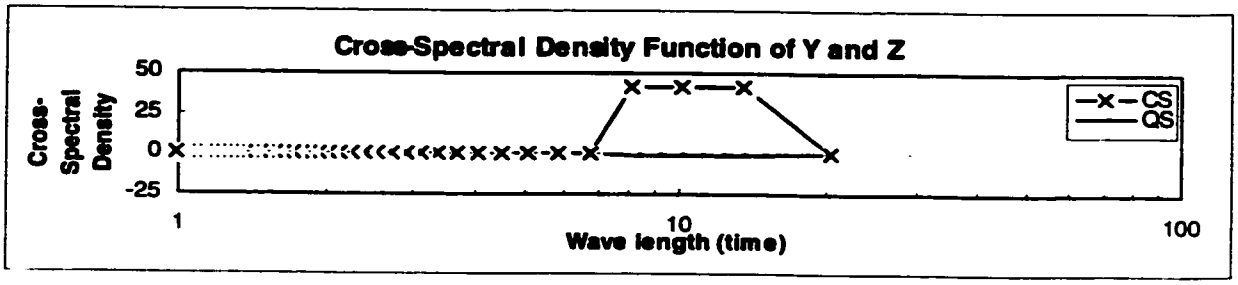
The introduction of a small-scale variability in Y produce an ACF with much short-term variability. However, the large-scale periodicity has been preserved in the ACF.



Since the large-scale sine wave character of Y (with a 10-day wave length) has been preserved, the CCF will also be more preserved but with a smaller correlation (less than 1 at 0 lag).

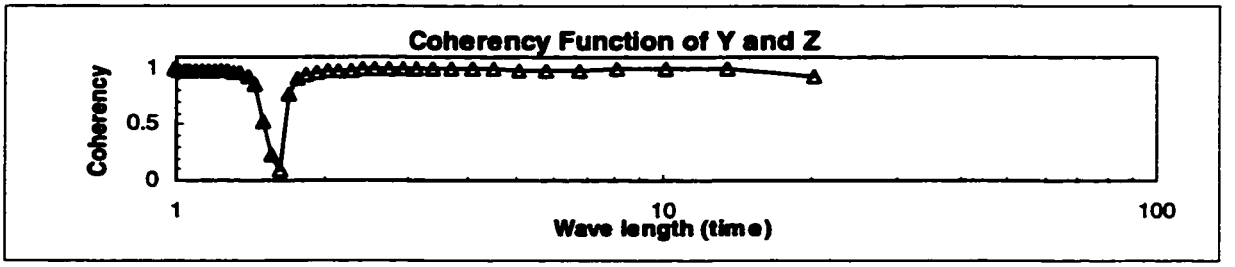


The power spectra of Y indicates that the large-scale periodic variability is preserved (wave length of 10) and also introduces a small-scale periodic variability (wave length of approximately 1.5).



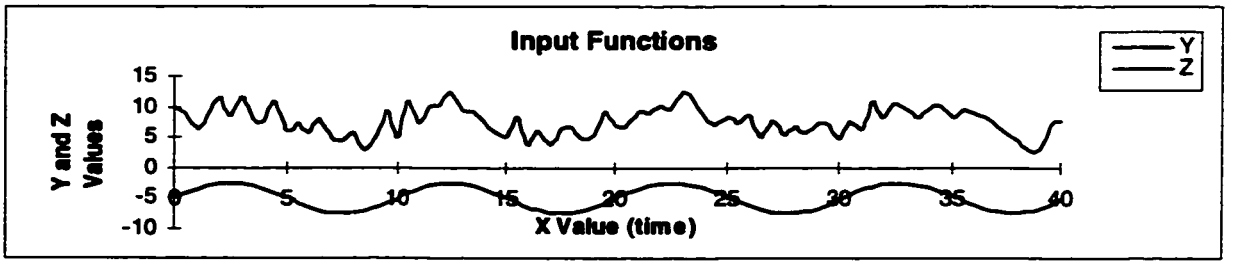
There is no influence on the CSDF from the base case when a small-scale deterministic variability is introduced. The cross-correlation between Y and Z is highest when the sine

waves are in-phase at large scale. There is no out-of-phase correlation seen between the two series.

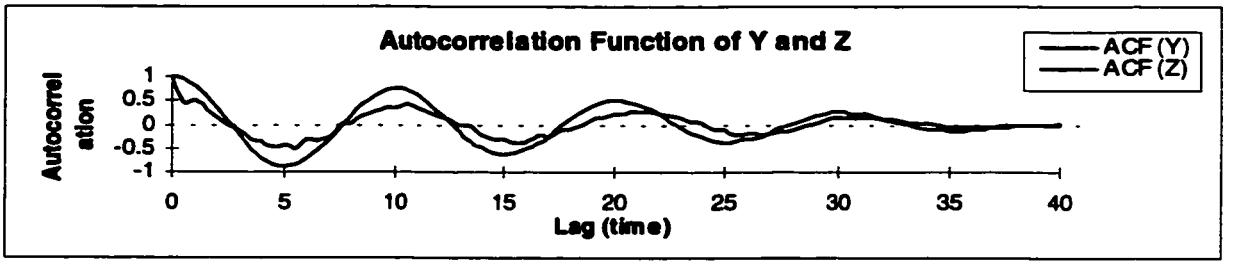


Coherency is preserved at all wave lengths except near 1.75 to 2, where it drops near 0. This indicates a lack of correlation at that small scale corresponding to the length of the small variability.

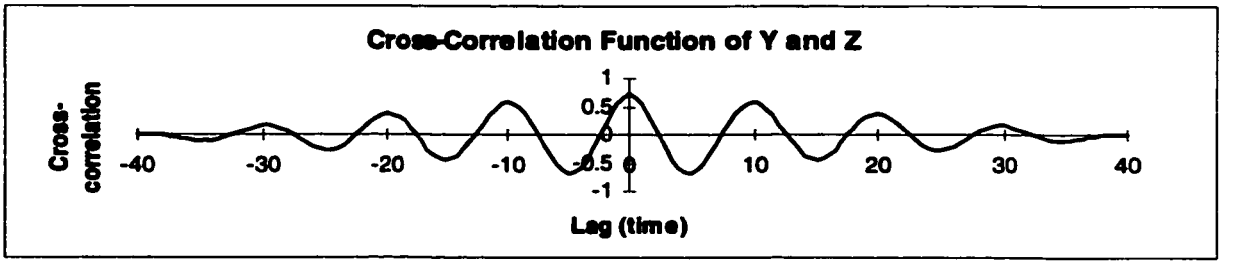
Effect of small-scale random variability in Y



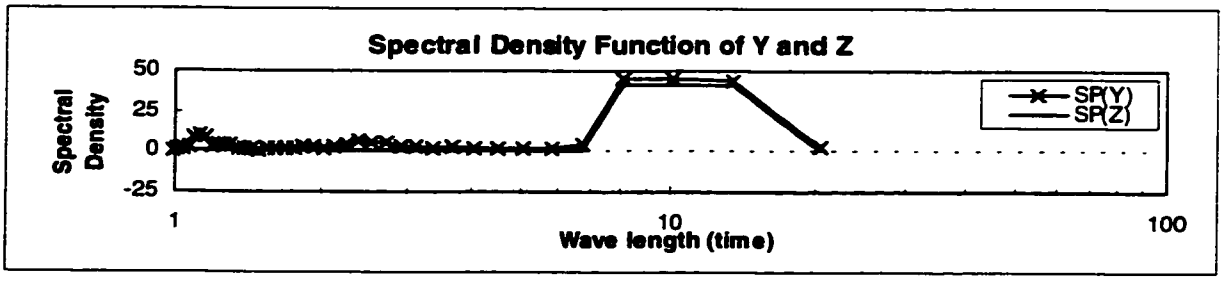
In this case, a small-scale random variability was introduced in Y.



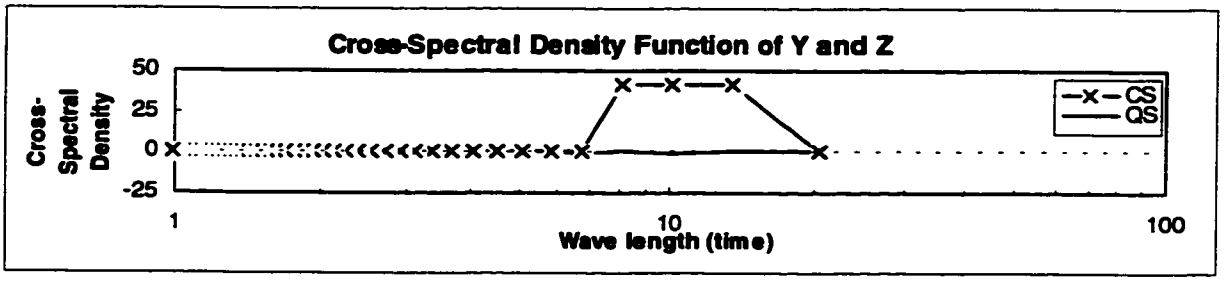
Since the sine wave character of Y (with a 10-day wave length) is preserved, the ACF will also be more preserved. However, the ACF of Y presents more variability and a faster decrease.



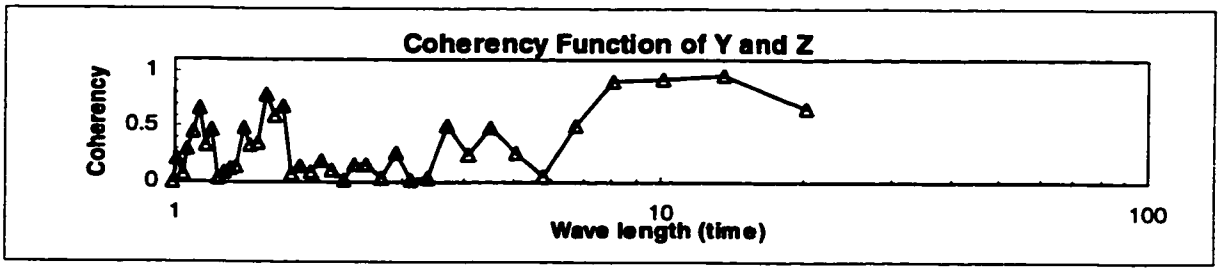
Since the large-scale sine wave character of Y (with a 10-day wave length) has been preserved, the CCF will also be more preserved but with a smaller correlation.



The power spectra remain almost identical to the base case, except for more variability and the estimate of small-scale cycles resulting from the introduction of a small-scale random variability in Y.

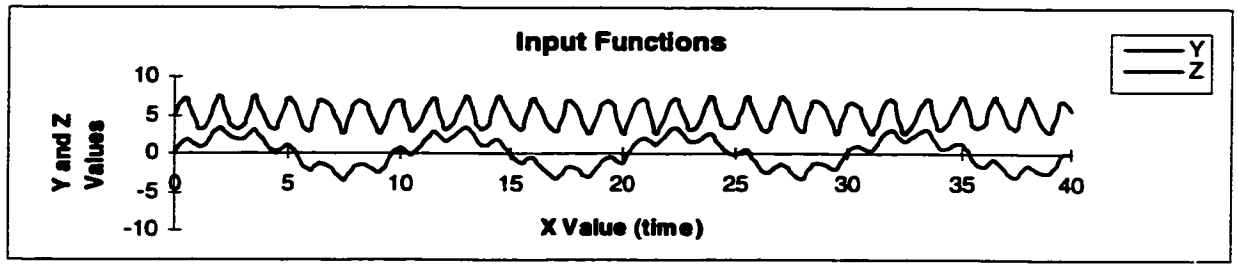


There is no major influence on the CSDF from the base case, when a small-scale random variability is introduced in Y. The cross-correlation between Y and Z is highest when the sine waves are in-phase at large scale. There is no out-of-phase correlation seen between the two series.

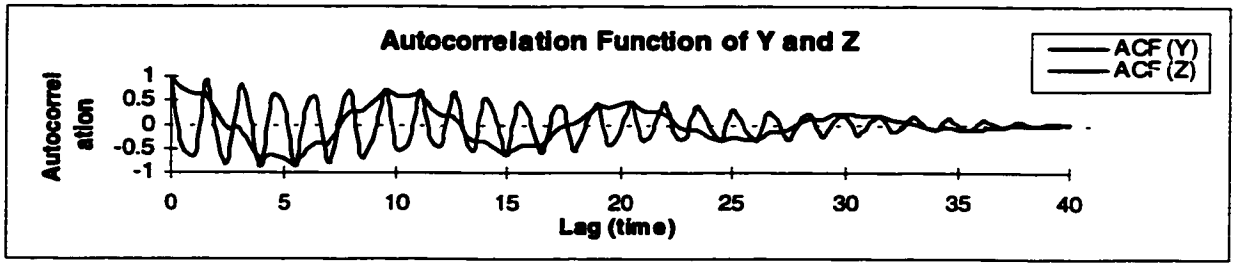


The coherency is partially lost at small scales, but preserved at large scales, since the periodicity was still well-defined in Y and Z. Therefore, the coherency between the two series is preserved at scales between 7 and 20.

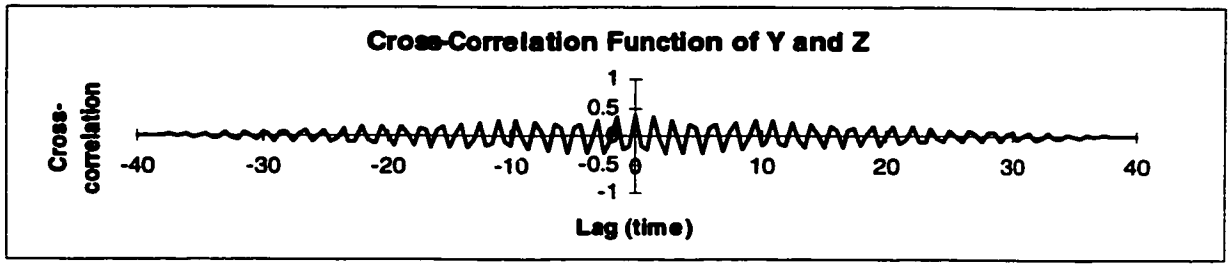
Effect of small-scale cross-correlation and no large correlations



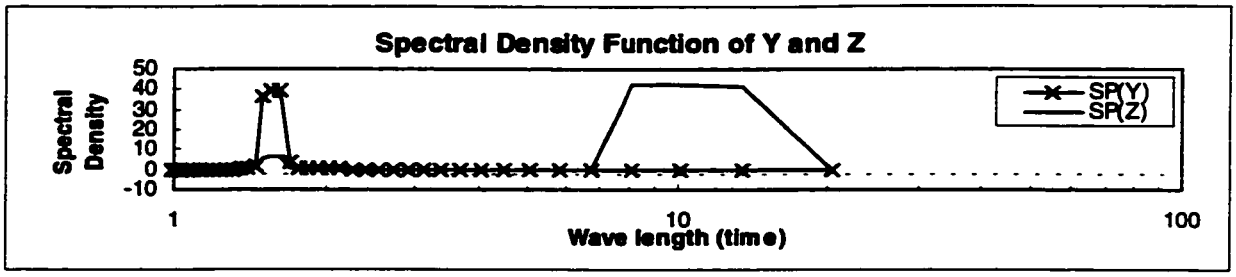
The effect caused by the introduction of a small-scale cross-correlation between Y and Z and no large correlations is presented here.



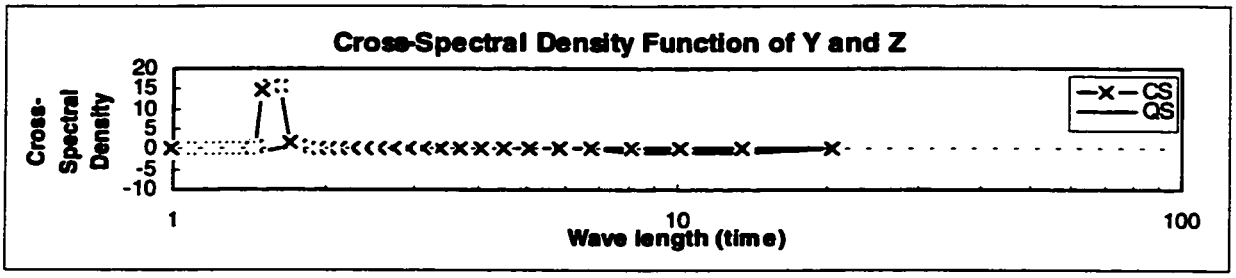
Y and Z show each one a small-scale variability in the ACF. In the case of Z, the ACF also displays the large-scale variability.



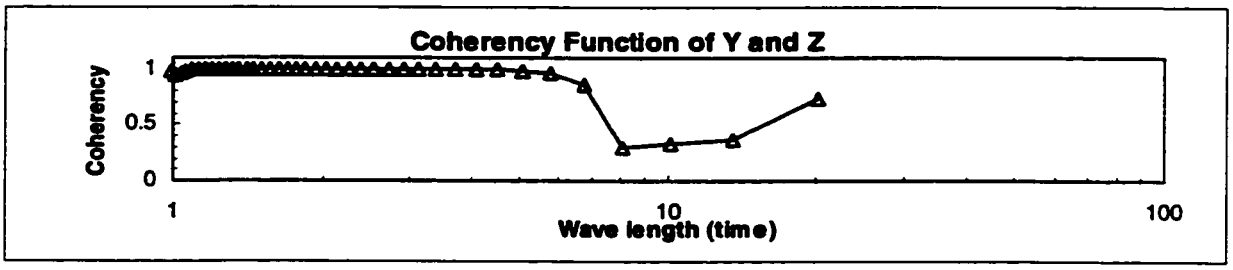
The CCF between Y and Z shows the small correlation following the small-scale variability common to the two functions. The lack of apparent correlation is caused by the large variability of the Z function (which increases the variance and decreases the autocorrelation).



The power spectrum of Y only shows theperiodic variability at small wave lengths. The power spectrum of Z shows the periodic variability at small wave lengths but also at the large wave length. The peak is smaller at small wave lengths because the small-scale variability is only a small component of the overall variability.



The co-spectrum shows the positive in-phase small-scale correlation (1.5) and no large scale correlation. There is no out-of-phase correlation seen between the two series.



The coherency is high at small wave lengths but decreases as the scale increases. The correlation between the 2 series is preserved, except for scales higher than 8.

APPENDIX V
DATA TRANSFORMATION

DATA TRANSFORMATION

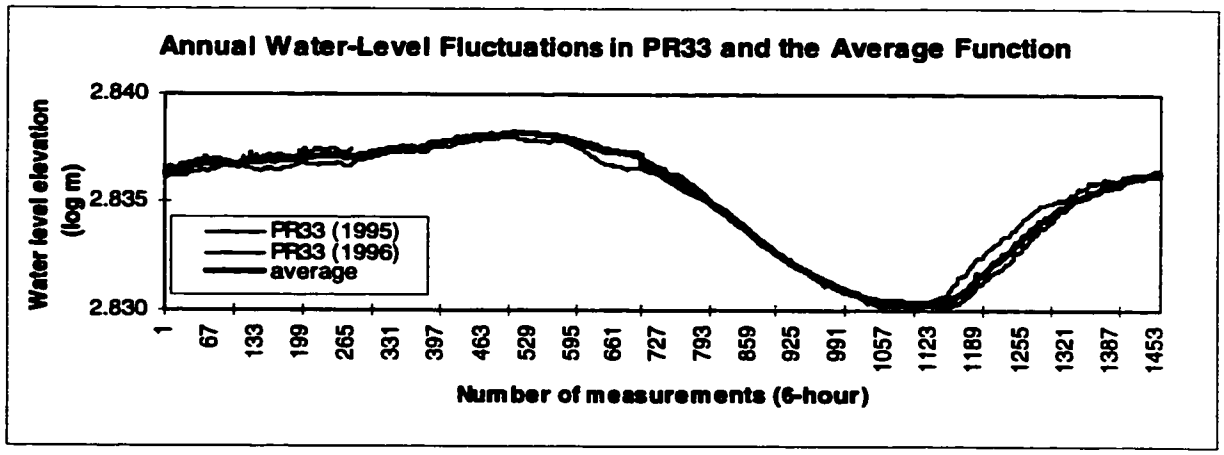
Purpose

Some of the time series examined during the course of this study have presented very large annual trends. These fluctuations may mask the effects of smaller-scale trends, by over-powering the statistical tests or even contaminating the results of the statistical tests at small scales, especially especially in spectral analysis. It is therefore, common practice to remove the large scale trends, in order to focus on the smaller ones.

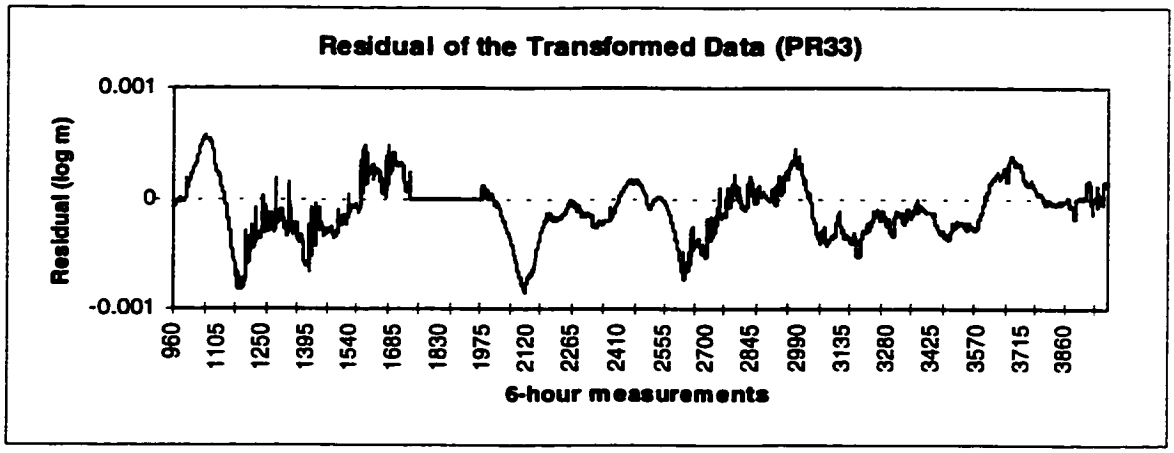
Method

First, the data were transformed into their log values in order to reduce the bias and yield a more –normally-distributed series (Salas et al, 1980; Padilla et al., 1995). It was found that discharge, water level and hydraulic head are best represented as logarithms, because the log transformation helps to de-emphasize the importance of large sporadic excursions of the data, making the distributions more normally distributed and stabilizing the variance over time. Expressing the data as logarithms also provides a convenient method for adjustment when an exponential trend is present.

Second, an average cyclical function was calculated for each series. The method chosen here is the Fourier transformation of the mean for each time interval of the data, as described in Salas et al. (1980). The average of each time interval was calculated, then, the harmonic number (periods in which either high variance is explained or a break in the periodogram occurs) was calculated for each time interval. In this case, we used 4 harmonics because it was assumed that it would explained most of the variance of the average of each time interval (more than 95% significant). Then, the annual average of each time interval is added to the sum of the harmonic numbers. This method produces a smoothed average function at each 6-hour time interval and an example is presented in the following Figure.



Finally, the residual of each measurement was calculated by subtracting each data measured from the average function. This procedure effectively filters the large-scale component out of the series. The residual calculated for the same example is presented in the next Figure.

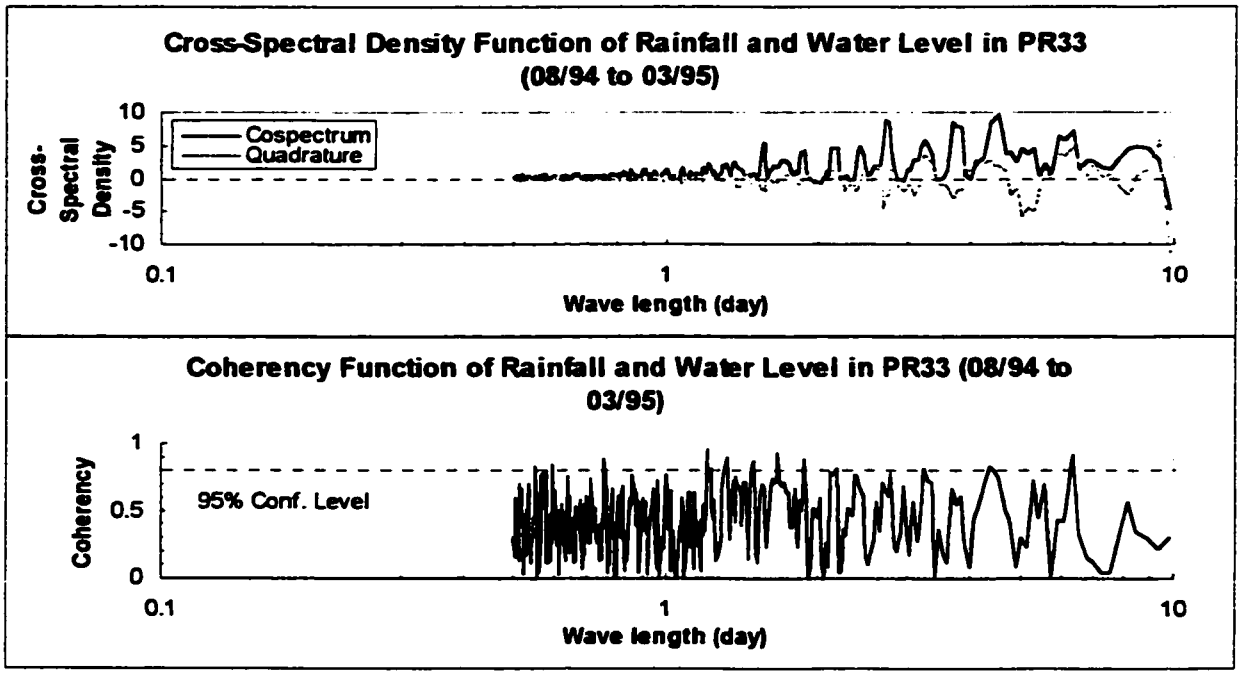


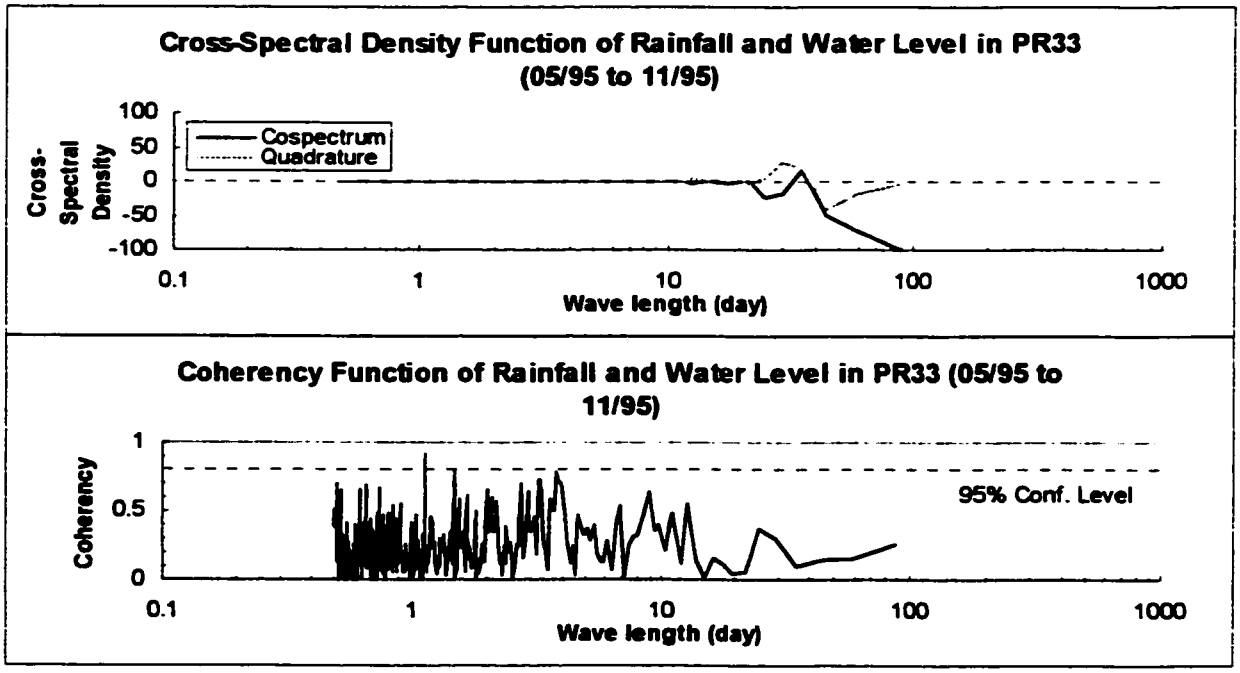
These transformations performed on the data are assumed to sufficiently decrease the contamination of the short-term fluctuations by the large long-term fluctuations in order to carry out the statistical analysis.

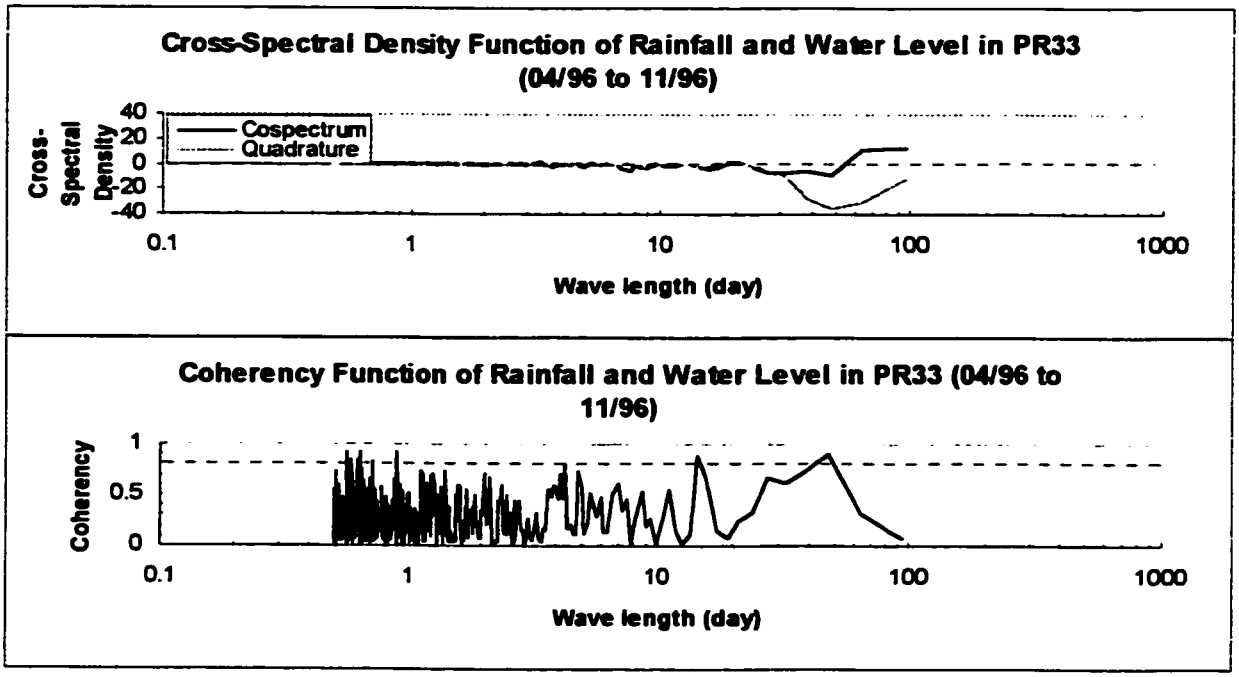
APPENDIX VI
EXAMPLES OF CROSS-SPECTRAL ANALYSIS RESULTS

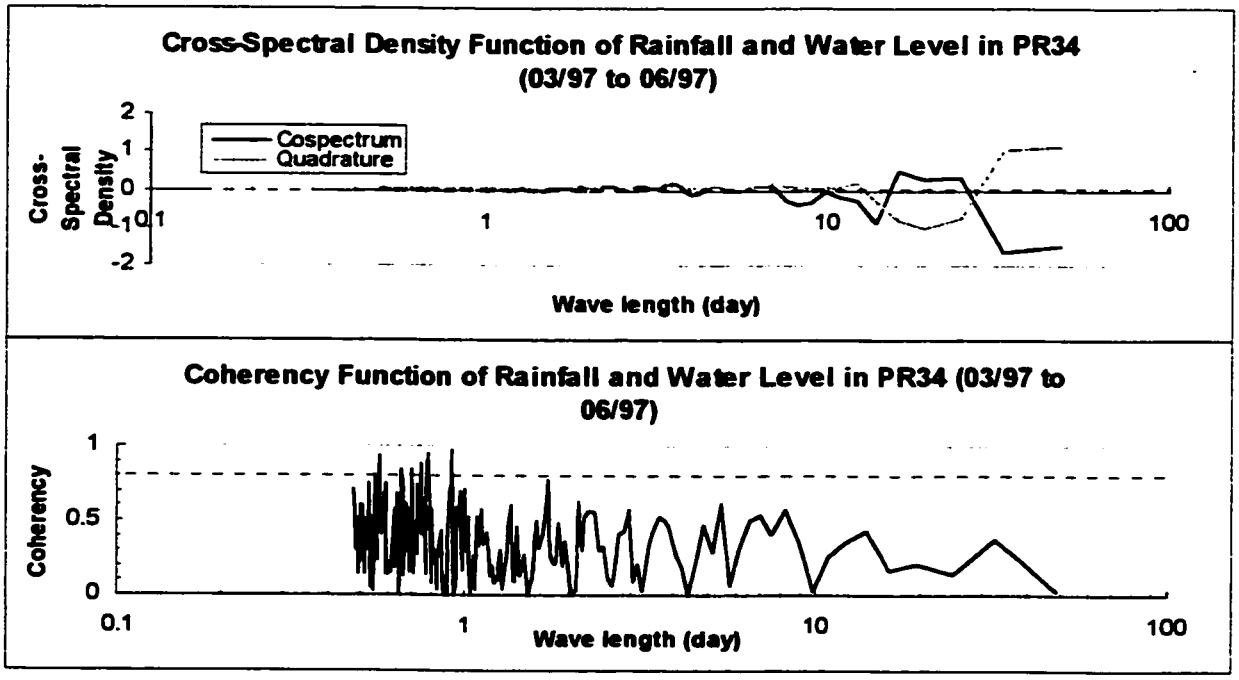
CHAPTER 4

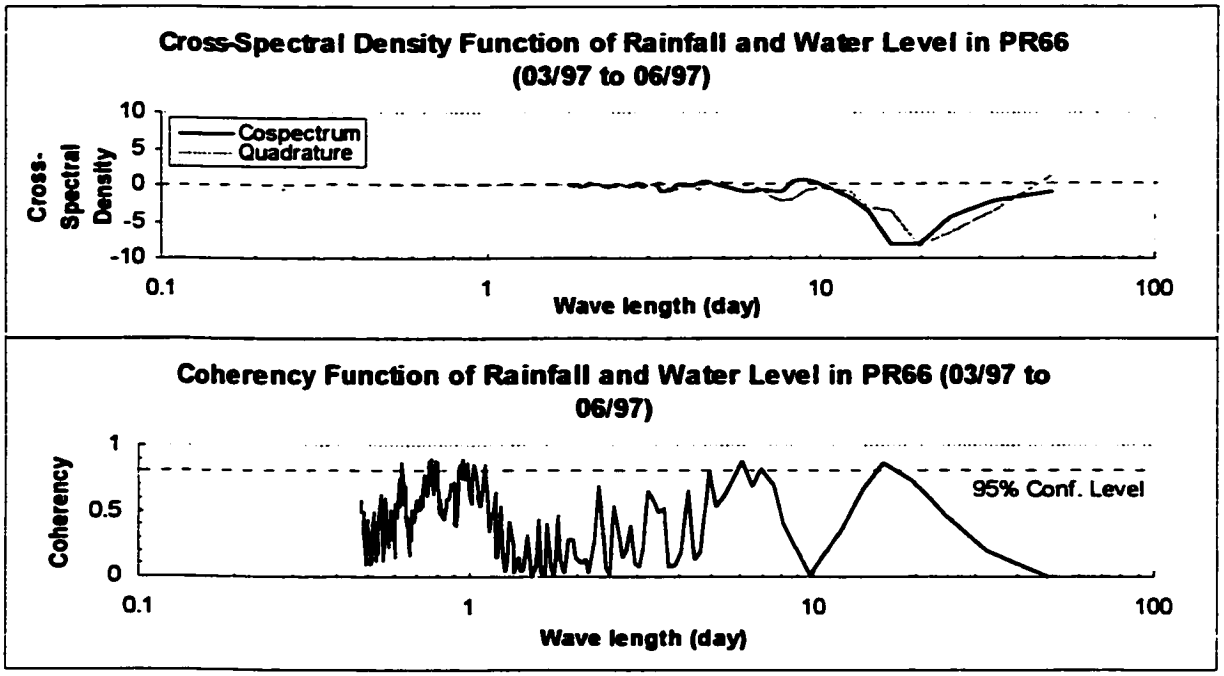
RAINFALL AND WATER LEVEL



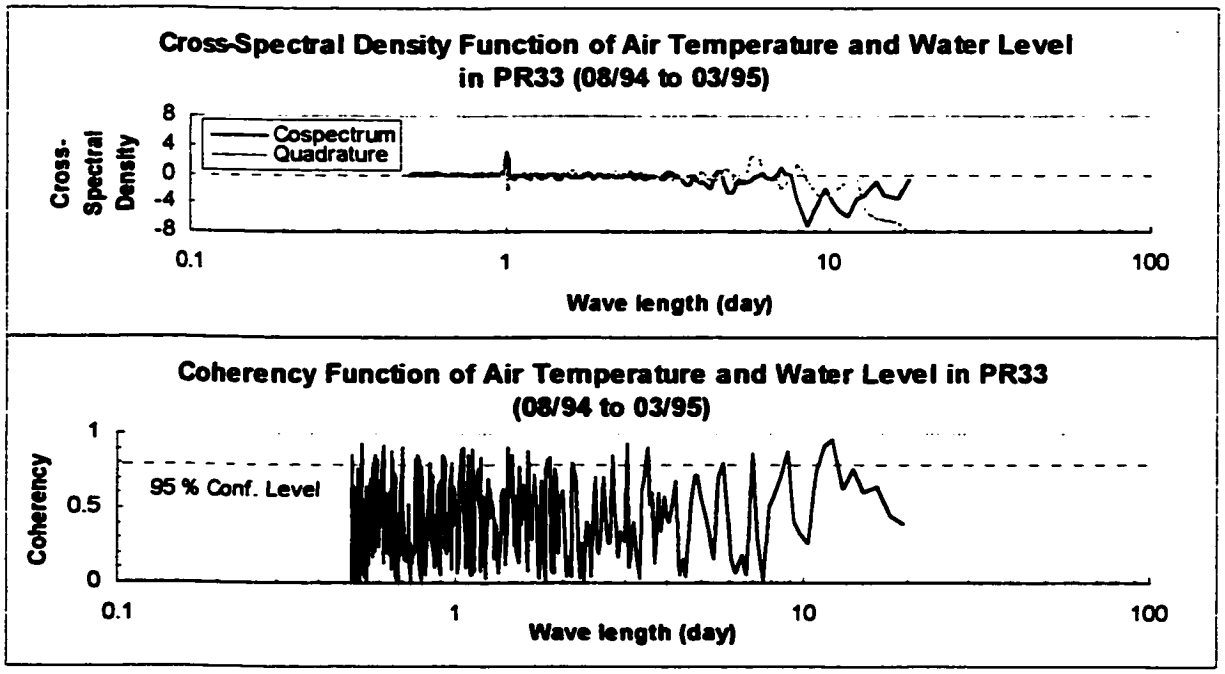



Cross-Spectral Density Function of Rainfall and Water Level in PR33 (04/96 to 11/96)
Cross-Spectral Density
40
20
0
-20
-40
Cospectrum
Quadrature
0.1
1
10
100
1000
Wave length (day)
Coherency Function of Rainfall and Water Level in PR33 (04/96 to 11/96)
Coherency
1
0.5
0
0.1
1
10
100
1000
Wave length (day)

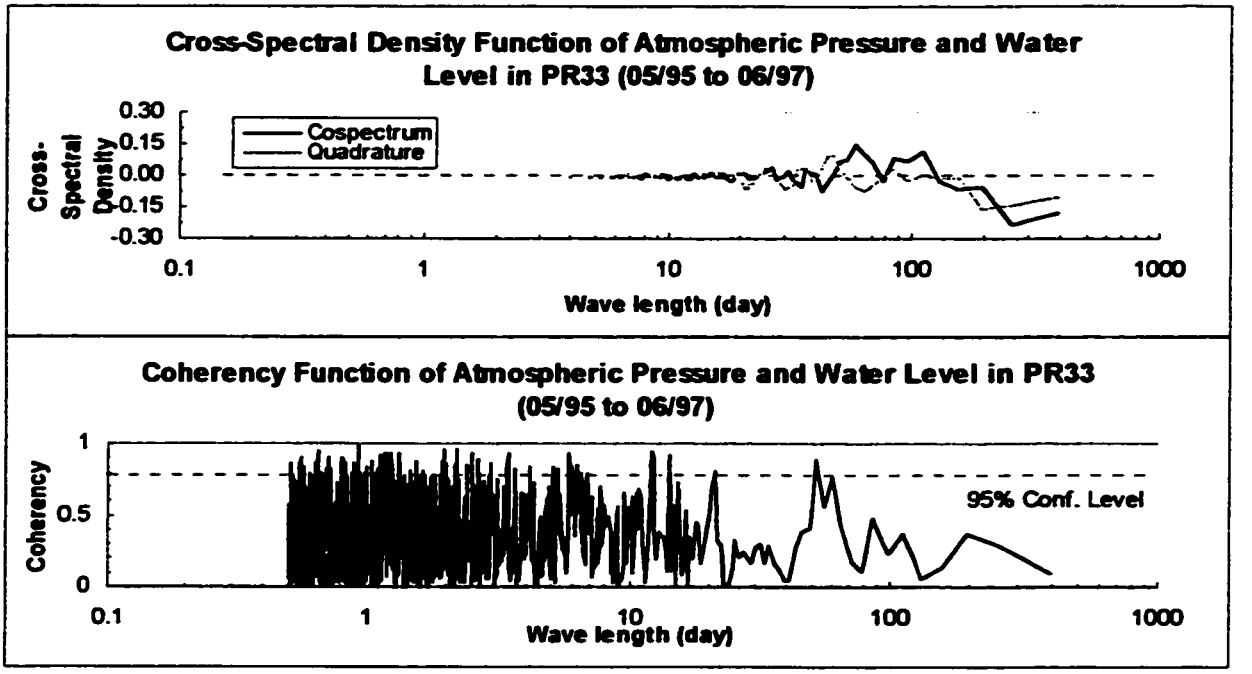

Cross-Spectral Density Function of Rainfall and Water Level in PR34 (03/97 to 06/97)
Cross-Spectral Density
2
1
0
-1
-2
Cospectrum
Quadrature
0.1
1
10
100
Wave length (day)
Coherency Function of Rainfall and Water Level in PR34 (03/97 to 06/97)
Coherency
1
0.5
0
0.1
1
10
100
Wave length (day)

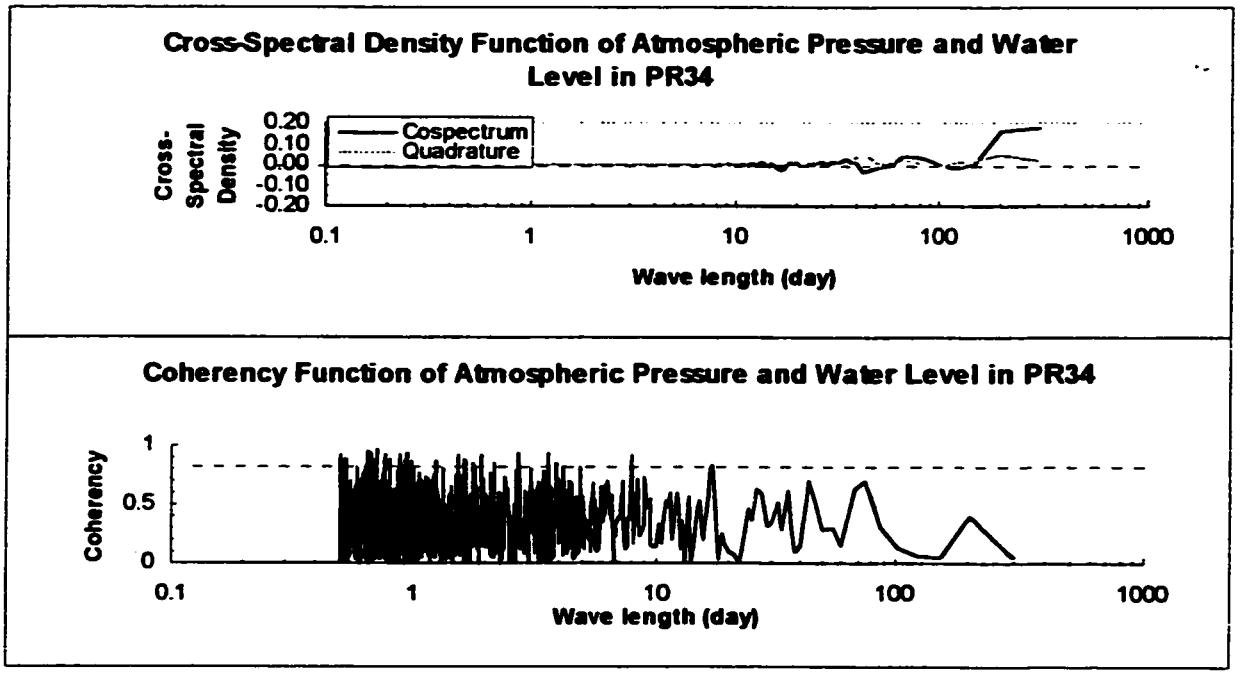


AIR TEMPERATURE AND WATER LEVEL



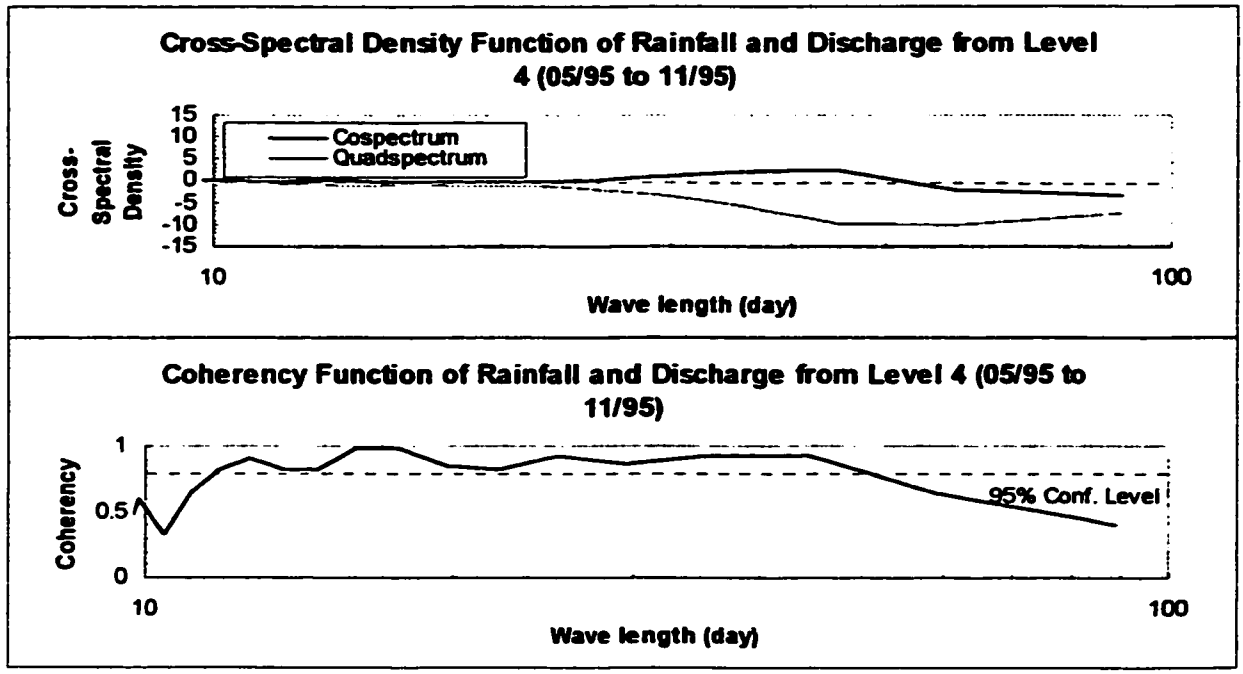
ATMOSPHERIC PRESSURE AND WATER LEVEL

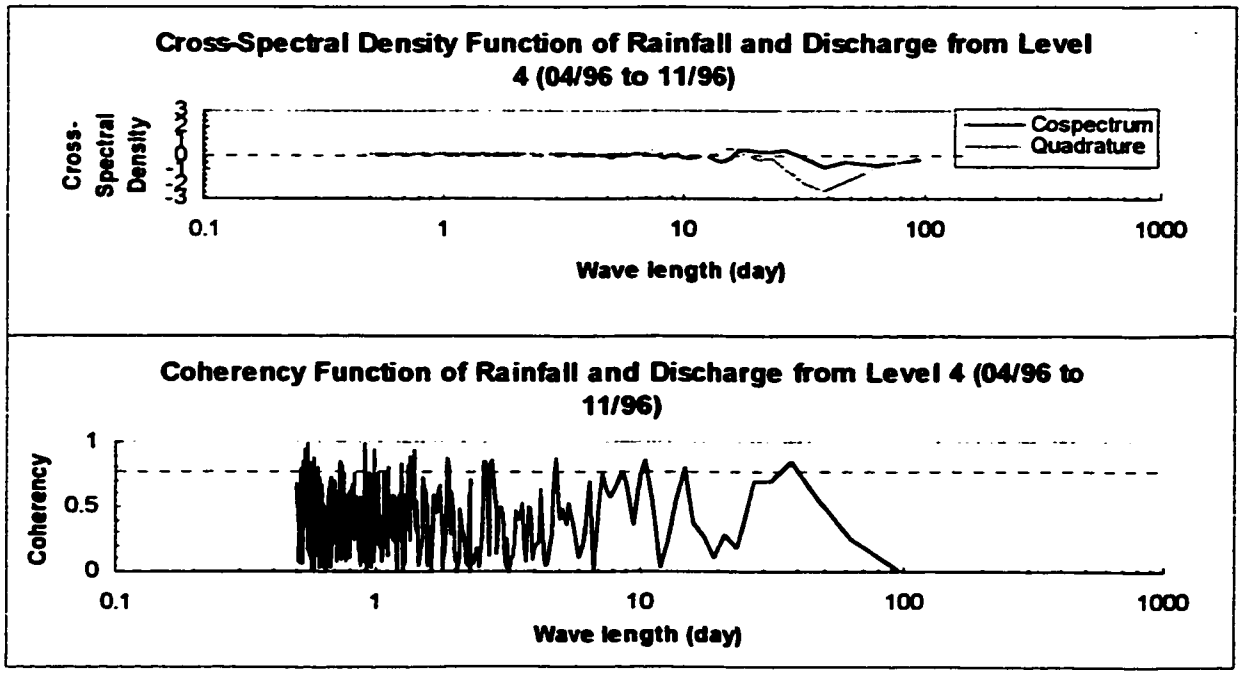




CHAPTER 5

RAINFALL AND DISCHARGE





RAINFALL AND HYDRAULIC HEAD

