THE IMPACT OF LANDSLIDES ON SEDIMENT YIELD, SOUTH WESTLAND, NEW ZEALAND

by

Mark Christopher Nelson
B.Sc. University of Wisconsin – Eau Claire, 2006

THESIS SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF SCIENCE

In the
Department of Earth Sciences
Faculty of Science

© Mark Christopher Nelson 2012

SIMON FRASER UNIVERSITY

Summer 2012

All rights reserved. However, in accordance with the *Copyright Act of Canada*, this work may be reproduced, without authorization, under the conditions for “Fair Dealing.” Therefore, limited reproduction of this work for the purposes of private study, research, criticism, review and news reporting is likely to be in accordance with the law, particularly if cited appropriately.

APPROVAL

Name:	**Mark Christopher Nelson**
Degree:	**Master of Science**
Title of Thesis:	**The Impact of Landslides on Sediment Yield South Westland, New Zealand**

Examining Committee:

Chair: **Dr. Dan Gibson**
Associate Professor, Department of Earth Sciences

Dr. John Clague
Senior Supervisor
Professor, Department of Earth Sciences

Dr. Shahin Dashtgard
Supervisor
Assistant Professor, Department of Earth Sciences

Dr. Maurice McSaveney
Supervisor
Engineering Geomorphologist, GNS Science

Dr. Oliver Korup
Supervisor
Professor, University of Potsdam

Dr. Timothy Davies
Supervisor
Professor, University of Canterbury

Dr. Brian Menounos
External Examiner
Associate Professor, University of Northern British Columbia

Date Defended/Approved: April 12, 2012

Partial Copyright Licence

The author, whose copyright is declared on the title page of this work, has granted to Simon Fraser University the right to lend this thesis, project or extended essay to users of the Simon Fraser University Library, and to make partial or single copies only for such users or in response to a request from the library of any other university, or other educational institution, on its own behalf or for one of its users.

The author has further granted permission to Simon Fraser University to keep or make a digital copy for use in its circulating collection (currently available to the public at the “Institutional Repository” link of the SFU Library website (www.lib.sfu.ca) at http://summit/sfu.ca and, without changing the content, to translate the thesis/project or extended essays, if technically possible, to any medium or format for the purpose of preservation of the digital work.

The author has further agreed that permission for multiple copying of this work for scholarly purposes may be granted by either the author or the Dean of Graduate Studies.

It is understood that copying or publication of this work for financial gain shall not be allowed without the author’s written permission.

Permission for public performance, or limited permission for private scholarly use, of any multimedia materials forming part of this work, may have been granted by the author. This information may be found on the separately catalogued multimedia material and in the signed Partial Copyright Licence.

While licensing SFU to permit the above uses, the author retains copyright in the thesis, project or extended essays, including the right to change the work for subsequent purposes, including editing and publishing the work in whole or in part, and licensing other parties, as the author may desire.

The original Partial Copyright Licence attesting to these terms, and signed by this author, may be found in the original bound copy of this work, retained in the Simon Fraser University Archive.

Simon Fraser University Library
Burnaby, British Columbia, Canada

revised Fall 2011

ABSTRACT

Sediment yields in the Southern Alps of New Zealand are among the highest in the world due to high annual precipitation, rapid uplift, weak bedrock and episodic earthquakes. Two neighbouring watersheds, those of the Poerua and Waitangitaona rivers, were studied to determine the impact landslides have on sediment yield. Both watersheds have been recently disturbed by landslides, 1) a large rock avalanche from Mt. Adams in the Poerua River watershed and 2) a failing slope known as the “Gaunt Creek slip” in the Waitangitaona watershed. I conducted a ground penetrating radar survey of the lower Waitangitaona River valley and a dGPS topographic survey of the lower Poerua River valley to determine average sediment yields on different timescales. The estimated sediment yields, which are among the highest in the world, are controlled by differences in the time, size, and character of the landslides that have perturbed the fluvial system.

Keywords: landslide; sediment yield; geomorphology; ground-penetrating radar; dGPS survey; South Westland, New Zealand

To everyone who asked me, “When are you going to finish?”.

“Soon”

ACKNOWLEDGEMENTS

Completion of this project would not have been possible without the generous contributions of number of people. First, I give my highest gratitude to my senior supervisor, Dr. John Clague, for his support, guidance, financial support and most importantly his patience throughout this endeavor. Thank you for the opportunity. It was an unbelievable privilege to study under you and learn from your knowledge and experience.

I would also like to thank my committee members; Dr. Shahin Dashtgard, Dr. Tim Davies, Dr. Oliver Korup and Dr. Mauri McSaveney. Their support, comments and suggestions were paramount. I would also like to thank the external examiner, Dr. Brian Menounos, for his constructive comments during the revision process.

Thanks to the faculty and staff of the Earth Sciences Department of SFU, particularly the graduate secretary Glenda Pauls for her help with graduate student issues, and the department technical staff Matt Plotnikoff and Rodney Arnold. Thank you also to my lab mate and fellow Natural Hazards Research Group members for their support, insight, and friendship, including: Nick Roberts, Denny Capps, Courtenay Brown, Dan Shugar, Marit Heideman and last but, not least, Michelle Hanson including her assistance in the field.

Finally, I thank my family with all my heart for their unconditional love, support, and encouragement. Mom and Dad, Kristin, thanks and this is for you.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

CHAPTER 1: INTRODUCTION

Landslides are common in mountainous areas throughout the world. They are an important agent of denudation (Burbank et al. 1996) and a major source of sediment to streams. Landslides occur frequently in the Southern Alps of New Zealand because of the high relief, steep slopes, weak bedrock, frequent earthquakes, and high precipitation.

In some instances landslides block streams, creating lakes upvalley of the debris dams. Unlike engineered dams, landslide barriers consist of unsorted and unconsolidated material that is susceptible to failure by piping, collapse, and incision by overflowing waters (Costa 1985; Costa and Schuster 1988). Failure of a landslide dam may result in catastrophic flooding, downstream aggradation and avulsion, and secondary landslides. Downstream sedimentation commonly increases the possibility of subsequent flooding (Hancox et al. 2005; Schuster 2006).

The sediment "pulse" that results from breaching of a landslide dam can reduce the average grain size of the channel through aggradation (Sutherland et al. 2002), increase channel width (James 1991), promote braiding of the channel, and bury riparian forest (Sutherland et al. 2002). Subsequently, with no further instability within the watershed and on timescales of years to tens of years, the aggraded channel is incised and the channel sediments becomes coarser.

A recent example of landslide damming followed by dam failure in the Southern Alps is the Mt. Adams event in the Poerua River watershed near Hari Hari, South Westland (Fig. 1.1) On 6 October 1999, a large rock avalanche from Mt. Adams impounded Poerua

River, creating a lake. The lake overtopped the dam one day later and failed in another five days, causing aggradation, avulsion, and flooding downstream (Hancox et al. 2005).

Because most landslide dams are unstable, the hazards from outburst floods have been the main focus of recent research. On the geologic time scale, landslide dams are ephemeral features (Korup 2002). Schuster (1993) reported that most landslide dams fail within one year of formation. However, Clague and Evans (1994) documented landslide dams in the Canadian Cordillera that are hundreds to thousands of years old. In addition, the largest landslide dam on Earth was emplaced by the Usoi landslide in Tajikistan in 1911. The dam is 500-700 m high (Alford et al. 2000) and has been well documented since its formation.

The subsequent, secondary effects of outburst floods have not been well documented and are rare. Bathurst and Ashiq (1998) studied bedload transport 13 years after a dam-break flood event, and recently Morche and Schmidt (2011) documented a decade-long study of pre- and post-dam-break sediment transport in the Bavarian Alps.

Several factors determine how a landslide affects a stream. The most important factors are the size of the landslide, the character and size of the dam, and the fluvial response over time. This thesis focuses on the last of these three factors.

The main objectives of this thesis are to: 1) present new data on the geomorphic imprint of the Mt. Adams landslide on Poerua River between 1999 and 2008 (Chapter 2); and 2) quantify sediment yield in the Waitangitaona River watershed (Fig. 1), southwest of Poerua River (Chapter 3). In Chapter 2, I describe the results of a differential GPS survey that extends earlier surveys between 1999 and 2005. I present changes in channel geomorphology and attempt to quantify sediment discharge and sediment yield. I compare my findings for the period 2005-2008 to changes in the river between 1999 and 2005. In Chapter 3, I describe the results of a ground-penetrating radar (GPR) survey of the lower Waitangitaona River valley carried out to demarcate the floodplain surface prior to an avulsion event in 1967. I estimate the total amount of sediment deposited since the avulsion and derive an estimate of average sediment yield over the 40-year period. Finally, I compare this value to other published estimates of sediment yield in the Southern Alps. Chapter 4 discusses the implications of the two studies for fluvial systems in South Westland.

1.1 Study Area

The study area is located on the coastal plain between the Southern Alps and Tasman Sea in South Westland, New Zealand (Fig. 1.1). The coastal plain is 10-15 km wide, extends from sea level to ca. 200 m asl, and has low to moderate relief. I conducted research on the alluvial plains of Poerua and Waitangitaona rivers, west of the Southern Alps.

Directly east of the study area, the Southern Alps rise abruptly to almost 4000 m asl on the east side of the Alpine Fault. The mountain range is a product of the convergence of the Pacific and Australian plates and is characterized by steep slopes, deep valleys with modal slopes of 38–40°, and boulder-choked streams (Korup 2005b; Wells and Goff 2005).

Precipitation is common throughout the year and can reach 14,000 mm a^{-1} (Henderson and Thompson 1999); average rainfall in the front ranges of the Southern

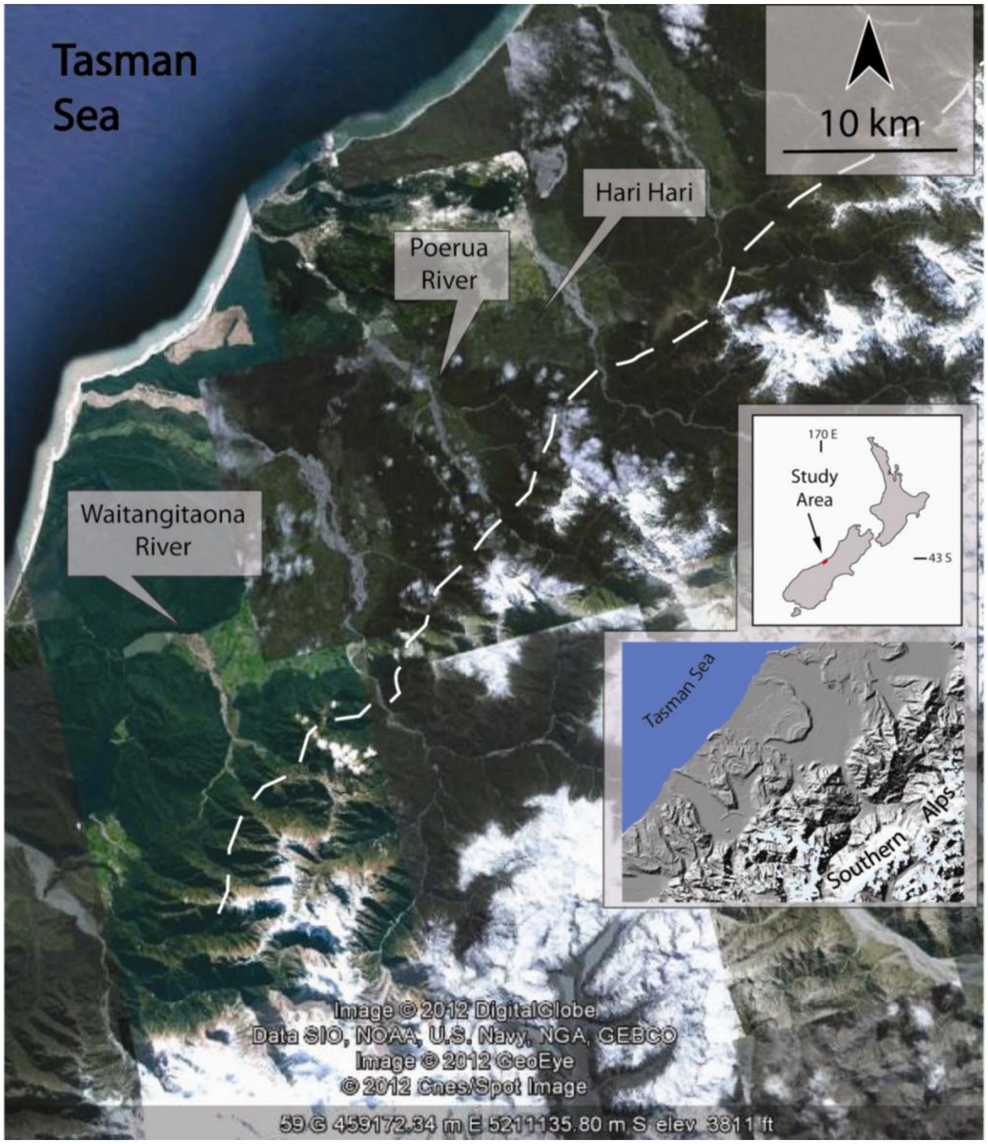


Figure 1.1. The study area, showing the locations of Poerua and Waitangitaona rivers (Google Earth 2011). The Alpine Fault is delineated by the white dashed line. Inset shaded-relief map shows the topography of the study area.

Alps is 11,000 mm a^{-1} (Griffiths and McSaveney 1983). The combination of steep slopes, weak rocks, and high rainfall results in high erosion and large sediment fluxes. Catchments in the Southern Alps have some of the highest sediment yields in the world (Davies and McSaveney 2001).

1.1.1 Geology

The South Westland coastal foreland lies west of the Alpine Fault and is underlain by early Ordovician greywacke capped by a thick sequence of Pleistocene glaciofluvial deposits and till (Korup 2005a; Cox and Barrel 2007). The Southern Alps have formed mainly during the past 2 million years and are composed of deformed and metamorphosed, Carboniferous to Cretaceous greywacke; rocks within 8 km to the east of the Alpine Fault are schist (Fig. 1.2; Cox and Findlay 1995; Cox and Barrel 2007).

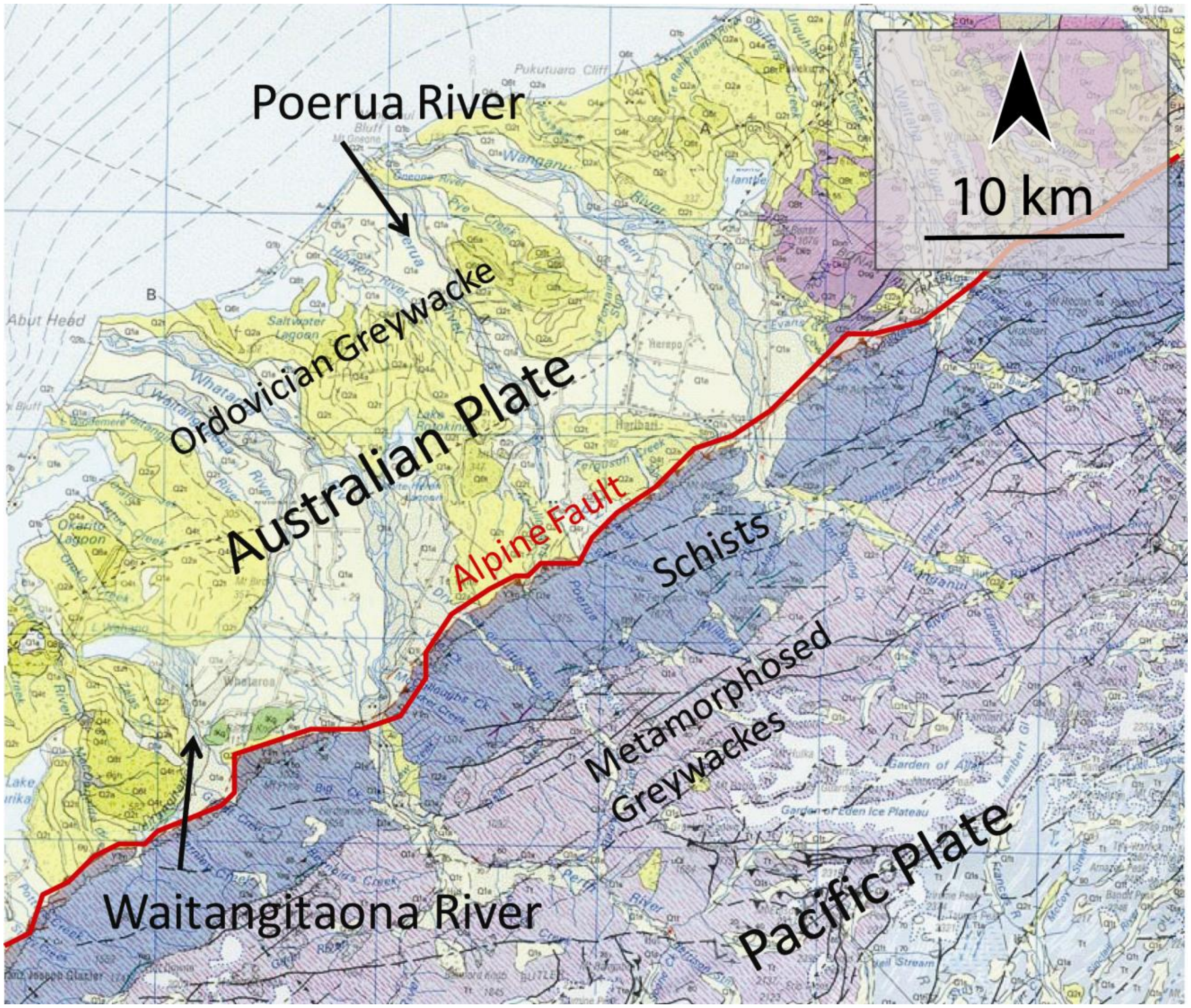


Figure 1.2. Geologic map of the Southern Alps and the Tasman Sea coastal lowland (Cox and Barrel 2007). The red line marks the Alpine Fault.

Prominent morainal ridges of the last glaciation have been assigned to the Okarito and Moana formations, which were deposited during the Kumara 2_2 (~18,000 to 22,000 ^{14}C years BP) and Kumara 3_2 (~14,000 to 15,000 ^{14}C years BP) stages, respectively, of the last (Otira) glaciation (Suggate 1990). The tills consist mainly of sandy, gravelly diamicton with clasts of granite, schist, and greywacke (Denton and Hendy 1994). Low areas between the morainal ridges and plateaus are outwash plains and Holocene floodplains (Warren 1967).

1.1.2 Tectonics

The Australian and Pacific plates are moving against each other at a rate of 37 ± 2 mm a^{-1}; 75% of this motion is taken up by strike-slip and dip-slip displacements along the Alpine Fault (Fig. 1.3) (Norris and Cooper. 2000).

Figure 1.3. Oblique aerial photograph of the Alpine Fault; view north from the study area to the southern tip of the North Island of New Zealand (McSaveney 2007).

The hanging wall is composed of a sequence of pumpellyite-actinolite schists (Cox and Findlay 1995). Average long-term displacements along the fault at Waikukupa River can be resolved into dip-slip (thrust) component of 8 ± 3 mm a^{-1} and a strike-slip component of 27 ± 5 mm a^{-1} (Norris and Cooper 2000). Average uplift rates in the Southern Alps locally reach 10 mm a^{-1} (Norris and Cooper 2007).

1.1.3 Alpine Fault Activity

No large earthquakes have occurred on the Alpine Fault during the past 200 years (Sutherland et al. 2006). There is geologic evidence, however, for five great (M_w ~ 8) earthquakes since about AD 900 (Larsen et al. 2005). Their approximate ages have been determined from radiocarbon ages on plant fossils in sediments associated with the earthquakes and by dendrochronology. The ages of the earthquakes are AD 940 ± 50, 1220 ± 50, 1425 ± 15, 1620 ± 10, and 1717 (Wells et al. 1998, 1999; Yetton 1998; Yetton et al. 1998; Norris et al. 2001; Wells and Goff 2005). According to Yetton (2000), the average recurrence time of an earthquake producing an 8-m displacement on the fault is ~ 300 years. The 1717 AD event produced a horizontal offset up to 8.5 m and uplift of about 3 m (Yetton 1998).

CHAPTER 2: WAITANGITAONA RIVER WATERSHED SEDIMENT YIELD AND DENUDATION RATES

2.1 Introduction

Sediment yield in mountain catchments is controlled by many factors, some of which vary in time and differ in space (Warrick and Mertes 2009). The main controlling factors are climate, geology, relief, and land use (Meade et al. 1990). High rates of sediment yield are favoured by high rainfall, weak bedrock, high relief, rapid uplift, frequent large earthquakes, and extensive modification of the landscape by humans (Griffiths 1981; Milliman and Syvitski 1992; Hicks et al. 1996). Most of these conditions exist in the Southern Alps of New Zealand – annual precipitation locally exceeds 14 m; the area is characterized by steep slopes developed in metamorphosed and pervasively deformed greywacke and schist close to the Alpine Fault, the active transform fault separating the Pacific and Australian plates; the maximum relief in the range is 4000 m, and local relief exceeds 2000 m; and mountains are rising at rates up to 10 mm a^{-1} (Cox and Findlay 1995; Norris and Cooper 1997; Henderson and Thompson 1999).

Contemporary sediment yield in New Zealand on an annual timescale has been estimated from sediment discharge records at hydrometric stations (Griffiths 1979, 1982; Hicks et al. 1996, 2004). There are few estimates, however, of sediment yield on timescales of decades. This study uses estimates of the volume of alluvium deposited by Waitanitaona River, which drains a mid-size watershed in the Southern Alps, since a major avulsion in 1967. From this sediment volume of, I estimate of average sediment yield over for the Waitangitaona River watershed for the 40-year period. I then compare this value to other estimates of sediment yield in active orogens around the world.

2.2 Study Area

Waitangitaona River drains ~74 km^2 of the Southern Alps in South Westland, New Zealand. Within the Southern Alps, the river flows in a steep-sided valley developed in fractured and faulted, foliated, biotite schist (Norris and Cooper 2007). The valley and floodplain broaden where Gaunt Creek flows into Waitangitaona River (Fig. 2.1). Over the next 2 km, between Gaunt Creek and the SH (State Highway) 6 bridge, the river is bordered by large Pleistocene moraines and has a floodplain that is 120 to 850 m wide. Below the bridge, the river is confined by engineered levees (“stop banks”). Prior to settlement, the river flowed across a ca. 19 km^2 alluvial fan that is bordered on the north by the Okarito moraine, on the west by the Zalas Creek moraine and Lake Wahapo, and on the east by Waitangiroto River (Fig. 2.1).

During a flood in 1967, Waitangitaona River abandoned its channel and began to flow to the southwest and into Lake Wahapo (Fig. 2.1; Griffiths and McSaveney 1986; Korup 2004). The event occurred after years of aggradation behind a stop bank built in 1933 (Griffiths and McSaveney, 1986). Following avulsion, 4.1 km^2 of grazing land was buried by a thickening sheet of gravel and sand, confined between stop banks to the west and east (Fig. 2.1). In 1970, three years after the avulsion, the prograding sediment wedge reached the shore of Lake Wahapo and two fan-toe deltas began to form (Korup 2004). Aggradation during the lead-up to the avulsion event in 1967 has been ascribed

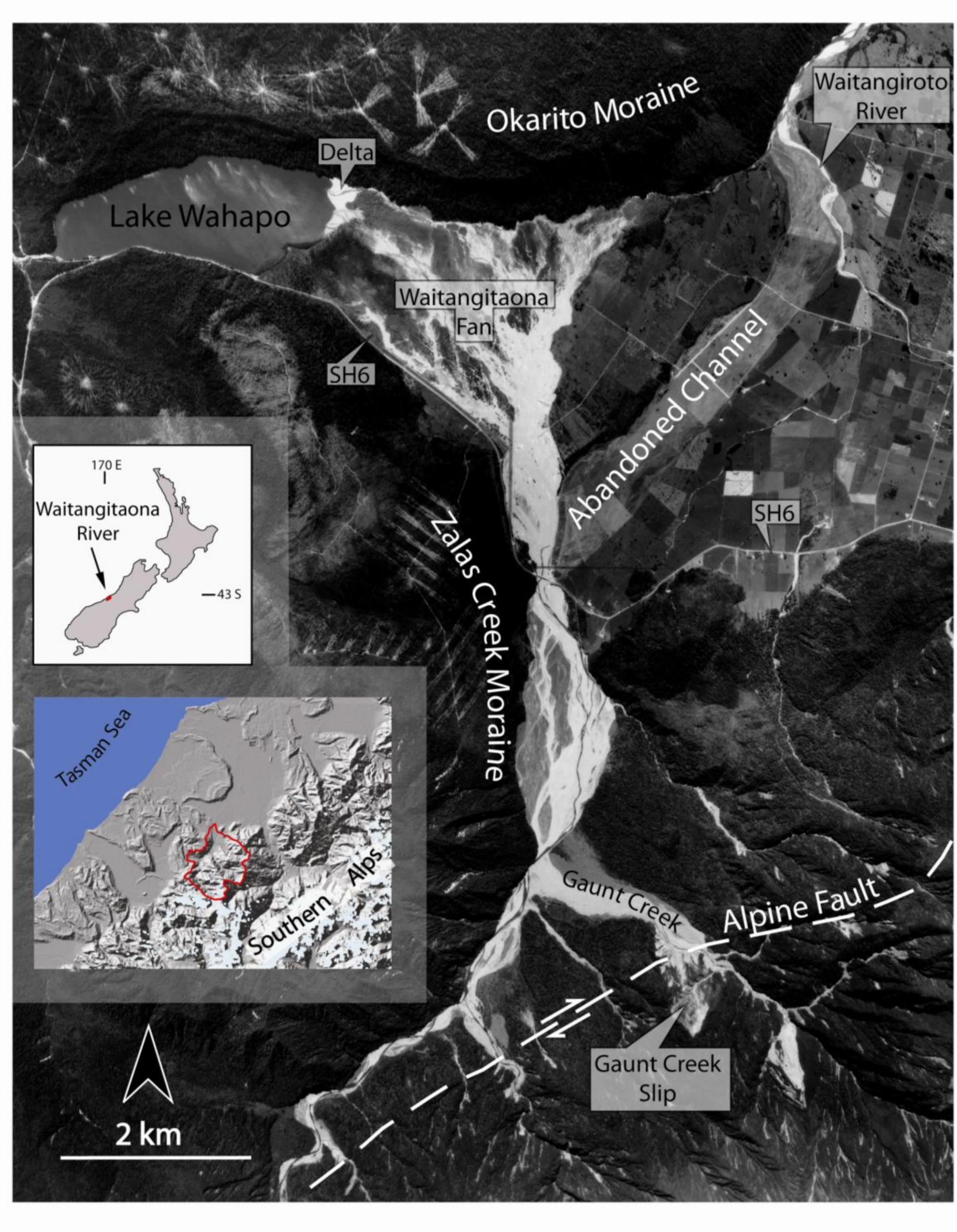


Figure 2.1. Aerial photograph of the study area, showing the site of the 1967 Waitangitaona River avulsion in South Westland, New Zealand. Also shown is Gaunt Creek, the location of the Gaunt Creek slip, and Lake Wahapo. The aerial photograph was taken in 1985 and was provided by Land Information New Zealand. Inset shaded relief map shows the Waitangitaona River watershed (red line). Image modified from Korup (2004).

to the delivery of large amounts of sediment by Gaunt Creek, a tributary of Waitangitaona River. Much of the sediment was derived from a failing slope on the trace of the Alpine Fault that is known informally as the “Gaunt Creek slip” (Fig. 2.1; Griffiths and McSaveney 1986). Davies and Korup (2007) estimated that the Gaunt Creek slip has delivered approximately 1.6×10^5 m^3 a^{-1} of sediment into the Waitangitaona fluvial system since about 1918.

2.3 Methods

I estimated coarse sediment yield yield from the Waitangitaona River watershed for the period 1967-2008 by determining the volume of sediment deposited following channel avulsion in 1967. The methods that I used include ground-penetrating radar (GPR), multi-temporal aerial photograph interpretation, backhoe trenching, and a differential GPS survey. The GPR survey provided data on the thickness of sediment overlying the pre-avulsion surface and the wedge of post-1967 deltaic sediment in Lake Wahapo. The results of the GPR survey were corroborated by geomorphic interpretation of pre- and post-avulsion aerial photographs and by backhoe trenching.

2.3.1 Ground-Penetrating Radar

Ground-penetrating radar uses electromagnetic (EM) waves to characterize the subsurface structure of sediments and rocks (Baker et al. 2007). Differences in electromagnetic properties of Earth materials affect the paths and travel times of EM waves, revealing structural and textural differences of near-surface materials (Van Overmeeren 1998).

I used a Sensors and Software pulse EKKO 100 system to perform the GPR survey. I conducted tests using two different sets of antennas – 50 and 100 MHz – and several CMP (Common Mid-Point) surveys to determine which antennas were best suited for the study. I also used the CMP surveys to determine the signal velocity for each survey line. The velocities range from 0.07 m n s^{-1} on the Lake Wahapo delta to 0.1 m ns^{-1} on the Waitangitoana fan. The pre-avulsion surface was easily identified using the 100 Mhz antennas, thus all subsequent lines were surveyed with them.

The GPR field setup included 100 MHz antennas, a console, a 12 V battery, and a laptop computer for collecting the data. The GPR antennae were set parallel to each other, 1 m apart, and oriented perpendicular to the survey line (Fig. 2.2). The step size was 0.25 m.

Fifteen transects ranging from 200 to 600 m in length and totalling 4.2 km were surveyed within the modern confined floodplain of Waitangitaona River below the SH6 bridge (Fig. 2.3). Locations of lines were chosen partly on the basis of accessibility and partly to ensure that the area sampled was sufficient to determine spatial variations in the form of the pre-avulsion surface. I correctly assumed that this surface was nearly flat, except along the channels that existed immediately before avulsion, which I was able to identify on pre-1967 photographs. Survey lines on the Lake Wahapo delta, however, were oriented parallel to Waitangitaona River to obtain the maximum amount of information on the thickness and form of the post-1970 prograding deltaic wedge. The maximum depth of energy penetration was 24 m, and full resolution was achieved to a depth of 8 m, which was more than adequate to demarcate the pre-avulsion surface.

Figure 2.2. Ground-penetrating radar field survey of the Waitangitaona River floodplain below the SH6 bridge. In the foreground are two 100 kHz antennae. Data are being recorded in the background on a waist-mounted laptop computer. Photograph by Mauri McSaveney, 2008.

The data were of high quality and required little post-processing. I did, however, process them using standard techniques (dewow, subtractor, horizontal average tracing, vertical average tracing, and constant gain) to provide the best visual display (Baker et al. 2007). Processing was done using the Sensors and Software program EKKO View Deluxe (Version 1.0). Interpretation was guided by reference to previous work (Davis and Annan 1989; Jol and Smith 1991). I surveyed topographic profiles along each GPR transect using a Topcon dGPS (differential Global Position System) and referenced elevations to the local datum (NZGS1949). The survey points were collected in real time

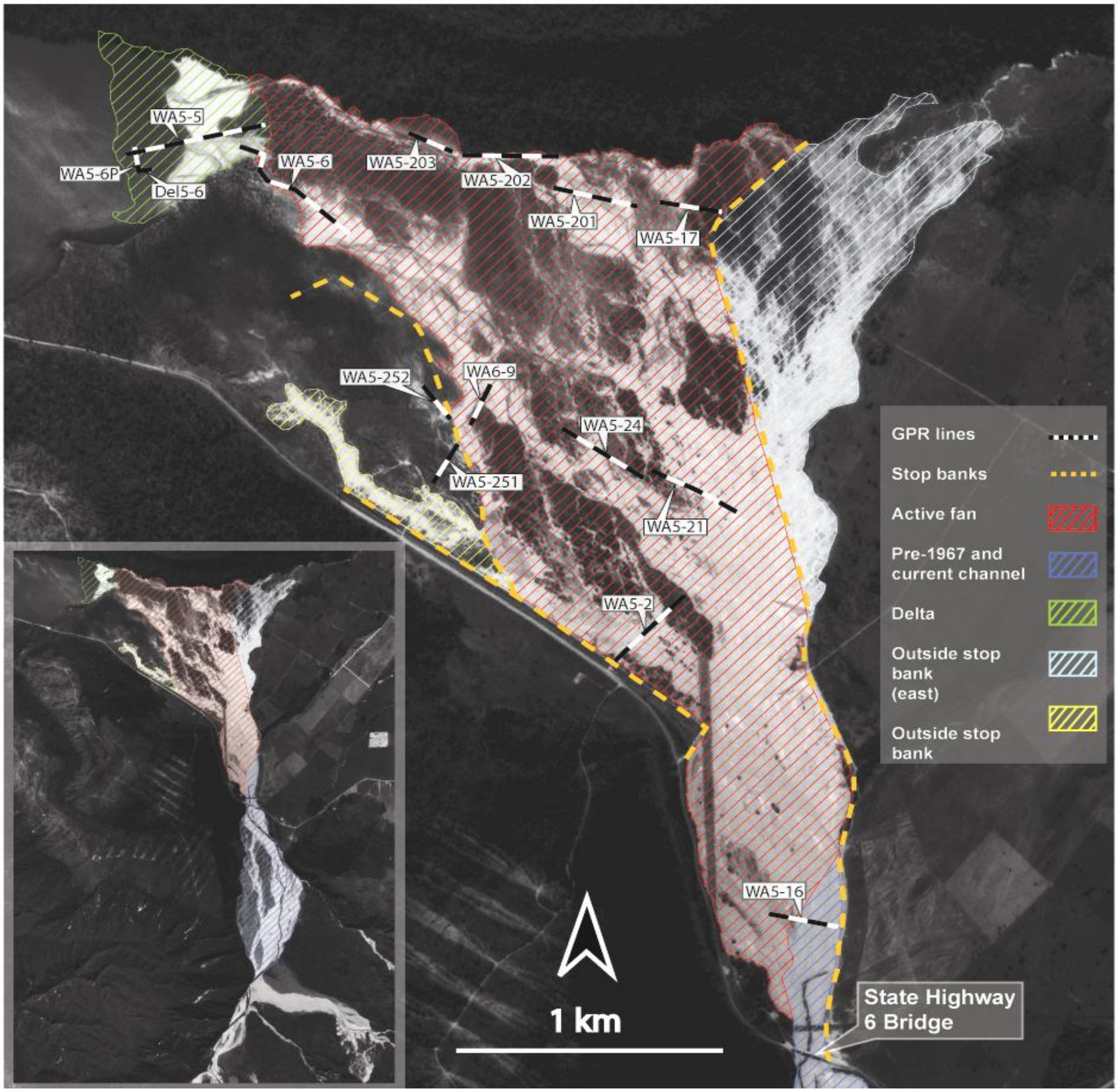


Figure 2.3. 1985 aerial photograph, showing GPR survey lines, stop banks, and the five areas of sediment deposition. Aerial photograph courtesy of Land Information New Zealand.

kinematic (RTK) mode,which provides an accuracy of 10 mm in the horizontal plane and 15 mm vertically. I combined the topographic data and subsurface data in a GIS (Geographic Information System) to estimate sediment volumes. The fan was not buried everywhere by the same thickness of sediment, and not all parts of the fan were surveyed. I thus divided the fan into five areas, each with about the same thickness of post-1967 sediments to obtain a total sediment volume for the period 1967-2008 (Fig. 2.3).

2.3.2 Map and Aerial Photograph Interpretation

I acquired aerial photographs taken in 1948, 1969, 1973, 1977, 1985, and 1994 from Oliver Korup and examined them to establish the five areas of expected uniform sediment depth. I also used the aerial photographs to determine the progradation rate of Waitangitaona River into Lake Wahapo. I orthorectified the photos in the GIS using ground control points to minimize errors in estimates of progradation rates. Although I chose and located ground control points with caution, minor errors in their positions, unavoidable minor location errors affected the accuracy of the rectification of the photos.

2.3.3 Backhoe Trenching

Backhoe trenches were excavated to a maximum depth of 2.5 m on the fan to confirm reflectors identified in the GPR survey, especially the pre-1967 surface. Because the water table was shallow (average depth = 1 m), the backhoe trench walls collapsed as the trenches were dug, limiting the amount of information that could be acquired. Nevertheless, I was able to identify the pre-1967 surface in one test pit and observed the architecture and sedimentary structures of shallow subsurface sediments.

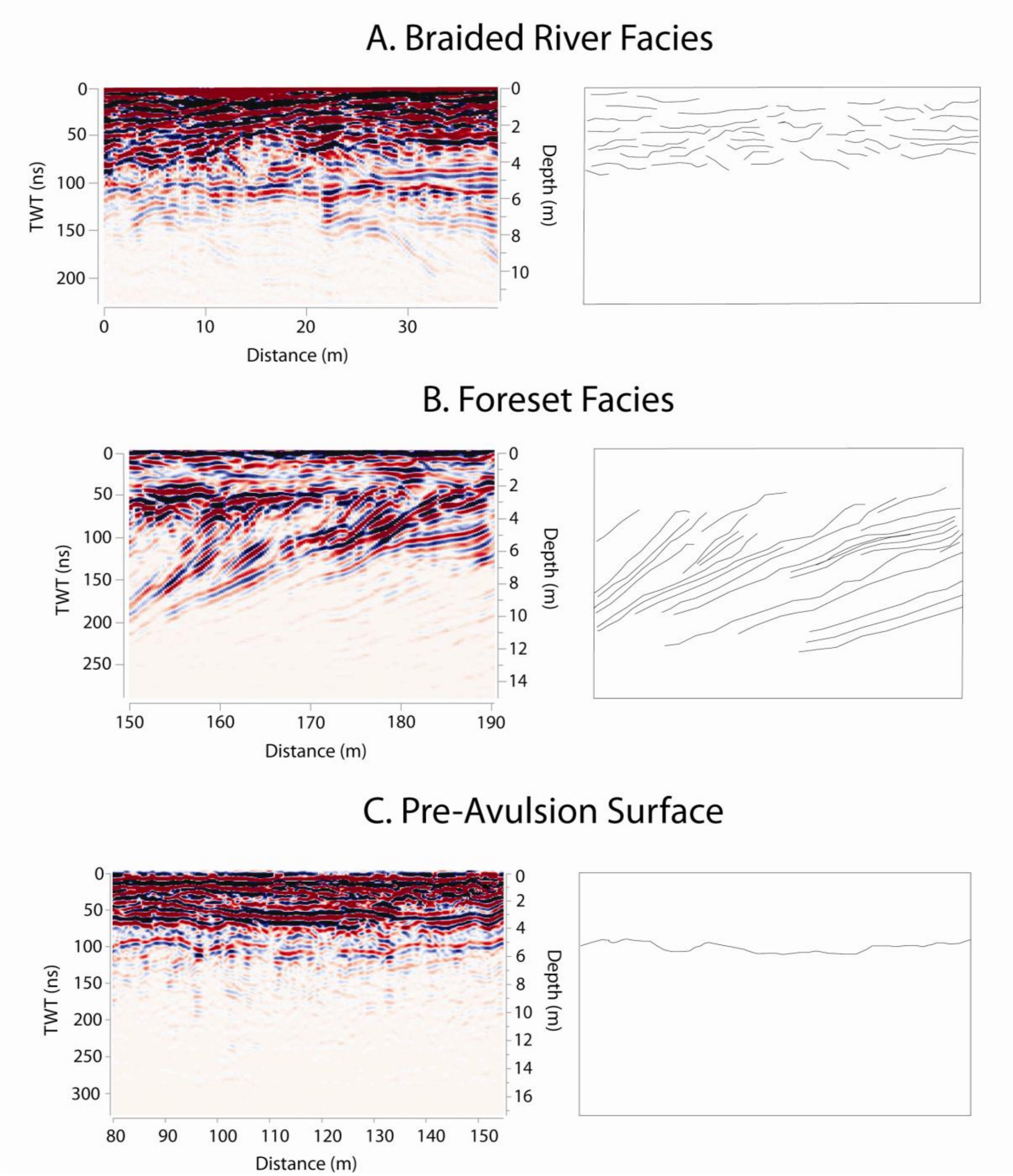
2.4 Results

2.4.1 Radar Facies

I identified two radar facies and a continuous subsurface reflector. One radar facies comprises hummocky, subhorizontal, and laterally discontinuous reflectors (Fig.

2.4A), which I interpreted to record channel deposits of a braided, gravel-bed stream. This facies dominates most profiles and extends to an average depth of 4 m and a maximum depth of ~7 m at the Lake Wahapo delta. The hummocky nature of the reflectors is likely due to heterogeneity in grain size (Stevens and Robinson 2007) and aggradation (Mumpy et al. 2007). Locally, the reflectors have a concave-up pattern, indicative of small-scale, cut-and-fill channels.

The second radar facies comprises tangential and parallel-dipping reflectors (Fig. 2.4B). It is restricted to the Lake Wahapo delta and adjacent floodplain, and is interpreted to be delta foreset beds. The downstream-dipping foresets are overlain by the braided stream radar facies and terminate in a tangential downlap onto an unseen flat-lying horizon that is below the maximum depth of GPR energy penetration (Mumpy et al. 2007). The unseen horizon is likely the original lake bottom. Survey lines parallel to the flow direction of Waitangitoana River show the foresets with true dip angles, whereas lines perpendicular to stream flow exhibit subhorizontal reflectors along the strike of the beds. True dips range from 12^o to 38^o and average 24^o. The subsurface surface reflector, which is most relevant to this study, is a strong, horizontal, laterally continuous reflector, which I interpret to be the pre-avulsion surface (Fig. 2.4C and 2.5). Aerial photographs show that this surface was stable, vegetated, and perhaps weathered prior to being buried after the avulsion event in 1967. Breaks in the reflector are probably due to erosion of the pre-1967 surface by waters of the avulsed river flowing over the fan.



A. Braided River Facies

B. Foreset Facies

C. Pre-Avulsion Surface

Figure 2.4. Examples of the two radar facies and the subsurface reflector identified in this study. (A) Wavy, subhorizontal, laterally discontinuous reflectors of a braided, gravel-bed stream. (B) Dipping reflectors of foreset facies. (C) Strong, horizontal, laterally continuous reflector of pre-avulsion surface. TWT = two-way travel time.

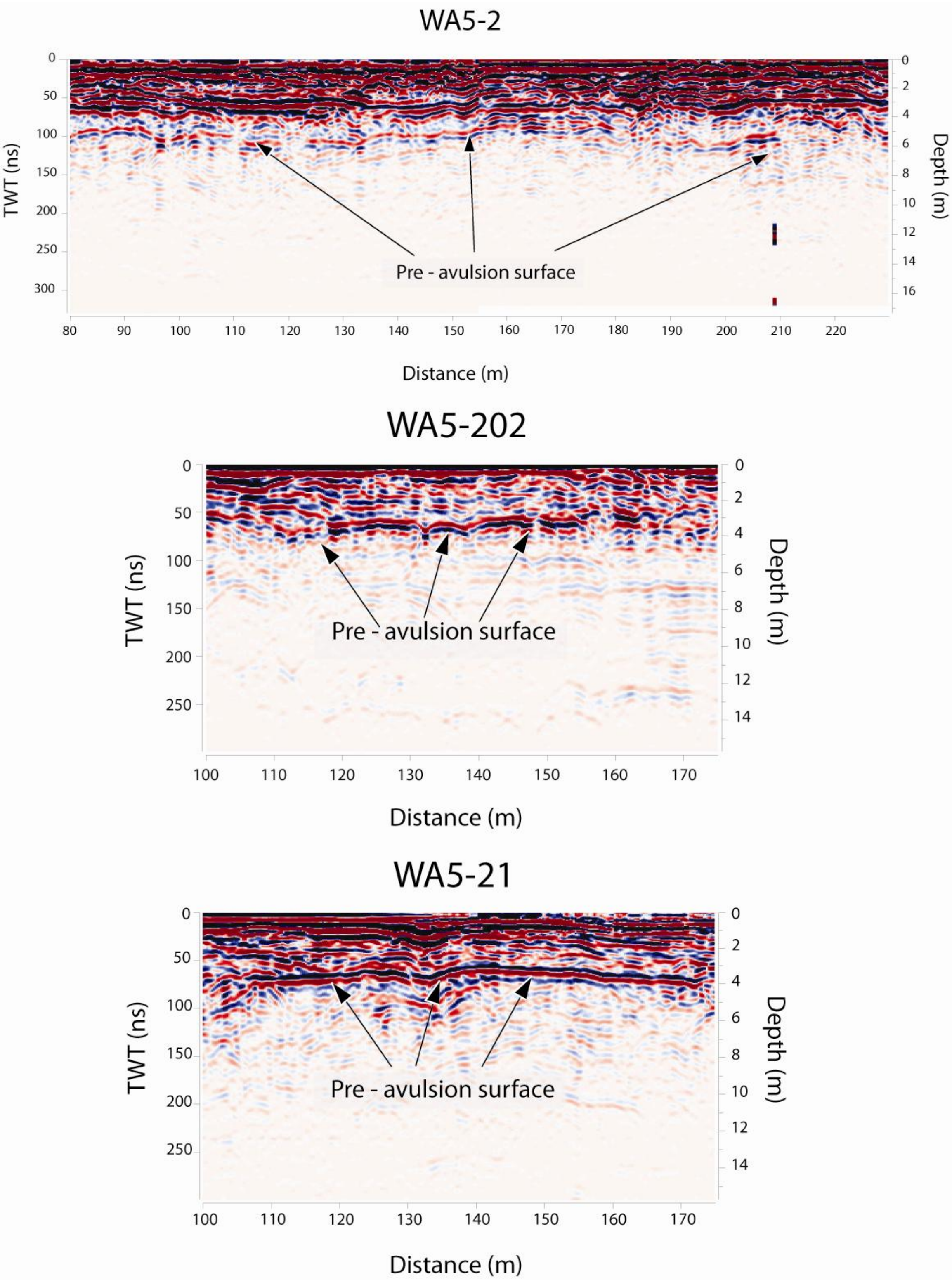


Figure 2.5. Three GPR profiles showing the strong horizontal reflector interpreted to be the pre-avulsion fan surface. See Figure 2.3 for locations of survey lines. TWT = two-way travel time.

2.4.2 Sediment Volume Calculations

The stop banks confined sedimentation following the 1967 avulsion event to a well defined area, which allows an estimate to be made of the total volume of sediment deposited since that date. In order to calculate this volume, I divided the affected area into the following five areas based on geomorphology and proximity to the stop banks: (1) the active fan north of the SH6 bridge; (2) the pre-1967 and current braidplain; (3) the Lake Wahapo delta; (4) the inactive fan outside the stop bank on the east (OSE), and (5) the inactive fan outside the stop bank on the west (OSW) (Fig. 2.3). Areas 4 and 5 were part of the active fan surface until the mid-1980s, when the present stop banks were built and sediment supply to these areas was cut-off.

2.4.2.1 Active fan north of SH6 bridge

The current active fan is bordered by stop banks on the east and west, the Okarito moraine on the north, and 1967 margin of Lake Wahapo on the northwest. The southern boundary of this sector is more poorly constrained, because the active fan is continuous with the floodplain of Waitanitaona River above the SH6 bridge. I chose as a southern boundary the point where the river avulsed in 1967. The total area of the current active fan, measured on the 1985 aerial photograph is ~3.2 km^2. The 1967 surface, based on GPR data, is almost everywhere 4 m below the modern surface, although along line WA5-2 (Fig. 2.3) it is up to 6 m deep. The total volume of sediment in this geomorphic zone is approximately 1.3 x 10^7 m^3 (Table 2.1)

2.4.2.2 Braidplain south of SH6 bridge

The sector between the SH6 bridge and Gaunt Creek is a composite of the pre-

1967 and the current braidplain. It has an area of 1.9 km^2. No GPR data were collected in this area, so the depth to the pre-1967 surface is assumed to be the same as that on the active fan north of the SH6 bridge. The total volume for this sector is about 7.6 x 10^6 m^3 (Table 2.3)

2.4.2.3 Lake Wahapo delta

Since its inception in 1967, a delta has prograded about 567 m into Lake Wahapo, at an average rate of 13.8 m a^{-1} (Fig. 2.6). I divided the volume of the delta sediment pile into two parts, the delta plain, which is above current lake level and the subaqueous delta wedge (represented by the clinoforms). The area of the delta plain is 0.29 km^2. Based on the GPR data, the estimated average thickness of the deltaic sequence is 5 m, thus the

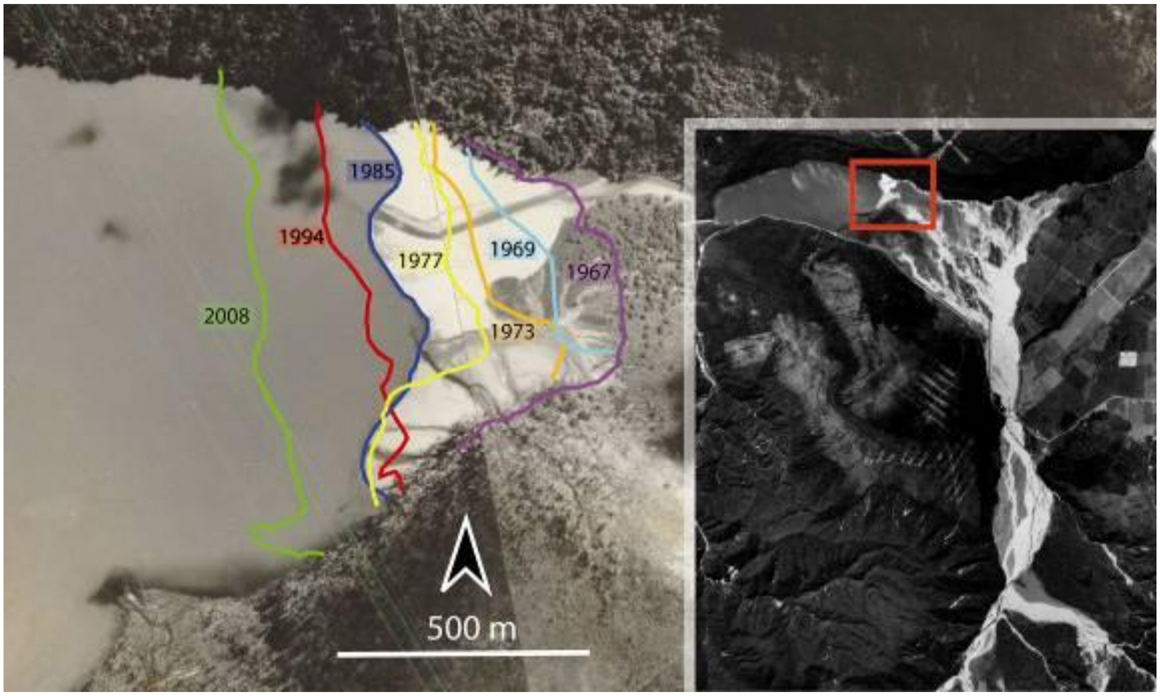


Figure 2.6. Growth of the Lake Wahapo delta since 1967 based on interpretation of aerial photographs. Base photograph, taken in 1985, provided courtesy of the West Coast Regional Council. The inset photograph was also taken in 1985 and provided courtesy of Land Information New Zealand.

volume of sediment is 1.4 x 10^6 m^3 (Table 2.1). The volume of the subaqueous wedge had to be inferred because no data are available to constrain the thickness of the sediments deposited in the lake. The tangential reflectors of the delta terminate on an unseen horizon, which I interpret to be the original lake bottom. I projected the lake bottom out to meet the lowest dipping reflector to create a realistic wedge model (Fig.

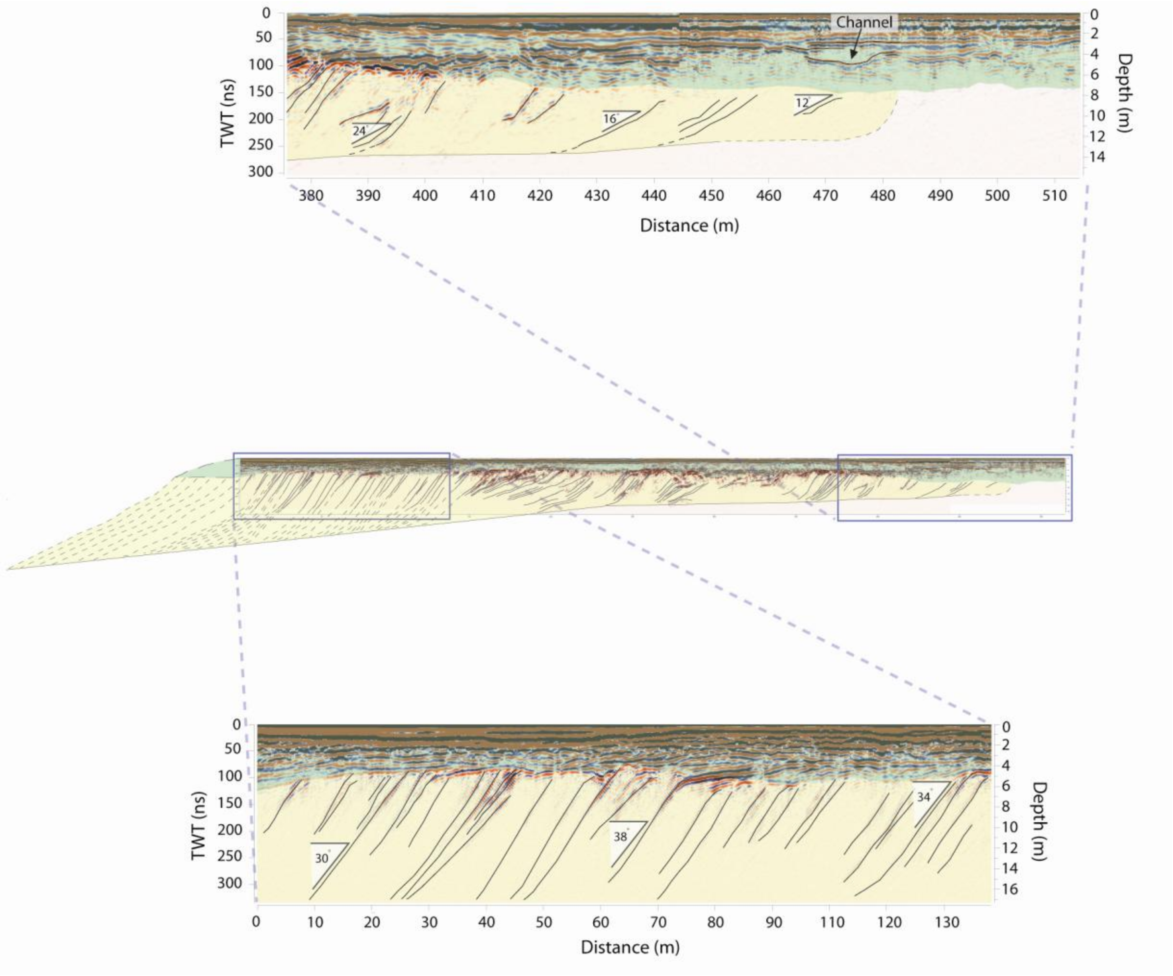


Figure 2.7. GPR profile and interpretive sketch of the Lake Wahapo delta; vertical exaggeration is 2x; specific values on the figure are the true dip angles. Clinoform dip angles range from 12 to 38°. The terminations of the clinoforms cannot be seen at the present lakeshore (left) due to the thickness of the foreset beds in that area. The clinoforms nearer the 1967 lakeshore (right) are conformable to the lake bottom at that time.

2.7). The area of this wedge is 4.4 x 10^5 m^2. Based on this wedge model, I estimate the average thickness of the deltaic sequence to be 5 m. The volume of sediment deposited in the wedge thus is about 2.2 x 10^6 m^3 and the estimated total volume of sediment deposited in the delta sector is about 3.6 x 10^6 m^3 (Table 2.1).

2.4.2.4 Inactive fan outside the existing stop banks on the east and west

Stop banks were constructed on the fan in the early 1980s to prevent Waitangitaona River from returning to its pre-1967 course. Between 1967 and the time the stop banks were built, areas both to the east and west received sediment. No GPR data were collected in these areas, but the depth of sediment was determined from 1) the elevation differences on opposite sides of both the east and west stop banks and 2) the thickness of post-1967 sediment inside the two stop banks, as determined from the GPR

Table 2.1. Sediment volume estimates for the five areas of the Waitangitaona fan and delta.

Sector	**Average depth (m)**	**Area (m^2)**	**Volume (m^3)**	**Percent of total area**	**Percent of total volume**
Active fan north of SH6 bridge	4.0	3.2 x 10^6	1.3 x 10^7	47.4	50.0
Braidplain south of SH6 bridge	4.0	1.9 x 10^6	7.6 x 10^6	28.0	29.5
Delta plain	5.0	2.9 x 10^5	1.4 x 10^6	4.5	5.6
Subaqueous delta (wedge)	5.0	4.4 x 10^5	2.2 x 10^6	6.5	8.6
Outside stop bank (east)	1.75	7.9 x 10^5	1.4 x 10^6	11.8	5.4
Outside stop bank (west)	1.75	1.3 x 10^5	2.3 x 10^5	1.9	0.9
Total		**6.7 x 10^6**	**2.6 x 10^7**		

survey. The average difference in elevation is 2.25 m, which, together with a 4-m thickness inside the stop banks, suggests a sediment depth of 1.75 m for both sections. The areas of OSE and OSW are, respectively, 7.9 x 10^5 and 1.3 x 10^5 $m^{2.}$ The corresponding volumes are 1.39 x 10^5 m^2 and 2.27 x 10^5 m^2 (Table 2.1).

2.4.3 Backhoe Trenching

Backhoe trenching provided information on the elevation of the local water table and the rooting level of a buried in-situ tree. The backhoe operator was able to extend the edge of the bucket under the bole of the tree along survey line WA5-17 (Fig. 2.3). The base of the tree represents the 1967 pre-avulsion surface. The depth to the rooting level was 3.8 m, which is in agreement with the results from the GPR survey.

2.4.4 Sediment Yield and Denudation Rate

The total volume of post-1967 coarse sediment (gravel and sand) is 2.6 x 10^7 m^3. This volume corresponds to an apparent average coarse sediment discharge of 625,000 m^3 a^{-1} and a specific coarse sediment yield for the watershed of 30,000 t km^{-2} a^{-1} (Table 2.2). Annual sediment discharge was calculated by dividing the total post-1967 sediment volume by the number of years over which it accumulated (41 years). The specific sediment yield was determined by multiplying the sediment discharge by the bulk density, in this case 1.8 t m^{-3} and then dividing this value by the catchment area: sediment yield = (sediment discharge x bulk density) / catchment area. Three-fourths of this sediment was deposited on the active fan surface between Gaunt Creek and the 1967 shoreline of Lake

Wahapo. This part of the fan has aggraded 3.69 m since 1967, an average rate of 0.09 m a^{-1}.

Changes in elevation of the bed of Waitangitaona River have been monitored by the West Coast Regional Council (WCRC) using cross-section survey data acquired in 1982, 1992, and 2001. The data show that the channel aggraded about 2 m between 1982 and 2001 (Korup 2004; Korup et al. 2004), an average rate of about 0.11 m a^{-1}. This rate is agreement with the longer term average determined in this study.

Table 2.2. Coarse sediment yield for the Waitangitaona River watershed.

Apparent coarse sediment discharge (m^3 a$^{-1)}$	625,000
Specific coarse sediment yield (t km^{-2} a-^{1})	30,000
Denudation rate (mm a^1)	5.1
Fan aggradation (m a^{-1})	0.09

It is necessary to consider the porosity of the deposited sediments when determining denudation rates from sediment yield values. Assuming that the coarse sediment that was eroded and then deposited has a porosity of 0.39 (Kamann et al. 2007), the average annual denudation rate for the watershed based on the coarse sediment fraction alone is 5.1 mm a^{-1}. It is clear, however, that the actual denudation rate is significantly greater than this because I do not account for silt and clay in my sediment budget. It is also clear that denudation differs widely throughout the watershed, because much of the sediment delivered to the coastal plain in South Westland is derived from small areas affected by landslides.

2.5 Discussion

2.5.1 Sediment Yields and Denudation Rates

Specific sediment yields and denudation rates for the Waitangitaona River watershed have been estimated by Griffiths and McSaveney (1986), Hovius et al. (1997), and Korup et al. (2004) (Table 2.3). Griffiths and McSaveney (1986) applied a simple equation based on trapping efficiency to estimate sediment yield. Their estimate of trapping efficiency of 0.53 was based on sediment samples taken from the Lake Wahapo delta and the Gaunt Creek slip. For the period 1968-1984, they calculated a denudation rate of 4.6 mm a^{-1} and a specific sediment yield of 12,500 t km^{-2} a^{-1}.

Hovius et al. (1997) estimated denudation rates in the Waitangitaona River watershed by identifying, characterizing, and mapping landslides on aerial photographs. Their estimates of denudation and sediment yield over the entire watershed for the period 1948-1985 are, respectively, 18.1 mm a^{-1} and 1.1×10^6 m^3 a^{-1}. They applied a similar approach to 13 nearby catchments in South Westland, all of which are larger than the Waitoangitaona River watershed or have a significant glacier in their headwaters (e.g., Franz Joseph Glacier in the Waiho River catchment). Six of the 13 catchments have higher sediment yields than the Waitangitaona River watershed.

The average denudation rate calculated by Hovius et al. (1997) more than three times that of my estimate and four to nearly five times that of other estimates summarized in Table 2.3. The estimate of Hovius et al. (1997) is based on landslides mapped using aerial photographs. It thus includes fine as well as coarse sediment. This study, however, only accounts for the coarse fraction of the denuded sediment and therefore the estimate of the average denudation rate is lower.

Table 2.3. Comparison of estimates of sediment yield and denudation rates for the Waitangitaona River watershed.

Study	**Sediment discharge (m^3 a^{-1})**	**Average sediment yield (t km^{-2} a^{-1})**	**Denudation rate (mm a^{-1})**	**Period**
Griffiths and McSaveney (1986)	347,000	12,500	4.6	1968-1984
Hovius et al. (1997)	1,100,000	45,400	18.1	1948-1986
Korup et al. (2004)	289,000	11,500	3.9	1968-2001
This study	625,000	30,000	5.1	1967-2008

Korup et al. (2004) used digital elevation models and estimated trapping efficiency value to calculate the amount of sediment produced by landslides in the Waitangitaona catchment. Their estimates of sediment discharge and average sediment yield were derived from the same deposit surface that I used. Their estimates of sediment yield and denudation are similar to those of Griffiths and McSaveney (1986), but span a longer period.

Hicks et al. (1996) estimated specific sediment yields for South Westland watersheds, although not the Waitangitaona River catchment. Their values range over four orders of magnitude, from 1.7 to 29,600 t km^{-2} a^{-1}. The specific sediment yield that I calculated for the Waitangitaona catchment is at the upper end of this range and likely reflects episodic sediment delivery from the Gaunt Creek slip rather than uniform denudation of the entire catchment.

Korup et al. (2004) attempted to isolate landslide-derived sediment from sediment produced by steady-state erosion in the Waitangitaona River watershed. A comparison of the two sources of sediment is difficult, because the short historical observation period confounds attempts to reliably quantify average recurrence intervals for landslides of different sizes (Korup et al. 2004).

Davies and Korup (2007) estimated a sediment discharge rate from the Gaunt Creek slip of 1.6×10^5 m^3 a^{-1}. Extrapolated over 40 years, this rate would provide about 39 percent of the total sediment volume determined in this study.

2.5.2 Error and Uncertainty

I acknowledge several assumptions and sources of error. I assumed that the depth of post-1967 sediment in each of the five parts of the Waitangitona fan is constant. A range of depths, however, is likely within each of the five areas. The mean sediment depth for each area is based on the GPR data and may be in error by up to 15 percent.

The study does not take into account the suspended load transported by Waitangitaona River and deposited in Lake Wahapo. The ratio of suspended sediment load to the total sediment load can range from 10 to 90 percent for mountain streams (Lauffer and Sommer 1982; Whittaker 1987; Diez et al. 1988; Billi et al. 1998).

2.5.3 Threat to the SH6 Bridge and Wahapo Dam

Continued aggradation of the Waitangitaona River floodplain poses a threat to the SH6 bridge. As sediment continues to accumulate on the floodplain and as the river channel lengths due to extension of the Lake Wahapo delta, the freeboard between the river channel and the bridge deck will decrease. With a reduced freeboard, the bridge is more vulnerable to damage or destruction during an extreme flood. The bridge is vulnerable, however, even without continued aggradation. A shift in the location of the channel beneath the bridge, accompanied by incision, could erode the bridge piers. In 1982, channel incision undermined a pier of the SH6 bridge over Waitangitaona River, causing the collapse of the pier and two spans (Griffiths and McSaveney 1986).

A small hydroelectric facility was built at the outlet of Lake Wahapo after the Waitangitaona River avulson to take advantage of the greatly increased inflow into lake. In an effort to understand the how fast the lake is filling with sediment, I estimated the volume of the lake by multiplying the area of the lake by my estimate of average water depth based on the wedge model described in section 2.4.2.3. Since 1967, about 7.9×10^6 m^3 of sediment have been deposited in the lake and the delta has advanced nearly 600 m towards the lake outlet. At present rates, Lake Wahapo will become completely filled with sediment in about 300 years, but the hydroelectric facility will become inoperable long before this due to reduced storage capacity and the passage of silt and clay through the turbines. My estimate of filling time is too high because I was unable to include the unknown amount of suspended sediment that has accumulated on the lake bottom. A future study of the volume of sediment that has been deposited on the lake bottom since 1967 would provide a better estimate of the time that will pass before the lake becomes filled with sediment.

2.6 Conclusions

The unique combination of an avulsion event and subsequent flow confinement by stop banks facilitated quantification of sediment deposited on the Waitangitaona River fan since 1967. I performed a ground-penetrating radar survey of the fan to determine the thickness of sediment deposited above the 1967, pre-avulsion surface. The survey, in conjunction with comparative air photo analysis, a differential GPS survey, and backhoe trenching, allowed me to estimate the total volume of sediment deposited on the confined floodplain since 1967. I estimated average annual sediment discharge and denudation based on this sediment volume. The values are within the range of those reported in three previous studies of the Waitangitaona River catchment. The Gaunt Creek slip is the single most important source of sediment to Waitangitaona River fan. It is responsible for over one-third of the sediment delivered to the fan and caused the avulsion that made this study possible.

CHAPTER 3: DOWNSTREAM EFFECTS OF THE 1999 POERUA RIVER LANDSLIDE DAM FAILURE

3.1 Introduction

Large pulses of sediment introduced to a fluvial system can have a dramatic impact on the morphology of the stream. Landslides are an important source of sediment to streams and, in some instances, block drainage, creating upvalley lakes. Unlike engineered dams, landslide barriers consist of unconsolidated and unsorted materials that are susceptible to failure by piping, collapse, and incision by overflowing waters (Costa 1985; Costa and Schuster 1988). Failures of landslide dams may cause catastrophic flooding, aggradation, and avulsion, and they commonly increase the possibility of subsequent flooding in downstream areas (Hancox et al. 2005).

Many rivers in South Westland, New Zealand, are subject to blockage by landslides, followed by failure and large fluxes of sediment below the dams. One such river, Poerua River, is the subject of this chapter. On 6 October 1999, a large (10-15 × 10^6 m^3) rock slope failure on the flank of Mt. Adams (2130 m asl) in the Southern Alps blocked Poerua River 11 km upstream of the State Highway 6 (SH6) bridge (Fig. 3.1). The fragmented rock mass descended almost 1800 m into the Poerua River gorge, creating a 80-100-m-high dam that completely stemmed the flow of the river (Hancox et al. 2005). Between 5 and 7 × 10^6 m^3 of water accumulated behind the barrier prior to overtopping late on 7 October 1999. The dam breached during a rainstorm early on the morning of 12 October 1999. The resulting outburst flood had a peak discharge of 2000-3000 m^3 s^{-1} at the breach and a discharge of 800-1000 m^3 s^{-1} at the SH6 bridge (Hancox et al. 2005). Incision of the dam was accompanied by the transfer of large amounts of sand and gravel downstream, both in the mountain valley and on the fan on the coastal plain farther west. Korup et al. (2004) calculated that 7.37×10^6 m^3 of sediment had been deposited in the lower gorge and on the fan by February 2002. Aggradation of the stream channel due to deposition of sediment from the outburst flood on the Poerua River fan led to an avulsion in April 2001 that destroyed 0.9 km^2 of farmland (Korup 2004). By April 2003, the river had returned to its pre-avulsion channel in the center of the valley (Hancox et al. 2005).

The immediate and subsequent (up to 2005) effects of the dam break flood have been previously reported (Hancox et al. 1999, 2005; Korup et al. 2004; Davies and Korup 2007) and will not be repeated here. Instead, I focus on changes to Poerua River between 2005 and 2008, including changes in floodplain level at 34 surveyed cross-sections and changes in sediment input and conveyance along the lower part of the river west of the mountain front. The objective of this study is to document changes in sediment flux towards the end of the first decade following the landslide.

3.2 Study Area

The study area is an 11-km reach of Poerua River extending from the mouth of the Poerua River gorge at the mountain front to a point 5 km downstream of the SH6 bridge (Fig. 3.1). The Poerua River gorge has steep (average = 38–40°) slopes and relief up to 1800 m. The valley walls are densely vegetated, except at sites where landslides and debris flows have occurred in the past several decades. Poerua River is confined in this steep-sided valley as far west as the mountain front; beyond the mountain front, the

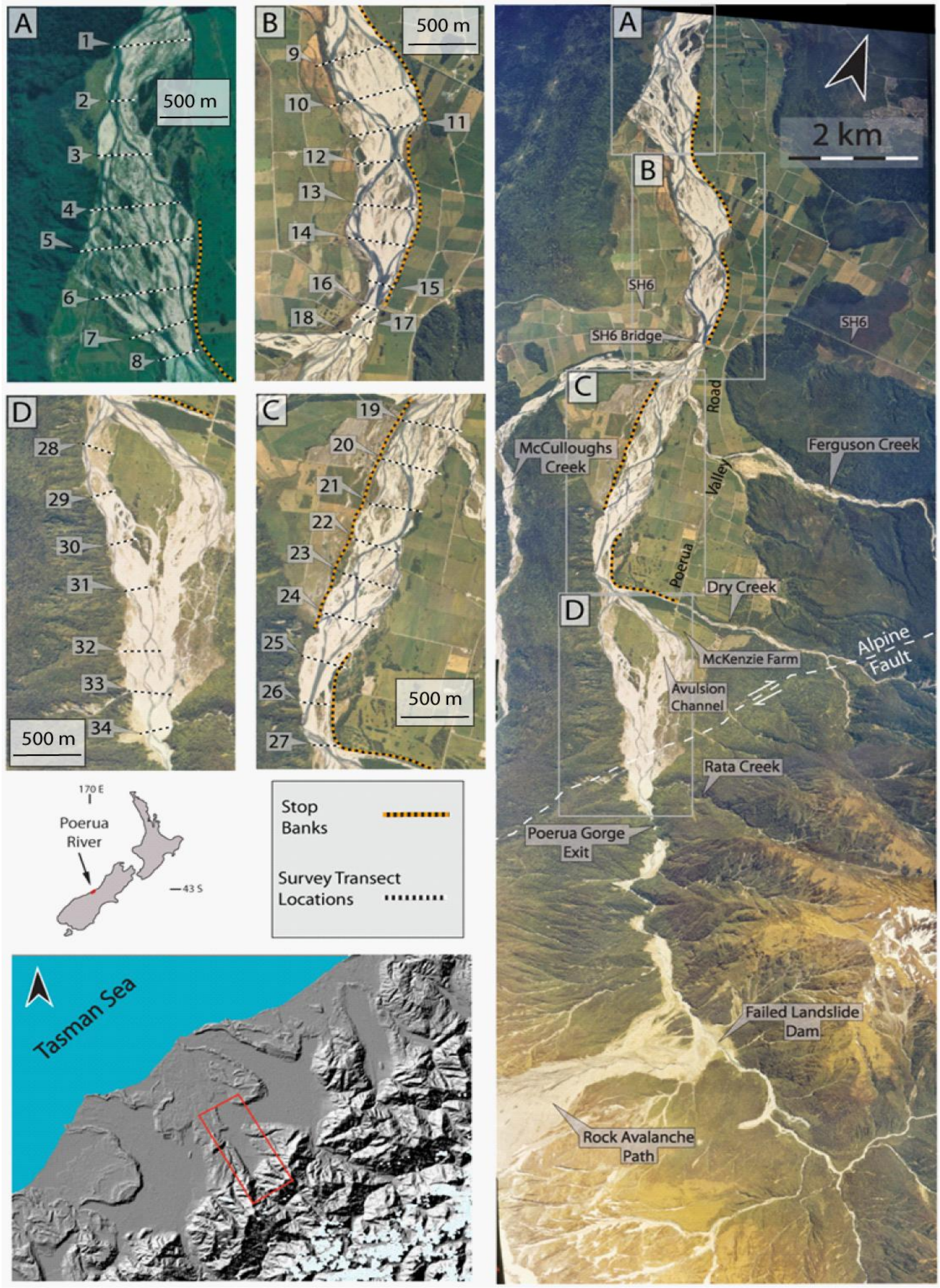


Figure 3.1. Right: Aerial photograph of the study area, showing the site of the 6 October 1999 Mt. Adams rock avalanche and downstream surveyed reaches of the Poerua River in South Westland, New Zealand. Inset shaded relief map shows the location of the aerial photograph (red rectangle). A, B, C, D) 34 surveyed cross-sections. (Aerial photograph (flown by Air Logistics Ltd) provided by Tim Davies.)

river flows across a low-gradient fan onto the coastal lowland bordering Tasman Sea. This part of the river is characterized by a braided planform with gravel-armoured channels. In this area, the floodplain is bordered by large lateral moraines deposited during several Pleistocene glaciations. Precipitation in the headwaters of the watershed is up to 11 m a^{-1} (Griffiths and McSaveney 1986), with snow dominating at higher elevations during the austral winter (Hancox et al. 2005). Bedrock consists of metamorphosed and deformed greywacke; the metamorphic grade increases close to the Alpine Fault (Norris and Cooper 1997).

3.3 Methods

Changes in the level of the Poerua River channel were monitored at 34 cross-sections across the channel by the West Coast Regional Council (WCRC) between 1999

Figure 3.2. Topographic survey of Poerua River just above the SH6 bridge. Data are being gathered by the rover component of the Top Con dGPS system. Mt. Adams is the high peak in the background. (Photograph by Michelle Hanson, 2008).

and 2005. These data have been used to estimate the amount of sediment delivered and transported along the surveyed reach of the channel and the amount of aggradation or degradation at each cross-section. Data were first collected in May 1999 before the dam-break flood, and the cross-sections were resurveyed in June 2000, December 2000, January 2001, February 2002, August 2003, and July 2005. All 34 cross-sections were surveyed only in February 2002, July 2005, and May 2008. The other surveys included 17-33 cross-sections, all located between the SH6 bridge and the mountain front.

I re-surveyed the 34 cross-sections in May 2008 using a TopCon dGPS HiPer L1 system and a local datum (NZGS 1949) (Fig. 3.2). The dGPS system consists of a base station and a rover. An iron pipe that the original surveyors used to mark the beginning of each cross-section was used to geo-reference the section. In order to check the accuracy of the dGPS system before each survey, neighbouring iron pipes were surveyed. I collected survey points in real time kinematic (RTK) mode, which provides an accuracy of 10 mm in the horizontal plane and 15 mm vertically. Bed elevation data were automatically collected, arbitrarily, every 2 m along the profiles; additional data were collected manually at points of significant change in elevation between the 2-m collection points. Methods employed to ensure the most accurate results included using a large number of satellites for locations, optimal dilution of precision (DOP), and lengthy occupation of measurement positions.

I derived the average elevation along each cross-section from the mean of all data points collected over each transect. Volumetric estimates of the net sediment flux were obtained by multiplying the mean elevation by the area between each cross-section.

3.4 Results

Because all 34 cross-sections were surveyed only in February 2002, July 2005, and May 2008, I focus here on an analysis of floodplain and active channel levels and sediment volume changes at cross-sections 17-34, which were surveyed eight times between 1999 and 2008. The initial survey in May of 1999, approximately five months before the rock avalanche, provided the pre-event floodplain elevations to which all the other surveys were compared.

3.4.1 Floodplain Elevation Changes

3.4.1.1 Changes in cross-sections 17-34 since 1999

Floodplain elevations generally remained above their May 1999 levels between the time of the landslide and at least 2005 (Table 3.1; Fig. 3.3). Hancox et al. (2005) reported that from 1999 to 2002, the cross-section surveys show a substantial change in the floodplain, with a maximum elevation rise of 4 m. Aggradation of the fan was continuing in 2005, causing damage to farmland (Davies and Korup 2007). Between 2005 and 2008, however, floodplain elevations dropped below their pre-landslide levels at six cross-sections, with the greatest decrease (0.38 m +/- 15 mm) recorded at cross-section 21. The results indicate that the distal part of the fan was incised between 2005 and 2008.

Further evidence for recent fan incision is provided by comparing bed elevations between successive surveys. The data show an increasing number of negative changes (lowering of floodplain levels) over time (Table 3.2; Fig. 3.4). Not all cross-sections,

Table 3.1. Change in mean floodplain elevations relative to May 1999 (in m ± 15 mm).

Cross-Section #	Distance above SH6 bridge (km)	Survey date Jun-00	Dec-00	Feb-02	Aug-03	Jul-05	May-08
17	0.06	0.12	0.10	0.29	0.01	1.00	-0.05
18	0.24	0.08	0.10	1.17	1.18	0.94	0.21
19	0.63	0.28	0.15	0.71	0.30	0.32	0.24
20	1.05	-0.03	0.20	0.29	0.00	0.04	-0.14
21	1.37	0.25	0.32	0.40	0.29	0.34	-0.38
22	1.78	0.15	0.24	0.25	0.38	0.31	-0.25
23	2.17	0.19	0.23	0.38	0.30	0.40	0.36
24	2.58	0.35	0.19	0.17	0.41	0.32	0.48
25	2.97	0.44	0.50	0.65	0.69	0.65	0.46
26	3.37	0.32	0.37	0.32	0.16	0.10	-0.07
27	3.77	0.33	0.32	0.33	0.35	0.57	-0.07
28	4.17	0.33	0.20	0.41	0.34	0.23	0.31
29	4.57	1.02	1.01	1.18	0.99	0.85	0.74
30	4.99	0.47	0.70	0.88	0.81	0.89	0.98
31	5.46	1.09	1.29	1.68	1.91	2.04	2.02
32	5.98	3.18	3.34	3.25	4.11	4.76	4.00
33	6.34	1.70	2.13	2.13	2.46	3.31	3.92
34	6.79	2.27	2.58	2.93	4.72	2.93	0.79

however, lowered in level. Some cross-sections showed an increase in mean bed level. Cross-section 33 had the largest increase – 0.61 m. In addition, the bed level at cross-section 33 increased between each survey after June 2000, except for the period between December 2000 and February 2002 when it was unchanged (Table 3.2). The consistent increase in mean bed level for section 33 could be due to rapid trenching of the fan between the initial deposition of outburst flood sediment and the first survey in June 2000. In addition, only the active channel, not the inactive post-dam break terraces, was surveyed, and only the current active channel has been aggrading.

The floodplain at cross-section 34, nearest the mountain front, was highest in 2003 and has lowered since then. It experienced the largest decrease (2.15 m) of all

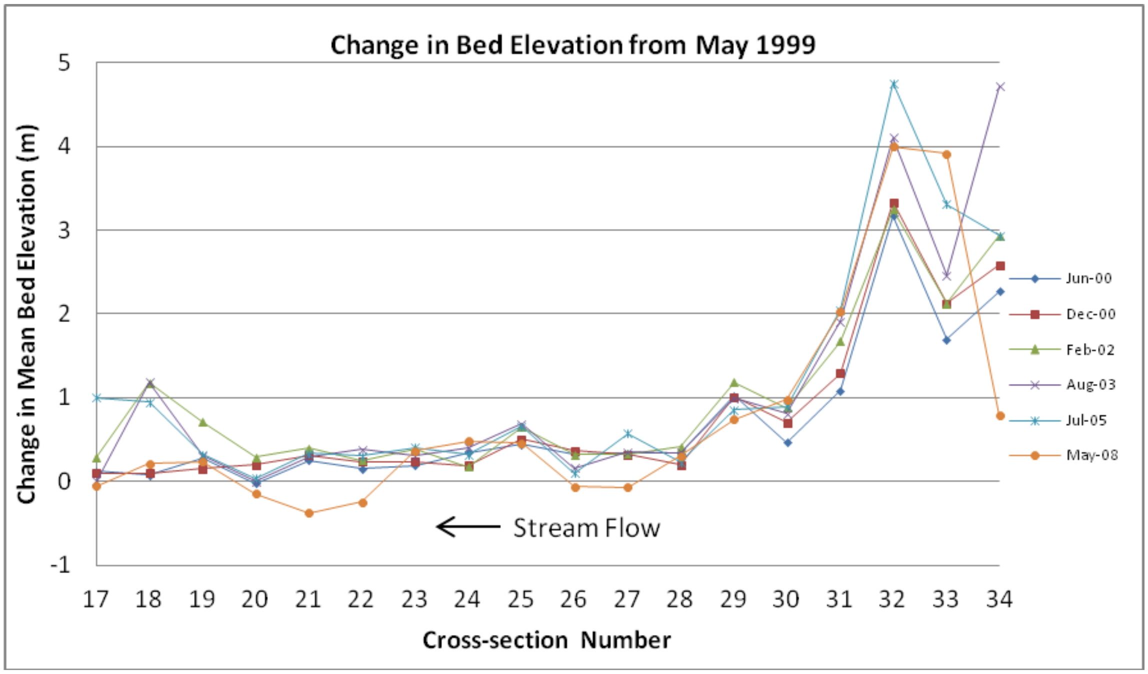


Figure 3.3. Changes in elevation of the floodplain of Poerua River between the mountain front and the SH6 bridge, relative to May 1999. See Figure 3.1 for location of sections and Table 3.1 for distances of sections of SH6 bridge.

cross-sections between 2005 and 2008. Davies and Korup (2007) reported that the sediment pulse resulting from the breach of the Poerua River landslide dam passed the mountain front at cross-section 34 in 2005. They attributed the change from aggradation to incision at this site to trenching of the fan head, which had been oversteepened due to aggradation from the initial dam break flood wave (Fig. 3.5). The aggraded fan head steepened, and after five years the river incised the fan. However, at cross-section 33, 454 m downstream from cross-section 34, the bed was higher than at any time since the landslide. The difference in response at the two cross-sections can be explained by a downstream migration of the sediment pulse from cross-section 34 to cross-section 33 between 2005 and 2008.

Table 3.2. Change in mean bed elevation from the preceding survey (in m ± 15 mm).

Cross-section #	Distance above SH6 bridge (km)	Survey date Jun-00	Dec-00	Feb-02	Aug-03	Jul-05	May-08
17	0.06	0.12	-0.02	0.19	-0.28	0.99	-1.05
18	0.24	0.08	0.02	1.08	0.01	-0.24	-0.73
19	0.63	0.28	-0.12	0.56	-0.41	0.02	-0.08
20	1.05	-0.03	0.23	0.09	-0.29	0.04	-0.18
21	1.37	0.25	0.06	0.08	-0.10	0.04	-0.72
22	1.78	0.15	0.09	0.01	0.13	-0.07	-0.56
23	2.17	0.19	0.04	0.15	-0.08	0.10	-0.04
24	2.58	0.35	-0.16	-0.01	0.23	-0.09	0.16
25	2.97	0.44	0.06	0.15	0.04	-0.04	-0.20
26	3.37	0.32	0.05	-0.05	-0.16	-0.06	-0.16
27	3.77	0.33	-0.01	0.01	0.03	0.22	-0.64
28	4.17	0.33	-0.14	0.22	-0.07	-0.11	0.08
29	4.57	1.02	-0.01	0.17	-0.19	-0.14	-0.11
30	4.99	0.47	0.24	0.17	-0.06	0.08	0.08
31	5.46	1.09	0.20	0.39	0.24	0.13	-0.02
32	5.98	3.18	0.16	-0.09	0.86	0.65	-0.76
33	6.34	1.70	0.43	0.00	0.33	0.85	0.61
34	6.79	2.27	0.31	0.35	1.79	-1.78	-2.15

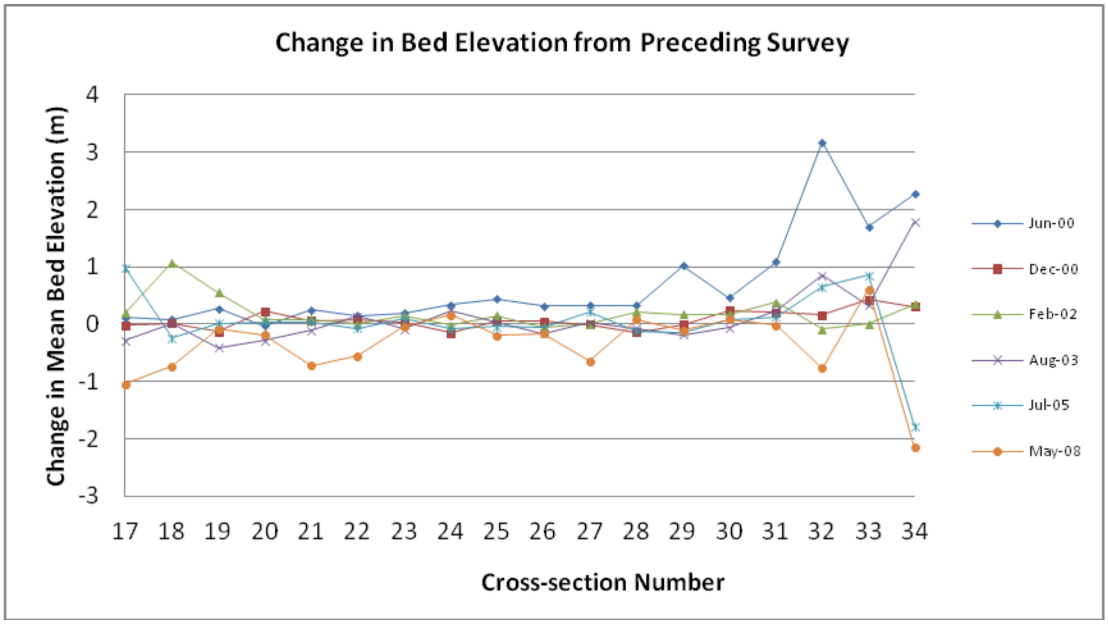


Figure 3.4. Sequence of changes in bed level at cross-sections 17 to 34 from 1999 to 2008. See Figure 3.1 for location of sections and Table 3.1 for distances of sections of SH6 bridge.

Griffiths (1993) and Madej and Ozaki (1996) forecast that aggradation at the SH6 bridge (cross-section 17) would increase in the future. However, although there was a 1 m increase in mean floodplain level at the bridge between 1999 and 2005, the 2008 survey showed a decrease of 1 m between 2005 and 2008. The decrease in floodplain level at most other sections suggests that aggradation is no longer an issue, barring another landslide or an extreme flood in the watershed.

Figure 3.5. Poerua River fan head, showing trenching of the fan near cross-section 34. The bank at the left is approximately 1.6 m high and separates the 1999 fan surface from the river level in 2008. (Photograph by Tim Davies, 2008).

In summary, most of surveyed reach of Poerua River aggraded from 1999 until 2005, but the river began to incise its floodplain in the following three years. On a smaller scale, floodplain elevation monitoring between 1999 and 2008 has shown a more complex pattern of localized aggradation and degradation due to wave-like movements of sediment downstream (Benda and Dunne 1997).

3.4.1.2 Changes in cross-sections 1-34 since 2002

The Poerua River bed at most of the upper cross-sections (15-34) has lowered since 2002, while the river bed at the lower cross-sections (1-14) has risen (Table 3.3). The data suggest that trenching at the fan head began within several years of the landslide, but that the lower reaches are still aggrading in response to sediment being

Table 3.3. Change in mean bed elevation at all 34 cross-sections since 2002 (in m ± 15 mm).

From 2002 (m)			From the preceding survey (m)		
Cross-section	Jul-05	May-08	Cross-section	Jul-05	May-08
1	0.02	0.09	1	0.02	0.07
2	-0.01	-0.25	2	-0.01	-0.24
3	0.02	-0.31	3	0.02	-0.33
4	0.05	0.06	4	0.05	0.01
5	-0.13	-0.11	5	-0.13	0.02
6	0.06	0.15	6	0.06	0.09
7	0.18	0.20	7	0.18	0.03
8	0.03	-0.11	8	0.03	-0.15
9	0.05	0.49	9	0.05	0.44
10	-0.04	0.12	10	-0.04	0.15
11	0.03	-0.10	11	0.03	-0.13
12	-0.09	-0.11	12	-0.09	-0.02
13	-0.13	-0.11	13	-0.13	0.02
14	-0.03	0.07	14	-0.03	0.10
15	0.05	-0.04	15	0.05	-0.09
16	-0.10	-0.64	16	-0.10	-0.54
17	0.71	-0.34	17	0.71	-1.05
18	-0.23	-0.96	18	-0.23	-0.73
19	-0.39	-0.47	19	-0.39	-0.08
20	-0.25	-0.43	20	-0.25	-0.18
21	-0.06	-0.77	21	-0.06	-0.72
22	0.06	-0.50	22	0.06	-0.56
23	0.02	-0.02	23	0.02	-0.04

24	0.15	0.31	24	0.15	0.16
25	0.01	-0.19	25	0.01	-0.20
26	-0.22	-0.39	26	-0.22	-0.16
27	0.25	-0.40	27	0.25	-0.64
28	-0.19	-0.11	28	-0.19	0.08
29	-0.33	-0.44	29	-0.33	-0.11
30	0.02	0.10	30	0.02	0.08
31	0.37	0.35	31	0.37	-0.02
32	1.51	0.75	32	1.51	-0.76
33	1.18	1.79	33	1.18	0.61
34	0.00	-2.15	34	0.00	-2.15

Table 3.4. Volume (x 1000 m^3) changes between adjacent cross-sections since the dam break event in May of 1999

Between section	Distance from	Survey date					
numbers	SH6 bridge (km)	Jun-00	Dec-00	Feb-02	Aug-03	Jul-05	May-08
17-18	0.24	3	3	6	8	23	-2
18-19	0.63	26	19	32	38	32	34
19-20	1.05	23	33	-10	6	19	8
20-21	1.37	21	49	-24	-6	12	-54
21-22	1.78	35	48	-3	18	23	-63
22-23	2.17	26	36	5	18	26	-9
23-24	2.58	49	39	42	65	62	72
24-25	2.97	49	43	69	86	65	59
25-26	3.37	44	50	64	56	39	23
26-27	3.77	39	41	40	34	39	-8
27-28	4.17	30	23	24	21	26	11
28-29	4.57	61	55	63	49	37	47
29-30	4.99	71	82	88	74	72	85
30-31	5.46	80	103	120	128	146	157
31-32	5.98	293	318	409	434	465	414
32-33	6.34	266	298	354	366	418	422
33-34	6.79	206	245	272	207	213	235

transported downstream from the fan. The changes in the downstream reach, however, are not large, amounting to only decimetres since 2002. Korup et al. (2004) suggested that once the pre-landslide rate of sediment supply was re-established, the river would incise its aggraded fan head. Given enough time and lateral erosion, the elevated fan head will be removed or greatly reduced in size.

3.4.2 Sediment Volume Changes

To calculate changes in sediment volume, I averaged the change in elevation at two adjacent cross-sections and then multiplied the average elevation change by the area between the two cross-sections. I assumed that there was a uniform sediment gain or loss over the area between the two adjacent sections.

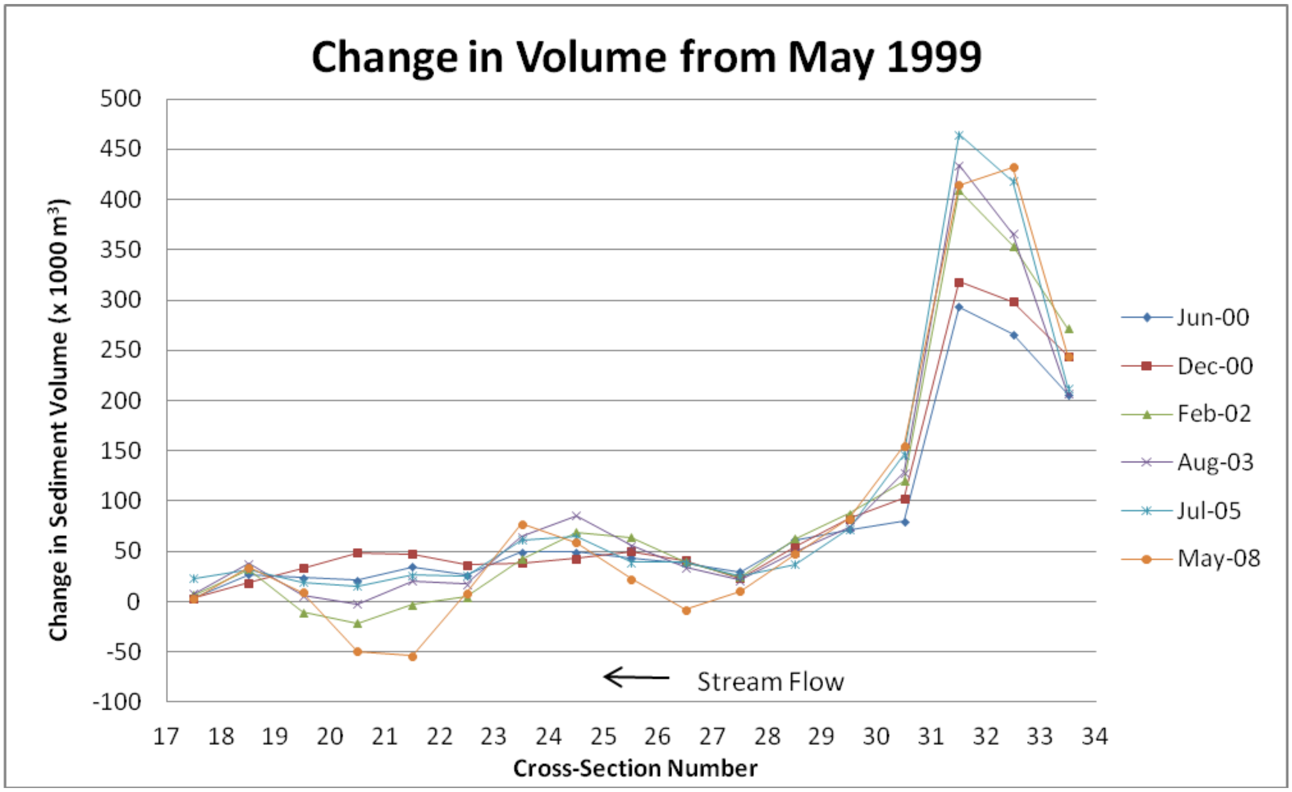


Figure 3.6. Sediment volume changes at cross-sections 17-34 between 1999 and 2008. See Figure 3.1 for location of sections and Table 3.1 for distances of sections of SH6 bridge.

There was little total loss or gain of sediment between cross-sections 17 and 34 between 1999 and 2008 (Table 3.4; Fig. 3.6). The May 2008 survey showed the largest losses, but the total amount of sediment lost from the system is tiny compared to the total amount of sediment introduced by the dam breach event. Ten of the 17 zones between cross-sections 17 and 34 show a decrease in sediment volume between 2005 and 2008. The decrease in volume was largest (8.6 x 10^4 m^3) in the zone between cross-sections 21 and 22 (1.78 km upstream of SH6 bridge) (Table 3.5; Fig. 3.7).

Seven of 17 zones between cross-sections 17 and 34 record a decrease in sediment volume between 2005 and 2008. The largest increase is just below the Poerua River gorge, 7 km upstream from the SH6 bridge. Korup et al. (2004) estimated that

Table 3.5. Volume (x 1000 m^3) changes from the preceding survey.

Section number	Distance from SH6 Bridge (km)	Survey date					
		Jun-00	Dec-00	Feb-02	Aug-03	Jul-05	May-08
17-18	0.24	3	-1	3	2	15	-25
18-19	0.63	27	-8	13	6	-6	2
19-20	1.05	24	10	-44	16	14	-12
20-21	1.37	21	27	-73	18	18	-66
21-22	1.78	35	13	-54	23	6	-86
22-23	2.17	26	10	-32	13	8	-26
23-24	2.58	49	-11	4	23	-3	10
24-25	2.97	49	-6	26	17	-21	-6
25-26	3.37	44	6	14	-8	-17	-17
26-27	3.77	39	2	-1	-6	6	-47
27-28	4.17	30	-7	1	-3	5	-15
28-29	4.57	61	-7	8	-14	-12	10
29-30	4.99	71	11	5	-14	-2	13
30-31	5.46	80	23	17	8	18	11
31-32	5.98	293	25	91	25	31	-51
32-33	6.34	266	32	56	12	52	4
33-34	6.79	206	38	27	-65	6	22

60,000 m^3 of sediment eroded from the landslide dam are stored on intramontane flats within the gorge, upstream of the survey area. Small-scale pulses of sediment mobilized by flooding from this supply of stored sediment may be periodically deposited on the fan at the mouth of the gorge, complicating the overall post-landslide reduction in sediment supply and floodplain lowering.

In summary, most of surveyed reach of Poerua River aggraded from 1999 until 2005, but the river began to incise its floodplain in the following three years. A similar pattern of localized aggradation followed by degradation is shown by the volume data.

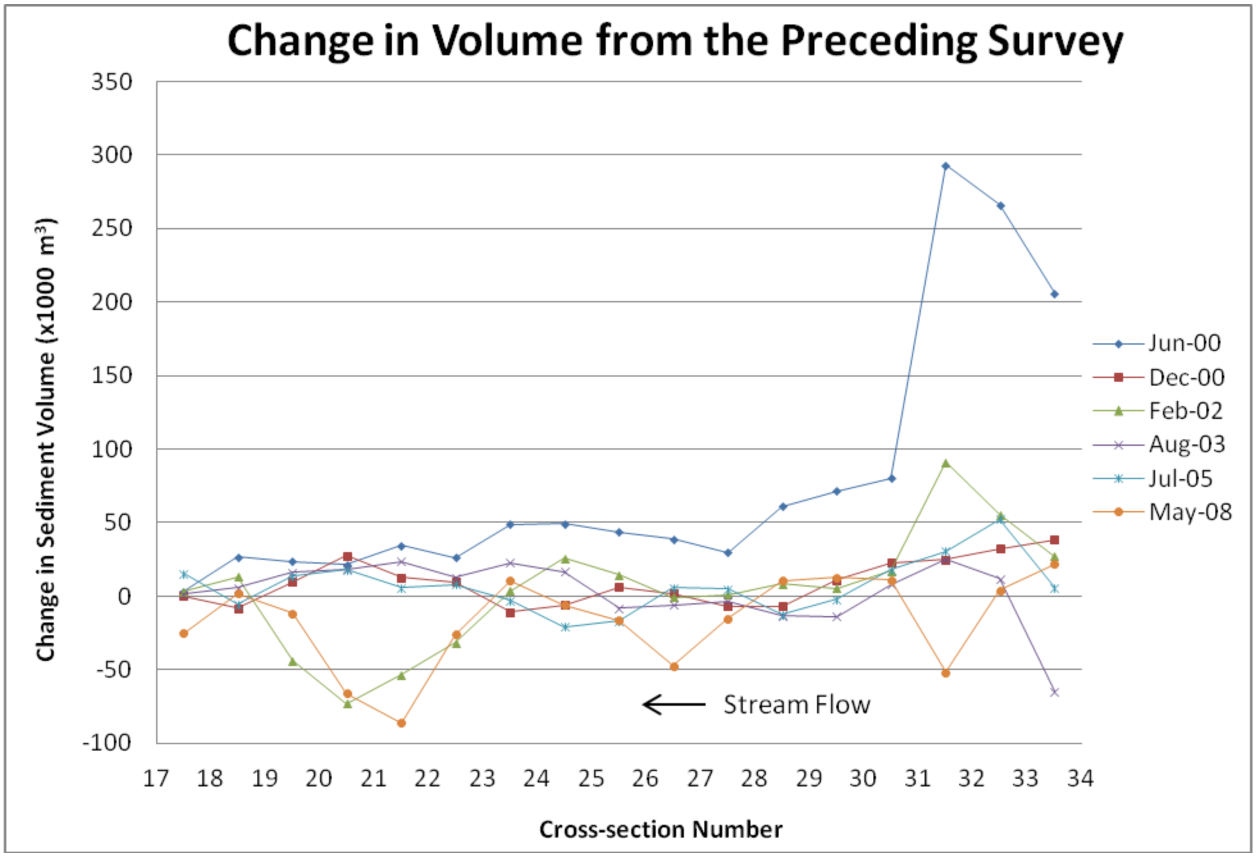


Figure 3.7. Volume changes at cross-sections 17-34 between successive surveys. See Figure 3.1 for location of sections and Table 3.1 for distances of sections of SH6 bridge.

Although the survey revealed a dominant incision trend along the lower Poerua River between the 2005 and 2008, there is a longer temporal pattern of aggradation and degradation since the landslide and dam failure. Comparison of the 2002 and 2005 survey data reveal six cross-sections with an inferred decrease in sediment volume, whereas ten cross-sections record a decrease in volume between 2005 and 2008.Comparison of the 2005 and 2008 surveys, however, does not show a consistent spatial pattern of aggradation and degradation **(**Table 3.5). This fluctuating pattern is similar to the pattern of wave-like movements displayed by the channel bed level data.

3.4.3 Sediment Discharge

The total volume of sediment deposited on the Poerua River fan (cross-sections 17-34) from February 2002 to July 2005 is ~ 169,000 m^3. The average sediment volume over this approximately 3.5-year period is about 49,500 m^3 a^{-1} (Table 3.6). In the following three years, from July 2005 to May 2008, there is a net loss of sediment from the Poerua River fan of about 279,000 m^3 or 98,500 m^3 a^{-1}.

Table 3.6. Net sediment delivery to the Poerua River fan (cross-sections 17-34).

Period	Months	Total sediment volume (m^3)	Average annual sediment volume (m3 a^{-1})
February 02 – July 05	41	169,000	49,500
July 05 - May 08	34	-279,000	-98,500

The sediment budget for all cross-sections is similar (Table 3.7). From February 2002 to July 2005, 208,000 m^3 of sediment were deposited within the survey area, which is equal to an average annual value of 61,000 m^3. From July 2005 to May 2008, -378,000 m^3 of sediment was lost from the total surveyed reach, equal to 134,000 m^3 a^{-1}.

Table 3.7. Net sediment delivery for all 34 cross-sections.

Period	Months	Total sediment volume (m^3)	Average annual sediment volume (m^3 a^{-1})
February 02 - July 05	41	208,000	61,000
July 05 - May 08	34	-378,000	-134,000

3.5 Discussion

3.5.1 Sediment Discharge and Sediment Yield

Korup et al. (2004) estimated sediment discharge rates for the first three years following the Mt. Adams landslide. They found that the average sediment discharge rate for the Poerua River watershed between May 1999 and February 2002 was about twice that of several other Westland watersheds (Table 3.8). Between 2002 and 2008, however, Poerua River sediment discharge decreased to values of neighboring watersheds (Hicks et al. 1996).

These estimates are conservative; they do not include sediment stored in the Poerua River gorge between the landslide dam and the apex of the Poerua River fan. Neither this study nor Korup et al. (2004) includes sediment deposited in the avulsion channel on the Poerua River fan from April 2001 to April 2003.

A river removes aggraded sediment following a disturbance event to re-establish equilibrium (Miller and Benda 2000). Griffiths (1979) observed channel aggradation followed by incision along Waimakariri River in New Zealand following bank failures. Madej and Ozaki (1996) documented channel aggradation, subsequent degradation, and channel widening along Redwood Creek in California after sediment supply increased due to bank erosion. As a river incises its bed, however, the channel may become armoured with coarse gravel or boulders, impeding or stopping further incision. Miller and Benda (2000) noted channel widening, braiding, and fining of bed material the introduction of sediment into the Gate Creek in Oregon by debris flows. After the sediment influx had passed they noted channel incision down to an immobile, armoured bed load. Poerua River may show a similar response, and its channel on the fan head may not reach the level it had before the dam break flood for decades or longer. Similar effects of a dam break flood in the Rocky Mountains persisted for more than a decade (Bathurst and Ashiq 1998). Morche and Schmidt (2011) found that studies of the post dam-break effects on fluvial systems must span more than a decade to definitively conclude that the system has returned to a pre-failure state.

Landslide dams pose significant hazards to settlements and farmland downstream (Davies and Scott 1997). Outburst floods from landslide-dammed lakes are an obvious hazard; less appreciated is the hazard posed by the greatly increased sediment supply following breaching of the landslide dam. When sediment input to a river reach is greater than output from the reach, the river responds by aggrading and widening its channel or by avulsing (Madej and Ozaki 1996). Later, the river incises the aggradational fill along

Table 3.8. Average sediment delivery to cross-sections 17-34 (modified from Korup et al. 2004).

Period	Duration (months)	Contributing watershed area (km^2)	Sediment volume input (m^3)	Apparent sediment discharge (m^3 a^{-1})[a]	Specific sediment yield (t km^{-2} a^{-1})[b]	Source
May 99 - November 99	6	59	932,800	1,865,600		Korup et al. 2004
					57,000	This study
November 99 - June 00	7	59	342,700	587,500		Korup et al. 2004
					18,000	This study
June 00 - December 00	6	59	165,500	330,900		Korup et al, 2004
					10,000	This study
December 00 - February 02	14	59	163,400	140,100		Korup et al. 2004
					4300	This study
February 02 - August 03	18	59	52,700	35,200	1100	This study
August 03 - July 05	23	59	116,600	60,800	1900	This study
July 05 - May 08	34	59	-279,000	-98,500	-3,000	This study
May 99 - May 08	108	59	1,438,200	159,800	4,900	This study

[a] Not corrected for trap efficiency.
[b] Bulk density assumed at 1.8 t m^{-3}.

its steepened channel (Schuster 2006). Poerua River responded in this manner after the Mt. Adams landslide. This study shows that the river is no longer aggrading over much of the surveyed reach and is approaching a new equilibrium.

3.5.2 Error and uncertainty

I acknowledge several assumptions and sources of error. First, measurements taken with the TopCon dGPS instrument have possible errors. A range of 0.0003 m up to 1.2 m in uncertainty, although the 1.2 m error was an outlier and was discarded from the data set. In addition, I assumed that each measurement was recorded with the utmost accuracy. Second, I assumed that the volume of sediment lost or gained between adjacent cross-sections is uniform. Thickness values used to calculate volumes were averages of those determined at the two closest cross-sections**.** Third, I do not take into account sediment that was deposited in the avulsion channel. The volume of sediment in this channel could amount to as much as 15% of the total sediment volume. Fourth, sediment volume estimates were not made for the entire active channel, from margin to margin. My estimate of sediment that not been accounted for due to incomplete surveying is 23%. Fifth, the volume estimates are entirely changes in sediment bedload. Finally, I did not perform the cross-section surveys prior to 2008. I assume that the data collected between 1999 and 2005 are accurate.

These sources of uncertainty and error could affect my results and conclusions made. Measurement errors, either my own or those of previous surveys, would affect the bed levels and volume estimates. Considering that some of the changes are as small as several centimeters, some of my statements regarding incision and aggradation could be compromised. Only at the apex of the fan, where the changes are on a meter scale, are my conclusions unassailable. Any error in the survey measurements would have an effect on the volume estimates. At any rate, the sediment volume estimates are conservative because the entire stream reach affected by the outburst flood was not included in the volume calculations

3.5.3 Threat to the SH6 Bridge

Hancox et al. (2005) reported only a minor (<0.5 m) build-up of sediment at the SH6 bridge following the 1999 Mt. Adams landslide. They stated that the threat to the bridge would increase as the sediment pulse moved downstream. My study, however, shows that the mean bed elevation adjacent to the bridge has been decreasing since 2002, with a total lowering of 0.63 m since then. Thus there appears to no threat to the bridge from aggradation. However, although the channel is incising near the SH6 bridge, the average level of the channel is still higher than it was before the landslide. With a reduced freeboard, the bridge is more vulnerable to damage or destruction during a major flood.

3.6 Conclusion

The debris dam emplaced during the1999 Mt. Adams rock avalanche had a major impact on Poerua River. I supplemented previous topographic surveys with dGPS measurements taken in June 2008 to track the downstream redistribution of sediment from the debris dam and the return of Poerua River to equilibrium. I estimated total sediment discharge and sediment yield at each of 34 surveyed cross-sections. Data collected over the period of a decade show aggradation occurring widely up to six years after the dam-break event, but incision becoming dominant three years later. In addition, the sediment flux in the first two years after dam breach was high, but it returned to values similar to those in adjacent watersheds nine years later. Within this overall pattern of aggradation followed by degradation are smaller-scale, wave-like movements of sediment over shorter distances within the surveyed reach. A decade is too short to fully document the return of a river to equilibrium following a dam-break event.

Future repeat surveying of the cross-sections will allow the continuing reduction in sediment supply below the landslide barrier to be documented. Because the cross-sections were first surveyed shortly before the landslide, continued surveying offers a singular opportunity to examine the impact of a large landslide on a river.

CHAPTER 4: DISCUSSION AND CONCLUSION

Both of the study areas experienced disturbances from mass-wasting events, but the disturbances differ in magnitude and character. The Waitangitaona River watershed was affected by the Gaunt Creek slip. This landslide increased sediment delivery to the lower reaches of the river and triggered an avulsion of the river channel and aggradation of the floodplain. After 40 years, the lower Waitangitaona River fan is still aggrading in response to the landslide. Poerua River was dammed by a rock avalanche from Mt. Adams in 1999. Failure of the landslide dam delivered large amounts of sediment to the fan at the west front of the Southern Alps, causing rapid aggradation (up to 4 m) over the next six years. Subsequently, the river began to incise the fan as the supply of sediment from the landslide dam diminished.

Sediment yield also differs in the two watersheds. The average sediment yield in the Waitangitaona River watershed over the four-decade period of my study is 30,000 t km^{-2} a^{1}. The sediment yield in the Poerua River watershed, largely associated with breaching of the Mt. Adams landslide dam, reached a maximum of 57,000 t km^{-2} a^{-1} between May 1999 and November 1999, but decreased to 1900 t km^{-2} a^{-1} by July 2005 (the average sediment yield from May 1999 to May 2008 is 4900 t km^{-2} a^{-1}). The difference in annual sediment yield between the two study areas is almost an order of magnitude, which is unusual considering that the two watersheds have the same physiographic, geologic, and tectonic settings. Sklar and Dietrich (1998 2004) noted that landslide dams greatly impact sediment flux along a stream because upstream sediment is trapped in natural reservoirs. The reduction in sediment supply commonly leads to incision of the stream channel downstream of the dam.

4.1 Sediment Yield in Other Regions

Sediment yield differs greatly throughout the world, as well as through time. For example, sediment yields range from 740 to 5300 t km^{-2} a^{-1} in southern coastal California (Warrick et al. 2009), 766 to 933 t km^{-2} a^{-1} in the Ecuadorian Andes (Laraque et al. 2004), and 355 to 1197 t km^{-2} a^{-1} in the Himalayas (Ali and De Boer 2005). In comparison, sediment yields for South Westland watersheds are 4 to 10 times these values. These extraordinarily high values are the result of high annual precipitation, rapid uplift, weak bedrock, and episodic large earthquakes. Sediment yields in South Westland watersheds are two orders of magnitude larger than in Fiordland, farther south on the South Island of New Zealand. The probable cause is the lower mean local relief and the presence of stable landslide dams in the latter area (Korup 2005). Sediment yields differ considerably between neighbouring watersheds in South Westland because of the different characteristics and magnitudes of mass-wasting events.

4.2 Effects over Time

Several studies of outburst floods resulting from failures of landslide dams have shown that sediment discharge is highest just after the dam break event and decrease over time (Costa 1985; Schuster 2006). The Poerua River dam break event displayed this pattern. The highest sediment discharge was directly after the dam failure and, over a period of about six years, decreased to pre-disturbance values. Poerua River incised its fan, and the dam continued to be eroded until at least the time of my study. Morche and

Schmidt (2011) documented a similar timescale for reestablishment of background sediment yields following a dam break event on Partnach River in the German Alps.

Landslides play an important role in sediment supply in South Westland, consistent with the finding of Keefer (1994) that landslides are the dominant agent of long-term erosion in seismically active regions. The Gaunt Creek slip contributed about 39% of the total sediment from the Waitangitaona River watershed over the 41-year period between 1967 and 2008 and continues to contribute sediment to the system today.

The characteristics of landslide events determine whether an elevated supply of sediment to the fluvial system will persist over a long period (Waitangitaona River) or simply represent a short-term perturbation of the normal background condition (Poerua River). The lower Poerua River experienced an elevated supply of sediment for a short period of time. The sediment pulse caused rapid aggradation, channel avulsion, changes to river planform, and burial of riparian vegetation. The system began to return to an equilibrium state, however, within years of the landslide that perturbed the system. Poerua River continues to adjust to the disturbance in 1999, but the changes are much smaller now than in the years immediately following the landslide

In contrast, the lower Waitangitaona River is experiencing the effects of elevated sediment supply from a landslide 40 years after the event. Sediment from the landslide has had similar effects to the outburst flood on Poerua River, although aggradation rates on the Waitangitaona River fan are much lower (0.09 m a^{-1}) than on the Poerua River fan (maximum of 0.66 m a^{-1}) and the Waitangitaona fan is still experiencing aggradation whereas the Poerua fan is now degrading.

4.3 Limitations and Suggestions for Future Studies

This project has limitations stemming from the methods used in the two study areas. Ground-penetrating radar (GPR) was the primary tool used in the Waitangitaona study to estimate sediment yield. Additional GPR profile lines, especially in the areas that I did not survey, would provide better estimates of the thickness of sediment deposited since 1967. In addition, this study could have been enhanced by construction of a high-resolution digital elevation model and a more detailed investigation of the Lake Wahapo delta. A bathymetric survey of the lake and acquisition of sediment cores would further constrain the sediment yield estimates.

The Poerua River study was based on differential GPS imeasurements of the level of the river bed. Future repeat surveys of the same cross-sections would extend the record of channel adjustments to the Mt. Adams landslide in 1999. In addition, examination of historic aerial photographs, creation of DEMs, documentation of grain size distributions of sediment deposited following the dam breach, and a survey of channel gradient would provide further insight into the nature of the changes to Poerua River since 1999.

REFERENCES

Alford, D., Cunha, S.F. and Ives, J.D. 2000. Lake Sarez, Pamir Mountains, Tajikistan; Mountain hazards and development assistance: Mountain Research and Development, v. 20, p. 20-23.

Ali, K.F. and De Boer, D.H. 2005. Spatial patterns and variation of suspednded sediment yield in the upper Indus River basin, northern Pakistan: Journal of Hydrology, v. 334, p. 368-387.

Baker, G.S., Jordan, T.E, and Pardy, J. 2007. An introduction to ground penetrating radar (GPR). In Stratigraphic Analyses Using GPR, ed. Baker, G.S. and Jol, H. M.: Geological Society of America Special Paper, no. 432, p. 1-18.

Bathurst, J.C. and Ashiq, M. 1998. Dambreak flood impact on mountain stream bedload transport after 13 years: Earth Surface Processes and Landforms, v. 23, p. 643-649.

Benda, L.E. and Dunne, T. 1997. Stochastic forcing of sediment routing and storage in channel networks: Water Resources Research, v. 33, p. 2865-2880.

Billi, P., D’Agostino, V. Lenzi, M.A., and Marchi, L. 1998. Bedload, slope and channel processed in a high-altitude alpine torrent: International Gravel-Bed Rivers workshop, v. 4, p. 15-38

Burbank, D.W., Leland, J., Fielding, E., Anderson, R.S., Brozovic, N., Reid, M.R. and Duncan, C. 1996. Bedrock incision, rock uplift, and threshold hillslopes in the northwestern Himalaya: Nature, v. 379, p. 505-510.

Clague, J.J. and Evans, S.G. 1994. Formation and Failure of Natural Dams in the Canadian Cordillera: Geological Survey of Canada Bulletin, no. 464, 35 p.

Costa, J.E. 1985, Floods from Dam Failures: U.S. Geological Survey Open-file Report, no. 85-560.

Costa, J.E. and Schuster, R.L. 1988. The formation and failure of natural dams: Geological Society of America Bulletin, v. 100, p. 1054-1068.

Cox, S.C. and Barrell, D.J.A. 2007. Geology of the Aoraki Area: GNS Science (Institute of Geological and Nuclear Sciences), Geological Map 15, scale 1:150,000, 1 sheet, 71 p. report.

Cox, S.C. and Findlay, R.H. 1995. The Main Divide Fault Zone and its role in the formation of the Southern Alps, New Zealand: New Zealand Journal of Geology and Geophysics, v. 38, p. 489-499.

Davies, T.R. and McSaveney, M.J. 2001. Anthropogenic fanhead aggradation, Wahio River, Westland, New Zealand. In Gravel-bed Rivers, ed. Mosley, M.P.: New Zealand Hydrological Society, Wellington?, p. 531-553.

Davies, T.R.H., and Korup, O., 2007. Persistent alluvial fanhead trenching resulting from large, infrequent sediment inputs: Earth Surface Processes and Landforms, v. 32, p. 725-742.

Davies, T.R.H. and Scott, B.K. 1997. Dambreak flood hazard from the Callery River, Westland, New Zealand: New Zealand Journal of Hydrology, v. 36, p. 1-13.

Davis, J.L., and Annan, A.P. 1989. Ground-penetrating radar for high-resolution mapping of soil and rock stratigraphy: Geophysical Prospecting, v. 37, p. 531-551.

Denton, G.H. and Hendy, C.H. 1994. Younger Dryas age advance of Franz Josef Glacier in the Southern Alps of New Zealand: Science, v. 264, p. 1434-1437.

Diez, J.C., Alvera, B., Puigdefabregas, J., Gallart, F. 1988. Assessing sediment sources in small a drainage basin above the timberline in the Pyrenees: IAHS-AISH, v. 174, p. 197-205.

Griffiths, G.A. 1979. High sediment yields from major rivers of the western Southern Alps, New Zealand: Nature, v. 282, p. 61-63.

Griffiths, G.A. 1981. Some suspended yields from South Island catchments, New Zealand: Water Resources Bulletin, v. 17, p. 662-671.

Griffiths, G.A. 1982. Spatial and temporal variability in suspended sediment yields of North Island basins, New Zealand: Water Resources Bulletin, v. 18, p. 575-584.

Griffiths, G.A. 1993. Sediment translation waves in braided gravel-bed rivers: Journal of Hydraulic Engineering, v. 119, p. 924-937.

Griffiths, G.A. and McSaveney, M.J. 1983. Distribution of mean annual precipitation across some steepland regions of New Zealand: New Zealand Journal of Science, v. 26, p. 197-209.

Griffiths, G.A., and McSaveney, M.J. 1986. Sedimentation and river containment on Waitangitaona alluvial fan – South Westland, New Zealand: Zeitschrift fur Geomorphologie, v. 30, p. 215-230.

Hancox, G.T., McSaveney M.J., Davies T.R.H. and Hodgson, K. 1999. Mt. Adams Rock Avalanche of 6 October 1999 and the Subsequent Formation and Breaching of a Large Landslide Dam in Poerua River, Westland, New Zealand: Institute of Geological and Nuclear Sciences Science Report, v. 19, 22 p.

Hancox, G.T., McSaveney, M.J., Manville, V.R. and Davies, T.R.H. 2005. The October 1999 Mt. Adams rock avalanche and subsequent landslide dam-break flood and effects in Poerua River, Westland, New Zealand: New Zealand Journal of Geology and Geophysics, v. 48, p. 683-705.

Henderson, R.D., and Thompson, S.M. 1999. Extreme rainfalls in the Southern Alps of New Zealand: Journal of Hydrology (NZ), v. 38, p. 309-330.

Hicks, D.M., Gomez, B. and Trustrum, N.A. 2004. Event suspended sediment characteristics and the generation of hyperpycnal plumes at river mouths: East coast continental margin, Northern Island, New Zealand: Journal of Geology, v. 112, p. 471-485.

Hicks, D.M., Hill, J. and Shankar, U. 1996. Variation of suspended sediment yields around New Zealand; the relative importance of rainfall and geology. In Erosion and Sediment Yield: Global and Regional Perspectives, ed. Walling, D.E. and Webb, B.W.: International Association of Hydrological Sciences Publication, no. 236, p. 149-156.

Hovius, N., Stark, C.P. and Philip, A.A. 1997. Sediment flux from a mountain belt derived by landslide mapping: Geology, v. 25, p. 231-234.

James, L.A. 1991. Incision and morphologic evolution of an alluvial channel recovering from hydraulic mining sediment: Geological Society of America Bulletin, v. 103, p. 723-736.

Jol, H.M. and Smith, D.G. 1991. Ground penetrating radar of northern lacustrine deltas: Canadian Journal of Earth Sciences, v. 28, p. 1939-1947.

Kamann, P.J., Ritzi, R.W., Dominic, D.F. and Conrad, C.M. 2007. Porosity and permeability in sediment mixtures: Ground Water, v. 45, p. 429-438.

Keefer, D.K. 1994. Landslides caused by earthquakes: Geological Society of America Bulletin, v. 95, p. 406-421.

Korup, O. 2002. Recent research on landslide dams – A literature review with special attention to New Zealand: Progress in Physical Geography, v. 23, p. 206-235.

Korup, O. 2004. Landslide-induced river channel avulsions in mountain catchments of southwest New Zealand: Geomorphology, v. 63, p. 57-80.

Korup, O. 2005a. Geomorphic imprint of landslides on alpine river systems, southwest New Zealand: Earth Surface Processes and Landforms, v. 30, p. 783-800.

Korup, O. 2005b. Large landslides and their effect on sediment flux in South Westland, New Zealand: Earth Surface Processes and Landforms, v. 30, p. 305-323.

Korup, O., McSaveney, M.J. and Davies, T.R.H. 2004. Sediment generation and delivery from large historic landslides in the Southern Alps, New Zealand: Geomorphology, v. 61, p. 189-207.

Laraque, A., Ceron, C., Armijos, E., Pombosa, R., Magat, P. and Guyot, J.L. 2004. Sediment yields and erosion rates in the Napo River basin; an Ecuadorian Andean Amazon tributary. In International Symposium on Sediment Transfer through the Fluvial System, ed. Golosov, V.N., Belyaev, V.R. and Walling, D.E.: International Association of Hydrological Sciences Publication, no. 288, p. 223-225.

Larsen, S.H., Davies, T.R. and McSaveney, M.J. 2005. A possible coseismic landslide origin of late Holocene moraines of the Southern Alps, New Zealand: New Zealand Journal of Geology and Geophysics, v. 48, p. 311-314.

Lauffer, H. and Sommer, N. 1982. Studies on sediment transport in mountain streams of the Eastern Alps: Proceedings, 14th International Congress on Large Dams, v. 3, p. 86-99.

Madej, M.A., 1999. Temporal and spatial variability in thalweg profiles of a gravel-bed river: Earth Surface Processes and Landforms, v. 24, p. 1153 – 1169.

Madej, M.A., 2001, Development of channel organization and roughness following sediment pulses in single thread gravel bed rivers: Water Resources Research, v. 37, p, 2259 – 2272.

Madej, M.A. and Ozaki, V. 1996. Channel response to sediment wave propagation and movement, Redwood Creek, California, USA: Earth Processes and Landforms, v. 21, p. 911-927.

McSaveney, E. 2007. ‘Active Faults’, Te Ara – the Encyclopedia of New Zealand, updated 21 September 2007, URL: http://www.TeAra.govt.nz/EarthSeaAndSky/ NaturalHazardsAndDisasters/ActiveFaults/en

Meade, R.H., Yuzyk, T.R. and Day, T.J. 1990. Movement and storage of sediment in rivers of the United States and Canada. In Surface Water Hydrology, ed. Wolman, M.G. and Riggs, H.C.: Geological Society of America, Geology of North America Series, v. 0-1, p. 255-280.

Miller, D.J. and Benda, L.E. 2000. Effects of punctuated sediment supply on valley-floor land forms and sediment transport: Geological Society of America Bulletin, v. 112, p. 1814-1824.

Milliman, J.D. and Syvitski, J.P. 1992. Geomorphic/tectonic control of sediment discharge to the ocean: The importance of small mountainous rivers: Journal of Geology, v. 100, p. 525-544.

Morche, D. and Schmidt, K.H. 2011. Sediment transport in an alpine river before and after a dambreak flood event: Earth Surface Processes and Landforms, v. 36, p. 36-42.

Mumpy, A.J., Jol, H.M., Kean, W.F. and Isbell, J.L. 2007. Architecture and sedimentology of an active braid bar in the Wisconsin River: based on 3-D ground penetrating radar. In Stratigraphic Analyses Using GPR, ed. Baker, G.S. and Jol, H. M.: Geological Society of America Special Paper, no. 432, p. 111-132.

Norris, R.J. and Cooper, A.F. 1997. Erosional control on the structural evolution of a transpressional thrust complex on the Alpine Fault, New Zealand: Journal of Structural Geology, v. 19, p. 1323-1342.

Norris, R.J. and Cooper, A.F. 2000. Late Quaternary slip partitioning on the Alpine Fault, New Zealand: Journal of Structural Geology, v. 23, p. 507-520.

Norris, R.J. and Cooper, A.F. 2007. The Alpine Fault, New Zealand: Surface geology and field relationships: Geophysical Monograph, v. 175, p. 157-175.

Norris, R.J., Cooper, A. F., Wright, T. and Berryman, K. 2001. Dating of Past Alpine Fault Rupture in South Westland: New Zealand Earthquake Commission Report, v. 99, 341 p.

Schuster, R.L. 1993. Landslide dams – A worldwide phenomenon: Journal of the Japanese Landslide Society, v. 31, p. 38-59.

Schuster, R.L. 2006. Impacts of landslide dams on mountain valley morphology. In Landslides from Massive Rock Slope Failure, ed. Evans, S.G., Scarascia-Mugnozza, G. and Strom, A.L.: NATO Science Series, IV Earth and Environmental Sciences, p. 591-616.

Sklar, L. and Dietrich, W.E., 1998, River longitudinal profiles and bedrock incision models: Stream power and the influence of sediment supply, In Rivers over rock: Fluvial processes in bedrock channels, ed Tinkler, K.J. and Wohl, E.E.: Geophysical Monograph Series.

Sklar, L. and Dietrich, W.E., 2004. A mechanistic model for river incision into bedrock by saltating bed load: Water Resources Research, v. 40.

Stevens, C.W. and Robinson, S.D., 2007. The internal structure of relict lacustrine deltas, northern New York. In Stratigraphic Analyses Using GPR, ed. Baker, G.S. and Jol, H.M.: Geological Society of America Special Paper, no. 432, p. 77-91.

Suggate, R.P. 1990. Late Pliocene and Quaternary glaciations of New Zealand. Quaternary Science Reviews 9: 175-197.

Sutherland, D.G., Ball, M.B., Hilton, S.J. and Thomas, E.L. 2002. Evolution of a landslide-induced sediment wave in the Navarro River, California: Geological Society of America Bulletin, v. 114, p. 1036-1048.

Sutherland, R., Berryman, K. and Norris, R. 2006. Quaternary slip rate and geomorphology of the Alpine Fault; Implications for kinematics and seismic hazard in southwest New Zealand: Geological Society of America Bulletin, v. 118, p. 464-474.

Van Overmeeren, R.A.1998. Radar facies of unconsolidated sediments in the Netherlands: A radar stratigraphy interpretation method for hydrogeology: Journal of Applied Geophysics, v. 40, p. 1-18.

Warrick, J.A. and Mertes, L.A. 2009. Sediment yield from the tectonically active semiarid western Transverse Ranges of California: Geological Society of America Bulletin, v. 121, p. 1054-1070.Wells, A. and Goff, J. 2005. Coastal dune ridge systems as chronological markers of paleoseismic activity – 650 year record from southwest New Zealand: The Holocene, v. 16, p. 543-550.

Wells, A., Stewart, G.H. and Duncan, R.P. 1998. Evidence of widespread, synchronous, disturbance-initiated forest establishment in Westland, New Zealand: Journal of the Royal Society of New Zealand, v. 28, p. 333-345.

Wells, A., Yetton, M.D., Duncan, R.P. and Stewart, G.H. 1999. Prehistoric dates of the most recent Alpine fault earthquakes, New Zealand: Geology, v. 27, p. 995-998.

Yetton, M.D. 1998. Progress in understanding the paleoseismicity of the central and northern Alpine Fault, Westland, New Zealand: New Zealand Journal of Geology and Geophysics, v. 41, p. 475-483.

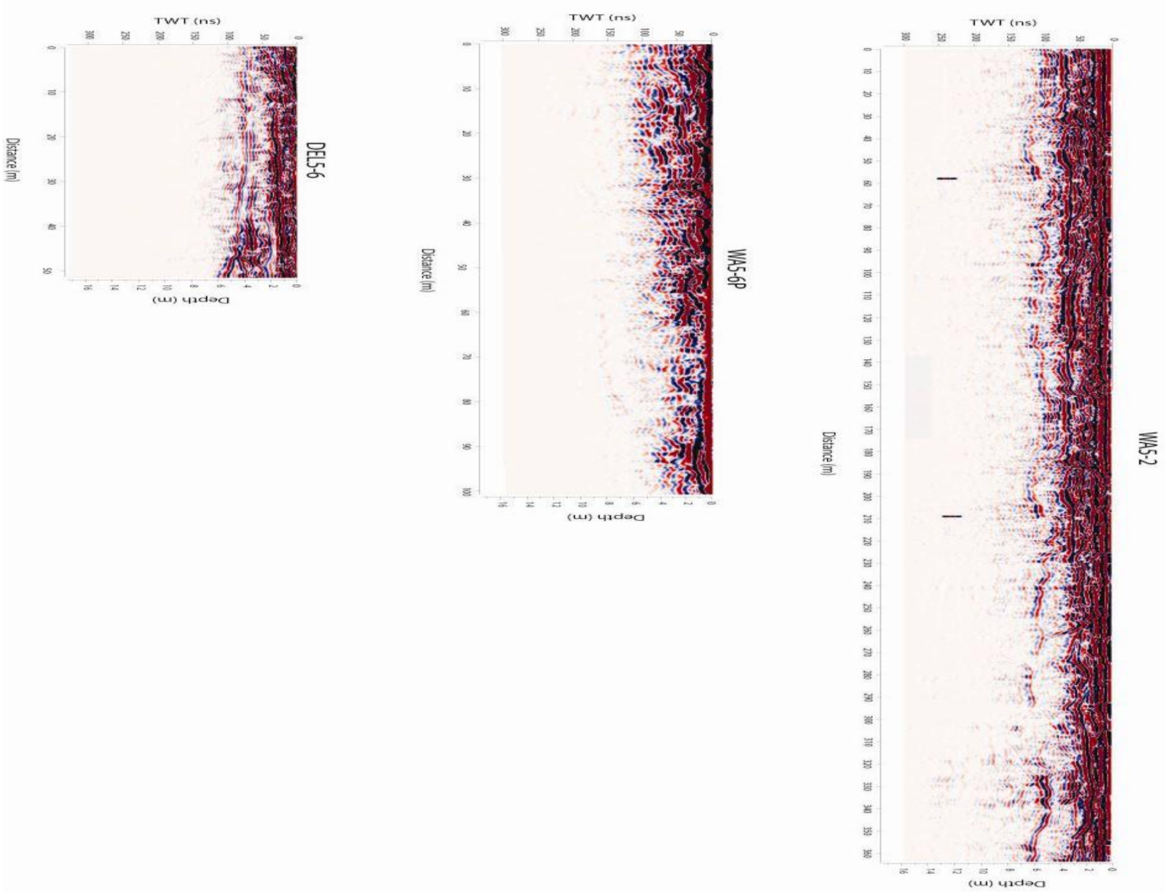
Yetton, M.D. 2000. The Probability and Consequences of the Next Alpine Fault Earthquake, South Island, New Zealand: Ph.D. thesis, University of Canterbury, Christchurch, 312 p.

Yetton, M.D., Wells, A. and Traylen, N.J. 1998. The Probability and Consequences of the Next Alpine Fault Earthquake: New Zealand Earthquake Commission Contract Report, v. 95, 193 p.

APPENDICES

Appendix A: GPR profiles.

Figure 1. GPR profiles for lines WA5-2, WA5-6P, and DEL5-6.



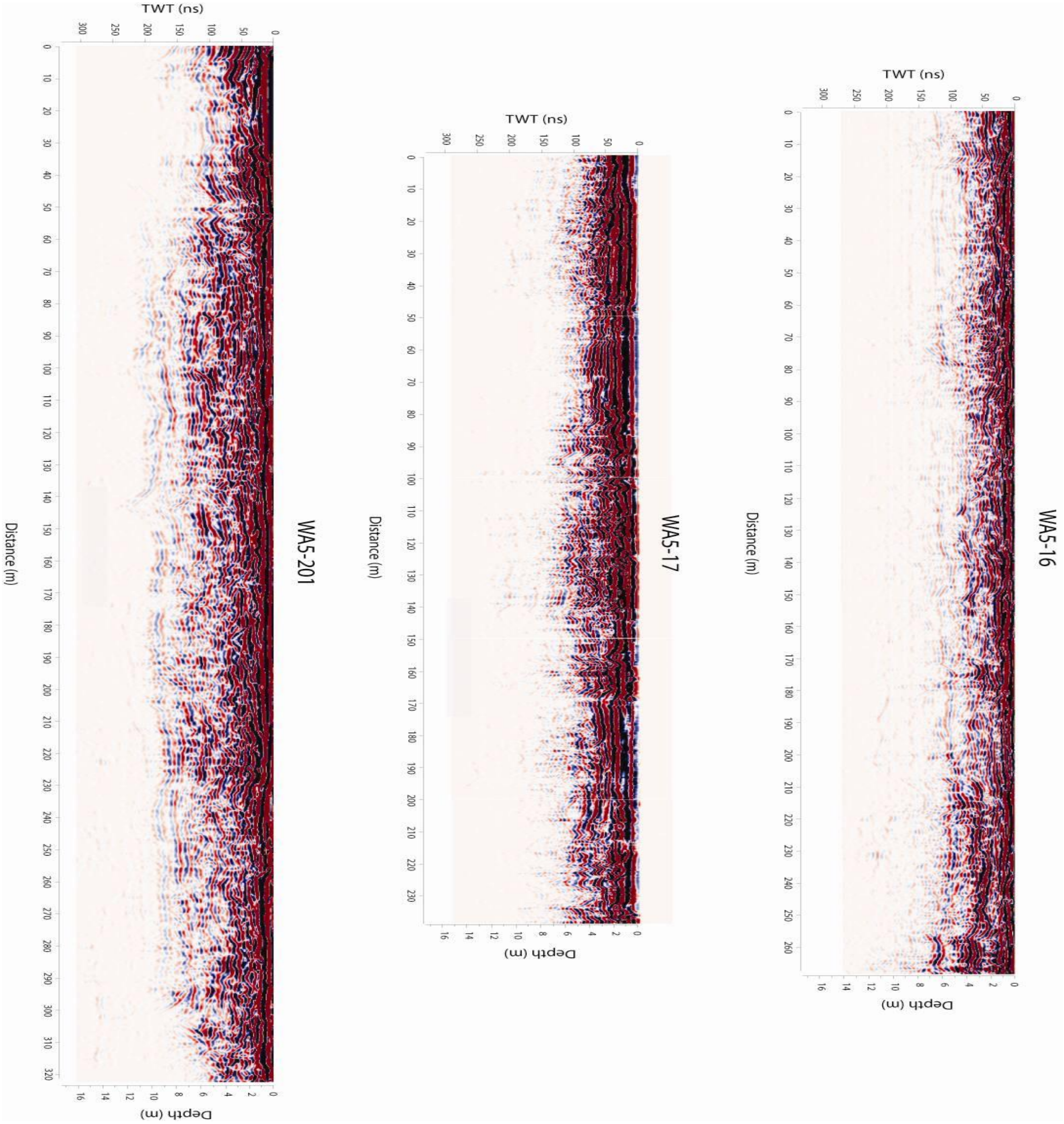


Figure 2. GPR profiles for lines WA5-16, WA5-17, and WA-201.

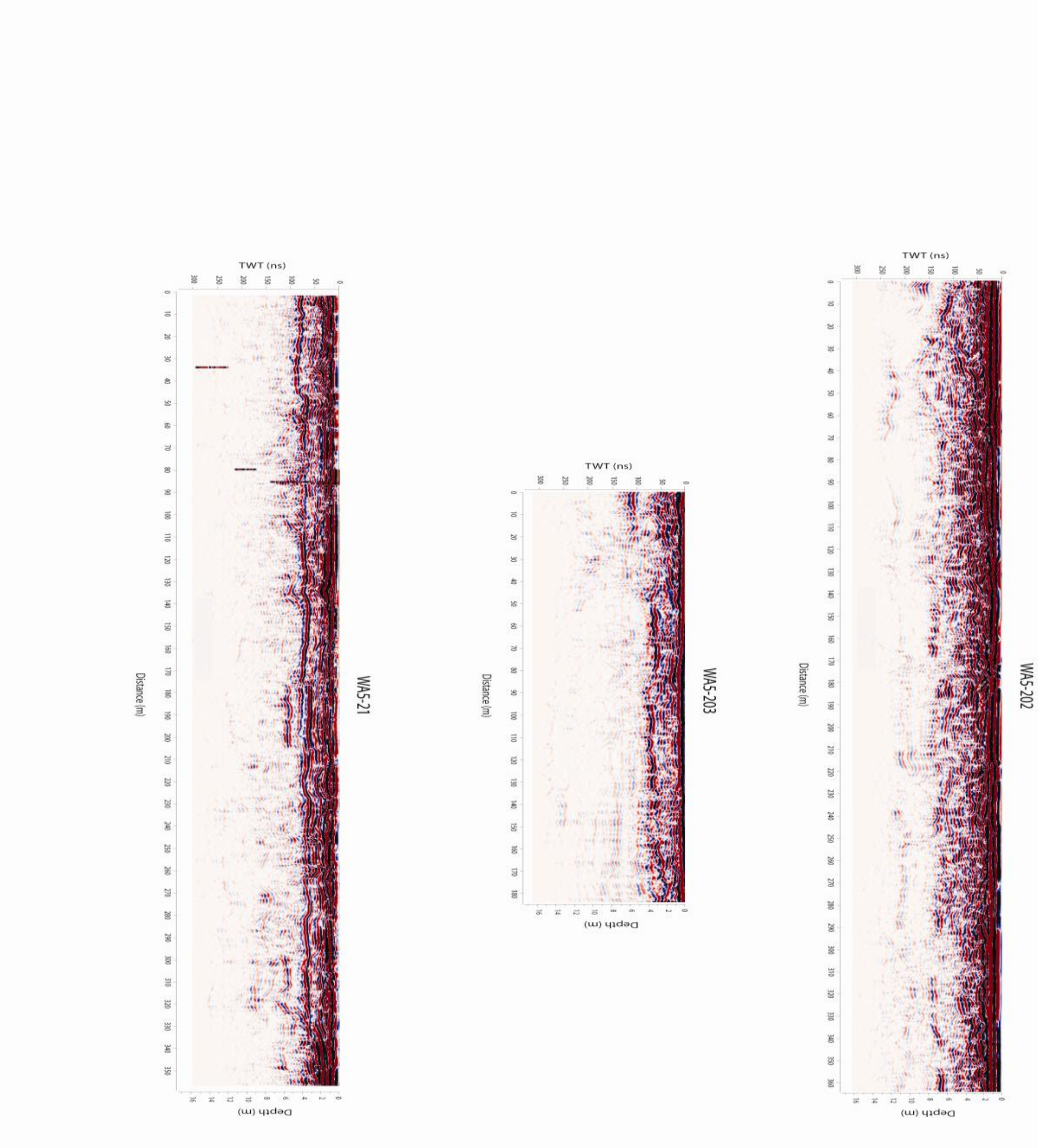


Figure 3. GPR profiles for lines WA5-202, WA5-203, and WA5-21.

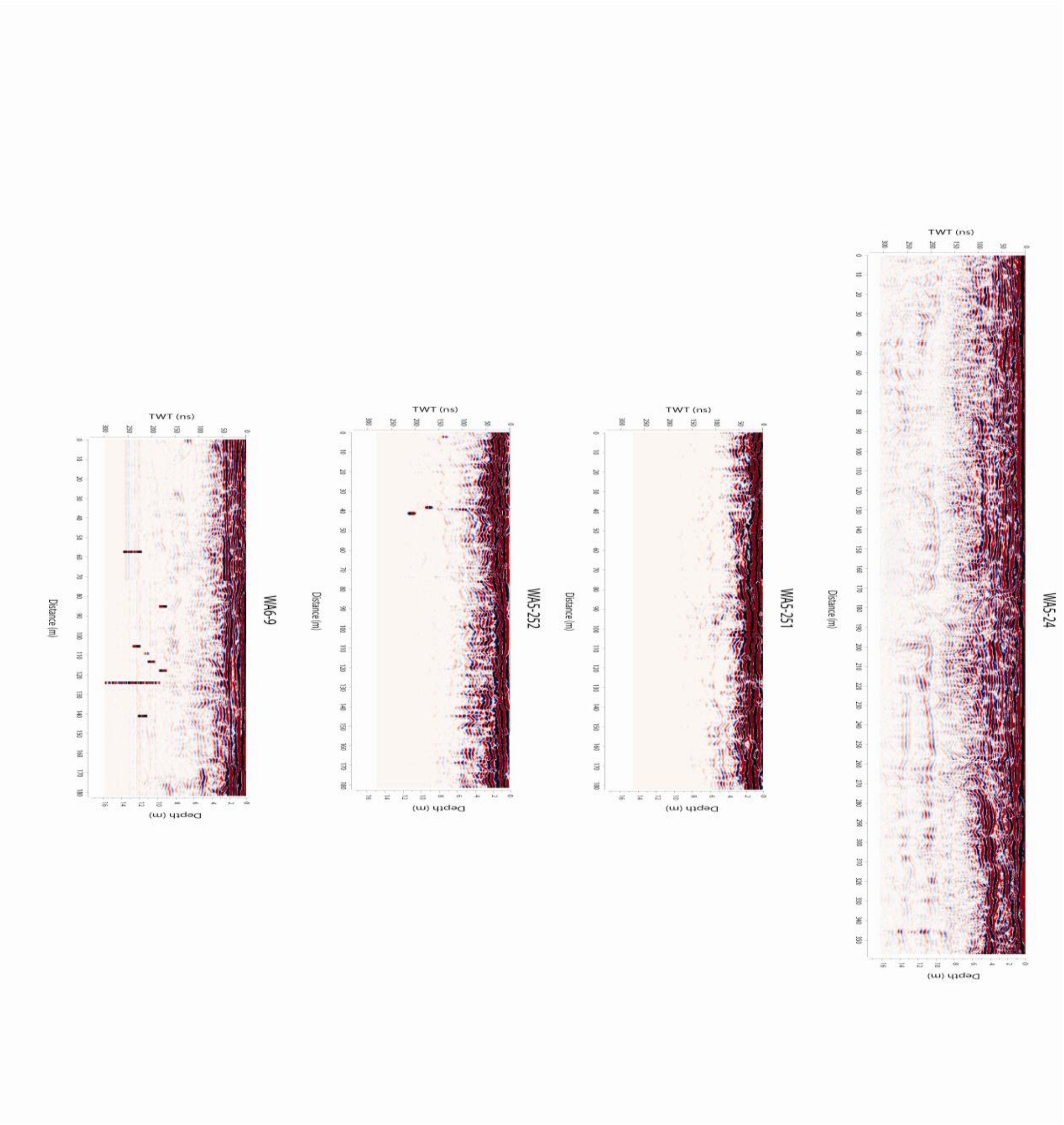


Figure 4. GPR profiles for lines WA5-24, WA5-251, WA5-252, and WA6-9.

Appendix B: Bed levels for each cross-section.

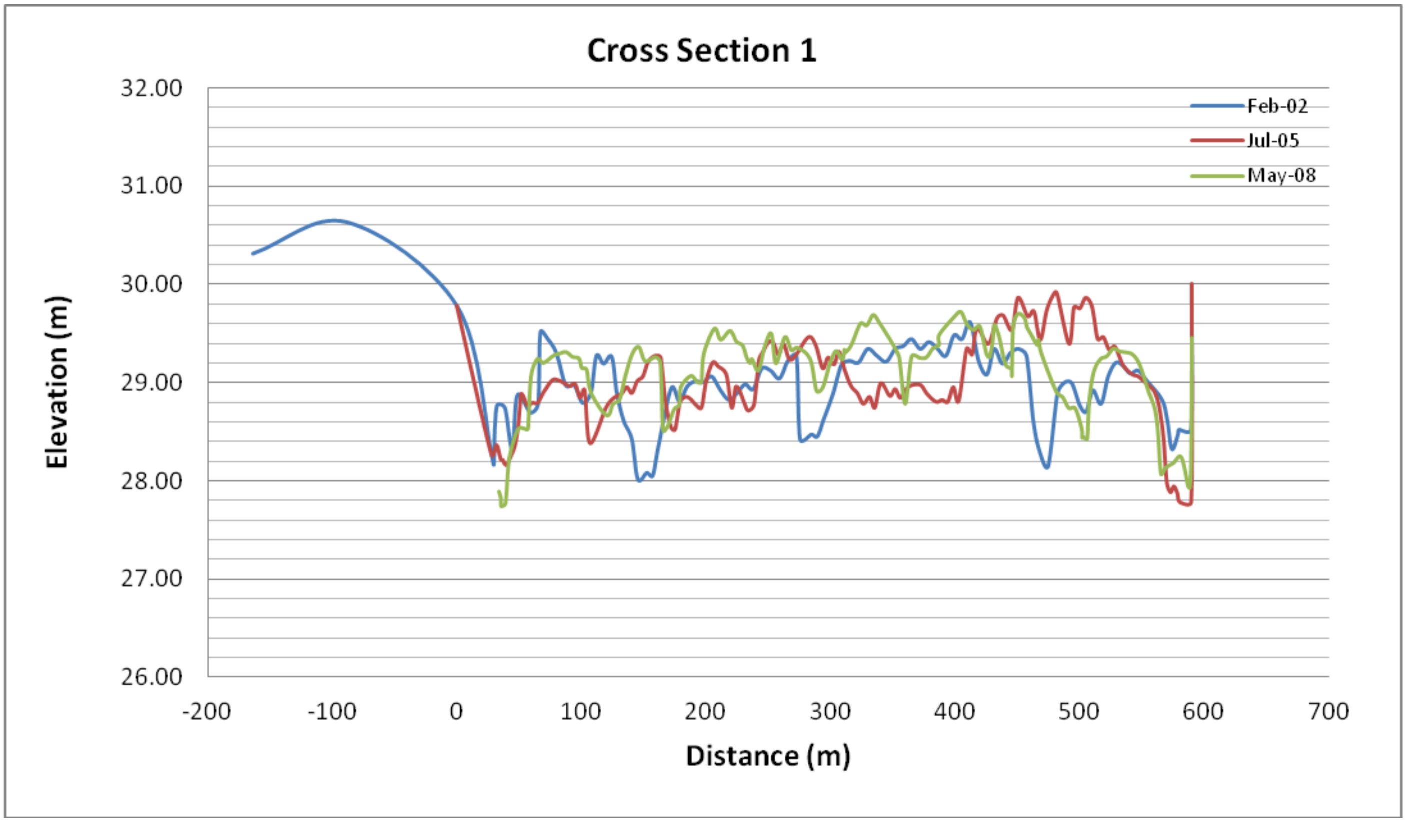


Figure 1. Bed levels at cross-section 1 on February 2002, July 2005, and May 2008.

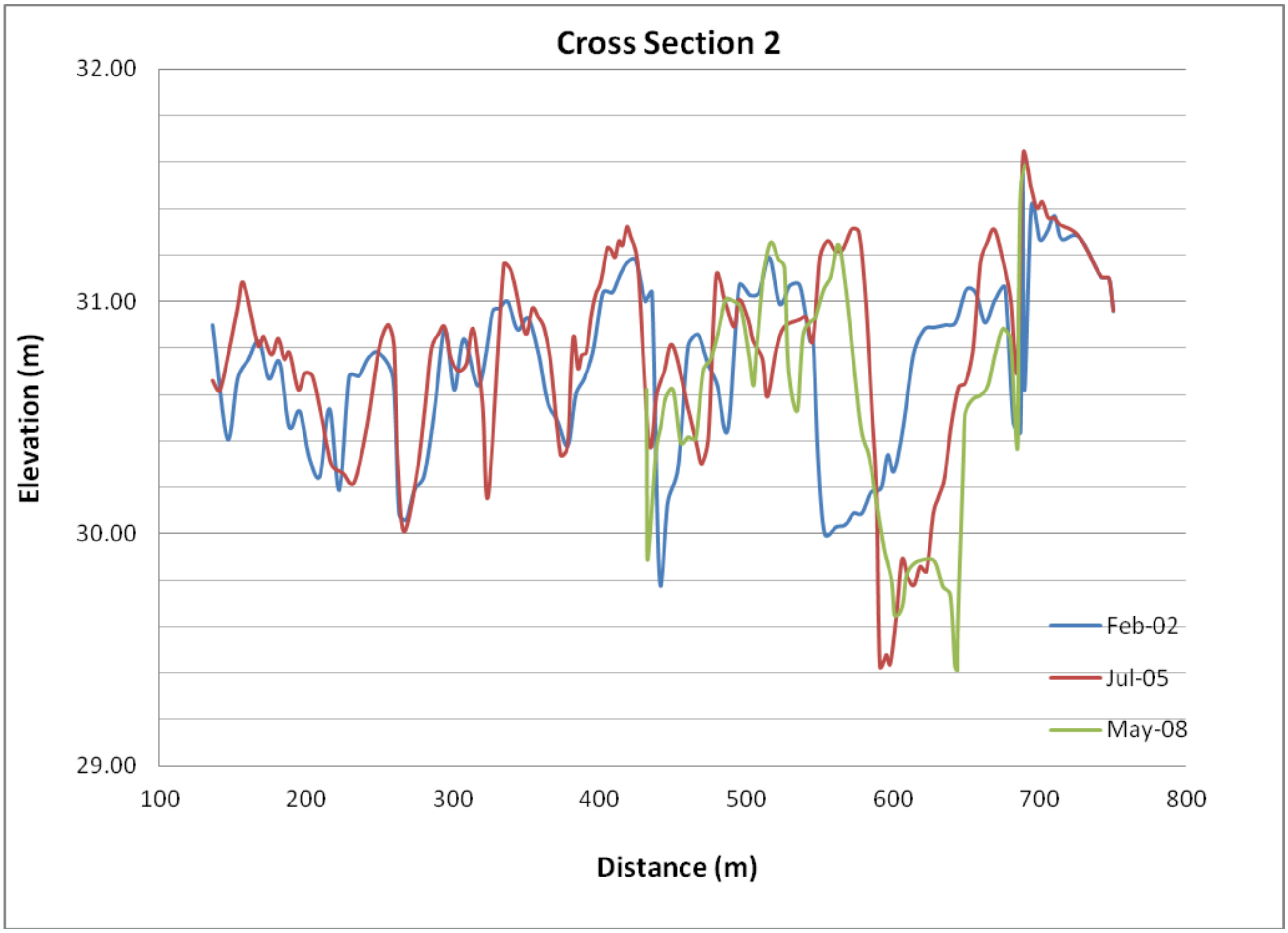


Figure 2. Bed levels at cross-section 2 on February 2002, July 2005, and May 2008.

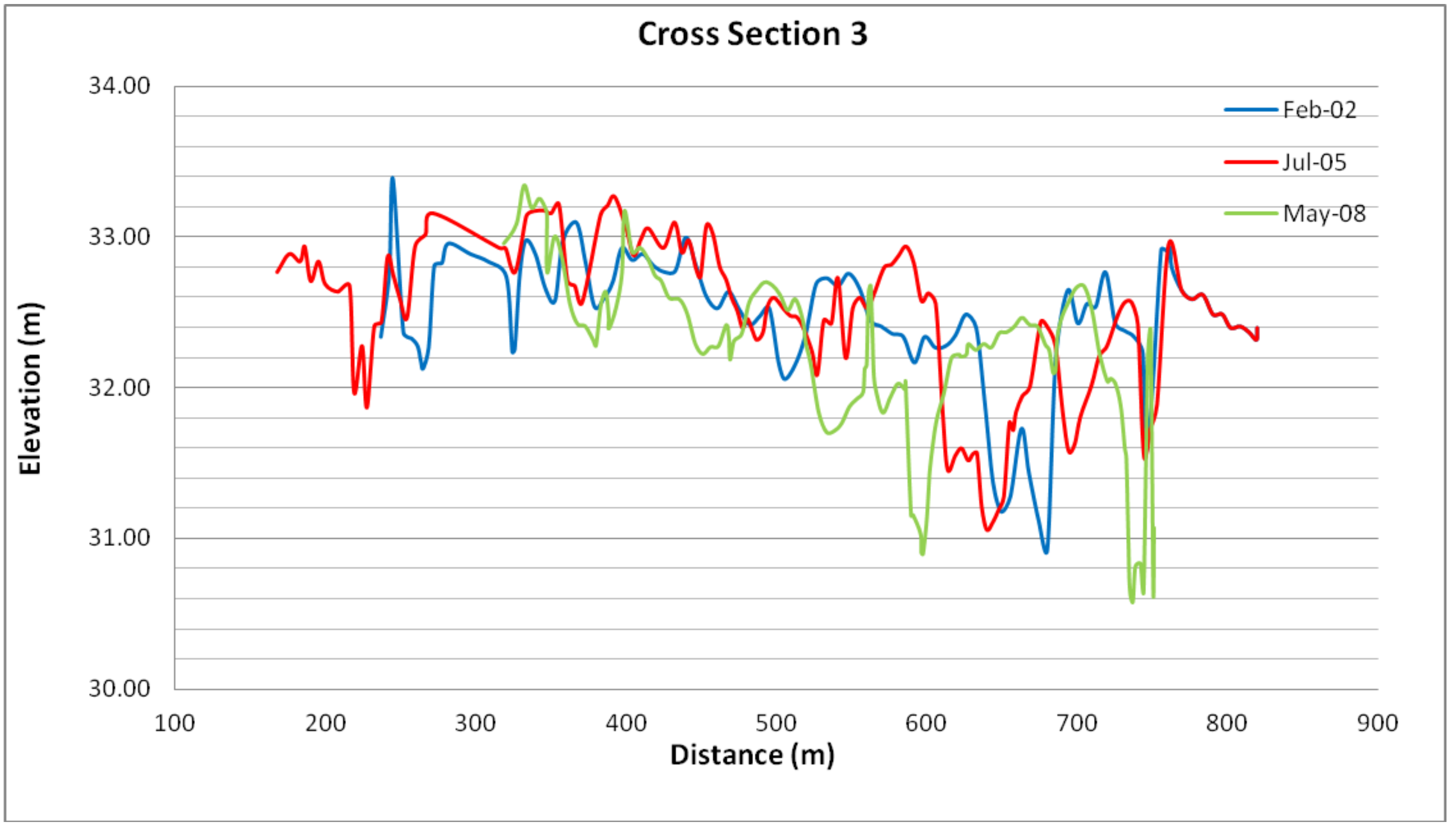


Figure 3. Bed levels at cross-section 3 on February 2002, July 2005, and May 2008.

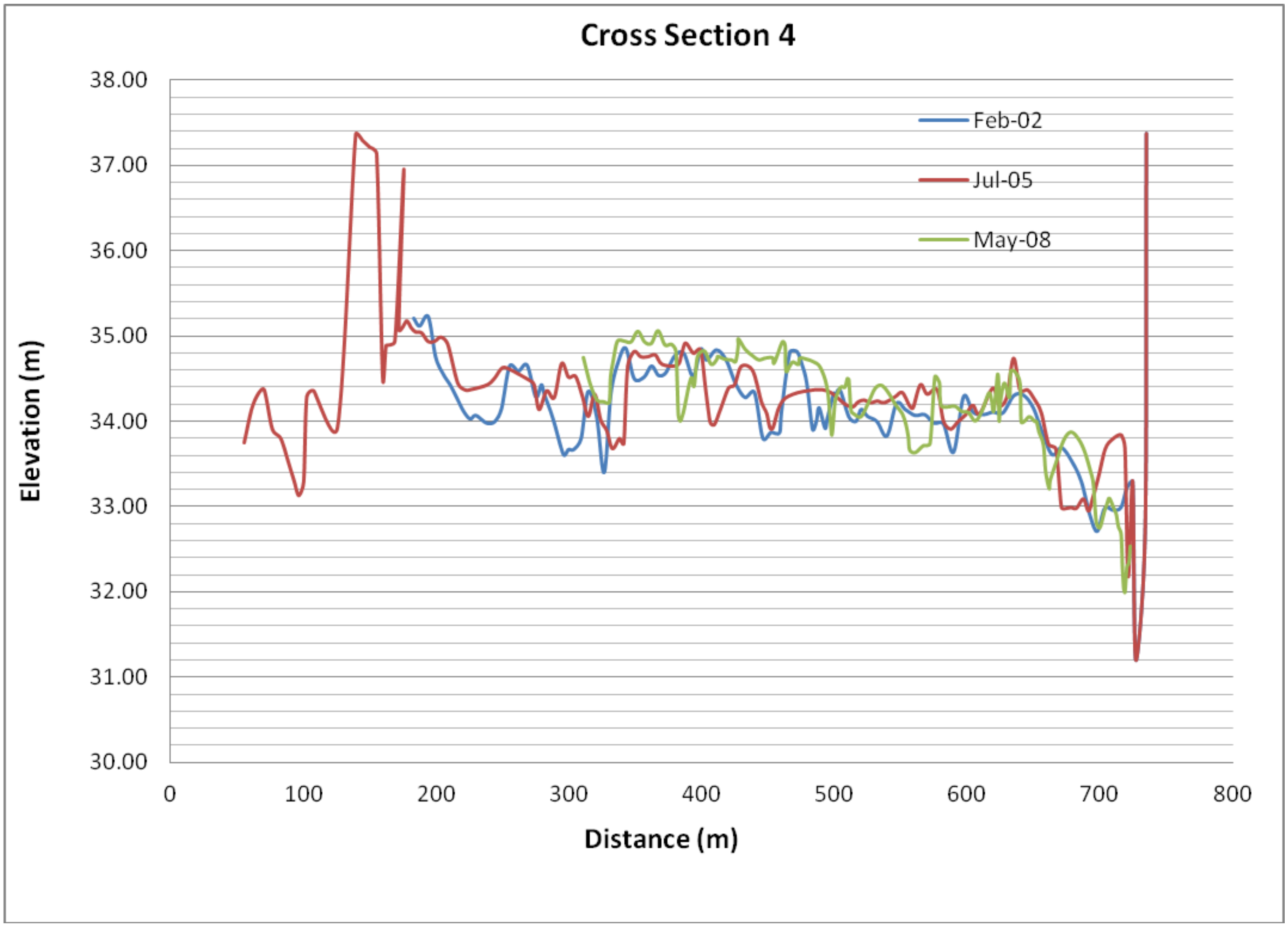


Figure 4. Bed levels at cross-section 4 on February 2002, July 2005, and May 2008.

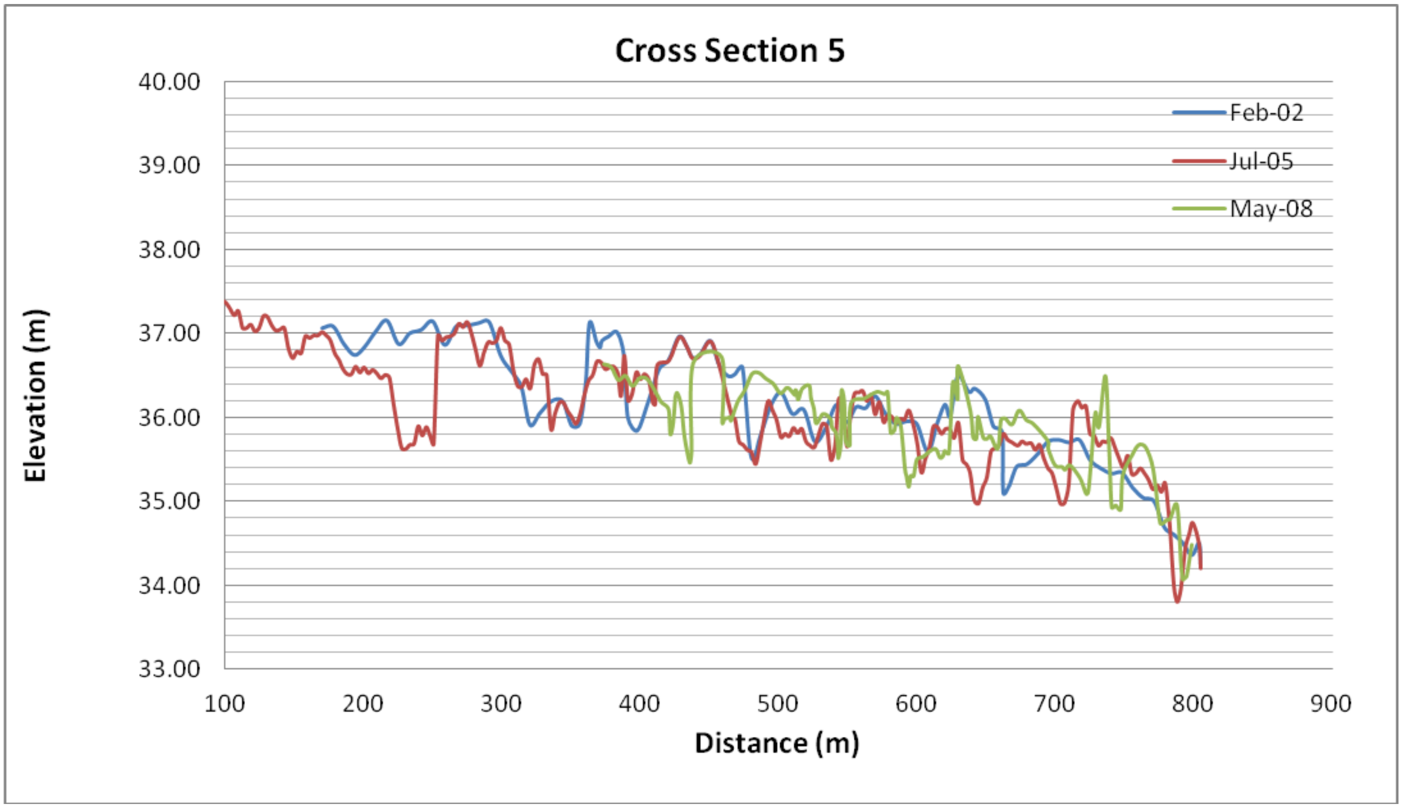


Figure 5. Bed levels at cross-section 5 on February 2002, July 2005, and May 2008.

.

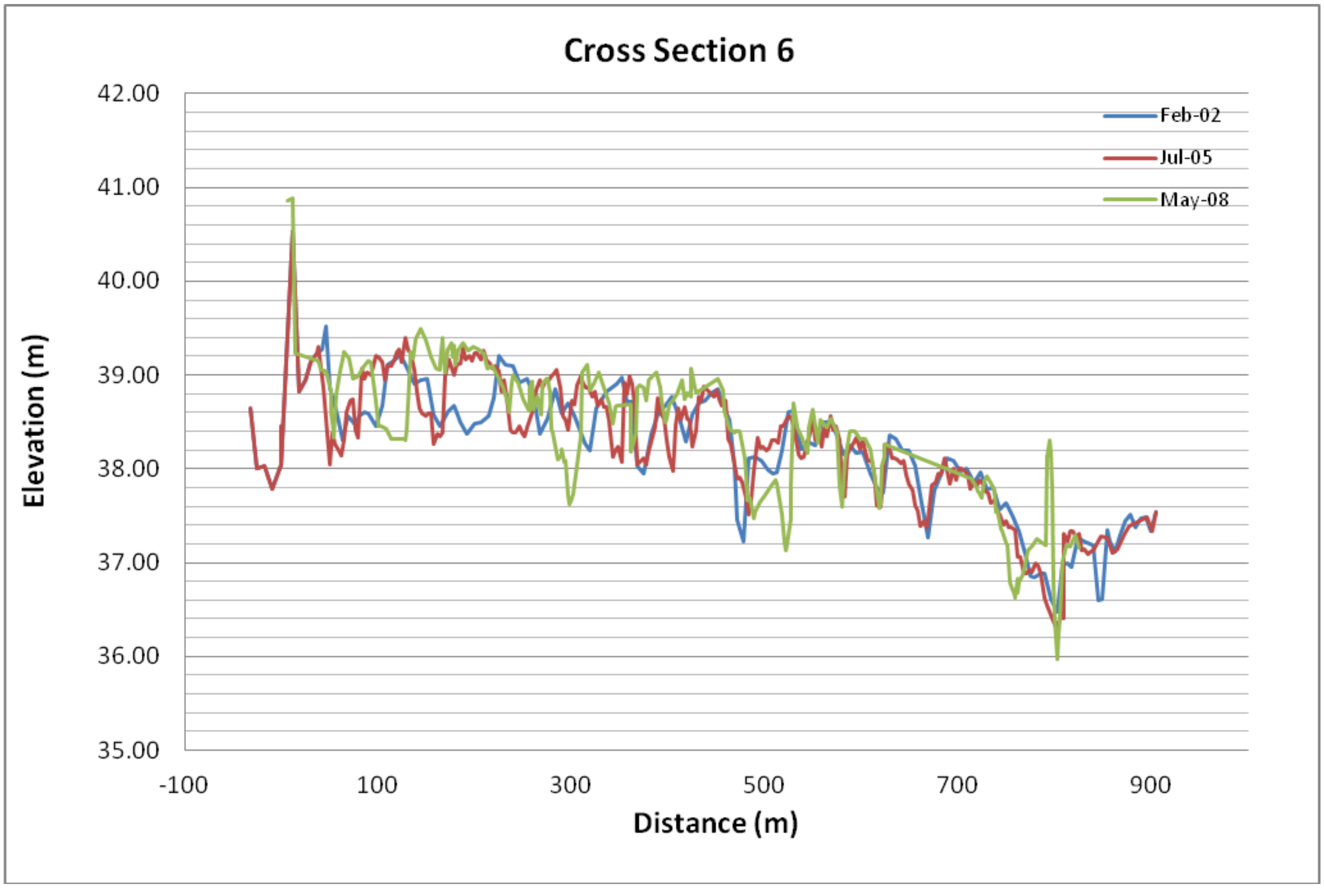


Figure 6. Bed levels at cross-section 6 on February 2002, July 2005, and May 2008.

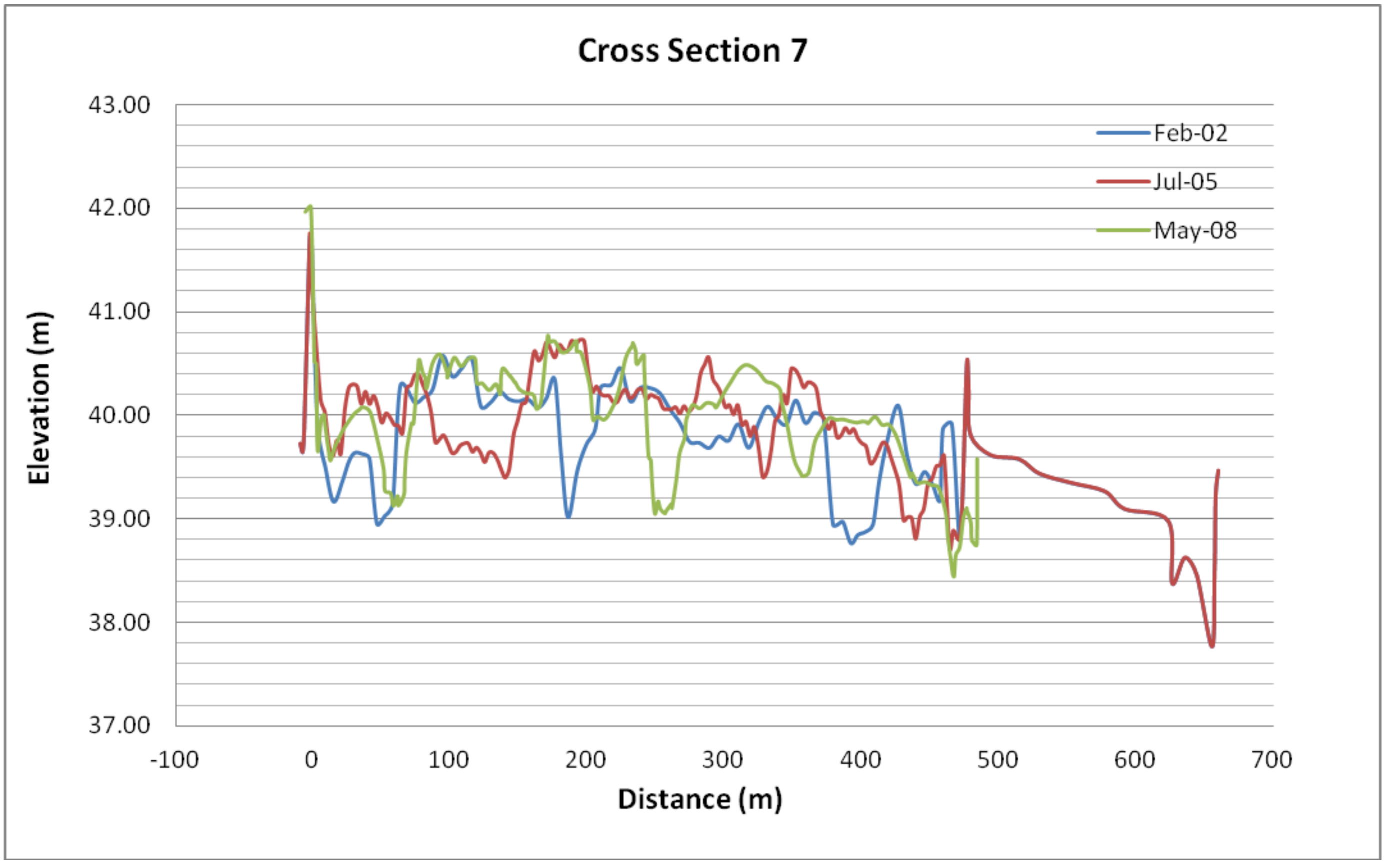


Figure 7. Bed levels at cross-section 7 on February 2002, July 2005, and May 2008.

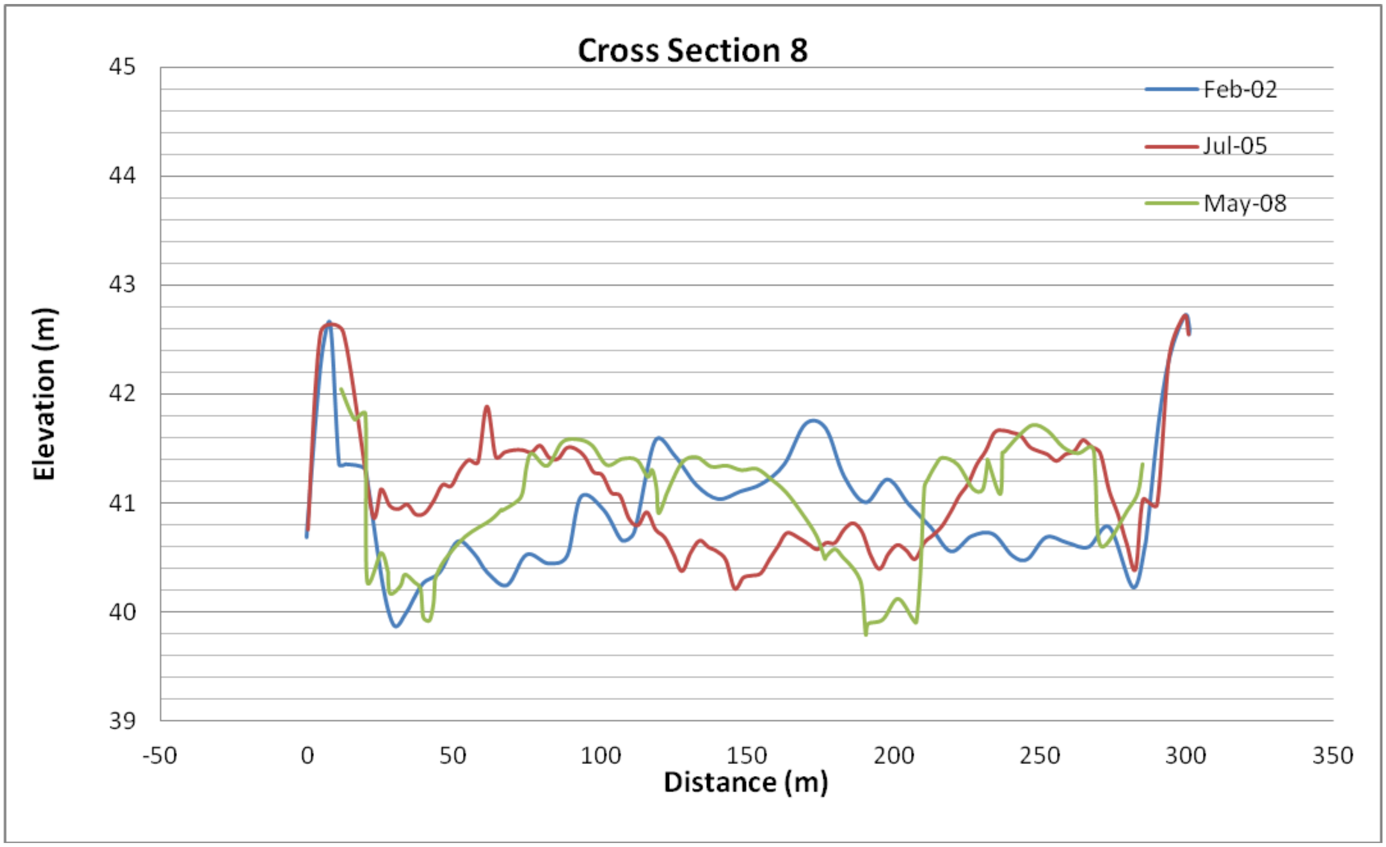


Figure 8. Bed levels at cross-section 8 on February 2002, July 2005, and May 2008.

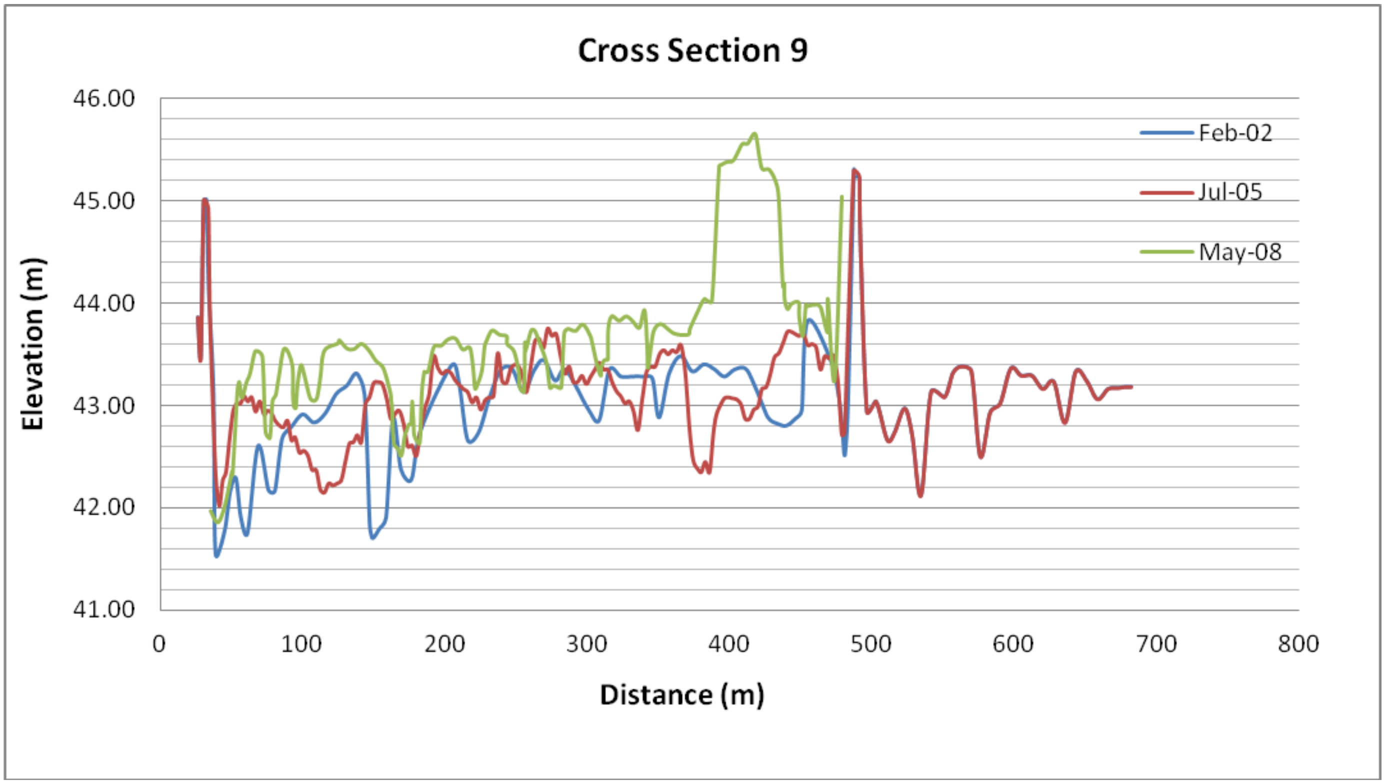


Figure 9. Bed levels at cross-section 9 on February 2002, July 2005, and May 2008.

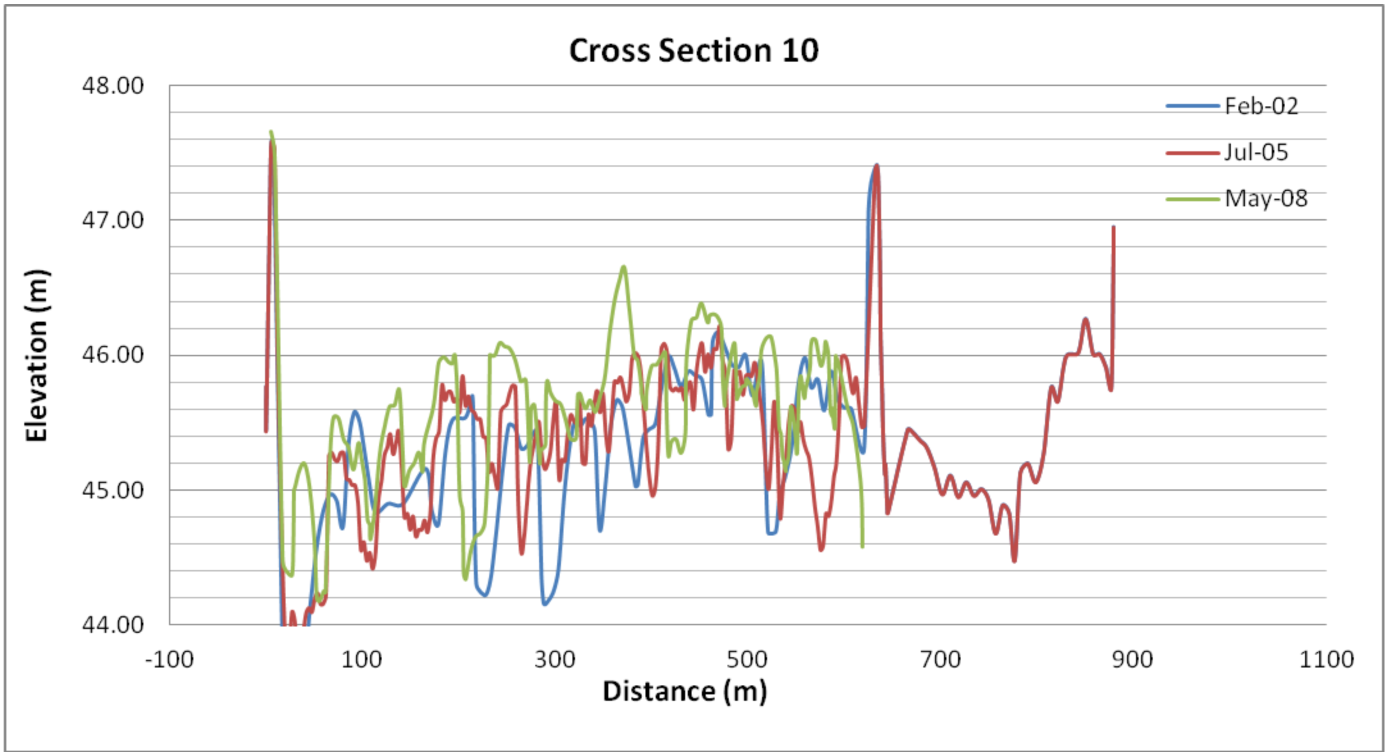


Figure 10. Bed levels at cross-section 10 on February 2002, July 2005, and May 2008.

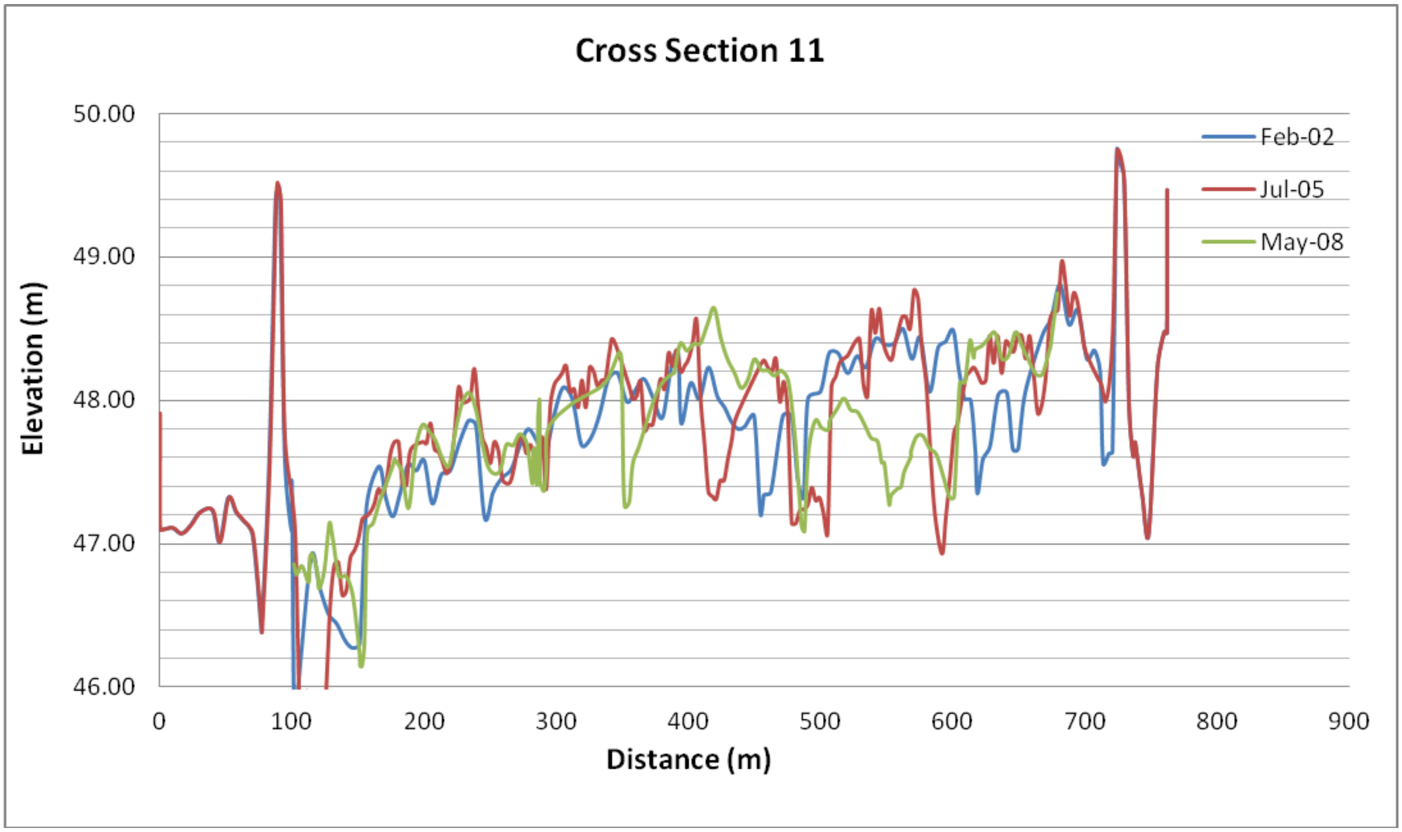


Figure 11. Bed levels at cross-section 11 on February 2002, July 2005, and May 2008.

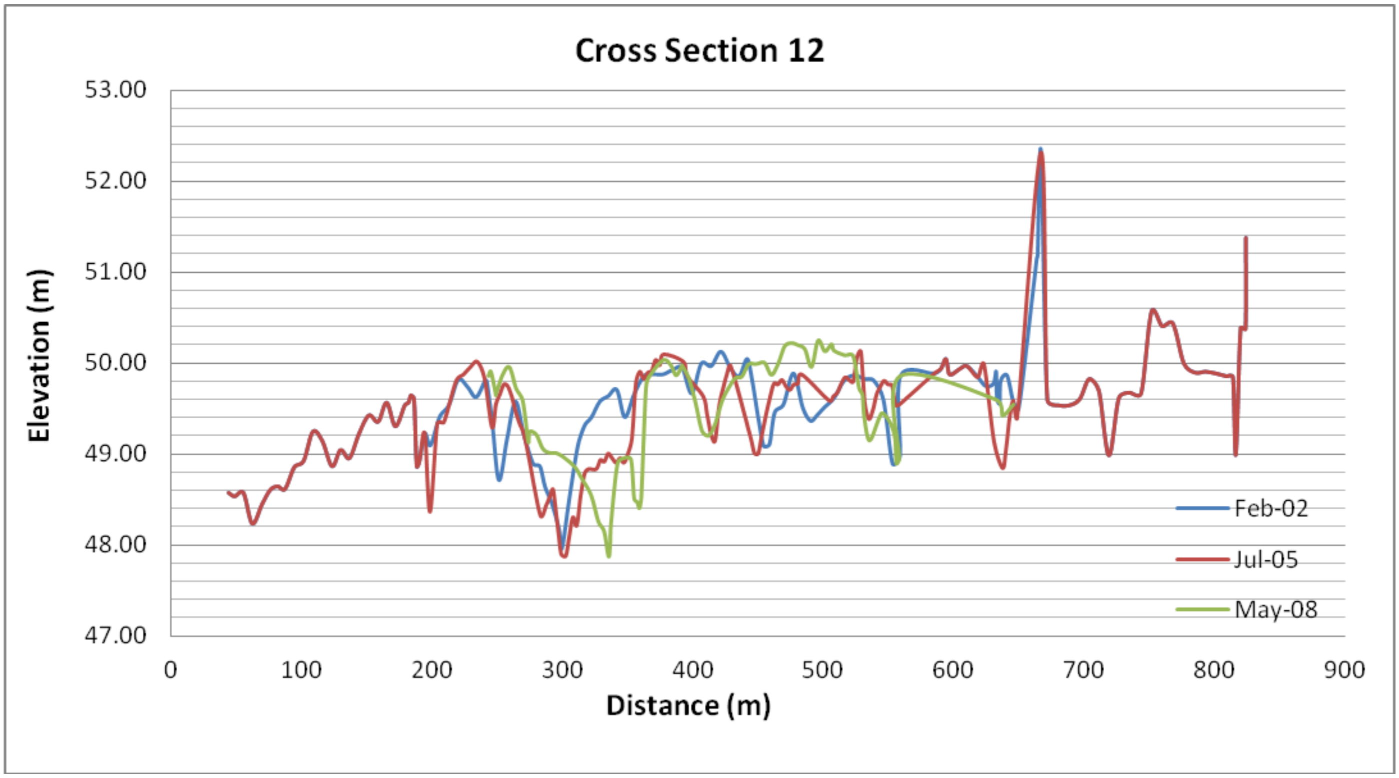


Figure 12. Bed levels at cross-section 12 on February 2002, July 2005, and May 2008.

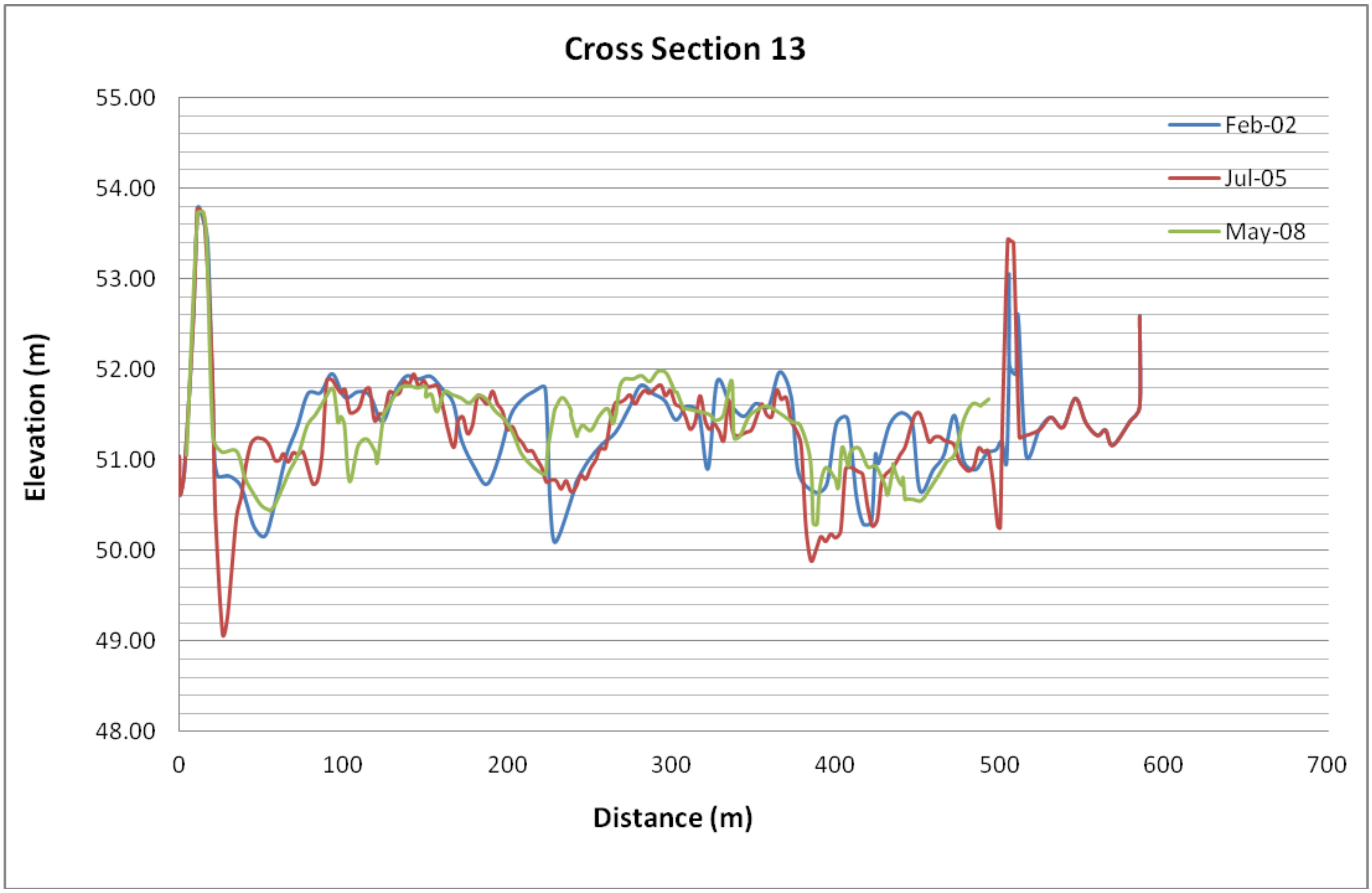


Figure 13. Bed levels at cross-section 13 on February 2002, July 2005, and May 2008.

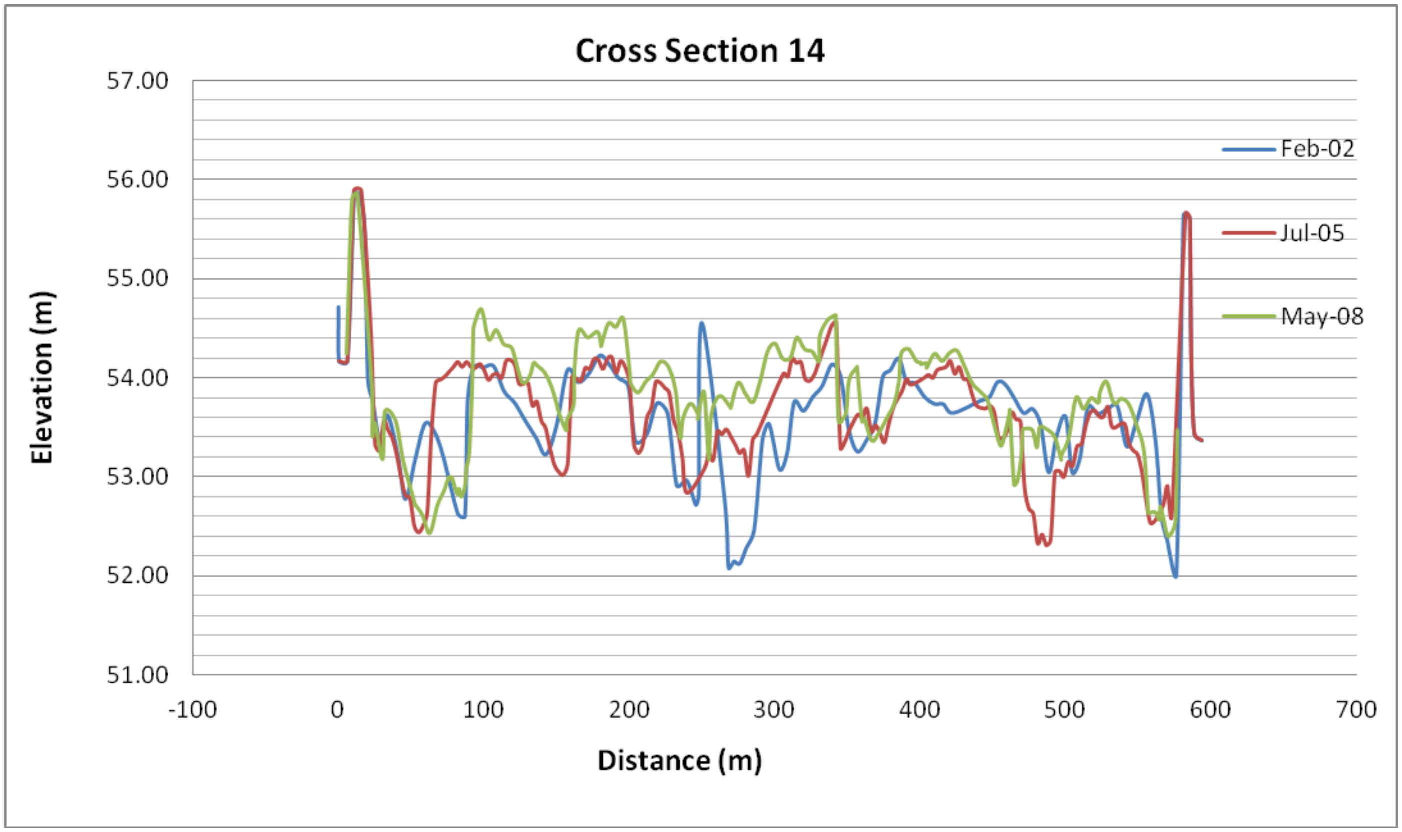


Figure 14. Bed levels at cross-section 14 on February 2002, July 2005, and May 2008.

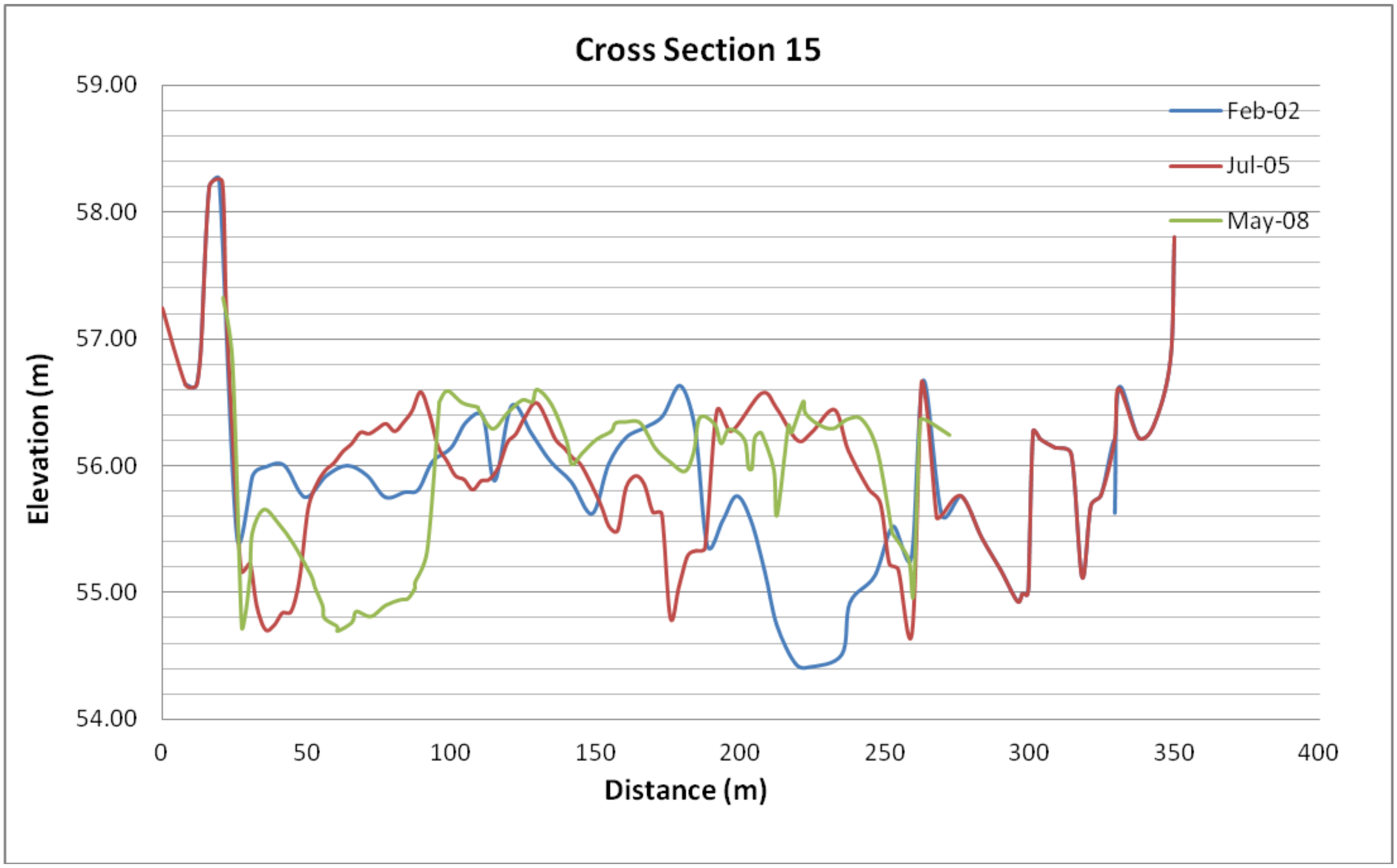


Figure 15. Bed levels at cross-section 6 on February 2002, July 2005, and May 2008.

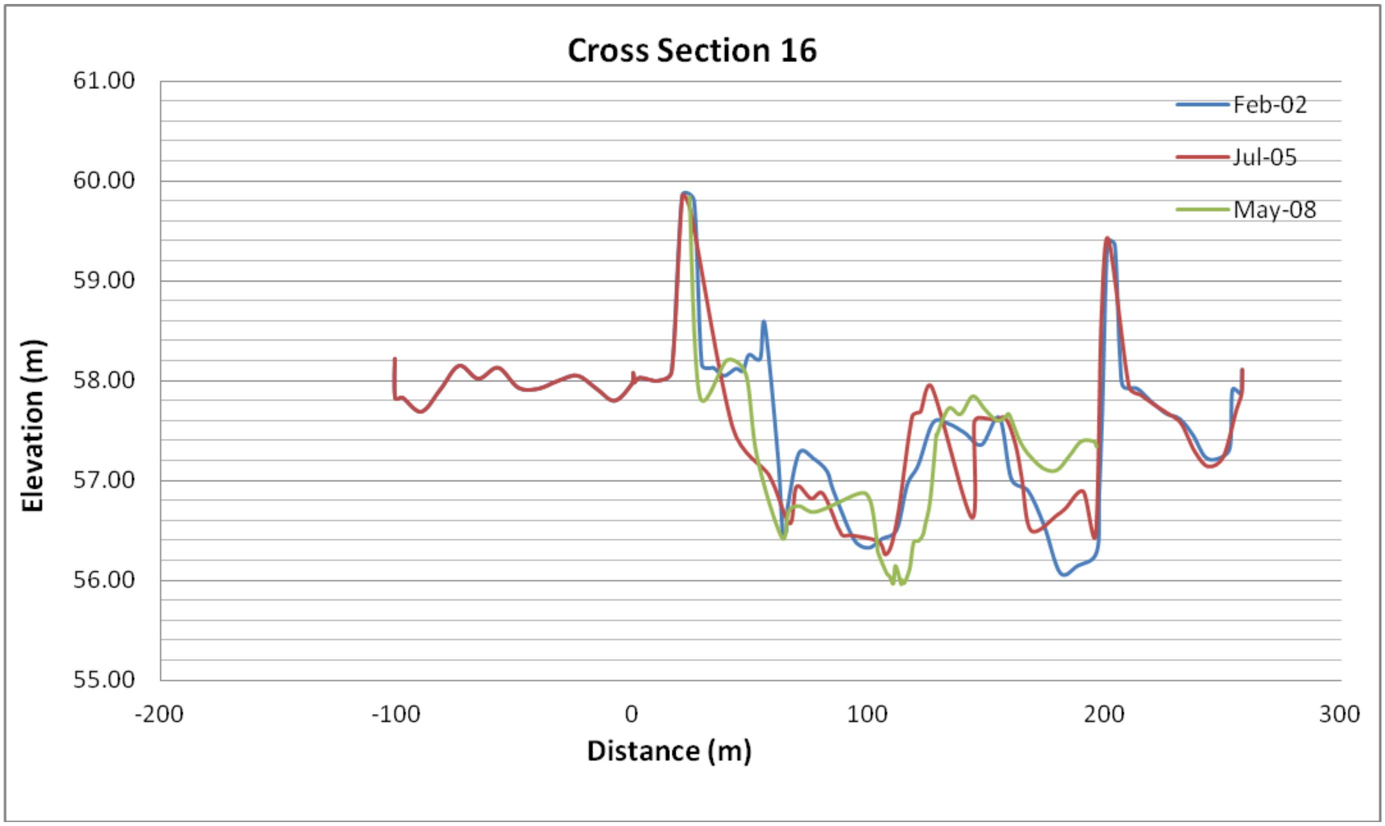


Figure 16. Bed levels at cross-section 16 on February 2002, July 2005, and May 2008.

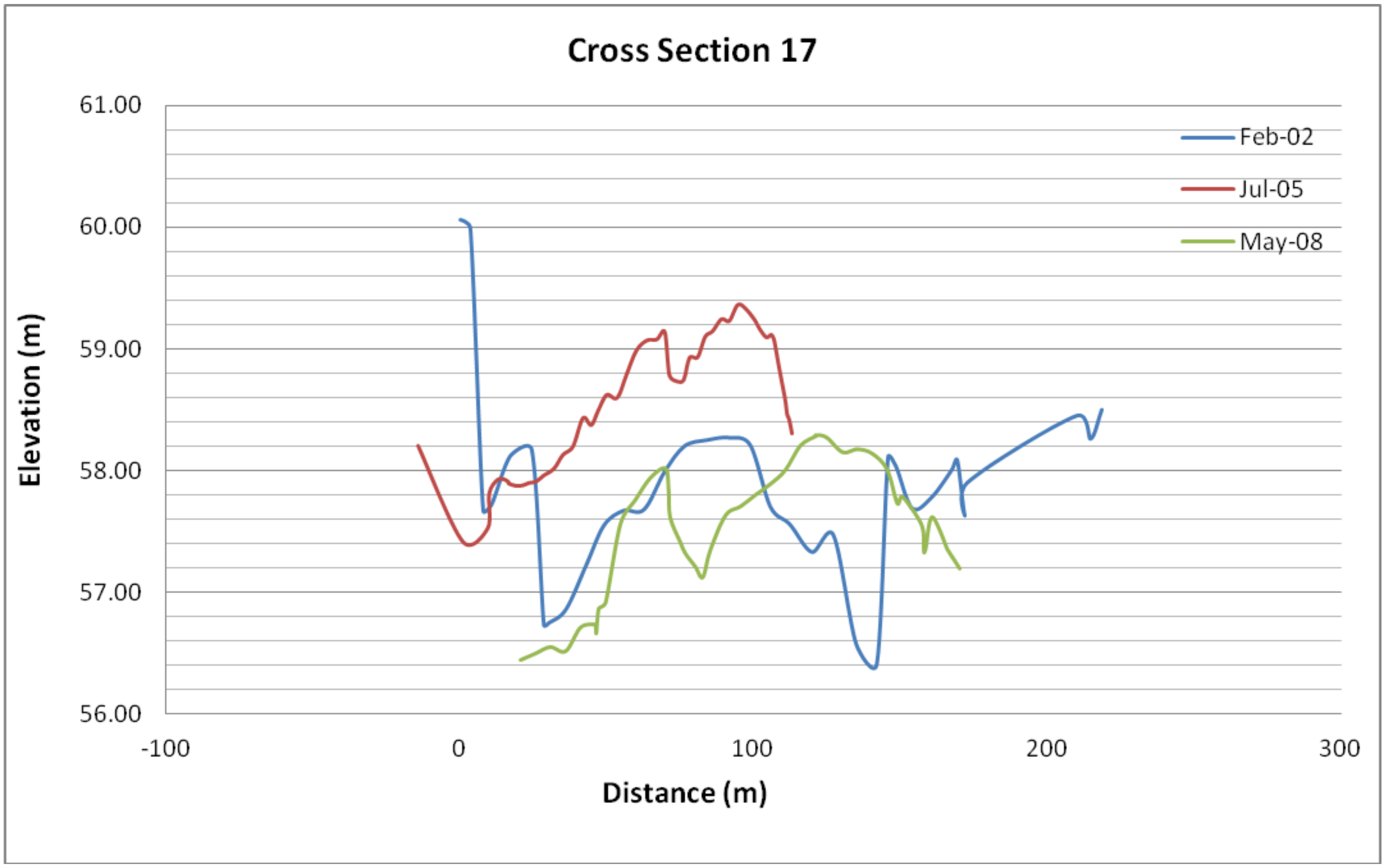


Figure 17. Bed levels at cross-section 17 on February 2002, July 2005, and May 2008.

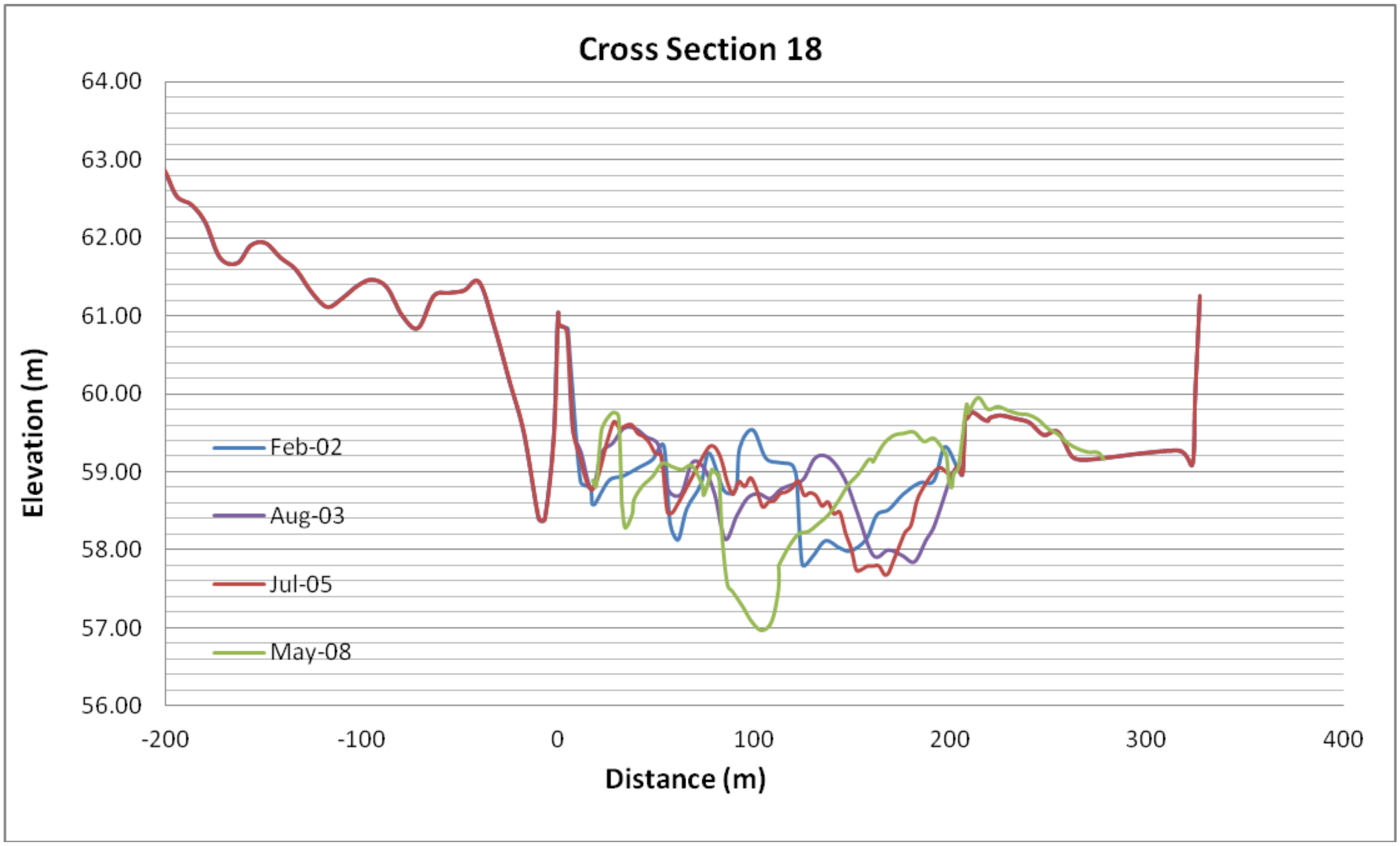


Figure 18. Bed levels at cross-section 18 on February 2002, August 2003, July 2005, and May 2008.

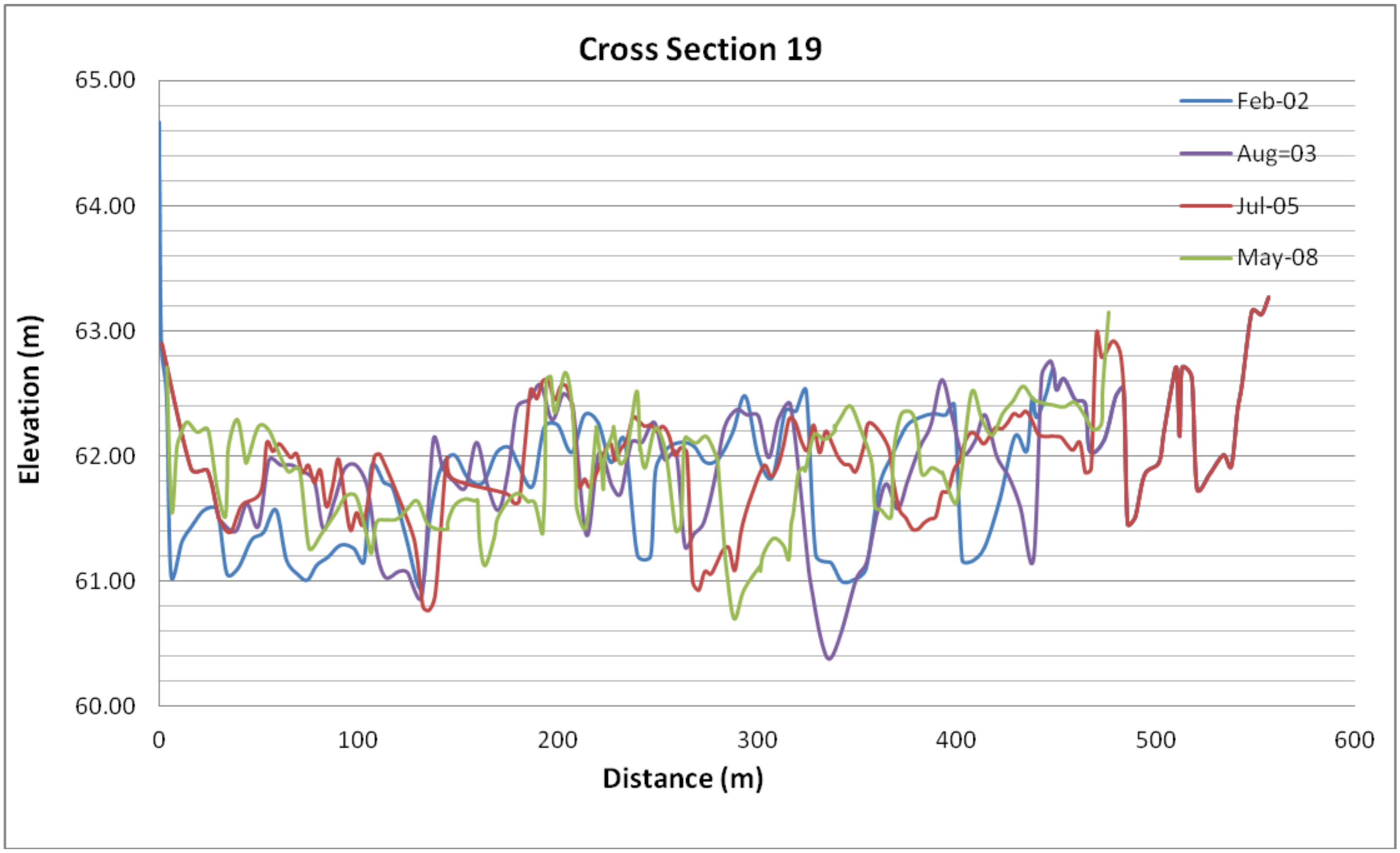


Figure 19. Bed levels at cross-section 19 on February 2002, August 2003, July 2005, and May 2008.

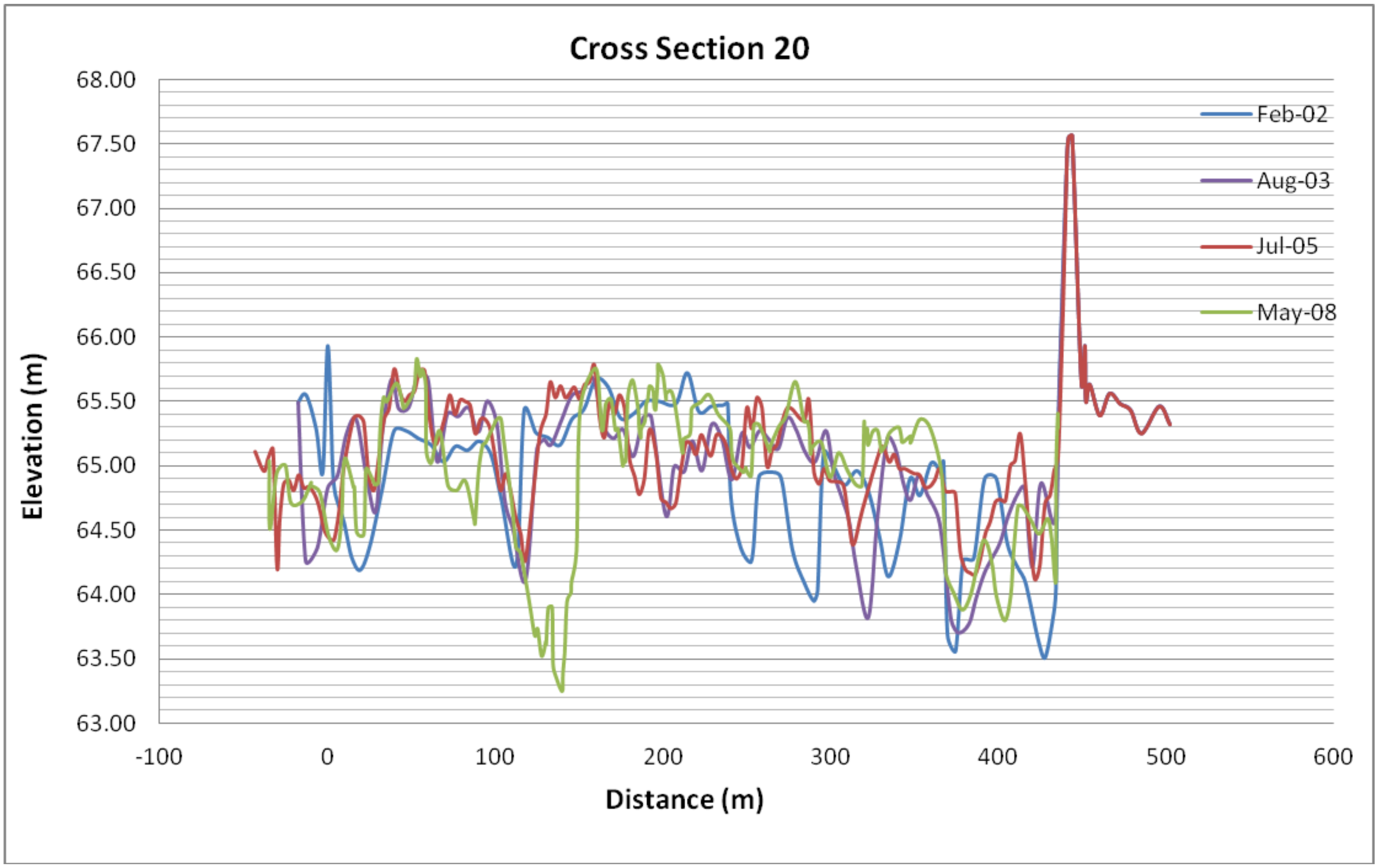


Figure 20. Bed levels at cross-section 20 on February 2002, August 2003, July 2005, and May 2008.

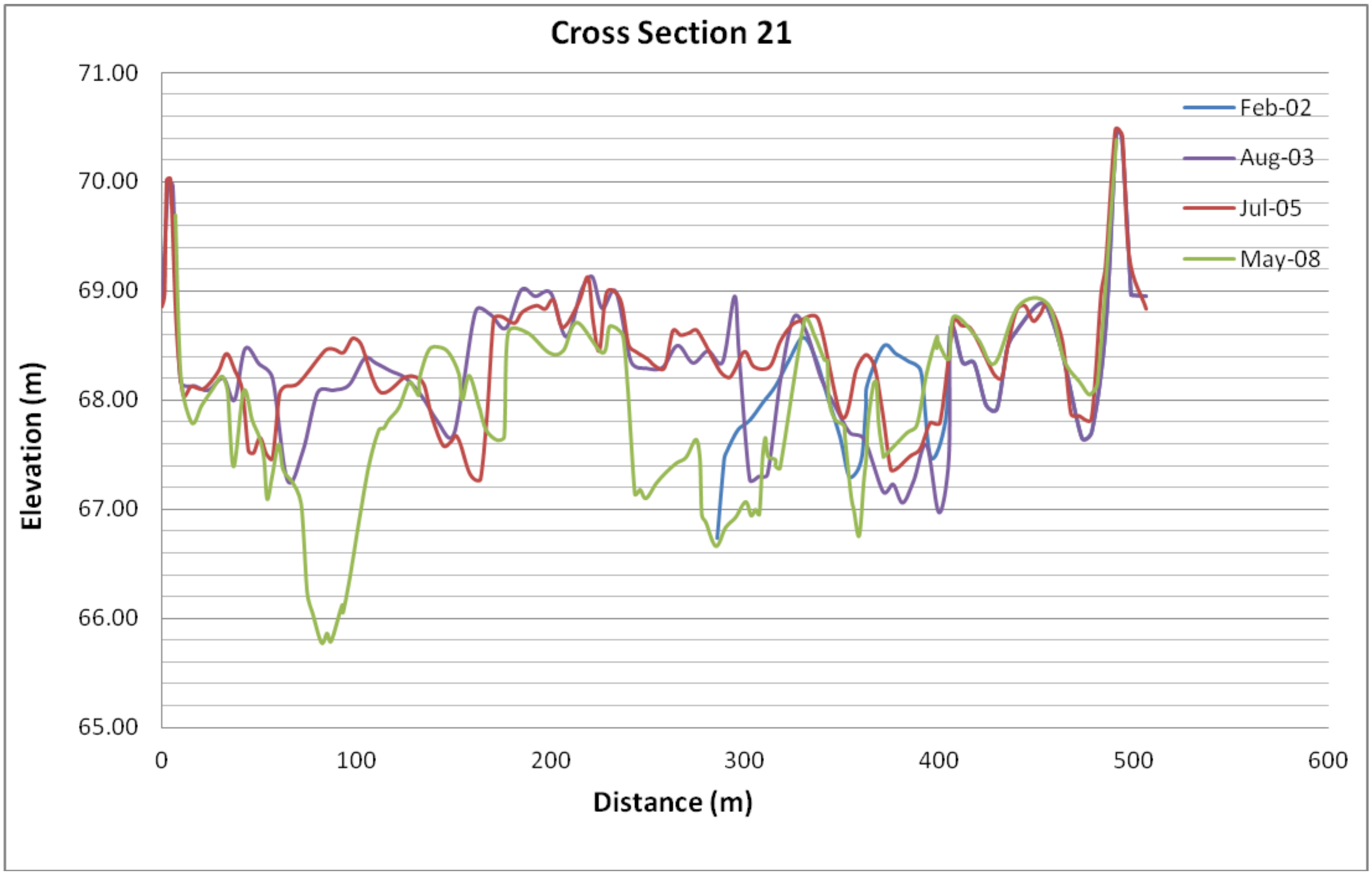


Figure 21. Bed levels at cross-section 21 on February 2002, August 2003, July 2005, and May 2008.

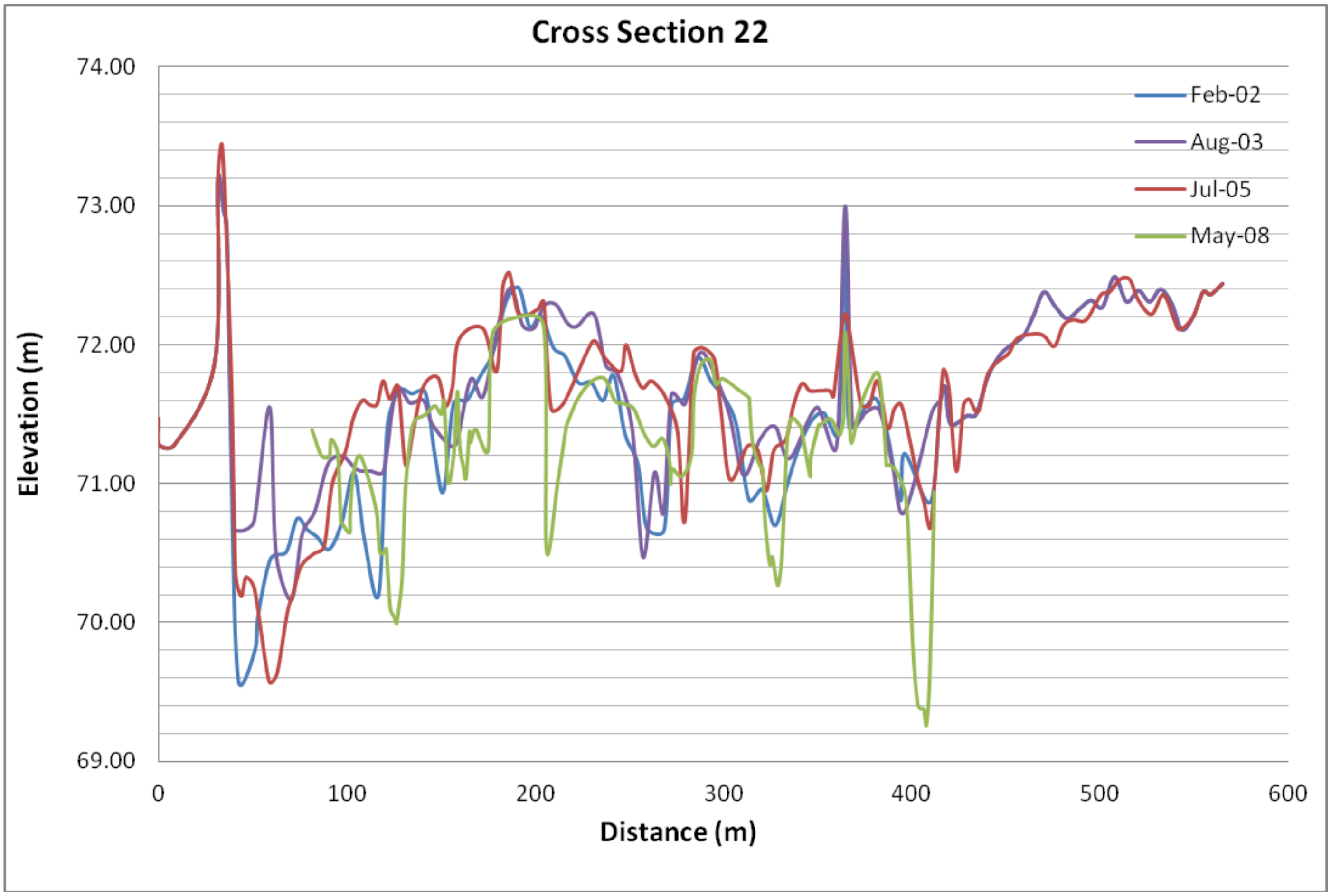


Figure 22. Bed levels at cross-section 22 on February 2002, August 2003, July 2005, and May 2008.

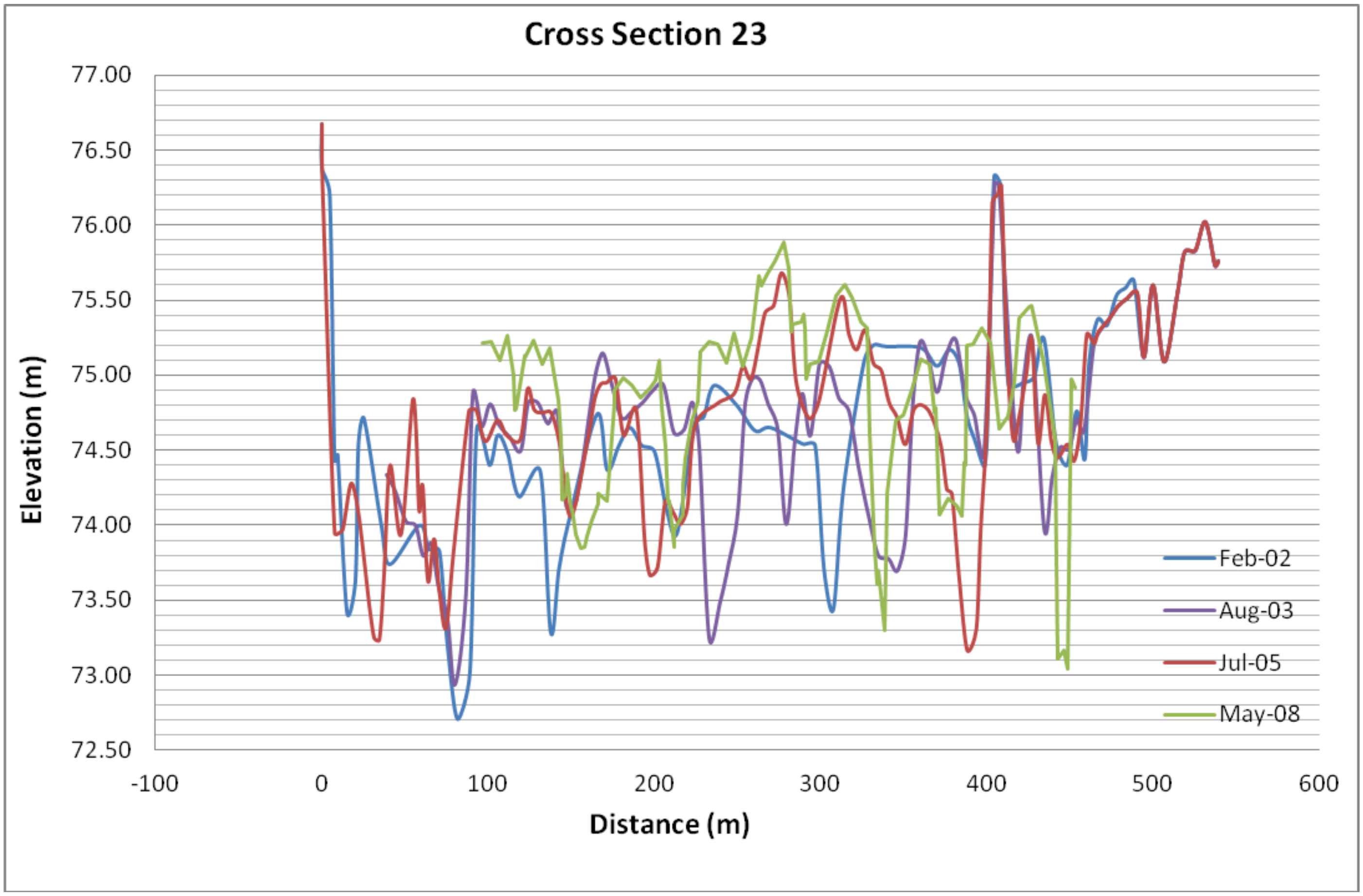


Figure 23. Bed levels at cross-section 23 on February 2002, August 2003, July 2005, and May 2008.

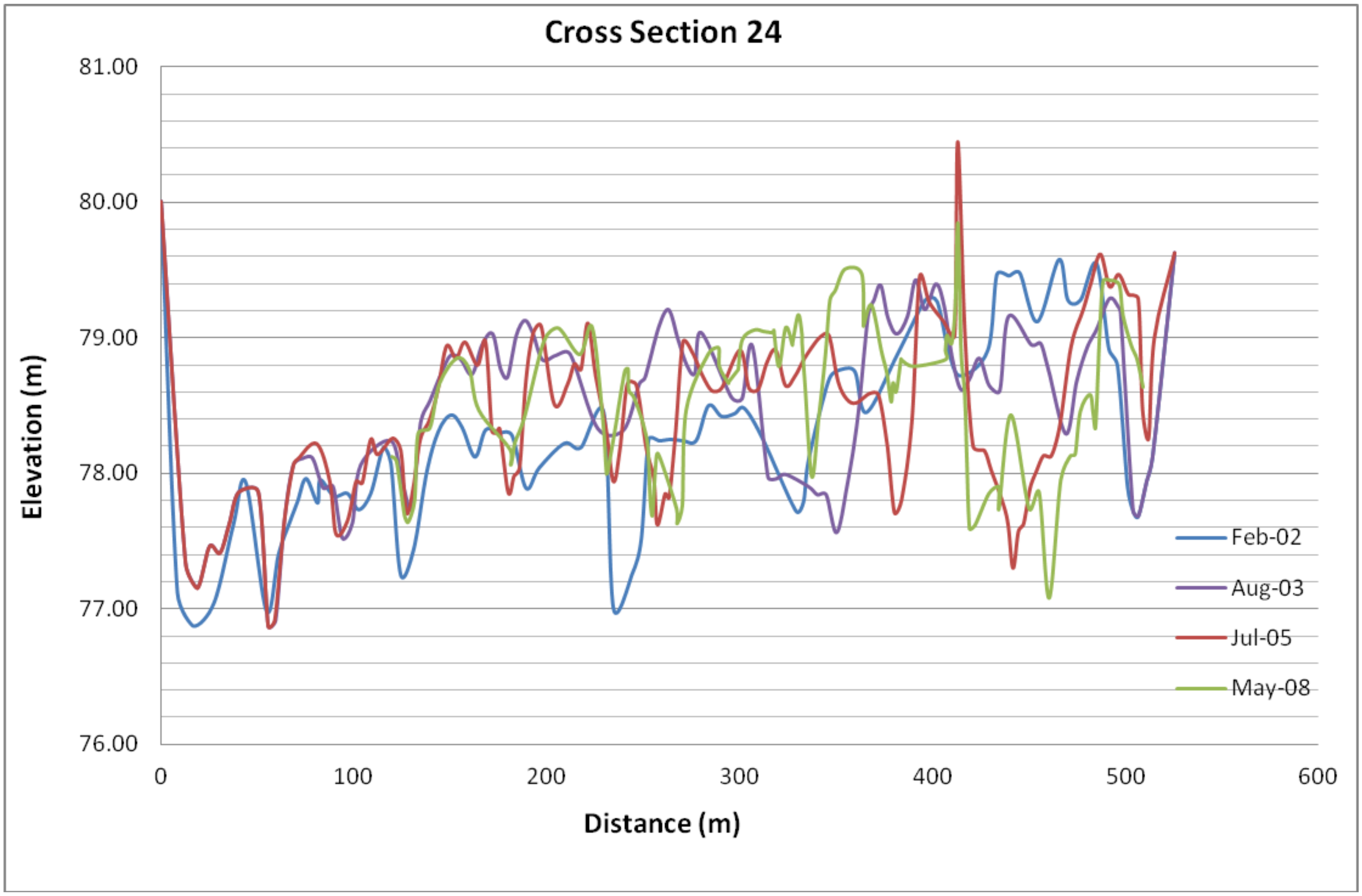


Figure 24. Bed levels at cross-section 24 on February 2002, August 2003, July 2005, and May 2008.

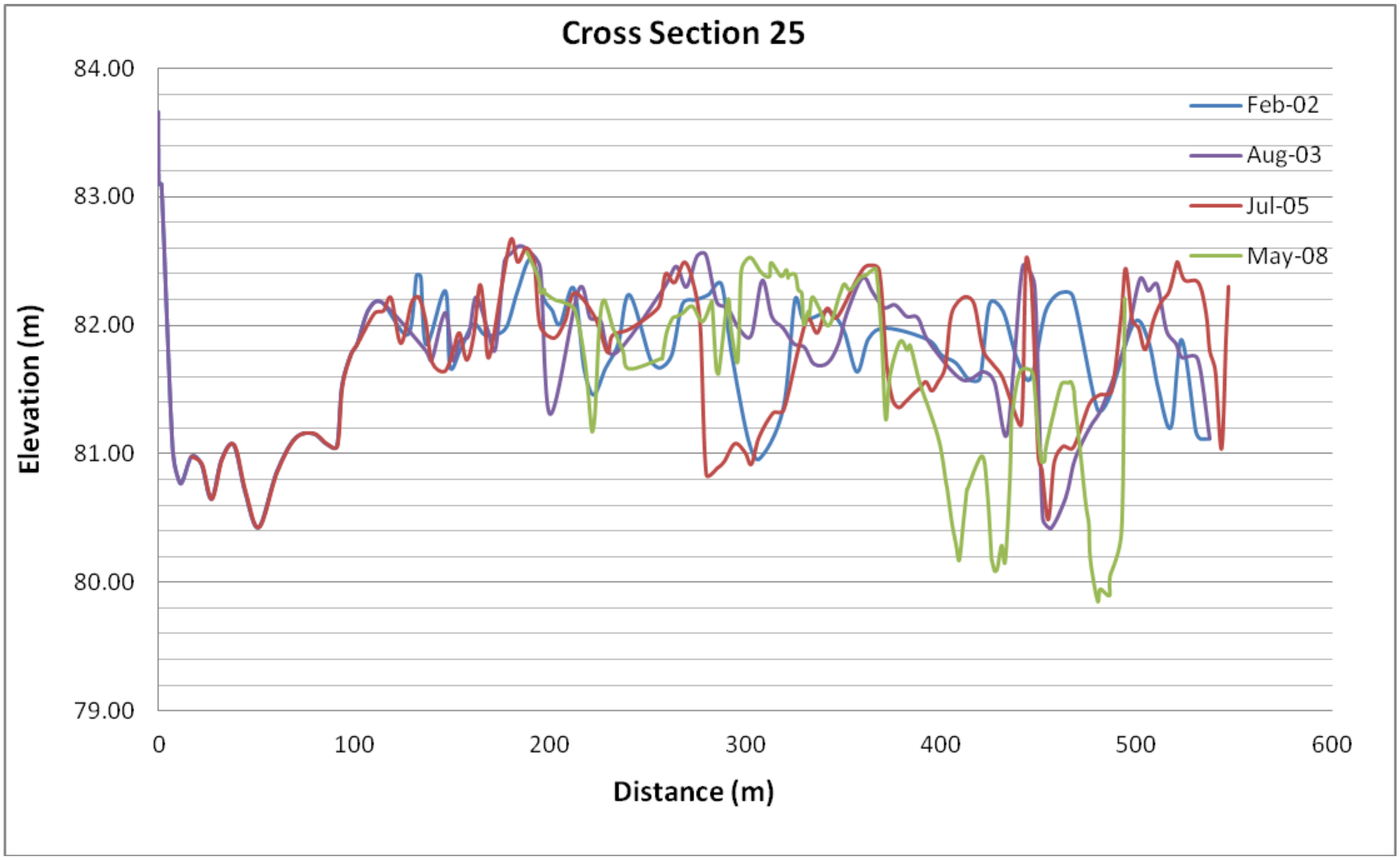


Figure 25. Bed levels at cross-section 25 on February 2002, August 2003, July 2005, and May 2008.

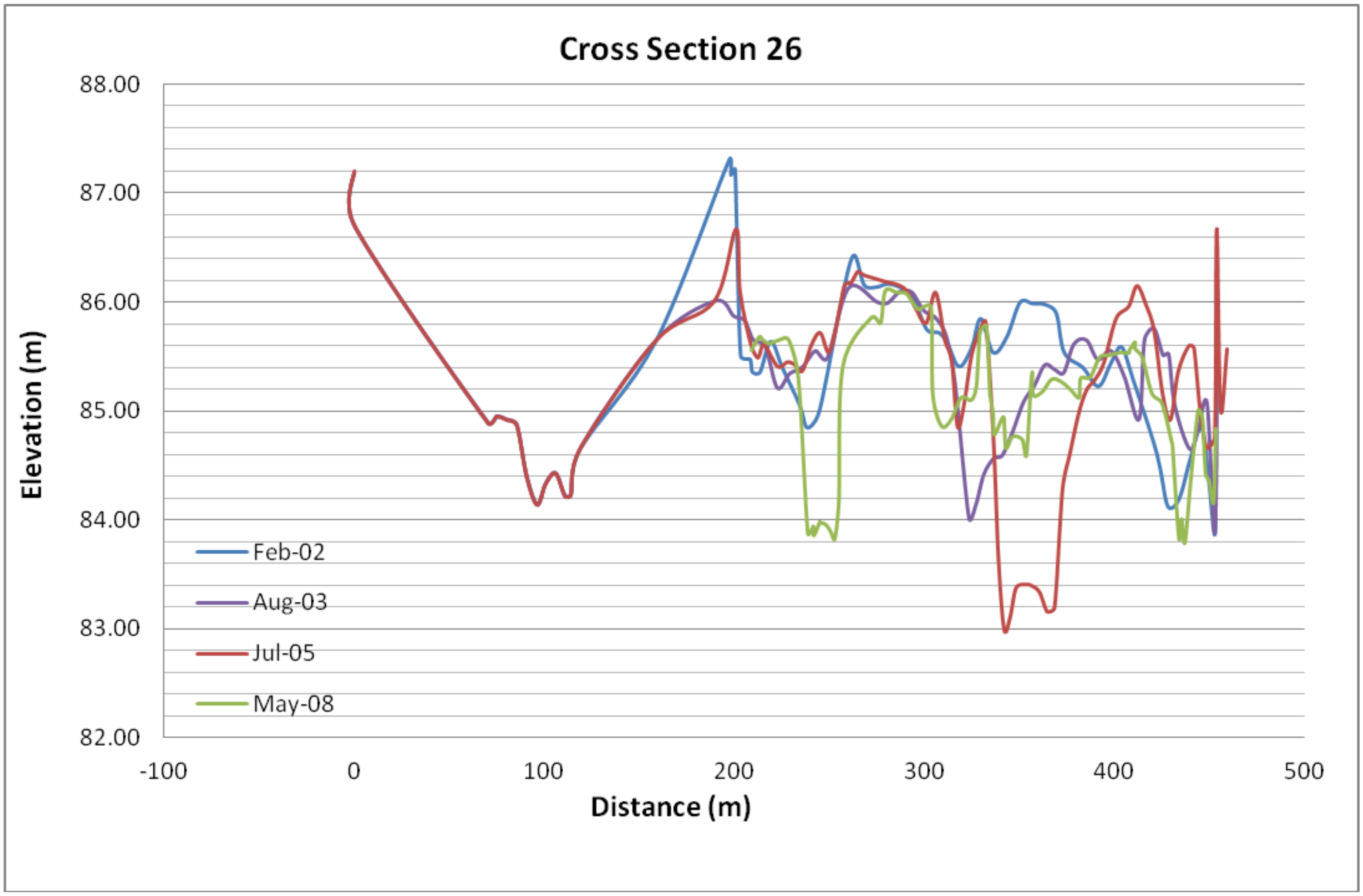


Figure 26. Bed levels at cross-section 26 on February 2002, August 2003, July 2005, and May 2008.

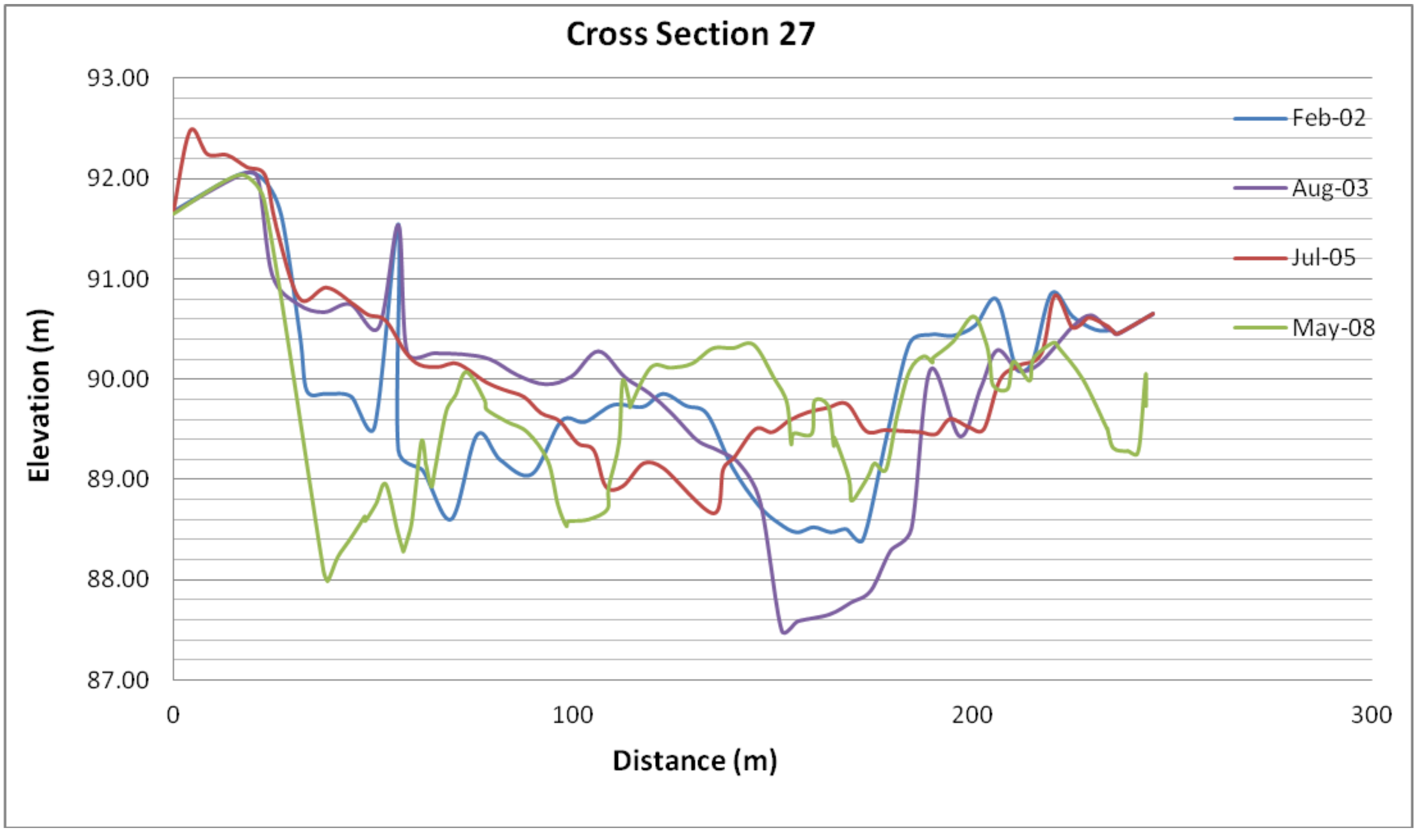


Figure 27. Bed levels at cross-section 27 on February 2002, August 2003, July 2005, and May 2008.

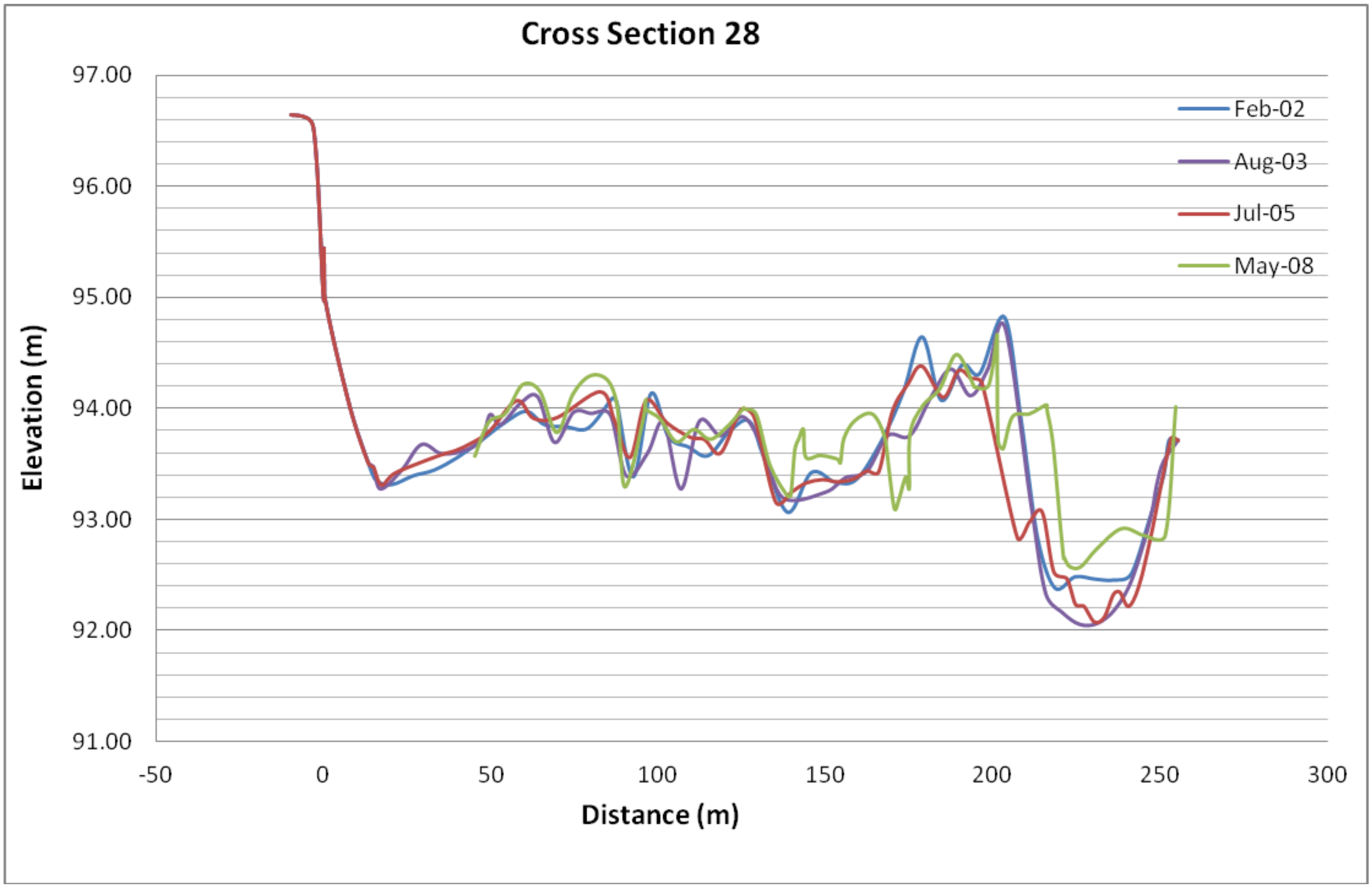


Figure 28. Bed levels at cross-section 28 on February 2002, August 2003, July 2005, and May 2008.

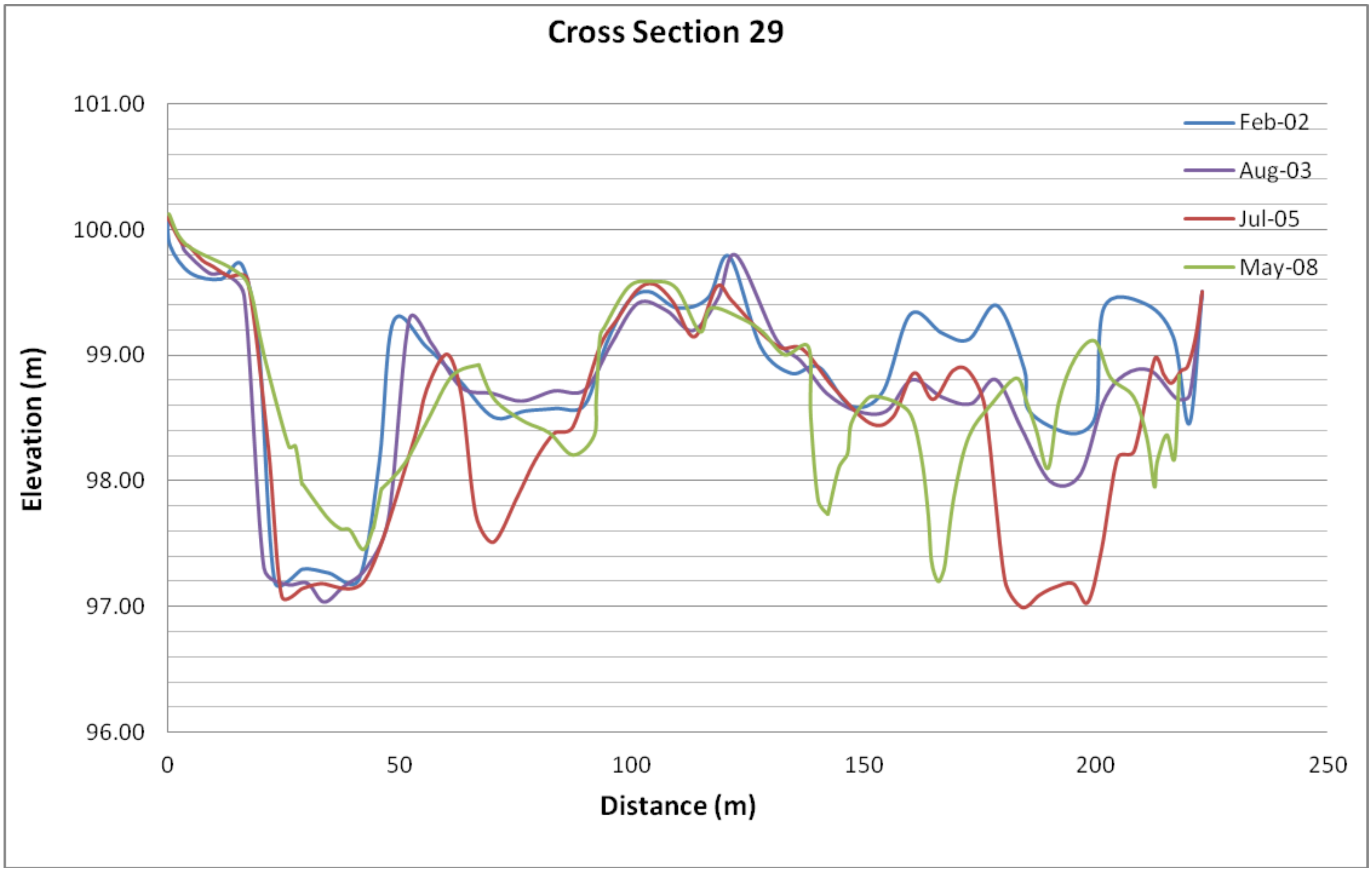


Figure 29. Bed levels at cross-section 29 on February 2002, August 2003, July 2005, and May 2008.

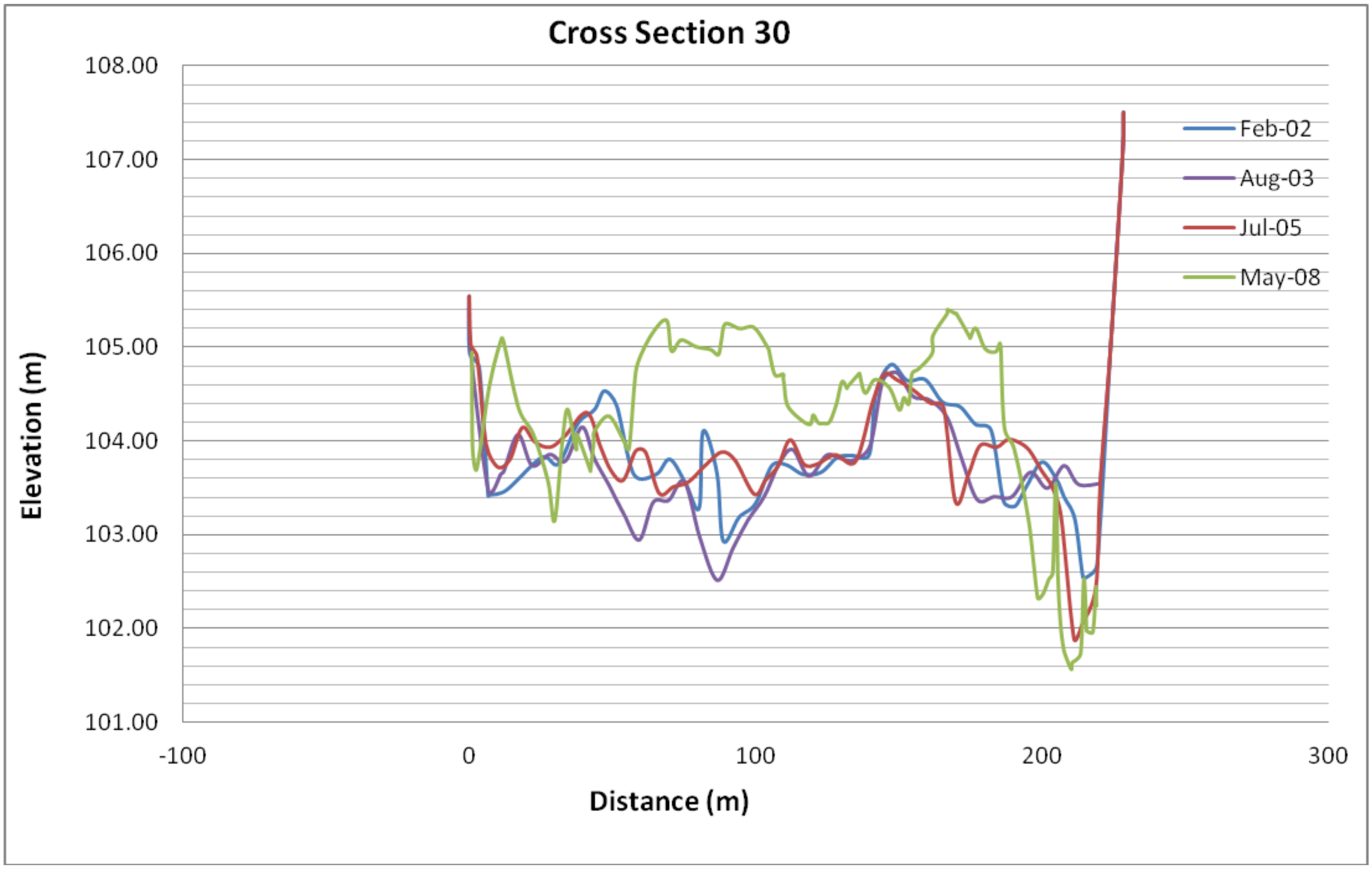


Figure 30. Bed levels at cross-section 30 on February 2002, August 2003, July 2005, and May 2008.

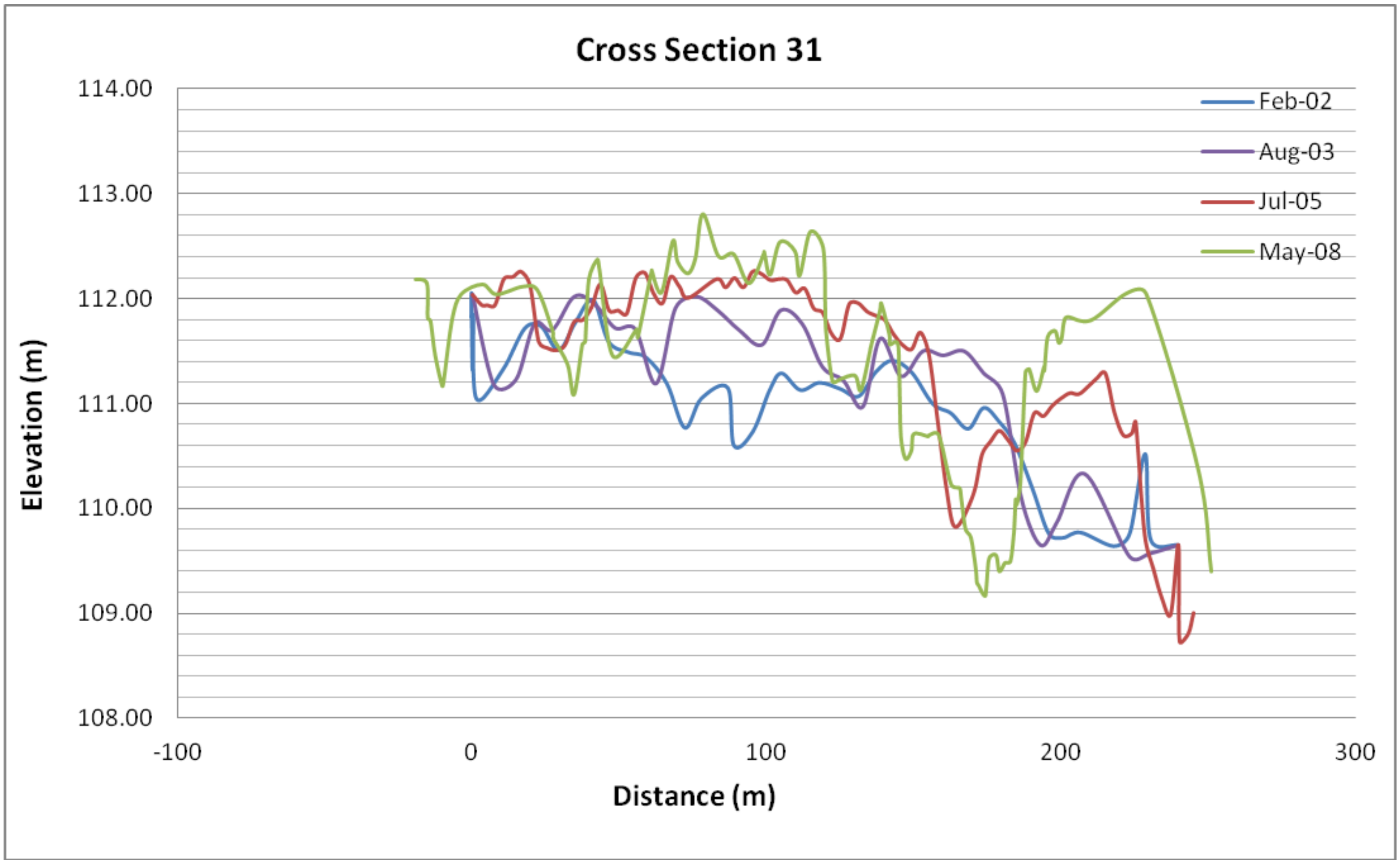


Figure 31. Bed levels at cross-section 31 on February 2002, August 2003, July 2005, and May 2008.

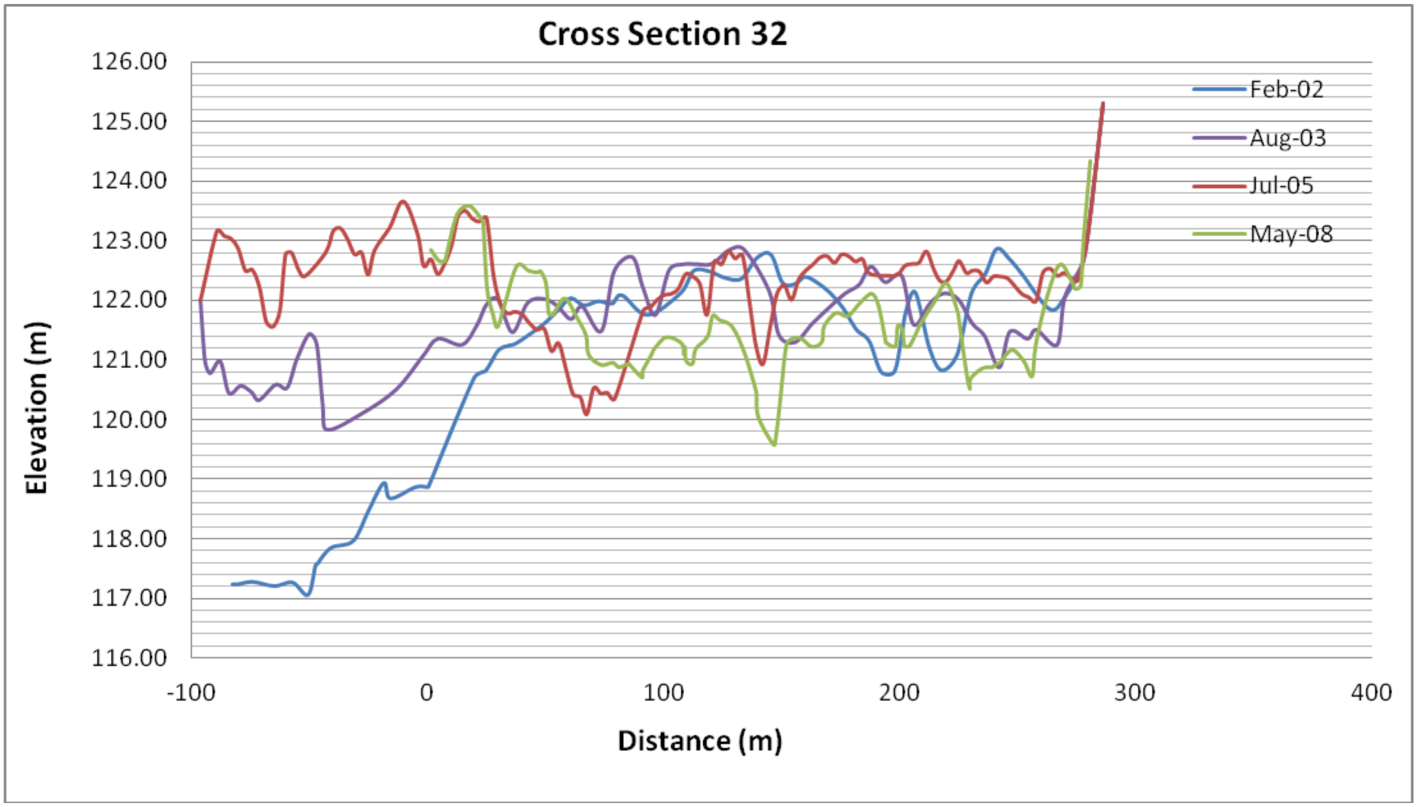


Figure 32. Bed levels at cross-section 32 on February 2002, August 2003, July 2005, and May 2008.

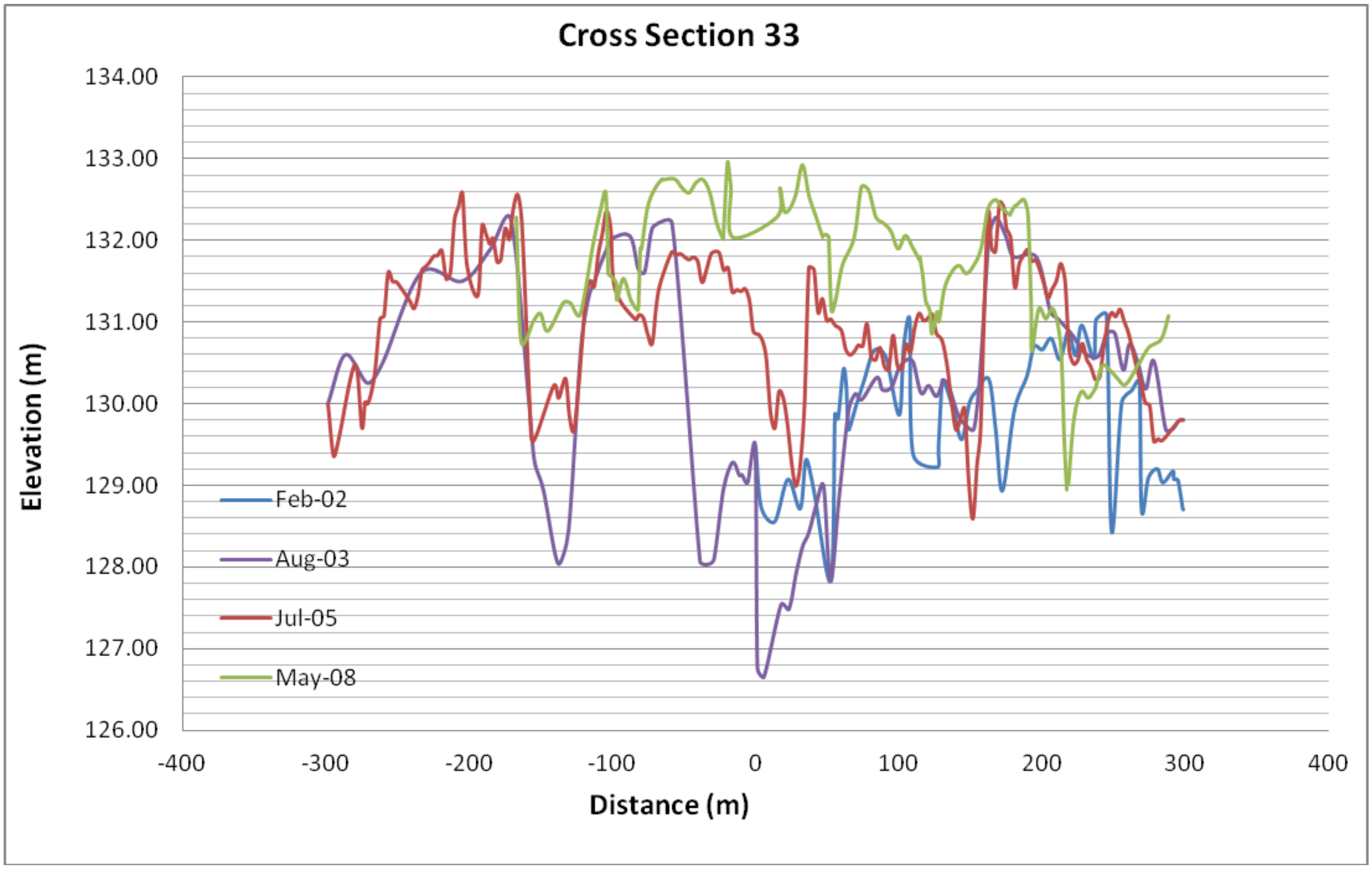


Figure 33. Bed levels at cross-section 33 on February 2002, August 2003, July 2005, and May 2008.

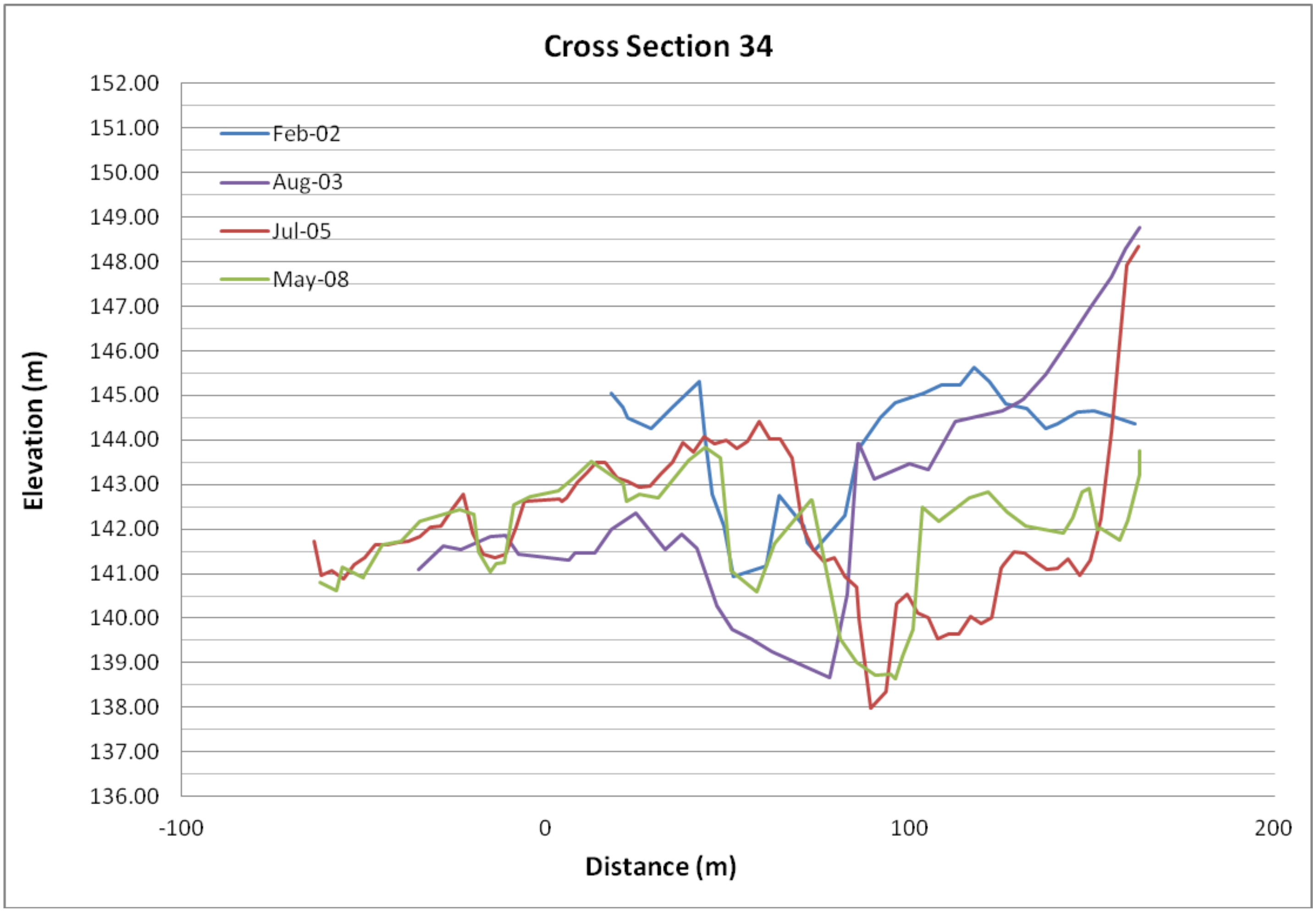


Figure 34. Bed levels at cross-section 34 on February 2002, August 2003, July 2005, and May 2008.

Appendix C: Survey data for the 34 cross-sections.

ID	Northing	Easting	Elevation	Code
1194	5223097	1393858	41.47	XSEC_1
1195	5223096	1393857	41.457	XSEC_1
1196	5223096	1393856	41.72	XSEC_1
1197	5223095	1393856	42.981	XSEC_1
1198	5223099	1393863	41.767	XSEC_1
1199	5223102	1393869	41.707	XSEC_1
1200	5223105	1393875	41.658	XSEC_1
1204	5223106	1393878	41.6	XSEC_1
1205	5223108	1393880	42.067	XSEC_1
1206	5223109	1393883	42.278	XSEC_1
1207	5223111	1393887	42.424	XSEC_1
1208	5223149	1393964	42.82	XSEC_1
1209	5223150	1393966	42.96	XSEC_1
1211	5223218	1394101	42.902	XSEC_1
1212	5223220	1394105	42.827	XSEC_1
1213	5223254	1394173	42.724	XSEC_1
1214	5223255	1394176	42.775	XSEC_1
1215	5223311	1394287	42.417	XSEC_1
1216	5223313	1394291	42.661	XSEC_1
1217	5223315	1394294	42.672	XSEC_1
13266	5223112	1393889	42.54	XSEC_1
13267	5223114	1393894	42.724	XSEC_1
13268	5223117	1393898	42.81	XSEC_1
13269	5223119	1393903	42.832	XSEC_1
13270	5223121	1393908	42.842	XSEC_1
13271	5223124	1393912	42.869	XSEC_1
13272	5223126	1393916	42.792	XSEC_1
13273	5223129	1393921	42.763	XSEC_1
13274	5223131	1393925	42.643	XSEC_1
13275	5223133	1393928	42.367	XSEC_1
13276	5223134	1393930	42.021	XSEC_1
13277	5223134	1393930	42.004	XSEC_1
13278	5223134	1393930	41.948	XSEC_1
13279	5223136	1393933	41.974	XSEC_1
13280	5223136	1393934	41.964	XSEC_1
13281	5223136	1393934	42.064	XSEC_1
13282	5223139	1393939	42.265	XSEC_1
13283	5223141	1393943	42.266	XSEC_1
13284	5223143	1393948	42.38	XSEC_1
13285	5223146	1393952	42.432	XSEC_1

13286	5223151	1393967	42.908	XSEC_1
13287	5223153	1393971	43.019	XSEC_1
13288	5223155	1393974	43.09	XSEC_1
13289	5223155	1393976	43.18	XSEC_1
13290	5223158	1393980	43.225	XSEC_1
13291	5223160	1393984	43.106	XSEC_1
13292	5223160	1393985	42.596	XSEC_1
13293	5223160	1393985	42.664	XSEC_1
13294	5223162	1393990	42.709	XSEC_1
13295	5223165	1393994	42.998	XSEC_1
13296	5223167	1393997	43.11	XSEC_1
13297	5223168	1393999	42.935	XSEC_1
13298	5223169	1394001	42.782	XSEC_1
13299	5223170	1394003	42.821	XSEC_1
13300	5223172	1394008	43.094	XSEC_1
13301	5223174	1394012	43.059	XSEC_1
13302	5223177	1394017	43.116	XSEC_1
13303	5223179	1394021	43.245	XSEC_1
13304	5223182	1394026	43.195	XSEC_1
13305	5223188	1394037	42.908	XSEC_1
13306	5223188	1394036	43.011	XSEC_1
13307	5223190	1394041	42.872	XSEC_1
13308	5223192	1394046	42.782	XSEC_1
13309	5223195	1394050	42.775	XSEC_1
13310	5223198	1394056	42.79	XSEC_1
13311	5223200	1394060	42.31	XSEC_1
13312	5223202	1394064	42.687	XSEC_1
13313	5223203	1394065	42.792	XSEC_1
13314	5223205	1394070	42.921	XSEC_1
13315	5223208	1394074	43.028	XSEC_1
13316	5223210	1394079	43.129	XSEC_1
13317	5223212	1394083	43.212	XSEC_1
13318	5223215	1394088	43.106	XSEC_1
13319	5223217	1394093	43.124	XSEC_1
13320	5223220	1394105	42.858	XSEC_1
13321	5223221	1394107	42.757	XSEC_1
13322	5223223	1394112	42.845	XSEC_1
13323	5223226	1394116	42.701	XSEC_1
13324	5223228	1394121	42.478	XSEC_1
13325	5223230	1394125	42.443	XSEC_1
13326	5223233	1394130	42.764	XSEC_1
13327	5223237	1394139	42.878	XSEC_1
13328	5223240	1394143	42.855	XSEC_1

13329	5223242	1394148	42.988	XSEC_1
13330	5223245	1394154	42.721	XSEC_1
13331	5223247	1394158	43.022	XSEC_1
13332	5223249	1394163	42.895	XSEC_1
13333	5223251	1394167	42.646	XSEC_1
13334	5223253	1394172	42.762	XSEC_1
13335	5223257	1394178	42.9	XSEC_1
13336	5223259	1394183	42.943	XSEC_1
13337	5223261	1394188	43.051	XSEC_1
13338	5223265	1394194	42.96	XSEC_1
13339	5223268	1394199	43.073	XSEC_1
13340	5223272	1394206	42.816	XSEC_1
13341	5223273	1394208	42.531	XSEC_1
13342	5223275	1394211	42.531	XSEC_1
13343	5223277	1394215	42.593	XSEC_1
13344	5223281	1394222	42.476	XSEC_1
13345	5223282	1394223	42.301	XSEC_1
13346	5223283	1394227	42.255	XSEC_1
13347	5223286	1394231	42.087	XSEC_1
13348	5223288	1394235	42.04	XSEC_1
13349	5223288	1394236	42.481	XSEC_1
13350	5223289	1394237	42.741	XSEC_1
13351	5223291	1394240	42.783	XSEC_1
13352	5223294	1394248	42.744	XSEC_1
13353	5223296	1394252	42.889	XSEC_1
13354	5223298	1394257	42.814	XSEC_1
13355	5223300	1394262	42.61	XSEC_1
13356	5223303	1394266	42.351	XSEC_1
13357	5223305	1394271	42.31	XSEC_1
13358	5223307	1394276	42.191	XSEC_1
13359	5223316	1394296	42.77	XSEC_1
13360	5223318	1394301	42.786	XSEC_1
13361	5223321	1394305	42.835	XSEC_1
13362	5223323	1394310	42.82	XSEC_1
13363	5223325	1394315	42.798	XSEC_1
13364	5223329	1394322	42.725	XSEC_1
13365	5223331	1394326	42.762	XSEC_1
13366	5223333	1394331	42.58	XSEC_1
13367	5223334	1394333	42.055	XSEC_1
13368	5223335	1394335	42.058	XSEC_1
13369	5223338	1394340	42.053	XSEC_1
13370	5223342	1394346	41.761	XSEC_1
13371	5223343	1394349	41.298	XSEC_1

13372	5223345	1394352	41.269	XSEC_1
13373	5223345	1394352	41.351	XSEC_1
13374	5223346	1394353	41.419	XSEC_1
1179	5222805	1394178	44.151	XSEC_2
1180	5222806	1394177	43.611	XSEC_2
1181	5222806	1394177	43.422	XSEC_2
1182	5222803	1394172	43.88	XSEC_2
1183	5222801	1394169	44.004	XSEC_2
1184	5222762	1394091	44.229	XSEC_2
1185	5222760	1394086	44.058	XSEC_2
1186	5222758	1394082	44.395	XSEC_2
1187	5222754	1394074	44.461	XSEC_2
1188	5222721	1394008	43.419	XSEC_2
1189	5222717	1394002	43.41	XSEC_2
1190	5222692	1393951	43.893	XSEC_2
1191	5222692	1393951	44.479	XSEC_2
1192	5222691	1393949	45.006	XSEC_2
1193	5222690	1393947	45.115	XSEC_2
13218	5222800	1394166	44.112	XSEC_2
13219	5222798	1394161	44.148	XSEC_2
13220	5222796	1394157	43.921	XSEC_2
13221	5222794	1394152	43.946	XSEC_2
13222	5222792	1394147	43.941	XSEC_2
13223	5222789	1394143	44.227	XSEC_2
13224	5222787	1394138	44.281	XSEC_2
13225	5222785	1394133	44.4	XSEC_2
13226	5222782	1394129	44.539	XSEC_2
13227	5222780	1394124	44.531	XSEC_2
13228	5222778	1394120	44.5	XSEC_2
13229	5222775	1394115	44.313	XSEC_2
13230	5222774	1394112	44.167	XSEC_2
13231	5222773	1394111	44.295	XSEC_2
13232	5222770	1394106	44.653	XSEC_2
13233	5222770	1394106	44.655	XSEC_2
13234	5222768	1394102	44.785	XSEC_2
13235	5222766	1394097	44.71	XSEC_2
13236	5222764	1394093	44.678	XSEC_2
13237	5222754	1394074	44.466	XSEC_2
13238	5222752	1394070	44.579	XSEC_2
13239	5222749	1394065	44.64	XSEC_2
13240	5222747	1394060	44.774	XSEC_2
13241	5222745	1394056	44.577	XSEC_2
13242	5222743	1394051	44.268	XSEC_2

13243	5222740	1394046	43.977	XSEC_2
13244	5222738	1394042	43.859	XSEC_2
13245	5222736	1394037	43.657	XSEC_2
13246	5222733	1394032	43.463	XSEC_2
13247	5222731	1394028	43.329	XSEC_2
13248	5222730	1394026	43.178	XSEC_2
13249	5222729	1394023	43.184	XSEC_2
13250	5222727	1394021	43.231	XSEC_2
13251	5222727	1394019	43.347	XSEC_2
13252	5222725	1394014	43.399	XSEC_2
13253	5222715	1393997	43.3	XSEC_2
13254	5222713	1393992	43.267	XSEC_2
13255	5222711	1393989	42.962	XSEC_2
13256	5222710	1393988	42.941	XSEC_2
13257	5222710	1393988	43.129	XSEC_2
13258	5222708	1393984	43.869	XSEC_2
13259	5222708	1393983	44.047	XSEC_2
13260	5222705	1393979	44.109	XSEC_2
13261	5222703	1393974	44.126	XSEC_2
13262	5222701	1393970	44.167	XSEC_2
13263	5222698	1393965	44.307	XSEC_2
13264	5222696	1393960	44.413	XSEC_2
13265	5222693	1393956	44.367	XSEC_2
1158	5222303	1394073	44.597	XSEC_3
1159	5222303	1394074	44.187	XSEC_3
1160	5222304	1394075	45.901	XSEC_3
1161	5222305	1394077	45.742	XSEC_3
1162	5222307	1394079	44.179	XSEC_3
1163	5222307	1394081	44.359	XSEC_3
1164	5222308	1394085	44.34	XSEC_3
1165	5222309	1394086	44.107	XSEC_3
1166	5222310	1394087	44.145	XSEC_3
1167	5222310	1394088	44.229	XSEC_3
1168	5222311	1394090	45.057	XSEC_3
1169	5222313	1394093	45.41	XSEC_3
1170	5222312	1394091	45.118	XSEC_3
1171	5222359	1394185	45.746	XSEC_3
1172	5222361	1394188	45.733	XSEC_3
1173	5222387	1394240	45.637	XSEC_3
1174	5222388	1394242	46.2	XSEC_3
1175	5222388	1394243	46.162	XSEC_3
1176	5222448	1394361	46.123	XSEC_3
1177	5222450	1394366	46.236	XSEC_3

1178	5222497	1394460	46.483	XSEC_3
13121	5222315	1394096	45.554	XSEC_3
13122	5222316	1394099	45.587	XSEC_3
13123	5222317	1394101	45.568	XSEC_3
13124	5222319	1394106	45.748	XSEC_3
13125	5222321	1394110	46.04	XSEC_3
13126	5222324	1394115	46.198	XSEC_3
13127	5222326	1394120	46.191	XSEC_3
13128	5222328	1394124	46.098	XSEC_3
13129	5222330	1394129	45.972	XSEC_3
13130	5222332	1394131	45.833	XSEC_3
13131	5222332	1394132	45.642	XSEC_3
13132	5222333	1394133	45.624	XSEC_3
13133	5222334	1394136	45.775	XSEC_3
13134	5222335	1394138	45.812	XSEC_3
13135	5222338	1394142	45.931	XSEC_3
13136	5222341	1394147	45.943	XSEC_3
13137	5222343	1394152	45.991	XSEC_3
13138	5222346	1394156	45.932	XSEC_3
13139	5222348	1394161	45.895	XSEC_3
13140	5222350	1394165	45.888	XSEC_3
13141	5222353	1394170	45.794	XSEC_3
13142	5222355	1394174	45.817	XSEC_3
13143	5222357	1394179	45.777	XSEC_3
13144	5222360	1394183	45.816	XSEC_3
13145	5222361	1394189	45.745	XSEC_3
13146	5222364	1394194	45.725	XSEC_3
13147	5222366	1394198	45.487	XSEC_3
13148	5222368	1394203	45.295	XSEC_3
13149	5222370	1394206	45	XSEC_3
13150	5222371	1394207	44.826	XSEC_3
13151	5222372	1394208	44.614	XSEC_3
13152	5222373	1394210	44.423	XSEC_3
13153	5222373	1394211	44.433	XSEC_3
13154	5222373	1394212	44.552	XSEC_3
13155	5222375	1394216	44.682	XSEC_3
13156	5222376	1394218	44.677	XSEC_3
13157	5222378	1394221	45.567	XSEC_3
13158	5222378	1394221	45.516	XSEC_3
13159	5222380	1394225	45.553	XSEC_3
13160	5222382	1394230	45.462	XSEC_3
13161	5222385	1394234	45.361	XSEC_3
13162	5222387	1394239	45.533	XSEC_3

13163	5222389	1394244	45.678	XSEC_3
13164	5222389	1394245	45.652	XSEC_3
13165	5222390	1394246	45.498	XSEC_3
13166	5222392	1394250	45.452	XSEC_3
13167	5222394	1394255	45.399	XSEC_3
13168	5222396	1394259	45.29	XSEC_3
13169	5222398	1394264	45.238	XSEC_3
13170	5222401	1394268	45.234	XSEC_3
13171	5222403	1394273	45.364	XSEC_3
13172	5222405	1394277	45.678	XSEC_3
13173	5222407	1394280	45.829	XSEC_3
13174	5222408	1394282	45.97	XSEC_3
13175	5222410	1394286	46.114	XSEC_3
13176	5222412	1394291	46.041	XSEC_3
13177	5222415	1394295	46.144	XSEC_3
13178	5222417	1394300	46.206	XSEC_3
13179	5222420	1394304	46.226	XSEC_3
13180	5222423	1394309	46.173	XSEC_3
13181	5222425	1394313	46.092	XSEC_3
13182	5222427	1394318	45.883	XSEC_3
13183	5222430	1394322	45.837	XSEC_3
13184	5222431	1394325	45.713	XSEC_3
13185	5222431	1394325	45.854	XSEC_3
13186	5222432	1394327	45.942	XSEC_3
13187	5222434	1394332	45.802	XSEC_3
13188	5222437	1394336	45.797	XSEC_3
13189	5222439	1394341	45.75	XSEC_3
13190	5222442	1394345	45.819	XSEC_3
13191	5222445	1394349	46.013	XSEC_3
13192	5222447	1394354	46.111	XSEC_3
13193	5222452	1394370	46.271	XSEC_3
13194	5222454	1394374	46.387	XSEC_3
13195	5222457	1394379	46.456	XSEC_3
13196	5222459	1394383	46.427	XSEC_3
13197	5222461	1394388	46.7	XSEC_3
13198	5222462	1394389	46.292	XSEC_3
13199	5222464	1394393	46.061	XSEC_3
13200	5222466	1394397	45.918	XSEC_3
13201	5222466	1394397	46.003	XSEC_3
13202	5222467	1394399	46.163	XSEC_3
13203	5222468	1394402	46.073	XSEC_3
13204	5222469	1394405	45.808	XSEC_3
13205	5222470	1394407	45.844	XSEC_3

13206	5222473	1394411	45.934	XSEC_3
13207	5222475	1394416	45.95	XSEC_3
13208	5222477	1394421	46.083	XSEC_3
13209	5222479	1394425	46.385	XSEC_3
13210	5222481	1394430	46.529	XSEC_3
13211	5222483	1394434	46.29	XSEC_3
13212	5222483	1394434	46.666	XSEC_3
13213	5222483	1394435	46.705	XSEC_3
13214	5222486	1394439	46.781	XSEC_3
13215	5222488	1394443	46.719	XSEC_3
13216	5222490	1394448	46.868	XSEC_3
13217	5222493	1394452	46.611	XSEC_3
1113	5222213	1394791	50.771	XSEC_4
1114	5222211	1394787	50.83	XSEC_4
1115	5222205	1394774	48.072	XSEC_4
1116	5222207	1394779	48.163	XSEC_4
1117	5222209	1394781	48.024	XSEC_4
1118	5222201	1394767	47.867	XSEC_4
1119	5222200	1394765	48.197	XSEC_4
1120	5222199	1394764	48.526	XSEC_4
1121	5222198	1394761	48.604	XSEC_4
1122	5222156	1394676	48.203	XSEC_4
1123	5222154	1394673	47.971	XSEC_4
1124	5222110	1394585	48.349	XSEC_4
1125	5222109	1394583	47.6	XSEC_4
1126	5222108	1394582	47.529	XSEC_4
1127	5222107	1394580	47.594	XSEC_4
1128	5222076	1394519	48.212	XSEC_4
1129	5222073	1394513	48.461	XSEC_4
1130	5222073	1394511	48.414	XSEC_4
1131	5222031	1394427	47.193	XSEC_4
1132	5222029	1394423	47.161	XSEC_4
1133	5222026	1394418	47.243	XSEC_4
1134	5222024	1394414	47.269	XSEC_4
1135	5222002	1394371	47.65	XSEC_4
1136	5222001	1394368	48.075	XSEC_4
1137	5222001	1394367	47.98	XSEC_4
1138	5222000	1394367	47.532	XSEC_4
1139	5222000	1394366	47.755	XSEC_4
1140	5221999	1394364	47.976	XSEC_4
1141	5221997	1394360	47.807	XSEC_4
1142	5221996	1394359	48.115	XSEC_4
1143	5221995	1394356	48.109	XSEC_4

1144	5221993	1394353	47.968	XSEC_4
1145	5221993	1394352	47.518	XSEC_4
1146	5221992	1394350	47.531	XSEC_4
1147	5221990	1394347	47.583	XSEC_4
1148	5221988	1394343	47.528	XSEC_4
1149	5221967	1394302	46.346	XSEC_4
1150	5221966	1394299	46.275	XSEC_4
1151	5221965	1394296	46.456	XSEC_4
1152	5221964	1394294	46.556	XSEC_4
1153	5221963	1394293	46.623	XSEC_4
1154	5221961	1394290	46.505	XSEC_4
1155	5221961	1394288	46.434	XSEC_4
1156	5221960	1394287	46.287	XSEC_4
1157	5221959	1394285	46.208	XSEC_4
12989	5222198	1394761	48.604	XSEC_4
12990	5222196	1394757	48.646	XSEC_4
12991	5222195	1394754	48.697	XSEC_4
12992	5222191	1394748	48.627	XSEC_4
12993	5222191	1394748	48.629	XSEC_4
12994	5222191	1394747	48.476	XSEC_4
12995	5222190	1394745	48.513	XSEC_4
12996	5222190	1394744	48.592	XSEC_4
12997	5222189	1394743	48.627	XSEC_4
12998	5222185	1394736	48.437	XSEC_4
12999	5222185	1394736	48.435	XSEC_4
13000	5222183	1394732	48.365	XSEC_4
13001	5222183	1394731	48.388	XSEC_4
13002	5222182	1394729	48.272	XSEC_4
13003	5222182	1394728	48.108	XSEC_4
13004	5222181	1394727	48.124	XSEC_4
13005	5222178	1394722	48.169	XSEC_4
13006	5222176	1394718	48.14	XSEC_4
13007	5222175	1394717	48.062	XSEC_4
13008	5222175	1394716	48.35	XSEC_4
13009	5222173	1394713	48.456	XSEC_4
13010	5222171	1394709	48.441	XSEC_4
13011	5222169	1394704	48.399	XSEC_4
13012	5222166	1394699	48.294	XSEC_4
13013	5222164	1394694	48.31	XSEC_4
13014	5222161	1394690	48.379	XSEC_4
13015	5222159	1394686	48.304	XSEC_4
13016	5222157	1394681	48.248	XSEC_4
13017	5222155	1394677	48.207	XSEC_4

13018	5222154	1394673	47.971	XSEC_4
13019	5222152	1394670	47.536	XSEC_4
13020	5222152	1394668	47.559	XSEC_4
13021	5222150	1394664	47.422	XSEC_4
13022	5222149	1394662	48.111	XSEC_4
13023	5222148	1394661	48.349	XSEC_4
13024	5222145	1394656	48.464	XSEC_4
13025	5222143	1394652	48.513	XSEC_4
13026	5222140	1394647	48.272	XSEC_4
13027	5222140	1394647	48.277	XSEC_4
13028	5222138	1394643	47.968	XSEC_4
13029	5222135	1394639	47.779	XSEC_4
13030	5222133	1394634	47.756	XSEC_4
13031	5222131	1394630	47.754	XSEC_4
13032	5222130	1394630	48.041	XSEC_4
13033	5222129	1394628	48.203	XSEC_4
13034	5222127	1394625	48.465	XSEC_4
13035	5222125	1394620	48.469	XSEC_4
13036	5222123	1394616	48.46	XSEC_4
13037	5222121	1394611	48.584	XSEC_4
13038	5222118	1394607	48.461	XSEC_4
13039	5222116	1394602	48.443	XSEC_4
13040	5222114	1394598	48.591	XSEC_4
13041	5222112	1394593	48.426	XSEC_4
13042	5222109	1394589	48.431	XSEC_4
13043	5222107	1394579	47.664	XSEC_4
13044	5222104	1394575	48.033	XSEC_4
13045	5222103	1394573	47.942	XSEC_4
13046	5222101	1394571	48.287	XSEC_4
13047	5222099	1394566	48.354	XSEC_4
13048	5222096	1394562	48.197	XSEC_4
13049	5222094	1394558	48.255	XSEC_4
13050	5222093	1394558	48.29	XSEC_4
13051	5222091	1394553	48.258	XSEC_4
13052	5222088	1394548	48.248	XSEC_4
13053	5222087	1394546	48.232	XSEC_4
13054	5222086	1394544	48.405	XSEC_4
13055	5222086	1394544	48.496	XSEC_4
13056	5222084	1394539	48.374	XSEC_4
13057	5222081	1394535	48.302	XSEC_4
13058	5222078	1394530	48.25	XSEC_4
13059	5222076	1394526	48.271	XSEC_4
13060	5222074	1394521	48.273	XSEC_4

13061	5222072	1394511	48.118	XSEC_4
13062	5222071	1394508	48.176	XSEC_4
13063	5222070	1394506	48.224	XSEC_4
13064	5222068	1394502	48.195	XSEC_4
13065	5222067	1394501	48.269	XSEC_4
13066	5222065	1394497	48.256	XSEC_4
13067	5222063	1394492	48.227	XSEC_4
13068	5222060	1394488	48.164	XSEC_4
13069	5222058	1394483	47.93	XSEC_4
13070	5222057	1394481	47.544	XSEC_4
13071	5222056	1394480	47.366	XSEC_4
13072	5222056	1394479	47.588	XSEC_4
13073	5222055	1394478	47.784	XSEC_4
13074	5222053	1394474	47.928	XSEC_4
13075	5222052	1394471	47.928	XSEC_4
13076	5222051	1394470	48.03	XSEC_4
13077	5222051	1394469	48.017	XSEC_4
13078	5222050	1394467	47.653	XSEC_4
13079	5222049	1394465	47.612	XSEC_4
13080	5222047	1394460	47.582	XSEC_4
13081	5222044	1394456	47.738	XSEC_4
13082	5222042	1394451	47.913	XSEC_4
13083	5222039	1394447	47.949	XSEC_4
13084	5222037	1394442	47.862	XSEC_4
13085	5222035	1394437	47.722	XSEC_4
13086	5222033	1394432	47.616	XSEC_4
13087	5222032	1394430	47.484	XSEC_4
13088	5222031	1394428	47.332	XSEC_4
13089	5222022	1394410	48.047	XSEC_4
13090	5222021	1394407	47.981	XSEC_4
13091	5222020	1394407	47.805	XSEC_4
13092	5222020	1394406	47.704	XSEC_4
13093	5222017	1394401	47.698	XSEC_4
13094	5222015	1394397	47.704	XSEC_4
13095	5222013	1394392	47.642	XSEC_4
13096	5222010	1394388	47.629	XSEC_4
13097	5222008	1394383	47.532	XSEC_4
13098	5222006	1394379	47.647	XSEC_4
13099	5222004	1394374	47.859	XSEC_4
13100	5222003	1394372	47.771	XSEC_4
13101	5221988	1394342	47.524	XSEC_4
13102	5221987	1394340	47.402	XSEC_4
13103	5221985	1394337	47.251	XSEC_4

13104	5221984	1394336	46.938	XSEC_4
13105	5221983	1394334	46.735	XSEC_4
13106	5221983	1394333	46.834	XSEC_4
13107	5221980	1394328	47.076	XSEC_4
13108	5221978	1394324	47.308	XSEC_4
13109	5221976	1394319	47.401	XSEC_4
13110	5221973	1394315	47.339	XSEC_4
13111	5221971	1394310	47.19	XSEC_4
13112	5221969	1394306	46.924	XSEC_4
13113	5221968	1394304	46.794	XSEC_4
13114	5221959	1394284	45.842	XSEC_4
13115	5221959	1394283	45.572	XSEC_4
13116	5221958	1394282	45.516	XSEC_4
13117	5221958	1394281	45.654	XSEC_4
13118	5221958	1394281	45.818	XSEC_4
13119	5221957	1394279	45.866	XSEC_4
13120	5221957	1394278	46.063	XSEC_4
110002	5222207	1394779	48.154	XSEC_4
110003	5222208	1394779	48.024	XSEC_4
461	5221562	1394392	48.008	XSEC_5
462	5221564	1394395	47.634	XSEC_5
463	5221565	1394397	47.61	XSEC_5
464	5221566	1394398	47.595	XSEC_5
465	5221566	1394399	47.75	XSEC_5
466	5221567	1394402	48.477	XSEC_5
467	5221569	1394406	48.321	XSEC_5
468	5221571	1394408	48.301	XSEC_5
469	5221595	1394454	49.572	XSEC_5
470	5221595	1394457	48.932	XSEC_5
471	5221596	1394459	48.612	XSEC_5
472	5221599	1394464	48.8	XSEC_5
473	5221602	1394470	48.952	XSEC_5
474	5221603	1394474	48.9	XSEC_5
475	5221638	1394542	50.135	XSEC_5
476	5221638	1394543	49.739	XSEC_5
477	5221640	1394546	49.947	XSEC_5
478	5221640	1394547	49.507	XSEC_5
479	5221641	1394549	49.097	XSEC_5
480	5221642	1394551	49.125	XSEC_5
481	5221643	1394552	49.063	XSEC_5
482	5221644	1394554	49.046	XSEC_5
483	5221645	1394557	49.145	XSEC_5
484	5221647	1394560	49.13	XSEC_5

485	5221649	1394565	49.058	XSEC_5
486	5221651	1394569	49.033	XSEC_5
487	5221652	1394570	48.964	XSEC_5
488	5221653	1394571	48.823	XSEC_5
489	5221653	1394573	48.83	XSEC_5
490	5221654	1394574	48.7	XSEC_5
491	5221654	1394575	48.76	XSEC_5
492	5221655	1394576	48.819	XSEC_5
493	5221655	1394577	48.905	XSEC_5
494	5221657	1394580	49.415	XSEC_5
495	5221658	1394582	49.52	XSEC_5
496	5221659	1394584	49.372	XSEC_5
497	5221660	1394586	49.342	XSEC_5
498	5221660	1394588	49.825	XSEC_5
499	5221662	1394590	49.801	XSEC_5
500	5221664	1394595	49.826	XSEC_5
501	5221668	1394603	49.751	XSEC_5
503	5221673	1394612	49.686	XSEC_5
504	5221673	1394612	49.195	XSEC_5
505	5221674	1394614	49.187	XSEC_5
506	5221674	1394615	49.255	XSEC_5
507	5221675	1394616	49.727	XSEC_5
508	5221676	1394618	49.839	XSEC_5
509	5221676	1394618	49.235	XSEC_5
510	5221677	1394620	49.041	XSEC_5
511	5221679	1394624	49.407	XSEC_5
512	5221713	1394692	49.513	XSEC_5
513	5221716	1394694	49.457	XSEC_5
514	5221716	1394694	50.24	XSEC_5
515	5221724	1394713	50.169	XSEC_5
516	5221725	1394714	49.113	XSEC_5
517	5221726	1394715	48.984	XSEC_5
518	5221727	1394719	49.288	XSEC_5
519	5221728	1394721	49.643	XSEC_5
520	5221729	1394724	49.813	XSEC_5
521	5221730	1394725	49.771	XSEC_5
522	5221787	1394839	50.495	XSEC_5
523	5221787	1394840	50.011	XSEC_5
524	5221788	1394841	49.801	XSEC_5
525	5221789	1394844	50.44	XSEC_5
526	5221790	1394846	50.481	XSEC_5
527	5221792	1394849	50.387	XSEC_5
528	5221792	1394849	50.306	XSEC_5

529	5221792	1394850	50.097	XSEC_5
530	5221793	1394852	50.149	XSEC_5
531	5221794	1394854	50.388	XSEC_5
532	5221819	1394904	50.491	XSEC_5
533	5221822	1394909	50.491	XSEC_5
534	5221823	1394911	50.524	XSEC_5
535	5221845	1394954	50.415	XSEC_5
536	5221845	1394956	49.971	XSEC_5
537	5221847	1394959	49.941	XSEC_5
538	5221848	1394960	49.847	XSEC_5
539	5221849	1394962	49.668	XSEC_5
540	5221849	1394964	49.503	XSEC_5
541	5221894	1395052	50.887	XSEC_5
542	5221895	1395054	50.734	XSEC_5
543	5221895	1395054	50.633	XSEC_5
544	5221896	1395056	50.455	XSEC_5
545	5221896	1395057	50.316	XSEC_5
546	5221897	1395060	50.253	XSEC_5
547	5221899	1395063	50.411	XSEC_5
12826	5221573	1394412	48.267	XSEC_5
12827	5221575	1394417	48.906	XSEC_5
12828	5221578	1394421	49.162	XSEC_5
12829	5221581	1394425	49.198	XSEC_5
12830	5221583	1394430	49.072	XSEC_5
12831	5221587	1394435	48.83	XSEC_5
12832	5221588	1394437	48.428	XSEC_5
12833	5221589	1394440	48.477	XSEC_5
12834	5221591	1394442	48.455	XSEC_5
12835	5221592	1394444	49.127	XSEC_5
12836	5221593	1394446	50.016	XSEC_5
12837	5221596	1394450	49.413	XSEC_5
12838	5221604	1394476	48.934	XSEC_5
12839	5221607	1394480	48.953	XSEC_5
12840	5221609	1394485	49.149	XSEC_5
12841	5221609	1394485	49.241	XSEC_5
12842	5221614	1394494	49.444	XSEC_5
12843	5221617	1394498	49.491	XSEC_5
12844	5221619	1394503	49.606	XSEC_5
12845	5221621	1394507	49.44	XSEC_5
12846	5221624	1394512	49.513	XSEC_5
12847	5221625	1394515	49.489	XSEC_5
12848	5221626	1394517	49.152	XSEC_5
12849	5221628	1394521	49.298	XSEC_5

12850	5221629	1394523	49.27	XSEC_5
12851	5221631	1394526	49.28	XSEC_5
12852	5221632	1394529	49.527	XSEC_5
12853	5221633	1394530	49.483	XSEC_5
12854	5221633	1394530	49.267	XSEC_5
12855	5221634	1394533	49.286	XSEC_5
12856	5221635	1394534	49.61	XSEC_5
12857	5221677	1394620	49.139	XSEC_5
12858	5221677	1394621	49.331	XSEC_5
12859	5221679	1394625	49.501	XSEC_5
12860	5221681	1394630	49.565	XSEC_5
12861	5221683	1394634	49.452	XSEC_5
12862	5221684	1394636	49.622	XSEC_5
12863	5221685	1394638	49.753	XSEC_5
12864	5221685	1394639	49.904	XSEC_5
12865	5221687	1394644	49.864	XSEC_5
12866	5221689	1394646	49.735	XSEC_5
12867	5221689	1394647	49.817	XSEC_5
12868	5221689	1394648	49.85	XSEC_5
12869	5221690	1394648	49.789	XSEC_5
12870	5221692	1394653	49.877	XSEC_5
12871	5221694	1394658	49.81	XSEC_5
12872	5221696	1394663	49.925	XSEC_5
12873	5221698	1394668	49.983	XSEC_5
12874	5221700	1394672	50.054	XSEC_5
12875	5221701	1394677	50.04	XSEC_5
12876	5221703	1394682	49.845	XSEC_5
12877	5221706	1394687	49.708	XSEC_5
12878	5221708	1394691	49.486	XSEC_5
12879	5221708	1394691	49.526	XSEC_5
12880	5221710	1394695	49.51	XSEC_5
12881	5221730	1394725	49.766	XSEC_5
12882	5221730	1394726	49.453	XSEC_5
12883	5221731	1394728	49.318	XSEC_5
12884	5221732	1394729	49.507	XSEC_5
12885	5221732	1394730	49.636	XSEC_5
12886	5221734	1394734	49.713	XSEC_5
12887	5221737	1394739	49.866	XSEC_5
12888	5221739	1394743	49.986	XSEC_5
12889	5221741	1394748	49.99	XSEC_5
12890	5221744	1394752	49.898	XSEC_5
12891	5221746	1394757	50.02	XSEC_5
12892	5221748	1394761	49.968	XSEC_5

12893	5221751	1394766	50.121	XSEC_5
12894	5221753	1394771	50.157	XSEC_5
12895	5221755	1394773	49.979	XSEC_5
12896	5221755	1394774	49.964	XSEC_5
12897	5221756	1394775	50.12	XSEC_5
12898	5221756	1394776	50.041	XSEC_5
12899	5221757	1394777	50.214	XSEC_5
12900	5221758	1394779	50.329	XSEC_5
12901	5221763	1394787	50.236	XSEC_5
12902	5221766	1394792	50.193	XSEC_5
12903	5221768	1394796	49.875	XSEC_5
12904	5221769	1394798	49.557	XSEC_5
12905	5221770	1394801	49.478	XSEC_5
12906	5221773	1394805	49.381	XSEC_5
12907	5221775	1394810	49.258	XSEC_5
12908	5221776	1394812	49.045	XSEC_5
12909	5221777	1394813	49.016	XSEC_5
12910	5221778	1394814	49.278	XSEC_5
12911	5221778	1394814	49.421	XSEC_5
12912	5221779	1394816	49.798	XSEC_5
12913	5221780	1394819	49.88	XSEC_5
12914	5221782	1394823	49.819	XSEC_5
12915	5221783	1394825	49.711	XSEC_5
12916	5221784	1394828	50.053	XSEC_5
12917	5221785	1394830	50.411	XSEC_5
12918	5221788	1394834	50.501	XSEC_5
12919	5221795	1394855	50.495	XSEC_5
12920	5221796	1394857	50.525	XSEC_5
12921	5221796	1394857	50.251	XSEC_5
12922	5221797	1394858	49.905	XSEC_5
12923	5221798	1394859	49.87	XSEC_5
12924	5221799	1394862	49.984	XSEC_5
12925	5221799	1394864	50.264	XSEC_5
12926	5221800	1394864	50.396	XSEC_5
12927	5221802	1394869	50.457	XSEC_5
12928	5221804	1394873	50.351	XSEC_5
12929	5221806	1394878	50.399	XSEC_5
12930	5221808	1394882	50.495	XSEC_5
12931	5221810	1394886	50.537	XSEC_5
12932	5221812	1394889	50.043	XSEC_5
12933	5221813	1394891	50.01	XSEC_5
12934	5221814	1394893	50.086	XSEC_5
12935	5221814	1394894	50.017	XSEC_5

12936	5221814	1394894	50.078	XSEC_5
12937	5221814	1394895	49.986	XSEC_5
12938	5221815	1394896	50.061	XSEC_5
12939	5221816	1394898	50.191	XSEC_5
12940	5221816	1394899	50.318	XSEC_5
12941	5221817	1394901	50.469	XSEC_5
12942	5221824	1394914	50.475	XSEC_5
12943	5221826	1394919	50.474	XSEC_5
12944	5221828	1394922	50.26	XSEC_5
12945	5221829	1394923	50.344	XSEC_5
12946	5221831	1394928	50.592	XSEC_5
12947	5221833	1394933	50.615	XSEC_5
12948	5221835	1394937	50.661	XSEC_5
12949	5221839	1394944	50.7	XSEC_5
12950	5221841	1394949	50.696	XSEC_5
12951	5221843	1394953	50.478	XSEC_5
12952	5221850	1394966	49.664	XSEC_5
12953	5221850	1394966	49.641	XSEC_5
12954	5221852	1394969	49.823	XSEC_5
12955	5221853	1394972	49.845	XSEC_5
12956	5221855	1394976	49.928	XSEC_5
12957	5221855	1394977	49.972	XSEC_5
12958	5221856	1394978	50.023	XSEC_5
12959	5221857	1394981	50.09	XSEC_5
12960	5221857	1394982	50.352	XSEC_5
12961	5221858	1394983	50.482	XSEC_5
12962	5221860	1394986	50.651	XSEC_5
12963	5221860	1394986	50.65	XSEC_5
12964	5221863	1394993	50.818	XSEC_5
12965	5221865	1394997	50.691	XSEC_5
12966	5221867	1395002	50.568	XSEC_5
12967	5221869	1395007	50.704	XSEC_5
12968	5221871	1395012	50.703	XSEC_5
12969	5221873	1395017	50.937	XSEC_5
12970	5221875	1395021	51.16	XSEC_5
12971	5221877	1395026	51.059	XSEC_5
12972	5221879	1395031	50.855	XSEC_5
12973	5221881	1395035	50.749	XSEC_5
12974	5221881	1395035	50.959	XSEC_5
12975	5221882	1395037	50.981	XSEC_5
12976	5221883	1395038	50.661	XSEC_5
12977	5221883	1395040	50.825	XSEC_5
12978	5221885	1395045	50.892	XSEC_5

12979	5221887	1395049	50.899	XSEC_5
12980	5221888	1395052	50.882	XSEC_5
12981	5221901	1395066	50.531	XSEC_5
12982	5221901	1395067	50.674	XSEC_5
12983	5221903	1395071	50.674	XSEC_5
12984	5221905	1395074	50.548	XSEC_5
12985	5221905	1395075	50.36	XSEC_5
12986	5221906	1395076	50.375	XSEC_5
12987	5221907	1395080	50.171	XSEC_5
12988	5221909	1395084	49.553	XSEC_5
30	5221570	1395296	54.391	XSEC_6
31	5221568	1395292	54.417	XSEC_6
416	5221567	1395289	52.765	XSEC_6
417	5221555	1395269	52.68	XSEC_6
418	5221554	1395266	52.588	XSEC_6
419	5221552	1395261	52.564	XSEC_6
420	5221550	1395257	52.358	XSEC_6
421	5221550	1395256	52.12	XSEC_6
422	5221549	1395255	51.921	XSEC_6
423	5221548	1395254	51.859	XSEC_6
424	5221547	1395251	52.325	XSEC_6
425	5221544	1395245	52.761	XSEC_6
426	5221546	1395248	52.567	XSEC_6
427	5221499	1395156	52.647	XSEC_6
428	5221498	1395153	52.915	XSEC_6
429	5221441	1395040	51.617	XSEC_6
430	5221440	1395038	51.239	XSEC_6
431	5221439	1395036	51.156	XSEC_6
432	5221438	1395035	51.172	XSEC_6
433	5221437	1395033	51.264	XSEC_6
434	5221434	1395026	51.872	XSEC_6
435	5221433	1395024	52.559	XSEC_6
436	5221431	1395020	52.641	XSEC_6
437	5221430	1395018	52.365	XSEC_6
438	5221428	1395014	52.44	XSEC_6
439	5221410	1394980	52.221	XSEC_6
440	5221408	1394975	51.907	XSEC_6
441	5221407	1394974	52.356	XSEC_6
442	5221406	1394971	52.422	XSEC_6
443	5221380	1394919	52.342	XSEC_6
444	5221370	1394899	52.495	XSEC_6
445	5221368	1394894	52.369	XSEC_6
446	5221367	1394894	52.149	XSEC_6

447	5221365	1394889	51.958	XSEC_6
448	5221362	1394884	51.916	XSEC_6
449	5221333	1394826	51.975	XSEC_6
450	5221331	1394821	51.846	XSEC_6
451	5221329	1394817	51.7	XSEC_6
452	5221328	1394815	51.967	XSEC_6
453	5221326	1394812	52.161	XSEC_6
454	5221323	1394806	51.805	XSEC_6
455	5221322	1394804	52.055	XSEC_6
456	5221320	1394799	51.97	XSEC_6
457	5221318	1394795	52.064	XSEC_6
458	5221292	1394745	51.797	XSEC_6
459	5221252	1394665	51.419	XSEC_6
460	5221249	1394660	51.325	XSEC_6
12648	5221544	1395245	52.776	XSEC_6
12649	5221541	1395241	52.702	XSEC_6
12650	5221540	1395238	52.575	XSEC_6
12651	5221539	1395237	52.495	XSEC_6
12652	5221539	1395237	52.482	XSEC_6
12653	5221537	1395232	52.518	XSEC_6
12654	5221534	1395227	52.613	XSEC_6
12655	5221532	1395223	52.676	XSEC_6
12656	5221530	1395220	52.668	XSEC_6
12657	5221527	1395216	52.242	XSEC_6
12658	5221526	1395214	51.981	XSEC_6
12659	5221525	1395211	51.981	XSEC_6
12660	5221522	1395207	51.959	XSEC_6
12661	5221520	1395202	51.849	XSEC_6
12662	5221517	1395198	51.846	XSEC_6
12663	5221515	1395193	51.852	XSEC_6
12664	5221513	1395189	51.851	XSEC_6
12665	5221513	1395188	51.833	XSEC_6
12666	5221513	1395188	51.946	XSEC_6
12667	5221511	1395185	52.733	XSEC_6
12668	5221510	1395184	52.771	XSEC_6
12669	5221509	1395182	52.701	XSEC_6
12670	5221508	1395179	52.909	XSEC_6
12671	5221505	1395175	53.024	XSEC_6
12672	5221503	1395170	52.898	XSEC_6
12673	5221501	1395166	52.726	XSEC_6
12674	5221499	1395161	52.599	XSEC_6
12675	5221497	1395158	52.582	XSEC_6
12676	5221498	1395153	52.922	XSEC_6

12677	5221497	1395152	52.672	XSEC_6
12678	5221497	1395151	52.563	XSEC_6
12679	5221495	1395149	52.8	XSEC_6
12680	5221494	1395147	52.812	XSEC_6
12681	5221493	1395145	52.866	XSEC_6
12682	5221493	1395144	52.718	XSEC_6
12683	5221492	1395143	52.822	XSEC_6
12684	5221492	1395143	52.847	XSEC_6
12685	5221491	1395142	52.635	XSEC_6
12686	5221490	1395140	52.782	XSEC_6
12687	5221488	1395135	52.867	XSEC_6
12688	5221485	1395130	52.785	XSEC_6
12689	5221483	1395126	52.835	XSEC_6
12690	5221481	1395121	52.797	XSEC_6
12691	5221478	1395117	52.759	XSEC_6
12692	5221476	1395112	52.599	XSEC_6
12693	5221474	1395107	52.628	XSEC_6
12694	5221471	1395103	52.516	XSEC_6
12695	5221469	1395098	52.408	XSEC_6
12696	5221467	1395094	52.23	XSEC_6
12697	5221466	1395092	52.129	XSEC_6
12698	5221465	1395090	52.452	XSEC_6
12699	5221464	1395089	52.53	XSEC_6
12700	5221462	1395085	52.444	XSEC_6
12701	5221460	1395080	52.265	XSEC_6
12702	5221457	1395075	52.161	XSEC_6
12703	5221457	1395074	52.149	XSEC_6
12704	5221456	1395073	52.393	XSEC_6
12705	5221455	1395071	52.455	XSEC_6
12706	5221455	1395070	52.157	XSEC_6
12707	5221453	1395066	52.297	XSEC_6
12708	5221451	1395062	52.102	XSEC_6
12709	5221450	1395062	52.427	XSEC_6
12710	5221449	1395058	52.49	XSEC_6
12711	5221448	1395057	52.488	XSEC_6
12712	5221447	1395054	52.34	XSEC_6
12713	5221446	1395053	51.95	XSEC_6
12714	5221446	1395052	51.908	XSEC_6
12715	5221444	1395048	51.632	XSEC_6
12716	5221441	1395045	51.687	XSEC_6
12717	5221441	1395044	51.734	XSEC_6
12718	5221440	1395041	51.598	XSEC_6
12719	5221428	1395014	52.436	XSEC_6

12720	5221426	1395009	52.552	XSEC_6
12721	5221424	1395004	52.39	XSEC_6
12722	5221422	1395000	52.229	XSEC_6
12723	5221420	1394995	52.013	XSEC_6
12724	5221419	1394994	52.188	XSEC_6
12725	5221418	1394992	52.201	XSEC_6
12726	5221410	1394979	51.711	XSEC_6
12727	5221408	1394973	52.394	XSEC_6
12728	5221405	1394968	52.392	XSEC_6
12729	5221404	1394965	52.253	XSEC_6
12730	5221402	1394963	52.471	XSEC_6
12731	5221401	1394960	52.499	XSEC_6
12732	5221398	1394956	52.55	XSEC_6
12733	5221396	1394952	52.393	XSEC_6
12734	5221396	1394951	52.255	XSEC_6
12735	5221394	1394948	52.028	XSEC_6
12736	5221394	1394946	52.066	XSEC_6
12737	5221392	1394944	52.213	XSEC_6
12738	5221391	1394942	52.248	XSEC_6
12739	5221389	1394937	52.324	XSEC_6
12740	5221387	1394933	52.478	XSEC_6
12741	5221386	1394930	52.275	XSEC_6
12742	5221385	1394928	52.335	XSEC_6
12743	5221384	1394924	52.294	XSEC_6
12744	5221384	1394923	52.598	XSEC_6
12745	5221382	1394919	52.394	XSEC_6
12746	5221362	1394883	51.931	XSEC_6
12747	5221360	1394879	51.929	XSEC_6
12748	5221358	1394874	51.639	XSEC_6
12749	5221357	1394873	51.466	XSEC_6
12750	5221357	1394871	51.196	XSEC_6
12751	5221355	1394869	51.218	XSEC_6
12752	5221354	1394866	50.997	XSEC_6
12753	5221353	1394865	51.07	XSEC_6
12754	5221351	1394860	51.178	XSEC_6
12755	5221349	1394856	51.231	XSEC_6
12756	5221346	1394849	51.359	XSEC_6
12757	5221345	1394846	51.404	XSEC_6
12758	5221344	1394844	51.369	XSEC_6
12759	5221342	1394839	51.047	XSEC_6
12760	5221341	1394837	50.735	XSEC_6
12761	5221340	1394835	50.652	XSEC_6
12762	5221340	1394835	50.721	XSEC_6

12763	5221338	1394832	51.003	XSEC_6
12764	5221337	1394831	51.368	XSEC_6
12765	5221336	1394829	52.225	XSEC_6
12766	5221316	1394792	52.013	XSEC_6
12767	5221315	1394789	51.919	XSEC_6
12768	5221313	1394787	51.336	XSEC_6
12769	5221312	1394784	51.126	XSEC_6
12770	5221311	1394782	51.605	XSEC_6
12771	5221309	1394777	51.93	XSEC_6
12772	5221307	1394772	51.928	XSEC_6
12773	5221305	1394768	51.847	XSEC_6
12774	5221303	1394763	51.841	XSEC_6
12775	5221301	1394758	51.736	XSEC_6
12776	5221298	1394754	51.475	XSEC_6
12777	5221296	1394749	51.109	XSEC_6
12778	5221296	1394748	51.164	XSEC_6
12779	5221295	1394747	51.564	XSEC_6
12780	5221294	1394745	51.65	XSEC_6
12781	5221249	1394660	51.288	XSEC_6
12782	5221249	1394658	51.277	XSEC_6
12783	5221247	1394655	51.225	XSEC_6
12784	5221247	1394655	51.233	XSEC_6
12785	5221246	1394653	51.389	XSEC_6
12786	5221245	1394650	51.453	XSEC_6
12787	5221243	1394646	51.351	XSEC_6
12788	5221241	1394644	51.291	XSEC_6
12789	5221240	1394642	51.065	XSEC_6
12790	5221240	1394641	51.097	XSEC_6
12791	5221238	1394638	50.891	XSEC_6
12792	5221238	1394637	50.859	XSEC_6
12793	5221236	1394632	50.737	XSEC_6
12794	5221236	1394632	50.714	XSEC_6
12795	5221235	1394629	50.318	XSEC_6
12796	5221234	1394627	50.27	XSEC_6
12797	5221233	1394625	50.205	XSEC_6
12798	5221233	1394625	50.166	XSEC_6
12799	5221232	1394624	50.159	XSEC_6
12800	5221232	1394622	50.362	XSEC_6
12801	5221232	1394622	50.356	XSEC_6
12802	5221231	1394621	50.214	XSEC_6
12803	5221231	1394621	50.314	XSEC_6
12804	5221230	1394619	50.346	XSEC_6
12805	5221230	1394617	50.4	XSEC_6

12806	5221228	1394612	50.653	XSEC_6
12807	5221227	1394607	50.702	XSEC_6
12808	5221225	1394602	50.784	XSEC_6
12809	5221225	1394597	50.743	XSEC_6
12810	5221224	1394593	50.708	XSEC_6
12811	5221224	1394591	51.654	XSEC_6
12812	5221224	1394591	51.668	XSEC_6
12813	5221224	1394589	51.829	XSEC_6
12814	5221223	1394587	51.7	XSEC_6
12815	5221223	1394586	51.31	XSEC_6
12816	5221223	1394585	50.317	XSEC_6
12817	5221223	1394583	49.911	XSEC_6
12818	5221223	1394581	49.492	XSEC_6
12819	5221223	1394579	49.771	XSEC_6
12820	5221222	1394578	49.928	XSEC_6
12821	5221222	1394576	50.529	XSEC_6
12822	5221222	1394570	50.708	XSEC_6
12823	5221223	1394565	50.704	XSEC_6
12824	5221223	1394560	50.817	XSEC_6
12825	5221223	1394555	50.692	XSEC_6
387	5221080	1394998	53.109	XSEC_7
388	5221081	1394998	52.279	XSEC_7
389	5221083	1395001	52.321	XSEC_7
390	5221083	1395002	52.49	XSEC_7
391	5221085	1395004	52.61	XSEC_7
392	5221130	1395061	53.463	XSEC_7
393	5221132	1395064	53.471	XSEC_7
394	5221194	1395143	53.743	XSEC_7
395	5221197	1395148	53.607	XSEC_7
396	5221233	1395194	54.148	XSEC_7
397	5221235	1395195	54.231	XSEC_7
398	5221287	1395263	53.85	XSEC_7
399	5221290	1395266	53.91	XSEC_7
400	5221357	1395353	53.582	XSEC_7
403	5221360	1395355	53.543	XSEC_7
404	5221364	1395361	53.418	XSEC_7
405	5221368	1395366	53.232	XSEC_7
406	5221370	1395369	53.092	XSEC_7
407	5221371	1395370	53.159	XSEC_7
408	5221373	1395372	53.446	XSEC_7
409	5221373	1395373	53.536	XSEC_7
410	5221374	1395374	53.493	XSEC_7
411	5221376	1395377	53.196	XSEC_7

412	5221377	1395377	54.027	XSEC_7
413	5221377	1395378	54.052	XSEC_7
414	5221379	1395380	55.544	XSEC_7
415	5221382	1395383	55.498	XSEC_7
12523	5221085	1395004	52.633	XSEC_7
12524	5221087	1395006	52.541	XSEC_7
12525	5221088	1395008	52.255	XSEC_7
12526	5221090	1395010	52.177	XSEC_7
12527	5221091	1395011	51.972	XSEC_7
12528	5221092	1395012	51.992	XSEC_7
12529	5221093	1395013	52.147	XSEC_7
12530	5221094	1395015	52.359	XSEC_7
12531	5221095	1395016	52.579	XSEC_7
12532	5221098	1395020	52.828	XSEC_7
12533	5221101	1395024	52.854	XSEC_7
12534	5221105	1395028	52.885	XSEC_7
12535	5221108	1395032	52.876	XSEC_7
12536	5221110	1395035	52.969	XSEC_7
12537	5221111	1395036	52.933	XSEC_7
12538	5221114	1395040	53.139	XSEC_7
12539	5221117	1395044	53.331	XSEC_7
12540	5221120	1395048	53.439	XSEC_7
12541	5221124	1395052	53.437	XSEC_7
12542	5221127	1395056	53.515	XSEC_7
12543	5221130	1395060	53.451	XSEC_7
12544	5221134	1395067	53.459	XSEC_7
12545	5221137	1395071	53.472	XSEC_7
12546	5221140	1395075	53.491	XSEC_7
12547	5221143	1395079	53.487	XSEC_7
12548	5221146	1395083	53.503	XSEC_7
12549	5221150	1395087	53.401	XSEC_7
12550	5221153	1395091	53.272	XSEC_7
12551	5221155	1395094	53.017	XSEC_7
12552	5221156	1395095	52.961	XSEC_7
12553	5221158	1395098	52.94	XSEC_7
12554	5221159	1395099	52.966	XSEC_7
12555	5221162	1395103	53.107	XSEC_7
12556	5221165	1395107	53.452	XSEC_7
12557	5221168	1395110	53.667	XSEC_7
12558	5221169	1395111	53.781	XSEC_7
12559	5221172	1395115	53.838	XSEC_7
12560	5221175	1395119	53.859	XSEC_7
12561	5221178	1395123	53.94	XSEC_7

12562	5221181	1395127	53.998	XSEC_7
12563	5221184	1395131	54.016	XSEC_7
12564	5221187	1395136	53.962	XSEC_7
12565	5221190	1395140	53.855	XSEC_7
12566	5221199	1395149	53.636	XSEC_7
12567	5221202	1395153	53.651	XSEC_7
12568	5221205	1395157	53.597	XSEC_7
12569	5221208	1395161	53.63	XSEC_7
12570	5221210	1395164	53.523	XSEC_7
12571	5221211	1395165	53.458	XSEC_7
12572	5221212	1395166	53.314	XSEC_7
12573	5221213	1395168	53.214	XSEC_7
12574	5221214	1395169	53.119	XSEC_7
12575	5221215	1395170	52.912	XSEC_7
12576	5221217	1395173	52.636	XSEC_7
12577	5221217	1395173	52.677	XSEC_7
12578	5221220	1395177	52.599	XSEC_7
12579	5221220	1395177	52.58	XSEC_7
12580	5221222	1395180	52.625	XSEC_7
12581	5221223	1395181	52.697	XSEC_7
12582	5221225	1395183	52.582	XSEC_7
12583	5221226	1395185	52.92	XSEC_7
12584	5221227	1395185	53.096	XSEC_7
12585	5221228	1395186	53.137	XSEC_7
12586	5221230	1395189	53.968	XSEC_7
12587	5221230	1395189	54.114	XSEC_7
12588	5221233	1395193	54.024	XSEC_7
12589	5221235	1395196	54.212	XSEC_7
12590	5221238	1395200	54.083	XSEC_7
12591	5221241	1395204	53.767	XSEC_7
12592	5221244	1395208	53.586	XSEC_7
12593	5221247	1395212	53.489	XSEC_7
12594	5221251	1395216	53.518	XSEC_7
12595	5221253	1395219	53.487	XSEC_7
12596	5221254	1395220	53.775	XSEC_7
12597	5221256	1395223	53.983	XSEC_7
12598	5221258	1395225	54.138	XSEC_7
12599	5221260	1395227	54.149	XSEC_7
12600	5221261	1395228	54.25	XSEC_7
12601	5221264	1395231	54.165	XSEC_7
12602	5221267	1395236	54.14	XSEC_7
12603	5221270	1395240	54.245	XSEC_7
12604	5221273	1395243	54.24	XSEC_7

12605	5221274	1395244	54.297	XSEC_7
12606	5221276	1395246	53.89	XSEC_7
12607	5221277	1395248	53.65	XSEC_7
12608	5221279	1395250	53.591	XSEC_7
12609	5221280	1395251	53.723	XSEC_7
12610	5221284	1395255	53.743	XSEC_7
12611	5221287	1395259	53.777	XSEC_7
12612	5221290	1395261	53.843	XSEC_7
12613	5221290	1395266	53.905	XSEC_7
12614	5221293	1395270	53.986	XSEC_7
12615	5221294	1395271	53.912	XSEC_7
12616	5221294	1395271	53.733	XSEC_7
12617	5221296	1395274	53.831	XSEC_7
12618	5221300	1395278	53.773	XSEC_7
12619	5221303	1395282	53.842	XSEC_7
12620	5221305	1395284	53.84	XSEC_7
12621	5221306	1395286	54.077	XSEC_7
12622	5221309	1395289	54.074	XSEC_7
12623	5221313	1395293	54.004	XSEC_7
12624	5221316	1395297	54.087	XSEC_7
12625	5221319	1395301	53.897	XSEC_7
12626	5221319	1395301	53.942	XSEC_7
12627	5221322	1395305	54.118	XSEC_7
12628	5221326	1395309	54.041	XSEC_7
12629	5221329	1395313	53.792	XSEC_7
12630	5221329	1395313	53.889	XSEC_7
12631	5221330	1395315	53.937	XSEC_7
12632	5221332	1395317	54.069	XSEC_7
12633	5221332	1395317	54.061	XSEC_7
12634	5221335	1395320	53.449	XSEC_7
12635	5221335	1395321	53.454	XSEC_7
12636	5221338	1395324	53.157	XSEC_7
12637	5221339	1395325	52.897	XSEC_7
12638	5221339	1395326	52.763	XSEC_7
12639	5221342	1395329	52.657	XSEC_7
12640	5221342	1395329	52.75	XSEC_7
12641	5221344	1395332	52.656	XSEC_7
12642	5221345	1395333	52.776	XSEC_7
12643	5221348	1395337	53.002	XSEC_7
12644	5221348	1395336	52.803	XSEC_7
12645	5221351	1395341	53.316	XSEC_7
12646	5221354	1395345	53.564	XSEC_7
12647	5221357	1395349	53.609	XSEC_7

367	5221217	1395504	56.605	XSEC_8
368	5221214	1395502	56.572	XSEC_8
369	5221212	1395500	55.576	XSEC_8
370	5221209	1395497	55.296	XSEC_8
371	5221206	1395495	55.349	XSEC_8
372	5221205	1395495	53.82	XSEC_8
373	5221202	1395492	54.072	XSEC_8
374	5221200	1395490	53.906	XSEC_8
375	5221184	1395479	54.005	XSEC_8
376	5221178	1395474	54.224	XSEC_8
377	5221172	1395469	54.373	XSEC_8
378	5221169	1395467	54.471	XSEC_8
379	5221080	1395400	54.038	XSEC_8
380	5221078	1395398	54.108	XSEC_8
381	5221075	1395397	54.032	XSEC_8
382	5221007	1395345	54.76	XSEC_8
383	5221005	1395343	54.135	XSEC_8
384	5220998	1395338	54.473	XSEC_8
385	5220995	1395336	54.629	XSEC_8
386	5220994	1395335	54.888	XSEC_8
12456	5221200	1395490	53.899	XSEC_8
12457	5221199	1395490	53.701	XSEC_8
12458	5221196	1395488	53.768	XSEC_8
12459	5221195	1395486	53.874	XSEC_8
12460	5221192	1395485	53.805	XSEC_8
12461	5221191	1395483	53.74	XSEC_8
12462	5221190	1395482	53.485	XSEC_8
12463	5221189	1395481	53.454	XSEC_8
12464	5221187	1395480	53.605	XSEC_8
12465	5221187	1395480	53.771	XSEC_8
12466	5221187	1395480	53.844	XSEC_8
12467	5221169	1395467	54.461	XSEC_8
12468	5221164	1395464	54.547	XSEC_8
12469	5221163	1395462	54.627	XSEC_8
12470	5221162	1395461	54.876	XSEC_8
12471	5221160	1395460	54.986	XSEC_8
12472	5221156	1395457	54.871	XSEC_8
12473	5221152	1395454	55.086	XSEC_8
12474	5221148	1395451	55.116	XSEC_8
12475	5221144	1395448	55.063	XSEC_8
12476	5221140	1395445	54.88	XSEC_8
12477	5221136	1395442	54.936	XSEC_8
12478	5221132	1395439	54.924	XSEC_8

12479	5221129	1395437	54.771	XSEC_8
12480	5221127	1395436	54.833	XSEC_8
12481	5221126	1395435	54.663	XSEC_8
12482	5221126	1395434	54.439	XSEC_8
12483	5221124	1395433	54.553	XSEC_8
12484	5221124	1395433	54.623	XSEC_8
12485	5221120	1395429	54.899	XSEC_8
12486	5221116	1395426	54.951	XSEC_8
12487	5221112	1395423	54.864	XSEC_8
12488	5221108	1395420	54.874	XSEC_8
12489	5221103	1395417	54.832	XSEC_8
12490	5221099	1395414	54.845	XSEC_8
12491	5221095	1395411	54.748	XSEC_8
12492	5221091	1395408	54.628	XSEC_8
12493	5221087	1395406	54.446	XSEC_8
12494	5221082	1395403	54.227	XSEC_8
12495	5221080	1395401	54.019	XSEC_8
12496	5221073	1395394	53.93	XSEC_8
12497	5221070	1395393	53.777	XSEC_8
12498	5221069	1395392	53.331	XSEC_8
12499	5221068	1395392	53.423	XSEC_8
12500	5221064	1395389	53.462	XSEC_8
12501	5221060	1395386	53.653	XSEC_8
12502	5221056	1395383	53.469	XSEC_8
12503	5221055	1395382	53.439	XSEC_8
12504	5221054	1395381	53.895	XSEC_8
12505	5221053	1395380	54.677	XSEC_8
12506	5221052	1395380	54.744	XSEC_8
12507	5221050	1395378	54.876	XSEC_8
12508	5221048	1395377	54.946	XSEC_8
12509	5221044	1395374	54.882	XSEC_8
12510	5221040	1395370	54.66	XSEC_8
12511	5221037	1395368	54.654	XSEC_8
12512	5221036	1395367	54.9	XSEC_8
12513	5221036	1395367	54.928	XSEC_8
12514	5221032	1395365	54.613	XSEC_8
12515	5221031	1395364	54.993	XSEC_8
12516	5221031	1395364	54.998	XSEC_8
12517	5221028	1395361	55.136	XSEC_8
12518	5221024	1395358	55.246	XSEC_8
12519	5221019	1395355	55.193	XSEC_8
12520	5221015	1395352	55.044	XSEC_8
12521	5221011	1395349	54.987	XSEC_8

12522	5221007	1395346	55.039	XSEC_8
326	5220616	1395571	58.571	XSEC_9
327	5220620	1395574	56.783	XSEC_9
328	5220624	1395577	57.563	XSEC_9
329	5220700	1395638	57.221	XSEC_9
330	5220708	1395644	57.232	XSEC_9
331	5220716	1395650	57.325	XSEC_9
332	5220720	1395653	57.25	XSEC_9
333	5220723	1395655	56.897	XSEC_9
334	5220723	1395656	57.108	XSEC_9
335	5220725	1395657	57.459	XSEC_9
336	5220727	1395659	57.29	XSEC_9
337	5220730	1395661	57.335	XSEC_9
338	5220790	1395709	57.053	XSEC_9
339	5220791	1395709	56.664	XSEC_9
340	5220845	1395752	56.853	XSEC_9
341	5220846	1395753	56.859	XSEC_9
342	5220893	1395791	57.135	XSEC_9
343	5220900	1395796	57.086	XSEC_9
344	5220902	1395797	56.983	XSEC_9
345	5220903	1395798	56.83	XSEC_9
346	5220905	1395800	56.594	XSEC_9
347	5220909	1395802	56.594	XSEC_9
348	5220912	1395805	56.832	XSEC_9
349	5220914	1395807	56.925	XSEC_9
350	5220916	1395808	56.75	XSEC_9
351	5220916	1395809	56.59	XSEC_9
352	5220917	1395809	56.504	XSEC_9
353	5220918	1395810	56.516	XSEC_9
354	5220918	1395810	56.614	XSEC_9
355	5220919	1395810	56.924	XSEC_9
356	5220923	1395814	57.086	XSEC_9
357	5220926	1395816	56.82	XSEC_9
358	5220928	1395818	56.631	XSEC_9
359	5220930	1395819	56.57	XSEC_9
360	5220931	1395820	56.211	XSEC_9
361	5220933	1395822	56.271	XSEC_9
362	5220935	1395823	57.008	XSEC_9
363	5220939	1395826	57.062	XSEC_9
364	5220942	1395829	56.841	XSEC_9
365	5220944	1395830	56.751	XSEC_9
366	5220947	1395832	56.605	XSEC_9
12337	5220624	1395577	57.243	XSEC_9

12338	5220628	1395580	57.493	XSEC_9
12339	5220632	1395584	57.511	XSEC_9
12340	5220635	1395586	57.499	XSEC_9
12341	5220636	1395586	57.514	XSEC_9
12342	5220637	1395588	57.209	XSEC_9
12343	5220640	1395589	57.388	XSEC_9
12344	5220640	1395590	57.536	XSEC_9
12345	5220644	1395593	57.522	XSEC_9
12346	5220646	1395594	57.471	XSEC_9
12347	5220648	1395596	57.567	XSEC_9
12348	5220648	1395596	57.72	XSEC_9
12349	5220648	1395596	57.69	XSEC_9
12350	5220649	1395597	57.926	XSEC_9
12351	5220651	1395598	58.493	XSEC_9
12352	5220652	1395599	58.677	XSEC_9
12353	5220656	1395602	58.83	XSEC_9
12354	5220660	1395606	58.84	XSEC_9
12355	5220661	1395607	58.96	XSEC_9
12356	5220664	1395609	59.184	XSEC_9
12357	5220668	1395612	59.089	XSEC_9
12358	5220670	1395614	59.09	XSEC_9
12359	5220671	1395615	59.061	XSEC_9
12360	5220675	1395618	58.924	XSEC_9
12361	5220679	1395622	58.907	XSEC_9
12362	5220682	1395624	58.883	XSEC_9
12363	5220683	1395625	58.865	XSEC_9
12364	5220687	1395629	57.547	XSEC_9
12365	5220691	1395632	57.571	XSEC_9
12366	5220695	1395635	57.435	XSEC_9
12367	5220698	1395639	57.279	XSEC_9
12368	5220730	1395662	57.34	XSEC_9
12369	5220734	1395665	57.401	XSEC_9
12370	5220738	1395668	57.358	XSEC_9
12371	5220742	1395672	57.401	XSEC_9
12372	5220744	1395673	57.274	XSEC_9
12373	5220744	1395673	56.98	XSEC_9
12374	5220746	1395675	56.974	XSEC_9
12375	5220748	1395676	56.909	XSEC_9
12376	5220748	1395677	56.819	XSEC_9
12377	5220750	1395678	56.914	XSEC_9
12378	5220753	1395681	57.133	XSEC_9
12379	5220754	1395682	57.215	XSEC_9
12380	5220758	1395685	57.321	XSEC_9

12381	5220762	1395688	57.257	XSEC_9
12382	5220766	1395692	57.278	XSEC_9
12383	5220768	1395693	57.239	XSEC_9
12384	5220769	1395694	56.792	XSEC_9
12385	5220770	1395695	56.7	XSEC_9
12386	5220774	1395698	56.726	XSEC_9
12387	5220776	1395699	56.703	XSEC_9
12388	5220778	1395701	56.944	XSEC_9
12389	5220781	1395703	57.124	XSEC_9
12390	5220784	1395706	57.257	XSEC_9
12391	5220786	1395708	57.265	XSEC_9
12392	5220789	1395711	57.141	XSEC_9
12393	5220792	1395711	56.676	XSEC_9
12394	5220793	1395712	56.718	XSEC_9
12395	5220794	1395712	56.861	XSEC_9
12396	5220796	1395714	57.056	XSEC_9
12397	5220800	1395717	57.129	XSEC_9
12398	5220800	1395717	57.206	XSEC_9
12399	5220804	1395720	57.221	XSEC_9
12400	5220808	1395724	57.262	XSEC_9
12401	5220811	1395726	57.161	XSEC_9
12402	5220812	1395727	57.112	XSEC_9
12403	5220814	1395729	56.868	XSEC_9
12404	5220816	1395731	56.739	XSEC_9
12405	5220817	1395732	56.695	XSEC_9
12406	5220818	1395733	56.877	XSEC_9
12407	5220820	1395735	57.092	XSEC_9
12408	5220824	1395738	57.076	XSEC_9
12409	5220828	1395741	57.183	XSEC_9
12410	5220831	1395744	57.176	XSEC_9
12411	5220835	1395748	57.113	XSEC_9
12412	5220839	1395751	57.1	XSEC_9
12413	5220842	1395753	56.872	XSEC_9
12414	5220846	1395753	56.859	XSEC_9
12415	5220847	1395754	56.672	XSEC_9
12416	5220848	1395755	56.299	XSEC_9
12417	5220849	1395755	56.157	XSEC_9
12418	5220851	1395757	56.234	XSEC_9
12419	5220852	1395758	56.338	XSEC_9
12420	5220852	1395758	56.569	XSEC_9
12421	5220852	1395758	56.565	XSEC_9
12422	5220853	1395759	56.357	XSEC_9
12423	5220855	1395760	56.34	XSEC_9

12424	5220856	1395761	56.279	XSEC_9
12425	5220857	1395761	56.252	XSEC_9
12426	5220859	1395763	56.041	XSEC_9
12427	5220860	1395765	56.107	XSEC_9
12428	5220863	1395766	56.163	XSEC_9
12429	5220864	1395767	56.523	XSEC_9
12430	5220864	1395767	56.581	XSEC_9
12431	5220864	1395768	56.643	XSEC_9
12432	5220868	1395771	56.893	XSEC_9
12433	5220873	1395774	56.965	XSEC_9
12434	5220877	1395777	57.073	XSEC_9
12435	5220881	1395780	57.132	XSEC_9
12436	5220885	1395783	57.08	XSEC_9
12437	5220889	1395787	57.086	XSEC_9
12438	5220893	1395790	57.166	XSEC_9
12439	5220948	1395833	56.76	XSEC_9
12440	5220949	1395834	56.67	XSEC_9
12441	5220952	1395836	55.853	XSEC_9
12442	5220952	1395837	55.887	XSEC_9
12443	5220956	1395839	55.555	XSEC_9
12444	5220960	1395842	55.386	XSEC_9
12445	5220964	1395846	55.498	XSEC_9
12446	5220968	1395849	55.585	XSEC_9
12447	5220972	1395852	55.845	XSEC_9
12448	5220974	1395853	55.957	XSEC_9
12449	5220975	1395854	56.262	XSEC_9
12450	5220976	1395854	56.722	XSEC_9
12451	5220978	1395855	57.371	XSEC_9
12452	5220981	1395858	57.204	XSEC_9
12453	5220983	1395860	58.691	XSEC_9
12454	5220985	1395860	58.701	XSEC_9
12455	5220987	1395864	58.624	XSEC_9
294	5220822	1396227	61.19	XSEC_10
295	5220818	1396224	61.006	XSEC_10
296	5220812	1396219	57.992	XSEC_10
297	5220808	1396216	57.915	XSEC_10
298	5220804	1396213	57.896	XSEC_10
299	5220803	1396212	58.138	XSEC_10
300	5220803	1396212	58.523	XSEC_10
304	5220748	1396169	58.774	XSEC_10
305	5220745	1396166	58.609	XSEC_10
306	5220672	1396108	59.532	XSEC_10
307	5220670	1396107	59.267	XSEC_10

308	5220668	1396105	58.482	XSEC_10
309	5220665	1396103	58.373	XSEC_10
310	5220618	1396066	59.334	XSEC_10
311	5220615	1396063	59.351	XSEC_10
312	5220523	1395991	59.49	XSEC_10
313	5220520	1395989	59.248	XSEC_10
314	5220459	1395940	59.824	XSEC_10
315	5220455	1395937	59.733	XSEC_10
316	5220453	1395936	59.324	XSEC_10
317	5220452	1395935	59.15	XSEC_10
318	5220451	1395935	59.26	XSEC_10
319	5220447	1395931	59.523	XSEC_10
320	5220444	1395929	59.611	XSEC_10
321	5220359	1395862	59.46	XSEC_10
322	5220352	1395856	59.14	XSEC_10
323	5220347	1395852	58.996	XSEC_10
324	5220341	1395847	58.533	XSEC_10
325	5220341	1395845	58.105	XSEC_10
1003	5220361	1395864	59.524	XSEC_10
12177	5220802	1396211	58.544	XSEC_10
12178	5220798	1396208	58.68	XSEC_10
12179	5220795	1396205	58.723	XSEC_10
12180	5220791	1396201	58.554	XSEC_10
12181	5220787	1396198	58.153	XSEC_10
12182	5220785	1396197	57.725	XSEC_10
12183	5220783	1396195	57.7	XSEC_10
12184	5220779	1396192	57.779	XSEC_10
12185	5220778	1396191	57.767	XSEC_10
12186	5220775	1396189	58.545	XSEC_10
12187	5220774	1396187	58.893	XSEC_10
12188	5220771	1396185	59.069	XSEC_10
12189	5220767	1396182	59.059	XSEC_10
12190	5220763	1396179	58.904	XSEC_10
12191	5220759	1396175	58.844	XSEC_10
12192	5220756	1396172	58.679	XSEC_10
12193	5220752	1396169	58.876	XSEC_10
12194	5220745	1396166	58.601	XSEC_10
12195	5220743	1396165	58.308	XSEC_10
12196	5220741	1396163	58.272	XSEC_10
12197	5220741	1396163	58.272	XSEC_10
12198	5220740	1396163	58.161	XSEC_10
12199	5220737	1396160	58.381	XSEC_10
12200	5220733	1396157	58.792	XSEC_10

12201	5220729	1396153	58.996	XSEC_10
12202	5220725	1396150	59.147	XSEC_10
12203	5220721	1396147	59.157	XSEC_10
12204	5220717	1396143	59.266	XSEC_10
12205	5220715	1396142	58.832	XSEC_10
12206	5220713	1396141	58.555	XSEC_10
12207	5220709	1396137	58.672	XSEC_10
12208	5220705	1396134	58.726	XSEC_10
12209	5220701	1396131	58.806	XSEC_10
12210	5220698	1396129	58.663	XSEC_10
12211	5220697	1396128	58.865	XSEC_10
12212	5220693	1396125	59.018	XSEC_10
12213	5220689	1396121	59.167	XSEC_10
12214	5220685	1396118	59.475	XSEC_10
12215	5220681	1396115	59.515	XSEC_10
12216	5220677	1396112	59.478	XSEC_10
12217	5220674	1396110	59.469	XSEC_10
12218	5220673	1396109	59.522	XSEC_10
12219	5220665	1396103	57.911	XSEC_10
12220	5220663	1396101	57.864	XSEC_10
12221	5220659	1396098	58.071	XSEC_10
12222	5220655	1396095	58.179	XSEC_10
12223	5220651	1396092	58.205	XSEC_10
12224	5220648	1396090	58.258	XSEC_10
12225	5220647	1396089	58.325	XSEC_10
12226	5220646	1396088	58.454	XSEC_10
12227	5220645	1396087	58.787	XSEC_10
12228	5220643	1396086	59.532	XSEC_10
12229	5220643	1396086	59.533	XSEC_10
12230	5220640	1396082	59.528	XSEC_10
12231	5220636	1396079	59.62	XSEC_10
12232	5220632	1396076	59.595	XSEC_10
12233	5220628	1396072	59.579	XSEC_10
12234	5220624	1396069	59.498	XSEC_10
12235	5220620	1396065	59.356	XSEC_10
12236	5220615	1396063	59.353	XSEC_10
12237	5220614	1396063	59.333	XSEC_10
12238	5220612	1396062	59.113	XSEC_10
12239	5220611	1396061	58.797	XSEC_10
12240	5220611	1396060	58.733	XSEC_10
12241	5220610	1396060	58.805	XSEC_10
12242	5220610	1396060	59.058	XSEC_10
12243	5220610	1396060	59.127	XSEC_10

12244	5220607	1396058	59.162	XSEC_10
12245	5220606	1396057	59.067	XSEC_10
12246	5220602	1396054	58.731	XSEC_10
12247	5220601	1396054	58.82	XSEC_10
12248	5220597	1396051	58.867	XSEC_10
12249	5220597	1396051	59.1	XSEC_10
12250	5220596	1396050	59.337	XSEC_10
12251	5220593	1396048	59.249	XSEC_10
12252	5220589	1396045	59.189	XSEC_10
12253	5220585	1396042	59.166	XSEC_10
12254	5220581	1396039	59.054	XSEC_10
12255	5220577	1396036	58.912	XSEC_10
12256	5220573	1396033	58.901	XSEC_10
12257	5220571	1396032	58.933	XSEC_10
12258	5220570	1396031	59.238	XSEC_10
12259	5220569	1396029	59.244	XSEC_10
12260	5220564	1396026	59.133	XSEC_10
12261	5220560	1396023	59.194	XSEC_10
12262	5220556	1396020	59.108	XSEC_10
12263	5220552	1396017	59.222	XSEC_10
12264	5220548	1396014	59.366	XSEC_10
12265	5220544	1396011	59.694	XSEC_10
12266	5220540	1396007	59.933	XSEC_10
12267	5220536	1396004	60.082	XSEC_10
12268	5220532	1396001	60.18	XSEC_10
12269	5220528	1395998	59.873	XSEC_10
12270	5220524	1395995	59.525	XSEC_10
12271	5220520	1395989	59.295	XSEC_10
12272	5220516	1395986	59.127	XSEC_10
12273	5220516	1395985	59.269	XSEC_10
12274	5220511	1395982	59.448	XSEC_10
12275	5220508	1395979	59.458	XSEC_10
12276	5220504	1395975	59.517	XSEC_10
12277	5220500	1395973	59.549	XSEC_10
12278	5220500	1395972	59.155	XSEC_10
12279	5220498	1395971	58.784	XSEC_10
12280	5220496	1395969	58.884	XSEC_10
12281	5220492	1395966	58.904	XSEC_10
12282	5220488	1395963	58.803	XSEC_10
12283	5220484	1395960	58.949	XSEC_10
12284	5220484	1395960	59.326	XSEC_10
12285	5220483	1395959	59.547	XSEC_10
12286	5220479	1395956	59.789	XSEC_10

12287	5220475	1395953	59.808	XSEC_10
12288	5220471	1395950	59.915	XSEC_10
12289	5220466	1395946	59.773	XSEC_10
12290	5220464	1395945	59.826	XSEC_10
12291	5220442	1395927	59.227	XSEC_10
12292	5220442	1395927	59.202	XSEC_10
12293	5220442	1395927	59.202	XSEC_10
12294	5220438	1395924	59.292	XSEC_10
12295	5220435	1395921	59.308	XSEC_10
12296	5220434	1395921	59.353	XSEC_10
12297	5220430	1395918	59.288	XSEC_10
12298	5220426	1395915	59.151	XSEC_10
12299	5220426	1395915	59.258	XSEC_10
12300	5220423	1395912	59.376	XSEC_10
12301	5220422	1395911	59.565	XSEC_10
12302	5220418	1395908	59.654	XSEC_10
12303	5220414	1395905	59.665	XSEC_10
12304	5220410	1395901	59.455	XSEC_10
12305	5220410	1395901	59.354	XSEC_10
12306	5220408	1395900	58.998	XSEC_10
12307	5220406	1395898	58.945	XSEC_10
12308	5220405	1395898	58.794	XSEC_10
12309	5220404	1395897	58.739	XSEC_10
12310	5220402	1395896	58.667	XSEC_10
12311	5220402	1395896	58.701	XSEC_10
12312	5220400	1395894	58.77	XSEC_10
12313	5220399	1395893	58.972	XSEC_10
12314	5220398	1395892	59.147	XSEC_10
12315	5220396	1395890	59.044	XSEC_10
12316	5220394	1395889	58.896	XSEC_10
12317	5220394	1395889	58.796	XSEC_10
12318	5220393	1395888	58.8	XSEC_10
12319	5220391	1395887	59.299	XSEC_10
12320	5220390	1395886	59.374	XSEC_10
12321	5220388	1395883	59.213	XSEC_10
12322	5220386	1395882	59.281	XSEC_10
12323	5220383	1395880	59.423	XSEC_10
12324	5220382	1395879	59.579	XSEC_10
12325	5220381	1395878	59.648	XSEC_10
12326	5220378	1395876	59.64	XSEC_10
12327	5220374	1395873	59.451	XSEC_10
12328	5220371	1395870	59.542	XSEC_10
12329	5220370	1395869	59.631	XSEC_10

12330	5220368	1395868	59.522	XSEC_10
12331	5220366	1395866	59.116	XSEC_10
12332	5220365	1395865	59.076	XSEC_10
12333	5220365	1395865	59.134	XSEC_10
12334	5220363	1395863	58.988	XSEC_10
12335	5220362	1395863	59.384	XSEC_10
12336	5220362	1395862	59.512	XSEC_10
251	5220108	1396173	62.274	XSEC_11
252	5220112	1396176	61.911	XSEC_11
253	5220158	1396212	61.823	XSEC_11
254	5220160	1396214	61.943	XSEC_11
255	5220163	1396216	61.651	XSEC_11
256	5220166	1396218	61.646	XSEC_11
257	5220168	1396220	61.135	XSEC_11
258	5220195	1396241	61.167	XSEC_11
259	5220240	1396276	61.46	XSEC_11
260	5220244	1396279	61.386	XSEC_11
261	5220337	1396352	61.714	XSEC_11
262	5220344	1396357	61.644	XSEC_11
263	5220349	1396362	61.495	XSEC_11
264	5220357	1396368	61.219	XSEC_11
265	5220361	1396371	61.08	XSEC_11
266	5220363	1396373	60.823	XSEC_11
267	5220366	1396375	60.783	XSEC_11
268	5220367	1396375	60.996	XSEC_11
269	5220367	1396376	61.645	XSEC_11
270	5220369	1396377	61.862	XSEC_11
271	5220378	1396384	61.643	XSEC_11
272	5220398	1396400	61.498	XSEC_11
273	5220411	1396411	61.325	XSEC_11
274	5220412	1396411	61.037	XSEC_11
275	5220414	1396413	60.893	XSEC_11
276	5220416	1396414	60.969	XSEC_11
277	5220416	1396414	61.522	XSEC_11
278	5220417	1396415	61.428	XSEC_11
279	5220417	1396415	61.208	XSEC_11
280	5220418	1396416	60.935	XSEC_11
281	5220419	1396417	61.189	XSEC_11
282	5220420	1396417	61.181	XSEC_11
283	5220499	1396480	61.062	XSEC_11
284	5220503	1396482	61.116	XSEC_11
285	5220544	1396515	60.344	XSEC_11
286	5220548	1396517	60.213	XSEC_11

287	5220549	1396518	60.321	XSEC_11
288	5220552	1396521	60.455	XSEC_11
289	5220553	1396522	60.424	XSEC_11
290	5220554	1396522	60.257	XSEC_11
291	5220558	1396525	60.371	XSEC_11
292	5220561	1396528	60.31	XSEC_11
293	5220563	1396529	60.385	XSEC_11
12077	5220113	1396177	61.868	XSEC_11
12078	5220117	1396180	61.709	XSEC_11
12079	5220121	1396183	61.71	XSEC_11
12080	5220125	1396186	61.799	XSEC_11
12081	5220129	1396189	61.897	XSEC_11
12082	5220133	1396192	62.003	XSEC_11
12083	5220137	1396196	61.84	XSEC_11
12084	5220141	1396199	61.815	XSEC_11
12085	5220145	1396202	61.996	XSEC_11
12086	5220149	1396205	61.958	XSEC_11
12087	5220153	1396208	61.906	XSEC_11
12088	5220157	1396211	61.88	XSEC_11
12089	5220168	1396220	61.125	XSEC_11
12090	5220170	1396221	60.85	XSEC_11
12091	5220172	1396223	60.849	XSEC_11
12092	5220176	1396226	61.004	XSEC_11
12093	5220180	1396230	61.151	XSEC_11
12094	5220184	1396233	61.192	XSEC_11
12095	5220188	1396236	61.28	XSEC_11
12096	5220191	1396240	61.271	XSEC_11
12097	5220195	1396241	61.134	XSEC_11
12098	5220199	1396245	61.028	XSEC_11
12099	5220201	1396246	60.925	XSEC_11
12100	5220203	1396248	60.91	XSEC_11
12101	5220207	1396251	60.861	XSEC_11
12102	5220208	1396252	60.802	XSEC_11
12103	5220211	1396254	61.091	XSEC_11
12104	5220212	1396256	61.091	XSEC_11
12105	5220215	1396258	61.238	XSEC_11
12106	5220219	1396261	61.265	XSEC_11
12107	5220222	1396264	61.362	XSEC_11
12108	5220226	1396267	61.446	XSEC_11
12109	5220230	1396271	61.459	XSEC_11
12110	5220234	1396274	61.54	XSEC_11
12111	5220244	1396280	61.322	XSEC_11
12112	5220248	1396283	61.334	XSEC_11

12113	5220252	1396286	61.384	XSEC_11
12114	5220256	1396289	61.149	XSEC_11
12115	5220259	1396291	60.614	XSEC_11
12116	5220260	1396292	60.655	XSEC_11
12117	5220264	1396295	61.277	XSEC_11
12118	5220268	1396299	61.664	XSEC_11
12119	5220272	1396302	61.734	XSEC_11
12120	5220276	1396305	61.698	XSEC_11
12121	5220280	1396308	61.735	XSEC_11
12122	5220284	1396312	61.739	XSEC_11
12123	5220288	1396315	61.814	XSEC_11
12124	5220291	1396319	61.668	XSEC_11
12125	5220295	1396322	61.613	XSEC_11
12126	5220300	1396325	61.723	XSEC_11
12127	5220304	1396328	61.814	XSEC_11
12128	5220308	1396331	61.961	XSEC_11
12129	5220312	1396334	62.172	XSEC_11
12130	5220316	1396337	62.054	XSEC_11
12131	5220320	1396341	61.924	XSEC_11
12132	5220324	1396344	61.92	XSEC_11
12133	5220328	1396347	61.873	XSEC_11
12134	5220331	1396351	61.922	XSEC_11
12135	5220335	1396353	61.717	XSEC_11
12136	5220420	1396417	61.15	XSEC_11
12137	5220421	1396418	60.945	XSEC_11
12138	5220424	1396421	61.227	XSEC_11
12139	5220428	1396424	61.292	XSEC_11
12140	5220432	1396427	61.212	XSEC_11
12141	5220436	1396430	61.217	XSEC_11
12142	5220440	1396434	61.029	XSEC_11
12143	5220446	1396438	61.043	XSEC_11
12144	5220450	1396442	61.205	XSEC_11
12145	5220454	1396445	61.456	XSEC_11
12146	5220458	1396448	61.579	XSEC_11
12147	5220462	1396451	61.517	XSEC_11
12148	5220466	1396454	61.325	XSEC_11
12149	5220470	1396458	61.071	XSEC_11
12150	5220474	1396461	61.123	XSEC_11
12151	5220478	1396464	61.244	XSEC_11
12152	5220482	1396467	61.313	XSEC_11
12153	5220485	1396470	61.353	XSEC_11
12154	5220489	1396474	61.186	XSEC_11
12155	5220493	1396477	60.776	XSEC_11

12156	5220497	1396480	61.029	XSEC_11
12157	5220503	1396483	61.087	XSEC_11
12158	5220507	1396486	60.958	XSEC_11
12159	5220511	1396489	60.827	XSEC_11
12160	5220516	1396492	60.669	XSEC_11
12161	5220519	1396494	60.63	XSEC_11
12162	5220520	1396495	60.443	XSEC_11
12163	5220521	1396496	59.82	XSEC_11
12164	5220522	1396497	59.671	XSEC_11
12165	5220524	1396498	59.677	XSEC_11
12166	5220524	1396498	59.759	XSEC_11
12167	5220528	1396501	60.171	XSEC_11
12168	5220532	1396504	60.304	XSEC_11
12169	5220536	1396507	60.299	XSEC_11
12170	5220541	1396510	60.587	XSEC_11
12171	5220542	1396512	60.669	XSEC_11
222	5220137	1396594	63.384	XSEC_12
223	5220136	1396592	63.432	XSEC_12
224	5220134	1396589	63.179	XSEC_12
225	5220095	1396536	62.252	XSEC_12
226	5220091	1396530	62.074	XSEC_12
227	5220088	1396526	61.789	XSEC_12
228	5220085	1396522	61.673	XSEC_12
229	5220083	1396519	61.4	XSEC_12
230	5220082	1396518	61.554	XSEC_12
231	5220055	1396481	63.498	XSEC_12
232	5220053	1396477	63.392	XSEC_12
233	5220050	1396474	63.498	XSEC_12
234	5219982	1396379	63.664	XSEC_12
235	5219977	1396373	63.613	XSEC_12
236	5219973	1396368	63.604	XSEC_12
237	5219970	1396364	63.252	XSEC_12
238	5219969	1396362	63.18	XSEC_12
239	5219968	1396361	62.929	XSEC_12
240	5219966	1396357	62.675	XSEC_12
241	5219962	1396352	62.907	XSEC_12
242	5219960	1396349	62.977	XSEC_12
243	5219956	1396344	62.858	XSEC_12
244	5219954	1396342	62.693	XSEC_12
245	5219954	1396341	62.419	XSEC_12
246	5219952	1396339	62.476	XSEC_12
247	5219901	1396268	63.072	XSEC_12
248	5219906	1396275	62.951	XSEC_12

249	5219909	1396279	63.124	XSEC_12
250	5219952	1396339	63.385	XSEC_12
12024	5220134	1396589	63.178	XSEC_12
12025	5220134	1396589	63.172	XSEC_12
12026	5220131	1396585	63.401	XSEC_12
12027	5220128	1396581	63.481	XSEC_12
12028	5220125	1396576	63.246	XSEC_12
12029	5220122	1396572	63.106	XSEC_12
12030	5220120	1396569	62.664	XSEC_12
12031	5220119	1396568	62.773	XSEC_12
12032	5220116	1396564	62.738	XSEC_12
12033	5220113	1396560	62.584	XSEC_12
12034	5220111	1396555	62.54	XSEC_12
12035	5220108	1396551	62.537	XSEC_12
12036	5220104	1396547	62.495	XSEC_12
12037	5220102	1396543	62.438	XSEC_12
12038	5220099	1396539	62.361	XSEC_12
12039	5220082	1396518	61.768	XSEC_12
12040	5220079	1396514	62.427	XSEC_12
12041	5220077	1396509	62.482	XSEC_12
12042	5220074	1396505	62.468	XSEC_12
12043	5220072	1396503	62.037	XSEC_12
12044	5220071	1396502	62	XSEC_12
12045	5220071	1396501	61.993	XSEC_12
12046	5220070	1396500	61.931	XSEC_12
12047	5220069	1396499	62.049	XSEC_12
12048	5220068	1396497	62.797	XSEC_12
12049	5220067	1396495	63.301	XSEC_12
12050	5220065	1396493	63.403	XSEC_12
12051	5220062	1396488	63.501	XSEC_12
12052	5220059	1396484	63.565	XSEC_12
12053	5220050	1396474	63.498	XSEC_12
12054	5220047	1396470	63.366	XSEC_12
12055	5220044	1396466	63.1	XSEC_12
12056	5220041	1396462	62.781	XSEC_12
12057	5220038	1396457	62.73	XSEC_12
12058	5220035	1396453	62.862	XSEC_12
12059	5220032	1396449	63.106	XSEC_12
12060	5220029	1396445	63.252	XSEC_12
12061	5220026	1396441	63.361	XSEC_12
12062	5220023	1396437	63.379	XSEC_12
12063	5220021	1396432	63.512	XSEC_12
12064	5220018	1396428	63.517	XSEC_12

12065	5220016	1396426	63.521	XSEC_12
12066	5220014	1396422	63.53	XSEC_12
12067	5220011	1396418	63.398	XSEC_12
12068	5220008	1396414	63.515	XSEC_12
12069	5220005	1396409	63.712	XSEC_12
12070	5220002	1396405	63.746	XSEC_12
12071	5219999	1396401	63.723	XSEC_12
12072	5219996	1396397	63.679	XSEC_12
12073	5219993	1396393	63.485	XSEC_12
12074	5219990	1396389	63.775	XSEC_12
12075	5219987	1396384	63.656	XSEC_12
12076	5219984	1396380	63.734	XSEC_12
187	5219710	1396433	65.2	XSEC_13
188	5219711	1396437	65.13	XSEC_13
189	5219726	1396479	64.101	XSEC_13
190	5219727	1396482	64.334	XSEC_13
191	5219729	1396488	64.486	XSEC_13
192	5219755	1396559	65.117	XSEC_13
193	5219767	1396593	65.03	XSEC_13
194	5219770	1396601	65.074	XSEC_13
195	5219772	1396608	65.1	XSEC_13
196	5219794	1396669	64.793	XSEC_13
197	5219795	1396672	65.015	XSEC_13
198	5219823	1396753	65.252	XSEC_13
199	5219824	1396756	65.225	XSEC_13
200	5219853	1396837	64.259	XSEC_13
203	5219855	1396842	64.037	XSEC_13
204	5219856	1396845	63.966	XSEC_13
205	5219869	1396882	66.981	XSEC_13
206	5219870	1396884	67.263	XSEC_13
207	5219871	1396887	67.246	XSEC_13
221	5219873	1396893	64.584	XSEC_13
11916	5219712	1396437	65.125	XSEC_13
11917	5219714	1396442	65.146	XSEC_13
11918	5219716	1396447	64.968	XSEC_13
11919	5219718	1396452	64.61	XSEC_13
11920	5219719	1396454	64.543	XSEC_13
11921	5219719	1396456	64.513	XSEC_13
11922	5219721	1396461	64.357	XSEC_13
11923	5219723	1396466	64.214	XSEC_13
11924	5219725	1396471	64.084	XSEC_13
11925	5219727	1396475	64.094	XSEC_13
11926	5219729	1396480	64.096	XSEC_13

11927	5219730	1396482	64.251	XSEC_13
11928	5219731	1396484	64.339	XSEC_13
11929	5219729	1396488	64.441	XSEC_13
11930	5219730	1396491	64.148	XSEC_13
11931	5219731	1396492	64.263	XSEC_13
11932	5219733	1396497	64.458	XSEC_13
11933	5219734	1396502	64.455	XSEC_13
11934	5219736	1396507	64.658	XSEC_13
11935	5219738	1396512	64.619	XSEC_13
11936	5219738	1396513	64.463	XSEC_13
11937	5219739	1396517	64.672	XSEC_13
11938	5219740	1396518	64.31	XSEC_13
11939	5219740	1396519	64.213	XSEC_13
11940	5219741	1396521	64.304	XSEC_13
11941	5219741	1396522	64.346	XSEC_13
11942	5219743	1396526	64.442	XSEC_13
11943	5219744	1396530	64.184	XSEC_13
11944	5219745	1396531	63.822	XSEC_13
11945	5219746	1396533	63.832	XSEC_13
11946	5219746	1396534	64.372	XSEC_13
11947	5219746	1396536	64.643	XSEC_13
11948	5219748	1396541	64.916	XSEC_13
11949	5219749	1396545	64.948	XSEC_13
11950	5219758	1396566	65.077	XSEC_13
11951	5219760	1396570	64.996	XSEC_13
11952	5219762	1396575	64.793	XSEC_13
11953	5219763	1396578	64.772	XSEC_13
11954	5219764	1396580	65.404	XSEC_13
11955	5219765	1396585	65.019	XSEC_13
11956	5219767	1396589	64.966	XSEC_13
11957	5219772	1396608	65.088	XSEC_13
11958	5219773	1396612	65.272	XSEC_13
11959	5219773	1396613	65.286	XSEC_13
11960	5219775	1396618	65.485	XSEC_13
11961	5219777	1396623	65.504	XSEC_13
11962	5219779	1396627	65.395	XSEC_13
11963	5219781	1396632	65.459	XSEC_13
11964	5219783	1396637	65.422	XSEC_13
11965	5219784	1396642	65.422	XSEC_13
11966	5219785	1396644	65.325	XSEC_13
11967	5219786	1396646	65.043	XSEC_13
11968	5219786	1396646	65.043	XSEC_13
11969	5219787	1396648	64.93	XSEC_13

11970	5219788	1396651	65.095	XSEC_13
11971	5219790	1396656	65.014	XSEC_13
11972	5219791	1396661	64.856	XSEC_13
11973	5219793	1396665	64.912	XSEC_13
11974	5219794	1396668	64.829	XSEC_13
11975	5219794	1396668	64.824	XSEC_13
11976	5219795	1396673	65.086	XSEC_13
11977	5219796	1396677	65.216	XSEC_13
11978	5219798	1396682	65.085	XSEC_13
11979	5219798	1396682	65.045	XSEC_13
11980	5219799	1396686	64.634	XSEC_13
11981	5219800	1396687	64.386	XSEC_13
11982	5219802	1396692	64.415	XSEC_13
11983	5219803	1396697	64.496	XSEC_13
11984	5219805	1396701	64.616	XSEC_13
11985	5219807	1396706	64.841	XSEC_13
11986	5219808	1396711	64.982	XSEC_13
11987	5219810	1396716	65.069	XSEC_13
11988	5219812	1396721	65.196	XSEC_13
11989	5219813	1396726	65.242	XSEC_13
11990	5219815	1396731	65.158	XSEC_13
11991	5219817	1396736	65.213	XSEC_13
11992	5219819	1396741	65.248	XSEC_13
11993	5219821	1396745	65.278	XSEC_13
11994	5219822	1396749	65.061	XSEC_13
11995	5219824	1396756	65.339	XSEC_13
11996	5219826	1396761	65.324	XSEC_13
11997	5219827	1396766	65.347	XSEC_13
11998	5219829	1396771	65.324	XSEC_13
11999	5219831	1396775	65.19	XSEC_13
12000	5219833	1396780	65.032	XSEC_13
12001	5219833	1396780	65.049	XSEC_13
12002	5219834	1396784	64.504	XSEC_13
12003	5219834	1396785	64.619	XSEC_13
12004	5219836	1396790	64.763	XSEC_13
12005	5219838	1396795	64.681	XSEC_13
12006	5219840	1396800	64.293	XSEC_13
12007	5219841	1396803	64.912	XSEC_13
12008	5219841	1396805	65.007	XSEC_13
12009	5219842	1396806	64.941	XSEC_13
12010	5219842	1396807	65.097	XSEC_13
12011	5219843	1396809	65.32	XSEC_13
12012	5219845	1396814	65.187	XSEC_13

12013	5219847	1396819	65.03	XSEC_13
12014	5219848	1396824	64.908	XSEC_13
12015	5219850	1396829	64.607	XSEC_13
12016	5219852	1396834	64.419	XSEC_13
12017	5219856	1396845	63.974	XSEC_13
12018	5219857	1396850	64.025	XSEC_13
12019	5219859	1396855	64.161	XSEC_13
12020	5219860	1396860	64.332	XSEC_13
12021	5219862	1396865	64.626	XSEC_13
12022	5219865	1396873	64.619	XSEC_13
12023	5219866	1396878	64.773	XSEC_13
46	5219506	1397057	67.769	XSEC_14
150	5219504	1397053	69.333	XSEC_14
151	5219503	1397050	69.38	XSEC_14
152	5219500	1397040	67.463	XSEC_14
153	5219500	1397040	66.944	XSEC_14
154	5219499	1397038	67.07	XSEC_14
155	5219497	1397033	66.704	XSEC_14
156	5219497	1397032	67.189	XSEC_14
157	5219494	1397025	67.101	XSEC_14
158	5219493	1397020	66.689	XSEC_14
159	5219491	1397015	66.381	XSEC_14
160	5219490	1397012	66.239	XSEC_14
161	5219467	1396948	67.729	XSEC_14
162	5219450	1396901	67.934	XSEC_14
163	5219448	1396894	67.991	XSEC_14
164	5219447	1396892	67.855	XSEC_14
165	5219424	1396829	67.113	XSEC_14
166	5219423	1396825	67.383	XSEC_14
167	5219422	1396823	66.707	XSEC_14
168	5219421	1396821	67.148	XSEC_14
169	5219419	1396815	67.344	XSEC_14
170	5219417	1396808	67.226	XSEC_14
171	5219392	1396740	68.159	XSEC_14
172	5219392	1396738	67.086	XSEC_14
173	5219390	1396734	67.17	XSEC_14
174	5219390	1396732	67.506	XSEC_14
175	5219388	1396727	67.64	XSEC_14
176	5219373	1396685	67.664	XSEC_14
177	5219372	1396681	67.675	XSEC_14
178	5219340	1396595	66.702	XSEC_14
179	5219320	1396538	66.171	XSEC_14
180	5219319	1396534	66.17	XSEC_14

181	5219318	1396531	66.092	XSEC_14
182	5219317	1396530	66.226	XSEC_14
183	5219317	1396528	66.089	XSEC_14
184	5219316	1396525	65.924	XSEC_14
185	5219314	1396520	66.077	XSEC_14
186	5219314	1396519	66.998	XSEC_14
11794	5219490	1397012	66.246	XSEC_14
11795	5219488	1397008	66.14	XSEC_14
11796	5219486	1397003	65.957	XSEC_14
11797	5219484	1396998	66.23	XSEC_14
11798	5219483	1396996	66.328	XSEC_14
11799	5219483	1396994	66.395	XSEC_14
11800	5219482	1396991	66.521	XSEC_14
11801	5219481	1396989	66.504	XSEC_14
11802	5219481	1396989	66.524	XSEC_14
11803	5219480	1396985	66.354	XSEC_14
11804	5219480	1396984	66.405	XSEC_14
11805	5219479	1396982	66.326	XSEC_14
11806	5219478	1396980	66.425	XSEC_14
11807	5219478	1396979	66.61	XSEC_14
11808	5219477	1396977	66.771	XSEC_14
11809	5219477	1396975	67.408	XSEC_14
11810	5219477	1396975	68	XSEC_14
11811	5219477	1396974	68.048	XSEC_14
11812	5219475	1396969	68.22	XSEC_14
11813	5219473	1396965	67.915	XSEC_14
11814	5219472	1396960	68.009	XSEC_14
11815	5219470	1396955	67.869	XSEC_14
11816	5219468	1396950	67.837	XSEC_14
11817	5219467	1396948	67.724	XSEC_14
11818	5219465	1396943	67.479	XSEC_14
11819	5219463	1396938	67.548	XSEC_14
11820	5219462	1396936	67.677	XSEC_14
11821	5219461	1396933	67.649	XSEC_14
11822	5219459	1396929	67.576	XSEC_14
11823	5219457	1396924	67.414	XSEC_14
11824	5219455	1396919	67.149	XSEC_14
11825	5219453	1396915	66.994	XSEC_14
11826	5219453	1396915	67.103	XSEC_14
11827	5219451	1396910	67.263	XSEC_14
11828	5219451	1396910	67.574	XSEC_14
11829	5219449	1396908	68.005	XSEC_14
11830	5219447	1396892	67.847	XSEC_14

11831	5219445	1396887	68.076	XSEC_14
11832	5219444	1396882	68.039	XSEC_14
11833	5219441	1396878	68.126	XSEC_14
11834	5219440	1396874	67.587	XSEC_14
11835	5219440	1396873	67.47	XSEC_14
11836	5219438	1396868	67.378	XSEC_14
11837	5219437	1396863	67.486	XSEC_14
11838	5219435	1396858	67.562	XSEC_14
11839	5219434	1396853	67.69	XSEC_14
11840	5219432	1396848	67.643	XSEC_14
11841	5219431	1396843	67.396	XSEC_14
11842	5219430	1396840	66.921	XSEC_14
11843	5219429	1396839	67.122	XSEC_14
11844	5219428	1396834	67.266	XSEC_14
11845	5219426	1396829	67.158	XSEC_14
11846	5219417	1396808	67.22	XSEC_14
11847	5219415	1396803	67.476	XSEC_14
11848	5219413	1396799	67.368	XSEC_14
11849	5219412	1396794	67.281	XSEC_14
11850	5219410	1396789	67.494	XSEC_14
11851	5219408	1396785	67.793	XSEC_14
11852	5219406	1396780	67.875	XSEC_14
11853	5219405	1396775	67.722	XSEC_14
11854	5219403	1396770	67.721	XSEC_14
11855	5219402	1396768	67.803	XSEC_14
11856	5219401	1396765	67.934	XSEC_14
11857	5219399	1396760	67.815	XSEC_14
11858	5219398	1396756	67.791	XSEC_14
11859	5219396	1396751	67.694	XSEC_14
11860	5219395	1396751	67.941	XSEC_14
11861	5219393	1396746	68.103	XSEC_14
11862	5219391	1396742	68.158	XSEC_14
11863	5219391	1396741	68.151	XSEC_14
11864	5219388	1396727	67.634	XSEC_14
11865	5219386	1396723	67.086	XSEC_14
11866	5219386	1396722	67.11	XSEC_14
11867	5219384	1396717	66.891	XSEC_14
11868	5219382	1396712	66.976	XSEC_14
11869	5219380	1396708	67.116	XSEC_14
11870	5219379	1396703	67.255	XSEC_14
11871	5219377	1396700	67.485	XSEC_14
11872	5219377	1396698	67.774	XSEC_14
11873	5219375	1396693	67.818	XSEC_14

11874	5219374	1396688	67.697	XSEC_14
11875	5219372	1396686	67.68	XSEC_14
11876	5219372	1396681	67.63	XSEC_14
11877	5219370	1396676	67.769	XSEC_14
11878	5219368	1396671	67.697	XSEC_14
11879	5219366	1396667	67.779	XSEC_14
11880	5219364	1396662	67.8	XSEC_14
11881	5219363	1396657	67.639	XSEC_14
11882	5219361	1396652	67.47	XSEC_14
11883	5219359	1396647	67.389	XSEC_14
11884	5219357	1396642	67.297	XSEC_14
11885	5219356	1396637	67.024	XSEC_14
11886	5219354	1396634	66.84	XSEC_14
11887	5219354	1396633	66.86	XSEC_14
11888	5219352	1396628	67.153	XSEC_14
11889	5219352	1396628	67.2	XSEC_14
11890	5219351	1396625	66.448	XSEC_14
11891	5219351	1396623	66.478	XSEC_14
11892	5219350	1396620	66.743	XSEC_14
11893	5219349	1396619	67.005	XSEC_14
11894	5219349	1396618	67.013	XSEC_14
11895	5219347	1396613	66.998	XSEC_14
11896	5219346	1396610	66.823	XSEC_14
11897	5219346	1396609	66.936	XSEC_14
11898	5219345	1396608	67.033	XSEC_14
11899	5219344	1396603	67.003	XSEC_14
11900	5219342	1396599	66.926	XSEC_14
11901	5219340	1396594	66.742	XSEC_14
11902	5219340	1396594	66.696	XSEC_14
11903	5219339	1396590	66.917	XSEC_14
11904	5219337	1396585	67.324	XSEC_14
11905	5219336	1396580	67.213	XSEC_14
11906	5219334	1396575	67.322	XSEC_14
11907	5219332	1396570	67.275	XSEC_14
11908	5219332	1396569	67.385	XSEC_14
11909	5219331	1396565	67.489	XSEC_14
11910	5219329	1396560	67.27	XSEC_14
11911	5219327	1396555	67.317	XSEC_14
11912	5219326	1396550	67.258	XSEC_14
11913	5219324	1396545	67.052	XSEC_14
11914	5219322	1396541	66.782	XSEC_14
11915	5219321	1396538	66.159	XSEC_14
141	5219015	1396880	69.772	XSEC_15

142	5219017	1396888	69.89	XSEC_15
143	5219018	1396889	69.889	XSEC_15
144	5219019	1396892	68.514	XSEC_15
145	5219019	1396893	68.783	XSEC_15
146	5219021	1396898	68.992	XSEC_15
147	5219074	1397046	70.033	XSEC_15
148	5219075	1397050	68.859	XSEC_15
149	5219077	1397054	68.609	XSEC_15
11723	5219021	1396899	68.992	XSEC_15
11724	5219023	1396903	69.649	XSEC_15
11725	5219025	1396908	69.891	XSEC_15
11726	5219027	1396913	69.897	XSEC_15
11727	5219029	1396918	69.822	XSEC_15
11728	5219031	1396923	69.858	XSEC_15
11729	5219032	1396927	69.944	XSEC_15
11730	5219032	1396927	70.034	XSEC_15
11731	5219034	1396931	69.788	XSEC_15
11732	5219034	1396932	69.846	XSEC_15
11733	5219035	1396936	69.139	XSEC_15
11734	5219036	1396937	69.499	XSEC_15
11735	5219037	1396941	69.784	XSEC_15
11736	5219038	1396942	69.79	XSEC_15
11737	5219038	1396943	69.744	XSEC_15
11738	5219038	1396944	69.506	XSEC_15
11739	5219039	1396945	69.512	XSEC_15
11740	5219039	1396946	69.737	XSEC_15
11741	5219041	1396951	69.818	XSEC_15
11742	5219042	1396954	69.706	XSEC_15
11743	5219043	1396956	69.858	XSEC_15
11744	5219044	1396961	69.909	XSEC_15
11745	5219045	1396963	69.639	XSEC_15
11746	5219046	1396966	69.485	XSEC_15
11747	5219048	1396971	69.56	XSEC_15
11748	5219050	1396975	69.666	XSEC_15
11749	5219051	1396980	69.866	XSEC_15
11750	5219053	1396985	69.875	XSEC_15
11751	5219054	1396989	69.866	XSEC_15
11752	5219054	1396990	69.801	XSEC_15
11753	5219056	1396995	69.736	XSEC_15
11754	5219058	1396999	69.624	XSEC_15
11755	5219059	1397003	69.541	XSEC_15
11756	5219060	1397004	69.724	XSEC_15
11757	5219061	1397009	70.011	XSEC_15

11758	5219063	1397014	70.132	XSEC_15
11759	5219064	1397016	70.034	XSEC_15
11760	5219065	1397019	70.048	XSEC_15
11761	5219067	1397023	69.945	XSEC_15
11762	5219069	1397028	69.821	XSEC_15
11763	5219071	1397033	69.972	XSEC_15
11764	5219071	1397033	69.993	XSEC_15
11765	5219072	1397038	70.026	XSEC_15
11766	5219074	1397043	70.121	XSEC_15
11767	5219075	1397046	70.026	XSEC_15
11768	5219076	1397054	68.56	XSEC_15
11769	5219077	1397056	68.478	XSEC_15
11770	5219078	1397059	68.469	XSEC_15
11771	5219080	1397064	68.425	XSEC_15
11772	5219081	1397069	68.337	XSEC_15
11773	5219083	1397073	68.376	XSEC_15
11774	5219084	1397075	68.29	XSEC_15
11775	5219086	1397079	68.222	XSEC_15
11776	5219086	1397079	68.258	XSEC_15
11777	5219087	1397084	68.325	XSEC_15
11778	5219087	1397084	68.42	XSEC_15
11779	5219088	1397087	68.565	XSEC_15
11780	5219088	1397087	68.634	XSEC_15
11781	5219089	1397089	68.708	XSEC_15
11782	5219091	1397094	68.911	XSEC_15
11783	5219092	1397099	69.072	XSEC_15
11784	5219094	1397103	69.183	XSEC_15
11785	5219096	1397107	68.997	XSEC_15
11786	5219096	1397108	68.678	XSEC_15
11787	5219096	1397108	68.599	XSEC_15
11788	5219096	1397109	68.399	XSEC_15
11789	5219097	1397110	68.255	XSEC_15
11790	5219097	1397114	70.354	XSEC_15
11791	5219098	1397117	70.857	XSEC_15
11792	5219100	1397121	70.827	XSEC_15
11793	5219101	1397125	69.379	XSEC_15
127	5218825	1397153	73.515	XSEC_16
128	5218824	1397149	71.376	XSEC_16
129	5218822	1397137	71.736	XSEC_16
130	5218821	1397129	71.595	XSEC_16
131	5218821	1397125	70.761	XSEC_16
132	5218814	1397079	70.4	XSEC_16
133	5218814	1397077	70.277	XSEC_16

134	5218814	1397074	69.899	XSEC_16
135	5218815	1397083	70.389	XSEC_16
136	5218817	1397100	70.215	XSEC_16
137	5218818	1397107	70.271	XSEC_16
138	5218819	1397111	70.222	XSEC_16
139	5218819	1397114	69.96	XSEC_16
140	5218801	1396983	70.892	XSEC_16
11691	5218814	1397074	69.816	XSEC_16
11692	5218813	1397070	69.598	XSEC_16
11693	5218813	1397069	69.569	XSEC_16
11694	5218812	1397068	69.494	XSEC_16
11695	5218812	1397067	69.673	XSEC_16
11696	5218812	1397064	69.491	XSEC_16
11697	5218812	1397064	69.535	XSEC_16
11698	5218811	1397063	69.501	XSEC_16
11699	5218811	1397061	69.593	XSEC_16
11700	5218811	1397061	69.673	XSEC_16
11701	5218811	1397059	69.908	XSEC_16
11702	5218810	1397057	69.923	XSEC_16
11703	5218810	1397055	69.981	XSEC_16
11704	5218811	1397054	70.093	XSEC_16
11705	5218810	1397052	70.333	XSEC_16
11706	5218810	1397050	70.989	XSEC_16
11707	5218810	1397049	70.976	XSEC_16
11708	5218810	1397044	71.251	XSEC_16
11709	5218809	1397039	71.194	XSEC_16
11710	5218808	1397034	71.374	XSEC_16
11711	5218808	1397029	71.24	XSEC_16
11712	5218807	1397024	71.13	XSEC_16
11713	5218806	1397021	71.168	XSEC_16
11714	5218806	1397019	71.193	XSEC_16
11715	5218805	1397014	70.9	XSEC_16
11716	5218805	1397009	70.738	XSEC_16
11717	5218804	1397004	70.639	XSEC_16
11718	5218803	1396999	70.636	XSEC_16
11719	5218803	1396994	70.775	XSEC_16
11720	5218802	1396989	70.923	XSEC_16
11721	5218801	1396984	70.922	XSEC_16
11722	5218801	1396982	70.868	XSEC_16
10219	5218704	1396988	70.882	XSEC_17
10220	5218704	1396988	70.883	XSEC_17
10221	5218705	1396993	71.149	XSEC_17
10222	5218705	1396996	70.895	XSEC_17

10223	5218705	1396996	70.858	XSEC_17
10224	5218705	1396996	71.039	XSEC_17
10225	5218705	1396999	71.155	XSEC_17
10226	5218706	1397003	71.317	XSEC_17
10227	5218706	1397005	71.262	XSEC_17
10228	5218706	1397009	71.538	XSEC_17
10229	5218707	1397014	71.67	XSEC_17
10230	5218708	1397019	71.706	XSEC_17
10231	5218708	1397024	71.682	XSEC_17
10232	5218709	1397029	71.799	XSEC_17
10233	5218709	1397032	71.823	XSEC_17
10234	5218710	1397033	71.812	XSEC_17
10235	5218710	1397033	71.812	XSEC_17
10236	5218710	1397033	71.822	XSEC_17
10237	5218710	1397038	71.737	XSEC_17
10238	5218711	1397043	71.536	XSEC_17
10239	5218712	1397048	71.422	XSEC_17
10240	5218712	1397053	71.331	XSEC_17
10241	5218713	1397058	71.237	XSEC_17
10242	5218713	1397063	71.163	XSEC_17
10243	5218714	1397068	70.88	XSEC_17
10244	5218714	1397071	70.655	XSEC_17
10245	5218715	1397073	70.74	XSEC_17
10246	5218715	1397077	70.851	XSEC_17
10247	5218715	1397078	70.944	XSEC_17
10248	5218716	1397082	71.147	XSEC_17
10249	5218716	1397082	71.371	XSEC_17
10250	5218716	1397083	71.549	XSEC_17
10251	5218716	1397088	71.472	XSEC_17
10252	5218717	1397094	71.291	XSEC_17
10253	5218718	1397099	71.093	XSEC_17
10254	5218718	1397104	70.447	XSEC_17
10255	5218719	1397106	70.399	XSEC_17
10256	5218719	1397107	70.266	XSEC_17
10257	5218719	1397107	70.197	XSEC_17
10258	5218719	1397107	70.257	XSEC_17
10259	5218719	1397107	70.268	XSEC_17
10260	5218720	1397112	70.243	XSEC_17
10261	5218720	1397117	70.048	XSEC_17
10262	5218721	1397122	70.082	XSEC_17
10263	5218721	1397127	70.03	XSEC_17
10264	5218722	1397132	69.975	XSEC_17
100218	5218703	1396984	70.726	XSEC_17

10143	5218533	1397179	72.424	XSEC_18
10144	5218532	1397178	72.347	XSEC_18
10145	5218532	1397176	72.895	XSEC_18
10146	5218532	1397174	73.118	XSEC_18
10147	5218531	1397169	73.291	XSEC_18
10148	5218531	1397167	73.249	XSEC_18
10149	5218530	1397165	72.141	XSEC_18
10150	5218530	1397164	72.041	XSEC_18
10151	5218530	1397163	71.812	XSEC_18
10152	5218530	1397160	71.998	XSEC_18
10153	5218530	1397159	72.17	XSEC_18
10154	5218529	1397155	72.347	XSEC_18
10155	5218528	1397149	72.467	XSEC_18
10156	5218527	1397144	72.639	XSEC_18
10157	5218527	1397140	72.597	XSEC_18
10158	5218526	1397134	72.561	XSEC_18
10159	5218525	1397129	72.608	XSEC_18
10160	5218525	1397124	72.367	XSEC_18
10161	5218524	1397123	72.235	XSEC_18
10162	5218524	1397119	72.563	XSEC_18
10163	5218524	1397119	72.559	XSEC_18
10164	5218523	1397116	72.493	XSEC_18
10165	5218524	1397116	72.484	XSEC_18
10166	5218524	1397116	72.481	XSEC_18
10167	5218523	1397114	71.657	XSEC_18
10168	5218523	1397112	71.081	XSEC_18
10169	5218522	1397109	70.999	XSEC_18
10170	5218521	1397104	70.813	XSEC_18
10171	5218520	1397099	70.603	XSEC_18
10172	5218519	1397094	70.497	XSEC_18
10173	5218518	1397089	70.614	XSEC_18
10174	5218517	1397086	71.026	XSEC_18
10175	5218519	1397086	71.329	XSEC_18
10176	5218519	1397086	71.33	XSEC_18
10177	5218519	1397081	71.569	XSEC_18
10178	5218518	1397075	71.736	XSEC_18
10179	5218518	1397070	71.767	XSEC_18
10180	5218517	1397065	71.87	XSEC_18
10181	5218516	1397060	71.982	XSEC_18
10182	5218515	1397055	72.164	XSEC_18
10183	5218514	1397050	72.369	XSEC_18
10184	5218514	1397045	72.505	XSEC_18
10185	5218513	1397040	72.688	XSEC_18

10186	5218512	1397038	72.659	XSEC_18
10187	5218513	1397038	72.676	XSEC_18
10188	5218513	1397038	72.675	XSEC_18
10189	5218512	1397033	72.881	XSEC_18
10190	5218511	1397028	72.997	XSEC_18
10191	5218511	1397023	73.024	XSEC_18
10192	5218510	1397017	73.042	XSEC_18
10193	5218509	1397012	72.922	XSEC_18
10194	5218508	1397007	72.96	XSEC_18
10195	5218508	1397002	72.801	XSEC_18
10196	5218508	1397001	72.719	XSEC_18
10197	5218507	1397000	72.395	XSEC_18
10198	5218507	1396998	72.33	XSEC_18
10199	5218507	1396997	72.509	XSEC_18
10200	5218507	1396995	72.589	XSEC_18
10201	5218506	1396991	73.39	XSEC_18
10202	5218506	1396990	73.282	XSEC_18
10203	5218506	1396990	73.28	XSEC_18
10204	5218505	1396985	73.483	XSEC_18
10205	5218504	1396980	73.334	XSEC_18
10206	5218502	1396975	73.368	XSEC_18
10207	5218500	1396970	73.318	XSEC_18
10208	5218499	1396965	73.276	XSEC_18
10209	5218497	1396960	73.264	XSEC_18
10210	5218496	1396955	73.203	XSEC_18
10211	5218494	1396951	73.087	XSEC_18
10212	5218493	1396946	73.014	XSEC_18
10213	5218491	1396941	72.897	XSEC_18
10214	5218489	1396936	72.825	XSEC_18
10215	5218487	1396931	72.784	XSEC_18
10216	5218486	1396926	72.778	XSEC_18
10217	5218485	1396923	72.692	XSEC_18
100	5218041	1396837	75.745	XSEC_19
1000	5218040	1396833	75.797	XSEC_19
10001	5218042	1396841	75.858	XSEC_19
10002	5218043	1396846	75.964	XSEC_19
10003	5218044	1396851	75.927	XSEC_19
10004	5218045	1396856	75.941	XSEC_19
10005	5218047	1396861	75.957	XSEC_19
10006	5218047	1396866	75.99	XSEC_19
10007	5218048	1396871	76.092	XSEC_19
10008	5218049	1396876	75.973	XSEC_19
10009	5218051	1396881	75.873	XSEC_19

10010	5218052	1396886	75.701	XSEC_19
10011	5218054	1396891	75.83	XSEC_19
10012	5218055	1396896	76.047	XSEC_19
10013	5218056	1396901	75.42	XSEC_19
10014	5218057	1396904	75.156	XSEC_19
10015	5218058	1396910	75.405	XSEC_19
10016	5218058	1396911	75.394	XSEC_19
10017	5218059	1396915	75.441	XSEC_19
10018	5218060	1396920	75.392	XSEC_19
10019	5218060	1396923	75.741	XSEC_19
10020	5218061	1396926	75.882	XSEC_19
10021	5218062	1396931	75.867	XSEC_19
10022	5218063	1396934	75.552	XSEC_19
10023	5218064	1396935	75.05	XSEC_19
10024	5218065	1396940	75.107	XSEC_19
10025	5218066	1396943	75.125	XSEC_19
10026	5218066	1396944	75.355	XSEC_19
10027	5218066	1396945	75.523	XSEC_19
10028	5218068	1396950	75.75	XSEC_19
10029	5218069	1396955	75.935	XSEC_19
10030	5218070	1396960	75.831	XSEC_19
10031	5218070	1396963	75.73	XSEC_19
10032	5218069	1396963	75.759	XSEC_19
10033	5218069	1396963	75.78	XSEC_19
10034	5218070	1396968	75.667	XSEC_19
10035	5218072	1396973	75.701	XSEC_19
10036	5218073	1396978	75.416	XSEC_19
10037	5218073	1396978	75.443	XSEC_19
10038	5218074	1396981	75.395	XSEC_19
10039	5218074	1396983	75.084	XSEC_19
10040	5218075	1396984	74.984	XSEC_19
10041	5218075	1396985	74.708	XSEC_19
10042	5218076	1396988	74.819	XSEC_19
10043	5218077	1396993	74.876	XSEC_19
10044	5218078	1396998	74.749	XSEC_19
10045	5218078	1396999	74.655	XSEC_19
10046	5218077	1396999	74.615	XSEC_19
10047	5218078	1397000	74.621	XSEC_19
10048	5218079	1397008	74.464	XSEC_19
10049	5218080	1397012	74.235	XSEC_19
10050	5218081	1397016	74.64	XSEC_19
10051	5218081	1397017	74.857	XSEC_19
10052	5218082	1397021	75.532	XSEC_19

10053	5218082	1397021	75.523	XSEC_19
10054	5218082	1397021	75.522	XSEC_19
10055	5218083	1397026	75.69	XSEC_19
10056	5218085	1397031	75.638	XSEC_19
10057	5218086	1397036	75.686	XSEC_19
10058	5218086	1397037	75.653	XSEC_19
10059	5218086	1397038	74.981	XSEC_19
10060	5218087	1397041	74.939	XSEC_19
10061	5218088	1397046	75.566	XSEC_19
10062	5218089	1397051	75.76	XSEC_19
10063	5218090	1397056	75.441	XSEC_19
10064	5218091	1397058	75.605	XSEC_19
10065	5218091	1397058	75.579	XSEC_19
10066	5218091	1397060	76.051	XSEC_19
10067	5218092	1397063	75.732	XSEC_19
10068	5218092	1397065	75.521	XSEC_19
10069	5218093	1397068	75.482	XSEC_19
10070	5218094	1397071	75.77	XSEC_19
10071	5218094	1397071	75.771	XSEC_19
10072	5218094	1397072	75.71	XSEC_19
10073	5218095	1397076	75.522	XSEC_19
10074	5218095	1397076	75.268	XSEC_19
10075	5218095	1397077	75.465	XSEC_19
10076	5218096	1397080	75.77	XSEC_19
10077	5218096	1397080	75.756	XSEC_19
10078	5218097	1397085	74.972	XSEC_19
10079	5218098	1397089	75.118	XSEC_19
10080	5218098	1397090	75.362	XSEC_19
10081	5218098	1397092	75.934	XSEC_19
10082	5218099	1397095	76.202	XSEC_19
10083	5218100	1397100	75.882	XSEC_19
10084	5218101	1397102	76.17	XSEC_19
10085	5218102	1397104	76.137	XSEC_19
10086	5218102	1397105	75.336	XSEC_19
10087	5218102	1397106	74.978	XSEC_19
10088	5218102	1397106	74.914	XSEC_19
10089	5218103	1397110	75.163	XSEC_19
10090	5218103	1397113	75.167	XSEC_19
10091	5218104	1397118	75.237	XSEC_19
10092	5218105	1397123	75.169	XSEC_19
10093	5218107	1397128	75.028	XSEC_19
10094	5218107	1397129	74.893	XSEC_19
10095	5218103	1397113	75.171	XSEC_19

10096	5218108	1397134	74.659	XSEC_19
10097	5218108	1397137	74.856	XSEC_19
10098	5218109	1397138	75.182	XSEC_19
10099	5218109	1397139	75.176	XSEC_19
10100	5218110	1397144	75.19	XSEC_19
10101	5218111	1397149	75.139	XSEC_19
10102	5218112	1397152	75.007	XSEC_19
10103	5218112	1397153	74.949	XSEC_19
10104	5218113	1397156	74.952	XSEC_19
10105	5218113	1397158	74.95	XSEC_19
10106	5218114	1397163	74.998	XSEC_19
10107	5218115	1397167	75.176	XSEC_19
10108	5218116	1397172	75.108	XSEC_19
10109	5218117	1397177	75.03	XSEC_19
10110	5218118	1397182	75.023	XSEC_19
10111	5218119	1397187	75.004	XSEC_19
10112	5218120	1397190	74.759	XSEC_19
10113	5218121	1397192	74.91	XSEC_19
10114	5218122	1397197	75.21	XSEC_19
10115	5218122	1397202	75.215	XSEC_19
10116	5218124	1397207	75.081	XSEC_19
10117	5218125	1397212	74.961	XSEC_19
10118	5218126	1397215	74.879	XSEC_19
10119	5218126	1397215	74.884	XSEC_19
10120	5218126	1397215	74.876	XSEC_19
10121	5218127	1397220	74.8	XSEC_19
10122	5218129	1397225	75.431	XSEC_19
10123	5218131	1397230	75.407	XSEC_19
10124	5218132	1397235	75.561	XSEC_19
10125	5218133	1397240	75.744	XSEC_19
10126	5218134	1397245	75.769	XSEC_19
10127	5218135	1397250	75.518	XSEC_19
10128	5218135	1397251	75.483	XSEC_19
10129	5218136	1397255	75.824	XSEC_19
10130	5218137	1397259	75.611	XSEC_19
10131	5218137	1397260	75.355	XSEC_19
10132	5218138	1397261	75.045	XSEC_19
10133	5218138	1397265	75.265	XSEC_19
10134	5218139	1397268	75.611	XSEC_19
10135	5218140	1397270	75.755	XSEC_19
10136	5218141	1397275	75.726	XSEC_19
10137	5218142	1397280	75.806	XSEC_19
10138	5218143	1397283	75.692	XSEC_19

10139	5218143	1397285	75.599	XSEC_19
10140	5218143	1397287	75.093	XSEC_19
10141	5218143	1397290	76.242	XSEC_19
10142	5218143	1397290	76.236	XSEC_19
110000	5218039	1396829	76.683	XSEC_19
110001	5218040	1396832	76.084	XSEC_19
10269	5217699	1397305	78.567	XSEC_20
10270	5217699	1397304	78.037	XSEC_20
10271	5217699	1397300	78.474	XSEC_20
10272	5217698	1397295	78.534	XSEC_20
10274	5217698	1397285	78.256	XSEC_20
10275	5217697	1397280	78.398	XSEC_20
10276	5217697	1397280	78.374	XSEC_20
10277	5217697	1397275	78.324	XSEC_20
10278	5217697	1397270	77.991	XSEC_20
10279	5217696	1397265	77.874	XSEC_20
10280	5217696	1397262	78.132	XSEC_20
10281	5217696	1397261	78.501	XSEC_20
10282	5217696	1397259	78.588	XSEC_20
10283	5217695	1397255	78.359	XSEC_20
10284	5217695	1397254	78.367	XSEC_20
10285	5217695	1397253	78.012	XSEC_20
10286	5217695	1397249	77.995	XSEC_20
10287	5217695	1397248	78.369	XSEC_20
10288	5217694	1397247	78.51	XSEC_20
10289	5217694	1397242	78.382	XSEC_20
10290	5217694	1397240	78.403	XSEC_20
10291	5217694	1397239	78.821	XSEC_20
10292	5217694	1397237	79.061	XSEC_20
10293	5217694	1397235	79.028	XSEC_20
10296	5217694	1397229	79.172	XSEC_20
10297	5217694	1397225	78.976	XSEC_20
10298	5217694	1397225	78.983	XSEC_20
10299	5217694	1397224	78.986	XSEC_20
10300	5217694	1397219	79.118	XSEC_20
10301	5217694	1397217	79.361	XSEC_20
10302	5217694	1397215	79.224	XSEC_20
10303	5217694	1397214	79.277	XSEC_20
10304	5217695	1397212	79.156	XSEC_20
10305	5217694	1397211	78.634	XSEC_20
10306	5217695	1397209	78.55	XSEC_20
10307	5217695	1397203	78.801	XSEC_20
10308	5217695	1397198	78.373	XSEC_20

10309	5217696	1397193	78.338	XSEC_20
10310	5217696	1397188	78.411	XSEC_20
10311	5217697	1397183	78.114	XSEC_20
10312	5217697	1397182	78.079	XSEC_20
10313	5217697	1397180	78.492	XSEC_20
10314	5217697	1397178	78.691	XSEC_20
10315	5217691	1397176	78.709	XSEC_20
10316	5217690	1397171	78.863	XSEC_20
10317	5217690	1397171	78.872	XSEC_20
10318	5217690	1397171	78.874	XSEC_20
10319	5217690	1397167	78.899	XSEC_20
10320	5217690	1397166	78.74	XSEC_20
10321	5217690	1397160	78.219	XSEC_20
10322	5217689	1397158	77.899	XSEC_20
10323	5217689	1397155	77.848	XSEC_20
10324	5217689	1397150	77.477	XSEC_20
10325	5217689	1397147	77.208	XSEC_20
10326	5217689	1397145	77.263	XSEC_20
10327	5217688	1397143	77.049	XSEC_20
10328	5217688	1397140	77.166	XSEC_20
10329	5217688	1397140	77.141	XSEC_20
10330	5217688	1397139	77.425	XSEC_20
10331	5217688	1397137	77.431	XSEC_20
10332	5217688	1397136	76.99	XSEC_20
10333	5217687	1397135	76.923	XSEC_20
10334	5217687	1397131	76.776	XSEC_20
10335	5217687	1397130	76.916	XSEC_20
10336	5217687	1397129	77.1	XSEC_20
10337	5217687	1397128	77.473	XSEC_20
10338	5217687	1397125	77.543	XSEC_20
10339	5217687	1397125	77.629	XSEC_20
10340	5217686	1397122	77.866	XSEC_20
10341	5217687	1397120	78.982	XSEC_20
10342	5217686	1397111	79.286	XSEC_20
10343	5217686	1397107	78.807	XSEC_20
10344	5217686	1397105	79.009	XSEC_20
10345	5217686	1397102	79.046	XSEC_20
10346	5217686	1397099	78.807	XSEC_20
10347	5217686	1397097	78.816	XSEC_20
10348	5217685	1397095	78.533	XSEC_20
10349	5217685	1397094	78.571	XSEC_20
10350	5217685	1397093	78.561	XSEC_20
10351	5217685	1397092	79.072	XSEC_20

10352	5217685	1397089	79.196	XSEC_20
10353	5217685	1397085	78.957	XSEC_20
10354	5217685	1397085	78.824	XSEC_20
10355	5217684	1397084	78.747	XSEC_20
10356	5217685	1397084	78.817	XSEC_20
10357	5217684	1397081	78.879	XSEC_20
10358	5217684	1397081	79.008	XSEC_20
10359	5217684	1397080	79.046	XSEC_20
10360	5217684	1397079	79.149	XSEC_20
10361	5217684	1397077	79.113	XSEC_20
10362	5217684	1397076	78.982	XSEC_20
10363	5217684	1397075	78.965	XSEC_20
10364	5217684	1397074	79.227	XSEC_20
10365	5217684	1397074	79.319	XSEC_20
10366	5217684	1397071	79.236	XSEC_20
10367	5217684	1397069	79.05	XSEC_20
10368	5217684	1397069	79.092	XSEC_20
10369	5217684	1397066	79.109	XSEC_20
10370	5217684	1397064	79.006	XSEC_20
10371	5217684	1397059	78.638	XSEC_20
10372	5217684	1397059	78.734	XSEC_20
10373	5217683	1397055	78.775	XSEC_20
10374	5217683	1397054	78.906	XSEC_20
10375	5217683	1397053	78.981	XSEC_20
10376	5217683	1397048	79.024	XSEC_20
10377	5217682	1397043	79.083	XSEC_20
10378	5217682	1397038	78.937	XSEC_20
10379	5217682	1397033	78.862	XSEC_20
10380	5217682	1397031	78.806	XSEC_20
10381	5217682	1397030	78.634	XSEC_20
10382	5217681	1397029	78.568	XSEC_20
10383	5217681	1397028	78.548	XSEC_20
10384	5217680	1397023	78.481	XSEC_20
10385	5217680	1397021	78.503	XSEC_20
10386	5217681	1397021	78.516	XSEC_20
10387	5217680	1397018	78.453	XSEC_20
10388	5217680	1397017	78.846	XSEC_20
10389	5217680	1397014	78.85	XSEC_20
10390	5217680	1397007	78.643	XSEC_20
10391	5217680	1397007	78.672	XSEC_20
10392	5217679	1397002	78.834	XSEC_20
10393	5217679	1396998	78.915	XSEC_20
10394	5217679	1396992	79.184	XSEC_20

10395	5217678	1396987	78.875	XSEC_20
10396	5217678	1396985	78.874	XSEC_20
10397	5217678	1396984	78.782	XSEC_20
10398	5217678	1396983	78.624	XSEC_20
10399	5217678	1396982	78.677	XSEC_20
10400	5217677	1396977	78.712	XSEC_20
10401	5217677	1396971	78.442	XSEC_20
10402	5217677	1396966	78.631	XSEC_20
10403	5217677	1396961	78.495	XSEC_20
10404	5217677	1396956	78.384	XSEC_20
10405	5217678	1396952	78.376	XSEC_20
10406	5217678	1396951	78.868	XSEC_20
10407	5217678	1396951	78.784	XSEC_20
10408	5217678	1396949	78.818	XSEC_20
10409	5217678	1396949	78.69	XSEC_20
10410	5217678	1396946	78.794	XSEC_20
10411	5217678	1396943	78.806	XSEC_20
10412	5217679	1396941	78.663	XSEC_20
10413	5217679	1396941	78.638	XSEC_20
10414	5217679	1396938	78.699	XSEC_20
10415	5217679	1396936	78.785	XSEC_20
10416	5217680	1396930	78.831	XSEC_20
10417	5217680	1396929	78.758	XSEC_20
10418	5217675	1396928	78.712	XSEC_20
10419	5217674	1396923	78.76	XSEC_20
10420	5217674	1396923	78.712	XSEC_20
10421	5217674	1396918	78.886	XSEC_20
10422	5217674	1396913	78.855	XSEC_20
10423	5217673	1396908	78.663	XSEC_20
10424	5217673	1396905	78.414	XSEC_20
10425	5217672	1396903	77.868	XSEC_20
10426	5217672	1396902	77.687	XSEC_20
10427	5217672	1396898	77.537	XSEC_20
10428	5217671	1396893	77.409	XSEC_20
10429	5217671	1396888	77.531	XSEC_20
10430	5217670	1396883	77.843	XSEC_20
10431	5217670	1396880	77.952	XSEC_20
10432	5217670	1396878	77.906	XSEC_20
10433	5217670	1396875	77.742	XSEC_20
10434	5217670	1396873	77.52	XSEC_20
10435	5217669	1396868	77.326	XSEC_20
10436	5217669	1396864	77.524	XSEC_20
10437	5217669	1396862	77.854	XSEC_20

10438	5217669	1396860	78.217	XSEC_20
10439	5217669	1396857	78.215	XSEC_20
10440	5217668	1396852	78.112	XSEC_20
10441	5217668	1396847	78	XSEC_20
10442	5217668	1396842	78.119	XSEC_20
10443	5217668	1396840	77.976	XSEC_20
10444	5217667	1396837	77.631	XSEC_20
10445	5217667	1396837	78.482	XSEC_20
10446	5217667	1396836	78.926	XSEC_20
10447	5217669	1396836	78.824	XSEC_20
22273	5217698	1397292	78.241	XSEC_20
78	5216839	1396949	83.657	XSEC_21
95	5217255	1397036	80.903	XSEC_21
96	5217255	1397039	80.92	XSEC_21
97	5217273	1397109	80.666	XSEC_21
98	5217275	1397114	81.102	XSEC_21
99	5217276	1397121	81.208	XSEC_21
105	5217277	1397125	80.961	XSEC_21
106	5217280	1397138	81.24	XSEC_21
107	5217282	1397144	80.982	XSEC_21
108	5217284	1397151	80.962	XSEC_21
109	5217287	1397162	81.145	XSEC_21
110	5217289	1397172	81.149	XSEC_21
111	5217290	1397174	80.192	XSEC_21
112	5217291	1397177	80.16	XSEC_21
113	5217292	1397183	80.255	XSEC_21
114	5217293	1397186	80.45	XSEC_21
115	5217310	1397255	78.644	XSEC_21
116	5217312	1397260	78.315	XSEC_21
117	5217312	1397262	78.386	XSEC_21
118	5217313	1397265	78.3	XSEC_21
119	5217314	1397269	78.566	XSEC_21
120	5217315	1397272	78.764	XSEC_21
121	5217316	1397275	79.577	XSEC_21
122	5217317	1397279	79.774	XSEC_21
123	5217331	1397335	80.737	XSEC_21
124	5217331	1397337	82.225	XSEC_21
125	5217332	1397341	82.193	XSEC_21
126	5217333	1397343	80.973	XSEC_21
10448	5217212	1396869	83.916	XSEC_21
10449	5217214	1396878	81.687	XSEC_21
10450	5217215	1396882	81.577	XSEC_21
10451	5217216	1396887	81.694	XSEC_21

10452	5217218	1396895	81.894	XSEC_21
10453	5217221	1396903	82.412	XSEC_21
10454	5217224	1396918	82.39	XSEC_21
10455	5217227	1396930	81.865	XSEC_21
10456	5217229	1396938	82.091	XSEC_21
10457	5217232	1396950	82.296	XSEC_21
10458	5217233	1396952	81.905	XSEC_21
10459	5217235	1396958	82.078	XSEC_21
10460	5217235	1396958	82.004	XSEC_21
10461	5217235	1396958	82.006	XSEC_21
10462	5217235	1396958	82.105	XSEC_21
10463	5217236	1396963	81.779	XSEC_21
10464	5217237	1396968	81.3	XSEC_21
10465	5217238	1396973	81.229	XSEC_21
10466	5217241	1396985	81.011	XSEC_21
10467	5217241	1396985	81.004	XSEC_21
10468	5217242	1396987	81.314	XSEC_21
10469	5217242	1396988	81.698	XSEC_21
10470	5217242	1396990	81.678	XSEC_21
10471	5217243	1396993	81.342	XSEC_21
10472	5217243	1396993	81.007	XSEC_21
10473	5217244	1396995	80.785	XSEC_21
10474	5217244	1396997	80.283	XSEC_21
10475	5217245	1397000	80.518	XSEC_21
10476	5217245	1397001	80.647	XSEC_21
10477	5217246	1397004	81.189	XSEC_21
10478	5217246	1397005	81.294	XSEC_21
10479	5217247	1397010	81.36	XSEC_21
10480	5217248	1397012	81.55	XSEC_21
10481	5217248	1397013	81.891	XSEC_21
10482	5217248	1397015	81.896	XSEC_21
10483	5217249	1397020	82.122	XSEC_21
10484	5217250	1397025	82.264	XSEC_21
11634	5216839	1396948	83.669	XSEC_21
11635	5217255	1397039	80.981	XSEC_21
11636	5217256	1397042	81.016	XSEC_21
11637	5217256	1397044	81.183	XSEC_21
11638	5217257	1397045	81.017	XSEC_21
11639	5217257	1397047	80.48	XSEC_21
11640	5217258	1397049	80.523	XSEC_21
11641	5217258	1397051	80.468	XSEC_21
11642	5217259	1397054	80.595	XSEC_21
11643	5217260	1397059	80.451	XSEC_21

11644	5217261	1397064	80.36	XSEC_21
11645	5217263	1397068	80.186	XSEC_21
11646	5217264	1397073	80.408	XSEC_21
11647	5217264	1397075	80.476	XSEC_21
11648	5217264	1397076	80.985	XSEC_21
11649	5217265	1397078	81.167	XSEC_21
11650	5217266	1397083	81.004	XSEC_21
11651	5217267	1397088	80.95	XSEC_21
11652	5217269	1397093	80.867	XSEC_21
11653	5217270	1397098	80.764	XSEC_21
11654	5217272	1397103	80.626	XSEC_21
11655	5217272	1397106	80.707	XSEC_21
11656	5217293	1397186	80.456	XSEC_21
11657	5217294	1397191	80.752	XSEC_21
11658	5217295	1397195	80.532	XSEC_21
11659	5217295	1397196	80.77	XSEC_21
11660	5217296	1397201	80.961	XSEC_21
11661	5217298	1397206	81.014	XSEC_21
11662	5217299	1397211	80.988	XSEC_21
11663	5217300	1397216	80.737	XSEC_21
11664	5217300	1397216	80.577	XSEC_21
11665	5217300	1397218	80.618	XSEC_21
11666	5217301	1397221	80.688	XSEC_21
11667	5217302	1397226	80.461	XSEC_21
11668	5217303	1397231	80.349	XSEC_21
11669	5217304	1397234	80.269	XSEC_21
11670	5217305	1397236	80.255	XSEC_21
11671	5217306	1397241	79.93	XSEC_21
11672	5217306	1397246	79.424	XSEC_21
11673	5217307	1397251	78.882	XSEC_21
11674	5217308	1397255	78.58	XSEC_21
11675	5217317	1397279	79.778	XSEC_21
11676	5217318	1397284	79.89	XSEC_21
11677	5217319	1397286	80.123	XSEC_21
11678	5217319	1397289	79.833	XSEC_21
11679	5217320	1397292	79.618	XSEC_21
11680	5217320	1397293	79.951	XSEC_21
11681	5217321	1397294	80.083	XSEC_21
11682	5217321	1397296	80.204	XSEC_21
11683	5217322	1397299	80.344	XSEC_21
11684	5217323	1397304	80.61	XSEC_21
11685	5217323	1397309	79.918	XSEC_21
11686	5217325	1397312	80.615	XSEC_21

11687	5217325	1397314	80.746	XSEC_21
11688	5217326	1397320	80.618	XSEC_21
11689	5217327	1397325	80.481	XSEC_21
11690	5217329	1397329	80.32	XSEC_21
50	5216897	1397290	82.858	XSEC_22
51	5216897	1397288	82.717	XSEC_22
52	5216897	1397287	82.377	XSEC_22
53	5216897	1397286	82.317	XSEC_22
54	5216896	1397285	82.348	XSEC_22
55	5216896	1397283	82.12	XSEC_22
56	5216896	1397283	82.03	XSEC_22
57	5216896	1397281	82.228	XSEC_22
58	5216895	1397278	82.596	XSEC_22
59	5216895	1397275	82.794	XSEC_22
61	5216894	1397270	83.145	XSEC_22
62	5216885	1397216	83.382	XSEC_22
63	5216885	1397215	83.28	XSEC_22
64	5216877	1397169	83.568	XSEC_22
65	5216876	1397167	83.898	XSEC_22
66	5216876	1397166	83.823	XSEC_22
67	5216876	1397164	83.918	XSEC_22
68	5216875	1397157	83.768	XSEC_22
69	5216874	1397155	84.591	XSEC_22
70	5216873	1397145	84.713	XSEC_22
71	5216870	1397128	84.671	XSEC_22
72	5216869	1397127	83.057	XSEC_22
73	5216868	1397121	83.538	XSEC_22
74	5216868	1397116	83.932	XSEC_22
75	5216854	1397034	84.283	XSEC_22
76	5216852	1397026	84.207	XSEC_22
77	5216851	1397021	84.148	XSEC_22
79	5216838	1396944	83.622	XSEC_22
80	5216837	1396938	83.399	XSEC_22
81	5216837	1396935	82.36	XSEC_22
82	5216836	1396932	81.946	XSEC_22
83	5216836	1396930	81.906	XSEC_22
84	5216836	1396929	81.906	XSEC_22
85	5216835	1396928	81.792	XSEC_22
86	5216835	1396926	82.129	XSEC_22
87	5216835	1396923	83.468	XSEC_22
88	5216834	1396922	84.701	XSEC_22
89	5216835	1396919	86.016	XSEC_22
90	5216834	1396916	86.027	XSEC_22

91	5216833	1396912	85.842	XSEC_22
92	5216832	1396908	83.355	XSEC_22
93	5216832	1396906	83.996	XSEC_22
94	5216832	1396905	83.952	XSEC_22
11537	5216466	1397046	88.912	XSEC_22
11539	5216894	1397269	83.118	XSEC_22
11540	5216893	1397264	83.658	XSEC_22
11541	5216893	1397263	83.547	XSEC_22
11542	5216892	1397261	83.937	XSEC_22
11543	5216892	1397260	83.958	XSEC_22
11544	5216891	1397256	83.867	XSEC_22
11545	5216891	1397255	83.425	XSEC_22
11546	5216891	1397254	83.339	XSEC_22
11547	5216891	1397252	83.784	XSEC_22
11548	5216890	1397249	83.915	XSEC_22
11549	5216890	1397244	83.727	XSEC_22
11550	5216889	1397240	83.725	XSEC_22
11551	5216889	1397239	83.847	XSEC_22
11552	5216889	1397236	83.746	XSEC_22
11553	5216889	1397234	83.266	XSEC_22
11554	5216889	1397234	83.258	XSEC_22
11555	5216889	1397229	83.173	XSEC_22
11556	5216889	1397229	83.301	XSEC_22
11557	5216889	1397228	83.585	XSEC_22
11558	5216889	1397224	83.73	XSEC_22
11559	5216889	1397219	83.546	XSEC_22
11560	5216885	1397215	83.286	XSEC_22
11561	5216885	1397214	83.048	XSEC_22
11562	5216884	1397213	83.02	XSEC_22
11563	5216884	1397211	83.061	XSEC_22
11564	5216884	1397210	83.021	XSEC_22
11565	5216883	1397209	82.634	XSEC_22
11566	5216883	1397206	82.57	XSEC_22
11567	5216883	1397205	82.522	XSEC_22
11568	5216883	1397205	82.519	XSEC_22
11569	5216883	1397204	82.634	XSEC_22
11570	5216883	1397202	82.855	XSEC_22
11571	5216883	1397200	83.51	XSEC_22
11572	5216882	1397197	83.908	XSEC_22
11573	5216882	1397195	83.987	XSEC_22
11574	5216882	1397190	84.023	XSEC_22
11575	5216882	1397185	84.086	XSEC_22
11576	5216881	1397181	84.027	XSEC_22

11577	5216882	1397180	84.121	XSEC_22
11578	5216882	1397178	83.543	XSEC_22
11579	5216882	1397175	83.735	XSEC_22
11580	5216882	1397173	84.179	XSEC_22
11581	5216881	1397172	84.058	XSEC_22
11582	5216882	1397171	83.786	XSEC_22
11583	5216882	1397170	83.66	XSEC_22
11584	5216882	1397169	83.648	XSEC_22
11585	5216868	1397116	83.956	XSEC_22
11586	5216867	1397111	84.122	XSEC_22
11587	5216866	1397106	84.226	XSEC_22
11588	5216865	1397101	84.282	XSEC_22
11589	5216864	1397096	84.276	XSEC_22
11590	5216864	1397091	84.124	XSEC_22
11591	5216863	1397086	84.101	XSEC_22
11592	5216862	1397081	84.061	XSEC_22
11593	5216861	1397076	83.894	XSEC_22
11594	5216860	1397071	83.796	XSEC_22
11595	5216859	1397066	83.852	XSEC_22
11596	5216859	1397062	83.687	XSEC_22
11597	5216859	1397062	83.523	XSEC_22
11598	5216858	1397061	83.633	XSEC_22
11599	5216858	1397056	83.579	XSEC_22
11600	5216857	1397051	83.73	XSEC_22
11601	5216856	1397049	84.158	XSEC_22
11602	5216856	1397046	84.387	XSEC_22
11603	5216855	1397041	84.418	XSEC_22
11604	5216855	1397038	84.242	XSEC_22
11605	5216851	1397020	84.135	XSEC_22
11606	5216851	1397018	83.805	XSEC_22
11607	5216850	1397014	83.626	XSEC_22
11608	5216850	1397013	83.637	XSEC_22
11609	5216850	1397012	83.267	XSEC_22
11610	5216849	1397010	82.947	XSEC_22
11611	5216849	1397008	83.001	XSEC_22
11612	5216848	1397006	82.795	XSEC_22
11613	5216847	1397003	82.998	XSEC_22
11614	5216847	1397001	83.87	XSEC_22
11615	5216847	1396998	83.999	XSEC_22
11616	5216846	1396994	83.94	XSEC_22
11617	5216846	1396993	83.939	XSEC_22
11618	5216845	1396989	83.585	XSEC_22
11619	5216845	1396988	83.719	XSEC_22

11620	5216844	1396984	83.951	XSEC_22
11621	5216844	1396983	83.95	XSEC_22
11622	5216843	1396978	83.996	XSEC_22
11623	5216843	1396975	83.928	XSEC_22
11624	5216842	1396973	83.878	XSEC_22
11625	5216842	1396971	84.008	XSEC_22
11626	5216842	1396970	84.614	XSEC_22
11627	5216841	1396968	84.203	XSEC_22
11628	5216842	1396968	84.176	XSEC_22
11629	5216841	1396967	83.821	XSEC_22
11630	5216841	1396963	84.044	XSEC_22
11631	5216841	1396958	84.232	XSEC_22
11632	5216840	1396953	84.319	XSEC_22
11633	5216840	1396950	84.021	XSEC_22
11417	5216550	1397439	88.153	XSEC_23
11418	5216550	1397434	88.303	XSEC_23
11419	5216549	1397431	88.252	XSEC_23
11420	5216549	1397429	87.87	XSEC_23
11421	5216548	1397429	87.975	XSEC_23
11422	5216547	1397423	88.066	XSEC_23
11423	5216546	1397419	88.145	XSEC_23
11424	5216546	1397418	88.14	XSEC_23
11425	5216546	1397417	88.145	XSEC_23
11426	5216546	1397417	87.528	XSEC_23
11427	5216545	1397415	87.443	XSEC_23
11428	5216545	1397414	87.396	XSEC_23
11429	5216545	1397414	87.561	XSEC_23
11430	5216545	1397412	87.776	XSEC_23
11431	5216545	1397409	87.932	XSEC_23
11432	5216544	1397408	88.012	XSEC_23
11433	5216543	1397405	88.178	XSEC_23
11434	5216543	1397404	88.579	XSEC_23
11435	5216543	1397403	88.379	XSEC_23
11436	5216540	1397392	87.978	XSEC_23
11437	5216539	1397387	88.318	XSEC_23
11438	5216537	1397382	88.52	XSEC_23
11439	5216536	1397377	88.21	XSEC_23
11440	5216535	1397373	87.68	XSEC_23
11441	5216534	1397372	87.734	XSEC_23
11442	5216534	1397370	87.812	XSEC_23
11443	5216534	1397369	88.579	XSEC_23
11444	5216533	1397368	88.607	XSEC_23
11445	5216533	1397367	88.612	XSEC_23

11446	5216532	1397362	88.745	XSEC_23
11447	5216530	1397358	88.752	XSEC_23
11448	5216528	1397353	88.623	XSEC_23
11449	5216527	1397348	88.794	XSEC_23
11450	5216526	1397344	88.531	XSEC_23
11451	5216526	1397344	88.296	XSEC_23
11452	5216525	1397343	88.306	XSEC_23
11453	5216525	1397338	88.661	XSEC_23
11454	5216525	1397338	88.647	XSEC_23
11455	5216523	1397333	88.759	XSEC_23
11456	5216522	1397328	88.605	XSEC_23
11457	5216521	1397323	88.713	XSEC_23
11458	5216520	1397318	88.363	XSEC_23
11459	5216520	1397317	88.109	XSEC_23
11460	5216520	1397316	87.698	XSEC_23
11461	5216519	1397313	87.734	XSEC_23
11462	5216519	1397313	87.87	XSEC_23
11463	5216518	1397310	87.632	XSEC_23
11464	5216519	1397294	87.738	XSEC_23
11465	5216518	1397289	87.686	XSEC_23
11466	5216518	1397289	87.692	XSEC_23
11467	5216517	1397284	88.338	XSEC_23
11468	5216517	1397284	88.425	XSEC_23
11469	5216517	1397279	88.507	XSEC_23
11470	5216516	1397274	88.46	XSEC_23
11471	5216515	1397269	88.377	XSEC_23
11472	5216514	1397264	88.437	XSEC_23
11473	5216513	1397260	88.494	XSEC_23
11474	5216512	1397258	88.627	XSEC_23
11475	5216512	1397256	88.313	XSEC_23
11476	5216512	1397254	88.053	XSEC_23
11477	5216512	1397252	87.683	XSEC_23
11478	5216509	1397249	87.502	XSEC_23
11479	5216509	1397244	87.6	XSEC_23
11480	5216509	1397244	87.798	XSEC_23
11481	5216509	1397243	87.982	XSEC_23
11482	5216508	1397239	88.219	XSEC_23
11483	5216507	1397235	88.354	XSEC_23
11484	5216507	1397234	88.511	XSEC_23
11485	5216507	1397234	88.683	XSEC_23
11486	5216506	1397228	88.747	XSEC_23
11487	5216505	1397224	88.733	XSEC_23
11488	5216504	1397218	88.611	XSEC_23

11489	5216503	1397214	88.809	XSEC_23
11490	5216502	1397208	88.587	XSEC_23
11491	5216502	1397203	88.777	XSEC_23
11492	5216501	1397198	89.192	XSEC_23
11493	5216498	1397194	89.203	XSEC_23
11494	5216497	1397189	89.289	XSEC_23
11495	5216496	1397184	89.413	XSEC_23
11496	5216495	1397181	89.242	XSEC_23
11497	5216495	1397181	88.814	XSEC_23
11498	5216495	1397179	88.864	XSEC_23
11499	5216494	1397174	88.881	XSEC_23
11500	5216494	1397173	88.937	XSEC_23
11501	5216494	1397172	88.839	XSEC_23
11502	5216493	1397171	88.505	XSEC_23
11503	5216493	1397169	88.603	XSEC_23
11504	5216492	1397164	88.622	XSEC_23
11505	5216492	1397159	88.823	XSEC_23
11506	5216491	1397154	89.06	XSEC_23
11507	5216489	1397149	89.135	XSEC_23
11508	5216488	1397144	89.045	XSEC_23
11509	5216487	1397139	88.883	XSEC_23
11510	5216486	1397135	88.841	XSEC_23
11511	5216486	1397134	88.138	XSEC_23
11512	5216486	1397131	87.369	XSEC_23
11513	5216485	1397130	87.134	XSEC_23
11514	5216485	1397129	87.224	XSEC_23
11515	5216484	1397125	86.825	XSEC_23
11516	5216484	1397124	87.74	XSEC_23
11517	5216484	1397121	88.026	XSEC_23
11518	5216484	1397119	88.227	XSEC_23
11519	5216483	1397114	88.264	XSEC_23
11520	5216482	1397109	88.439	XSEC_23
11521	5216482	1397104	88.632	XSEC_23
11522	5216481	1397099	88.603	XSEC_23
11523	5216480	1397095	88.277	XSEC_23
11524	5216476	1397093	87.598	XSEC_23
11525	5216475	1397088	87.708	XSEC_23
11526	5216474	1397083	87.654	XSEC_23
11527	5216473	1397080	87.588	XSEC_23
11528	5216473	1397078	87.943	XSEC_23
11529	5216473	1397078	87.929	XSEC_23
11530	5216472	1397077	88.729	XSEC_23
11531	5216472	1397073	88.735	XSEC_23

11532	5216471	1397068	88.841	XSEC_23
11533	5216470	1397063	88.739	XSEC_23
11534	5216469	1397058	88.167	XSEC_23
11535	5216467	1397053	88.257	XSEC_23
11536	5216467	1397049	88.466	XSEC_23
11538	5216465	1397040	88.984	XSEC_23
20081	5216554	1397456	89.812	XSEC_23
20082	5216553	1397453	87.193	XSEC_23
20083	5216553	1397450	86.619	XSEC_23
20084	5216552	1397448	86.808	XSEC_23
20085	5216552	1397446	86.99	XSEC_23
20086	5216552	1397445	86.818	XSEC_23
20087	5216551	1397443	86.976	XSEC_23
20088	5216551	1397441	87.461	XSEC_23
20089	5216551	1397440	87.559	XSEC_23
20090	5216550	1397439	88.136	XSEC_23
20091	5216541	1397397	88.141	XSEC_23
20092	5216540	1397392	87.981	XSEC_23
20093	5216522	1397310	87.647	XSEC_23
20094	5216522	1397307	87.463	XSEC_23
20095	5216521	1397304	87.371	XSEC_23
20096	5216521	1397302	87.382	XSEC_23
20097	5216520	1397300	87.456	XSEC_23
20098	5216520	1397298	87.564	XSEC_23
20099	5216519	1397294	87.67	XSEC_23
20100	5216510	1397252	87.689	XSEC_23
20101	5216510	1397249	87.383	XSEC_23
20102	5216498	1397198	89.123	XSEC_23
20103	5216498	1397195	89.189	XSEC_23
20104	5216476	1397095	88.314	XSEC_23
20105	5216476	1397093	87.606	XSEC_23
20106	5216464	1397039	88.989	XSEC_23
20107	5216463	1397031	88.604	XSEC_23
20108	5216461	1397025	88.097	XSEC_23
20109	5216461	1397024	87.257	XSEC_23
20110	5216461	1397023	86.634	XSEC_23
20111	5216459	1397020	83.699	XSEC_23
20112	5216460	1397018	86.57	XSEC_23
20113	5216459	1397015	88.502	XSEC_23
20114	5216459	1397013	88.448	XSEC_23
20115	5216458	1397010	90.6	XSEC_23
20116	5216457	1397007	90.73	XSEC_23
20117	5216457	1397004	90.626	XSEC_23

20118	5216456	1397002	89.002	XSEC_23
20119	5216455	1396998	88.804	XSEC_23
11328	5216023	1397018	92.162	XSEC_24
11329	5216025	1397028	92.693	XSEC_24
11330	5216025	1397030	92.917	XSEC_24
11331	5216026	1397035	92.951	XSEC_24
11332	5216027	1397038	92.944	XSEC_24
11333	5216028	1397040	92.579	XSEC_24
11334	5216028	1397042	91.867	XSEC_24
11335	5216028	1397043	91.97	XSEC_24
11336	5216029	1397045	92.107	XSEC_24
11337	5216030	1397050	91.982	XSEC_24
11338	5216031	1397052	91.666	XSEC_24
11339	5216031	1397055	91.655	XSEC_24
11340	5216032	1397060	91.478	XSEC_24
11341	5216033	1397066	90.606	XSEC_24
11342	5216035	1397070	91.385	XSEC_24
11343	5216036	1397075	91.265	XSEC_24
11344	5216040	1397084	91.956	XSEC_24
11345	5216040	1397091	91.424	XSEC_24
11346	5216042	1397096	91.375	XSEC_24
11347	5216040	1397090	91.273	XSEC_24
11348	5216043	1397103	91.141	XSEC_24
11349	5216044	1397105	91.12	XSEC_24
11350	5216044	1397108	92.069	XSEC_24
11351	5216045	1397110	92.428	XSEC_24
11352	5216045	1397111	93.369	XSEC_24
11353	5216045	1397113	92.759	XSEC_24
11354	5216045	1397115	92.487	XSEC_24
11355	5216046	1397117	92.545	XSEC_24
11356	5216046	1397118	92.432	XSEC_24
11357	5216050	1397140	92.369	XSEC_24
11358	5216050	1397143	92.129	XSEC_24
11359	5216051	1397145	92.193	XSEC_24
11360	5216051	1397145	92.054	XSEC_24
11361	5216051	1397148	92.263	XSEC_24
11362	5216052	1397150	92.429	XSEC_24
11363	5216053	1397155	92.766	XSEC_24
11364	5216054	1397160	92.621	XSEC_24
11365	5216054	1397160	92.999	XSEC_24
11366	5216054	1397160	92.612	XSEC_24
11367	5216056	1397169	93.032	XSEC_24
11368	5216057	1397174	92.873	XSEC_24

11369	5216058	1397176	92.804	XSEC_24
11370	5216058	1397179	92.396	XSEC_24
11371	5216059	1397182	91.924	XSEC_24
11372	5216059	1397186	91.501	XSEC_24
11373	5216061	1397189	92.184	XSEC_24
11374	5216061	1397191	92.488	XSEC_24
11375	5216061	1397191	92.546	XSEC_24
11376	5216061	1397192	92.695	XSEC_24
11377	5216062	1397195	92.483	XSEC_24
11378	5216062	1397195	92.483	XSEC_24
11379	5216064	1397202	92.314	XSEC_24
11380	5216064	1397205	92.582	XSEC_24
11381	5216064	1397205	92.563	XSEC_24
11382	5216064	1397205	92.58	XSEC_24
11383	5216066	1397210	92.572	XSEC_24
11384	5216067	1397215	92.584	XSEC_24
11385	5216068	1397221	92.513	XSEC_24
11386	5216068	1397223	92.291	XSEC_24
11387	5216068	1397223	92.296	XSEC_24
11388	5216069	1397228	92.2	XSEC_24
11389	5216069	1397228	92.191	XSEC_24
11390	5216070	1397232	92.312	XSEC_24
11391	5216070	1397233	92.453	XSEC_24
11392	5216072	1397238	92.41	XSEC_24
11393	5216075	1397249	91.993	XSEC_24
11394	5216075	1397251	91.288	XSEC_24
11395	5216076	1397254	91.154	XSEC_24
11396	5216076	1397254	91.262	XSEC_24
11397	5216077	1397263	91.666	XSEC_24
11398	5216077	1397265	91.581	XSEC_24
11399	5216078	1397266	91.217	XSEC_24
11400	5216078	1397267	91.321	XSEC_24
11401	5216078	1397269	91.707	XSEC_24
11402	5216079	1397271	91.897	XSEC_24
11403	5216080	1397276	92.087	XSEC_24
11404	5216081	1397278	92.139	XSEC_24
11405	5216081	1397279	92.298	XSEC_24
11406	5216081	1397280	92.28	XSEC_24
11407	5216082	1397283	92.047	XSEC_24
11408	5216083	1397285	91.89	XSEC_24
11409	5216084	1397289	91.549	XSEC_24
11410	5216084	1397289	91.548	XSEC_24
11411	5216084	1397289	91.523	XSEC_24

11412	5216084	1397291	91.939	XSEC_24
11413	5216085	1397297	92.604	XSEC_24
11414	5216094	1397337	91.648	XSEC_24
11415	5216094	1397338	91.589	XSEC_24
11416	5216094	1397338	91.704	XSEC_24
20058	5216023	1397021	92.365	XSEC_24
20059	5216024	1397024	92.474	XSEC_24
20060	5216045	1397118	92.364	XSEC_24
20061	5216050	1397140	92.361	XSEC_24
20062	5216048	1397134	92.316	XSEC_24
20063	5216062	1397195	92.472	XSEC_24
20064	5216063	1397199	92.601	XSEC_24
20065	5216086	1397303	92.403	XSEC_24
20066	5216089	1397314	92.597	XSEC_24
20067	5216090	1397321	92.504	XSEC_24
20068	5216092	1397331	91.931	XSEC_24
20069	5216093	1397336	91.757	XSEC_24
20070	5216098	1397354	91.99	XSEC_24
20071	5216099	1397359	92.293	XSEC_24
20072	5216100	1397365	92.376	XSEC_24
20073	5216102	1397374	92.191	XSEC_24
20074	5216103	1397379	91.861	XSEC_24
20075	5216104	1397385	91.816	XSEC_24
20076	5216105	1397387	91.324	XSEC_24
20077	5216105	1397390	91.164	XSEC_24
20078	5216106	1397392	91.217	XSEC_24
20079	5216106	1397396	91.616	XSEC_24
20080	5216107	1397398	91.648	XSEC_24
11232	5215727	1397307	95.781	XSEC_25
11233	5215727	1397302	95.727	XSEC_25
11234	5215726	1397297	95.703	XSEC_25
11235	5215726	1397292	95.641	XSEC_25
11236	5215725	1397287	95.239	XSEC_25
11237	5215724	1397283	94.708	XSEC_25
11238	5215724	1397282	94.838	XSEC_25
11239	5215724	1397280	95.478	XSEC_25
11240	5215724	1397278	95.7	XSEC_25
11241	5215724	1397277	95.721	XSEC_25
11242	5215723	1397273	95.506	XSEC_25
11243	5215723	1397273	95.504	XSEC_25
11244	5215723	1397268	95.334	XSEC_25
11245	5215722	1397264	95.19	XSEC_25
11246	5215718	1397248	95.273	XSEC_25

11247	5215717	1397246	95.467	XSEC_25
11248	5215717	1397243	95.583	XSEC_25
11249	5215716	1397238	95.621	XSEC_25
11250	5215715	1397233	95.677	XSEC_25
11251	5215714	1397228	95.557	XSEC_25
11252	5215714	1397224	95.69	XSEC_25
11253	5215713	1397223	95.714	XSEC_25
11254	5215713	1397221	95.19	XSEC_25
11255	5215713	1397219	95.155	XSEC_25
11256	5215712	1397215	95.724	XSEC_25
11257	5215712	1397213	95.5	XSEC_25
11258	5215711	1397210	95.238	XSEC_25
11259	5215711	1397209	95.435	XSEC_25
11260	5215711	1397208	95.923	XSEC_25
11261	5215711	1397207	96.006	XSEC_25
11262	5215710	1397203	96.053	XSEC_25
11263	5215710	1397198	95.941	XSEC_25
11264	5215709	1397194	95.906	XSEC_25
11265	5215709	1397193	96.014	XSEC_25
11266	5215708	1397188	95.91	XSEC_25
11267	5215707	1397185	95.959	XSEC_25
11268	5215707	1397184	95.897	XSEC_25
11269	5215707	1397179	95.804	XSEC_25
11270	5215706	1397177	95.776	XSEC_25
11271	5215706	1397176	95.535	XSEC_25
11272	5215706	1397174	95.636	XSEC_25
11273	5215706	1397174	95.606	XSEC_25
11274	5215706	1397172	95.747	XSEC_25
11275	5215705	1397169	95.671	XSEC_25
11276	5215704	1397164	95.525	XSEC_25
11277	5215703	1397158	95.766	XSEC_25
11278	5215702	1397153	95.805	XSEC_25
11279	5215701	1397148	95.899	XSEC_25
11280	5215703	1397156	95.849	XSEC_25
11281	5215701	1397145	95.92	XSEC_25
11282	5215700	1397142	95.955	XSEC_25
11283	5215700	1397140	95.966	XSEC_25
11284	5215699	1397137	95.468	XSEC_25
11285	5215699	1397135	94.801	XSEC_25
11286	5215699	1397133	95.147	XSEC_25
11287	5215698	1397128	95.403	XSEC_25
11288	5215697	1397124	95.335	XSEC_25
11289	5215697	1397123	95.372	XSEC_25

11290	5215696	1397118	95.075	XSEC_25
11291	5215695	1397113	94.853	XSEC_25
11292	5215694	1397108	94.607	XSEC_25
11293	5215693	1397105	94.312	XSEC_25
11294	5215693	1397094	94.246	XSEC_25
11295	5215692	1397086	94.513	XSEC_25
11296	5215692	1397084	94.267	XSEC_25
11297	5215692	1397081	93.7	XSEC_25
11298	5215692	1397081	93.709	XSEC_25
11299	5215692	1397080	93.618	XSEC_25
11300	5215691	1397079	93.636	XSEC_25
11301	5215691	1397076	93.818	XSEC_25
11302	5215691	1397074	93.692	XSEC_25
11303	5215691	1397072	94.313	XSEC_25
11304	5215691	1397071	94.802	XSEC_25
11305	5215691	1397071	94.874	XSEC_25
11306	5215691	1397069	95.057	XSEC_25
11307	5215691	1397066	95.183	XSEC_25
11308	5215690	1397061	95.177	XSEC_25
11309	5215690	1397060	95.111	XSEC_25
11310	5215689	1397057	94.656	XSEC_25
11311	5215689	1397056	94.47	XSEC_25
11312	5215689	1397054	94.473	XSEC_25
11313	5215689	1397054	94.558	XSEC_25
11314	5215689	1397052	94.701	XSEC_25
11315	5215689	1397051	94.772	XSEC_25
11316	5215688	1397046	95.071	XSEC_25
11317	5215687	1397042	95.082	XSEC_25
11318	5215687	1397041	95.087	XSEC_25
11319	5215687	1397040	95.019	XSEC_25
11320	5215684	1397037	94.533	XSEC_25
11321	5215683	1397034	94.14	XSEC_25
11322	5215683	1397032	93.974	XSEC_25
11323	5215682	1397032	93.705	XSEC_25
11324	5215682	1397028	93.388	XSEC_25
11325	5215681	1397027	93.478	XSEC_25
11326	5215681	1397022	93.43	XSEC_25
11327	5215681	1397022	93.58	XSEC_25
20040	5215729	1397316	96.097	XSEC_25
20041	5215728	1397310	95.899	XSEC_25
20042	5215728	1397309	95.781	XSEC_25
20043	5215727	1397307	95.807	XSEC_25
20044	5215718	1397248	95.267	XSEC_25

20045	5215717	1397241	95.595	XSEC_25
20046	5215707	1397184	95.913	XSEC_25
20047	5215707	1397181	95.923	XSEC_25
20048	5215694	1397104	94.253	XSEC_25
20049	5215694	1397102	93.988	XSEC_25
20050	5215694	1397099	93.821	XSEC_25
20051	5215693	1397098	93.705	XSEC_25
20052	5215693	1397096	93.977	XSEC_25
20053	5215693	1397094	94.256	XSEC_25
20054	5215684	1397040	94.944	XSEC_25
20055	5215684	1397037	94.535	XSEC_25
20056	5215680	1397016	93.933	XSEC_25
20057	5215681	1397014	95.737	XSEC_25
11175	5215266	1397122	98.459	XSEC_26
11176	5215267	1397125	98.529	XSEC_26
11177	5215267	1397128	97.935	XSEC_26
11178	5215268	1397131	97.324	XSEC_26
11179	5215269	1397133	97.538	XSEC_26
11180	5215269	1397134	97.365	XSEC_26
11181	5215270	1397138	98.229	XSEC_26
11182	5215270	1397138	98.239	XSEC_26
11183	5215272	1397143	98.595	XSEC_26
11184	5215273	1397148	98.688	XSEC_26
11185	5215274	1397153	99.021	XSEC_26
11186	5215275	1397157	99.097	XSEC_26
11187	5215273	1397160	99.06	XSEC_26
11188	5215274	1397165	99.063	XSEC_26
11189	5215275	1397170	99.04	XSEC_26
11190	5215276	1397175	99.02	XSEC_26
11191	5215277	1397180	98.839	XSEC_26
11192	5215279	1397185	98.827	XSEC_26
11193	5215279	1397186	98.651	XSEC_26
11194	5215279	1397190	98.72	XSEC_26
11195	5215280	1397195	98.795	XSEC_26
11196	5215281	1397200	98.819	XSEC_26
11197	5215283	1397205	98.702	XSEC_26
11198	5215283	1397210	98.675	XSEC_26
11199	5215283	1397210	98.884	XSEC_26
11200	5215283	1397211	98.777	XSEC_26
11201	5215284	1397213	98.127	XSEC_26
11202	5215284	1397215	98.265	XSEC_26
11203	5215285	1397220	98.293	XSEC_26
11204	5215286	1397224	98.185	XSEC_26

11205	5215286	1397224	98.367	XSEC_26
11206	5215287	1397225	98.473	XSEC_26
11207	5215287	1397230	98.31	XSEC_26
11208	5215288	1397230	98.486	XSEC_26
11209	5215287	1397232	98.663	XSEC_26
11210	5215288	1397234	99.305	XSEC_26
11211	5215288	1397237	99.264	XSEC_26
11212	5215288	1397238	99.138	XSEC_26
11213	5215289	1397238	98.895	XSEC_26
11214	5215289	1397239	98.722	XSEC_26
11215	5215289	1397242	98.627	XSEC_26
11216	5215290	1397247	98.65	XSEC_26
11217	5215291	1397252	98.447	XSEC_26
11218	5215291	1397257	98.393	XSEC_26
11219	5215292	1397262	98.676	XSEC_26
11220	5215292	1397263	99.482	XSEC_26
11221	5215305	1397320	97.507	XSEC_26
11222	5215305	1397323	97.386	XSEC_26
11223	5215306	1397323	97.472	XSEC_26
11224	5215307	1397326	97.404	XSEC_26
11225	5215307	1397331	98.834	XSEC_26
11226	5215308	1397336	99.182	XSEC_26
11227	5215309	1397341	99.178	XSEC_26
11228	5215310	1397346	99.147	XSEC_26
11229	5215311	1397349	99.182	XSEC_26
11230	5215312	1397351	99.208	XSEC_26
11231	5215312	1397355	99.091	XSEC_26
20020	5215264	1397116	98.367	XSEC_26
20021	5215265	1397117	97.694	XSEC_26
20022	5215265	1397119	97.892	XSEC_26
20023	5215266	1397121	97.952	XSEC_26
20024	5215273	1397157	99.159	XSEC_26
20025	5215273	1397160	99.082	XSEC_26
20026	5215287	1397232	98.671	XSEC_26
20027	5215295	1397269	99.46	XSEC_26
20028	5215296	1397275	99.603	XSEC_26
20029	5215297	1397280	99.614	XSEC_26
20030	5215298	1397286	99.629	XSEC_26
20031	5215299	1397288	99.333	XSEC_26
20032	5215299	1397293	99.386	XSEC_26
20033	5215303	1397308	98.938	XSEC_26
20034	5215303	1397310	97.708	XSEC_26
20035	5215303	1397312	97.356	XSEC_26

20036	5215304	1397314	97.414	XSEC_26
20037	5215304	1397316	97.484	XSEC_26
20038	5215305	1397320	97.513	XSEC_26
20039	5215312	1397355	99.083	XSEC_26
220	5214939	1397634	105.177	XSEC_27
11102	5214919	1397590	102.114	XSEC_27
11103	5214917	1397585	102.479	XSEC_27
11104	5214915	1397583	102.012	XSEC_27
11105	5214915	1397581	101.806	XSEC_27
11106	5214915	1397581	101.807	XSEC_27
11107	5214915	1397581	101.875	XSEC_27
11108	5214914	1397580	102.064	XSEC_27
11109	5214914	1397579	102.266	XSEC_27
11110	5214913	1397577	102.907	XSEC_27
11111	5214912	1397576	102.68	XSEC_27
11112	5214912	1397576	102.669	XSEC_27
11113	5214912	1397575	102.453	XSEC_27
11114	5214911	1397574	102.638	XSEC_27
11115	5214910	1397572	103.202	XSEC_27
11116	5214909	1397570	103.366	XSEC_27
11117	5214908	1397567	103.599	XSEC_27
11118	5214906	1397563	103.314	XSEC_27
11119	5214906	1397563	103.225	XSEC_27
11120	5214904	1397558	103.102	XSEC_27
11121	5214901	1397553	102.997	XSEC_27
11122	5214899	1397549	102.71	XSEC_27
11123	5214898	1397546	102.27	XSEC_27
11124	5214897	1397544	102.061	XSEC_27
11125	5214897	1397544	102.107	XSEC_27
11126	5214895	1397539	102.127	XSEC_27
11127	5214893	1397535	102.23	XSEC_27
11128	5214893	1397535	102.449	XSEC_27
11129	5214892	1397532	102.897	XSEC_27
11130	5214891	1397532	103.504	XSEC_27
11131	5214891	1397530	103.337	XSEC_27
11132	5214891	1397530	103.254	XSEC_27
11133	5214889	1397525	103.644	XSEC_27
11134	5214887	1397520	103.64	XSEC_27
11135	5214885	1397515	103.682	XSEC_27
11136	5214883	1397511	103.833	XSEC_27
11137	5214881	1397506	103.836	XSEC_27
11138	5214879	1397501	103.871	XSEC_27
11139	5214877	1397497	103.543	XSEC_27

11140	5214875	1397494	103.293	XSEC_27
11141	5214875	1397493	102.886	XSEC_27
11142	5214875	1397492	102.986	XSEC_27
11143	5214873	1397488	102.982	XSEC_27
11144	5214872	1397488	103.301	XSEC_27
11145	5214872	1397486	103.32	XSEC_27
11146	5214871	1397484	103.228	XSEC_27
11147	5214871	1397483	102.863	XSEC_27
11148	5214870	1397483	102.941	XSEC_27
11149	5214869	1397480	102.547	XSEC_27
11150	5214869	1397479	102.319	XSEC_27
11151	5214868	1397478	102.336	XSEC_27
11152	5214867	1397475	102.557	XSEC_27
11153	5214867	1397473	102.687	XSEC_27
11154	5214859	1397461	103.737	XSEC_27
11155	5214857	1397456	103.898	XSEC_27
11156	5214855	1397452	104.153	XSEC_27
11157	5214854	1397449	103.918	XSEC_27
11158	5214853	1397448	103.707	XSEC_27
11159	5214853	1397447	103.461	XSEC_27
11160	5214852	1397444	103.431	XSEC_27
11161	5214851	1397442	103.702	XSEC_27
11162	5214849	1397439	103.512	XSEC_27
11163	5214849	1397438	103.734	XSEC_27
11164	5214847	1397433	103.893	XSEC_27
11165	5214841	1397421	103.039	XSEC_27
11166	5214840	1397420	102.84	XSEC_27
11167	5214838	1397417	102.807	XSEC_27
11168	5214838	1397417	102.813	XSEC_27
11169	5214837	1397415	102.774	XSEC_27
11170	5214837	1397414	102.902	XSEC_27
11171	5214834	1397414	103.571	XSEC_27
11174	5214835	1397413	103.258	XSEC_27
20002	5214933	1397618	105.568	XSEC_27
20003	5214929	1397613	105.305	XSEC_27
20004	5214923	1397599	101.611	XSEC_27
20005	5214923	1397599	101.51	XSEC_27
20006	5214922	1397596	101.748	XSEC_27
20007	5214920	1397594	101.915	XSEC_27
20008	5214919	1397591	102.072	XSEC_27
20009	5214919	1397590	102.158	XSEC_27
20010	5214918	1397588	102.283	XSEC_27
20011	5214891	1397530	103.245	XSEC_27

20012	5214864	1397472	102.622	XSEC_27
20013	5214863	1397469	103.167	XSEC_27
20014	5214861	1397466	103.61	XSEC_27
20015	5214860	1397463	103.754	XSEC_27
20016	5214859	1397461	103.692	XSEC_27
20017	5214846	1397432	103.837	XSEC_27
20018	5214843	1397427	103.53	XSEC_27
20019	5214841	1397421	103.03	XSEC_27
209	5214495	1397545	106.388	XSEC_28
210	5214497	1397552	106.387	XSEC_28
211	5214498	1397558	106.449	XSEC_28
212	5214499	1397566	106.266	XSEC_28
213	5214500	1397570	106.104	XSEC_28
214	5214501	1397573	106.108	XSEC_28
215	5214501	1397575	106.195	XSEC_28
216	5214506	1397595	108.192	XSEC_28
217	5214506	1397597	107.737	XSEC_28
218	5214507	1397601	107.723	XSEC_28
219	5214521	1397669	107.534	XSEC_28
11047	5214502	1397575	106.179	XSEC_28
11048	5214502	1397576	106.536	XSEC_28
11049	5214502	1397578	107.204	XSEC_28
11050	5214502	1397580	107.513	XSEC_28
11051	5214503	1397580	107.562	XSEC_28
11052	5214504	1397585	107.48	XSEC_28
11053	5214505	1397590	107.455	XSEC_28
11054	5214506	1397593	107.165	XSEC_28
11055	5214506	1397594	107.229	XSEC_28
11056	5214506	1397595	108.126	XSEC_28
11057	5214507	1397601	107.729	XSEC_28
11058	5214508	1397606	108.014	XSEC_28
11059	5214509	1397611	107.707	XSEC_28
11060	5214511	1397616	107.552	XSEC_28
11061	5214512	1397620	107.303	XSEC_28
11062	5214512	1397620	106.812	XSEC_28
11063	5214512	1397621	106.912	XSEC_28
11064	5214512	1397623	106.706	XSEC_28
11065	5214513	1397625	106.629	XSEC_28
11066	5214513	1397626	106.986	XSEC_28
11067	5214513	1397628	107.279	XSEC_28
11068	5214513	1397631	107.48	XSEC_28
11069	5214513	1397636	107.419	XSEC_28
11070	5214514	1397640	107.258	XSEC_28

11071	5214514	1397641	107.042	XSEC_28
11072	5214514	1397642	107.073	XSEC_28
11073	5214514	1397647	107.107	XSEC_28
11074	5214515	1397651	107.09	XSEC_28
11075	5214515	1397652	107.34	XSEC_28
11076	5214515	1397653	107.256	XSEC_28
11077	5214515	1397655	107.153	XSEC_28
11078	5214515	1397656	106.747	XSEC_28
11079	5214515	1397657	106.748	XSEC_28
11080	5214516	1397662	107.02	XSEC_28
11081	5214517	1397666	107.48	XSEC_28
11082	5214521	1397669	107.524	XSEC_28
11083	5214521	1397674	107.367	XSEC_28
11084	5214521	1397679	107.252	XSEC_28
11085	5214521	1397684	107.34	XSEC_28
11086	5214521	1397689	107.228	XSEC_28
11087	5214522	1397694	107.436	XSEC_28
11088	5214522	1397698	107.522	XSEC_28
11089	5214522	1397698	107.609	XSEC_28
11090	5214523	1397699	107.418	XSEC_28
11091	5214524	1397705	106.824	XSEC_28
11092	5214524	1397707	107.55	XSEC_28
11093	5214525	1397710	107.783	XSEC_28
11094	5214525	1397715	107.824	XSEC_28
11095	5214526	1397720	107.661	XSEC_28
11096	5214526	1397725	107.314	XSEC_28
11097	5214527	1397730	107.685	XSEC_28
11098	5214528	1397735	107.742	XSEC_28
11099	5214529	1397740	107.486	XSEC_28
11100	5214530	1397745	107.404	XSEC_28
11101	5214531	1397749	107.1	XSEC_28
110100	5214495	1397542	107.544	XSEC_28
208	5214165	1397897	113.655	XSEC_29
10969	5214163	1397893	113.413	XSEC_29
10970	5214159	1397884	113.215	XSEC_29
10971	5214157	1397881	113.066	XSEC_29
10972	5214156	1397879	112.535	XSEC_29
10973	5214153	1397874	111.8	XSEC_29
10974	5214153	1397872	111.807	XSEC_29
10975	5214152	1397871	111.499	XSEC_29
10976	5214152	1397871	111.505	XSEC_29
10977	5214150	1397866	111.242	XSEC_29
10978	5214149	1397864	111.146	XSEC_29

10979	5214148	1397862	111.134	XSEC_29
10980	5214146	1397859	110.979	XSEC_29
10981	5214145	1397857	111.153	XSEC_29
10982	5214145	1397857	111.149	XSEC_29
10983	5214145	1397856	111.453	XSEC_29
10984	5214144	1397856	111.462	XSEC_29
10986	5214142	1397851	111.668	XSEC_29
10987	5214140	1397847	112.02	XSEC_29
10988	5214144	1397856	111.465	XSEC_29
10990	5214138	1397842	112.365	XSEC_29
10991	5214136	1397837	112.453	XSEC_29
10992	5214136	1397836	112.442	XSEC_29
10993	5214135	1397834	112.231	XSEC_29
10994	5214134	1397832	112.115	XSEC_29
10995	5214132	1397827	111.993	XSEC_29
10996	5214130	1397823	111.91	XSEC_29
10997	5214128	1397818	111.733	XSEC_29
10998	5214126	1397814	111.89	XSEC_29
10999	5214126	1397813	112.191	XSEC_29
11000	5214125	1397813	112.682	XSEC_29
11001	5214122	1397813	112.75	XSEC_29
11002	5214122	1397813	112.754	XSEC_29
11003	5214120	1397808	113.074	XSEC_29
11004	5214118	1397804	113.117	XSEC_29
11005	5214116	1397799	113.063	XSEC_29
11006	5214114	1397794	112.717	XSEC_29
11007	5214114	1397792	112.906	XSEC_29
11008	5214111	1397786	112.822	XSEC_29
11009	5214108	1397782	112.715	XSEC_29
11010	5214107	1397777	112.533	XSEC_29
11011	5214102	1397774	112.59	XSEC_29
11012	5214102	1397773	112.029	XSEC_29
11013	5214101	1397772	111.375	XSEC_29
11014	5214101	1397770	111.263	XSEC_29
11015	5214101	1397770	111.26	XSEC_29
11016	5214100	1397768	111.627	XSEC_29
11017	5214099	1397766	111.746	XSEC_29
11018	5214099	1397766	111.985	XSEC_29
11019	5214098	1397763	112.163	XSEC_29
11020	5214097	1397761	112.202	XSEC_29
11021	5214095	1397756	112.143	XSEC_29
11022	5214093	1397753	112.027	XSEC_29
11023	5214093	1397751	111.679	XSEC_29

11024	5214092	1397750	111.246	XSEC_29
11025	5214092	1397750	110.892	XSEC_29
11026	5214091	1397748	110.73	XSEC_29
11027	5214091	1397747	110.775	XSEC_29
11028	5214091	1397747	110.868	XSEC_29
11029	5214090	1397745	111.404	XSEC_29
11030	5214089	1397742	111.881	XSEC_29
11031	5214087	1397737	112.151	XSEC_29
11032	5214084	1397733	112.346	XSEC_29
11033	5214083	1397731	112.159	XSEC_29
11034	5214080	1397730	111.929	XSEC_29
11035	5214079	1397728	111.628	XSEC_29
11036	5214073	1397716	112.35	XSEC_29
11037	5214071	1397711	112.196	XSEC_29
11038	5214070	1397709	111.866	XSEC_29
11039	5214078	1397726	112.154	XSEC_29
11040	5214076	1397723	112.501	XSEC_29
11041	5214074	1397719	112.643	XSEC_29
11042	5214069	1397707	111.482	XSEC_29
11043	5214069	1397706	111.673	XSEC_29
11044	5214068	1397705	111.894	XSEC_29
11045	5214068	1397703	111.706	XSEC_29
11046	5214067	1397702	112.368	XSEC_29
10485	5213830	1398191	118.475	XSEC_30
10486	5213830	1398190	117.456	XSEC_30
10487	5213830	1398189	117.231	XSEC_30
10488	5213828	1398185	118.109	XSEC_30
10489	5213826	1398181	118.624	XSEC_30
10490	5213825	1398181	118.555	XSEC_30
10491	5213823	1398176	117.874	XSEC_30
10492	5213821	1398171	117.603	XSEC_30
10493	5213819	1398167	117.102	XSEC_30
10494	5213817	1398165	116.681	XSEC_30
10495	5213816	1398163	117.529	XSEC_30
10496	5213815	1398161	117.868	XSEC_30
10497	5213814	1398158	117.442	XSEC_30
10498	5213814	1398158	117.596	XSEC_30
10499	5213812	1398154	117.208	XSEC_30
10500	5213812	1398154	117.212	XSEC_30
10501	5213812	1398152	117.519	XSEC_30
10502	5213811	1398152	117.63	XSEC_30
10503	5213809	1398148	117.796	XSEC_30
10504	5213807	1398143	117.542	XSEC_30

10505	5213806	1398141	117.449	XSEC_30
10506	5213805	1398140	118.112	XSEC_30
10507	5213805	1398139	118.366	XSEC_30
10508	5213803	1398134	118.677	XSEC_30
10509	5213800	1398130	118.815	XSEC_30
10510	5213799	1398128	118.489	XSEC_30
10511	5213798	1398125	118.606	XSEC_30
10512	5213796	1398121	118.535	XSEC_30
10513	5213793	1398116	118.504	XSEC_30
10514	5213792	1398114	118.45	XSEC_30
10515	5213792	1398113	118.6	XSEC_30
10516	5213791	1398111	118.779	XSEC_30
10517	5213789	1398107	118.728	XSEC_30
10518	5213786	1398102	118.738	XSEC_30
10519	5213784	1398098	118.51	XSEC_30
10520	5213784	1398098	118.508	XSEC_30
10521	5213783	1398096	118.236	XSEC_30
10522	5213782	1398093	118.244	XSEC_30
10523	5213782	1398093	118.199	XSEC_30
10524	5213782	1398093	118.13	XSEC_30
10525	5213781	1398092	117.915	XSEC_30
10526	5213780	1398089	117.777	XSEC_30
10527	5213778	1398085	117.706	XSEC_30
10528	5213777	1398084	117.806	XSEC_30
10529	5213776	1398083	117.725	XSEC_30
10530	5213775	1398081	117.718	XSEC_30
10531	5213774	1398080	117.716	XSEC_30
10532	5213774	1398079	117.751	XSEC_30
10533	5213773	1398077	117.928	XSEC_30
10534	5213772	1398075	118.161	XSEC_30
10535	5213772	1398073	118.104	XSEC_30
10536	5213772	1398073	118.091	XSEC_30
10537	5213770	1398069	118.251	XSEC_30
10538	5213770	1398069	118.246	XSEC_30
10539	5213770	1398068	118.041	XSEC_30
10540	5213768	1398064	118.185	XSEC_30
10541	5213766	1398060	118.096	XSEC_30
10542	5213764	1398057	117.861	XSEC_30
10543	5213763	1398055	117.992	XSEC_30
10544	5213763	1398054	117.928	XSEC_30
10545	5213762	1398053	118.243	XSEC_30
10546	5213761	1398051	118.297	XSEC_30
10547	5213759	1398047	118.467	XSEC_30

10548	5213759	1398046	118.653	XSEC_30
10549	5213756	1398042	118.889	XSEC_30
10550	5213756	1398042	118.931	XSEC_30
10551	5213755	1398039	118.883	XSEC_30
10552	5213755	1398039	118.892	XSEC_30
10553	5213753	1398035	118.641	XSEC_30
10554	5213753	1398035	118.624	XSEC_30
10555	5213752	1398033	118.732	XSEC_30
10556	5213751	1398030	118.513	XSEC_30
10557	5213749	1398027	118.481	XSEC_30
10558	5213749	1398025	118.573	XSEC_30
10559	5213748	1398025	118.523	XSEC_30
10560	5213748	1398024	117.677	XSEC_30
10561	5213746	1398021	117.445	XSEC_30
10562	5213743	1398017	116.7	XSEC_30
10563	5213742	1398014	115.857	XSEC_30
10564	5213741	1398012	115.896	XSEC_30
10565	5213740	1398010	116.061	XSEC_30
10566	5213739	1398009	116.127	XSEC_30
10567	5213739	1398008	117.078	XSEC_30
10568	5213739	1398008	116.087	XSEC_30
10569	5213738	1398007	115.598	XSEC_30
10570	5213738	1398006	115.327	XSEC_30
10571	5213737	1398005	115.22	XSEC_30
10572	5213737	1398004	115.097	XSEC_30
10573	5213736	1398003	115.169	XSEC_30
10574	5213735	1398001	115.27	XSEC_30
10575	5213735	1397999	116.06	XSEC_30
10576	5213734	1397999	115.511	XSEC_30
10577	5213734	1397999	115.505	XSEC_30
10578	5213733	1397997	115.496	XSEC_30
10579	5213733	1397996	115.772	XSEC_30
10580	5213734	1397995	115.969	XSEC_30
10581	5213733	1397993	115.84	XSEC_30
10582	5213732	1397991	116.263	XSEC_30
10583	5213731	1397990	116.441	XSEC_30
1685	5213453	1398453	125.348	XSEC_31
10584	5213363	1398259	125.109	XSEC_31
10585	5213364	1398260	125.225	XSEC_31
10586	5213364	1398262	125.167	XSEC_31
10587	5213365	1398263	124.846	XSEC_31
10588	5213365	1398263	124.882	XSEC_31
10589	5213366	1398266	124.65	XSEC_31

10590	5213341	1398212	122.93	XSEC_31
10591	5213343	1398216	123.905	XSEC_31
10592	5213351	1398232	125.58	XSEC_31
10593	5213354	1398238	125.577	XSEC_31
10594	5213359	1398249	125.324	XSEC_31
10595	5213362	1398256	125.356	XSEC_31
10596	5213362	1398257	125.302	XSEC_31
10597	5213363	1398258	125.154	XSEC_31
10598	5213366	1398268	124.859	XSEC_31
10599	5213367	1398269	124.83	XSEC_31
10600	5213367	1398271	123.764	XSEC_31
10601	5213368	1398272	123.566	XSEC_31
10602	5213369	1398272	123.615	XSEC_31
10603	5213370	1398272	123.303	XSEC_31
10604	5213370	1398273	123.025	XSEC_31
10605	5213370	1398275	123.013	XSEC_31
10606	5213371	1398277	122.931	XSEC_31
10607	5213371	1398278	123.082	XSEC_31
10608	5213371	1398280	123.076	XSEC_31
10609	5213372	1398281	123.019	XSEC_31
10610	5213372	1398282	122.701	XSEC_31
10611	5213372	1398283	122.724	XSEC_31
10612	5213372	1398284	122.798	XSEC_31
10613	5213373	1398285	122.826	XSEC_31
10614	5213373	1398285	122.96	XSEC_31
10615	5213373	1398287	123.251	XSEC_31
10616	5213373	1398289	123.34	XSEC_31
10617	5213374	1398290	123.63	XSEC_31
10618	5213377	1398289	123.726	XSEC_31
10619	5213378	1398292	123.759	XSEC_31
10620	5213380	1398296	124.235	XSEC_31
10621	5213382	1398299	124.225	XSEC_31
10622	5213382	1398299	124.218	XSEC_31
10623	5213383	1398304	124.241	XSEC_31
10624	5213383	1398305	124.083	XSEC_31
10625	5213383	1398307	124.006	XSEC_31
10626	5213384	1398308	124.216	XSEC_31
10627	5213384	1398309	124.817	XSEC_31
10628	5213384	1398309	125.108	XSEC_31
10629	5213385	1398312	125.183	XSEC_31
10630	5213385	1398315	125.486	XSEC_31
10631	5213389	1398314	125.416	XSEC_31
10632	5213387	1398311	125.094	XSEC_31

10633	5213390	1398317	125.037	XSEC_31
10634	5213390	1398317	125.037	XSEC_31
10635	5213390	1398317	125.05	XSEC_31
10636	5213391	1398320	124.66	XSEC_31
10637	5213392	1398321	124.798	XSEC_31
10638	5213394	1398326	124.763	XSEC_31
10639	5213395	1398328	124.745	XSEC_31
10640	5213397	1398330	125.21	XSEC_31
10641	5213397	1398330	125.446	XSEC_31
10642	5213397	1398331	126.015	XSEC_31
10643	5213399	1398335	126.168	XSEC_31
10644	5213401	1398338	125.751	XSEC_31
10645	5213401	1398340	125.982	XSEC_31
10646	5213403	1398344	126.07	XSEC_31
10647	5213405	1398347	125.759	XSEC_31
10648	5213406	1398349	125.946	XSEC_31
10649	5213405	1398349	125.979	XSEC_31
10650	5213405	1398349	125.964	XSEC_31
10651	5213408	1398354	125.677	XSEC_31
10652	5213410	1398359	125.956	XSEC_31
10653	5213412	1398363	125.935	XSEC_31
10654	5213414	1398368	126.337	XSEC_31
10655	5213415	1398370	125.915	XSEC_31
10656	5213416	1398373	125.771	XSEC_31
10657	5213418	1398376	125.882	XSEC_31
10658	5213418	1398377	126.08	XSEC_31
10659	5213420	1398381	125.59	XSEC_31
10660	5213422	1398384	125.802	XSEC_31
10661	5213422	1398384	125.797	XSEC_31
10662	5213424	1398388	125.166	XSEC_31
10663	5213424	1398388	125.238	XSEC_31
10664	5213427	1398396	124.988	XSEC_31
10665	5213430	1398400	125.801	XSEC_31
10666	5213430	1398400	125.905	XSEC_31
10667	5213431	1398403	125.712	XSEC_31
10668	5213432	1398404	125.125	XSEC_31
10669	5213432	1398405	125.094	XSEC_31
10670	5213434	1398407	124.616	XSEC_31
10671	5213435	1398409	124.905	XSEC_31
10672	5213436	1398414	125.148	XSEC_31
10673	5213435	1398414	125.198	XSEC_31
10674	5213436	1398415	125.236	XSEC_31
10675	5213438	1398419	125.614	XSEC_31

10676	5213440	1398424	125.644	XSEC_31
10677	5213444	1398432	125.572	XSEC_31
10678	5213446	1398436	125.667	XSEC_31
10679	5213449	1398443	125.57	XSEC_31
10680	5213450	1398445	125.339	XSEC_31
10681	5213451	1398448	124.743	XSEC_31
10682	5213451	1398448	124.696	XSEC_31
10683	5213452	1398451	124.99	XSEC_31
10684	5213453	1398452	125.318	XSEC_31
10685	5213453	1398453	125.675	XSEC_31
10686	5213455	1398457	125.714	XSEC_31
10687	5212951	1398686	136.184	XSEC_32
10688	5212949	1398681	136.977	XSEC_32
10689	5212948	1398676	137.118	XSEC_32
10690	5212947	1398671	136.904	XSEC_32
10691	5212946	1398671	136.842	XSEC_32
10692	5212946	1398669	135.726	XSEC_32
10693	5212945	1398667	135.29	XSEC_32
10694	5212945	1398665	135.086	XSEC_32
10695	5212944	1398662	135.477	XSEC_32
10696	5212943	1398657	136.114	XSEC_32
10697	5212941	1398652	136.028	XSEC_32
10698	5212940	1398648	136.001	XSEC_32
10699	5212940	1398647	136.016	XSEC_32
10700	5212952	1398692	136.379	XSEC_32
10701	5212951	1398689	136.195	XSEC_32
10702	5212951	1398686	136.193	XSEC_32
10703	5212939	1398645	135.804	XSEC_32
10704	5212939	1398644	135.313	XSEC_32
10705	5212938	1398642	135.29	XSEC_32
10706	5212937	1398637	135.565	XSEC_32
10707	5212935	1398633	135.255	XSEC_32
10708	5212934	1398629	134.944	XSEC_32
10709	5212933	1398628	134.624	XSEC_32
10710	5212932	1398623	134.452	XSEC_32
10711	5212931	1398618	134.487	XSEC_32
10712	5212930	1398610	134.437	XSEC_32
10713	5212929	1398606	134.24	XSEC_32
10714	5212928	1398605	134.355	XSEC_32
10715	5212931	1398615	134.411	XSEC_32
10716	5212930	1398611	134.471	XSEC_32
10717	5212928	1398602	134.618	XSEC_32
10718	5212927	1398601	134.729	XSEC_32

10719	5212926	1398596	134.917	XSEC_32
10720	5212924	1398590	134.81	XSEC_32
10721	5212923	1398588	134.749	XSEC_32
10722	5212924	1398589	134.63	XSEC_32
10723	5212924	1398588	134.522	XSEC_32
10724	5212923	1398585	134.47	XSEC_32
10725	5212923	1398584	134.716	XSEC_32
10726	5212922	1398579	134.925	XSEC_32
10727	5212921	1398577	135.274	XSEC_32
10728	5212921	1398574	135.201	XSEC_32
10729	5212919	1398569	135.094	XSEC_32
10730	5212917	1398564	134.672	XSEC_32
10731	5212924	1398589	134.672	XSEC_32
10732	5212915	1398559	134.02	XSEC_32
10733	5212916	1398559	133.913	XSEC_32
10734	5212916	1398558	133.565	XSEC_32
10735	5212913	1398552	133.112	XSEC_32
10736	5212913	1398551	133.253	XSEC_32
10737	5212913	1398549	133.831	XSEC_32
10738	5212912	1398547	134.629	XSEC_32
10739	5212912	1398546	134.845	XSEC_32
10740	5212911	1398541	134.901	XSEC_32
10741	5212910	1398536	134.752	XSEC_32
10742	5212909	1398532	134.842	XSEC_32
10743	5212909	1398531	135.098	XSEC_32
10744	5212908	1398526	135.321	XSEC_32
10745	5212908	1398521	135.27	XSEC_32
10746	5212906	1398516	135.488	XSEC_32
10747	5212905	1398511	135.645	XSEC_32
10748	5212901	1398509	135.436	XSEC_32
10749	5212900	1398506	134.823	XSEC_32
10750	5212900	1398506	134.819	XSEC_32
10751	5212899	1398503	134.765	XSEC_32
10752	5212899	1398502	135.101	XSEC_32
10753	5212898	1398500	135.045	XSEC_32
10754	5212898	1398499	134.775	XSEC_32
10755	5212897	1398497	134.772	XSEC_32
10756	5212896	1398492	135.171	XSEC_32
10757	5212894	1398487	135.505	XSEC_32
10758	5212892	1398482	135.822	XSEC_32
10759	5212890	1398477	135.323	XSEC_32
10760	5212890	1398477	135.243	XSEC_32
10761	5212890	1398474	134.292	XSEC_32

10762	5212890	1398472	134.046	XSEC_32
10763	5212890	1398472	134.219	XSEC_32
10764	5212888	1398467	134.392	XSEC_32
10765	5212887	1398463	134.433	XSEC_32
10766	5212888	1398463	134.411	XSEC_32
10767	5212887	1398460	134.492	XSEC_32
10768	5212887	1398460	134.489	XSEC_32
10769	5212885	1398455	134.701	XSEC_32
10770	5212884	1398450	134.507	XSEC_32
10771	5212882	1398447	134.26	XSEC_32
10772	5212882	1398446	134.799	XSEC_32
10773	5212880	1398441	135.641	XSEC_32
10774	5212879	1398436	136.136	XSEC_32
10775	5212876	1398431	135.854	XSEC_32
10776	5212874	1398428	135.79	XSEC_32
10777	5212880	1398429	135.723	XSEC_32
10778	5212879	1398425	136.556	XSEC_32
10779	5212879	1398423	137.869	XSEC_32
10800	5212526	1398563	144.609	XSEC_33
10801	5212527	1398568	144.326	XSEC_33
10802	5212530	1398577	144.222	XSEC_33
10803	5212531	1398583	144.019	XSEC_33
10804	5212531	1398584	144.029	XSEC_33
10805	5212533	1398588	143.866	XSEC_33
10806	5212534	1398593	143.762	XSEC_33
10807	5212535	1398598	143.852	XSEC_33
10808	5212536	1398603	143.949	XSEC_33
10809	5212537	1398608	143.998	XSEC_33
10811	5212539	1398612	143.731	XSEC_33
10812	5212541	1398617	143.604	XSEC_33
10813	5212542	1398622	143.677	XSEC_33
10814	5212543	1398627	143.348	XSEC_33
10815	5212545	1398631	142.602	XSEC_33
10816	5212545	1398631	142.566	XSEC_33
10817	5212545	1398632	142.624	XSEC_33
10818	5212545	1398632	142.491	XSEC_33
10819	5212546	1398633	143.122	XSEC_33
10820	5212547	1398636	144.251	XSEC_33
10821	5212548	1398641	144.692	XSEC_33
10822	5212549	1398646	144.575	XSEC_33
10823	5212550	1398651	144.692	XSEC_33
10824	5212552	1398655	144.175	XSEC_33
10825	5212552	1398655	144.696	XSEC_33

10826	5212553	1398658	145.854	XSEC_33
10827	5212554	1398660	146.034	XSEC_33
10828	5212555	1398665	145.966	XSEC_33
10829	5212553	1398667	145.952	XSEC_33
10830	5212554	1398670	145.859	XSEC_33
10831	5212554	1398670	145.845	XSEC_33
10832	5212556	1398675	145.919	XSEC_33
10833	5212557	1398680	146.032	XSEC_33
10834	5212558	1398685	145.931	XSEC_33
10835	5212559	1398690	145.431	XSEC_33
10836	5212560	1398695	145.226	XSEC_33
10837	5212561	1398700	145.128	XSEC_33
10838	5212562	1398705	145.226	XSEC_33
10839	5212563	1398710	145.144	XSEC_33
10840	5212539	1398612	143.738	XSEC_33
10841	5212564	1398716	144.939	XSEC_33
10842	5212565	1398719	144.544	XSEC_33
10843	5212565	1398721	144.659	XSEC_33
10844	5212566	1398724	144.389	XSEC_33
10845	5212566	1398726	144.666	XSEC_33
10846	5212567	1398728	144.806	XSEC_33
10847	5212567	1398731	145.125	XSEC_33
10848	5212568	1398732	145.337	XSEC_33
10849	5212570	1398731	145.31	XSEC_33
10850	5212570	1398732	145.289	XSEC_33
10851	5212571	1398736	145.448	XSEC_33
10852	5212573	1398741	145.593	XSEC_33
10853	5212575	1398746	145.432	XSEC_33
10854	5212576	1398751	145.647	XSEC_33
10855	5212577	1398756	145.748	XSEC_33
10856	5212578	1398761	145.818	XSEC_33
10857	5212579	1398766	146.15	XSEC_33
10858	5212581	1398771	146.188	XSEC_33
10859	5212582	1398776	145.57	XSEC_33
10860	5212584	1398784	145.231	XSEC_33
10861	5212584	1398789	144.81	XSEC_33
10862	5212585	1398792	144.676	XSEC_33
10863	5212585	1398794	145.581	XSEC_33
10864	5212585	1398794	145.568	XSEC_33
10865	5212586	1398795	145.598	XSEC_33
10866	5212586	1398795	145.606	XSEC_33
10867	5212587	1398798	145.598	XSEC_33
10868	5212587	1398798	145.576	XSEC_33

10869	5212588	1398803	145.83	XSEC_33
10870	5212589	1398808	146.078	XSEC_33
10871	5212589	1398813	146.459	XSEC_33
10872	5212591	1398818	146.103	XSEC_33
10873	5212592	1398823	145.926	XSEC_33
10874	5212593	1398828	145.887	XSEC_33
10875	5212594	1398834	146.177	XSEC_33
10876	5212595	1398839	145.825	XSEC_33
10877	5212595	1398844	145.573	XSEC_33
10878	5212596	1398849	146.166	XSEC_33
10879	5212597	1398854	146.478	XSEC_33
10880	5212602	1398855	146.295	XSEC_33
10881	5212603	1398860	145.557	XSEC_33
10882	5212603	1398860	145.548	XSEC_33
10883	5212605	1398865	145.739	XSEC_33
10884	5212606	1398870	146.109	XSEC_33
10885	5212608	1398875	146.278	XSEC_33
10886	5212609	1398880	146.243	XSEC_33
10887	5212610	1398885	146.117	XSEC_33
10888	5212611	1398890	146.185	XSEC_33
10889	5212612	1398895	146.288	XSEC_33
10890	5212615	1398904	146.276	XSEC_33
10891	5212615	1398904	146.285	XSEC_33
10892	5212616	1398909	146.163	XSEC_33
10893	5212618	1398914	145.93	XSEC_33
10894	5212619	1398918	145.426	XSEC_33
10895	5212620	1398918	145.445	XSEC_33
10896	5212620	1398920	144.746	XSEC_33
10897	5212620	1398920	144.678	XSEC_33
10898	5212622	1398925	144.804	XSEC_33
10899	5212623	1398930	145.066	XSEC_33
10900	5212624	1398934	144.802	XSEC_33
10901	5212624	1398935	145.016	XSEC_33
10902	5212626	1398940	145.121	XSEC_33
10903	5212626	1398940	145.124	XSEC_33
10904	5212626	1398942	146.111	XSEC_33
10905	5212627	1398945	145.917	XSEC_33
10906	5212629	1398950	145.489	XSEC_33
10907	5212629	1398959	144.627	XSEC_33
10908	5212631	1398966	144.762	XSEC_33
10909	5212631	1398971	144.77	XSEC_33
10910	5212633	1398982	144.423	XSEC_33
10911	5212634	1398987	144.637	XSEC_33

10912	5212636	1398991	144.543	XSEC_33
10913	5212637	1399000	144.292	XSEC_33
10914	5212641	1399003	145.817	XSEC_33
10915	5212211	1399047	143.746	XSEC_34
10916	5212208	1399043	143.233	XSEC_34
10917	5212205	1399038	142.194	XSEC_34
10918	5212203	1399034	141.744	XSEC_34
10919	5212197	1399025	142.027	XSEC_34
10920	5212194	1399022	142.001	XSEC_34
10921	5212193	1399021	142.913	XSEC_34
10922	5212192	1399018	142.845	XSEC_34
10923	5212191	1399016	142.259	XSEC_34
10924	5212190	1399014	141.919	XSEC_34
10925	5212188	1399012	142.057	XSEC_34
10926	5212186	1399008	142.377	XSEC_34
10927	5212183	1399003	142.832	XSEC_34
10928	5212181	1398999	142.699	XSEC_34
10929	5212178	1398994	142.695	XSEC_34
10930	5212179	1398986	142.186	XSEC_34
10931	5212179	1398986	142.503	XSEC_34
10932	5212178	1398984	139.745	XSEC_34
10933	5212177	1398981	139.152	XSEC_34
10934	5212175	1398976	138.651	XSEC_34
10935	5212170	1398969	138.756	XSEC_34
10936	5212166	1398965	138.709	XSEC_34
10937	5212166	1398961	139.017	XSEC_34
10938	5212164	1398958	139.53	XSEC_34
10939	5212162	1398952	142.66	XSEC_34
10940	5212159	1398948	142.638	XSEC_34
10941	5212154	1398939	141.684	XSEC_34
10942	5212154	1398939	140.605	XSEC_34
10943	5212150	1398932	141.078	XSEC_34
10944	5212146	1398929	143.589	XSEC_34
10945	5212144	1398924	143.843	XSEC_34
10946	5212141	1398921	143.549	XSEC_34
10947	5212140	1398920	142.714	XSEC_34
10948	5212139	1398918	142.768	XSEC_34
10949	5212137	1398916	142.625	XSEC_34
10950	5212216	1399058	143.045	XSEC_34
10951	5212214	1399054	143.05	XSEC_34
10952	5212213	1399052	143.517	XSEC_34
10953	5212211	1399047	143.144	XSEC_34
10954	5212136	1398914	142.855	XSEC_34

10955	5212135	1398900	142.741	XSEC_34
10956	5212132	1398895	142.542	XSEC_34
10957	5212130	1398891	141.239	XSEC_34
10958	5212127	1398886	141.22	XSEC_34
10959	5212121	1398878	141.05	XSEC_34
10960	5212120	1398875	141.496	XSEC_34
10961	5212118	1398873	142.328	XSEC_34
10962	5212117	1398872	142.445	XSEC_34
10963	5212116	1398870	142.162	XSEC_34
10964	5212115	1398869	141.733	XSEC_34
10965	5212112	1398865	141.655	XSEC_34
10966	5212111	1398863	140.926	XSEC_34
10967	5212110	1398860	140.912	XSEC_34
10968	5212113	1398858	141.146	XSEC_34
10985	5212135	1398900	140.625	XSEC_34
10989	5212139	1398907	140.803	XSEC_34