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Flood Assessment

Milldale Fast Track Application

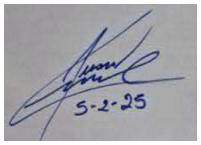
Milldale Stages 10 - 13

Fulton Hogan Land Development Limited ("FHLD")

5/08/2025

Final

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FOREWORD

Section 53(2) of the Fast-track Approvals Act 2024 enables the Expert Consenting Panel to invite written comments on the application from specified persons and groups.

This updated version of the Flood Assessment report has been prepared in response to the technical specialist memorandums issued by Auckland Council as part of their assessment of the Milldale Fast-track Application. It specifically addresses the matters raised by Council and provides clarification, additional assessment, and updates where required.

In particular, this memo provides response to the following:

- Memorandum of Planning Matters for Auckland Council (29 July 2025)
- Annexure 2: Healthy Waters
    - Appendix B: Additional Recommended Conditions Register

      General # 5
- Annexure 6: Stormwater, ITA
    - 4.0 Specialist Analysis
    - 5.0 Section 67 Information Gap

Since the initial lodgement of the Substantive Application with the Environmental Protection Authority (EPA), there has been ongoing engagement between the Applicant's expert team and Auckland Council specialists through meetings, design workshops, and site discussions.

SUMMARY OF CHANGES

1. This document has been updated to acknowledge that Version 4 of the Stormwater Code of Practice (March 2024) has become operative recently. No changes have been made to the flood and culvert assessments approach, as these were originally undertaken in accordance with Version 3 (January 2022), which was the operative version at the Milldale Stages 10 – 13 Substantive Application lodgement time and consistent with the adopted Wainui East Stormwater Management Plan (V4, Sept 2016).

   An additional flood model scenario was included in the Flood Assessment as part of a resilient assessment for the 100-year ARI storm event with future climate change allowance of 3.8°C temperature increase by 2110, this is consistent with the recently operative Version 4 of the Stormwater Code of Practice (March 2024).

2. A Network Discharge Consent was granted for development within the Wainui East catchment in 2016, which includes Milldale Stages 10-13. The granted Network Discharge Consent has since been incorporated into the Auckland Council Regionwide Network Discharge Consent (NDC). This report is based on the adopted Wainui East Stormwater Management Plan (V4) (Woods, September 2016).

   The Wainui East Stormwater Management Plan (V4) (Woods, September 2016) recommends a 'pass flow forward approach for Zone C and Zone D where Milldale Stages 10-13 are located; provided there are no effects on Wainui Road Bridge. The pass flows forward strategy remains appropriate as there is no overtopping at the Wainui Road Bridge for any of the modelled scenarios. This is consistent with previous works undertaken as part of the part of the modelling query list generated during the Healthy Waters' high-level review in 2022 and this has been confirmed by the latest flood modelling detailed in Section 9.1.

3. Section 6.2.4
    a. Surface grids have been updated in the stormwater model for better definition
4. Section 7.1
    a. Table 4 updated to include the pre-development for the 2-year and 10-year ARI events including 2.1 °C climate change scenario; and post-development for the 2-year ARI event including 2.1 °C climate change scenario
5. Section 7.2
    a. Inclusion of 2-year and 10-year ARI events assuming 2.1 °C climate change scenario results figures

6. Section 7.2 and Section 7.3.
    a. All figures have been updated to include the Milldale Stages 10 – 13 extent and the between Wainui Road Bridge and Lysnar Road
7. Section 7.4
    a. Table 5 and Table 6 have been updated in to reflect any upsizes in culvert diameters and latest model results
    b. All culverts freeboard requirements remain compliant
8. Section 7.4.1
    a. Figures been updated to include the Milldale Stages 10 – 13 extent and the between Wainui Road Bridge and Lysnar Road
9. Section 8
    a. Additional figures have been added showing maximum water level results comparison between the pre-development and post-development scenarios for the 2-year, 10-year and 100 ARI events assuming 2.1 °C climate change
    b. Additional figures have been added showing flood extents comparisons between the pre-development and post development scenarios for the 2-year, 10-year and 100-year ARI events assuming 2.1 °C climate change
    c. All figures have been updated to include the Milldale Stages 10 – 13 extent and the between Wainui Road Bridge and Lysnar Road.
    d. Notes have been added to highlight the following:
        i. The third party land at 147 Argent Lane is assumed to be developed in the post-development scenarios with a 65% weighted impervious coverage, considered a conservative approach as the area is currently undeveloped
        ii. The surface within 147 Argent Lane remains unchanged between the pre-development and post-development scenarios.
        iii. Pre-development model results show a wide flood plain within 147 Argent Lane, requiring land to be raised above the flood plan for any future development and likely to involve stream works to increase conveyance capacity
        iv. Post development scenarios do not include a primary network, which is a conservative approach
        v. The primary network in Milldale Stages 10-13 is designed to contain overland flows generated up to and including the 10-year ARI event including 2.1°C climate change
        vi. Any flood depth increases near Argent Lane during the 2-year ARI event including 2.1°C climate change is due to model limitations and not actual conditions as overland flows would be captured by the primary stormwater network during this small event.
        vii. A figure has been included to show the designed primary network along Argent Lane which ultimately discharges outside of 147 Argent Lane.
    e. Two additional points have been included in the flood assessment findings:
        i. Overall, the post-development flood extents are generally reduced or within the pre-development flood extents
        ii. A significant reduction in floodplain is observed within 147 Argent Lane for the 10-year and 100-year ARI events including 2.1°C climate change, which is a result of the ‘U-culvert 21/3’ structure (located under Argent Lane)
10. Section 9
    a. All figures have been updated to include the Milldale Stages 10 – 13 extent and the between Wainui Road Bridge and Lysnar Road

11. Section 9.1

    a. Water level results figures updated for the 100-year ARI storm event including 2.1°C climate change and 3.8°C climate change scenarios have been updated as per the latest stormwater modelling

    b. Updated water levels results still confirm that there is not an overtopping risk at the Wainui Road Bridge, and it does not act as a bottleneck for the upstream catchment while not showing flood effects downstream.

12. Section 9.2

    a. This section has been included to discuss the 'U-culvert 21/3' structure capacity assessment which confirms that the structure has enough capacity to convey upstream flow for the 100-year ARI storm event assuming maximum probable development with allowance for 3.8°C future climate change, while not showing flood effects downstream.

13. Section 9.3

    a. This section has been included to discuss the wastewater treatment plant (WWTP) queries raised by Healthy Waters as part of Annexure 6. This assessment confirms that there are no impacts downstream for the 100-year ARI storm event assuming maximum probable development with allowance for 3.8°C future climate change.

14. Section 11

    a. Relatively few changes in as conclusions remain unchanged

    b. An additional point has been added to include the 'U-culvert 21/3' assessment findings.

1. INTRODUCTION

This report has been prepared in support of the application by Fulton Hogan Land Development (FHLD) for a resource consent to the Environmental Protection Authority (EPA) under the Fast-Track Approvals Act 2024 (FTAA).

Resource consent is required for bulk earthworks, subdivision, streamworks, water permits and discharge consents for the development of 606 residential lots, 27 residential super lots, jointly owned access lots (JOALS) and roads to vest, reserves to vest, and all associated works, landscaping and infrastructure.

This report covers the flood assessment for proposed Stages 10-13 of the Milldale development.

2. STATEMENT OF QUALIFICATIONS AND EXPERIENCE

Pranil Wadan

I am a Technical Director and the General Manager of Water Infrastructure & Planning at Wood and Partners Consultants Limited ("Woods"). Woods is a multi-disciplinary consultancy specialising in planning, urban design, engineering, water infrastructure, and surveying. I have been employed at Woods since 2012.

I hold a Bachelor of Engineering degree from the University of Auckland, which I completed in 2007. I am a Chartered Professional Engineer (CPEng) and a member of Engineering New Zealand (CMEngNZ) and Water New Zealand. In addition, I also hold the following qualifications and affiliations:

- International Professional Engineer (IntPe(NZ))
- Certified Independent Hearing Commissioner
- Certificate in Company Direction & Governance

I have over 16 years of experience in stormwater design, hydrodynamic modelling, flood risk assessments, water infrastructure and stormwater management for land development.

I have been the principal author and lead stormwater engineer for a wide range of stormwater management plans and flood modelling reports to support Woods' land development, urban design and planning teams. I have been involved in and prepared numerous catchment scale flood models, detailed stormwater pipe models and integrated catchment management plans for private clients as well as for district and regional councils.

I confirm that, in my capacity as approver of this report, I have read and abide by the Environment Court of New Zealand's Code of Conduct for Expert Witnesses Practice Note 2023

Juan Alvarez De Lugo

I am an Associate Water Engineer within the Water Infrastructure & Planning team at Wood and Partners Consultants Limited ("Woods"). Woods is a multi-disciplinary consultancy specialising in planning, urban design, engineering, water infrastructure, and surveying. I have been employed at Woods since May 2019.

I hold a Bachelor of Engineering degree from the University of Auckland. I am a Chartered Professional Engineer (CPEng), member of Engineering New Zealand (CMEngNZ) and Water New Zealand. In addition, I also hold the following qualifications and affiliations:

- International Professional Engineer (IntPE(NZ))
- Water New Zealand Modellling group committee member

I have over 12 years of experience in stormwater modelling (hydrology and hydraulic), stormwater model reviews, technical report writing and review, and flood risk assessments for land development.

I have been the lead stormwater engineer responsible for employing different software packages to create/review stormwater models and analyse flood hazards for complex land development and infrastructure projects in the public and private sector. Recent projects include:

- Supporting the infrastructure development in multiple neighbourhoods for Kainga-Ora
- Stormwater models conversion for Auckland Council aimed to aid with stormwater catchment planning and decision making processes
- Creating and reviewing stormwater models and reports to support resource consent applications for multiple Milldale development stages

I confirm that, in my capacity as reviewer of this report, I have read and abide by the Environment Court of New Zealand's Code of Conduct for Expert Witnesses Practice Note 2023.

Shakti Singh

I am a Water Engineer at Wood and Partners Consultants Ltd ("Woods"). Woods is a multi-disciplinary consultancy specialising in planning, urban design, engineering, water infrastructure, and surveying. I have been employed at Woods since April 2023.

I hold the qualifications of Bachelor of Civil Engineering Technology (BEngTech) from Unitec Institute of Technology, which I completed in 2019. I am an Engineering NZ member and Rivers Group member.

I have 5 years of professional experience within the water engineering field. My key areas of expertise include stormwater management, flood management and modelling, hydrological and hydraulic assessments, and design of urban drainage infrastructure.

I confirm that, in my capacity as author of this report, I have read and abide by the Environment Court of New Zealand's Code of Conduct for Expert Witnesses Practice Note 2023.

Ricky Kiddle

I am a Graduate Water Engineer at Wood and Partners Consultants Ltd ("Woods"). Woods is a multi-disciplinary consultancy specialising in planning, urban design, engineering, water infrastructure, and surveying. I have been employed at Woods since February 2024.

I hold the qualifications of Bachelor of Engineering with Honours from Canterbury University, which I completed in 2023. I am an Engineering NZ emerging professional member.

I have 1.5 years of professional experience in the water engineering field. My experience includes stormwater management, flood management, and stormwater modelling.

I confirm that, in my capacity as author of this report, I have read and abide by the Environment Court of New Zealand's Code of Conduct for Expert Witnesses Practice Note 2023.

Chantelle Potbury

I am a Graduate Water Engineer at Wood and Partners Consultants Ltd ("Woods"). Woods is a multi-disciplinary consultancy specialising in planning, urban design, engineering, water infrastructure, and surveying. I have been employed at Woods since November 2024.

I hold the qualifications of Bachelor of Engineering with Honours from the University of Auckland, which I completed in 2024. I am an Engineering NZ emerging professional member.

I have 1 year of professional experience in the water engineering field. My experience includes stormwater management, flood management, and stormwater modelling.

I confirm that, in my capacity as author of this report, I have read and abide by the Environment Court of New Zealand's Code of Conduct for Expert Witnesses Practice Note 2023.

3. BACKGROUND

The Wainui East Stormwater Management Plan (V4) (Woods, September 2016) is the adopted Stormwater Management Plan (SMP) for the proposed development area. The flood assessment work undertaken as part of the proposed Stages 10-13 of the Milldale development is consistent with the SMP.

This report is to be read in conjunction with the Wainui East Model Build Report (Woods, July 2016), which is included as an Appendix in the Wainui East SMP (refer to Appendix A), which was reviewed and accepted by Auckland Council's technical specialists at the time.

A Network Discharge Consent was granted for development within the Wainui East catchment in 2016, which includes Milldale Stages 10-13. The granted Network Discharge Consent has since been incorporated into the Auckland Council Regionwide Network Discharge Consent (NDC). This report is based on the adopted Wainui East Stormwater Management Plan (V4) (Woods, September 2016).

Since the adoption of the Wainui East SMP, the flood model has undergone various updates and high-level reviews with Healthy Waters, the most recent being in May 2022.

The high-level review undertaken in May 2022 resulted in updates to the following:

- Tailwater level boundary conditions
- Wainui Road bridge losses
- Overflow representation; and
- Stream bed roughness.

It is noted that all queries and updates raised by Healthy Waters were undertaken as agreed and a copy of the full query list and correspondence can be found in Appendix B.

4. FLOOD MANAGEMENT

The adopted Wainui East SMP breaks the catchment into five stormwater management zones (Zones A-E as shown in Figure 1), these zones detail both the stormwater and flood management approach to be incorporated based on various factoring including location and discharge environment.

The Stormwater Management Zones for Stages 10-13 are as follows:

- Stage 10 – 11 – Zone C – Recommended flood management approach is pass flows forward; and
- Stage 12 – 13 – Zone D – Recommended flood management approach is pass flows forward, option to attenuate (if required).

The recommended flood management approach as per the adopted SMP for both Zones C & D is to pass flows forward. To enable pass flows forward, upgrades to existing culverts are required to facilitate upstream flows.

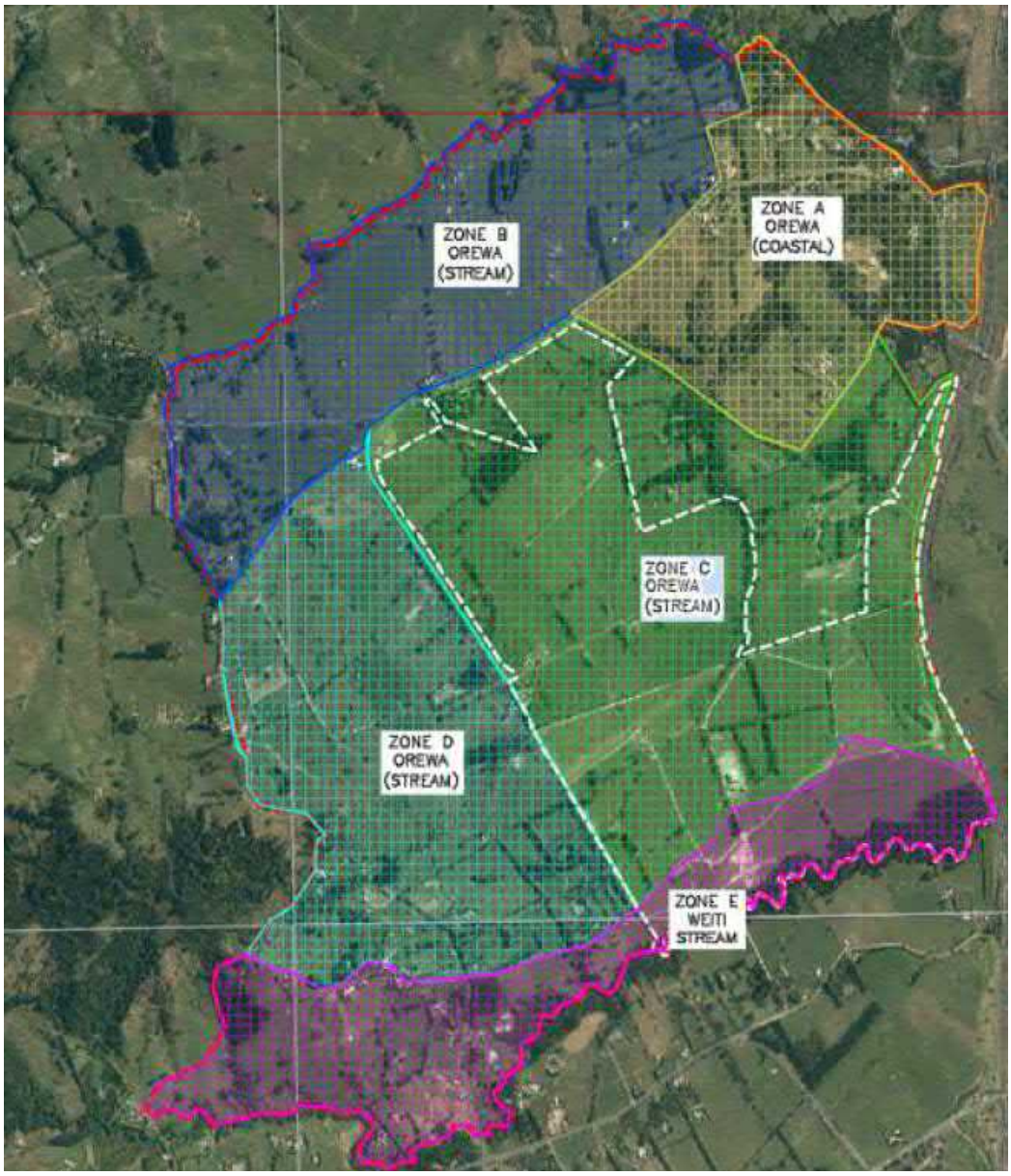


Figure 1: Stormwater Management Zones

Previous modelling and flood assessments showed that there is no overtopping risk at the Wainui Road Bridge and this was agreed with Healthy Waters as part of the modelling query list generated during the high-level review in 2022 (Further details in Section 9.1). The most recent assessment was undertaken to highlight potential effects (if any) that result from the increased flows along Waterloo Creek generated from upstream developed area under maximum probable development (MPD) and confirmed that the pass flows forward strategy is appropriate.

An effects assessment has been undertaken for 147 Argent Lane as this landholding is not owned by the applicant. 147 Argent Lane is located downstream of proposed Stages 12 & 13. This effects assessment is detailed in Section 8 of this report.

The flood modelling scenarios undertaken for the Stages 10-13 of the Milldale development flood assessment are summarised as follows:

- Pre-Development – Existing Development (ED) - land use as per existing / grassed state; and
- Post-Development – Maximum Probable Development (MPD) - MPD land use for contributing catchment related to and including the Milldale development extent. The post-development model scenarios simulated were as follow:
    a. 2-year, 10-year and 100-year ARI storm events with allowance for 2.1 °C temperature increase by 2090 as per the adopted SMP and operative Stormwater Code of Practice, Version 3, Jan 2022 (SWCoP)
    b. Blockage scenario for 100-year ARI storm event with allowance for 2.1°C temperature increase by 2090 as per the Stormwater Code of Practice (V3, Jan 2022); and
    c. For the purpose of ensuring resilience, an additional 100-year ARI storm event with allowance for 3.8 °C temperature increase by 2110 as per the recently operative Stormwater Code of Practice (V4, March 2025).

5. SITE DESCRIPTION

The site subject to this application is located within the Milldale development and referred to as the Milldale Stages 10 – 13 subdivision areas (the Site). The Site consists of land covered by Lot 9006 DP 602895; Lot 9007 DP 602895; Lot 3 DP 151229; Lot 1 DP 147739; Lot 1 DP 488814; Lot 2 DP 488814; Lot 3 DP 488814; and Lot 2 DP 147739. Stages 10 – 13 are located within the northern and western extents of the Milldale development and comprise the remaining undeveloped greenfield stages of Milldale.

Overall, the Site covers a total area of approximately 71 ha. The Site is bordered by Wainui Road to the north, Lysnar Road to the north-east, and undeveloped land to the west. Previously consented Milldale stages (Stages 5-8) and the Milldale Town Centre are located to the south of the Site.

A full description of the Site and surroundings is provided in the application Assessment of Environmental Effects (AEE).

5.1. Location & Stages Boundaries

The total land area associated with the Milldale Stages 10-13 is approximately 71 ha. Each individual stages' areas are as follow:

- Stage 10: 12.6 ha
- Stage 11: 12.8 ha
- Stage 12: 23.0 ha; and
- Stage 13: 22.2 ha.

The third-party land at 147 Argent Lane is approximately 12.3 ha. Figure 2 shows the boundaries of the Milldale Stages 10-13 and 147 Argent Lane (third-party land).

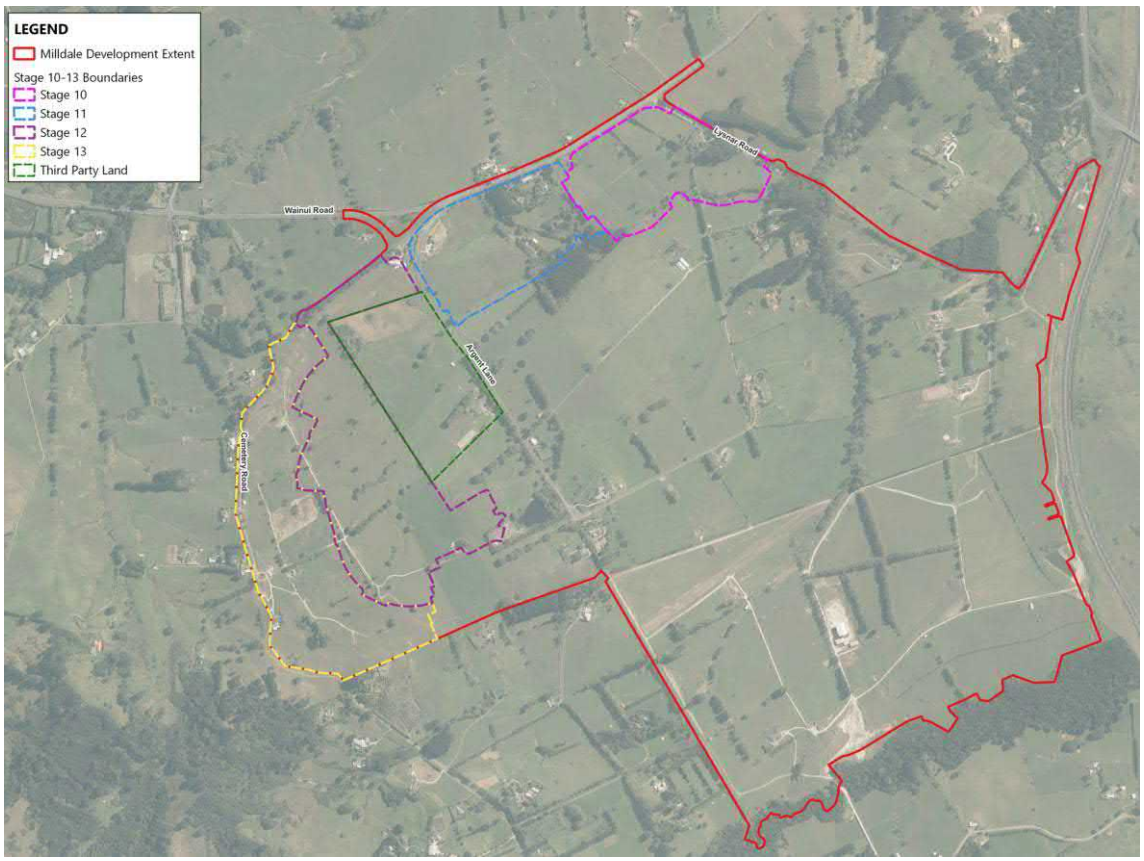


Figure 2. Milldale Stages 10-13 boundaries and 147 Argent Lane (third-party land)

5.2. Topography and Watercourses

The Milldale development site is located within a natural basin defined by Cemetery Road and Wainui Road as the ridgelines that form the northern and western catchment boundaries. The gradient of the Site steepens towards these ridgelines and features small gullies.

A permanent watercourse, identified as Stream 21 flows adjacent to Stage 10 and Stage 11 development boundaries and ultimately discharges to the north, towards Orewa River. The Waterloo Creek is another water body which transverses the Milldale development while flowing north-east towards the Orewa River and ultimately discharges to the Hauraki Golf. A smaller watercourse, referred to as "Endsley" stream traverses the Milldale development at the eastern end. All watercourses, including those proposed within Stages 10-13 can be seen in Figure 3.

Woods originally used raw ground classified point cloud data from the Auckland Council LiDAR Dataset 2013 to represent the surface for flood modelling.

Topography for areas within consent/under consent development stages is modelled with a combination of LiDAR 2016, topo and either design surface or as-built surface, depending on the development progress of previous stages and availability of data.

Surface for the post development model scenarios has been updated to include the proposed design contours for Stages 10-13 and the wider Milldale development consented to date.

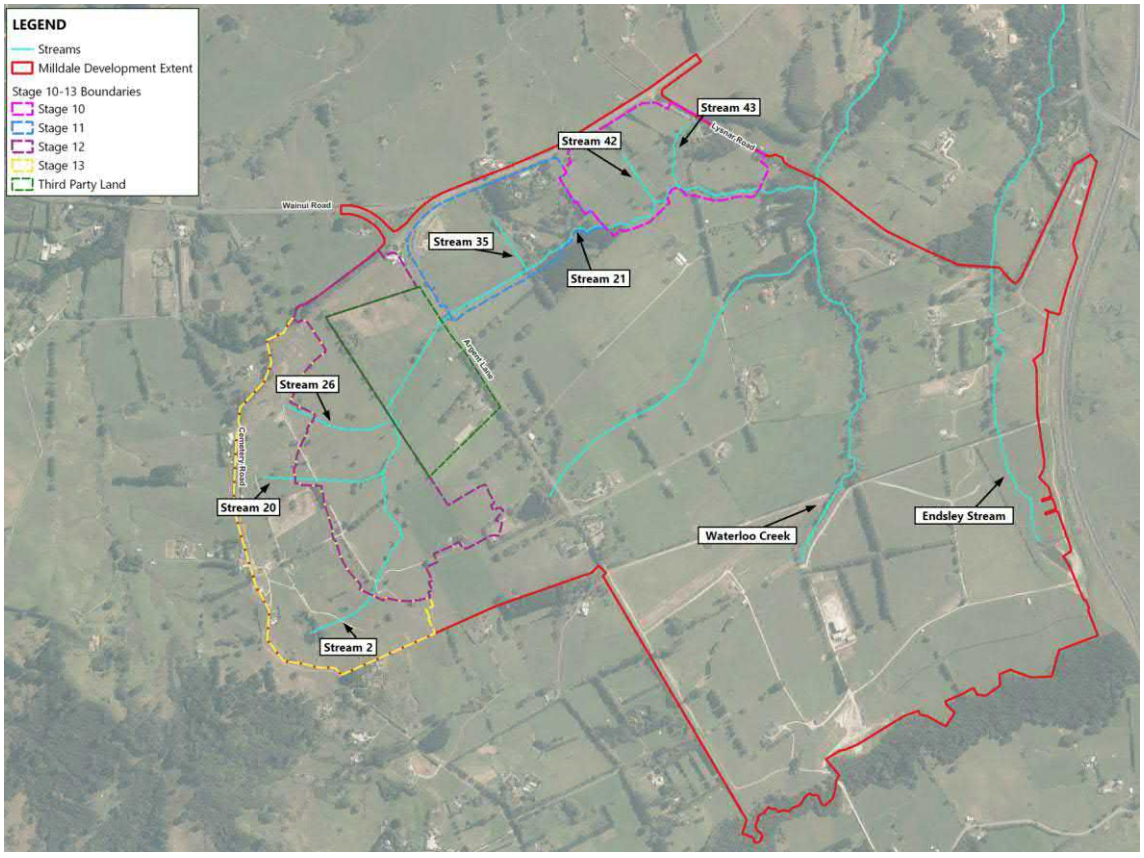


Figure 3: Watercourses within the Milldale development

5.3. Pre-development Scenario Landuse and Stormwater Infrastructure

The pre-development scenario assumed ground cover to be predominantly pasture with several isolated bush areas, tree shelter belts and rural residential/lifestyle blocks. Furthermore, the pre-development scenario considered the main gully system to be generally covered by trees and/or bush, with several farm dwellings and limited stormwater structures located across the Milldale development extent.

The landuse and stormwater infrastructure assumed and included when developing the pre-development scenario for the Milldale development Stages 10-13 is consistent with the pre-development scenario in the Wainui East SMP (Woods, Sept 2016). It is noted that the structure across Argent Lane and adjacent to Rillside Crescent is shown as having a 1600 mm diameter in Auckland Council Geomaps, however the field survey confirmed a 1500 mm diameter. Figure 4 shows the stormwater structures within the Milldale development extent included in the pre-development scenario.



Figure 4: Stormwater infrastructure included in pre-development scenarios

6. FLOOD MODELLING

The flood modelling builds on the flood model originally developed in consultation with Auckland Council's technical specialists when preparing the Wainui East Model Build Report (Woods, July 2016). The purpose of the flood modelling is to assess any flood effects upstream, downstream and within Stages 10-13 whilst also providing an updated flood extent.

Since the adoption of the Wainui East SMP (Woods, Sept 2016), the flood model has undergone various updates and high-level reviews with Healthy Waters, the most recent being in May 2022 and a copy of the full query list and correspondence can be found in Appendix B.

The high-level review undertaken in May 2022 resulted in updates to the following:

- Tailwater level boundary conditions
- Wainui Road bridge losses
- Overflow representation; and
- Stream bed roughness

It is noted that all queries and updates raised by Healthy Waters were undertaken as agreed.

A summary of the base parameters for all flood model scenarios and the parameters updates undertaken in the post- development model scenarios are covered in the sections below. Further details on the flood model parameters can be found in the Wainui East Model Build Report (Woods, July 2016).

The post-development flood model scenarios also include topography and landform updates within the proposed development Stages 10-13 and previous Milldale development consented stages with design and as-built data, including proposed or already constructed stormwater structures.

6.1. Flood Model Base Parameters

Table 1 summarises base parameters used for all modelled scenarios and they are consistent with the Wainui East Flood Model Build Report (Woods, July 2016). The sub-catchments in the post-development scenarios assume maximum probable development and maintained a weighted impervious coverage of 65%.

Table 1 – Pervious and impervious base parameters

	Pervious	Impervious
Curve Number	74	98
Initial Abstraction	5	1*
Slope calculation method	Equal-area method	
Time of concentration	Calculated as per TP108 method, minimum of 10 minutes	

*Ia of 1mm was used as XPStorm modelling software does not allow a value of 0.

6.2. Flood Model Parameters Updates

6.2.1. Subcatchment Delineation

The sub-catchment delineation has been updated and adjusted to reflect the landform changes undertaken as part of Stages 10-13 Milldale development and previously consented stages. The sections below show a subcatchments delineation comparison between the pre-development scenario and the post-development scenarios.

Figure 5 shows a schematic of the pre-development model scenario subcatchments which has been slightly modified from the delineation outlined in the Wainui East Flood Model Build Report (Woods, July 2016).

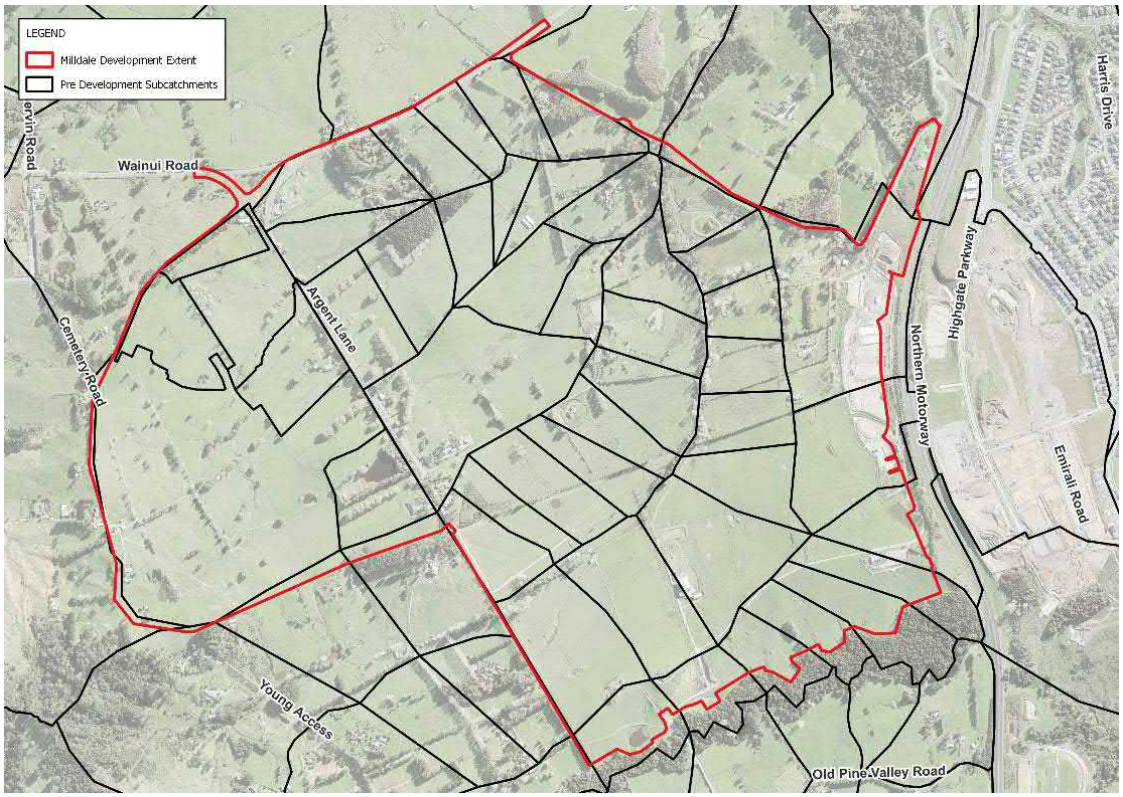


Figure 5. Pre-development scenarios subcatchments delineation

The post-development model scenario subcatchments delineation was based on the post development surface contours from Milldale Stages 10-13 and previous Milldale stages consented to date it is shown in Figure 6.

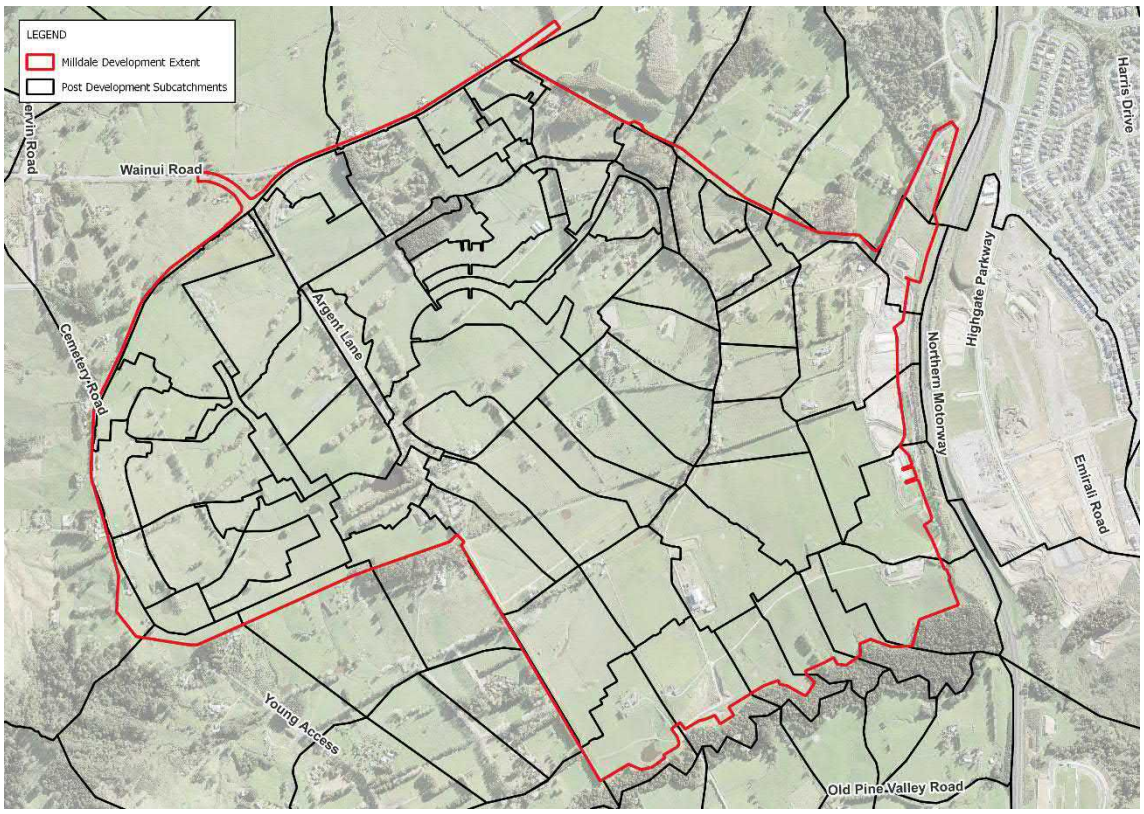


Figure 6. Post-development subcatchments delineation for Stages 10-13 Milldale development and previously Milldale consented stages

6.2.2. Rainfall Depths

The rainfall depths used in the flood model scenarios are as per the adopted Wainui East SMP (Woods, Sept 2016) with allowance for 2.1°C temperature increase by 2090 and in accordance with the Stormwater Code of Practice (V3, Jan 2022).

It is noted that the recently operative Stormwater Code of Practice (V4, March 2024) which considers future temperature increase of 3.8°C by 2110 and sea level rise.

The rainfall depths applied in the flood model are summarised in Table 2 as follows:

Table 2: Flood Model Rainfall depths with climate change allowances

Storm Event	Rainfall Depth (mm)	
	2.1 °C	3.8 °C
2-year	95.9	112.1
10-year	164.1	190.0
100-year	262.8	298.6

6.2.3. Boundary Conditions

The boundary conditions applied in the stormwater model for the Orewa River and Weiti Creek are shown in Table 3. It is noted that the boundary conditions applied in the Wainui East SMP (Woods, Sept 2016) were lower as the allowance for sea level rise was only +0.50 m. The updated boundary conditions are reflective of the high-level review queries raised by Healthy Waters in May 2022 and are based on the Mean High-Water Springs (MHWS) 10 percentile levels and allow for +1 m of sea level rise, as per Auckland Unitary Plan (AUP(OP)).

Table 3: Boundary conditions based on MHWS 10%ile allowing for +1m sea level rise

	Boundary Condition (May 2022)
Orewa River	2.44m RL
Weiti Creek	2.51 m RL

6.2.4. Model Surface Grid

All model scenarios use 1m and 3m resolution grids in the 2-D domain. The 1m grid allows for better definition and accuracy in model results, particularly within watercourses represented in the 2-D domain and Argent Lane, while the 3m grid has been used for the remaining area of the model extent. It is noted that 3m grid have been retained around areas where watercourses have been represented in the 1-D domain.

Figure 7 shows the grid extents for the pre-development, post-development and blocked scenarios as required.

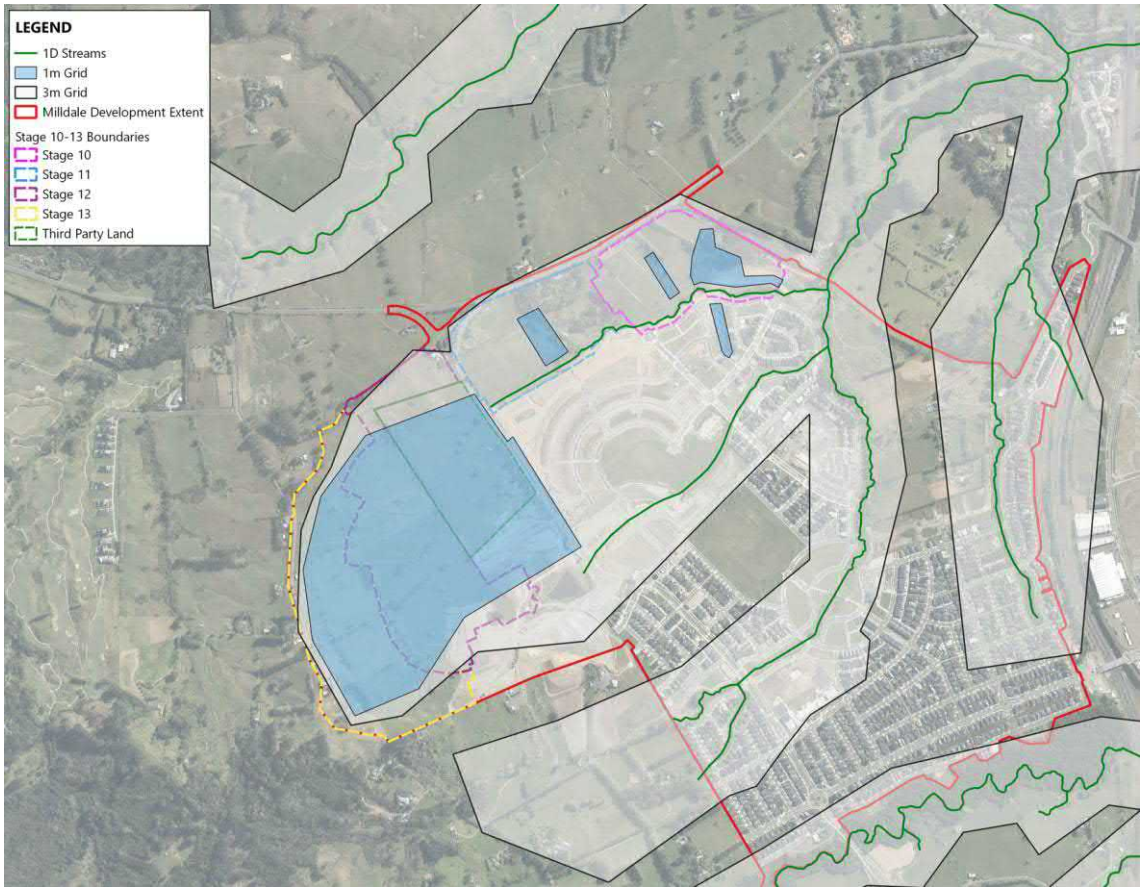


Figure 7: Grid extents used in the modelled scenarios

7. FLOOD MODEL RESULTS

Flood modelling has been undertaken to assess if any flood effects result from the proposed development of Milldale Stages 10-13 to the upstream or downstream areas. The flood modelling has been undertaken in line with recommended flood management strategy i.e. pass flow forward, as per the Wainui East SMP (Woods, Sept 2016).

Water levels and flood depth results were extracted from the simulated model scenarios and used to assess flood effects (if any) for the 2-year, 10-year and 100-year ARI events with allowance for 2.1°C climate change (as per the Stormwater Code of Practice, V3,Jan 2022)

The flood assessment also covers an analysis of the minimum freeboard requirements and blockage for culvert structures in accordance with the Stormwater Code of Practice (V3, Jan 2022). The culverts' freeboard requirements are covered in more detail in Section 7.4 and the culverts blockage scenario in Section 7.4.1.

An additional resilience scenario has been included in the flood assessment assuming future climate change allowance for 3.8°C temperature increase by 2110 as stated in recently operative Stormwater Code of Practice (V4, March 2024) and it is discussed in Section 9. The Wainui Road bridge structure has also been included in the flood assessment as part of the additional scenario and it is covered in more detail in Section 9.1. It is noted that previous modelling and flood assessments showed that there is no overtopping risk at the Wainui Road Bridge and this was agreed with Healthy Waters as part of the modelling query list generated during the high-level review in 2022.

7.1. Modelled Scenarios

There was a total of eight modelled scenarios and they are summarised in Table 4.

Table 4 –Modelled scenarios summary

#	Model Scenario	Rainfall Event	Land Use	Landform	Stormwater Network	Purpose
1	Pre-Development (ED)	2-Year ARI + 2.1°C future climate change	Existing development for full model extent	Topographical Survey LiDAR 2016 LiDAR 2013	No primary network within the development Includes existing 600mm and 1500 mm diameter culvert under Argent Lane.	To provide a baseline reference model which is used to compare the effects from proposed development
2		10-Year ARI + 2.1°C future climate change				
3		100-Year ARI + 2.1°C future climate change				

4	Post-Development (MPD)	2-Year ARI + 2.1°C future climate change	Maximum Probable development (MPD) for Milldale development area and all other areas discharging to Orewa stream. Existing development for the remaining model extent	Design Surface Topographical Survey LiDAR 2016 LiDAR 2013	No primary network within the development Includes proposed culverts/structures for development stages 10-13 and proposed U-culverts along Stream 21 watercourse. Includes stormwater conveyance structures from previous Milldale development stages	To assess flood effects (if any) resulting from Stages 10-13 Milldale development.
5		10-Year ARI + 2.1°C future climate change				To assess flood effects (if any) resulting from Stages 10-13 Milldale development and the culverts performance as per the Stormwater Code of Practice
6		100-Year ARI + 2.1°C future climate change				To assess flood effects (if any) resulting from Stages 10-13 Milldale development and the culverts performance as per the Stormwater Code of Practice.
Additional Scenarios						
7	Post-Development (MPD) assuming culverts blockage	100-Year ARI + 2.1°C future climate change	Maximum Probable development (MPD) for Milldale development area and all other areas discharging to Orewa stream. Existing development for the remaining model extent	Design Surface Topographical Survey LiDAR 2016 LiDAR 2013	No primary network within the development. Includes proposed culverts/structures proposed for development stages 10-13 and allows for blockage as per SWCOP, Ver 3, Jan 2022. Includes proposed U-culverts along Stream 21 watercourse and allows for 25% blockage. Includes stormwater convevance	To assess the proposed infrastructure performance with allowance for blockage and overtopping risk/hazard that may be posed to the surrounding areas (if any).

8	Post-Development (MPD)	100-Year ARI + 3.8°C future climate change			No primary network within the primary development Includes proposed culverts/structures proposed for development stages 10-13 and proposed U-culverts along Stream 21 watercourse. Includes stormwater conveyance structures from previous Milldale development stages	To assess the resiliency of the proposed infrastructure with allowance for future 3.8° temperature increase by 2110.

7.2. Pre-Development Model Results

The pre-development scenario flood depth results for the 2-year, 10-year and 100-year ARI events (including 2.1 °C climate change) are shown in Figure 8,Figure 9 and Figure 10 respectively. It is noted that the flood depth model results are filtered by 50 mm (consistent with the Wainui East SMP, Woods, 2016).

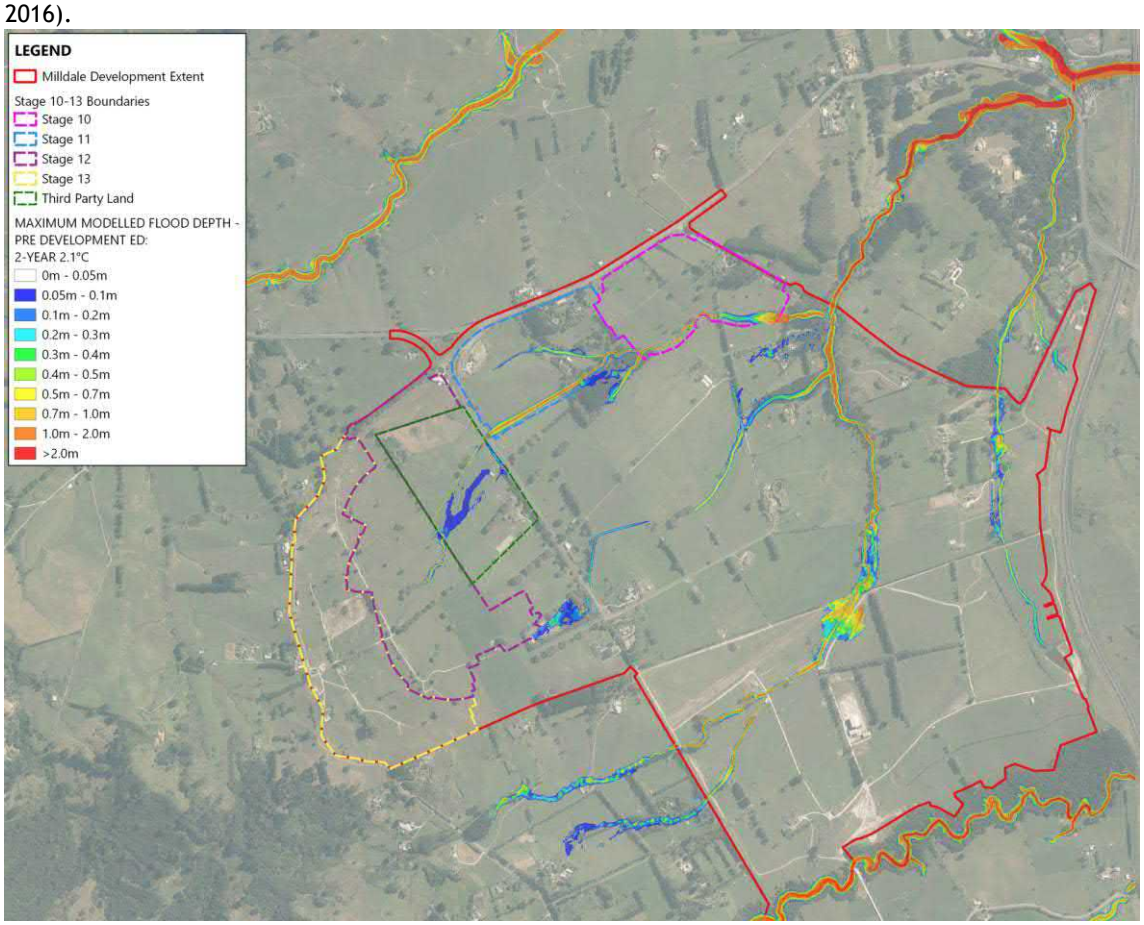


Figure 8: Pre-development scenario model flood depth results (2-year ARI event including 2.1 °C climate change)

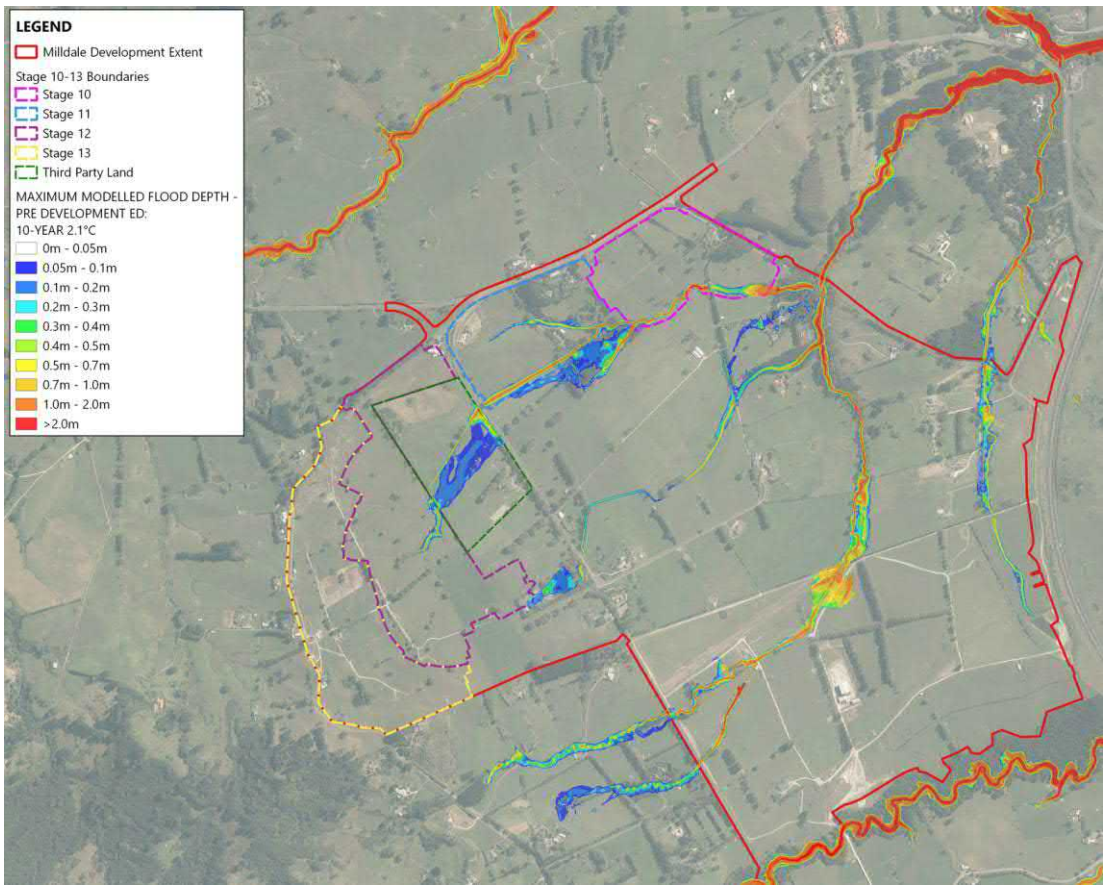


Figure 9: Pre-development scenario model flood depth results (10-year ARI event including 2.1 °C climate change)

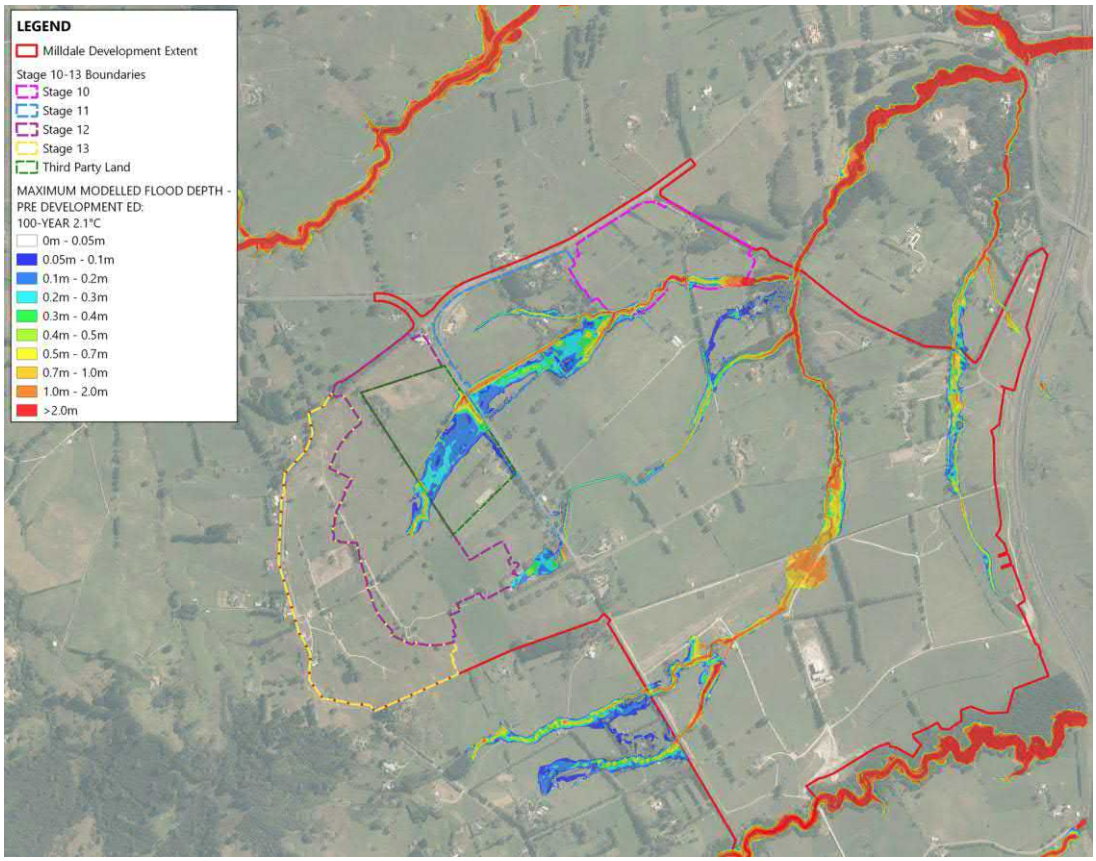


Figure 10: Pre-development scenario model flood depth results (100-year ARI event including 2.1 °C climate change)

7.3. Post-Development Model Results

The post-development scenario flood depth results for the 2-year,10-year and 100-year ARI events (including 2.1 °C climate change) are shown in Figure 11, Figure 12 and Figure 13 respectively. It is noted that the flood depth model results are filtered by 50 mm (consistent with the Wainui East SMP, Woods, 2016).

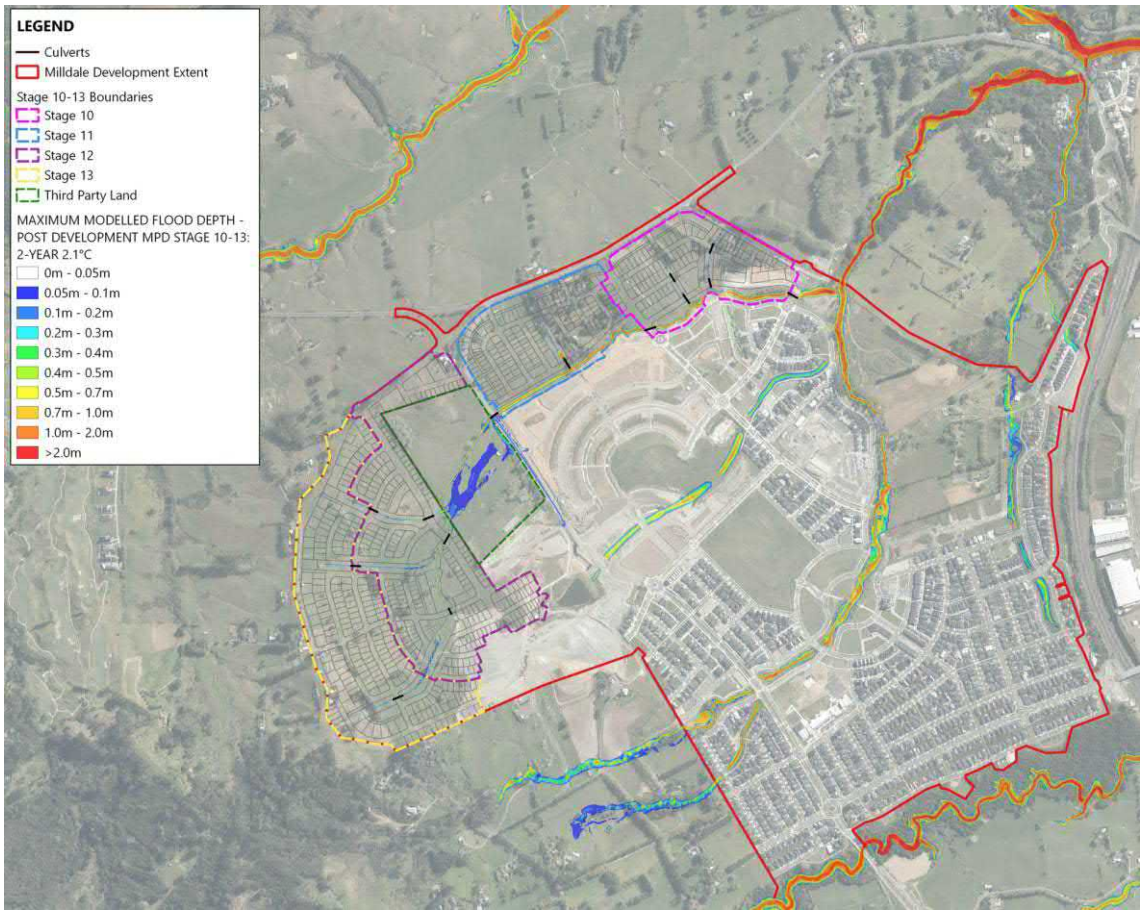


Figure 11: Post-development scenario model flood depth results (2-year ARI event including 2.1 °C climate change)

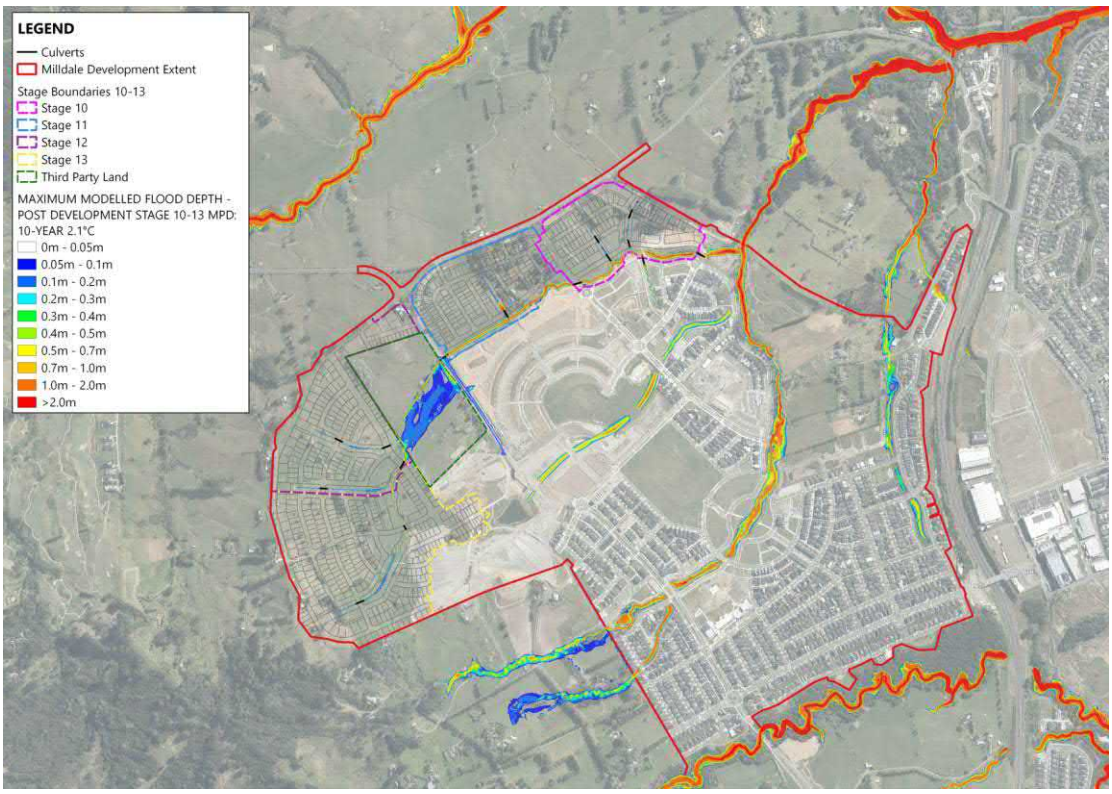


Figure 12: Post-development scenario model flood depth results (10-year ARI event including 2.1 °C climate change)

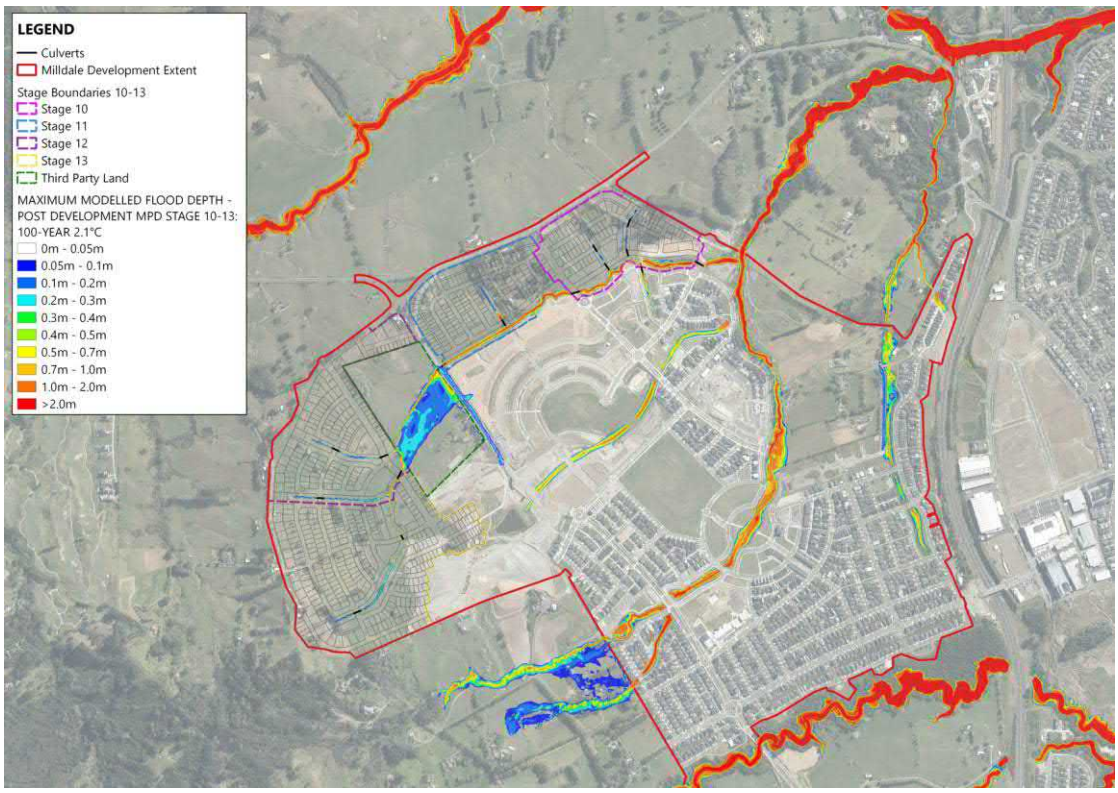


Figure 13: Post-development scenario model flood depth results (100-year ARI event including 2.1 °C climate change)

7.4. Culvert Assessments

The Milldale development Stages 10-13 include a total of 14 culvert structures as shown in Figure 14. It is noted that all three culvert structures along Stream 21 have an inverted-U shape and retain the natural stream cross section. The inverted-U shape culverts cross section can be found in Appendix C.

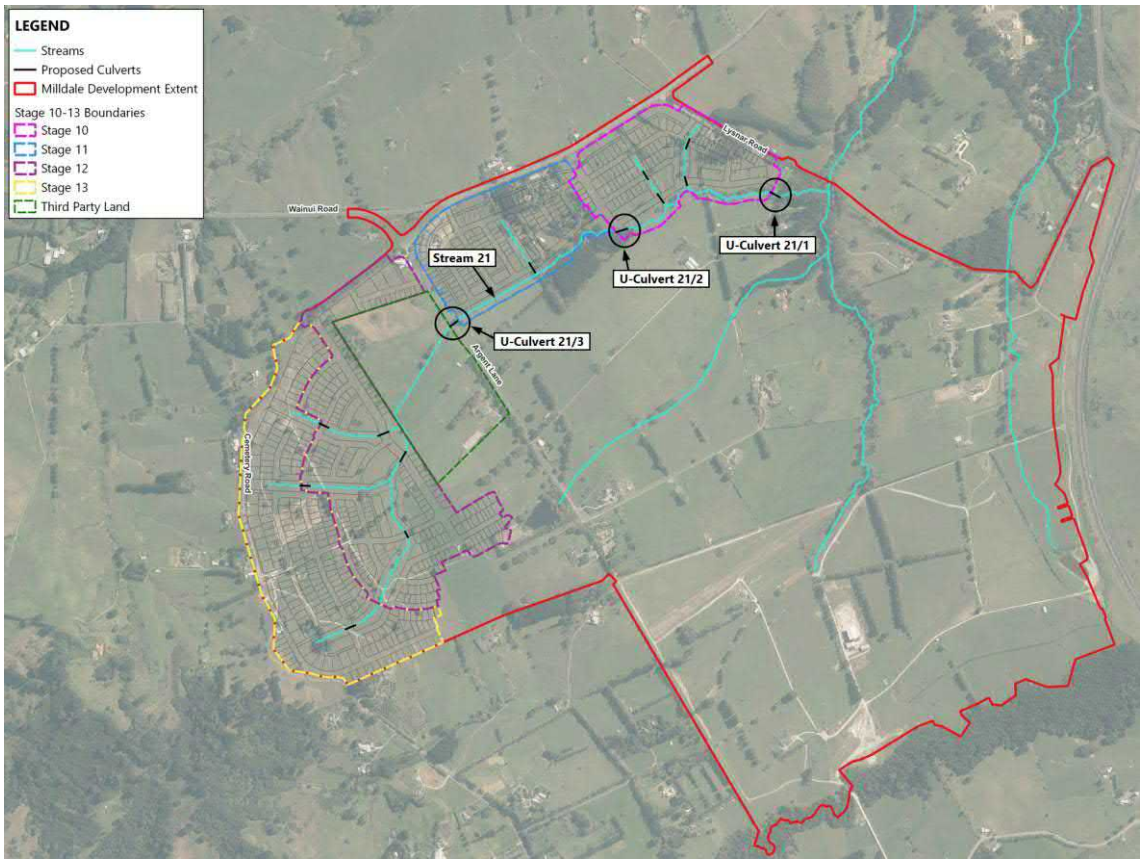


Figure 14: Culvert structures included in Milldale Stages 10-13

The post-development model results also show that all culvert structures comply with the freeboard requirements stated in the Stormwater Code of Practice (V3, Jan 2022) for both 10 and 100-year ARI storm events (inclusive of 2.1°C future climate change) as:

- The maximum water level in the culvert does not exceed the soffit level of the pipe during a 10- year ARI storm event (inclusive of 2.1°C future climate change).
- The maximum headwater level has a freeboard of 500mm to the top of the edge of seal and maximum headwater depth less than 3m during a 100-year ARI storm event (inclusive of 2.1°C future climate change).

Figure 15 and Figure 16 show the culvert locations and notations within the development.

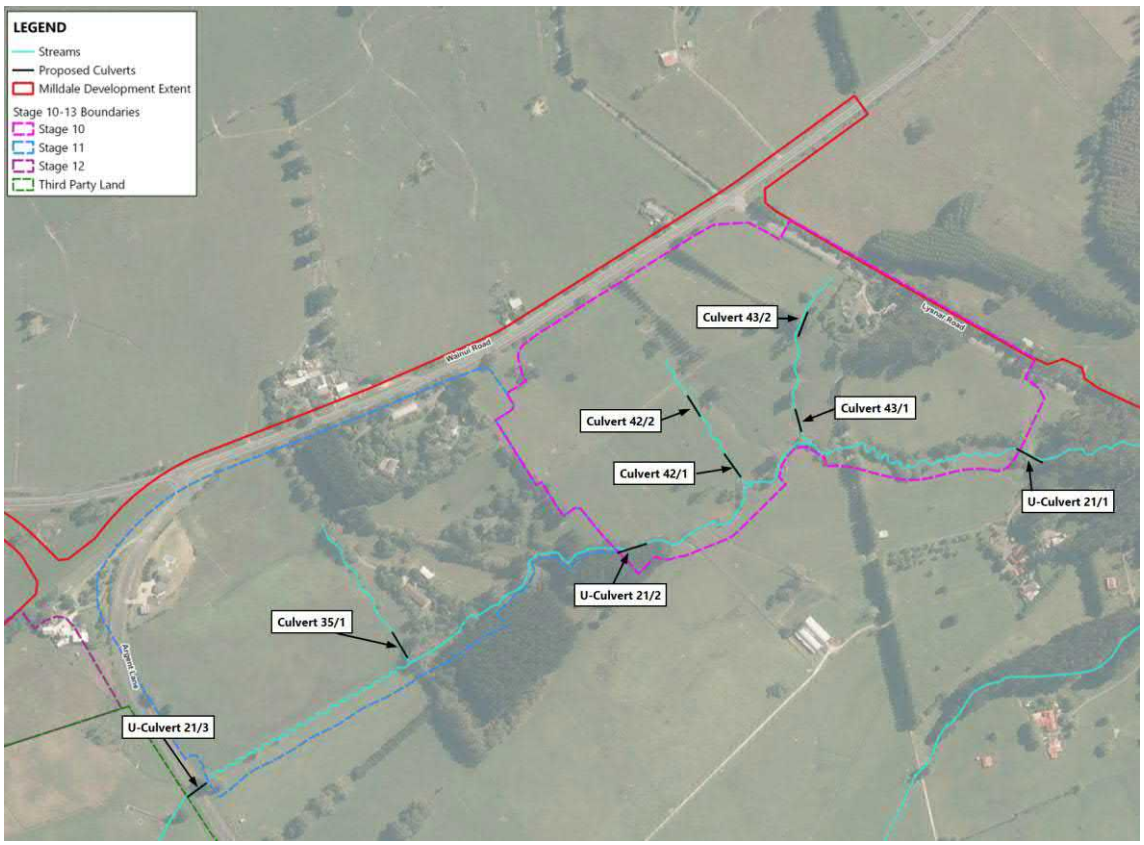


Figure 15. Proposed culverts within Stages 10 & 11

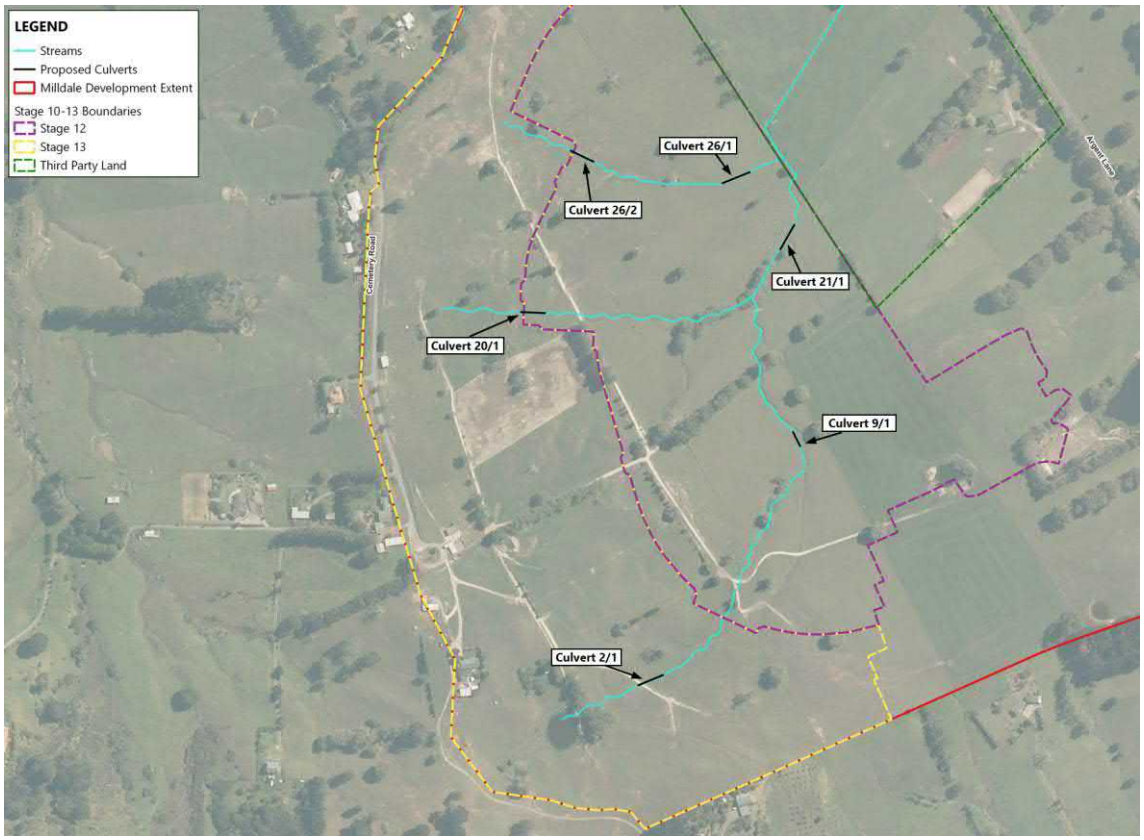


Figure 16. Proposed culverts within Stages 12 & 13

Table 5 and Table 6 provide a summary showing that all proposed culverts within Milldale Stages 10-13 are compliant with the freeboard requirements stated in the Stormwater Code of Practice (V3, Jan 2022) for both 10- and 100-year ARI storm events (inclusive of 2.1°C future climate change). It is noted that the final engineering design for all proposed structures within Milldale Stages 10-13 development will be completed during the detailed design phase.

Table 5 - 10-year ARI (2.1°C climate change) SWCOP v3 culvert compliance summary

STAGE 10				
Culvert #	**Diameter (mm)**	**Soffit level (m RL)**	**Headwater level (m RL)**	**Compliance Status**
U Culvert 21/1	U-Culvert	10.87	9.48	Complies
43/1	1050	16.43	15.63	Complies
43/2	825	24.1	23.81	Complies
42/1	1200	16	15.7	Complies
42/2	825	21.42	21.2	Complies
U Culvert 21/2	U-Culvert	19.34	17.26	Complies
STAGE 11				
Culvert #	**Diameter**	**Soffit level (m RL)**	**Headwater level (m RL)**	**Compliance Status**
35/1	1200	21.7	21.7	Complies
U Culvert 21/3	U-Culvert	26.17	24.75	Complies
STAGE 12				
Culvert #	**Diameter**	**Soffit level (m RL)**	**Headwater level (m RL)**	**Compliance Status**
26/1	1200	32.81	32.45	Complies
26/2	900	45.82	45.14	Complies

21/1	2400	31.75	31.7	Complies
20/1	1050	51.84	51.45	Complies
STAGE 13				
Culvert #	**Diameter**	**Soffit level (m RL)**	**Headwater level (m RL)**	**Compliance Status**
9/1	1800	38.23	37.86	Complies
2/1	975	56.51	56.3	Complies

Table 6 - 100-year ARI (2.1°C) SWCOP v3 culvert compliance summary

STAGE 10						
Culvert #	**Diameter (mm)**	**Headwater level (m RL)**	**Headwater depth (m)**	**Top of embankment (m RL)**	**Freeboard (m)**	**Compliance Status**
U Culvert 21/1	U-Culvert	10.19	2.92	12.6	2.4	Complies
43/1	1050	16.27	0.89	18.6	2.33	Complies
43/2	825	24.04	0.77	25.9	1.86	Complies
42/1	1200	16.08	1.28	18.03	1.95	Complies
42/2	825	21.46	0.87	23.50	2.04	Complies
U Culvert 21/2	U-Culvert	17.70	2.15	21.0	3.3	Complies
STAGE 11						
Culvert #	**Diameter**	**Headwater level (m RL)**	**Headwater depth (m)**	**Top of embankment (m RL)**	**Freeboard (m)**	**Compliance Status**

35/1	1200	22.07	1.57	24.37	2.3	Complies
U Culvert 21/3	U-Culvert	25.28	2.43	27.4	2.12	Complies
STAGE 12						
Culvert #	**Diameter (mm)**	**Headwater level (m RL)**	**Headwater depth (m)**	**Top of embankment (m RL)**	**Freeboard (m)**	**Compliance Status**
26/1	1200	32.78	1.17	35.24	2.46	Complies
26/2	900	45.77	0.85	47.5	1.73	Complies
21/1	2400	32.33	2.98	34.9	2.57	Complies
20/1	1050	51.7	0.91	53.42	1.72	Complies
STAGE 13						
Culvert #	**Diameter (mm)**	**Headwater level (m RL)**	**Headwater depth (m)**	**Top of embankment (m RL)**	**Freeboard (m)**	**Compliance Status**
9/1	1800	38.45	2.02	41.8	3.35	Complies
2/1	975	56.64	1.11	58.8	2.16	Complies

7.4.1. Culvert Blockage Assessment

Culverts proposed as part of Milldale Stages 10-13 are required to be assessed assuming blockage as per the Stormwater Code of Practice (V3, Jan 2022). The culverts blockage assessment criteria are as follow:

- For culverts less than DN1500 diameter, there should be a blockage allowance of 100%
- For culverts greater than or equal to DN1500, there should be a blockage allowance of 50%.

The post-development culvert blockage model scenario flood depth results for 100-year ARI (with allowance for 2.1°C future climate change) is shown in Figure 17. It is noted that the flood depth model results are filtered by 50 mm (consistent with the Wainui East SMP, Woods, 2016).

The post-development culvert blockage model scenario assumed all the proposed culverts within Milldale stages 10-13 to be fully or partially blocked and the three inverted U-shape culvert structures along Stream 21 watercourse have been assumed to be blocked by 25%.

The culvert blockage assessment aims to demonstrate resilience for proposed infrastructure in an event of blockage. This is not considered to be suitable for assessing flood effects (if any) on areas upstream, downstream and within the Site.

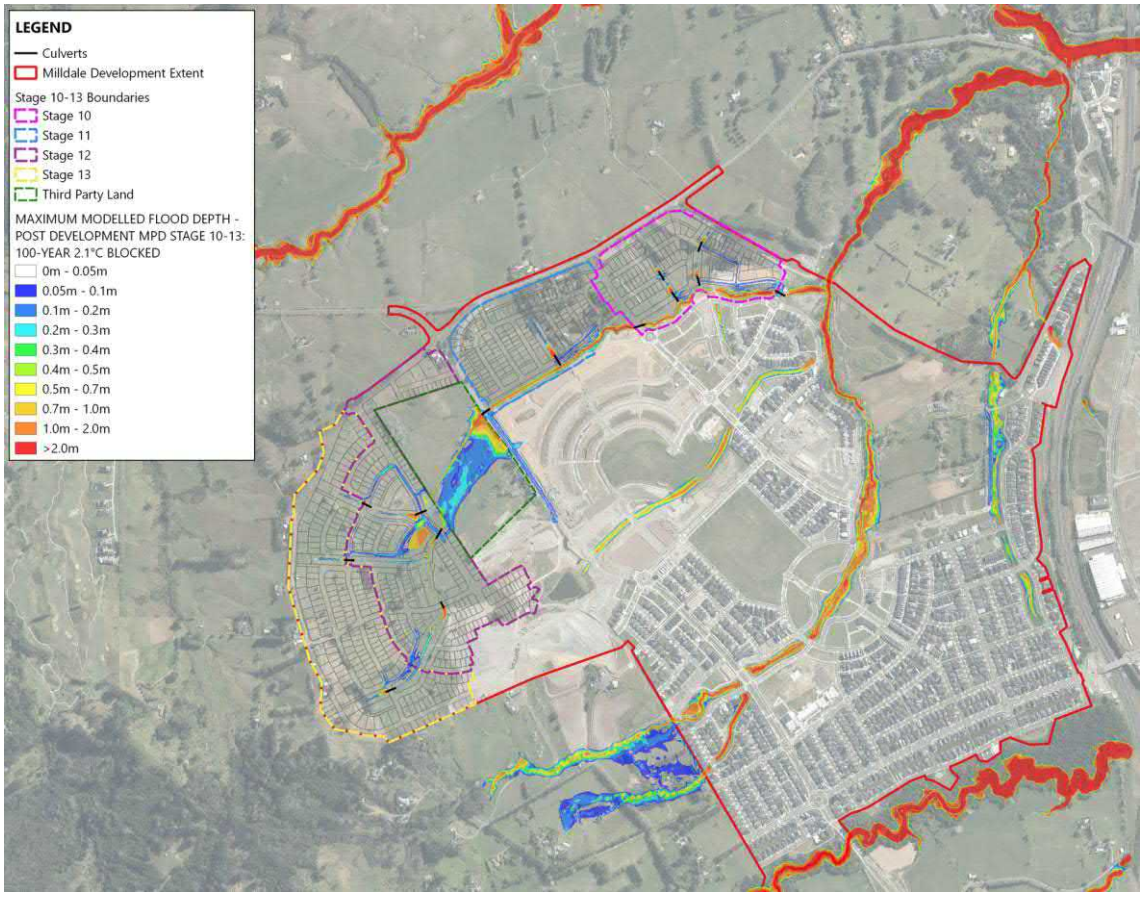


Figure 17: Maximum flood depth assuming culverts blockage for the 100-year ARI storm event including 2.1°C climate change maximum flood depth

The culvert blockage assessment shows that:

- There is road overtopping where the culverts are assumed to be fully blocked; and
    - In most instances, the flows overtopping the culvert immediately returns to the stream; and
    - Instances where flows overtop and do not immediately return to the stream, they are fully contained within the roads and do not enter lots.
- There is no flooding entering the proposed lots boundaries within the proposed Milldale Stages 10-13 development during a 100-year ARI storm event including 2.1°C climate change scenario where proposed culverts are assumed to be blocked as per SWCOP (V3, Jan 2022).

8. FLOOD EFFECTS ASSESSMENT

The flood effects assessment consists of a maximum water level results and flood extents comparison between the pre-development and post-development scenarios.

Results comparing the post-development and pre-development model scenarios maximum water levels for the 2-year, 10-year and 100-year ARI events including 2.1 °C climate change) are shown in Figure 18, Figure 19 and Figure 20 respectively.

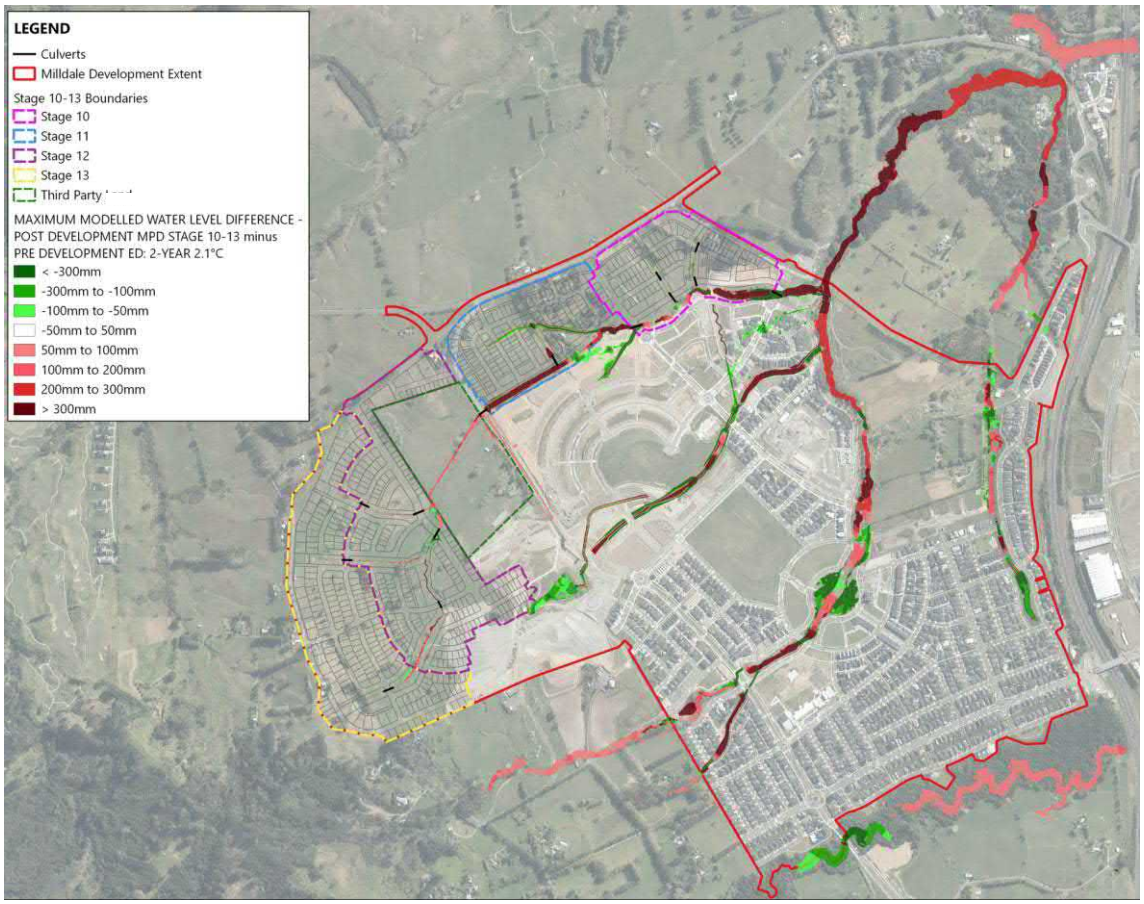


Figure 18: Afflux comparing water level results between the post-development and pre-development scenarios for the 2-year ARI event (inclusive of 2.1 °C climate change)

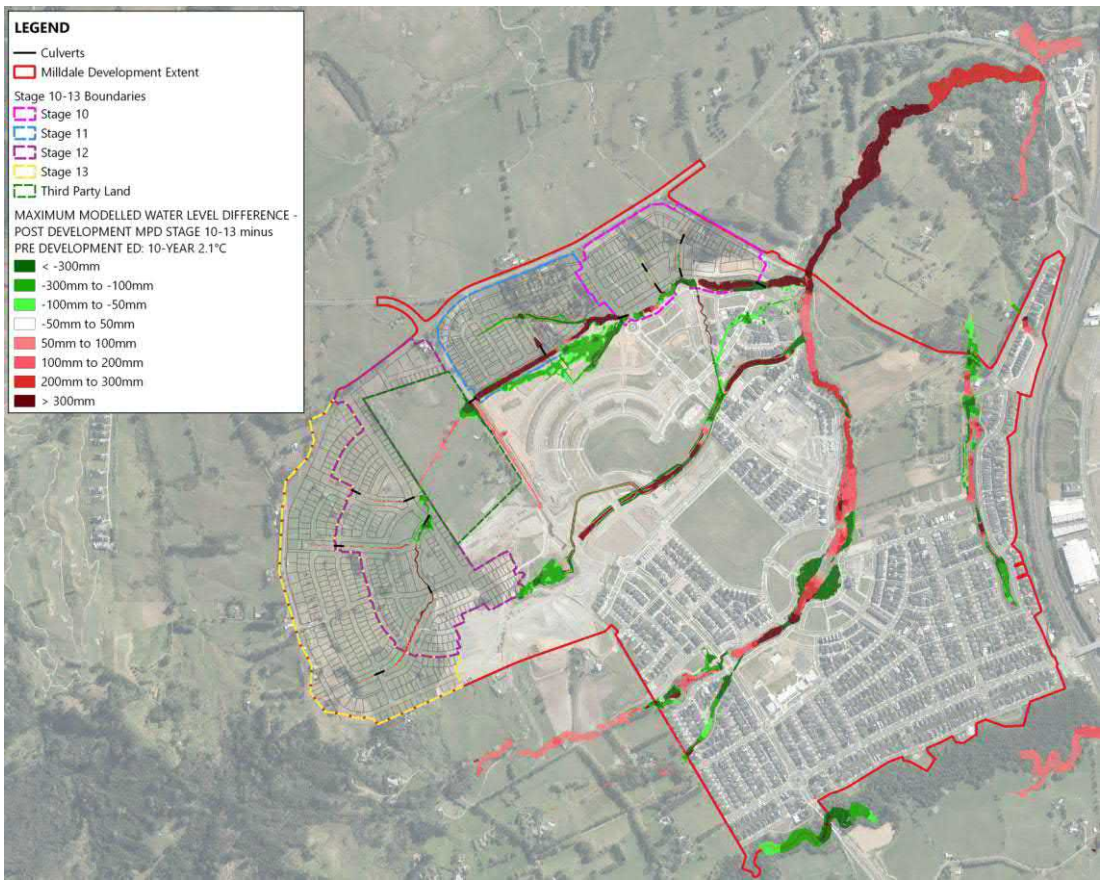


Figure 19: Afflux comparing water level results between the post-development and pre-development scenarios for the 10-year ARI event (inclusive of 2.1 °C climate change)

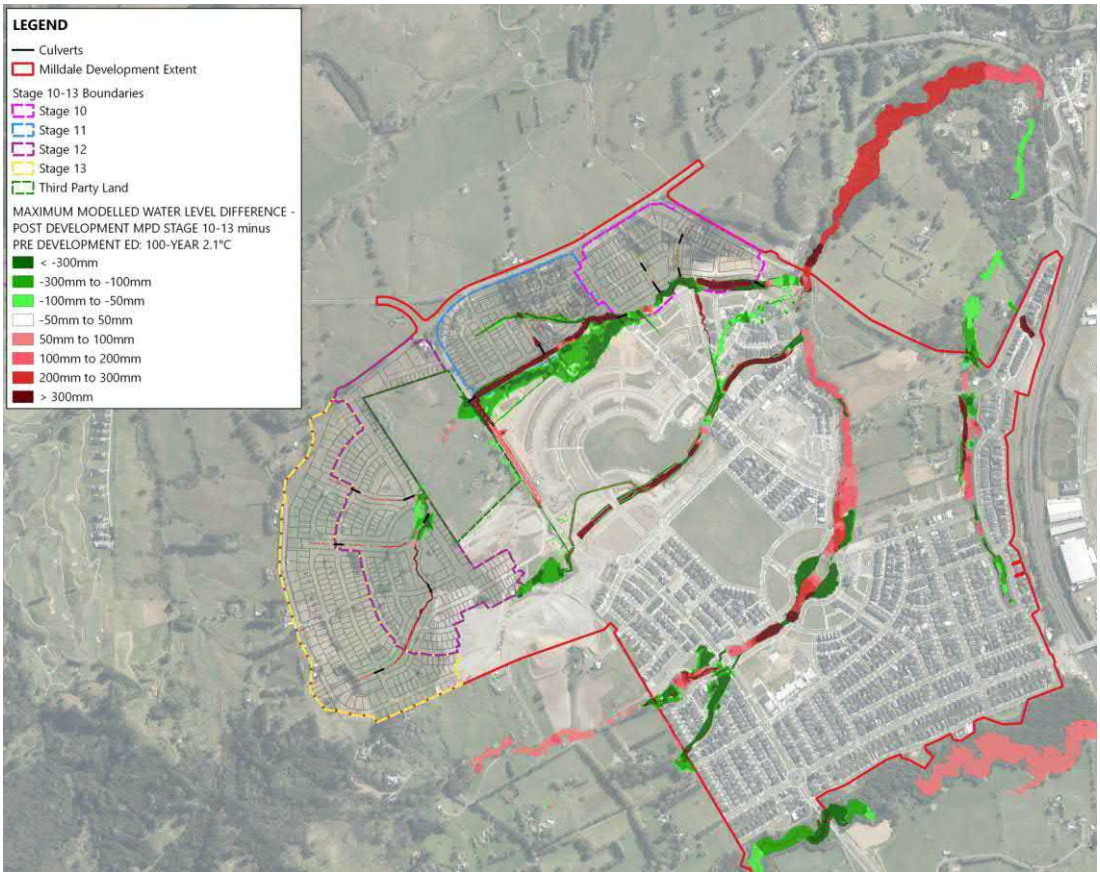


Figure 20: Afflux comparing water level results between the post-development and pre-development scenarios for the 100-year ARI event (inclusive of 2.1 °C climate change)

Results comparing the post-development and pre-development model scenarios flood extents for the 2-year, 10-year and 100-year ARI events (including 2.1 °C climate change) are shown in Figure 21, Figure 22 and Figure 23 respectively.

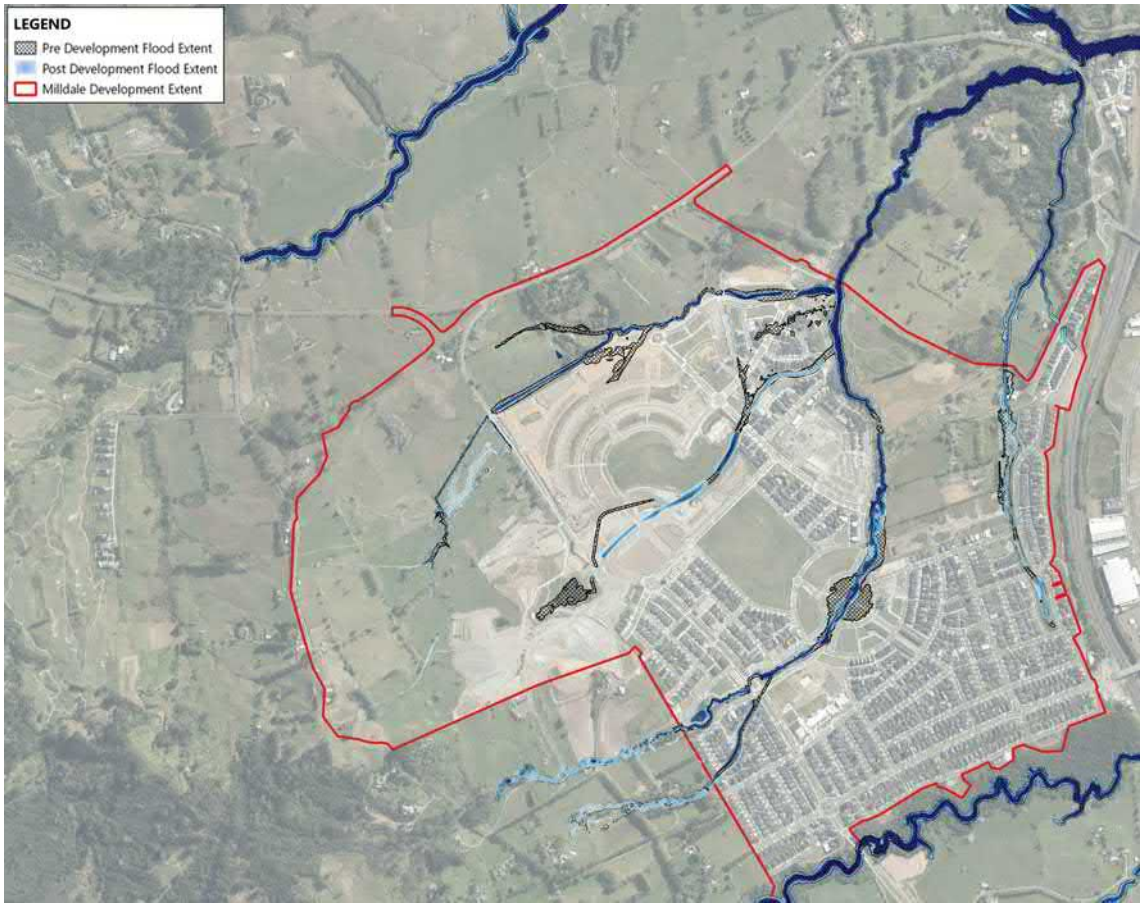


Figure 21: Flood extent comparison between the post-development and pre-development scenarios for the 2-year ARI event (inclusive of 2.1 °C climate change)

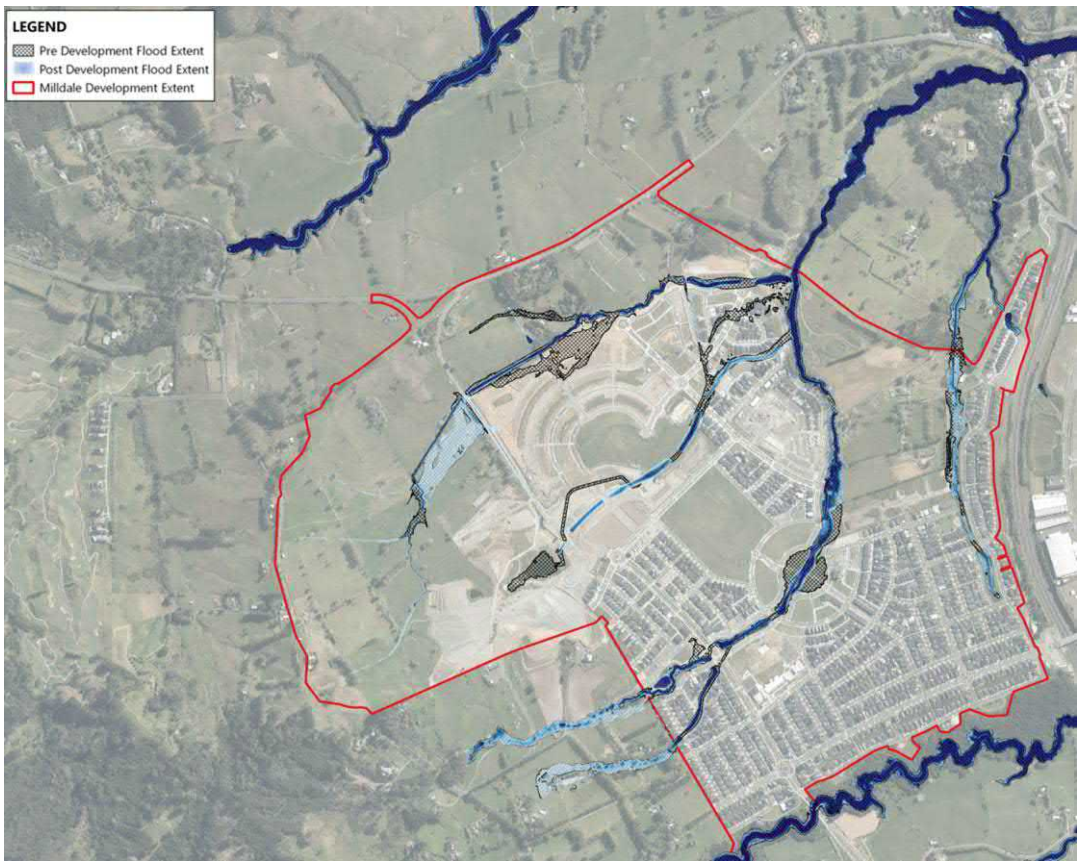


Figure 22: Flood extent comparison between the post-development and pre-development scenarios for the 10-year ARI event (inclusive of 2.1 °C climate change)

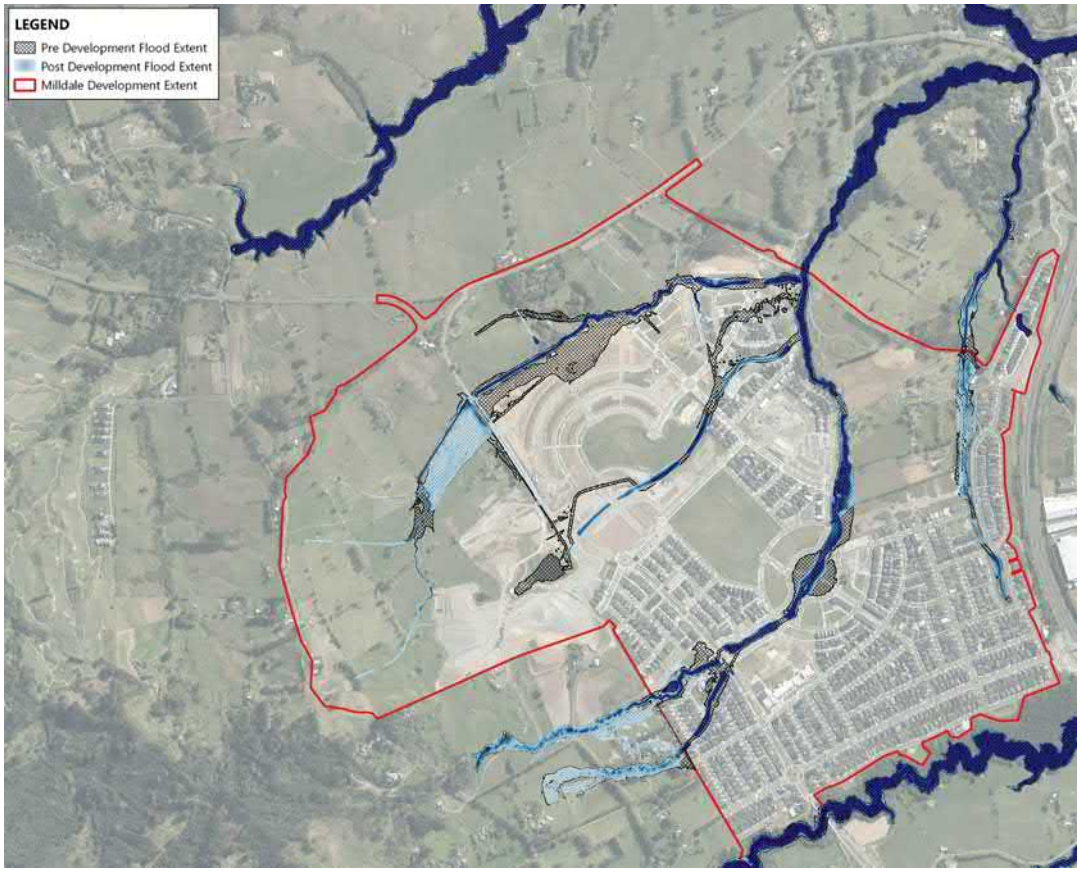


Figure 23: Flood extent comparison between the post-development and pre-development scenarios for the 100-year ARI event (inclusive of 2.1 °C climate change)

It is noted that the third-party land area at 147 Argent Lane has been assumed to be developed in the post-development scenarios and assigned a 65% weighted impervious coverage, which is considered to be a conservative approach as currently this area is not developed. Furthermore, the surface within 147 Argent Lane remains unchanged between the pre-development and post-development scenarios.

The pre-development model results show there is a wide flood plain within 147 Argent Lane, which would require land to be raised above the flood plain for any future development to occur. Any future development within 147 Argent Lane would likely incur in stream works that would increase its conveyance capacity.

The-post development scenarios do not represent primary stormwater network which is overall considered a conservative approach. The primary stormwater network within Milldale Stages 10-13 is designed to contain any overland flows up to and including the 10-year ARI event (inclusive of 2.1 °C climate change). This is particularly relevant during the 2-year ARI event (inclusive of 2.1 °C climate change) as any flood depth increases adjacent to Argent Lane are attributed to model representation and limitations since any overland flow along Argent Lane would be captured by the primary network. Figure 24 shows the primary network (including megapits with 0.8 m^3/s capacity) along Argent Lane that would ultimately discharge at the downstream headwall of 'U-culvert 21/3' structure outlet and not 147 Argent Lane.

The flood effects assessment shows that:

- Any flood increases are limited to the stream corridors and are generally contained within the pre-development flooding extent
- Post-development flood extents are generally unchanged or reduced when compared against pre-development flood extents.
- There is a significant flood reduction within 147 Agent Lane and directly upstream of the 'U-culvert 21/3' structure which is located under Argent Lane in the 10-year and 100-year ARI event (inclusive of 2.1 °C climate change). This is due to the increased capacity of this structure to convey flows generated upstream and it is further discussed in Section 9
- A detailed flood path assessment has been undertaken to demonstrate that flows can be adequately conveyed along Argent Lane corridors, and this is covered in more detailed in Section 8.1
- The post-development flood extent has reduced when compared against the pre-development flood extent resulting from the stormwater structures upgrades and the pass flow forward approach; and
- Overall, there are no upstream or downstream flood effects caused by the proposed Milldale Stages 10-13 development for the 100-year ARI events with allowance for 2.1°C climate change.

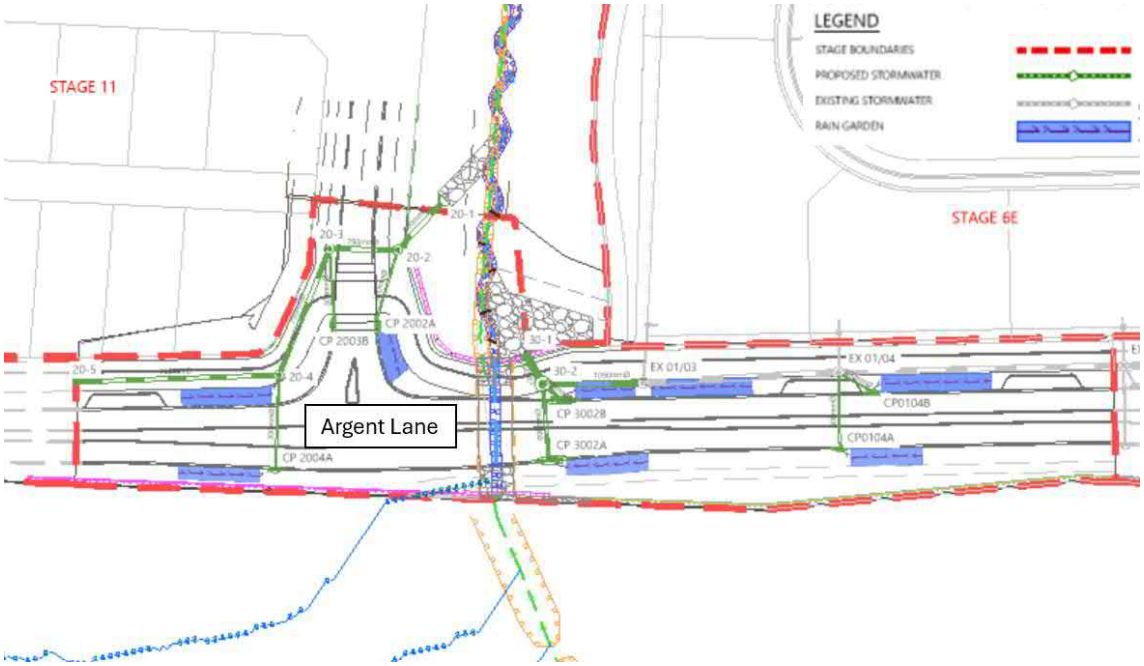


Figure 24: Argent Lane stormwater primary network

8.1. Argent Lane Overland Flow Path Assessment

An overland flow path assessment memorandum has been prepared by Woods, dated March 2024, which supported an Engineering Plan Approval application for the construction of roads in Stages 6D, 6G, and Local Centre of the Milldale development. Furthermore, this memorandum was used to determine whether vehicular and pedestrian safety requirements in accordance with the Auckland Transport – Transport Design Manual (AT TDM) are met. The extent of the overland flow path assessment is approximately 14.3 ha and it can be seen in Figure 25.

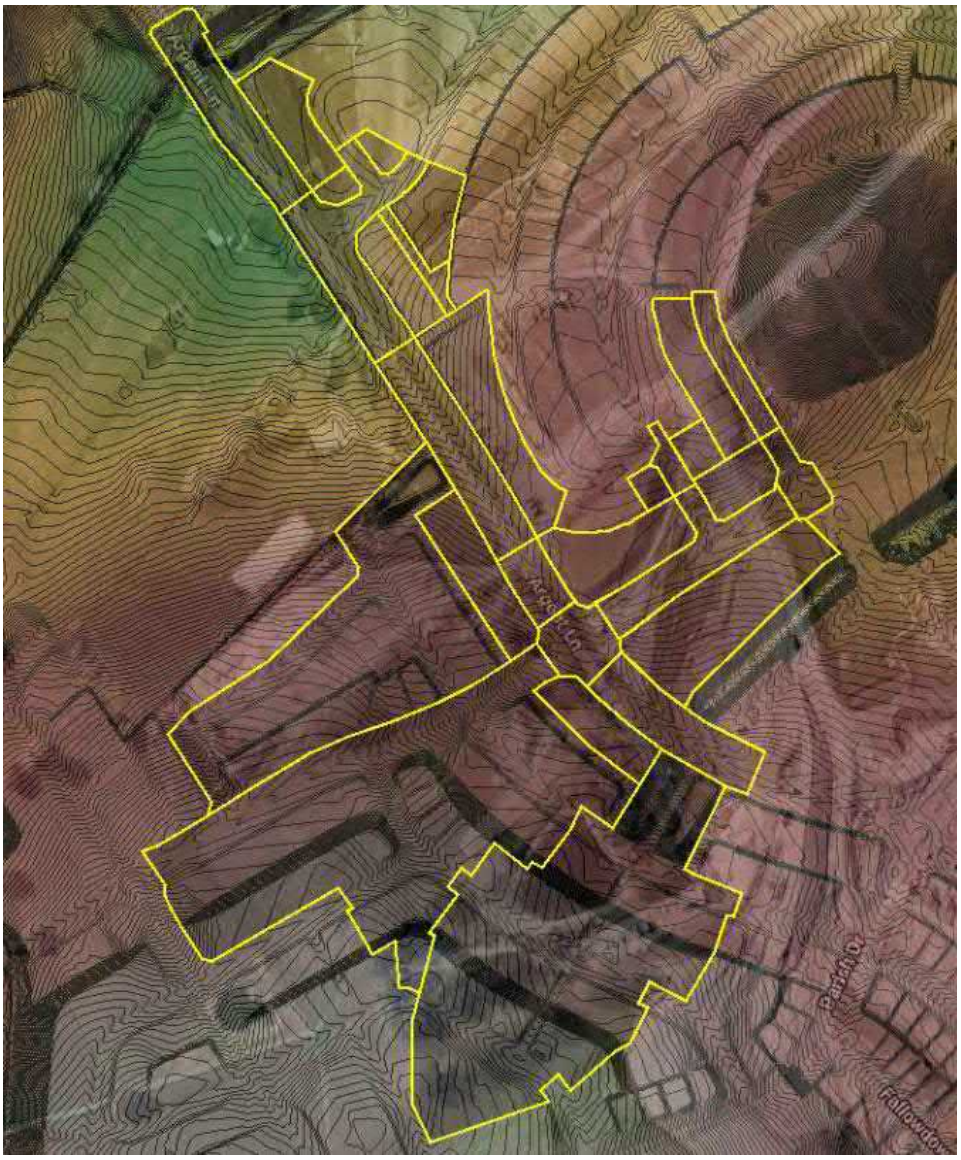


Figure 25: Argent Lane overland flow path assessment extent

The overland flow path assessment memorandum concluded that flows for the 100-year ARI storm event assuming maximum probable development with allowance for 3.8°C future climate change can be adequately conveyed along Argent Lane corridors. Furthermore, the design meets the pedestrian and vehicle safety requirements as per the AT TDM Version 1, while not exceeding any safety thresholds. The proposed road network design is considered appropriate, and the full overland flow path assessment can be found in Appendix D. Overland flows generated from Milldale Stages 10-13 are not contributing to runoff generated within, along or towards Argent Lane.

9. 100-YEAR 3.8°C ARI STORM EVENT CLIMATE CHANGE SCENARIO

The flood modelling undertaken for Milldale Stages 10-13 is in accordance with the version of Stormwater Code of Practice (V3, Jan 2022) which states that the secondary overland flow paths should be assessed with allowance for 2.1°C future climate change, and consistent with the adopted Wainui East Stormwater Management Plan (V4, Sept 2016).

Given the timing of the application and long-term nature of the Mildalle development, an additional flood model scenario has been created for the 100-year ARI storm event allowing for MPD and future climate change allowance for 3.8°C temperature increase by 2110 as stated in the recently operative Stormwater Code of Practice (V4, March 2024).

The flood model maximum depth results from the 100-year ARI storm event allowing for MPD and future climate change allowance for 3.8°C are shown in Figure 26 and demonstrate that:

- Runoff generated from the proposed Milldale Stage 10-13 subcatchments is contained within the watercourses; and
- The stormwater infrastructure included in the proposed Milldale Stages 10-13 development have sufficient capacity to convey the upstream flows during a 100-year ARI storm event assuming maximum probable development with allowance for 3.8 °C climate change.

The model results from the 100-year ARI storm event allowing for MPD and future climate change allowance for 3.8°C aims to demonstrate future resilience of proposed infrastructure, and it is not used to assess flood effects (if any). A map showing the model maximum modelled flood depth results for the 100-year ARI storm event allowing for MPD and future climate change allowance for 3.8°C temperature increase can be found in Appendix E.

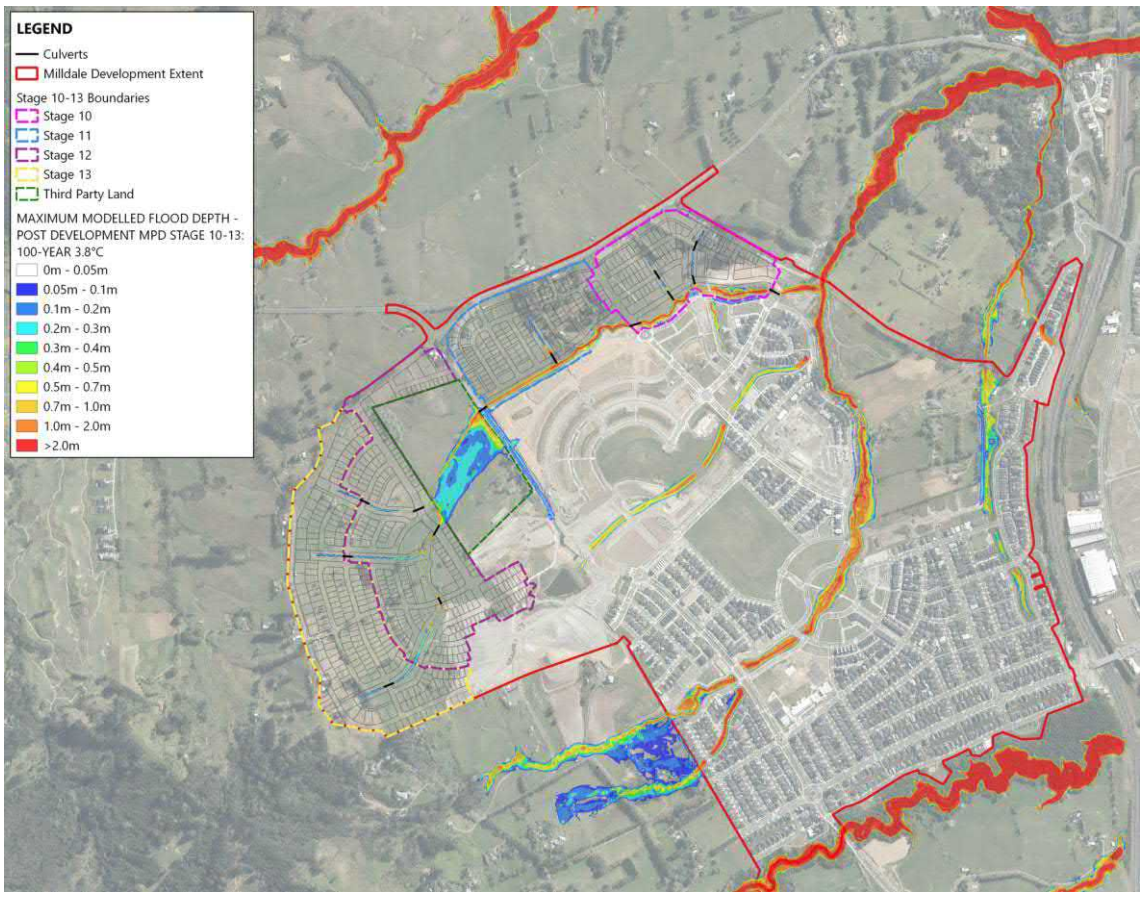


Figure 26: 100-year ARI storm event including 3.8°C climate change maximum flood depth

9.1. Wainui Road Bridge Assessment

Previous modelling and flood assessments showed that there is no overtopping risk at the Wainui Road Bridge and this was agreed with Healthy Waters as part of the modelling query list generated during the high-level review in 2022. The most recent Wainui Road Bridge assessment was undertaken to highlight potential effects (if any) that result from the increased flows along Waterloo Creek generated from proposed Milldale Stages 10-13 development under maximum probable development (MPD) and confirmed that the pass flows forward strategy is appropriate.

The Wainui Road bridge has been represented in the flood model using the parameters stated in Table 7. The Wainui Road bridge is located downstream of the Milldale Stages 10-13 development as shown in Figure 27. Figure 28 shows the cross-section view of the Wainui Bridge.

Table 7: Wainui Road bridge data summary

DATA	Value
High Chord Elevation	5.44 m
Low Chord Elevation	4.79 m
Reach Length	14.25
Max WSEL	10 m
Skew Angle	18.1 degrees
Manning's n	0.06
Entrance Loss Coefficient	0.5
Exit Loss Coefficient	1
Weir Representation	Broad-crested

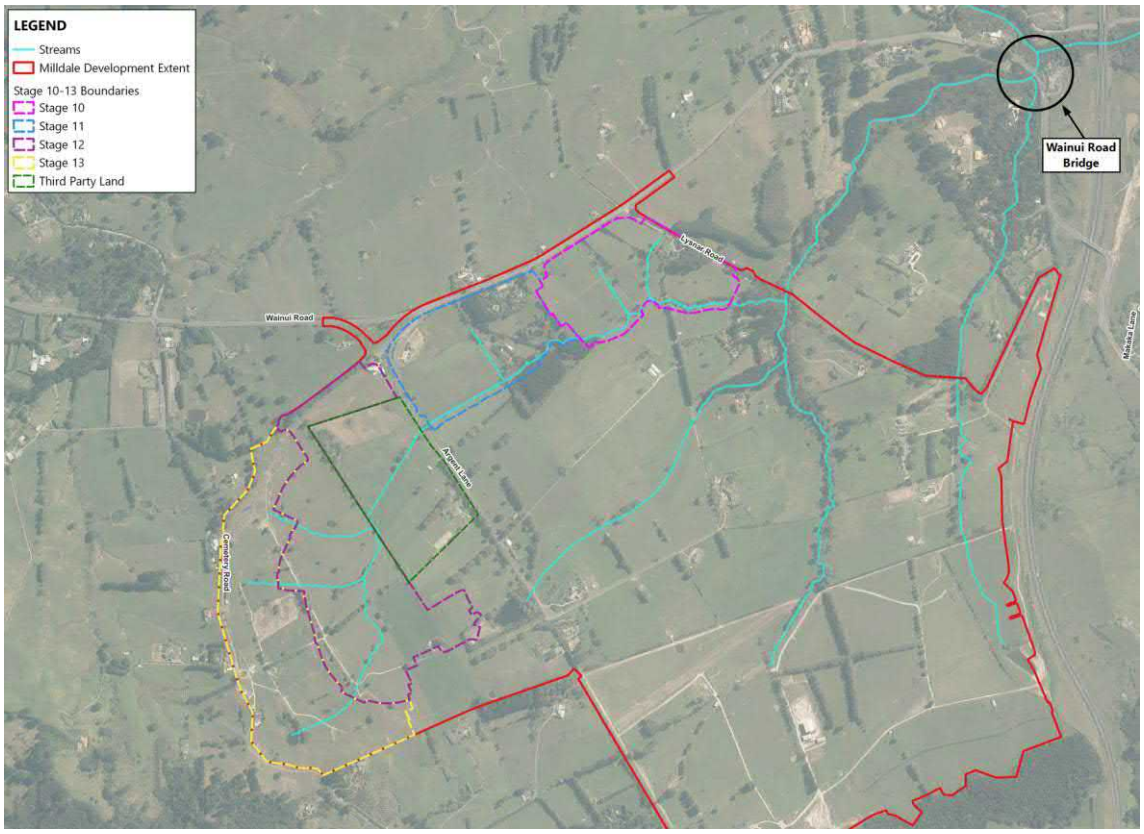


Figure 27. Wainui Road Bridge location downstream of development



Figure 28: Wainui Bridge cross-section view

It is noted that flood effects listed in the Wainui East SMP (Woods, Sept 2016) are considered outdated and no longer relevant. Since the adoption of the SMP, the flood model has undergone various updates and high-level reviews with Healthy Waters with the most recent being in May 2022 (Appendix B).

Furthermore, the latest post-development flood model results show that:

- Water levels do not exceed the low chord elevation for the post-development scenario in the 2-year and 10-year ARI event assuming 2.1 ºC climate change
- The 100-year ARI plus climate change event water levels do not overtop the Wainui Bridge as the maximum water level is not more than the bridge's high chord elevation of 5.44 m. The water level for the 100-year ARI storm event including 2.1°C climate change scenario is 4.68 m RL and the water level including 3.8°C climate change scenario is 5.34 m RL; and
- The model results show that the water level does not overtop the Wainui Road Bridge in any of the modelled scenarios.

Overall, the flood modelling undertaken for the proposed Milldale Stages 10-13 development confirmed that there is not an overtopping risk at the Wainui Road Bridge, and it does not act as a bottleneck for the upstream catchment while not showing flood effects downstream.

9.2. U-Culvert 21/3 Structure Assessment

Under pre-development conditions, there is a 1500mm diameter structure adjacent to 147 Argent Lane and transversing Argent Lane Road. The pre-development model results shows that this structure does not have enough capacity to convey upstream flows causing overtopping onto Argent Lane Road for the 100-year ARI event with allowance for 2.1°C climate change (Refer to Figure 4).

The recommended approach as per the adopted Wainui East SMP is to pass flows forward while upgrading culverts to facilitate upstream flows. The U-Culvert 21/3 is a proposed upgraded structure as part of the wider Milldale development.

Overall, the flood modelling undertaken for the proposed Milldale Stages 10-13 development confirmed that the U-Culvert 21/3 has enough capacity to convey upstream flow for the 100-year ARI storm event assuming maximum probable development with allowance for 3.8°C future climate change, while not showing flood effects downstream. U-Culvert 21/3 long section and cross sections are shown Figure 29 and Figure 30 respectively including the water level results for the 100-year ARI storm with allowance for 3.8°C future climate change.

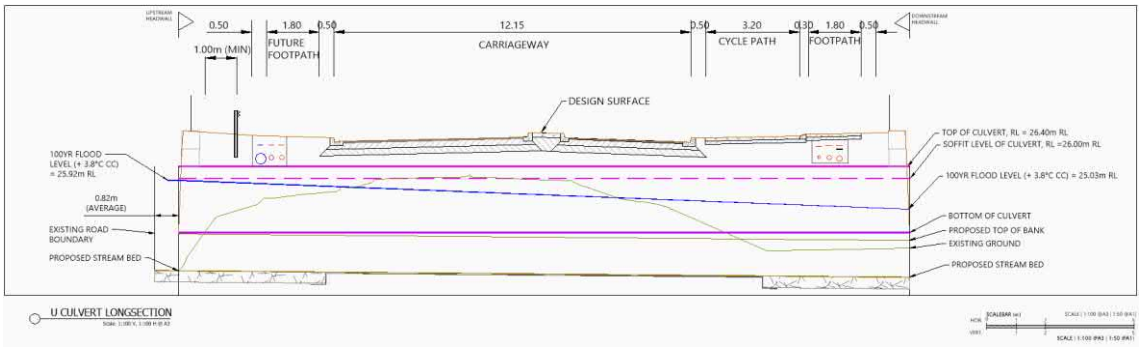


Figure 29: U-Culvert 21/3 long section showing water level results for the 100-year ARI storm event allowance for 3.8°C future climate change

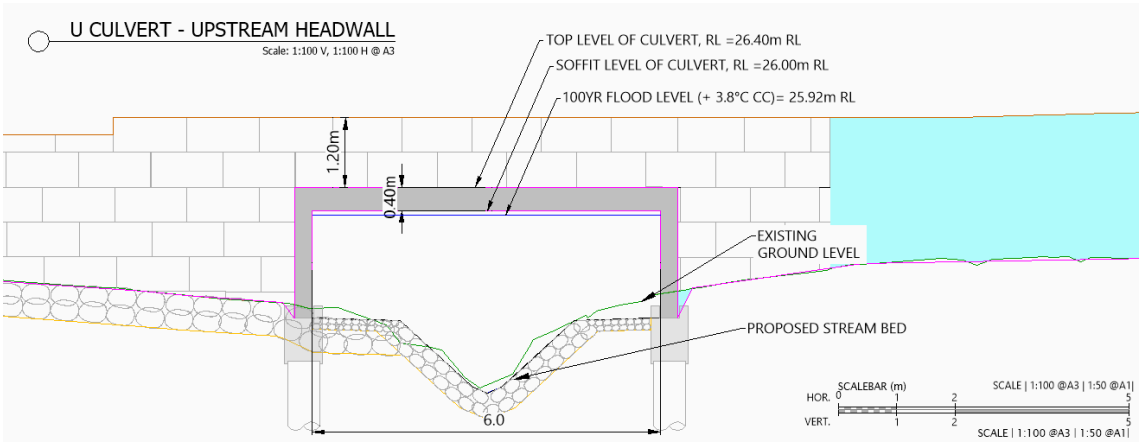


Figure 30: U-Culvert 21/3 upstream cross-section showing water level results for the 100-year ARI storm event allowance for 3.8°C future climate change

9.3. Wastewater Treatment Plant (WWTP) Assessment

The Wastewater Treatment Plant(WWTP) site subject to this application is located within Lot 4 DP 353309,which is owned by FHLD and has a total area of 10.5ha. The WWTP site is bordered by Lysnar Road to the south, Wainui Road to the east and Waterloo Stream to the west, and just outside the Wainui Precinct by Stage 10 as seen in Figure 31.

The sub-catchments in the post-development scenarios assume a maximum probable development and maintained a weighted impervious coverage of 65% (As mentioned in Section 6.1) which sufficiently accounts for the 32% impervious coverage within the WWTP site boundary.

Figure 31 also shows that the WWTP is not within the flood extent for the 100-year ARI storm event assuming maximum probable development with allowance for 3.8 °C climate change.

The wet weather WWTP flow rate combined with the expected dry weather flowrate gives a total peak treatment volume of 829 m^3 per day or 9.6 litres per second (0.0096 m^3/s). This WWTP effluent is considered to be insignificant in a 100-year ARI storm event and very unlikely to create any effects downstream as the pass forward flows for the 100-year ARI storm event assuming maximum probable development with allowance for 3.8 °C climate change is approximately 110 m^3/s along the Waterloo Stream.

Further details on the WWTP can be found in the Infrastructure Report Milldale Temporary Wastewater Treatment Plant (V0, March 2025) by Woods.

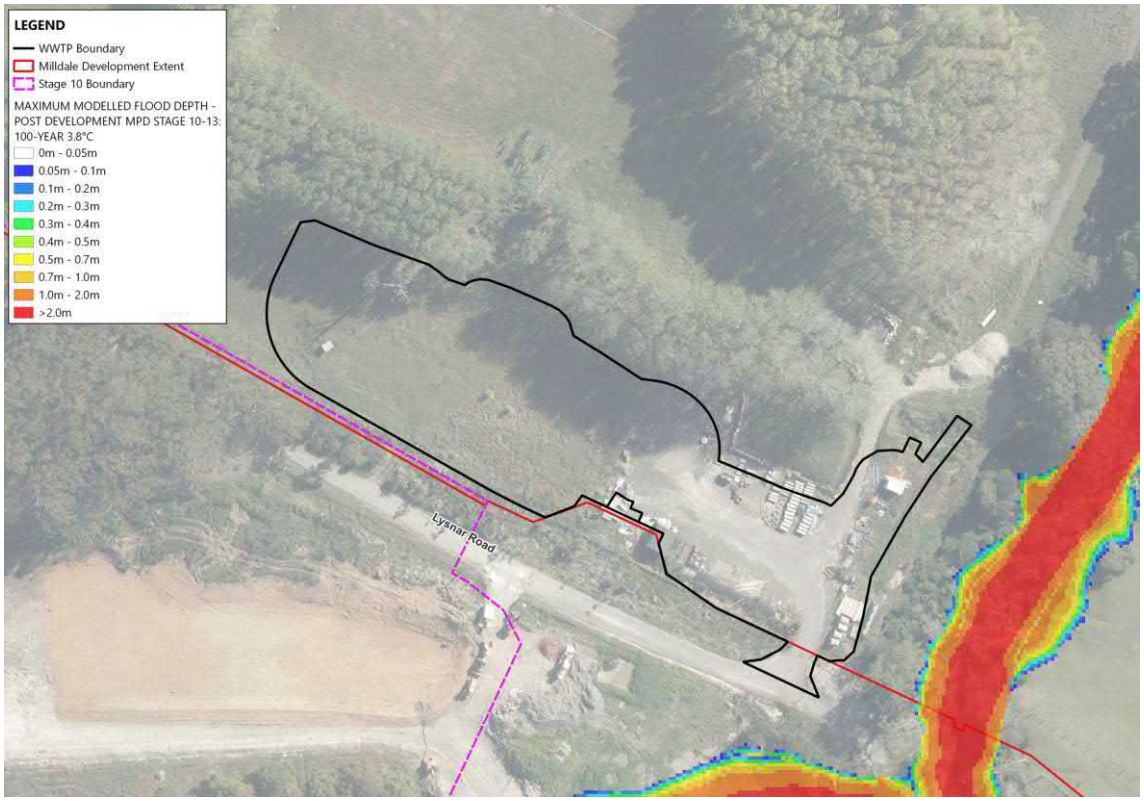


Figure 31: WWTP site location outside the flood extent for the 100-year ARI storm event assuming maximum probable development with allowance for 3.8 °C climate change

10. AUCKLAND UNITARY PLAN (OP) ASSESSMENT

Per Table E36.4.1 the development proposes Activity A33 (Construction of other land drainage works, stormwater management devices or flood mitigation works in a 1% AEP floodplain), which is a restricted discretionary (RD) activity. Based on the flood modelling undertaken for the proposed Milldale Stages 10-13 development, under the MPD scenario, the magnitude of flow approaching exceeds the 2 m^3/s threshold for the floodplain classification. For relevant matters of discretion, the following is noted:

- The construction of conveyance structures within the floodplain will not increase flood risk either upstream or downstream of the culverts with the modelling showing that flows will be contained within the watercourse and not create a hazard at the adjoining land parcels
- The proposed culverts are designed to adequately convey flows up to the 10-year ARI event (including 2.1 °C climate change) where the maximum headwater level does not exceed the soffit level of the pipe; and
- The proposed culverts are designed to adequately convey flows up to the 100-year ARI event including 2.1 °C climate change with adequate freeboard and thus it is inferred that small events will also be adequately managed without creating a nuisance in the surrounding environment.

With respect to activities in overland flow paths, the development proposes Activity A42 in Table E36.4.1 (Any buildings or other structures located within or over an overland flow path) which is considered a restricted discretionary activity. As far as relevant matters for discretion are concerned, while the culverts are located along an OLFP (existing situation), the proposed culvert upgrades are not expected to create negative effects in that flows are contained within the watercourses and do not overtop the banks to create a hazard in the area.

11. CONCLUSION

The flood assessment report for Milldale Stages 10-13 (referred to as the Site) supports the resource consent application by Fulton Hogan Land Development (FHLD) to the Environmental Protection Authority (EPA) under the Fast-Track Approvals Act 2024. The flood assessment has been performed in consistency with the recommended flood management strategy to pass flow forward of the adopted Wainui East Stormwater Management Plan (SMP), Version 4, September 2016. The recommended flood management strategy for the Site also ensures there are no flood effects upstream or downstream of the Site while the downstream stormwater infrastructure, both proposed and already constructed, have sufficient capacity to convey upstream flows for MPD development conditions.

The flood assessment involved stormwater modelling and eight model scenarios were developed, including pre-development and post-development scenarios. The flood modelling undertaken in this flood assessment builds on the Wainui East flood models originally developed while creating the Wainui East Model Build Report (Woods, July 2016). Since the adoption of the Wainui East SMP, the flood model has undergone various updates and high-level reviews with Healthy Waters, the most recent being in May 2022.

The flood model scenarios have been simulated for the 2-year, 10-year and 100-year ARI storm events including climate change including 2.1°C temperature increase by 2090 as well as a resilience assessment for the 100-year ARI storm event including 3.8°C temperature increase by 2110. An additional model scenario has been developed which allows for blockage of the proposed culverts within the Site extent.

The flood assessment findings are as follow:

- Flood Effects Assessment

  Flood depths comparison between the pre-development and post-development scenario for the 2-year, 10-year and 100-year ARI events including 2.1 °C climate change shows that any flood depth increases are limited to the stream corridor and does not increase pre-development flood extents, this is consistent with the adopted SMP. There are no upstream or downstream flood effects resulting from developing the Site.

- Culverts Freeboard Assessment

  The post-development model results also show that all proposed culvert structures within the Site comply with the freeboard requirements stated in the Stormwater Code of Practice (V3, Jan 2022) for both 10 and 100-year ARI storm events including 2.1°C climate change.

- Resilience Assessment

  An additional flood model scenario has been created for the 100-year ARI storm event allowing for MPD and future climate change allowance for 3.8°C temperature increase by 2110 as stated in recently operative version of the Stormwater Code of Practice (V4, March 2024). The resilience assessment demonstrated that runoff generated from the proposed Milldale Stage 10-13 subcatchments is contained within the watercourses and the proposed stormwater infrastructure within the Site have sufficient capacity to convey the upstream flows during a 100-year ARI storm event assuming maximum probable development with allowance for 3.8 °C climate change.

- Blockage Assessment

  The culvert blockage assessment shows that there is road overtopping where the proposed culverts within the Site are assumed to be fully blocked, and in most instances, the runoff overtopping the culverts immediately returns to the stream. Instances where flows overtop and do not immediately return to the stream, then flows are fully contained within the roads and do not enter the proposed lots.

- Wainui Bridge Assessment

  Previous modelling and flood assessments showed that there is no overtopping risk at the Wainui Road Bridge and this was agreed with Healthy Waters as part of the modelling query list generated during the high-level review in 2022. There is not an overtopping risk at the Wainui Road Bridge, and it does not act as a bottleneck for the upstream catchment while not showing flood effects downstream either, confirming the pass flow forward strategy is appropriate.

- U-Culvert 21/3 Structure Assessment

  Flood modelling undertaken for the proposed Milldale Stages 10-13 development confirmed that the U-Culvert 21/3 has enough capacity to convey upstream flow for the 100-year ARI storm event assuming maximum probable development with allowance for 3.8°C future climate change, while not showing flood effects downstream.

- Wastewater Treatment Plant (WWTP) Assessment
  - WWTP impervious coverage is already accounted for in the post-development scenarios
  - The WWTP is outside of the 100-year ARI storm event assuming maximum probable development with allowance for 3.8 °C climate change scenario flood extent.
  - The WWTP effluent of 0.0096 m3/s is considered to be minimal in a 100-year ARI storm event and very unlikely to create any effects downstream. The pass forward flows for the 100-year ARI storm event assuming maximum probable development with allowance for 3.8 °C climate change are approximately 110 m^3/s along the Waterloo Stream.

- Auckland Unitary Plan Assessment

  Per Table E36.4.1 the proposed Milldale Stages 10-13 development proposes Activity A33 and Activity A42 which are considered a restricted discretionary activity. As far as relevant matters for discretion are concerned, the proposed culverts are designed to adequately convey flows up to the 10-year and 100-year ARI events (including 2.1 °C climate change) while not creating any negative effects in that flows are contained within the watercourses and do not overtop the banks to create a hazard in the area.

Appendix A - Wainui East Model Build Report (Woods, July 2016)

FLOOD MODEL BUILD REPORT

WAINUI EAST

FULTON & HOGAN LIMITED
WAINUI EAST
JOB NO. 31720

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1 INTRODUCTION

1.1 INTRODUCTION

This report has been prepared as a technical report to detail the flood model build for the Wainui East Future Urban Zone.

The Argent Lane SHA is a proposed residential development on 190ha of predominantly rural land bounded by Wainui Road to the north, the Northern Motorway to the east and Weiti Stream to the south (Figure 1 – Site Location).

This report details the model build parameters adopted for the scenarios that have been modelled using XP-STORM 2016.1. The modelled scenarios are:

- Existing Development (ED)
- Maximum Probable Development (MPD)
- Post Development (Argent Lane SHA)



Figure 1: Site Location

2 CATCHMENT DESCRIPTION

2.1 LOCATION AND TOPOGRAPHY

The Argent Lane SHA sits to the east of the Northern Motorway and has an undulating topography with a stream running along the southern boundary and another stream running through the centre of the precinct. There are clusters of exotic and native vegetation throughout the precinct, some of which exists as a riparian margin along the edge of the streams.

The site has two discharge locations, the Orewa Estuary and Weiti Stream.

The delineated catchment extents total approximately 3336 ha. Inflows from neighbouring developments such as the Highgate Business Park have also been taken into consideration and have been included within the model.

2.2 GEOLOGY AND SOILS

Geotechnical investigations undertaken by Tonkin and Taylor indicate that the site is underlain by Northland Allochthon materials. This formation typically compromises of mudstones, siltstones and limestones.

Site investigations confirmed the presence of Northland allochthon soils over the rock being typically 1-2m with thicker alluvial deposits in valleys and lower lying areas of the site.

The northern extremity of the site is typically underlain by East Coast Bays Formation (ECBF) soils which weather to silts and clays.

A copy of the geotechnical report for the site can be found in Appendix A – Wainui East Geotechnical Report.

2.3 LAND USE

The land use for a majority of the catchment is rural residential, however there is residential settlements and commercial land use at the lower catchments (Millwater Development and Silverdale Township). An aerial photograph of the delineated catchment is shown in Figure 2.

There is more information provided in Section 3.3 regarding the representation of existing and future land uses.

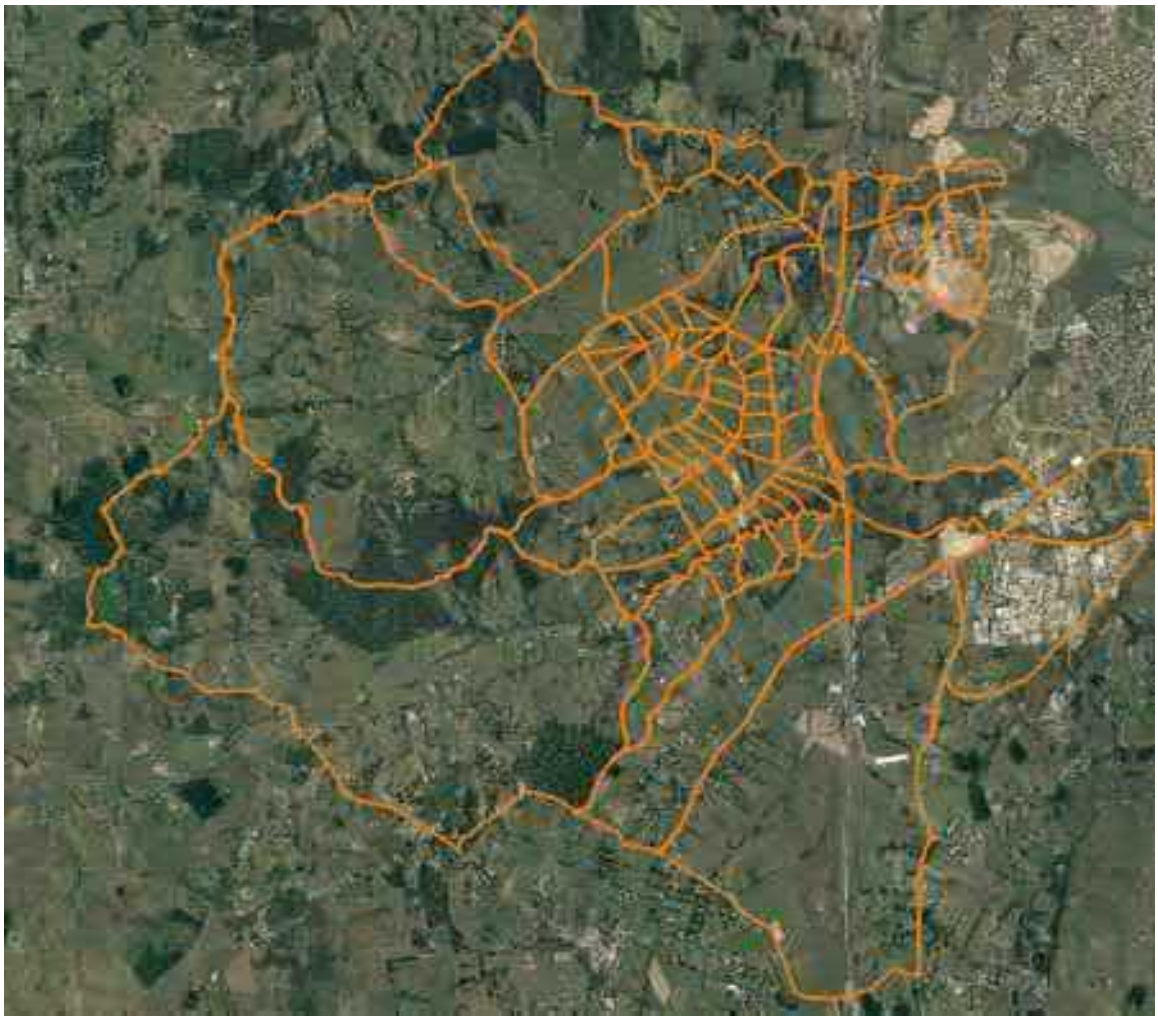


Figure 2: Existing Landuse

3 MODEL BUILD

3.1 MODELLING SOFTWARE

The software used for modelling the Wainui East Flood Model is shown in Table 1.

Table 1: Modelling Software

Software Type	**XP Storm by XP Solutions**	
	ED Scenario	**MPD & Argent Lane SHA Scenarios**
Software Version	2016	
Service Pack	2016.1	
Model used for Runoff	SCS Hydrology	
Number of modelled nodes	186	187
Number of modelled links	180	181

3.2 TOPOGRAPHICAL DATA

This section refers to the topographical data and assumptions used to represent the modelled scenarios in the catchment:

1. Existing Development (ED)
2. Maximum Probable Development (MPD)
3. Post Development (Argent Lane SHA)

The scenarios are discussed under each topographical information sub-section discussed in the following sub-sections.

3.2.1 Topography

The Auckland Council 2013 LiDAR data has been used for the flood model. The LiDAR data has been overlain with survey data of the watercourses which is discussed further in section 3.2.2 below.

The same data set was used to represent the topography for both ED scenarios. The MPD and Argent Lane SHA scenario includes the “future” topography proposed for the Argent Lane SHA.

This “future” topography is based on the 12D earthworks design surface. Figure 3 shows the underlying zoning for Wainui 1 Precinct area in relation to the modelled catchment.



Figure 3: Wainui 1 Precinct & Modelled Sub-catchments

3.2.2 2D Grid

The model was processed using a multiple domain grid interface in which the ground model was processed with a 3m grid around the streams and known flood areas and a 6m grid outside of this.

3.2.3 Watercourses

A full topographical survey of the Argent Lane SHA was undertaken by Woods in 2016, a cross section survey was undertaken for watercourses downstream of the Argent Lane SHA discharging to the Orewa River was undertaken, this was supplemented by Hydrographic survey for the areas within the Orewa Estuary where traditional survey methods could not be used.

For areas located in the upper reaches of catchments and the Weiti Stream, LiDAR data was used to derive cross sections. A highlighting the survey methodology along with a copy of the survey plans can be found in Appendix B; this provides a summary of the survey information used for the model build, information outside the extents shown in the survey plans is based on LiDAR.

A copy of the XP Storm model links and nodes are provided in Appendix D, these plans can be used in conjunction with the XP Storm model outputs provided for the assessment scenarios in Appendix K for reference in regards to the location of watercourses.

3.2.4 Asset Data

Asset data was collected during the topographical survey of the Argent Lane SHA, some key assets outside of the Argent Lane SHA were also collected and can be seen in the survey plans found in Appendix B. These assets are further discussed in the sections below.

It is important to note that there is no existing public stormwater network within the Argent Lane SHA.

A copy of the XP Storm model links and nodes are provided in Appendix D, these plans can be used in conjunction with the XP Storm model outputs provided for the assessment scenarios in Appendix K for reference in regards to the location of culverts and bridges.

3.2.4.1 Culverts

The surveyed culvert data is summarised in Table 2 – Surveyed Culvert Data Summary, culvert locations can be found on the survey plan in Appendix B.

Table 2: Culvert Data Summary

Culvert Name (XP Storm)	Type	Diameter Size [m]	Length [m]	Upstream IL [m RL]	Downstream IL [m RL]	Survey
CUL_NZTA	Circular	4.5	98.3	5.19	4.74	Yes
Culv_EX1500d	Circular	1.5	15.0	25.06	24.98	Yes
Culv_Ex1800	Circular	1.8	7.8	13.98	13.73	Yes
Culv_LK101.1	Circular	1.5	20.0	22.85	22.77	Yes
Culv_LK113	Circular	0.6	5.2	17.39	17.24	Yes
Culv_LK125	Circular	0.4	8.1	25.1	24.86	Yes
Culv_LK126	Circular	0.9	12.6	23.88	23.78	Yes
Culv_LK136	Circular	0.9	12.4	21.83	21.75	Yes
Culv_Lk143	Circular	0.6	29.7	36.54	34.8	Yes
Culv_Lk171	Circular	2.55	92.6	7.99	6.76	Yes
Culv_Lk172	Rectangular	3.7 x 2.350	13.4	9.62	9.34	Yes
Culv_Lk25.1.2	Circular	1.85	10.5	4.66	4.45	Yes
Culv_LK46	Circular	1.2	12.5	19.98	19.84	Yes
Culv_Lk48.2	Circular	0.6	2.4	15.19	15.08	Yes
Culv_LK58.1	Circular	1.85	7.9	11.17	10.83	Yes
Culv_Lk92.1	Circular	1.2	15.4	14.45	14.27	Yes
CulvLK42.1	Circular	1.05	5.7	20.92	20.83	Yes
CulvLK77.1	Circular	0.45	23.5	14.81	14.78	Yes
CulvLK87.1	Circular	0.6	5.0	20.45	20.22	Yes
Highgate.1	Circular	1.6	168.1	19.08	15.63	Yes
Culv_Link23.2_Multi	Circular	0.7	7.44	9.74	9.54	Yes
	Circular	0.7	7.44	8.88	8.88	Yes
	Circular	0.7	7.44	8.92	8.83	Yes
Link23.1	Ellipse	1.75x2.15	5.45	6.17	6.16	Yes

3.2.4.2 Bridges

Surveyed bridges in XP Storm have been modelled as a “bridge link”. Survey of bridges was undertaken based on location and level of risk. Bridges modelled as a “bridge link” include high cord and low cord elevations which represent the underside of the bridge and top of deck. A summary of the Bridges included along with modelled parameters is outlined in Table 3 – Modelled Bridges. A plan of the surveyed bridges can be found in Appendix B.

It is important to note that side rails have not been considered in the modelling of bridge structures.

Table 3: Modelled Bridges

Name	Modelled	US Node IL (m RL)	DS Node IL (m RL)	Bridge length (m)	Max WSEL	High chord elevation	Low chord elevation	Skew angle	Reach length (m)	Survey
Bridge_Kowhai	Bridge Link	2.64	2.62	16.33	12	9.28	7.95	N/A	9.22	Yes
Bridge_Lysnar	Bridge Link	4.46	4.32	23.634	13	7.31	6.65	N/A	3.5	Yes
Bridge_Wainui	Bridge Link	-0.34	-0.47	18.5	10	5.44	4.79	28	14.25	Yes
Bridge_Weiti	Bridge Link	11.6	9.83	56.85	21	18.35	16.83	41	15	Yes
Bridge_MWAY	Natural	Bridges modelled as natural channels, site observed, bridge deck levels well clear of potential flood risk								No
Link 178 (Orewa Bridge)	Natural									No
Link 189 (Silverdale Bridges)	Natural									No

3.2.4.3 Highgate Stormwater Pond

User inflows from the neighbouring Highgate Stormwater pond was included in the model, The Highgate development included the construction of a stormwater pond that discharges flows via a culvert into a watercourse within the Argent Lane SHA. The culvert is located under the Northern Motorway and has been surveyed as a 1600mm diameter circular culvert.

The stormwater pond has been modelled based on the information outlined in the Highgate Stormwater Pond Design report (Highgate catchment One - Stormwater Design Report, December 2014) along with updated design information provided by the project engineers who undertook the design at Woods. The report states that rainfall depths with allowance for climate change have been applied to a TP108 rain profile. The Highgate report modelled the 2, 10, 100 and 1000 year ARI events. The XP Storm model inputs the time series data as a user inflow hydrograph for the applicable ARI event for the ED, MPD and Argent Lane SHA scenarios.

The XP Storm model inputs this information as a user inflow hydrograph. The HEC-HMS model was re-simulated for the 5, 20 and 50 year ARI event as these events were not considered as part of the Highgate design. The 20 year and 50 year ARI events were inputted with the appropriate existing and future rainfall profiles.

Figure 4 shows the location of the stormwater pond. A copy of the time series data used in the model can be found in Appendix C.

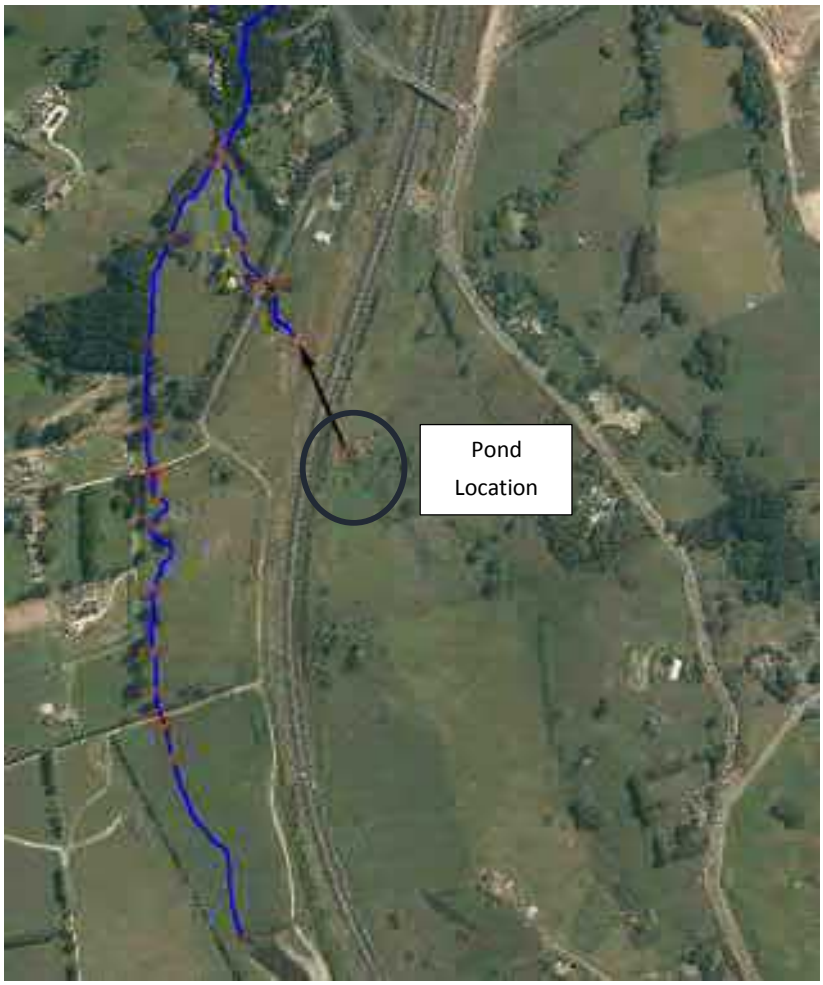


Figure 4: Highgate Pond Location

3.2.4.4 Argent Lane Dam

A private dam is noted to be located at the end of Argent Lane. This located upstream of the Argent Lane SHA. The dam is located between two ridges with a limited catchment draining to it. It is understood that this dam has been constructed for amenity and irrigation purposes. Site investigation of this dam shows no outlet structure, the dam embanks water which flows east into the downstream culvert. The dam is represented topographically from the LiDAR information in all scenarios. Figure 5 shows the location of the Argent Lane dam.

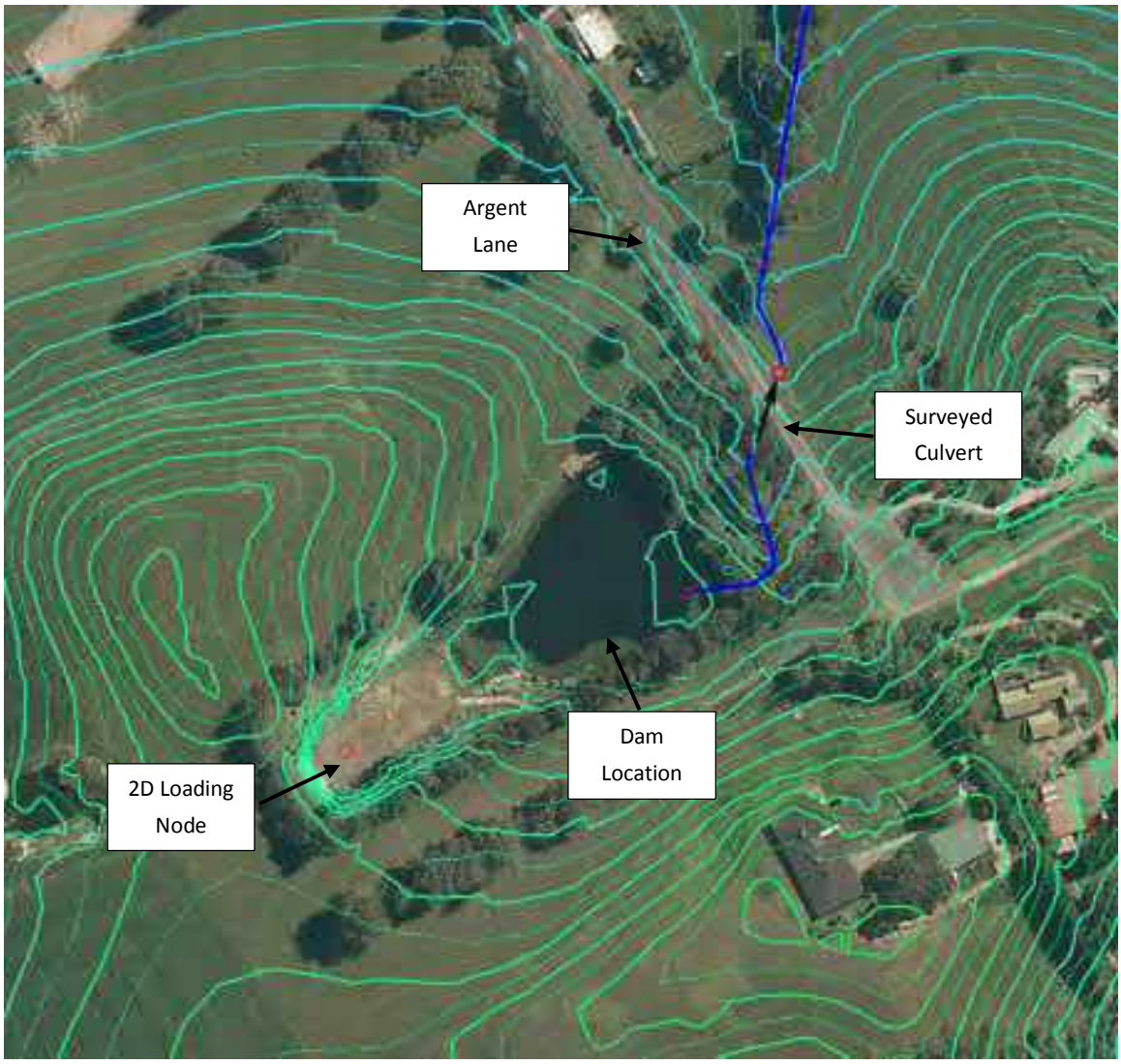


Figure 5: Argent Lane Dam

3.3 HYDROLOGICAL MODEL

3.3.1 Method used

The stormwater models are based on the Soil Conservation Services (SCS) Unit Hydrograph method was used to transform rainfall into runoff.

A normalized 24-hour temporal rainfall and profile has been adopted as specified in the former Auckland Regional Councils Technical Publication 108 (TP108) for this model. The normalised profile adopted is based on a 2.1^{o}c allowance for future climate change, a profile for this is shown in Table 4 below.

Table 4: TP108 Normalised 24 hour Temporal Rainfall Profile

Time [hrs:min]	Time Interval [min]	TP-108 Normalised Rainfall Intensity [I/I24]	
		Existing Condition	Future Climate Change*
0:00 –	360	0.34	0.33
6:00 –	180	0.74	0.73
9:00 –	60	0.96	0.95
10:00 –	60	1.4	1.40
11:00 –	30	2.2	2.20
11:30 –	10	3.8	3.82
11:40 –	10	4.8	4.86
11:50 –	10	8.7	8.86
12:00 –	10	16.2	16.65
12:10 –	10	5.9	5.95
12:20 –	10	4.2	4.24
12:30 –	30	2.9	2.92
13:00 –	60	1.7	1.70
14:00 –	60	1.2	1.19
15:00 –	180	0.75	0.75
18:00 – 24:00	360	0.4	0.39

**Assuming 2.1°c increase in temperature as per Auckland Council Code of Practice.*

3.3.2 Hydrological model extents and Sub-Catchment Delineation

The hydrological models are linked by having sub-catchments draining directly to loading nodes.

The exception to the above is the Highgate catchment in which a time series inflow is connected to a loading node, this user time series inflow is based on the outflows from the Highgate stormwater pond.

Sub-catchments have been delineated by taking into consideration overland flow paths from preliminary rain on grid stormwater models, topography and obstructions such as roads.

The sub-catchment areas for the ED and MPD scenarios are shown in Figure 1 and the Argent Lane SHA scenario is shown in Figure 2 of Appendix D – Catchment Plans. Note that the catchment delineation shown in Figures 1 and 2 are the same as even with the re-contouring of the landform for the Argent Lane SHA, the catchment loadings are the same.

A summary of the hydrological sub-catchments is shown in Table 5.

Table 5: Hydrological Sub-Catchments

Hydrological Model Components	ED & MPD	Post Development (Argent Lane SHA)
Number of sub-catchments	79	79
Range of sub-catchment size [ha]	2ha – 714ha	2ha – 714ha

3.3.3 Impervious Coverages

3.3.3.1 Existing Coverage

The existing catchment comprises mainly of rural residential, with the exception of the residential development and Millwater and some commercial and residential at Silverdale, both are located downstream of the SHA, runoff from the Highgate development which is upstream of the SHA is limited through an attenuating stormwater pond.

An impervious percentage of 5% has been adopted for the existing catchment, 65% for the Millwater development area and varying coverage of between 15% – 55 % for the Weiti sub-catchments based on aerial photography.

A copy of this impervious coverage assessment can be found in Appendix E – Modelling Inputs.

3.3.3.2 Proposed Coverage

The impervious coverages applied for the MPD is 65% coverage for areas within the RUB zoned future urban. The impervious coverage applied for catchments outside the RUB varies depending on the underlying zoning.

The 65% coverage for areas zoned future is based on the zoning plan of the Argent Lane SHA, a copy of the zoning plan and a breakdown of the impervious coverages can be found in Appendix E – Argent Lane SHA Zoning Plan. A summary of the applicable underlying zones and MPD impervious coverages are summarised in Table 6, further details on coverages applied to the modelled sub catchments can be found in Appendix F – Modelling Inputs.

Table 6: MPD Impervious Coverage Summary

Zone Type	IMP %
Millwater (Single House)	65
Single House	60
Large Lot	10
Future Urban	65*
Mixed Rural	10
Rural Production	10
Countryside Living	10
Heavy Industry	80
Light Industry	80
General Business	80
Town Centre	100
Public Open Space (Conservation/ Community/ Information Recreation)	Lesser of 10% or 5000 m2

**Future urban coverage based on Argent Lane SHA zoning plan*

3.3.4 Hydrological Soil Group and Curve Number

The curve number has been determined using the SCS Hydrology Method as set out in TP108. The soil group has been determined based on a geotechnical assessment undertaken by Tonkin & Taylor.

The catchment has been modelled as hydrological soil group C catchment, this has been interpreted based on the geotechnical assessments undertaken for the Argent Lane SHA.

For the ED model, a Curve Number (CN) of 74 was adopted for pervious surfaces due to the land cover being predominantly pasture for grazing and in 'good' hydrological condition. A CN of 74 (urban lawns) was adopted for the pervious coverage in the MPD and post-development scenarios. The impervious areas within the model (all scenarios) have a CN of 98.

A hydrological calibration was undertaken to confirm the validate appropriate curve number, this is discussed further in Section 5 of this report.

3.3.5 Initial Abstraction

Initial abstraction accounts for losses that occur before runoff begins as a result of depression storage, interception by vegetation, evaporation and infiltration. The stormwater modelling has been undertaken using the initial abstraction depths of 5mm for pervious surfaces and 1mm

(1mm is due to a limitation in XP Storm that doesn't allow 0 values) for impervious, as stated in TP108.

3.3.6 Channelization Factors

A channelization factor of 0.6 was used for impervious sub-catchments areas, and 1.0 for pervious ones.

3.3.7 Areal Reduction Factors

There are no areal reduction factors applied in the model.

3.3.8 Time of Concentrations

The time of concentration was determined based on TP108 methodology, where the longest flow path for each sub-catchment was determined from LiDAR and an overland flowpath assessment. Catchment length and slope were calculated based on identified longest flow path. The time for concentration for each sub-catchment was calculated based on catchment length, slope, curve number and channelization factor. A channelization factor of 0.6 was used for impervious sub-catchments, and 1.0 for pervious ones.

3.3.9 TP108 Validation

A TP108 assessment of peak flows for all sub catchments was carried out to review the outputs from the hydrological model. A comparison of the XP Storm modelled peak flows and the TP108 peak flows are provided in Appendix F – TP108 Runoff Validation. The TP108 validation assessment shows that the sum of the peak flows from the TP108 graphical method is 601.236m3/s whilst the sum of peak flows from XP Storm is 606.492m3/s. This results in an overall variance of 0.87%.

Overall the assessment shows that the hydrological model is in line with the TP108 methodology and the variances lie within acceptable tolerances. Note that this process should not be considered a model validation, which is discussed in Section 5.

3.4 HYDRAULIC MODEL

A 1D/2D hydraulic model was developed using XP Solutions software. The XP Storm Flood software dynamically couples the 1D and 2D elements so that flows can pass from one another.

It is important to note that there is no existing public stormwater network within the Argent Lane SHA, the Hydraulic model therefore comprises open channels, culverts (surveyed) and bridges.

3.4.1 Manning's Roughness Coefficients

The Manning's coefficients ("n" values) adopted based on engineering judgement from site visits of the Argent Lane SHA area and are as follows (DEFRA, 2004):

- 0.06 for main stream channels [Based on unit roughness for light brush & trees].
- +0.01-0.02 added to above stream channel values for irregular sections, with pools, meander and riffles, etc.
- 0.08 for overbank, floodway, floodplain and vegetated areas.
- 0.014 for concrete pipes.
- 0.017 for corrugated metal

3.4.2 Culvert losses

Culverts have been modelled with the following losses:

- Entrance loss – 0.50
- Exit loss - 1.0

3.4.3 Modelled Bridges

A summary of the hydraulic parameters of the modelled bridges is covered in section 3.2.4.2 of this report.

3.5 BOUNDARY CONDITIONS

3.5.1 Rainfall

The 24 hour rainfall depths for the 2, 10 and 100 year ARI design storms were obtained from TP108's rainfall design isohyets graphs, based on the centroid of the catchment. To incorporate climate change to 2090, the rainfall depth was then increased by respective percentages based on Chapter 4 of Auckland Council Code of Practice for Land Development and Subdivision. The rainfall data is summarised in Table 7 – Rainfall Data.

Table 7: Rainfall Data (24 hour)

Event	TP108 Rainfall Depth (mm)	Percentage Increase in 24 hour design rainfall depth due to climate change	Rainfall Depth + Allowance for Climate Change (mm)
2 Year ARI (50% AEP)	88mm	9.0%	95.9mm
5 Year ARI (20% AEP)	125mm	11.3%	139.1mm
10 Year ARI (10% AEP)	145mm	13.2%	164.1mm
20 Year ARI (5% AEP)	170mm	15.1%	196mm
50 Year ARI (2% AEP)	200mm	16.8%	234mm
100 Year ARI (1% AEP)	225mm	16.8%	262.8mm

(Based on MfE report on climate change, 2008 considering 2.1^{o} C increase in temperature by 2090) and in Accordance with Auckland Council Stormwater Code of Practice.

3.5.2 Downstream Boundary Conditions

The site has two ultimate discharge points, the Orewa River and the Weiti Stream. In agreement with Auckland Council it was determined that an appropriate boundary condition would be the application of Mean High Water Springs (MHWS) (1.258m RL) + an allowance for sea level rise (0.50m).

The source of the MHWS was by way of the LINZ secondary port tables, the Weiti outlet is the second closest port table to Millwater, Tiritiri Matangi is the next closest and provides a good check.

Tiritiri Matangi Island is a secondary port and has a MHWS of 1.258m RL, Weiti River Entrance is a secondary port and has a MHWS of 1.258m RL also.

The tide charts are in “Chart Datum” so these have been converted to “Auckland Vertical Datum 1946” using the Primary Auckland port datum offsets. A copy of the LINZ secondary port tables can be found in Appendix G – LINZ secondary port tables

The boundary conditions applied for the Orewa and Weiti outlets for the modelled scenarios are summarised as follows:

- Existing Rainfall – 1.258m RL
- Future Rainfall – 1.758m RL

4 MODELLING LIMITATIONS & ASSUMPTIONS

The flood modelling undertaken represents the flood risk within the modelled extent and are subject to assumptions and limitations outlined below:

- The design storms are in accordance with the former Auckland Regional Councils (ARC) Technical Publication 108 (TP108). The TP108 model has a reported 90% confidence of flow results being within ± 25% of the system being modelled (ARC, 1999).
- The runoff flows calculated by the hydrological model are loaded in the hydraulic model at specified nodes inside the two dimensional model extents (structured mesh). Inside the two dimensional model extents, water can flow in all directions from the loading node. The extents of the flow paths may vary according to the location of the loading node, the elevation of the two dimensional grid cells (from LiDAR data) and other model assumptions. The location of the loading determines the origin of the overland flow path.
- No sedimentation or blockage has been allowed for in any watercourses or culverts. i.e. it is assumed that all culverts and watercourses are capable of performing at full capacity.
- The potential for change in asset condition over time is not represented.
- This model has been prepared to provide guidance on flood levels and depths within the modelled catchment area for the modelled scenario. The modelling process relies on a range of assumptions and simplifications and is subject to errors and inaccuracies. The compounding effects of the uncertainties in the TP108 rainfall model (ARC, 1999), the uncertainties in the contour model and the uncertainties in hydraulic parameters such as roughness could result in the water level varying from the mapped levels.
- The stormwater model for this catchment has been prepared using LiDAR topographical data supplied by Auckland Council. The LiDAR data is rural spec stated to have an accuracy of about ± 0.50m with a 68% confidence interval. This relates to the spheroid height; additional error is introduced when the geodic height model is



applied. As a result of the water level variability the lateral extent of flood extent may vary significantly from that shown on the plans. This can have a compounding effect with other uncertainties such as the TP108 rainfall model and other causes for uncertainty.

5 MODEL VALIDATION & CALIBRATION

The Auckland Council Stormwater Modelling Specifications recommends flood models to be validated to at least three storm events based on available flow/level monitoring data and against available historical flood incidents information.

There is no long term flow gauge data at any locations directly downstream of the Argent Lane SHA. There is however a flow gauge located on Orewa River at Kowhai Ave, however this is upstream of the confluence point at which a majority of the Future Urban land and the Argent Lane SHA discharge to.

Due to the location of the flow gauge there is currently no reliable way to calibrate or validate the stormwater flood model (with respect to the Argent Lane SHA) at present. However, the flow gauge information can be used to validate the hydrological model with regards to the suitability of the curve numbers being applied.

A hydrological calibration of Kowhai Avenue Bridge Flow Gauge was undertaken, the calibration highlighted uncertainty relating to the catchment rainfall runoff response. It was agreed with the DPO and Auckland Council that a CN of 74 would be used until the rating curve is looked into to improve the hydrological calibration.

A copy of the model calibration assessment along with Auckland Council's remarks can be found in Appendix I – Hydrological Calibration.

6 MODEL SCENARIOS & SIMULATIONS

Through consultation with the DPO, it was decided that the design events considered would be the 2, 10 and 100 year ARI events. These events would be modelled for the proposed ED, MPD and Argent Lane SHA scenarios. The modelling undertaken is based on unmitigated scenarios and therefore does not consider stormwater mitigation devices such as raingardens or rain tanks.

It is however important to note that the Wainui East Future Urban Zone is within the SMAF 1 overlay and therefore will need to meet the SMAF 1 hydrology mitigation requirements for retention & detention for new impervious areas. The volume required for offset mitigation of 2 year ARI event is equivalent to the retention & detention depth (24mm/m^2 impervious), therefore there would be no increase in flood effects for the 2 year ARI event. Table 8 shows the simulation matrix for the unmitigated ED, MPD and Argent Lane SHA scenarios. There are 36 scenarios modelled in total.

Table 8: Simulation Matrix

Scenario	Landuse	Landform	Hydraulic Structure	Rainfall
ED & MPD Scenarios				
1	ED	Existing	Existing	Existing 2 year
2	ED	Existing	Existing	Existing 10 year
3	ED	Existing	Existing	Existing 100 year
4	ED	Existing	Existing	Future 2 year
5	ED	Existing	Existing	Future 10 year
6	ED	Existing	Existing	Future 100 year
7	MPD	Existing	Existing	Existing 2 year
8	MPD	Existing	Existing	Existing 10 year
9	MPD	Existing	Existing	Existing 100 year
10	MPD	Existing	Existing	Future 2 year
11	MPD	Existing	Existing	Future 10 year
12	MPD	Existing	Existing	Future 100 year
MPD & Post Development Scenarios				
13	Argent Lane SHA	Future	Existing & Future (1)	Existing 2 year
14	Argent Lane SHA	Future	Existing & Future (1)	Existing 10 year
15	Argent Lane SHA	Future	Existing & Future (1)	Existing 100 year
16	Argent Lane SHA	Future	Existing & Future (1)	Future 2 year
17	Argent Lane SHA	Future	Existing & Future (1)	Future 5 year
18	Argent Lane SHA	Future	Existing & Future (1)	Future 10 year
19	Argent Lane SHA	Future	Existing & Future (1)	Future 100 year
20	MPD	Future	Existing & Future (1)	Existing 2 year
21	MPD	Future	Existing & Future (1)	Existing 10 year
22	MPD	Future	Existing & Future (1)	Existing 100 year
23	MPD	Future	Existing & Future (1)	Future 2 year
24	MPD	Future	Existing & Future (1)	Future 10 year
25	MPD	Future	Existing & Future (1)	Future 100 year
26	MPD	Future	Future - Argent Lane Culverts Open	Future 2 year
27	MPD	Future	Future - Argent Lane Culverts Open	Future 10 year
28	MPD	Future	Future - Argent Lane Culverts Open	Future 100 year
29	MPD	Future	Future - Argent Lane Culverts Open	Existing 2 year

30	MPD	Future	Future - Argent Lane Culverts Open	Existing 10 year
31	MPD	Future	Future - Argent Lane Culverts Open	Existing 100 year
Additional Scenarios				
32	Argent Lane SHA	Existing	Existing & Future (1)	Existing 20 year
33	Argent Lane SHA	Future	Existing & Future (1)	Future 20 year
34	ED	Existing	Existing	Existing 50 year
35	ED	Future	Existing	Future 50 year
36	ED	Existing	Existing	Existing 20 year

(1) Existing hydraulic structures outside of Argent Lane SHA have been kept whilst areas within the Argent Lane SHA has been modelled with future structures (i.e. culverts removed).

(2) Future Rainfall expected year 2100

7 FLOOD MODEL RESULTS

Results from the XP Storm model have been extracted and mapped for the 10 and 100 year ARI Events. Results for the 2 year ARI event have not been mapped as this event will be mitigated through the implementation of the SMAF 1 hydrology mitigation requirements for retention and detention.

A total of four sets of flood maps have been prepared, the scenarios modelled in each set are summarised in Table 9 – Flood Map Scenarios, a copy of the flood maps can be found in Appendix J – Flood Maps. A complete set of the XP Storm Model Outputs for each of the modelled scenarios shown in Table 9 can be found in Appendix K – XP Storm Model Outputs, plans outlining the modelled catchment, link and node locations to supplement the XP Storm outputs can be found in Appendix D – Catchment & XP Storm Model Plans.

Table 9: Flood Map Scenarios

Set 1	**10yr Existing Rainfall**
Scenario 2	ED
Scenario 30	MPD
Scenario 14	Post Development – Argent Lane SHA
Set 2	**10yr Future Rainfall**
Scenario 5	ED
Scenario 27	MPD
Scenario 18	Post Development – Argent Lane SHA
Set 3	**100yr Existing Rainfall**
Scenario 3	ED
Scenario 31	MPD
Scenario 15	Post Development – Argent Lane SHA

Set 4	100yr Future Rainfall
Scenario 6	ED
Scenario 28	MPD
Scenario 19	Post Development – Argent Lane SHA

7.1 FLOODING ISSUES

Within the Wainui East Future Urban Zone, flooding issues appear to be confined upstream of the Wainui Road Bridge crossing above Waterloo Creek. Results have been tabulated for the following locations.

- Link 178 – A downstream Link for the Orewa River
- Kowhai Bridge
- Wainui Bridge
- Link 8 – Confluence point for upstream of the Argent Lane SHA
- Weiti Culvert – Upstream levels for Weiti Culvert (modelled as NZTA_Culv)
- Node 195 – A downstream link for the Weiti Stream

Figure 6 shows the location of these areas in context with the XP Storm modelled Links and Nodes. Results for the 10 year ARI event (existing and future rainfall scenarios) are summarised for the ED, MPD and Argent Lane SHA scenarios in Tables 10 - 13.

A set of flood maps have been prepared for the 10 and 100 year ARI events (future and existing) for the ED, MPD and Argent Lane SHA scenarios. These flood maps show the flood extents for the scenarios modelled and can be found in Appendix J - Flood Maps.

7.1.1 Safety Criteria

The key safety criteria for vehicles crossing a floodway is the product of water velocity and depth of flow. The Austroads 'Safety Provisions for Floodways Over Roads' document was used to determine whether the depth and velocity at which flows overtop roadways, bridges or crossings meet the safety criteria set out in the document. The safety criteria can be seen in Figure 7.

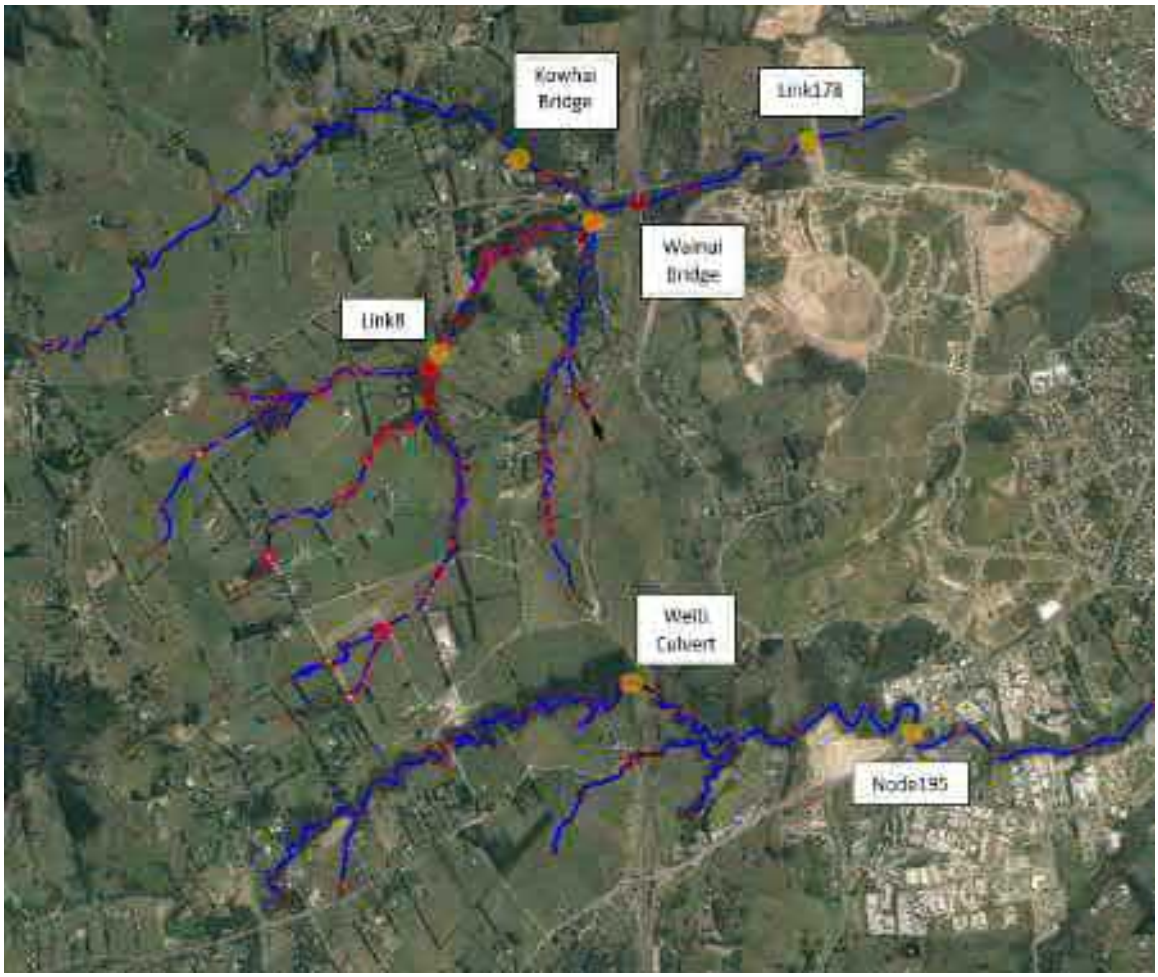


Figure 6: Result Locations

Table 3.2: The proposed draft *interim criteria* for stationary vehicle stability

Class of vehicle	Length (m)	Kerb weight (kg)	Ground clearance (m)	Limiting still water depth with zero velocity	Limiting high velocity flow depth (3 m/sec)	limiting velocity (m/sec) at low depth	Equation of stability
Small passenger	< 4.3	< 1250	< 0.12	0.3	0.1	3.0	DxV < 0.3
Large passenger	> 4.3	> 1250	> 0.12	0.4	0.15	3	DxV < 0.45
Large 4WD	> 4.5	> 2000	> 0.22	0.5	0.2	3	DxV < 0.6

Source: Shand et al. (2011)

Figure 7: Austroads Floodway's Safety Criteria

Table 10: Summary 10 year ARI event (Existing Rainfall)

Location	Event	ED (S2)		MPD (S30)		Argent Lane SHA (S14)	
		Total Peak Flow [m3/s]	Water Elevation [m RL]	Total Peak Flow [m3/s]	Water Elevation [m RL]	Total Peak Flow [m3/s]	Water Elevation [m RL]
Link 178	10yr Existing	90.40	1.73	101.48	1.95	95.41	1.71
Kowhai Bridge	10yr Existing	64.53	4.27	65.90	4.36	64.53	4.27
Wainui Bridge	10yr Existing	24.03	5.06	35.10	5.54	28.55	5.28
Link 8	10yr Existing	24.03	5.17	36.30	5.68	28.92	5.41
Weiti Culvert (NZTA_Culv)	10yr Existing	43.37	9.21	44.81	9.30	43.48	9.21
Link189	10yr Existing	72.02	4.12	79.26	4.29	72.24	4.12

Table 11: Summary 10 year ARI event (Future Rainfall)

Location	Event	ED (S5)		MPD (S27)		Argent Lane SHA (S18)	
		Total Peak Flow [m3/s]	Water Elevation [m RL]	Total Peak Flow [m3/s]	Water Elevation [m RL]	Total Peak Flow [m3/s]	Water Elevation [m RL]
Link 178	10yr Future	111.50	2.06	125.04	2.23	116.52	2.10
Kowhai Bridge	10yr Future	79.05	4.53	80.38	4.63	79.05	4.57
Wainui Bridge	10yr Future	30.20	5.40	43.83	5.75	35.41	5.56
Link 8	10yr Future	29.99	5.52	42.56	5.93	34.57	5.70
Weiti Culvert (NZTA_Culv)	10yr Future	52.20	9.77	53.78	9.86	52.33	9.78
Link189	10yr Future	88.67	4.45	96.01	4.59	89.06	4.45

Table 12: Summary 100 year ARI event (Existing Rainfall)

Location	Event	ED (S3)		MPD (S31)		Argent Lane SHA (S15)	
		Total Peak Flow [m3/s]	Water Elevation [m RL]	Total Peak Flow [m3/s]	Water Elevation [m RL]	Total Peak Flow [m3/s]	Water Elevation [m RL]
Link 178	100yr Existing	179.51	2.26	190.74	2.51	184.50	2.22
Kowhai Bridge	100yr Existing	122.23	5.19	122.39	5.26	122.33	5.21
Wainui Bridge	100yr Existing	50.74	5.96	60.76	6.16	55.16	6.04
Link 8	100yr Existing	45.51	6.19	61.94	6.48	50.10	6.29
Weiti Culvert (NZTA_Culv)	100yr Existing	73.50	11.72	74.35	11.86	73.57	11.73
Link189	100yr Existing	134.08	5.18	143.07	5.33	135.34	5.18

Table 13: Summary 100 year ARI event (Future Rainfall)

Location	Event	ED (S6)		MPD (S28)		Argent Lane SHA (S19)	
		Total Peak Flow [m3/s]	Water Elevation [m RL]	Total Peak Flow [m3/s]	Water Elevation [m RL]	Total Peak Flow [m3/s]	Water Elevation [m RL]
Link 178	100yr Future	226.13	2.57	235.94	2.79	230.86	2.61
Kowhai Bridge	100yr Future	150.84	5.59	151.00	5.64	150.92	5.62
Wainui Bridge	100yr Future	59.96	6.17	71.10	6.37	64.84	6.25
Link 8	100yr Future	57.55	6.48	79.51	6.80	63.52	6.61
Weiti Culvert (NZTA_Culv)	100yr Future	86.26	13.02	87.15	13.12	86.33	13.03
Link189	100yr Future	159.91	5.56	167.68	5.69	159.99	5.57

The tables above highlight an effect on the Wainui Road Bridge crossing above Waterloo Creek, this is discussed further in section 7.1.1 along with Weiti Culvert in section 7.1.2.

The effect on the Wainui road crossings is discussed further in section 7.1.3.

7.1.2 Wainui Road Bridge (Waterloo Creek Crossing)

The Wainui Road bridge has a low chord elevation of 4.79m RL (underside of bridge) with the high chord elevation (road level) surveyed at an elevation of 5.44m RL.

The flood modelling predicts the following:

- Stormwater flows will exceed the low chord elevation for the ED scenario in the 10 year ARI event (existing rainfall) (5.01m RL),
- The MPD scenario will result in 100mm overtopping of the bridge in the 10 year ARI event (existing rainfall) (5.54m RL).
- The Argent Lane SHA scenario results in an increase in flood level to 5.28m RL in the 10 yea ARI event (existing rainfall). While this is a higher flood level than in the ED scenario, it does not result in the bridge overtopping.
- In the 10 year ARI event (future rainfall) ED scenario, the flood level reaches an elevation of 5.40m RL. This is 40mm below the bridge deck level.
    - The bridge will overtop by 310mm in the MPD scenario and by 120mm in the Argent Lane SHA scenario.
    - The overtopping depth in the Argent Lane SHA scenario of 120mm is considered trafficable for passenger vehicles under Austroads “Safety Provisions for Floodways Over Roads” document (DxV=0.072<0.3 therefore OK).

- The XP Storm model predicts that the Bridge will not overtop in the 20 year ARI event (existing rainfall) under the ED scenario, whilst overtopping would occur in the Argent Lane SHA (existing rainfall) scenario.
- The Bridge is predicted to overtop in the ED scenario during the 50 year ARI event (existing rainfall).
- The XP Storm model predicts that the Wainui Road Bridge will overtop in the 100 year ARI event for all scenarios (ED, MPD and Argent Lane SHA) for both existing and future rainfall.
- The 5 year ARI event was simulated for the Argent Lane SHA scenario to determine whether the 5 year flows are passable. The model doesn't predict overtopping of the bridge in the future rainfall 5 year ARI event.

The flood results including the time of inundation for the Wainui Road Bridge has been summarised in Table 15 – Wainui Bridge Flood Results.

Table 14: Wainui Bridge Flood Results

Scenario	Landuse	Rainfall	U/S Level	Stream Flow [m^3/s]	Bridge Flow [m^3/s]	Flow Total [m^3/s]	Inundation Time	Inundation/ Overtopping
2	ED	Existing 10 year	5.06	24.03	0.00	24.03		No
3	ED	Existing 100 year	5.96	39.16	11.58	50.74	**1hr 37mins**	Yes
5	ED	Future 10 year	5.40	30.20	0.00	30.20		No
6	ED	Future 100 year	6.17	40.64	19.33	59.96	**2hrs**	Yes
14	Argent Lane SHA	Existing 10 year	5.28	28.55	0.00	28.55		No
15	Argent Lane SHA	Existing 100 year	6.04	40.94	14.22	55.16	**1hr 44mins**	Yes
17	Argent Lane SHA	Future 5 year	5.22	27.37	0.00	27.37		No
18	Argent Lane SHA	Future 10 year	5.56	34.08	1.33	35.41	**46mins**	Yes
19	Argent Lane SHA	Future 100 year	6.25	42.25	22.58	64.84	**2hrs 12mins**	Yes
27	MPD	Future 10 year	5.75	38.46	5.37	43.83	**1hr 4mins**	Yes
28	MPD	Future 100 year	6.37	43.41	27.70	71.10	**2hrs 10mins**	Yes
30	MPD	Existing 10 year	5.54	34.22	0.89	35.10	**34mins**	Yes
31	MPD	Existing 100 year	6.16	41.94	18.82	60.76	**1hr 49mins**	Yes
32	Argent Lane SHA	Existing 20 year	5.59	34.67	1.77	36.44	**50mins**	Yes
33	Argent Lane SHA	Future 20 year	5.59	39.34	8.15	47.48	**1hr 28mins**	Yes
34	ED	Existing 50 year	5.76	37.00	5.49	42.49	**1hr 11mins**	Yes
35	ED	Future 50 year	6.01	39.34	13.36	52.69	**1hr 44mins**	Yes
36	ED	Existing 20 year	5.43	30.8144	0	30.81		No

The results from Table 14 highlight the following:

- There is no inundation / overtopping of the bridge in the 10 year ARI (existing rainfall) ED or Argent Lane SHA scenarios.

- The time of inundation for the ED scenario in the 100 year ARI event (existing rainfall) is 1hr and 37 minutes and 2 hours under the future rainfall scenario.
- Time of inundation increased by 7 minutes for the Argent Lane SHA in the 100 year ARI event (existing rainfall) and 12 minutes with future rainfall. The MPD scenario increases the inundation time by an additional 5 and 8 minutes respectively.
    - The increase in inundation time of 7 and 12 minutes for the Argent Lane SHA in the 100 year ARI events is considered minor when put into perspective with the total time of inundation under the existing land use (ED) scenarios (1 hour and 37 minutes & 2 hours).
- The Wainui Road Bridge overtops in the 100 year event (existing and future rainfall) for all modelled scenarios ED, MPD and Argent Lane SHA.
- The Wainui Road Bridge is deficient when the effects of climate change are taken into consideration.
- Overtopping of the bridge in the Argent Lane SHA scenario for the 10 year future rainfall scenario will result in an flood depth of 120mm over the carriageway is considered trafficable for passenger vehicles under Austroads "Safety Provisions for Floodways Over Roads" document (DxV=0.072 < 0.3 therefore OK).

Overall the Wainui Road Bridge acts as a bottleneck for the upstream catchment, as the bridge sees a decrease in effective cross sectional area. This acts as a throttle for flows, resulting in an increase in flood levels and flood extents upstream.

It is expected that if flows were able to pass freely at the Wainui Road Bridge, there would be a decrease in the upstream flood levels and corresponding flood extents.

7.1.3 Weiti Culvert

The southern portion of the Wainui East Future Urban Area discharges to the Weiti Stream. The flows from the stream pass through a 4.50m diameter culvert under the Motorway and discharges ultimately into Karepiro Bay.

The culvert sit wells below the motorway. The stream topography upstream of the culvert is well incised. The headwater level at this culvert is 9.69m RL, with the motorway at approximately 16.5m RL.

In larger storm events, the flood elevation at this culvert remains well below the motorway and its surrounding banks (13.12m RL in the 100 year MPD + CC scenario) with no notable downstream effects as shown in the prepared flood maps (Appendix J).

7.1.4 Wainui Road Crossings

The stream tributary adjacent to Wainui Road has two crossings that enable access to the adjacent lot owners. The crossings have been surveyed and included in the flood model. The location of these crossings with reference to the XP Storm modelled links and nodes is shown in Figure 8 – Wainui Road Crossings.

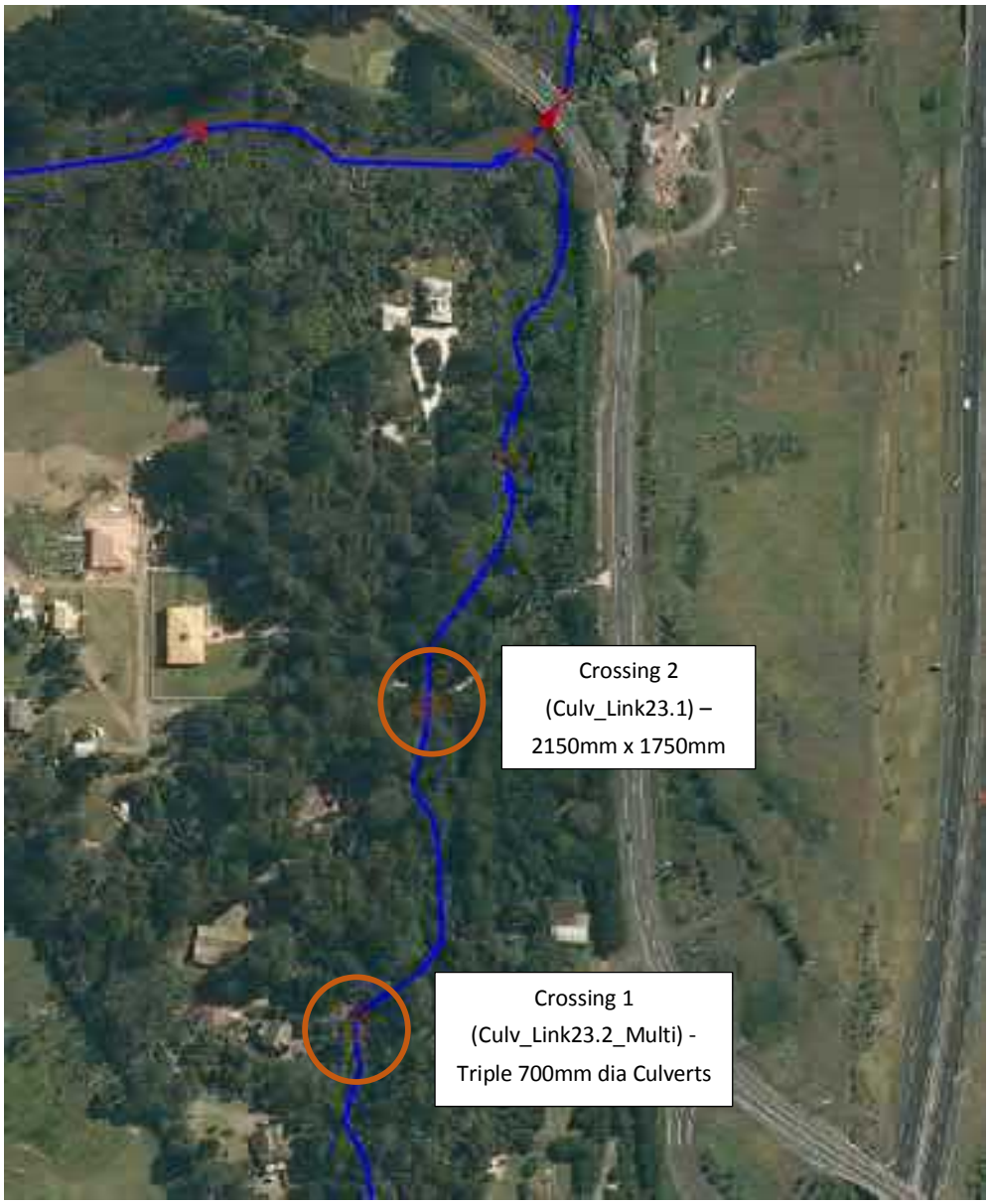


Figure 8: Wainui Road Crossings

Crossing 1 consists of triple 700mm diameter culverts whilst crossing 2 has been modelled as an ellipse culvert with a 2150mm width and a 1750mm height. The culvert at crossing 2 was

modelled as an ellipse as the top of the culvert is deformed due to the existing vehicle crossing. Photos of the culverts at crossings 1 & 2 are shown in Figures 9 & 10.



Figure 9: Wainui Road Crossing 1



Figure 10: Wainui Road Crossing 2

The flood model predicts that crossing 1 is deficient, it is important to note that land for crossing 1 is owned by the applicant therefore the effects on this culvert are not discussed in detail.

The flood model results for the Wainui Road Crossing 2 are presented in Table 15.

Table 15: Wainui Road Crossing 2

Scenario	Landuse	Rainfall	Crossing 2 (Culv_Link23.1) Overtopping
2	ED	Existing 10 year	No
3	ED	Existing 100 year	Yes
5	ED	Future 10 year	No
6	ED	Future 100 year	Yes
14	Argent Lane SHA	Existing 10 year	No
15	Argent Lane SHA	Existing 100 year	Yes
17	Argent Lane SHA	Future 5 year	No
18	Argent Lane SHA	Future 10 year	Yes
19	Argent Lane SHA	Future 100 year	Yes
27	MPD	Future 10 year	Yes
28	MPD	Future 100 year	Yes
30	MPD	Existing 10 year	No
31	MPD	Existing 100 year	Yes
32	Argent Lane SHA	Existing 20 year	Yes
33	Argent Lane SHA	Future 20 year	Yes
34	ED	Existing 50 year	Yes
35	ED	Future 50 year	Yes
36	ED	Existing 20 year	No

The flood results from Table 15 are summarised as follows:

- The crossing in the existing ED scenario will overtop in 50 and 100 year ARI events (existing rainfall) and 20, 50 and 100 year ARI events under future rainfall conditions.
- The culvert overtops in the Argent Lane SHA scenario with existing rainfall for the 20 year ARI event.
    - The overtopping depth under this scenario is 66mm which is considered trafficable for passenger vehicles under Austroads 'Safety Provisions for Floodways Over Roads' document (DxV < 0.3).
- The Argent Lane SHA scenario under future rainfall conditions would result in overtopping of 38mm during the 10 year ARI event.

- The overtopping depth under this scenario is 38mm which is considered trafficable for passenger vehicles under Austroads (DxV < 0.3).

Overall the increase in the upstream flood extents in this area can be considered less than minor. The existing culvert acts as a restriction and it is expected that an upgrade or additional culvert would enable flows to pass forward without causing overtopping.

As this area is zoned future urban it is expected that this culvert would be upgraded prior to the effects of climate change taking place.

8 CONCLUSION

This report provides the methodology and outcomes of the Wainui East Future Urban Zone model build.

The flood modelling has been undertaken as part of an effects assessment and is based on unmitigated scenarios. It was determined that SMAF 1 requirements proposed in the Stormwater Management Plan would mitigate the effects of the 2 year ARI event. Flood maps have been prepared to detail the flood extents for the various ED, MPD and Argent Lane SHA scenarios in the 10 and 100 year ARI storm events.

The flooding effects observed within the Wainui East Future Urban Zone appear to be confined to upstream of the Wainui Road bridge crossing above Waterloo Creek. There are no notable flood effects observed downstream of the Wainui Road bridge as shown in the prepared flood maps.

These effects are summarised as follows:

- There is no inundation / overtopping of the Wainui Bridge crossing over Waterloo Creek in the 10 year ARI (existing rainfall) ED or Argent Lane SHA scenarios.
- The time of inundation for the ED scenario in the 100 year ARI event (existing rainfall) is 1hr and 37 minutes and 2 hours under the future rainfall scenario.
- Time of inundation increased by 7 minutes for the Argent Lane SHA in the 100 year ARI event (existing rainfall) and 12 minutes with future rainfall. The MPD scenario increases the inundation time by an additional 5 and 8 minutes respectively.
    - The increase in inundation time of 7 and 12 minutes for the Argent Lane SHA in the 100 year ARI events is considered minor when put into perspective with the total time of inundation under the existing land use (ED) scenarios (1 hour and 37 minutes & 2 hours).
- The Wainui Road Bridge overtops in the 100 year event (existing and future rainfall) for all modelled scenarios ED, MPD and Argent Lane SHA.
- The Wainui Road Bridge is deficient when the effects of climate change are taken into consideration.
- Overtopping of the bridge in the Argent Lane SHA scenario for the 10 year future rainfall scenario will result in an flood depth of 120mm over the carriageway. This is considered trafficable for passenger vehicles, as stated in Austroads “Safety Provisions for Floodways Document” (where DxV < 0.3).

- There are two vehicle crossings at Wainui Road that provides access into existing residential properties.
    - Crossing 1 is deficient however the crossing and the surrounding residential lots are owned by the applicant.
    - The Argent Lane SHA scenario would result in crossing 2 overtopping during the 20 year ARI event (existing rainfall), however the overtopping depth is 66mm which is considered trafficable under Austroads “Safety Provisions for Floodways Document” (where DxV < 0.3).
    - The overtopping of crossing 2 in the 10 year ARI event (future rainfall) Argent Lane SHA scenario results in an overtopping depth of 38mm which is considered trafficable for passenger vehicles under Austroads “Safety Provisions for Floodways Document” (where DxV < 0.3).

The flood effects from the existing rainfall Argent Lane SHA scenario are considered less than minor with the effects limited to a small increase in flood depth on the Wainui Road Bridge crossing over Waterloo Creek.

The flood modelling shows the increase in flood extents do not affect habitable floor levels on existing dwellings. There are no adverse flood effects observed downstream of the Wainui Road bridge, at the Weiti Culvert or other areas upstream of the Argent Lane SHA as shown in the prepared flood maps.

9 LIST OF REFERENCES

Guidelines for Stormwater Runoff Modelling in the Auckland Region – Technical Publication 108 (1999). Auckland Regional Council.

Auckland Unitary Plan stormwater management provisions: technical basis of contaminant and volume management requirements– Technical Report 2013/035 (2013). Auckland Council.

Design Guideline Manual for Stormwater Treatment Devices – Technical Publication 10 (2003). Auckland Regional Council. Chapter 5.

Auckland Code of Practice: For Land Development and Subdivision (Chapter 4 - Stormwater) - October (2013). Auckland Council.

Auckland Council Stormwater Flood Modelling Specifications (2011). Auckland Council.

DRAFT Silverdale West Structure Plan Stormwater Assessment (2008). Riley Consultants Ltd/ Rodney District Council.

Orewa Estuary Hydraulic Modelling (2007). DHI/ Rodney District Council.

Safety Provisions for Floodways Over Roads (2015). Austroads.

APPENDIX A

GEOTECHNICAL REPORT

Tonkin+Taylor

Job No: 30868
27 July 2016

Fulton Hogan Land Development Ltd
C/- Woods
P.O. Box 6752
Wellesley Street
Auckland 1141

Attention: Mr Jamie Whyte

Dear Jamie

Argent Lane Special Housing Area
Geotechnical Overview

1 Introduction

Tonkin & Taylor (T&T) has been engaged by Fulton Hogan Land Development Ltd to prepare a preliminary geotechnical report to accompany the application for a proposed urban development (residential and business) within the area known as Wainui East, in Silverdale, in the Proposed Auckland Unitary Plan. The area of interest for this geotechnical appraisal comprises the Argent Lane Special Housing Area (ALSHA - see attached plans in Appendix A).

This ALSHA area is bounded by SH1 (northern motorway) in the east, Wainui Road to the north, Argent Lane to the west and a tributary to the Weiti River to the south. We have undertaken a preliminary geotechnical assessment of the proposed subdivision in accordance with the following scope of work:

- Engineering geological and geomorphological mapping by an engineering geologist,
- Preliminary geotechnical site investigations across part of the overall site,
- Assessment of geotechnical suitability for development of the site,
- Provide a preliminary geotechnical report to accompany the application.

This preliminary assessment has been undertaken to identify the geology, subsurface conditions and types of geotechnical works which are likely to be required to achieve acceptable slope stability for a successful urban subdivision development. Detailed investigations, analyses and design of the finalised geotechnical works will be covered in separate Geotechnical Investigation Reports.

In a regional context, and with appropriate earthworking provisions, this land area appears to be well suited to a comprehensive development.

2 Site Description

The subject site comprises a number of separate land titles, predominantly covered in pasture, with a number of separate stands of trees and bush.

East-west orientated ridgelines are located along the Wainui Road alignment and immediately north of the Weiti River, as well as a low level ridge running centrally through the site. There is also a single isolated high-point within the northern half of the site. These ridges rise up to between 35m and 55m

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above sea level, but generally have shallow flanks. There are some localised steeper areas of ridge flank that indicate shallow soil creep.

Surrounding these ridgelines and isolated high points, the local topography is typically gently sloping to flat, with numerous areas of swampy ground, or with areas exhibiting evidence of near surface ground water. Farm drains and minor streams cross the site, generally falling towards a central gully system (Waterloo Creek) that runs in a northerly direction, ultimately discharging into the upper reaches of the Orewa Estuary system. There are also several small ponds across the site.

As noted above, ground cover is predominantly in pasture with several isolated bush areas and tree shelter belts. The main gully system is generally covered by trees and/or bush. There are also a number of existing farm dwellings and structures located across the site.

There is limited evidence of historic earthworks having been undertaken across the site, predominantly to form farm tracks or a private airstrip that is located in the centre of the site. In addition, clearing of farm drains appears to have resulted in a number of stockpiles in isolated locations across the site.

There is a large bridge constructed across the Weiti River tributary which we understand was built to accommodate a previously proposed quarry, the proposal for which was later abandoned.

3 Geology

3.1 Geological Conditions

Published geological maps and information[1] indicate the studied area to be underlain by the Northland Allochthon materials. This formation typically comprises brecciated MUDSTONE and SILTSTONE. The materials are pervasively sheared and softened with many slickensided surfaces. The Northland Allochthon is generally encountered at a depth of between 3 and 4m. The geological maps indicate that the subject site is expected to be underlain by more limestone rich deposits and comprise the following:

Mahurangi Limestone – Blue-grey to white, micritic, coccolith foraminiferal, muddy limestone, locally with glauconitic sandstone beds. An outcrop of Mahurangi limestone was observed within the walls of a historic lime pit east of Cemetery Road, as shown on Figure 1.



Figure 1-Highly sheared Mahurangi Limestone outcrop in disused farm lime quarry. East of Cemetery Road.

Mangakahia Complex – Closely fractured to sheared. Light or dark coloured, siliceous and locally calcareous mudstone, with micaceous sandstone, siltstone, green and

[1] New Zealand Geological Survey, *Geological Map of New Zealand 1:50,000 – Sheets Q10 & R10 Helensville and Whangaparaoa*, 1989

brown shale, and some muddy limestone. Commonly occurs as a melange of mixed lithologies, with a sheared matrix. Many small serpentinite bodies within melange units.

Tauranga Group Alluvium – Alluvium/colluvium fan deposits across the lower lying areas of the site. These deposits are likely to include loose/soft sands and silts but may include organic rich deposits such as peat.

3.2 Geological Hazards

Groundwater levels are expected to be near surface across the lower lying parts of the site. Within the ridges, groundwater would typically be expected to be encountered between 2 and 4m depth, generally above the soil/rock interface.

Geotechnical issues arising from the geology include:

- Pervasively sheared and shattered rockmass;
- Low strength and expansive soils within the superficial deposits;
- Stability problems on a range of slopes steeper than 7-8º, especially where the relatively less weathered rockmass is at shallow depth;
- Potential for deep seated instability along slopes dipping at more than 15º;
- Drainage problems in areas dominated by low permeability soils/ high ground water table.
- Settlement of compressible alluvial sediments;
- Potential for liquefaction in the alluvial sediments;
- Karstic features/sinkholes/tomo's within the limestone rock.

3.3 Geomorphology

The majority of the site comprises rolling topography with large areas of predominantly flat land and swamps along the main streams and tributaries. Several of the ridgelines display gentle to moderate slopes along which active soil creep and shallow landslip features were observed (particularly along the ridge adjacent to Cemetery Road).

Instability is considered to be mainly a function of the shallow creep along the soil/rock interface, in combination with the presence of groundwater. Due to the relatively gentle nature of the site, the presence of creep is limited to the steeper areas, particularly along ridge flanks.

Thick deposits of alluvium are expected to be encountered within the low lying areas above the weathered rock mass.

The main geomorphic features are summarised on the geomorphological plan in Appendix A.

4 Preliminary Site Investigations

4.1 General

The preliminary geotechnical site investigations have comprised a total of nine machine drilled boreholes, 38 Cone Penetration Tests (CPTs), 11 hand auger boreholes, 11 falling head percolation tests and laboratory testing of selected soil samples. Investigation locations are shown on the site plan in Appendix A. The following sections summarise the work carried out as part of the preliminary site investigation.

4.1.1 Machine drilled boreholes (BH)

Nine machine drilled boreholes (BH1 to BH9) were carried out between 24 July and 16 September 2015 to depths of between 6.35 m and 16.95 m below ground level (bgl). Standard Penetration Tests (SPT's) were carried out at approximately 1.5m intervals. A total of 47 samples were taken for laboratory testing, the results of which are provided in Appendix C. The borehole drilling, *in situ* testing and sample collection was carried out by DCN Drilling Ltd under the supervision of an Engineering Geologist from T+T.

All recovered core was logged by an Engineering Geologist from T+T and copies of the borehole logs are attached in Appendix B.

Groundwater was encountered in all boreholes at depths of between 0.0 m bgl to 7.17 m bgl. Two standpipe piezometers were installed in each of boreholes BH1 to BH8 to monitor shallow and deep groundwater levels and a single piezometer installed in BH9.

4.1.2 Cone Penetration Tests (CPTs)

Thirty-eight Cone Penetrometer Tests (CPT1 to CPT38) were undertaken using a CPT rig from DCN drilling and advanced to refusal.

The CPT logs are attached in Appendix B.

4.1.3 Percolation Testing

Investigations have included an initial suite of 4 falling head percolation tests, undertaken on 11 March 2016. A further 7 tests were undertaken between 18 May and 23 May 2016. The tests comprised drilling a 100mm diameter hand auger to a minimum depth of 1.5m (or until refusal), followed by the falling head percolation test.

The hand auger logs are included in Appendix B, while the percolation test results are included in Appendix D. Percolation rates ranged from 0.48mm/hr through to 4.32mm/hr.

5 Geological Model

The geological profile of the site is generally consistent with the published information set out in Section 3. The results of the recent geotechnical investigation conducted on this site indicate that the majority of the low level ridgelines are underlain by the Mangakahia Complex (part of the Northland Allochthon). In the central gully system (Waterloo Creek) around BH9 a moderate thickness (of up to 12m depth) Tauranga Group Alluvium was found to overly the Mangakahia Complex. Within the gully to the east (adjacent to the Northern Motorway), alluvium of up to 5m depth was recorded.

The area to the north of the east-west orientated ridgeline on the northern side of the Weiti Stream (BH1 and BH2) was found to be underlain by the Motatau complex (part of the Northland Allochthon), which was in turn underlain by the Mangakahia Complex. The Motatau Complex and Mangakahia are collectively referred to below as the Northland Allochthon mudstones.

In the northern part of the site, in the area to the east of Sidwell Road (BH6 and BH7) the site was found to be underlain by the East Coast Bays Formation (ECBF) with a moderate thickness of Tauranga Group Alluvium overlying the ECBF in the gully around BH6. The hand augers drilled immediately to the south of Wainui Road (HA5 and HA6) also indicate the presence of ECBF soils on this ridgeline.

The results of the investigations indicate that the interface between the Northland Allochthon and ECBF materials lies south of the end of Sidwell Road.

6 Laboratory Testing

Laboratory testing has been carried out to determine the typical parameters for the subsurface materials and to provide information for earthworks construction. Samples were obtained from the machine boreholes during the site investigation for subsequent laboratory testing. The results of the laboratory testing are presented in Appendix C and was as follows:

- 47 moisture content tests
- 4 Atterberg limit tests (on samples from BH6, BH7 and BH9)
- 4 Consolidation tests (on samples from BH6, BH7 and BH9)

7 Development Considerations

7.1 General

A preliminary review of expected slope stability and geological conditions for the development has been undertaken. A number of risk elements, as noted above, are present. Works to remediate these risks are likely to be required to ensure a successful, stable residential development.

7.2 Shear Keys

Shear keys have been used in previous developments within the Northland Allochthon to improve the stability of natural cut and filled slopes. The presence of softened pervasively sheared Northland Allochthon suggests that deeper instability might occur. The potential for instability is more likely along the ridge flanks when cut or surcharged. Shear keys are mainly expected to be necessary along the northern, southern and western slopes, although this will be subject to detailed assessment as scheme plans are developed in more detail. Shear keys need to be locked into good rockmass. Further site investigation and detailed slope stability analyses are required to identify the location and extent of ground improvement measures.

7.3 Undercutting of residual soils and replacement

This option may be applied to increase stability and geotechnical properties of the existing ground where deeper seated instability is not expected to be present. This would consist of undercutting all the weathered soils down to moderately weathered rock mass, benching if required, placement of drainage and placement of reworked materials as engineered fill. The need or otherwise of this option would be dependent on final development forms.

7.4 Gully Filling

As part of the development, earthworks are likely to be undertaken within gully areas to raise the existing topography to a design ground level. This would likely require compaction of materials and subsoil drainage. Materials derived from the cutting of the ridges would likely be used as reworked engineered fill.

7.5 Subsoil Drainage

During the walk-over survey we observed numerous areas of swampy ground and ponding. Sub-soil drainage is expected to be necessary to control water flows in these areas, particularly within the gully systems. The use of sub-soil drainage will also increase the stability of the slopes. Storm water control measures will be required to prevent instability.

7.6 Settlement of Alluvial Soils

Dependent on the depth and extent of the alluvial soils, there is risk of settlement, particularly in areas subject to filling as part of the development. Further site investigations will be required to

better determine the nature and extent of these alluvial soils, as well as settlement analyses to assess the potential magnitude and rate of settlement.

Settlement magnitudes and rates would need to be regularly monitored during and following completion of bulk earthworks operations, and prior to release of the subject areas for further development, to ensure that further settlements are unlikely to detrimentally affect the building developments or services.

If detailed analyses show that long term settlements may present a risk of damage to buildings or services then there are a number of methods of accelerating the settlement prior to development. These include installation of wick drains and/or preloading and surcharging the fill areas. Further commentary on potential "settlement acceleration" options would be provided following completion of detailed analyses.

7.7 Bulk Earthworks

Bulk earthworks across the site is expected to be more favourable than recent developments in the Hibiscus Coast area, particularly those to the east of the motorway, due to the generally gentler slope gradients. Cuts from the ridge lines and surficial soil areas are typically suitable for use as engineered fill, although some conditioning is likely to be required to meet normal earthworks compaction requirements.

7.8 Re-use of limestone derived materials as fill

We recognise that much of the cut material will likely comprise weathered limestone. The limestone materials will deteriorate following excavation. Specific laboratory testing will be required to assess the potential for re-use of the limestone and any conditioning that may be required.

7.9 Infiltration Potentials

The testing suggests that soakage into either the limestone or alluvium is relatively limited and that water is likely to pond above the interface between the soil and the underlying limestone. Soakage into the underlying ECBF soils, present on the northern boundary of the site (HA5 and HA6 in section 4.1.3) appears more favourable but would require additional delineation of this area to better confirm soakage potential as earthworks plans are developed.

Based on the soil types encountered and our experience with similar soils in the Auckland area, the soils of the weathered ECBF are considered to lie within Soil Category 5 (Silty clay loam-moderate to slow drainage) as defined in TP58[2]. In hydrological soil group terminology, these soils are likely to fall within Group C (as defined in TP108[3]).

The soils of the alluvium and sheared limestone are considered to lie within Soil Category 6 (slowly draining non-swelling clay and silty clay-slowly draining). In hydrological soil group terminology, these soils may also fall within Group C, although based on anecdotal evidence the lower lying gully areas may fall into Group D.

While there may be some capacity for soakage within the ECBF soils, and limited capacity within the Northland Allochthon and Alluvial soils, this would need to be subject to additional delineation of areas as well as a comprehensive assessment of potential impacts on slope stability of the finished

[2] The New Zealand Manual of Alternative Wastewater Treatment and Disposal Systems, Volume II Part A – *On-site Wastewater Disposal from Households and Institutions*, ARC Environment Technical Publication No 58, Second Edition, November 1994.
[3] Guidelines for stormwater runoff modelling in the Auckland Region, ARC Technical Publication No. 108, April 1999.

development form. This assessment may result in requiring any rain garden / detention tank features to be lined to mitigate against slope stability implications.

8 Conclusions

According to our findings, and based on the preliminary investigations, we consider the site to be suitable for comprehensive development. The gentle gradients across the majority of the site make it generally more favourable for development than sites recently developed to the east of the motorway.

Development will require earthworks and drainage to provide adequate stability. This is achievable given appropriate design, competent contractors and regular inspection and supervisions of the works.

The following main earthworks may be required:

- In the northern, southern and western areas, shear keys will likely be required to stabilise the shallow landslippage and soil creep observed;
- Stabilising local shallow instability may require stripping and replacement of superficial deposits;
- All fill will need to be appropriately engineered;
- Subsoil drainage will be required to control underground water and prevent future instability of the site;
- Assessment and monitoring of rates and magnitudes of settlement beneath filled areas will be required prior to release of site for future development,
- Infiltration of stormwater flows to ground may be possible across the site, but the appropriateness of this would need to be subject to detailed analysis and assessment once final landforms have been developed.

Further site investigations will be required in order to confirm the underlying geological conditions with particular respect to the proposed development contours. Detailed analysis and design will then be undertaken to determine accurate locations and extents of the various ground improvement works required, in conjunction with development of the final landform.

Based on the information available, and on our experience on neighbouring and nearby sites, we conclude that the subject site can be satisfactorily engineered to achieve a successful urban development.

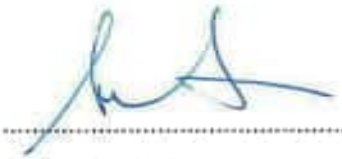
9 Applicability

This report has been prepared for the exclusive use of our client Fulton Hogan Land Development Ltd, with respect to the particular brief given to us and it may not be relied upon in other contexts or for any other purpose, or by any person other than our client, without our prior written agreement.

Tonkin & Taylor Ltd

Environmental and Engineering Consultants

Report prepared by:

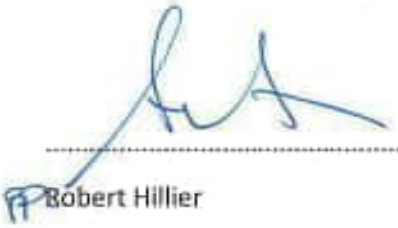


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Andrew Linton

Senior Geotechnical Engineer

Authorised for Tonkin & Taylor Ltd by:



.....

Robert Hillier

Project Director

AJL
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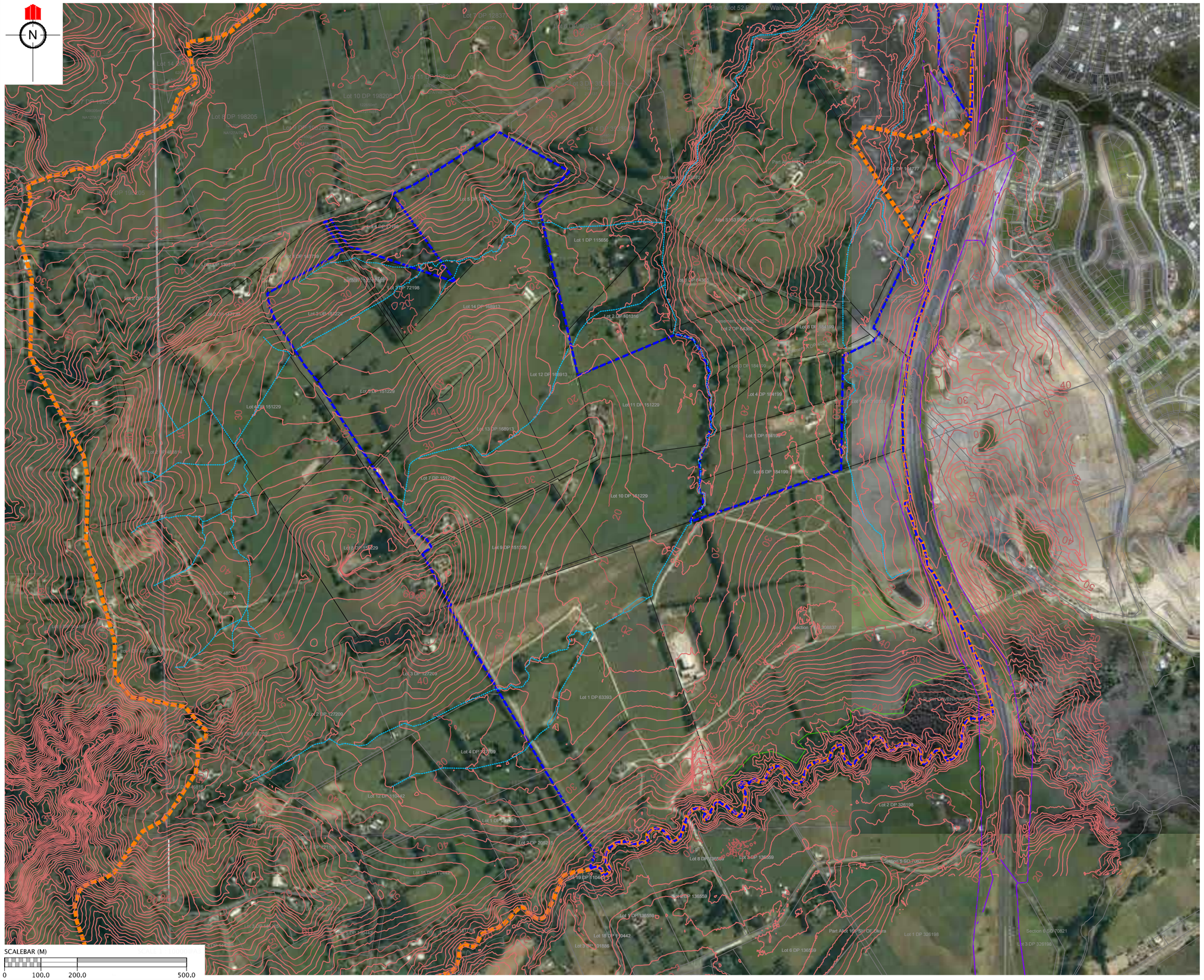
Appendix A: Drawings

WOODS DRAWINGS

- **31720-00-EW-100 Existing Contour Plan**
- **32720-00-EW-101 Indicative Contour Plan**
- **31723-00-EW-110 Indicative Earthworks Extents Plan**

TONKIN + TAYLOR DRAWINGS

- **SHA - Figure 1: Geomorphological Plan**
- **SHA – Figure 2: Site Investigation Plan**



REVISION DETAILS	NAME	DATE
1. ISSUED FOR INFORMATION	JAW	27-06-16

LEGEND:

- QUALIFYING DEVELOPMENT STAGE 1
- SHA BOUNDARY
- RURAL URBAN BOUNDARY
- MOTORWAY DESIGNATION
- MINOR CONTOUR (2m)
- MAJOR CONTOUR (10m)

CLIENT:

Fulton Hogan

WOODS
Engineers. Surveyors. Planners.

ARGENT LANE SPECIAL HOUSING AREA

EXISTING CONTOUR PLAN

AUCKLAND COUNCIL

DESIGNED: JAW	ISSUED FOR INFORMATION
CHECKED:	DRAWN: JAW
APPROVED:	SURVEYED: WOODS
JOB NUMBER: 31720	SCALE: 1:10000 @ A3
ISSUED: JUNE 2016	
DWG. NO. 31720-00-EW-100	REV. 1

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REVISION DETAILS	NAME	DATE
1. ISSUED FOR INFORMATION	JAW	27-06-16

LEGEND:

- QUALIFYING DEVELOPMENT STAGE 1
- SHA BOUNDARY
- RURAL URBAN BOUNDARY
- MOTORWAY DESIGNATION
- MINOR CONTOUR (1m)
- MAJOR CONTOUR (5m)

CLIENT:

Fulton Hogan

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Engineers. Surveyors. Planners.

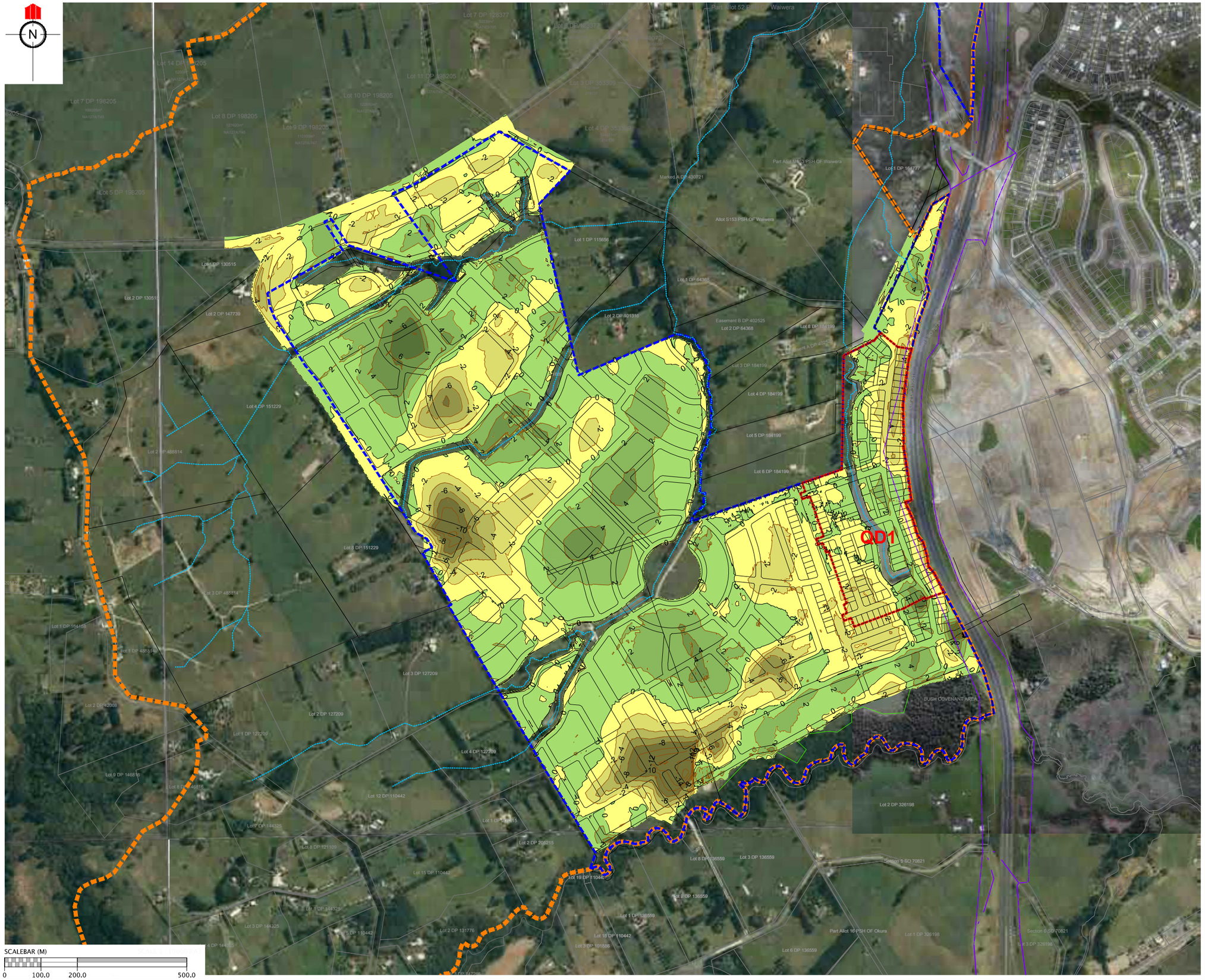
ARGENT LANE SPECIAL HOUSING AREA

INDICATIVE PROPOSED CONTOUR PLAN

AUCKLAND COUNCIL

DESIGNED: JAW	ISSUED FOR INFORMATION
CHECKED:	DRAWN: JAW
APPROVED:	SURVEYED: WOODS
JOB NUMBER: 31720	SCALE: 1:10000 @ A3
ISSUED: JUNE 2016	
DWG. NO. 31720-00-EW-101	REV. 1

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REVISION DETAILS	NAME	DATE
1. ISSUED FOR INFORMATION	JAW	27-06-16

LEGEND:

- QUALIFYING DEVELOPMENT STAGE 1
- SHA BOUNDARY
- RURAL URBAN BOUNDARY
- MOTORWAY DESIGNATION
- AREAS OF CUT
- AREAS OF FILL

CLIENT:

Fulton Hogan

WOODS
Engineers. Surveyors. Planners.

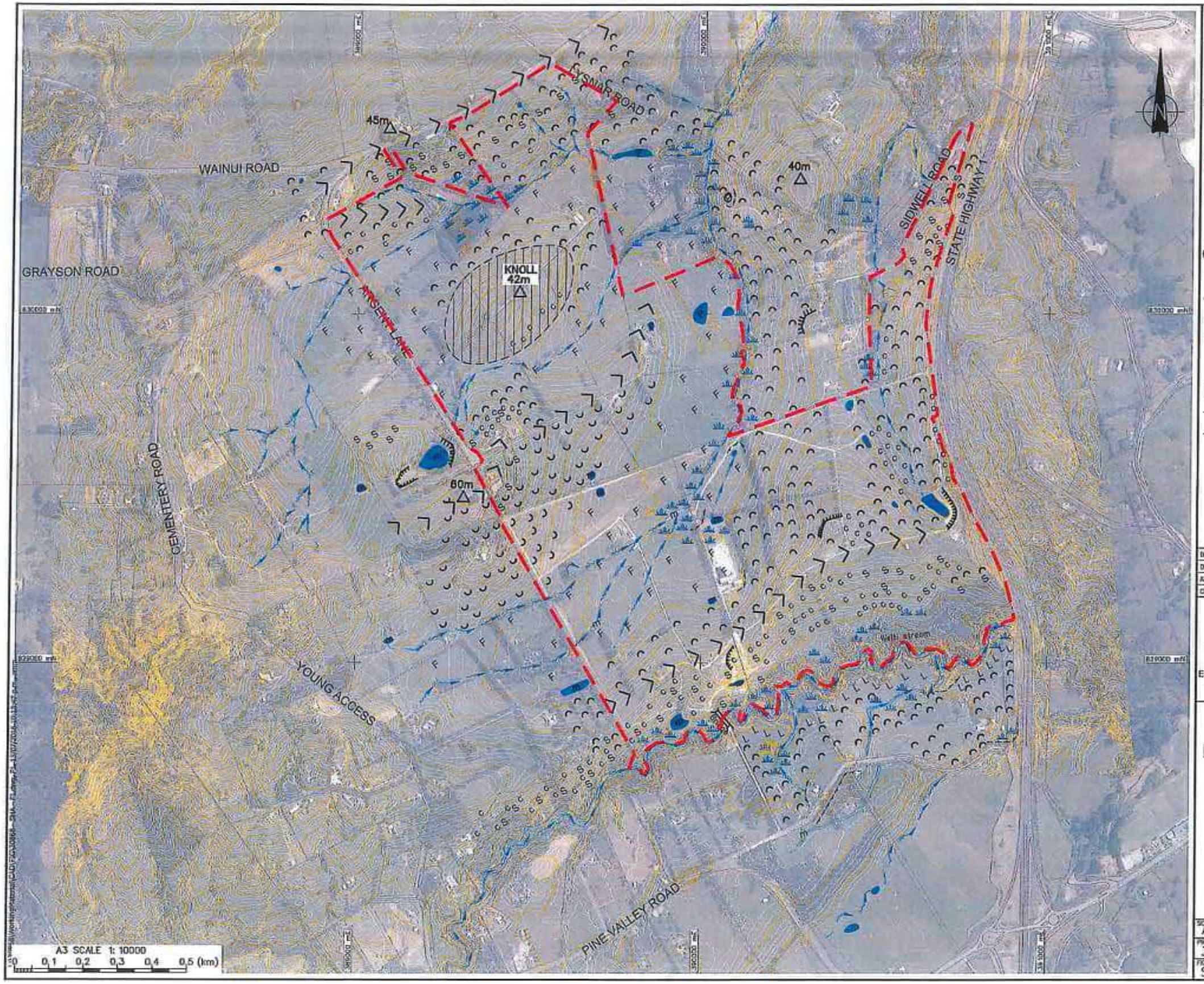
ARGENT LANE SPECIAL HOUSING AREA

INDICATIVE EARTHWORKS EXTENTS PLAN

AUCKLAND COUNCIL

DESIGNED: JAW	ISSUED FOR INFORMATION
CHECKED:	DRAWN: JAW
APPROVED:	SURVEYED: WOODS
JOB NUMBER: 31720	SCALE: 1:10000 @ A3
ISSUED: JUNE 2016	
DWG. NO. 31720-00-EW-110	REV. 1

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NOTES :

1. All dimensions are in millimetres unless noted otherwise.
2. Aerial photo and property boundary taken form Auckland Council GIS website. Imagery dated 2011.
3. Coordinate Datum: NZGD2000, Mt Eden Circuit Circuit Coordinates.

LEGEND

- LIDAR Contour (1m Interval)
- LIDAR Contour (5m Interval)
- Existing Property Boundary
- Argent Lane SHA Boundary

GEOMORPHOLOGICAL

- Hummocky / Rolling
- Stream
- Wet/Swampy Ground
- Pond
- Scarp
- Ridge Line
- Landslide Headscarp
- Inferred Landslide Headscarp
- L Lowland/Gentle Slope
- F Flat
- C Creep
- S Steep

DRAWN	A.K.	Jul. 16
DRAWING CHECKED		
APPROVED		
CADFILE	\\30868 – SHA – F1.dwg	

Tonkin & Taylor
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FULTON HOGAN LAND DEVLOPMENT LTD

ARGENT LANE SPECIAL HOUSING AREA

Geomorphological Plan

SCALES (AT A3 SIZE)	AS SHOWN
PROJECT No.	30868.000
FIG. No.	SHA – Figure 1
REV.	0

NOTES :

1. All dimensions are in millimetres unless noted otherwise.
2. Aerial photo and property boundary taken form Auckland Council GIS website. Imagery dated 2011.
3. Coordinate Datum: NZGD2000, Mt Eden Circuit Circuit Coordinates.

LEGEND

- LIDAR Contour (1m Interval)
- LIDAR Contour (5m Interval)
- Existing Property Boundary
- Enabling Works Boundary
- Stream
- Pond
- 60m Elevation Level

GEOTECHNICAL INVESTIGATIONS

- BH6 Machine Borehole, July–September 2015
- CPT33 CPT July 2015
- HA1 Hand Auger / Infiltration Test, March 2016
- HA2 Hand Auger / Infiltration Test, May 2016

DRAWN	A.R.	JUL 16
DRAFTING CHECKED		
APPROVED		
CADFILE	\\30868 – SHA – F2.dwg	

Tonkin+Taylor

105 Carlton Gore Road, Newmarket, Auckland
www.tonkintaylor.co.nz

FULTON HOGAN LAND DEVELOPMENT LTD

ARGENT LANE SPECIAL HOUSING AREA

Site Investigation Location Plan

SCALES (AT A3 SIZE) 1: 10000	
PROJECT No. 30868	
FIG. No. SHA – Figure 2	REV. 0

A3 SCALE 1: 10000
0 0.1 0.2 0.3 0.4 0.5 (km)
ORIGINAL IN COLOUR

Appendix B Investigation logs

- Borehole logs (BH1 to BH9)
- Cone Penetration Test results (CPT1 to CPT38)
- Hand Augers HA1 to HA4 (March 2016)
- Hand Augers HA1 to HA7 (May 2016)

BORE HOLE LOG

Tonkin+Taylor

BOREHOLE No: **BH1**

SHEET 1 OF 2

PROJECT:	CO-ORDINATES: (Mt Eden 2000)	R.L. GROUND: 37.69m	DRILLED BY: DCN Drilling Ltd.
JOB No: 30868		R.L. COLLAR: 37.69m	LOGGED BY: MTJH
LOCATION: 17 Old Pine Valley Road, Daily Flat (Refer to Site Plan)	DIRECTION: 0.00°	DATUM: Auckland 1946	CHECKED:
	ANGLE FROM HORIZ.: -90.00°	SURVEY: Trimble	START DATE: 21/7/15
			FINISH DATE: 21/7/15
			CONTRACTOR: DCN Drilling Ltd.

GEOLOGICAL UNIT	DESCRIPTION OF CORE	Rock Weathering	Rock Strength	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log	Fracture Spacing (cm)	RQD %	Description: Type, Orientation, Spacing, Shape, Persistence, Roughness, Aperture, Weathering, Infill	Water Loss (%)	Water Level	Casing	Installation	Core Box
TS	Brn Organic SILT with minor clay; dark brown. Soft, wet, low plasticity. [TOPSOIL]			DB	100		37.5	0					0m to 2.5m: Open Barrel (OB) drilling method was used, which results in the compression of the recovered core. Therefore, no noticeable core loss was identified through this section of core					
NORTHERN ALLOCHTHON	0.34m: CLAY with some silt and trace topsoil; orange brown, with dark brown streaks and light grey mottles. Stiff, moist, high plasticity. [RS MANGAKAHIA COMPLEX]					WC 11 43.6%		0.5										
	0.53m: Silty CLAY; light brownish grey with dark brown streaks and dark orange specks. Stiff, moist, high plasticity. With minor MnO nodules and trace ferruginous staining.			DB	100	SV 0.55kPa 30/35	37.0	0.7										
						WC 12 45.7%		1.0										
	1.45m: SILT with minor clay and trace medium to coarse sand; light grey and light brownish grey. Hard, moist, low plasticity. [CW MANGAKAHIA COMPLEX]			DB	100	SV 1.45kPa 34/38	36.5	1.2					1.4m: Orange brown lineation inclined at 10° within the core (up to 10mm thick)					
						WC 13 40.8%		1.5										
				SPT	100	SPT 1.5m 42 3 11 N=28	36.0	1.7										
	2.19m: Highly weathered, light grey and grey, SILTSTONE; extremely weak (SILT with minor clay). Evidence of soft sediment deformation. Unit is highly sheared. Seems into a SILT with minor clay under minimal pressure.			DB	91		35.5	2.2					2.19m to 2.5m: Bedding is typically inclined at 15°					
						WC 14 18.9%		2.5										1
	2.5m to 2.63m: Core lost (core washed away)						35.0	2.6										
	2.63m: Highly weathered, light brownish grey, SILTSTONE; extremely weak (SILT with minor clay). Unit is highly sheared and polished surfaces are rare. Crumbles into fine to medium gravel-sized clasts with minimal pressure.			HQD	76							4		2.69m: Siltstone contact is inclined at 10°					
				SPT	3no: 11/ 31 18 N=49		34.5	3.0										
	2.66m: Moderately weathered, grey, SILTSTONE; very weak. Evidence of shearing and polished surfaces are common. Crumbles into coarse sand to fine gravel-sized clasts under minimal pressure.			SPT	100			3.2										
	3.56m: Highly weathered, grey, SILTSTONE; extremely weak (sandy SILT with some gravel). Unit is highly sheared and polished surfaces are common. Easily crumbles into medium to coarse sand to fine gravel-sized clasts under minimal pressure. [CRUSH ZONE]			TCD	100		34.0	3.5				0						
								3.7										
	4.14m: Slightly weathered, brownish grey, with dark brown streaks, fine sandy SILTSTONE; very weak. Evidence of shearing surfaces (seen as dark brown lineations within the core).						33.5	4.0					4.14m: Sharp siltstone contact, inclined at 10°. This contact may possibly be an unconformity between the Motatu and Mangakahia Complexes of the Northern Allochthon?					
				SPT	100	SPT 4.5m 25 9/ 13/no: 0/3 14 Dr 42mm N=50	33.0	4.2					4.14m to 6.5m: Shear surfaces range from <5 to 45°					
								4.5					4.43m: J 35-45°, UN, R, N, CN					
				HQD	97			5.0				80						

COMMENTS: 1) No HW casing used during drilling. 2) Water loss was unable to be measured as no HW was inserted.
3) Two Standpipe Piezometers were installed down the borehole (see installation sheet for further details).

T+T DATATEMPLATE.GDT auth

Log Scale 1:25

GENERAL LOG 30868.GPJ 26-Nov-2015

BORE HOLE LOG

Tonkin+Taylor

BOREHOLE No: **BH1**

SHEET 2 OF 2

PROJECT:	CO-ORDINATES: (Mt Eden 2000)	R.L. GROUND: 37.69m	DRILLED BY: DCN Drilling Ltd.
JOB No: 30868		R.L. COLLAR: 37.69m	LOGGED BY: MTJH
LOCATION: 17 Old Pine Valley Road, Dairy Flat (Refer to Site Plan)	DIRECTION: 0.00°	DATUM: Auckland 1946	CHECKED:
	ANGLE FROM HORIZ.: -90.00°	SURVEY: Trimble	START DATE: 21/7/15
			FINISH DATE: 21/7/15
			CONTRACTOR: DCN Drilling Ltd.

GEOLOGICAL UNIT	DESCRIPTION OF CORE SOIL: Classification, colour, consistency / density, moisture, plasticity ROCK: Weathering, colour, fabric, name, strength, cementation	Rock Weathering	Rock Strength	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log	Fracture Spacing (mm)	RQD %	Description Type, Orientation, Spacing, Shape, Persistence, Roughness, Aperture, Weathering, Infill	Water Loss (%)	Water Level	Casing	Installation	Core Box
NORTHERN ALLOCHTHON	4.14m: Slightly weathered, brownish grey, with dark brown streaks, fine sandy SILTSTONE; very weak. Evidence of shearing surfaces (seen as dark brown lineations within the core).			HQ3	97	SPTC 4m: 25 for 100mm 50 for 100mm N=50+	32.5	5.5				80	6.54m to 6.5m: Shear surfaces within the core reduce in frequency 6.83m to 6m: Core highly disturbed due to drilling (discing) 6m to 6.28m: SPTC core donut has been placed within Core Box 3					2
				SPTC			32.0	6.0										
				HQ3	100	SPTC 6.5m: 25 for 100mm 50 for 100mm N=50+	31.5	6.5				0	6.52m: Suspected calcite nodule (7mm diameter) 6.5m to 7.17m: Shear surfaces become common and are inclined between <5 to 70° (typically 35 to 45°) 6.61m: J 35°, UN, R, Ni, CO (silt with minor clay, up to 4mm thick) 6.64m: Vein 35-70°, UN, CC (calcite, up to 4mm thick) 7.17m: Calcite nodule (3mm diameter)					
				SPTC			31.0	7.0										
	End of Borehole at 7.7m bgl (Target Depth Reached) Notes: 1) Shear vane readings were completed in the end of the core barrel, using Shear Vane number 569, with a Calibration Factor of 1.370. 2) Some core recovery measurements were difficult due to the shattered nature of the core. 3) SPTC refers to a Solid Cone Standard Penetration Test. 4) Water levels in the installed piezometers were: 0.43m (Shallow) and 0.18m (Deep) on 26/7/15, 0.31m (Shallow) and 0.08m (Deep) on 25/8/15 and 1.01m (Shallow) and 1.11m (Deep) on 29/10/15.						30.5	7.5										
							30.0	8.0										
							29.5	8.5										
							29.0	9.0										
							28.5	9.5										
							28.0	10.0										

COMMENTS: 1) No HW casing used during drilling. 2) Water loss was unable to be measured as no HW was inserted.
3) Two Standpipe Piezometers were installed down the borehole (see installation sheet for further details).

T+T DATATEMPLATE.ODT mlh

Log Scale 1:25

GENERAL LOG 30868.GPJ 26-Nov-2015

BORE HOLE LOG

Tonkin+Taylor

BOREHOLE No: **BH2**

SHEET 1 OF 3

PROJECT:	CO-ORDINATES: (Mt Eden 2000)	R.L. GROUND: 42.26m	DRILLED BY: DCN Drilling Ltd.
JOB No: 30868		R.L. COLLAR: 42.26m	LOGGED BY: MTJH
LOCATION: 17 Old Pine Valley Road, Dairy Flat (Refer to Site Plan)	DIRECTION: 0.00°	DATUM: Auckland 1946	CHECKED:
	ANGLE FROM HORIZ.: -90.00°	SURVEY: Trimble	START DATE: 20/7/15
			FINISH DATE: 20/7/15
			CONTRACTOR: DCN Drilling Ltd.

GEOLOGICAL UNIT	DESCRIPTION OF CORE	Rock Weathering	Rock Strength	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log	Fracture Spacing (cm)	RQD %	Description	Water Loss (%)	Water Level	Casing	Installation	Core Box
	SOIL: Classification, colour, consistency / density, moisture, plasticity ROCK: Weathering, colour, fabric, name, strength, cementation												Type, Orientation, Spacing, Shape, Persistence, Roughness, Aperture, Weathering, Infill					
TS	0m: Organic SILT with minor clay; dark brown. Firm, wet, low plasticity. [TOPSOIL]																	
FILL	0.08m: SILT with minor clay and trace fine to medium gravel and organics; brown and brownish grey with black and dark orange mottles. Firm, moist, low plasticity. With minor MnO nodules and ferrolite staining. Organics are fibrous (rootlets). Gravel is sub-angular basalt, up to 8mm. [FILL]			CB	100								0m to 3m: Open Barrel (OB) drilling method was used, which results in the compression of the recovered core. Therefore, no noticeable core loss was identified through this section of core					
NORTHERN ALLOCHTHON	0.71m: SILT with minor clay and trace organics; brown and brownish grey with light grey streaks and dark orange specks. Stiff, moist, high plasticity. With trace ferrolite staining. Organics are fibrous (rootlets). [Residual MOTATAU COMPLEX]			CB	100	SV 0.45kPa 46/17	41.5	0.5					0.71m to 1.81m: Unit has been stained brown due to leaching from the SI above					
				CB	92	SV 0.95kPa UTP WC B 28.3%	41.0	1.0										
	1.81m to 1.95m: Core loss (dropped out of SPT point)			SPT	48	SV 1.45kPa UTP SPT 2.5kN 3V 3 10-12	40.5	1.5										
	1.95m: SILT with some clay and minor fine gravel and medium to coarse sand; light grey and light brownish grey with orange brown specks. Very stiff, moist, high plasticity. Gravel is angular siltstone, up to 4mm.			CB	92	WC 9 18.4%	40.0	2.0										
	2.27m: SILT with some fine to coarse gravel, minor fine to coarse sand and trace clay; light grey with orange brown specks. Hard, moist, low plasticity. Gravel is angular siltstone, up to 20mm. [Completely Weathered MOTATAU COMPLEX]			CB	92	SV 2.55kPa 9/10/2	39.5	2.5										
	3.15m: Highly weathered, grey, SILTSTONE; very weak. Unit is highly sheared and polished surfaces are common. Crumbles into coarse sand to fine to medium gravel-sized siltstone clasts under minimal pressure.			SPT	100	WC 10 31.8% SPT 3kN 2/3 4/5 for 95mm 10-22	39.0	3.0										
	3.34m to 3.64m: Core loss (core washed away)						38.5	3.5										
	3.64m: Slightly weathered, grey, SILTSTONE: weak. Evidence of shearing and polished surfaces are common. Crumbles into coarse sand to fine to coarse gravel-sized clasts with pressure.			TRO	95		38.0	4.0				0	3.78m: J 70°, PL, Polished, N, CN 3.83m: J 25-50°, UN, SM, N, CV (clayey silt) 3.9m: J 85°, UN, Polished, N, CV (clayey silt) 4.05m: J 75°, UN, Polished, VN, CN					
	4.6m: Moderately weathered, grey, SILTSTONE; very weak. Unit is highly sheared and polished surfaces are common. Crumbles into coarse sand to fine to coarse gravel-sized clasts under minimal pressure. With trace bands of slightly weathered siltstone (up to 85mm thick).			SPT	100	SPT 4.5kN 30 for 85mm 30+50 Refusal	37.5	4.5				0						
				TRO	100							0	4.93m: J 85°, UN, Polished, N, CN					
				TRO	100			5.0										

COMMENTS: 1) No HW casing used during drilling. 2) Water loss was unable to be measured as no HW was inserted.
3) Two Standpipe Piezometers were installed down the borehole (see Installation sheet for further details).

BORE HOLE LOG

Tonkin+Taylor

BOREHOLE No: **BH2**

SHEET 2 OF 3

PROJECT:

JOB No: 30868

LOCATION: 17 Old Pine Valley Road, Dairy Flat (Refer to Site Plan)

CO-ORDINATES: (Mt Eden 2000)

DIRECTION: 0.00°

ANGLE FROM HORIZ.: -90.00°

R.L. GROUND: 42.26m

R.L. COLLAR: 42.26m

DATUM: Auckland 1946

SURVEY: Trimble

DRILLED BY: DCN Drilling Ltd.

LOGGED BY: MTJH

CHECKED:

START DATE: 20/7/15

FINISH DATE: 20/7/15

CONTRACTOR: DCN Drilling Ltd.

GEOLOGICAL UNIT	DESCRIPTION OF CORE SOIL: Classification, colour, consistency / density, moisture, plasticity ROCK: Weathering, colour, fabric, name, strength, cementation	Rock Weathering	Rock Strength	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log	Fracture Spacing (cm)	RQD %	Description: Type, Orientation, Spacing, Shape, Persistence, Roughness, Aperture, Weathering, Infill	Water Loss (%)	Water Level	Casing	Installation	Core Box
NORTHERN ALLOCHTHON	4.4m: Moderately weathered, grey, SILTSTONE; very weak. Unit is highly sheared and polished surfaces are common. Crumbles into coarse sand to fine to coarse gravel-sized clasts under minimal pressure. With inter bands of slightly weathered siltstone (up to 85mm thick).																	
	5.3m: Highly weathered, grey, SILTSTONE; extremely weak (GRAVEL with some sand and minor silt). Unit is highly sheared and polished surfaces are common. Crumbles into coarse sand to fine to medium gravel-sized clasts under minimal pressure. [CRUSH ZONE]			HQ3	100			5.5				0	5.37m: J 35°, UN, R, N, CN 5.88m: J 10°, UN, Polished, N, CN					
	5.87m: Moderately weathered, grey SILTSTONE; extremely weak (GRAVEL with some sand and minor silt). Unit is highly sheared and polished surfaces are common. Crumbles into coarse sand to fine to coarse gravel-sized clasts under minimal pressure.			SPTC		SPTC 6m: 27 for 450mm N=60		6.0					6.03m: J 35°, UN, VN, still intact					
	6.77m: Highly weathered, grey SILTSTONE; extremely weak (GRAVEL with some sand and minor silt). Unit is highly sheared and polished surfaces are common. Crumbles into coarse sand to fine to coarse gravel-sized clasts under minimal pressure. [CRUSH ZONE]			HQ3	100			6.5 7.0				9	7.1m: J 75°, UN, R, N, CV (clayey silt)					
	6.93m: Slightly weathered, grey, SILTSTONE; weak. Evidence of shearing and polished surfaces are rare. Unit stays intact under pressure.												7.24mc: Fg 85°, UN, SL, CG (sandy silt with some gravel), indeterminate offset					
	7.33m: Highly weathered, grey, SILTSTONE; extremely weak (silty GRAVEL with some sand). Unit is highly sheared and polished surfaces are common. Recovered as a coarse sand to fine to medium gravel, and crumbles easily with minimal pressure. [CRUSH ZONE]			SPTC		SPTC 7.8m: 50 for 125mm N>50		7.5					7.48mc: J 50°, PL, Polished, VN, CN					
	8.13m to 8.29m: ...moderately weathered, SILTSTONE; extremely weak (silty GRAVEL with some sand)			HQ3	100			8.0				0	8mc: Fg 70°, UN, SL, CG (clay, up to 30mm thick), indeterminate offset					
	8.75m to 8.9m: ...moderately weathered, SILTSTONE; very weak			SPTC		SPTC 8.9m: 50/ 35 for 40mm N>50		8.5 9.0					8.54mc: Fg 55-85°, UN, SL, CG (clay, up to 10mm thick), indeterminate offset 8.78mc: J 85°, PL, Polished, T, CN 8.8m: Due to the barrel becoming stuck the HQ3 run was shortened as the rods were required to be pulled for the core to be recovered. An early SPTC was undertaken					
	End of Borehole at 9.14m bgl (Target Depth Reached) Notes: 1) Shear vane readings were completed in the end of the core barrel, using Shear Vane number 589, with a Calibration Factor of 1.570. 2) Some core recovery measurements were difficult due to the sheared nature of the core. 3) SPTC refers to a Solid Cone Standard Penetration Test.							9.5 10.0										

COMMENTS: 1) No HW casing used during drilling. 2) Water loss was unable to be measured as no HW was inserted.
3) Two Standpipe Piezometers were installed down the borehole (see installation sheet for further details).

Tonkin+Taylor

BORE HOLE LOG

BOREHOLE No: **BH2**

SHEET 3 OF 3

PROJECT:

JOB No: 30868

LOCATION: 17 Old Pine Valley Road, Dairy Flat (Refer to Site Plan)

CO-ORDINATES: (Mt Eden 2000)

DIRECTION: 0.00°

ANGLE FROM HORIZ.: -90.00°

R.L. GROUND: 42.26m

R.L. COLLAR: 42.26m

DATUM: Auckland 1946

SURVEY: Trimble

DRILLED BY: DCN Drilling Ltd.

LOGGED BY: MTJH

CHECKED:

START DATE: 20/7/15

FINISH DATE: 20/7/15

CONTRACTOR: DCN Drilling Ltd.

GEOLOGICAL UNIT	DESCRIPTION OF CORE SOIL: Classification, colour, consistency / density, moisture, plasticity ROCK: Weathering, colour, fabric, name, strength, cementation	Rock Weathering	Rock Strength	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log	Fracture Spacing (cm)	RQD %	Description: Type, Orientation, Spacing, Shape, Persistence, Roughness, Aperture, Weathering, Infill	Water Loss (%)	Water Level	Casing	Installation	Core Size
	4) Water levels in the installed piezometers were 1.43m (Shallow: S) and 1.56m (Deep: D) on 26/7/15, 1.62m (Shallow) and 1.725m (Deep) on 25/8/15 and 2.3m (Shallow) and 2.37m (Deep) on 29/10/15.						32.0 31.5 31.2 31.0 30.5 30.0 29.5 29.3 28.8 27.5	10.5 11.0 11.5 12.0 12.5 13.0 13.5 14.0 14.5 15.0									

COMMENTS: 1) No HW casing used during drilling. 2) Water loss was unable to be measured as no HW was inserted.
3) Two Standpipe Piezometers were installed down the borehole (see installation sheet for further details).

Appendix B Investigation logs

- Borehole logs (BH1 to BH9)
- Cone Penetration Test results (CPT1 to CPT38)
- Core Photos

BORE HOLE LOG

Tonkin+Taylor

BOREHOLE No: **BH1**

SHEET 1 OF 2

PROJECT:	CO-ORDINATES: (Mt Eden 2000)	R.L. GROUND: 37.69m	DRILLED BY: DCN Drilling Ltd.
JOB No: 30888		R.L. COLLAR: 37.69m	LOGGED BY: MTJH
LOCATION: 17 Old Pine Valley Road, Dairy Flat (Refer to Site Plan)	DIRECTION: 0.00°	DATUM: Auckland 1946	CHECKED:
	ANGLE FROM HORIZ.: -90.00°	SURVEY: Trimble	START DATE: 21/7/15
			FINISH DATE: 21/7/15
			CONTRACTOR: DCN Drilling Ltd.

GEOLOGICAL UNIT	DESCRIPTION OF CORE	Rock Weathering	Rock Strength	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log	Fracture Spacing (cm)	RQD %	Description: Type, Orientation, Spacing, Shape, Persistance, Roughness, Aperture, Weathering, Infill	Water Loss (%)	Water Level	Casing	Installation	Core Box
TS	0m: Organic SILT with minor clay; dark brown. Soft, wet, low plasticity. [TOPSOIL]																	
NORTHERN ALLOCHTHON	0.34m: CLAY with some silt and trace topsoil; orange brown, with dark brown streaks and light grey mottles. Stiff, moist, high plasticity. [RS MANGAKAHIA COMPLEX]			DB	100	WC 11 42.6%	37.3	0.5					0m to 2.8m: Open Hand (OH) drilling method was used, which results in the compression of the recovered core. Therefore, no noticeable core loss was identified through this section of core					
	0.83m: Silty CLAY; light brownish grey with dark brown streaks and dark orange specks. Stiff, moist, high plasticity. With minor MnO nodules and trace limonite staining.			DB	100	SV 0.95kPa 30/30	37.0	1.0										
				DB	100	WC 11 43.7%	36.5											
	1.48m: SILT with minor clay and trace medium to coarse sand; light grey and light brownish grey. Hard, moist, low plasticity. [CW MANGAKAHIA COMPLEX]			SPT	100	SV 1.45kPa 9/30		1.5					1.4m: Orange brown limestone inclined at 10° within the core (up to 10mm thick)					
						WC 13 49.8%	36.0											
						SPT 1.5m 4* 7 11 N=18		2.0										
	2.48m: Highly weathered, light grey and grey, SILTSTONE; extremely weak (SILT with minor clay). Evidence of soft sediment deformation. Unit is highly sheared. Seems into a SILT with minor clay under minimal pressure.			DB	97		35.5						2.93m to 2.8m: Bedding is typically inclined at 15°					
	2.5m to 2.62m: Core loss (core washed away)					WC 14 [3.9%]		2.5										
	2.62m: Highly weathered, light brownish grey, SILTSTONE; extremely weak (SILT with minor clay). Unit is highly sheared and polished surfaces are rare. Crumbles into fine to medium gravel-sized clasts with minimal pressure.			HQ3	76		35.0					0	2.66m: Siltstone contact is inclined at 10°					
						SPT 3m 11* 12 16 N=43		3.0										
	2.66m: Moderately weathered, grey, SILTSTONE; very weak. Evidence of shearing and polished surfaces are common. Crumbles into coarse sand to fine gravel-sized clasts under minimal pressure.			SPT	100		34.5											
	3.56m: Highly weathered, grey, SILTSTONE; extremely weak (sandy SILT with some gravel). Unit is highly sheared and polished surfaces are common. Easily crumbles into medium to coarse sand to fine gravel-sized clasts under minimal pressure. [CRUSH ZONE]			HQ3	100		34.0	4.0				0						
	4.14m: Highly weathered, brownish grey, with dark brown streaks, fine sandy SILTSTONE; very weak. Evidence of shearing surfaces (seen as dark brown lineations within the core).												4.14m: Sharp siltstone contact, inclined at 10°. This contact may possibly be an unconformity between the Motatu and Mangakahia Complexes of the Northern Allochthon? 4.14m to 6.5m: Shear surfaces range from <5 to 45° 4.48m: J 35-45°, UN, R, N, CN					
				SPT	100	SPT 4.5m 25 6* 150mm ADH 14 9* 45mm N=50	33.0	4.5										
				HQ3	97			5.0				88						

COMMENTS: 1) No HW casing used during drilling. 2) Water loss was unable to be measured as no HW was inserted.
3) Two Standpipe Piezometers were installed down the borehole (see installation sheet for further details).

Log Scale 1:25

GENERAL LOG 30888.GPJ 26-Nov-2015

T+T DATATEMPLATE.GDT 26/11/15

BORE HOLE LOG

Tonkin+Taylor

BOREHOLE No: **BH1**

SHEET 2 OF 2

PROJECT:	CO-ORDINATES: (Mt Eden 2000)	R.L. GROUND: 37.69m	DRILLED BY: DCN Drilling Ltd.
JOB No: 30888		R.L. COLLAR: 37.69m	LOGGED BY: MTJH
LOCATION: 17 Old Pine Valley Road, Dairy Flat (Refer to Site Plan)	DIRECTION: 0.00°	DATUM: Auckland 1946	CHECKED:
	ANGLE FROM HORIZ.: -90.00°	SURVEY: Trimble	START DATE: 21/7/15
			FINISH DATE: 21/7/15
			CONTRACTOR: DCN Drilling Ltd.

GEOLOGICAL UNIT	DESCRIPTION OF CORE SOIL: Classification, colour, consistency / density, moisture, plasticity ROCK: Weathering, colour, fabric, name, strength, cementation	Rock Weathering	Rock Strength	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log	Fracture Spacing (cm)	RQD %	Description Type, Orientation, Spacing, Shape, Persistence, Roughness, Aperture, Weathering, Infill	Water Loss (%)	Water Level	Casing	Installation	Core Box
NORTHERN ALLOCHTHON	4.14m: Slightly weathered, brownish gray, with dark brown streaks, fine sandy SILTSTONE; very weak. Evidence of shearing surfaces (seen as dark brown lineations within the core).			HQ1	97	SPTC 4.5m 32 blows for 150mm 32 blows for 150mm 32 blows for 150mm

BORE HOLE LOG

Tonkin+Taylor

BOREHOLE No: BH2

SHEET 1 OF 3

PROJECT:	CO-ORDINATES: (Mt Eden 2000)	R.L. GROUND: 42.28m	DRILLED BY: DCN Drilling Ltd.
JOB No: 30868		R.L. COLLAR: 42.28m	LOGGED BY: MTJH
LOCATION: 17 Old Pine Valley Road, Dairy Flat (Refer to Site Plan)	DIRECTION: 0.00°	DATUM: Auckland 1946	CHECKED:
	ANGLE FROM HORIZ.: -90.00°	SURVEY: Trimble	START DATE: 20/7/15
			FINISH DATE: 20/7/15
			CONTRACTOR: DCN Drilling Ltd.

GEOLOGICAL UNIT	DESCRIPTION OF CORE (SOIL: Classification, colour, consistency / density, moisture, plasticity. ROCK: Weathering, colour, fabric, name, strength, cementation)	Rock Weathering	Rock Strength	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log	Fracture Spacing (cm)	RQD %	ROCK DEFECTS: Description (Type, Orientation, Spacing, Shape, Persistence, Roughness, Aperture, Weathering, Infill)	Water Loss (%)	Water Level	Casing	Installation	Core Box
TS	0m: Organic SILT with minor clay; dark brown. Firm, wet, low plasticity. [TOPSOIL]																	
FILL	0.08m: SILT with minor clay and trace fine to medium gravel and organics; brown and brownish grey with black and dark orange mottles. Firm, moist, low plasticity. With minor MnO nodules and limonite staining. Organics are fibrous (rootlets). Gravel is sub-angular basalt, up to 8mm. [FILL]				100	SV 0.45kPa 46/17	42.0	0.5					0m to 3m: Open Hamd (OH) drilling method was used, which results in the compression of the recovered core. Therefore, no noticeable core loss was identified through this section of core					
NORTHERN ALLOCHTHON	0.71m: SILT with minor clay and trace organics; brown and brownish grey with light grey streaks and dark orange specks. Stiff, moist, high plasticity. With trace limonite staining. Organics are fibrous (rootlets). [Residual MOTATAU COMPLEX]				100	SV 0.95kPa UTP	41.5	1.0					0.71m to 1.81m: Unit has been stained brown due to leaching from the fill above					
	1.81m to 1.95m: Core loss (dropped out of SPT spoon)			SPT	10	WC B 28.5%	41.0	1.5										
	1.95m: SILT with some clay and minor fine gravel and medium to coarse sand; light grey and light brownish grey with orange brown specks. Very stiff, moist, high plasticity. Gravel is angular siltstone, up to 4mm.				100	SV 0.95kPa 97/22	40.3	2.0										
	2.27m: SILT with some fine to coarse gravel, minor fine to coarse sand and trace clay; light grey with orange brown specks. Hard, moist, low plasticity. Gravel is angular siltstone, up to 28mm. [Completely Weathered MOTATAU COMPLEX]				90	WC 10 21.8%	40.0	2.5										
	3.15m: Highly weathered, grey, SILTSTONE; very weak. Unit is highly sheared and polished surfaces are common. Crumbles into coarse sand to fine to medium gravel-sized siltstone clasts under minimal pressure.			SPT	100	SPT 3cm: 23 30/0 for 10cm: 50/30	39.8	3.0										
	3.24m to 3.64m: Core loss (core washed away)						39.3	3.5										
	3.64m: Slightly weathered, grey, SILTSTONE; weak. Evidence of shearing and polished surfaces are common. Crumbles into coarse sand to fine to coarse gravel-sized clasts with pressure.			TCP	60		38.8	4.0			E		3.76m: J 70°, PL, Polished, N, CN 3.82m: J 25-50°, UN, SM, N, CV (clayey silt) 3.9m: J 60°, UN, Polished, N, CV (clayey silt) 4.03m: J 75°, UN, Polished, VN, CN					
	4.4m: Moderately weathered, grey, SILTSTONE; very weak. Unit is highly sheared and polished surfaces are common. Crumbles into coarse sand to fine to coarse gravel-sized clasts under minimal pressure. With trace bands of slightly weathered siltstone (up to 85mm thick).			SPT TCP TCP	100 100 100	SPT 4.5cm: 28 for 15cm: 50/30 for 10cm: 50/30	37.3	4.5			B B		4.63m: J 85°, UN, Polished, N, CN					
								5.0										

COMMENTS: 1) No HW casing used during drilling. 2) Water loss was unable to be measured as no HW was inserted.
3) Two Standpipe Piezometers were installed down the borehole (see installation sheet for further details).

T+T_DATATEMPLATE.ODT.mtb

Log Scale 1:25

GENERAL LOG 30868.GPJ 26-Nov-2015

BORE HOLE LOG

Tonkin+Taylor

BOREHOLE No: **BH2**

SHEET 2 OF 3

DRILLED BY: DCN Drilling Ltd.
LOGGED BY: MTJH
CHECKED:
START DATE: 20/7/15
FINISH DATE: 20/7/15
CONTRACTOR: DCN Drilling Ltd.

PROJECT:
JOB No: 30868
LOCATION: 17 Old Pine Valley Road, Dairy Flat (Refer to Site Plan)

CO-ORDINATES: (Mt Eden 2000)
DIRECTION: 0.00°
ANGLE FROM HORIZ.: -90.00°

R.L. GROUND: 42.26m
R.L. COLLAR: 42.26m
DATUM: Auckland 1946
SURVEY: Trimble

GEOLOGICAL UNIT | DESCRIPTION OF CORE | Rock Weathering | Rock Strength | Sampling Method | Core Recovery (%) | Testing | RL (m) | Depth (m) | Graphic Log | ROCK DEFECTS: Defect Log | Fracture Spacing (cm) | RQD % | Description | Water Loss (%) | Water Level | Casing | Installation | Core Box

NORTHERN ALLOCHTHON

4.4m: Moderately weathered, grey, SILTSTONE; very weak. Unit is highly sheared and polished surfaces are common. Crumbles into coarse sand to fine to coarse gravel-sized clasts under minimal pressure. With trace bands of slightly weathered siltstone (up to 85mm thick).

5.3m: Highly weathered, grey, SILTSTONE; extremely weak (GRAVEL with some sand and minor silt). Unit is highly sheared and polished surfaces are common. Crumbles into coarse sand to fine to medium gravel-sized clasts under minimal pressure. [CRUSH ZONE]

5.87m: Moderately weathered, grey SILTSTONE; extremely weak (GRAVEL with some sand and minor silt). Unit is highly sheared and polished surfaces are common. Crumbles into coarse sand to fine to coarse gravel-sized clasts under minimal pressure.

6.77m: Highly weathered, grey SILTSTONE; extremely weak (GRAVEL with some sand and minor silt). Unit is highly sheared and polished surfaces are common. Crumbles into coarse sand to fine to coarse gravel-sized clasts under minimal pressure. [CRUSH ZONE]

6.93m: Slightly weathered, grey, SILTSTONE; weak. Evidence of shearing and polished surfaces are rare. Unit slept intact under pressure.

7.33m: Highly weathered, grey, SILTSTONE; extremely weak (silty GRAVEL with some sand). Unit is highly sheared and polished surfaces are common. Recovered as a coarse sand to fine to medium gravel, and crumbles easily with minimal pressure. [CRUSH ZONE]

8.11m to 8.39m: ...moderately weathered, SILTSTONE; extremely weak (silty GRAVEL with some sand)

8.75m to 8.8m: ...moderately weathered, SILYSTONE; very weak

End of Borehole at 9.14m bgl (Target Depth Reached)

Notes:
1) Shear vane readings were completed in the end of the core barrel, using Shear Vane number 569, with a Calibration Factor of 1.378.
2) Some core recovery measurements were difficult due to the sheared nature of the core.
3) SPTC refers to a Solid Core Standard Penetration Test.

5.57m: J 35°, UN, R, N, CN

5.69m: J 10°, UN, Polished, N, CN

5.98m: J 35°, UN, VN, slit lined

7.1m: J 75°, UN, R, N, CV (clayey silt)

7.24m: Fg 85°, UN, SL, CG (sandy silt with some gravel), indeterminate offset

7.69m: J 50°, PL, Polished, VN, CN

8m: Fg 75°, UN, SL, CG (clay, up to 30mm thick), indeterminate offset

8.54m: Fg 80-85°, UN, SL, CG (clay, up to 10mm thick), indeterminate offset

8.78m: J 85°, PL, Polished, T, CN

8.8m: Due to the barrel becoming stuck the HQ3 run was shortened as the rods were required to be pulled for the core to be recovered. An early SPTC was undertaken

COMMENTS: 1) No HW casing used during drilling. 2) Water loss was unable to be measured as no HW was inserted.
3) Two Standpipe Piezometers were installed down the borehole (see Installation sheet for further details).

T+T DATATEMPLATE.GDT mtjh

Log Scale 1:25

GENERAL LOG 30868.GPJ 30-Nov-2015

Tonkin+Taylor

BORE HOLE LOG

BOREHOLE No: **BH2**

SHEET 3 OF 3

PROJECT:

JOB No: 30868

LOCATION: 17 Old Pine Valley Road, Dairy Flat (Refer to Site Plan)

CO-ORDINATES: (Mt Eden 2000)

DIRECTION: 0.00°

ANGLE FROM HORIZ.: -90.00°

R.L. GROUND: 42.26m

R.L. COLLAR: 42.28m

DATUM: Auckland 1946

SURVEY: Trimble

DRILLED BY: DCN Drilling Ltd.

LOGGED BY: MTJH

CHECKED:

START DATE: 20/7/15

FINISH DATE: 20/7/15

CONTRACTOR: DCN Drilling Ltd.

GEOLOGICAL UNIT	DESCRIPTION OF CORE SOIL: Classification, colour, consistency / density, moisture, plasticity ROCK: Weathering, colour, fabric, name, strength, cementation	Rock Weathering	Rock Strength	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log	Fracture Spacing (cm)	RQD %	Description: Type, Orientation, Spacing, Shape, Persistence, Roughness, Aperture, Weathering, Infill	Water Loss (%)	Water Level	Casing	Installation	Core Box
	4) Water levels in the installed piezometers were 1.43m (Shallow: S) and 1.56m (Deep: D) on 26/7/15, 1.62m (Shallow) and 1.725m (Deep) on 25/9/15 and 2.3m (Shallow) and 2.37m (Deep) on 29/10/15.						32.0 31.5 31.0 30.5 30.0 29.5 29.0 28.5 28.0 27.5 27.0	10.5 11.0 11.5 12.0 12.5 13.0 13.5 14.0 14.5 15.0										

COMMENTS: 1) No HW casing used during drilling. 2) Water loss was unable to be measured as no HW was inserted.
3) Two Standpipe Piezometers were installed down the borehole (see installation sheet for further details).

T+T DATATEMPLATE.GDT mth

Log Scale 1:25

GENERAL LOG 30868.GPJ 26-Nov-2015

Tonkin+Taylor

BORE HOLE LOG

BOREHOLE No: **BH3**

SHEET 1 OF 2

PROJECT:

JOB No: 30868

LOCATION: 17 Old Pine Valley Road, Dairy Flat (Refer to Site Plan)

CO-ORDINATES: (Mt Eden 2000)

DIRECTION: 0.00°

ANGLE FROM HORIZ.: -90.00°

R.L. GROUND: 34.60m

R.L. COLLAR: 34.60m

DATUM: Auckland 1946

SURVEY: Trimble

DRILLED BY: DCN Drilling Ltd.

LOGGED BY: MTJH

CHECKED:

START DATE: 16/7/15

FINISH DATE: 17/7/15

CONTRACTOR: DCN Drilling Ltd.

GEOLOGICAL UNIT	DESCRIPTION OF CORE SOIL: Classification, colour, consistency / density, moisture, plasticity ROCK: Weathering, colour, fabric, name, strength, cementation	Rock Weathering	Rock Strength	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log	Fracture Spacing (cm)	RQD %	Description Type, Orientation, Spacing, Shape, Persistence, Roughness, Aperture, Weathering, Infill	Water Loss (%)	Water Level	Casing	Installation	Core Box
TS	0m: Organic clayey SILT; dark brown. Soft, wet, high plasticity. [TOPSOIL] 0.1m to 0.18m: ...firm, moist												0m to 2.1m: Open Barrel (OB) drilling method was used, which results in the compression of the recovered core. Therefore, no noticeable core loss was identified through this section of core 0.18m to 0.42m: Unit has been stained brown due to leaching from the topsoil above					
NORTHERN ALLOCHTHON	0.18m: Silty CLAY with trace fine gravel and coarse sand; greyish brown. Stiff, moist, high plasticity. Gravel and sand are MnD residues. [Residual MANGAKAHIA COMPLEX] 0.42m: SILT with minor clay and fine to coarse gravel and trace organics; light brownish grey and light grey. Very stiff, moist, high plasticity. Evidence of shearing. Organics are fibrous (rootlets). Gravel is angular siltstone, up to 22mm. [Completely Weathered MANGAKAHIA COMPLEX] 0.5m to 0.74m: ...gravelly SILT with minor clay. Hard 0.74m: Highly weathered, light grey and light brownish grey, SILTSTONE; very weak. With trace manganese staining. Unit is sheared and polished surfaces are common. Crumbles into fine to medium gravel-sized clasts under minimal pressure. 1.14m: Highly weathered, light brownish grey and light grey, SILTSTONE; extremely weak (silty GRAVEL). Unit is highly sheared and polished surfaces are common. Recovered as a fine to coarse gravel, and crumbles easily with minimal pressure. [CRUSH ZONE] 1.15m: Moderately weathered, light brownish grey, SILTSTONE; extremely weak (gravelly SILT). Unit is highly fractured, with evidence of shearing and polished surfaces are rare. Crumbles into coarse sand to fine to medium gravel-sized clasts under minimal pressure. 1.3m: Slightly weathered, grey SILTSTONE; weak. Evidence of shearing and polished surfaces are common. Crumbles into coarse sand to fine gravel-sized clasts under pressure. 1.35m to 1.95m: Core lost (dropped out of SPT spoon) 1.95m: Core description is the same as 1.3m 1.1m to 2.28m: ...recovered as a medium to coarse gravel (sub angular siltstone clasts, up to 40mm). Polished surfaces are common 2.28m: Highly weathered, light greenish grey, SILTSTONE; extremely weak (GRAVEL with trace silt). Unit is highly sheared and polished surfaces are common. Recovered as a fine to coarse sand to fine to medium gravel and crumbles easily with minimal pressure. [CRUSH ZONE] 2.43m to 3m: Core lost (core washed away) 3m: Slightly weathered, light greenish grey SILTSTONE; weak. Evidence of shearing and polished surfaces are common. Crumbles into coarse sand to fine gravel-sized clasts under pressure. 3.45m: Highly weathered, light greenish grey, SILTSTONE; extremely weak (gravelly SILT with trace clay). Evidence of shearing surfaces (seen as dark fissures within the core). Unit is highly fractured and polished surfaces are common. Crumbles into coarse sand to fine gravel-sized clasts under minimal pressure. [CRUSH ZONE] 3.74m: Moderately weathered, light greenish grey, SILTSTONE; extremely weak (sandy SILT with trace clay and gravel). Unit is highly sheared and polished surfaces are common. Crumbles into medium to coarse sand to fine to medium gravel-sized clasts with			OB OB OB SPT OB HQ3 SPT HQ3 HQ3 SPT	100 100 100 86 67 37 100 67 82 90	WC 1: 13.1% SV 6.45m: 57/17 3V 0.91m: 17/7° WC 2: 18.6% SPT 4.5m: 50/125 = 20 50/75 = 27 125 mm = N>50 SPT 3m: 100/100 = 25 N>50 SPT 4.5m: 20 50/75 = 27 125 mm = N>50	34.5 34.0 33.5 33.0 32.5 32.0 31.5 31.0 30.5 30.0	0 0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0		0 0 0 0 0 0 0	2.28m: J 30°, UN, Polished, T, CN 3.45m to 3.74m: Zone of Joints. Joints are J 45-60°, UN, Polished, T-N, CN 3.72m: J 45°, UN, Polished, T, CV (silty clay) 4.05m: J 35°, ST, Polished, T, CN 4.35m: J 40-50°, UN, Polished, VN, CN 4.6m: J 20°, UN, Polished, VN, CV (clayey silt)			4.5m HW (16/7/15)		

COMMENTS: 1) HW casing installed to 4.5m. 100% water loss. 2) Water loss was less than 5% for the majority of drilling after HW was inserted. Three HQ3 runs had 3) Two Standpipe Piezometers were installed down the borehole (see installation sheet for further details).

T+T DATATEMPLATE.GDT with

Log Scale 1:35

GENERAL LOG 30868.GPJ 26-Nov-2015

BORE HOLE LOG

Tonkin+Taylor

BOREHOLE No: **BH3**

SHEET 2 OF 2

PROJECT:

JOB No: 30868

LOCATION: 17 Old Pine Valley Road, Dairy Flat (Refer to Site Plan)

CO-ORDINATES: (Mt Eden 2000)

DIRECTION: 0.00°

ANGLE FROM HORIZ.: -90.00°

R.L. GROUND: 34.60m

R.L. COLLAR: 34.60m

DATUM: Auckland 1946

SURVEY: Trimble

DRILLED BY: DCN Drilling Ltd.

LOGGED BY: MTJH

CHECKED:

START DATE: 16/7/15

FINISH DATE: 17/7/15

CONTRACTOR: DCN Drilling Ltd.

GEOLOGICAL UNIT	DESCRIPTION OF CORE SOIL: Classification, colour, consistency / density, moisture, plasticity ROCK: Weathering, colour, fabric, name, strength, cementation	Rock Weathering	Rock Strength	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log	Fracture Spacing (cm)	RQD %	Description Type, Orientation, Spacing, Shape, Persistence, Roughness, Aperture, Weathering, Infill	Water Loss (%)	Water Level	Casing	Installation	Core Box
NORTHERN ALLOCHTHON	minimal pressure. 4.14m to 4.23m: Core loss (core washed away) 4.23m: Core description is the same as 3.74m 4.93m: Highly weathered, light greenish grey, SILTSTONE; extremely weak (sandy SILT with trace clay and gravel). Unit is highly fractured and sheared, with polished surfaces common. Recovered as a coarse sand to fine to coarse gravel and cmaddles easily with minimal pressure. [CRUSH ZONE] 5.55m to 5.73m: Core loss (core washed away) 5.73m: Slightly weathered, greenish grey, SILTSTONE; weak. Evidence of shearing (seen as dark grey laminations within the core) and polished surfaces are common. Cuttings are coarse sand to fine to medium gravel-sized clasts with pressure.			(HQ) SPT	88 74	SPT Refusal 19 1/37 13 for 10mm 30/50	33.5 33.0 32.5 32.0 31.5 31.0	5.5 6.0			8	4.93m to 5.55m: Coring may be represented within Core Box 2 due to the highly fractured nature of the core 5.73m to 6.35m: Shear surfaces are inclined between 25 to 85° 5.89m: J 25-40°, UN, R, N, CN					
	End of Borehole at 6.35m bgl (Target Depth Reached) Notes: 1) Shear vane readings were completed in the end of the core barrel, using Shear Vane number 569, with a Calibration Factor of 1.570. 2) Some core recovery measurements were difficult due to the sheared nature of the core. 3) Water levels in the installed piezometers was 0.26m (Shallow: S) and 0.82m (Deep: D) on 20/7/15, 0.26m (Shallow) and 0.53m (Deep) on 23/9/15 and 0.93m (Shallow) and 1.035m (Deep) on 29/10/15.						30.0 29.5 29.0 28.5 28.0 27.5 27.0 26.5 26.0 25.5 25.0 24.5 24.0	6.5 7.0 7.5 8.0 8.5 9.0 9.5 10.0									

COMMENTS: 1) HW casing installed to 4.6m. 100% water loss. 2) Water loss was less than 5% for the majority of drilling after HW was inserted. Three HQ3 runs had 3) Two Standpipe Piezometers were installed down the borehole (see installation sheet for further details).

T+T DATATEMPLATE.GDT 30/11/15

Log Scale 1:25

GENERAL.LOG 30868.GPJ 26-Nov-2015

BORE HOLE LOG

Tonkin+Taylor

BOREHOLE No: **BH4**

SHEET 1 OF 2

DRILLED BY: DCN Drilling Ltd.
LOGGED BY: MTJH
CHECKED:
START DATE: 17/7/15
FINISH DATE: 17/7/15
CONTRACTOR: DCN Drilling Ltd.

PROJECT:
JOB No: 30868
LOCATION: 101 Argent Lane, Wainui (Refer to Site Plan)

CO-ORDINATES: (Mt Eden 2000)
DIRECTION: 0.00°
ANGLE FROM HORIZ.: -90.00°

R.L. GROUND: 42.91m
R.L. COLLAR: 42.91m
DATUM: Auckland 1946
SURVEY: Trimble

GEOLOGICAL UNIT	DESCRIPTION OF CORE SOIL: Classification, colour, consistency / density, moisture, plasticity ROCK: Weathering, colour, fabric, name, strength, cementation	Rock Weathering	Rock Strength	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log	Fracture Spacing (cm)	RQD %	Description: Type, Orientation, Spacing, Shape, Persistence, Roughness, Aperture, Weathering, Infill	Water Loss (%)	Water Level	Casing	Installation	Core Size
TS	0m: Organic SILT with trace clay; dark brown. Very soft, wet, low plasticity. [TOPSOIL]												0m to 2.5m: Open Hand (OH) drilling method was used, which results in the compression of the recovered core. Therefore, no noticeable core loss was identified through this section of core					
	0.09m: Silty CLAY with trace organics; brown with orange brown streaks. Firm, moist, high plasticity. Organics are fibrous (roots). [Residual MANGAKAHIA COMPLEX]			OH	100	SV 0.25m 69/33							0.24m: SV completed at 0.24m as core dropped out of OH prior to being recovered on a later run					
	0.17m: Clayey SILT with trace fine sand; orange brown with light grey mottles. Stiff, moist, high plasticity.					WC 3: 67.9%	42.5	0.5					0.25m to 0.37m: Core has piled with 5x0-in due to three recovery attempts of dropped core					
	0.46m to 0.73m: ...with trace fine to coarse sand; light grey with orange brown streaks and dark orange and black specks. With trace MnO nodules and limonite staining.			OH	111	WC 4: 83.1%	42.0											
	0.73m to 0.98m: ...with some clay.							1.0										
	0.98m: SILT with coarse medium to coarse sand and fine to medium gravel and minor clay; grey with orange brown streaks and black specks. Very stiff, moist, high plasticity. With trace MnO nodules. Gravel and sand are angular weathered siltstone, up to 12mm. [Completely Weathered MANGAKAHIA COMPLEX]			OH	109	WC 5: 102.6%	41.5											
	1.35m: Highly weathered, light grey with orange brown specks, SILTSTONE; extremely weak (SILT with minor clay and gravel). Unit is sheared. Crumbles into coarse sand to fine to medium gravel-sized clasts within a silt with minor clay matrix under minimal pressure.			SPT	80	SV 1.45m 117° WC 6: 36.1% SPT 1.8m 47 7 11 30*/150	41.3	1.5					1.5m: OB run recovered 0.7m of core loss from the two previous runs					
	1.7m: Slightly weathered, grey, SILTSTONE; weak. Unit is sheared and polished surfaces are rare. Crumbles into medium to coarse sand to fine to coarse gravel-sized clasts with pressure.			OB	91		41.0				9						
	1.86m to 2.15m: Core loss (0.03m: dropped out of SPT spoon and 0.26m: washed away while drilling)					WC 7: 33.9%	40.5	2.5										
	2.15m: Core description is the same as 1.7m.																	
	2.5m: Moderately weathered, grey, SILTSTONE; very weak. Unit is sheared and polished surfaces are common. Crumbles into coarse sand to fine gravel-sized clasts with pressure.			HQ3	100		40.0				0		2.6m: J 60°, UN, Polished, VN, CV (clayey silt)					
	2.82m: Highly weathered, grey, SILTSTONE; extremely weak (sandy GRAVEL with minor silt). Unit is highly sheared and polished surfaces are very common. Crumbles into medium to coarse sand to fine to medium gravel-sized clasts easily with minimal pressure. [CRUSH ZONE]			SPT	60	SPT 3m 102 2/6 5/6 8/6 16/150	39.5	3.0					2.82m: J 55°, UN, Polished, VN, CN					
	3.29m to 3.45m: Core loss (dropped out of SPT spoon)			HQ3	0						0		3.45m to 4.5m: Three short HQ3 runs due to hole collapsing and rods becoming core bound. Rods were pulled and then reinserted at 4.5m					
	3.45m: Core description is the same as 2.82m							3.5										
	3.5m to 3.62m: Core loss (core-barrelling caused the core to be washed away)																	
	3.62m: Core description is the same as 2.82m			HQ3	85		39.0	4.0			0		3.85m: J 20°, UN, Polished, T, CN 3.88m: J 10°, PL, Polished, T, CN					
	3.62m to 3.79m: ...recovered as a fine to coarse gravel (sub-angular to angular clasts, up to 40mm).																	
	4.02m: Moderately weathered, grey with dark grey streaks, SILTSTONE; very weak. Unit is sheared and polished surfaces are common. Crumbles into medium to coarse sand to fine to medium gravel within a silt with minor clay matrix under minimal pressure.			HQ3	90		38.5				0							
				SPT	42	SPT 4.5m 33 50/ 17 for 45mm 50/150		4.5										
	4.73m to 4.87m: Core loss (dropped out of SPT spoon)			HQ3	97						0							
	4.87m: Core description is the same as 4.02m							5.0										

NORTHERN ALLOCHTHON

COMMENTS: 1) HW casing installed to 4.5m. 2) Water loss was less than 5% during drilling after HW was inserted.
3) Two Standpipe Piezometers were installed down the borehole (see installation sheet for further details).

T+T DATATEMPLATE.GDT mtjh

Log Scale 1:25

GENERAL LOG 30868.GPJ 26-Nov-2015

Tonkin+Taylor

BORE HOLE LOG

BOREHOLE No: **BH4**

SHEET 2 OF 2

PROJECT:	CO-ORDINATES: (Mt Eden 2000)	R.L. GROUND: 42.91m	DRILLED BY: DCN Drilling Ltd.
JOB No: 30868		R.L. COLLAR: 42.91m	LOGGED BY: MTJH
LOCATION: 101 Argent Lane, Wainui (Refer to Site Plan)	DIRECTION: 0.00°	DATUM: Auckland 1946	CHECKED:
	ANGLE FROM HORIZ: -90.00°	SURVEY: Trimble	START DATE: 17/7/15
			FINISH DATE: 17/7/15
			CONTRACTOR: DCN Drilling Ltd.

GEOLOGICAL UNIT	DESCRIPTION OF CORE	Rock Weathering	Rock Strength	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log	Fracture Spacing (cm)	RQD %	Description	Water Loss (%)	Water Level	Casing	Installation	Core Box
	SOIL: Classification, colour, consistency / density, moisture, plasticity ROCK: Weathering, colour, fabric, name, strength, cementation												Type, Orientation, Spacing, Shape, Persistence, Roughness, Aperture, Weathering, Infill					
NORTHERN ALLOCATION	4.03m: Moderately weathered, grey with dark grey streaks, SILTSTONE; very weak. Unit is sheared and polished surfaces are common. Crumbles into medium to coarse sand to fine to medium gravel within a silt with minor clay matrix under minimal pressure.			THQ1	97		37.5	5.5				8	4.87m to 5.05m: Recovered as a gravel due to fracturing of the core by the SPT undertaken at 4.5m					
	5.33m: Slightly weathered, grey, SILTSTONE; weak. Unit is sheared and polished surfaces are common. Crumbles into a coarse sand to fine gravel-sized clasts under pressure.												5.03m: J 70°, Pl, Polished, T, CN					
	5.93m: Highly weathered, grey, SILTSTONE; extremely weak (clayey SILT with some fine gravel and coarse sand). Unit is highly sheared and polished surfaces are common. Crumbles into a coarse sand to fine gravel-sized clasts under minimal pressure. [CRUSH ZONE]			SPT	89	10/1 Ref 14 3/50 15 Ref 50mm N>50	37.0	6.0					5.89m: J 30°, Uli, Polished, N, CV (clayey silt)					
	5.96m: Core description is the same as 5.33m **End of Borehole at 6.37m bgl (Target Depth Reached)**						36.0	6.5										
	Notes: 1) Shear vane readings were completed in the end of the core barrel, using Shear Vane number 589, with a Calibration Factor of 1.570. 2) Some core recovery measurements were difficult due to the sheared nature of the core. 3) Water levels in the installed piezometers were Dry (Shallow; S) and 0.31m (Deep; D) on 26/7/15, 0.11m (Shallow) and 0.18m (Deep) on 25/9/15 and 0.74m (Shallow) and 0.83m (Deep) on 29/10/15.						35.0	8.0										
							34.0	9.0										
							33.0	10.0										

COMMENTS: 1) HW casing installed to 4.5m. 2) Water loss was less than 5% during drilling after HW was inserted.
3) Two Standpipe Piezometers were installed down the borehole (see installation sheet for further details).

T+T_DATATEMPLATE.ODT rel3

Log Scale 1:25

GENERAL LOG 30868.GPJ 26-Nov-2015

Tonkin+Taylor

BORE HOLE LOG

BOREHOLE No: **BH5**

SHEET 1 OF 4

PROJECT:

JOB No: 30868

LOCATION: 17 Old Pine Valley Road, Dairy Flat (Refer to Site Plan)

CO-ORDINATES: (Nt Eden 2000)

DIRECTION: 0.00°

ANGLE FROM HORIZ.: -90.00°

R.L. GROUND: 34.04m

R.L. COLLAR: 34.04m

DATUM: Auckland 1946

SURVEY: Trimble

DRILLED BY: DCN Drilling Ltd.

LOGGED BY: MTJH

CHECKED:

START DATE: 22/7/15

FINISH DATE: 22/7/15

CONTRACTOR: DCN Drilling Ltd.

GEOLOGICAL UNIT	DESCRIPTION OF CORE SOIL: Classification, colour, consistency / density, moisture, plasticity ROCK: Weathering, colour, fabric, name, strength, cementation	Rock Weathering	Rock Strength	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log	Fracture Spacing (cm)	RQD %	Description: Type, Orientation, Spacing, Shape, Persistence, Roughness, Aperture, Weathering, Infill	Water Loss (%)	Water Level	Casing	Installation	Core Box
TS	Organic SILT with minor clay; dark brown. Soft, wet, low plasticity. [TOPSOIL]			CB	100		34.0	0					0m to 6m: Open Barrel (OB) drilling method was used, which results in the compression of the recovered core. Therefore, no noticeable core loss was identified through this section of core					
	0.03m to 0.06m: ...with some clay. Firm, moist, high plasticity																	
	0.06m: SILT with minor clay, fine to medium sand and fine to medium gravel and trace topsoil; light brownish grey with light grey and brown streaks. Stiff, moist, high plasticity. Gravel is angular siltstone, up to 8mm. [FILL]					WC 18 39.9%	33.5	0.5										
	0.16m to 0.38m: ...with minor topsoil																	
	0.5m: Clayey SILT with some topsoil and trace fine to coarse sand and fine gravel; light brownish grey and brown. Stiff, moist, high plasticity. Gravel is angular siltstone, up to 6mm.			CB	100	SV 0.35kPa 03/03/1	33.0	1.0										
	0.53m: ...wood fragment (12mm diameter)					WC 19 32.4%												
	0.58m to 0.63m: ...with minor fine to medium gravel. Gravel is angular siltstone, up to 20mm																	
	0.63m: Silty CLAY with minor topsoil and trace gravel; orange brown with dark brown streaks and light grey mottles. Very stiff, moist, high plasticity. Gravel is angular siltstone, up to 7mm.			CB	100	SV 1.45kPa 054/10	32.5	1.5										
	0.73m to 0.84m: ...clayey SILT with some topsoil and organics. Organics are fibrous (wood fragments). Contains trace silt-sized micaceous material (observed as 'sparkles' within the core)			PTH0	100													
	1m: CLAY with some silt, minor fine sand and trace fine to medium gravel; light grey with orange brown and brownish grey streaks. Very stiff, moist, high plasticity. Gravel is angular siltstone, up to 10mm.			SPT	100	SPT 1.5m: 0* 2 3 N=5	32.0	2.0					1.5m: 80mm diameter Push Tube completed					
	1.38m to 2.45m: ... with minor silt and fine to medium gravel; brownish grey with orange brown streaks and light grey mottles. Gravel is angular siltstone, up to 9mm.												2m: SPT self-penetrated 150mm					
TS	2.45m: Organic clayey SILT; dark brown. Stiff, moist, high plasticity. [BURIED TOPSOIL]			CB	91	WC 20 32.6%	31.5	2.5										
	2.58m: wood fragment (21mm x 10mm)																	
	2.58m: CLAY with minor silt; orange brown with brown streaks and light grey mottles. Very stiff, moist, high plasticity. [Residual MANGAKAHIA COMPLEX]					SV 2.95kPa 126/30	31.0	3.0										
						WC 21 28.1%												
				SPT	91	SPT 3cm: 3* 4 7 N=11	30.5	3.5										
	3.88m: Silty CLAY; grey with orange brown streaks and black mottles. Very stiff, moist, high plasticity. [Completely Weathered MANGAKAHIA COMPLEX]			CB	100		30.0	4.0										
	4.06m to 4.18m: ...clayey SILT																	
	4.18m: SILT with minor clay; grey. Very stiff, moist, high plasticity. Evidence of shearing.					SV 0.45kPa 093/05	29.5	4.5										
	4.27m to 4.4m: ...with trace clay. Low plasticity																	
	4.38m to 4.4m: ...with trace organics. Organics are fibrous (roots)					WC 22 41.8%												
	4.4m: SILT with some clay; orange brown with grey specks and black mottles. Hard, moist, low plasticity. Evidence of shearing. With minor MnO nodules.			SPT	100	SPT 4.5m: 3* 4 5 N=9												
	4.68m: Highly weathered, greenish grey with brownish grey streaks, SILTSTONE; extremely weak						29.0	5.0										

COMMENTS: 1) HW casing installed to 4.5m. 2) Water loss was less than 5% during drilling after HW was inserted.
3) Two Standpipe Piezometers were installed down the borehole (see installation sheet for further details).

NORTHERN ALLOCHTHON

FILL

T+T DATATEMPLATE.GDT.mlib

Log Scale 1:25

GENERAL LOG 30868.GPJ 26-Nov-2015

BORE HOLE LOG

Tonkin+Taylor

BOREHOLE No: **BH5**

SHEET 2 OF 4

PROJECT:

JOB No: 30668

LOCATION: 17 Old Pine Valley Road, Dairy Flat (Refer to Site Plan)

CO-ORDINATES: (Mt Eden 2000)

DIRECTION: 0.00°

ANGLE FROM HORIZ.: -90.00°

R.L. GROUND: 34.04m

R.L. COLLAR: 34.04m

DATUM: Auckland 1946

SURVEY: Trimble

DRILLED BY: DCN Drilling Ltd.

LOGGED BY: MTJH

CHECKED:

START DATE: 22/7/15

FINISH DATE: 22/7/15

CONTRACTOR: DCN Drilling Ltd.

GEOLOGICAL UNIT	DESCRIPTION OF CORE (SOIL: Classification, colour, consistency / density, moisture, plasticity. ROCK: Weathering, colour, fabric, name, strength, comments)	Rock Weathering	Rock Strength	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	Defect Log	Fracture Spacing (cm)	RQD %	ROCK DEFECTS Description (Type, Orientation, Spacing, Shape, Persistence, Roughness, Aperture, Weathering, Infill)	Water Loss (%)	Water Level	Casing	Installation	Core Box
NORTHERN ALLOCHTHON	((SILT with some clay and trace gravel). Evidence of soft sediment deformation. Unit is sheared and polished surfaces are rare. Crumbles into a silt with loose fine gravel-sized siltstone clasts under minimal pressure.																	
	4.95m to 5.3m: Core loss (core washed away)																	
	5.3m: Core description is the same as 4.65m																	
	5.52m: Moderately weathered, grey and greenish grey, SILTSTONE; very weak. Unit is sheared and polished surfaces are common. Crumbles into medium to coarse sand to fine gravel-sized clasts with pressure.																	
	6.25m: Moderately weathered, greenish grey with light grey streaks, SILTSTONE; extremely weak (SILT with minor clay, gravel and sand). Unit is sheared and polished surfaces are common. Crumbles into medium to coarse sand to fine to coarse gravel-sized clasts within a silt with minor clay matrix.																	
	6.45m to 6.64m: Core loss (core washed away)																	
	6.64m: Core description is the same as 6.25m																	
	6.93m: Moderately weathered, grey, silty fine SANDSTONE; extremely weak (SAND with some silt). Evidence of soft sediment deformation. 7.08m to 7.1m: ...evidence of shearing surfaces (seen in dark grey locations within the core)												6.93m to 7.1m: Unit is bound by two sharp contacts, with the units upper contact inclined at 5° and the lower contact on a suspected fault (inclined at 65°) 7.1m: F 65°, PL, SL, CN, indeterminate infill					
	7.1m: Moderately weathered, greenish grey with grey mottles, SILTSTONE; extremely weak (SILT with minor clay and gravel). Evidence of soft sediment deformation. Unit is sheared and polished surfaces are rare. Crumbles into coarse sand to fine gravel-sized clasts in a silt with minor clay matrix under minimal pressure. 7.1m to 7.15m: ...evidence of shearing surfaces (seen in brownish grey locations within the core) 7.23m to 7.33m: ...suspected calcite nodules? Sub-angular, white and up to 20mm in diameter												7.35m: J 45°, PL, VN, still intact 7.4m: J 65°, PL, VN, still intact					
	7.33m: Moderately weathered, light grey and light greenish grey, SILTSTONE; very weak. Unit is sheared and polished surfaces are common. Crumbles into medium to coarse sand to fine to medium gravel-sized clasts with minimal pressure.																	
	7.95m to 8.23m: Core loss (core washed away)																	
	8.23m: Core description is the same as 7.33m																	
	8.43m: Highly weathered, grey, SILTSTONE; extremely weak (silty GRAVEL with some sand and trace clay). Evidence for soft sediment deformation. Unit is highly sheared and polished surfaces are common. Crumbles into medium to coarse sand to fine gravel-sized clasts with minimal pressure. With trace very weak siltstone beds (up to 37mm thick).												8.54m: J 30°, UN, T, CN, still intact 8.74m: J 65°, UN, T, CV (clayey silt), still intact 8.89m: J 45°, UN, T, CV (clayey silt), still intact					
	8.94m: Moderately weathered, grey, SILTSTONE; very weak. Unit is sheared and polished surfaces are common. Crumbles into coarse sand to fine gravel-sized clasts with pressure.																	
	9.45m to 9.67m: Core loss (core washed away)																	
	9.67m: Core description is the same as 8.94m												9.66m: J 50°, PL, Polished, VN, CV (clayey silt)					

COMMENTS: 1) HW casing installed to 4.5m. 2) Water loss was less than 5% during drilling after HW was inserted.
3) Two Standpipe Piezometers were installed down the borehole (see installation sheet for further details).

T+T DATATEMPLATE.GDT auth

Log Scale 1:25

GENERAL LOG 30668.GPJ 26-Nov-2015

BORE HOLE LOG

Tonkin+Taylor

BOREHOLE No: **BH5**

SHEET 3 OF 4

PROJECT:	CO-ORDINATES: (Mt Eden 2000)	R.L. GROUND: 34.04m	DRILLED BY: DCN Drilling Ltd.
JOB No: 30868		R.L. COLLAR: 34.04m	LOGGED BY: MTJH
LOCATION: 17 Old Pine Valley Road, Dairy Flat (Refer to Site Plan)	DIRECTION: 0.00°	DATUM: Auckland 1946	CHECKED:
	ANGLE FROM HORIZ.: -90.00°	SURVEY: Trimble	START DATE: 22/7/15
			FINISH DATE: 22/7/15
			CONTRACTOR: DCN Drilling Ltd.

GEOLOGICAL UNIT: NORTHERN ALLOCHTHON

DESCRIPTION OF CORE

SOIL: Classification, colour, consistency / density, moisture, plasticity

ROCK: Weathering, colour, fabric, name, strength, cementation

Rock Weathering: RW SW MW HW CW

Rock Strength: EW VW W M S VS EH

Sampling Method / Core Recovery (%) / Testing / RL (m) / Depth (m) / Graphic Log

ROCK DEFECTS: Defect Log / Fracture Spacing (cm) / RQD % / Description (Type, Orientation, Spacing, Shape, Persistence, Roughness, Aperture, Weathering, Infill)

Water Loss (%) / Water Level / Casing / Installation / Core Size

8.94m: Moderately weathered, grey, SILTSTONE; very weak. Unit is sheared and polished surfaces are common. Crumbles into coarse sand to fine gravel-sized clasts with pressure.

HQ3 75 — SPT 10.5m: 3,7 / 11 / 12 / N=35

10.75m to 10.93m: ...dark greenish grey with brownish grey streaks

SPT 100

10.95m to 11.74m: ...evidence of shearing surfaces (seen as lineations within the core)

RQD 100

11.57m: Highly weathered, greenish grey, SILTSTONE; extremely weak (SILT with minor clay and gravel). Evidence of soft sediment deformation. Unit is highly sheared. Evidence of shearing surfaces are common (seen as lineations within the core). [FAULT ZONE]

11.94m to 11.97m: ...moderately weathered, light grey, SILTSTONE; very weak.

11.97m to 12.6m: ...moderately weathered, grey, SILTSTONE; extremely weak (clayey SILT with minor gravel).

SPT 100

SPT 12m: 31 / 50 for 120mm / N=50

12.3m to 12.6m: Core lost (core washed away)

12.6m: Core description is the same as 11.57m

12.69m: Moderately weathered, grey, SILTSTONE; very weak. Unit is sheared and polished surfaces are common. Crumbles into coarse sand to fine gravel-sized clasts with minimal pressure.

HQ3 75

12.89m: Moderately weathered, grey, SILTSTONE; very weak. Unit is highly sheared. Evidence of shearing surfaces are common (seen as lineations within the core). [FAULT ZONE]

13.36m: Moderately weathered, greenish grey with grey mottles, SILTSTONE; extremely weak (clayey SILT with minor sand and gravel). Evidence of soft sediment deformation. Unit is sheared. Crumbles into medium to coarse sand to fine gravel-sized clasts within a clayey silt matrix under minimal pressure.

SPT 12m: 11 / 19 / 21 / N=37

13.95m to 14.09m: Core lost (core washed away)

14.09m: Moderately weathered, light grey, SILTSTONE; extremely weak (silt with minor clay). Unit is sheared and polished surfaces are common. Crumbles into medium to coarse sand to fine gravel-sized clasts within a clayey silt matrix under minimal pressure.

HQ3 97

14.26m: Highly weathered, grey, SILTSTONE; extremely weak (sandy GRAVEL with minor silt). Unit is highly sheared and polished surfaces are common. Crumbles easily into medium to coarse sand to fine gravel-sized clasts under minimal pressure. [CRUSH ZONE]

Depth (m)	RL (m)
10.5	23.5
11.0	23.0
11.5	22.5
12.0	22.0
12.5	21.5
13.0	21.0
13.5	20.5
14.0	20.0
14.5	19.5
15.0	

Defect Log	Fracture Spacing (cm)	RQD %	Description
		0	**10.81m:** J 45°, UN, T, CN, still intact
			10.89m: J 55°, UN, Polished, T, CV (clayey silt)
			10.27m: J 40°, PL, Polished, VN, CV (clayey silt)
			10.37m: J 50°, PL, R, N, CG (clayey silt, up to 2mm thick)
		0	**10.95m to 11.74m:** Shear surfaces are inclined between 75 to 90°
			10.98m: J 90°, PL, Polished, T, CN
			11.14m: J 85°, UN, SW, VN, CV (clayey silt)
			11.57m: F 80°, UN, Indeterminate offset
			11.84m: J 65°, UN, Polished, N, CG (clayey silt, up to 2mm)
			11.91m: F 55°, PL, Indeterminate offset
			11.95m: F 60°, UN, Indeterminate offset
		0	**12.69m:** Fg 50°, UN, CG (clay, up to 11mm), Indeterminate offset
			12.85m: J 40°, PL, Polished, VN, CN
			12.91m to 13.36m: Shear surfaces are inclined between 75 to 90°
			13.39m: F 65°, PL, SL, VN, Indeterminate offset
		0	**14.12m:** J 40°, UN, R, VN, CN
			14.31m: J 35°, PL, Polished, T, CN
			14.46m: J 50°, PL, R, VN, CV (clayey silt)

COMMENTS: 1) HW casing installed to 4.5m. 2) Water loss was less than 5% during drilling after HW was inserted.
3) Two Standpipe Piezometers were installed down the borehole (see installation sheet for further details).

T+T DATATEMPLATE.ODT mith

Log Scale 1:25

GENERAL LOG 30868.GPJ 26-Nov-2015

BORE HOLE LOG

Tonkin+Taylor

BOREHOLE No: **BH5**

SHEET 4 OF 4

PROJECT:

JOB No: 30888

LOCATION: 17 Old Pine Valley Road, Dairy Flat (Refer to Site Plan)

CO-ORDINATES: (Mt Eden 2000)

DIRECTION: 0.00°

ANGLE FROM HORIZ.: -90.00°

R.L. GROUND: 34.04m

R.L. COLLAR: 34.04m

DATUM: Auckland 1946

SURVEY: Trimble

DRILLED BY: DCN Drilling Ltd.

LOGGED BY: MTJH

CHECKED:

START DATE: 22/7/15

FINISH DATE: 22/7/15

CONTRACTOR: DCN Drilling Ltd.

GEOLOGICAL UNIT	DESCRIPTION OF CORE SOIL: Classification, colour, consistency / density, moisture, plasticity ROCK: Weathering, colour, fabric, name, strength, cementation	Rock Weathering	Rock Strength	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log	Fracture Spacing (cm)	RQD %	Description: Type, Orientation, Spacing, Shape, Planarity, Roughness, Aperture, Weathering, Infill	Water Loss (%)	Water Level	Casing	Installation	Core Box
NORTHERN ALLOCHTHON	14.81m to 14.84m: ...lens of moderately strong fine sandy SILTSTONE (does not propagate through the width of the core) 14.26m: Highly weathered, grey, SILTSTONE, extremely weak (sandy GRAVEL with minor silt). Unit is highly sheared and polished surfaces are common. Crumbles easily into medium to coarse sand to fine gravel-sized clasts under minimal pressure. [CRUSH ZONE]			SPTC		SPTC 18hm 6/5 6/5 13/15cm N=50												
	15.66m: Moderately weathered, greenish grey, SILTSTONE; extremely weak clayey SILT with minor gravel). Evidence of soft sediment deformation. Unit is sheared and polished surfaces are rare. Crumbles into coarse sand to fine gravel-sized clasts within a clayey silt matrix with minimal pressure.			HQ3	100							0						
	16.15m: Highly weathered, grey, SILTSTONE; extremely weak (sandy GRAVEL with minor silt). Unit is highly sheared and polished surfaces are common. Crumbles into medium to coarse sand to fine gravel-sized clasts with minimal pressure. [CRUSH ZONE]					SPTC 16.45m 33/7 25/25 N=43							16.18m: J 55°, UN, R, N, CG (silt with minor clay, up to 2mm)					
	SPTC																	
	End of Borehole at 16.95m bgl (Target Depth Reached) Notes: 1) Shear vane readings were completed in the end of the core barrel, using Shear Vane number 569, with a Calibration Factor of 1.538. 2) Some core recovery measurements were difficult due to the sheared nature of the core. 3) SPTC refers to a Solid Cone Standard Penetration Test. 4) Water levels in the installed piezometers were 4.09m (Shallow: S) and 0.62m (Deep: D) on 26/7/15, 4.24m (Shallow) and 2.975m (Deep) on 25/9/15 and 4.475m (Shallow) and 3.35m (Deep) on 29/10/15.																	

COMMENTS: 1) HW casing installed to 4.5m. 2) Water loss was less than 5% during drilling after HW was inserted.
3) Two Standpipe Piezometers were installed down the borehole (see installation sheet for further details).

T+T_DATATEMPLATE.GDT.ms(l)

Log Scale 1:25

GENERAL LOG 30888.GPJ 30-Nov-2015

BORE HOLE LOG

Tonkin+Taylor

BOREHOLE No: **BH6**

SHEET 1 OF 3

DRILLED BY: DCN Drilling Ltd.
LOGGED BY: MTJH
CHECKED:
START DATE: 23/7/15
FINISH DATE: 23/7/15
CONTRACTOR: DCN Drilling Ltd.

PROJECT:
JOB No: 30868
LOCATION: 21A Sidwell Road, Wairui (Refer to Site Plan)

CO-ORDINATES: (Mt Eden 2000)
DIRECTION: 0.00°
ANGLE FROM HORIZ.: -90.00°

R.L. GROUND: 22.78m
R.L. COLLAR: 22.78m
DATUM: Auckland 1946
SURVEY: Trimble

GEOLOGICAL UNIT	DESCRIPTION OF CORE SOIL: Classification, colour, consistency / density, moisture, plasticity ROCK: Weathering, colour, fabric, name, strength, cementation	Rock Weathering	Rock Strength	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Drilled Log	Fracture Spacing (cm)	RQD %	Description Type, Orientation, Spacing, Shape, Persistance, Roughness, Aperture, Weathering, Infill	Water Loss (%)	Water Level	Casing	Installation	Core Box
FILL	0m: Organic SILT; dark brown. Very soft, wet, low plasticity. [TOPSOIL] 0.07m: Organic SILT with some clay and fine to medium gravel; dark brown with orange brown and light grey streaks. Very stiff, moist, low plasticity. Gravel is sub-angular basalt, up to 12mm. [TOPSOIL FILL] 0.56m to 0.59m: ...with trace charcoal fragments (up to 11mm) 0.59m: SILT with minor clay and trace fine gravel, fine sand and organics; brown with light grey streaks and orange brown mottles. Very stiff, moist, high plasticity. Organics are fibrous (rootlets). Gravel is sub-angular basalt, up to 5mm.												0m to 7.5m: Open Barrel (OB) drilling method was used, which results in the compression of the recovered core. Therefore, no noticeable core loss was identified through this section of core					
TAURANGA GROUP	1m: Organic clayey SILT; brown and light grey with orange brown streaks. Firm, moist, high plasticity. Organics are fibrous (decomposing wood fragments). [TAURANGA GROUP] 1.8m to 1.86m: Core loss (dropped out of Push Tube) 1.95m to 2.28m: Core description is the same as 1m 2.28m to 2.4m: Core loss (dropped out of SPT spoon) 2.4m: Clayey SILT with minor organics; light grey with orange brown streaks and black mottles. Stiff, moist, high plasticity. Organics are fibrous (decomposing wood fragments). 2.57m to 2.66m: ...organic clayey SILT; brown and light grey with orange brown streaks 2.66m to 2.77m: ...SILT with minor clay. Low plasticity 2.77m to 2.9m: ...CLAY with minor silt. Very stiff. With beds of organic clayey SILT (up to 200mm thick) 2.89m: ...wood fragment (25mm diameter) 2.9m: SILT with trace clay and organics; brown with light grey/ish brown streaks. Firm, moist, low plasticity. Organics are fibrous (wood fragments and rootlets). 3.33m to 3.45m: Core loss (dropped out of SPT spoon) 3.45m: CLAY with some silt and trace organics; light grey with orange brown streaks. Stiff, moist, high plasticity. Organics are fibrous (rootlets). 4.39m to 5.05m: ...light grey with orange brown specks 4.39m to 4.43m: ...with trace organics (wood fragments and rootlets)			OB OB OB PTB0 SPT OB SPT OB SPT	100 100 100 67 73 100 71 100 88	SV 0.45m: 134kPa VHC 21 18.6% SV 0.65m: 177kPa SV 1.45m: 350kPa VHC 33 34.7% CONS: 1.35m ALT: 1.8m SPT 1.95m: 12/5cm N=9 SV 2.85m: 38kPa VHC 28 28.1% SPT 3m: 3/5cm N=3 SV 4.45m: 69kPa VHC 27 31.6% SPT 4.5m: 1/5cm N=4	22.8 22.0 21.8 21.0 20.8 20.0 19.8 19.0 18.8 18.0	0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0				1.8m: 60mm diameter Push Tube completed 1.95m: SPT self-penetrated 150mm 2.77m to 2.8m: Bedding is inclined at 5 to 15° 3m: SPT self-penetrated 75mm 3.45m to 3.65m: Bedding is inclined at <5 to 5° (typically 5°) 4.5m: SPT self-penetrated 75mm					

COMMENTS: 1) HW casing installed to 6m. 2) Water loss was less than 5% during drilling after HW was inserted.
3) Two Standpipe Piezometers were installed down the borehole (see installation sheet for further details).

BORE HOLE LOG

Tonkin+Taylor

BOREHOLE No: **BH6**

SHEET 2 OF 3

PROJECT:	CO-ORDINATES: (Mt Eden 2000)	R.L. GROUND: 22.78m	DRILLED BY: DCN Drilling Ltd.
JOB No: 30866		R.L. COLLAR: 22.78m	LOGGED BY: MTJH
LOCATION: 21A Sidwell Road, Wainui (Refer to Site Plan)	DIRECTION: 0.00°	DATUM: Auckland 1946	CHECKED:
	ANGLE FROM HORIZ.: -90.00°	SURVEY: Trimble	START DATE: 23/7/15
			FINISH DATE: 23/7/15
			CONTRACTOR: DCN Drilling Ltd.

GEOLOGICAL UNIT	DESCRIPTION OF CORE	Rock Weathering	Rock Strength	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log	Fracture Spacing (cm)	RQD %	Description	Water Loss (%)	Water Level	Casing	Installation	Core Box
EAST COAST BAYS FORMATION	SOIL: Classification, colour, consistency / density, moisture, plasticity ROCK: Weathering, colour, fabric, name, strength, cementation												Type, Orientation, Spacing, Shape, Persistence, Roughness, Aperture, Weathering, infill					
	5.05m: Clayey SILT; light grey with orange brown mottles. Stiff, moist, high plasticity. 5.43m to 5.5m:...with trace organics. Organics are fibrous (rootlets) 5.43m to 5.5m:...SILT with trace clay. Firm, low plasticity			C/D	100	SV 5.45m: 42kPa WC 28 48.2%	17.5	5.5					5.05m to 5.5m: Bedding is inclined at <5 to 10°					
	5.5m: SILT with some fine sand; light grey with orange brown streaks and dark orange mottles. Soft, moist, low plasticity. With trace limonite staining. [Residual EAST COAST BAYS FORMATION]			C/D	100	SV 5.85m: 35kPa	17.0	6.0					5.5m to 5.62m: Unit has been stained due to leaching from the alluvium above 5.62m to 5.78m: Wood fragments observed on core are not from within this unit, they have been smeared on the core during recovery of the CB run 5.84m: Black carbonaceous material inclined at <5 to 10°					
	5.77m: SILT with minor clay; grey. Stiff, moist, high plasticity. [Completely Weathered EAST COAST BAYS FORMATION] 5.77m to 5.89m:...grey with dark orange specks. With trace limonite staining. 6.49m to 6.7m:...with some clay			SPT*	84	WC 29 45.1% SPT 4,6,6 N=12	16.5	6.5					6m: SPT self-penetrated 350mm					
	6.7m: Interbedded clayey SILT and fine sandy SILT; grey. Clayey SILT is very stiff, moist, highly plastic and in beds 11-40mm thick. Fine sandy SILT has trace clay and is very stiff, moist, low plasticity and in beds 26-46mm thick. Clayey SILT dominates the unit (60%).			C/D	100		16.0	7.0										
	7.3m: Clayey SILT; grey. Very stiff, moist, high plasticity. With occasional beds of SILT with minor clay and trace fine sand (from 7-15mm thick and typically spaced 35-40mm, but ranges 7-71mm).			SPT	17	SV 7.45m: 170kPa WC 38 28.3% SPT 7,8,9 N=17	15.5	7.5					7.3m to 7.8m: Bedding is inclined at 5°					
	7.8m: Highly weathered, grey, laminated SILTSTONE; extremely weak (SILT with minor clay and fine sand).			HQ3	92		15.0	8.0				85						
	8.08m: Highly weathered, grey, silty fine SANDSTONE; poorly cemented, extremely weak (silty fine SAND).						14.5	8.5					8.28m to 8.84m: Bedding is inclined at <5 to 5°					
	8.28m: Slightly weathered, grey, silty fine to coarse SANDSTONE; moderately cemented, weak. Beds within this unit increase with depth. 8.28m to 8.36m:...very weak 8.72m:...soft sediment deformation (rip-up clast, 60x15mm) 8.84m to 8.93m:...laminated SILTSTONE.			HQ3	82	SPTC 5no: 25 for 12mm AND 5no: 25 for 13mm N=50	14.0	9.0				85	8.44m: Drilling induced defect 8.48m to 8.55m: Zone of Bedding Joints. Joints are B <5°, PL, SM, T, CN 8.6m: Short HQ3 run due to the drillist needing to be changed. All rods were removed from the hole 8.77m: B 5°, PL, Polished, T, CN 8.82m: B <5°, PL, SM, VN, CV (silt with minor clay) 8.84m: B <5°, PL, SM, VN, CV (silt with minor clay)					
	9.34m: Slightly weathered, grey, laminated SILTSTONE; weak. 9.81m:...soft sediment deformation (rip-up clast, 52x14mm)			HQ3	89		13.5	9.5				94	8.84m to 8.92m: Bedding is inclined at <5° 8.92m to 9.34m: Bedding is inclined at <5 to 5° 9.38m: J 45°, UN, SM, N, CV (silt) 9.46m: B <5°, PL, SM, VN, CN 9.68m to 9.72m: Core is highly disturbed due to drilling (drucking) 9.78m: B 5°, UN, SM, VN, CN 9.84m: Drilling induced defect					
							10.0	10.0										

COMMENTS: 1) HW casing installed to 6m. 2) Water loss was less than 5% during drilling after HW was inserted.
3) Two Standpipe Piezometers were installed down the borehole (see installation sheet for further details).

T+T DATATEMPLATE.GDT utils

Log Scale 1:25

GENERAL LOG 30866.GPJ 30-Nov-2015

BORE HOLE LOG

Tonkin+Taylor

BOREHOLE No: **BH6**

SHEET 3 OF 3

PROJECT:	CO-ORDINATES: (Mt Eden 2000)	R.L. GROUND: 22.78m	DRILLED BY: DCN Drilling Ltd.
JOB No: 30868		R.L. COLLAR: 22.78m	LOGGED BY: MTJH
LOCATION: 21A Sidwell Road, Wainui (Refer to Site Plan)	DIRECTION: 0.00°	DATUM: Auckland 1946	CHECKED:
	ANGLE FROM HORIZ.: -90.00°	SURVEY: Trimble	START DATE: 23/7/15
			FINISH DATE: 23/7/15
			CONTRACTOR: DCN Drilling Ltd.

GEOLOGICAL UNIT	DESCRIPTION OF CORE	Rock Weathering	Rock Strength	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log	Fracture Spacing (cm)	RQD %	Description	Water Loss (%)	Water Level	Casing	Installation	Core Box
	SOIL: Classification, colour, consistency / density, moisture, plasticity ROCK: Weathering, colour, fabric, name, strength, cementation	EW HW MW SW FR	EW HW MW SW FR VL L M H VH EH										Type, Orientation, Spacing, Shape, Persistence, Roughness, Aperture, Weathering, Infill					
EAST COAST BAYS FORMATION	9.9m to 10.66m...fine SANDSTONE; moderately cemented												9.9m: B 5°, PL, R, T, CV (silty sand) 9.9m to 10.66m: Core is highly disturbed due to drilling (flushing)					
	10.22m interbedded SILTSTONE and silty fine to medium SANDSTONE; grey. SILTSTONE is slightly weathered, laminated, weak and in beds 15-90mm thick. SANDSTONE is slightly weathered, moderately cemented, weak and in beds 10-31mm thick. Siltstone dominates the unit (55%).			110	78	SPTC 15cm 35 for 150mm 350 for 450mm N=85						84	10.1m: B <5°, PL, SM, T, CN 10.11m: J 65-85°, UN, SM, N, CN 10.12m: B <5°, PL, SM, VN, CN					
	10.22m to 10.26m...zone of soft sediment deformation			SPT1			10.5											
	10.73m: Core loss (core washed away)												10.64m: B <5°, PL, R, T, CN					1
	10.81m: Core description is the same as 10.22m						11.0						10.84m: F 35°, UN, T, microfault with indeterminate offset 10.84m: F 55°, UN, T, microfault with indeterminate offset					
	11.03m to 11.06m...silty fine SANDSTONE; poorly cemented, extremely weak (silty fine SAND)												11.08m: J 80°, UN, R, N, CN					
	11.06m: Slightly weathered, grey, laminated SILTSTONE; weak.			110	94		11.5					78	11.25m: B <5°, PL, SM, T, CV (silty sand)					
	11.26m to 11.37m...zone of soft sediment deformation																	
	11.37m to 11.56m...silty fine to medium SANDSTONE. Bed common with depth					SPTC 15cm 35 for 150mm 350 for 450mm N=85	12.0						11.47m: B <5°, UN, SM, N, CV (sand)					
	11.81m to 11.83m...extremely weak (SILT with minor clay)												11.88m to 12m: Core is highly disturbed due to handling (difficult removal from the catcher)					
	11.89m to 12m...fine SANDSTONE			SPT2														
	End of Borehole at 12.00m bgl (Target Depth Reached)						12.5											
	Notes: 1) Shear vane readings were completed in the end of the core barrel, using Shear Vane number 569, with a Calibration Factor of 1.338. 2) SPTC refers to a Solid Core Standard Penetration Test. 3) Water levels in the installed piezometers were 4.14m (Shallow: S) and 5.09m (Deep: D) on 26/7/15, 4.14m (Shallow) and 4.965m (Deep) on 25/9/15 and 4.7m (Shallow) and 5.64m (Deep) on 29/10/15.						13.0											
							13.5											
							14.0											
							14.5											
							15.0											

COMMENTS: 1) HW casing installed to 6m. 2) Water loss was less than 5% during drilling after HW was inserted.
3) Two Standpipe Piezometers were installed down the borehole (see installation sheet for further details).

T+T_DATATEMPLATE.GDT mib

Log Scale 1:25

GENERAL LOG 30868.GPJ 26-Nov-2015

BORE HOLE LOG

Tonkin+Taylor

BOREHOLE No: **BH7**

SHEET 1 OF 3

DRILLED BY: DCN Drilling Ltd.
LOGGED BY: MTJH
CHECKED:
START DATE: 24/7/15
FINISH DATE: 24/7/15
CONTRACTOR: DCN Drilling Ltd.

PROJECT:

JOB No: 30869

LOCATION: 330 Wainui Road, Wainui (Refer to Site Plan)

CO-ORDINATES: (Mt Eden 2000)

DIRECTION: 0.00°

ANGLE FROM HORIZ.: -90.00°

R.L. GROUND: 16.46m

R.L. COLLAR: 16.46m

DATUM: Auckland 1946

SURVEY: Trimble

GEOLOGICAL UNIT	DESCRIPTION OF CORE	Rock Weathering	Rock Strength	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Defect Leg	Fracture Spacing (m)	RQD %	Description: Type, Orientation, Spacing, Shape, Persistence, Roughness, Aperture, Weathering, Infill	Water Loss (%)	Water Level	Casing	Installation	Core Box
FILL / TS	0m: Organic SILT with trace clay; dark brown with orange brown and black mottles. Firm, moist, low plasticity. Unit composition is mainly topsoil, but with lenses of clay with some silt (up to 55x26mm). [TOPSOIL FILL]												0m to 6m: Open Barrel (OB) drilling method was used, which results in the compression of the recovered core. Therefore, no noticeable core loss was identified through this section of core					
	0.13m: Organic SILT with minor clay; brown with orange brown specks. Firm, moist, low plasticity. [BURIED TOPSOIL]																	
	0.33m to 0.34m...highly organic band of decomposing organics; dark brown and black. Suspect this is a buried ground surface.																	
	0.25m: CLAY with minor silt; orange brown with light grey mottles. Stiff, moist, high plasticity. [Residual EAST COAST BAYS FORMATION]																	
	0.33m to 0.53m...with some silt and minor topsoil; orange brown and brown with light grey streaks																	
	0.53m to 0.58m...orange brown with light grey and dark orange specks. With trace limonite staining																	
	0.58m to 0.74m...with trace silt																	
	1.07m to 1.95m...with trace silt; orange brown and light grey																	
EAST COAST BAYS FORMATION	1.95m to 2.84m...orange brown and light grey																	
	2.84m: Silty CLAY with trace fine sand; orange brown with light grey streaks and pink mottles. Stiff, moist, high plasticity.												3m: 60mm diameter Push Tube completed					
	3.6m: Silty CLAY; orange brown with light grey streaks. Stiff, moist, high plasticity.												3.45m: SPT self-penetrated 75mm					
	4.13m to 4.25m...with some silt; orange brown																	
	4.25m: SILT with trace clay and trace fine sand; grey with orange brown streaks. Stiff, moist, low plasticity. [Completely Weathered EAST COAST BAYS FORMATION]												4.5m: SPT self-penetrated 300mm					
	4.7m to 5.21m...with some clay; grey. High plasticity																	

COMMENTS: 1) HW casing installed to 6m. 2) Water loss was less than 5% during drilling after HW was inserted.
3) Two Standpipe Piezometers were installed down the borehole (see installation sheet for further details).

T+T_DATATEMPLATE.GDT smh

Log Scale 1:25

GENERAL LOG 30869.GPJ 26-Nov-2015

BORE HOLE LOG

Tonkin+Taylor

BOREHOLE No: BH7

SHEET 2 OF 3

PROJECT:	CO-ORDINATES: (M.Eden 2000)	R.L. GROUND: 16.46m	DRILLED BY: DCN Drilling Ltd.
JOB No: 30868	DIRECTION: 0.00°	R.L. COLLAR: 16.46m	LOGGED BY: MTJH
LOCATION: 330 Wainui Road, Wainui (Refer to Site Plan)	ANGLE FROM HORIZ.: -90.00°	DATUM: Auckland 1946	CHECKED:
		SURVEY: Trimble	START DATE: 24/7/15
			FINISH DATE: 24/7/15
			CONTRACTOR: DCN Drilling Ltd.

GEOLOGICAL UNIT: EAST COAST BAYS FORMATION

DESCRIPTION OF CORE

SOIL: Classification, colour, consistency / density, moisture, plasticity

ROCK: Weathering, colour, bdds, name, strength, cementation

5.03m to 5.12m: ...grey with light grey specks. Light grey specks are extremely weak, coarse sand-sized siltstone clasts (clayey silt)

5.12m: SILT with some fine sand and trace clay; grey. Stiff, moist, low plasticity.

5.46m to 5.49m: ...with colour fine to coarse sand and trace fine gravel. Gravel is sub angular weathered siltstone, up to 4mm

5.54m to 5.69m: ...clayey SILT. High plasticity. With soft sediment deformation

5.69m: Fine sandy SILT; grey. Stiff, moist, low plasticity.

5.91m: Highly weathered, grey, SILTSTONE; extremely weak (clayey SILT).

6.45m: Highly weathered, grey, fine to medium SANDSTONE; poorly cemented, extremely weak (SAND with some silt).

6.81m to 6.95m: ...silty fine to medium SANDSTONE. Bed coarsens with depth

7.11m to 7.24m: ...silty fine to medium SANDSTONE. Bed coarsens with depth

7.24m: Highly weathered, grey with greenish grey streaks, laminated SILTSTONE; very weak.

7.39m: Highly weathered, grey, fine SANDSTONE; moderately cemented, very weak.

7.8m: Highly weathered, grey, laminated SILTSTONE; very weak.

7.93m to 8.14m: ...interbedded SILTSTONE and silty fine SANDSTONE; grey. SILTSTONE is highly weathered, laminated, very weak and in beds up to 10mm thick. Silty fine SANDSTONE is highly weathered, moderately cemented, very weak and in beds up to 22mm

8.25m to 8.34m: ...silty fine SANDSTONE; extremely weak (silty fine SAND)

8.69m to 8.82m: ...zone of soft sediment deformation

8.93m: Interbedded fine SANDSTONE and SILTSTONE; grey. SANDSTONE is moderately weathered, moderately cemented, very weak and in beds 9-35mm thick. SILTSTONE is moderately weathered, laminated, very weak and in beds 3-56mm thick. Sandstone dominates (in soil (55%).

8.93m to 9.12m: ...fine SANDSTONE

9.12m to 9.21m: ...laminated SILTSTONE

Rock Weathering | Rock Strength | Sampling Method | Core Recovery (%) | Testing | RL (m) | Depth (m) | Graphic Log

ROCK DEFECTS: Defect Log | Fracture Spacing (cm) | RQD % | Description (Type, Orientation, Spacing, Shape, Persistence, Roughness, Aperture, Weathering, Infill)

Water Loss (%) | Water Level | Casing | Installation | Core Box

Sm: 60mm diameter Push Tube completed

6.45m: Extended HW casing an extra 3m due to the hole squeezing

7.39m: B <5°, PL, R, T, CV (sand)

7.8m to 8.69m: Bedding is inclined at <5°

8.58m: B <5°, UN, SM, T, CV (sandy silt)

8.93m to 10.05m: Bedding is inclined at <5°

COMMENTS: 1) HW casing installed to 6m. 2) Water loss was less than 5% during drilling after HW was inserted.
3) Two Standpipe Piezometers were installed down the borehole (see installation sheet for further details).

T+T DATATEMPLATE.GDT mth

Log Scale 1:25

BORE HOLE LOG

Tonkin+Taylor

BOREHOLE No: **BH7**

SHEET 3 OF 3

PROJECT:	CO-ORDINATES: (Mt Eden 2000)	R.L. GROUND: 16.46m	DRILLED BY: DCN Drilling Ltd.
JOB No: 30868		R.L. COLLAR: 16.46m	LOGGED BY: MTJH
LOCATION: 330 Wainui Road, Wainui (Refer to Site Plan)	DIRECTION: 0.00°	DATUM: Auckland 1946	CHECKED:
	ANGLE FROM HORIZ.: -90.00°	SURVEY: Trimble	START DATE: 24/7/15
			FINISH DATE: 24/7/15
			CONTRACTOR: DCN Drilling Ltd.

GEOLOGICAL UNIT: EAST COAST BAYS FORMATION

DESCRIPTION OF CORE

SOIL: Classification, colour, consistency / density, moisture, plasticity

ROCK: Weathering, colour, fabric, name, strength, cementation

Rock Weathering: XW | HW | MW | SW | FW | SW

Rock Strength: EW | VW | W | M | S | VS

Sampling Method: 1(Q) | 6(PT) | 1(Q) | 3(PT)

Core Recovery (%): 38 | 95 | 97

Testing: SPTC 10.5sec 23 for 40mm 100 for 75mm 50/50 | SPTC 13sec 25 for 30mm 100 for 45mm 50/50 | SPTC 13.5sec 25 for 35mm 100 for 48mm 50/50

RL (m) / Depth (m): 4.0 / 10.5 | 3.5 / 11.0 | 3.0 / 11.5 | 4.5 / 12.0 | 4.0 / 12.5 | 3.5 / 13.0 | 3.0 / 13.5 | 2.5 / 14.0 | 2.0 / 14.5 | 15.0

Graphic Log

ROCK DEFECTS

Defect Log

Fracture Spacing (m): 97

RQD %: 100 | 38 | 95 | 73

Description

Type, Orientation, Spacing, Shape, Persistence, Roughness, Aperture, Weathering, Infill

Water Loss (%): 0

Water Level

Casing

Installation

Core Loss

10.05m to 10.33m: Core loss (suspect an extremely weak sandstone unit has been washed away)

10.33m: Moderately weathered, grey, fine SANDSTONE; poorly cemented, extremely weak (SAND).
10.43m to 10.46m: ...fine sandy SILTSTONE; very weak
10.46m to 10.48m: ...zone of soft sediment deformation (ball and pillow structures, up to 15x6mm).

10.48m: Slightly weathered, grey, laminated SILTSTONE; weak.
10.68m to 10.86m: ...silty fine to medium SANDSTONE; moderately cemented. Bed contacts with depth
11.01m to 11.15m: ...silty fine to medium SANDSTONE; moderately cemented, very weak. Bed contacts with depth
11.26m to 11.35m: ...zone of soft sediment deformation

11.72m to 11.74m: ...medium SANDSTONE; moderately cemented

12.47m: Unweathered, grey, laminated SILTSTONE; weak.

12.79m to 13.66m: ...fine SANDSTONE; moderately cemented, very weak

13.66m: ...soft sediment deformation (load cast structure)

End of Borehole at 13.50m bgl (Target Depth Reached)

Notes:
1) Shear vane readings were completed in the end of the core barrel, using Shear Vane number 388, with a Calibration Factor of 1.370.
2) SPTC refers to a Solid Core Standard Penetration Test.
3) Water levels in the installed piezometers were: 3.90m (Shallow: S) and 7.17m (Deep: D) on 26/7/15, 4.18m (Shallow) and 7.155m (Deep) on 25/8/15 and 4.51m (Shallow) and 7.545m (Deep) on 29/10/15.

0.98m: Black carbonaceous material inclined at <5°
10.04m: B <5°, UN, R, VN, CV (black carbonaceous material)

10.48m to 12.47m: Bedding is inclined at <5°

10.72m: Black carbonaceous material inclined at <5°
10.8m: B <5°, PL, R, VN, CV (sand)
10.92m: B <5°, UN, SM, VN, CV (silt with minor clay)
11.01m to 11.15m: Core is highly disturbed due to drilling (drilling)

11.25m: B 5°, PL, R, T, CN

12.2m: B <5°, PL, R, VN, CV (sand)

12.47m to 13.58m: Bedding is inclined from <5 to 10° (typically <5°)
12.61m: Drilling induced defect (associated with spin marks and the loss of 0.04m of core)
12.79m to 13.66m: Core is highly disturbed due to drilling (drilling)
12.87m: J 85-90°, UN, R, N, CV (sand)

13.07m: J 75-85°, UN, SM, VN, CV (silty sand)

13.25m: S lithions contact inclined at 5°
13.32m: J 45°, PL, SM, N, CO (clayey silt, up to 4mm thick)
13.46m: B <5°, PL, R, T, CV (sand)
13.48m: Black carbonaceous material inclined at 15°

COMMENTS: 1) HW casing installed to 6m. 2) Water loss was less than 5% during drilling after HW was inserted.
3) Two Standpipe Piezometers were installed down the borehole (see installation sheet for further details).

T+T DATATEMPLATE.GDT mrb

Log Scale 1:35

GENERAL LOG 30868.GPJ 26-Nov-2015

BORE HOLE LOG

Tonkin+Taylor

BOREHOLE No: **BH8**

SHEET 1 OF 2

PROJECT:	CO-ORDINATES: (Mt Eden 2000)	R.L. GROUND: 30.67m	DRILLED BY: DCN Drilling Ltd.
JOB No: 30868		R.L. COLLAR: 30.67m	LOGGED BY: MTJH
LOCATION: 17 Old Pine Valley Road, Dairy Flat (Refer to Site Plan)	DIRECTION: 0.00°	DATUM: Auckland 1946	CHECKED:
	ANGLE FROM HORIZ.: -90.00°	SURVEY: Trimble	START DATE: 21/7/15
			FINISH DATE: 21/7/15
			CONTRACTOR: DCN Drilling Ltd.

GEOLOGICAL UNIT	DESCRIPTION OF CORE SOIL: Classification, colour, consistency / density, moisture, plasticity ROCK: Weathering, colour, fabric, name, strength, cementation	Rock Weathering	Rock Strength	Drilling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log	Fracture Spacing (cm)	RQD %	Description Type, Orientation, Spacing, Shape, Persistence, Roughness, Aperture, Weathering, Infill	Water Loss (%)	Water Level	Casing	Installation	Core Box
TS	0m: Organic SILT with minor clay; dark brown. Soft, moist, high plasticity. [TOPSOIL]												0m to 2.1m: Open Barrel (OB) drilling method was used, which results in the compression of the recovered core. Therefore, no noticeable core loss was identified through this section of core					
NORTHERN ALLOCHTHON	0.34m: Clayey SILT; brown, with dark orange streaks. Stiff, moist, high plasticity. [RS MANGAKAHIA COMPLEX]			OB	100													
	0.42m: Silty CLAY; orange brown, with brown streaks. Stiff, moist, high plasticity.					SEC 14: 33.7%												
	0.5m: CLAY with minor silt; light grey, with orange brown streaks and black mottles. Stiff, moist, high plasticity. With minor MnO nodules.			OB	100													
	0.95m: CLAY with minor silt; grey, with orange brown and black mottles. Very stiff, moist, high plasticity. [CW MANGAKAHIA COMPLEX]			OB	100	SEC 16: 33.4%												
	1.42m: Highly weathered, grey, SILTSTONE; extremely weak (gravelly SAND with minor silt). Unit is highly sheared and no polished surfaces were observed. Crumbles easily into coarse sand to fine gravel-sized clasts under minimal pressure.			SPT	67	SEC 17: 33.1% SPT 4.5m: 3V 2 4 11 N=30												
	1.8m to 2.44m: Core loss (core washed away)			OB	75	3V 1.8m: UNP						0						
	2.44m: Core description is the same as 1.42m			HQ3	62							0						
	2.57m: Moderately weathered, grey, SILTSTONE; very weak. Unit is sheared and polished surfaces are common. Crumbles into coarse sand to fine to medium gravel-sized clasts with minimal pressure.			SPT	100	SPT 3m: 1 2 3 18 25 N=43						0	2.61m: J 20°, UN, Polished, T, CN					
				HQ3	100							0	3m: J 35°, UN, R (with some polished surfaces), N, CN					
				SPT	100	SPT 4.5m: 25 50/ 130mm: 214 4 50/ 130mm N>99						0	4.5m: HQ3 run recovered 0.7m of core loss from the previous run					
	4.77m to 4.8m: SILTSTONE; moderately strong. No evidence of shearing observed			HQ3	100							0	4.77m: J 45°, UN, Polished, T, CN 4.78m: Vein 45-75°, UN, CC (calcite, <1mm thick)					

COMMENTS: 1) No HW casing used during drilling. 2) Water loss was unable to be measured as no HW was inserted.
3) Two Standpipe Piezometers were installed down the borehole (see installation sheet for further details).

T+T_DATATEMPLATE.GDT mtjh

Log Scale 1:25

GENERAL.LOG 30868.GPJ 26-Nov-2015

BORE HOLE LOG

Tonkin+Taylor

BOREHOLE No: **BH8**

SHEET 2 OF 2

PROJECT:	CO-ORDINATES: (Mt Eden 2000)	R.L. GROUND: 30.67m	DRILLED BY: DCN Drilling Ltd.
JOB No: 30868		R.L. COLLAR: 30.67m	LOGGED BY: MTJH
LOCATION: 17 Old Pine Valley Road, Dairy Flat (Refer to Site Plan)	DIRECTION: 0.00°	DATUM: Auckland 1946	CHECKED:
	ANGLE FROM HORIZ.: -90.00°	SURVEY: Trimble	START DATE: 21/7/15
			FINISH DATE: 21/7/15
			CONTRACTOR: DCN Drilling Ltd.

GEOLOGICAL UNIT	DESCRIPTION OF CORE	Rock Weathering	Rock Strength	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log	Fracture Spacing (cm)	RQD %	Description	Water Loss (%)	Water Level	Casing	Installation	Core Box
	SOIL: Classification, colour, consistency / density, moisture, plasticity ROCK: Weathering, colour, fabric, name, strength, cementation												Type, Orientation, Spacing, Shape, Persistance, Roughness, Aperture, Weathering, Infill					
NORTHERN ALLOCHTHON	4.8m: Moderately weathered, grey, SILTSTONE; extremely weak (gravelly SILT with some sand and trace clay). Unit is highly sheared and polished surfaces are very common. Crumbles easily into coarse sand to fine gravel-sized clasts within a SILT with trace clay matrix with minimal pressure. [CRUSH ZONE]			HQ3	100		25.8	5.0				0	4.8m: Siltstone contact is inclined at <5° 4.82m: J 10°, UN, Polished, VN, CV (slt) 4.77m: J 40°, UN, Polished, T, CN 5.00m: J 30°, UN, Polished, T, CN 5.11m: B <5°, PL, Polished, VN, CV (clayey slt) 5.28m: Vein 70-80°, UN, CC (calcite, up to 1mm thick) 5.29m: J 75-80°, UN, T, CN, still intact 5.34m: J <5°, PL, Polished, MN, CV (clayey slt) 5.37m to 5.51m: Core is highly disturbed due to drilling (two attempts required to recover dropped core)					
	5.2m: Unweathered, grey, SILTSTONE; moderately strong. Evidence of shearing (seen as joints within the unit).						25.0	5.5										
	5.53m: Highly weathered, grey, with greenish grey streaks, SILTSTONE; extremely weak (silty sandy GRAVEL). Unit is highly sheared and polished surfaces are common. Crumbles into medium to coarse sand to fine to medium gravel-sized clasts with minimal pressure. With trace moderately strong siltstone units (from 9-20mm thick, and typically spaced 110mm apart).			HQ3	100	SPTC 6no 25 for 125mm (50) for 140mm 50+50	24.5	6.0					6m: Two attempts required to recover dropped core 6.07m: J 60°, UN, R (with minor polished surfaces), T, CN					
							24.0	6.5				6	6.83m: F 85°, PL, T, Intralaminate offset 6.93m: J 30°, UN, Polished, T, CN					
	7.17m to 7.19m: ...moderately weathered, SILTSTONE; very weak					SPTC 7.5no 25 for 185mm (50) for 330mm 50+50	23.5	7.0					7.17m: J 30°, PL, VN, still intact, cross-cuts joint at 7.19m 7.19m: J 25°, PL, VN, still intact, cross-cuts joint at 7.17m 7.25m: Calcite nodule (32x30mm) 7.29m to 7.5m: Core is highly disturbed due to handling (difficult removal from the catcher)					
							23.0	7.5										
	End of Borehole at 7.74m bgl (Target Depth Reached) **Notes:** 1) Shear vane readings were completed in the end of the core barrel, using Shear Vane number 569, with a Calibration Factor of 1.578. 2) Some core recovery measurements were difficult due to the sheared nature of the core. 3) SPTC refers to a Solid Cone Standard Penetration Test. 4) Water levels in the installed piezometers were 0.03m (Shallow: S) and 2.74m (Deep: D) on 26/7/15, 0.23m (Shallow) and 1.54m (Deep) on 29/8/15 and 0.92m (Shallow) and 1.45m (Deep) on 29/10/15.						22.5	8.0										
							22.0	8.5										
							21.5	9.0										
							21.0	9.5										
							20.5	10.0										

COMMENTS: 1) No HW casing used during drilling. 2) Water loss was unable to be measured as no HW was inserted.
3) Two Standpipe Piezometers were installed down the borehole (see installation sheet for further details).

T+T_DATATEMPLATE.GDT mlb

Log Scale 1:25

GENERAL LOG 30868.GPJ 26-Nov-2015

BORE HOLE LOG

Tonkin+Taylor

BOREHOLE No: **BH9**

SHEET 1 OF 3

PROJECT:	CO-ORDINATES: (Mt Eden 2000)	R.L. GROUND: 19.85m	DRILLED BY: DCN Drilling Ltd.
JOB No: 30868		R.L. COLLAR: 19.80m	LOGGED BY: MTJH
LOCATION: 17 Old Pine Valley Road, Dairy Flat (Refer to Site Plan)	DIRECTION: 0.00°	DATUM: Auckland 1946	CHECKED:
	ANGLE FROM HORIZ.: -90.00°	SURVEY: Trimble	START DATE: 24/8/15
			FINISH DATE: 24/8/15
			CONTRACTOR: DCN Drilling Ltd.

GEOLOGICAL UNIT	DESCRIPTION OF CORE	Rock Weathering	Rock Strength	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log	Fracture Spacing (cm)	RQD %	Description	Water Loss (%)	Water Level	Casing	Installation	Core Box
	SOIL: Classification, colour, consistency / density, moisture, plasticity ROCK: Weathering, colour, fabric, name, strength, comments												Type, Orientation, Spacing, Shape, Persistence, Roughness, Aperture, Weathering, Infill					
TOPSOIL	0m: Organic SILT with trace clay; dark brown. Soft, moist, low plasticity. [TOPSOIL] 0m to 0.03m...wet 0.2m to 0.24m...with minor gravel; dark brown, with light brownish grey mottles. Gravel is rounded completely weathered to highly weathered siltstone, up to 6mm			DB	100	SV 0.45kPa 14/5/0							0m to 1.5m: Open Barrel (OB) drilling method was used, which results in the compression of the recovered core. Therefore, possible core loss was not as easily identified through this section of core 0.32m to 0.36m: Core loss been stained brown due to leaching from the topsoil unit above					
TAURANGA GROUP	0.24m to 0.3m:...with trace organics; dark brown, with black specks. Organics are fibrous (decomposing wood fragments)					WC 42 35.4%	16.5	0.5										
	0.32m: CLAY with trace silt; light brownish grey, with brown and orange brown stonks. Very stiff, moist, high plasticity. [TAURANGA GROUP]			DB	84	SV 0.95kPa 13/9/8												
	0.5m to 0.73m: Core loss (core washed away)						16.0	1.0										
	0.73m: CLAY with trace silt; light brownish grey, with orange brown mottles. Very stiff, moist, high plasticity.			DB	88	WC 43 33.7%												
	0.93m to 1.36m:...CLAY with minor silt; light grey, with orange brown mottles					SV 1.45kPa 18/18/0	15.5	1.5					1.5m: 60mm diameter Push Tube completed					
	1m to 1.2m: Core loss (core washed away)			PTO	33													
	1.2m: CLAY with minor silt; light grey, with orange brown mottles. Very stiff, moist, high plasticity.					WC 44 44.8%												
	1.36m to 1.43m:...with trace organics; light grey, with orange brown streaks and brown specks. Organics are fibrous (wood fragments)					ALT 1.72m CONS 1.85m	15.0	2.0										
	1.43m to 2.73m:...with trace silt and organics; light grey, with orange brown streaks and brown specks. Organics are fibrous (wood fragments)			SPT	91	SPT 1.95m 20 2 3 N=5												
	1.74m to 1.95m: Core loss (core dropped out of Push Tube)																	
	1.95m: CLAY with trace silt and organics; light grey, with orange brown streaks and brown specks. Very stiff, moist, high plasticity. Organics are fibrous (wood fragments).						14.5	2.5					2.4m to 2m: Multiple attempts to recover the core after dropping out of the open barrel. Drillers changed to HQ3. This led to 0.33m of core loss through this run					
	2.4m to 2.73m: Core loss (core washed away)			HQ3	42													
	2.73m: Clayey SILT with minor organics; light greenish grey, with black mottles. Firm, moist, high plasticity. Organics are fibrous (decomposing wood fragments and rootlets). Unit is mainly composed of reworked Northern Allochthon sediments.					SV 0.95kPa 6/5/5 WC 45 38.0%		3.0					3m: 60mm diameter Push Tube completed					
				HQ3	100	CONS 1.3m ALT 1.35m	13.5											
	3.45m to 4.7m:...with trace coarse sand and fine gravel. Sand and gravel are completely weathered to highly weathered siltstone, up to 3mm, which mixes into a clayey silt under minimal pressure					WC 46 40.0% SPT 3.45m 10 2 3 N=5												
				SPT	100		13.0	3.5										
	3.9m to 4.03m: Core loss (core washed away)																	
	4.03m: Clayey SILT with minor organics and trace fine gravel and coarse sand; light greenish grey, with black mottles. Firm to stiff, moist, high plasticity. Organics are fibrous (decomposing wood fragments and rootlets). Sand and gravel are completely weathered to highly weathered siltstone, up to 3mm, which mixes into a clayey silt under minimal pressure. Unit is mainly composed of reworked Northern Allochthon sediments.			HQ3	78			4.0											
						SV 4.45kPa 53/53/0 SPT 4.5m 17 — N=0	12.0	4.5										
	4.7m: Organic clayey SILT with minor coarse sand and fine gravel; light greenish grey, with dark brown streaks. Firm to stiff, moist, high plasticity. Organics are fibrous (wood fragments). Sand and gravel are			SPT	100		11.0	5.0										

COMMENTS: 1) No HW casing used during drilling. 2) Water loss was unable to be measured as no HW was inserted.
3) One Standpipe Piezometer was installed down the borehole (see installation sheet for further details).

T&T DATATEMPLATE.GDT mth

Log Scale 1:25

GENERAL LOG 30868.GPJ 26-Nov-2015

BORE HOLE LOG

Tonkin+Taylor

BOREHOLE No: **BH9**

SHEET 2 OF 3

PROJECT:	CO-ORDINATES: (Mt Eden 2000)	R.L. GROUND: 19.85m	DRILLED BY: DCN Drilling Ltd.
JOB No: 30868		R.L. COLLAR: 19.80m	LOGGED BY: MTJH
LOCATION: 17 Old Pine Valley Road, Dairy Flat (Refer to Site Plan)	DIRECTION: 0.00°	DATUM: Auckland 1946	CHECKED:
	ANGLE FROM HORIZ.: -90.00°	SURVEY: Trimble	START DATE: 24/8/15
			FINISH DATE: 24/8/15
			CONTRACTOR: DCN Drilling Ltd.

GEOLOGICAL UNIT	DESCRIPTION OF CORE	Rock Weathering	Rock Strength	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log	Fracture Spacing (cm)	RQD %	Description	Water Loss (%)	Water Level	Casing	Installation	Core Box
TAURANGA GROUP	SOIL: Classification, colour, consistency / density, moisture, plasticity ROCK: Weathering, colour, fabric, name, strength, cementation												Type, Orientation, Spacing, Shape, Planarness, Roughness, Aperture, Weathering, Infill					
NORTHERN ALLOCHTHON	Completely weathered to highly weathered siltstone, up to 4mm, which smear into a clayey silt under minimal pressure. Unit is composed mainly of reworked Northern Allochthon sediments.																	
	4.95m to 5.15m: Core loss (core washed away)																	
	5.15m: Organic clayey SILT with minor coarse sand and fine gravel; light greenish grey, with dark brown streaks. Firm, moist, high plasticity. Organics are fibrous (wood fragments). Sand and gravel are completely weathered to highly weathered siltstone, up to 4mm, which smear into a clayey silt under minimal pressure. Unit is composed mainly of reworked Northern Allochthon sediments.			HQ3	81	SPT (EC 47) 38.1%	5.5											
	5.27m: Organic SILT with minor clay; brown, with dark brown mottles. Firm, moist, low plasticity. Organics are fibrous (decomposing wood fragments and rootlets).			SPT	100	SV 5.95m kPa12 SPT 6m: 3,3,3 N=6	6.0											
	5.56m: Highly weathered, greenish grey, SILTSTONE; extremely weak (clayey SILT with some gravel and sand). Unit is highly sheared and polished surfaces are common. Crumbles into a clayey silt with medium to coarse sand and fine to medium gravel-sized clasts with minimal pressure. [MANGAKAHIA COMPLEX]			HQG	100		6.5					9	6.53m: J 60°, UN, SM, VN, CN 6.59m: J 5°, UN, Polished, VN, CV (silt) 6.63m: J 70-90°, UN, N, CN, still intact, with multiple splays 6.68m: J 40°, PL, R, VN, CV (silt) 6.73m: J 50°, UN, VN, CN, still intact 6.85m: J 25°, PL, VN, CN, still intact 7.01m: J 5-10°, UN, SM, VN, CN 7.04m: J 75°, UN, Polished, VN, CN					
	6.49m to 6.58m:...very weak. Crumbles into a medium to coarse sand and fine to medium gravel-sized clasts within a clayey silt matrix with minimal pressure						7.0											
	6.58m: Slightly weathered, greenish grey, SILTSTONE; very weak. Unit is sheared and polished surfaces are common. Crumbles into coarse sand to fine to coarse gravel-sized clasts with pressure.												7.23m: J 70°, PL, Polished, T, CV (clayey silt)					
	7.33m: Highly weathered, greenish grey, extremely weak (sandy silty GRAVEL with some clay). Unit is highly sheared and polished surfaces are rare. Crumbles into medium to coarse sand to fine gravel-sized clasts within a clayey silt matrix with minimal pressure. [CRUSH ZONE]			SPT	100	SV 1.45m UTP SPT 7.5m: 2,3,3 N=6 SV 11.5m: N=NR	7.5						7.45m: F 45-90°, UN, SM, VN, indeterminate offset					
	7.7m: Slightly weathered, greenish grey, SILTSTONE; very weak. Unit is sheared and polished surfaces are common. Crumbles into coarse sand to fine to coarse gravel-sized clasts with pressure.																	
	7.97m: Slightly weathered, greenish grey, SILTSTONE; weak. Unit is sheared and polished surfaces are common. Crumbles into coarse sand to fine to coarse gravel-sized clasts with pressure.			HQ3	94		8.0						6.68m: J 40-70°, UN, Polished, VN, CN 8.14m: J 50°, UN, Polished, VN, CN 8.22m: J 45°, UN, Polished, N, CG (slt silt with minor coarse sand and fine gravel) 8.24m: J 25°, UN, T, CC, still intact 8.37m: J 45°, PL, Polished, T, CV (slt) 8.49m: Vein 5-20°, UN, CC, pinches out 8.53m: Vein 15°, PL, CC, pinches out 8.59m: J 50°, PL, SM, VN, CV (clayey silt) 8.71m: J 65-80°, UN, VN, still intact, with multiple splays					
	8.12m to 8.96m:...evidence of soft sediment deformation						8.5											
	8.96m: Highly weathered, grey, extremely weak (silty GRAVEL with some medium to coarse sand). Unit is highly sheared and polished surfaces are rare. Crumbles into medium to coarse sand to fine to medium gravel-sized clasts within a clayey silt matrix with minimal pressure. [CRUSH ZONE]			SPTC		SPT: 9m: 3,3,3 N=6 SV: 9.5m:	9.0											
	9.25m to 9.45m: Core loss (core washed away)																	
	9.43m: Core description is the same as 8.96m						9.5											
	9.47m: Slightly weathered, grey, SILTSTONE; weak. Evidence of soft sediment deformation. Unit is sheared. Crushes into fine to coarse gravel-sized clasts with a blow of a geological hammer.			HQ3	94		10.0						8.49m: J 35°, UN, RO, N, CV (clayey silt) 8.57m: J 30°, UN, Polished, T, CN 8.6m to 9.67m: Zone of calcite veins (<1mm thick) and nodules (up to 4mm in diameter) 8.67m: J 65°, UN, VN, CN, still intact 8.72m: J 60°, UN, Polished, VN, CN					

COMMENTS: 1) No HW casing used during drilling. 2) Water loss was unable to be measured as no HW was inserted.
3) One Standpipe Piezometer was installed down the borehole (see installation sheet for further details).

T+T DATATEMPLATE.GDT wlb

Log Scale 1:25

GINTBCAL LOG 30868.GPJ 26-Nov-2015

BORE HOLE LOG

Tonkin+Taylor

BOREHOLE No: **BH9**

SHEET 3 OF 3

PROJECT:

JOB No: 30888

LOCATION: 17 Old Pine Valley Road, Dairy Flat (Refer to Site Plan)

CO-ORDINATES: (Mt Eden 2000)

DIRECTION: 0.00°

ANGLE FROM HORIZ.: -90.00°

R.L. GROUND: 19.85m

R.L. COLLAR: 19.60m

DATUM: Auckland 1946

SURVEY: Trimble

DRILLED BY: DCN Drilling Ltd.

LOGGED BY: MTJH

CHECKED:

START DATE: 24/8/15

FINISH DATE: 24/8/15

CONTRACTOR: DCN Drilling Ltd.

GEOLOGICAL UNIT	DESCRIPTION OF CORE SOIL: Classification, colour, consistency / density, moisture, plasticity ROCK: Weathering, colour, fabric, name, strength, cementation	Rock Weathering	Rock strength	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log	Fracture Spacing (cm)	RQD %	Description Type, Orientation, Spacing, Shape, Persistence, Roughness, Aperture, Weathering, Infill	Water Loss (%)	Water Level	Casing	Installation	Core Box
				HQ3 SPTC	86	SPTC (0.5m) 29 N* 72mm (50 for 50mm)		10.5					9.77m: J 55°, UN, Polished, VN, CN 10.08m: J 85-85°, UN Polished, VN, CN 10.28m: J 45°, UN, Polished, VN, CN 10.34m: J 5°, UN, SM, N, CV (clayey silt) 10.43m: J 40-45°, UN, Polished, VN, CN 10.47m: J 15-25°, UN, SM, VN, CN					
	End of Borehole at 10.66m bgl (Target Depth Reached) Notes: 1) Shear vane readings were completed to the end of the core barrel. 2) SPTC refers to a Solid Cone Standard Penetration Test. 3) The water level in the borehole prior to the installation of the piezometer was 1.4m on 24/8/15 (no rods or casing, only the open hole to 10.66m). 4) The Water level in the installed piezometer was 0.583m on 6/9/15 and 1.325m on 28/9/15.							11.0										

COMMENTS: 1) No HW casing used during drilling. 2) Water loss was unable to be measured as no HW was inserted.
3) One Standpipe Piezometer was installed down the borehole (see Installation sheet for further details).

T+T DATATEMPLATE.GDT 9/9/15

Log Scale 1:25

GENERAL LOG 30888.GPJ 26-Nov-2015

Core Photos Wainui East - BH1



BH1_Box1 - 0 to 2.5m.jpg



BH1_Box2 - 2.5 to 5.95m.jpg

Core Photos Wainui East - BH1



BH1_Box3 - 5.95 to 7.7m.jpg

Core Photos Wainui East - BH2



BH2_Box1 - 0 to 2.77m.jpg



BH2_Box2 - 2.77 to 5.81m.jpg

Core Photos Wainui East - BH2



BH2_Box3 - 5.81 to 8.48m.jpg



BH2_Box4 - 8.48 to 9.14m.jpg

Core Photos Wainui East - BH3



BH3_Box1 - 0 to 3.45m.jpg



BH3_Box2 - 3.45 to 6.35m.jpg

Core Photos Wainui East - BH4



BH4_Box1 - 0 to 2.76m.jpg



BH4_Box2 - 2.76 to 6.37m.jpg

Core Photos Wainui East - BH5



BH5_Box1 - 0 to 3m.jpg



BH5_Box2 - 3 to 6.96m.jpg

Core Photos Wainui East - BH5



BH5_Box3 - 6.96 to 10.95m.jpg



BH5_Box4 - 10.95 to 14.7m.jpg

Core Photos Wainui East - BH5



BH5_Box4 - 14.7 to 16.95m.jpg

Core Photos Wainui East - BH6



BH6_Box1 - 0 to 4.35m.jpg



BH6_Box2 - 4.35 to 7.16m.jpg

Core Photos Wainui East - BH6



BH6_Box3 - 7.16 to 10.61m.jpg



BH6_Box4 - 10.61 to 12.09m.jpg

Core Photos Wainui East - BH7



BH7_Box1 - 0 to 3.45m.jpg



BH7_Box2 - 3.45 to 6.79m.jpg

Core Photos Wainui East - BH7



BH7_Box3 - 6.79 to 9.63m.jpg



BH7_Box4 - 9.63 to 13.02m.jpg

Core Photos Wainui East - BH7



BH7_Box5 - 13.02 to 13.58m.jpg

Core Photos Wainui East - BH8



BH8_Box1 - 0 to 3m.jpg

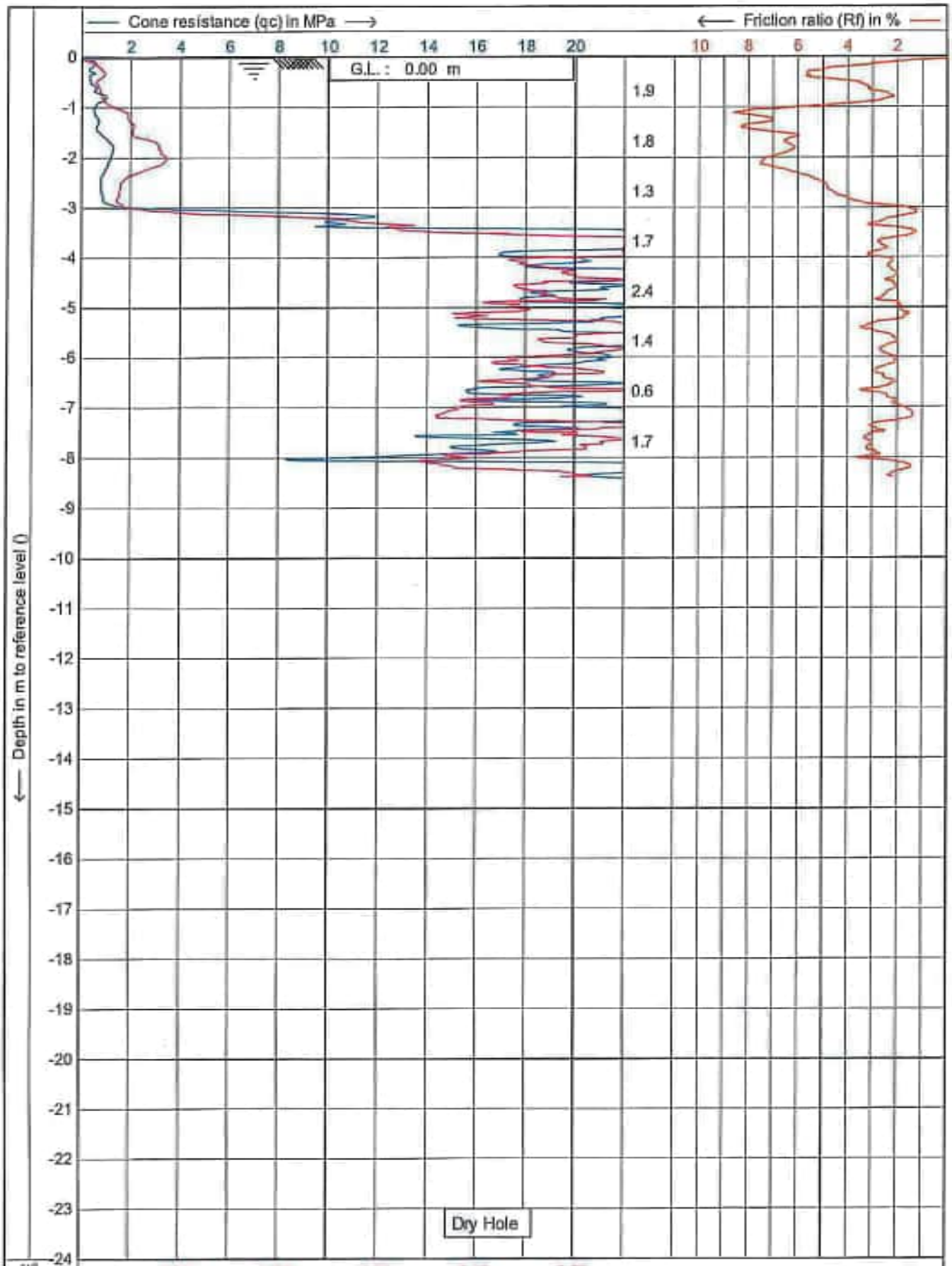


BH8_Box2 - 3 to 6.27m.jpg

Core Photos Wainui East - BH8



BH8_Box3 - 6.27 to 7.74m.jpg



Test according ASTM Standard D 5778-07

Project : **Old Pine Valley Rd**

Location: **Old Pine Valley Rd**

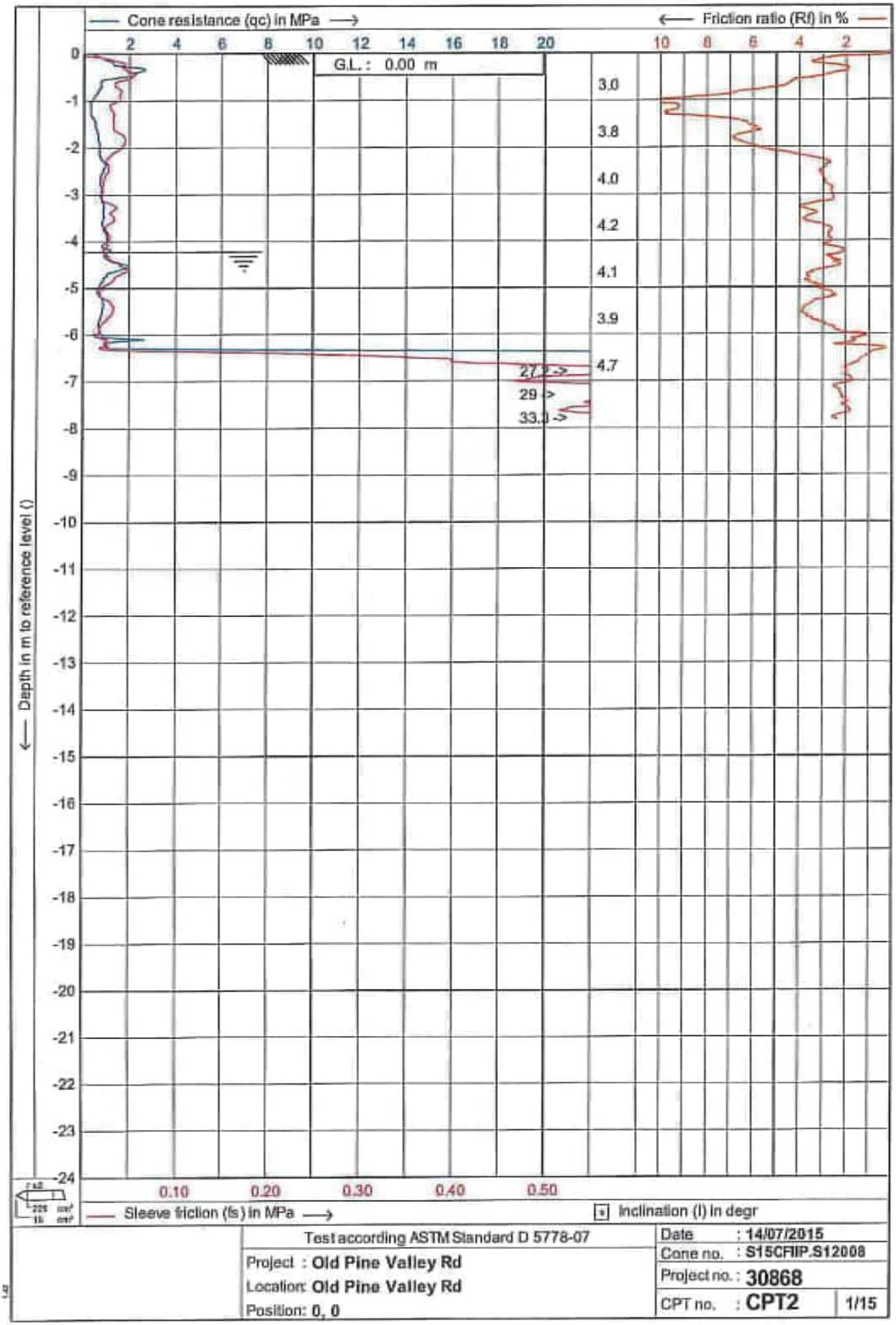
Position: **0, 0**

Date : **14/07/2015**

Cone no. : **S15CFIIP.S12008**

Project no. : **30868**

CPT no. : **CPT1** 1/15



Test according ASTM Standard D 5778-07

Project : **Old Pine Valley Rd**

Location: **Old Pine Valley Rd**

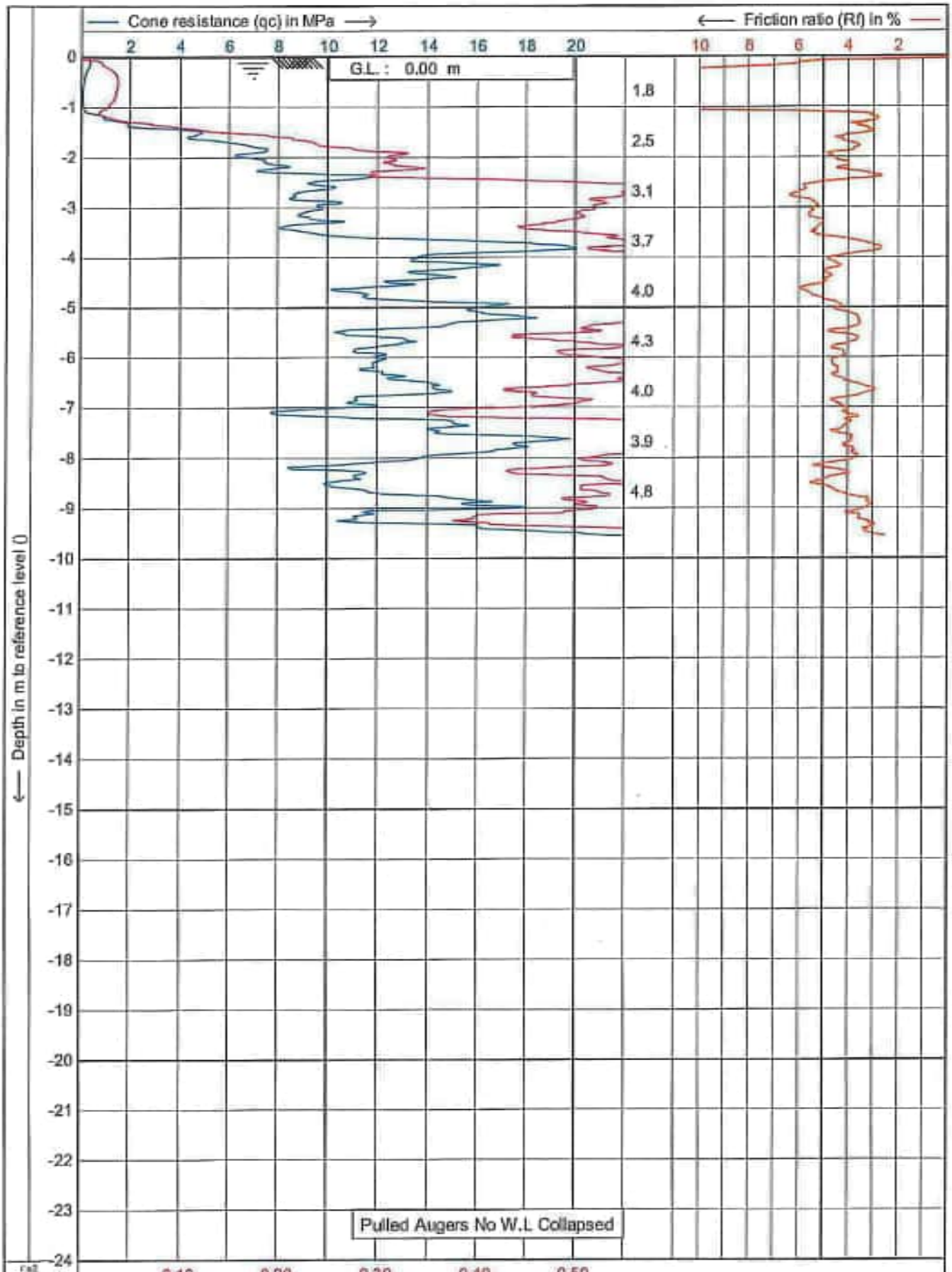
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Date : **14/07/2015**

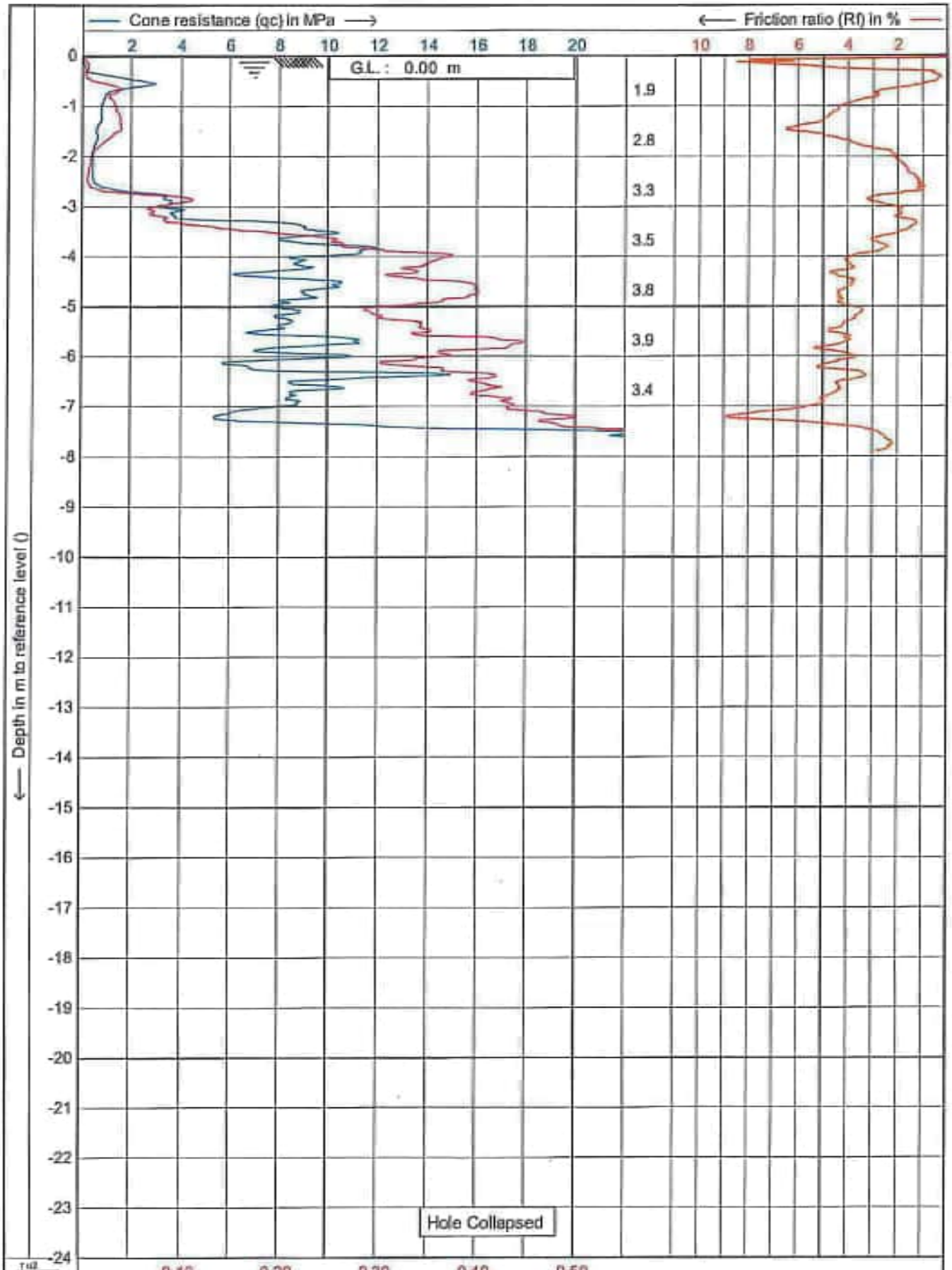
Cone no. : **S15CFIIP.S12008**

Project no. : **30868**

CPT no. : **CPT2** 1/15



Test according ASTM Standard D 5778-07	Date	: 14/07/2015
Project : **Old Pine Valley Rd**	Cone no.	: S15CFIIP.S12008
Location: **Old Pine Valley Rd**	Project no.	: **30868**
Position: **0, 0**	CPT no.	: **CPT3** 1/15



Test according ASTM Standard D 5778-07

Project : **Old Pine Valley Rd**

Location: **Old Pine Valley Rd**

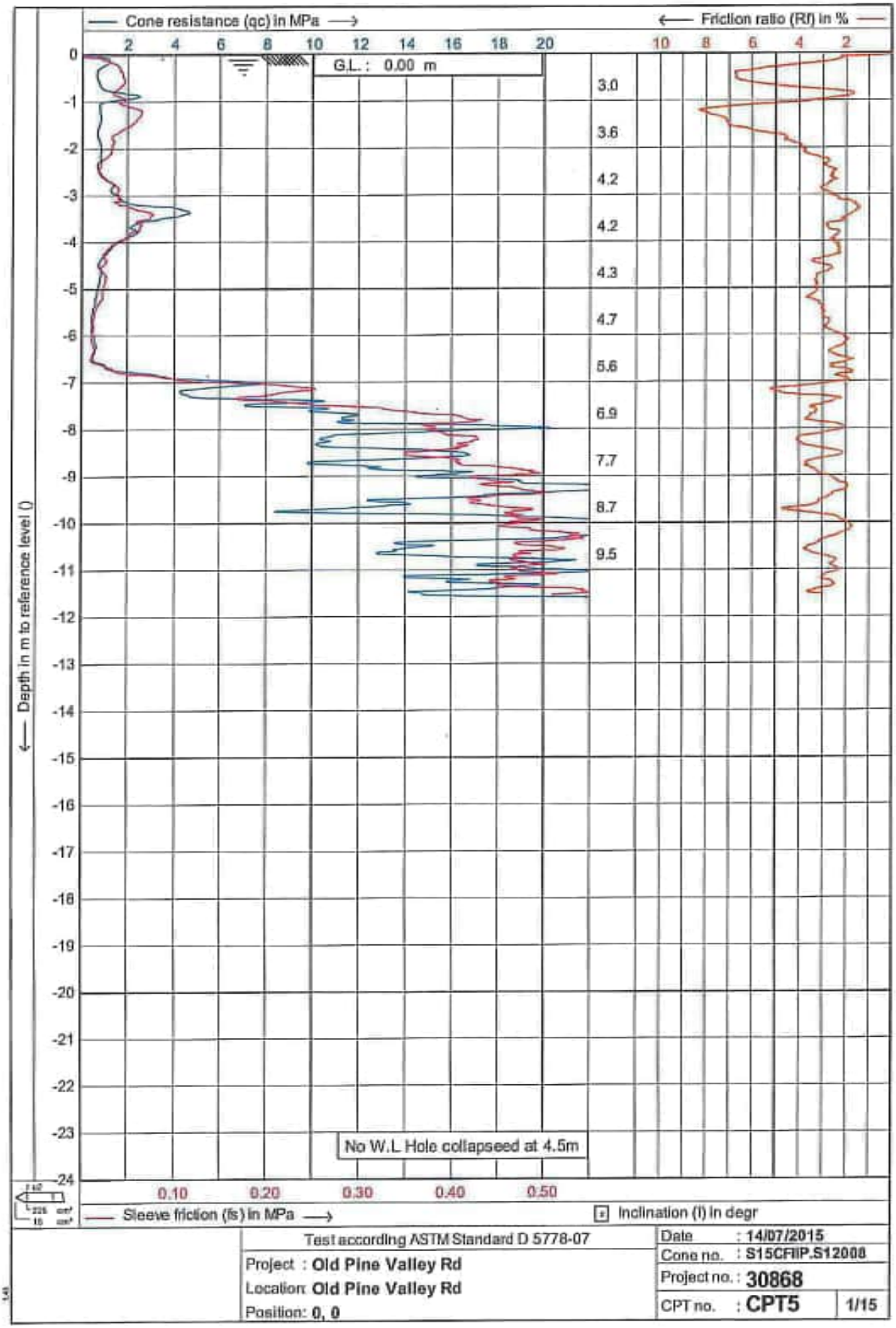
Position: **0, 0**

Date : **14/07/2015**

Cone no. : **S15CRIP.S12008**

Project no.: **30868**

CPT no. : **CPT4** 1/15



Test according ASTM Standard D 5778-07

Project : **Old Pine Valley Rd**

Location: **Old Pine Valley Rd**

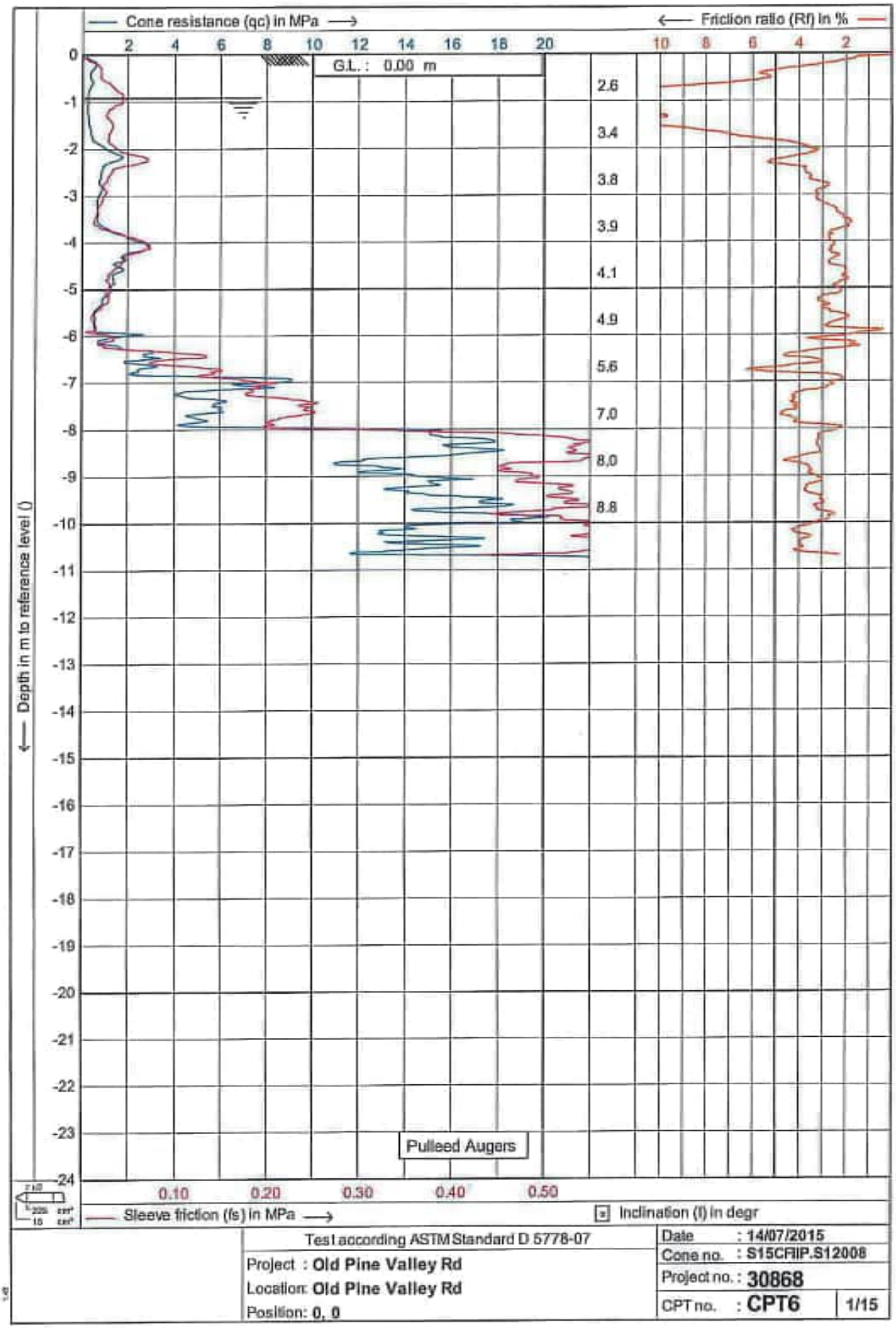
Position: **0, 0**

Date : **14/07/2015**

Cone no. : **S15CFIIP.S12008**

Project no. : **30868**

CPT no. : **CPT5** 1/15



Test according ASTM Standard D 5778-07

Project : **Old Pine Valley Rd**

Location: **Old Pine Valley Rd**

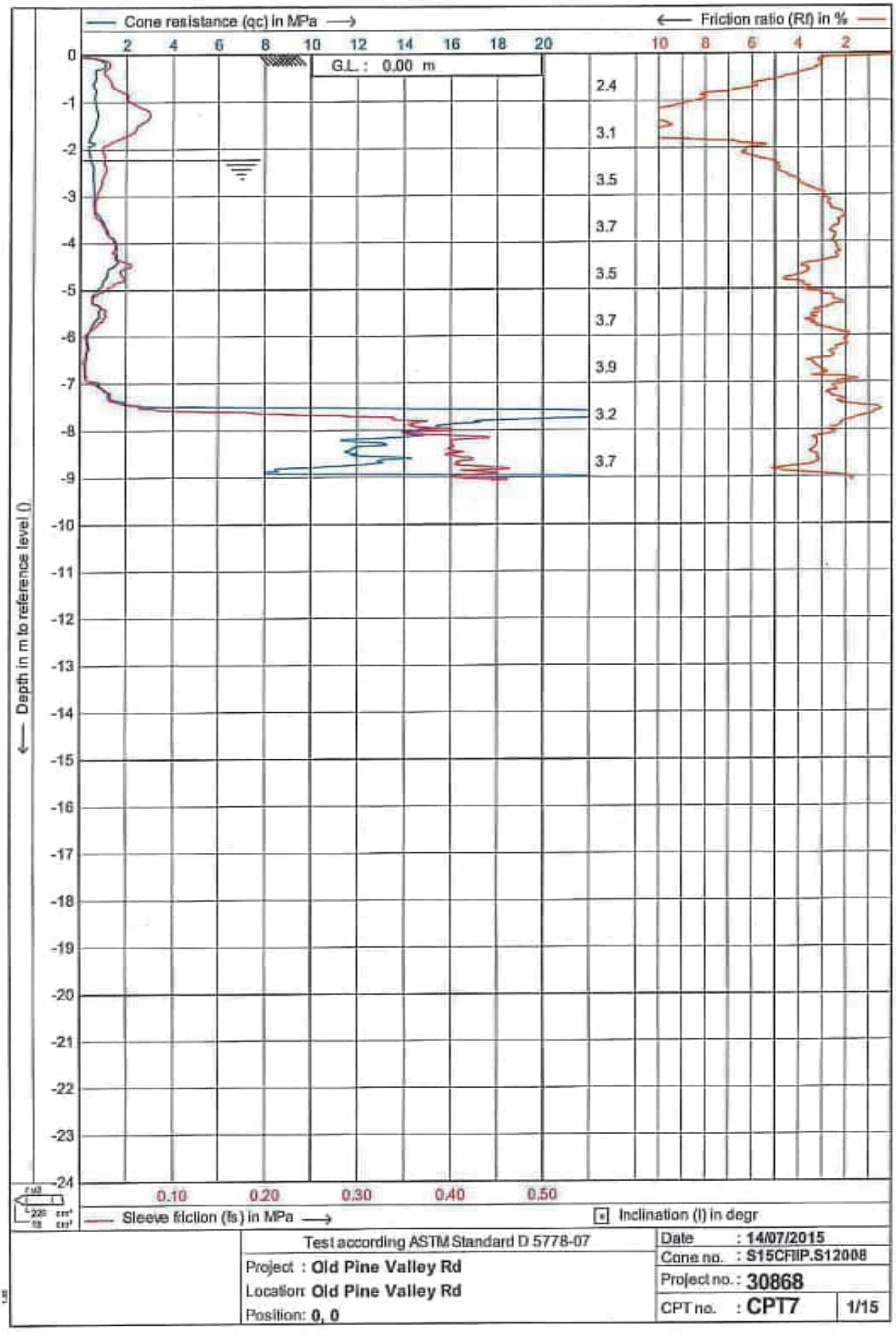
Position: **0, 0**

Date : **14/07/2015**

Cone no. : **S15CFIP.S12008**

Project no. : **30868**

CPT no. : **CPT6** 1/15



Test according ASTM Standard D 5778-07

Project : **Old Pine Valley Rd**

Location: **Old Pine Valley Rd**

Position: **0, 0**

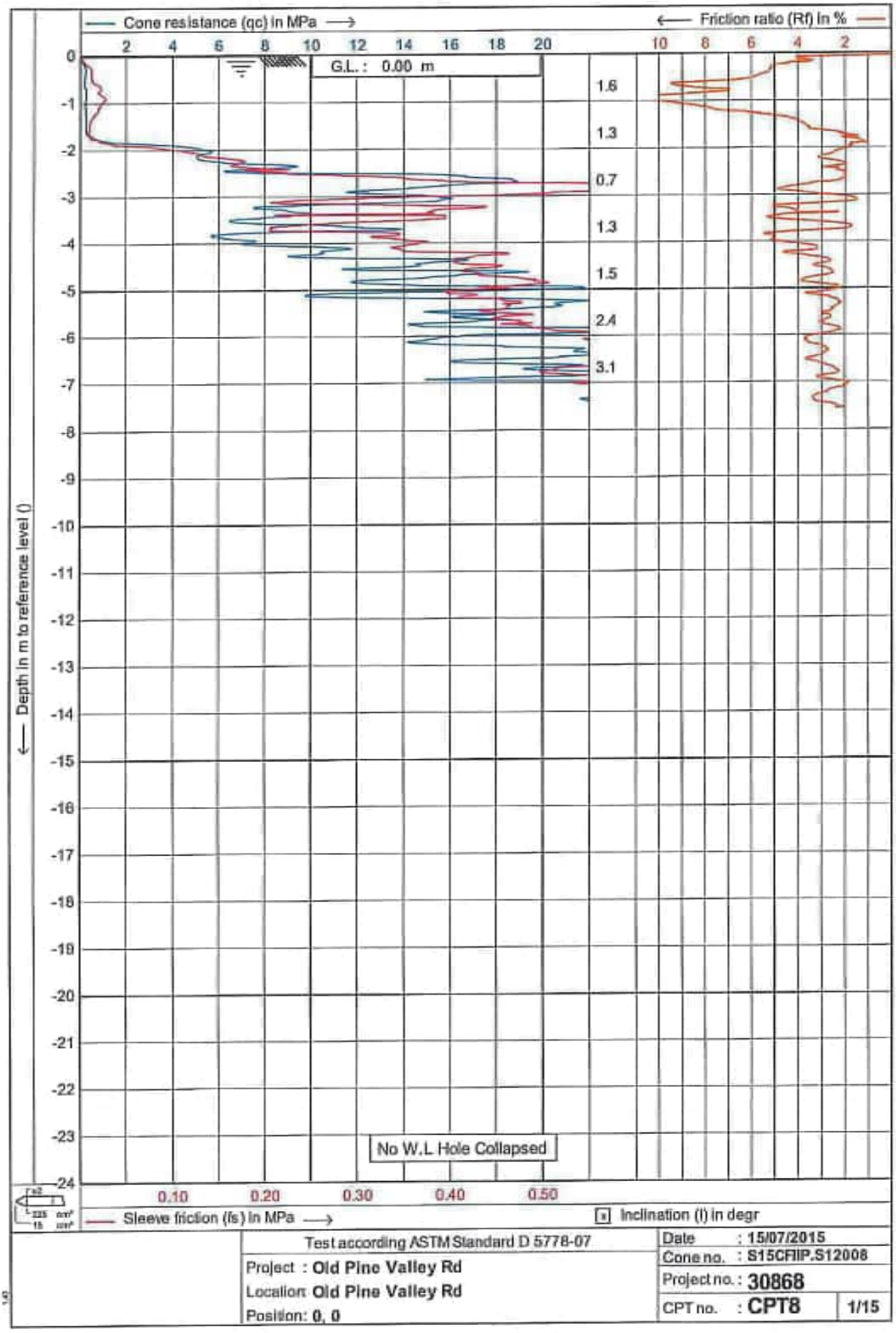
Date : **14/07/2015**

Cone no. : **S15CFIIP.S12008**

Project no. : **30868**

CPT no. : **CPT7**

1/15



Test according ASTM Standard D 5778-07

Project : **Old Pine Valley Rd**

Location: **Old Pine Valley Rd**

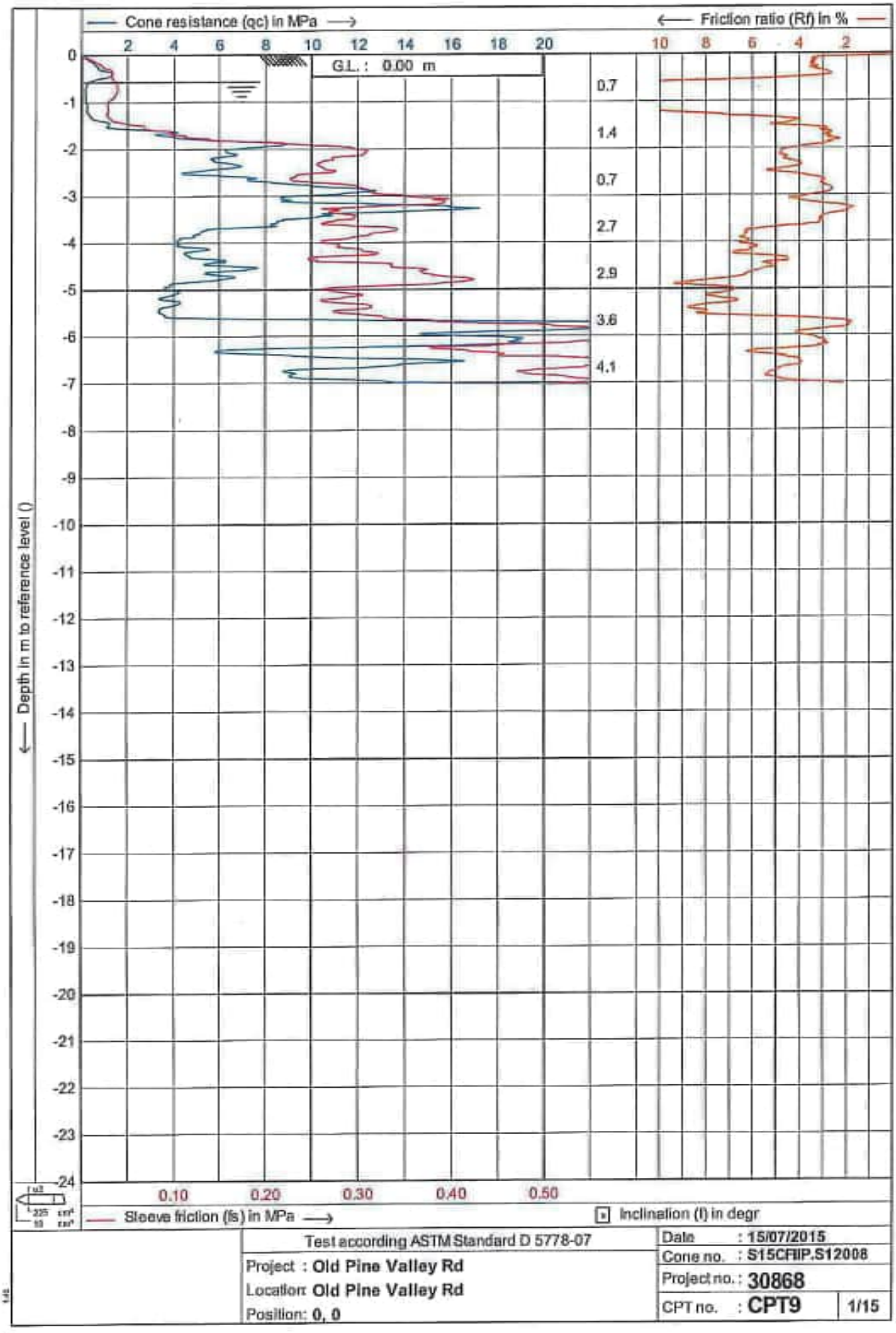
Position: **0, 0**

Date : **15/07/2015**

Cone no. : **S15CFIIP.S12008**

Project no. : **30868**

CPT no. : **CPT8** 1/15



Test according ASTM Standard D 5778-07

Project : **Old Pine Valley Rd**

Location: **Old Pine Valley Rd**

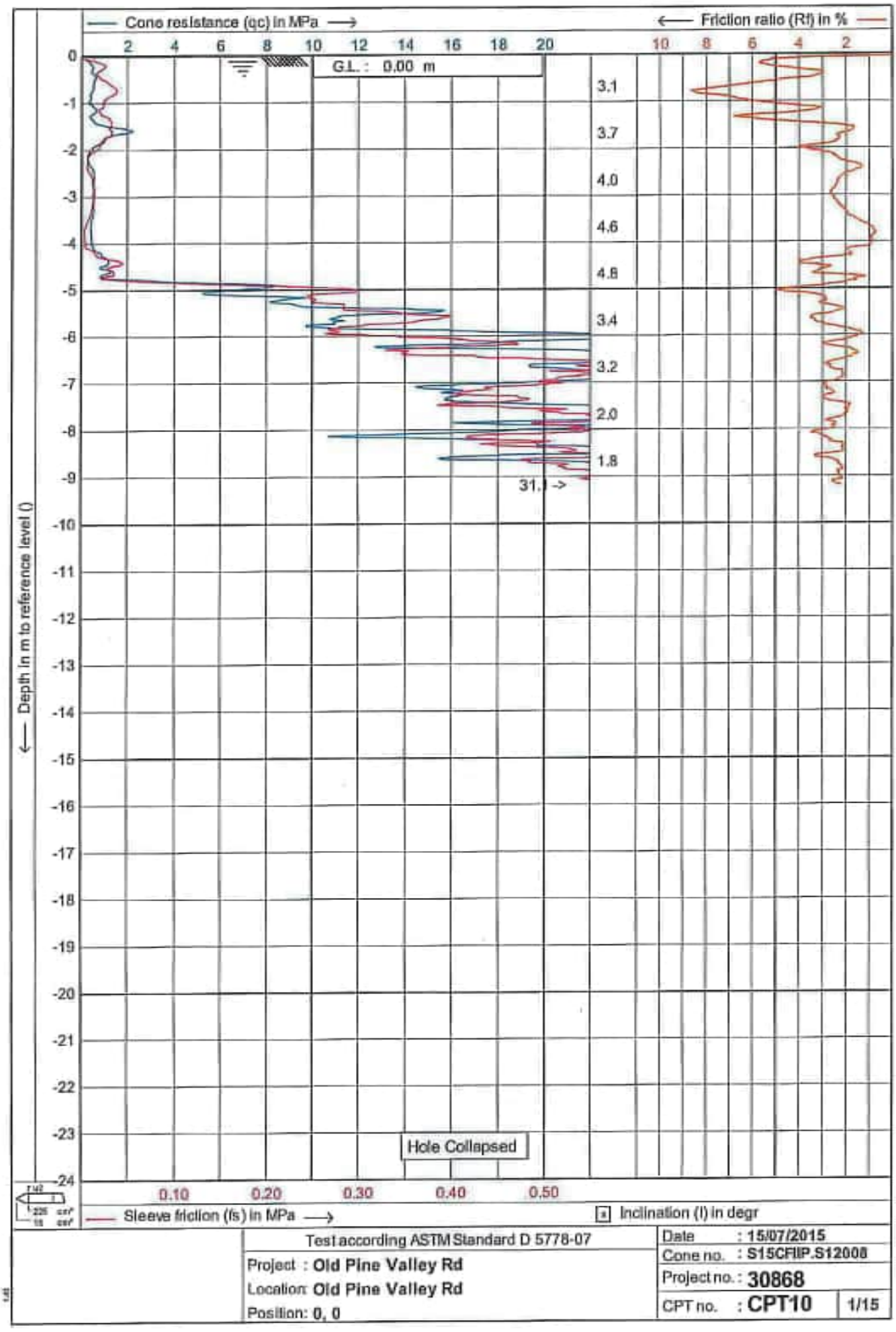
Position: **0, 0**

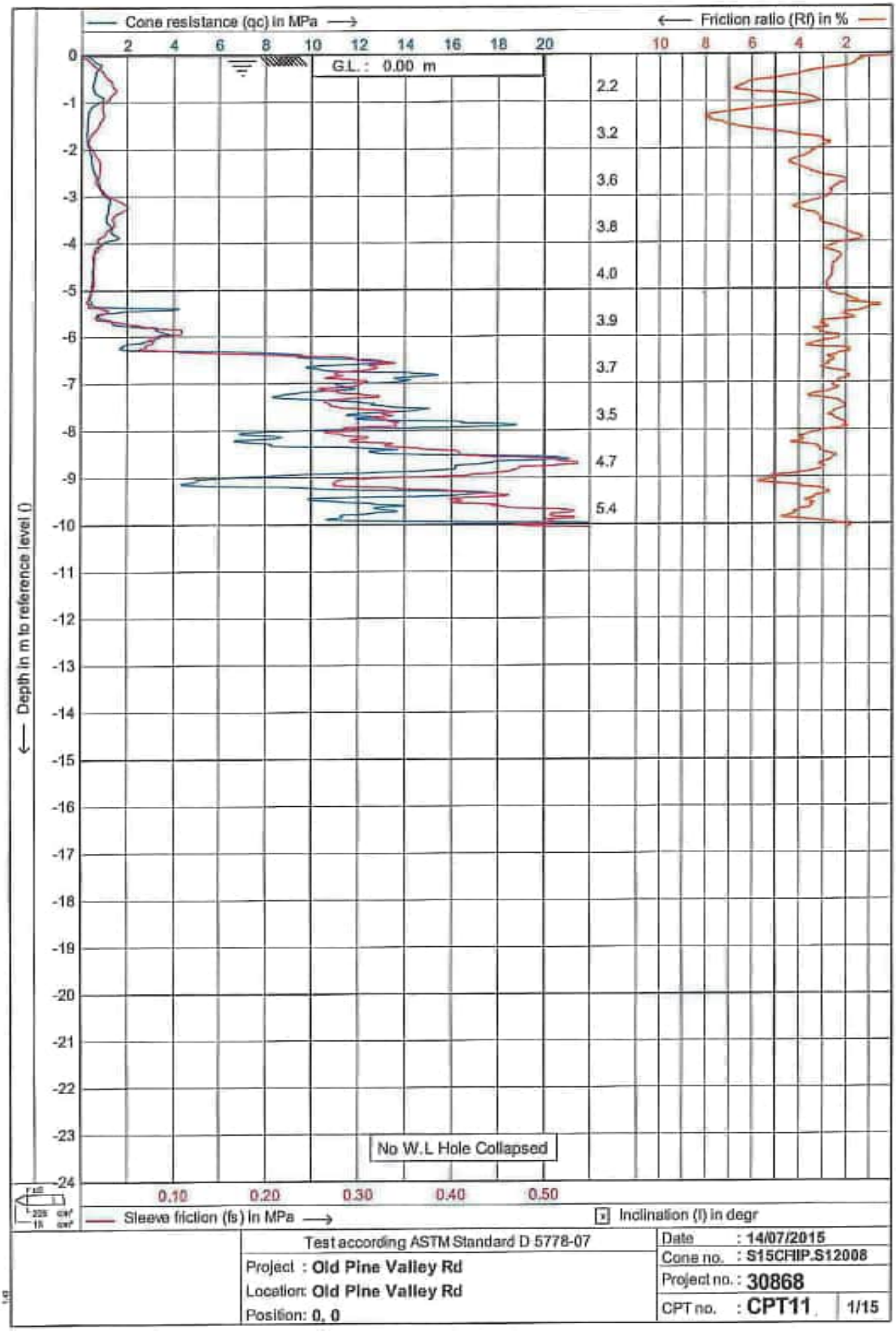
Date : **15/07/2015**

Cone no. : **S15CFIIP.S12008**

Project no. : **30868**

CPT no. : **CPT9** 1/15


Cone resistance (qc) in MPa
Friction ratio (Rf) in %
G.L. : 0.00 m
3.1
3.7
4.0
4.6
4.8
3.4
3.2
2.0
1.8
31.1
Hole Collapsed
Depth in m to reference level ()
Sleeve friction (fs) in MPa
Inclination (I) in degr
Test according ASTM Standard D 5778-07
Project : Old Pine Valley Rd
Location: Old Pine Valley Rd
Position: 0, 0
Date : 15/07/2015
Cone no. : S15CFIIP.S12008
Project no. : 30868
CPT no. : CPT10
1/15



Test according ASTM Standard D 5778-07

Project : **Old Pine Valley Rd**

Location: **Old Pine Valley Rd**

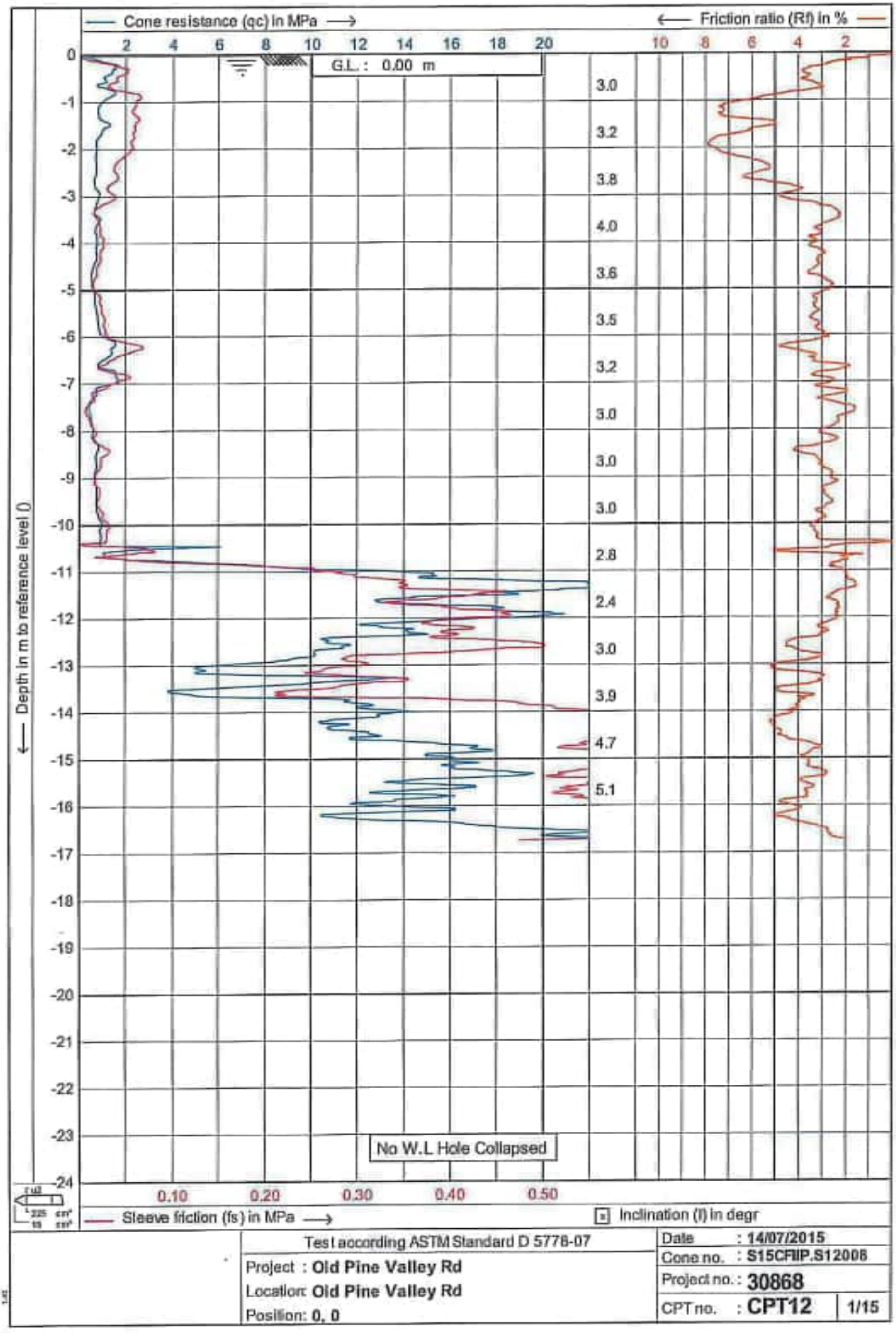
Position: **0, 0**

Date : **14/07/2015**

Cone no. : **S15CHIP.S12008**

Project no. : **30868**

CPT no. : **CPT11** 1/15



Test according ASTM Standard D 5778-07

Project : **Old Pine Valley Rd**

Location: **Old Pine Valley Rd**

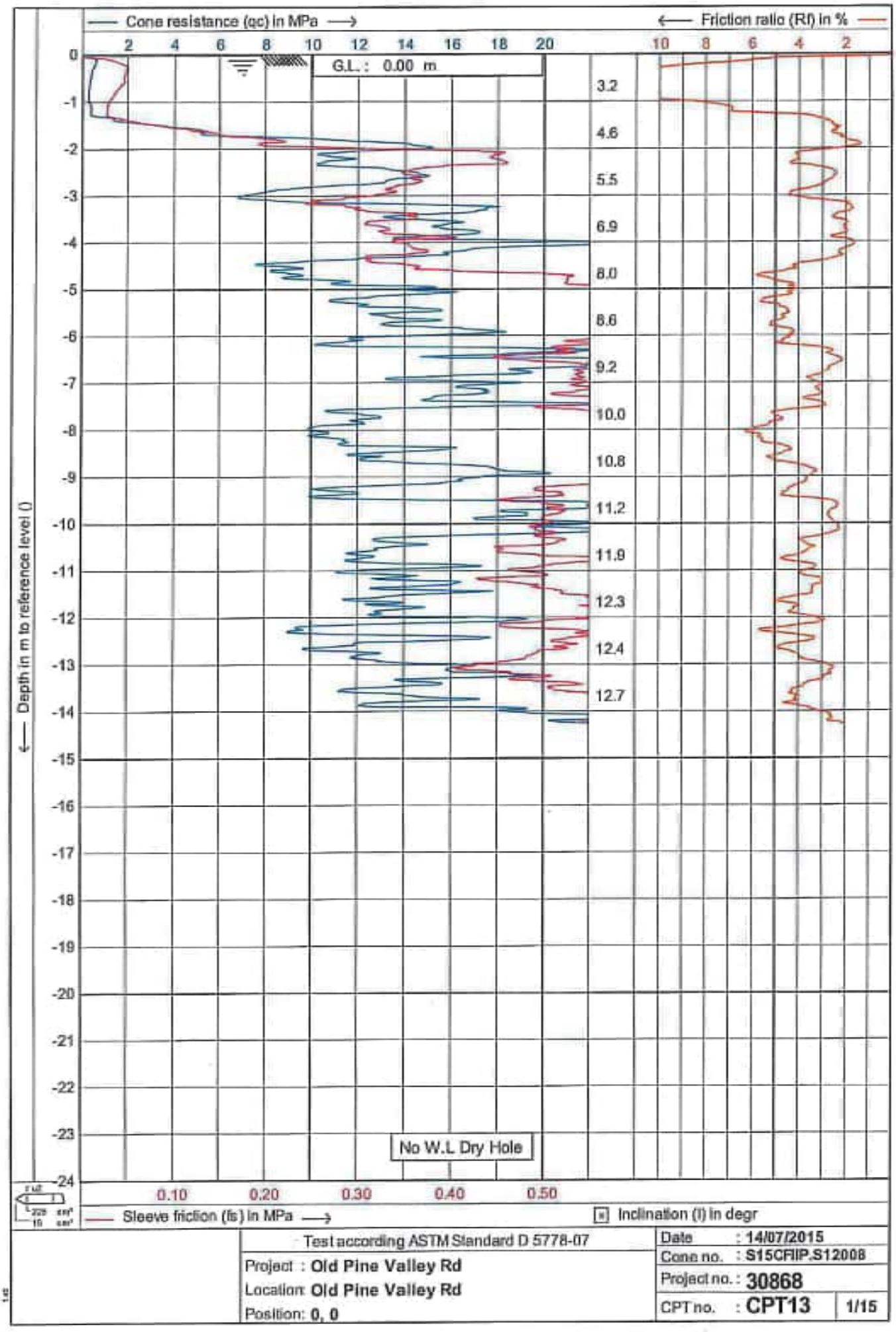
Position: **0, 0**

Date : **14/07/2015**

Cone no. : **S15CFIIP.S12008**

Project no. : **30868**

CPT no. : **CPT12** 1/15



Test according ASTM Standard D 5778-07

Project : **Old Pine Valley Rd**

Location: **Old Pine Valley Rd**

Position: **0, 0**

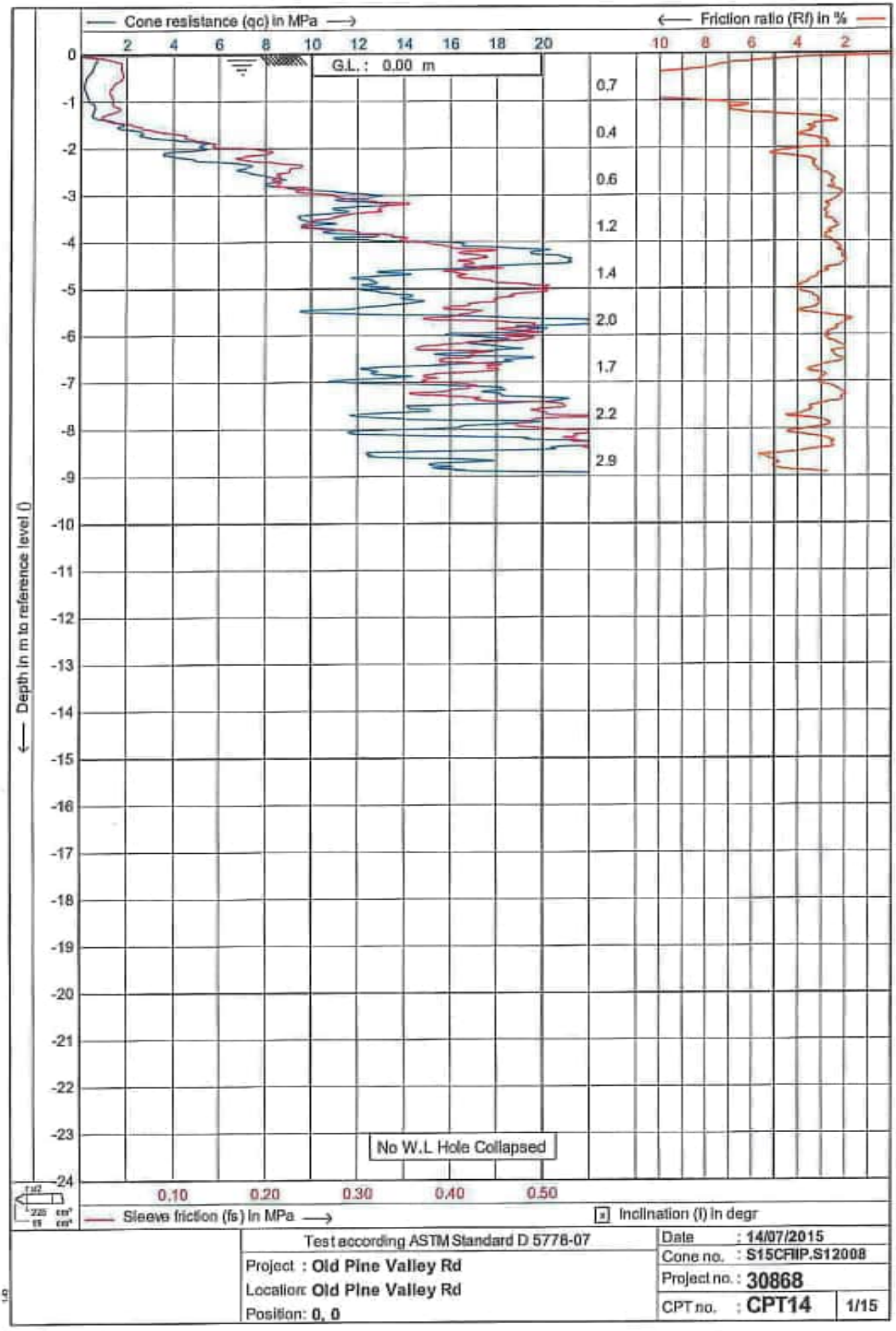
Date : **14/07/2015**

Cone no. : **S15CFIP.S12008**

Project no. : **30868**

CPT no. : **CPT13**

1/15



Test according ASTM Standard D 5778-07

Project : **Old Pine Valley Rd**

Location: **Old Pine Valley Rd**

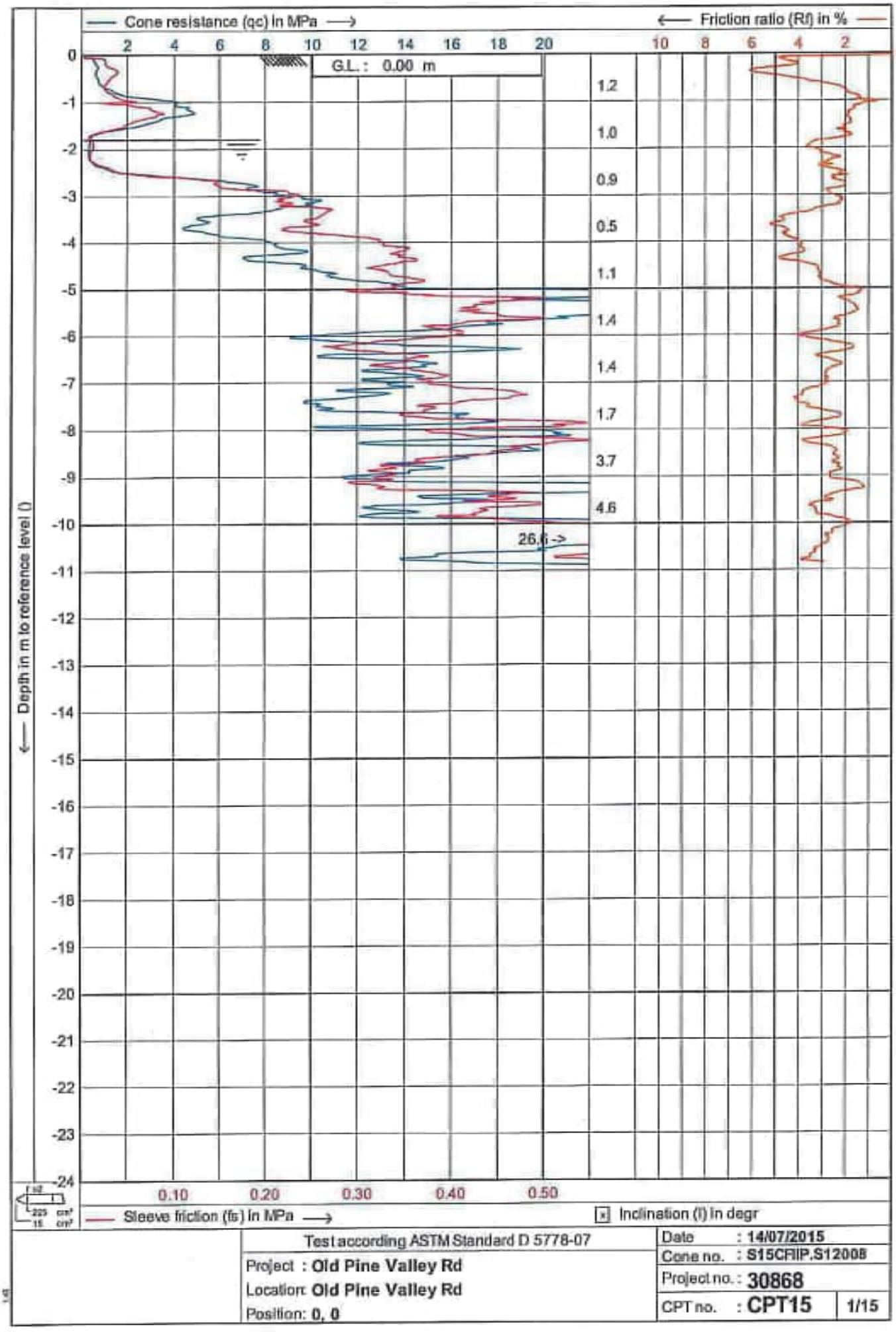
Position: **0, 0**

Date : **14/07/2015**

Cone no. : **S15CFIIP.S12008**

Project no. : **30868**

CPT no. : **CPT14** 1/15



Test according ASTM Standard D 5778-07

Project : **Old Pine Valley Rd**

Location: **Old Pine Valley Rd**

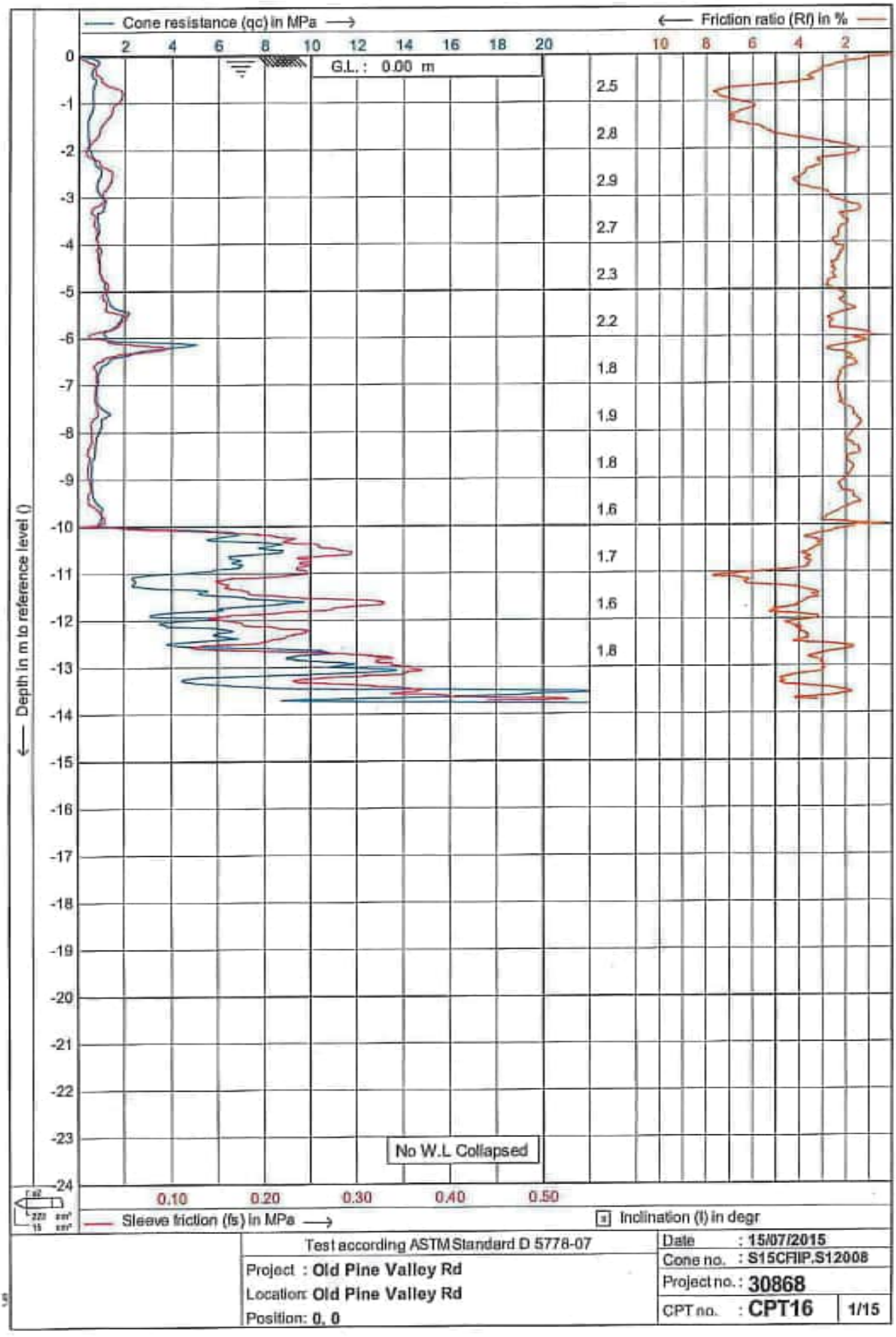
Position: **0, 0**

Date : **14/07/2015**

Cone no. : **S15CRIP.S12008**

Project no.: **30868**

CPT no. : **CPT15** 1/15



Test according ASTM Standard D 5778-07

Project : **Old Pine Valley Rd**

Location: **Old Pine Valley Rd**

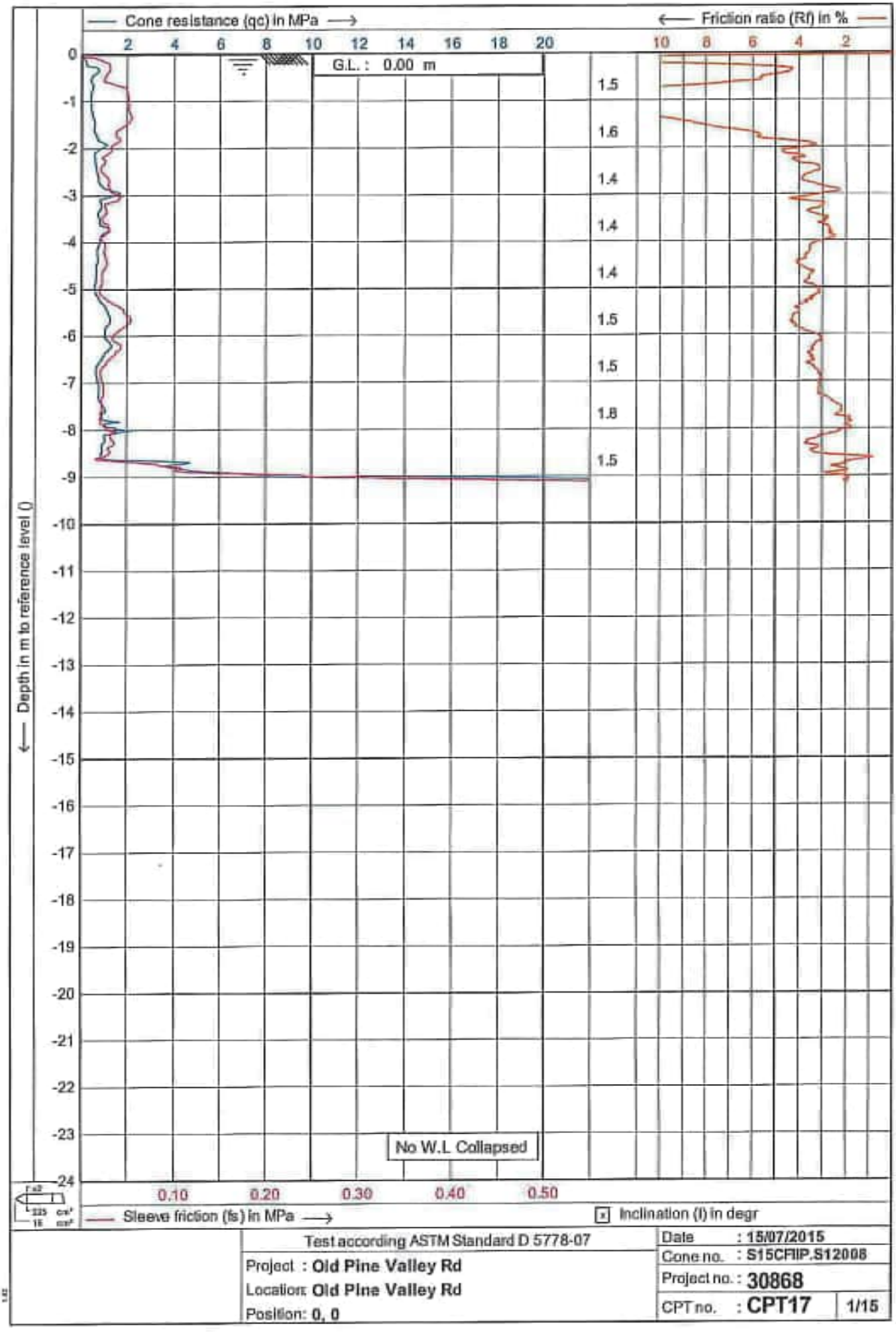
Position: **0, 0**

Date : **15/07/2015**

Cone no. : **S15CFIP.S12008**

Project no.: **30868**

CPT no. : **CPT16**



Test according ASTM Standard D 5778-07

Project : **Old Pine Valley Rd**

Location: **Old Pine Valley Rd**

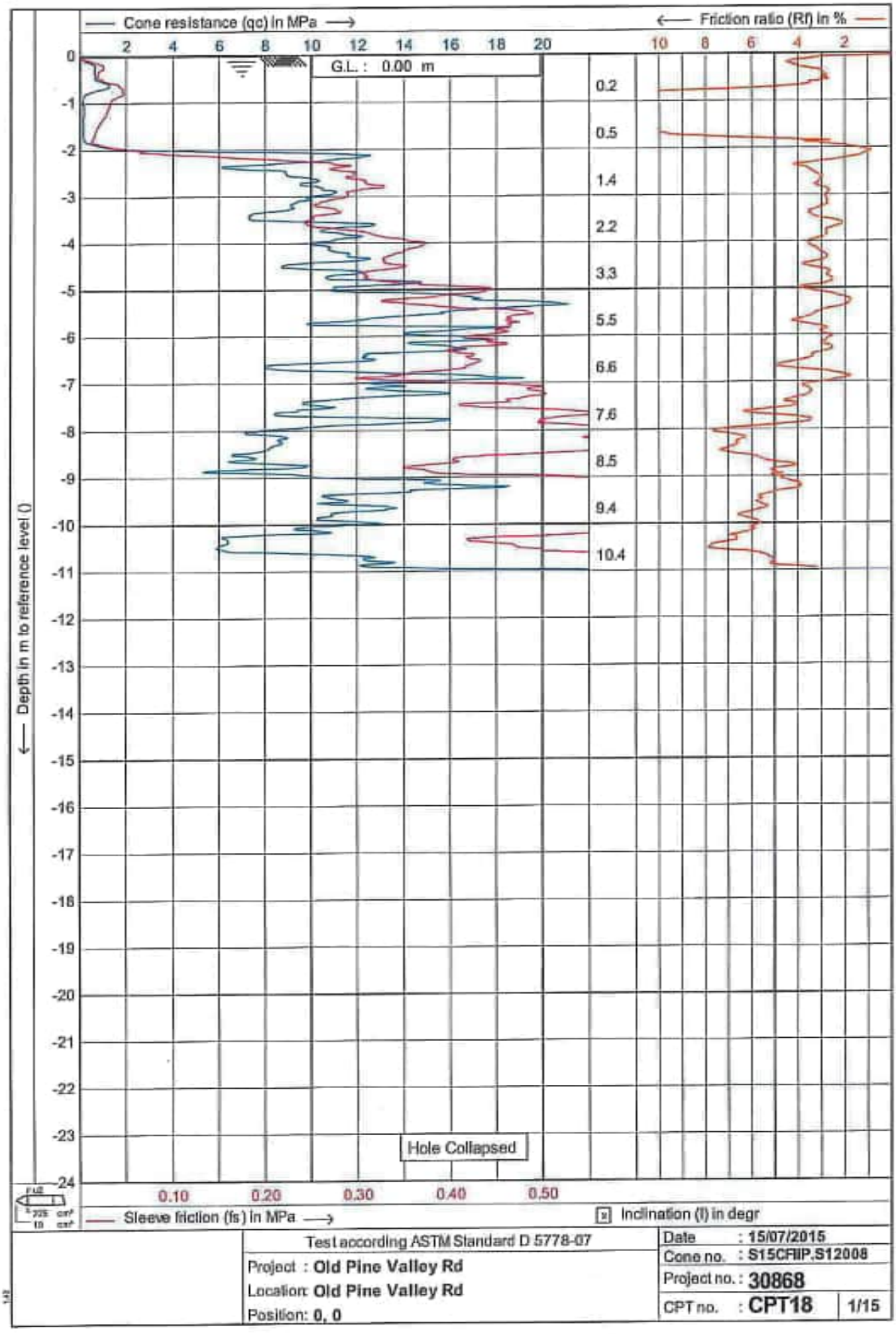
Position: **0, 0**

Date : **15/07/2015**

Cone no. : **S15CFIIP.S12008**

Project no. : **30868**

CPT no. : **CPT17** 1/15



Test according ASTM Standard D 5778-07

Project : **Old Pine Valley Rd**

Location: **Old Pine Valley Rd**

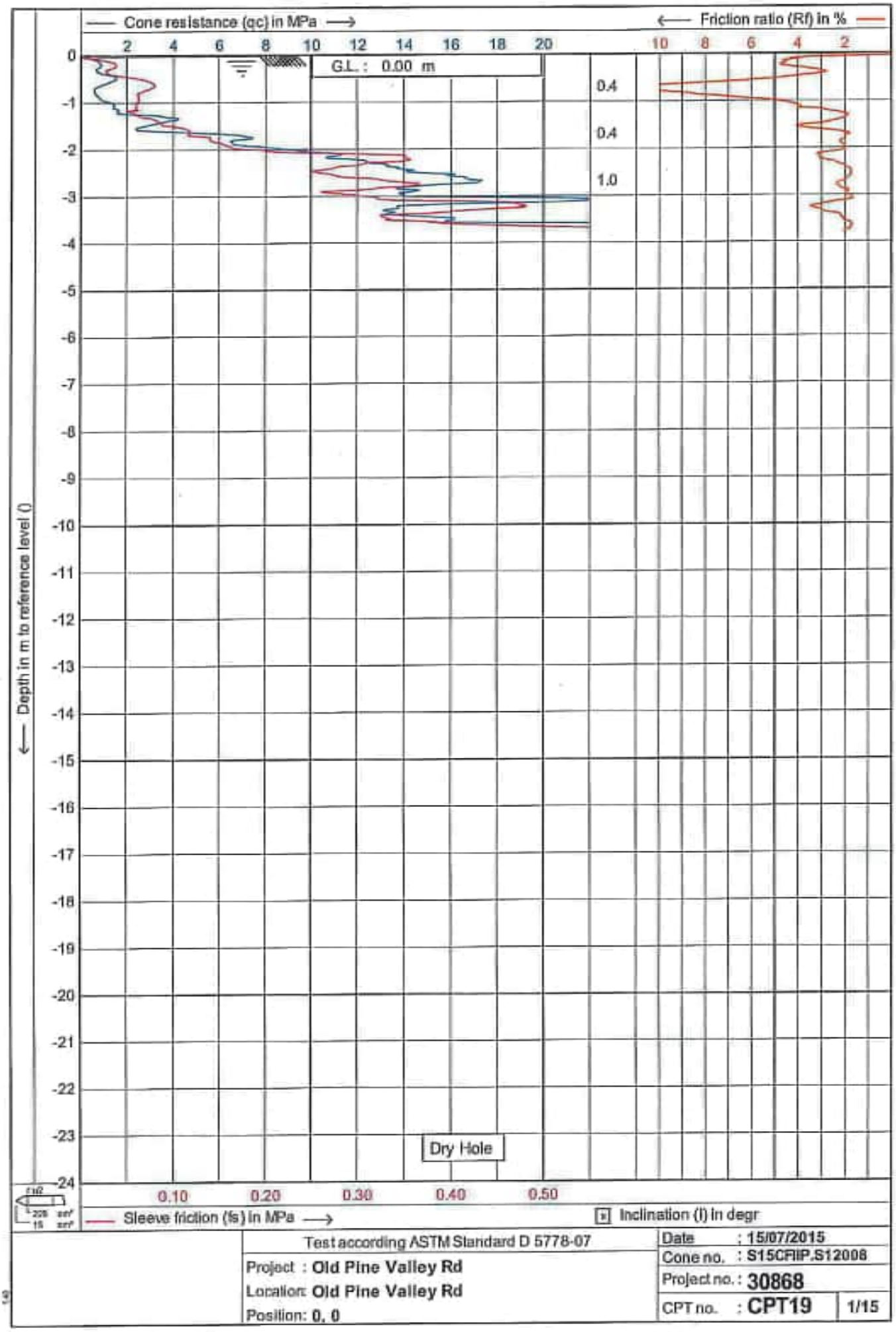
Position: **0, 0**

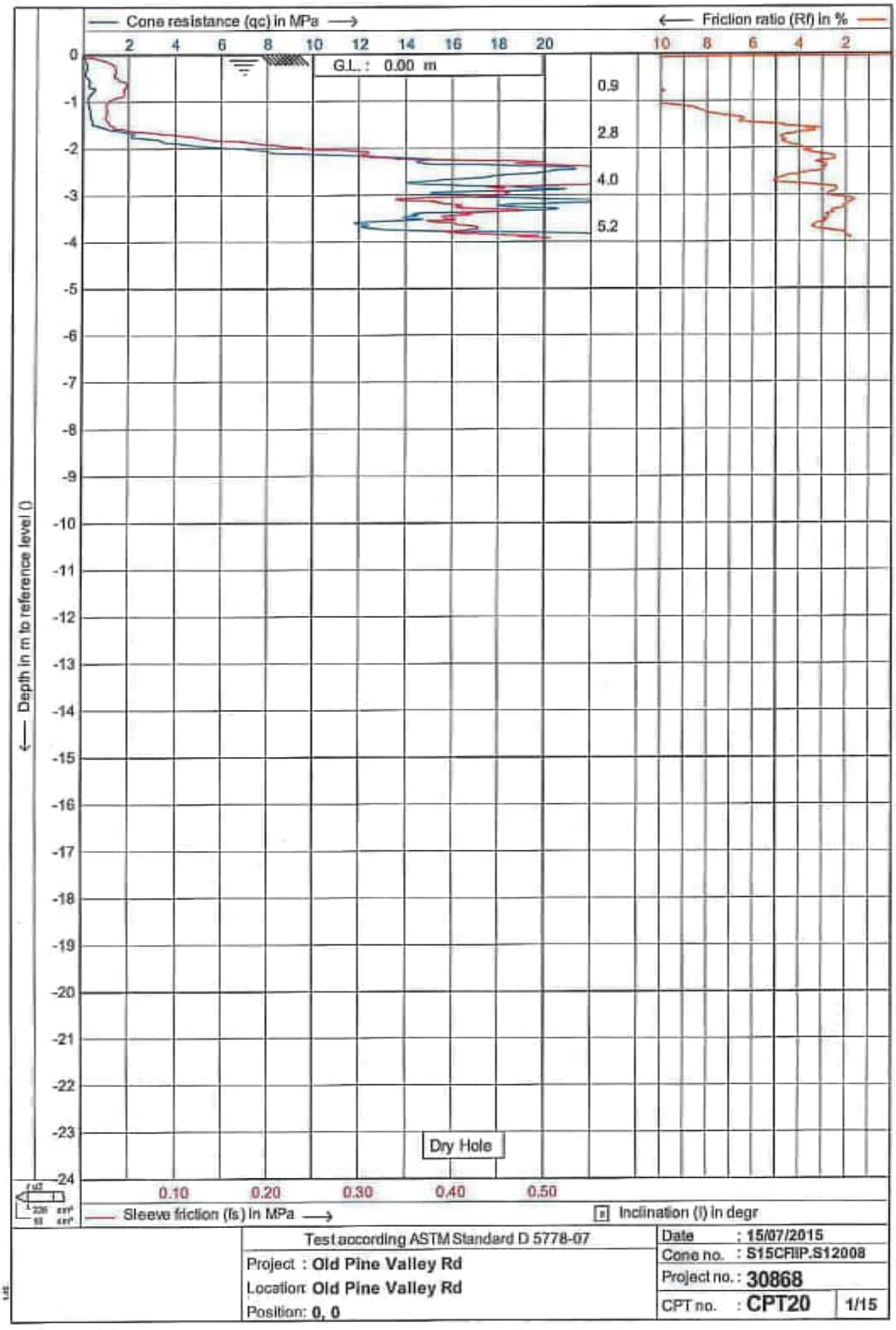
Date : **15/07/2015**

Cone no. : **S15CFIIP,S12008**

Project no. : **30868**

CPT no. : **CPT18** 1/15


Cone resistance (qc) in MPa
Friction ratio (Rf) in %
G.L. : 0.00 m
0.4
0.4
1.0
Depth in m to reference level ()
Dry Hole
Sleeve friction (fs) in MPa
Inclination (I) in degr
Test according ASTM Standard D 5778-07
Project : Old Pine Valley Rd
Location: Old Pine Valley Rd
Position: 0, 0
Date : 15/07/2015
Cone no. : S15CFIIP.S12008
Project no. : 30868
CPT no. : CPT19
1/15



Test according ASTM Standard D 5778-07

Project : **Old Pine Valley Rd**

Location: **Old Pine Valley Rd**

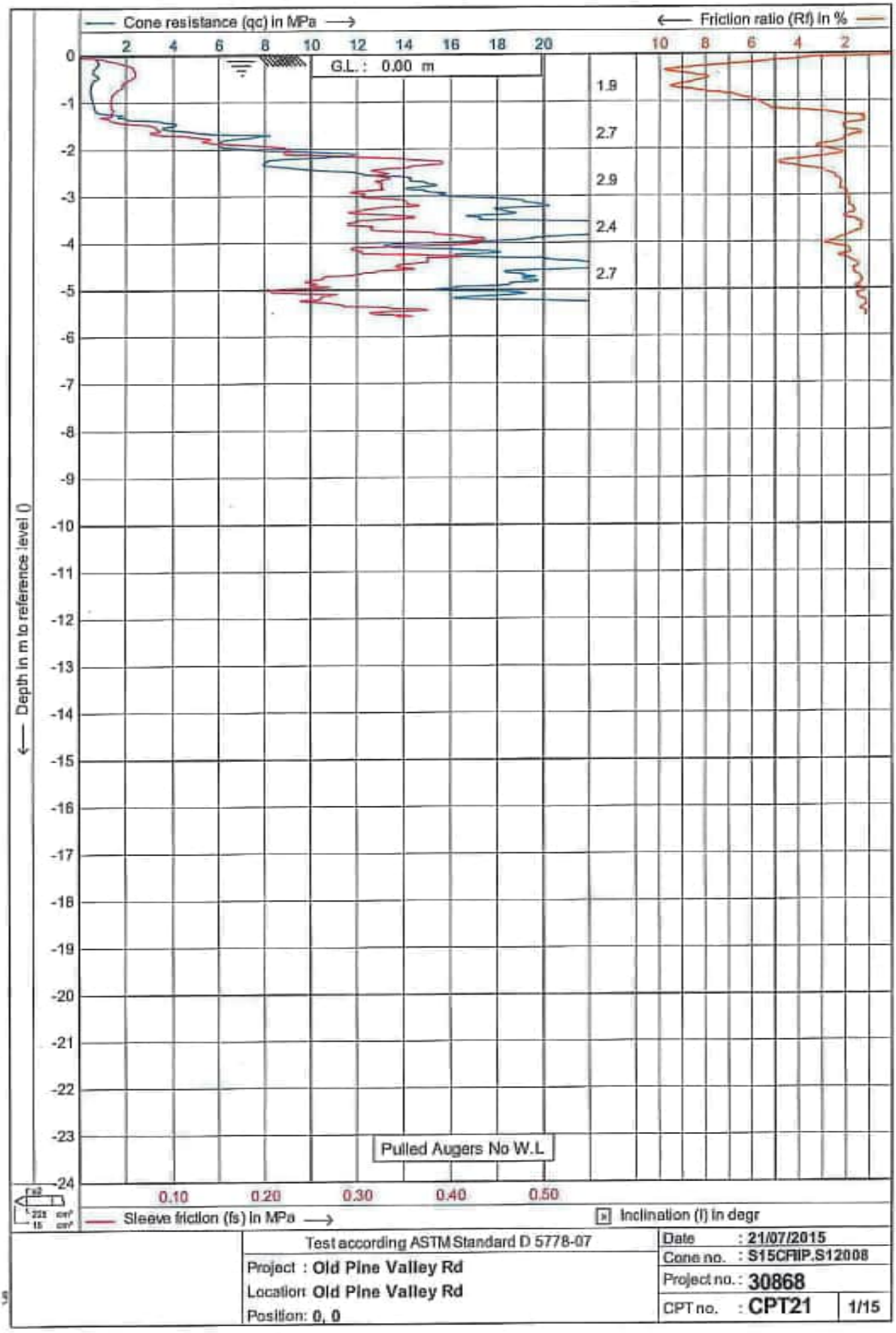
Position: **0, 0**

Date : **15/07/2015**

Cone no. : **S15CFIIP.S12008**

Project no.: **30868**

CPT no. : **CPT20** 1/15



Test according ASTM Standard D 5778-07

Project : **Old Pine Valley Rd**

Location: **Old Pine Valley Rd**

Position: **0, 0**

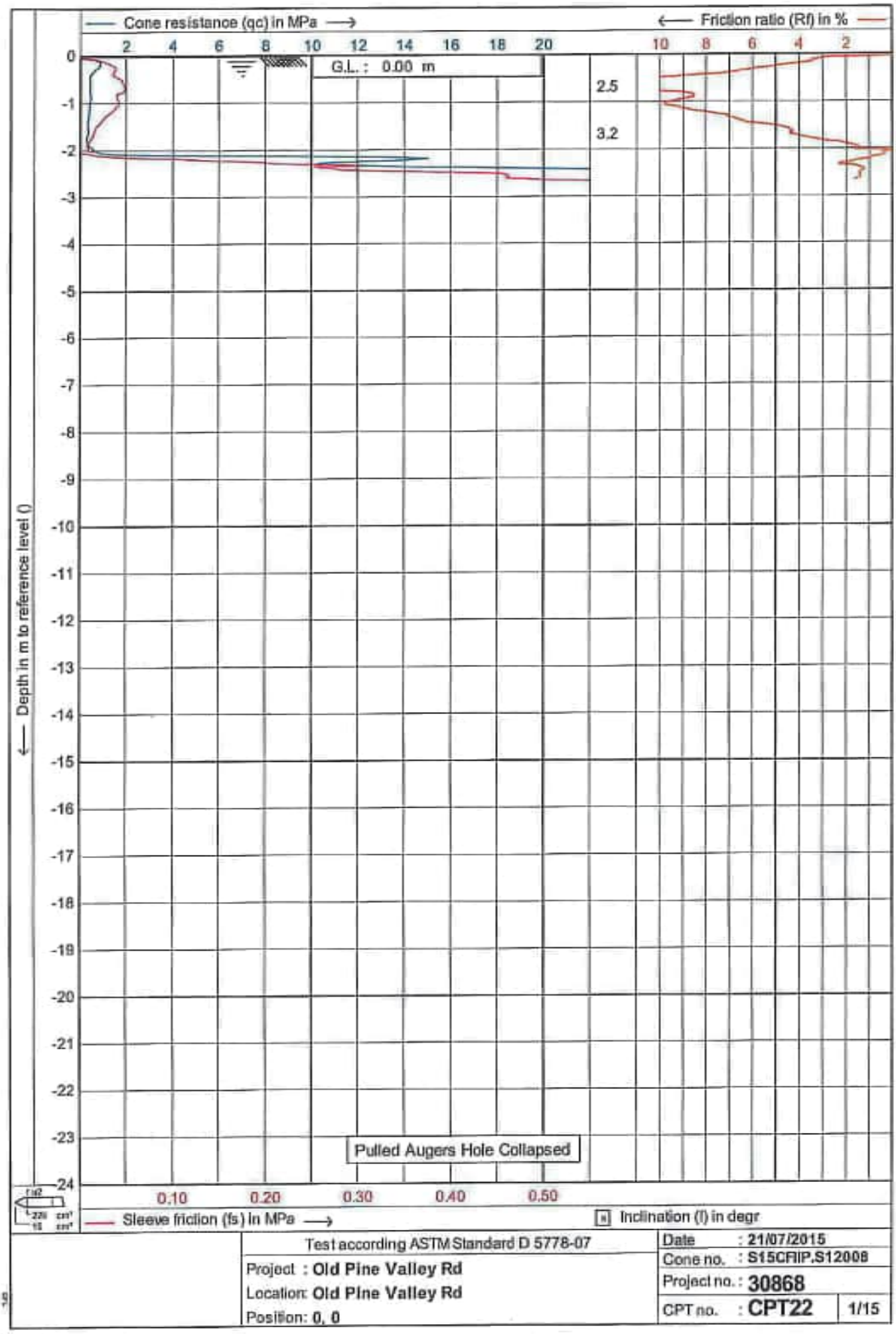
Date : **21/07/2015**

Cone no. : **S15CFIIP.S12008**

Project no.: **30868**

CPT no. : **CPT21**

1/15



Test according ASTM Standard D 5778-07

Project : **Old Pine Valley Rd**

Location: **Old Pine Valley Rd**

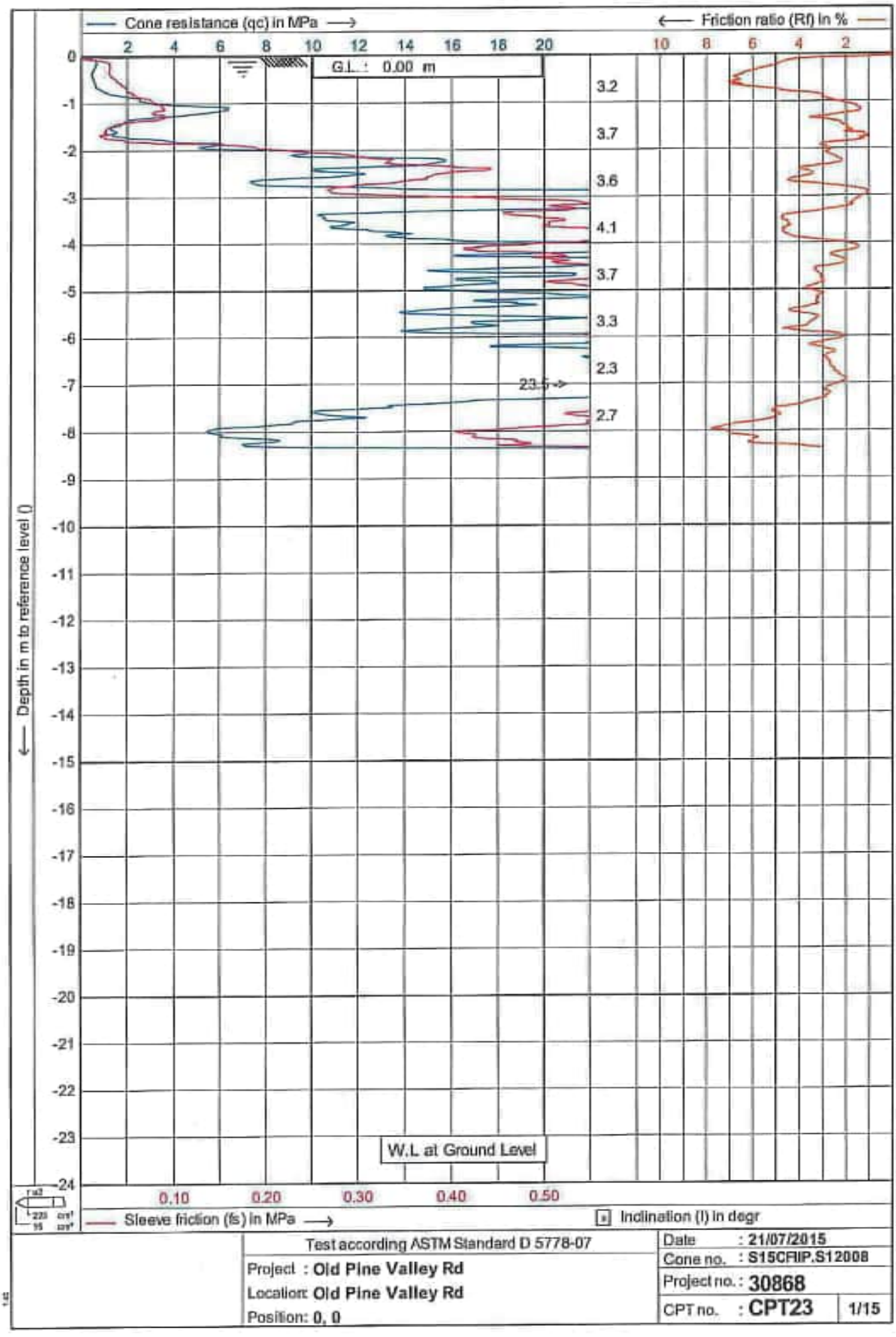
Position: **0, 0**

Date : **21/07/2015**

Cone no. : **S15CFIIP.S12008**

Project no. : **30868**

CPT no. : **CPT22** 1/15



Test according ASTM Standard D 5778-07

Project : **Old Pine Valley Rd**

Location: **Old Pine Valley Rd**

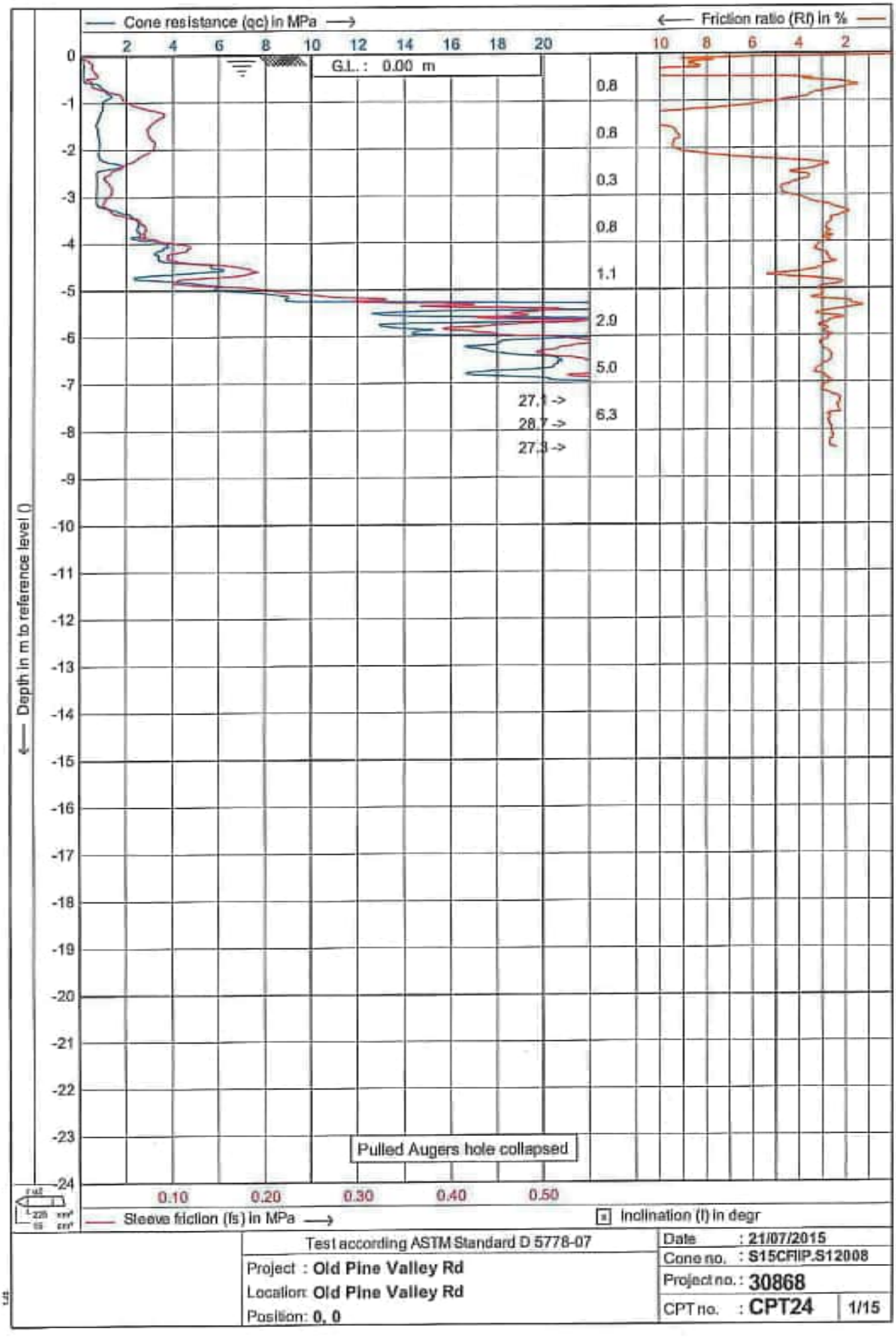
Position: **0, 0**

Date : **21/07/2015**

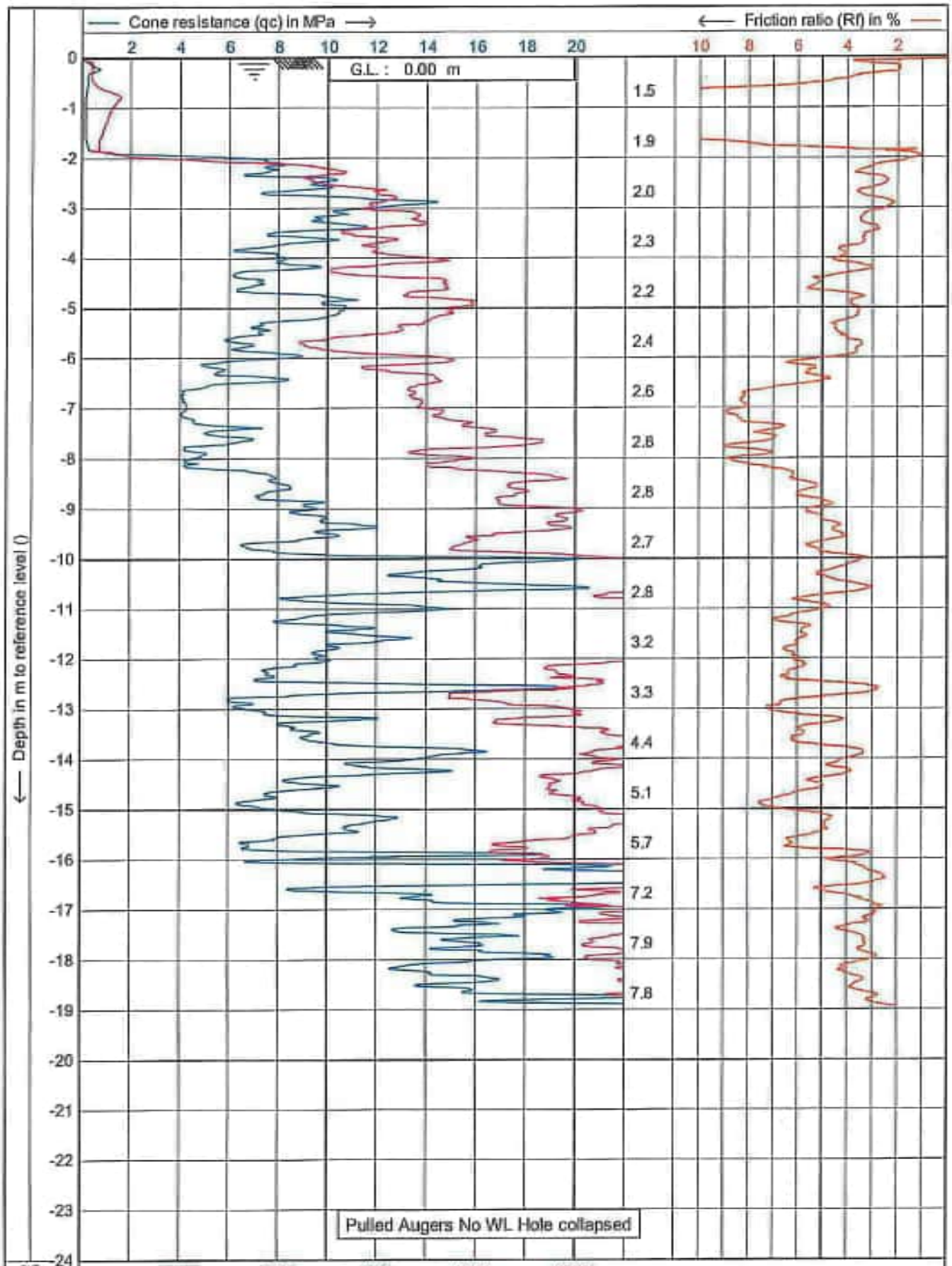
Cone no. : **S15CFIIP.S12008**

Project no. : **30868**

CPT no. : **CPT23** 1/15



Test according ASTM Standard D 5778-07	Date	: 21/07/2015
Project : **Old Pine Valley Rd**	Cone no.	: S15CFIIP.S12008
Location: **Old Pine Valley Rd**	Project no.	: **30868**
Position: **0, 0**	CPT no.	: **CPT24** 1/15



Test according ASTM Standard D 5778-07

Project : **Old Pine Valley Rd**

Location: **Old Pine Valley Rd**

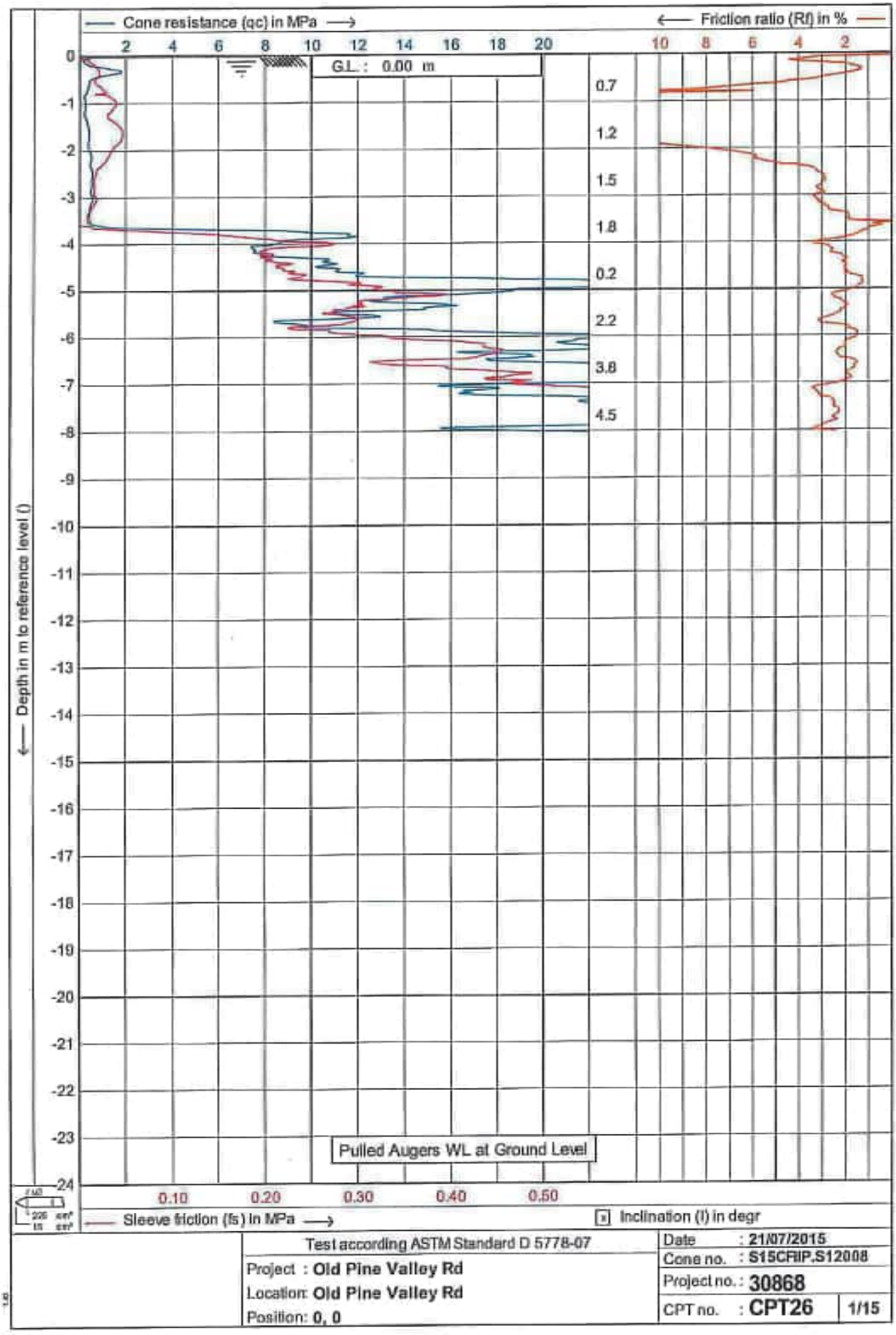
Position: **0, 0**

Date : **21/07/2015**

Cone no. : **S15CFIIP.S12008**

Project no. : **30868**

CPT no. : **CPT25** 1/15



Test according ASTM Standard D 5778-07

Project : **Old Pine Valley Rd**

Location: **Old Pine Valley Rd**

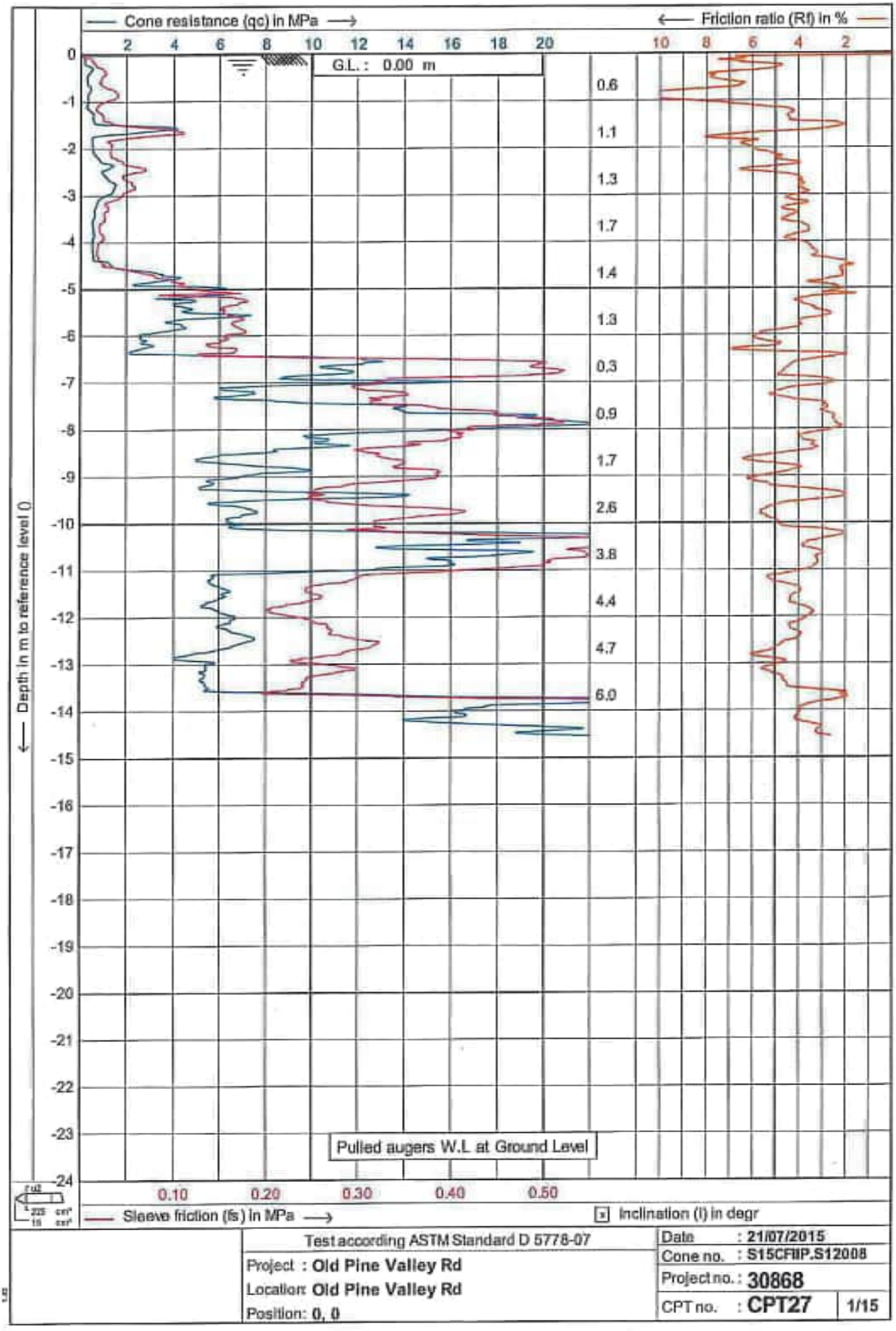
Position: **0, 0**

Date : **21/07/2015**

Cone no. : **S15CFIIP.S12008**

Project no.: **30868**

CPT no. : **CPT26** 1/15



Test according ASTM Standard D 5778-07

Project : **Old Pine Valley Rd**

Location: **Old Pine Valley Rd**

Position: **0, 0**

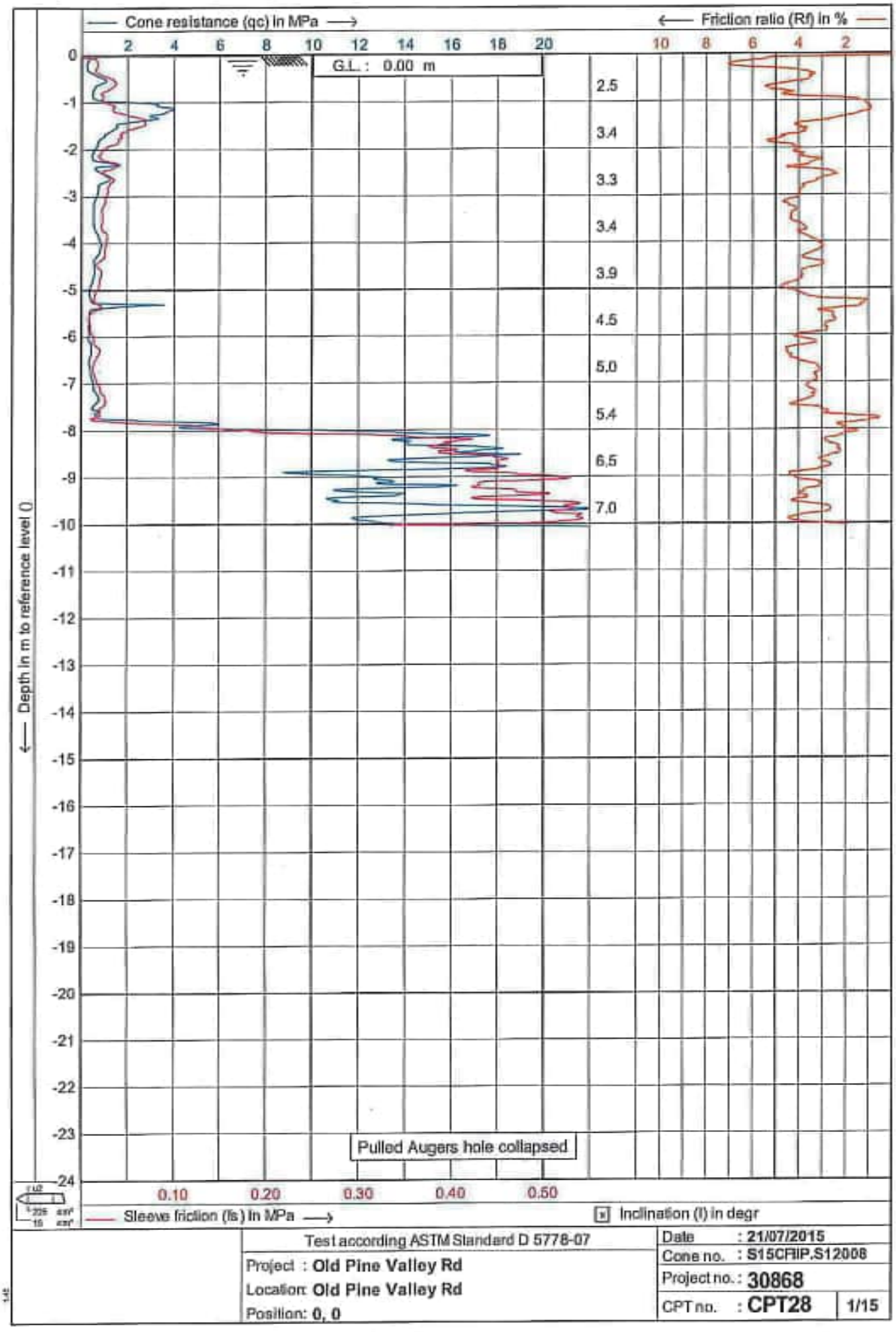
Date : **21/07/2015**

Cone no. : **S15CFIIP.S12008**

Project no.: **30868**

CPT no. : **CPT27**

1/15



Test according ASTM Standard D 5778-07

Project : **Old Pine Valley Rd**

Location: **Old Pine Valley Rd**

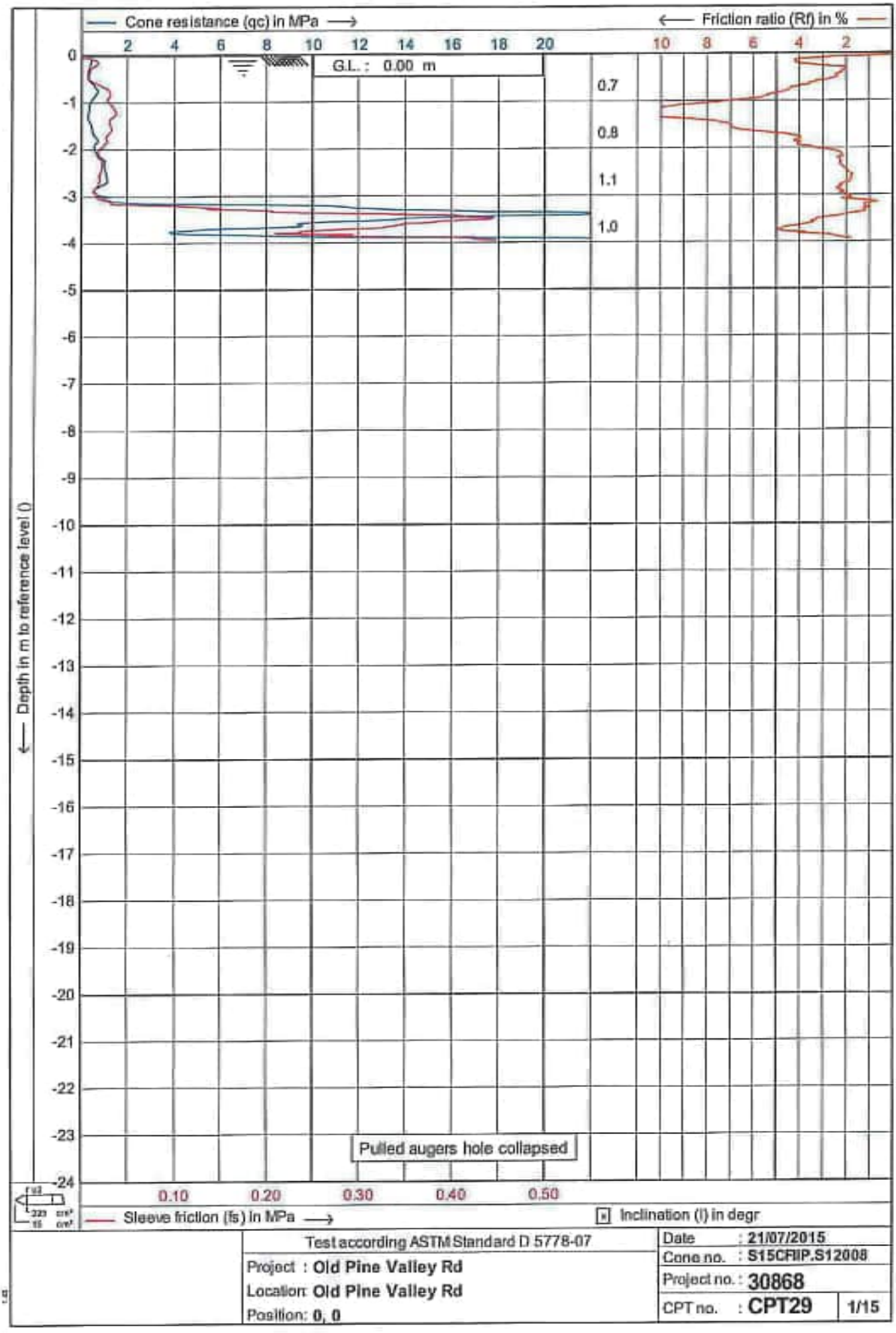
Position: **0, 0**

Date : **21/07/2015**

Cone no. : **S15CFIIP.S12008**

Project no.: **30868**

CPT no. : **CPT28**



Test according ASTM Standard D 5778-07

Project : **Old Pine Valley Rd**

Location: **Old Pine Valley Rd**

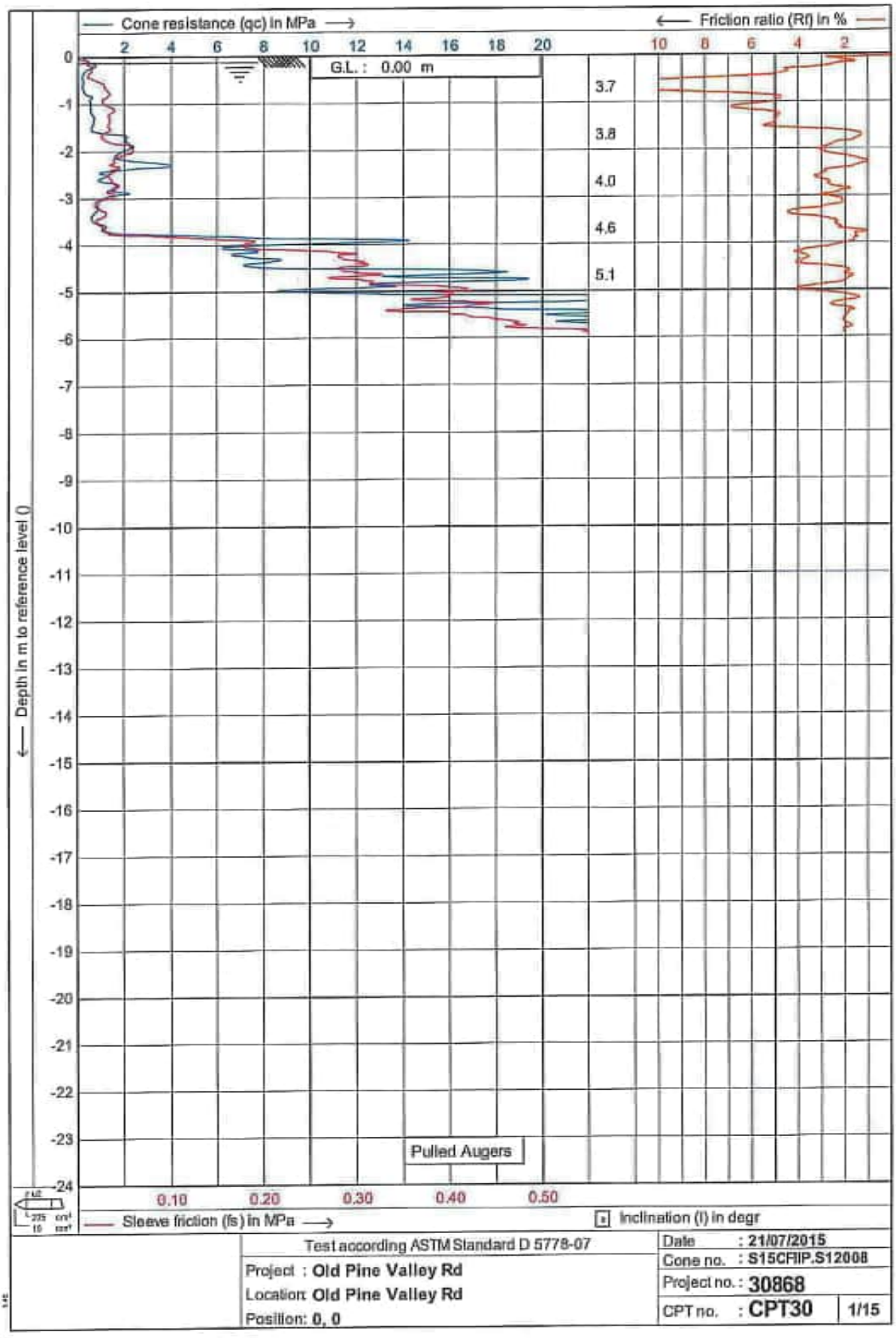
Position: **0, 0**

Date : **21/07/2015**

Cone no. : **S15CFIIP.S12008**

Project no. : **30868**

CPT no. : **CPT29** 1/15



Test according ASTM Standard D 5778-07

Project : **Old Pine Valley Rd**

Location: **Old Pine Valley Rd**

Position: **0, 0**

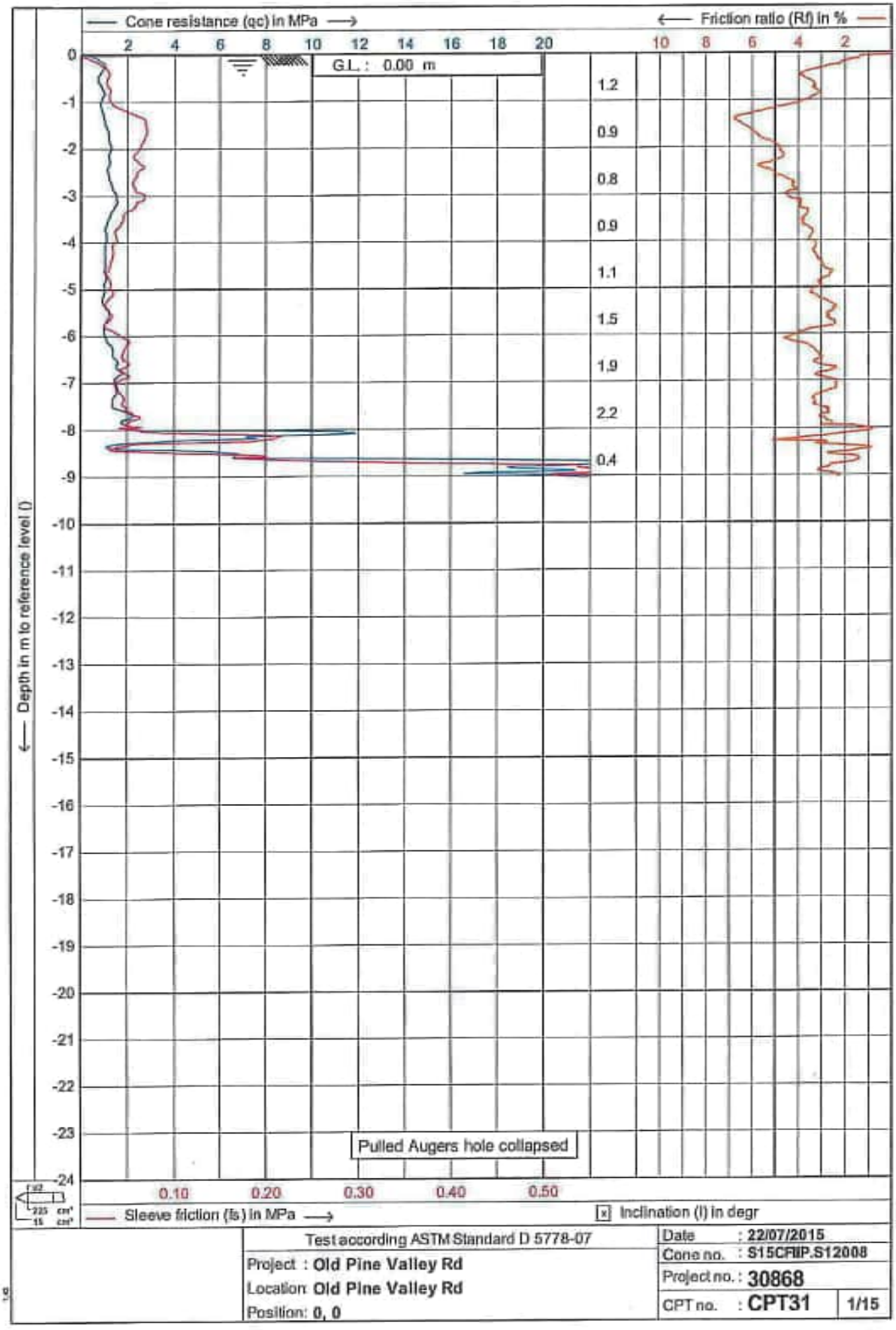
Date : **21/07/2015**

Cone no. : **S15CFIIP.S12008**

Project no. : **30868**

CPT no. : **CPT30**

1/15



Test according ASTM Standard D 5778-07

Project : **Old Pine Valley Rd**

Location: **Old Pine Valley Rd**

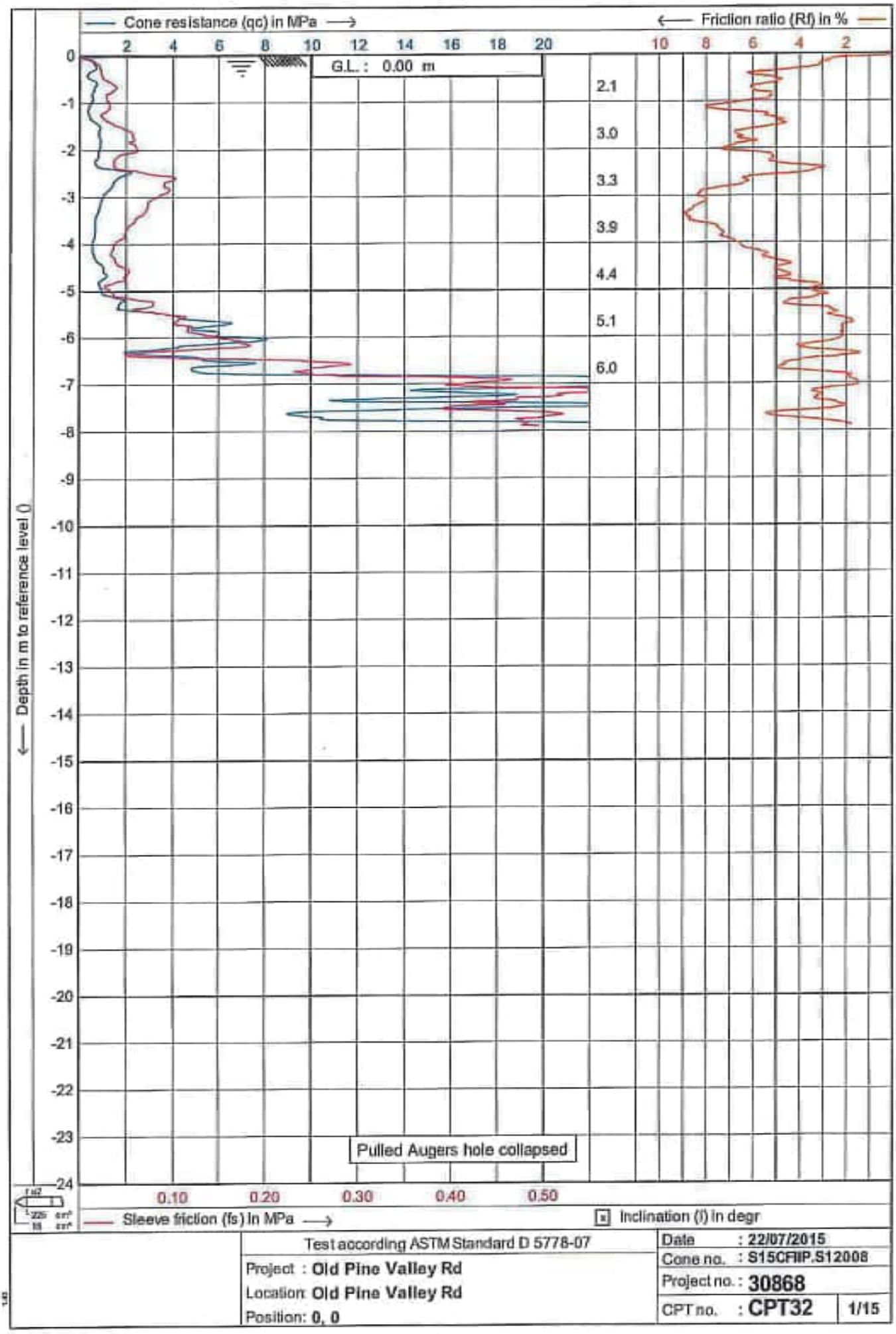
Position: **0, 0**

Date : **22/07/2015**

Cone no. : **S15CFIIP.S12008**

Project no. : **30868**

CPT no. : **CPT31** 1/15



Test according ASTM Standard D 5778-07

Project : **Old Pine Valley Rd**

Location: **Old Pine Valley Rd**

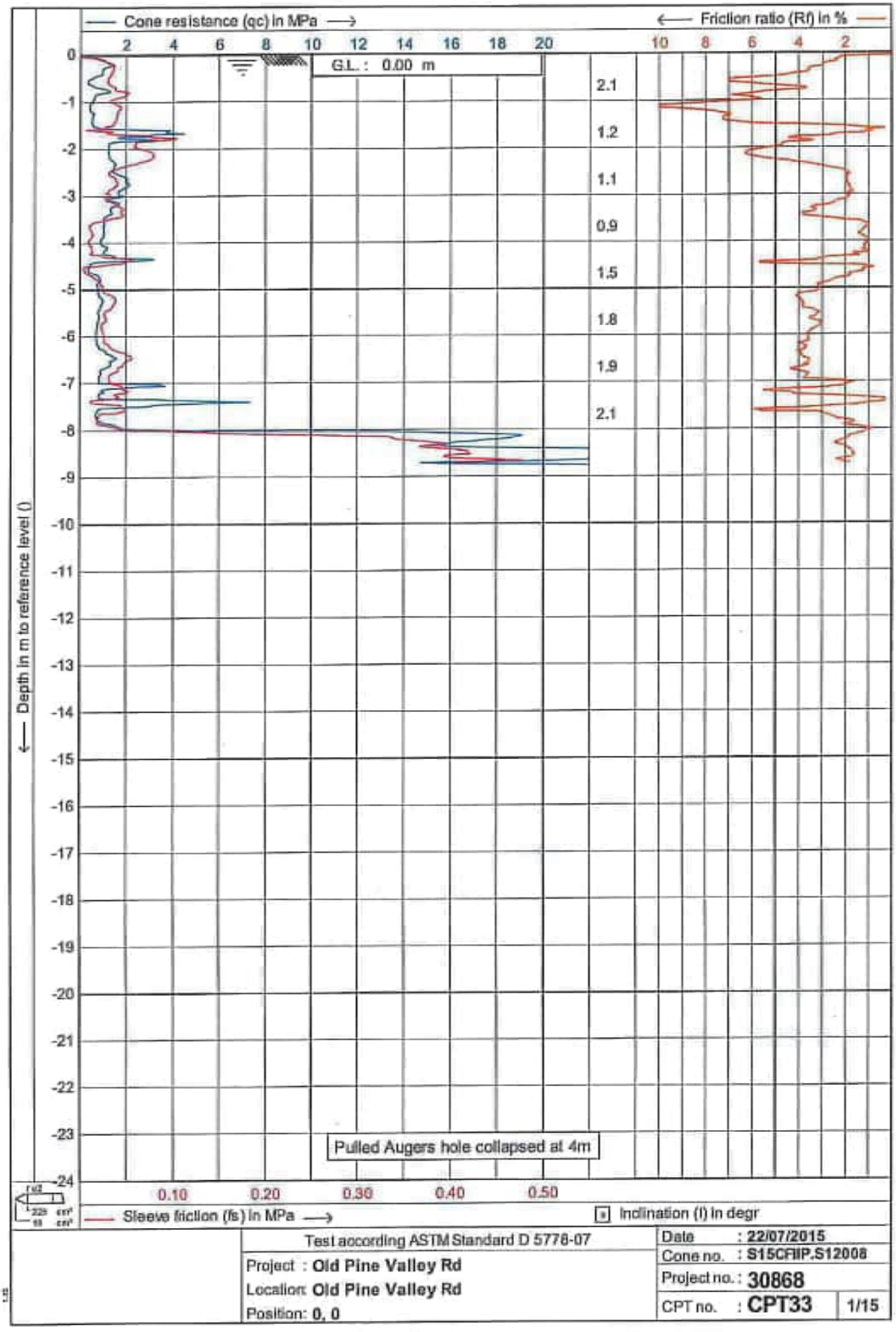
Position: **0, 0**

Date : **22/07/2015**

Cone no. : **S15CFIIP.S12008**

Project no. : **30868**

CPT no. : **CPT32**



Test according ASTM Standard D 5778-07

Project : **Old Pine Valley Rd**

Location: **Old Pine Valley Rd**

Position: **0, 0**

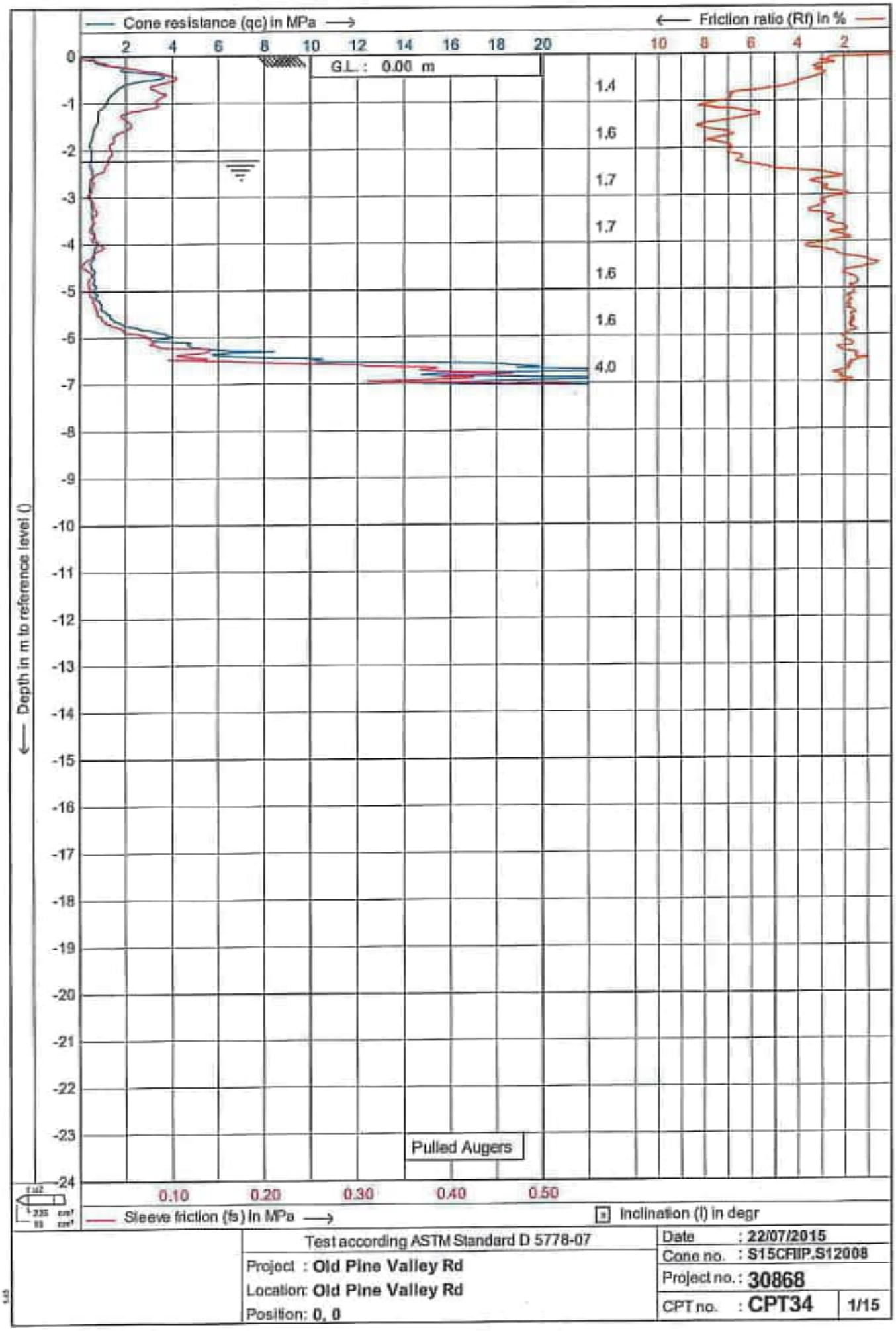
Date : **22/07/2015**

Cone no. : **S15CFIIP.S12008**

Project no.: **30868**

CPT no. : **CPT33**

1/15



Test according ASTM Standard D 5778-07

Project : **Old Pine Valley Rd**

Location: **Old Pine Valley Rd**

Position: **0, 0**

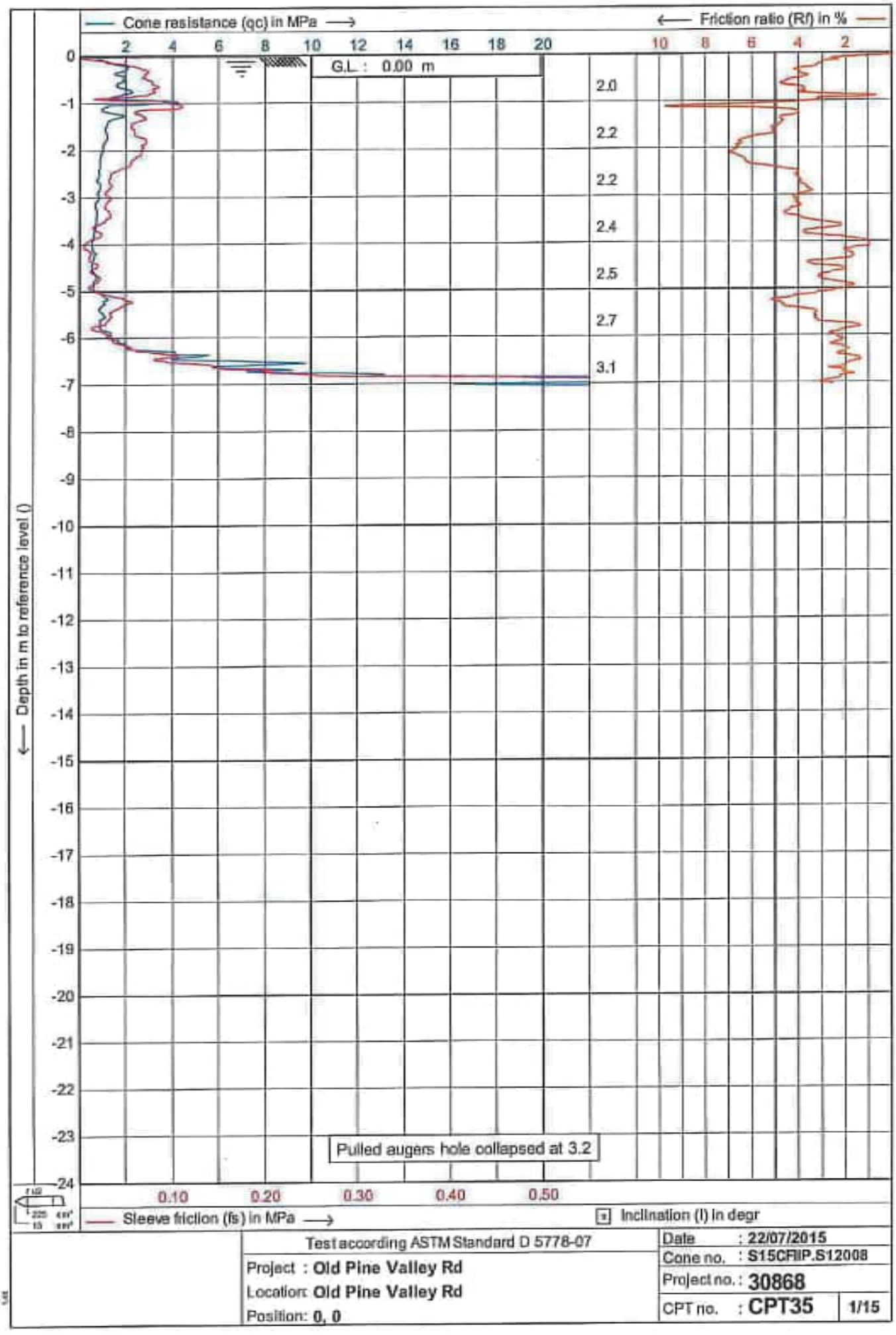
Date : **22/07/2015**

Cone no. : **S15CFIIP.S12008**

Project no.: **30868**

CPT no. : **CPT34**

1/15



Test acording ASTM Standard D 5778-07

Project : **Old Pine Valley Rd**

Location: **Old Pine Valley Rd**

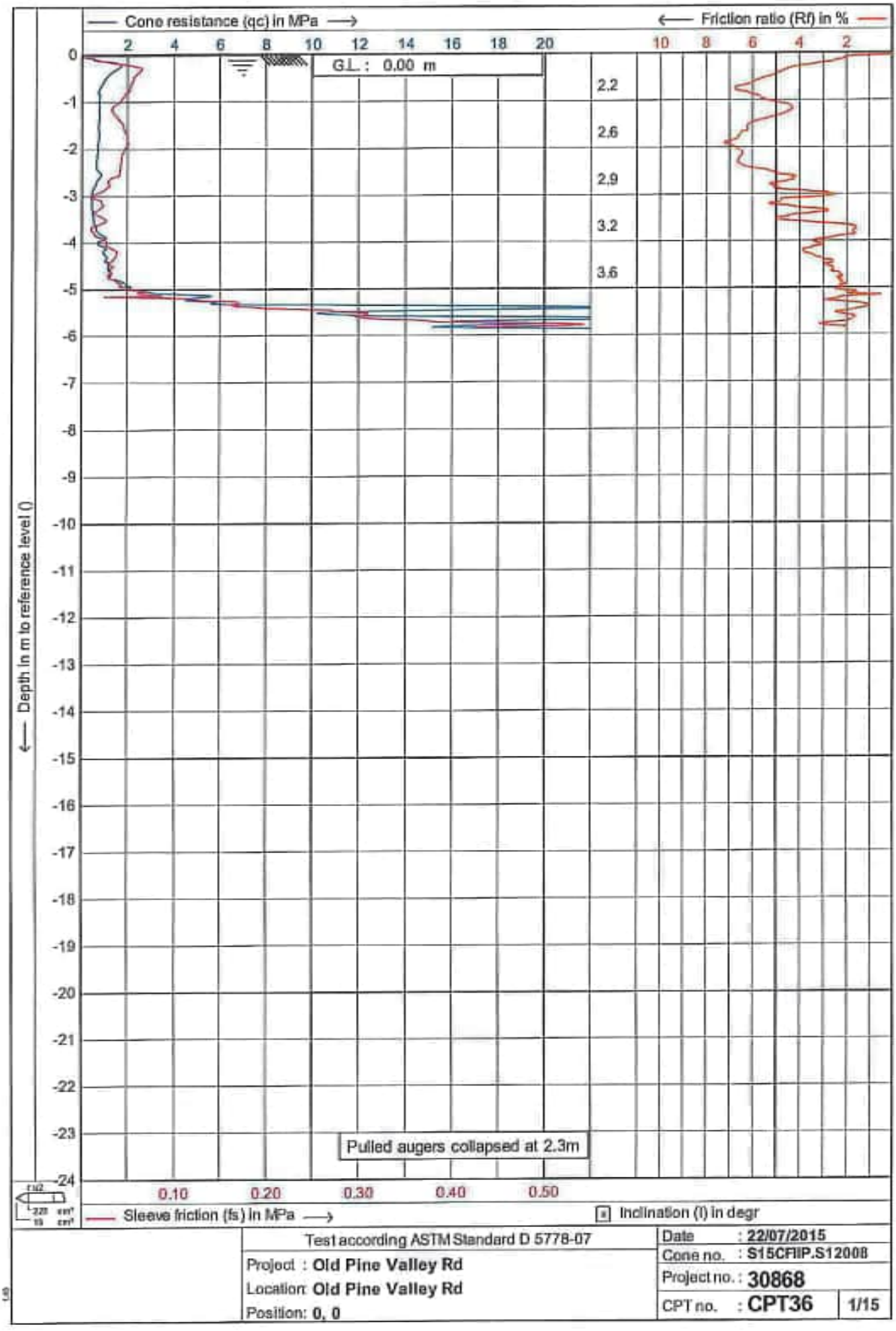
Position: **0, 0**

Date : **22/07/2015**

Cone no. : **S15CFIIP.S12008**

Project no. : **30868**

CPT no. : **CPT35**



Test according ASTM Standard D 5778-07

Project : **Old Pine Valley Rd**

Location: **Old Pine Valley Rd**

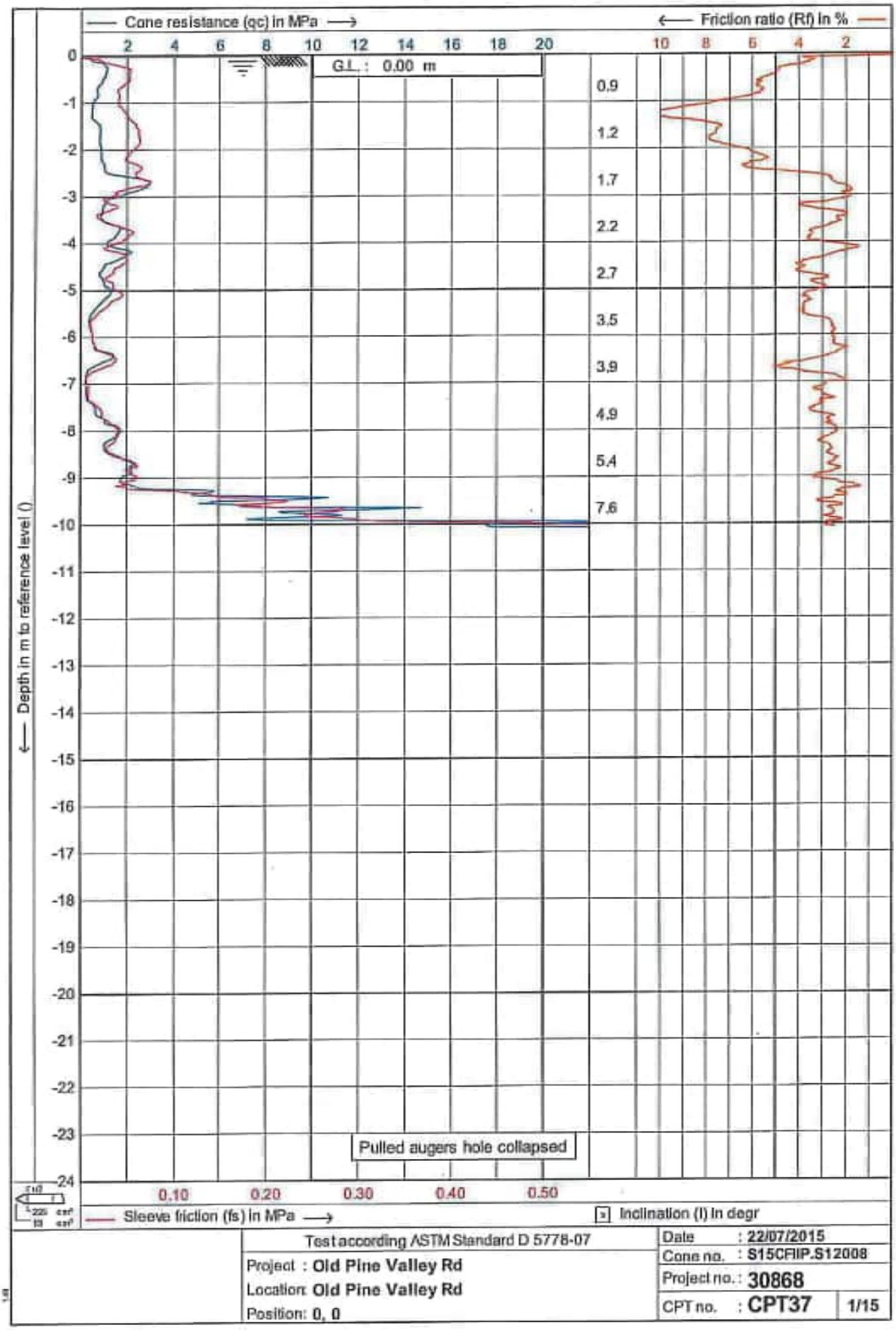
Position: **0, 0**

Date : **22/07/2015**

Cone no. : **S15CFIIP.S12008**

Project no. : **30868**

CPT no. : **CPT36**



Test according ASTM Standard D 5778-07

Project : **Old Pine Valley Rd**

Location: **Old Pine Valley Rd**

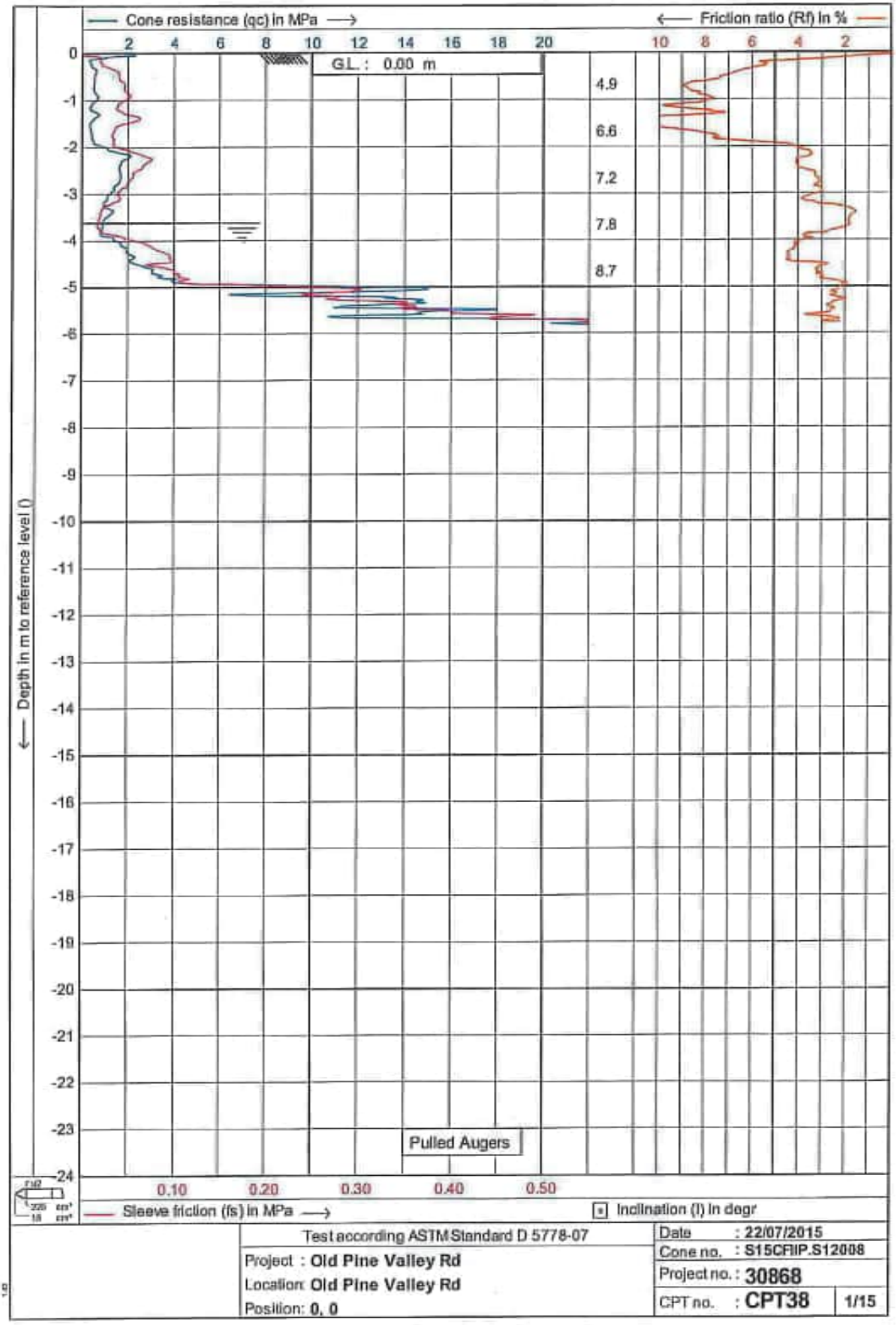
Position: **0, 0**

Date : **22/07/2015**

Cone no. : **S15CFIIP.S12008**

Project no.: **30868**

CPT no. : **CPT37** 1/15



Test according ASTM Standard D 5778-07

Project : **Old Pine Valley Rd**

Location: **Old Pine Valley Rd**

Position: **0, 0**

Date : **22/07/2015**

Cone no. : **S15CFIIP.S12008**

Project no. : **30868**

CPT no. : **CPT38** 1/15

Tonkin+Taylor

BOREHOLE LOG

BOREHOLE No:HA01
Hole Location: Refer GPS coordinates and site plan
SHEET 1 OF 1

PROJECT: Silverdalewest-soak	LOCATION: Old Pine Valley Road	JOB No: 30888
CO-ORDINATES:	DRILL TYPE: 100mm hand auger	HOLE STARTED: 11/3/16
	DRILL METHOD: HA	HOLE FINISHED: 11/3/16
R.L.:		DRILLED BY: geotechnics
DATUM:	DRILL FLUID:	LOGGED BY: KS/RBE CHECKED:

GEOLOGICAL | ENGINEERING DESCRIPTION

GEOLOGICAL UNIT, GENERIC NAME, ORIGIN, MINERAL COMPOSITION	FLUID LOSS	WATER	CORE RECOVERY (%)	METHOD	CASING	TESTS	SAMPLES	R.L. (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MOISTURE CONDITION / WEATHERING	STRENGTH/DENSITY CLASSIFICATION	SHEAR STRENGTH (kPa)	COMPRESSIVE STRENGTH (MPa)	DEFECT SPACING (mm)	SOIL DESCRIPTION: Soil type, colour components, plasticity or particle size, colour. ROCK DESCRIPTION: Substance: Rock type, particle size, colour, minor components. Defects: Type, inclination, thickness, roughness, filling.
		Hole dry on completion							0.5								SILT, friable, moist, dark brown -non plastic, clayey clayey SILT, low plasticity, moist, yellowish brown gravelly SILT, moist, non plastic, yellowish brown, with black oxide gravel 0.5 clayey SILT, low plasticity, moist, yellowish brown SILT, some clay, non plastic, moist, light brown mottled white, becoming dry at 0.8m SILT, friable dry, brownish white, hard to auger 1.0
									1.0								
									1.5								END OF BOREHOLE 1.15m (weathered limestone, unable to auger) 1.5
									2								

T+T DATATEMPLATE.ODT rlr

Log Scale 1:10

BOREHOLE 616864.GPJ 14-Mar-2016

Tonkin+Taylor

BOREHOLE LOG

BOREHOLE No:HA02
Hole Location: Refer GPS coordinates and site plan
SHEET 1 OF 1

PROJECT: Silverdalewest-soak	LOCATION: Old Pine Valley Road	JOB No: 30869
CO-ORDINATES:	DRILL TYPE: 100mm hand auger	HOLE STARTED: 11/3/16
	DRILL METHOD: HA	HOLE FINISHED: 11/3/16
R.L.:		DRILLED BY: geotechnics
DATUM:	DRILL FLUID:	LOGGED BY: KSIRBE CHECKED:

GEOLOGICAL

GEOLOGICAL UNIT, GENERIC NAME, ORIGIN, MINERAL COMPOSITION.

FLUID LOSS | WATER | CORE RECOVERY (%) | METHOD | CASING | TESTS | SAMPLES | R.L. (m) | DEPTH (m)

ENGINEERING DESCRIPTION

GRAPHIC LOG | CLASSIFICATION SYMBOL | MOISTURE / WEATHERING CONDITION | STRENGTH/DENSITY CLASSIFICATION | SHEAR STRENGTH (kPa) | COMPRESSIVE STRENGTH (MPa) | DEFECT SPACING (mm)

SOIL DESCRIPTION
Soil type, minor components, plasticity or particle size, colour.

ROCK DESCRIPTION
Substance: Rock type, particle size, colour, minor components.
Defects: Type, inclination, thickness, roughness, filling.

Hole dry on completion

0.5

SILT, non plastic, moist, dark brown

-non plastic, clayey

clayey SILT, medium plasticity, moist, yellowish brown and light brown

0.5

1.0

SILT, non plastic, dry to moist, brown mottled white

1.0

END OF BOREHOLE 1.3m (weathered limestone, unable to auger)

1.5

2

T+T_DATATEMPLATE.GDT 4.2

Log Scale 1:10

BORELOG 616864.GPJ 14-Mar-2016

Tonkin+Taylor

BOREHOLE LOG

BOREHOLE No:HA03
Hole Location: Refer GPS coordinates and site plan
SHEET 1 OF 1

PROJECT: Silverdalewest-soak | LOCATION: Old Pine Valley Road | JOB No: 30858

CO-ORDINATES:

R.L.:

DATUM:

DRILL TYPE: 100mm hand auger

DRILL METHOD: HA

DRILL FLUID:

HOLE STARTED: 11/3/16
HOLE FINISHED: 11/3/16
DRILLED BY: geotechnics
LOGGED BY: KS/RBE CHECKED:

GEOLOGICAL									ENGINEERING DESCRIPTION							
GEOLOGICAL UNIT, GENERIC NAME, ORIGIN, MINERAL COMPOSITION	FLUID LOSS	WATER	CORE RECOVERY (%)	METHOD	CASING	TESTS	SAMPLES	R.L. (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MOISTURE CONDITION / WEATHERING	STRENGTH/DENSITY CLASSIFICATION	SHEAR STRENGTH (kPa)	COMPRESSIVE STRENGTH (MPa)	DEFECT SPACING (mm)	SOIL DESCRIPTION Soil type, minor components, plasticity or particle size, colour. ROCK DESCRIPTION Rock type, particle size, colour, minor components. Defects: Type, inclination, thickness, roughness, infill.
		Hole dry on completion							0.5								SILT, non plastic, moist, dark brown SILT, some clay, low plasticity, moist, light brown clayey SILT, low plasticity, moist, light brown; light whitish brown mottled yellowish brown from 0.6m SILT, non plastic, dry to moist, light yellowish brown and light brown clayey SILT, low to no plasticity, moist, light yellowish brown and light whitish grey; light whitish grey from 1.2m END OF BOREHOLE 1.3m (alluvial clay)
									1.0								
									1.5								
									2								

T+T DATATEMPLATE.GDT rhe

Log Scale 1:10

BORELOG 616664.GPJ 14-Mar-2016

Tonkin+Taylor

BOREHOLE LOG

BOREHOLE No:HA04
Hole Location: Refer GPS coordinates and site plan
SHEET 1 OF 1

PROJECT: Silverdalewest-soak	LOCATION: Old Pine Valley Road	JOB No: 30868
CO-ORDINATES:	DRILL TYPE: 100mm hand auger	HOLE STARTED: 11/3/16
	DRILL METHOD: HA	HOLE FINISHED: 11/3/16
R.L.:		DRILLED BY: geotechnics
DATUM:	DRILL FLUID:	LOGGED BY: KS/RBE CHECKED:

GEOLOGICAL									ENGINEERING DESCRIPTION							
GEOLOGICAL UNIT, GENERIC NAME, ORIGIN, MINERAL COMPOSITION	FLUID LOSS	WATER	CORE RECOVERY (%)	METHOD	CASING	TESTS	SAMPLES	R.L. (m) / DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MOISTURE / WEATHERING CONDITION	STRENGTH/DENSITY CLASSIFICATION	SHEAR STRENGTH (kPa)	COMPRESSIVE STRENGTH (MPa)	DEFECT SPACING (mm)	SOIL DESCRIPTION: Soil type, minor components, plasticity or particle size, colour. ROCK DESCRIPTION: Substance: Rock type, particle size, colour, minor components. Defects: Type, inclination, thickness, roughness, filling.
		Hole dry on completion						0.5								SILT, friable, moist, dark brown (topsoil)
																SILT, non plastic, moist, light greyish brown
								1.0								clayey SILT, low plasticity, moist, light yellowish brown -whitish grey
								1.5								END OF BOREHOLE 1.28m (alluvial clay)
								2								

T+T DATATEMPLATE.GDT.rtf

Log Scale 1:10

BORELOG 016864.GPJ 14-Mar-2016

Tonkin+Taylor

BOREHOLE LOG

BOREHOLE No:HA01
Hole Location: Refer to site plan

SHEET 1 OF 1

PROJECT: SilverdaleWest | LOCATION: Argent Lane, Wainui | JOB No: 30868

CO-ORDINATES:

R.L.:

DATUM:

DRILL TYPE: 100mm hand auger

DRILL METHOD: HA

DRILL FLUID:

HOLE STARTED: 19/5/16
HOLE FINISHED: 19/5/16
DRILLED BY: Geotechnics
LOGGED BY: rbe CHECKED:

GEOLOGICAL | ENGINEERING DESCRIPTION

GEOLOGICAL UNIT, GENERIC NAME, ORIGIN, MINERAL COMPOSITION.

FLUID LOSS | WATER | CORE RECOVERY (%) | METHOD | CASING | TESTS | SAMPLES | R.L. (m) | DEPTH (m) | GRAPHIC LOG | CLASSIFICATION SYMBOL | MOISTURE CONDITION / WEATHERING | STRENGTH/DENSITY CLASSIFICATION | SHEAR STRENGTH (kPa) | COMPRESSIVE STRENGTH (MPa) | DEFECT SPACING (mm)

SOIL DESCRIPTION
Soil type, minor components, plasticity or particle size, colour.

ROCK DESCRIPTION
Substance: Rock type, particle size, colour, minor components.
Defects: Type, inclination, thickness, roughness, infill.

TOPSOIL

SILT, non plastic, moist, dark brown

RESIDUAL SOILS

clayey SILT, low to medium plasticity, moist, light yellowish brown, minor black gravelly layers (oxides)

0.5

CLAY, medium to high plasticity, moist, light greyish white mottled yellowish brown

1.0

SILT, friable, moist, light whitish brown

END OF BOREHOLE 1.35m (limestone, unable to auger)

1.5

2.0

3

Hole dry on completion

T+T DATATEMPLATE.GDT rbe

Log Scale 1:12.5

BORELOG 616864-001.GPJ 23-May-2016

Tonkin+Taylor

BOREHOLE LOG

BOREHOLE No:HA02
Hole Location: Refer to site plan

SHEET 1 OF 1

PROJECT: SilverdaleWest | LOCATION: Argent Lane, Walnut | JOB No: 30868

CO-ORDINATES:

R.L.:

DATUM:

DRILL TYPE: 100mm hand auger

DRILL METHOD: HA

DRILL FLUID:

HOLE STARTED: 20/5/16
HOLE FINISHED: 20/5/16
DRILLED BY: Geotechnics
LOGGED BY: rbe CHECKED:

GEOLOGICAL | ENGINEERING DESCRIPTION

GEOLOGICAL UNIT, GENERIC NAME, ORIGIN, MINERAL COMPOSITION

FLUID LOSS | WATER | CORE RECOVERY (%) | METHOD | CASING | TESTS | SAMPLES | R.L. (m) | DEPTH (m) | GRAPHIC LOG | CLASSIFICATION SYMBOL | MOISTURE CONDITION / WEATHERING | STRENGTH/DENSITY CLASSIFICATION | SHEAR STRENGTH (kPa) | COMPRESSIVE STRENGTH (MPa) | DEFECT SPACING (mm)

SOIL DESCRIPTION
Soil type, minor components, plasticity or particle size, colour.

ROCK DESCRIPTION
Defect: Rock type, particle size, colour, minor components.
Defects: Type, inclination, thickness, roughness, filling.

TOPSOIL

SILT, non plastic, moist, dark brown

RESIDUAL SOILS

fine sandy SILT, non plastic, moist, white

0.5

-minor clay, moist, light brownish white

1.0

silty CLAY, low plasticity, moist, light brownish white

-yellowish brown

1.5

fine gravelly SILT, white, hard to auger

Hole dry on completion

END OF BOREHOLE 1.61m (limestone)

2.0

3

Log Scale 1:12.5

BOREHOLE 616864-001.GPJ 23-May-2016

T+T_DATATEMPLATE.GDT rbe

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BOREHOLE LOG

BOREHOLE No:HA03
Hole Location: Refer to site plan

SHEET 1 OF 1

PROJECT: SilverdaleWest	LOCATION: Argent Lane, Wainui	JOB No: 30868
CO-ORDINATES:	DRILL TYPE: 100mm hand auger	HOLE STARTED: 18/5/16
	DRILL METHOD: HA	HOLE FINISHED: 18/5/16
R.L.:		DRILLED BY: Geotechnics
DATUM:	DRILL FLUID:	LOGGED BY: rbe CHECKED:

GEOLOGICAL

GEOLOGICAL UNIT, GENERIC NAME, ORIGIN, MINERAL COMPOSITION

FLUID LOSS | WATER | CORE RECOVERY (%) | METHOD | CASING | TESTS | SAMPLES | R.L. (m) | DEPTH (m)

ENGINEERING DESCRIPTION

GRAPHIC LOG | CLASSIFICATION SYMBOL | MOISTURE CONDITION / WEATHERING | STRENGTH/DENSITY CLASSIFICATION | SHEAR STRENGTH (kPa) | COMPRESSIVE STRENGTH (MPa) | DEFECT SPACING (mm)

SOIL DESCRIPTION
Soil type, minor components, plasticity or particle size, colour.

ROCK DESCRIPTION
Substance: Rock type, particle size, colour, minor components.
Defects: Type, inclination, thickness, roughness, filling.

GEOLOGICAL UNIT		DEPTH (m)	ENGINEERING DESCRIPTION
TOPSOIL		0.0	SILT, friable, dry, brown
ALLUVIUM	Hole dry on completion	0.5	clayey SILT, low plasticity, moist, light grey
		1.0	-medium plasticity, moist to wet
		1.5	CLAY, medium to high plasticity, moist, light grey
		2.0	END OF BOREHOLE 2.0m (target depth)
		3	

T+T DATATEMPLATE.GDT rbe

Log Scale 1:12.5

BORELOG 616884-001.GPJ 23-May-2016

Tonkin+Taylor

BOREHOLE LOG

BOREHOLE No:HA04
Hole Location: Refer to site plan

SHEET 1 OF 1

PROJECT: SilverdaleWest	LOCATION: Argent Lane, Walnui	JOB No: 30868
CO-ORDINATES:	DRILL TYPE: 100mm hand auger	HOLE STARTED: 19/5/16
	DRILL METHOD: HA	HOLE FINISHED: 19/5/16
R.L.:		DRILLED BY: Geotechnics
DATUM:	DRILL FLUID:	LOGGED BY: rbe CHECKED:

GEOLOGICAL									ENGINEERING DESCRIPTION							
GEOLOGICAL UNIT, GENERIC NAME, ORIGIN, MINERAL COMPOSITION	FLUID LOSS	WATER	CORE RECOVERY (%)	METHOD	CASING	TESTS	SAMPLES	R.L. (m) / DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MOISTURE CONDITION / WEATHERING	STRENGTH/DENSITY CLASSIFICATION	SHEAR STRENGTH (kPa)	COMPRESSIVE STRENGTH (MPa)	DEFECT SPACING (mm)	SOIL DESCRIPTION: Soil type, colour, components, plasticity or particle size, colour. ROCK DESCRIPTION: Substance: Rock type, particle size, colour, minor components. Defects: Type, inclination, thickness, roughness, filling.
TOPSOIL																SILT, non plastic, moist, dark brown
RESIDUAL SOILS		Hole dry on completion						0.5								SILT, minor clay, non plastic, moist, orange brown
								1.0								clayey SILT, low plasticity, moist, orange brown -medium plasticity, light greyish white mottled yellowish brown
								1.5								-low to medium plasticity SILT, minor clay, low plasticity, light brown
								2.0								END OF BOREHOLE 1.98m (target depth)
								3								

T+T DATATEMPLATE.GDT.rbt

Log Scale 1:12.5

BOREHOLE 616864-001.GPJ 23-May-2016

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BOREHOLE LOG

BOREHOLE No:HA05
Hole Location: Refer to site plan

SHEET 1 OF 1

PROJECT: SilverdaleWest | LOCATION: Argent Lane, Walnut | JOB No: 30868

CO-ORDINATES:

R.L.:

DATUM:

DRILL TYPE: 100mm hand auger

DRILL METHOD: HA

DRILL FLUID:

HOLE STARTED: 19/5/16

HOLE FINISHED: 19/5/16

DRILLED BY: Geotechnics

LOGGED BY: dbe CHECKED:

GEOLOGICAL									ENGINEERING DESCRIPTION							
GEOLOGICAL UNIT, GENERIC NAME, ORIGIN, MINERAL COMPOSITION	FLUID LOSS	WATER	CORE RECOVERY (%)	METHOD	CASING	TESTS	SAMPLES	R.L. (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MOISTURE CONDITION / WEATHERING	STRENGTH/DENSITY CLASSIFICATION	SHEAR STRENGTH (kPa)	COMPRESSIVE STRENGTH (MPa)	DEFECT SPACING (mm)	SOIL DESCRIPTION: Soil type, minor components, plasticity or particle size, colour. ROCK DESCRIPTION: Substance: Rock type, particle size, colour, minor components. Defects: Type, inclination, thickness, roughness, filling.
TOPSOIL									0								SILT, non plastic, dry to moist, dark brown
RESIDUAL SOILS																	SILT, minor clay, non plastic, moist, yellowish brown and brownish white
		Hole dry on completion							0.5								clayey SILT, medium plasticity, moist, yellowish brown
																	-yellowish brown and light greyish white
									1.0								silty CLAY, medium plasticity, moist, light greyish white and yellowish brown
									1.5								clayey SILT, medium plasticity, moist, light greyish white mottled yellowish brown
									2.0								END OF BOREHOLE 2.0m (target depth)
									3								

T+T DATATEMPLATE.GDT.tbe

Log Scale 1:12.5

BOREHOLE 610364-001.GPJ 23-May-2016

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BOREHOLE LOG

BOREHOLE No:HA06
Hole Location: Refer to site plan

SHEET 1 OF 1

PROJECT: SilverdaleWest | LOCATION: Argent Lane, Walnut | JOB No: 30869

CO-ORDINATES:

R.L.:

DATUM:

DRILL TYPE: 100mm hand auger

DRILL METHOD: HA

DRILL FLUID:

HOLE STARTED: 18/5/16

HOLE FINISHED: 18/5/16

DRILLED BY: Geotechnics

LOGGED BY: rbe CHECKED:

GEOLOGICAL									ENGINEERING DESCRIPTION							
GEOLOGICAL UNIT, GENERIC NAME, ORIGIN, MINERAL COMPOSITION	FLUID LOSS	WATER	CORE RECOVERY (%)	METHOD	CASING	TESTS	SAMPLES	R.L. (m) / DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MOISTURE CONDITION / WEATHERING	STRENGTH/DENSITY CLASSIFICATION	SHEAR STRENGTH (kPa)	COMPRESSIVE STRENGTH (MPa)	DEFECT SPACING (mm)	SOIL DESCRIPTION: Soil type, minor components, plasticity or particle size, colour. ROCK DESCRIPTION: Substance: Rock type, particle size, colour, minor components. Defects: Type, inclination, thickness, roughness, filling.
TOPSOIL																SILT, friable, dry, brown
RESIDUAL SOILS																SILT, non plastic, moist to dry, orange brown
		Hole dry on completion						0.5								SILT, some clay, low plasticity, moist, orange brown
								1.0								-light yellowish brown and light greyish white
								1.5								
								2.0								END OF BOREHOLE 1.98m (target depth)
								3								

T+T DATATEMPLATE.GDT rbe

Log Scale 1:12.5

BORELOG 636864-001.GPJ 23-Sep-2016

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BOREHOLE LOG

BOREHOLE No:HA07
Hole Location: Refer to site plan

SHEET 1 OF 1

PROJECT: SilverdaleWest | LOCATION: Argent Lane, Wainui | JOB No: 30668

CO-ORDINATES:

R.L.:

DATUM:

DRILL TYPE: 100mm hand auger

DRILL METHOD: HA

DRILL FLUID:

HOLE STARTED: 18/5/16

HOLE FINISHED: 18/5/16

DRILLED BY: Geotechnics

LOGGED BY: rhe CHECKED:

GEOLOGICAL									ENGINEERING DESCRIPTION							
GEOLOGICAL UNIT, GENERIC NAME, ORIGIN, MINERAL COMPOSITION	FLUID LOSS	WATER	CORE RECOVERY (%)	METHOD	CASING	TESTS	SAMPLES	R.L. (m) / DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MOISTURE CONDITION / WEATHERING	STRENGTH/DENSITY CLASSIFICATION	SHEAR STRENGTH (kPa)	COMPRESSIVE STRENGTH (MPa)	DEFECT SPACING (mm)	SOIL DESCRIPTION: Soil type, minor components, plasticity or particle size, colour. ROCK DESCRIPTION: Substance: Rock type, particle size, colour, minor components. Defects: Type, inclination, thickness, roughness, filling.
TOPSOIL																SILT, non plastic, moist to wet, dark brown
RESIDUAL SOILS								0.5								CLAY, medium to high plasticity, moist, light grey mottled light greyish brown
								1.0								
								1.5								END OF BOREHOLE 1.4m (limestone, unable to auger)
								2.0								
								3								

T+T DATATEMPLATE.GDT rhe

Log Scale 1:12.5

BOREHOLE 616864-BH.GPJ 23-May-2016

Appendix C: Laboratory Testing Results

- Moisture Contents (47 samples)
- Atterberg Limits (4 samples)
- Consolidation tests (4 samples)

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Your Job No.: 30868

Site : 17 Old Pine Valley Road, Silverdale

Our Job No.: 616691.000

Test Method Used: NZS 4402:1986 Test 2.1 Determination of the Water Content

WATER CONTENT TEST RESULTS

Table 1: Water Content

BH No.:		3	3	4	4	4	4	4
Sample No.:		1	2	3	4	5	6	7
Depth	(m)	0.20 - 0.22	0.98 - 1.00	0.27 - 0.29	0.71 - 0.73	1.09 - 1.11	1.48 - 1.50	2.50 - 2.52
Water Content	(%)	55.1	19.6	67.3	83.1	102.0	26.1	23.5

Table 2: Water Content

BH No.:		2	2	2	1	1	1	1
Sample No.:		8	9	10	11	12	13	14
Depth	(m)	0.98 - 1.00	1.95 - 1.97	2.98 - 3.00	0.48 - 0.50	0.98 - 1.00	1.48 - 1.50	2.48 - 2.50
Water Content	(%)	28.5	36.4	21.8	47.6	65.7	49.6	18.9

Table 3: Water Content

BH No.:		8	8	8	5	5	5	5
Sample No.:		15	16	17	18	19	20	21
Depth	(m)	0.48 - 0.50	0.98 - 1.00	1.48 - 1.50	0.48 - 0.50	1.00 - 1.02	2.45 - 2.47	2.98 - 3.00
Water Content	(%)	33.7	57.4	23.1	39.5	37.4	53.6	59.1

Tested by: ST Date: 10.08.2015 Checked by: MP Date: 10.08.2015

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Your Job No.: 30866

Site : 17 Old Pine Valley Road, Silverdale

Our Job No.: 616691.000

Test Method Used: NZS 4402:1986 Test 2.1 Determination of the Water Content

WATER CONTENT TEST RESULTS

Table 1: Water Content

BH No.:		5	5	6	6	6	6	6
Sample No.:		22	23	24	25	26	27	28
Depth	(m)	4.48 - 4.50	5.30 - 5.32	0.48 - 0.50	1.48 - 1.50	2.98 - 3.00	4.48 - 4.50	5.50 - 5.52
Water Content	(%)	49.8	35.9	38.6	84.7	28.1	51.6	40.2

Table 2: Water Content

BH No.:		6	6	7	7	7	7	7
Sample No.:		29	30	31	32	33	34	35
Depth	(m)	5.98 - 6.00	7.48 - 7.50	0.48 - 0.50	1.48 - 1.50	2.98 - 3.00	3.90 - 3.92	4.95 - 4.97
Water Content	(%)	43.1	28.5	40.1	54.3	51.4	46.2	55.1

Table 3: Water Content

BH No.:		7
Sample No.:		36
Depth	(m)	5.98 - 6.00
Water Content	(%)	40.2

Tested by: ST Date: 10.08.2015 Checked by: MP Date: 10.08.2015

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Your Job No.: 30868

Site : 17 Old Pine Valley Road, Silverdale

Our Job No.: 616691.000

Test Method Used: NZS 4402:1986 Test 2.1 Determination of the Water Content

WATER CONTENT TEST RESULTS

Table 1: Water Content

BH No.:		9	9	9	9	9	9
Sample No.:		42	43	44	45	46	47
Depth	(m)	0.48 - 0.50	1.20 - 1.22	1.70 - 1.74	2.98 - 3.00	3.42 - 3.45	5.40 - 5.42
Water Content	(%)	35.4	32.1	44.0	39.1	65.9	55.1

Tested by: MP Date: 03.09.2015 Checked by: ST Date: 03.09.2015

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Your Job No.: 30868

Site : 17 Old Pine Valley Road, Silverdale

Our Job No.: 616691.000

Test Method Used: NZS 4402:1986 Test 2.2 Determination of the Liquid Limit

Test 2.3 Determination of the Plastic Limit

Test 2.4 Determination of the Plasticity Index

TEST RESULTS

Atterberg Limits Test Results Summary

BH No.:	6	7
Sample ID.:	38	39
Depth (m)	1.80-2.00	3.35-3.50
Liquid Limit	147	77
Plastic Limit	51	35
Plasticity Index	96	42

Remarks : Atterberg limits performed on material passing 0.425mm test sieve.

Tested by: ST Date: 10.08.2015 Checked by: MP Date: 10.08.2015

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Your Job No.: 30668.000

Our Job No.: 616591.000

Site : 17 Old Pine Valley Road, Silverdale

Test Method Used: NZS 4402:1986

Test 2.2 Determination of the Liquid Limit

Test 2.3 Determination of the Plastic Limit

Test 2.4 Determination of the Plasticity Index

ATTERBERG LIMITS TEST RESULTS

Table 1: Atterberg Limits

BH No.:		9	9
Sample No.:		40	41
Depth	(m)	1.75 - 1.85	3.35 - 3.45
Liquid Limit	(%)	97	101
Plastic Limit	(%)	27	37
Plasticity Index	(%)	70	64

Remarks : The sample used for testing was natural, fraction passing 0.425mm test sieve.

Tested by: ST Date: 03.09.2015 Checked by: MP Date: 03.09.2015

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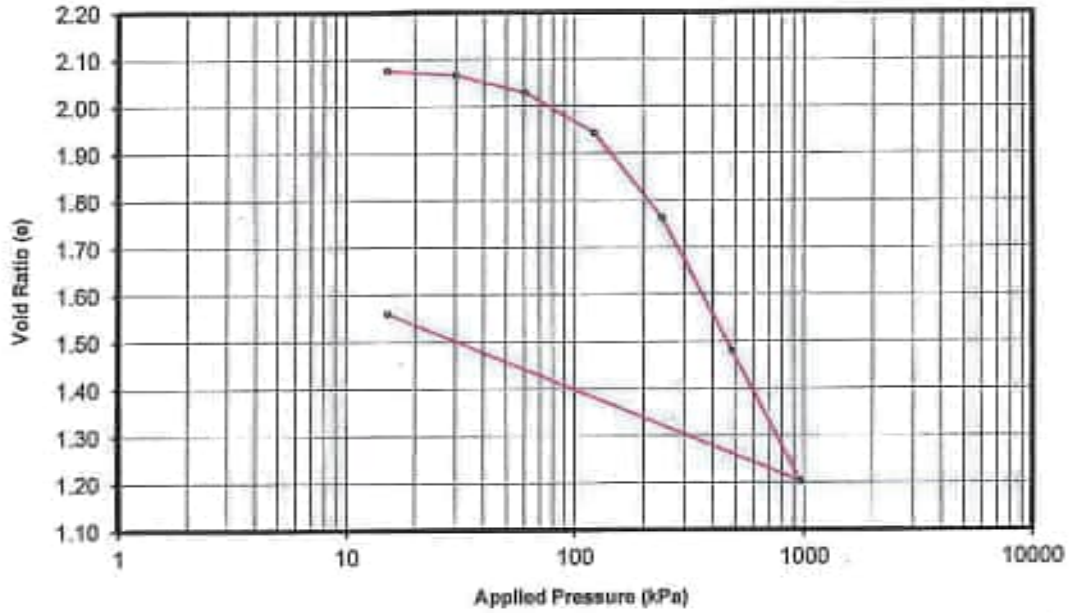
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Your Job No.: **30868**
Our Job No.: **616691.000**

Site: **17 Old Pine Valley Road, Silverdale**
BH No.: **6**
Depth: **1.75-1.80 (m)**

Test Method Used: NZS 4402:1986 Test 7.1 One-Dimensional Consolidation

ONE-DIMENSIONAL CONSOLIDATION TEST



Pressure (kPa)		Void Ratio (e)	Pressure Increment (kPa)	Coefficient of Consolidation Cv (m^2/yr)	Coefficient of Volume Compressibility Mv (m^2/MN)
As received	0	2.086			
Preload	15.1	2.076	0 to 15.1	NA	0.21
	30.2	2.067	15.1 to 30.2	2.5	0.19
	60.3	2.030	30.2 to 60.3	2.3	0.40
	121	1.944	60.3 to 121	1.5	0.47
	241	1.762	121 to 241	0.91	0.51
	483	1.481	241 to 483	0.79	0.42
	966	1.203	483 to 966	0.60	0.23
Unload	15.1	1.560	966 to 15.1	NA	NA

Sample History: Undisturbed core trimmed at NWC. SQR of time fitting method used.

Description: SILT with minor clay and trace of sand, trace to minor organics, firm, dark brown with light grey, mottled black, high plasticity.

Initial Dry Density (t/m^3): 0.87 Initial Water Content: 75.3%

Solid Density (t/m^3): 2.68 (Assumed) Initial Saturation: 97%

Temperature During Testing: Max = 17 ^{0}C Min = 15 ^{0}C

Remarks: The calculations of void ratio are affected by the solid density value. We have assumed a value of 2.68 t/m^3.
Sample description is not IANZ accredited.

Entered by: ST Date: 10.08.2015 Checked by: MP Date: 10.08.2015

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Your Job No.: **30868**

Site: **17 Old Pine Valley Road, Silverdale**

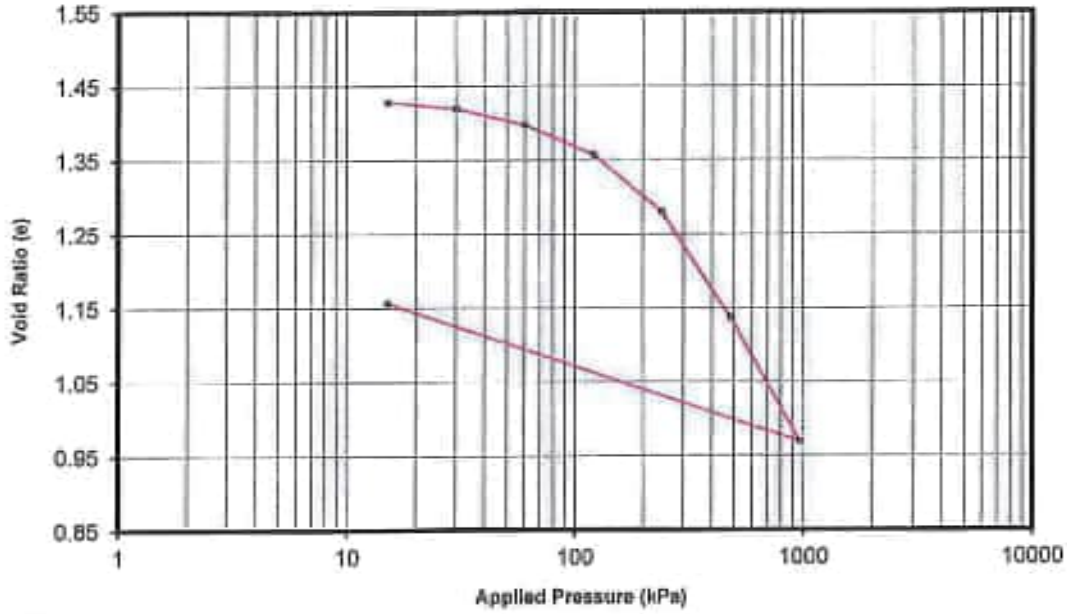
Our Job No.: **616691.000**

BH No.: **7**

Depth: **3.30-3.35 (m)**

Test Method Used: NZS 4402:1986 Test 7.1 One-Dimensional Consolidation

ONE-DIMENSIONAL CONSOLIDATION TEST



Pressure (kPa)		Void Ratio (e)	Pressure Increment (kPa)	Coefficient of Consolidation Cv (m^2/yr)	Coefficient of Volume Compressibility Mv (m^2/MN)
As received	0	1.437			
Preload	15.1	1.428	0 to 15.1	NA	0.25
	30.2	1.420	15.1 to 30.2	7.9	0.23
	60.3	1.397	30.2 to 60.3	7.1	0.31
	121	1.357	60.3 to 121	5.9	0.28
	241	1.280	121 to 241	4.0	0.27
	483	1.137	241 to 483	2.9	0.26
	966	0.969	483 to 966	2.7	0.16
Unload	15.1	1.157	966 to 15.1	NA	NA

Sample History: Undisturbed core trimmed at NWC. SQR of time fitting method used.

Description: SILT with minor to some clay and trace of sand, firm, yellowish brown with light grey, mottled red, high plasticity.

Initial Dry Density (t/m^3): 1.10 Initial Water Content: 52.2%

Solid Density (t/m^3): 2.68 (Assumed) Initial Saturation: 97%

Temperature During Testing: Max = 17 °C Min = 15 °C

Remarks: The calculations of void ratio are affected by the solid density value. We have assumed a value of 2.68 t/m^3.
Sample description is not IANZ accredited.

Entered by: ST Date: 10.08.2015 Checked by: MP Date: 10.08.2015

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Your Job No.: **30868**

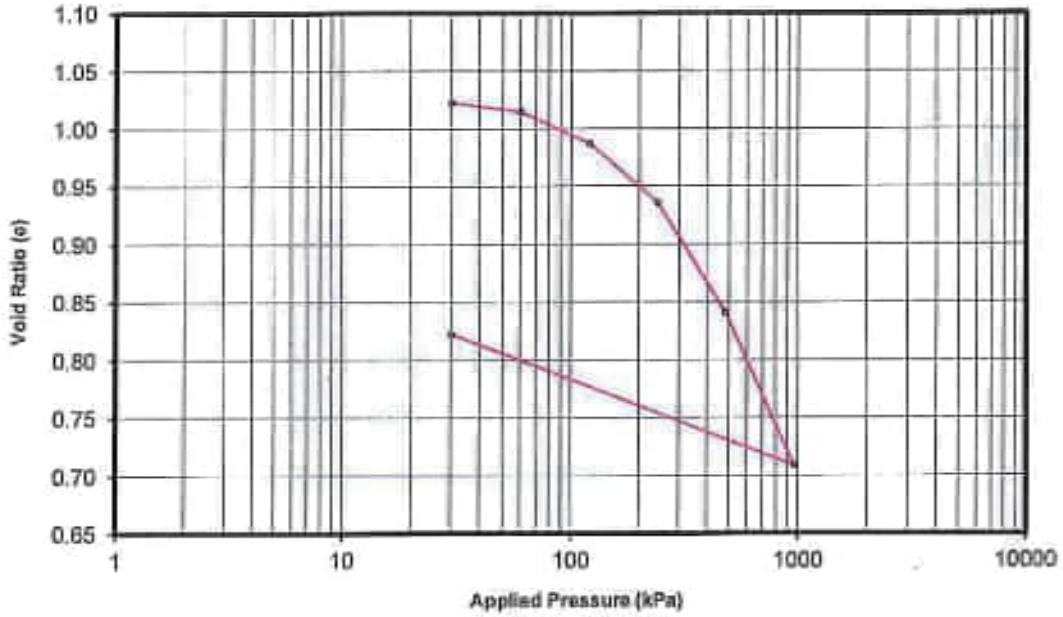
Site: **17 Old Pine Valley Road, Silverdale**

Our Job No.: **616691.000**

BH No.: **9** Sample No.: **40** Depth: **1.85-1.90 (m)**

Test Method Used: NZS 4402:1986 Test 7.1 One-Dimensional Consolidation

ONE-DIMENSIONAL CONSOLIDATION TEST



Pressure (kPa)		Void Ratio (e)	Pressure Increment (kPa)	Coefficient of Consolidation Cv (m^2/yr)	Coefficient of Volume Compressibility Mv (m^2/MN)
As received	0	1.026			
Preload	30.2	1.023	0 to 30.2	NA	0.052
	60.3	1.015	30.2 to 60.3	1.3	0.13
	121	0.987	60.3 to 121	1.0	0.23
	241	0.936	121 to 241	0.90	0.21
	483	0.841	241 to 483	0.64	0.20
	966	0.709	483 to 966	0.58	0.15
Unload	30.2	0.822	966 to 30.2	NA	NA

Sample History: Undisturbed core trimmed at NWC. SQR of time fitting method used.

Description: SILT with minor clay and trace of sand, stiff, light greyish brown, mottled orange-black, high plasticity.

Initial Dry Density (t/m^3): 1.32 Initial Water Content: 36.7%

Solid Density (t/m^3): 2.68 (Assumed) Initial Saturation: 96%

Temperature During Testing: Max = 17 ^{0}C Min = 15 ^{0}C

Remarks: The calculations of void ratio are affected by the solid density value. We have assumed a value of 2.68 t/m^3.

Sample description is not IANZ accredited.

Entered by: ST Date: 03.09.2015 Checked by: MP Date: 03.09.2015

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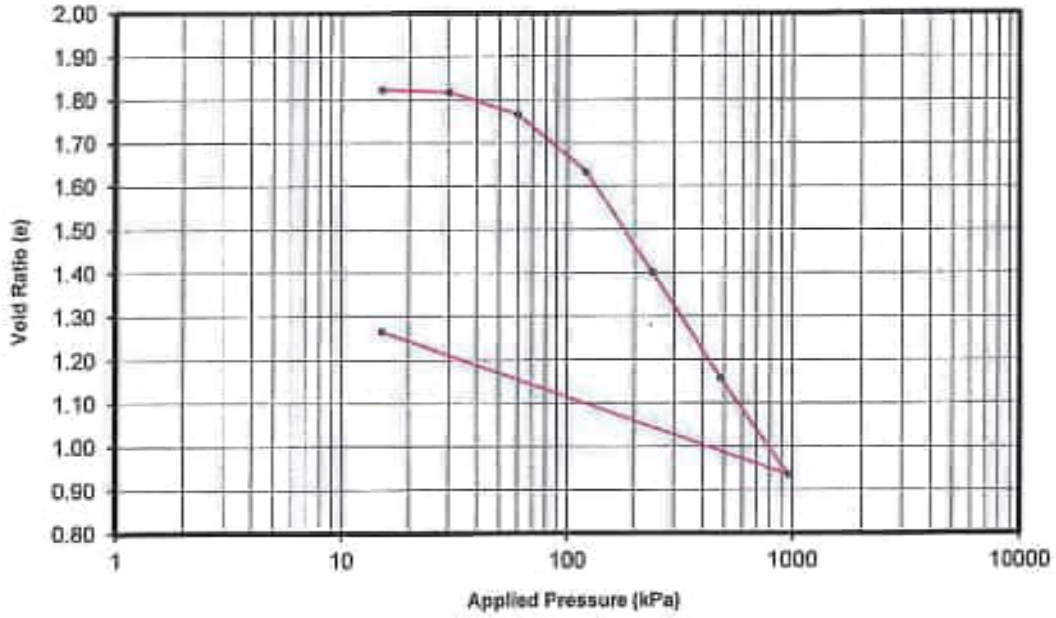
Site: **17 Old Pine Valley Road, Silverdale**

Our Job No.: **616691.000**

BH No.: **9** Sample No.: **41** Depth: **3.30-3.35 (m)**

Test Method Used: NZS 4402:1986 Test 7.1 One-Dimensional Consolidation

ONE-DIMENSIONAL CONSOLIDATION TEST



Pressure (kPa)		Void Ratio (e)	Pressure Increment (kPa)	Coefficient of Consolidation Cv (m^2/yr)	Coefficient of Volume Compressibility Mv (m^2/MN)
As received	0	1.830			
Preload	15.1	1.823	0 to 15.1	NA	0.17
	30.2	1.818	15.1 to 30.2	1.2	0.13
	60.3	1.766	30.2 to 60.3	0.76	0.61
	121	1.633	60.3 to 121	0.52	0.79
	241	1.401	121 to 241	0.45	0.73
	483	1.157	241 to 483	0.28	0.42
	966	0.934	483 to 966	0.20	0.21
Unload	15.1	1.265	966 to 15.1	NA	NA

Sample History: Undisturbed core trimmed at NWC. SQR of time fitting method used.

Description: SILT with minor to some clay and trace of sand, firm, light bluish-greenish grey, mottled black, high plasticity.

Initial Dry Density (t/m^3): 0.95 Initial Water Content: 66.4%

Solid Density (t/m^3): 2.68 (Assumed) Initial Saturation: 97%

Temperature During Testing: Max = 17 °C Min = 15 °C

Remarks: The calculations of void ratio are affected by the solid density value. We have assumed a value of 2.68 t/m^3.

Sample description is not IANZ accredited.

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Appendix D: Percolation Test Results

- **Percolation Tests 1 to 4 (March 2016)**
- **Percolation Tests 1 to 7 (May 2016)**

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Site: Old Pine Valley Road Job Name: SilverdaleW Job No.: 30868

Borehole No: HA1 Sample No.: Depth: 1.15 (m)

Test method used: Falling Head Percolation Test - Auckland City Soakage Design Manual 3.3, 3.4

Falling-Head Percolation Test

Time (mins)	Depth To Water(cm)	Water Depth	Avg. Depth	Gradient
0	0.000	1.150	--	--
1	25.000	0.900	1.025	0.250000
2	36.000	0.790	0.845	0.110000
3	44.000	0.710	0.750	0.080000
4	50.000	0.650	0.680	0.060000
5	54.000	0.610	0.630	0.040000
6	57.000	0.580	0.595	0.030000
7	59.000	0.560	0.570	0.020000
8	60.500	0.545	0.553	0.015000
9	61.500	0.535	0.540	0.010000
10	62.500	0.525	0.530	0.010000
15	64.500	0.505	0.515	0.004000
20	65.500	0.495	0.500	0.002000
25	66.500	0.485	0.490	0.002000
30	67.250	0.478	0.481	0.001500
35	68.000	0.470	0.474	0.001500
40	68.800	0.462	0.466	0.001600
45	69.600	0.454	0.458	0.001600
50	70.250	0.448	0.451	0.001300
55	71.000	0.440	0.444	0.001500
60	71.750	0.433	0.436	0.001500
70	73.100	0.419	0.426	0.001350
80	74.250	0.408	0.413	0.001150
110	77.000	0.380	0.394	0.000917
140	79.250	0.358	0.369	0.000750

Procedure

		Yes/No
Hole kept full for:	0.333 hours	
Water Levels Recorded at 30mins or less		yes
Test continued for 4 hours, or until hole is empty		no
Stop test or refill hole when water level is at 0.25m		no
Percolation Rate is determined from minimum slope		yes

Test Details:

Diameter of Bore = D	0.11	m
Depth of Bore Hole	1.15	m

Calculate Minimum Gradient

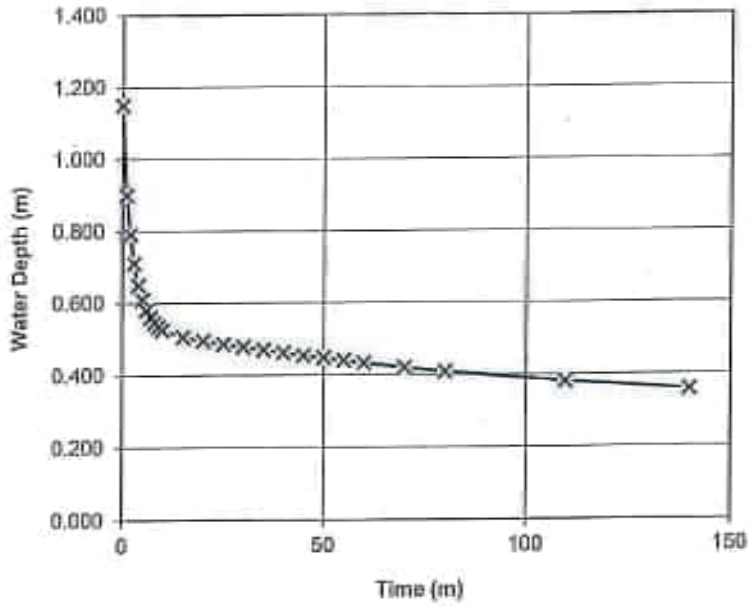
Minimum Gradient = y/x 0.000750 m/min

a straight line interpolation between between the last two points on the graph

Calculate Percolation Rate 0.056 L/m²/min

Percolation Rate = (D x Gradient x 1000) / (4 x d)

d = distance between the midpoint of the last two readings and the base of the borehole



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Site: Old Pine Valley Road Job Name: SilverdaleW Job No.: 30868

Borehole No: HA2 Sample No.: Depth: 1.3 (m)

Test method used: Falling Head Percolation Test - Auckland City Soakage Design Manual 3.3, 3.4

Falling-Head Percolation Test

Time (mins)	Depth To Water(cm)	Water Depth	Avg. Depth	Gradient
0	0.000	1.300	–	–
15	13.000	1.170	1.235	0.008667
30	19.500	1.105	1.138	0.004333
60	27.500	1.025	1.065	0.002667
90	33.500	0.965	0.995	0.002000
120	37.500	0.925	0.945	0.001333

Procedure

		Yes/No
Hole kept full for:	0.5 hours	
Water Levels Recorded at 30mins or less		yes
Test continued for 4 hours, or until hole is empty		no
Stop test or refill hole when water level is at 0.25m		no
Percolation Rate is determined from minimum slope		yes

Test Details:

Diameter of Bore = D	0.11	m
Depth of Bore Hole	1.30	m

Calculate Minimum Gradient

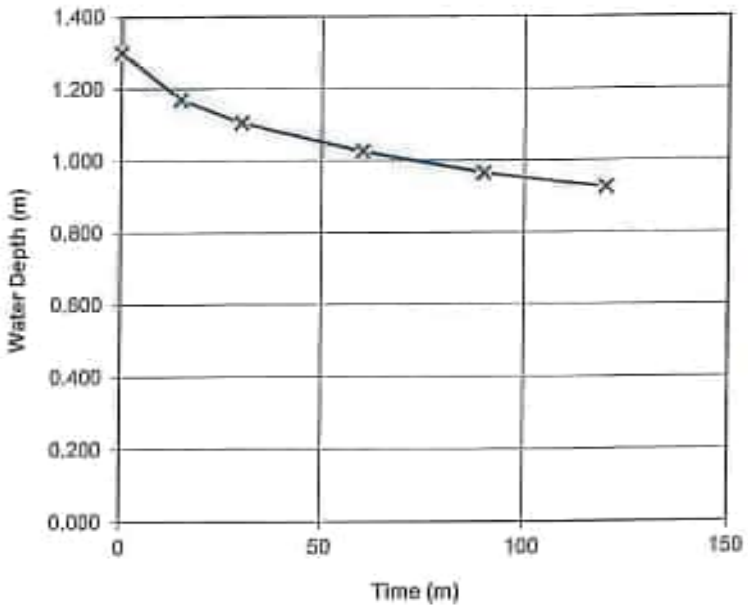
Minimum Gradient = y/x 0.001333 m/min

a straight line interpolation between between the last two points on the graph

Calculate Percolation Rate 0.039 L/m²/min

Percolation Rate = (D x Gradient x 1000) / (4 x d)

d = distance between the midpoint of the last two readings and the base of the borehole



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Site: Old Pine Valley Road Job Name: SilverdaleW Job No.: 30868

Borehole No: HA3 Sample No.: Depth: 1.3 (m)

Test method used: Falling Head Percolation Test - Auckland City Soakage Design Manual 3.3, 3.4

Falling-Head Percolation Test

Time (mins)	Depth To Water(cm)	Water Depth	Avg. Depth	Gradient
0	0.000	1.300	--	--
30	12.500	1.175	1.238	0.004167
60	20.500	1.095	1.135	0.002667
90	25.500	1.045	1.070	0.001667
120	29.500	1.005	1.025	0.001333

Procedure

		Yes/No
Hole kept full for:	0.5 hours	
Water Levels Recorded at 30mins or less		yes
Test continued for 4 hours, or until hole is empty		no
Stop test or refill hole when water level is at 0.25m		no
Percolation Rate is determined from minimum slope		yes

Test Details:

Diameter of Bore = D	0.11	m
Depth of Bore Hole	1.30	m

Calculate Minimum Gradient

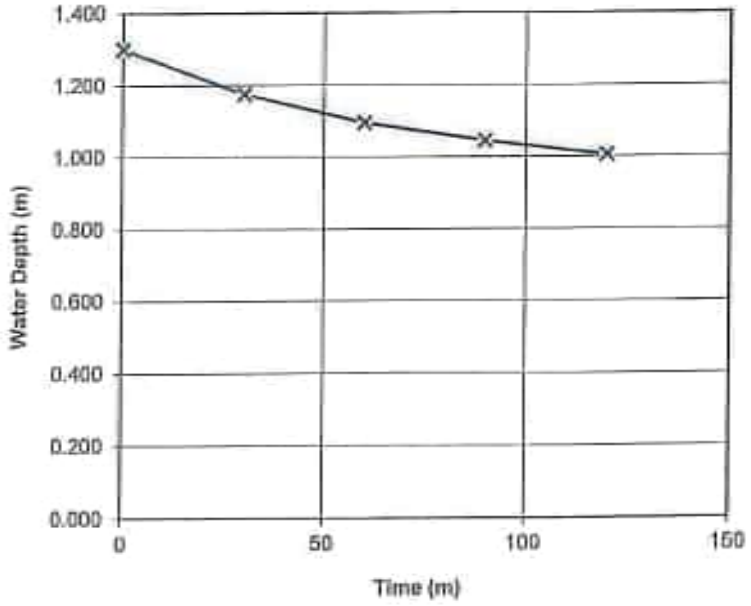
Minimum Gradient = y/x 0.001333 m/min

a straight line interpolation between between the last two points on the graph

Calculate Percolation Rate 0.036 L/m²/min

Percolation Rate = (D x Gradient x 1000) / (4 x d)

d = distance between the midpoint of the last two readings and the base of the borehole



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Site: Old Pine Valley Road Job Name: SilverdaleW Job No.: 30868

Borehole No: HA4 Sample No.: Depth: 1.28 (m)

Test method used: Falling Head Percolation Test - Auckland City Soakage Design Manual 3.3, 3.4

Falling-Head Percolation Test

Time (mins)	Depth To Water(cm)	Water Depth	Avg. Depth	Gradient
0	0.000	1.280	–	–
6	20.000	1.080	1.180	0.033333
7	23.000	1.050	1.065	0.030000
8	26.000	1.020	1.035	0.030000
9	29.000	0.990	1.005	0.030000
10	30.000	0.980	0.985	0.010000
17.5	44.000	0.840	0.910	0.018667
20	47.000	0.810	0.825	0.012000
25	53.000	0.750	0.780	0.012000
30	58.000	0.700	0.725	0.010000
35	63.000	0.650	0.675	0.010000
42	67.000	0.610	0.630	0.005714
45	69.000	0.590	0.600	0.006667
50	71.500	0.565	0.578	0.005000
60	75.000	0.530	0.548	0.003500
70	78.000	0.500	0.515	0.003000
80	80.500	0.475	0.488	0.002500
100	83.750	0.443	0.459	0.001625
120	85.750	0.423	0.433	0.001000

Procedure

		Yes/No
Hole kept full for:	0.5 hours	
Water Levels Recorded at 30mins or less		yes
Test continued for 4 hours, or until hole is empty		no
Stop test or refill hole when water level is at 0.25m		no
Percolation Rate is determined from minimum slope		yes

Test Details:

Diameter of Bore = D	0.11	m
Depth of Bore Hole	1.28	m

Calculate Minimum Gradient

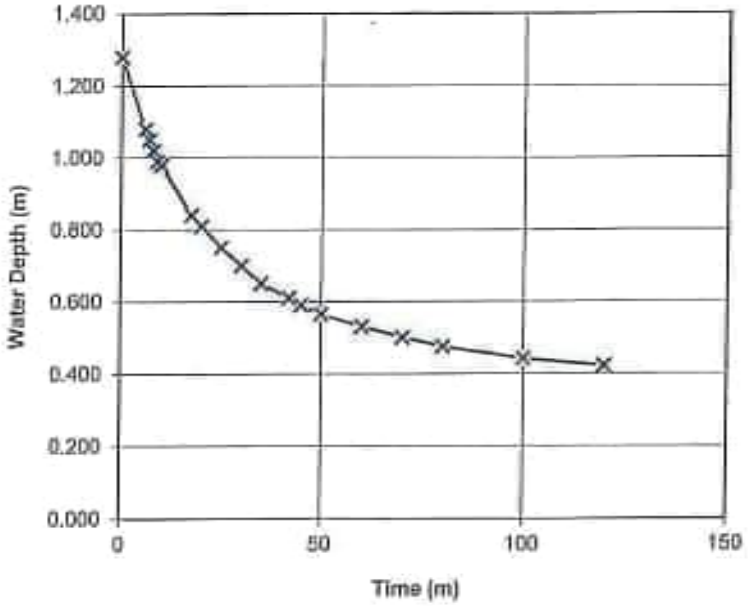
Minimum Gradient = y/x 0.001000 m/min

a straight line interpolation between between the last two points on the graph

Calculate Percolation Rate 0.064 L/m²/min

Percolation Rate = (D x Gradient x 1000) / (4 x d)

d = distance between the midpoint of the last two readings and the base of the borehole



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Site: Argent Lane, Wainui Job Name: Job No.: 30868

Borehole No: 1 Sample No.: Depth: 1.35 (m)

Test method used: Falling Head Percolation Test - Auckland City Soakage Design Manual 3.3, 3.4

Falling-Head Percolation Test

Time (mins)	Depth To Water(cm)	Water Depth	Avg. Depth	Gradient
0	0.000	1.350	--	--
15	2.500	1.325	1.338	0.001667
30	4.500	1.305	1.315	0.001333
60	8.000	1.270	1.288	0.001167
90	11.000	1.240	1.255	0.001000
120	13.500	1.215	1.228	0.000833
150	15.500	1.195	1.205	0.000667
180	18.000	1.170	1.183	0.000833

Procedure

		Yes/No
Hole kept full for:	0.25 hours	
Water Levels Recorded at 30mins or less		yes
Test continued for 4 hours, or until hole is empty		3hrs
Stop test or refill hole when water level is at 0.25m		no
Percolation Rate is determined from minimum slope		yes

Test Details:

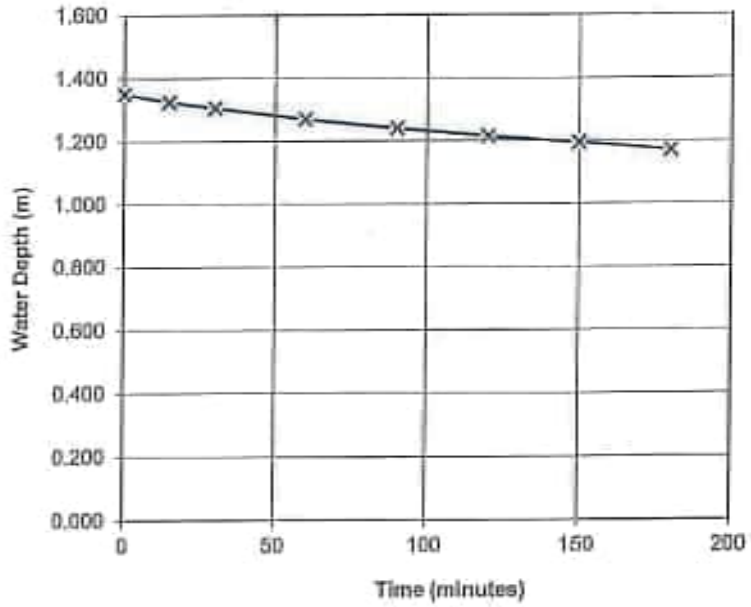
Diameter of Bore = D	0.11	m
Depth of Bore Hole	1.35	m
Calculate Minimum Gradient		
Minimum Gradient = y/x	0.000833	m/min

a straight line interpolation between the last two points on the graph

Calculate Percolation Rate	0.019	L/m²/min

Percolation Rate = (D x Gradient x 1000) / (4 x d)

d = distance between the midpoint of the last two readings and the base of the borehole



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Site: Argent Lane, Wainui Job Name: Job No.: 30868

Borehole No: 2 Sample No.: Depth: 1.61 (m)

Test method used: Falling Head Percolation Test - Auckland City Soakage Design Manual 3.3, 3.4

Falling-Head Percolation Test

Time (mins)	Depth To Water(cm)	Water Depth	Avg. Depth	Gradient
0	0.000	1.610	–	–
15	4.000	1.570	1.590	0.002667
30	5.500	1.555	1.563	0.001000
60	9.000	1.520	1.538	0.001167
90	11.500	1.495	1.508	0.000833
120	13.000	1.480	1.488	0.000500
150	14.000	1.470	1.475	0.000333
180	15.500	1.455	1.463	0.000500

Procedure

		Yes/No
Hole kept full for:	0.18 hours	
Water Levels Recorded at 30mins or less		yes
Test continued for 4 hours, or until hole is empty		3hrs
Stop test or refill hole when water level is at 0.25m		no
Percolation Rate is determined from minimum slope		yes

Test Details:

Diameter of Bore = D	0.11	m
Depth of Bore Hole	1.61	m

Calculate Minimum Gradient

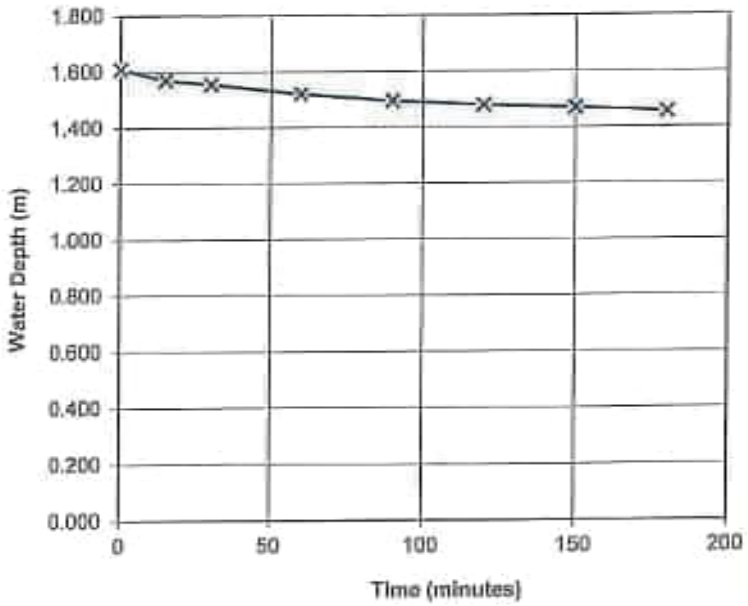
Minimum Gradient = y/x 0.000500 m/min

a straight line interpolation between the last two points on the graph

Calculate Percolation Rate 0.009 L/m²/min

Percolation Rate = (D x Gradient x 1000) / (4 x d)

d = distance between the midpoint of the last two readings and the base of the borehole



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Site: Argent Lane, Wainui Job Name: Job No.: 30868

Borehole No: 3 Sample No.: Depth: 2.01 (m)

Test method used: Falling Head Percolation Test - Auckland City Soakage Design Manual 3.3, 3.4

Falling-Head Percolation Test

Time (mins)	Depth To Water(cm)	Water Depth	Avg. Depth	Gradient
0	0.000	2.010	--	--
5	7.000	1.940	1.975	0.014000
10	10.000	1.910	1.925	0.006000
15	11.500	1.895	1.903	0.003000
30	15.000	1.860	1.878	0.002333
60	18.000	1.830	1.845	0.001000
90	21.000	1.800	1.815	0.001000
120	23.000	1.780	1.790	0.000667
150	24.500	1.765	1.773	0.000500
180	26.000	1.750	1.758	0.000500

Procedure

		Yes/No
Hole kept full for: 0.33 hours		
Water Levels Recorded at 30mins or less		yes
Test continued for 4 hours, or until hole is empty		3hrs
Stop test or refill hole when water level is at 0.25m		no
Percolation Rate is determined from minimum slope		yes

Test Details:

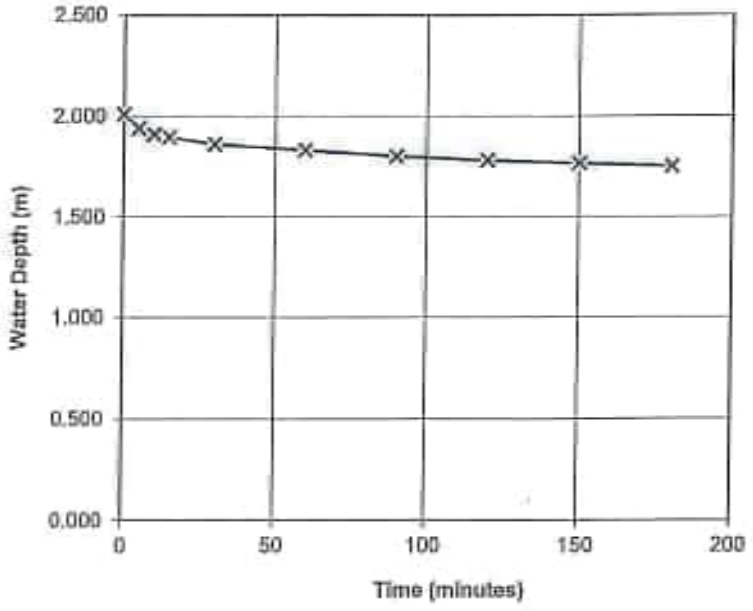
Diameter of Bore = D	0.11	m
Depth of Bore Hole	2.01	m
Calculate Minimum Gradient		
Minimum Gradient = y/x	0.000500	m/min

a straight line interpolation between the last two points on the graph

Calculate Percolation Rate	0.008	L/m²/min

Percolation Rate = (D x Gradient x 1000) / (4 x d)

d = distance between the midpoint of the last two readings and the base of the borehole



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Site: Argent Lane, Wainui Job Name: Job No.: 30868

Borehole No: 4 Sample No.: Depth: 1.98 (m)

Test method used: Falling Head Percolation Test - Auckland City Soakage Design Manual 3.3, 3.4

Falling-Head Percolation Test

Time (mins)	Depth To Water(cm)	Water Depth	Avg. Depth	Gradient
0	0.000	1.980	--	--
15	9.000	1.890	1.935	0.006000
30	16.000	1.820	1.855	0.004667
45	20.500	1.775	1.798	0.003000
60	25.000	1.730	1.753	0.003000
75	29.500	1.685	1.708	0.003000
90	33.000	1.650	1.668	0.002333
105	37.000	1.610	1.630	0.002667
120	40.500	1.575	1.593	0.002333
150	46.500	1.515	1.545	0.002000
180	51.500	1.465	1.490	0.001667

Procedure

		Yes/No
Hole kept full for:	0.33 hours	
Water Levels Recorded at 30mins or less		yes
Test continued for 4 hours, or until hole is empty		3hrs
Stop test or refill hole when water level is at 0.25m		no
Percolation Rate is determined from minimum slope		yes

Test Details:

Diameter of Bore = D	0.11	m
Depth of Bore Hole	1.98	m

Calculate Minimum Gradient

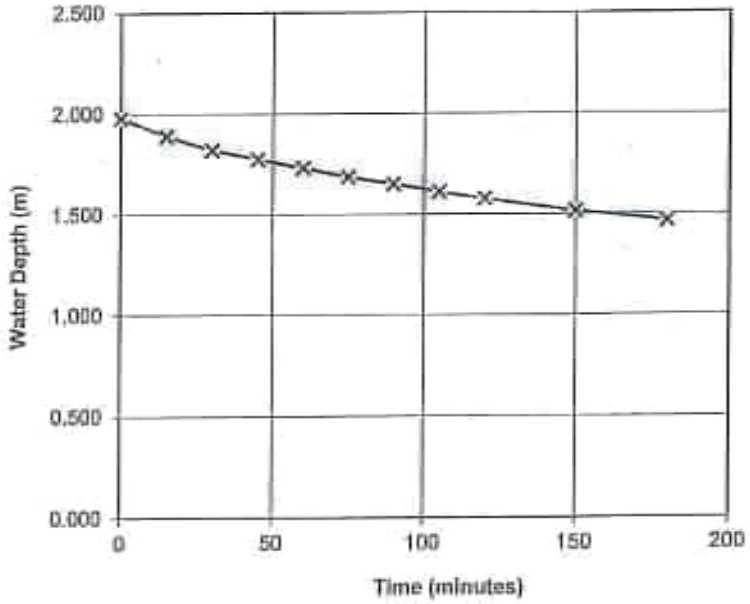
Minimum Gradient = y/x 0.001667 m/min

a straight line interpolation between the last two points on the graph

Calculate Percolation Rate 0.031 L/m²/min

Percolation Rate = (D x Gradient x 1000) / (4 x d)

d = distance between the midpoint of the last two readings and the base of the borehole



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Site: Argent Lane, Wainui Job Name: Job No.: 30868

Borehole No: 5 Sample No.: Depth: 2.04 (m)

Test method used: Falling Head Percolation Test - Auckland City Soakage Design Manual 3.3, 3.4

Falling-Head Percolation Test

Time (mins)	Depth To Water(cm)	Water Depth	Avg. Depth	Gradient
0	0.000	2.040	–	–
15	9.000	1.950	1.995	0.006000
30	13.000	1.910	1.930	0.002667
60	18.500	1.855	1.883	0.001833
90	23.500	1.805	1.830	0.001667
120	27.500	1.765	1.785	0.001333
150	31.000	1.730	1.748	0.001167
180	34.500	1.695	1.713	0.001167

Procedure

		Yes/No
Hole kept full for:	0.25 hours	
Water Levels Recorded at 30mins or less		yes
Test continued for 4 hours, or until hole is empty		3hrs
Stop test or refill hole when water level is at 0.25m		no
Percolation Rate is determined from minimum slope		yes

Test Details:

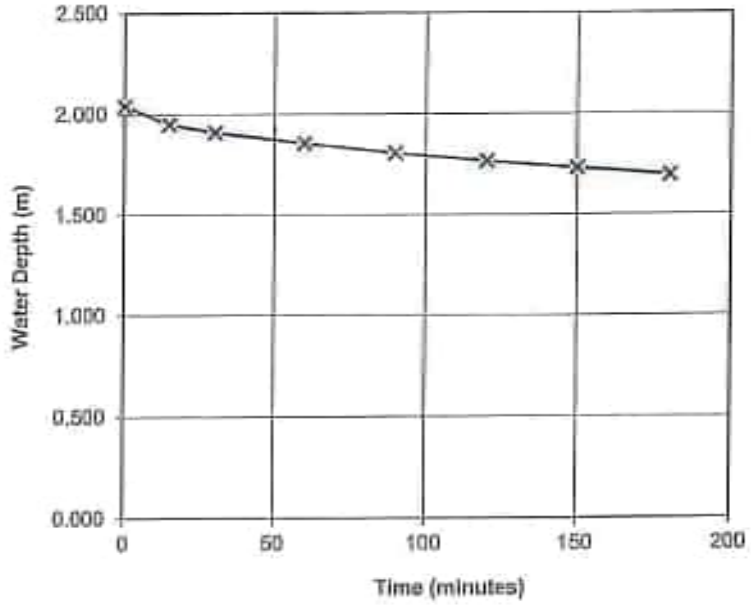
Diameter of Bore = D	0.11	m
Depth of Bore Hole	2.04	m
Calculate Minimum Gradient		
Minimum Gradient = y/x	0.001167	m/min

a straight line interpolation between the last two points on the graph

Calculate Percolation Rate	0.019	L/m²/min

Percolation Rate = (D x Gradient x 1000) / (4 x d)

d = distance between the midpoint of the last two readings and the base of the borehole



Entered By: RAL Date: 23-5-14 Checked By: KMS Date: 24/5/14

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Page of

Site: Argent Lane, Wainui Job Name: Job No.: 30868

Borehole No: 6 Sample No.: Depth: 1.98 (m)

Test method used: Falling Head Percolation Test – Auckland City Soakage Design Manual 3.3, 3.4

Falling-Head Percolation Test

Time (mins)	Depth To Water(cm)	Water Depth	Avg. Depth	Gradient
0	0.000	1.980	--	--
5	21.500	1.765	1.873	0.043000
10	31.000	1.670	1.718	0.019000
15	39.500	1.585	1.628	0.017000
20	46.500	1.515	1.550	0.014000
25	53.000	1.450	1.483	0.013000
30	58.000	1.400	1.425	0.010000
35	63.000	1.350	1.375	0.010000
40	67.500	1.305	1.328	0.009000
45	72.000	1.260	1.283	0.009000
50	76.000	1.220	1.240	0.008000
55	79.500	1.185	1.203	0.007000
60	82.500	1.155	1.170	0.006000
65	85.500	1.125	1.140	0.006000
70	88.500	1.095	1.110	0.006000
75	91.000	1.070	1.083	0.005000
80	93.500	1.045	1.058	0.005000
85	96.000	1.020	1.033	0.005000
90	98.000	1.000	1.010	0.004000
100	101.500	0.965	0.983	0.003500
110	106.000	0.920	0.943	0.004500
120	109.500	0.885	0.903	0.003500
130	112.500	0.855	0.870	0.003000
140	115.500	0.825	0.840	0.003000
150	118.000	0.800	0.813	0.002500
160	120.500	0.775	0.788	0.002500
170	122.500	0.755	0.765	0.002000
180	124.500	0.735	0.745	0.002000
196	127.500	0.705	0.720	0.001875
210	130.500	0.675	0.690	0.002143
225	133.000	0.650	0.663	0.001667
240	135.500	0.625	0.638	0.001667

Procedure

		Yes/No
Hole kept full for:	0.33 hours	
Water Levels Recorded at 30mins or less		yes
Test continued for 4 hours, or until hole is empty		4hrs
Stop test or refill hole when water level is at 0.25m		no
Percolation Rate is determined from minimum slope		yes

Test Details:

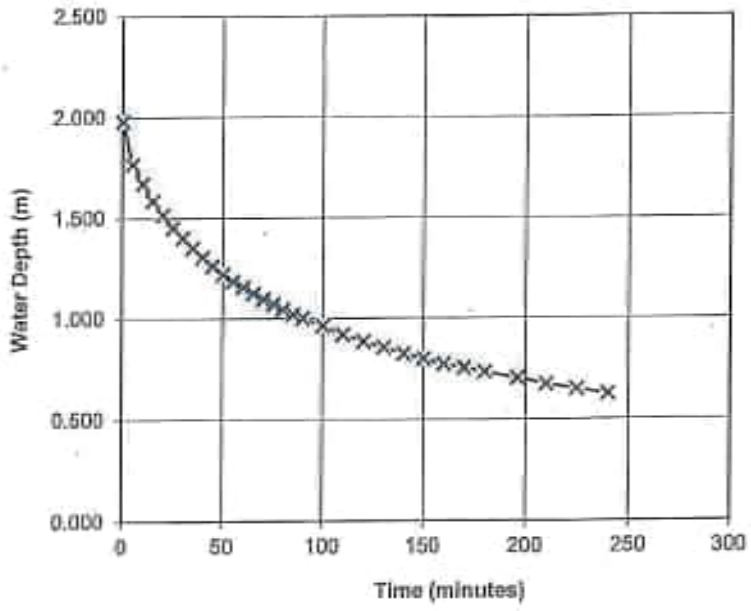
Diameter of Bore = D	0.11	m
Depth of Bore Hole	1.98	m
Calculate Minimum Gradient		
Minimum Gradient = y/x	0.001667	m/min

a straight line interpolation between the last two points on the graph

Calculate Percolation Rate	0.072	L/m²/min

Percolation Rate = (D x Gradient x 1000) / (4 x d)

d = distance between the midpoint of the last two readings and the base of the borehole



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Site: Argent Lane, Wainui Job Name: Job No.: 30868

Borehole No: 7 Sample No.: Depth: 1.4 (m)

Test method used: Falling Head Percolation Test – Auckland City Soakage Design Manual 3.3, 3.4

Falling-Head Percolation Test

Time (mins)	Depth To Water(cm)	Water Depth	Avg. Depth	Gradient
0	0.000	1.400	–	–
10	6.500	1.335	1.368	0.006500
30	9.500	1.305	1.320	0.001500
60	12.000	1.280	1.293	0.000833
90	13.500	1.265	1.273	0.000500
120	15.250	1.248	1.256	0.000583
150	17.250	1.228	1.238	0.000667
180	19.500	1.205	1.216	0.000750
210	22.000	1.180	1.193	0.000833

Procedure

		Yes/No
Hole kept full for:	0.17 hours	
Water Levels Recorded at 30mins or less		yes
Test continued for 4 hours, or until hole is empty		3.5hrs
Stop test or refill hole when water level is at 0.25m		no
Percolation Rate is determined from minimum slope		yes

Test Details:

Diameter of Bore = D	0.11	m
Depth of Bore Hole	1.40	m

Calculate Minimum Gradient

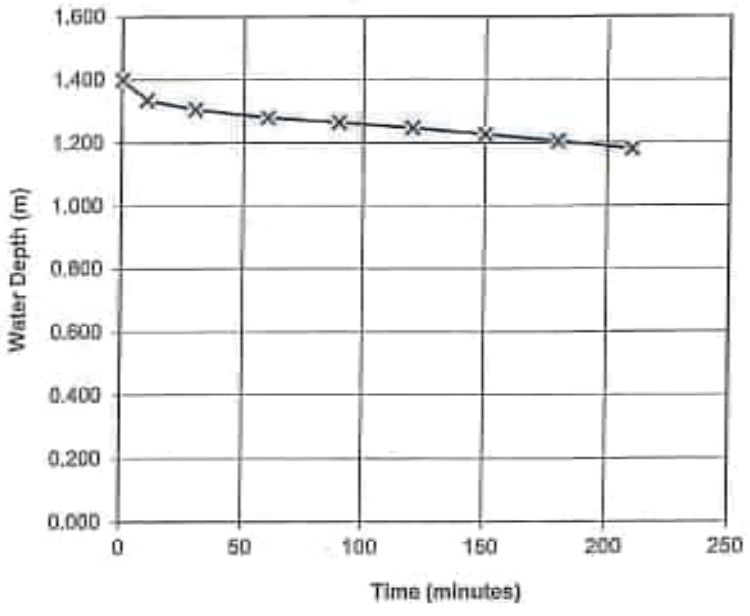
Minimum Gradient = y/x 0.000833 m/min

a straight line interpolation between the last two points on the graph

Calculate Percolation Rate 0.019 L/m²/min

Percolation Rate = (D x Gradient x 1000) / (4 x d)

d = distance between the midpoint of the last two readings and the base of the borehole



Entered By: ROE Date: 23-5-16 Checked By: KMS Date: 24/5/16

APPENDIX B

SURVEY PLANS

REVISION DETAILS	NAME	DATE
A. ADDED ADDITIONAL TOPO INFORMATION INCLUDING CULVERTS, CROSS SECTIONS AND INVERTS, PLUS AERIAL PHOTOS. ADDED HYDRO CROSS SECTIONS	JB	28/06/2016
B. ADDED HIGH-GATE CULVERT AND FIXED SCALING ERROR	JB	25/07/2016
C. ADDED ADDITIONAL CULVERT INFORMATION	JB	29/07/2016

NOTES

1. THE SURVEY IS IN TERMS OF THE GEODETIC DATUM 2000, MT EDEN CIRCUIT. THE ORIGIN OF COORDINATES IS "AK 275", 830836.11mN, 391419.790mE SOURCED FROM IN HOUSE CONTROL PLAN.
2. THE ORIGIN OF LEVELS IS "AK 275", RL=30.93. HEIGHTS ARE IN TERMS OF AUCKLAND VERTICAL DATUM 1946.
3. CONTOURS ARE AT 1.0m INTERVALS.
4. A 3D DTM HAS BEEN INCLUDED IN THE CAD FILE FOR THE RECREATION OF THE EXISTING SURFACE.
5. NO EXCAVATION OF ANY KIND IS TO TAKE PLACE WITHOUT PERMISSION FROM THE RELEVANT SERVICE PROVIDER.
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KEY

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	BUILDING	30.0	EXISTING CONTOURS
	BUILDING EAVES		DRIPLINE
	GATE	CESSPIT LL=30.46	CESSPIT
	FENCE		EDGE OF SEAL
	TOP OF BANK		BOTTOM OF BANK
	FLOOR LEVEL		UNKNOWN MANHOLE
	FLOW DIRECTION		SIGNS
	BENCH		SERVICE LID
	SITE DATUM		FIRE HYDRANT
	WATER METER		POST
	DOWNPIPE		TREE
	SEWER MANHOLE		STORM-WATER MANHOLE
	STREET LIGHT		VALVE
	TELECOM PLINTH		POWER POLE
	WALLS		DRAIN CENTER LINE

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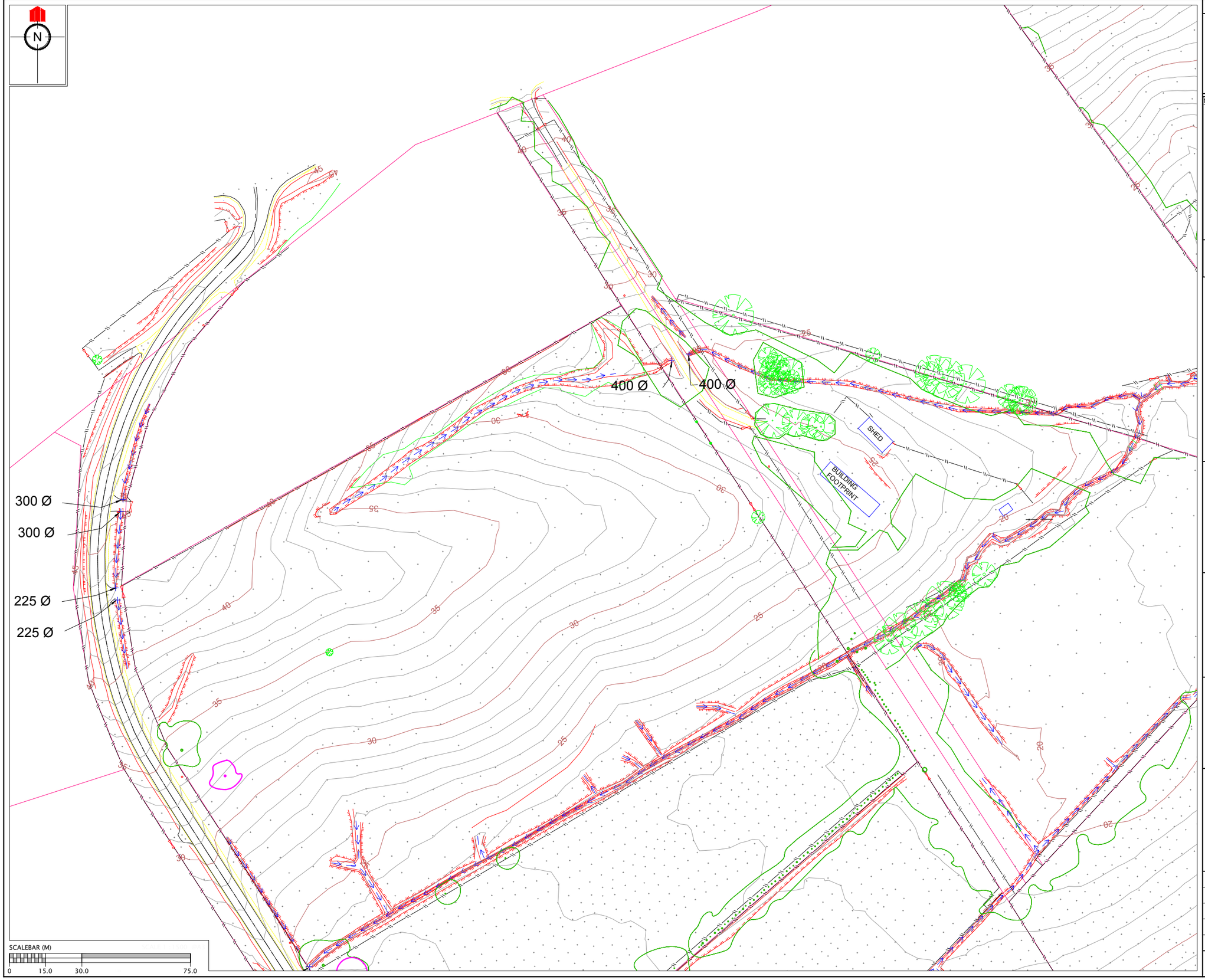
TOPOGRAPHICAL PLAN
1 OF 15

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SCALEBAR (M)
0 100.0 200.0 500.0

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	BUILDING EAVES		DRIPLINE
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	FENCE		EDGE OF SEAL
	TOP OF BANK		BOTTOM OF BANK
	FLOOR LEVEL		UNKNOWN MANHOLE
	FLOW DIRECTION		SIGNS
	BENCH		SERVICE LID
SSM RL=28.08	SITE DATUM		FIRE HYDRANT
	WATER METER		POST
D	DOWNPIPE		TREE
	SEWER MANHOLE		STORM-WATER MANHOLE
	STREET LIGHT		VALVE
T	TELECOM PLINTH	P	POWER POLE
	WALLS		DRAIN CENTER LINE

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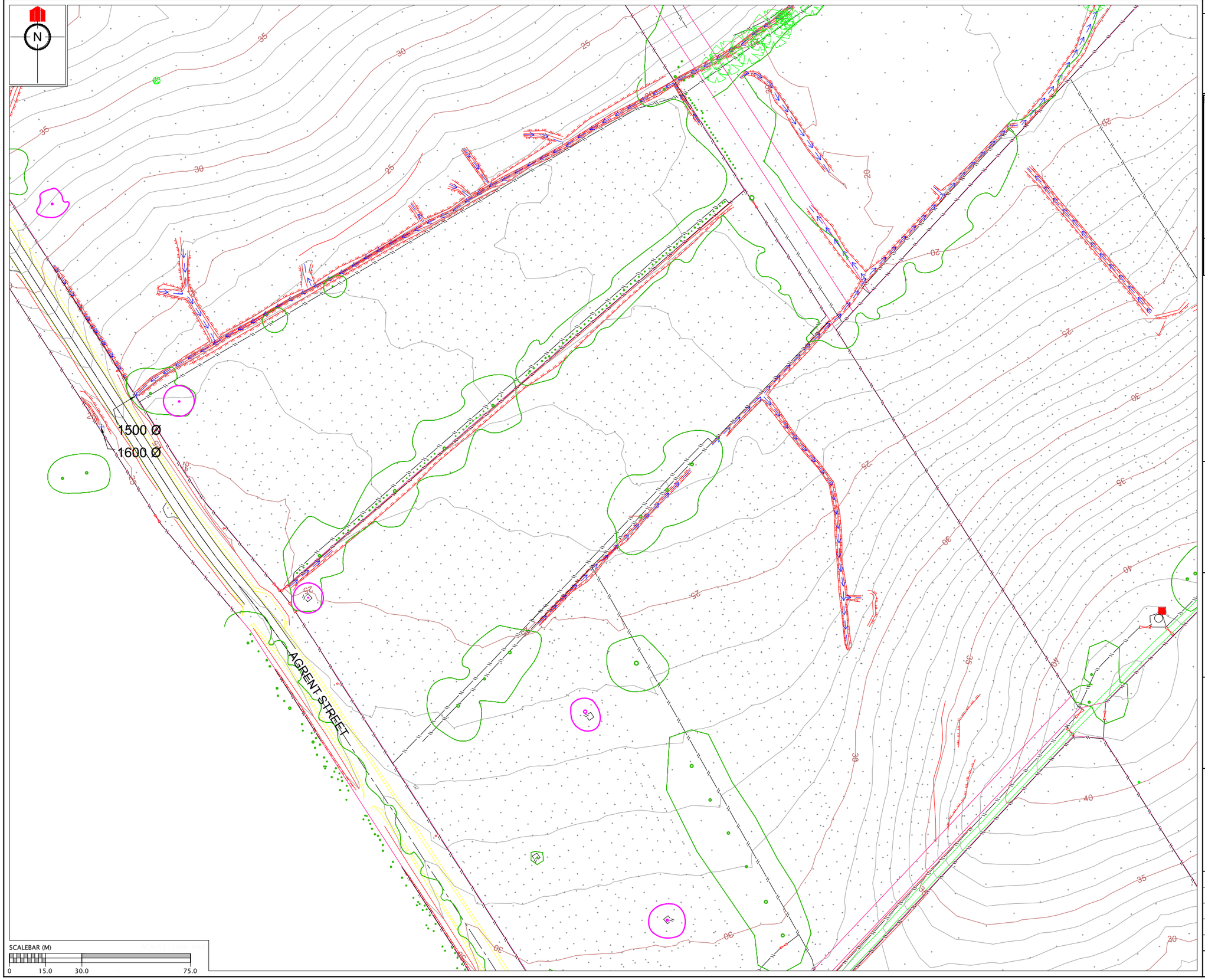
WAINUI EAST

TOPOGRAPHICAL PLAN
2 OF 15

AUCKLAND COUNCIL

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	BUILDING	30.0	EXISTING CONTOURS
	BUILDING EAVES		DRIPLINE
	GATE	CESSPIT LL=30.46	CESSPIT
	FENCE		EDGE OF SEAL
	TOP OF BANK		BOTTOM OF BANK
	FLOOR LEVEL		UNKNOWN MANHOLE
	FLOW DIRECTION		SIGNS
	BENCH		SERVICE LID
	SITE DATUM		FIRE HYDRANT
	WATER METER		POST
D	DOWNPIPE		TREE
	SEWER MANHOLE		STORM-WATER MANHOLE
	STREET LIGHT		VALVE
T	TELECOM PLINTH	P	POWER POLE
	WALLS		DRAIN CENTER LINE

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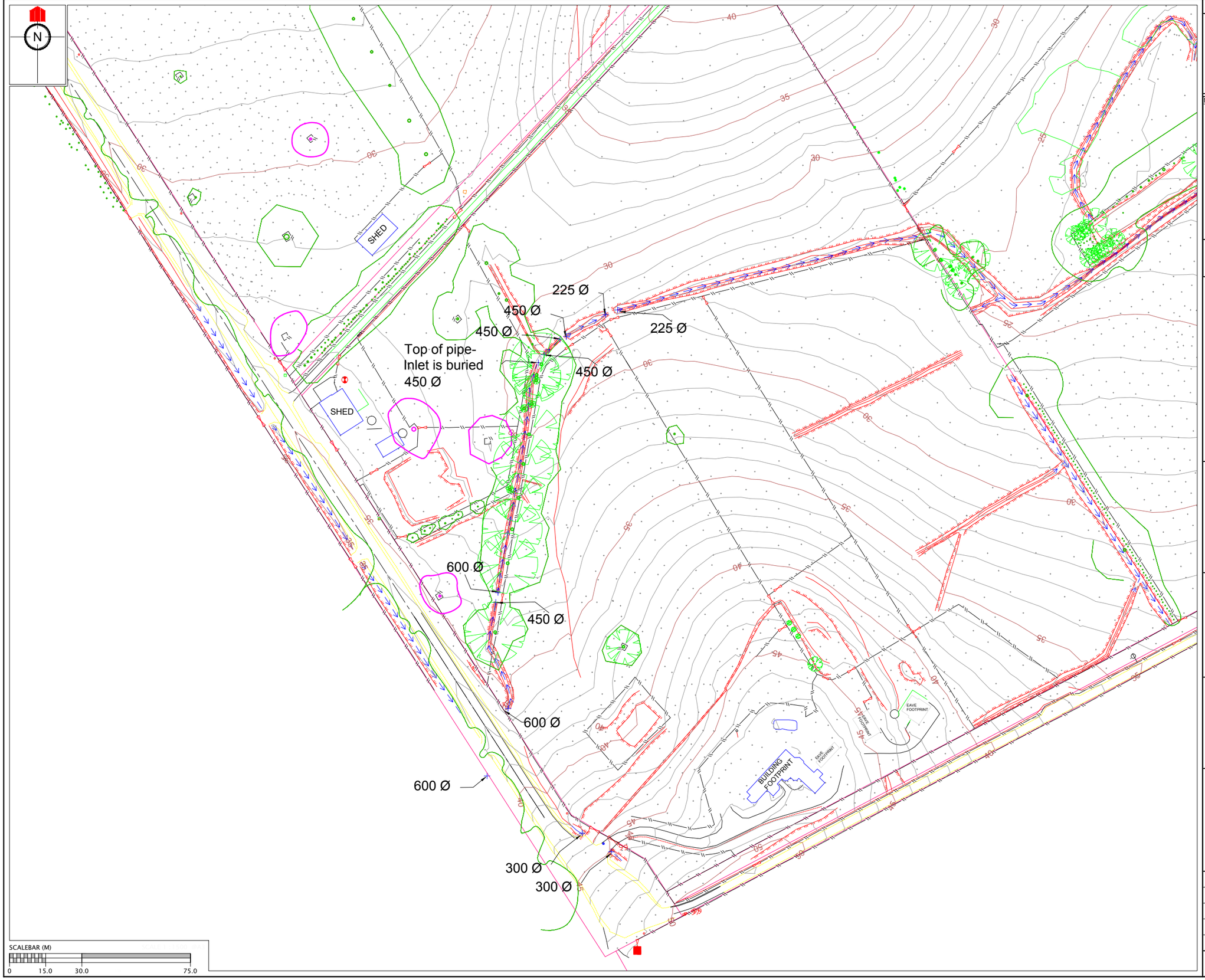
WAINUI EAST

TOPOGRAPHICAL PLAN
3 OF 15

AUCKLAND COUNCIL

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2. THE ORIGIN OF LEVELS IS "AK 275", RL=30.93. HEIGHTS ARE IN TERMS OF AUCKLAND VERTICAL DATUM 1946.
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	BUILDING EAVES		DRIPLINE
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	FENCE		EDGE OF SEAL
	TOP OF BANK		BOTTOM OF BANK
	FLOOR LEVEL		UNKNOWN MANHOLE
	FLOW DIRECTION		SIGNS
	BENCH		SERVICE LID
SITE DATUM RL=18.00	SITE DATUM		FIRE HYDRANT
	WATER METER		POST
D	DOWNPIPE		TREE
SW	SEWER MANHOLE	SW	STORM-WATER MANHOLE
	STREET LIGHT		VALVE
T	TELECOM PLINTH	P	POWER POLE
	WALLS		DRAIN CENTER LINE

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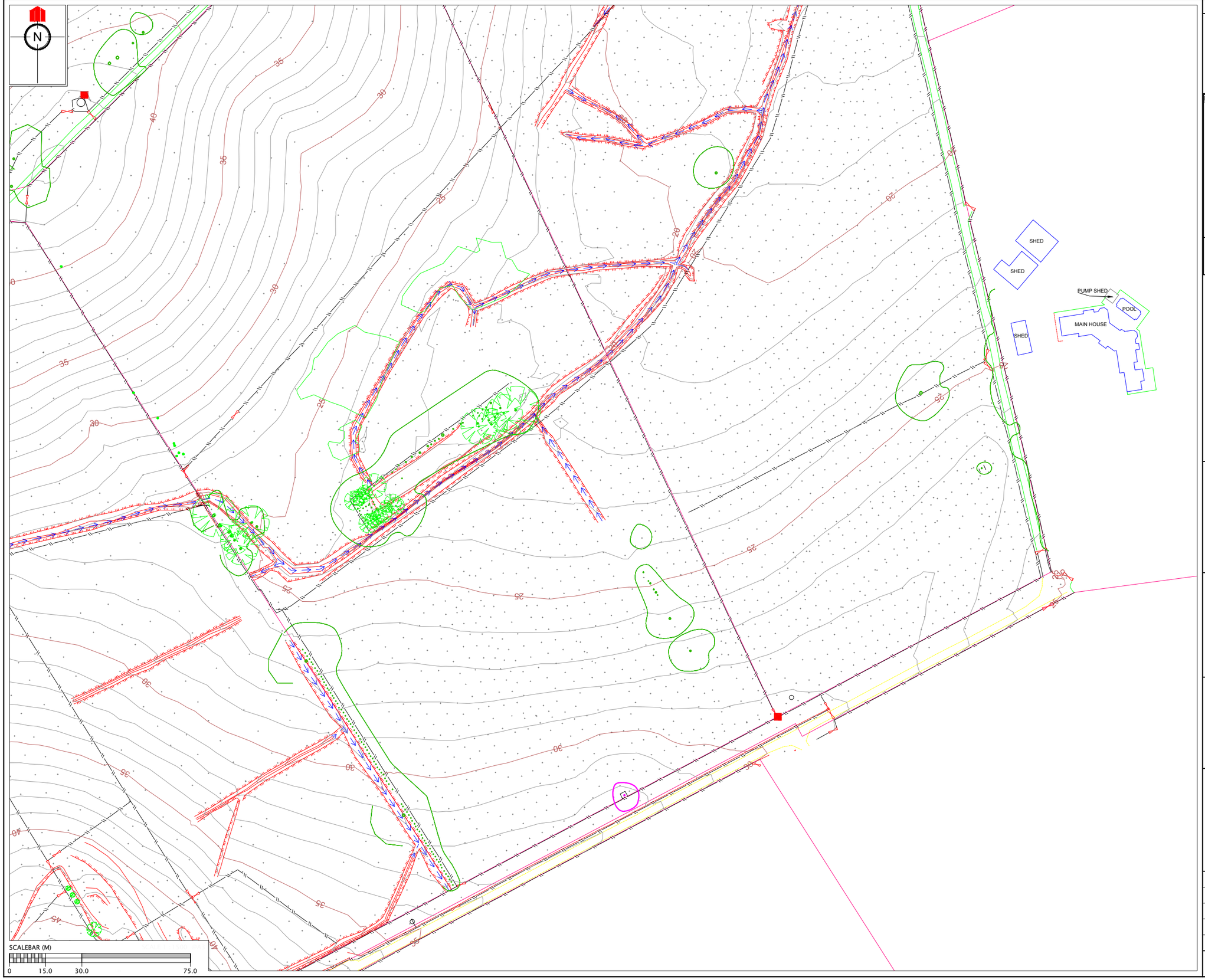
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TOPOGRAPHICAL PLAN
4 OF 15

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2. THE ORIGIN OF LEVELS IS "AK 275", RL=30.93. HEIGHTS ARE IN TERMS OF AUCKLAND VERTICAL DATUM 1946.
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KEY

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	BUILDING	30.0	EXISTING CONTOURS
	BUILDING EAVES		DRIPLINE
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	FENCE		EDGE OF SEAL
	TOP OF BANK		BOTTOM OF BANK
	FLOOR LEVEL		UNKNOWN MANHOLE
	FLOW DIRECTION		SIGNS
	BENCH		SERVICE LID
RL=18.38	SITE DATUM	H	FIRE HYDRANT
W	WATER METER		POST
D	DOWNPIPE		TREE
SW	SEWER MANHOLE	SW	STORM-WATER MANHOLE
	STREET LIGHT		VALVE
T	TELECOM PLINTH	P	POWER POLE
	WALLS		DRAIN CENTER LINE

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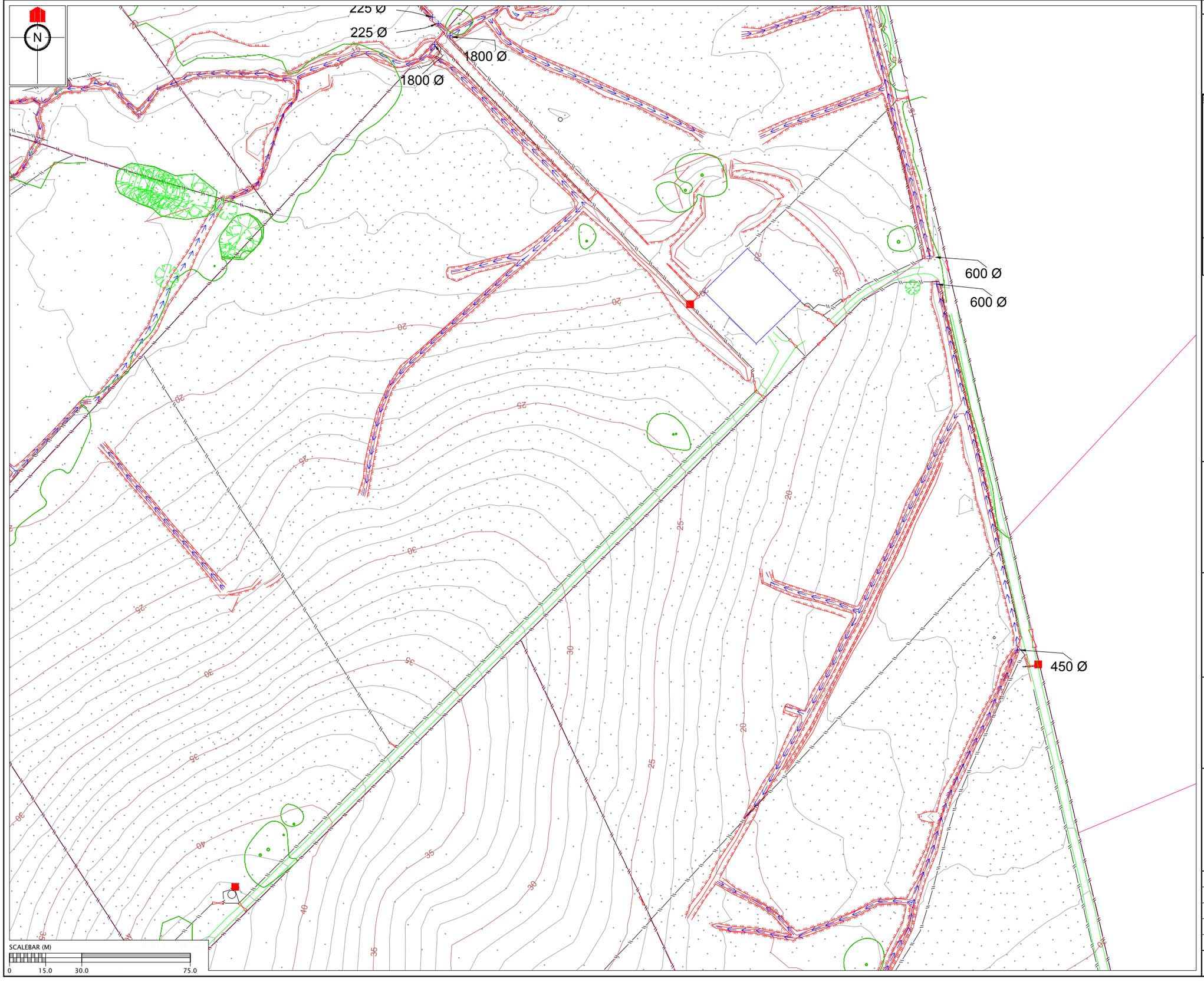
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TOPOGRAPHICAL PLAN
5 OF 15

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2. THE ORIGIN OF LEVELS IS "AK 275", RL=30.93. HEIGHTS ARE IN TERMS OF AUCKLAND VERTICAL DATUM 1946.
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KEY

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	BUILDING	30.0	EXISTING CONTOURS
	BUILDING EAVES		DRIPLINE
	GATE	CESSPIT LL=30.46	CESSPIT
	FENCE		EDGE OF SEAL
	TOP OF BANK		BOTTOM OF BANK
	FLOOR LEVEL		UNKNOWN MANHOLE
	FLOW DIRECTION		SIGNS
	BENCH		SERVICE LID
30.0 RL=29.58	SITE DATUM		FIRE HYDRANT
W	WATER METER		POST
D	DOWNPIPE		TREE
SW	SEWER MANHOLE		STORM-WATER MANHOLE
	STREET LIGHT		VALVE
T	TELECOM PLINTH	P	POWER POLE
	WALLS		DRAIN CENTER LINE

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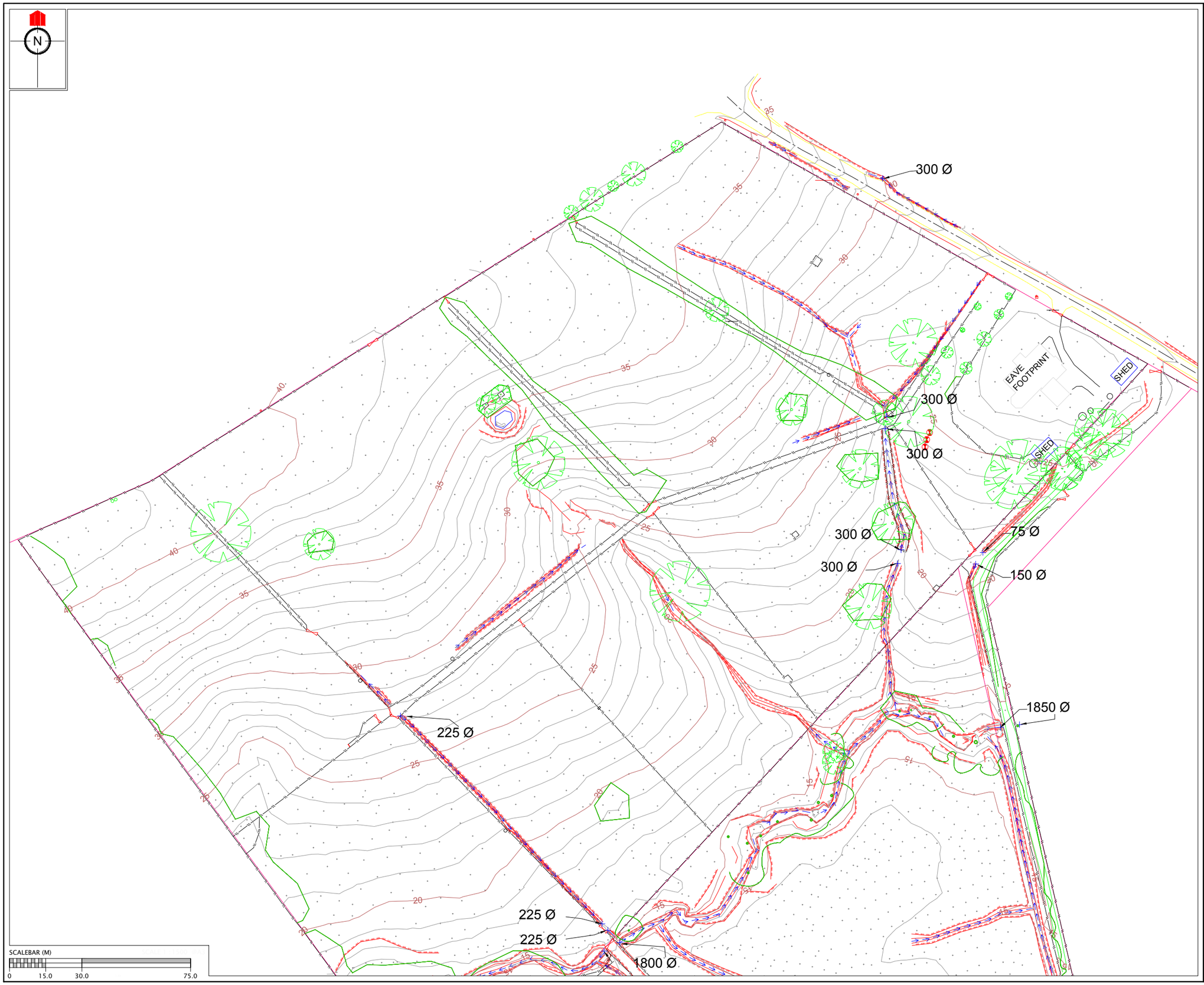
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TOPOGRAPHICAL PLAN
6 OF 15

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2. THE ORIGIN OF LEVELS IS "AK 275", RL=30.93. HEIGHTS ARE IN TERMS OF AUCKLAND VERTICAL DATUM 1946.
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4. A 3D DTM HAS BEEN INCLUDED IN THE CAD FILE FOR THE RECREATION OF THE EXISTING SURFACE.
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7. BOUNDARIES ARE SUBJECT TO FINAL SURVEY.

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KEY

30.84	SPOT HEIGHT		XML BOUNDARY
	BUILDING	30.0	EXISTING CONTOURS
	BUILDING EAVES		DRIPLINE
	GATE	CESSPIT LL=30.46	CESSPIT
	FENCE		EDGE OF SEAL
	TOP OF BANK		BOTTOM OF BANK
	FLOOR LEVEL		UNKNOWN MANHOLE
	FLOW DIRECTION		SIGNS
	BENCH		SERVICE LID
30.8 RL=30.93	SITE DATUM	H	FIRE HYDRANT
W	WATER METER		POST
D	DOWNPIPE		TREE
SE	SEWER MANHOLE	SW	STORM-WATER MANHOLE
	STREET LIGHT		VALVE
T	TELECOM PLINTH	P	POWER POLE
	WALLS		DRAIN CENTER LINE

CLIENT:

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WAINUI EAST

TOPOGRAPHICAL PLAN
7 OF 15

AUCKLAND COUNCIL

DESIGNED:	ISSUED FOR INFORMATION
CHECKED:	DRAWN: JB
APPROVED:	SURVEYED: JB
JOB NUMBER: 31720	SCALE: 1:1500 @ A3
ISSUED: JULY 2016	
DWG. NO. 31720-SU-056	REV. C

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REVISION DETAILS	NAME	DATE
1.		

NOTES

1. THE SURVEY IS IN TERMS OF THE GEODETIC DATUM 2000, MT EDEN CIRCUIT. THE ORIGIN OF COORDINATES IS "AK 275", 830836.11mN, 391419.790mE SOURCED FROM IN HOUSE CONTROL PLAN.
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KEY

30.84	SPOT HEIGHT		XML BOUNDARY
	BUILDING	30.0	EXISTING CONTOURS
	BUILDING EAVES		DRIPLINE
	GATE	CESSPIT LL=30.46	CESSPIT
	FENCE		EDGE OF SEAL
	TOP OF BANK		BOTTOM OF BANK
	FLOOR LEVEL		UNKNOWN MANHOLE
	FLOW DIRECTION		SIGNS
	BENCH		SERVICE LID
	SITE DATUM		FIRE HYDRANT
	WATER METER		POST
D	DOWNPIPE		TREE
	SEWER MANHOLE		STORM-WATER MANHOLE
	STREET LIGHT		VALVE
T	TELECOM PLINTH	P	POWER POLE
	WALLS		DRAIN CENTER LINE

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WAINUI EAST

TOPOGRAPHICAL PLAN
8 OF 15

AUCKLAND COUNCIL

DESIGNED:	ISSUED FOR INFORMATION
CHECKED:	DRAWN: JB
APPROVED:	SURVEYED: JB
JOB NUMBER: 31720	SCALE: 1:2500 @ A3
ISSUED: JULY 2016	
DWG. NO. 31720-SU-057	REV. C

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REVISION DETAILS	NAME	DATE
1.		

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1. THE SURVEY IS IN TERMS OF THE GEODETIC DATUM 2000, MT EDEN CIRCUIT. THE ORIGIN OF COORDINATES IS "AK 275", 830836.11mN, 391419.790mE SOURCED FROM IN HOUSE CONTROL PLAN.
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KEY

30.84	SPOT HEIGHT		XML BOUNDARY
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	BUILDING EAVES		DRIPLINE
	GATE	CESSPIT LL=30.46	CESSPIT
	FENCE		EDGE OF SEAL
	TOP OF BANK		BOTTOM OF BANK
	FLOOR LEVEL		UNKNOWN MANHOLE
	FLOW DIRECTION		SIGNS
	BENCH		SERVICE LID
	SITE DATUM		FIRE HYDRANT
M	WATER METER		POST
D	DOWNPIPE		TREE
SW	SEWER MANHOLE	SW	STORM-WATER MANHOLE
	STREET LIGHT		VALVE
T	TELECOM PLINTH	P	POWER POLE
	WALLS		DRAIN CENTER LINE

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TOPOGRAPHICAL PLAN
9 OF 15

AUCKLAND COUNCIL

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APPROVED:	SURVEYED: JB
JOB NUMBER: 31720	SCALE: 1:2500 @ A3
ISSUED: JULY 2016	
DWG. NO. 31720-SU-058	REV. C

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REVISION DETAILS	NAME	DATE
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1. THE SURVEY IS IN TERMS OF THE GEODETIC DATUM 2000, MT EDEN CIRCUIT. THE ORIGIN OF COORDINATES IS "AK 275", 830836.11mN, 391419.790mE SOURCED FROM IN HOUSE CONTROL PLAN.
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KEY

30.84	SPOT HEIGHT		XML BOUNDARY
	BUILDING	30.0	EXISTING CONTOURS
	BUILDING EAVES		DRIPLINE
	GATE	CESSPIT LL=30.46	CESSPIT
	FENCE		EDGE OF SEAL
	TOP OF BANK		BOTTOM OF BANK
	FLOOR LEVEL		UNKNOWN MANHOLE
	FLOW DIRECTION		SIGNS
	BENCH		SERVICE LID
	SITE DATUM		FIRE HYDRANT
	WATER METER		POST
D	DOWNPIPE		TREE
SE	SEWER MANHOLE		STORM-WATER MANHOLE
	STREET LIGHT		VALVE
T	TELECOM PLINTH	P	POWER POLE
	WALLS		DRAIN CENTER LINE

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TOPOGRAPHICAL PLAN
10 OF 15

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APPROVED:	SURVEYED: JB
JOB NUMBER: 31720	SCALE: 1:2500 @ A3
ISSUED: JULY 2016	
DWG. NO. 31720-SU-059	REV. C

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REVISION DETAILS	NAME	DATE
1.		

NOTES

1. THE SURVEY IS IN TERMS OF THE GEODETIC DATUM 2000, MT EDEN CIRCUIT. THE ORIGIN OF COORDINATES IS "AK 275", 830836.11mN, 391419.790mE SOURCED FROM IN HOUSE CONTROL PLAN.
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KEY

30.84	SPOT HEIGHT		XML BOUNDARY
	BUILDING	30.0	EXISTING CONTOURS
	BUILDING EAVES		DRIPLINE
	GATE	CESSPIT LL=30.46	CESSPIT
	FENCE		EDGE OF SEAL
	TOP OF BANK		BOTTOM OF BANK
	FLOOR LEVEL		UNKNOWN MANHOLE
	FLOW DIRECTION		SIGNS
	BENCH		SERVICE LID
30.8 RL=10.38	SITE DATUM		FIRE HYDRANT
	WATER METER		POST
D	DOWNPIPE		TREE
SE	SEWER MANHOLE		STORM-WATER MANHOLE
	STREET LIGHT		VALVE
T	TELECOM PLINTH	P	POWER POLE
	WALLS		DRAIN CENTER LINE

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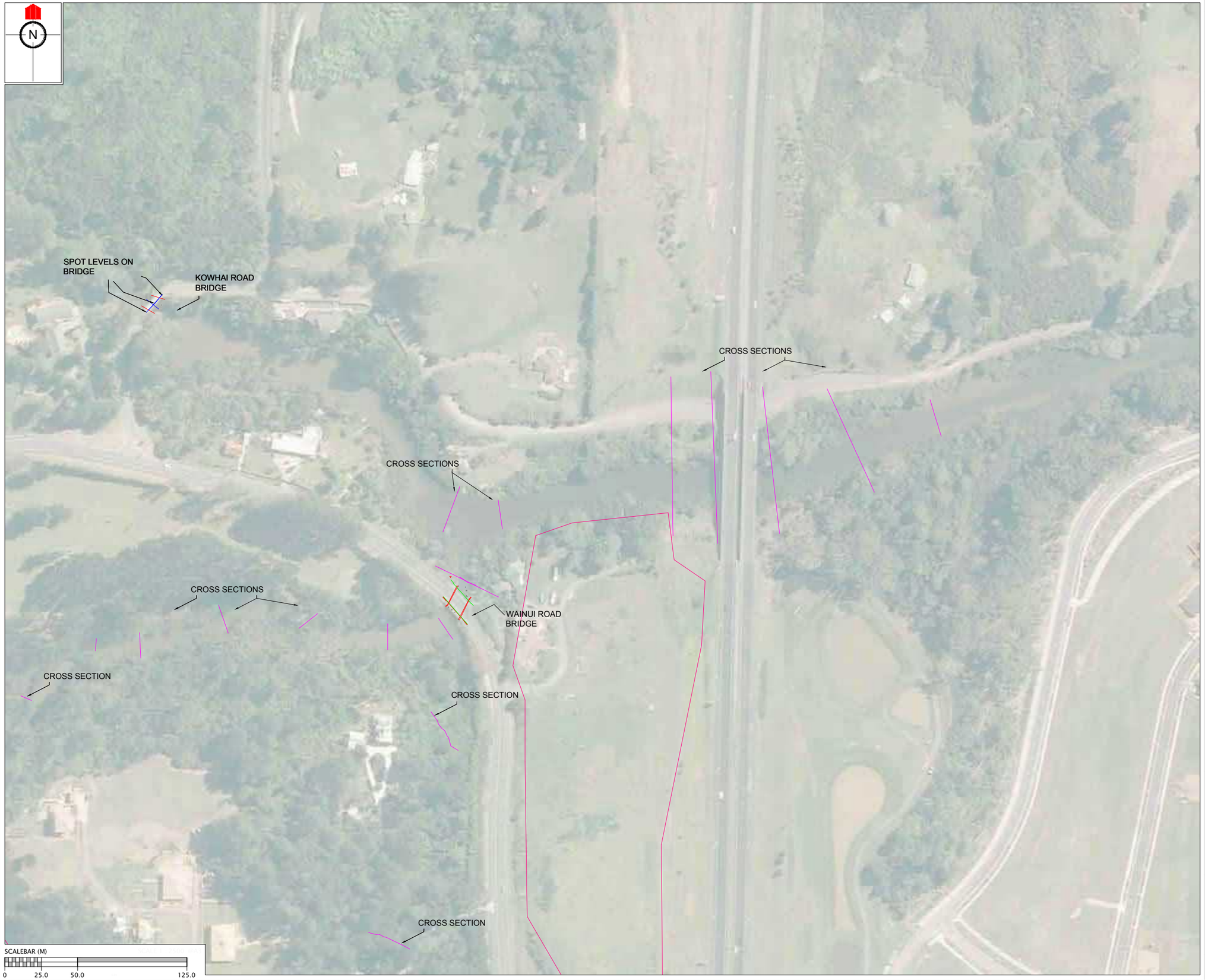
WAINUI EAST

TOPOGRAPHICAL PLAN
11 OF 15

AUCKLAND COUNCIL

DESIGNED:	ISSUED FOR INFORMATION
CHECKED:	DRAWN: JB
APPROVED:	SURVEYED: JB
JOB NUMBER: 31720	SCALE: 1:2500 @ A3
ISSUED: JULY 2016	
DWG. NO. 31720-SU-059-01	REV. C

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REVISION DETAILS	NAME	DATE
1.		

NOTES

1. THE SURVEY IS IN TERMS OF THE GEODETIC DATUM 2000, MT EDEN CIRCUIT. THE ORIGIN OF COORDINATES IS "AK 275", 830836.11mN, 391419.790mE SOURCED FROM IN HOUSE CONTROL PLAN.
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KEY

30.84	SPOT HEIGHT		XML BOUNDARY
	BUILDING	30.0	EXISTING CONTOURS
	BUILDING EAVES		DRIPLINE
	GATE	CESSPIT LL=30.46	CESSPIT
	FENCE		EDGE OF SEAL
	TOP OF BANK		BOTTOM OF BANK
	FLOOR LEVEL		UNKNOWN MANHOLE
	FLOW DIRECTION		SIGNS
	BENCH		SERVICE LID
30.8 RL=30.58	SITE DATUM		FIRE HYDRANT
WM	WATER METER		POST
D	DOWNPIPE		TREE
SW	SEWER MANHOLE		STORM-WATER MANHOLE
	STREET LIGHT		VALVE
T	TELECOM PLINTH		POWER POLE
	WALLS		DRAIN CENTER LINE

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WAINUI EAST

TOPOGRAPHICAL PLAN
12 OF 15

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APPROVED:	SURVEYED: JB
JOB NUMBER: 31720	SCALE: 1:2500 @ A3
ISSUED: JULY 2016	
DWG. NO. 31720-SU-059-02	REV. C

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REVISION DETAILS	NAME	DATE
1.		

NOTES

1. THE SURVEY IS IN TERMS OF THE GEODETIC DATUM 2000, MT EDEN CIRCUIT. THE ORIGIN OF COORDINATES IS "AK 275", 830836.11mN, 391419.790mE SOURCED FROM IN HOUSE CONTROL PLAN.
2. THE ORIGIN OF LEVELS IS "AK 275", RL=30.93. HEIGHTS ARE IN TERMS OF AUCKLAND VERTICAL DATUM 1946.
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KEY

30.84	SPOT HEIGHT		XML BOUNDARY
	BUILDING	30.0	EXISTING CONTOURS
	BUILDING EAVES		DRIPLINE
	GATE	CESSPIT LL=30.46	CESSPIT
	FENCE		EDGE OF SEAL
	TOP OF BANK		BOTTOM OF BANK
	FLOOR LEVEL		UNKNOWN MANHOLE
	FLOW DIRECTION		SIGNS
	BENCH		SERVICE LID
30.8 RL=30.93	SITE DATUM		FIRE HYDRANT
	WATER METER		POST
D	DOWNPIPE		TREE
	SEWER MANHOLE		STORM-WATER MANHOLE
	STREET LIGHT		VALVE
T	TELECOM PLINTH	P	POWER POLE
	WALLS		DRAIN CENTER LINE

CLIENT:

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WAINUI EAST

TOPOGRAPHICAL PLAN
13 OF 15

AUCKLAND COUNCIL

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CHECKED:	DRAWN: JB
APPROVED:	SURVEYED: JB
JOB NUMBER: 31720	SCALE: 1:2500 @ A3
ISSUED: JULY 2016	
DWG. NO. 31720-SU-059-03	REV. C

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REVISION DETAILS	NAME	DATE

NOTES

1. THE SURVEY IS IN TERMS OF THE GEODETIC DATUM 2000, MT EDEN CIRCUIT. THE ORIGIN OF COORDINATES IS "AK 275", 830836.11mN, 391419.790mE SOURCED FROM IN HOUSE CONTROL PLAN.
2. THE ORIGIN OF LEVELS IS "AK 275", RL=30.93. HEIGHTS ARE IN TERMS OF AUCKLAND VERTICAL DATUM 1946.
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KEY

30.84	SPOT HEIGHT		XML BOUNDARY
	BUILDING	30.0	EXISTING CONTOURS
	BUILDING EAVES		DRIPLINE
	GATE	CESSPIT RL=30.46	CESSPIT
	FENCE		EDGE OF SEAL
	TOP OF BANK		BOTTOM OF BANK
	FLOOR LEVEL		UNKNOWN MANHOLE
	FLOW DIRECTION	S	SIGNS
	BENCH		SERVICE LID
SITE DATUM RL=18.00		H	FIRE HYDRANT
W	WATER METER		POST
D	DOWNPIPE		TREE
SW	SEWER MANHOLE	SW	STORM-WATER MANHOLE
	STREET LIGHT		VALVE
T	TELECOM PLINTH	P	POWER POLE
	WALLS		DRAIN CENTER LINE

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TOPOGRAPHICAL PLAN
14 OF 15

AUCKLAND COUNCIL

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REVISION DETAILS	NAME	DATE
1.		

NOTES

1. THE SURVEY IS IN TERMS OF THE GEODETIC DATUM 2000, MT EDEN CIRCUIT. THE ORIGIN OF COORDINATES IS "AK 275", 830836.11mN, 391419.790mE SOURCED FROM IN HOUSE CONTROL PLAN.
2. THE ORIGIN OF LEVELS IS "AK 275", RL=30.93. HEIGHTS ARE IN TERMS OF AUCKLAND VERTICAL DATUM 1946.
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	BUILDING	30.0	EXISTING CONTOURS
	BUILDING EAVES		DRIPLINE
	GATE	CESSPIT LL=30.46	CESSPIT
	FENCE		EDGE OF SEAL
	TOP OF BANK		BOTTOM OF BANK
	FLOOR LEVEL		UNKNOWN MANHOLE
	FLOW DIRECTION		SIGNS
	BENCH		SERVICE LID
	SITE DATUM		FIRE HYDRANT
W	WATER METER		POST
D	DOWNPIPE		TREE
SW	SEWER MANHOLE		STORM-WATER MANHOLE
	STREET LIGHT		VALVE
T	TELECOM PLINTH		POWER POLE
	WALLS		DRAIN CENTER LINE

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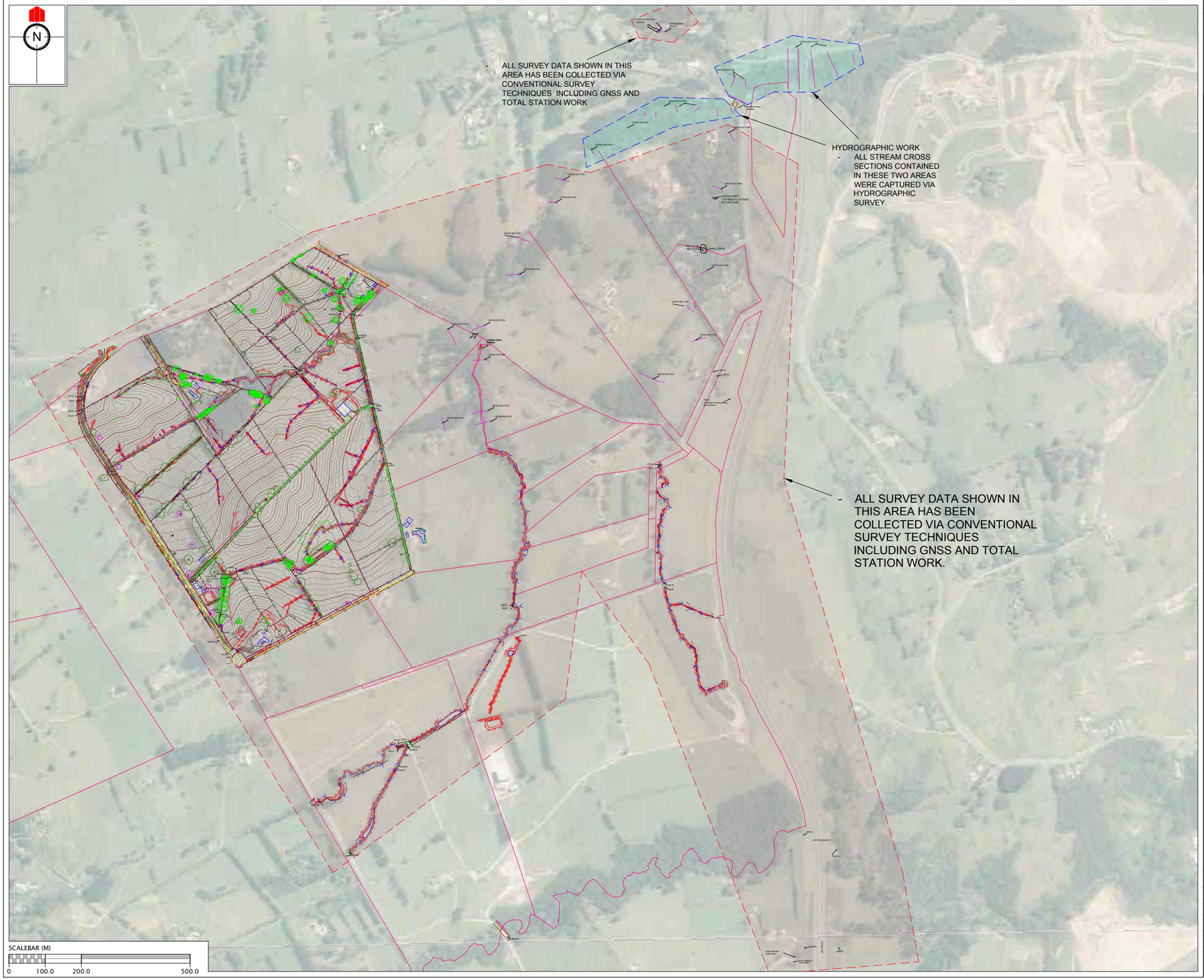
WAINUI EAST

TOPOGRAPHICAL PLAN
15 OF 15

AUCKLAND COUNCIL

DESIGNED:	ISSUED FOR INFORMATION
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REVISION DETAILS	NAME	DATE
A.		

NOTES

1. THE SURVEY IS IN TERMS OF THE GEODETIC DATUM 2000, MT EDEN CIRCUIT. THE ORIGIN OF COORDINATES IS "AK 275", 830836.11mN, 391419.790mE SOURCED FROM IN HOUSE CONTROL PLAN.
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	BUILDING EAVES		DRIPLINE
	GATE	CESSPIT LL=30.46	CESSPIT
	FENCE		EDGE OF SEAL
	TOP OF BANK		BOTTOM OF BANK
	FLOOR LEVEL		UNKNOWN MANHOLE
	FLOW DIRECTION		SIGNS
	BENCH		SERVICE LID
RL=30.93	SITE DATUM		FIRE HYDRANT
	WATER METER		POST
D	DOWNPIPE		TREE
S	SEWER MANHOLE	S	STORM-WATER MANHOLE
	STREET LIGHT		VALVE
T	TELECOM PLINTH	P	POWER POLE
	WALLS		DRAIN CENTER LINE

CLIENT:

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WAINUI EAST

SURVEY METHODOLOGY PLAN
1 OF 1

AUCKLAND COUNCIL

DESIGNED:	ISSUED FOR INFORMATION
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APPROVED:	SURVEYED: JB
JOB NUMBER: 31720	SCALE: 1:10000 @ A3
ISSUED: JULY 2016	
DWG. NO. 31720-SU-090	REV.

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APPENDIX C

HIGHGATE TIME SERIES DATA

Highgate - 2yr - Time Series Inflow (Wetland)					
Date	Time	Inflow m3/s	Storage	Elevation m	Outflow m3/s
1-Apr-08	0:00	0	0	28	0
1-Apr-08	0:01	0.0006	0	28	0
1-Apr-08	0:02	0.0023	0	28	0
1-Apr-08	0:03	0.0057	0	28	0
1-Apr-08	0:04	0.0113	0	28	0
1-Apr-08	0:05	0.0197	0	28	0
1-Apr-08	0:06	0.0302	0	28	0
1-Apr-08	0:07	0.0421	0.01	28	0.0001
1-Apr-08	0:08	0.0543	0.01	28	0.0001
1-Apr-08	0:09	0.0663	0.01	28	0.0002
1-Apr-08	0:10	0.0773	0.02	28	0.0002
1-Apr-08	0:11	0.0873	0.02	28	0.0003
1-Apr-08	0:12	0.0958	0.03	28	0.0003
1-Apr-08	0:13	0.1026	0.03	28	0.0004
1-Apr-08	0:14	0.108	0.04	28	0.0005
1-Apr-08	0:15	0.1124	0.05	28	0.0006
1-Apr-08	0:16	0.1159	0.05	28	0.0007
1-Apr-08	0:17	0.1189	0.06	28	0.0008
1-Apr-08	0:18	0.1214	0.07	28	0.0009
1-Apr-08	0:19	0.1234	0.07	28	0.001
1-Apr-08	0:20	0.125	0.08	28	0.0011
1-Apr-08	0:21	0.1263	0.09	28	0.0012
1-Apr-08	0:22	0.1274	0.1	28	0.0013
1-Apr-08	0:23	0.1283	0.1	28	0.0014
1-Apr-08	0:24	0.129	0.11	28	0.0015
1-Apr-08	0:25	0.1296	0.12	28	0.0016
1-Apr-08	0:26	0.1301	0.13	28	0.0017
1-Apr-08	0:27	0.1305	0.13	28	0.0018
1-Apr-08	0:28	0.1308	0.14	28	0.0019
1-Apr-08	0:29	0.1311	0.15	28	0.002
1-Apr-08	0:30	0.1313	0.16	28	0.0021
1-Apr-08	0:31	0.1315	0.17	28	0.0022
1-Apr-08	0:32	0.1316	0.17	28	0.0023
1-Apr-08	0:33	0.1317	0.18	28	0.0024
1-Apr-08	0:34	0.1318	0.19	28	0.0025
1-Apr-08	0:35	0.1319	0.2	28	0.0026
1-Apr-08	0:36	0.132	0.2	28	0.0027
1-Apr-08	0:37	0.1321	0.21	28	0.0028
1-Apr-08	0:38	0.1321	0.22	28	0.0029
1-Apr-08	0:39	0.1321	0.23	28	0.003
1-Apr-08	0:40	0.1321	0.24	28	0.0031
1-Apr-08	0:41	0.1321	0.24	28	0.0032
1-Apr-08	0:42	0.1321	0.25	28	0.0033
1-Apr-08	0:43	0.1321	0.26	28	0.0034
1-Apr-08	0:44	0.1321	0.27	28	0.0035
1-Apr-08	0:45	0.1321	0.27	28	0.0036
1-Apr-08	0:46	0.1321	0.28	28	0.0037

1-Apr-08	0:47	0.1321	0.29	28	0.0038
1-Apr-08	0:48	0.1321	0.3	28	0.0039
1-Apr-08	0:49	0.1321	0.3	28	0.004
1-Apr-08	0:50	0.1321	0.31	28	0.0041
1-Apr-08	0:51	0.1321	0.32	28	0.0041
1-Apr-08	0:52	0.1321	0.33	28	0.0042
1-Apr-08	0:53	0.1321	0.34	28	0.0043
1-Apr-08	0:54	0.1321	0.34	28	0.0044
1-Apr-08	0:55	0.1321	0.35	28	0.0044
1-Apr-08	0:56	0.1321	0.36	28	0.0045
1-Apr-08	0:57	0.1321	0.37	28	0.0046
1-Apr-08	0:58	0.1321	0.37	28	0.0047
1-Apr-08	0:59	0.1321	0.38	28	0.0048
1-Apr-08	1:00	0.1321	0.39	28	0.0048
1-Apr-08	1:01	0.1321	0.4	28	0.0049
1-Apr-08	1:02	0.1321	0.4	28	0.005
1-Apr-08	1:03	0.1321	0.41	28	0.0051
1-Apr-08	1:04	0.1321	0.42	28	0.0052
1-Apr-08	1:05	0.1321	0.43	28	0.0052
1-Apr-08	1:06	0.1321	0.43	28	0.0053
1-Apr-08	1:07	0.1321	0.44	28	0.0054
1-Apr-08	1:08	0.1321	0.45	28	0.0055
1-Apr-08	1:09	0.1321	0.46	28	0.0055
1-Apr-08	1:10	0.1321	0.47	28	0.0056
1-Apr-08	1:11	0.1321	0.47	28	0.0057
1-Apr-08	1:12	0.1321	0.48	28	0.0058
1-Apr-08	1:13	0.1321	0.49	28	0.0059
1-Apr-08	1:14	0.1321	0.5	28	0.0059
1-Apr-08	1:15	0.1321	0.5	28	0.006
1-Apr-08	1:16	0.1321	0.51	28	0.0061
1-Apr-08	1:17	0.1321	0.52	28	0.0062
1-Apr-08	1:18	0.1321	0.53	28	0.0062
1-Apr-08	1:19	0.1321	0.53	28	0.0063
1-Apr-08	1:20	0.1321	0.54	28	0.0064
1-Apr-08	1:21	0.1321	0.55	28	0.0065
1-Apr-08	1:22	0.1321	0.56	28	0.0066
1-Apr-08	1:23	0.1321	0.56	28	0.0066
1-Apr-08	1:24	0.1321	0.57	28	0.0067
1-Apr-08	1:25	0.1321	0.58	28	0.0068
1-Apr-08	1:26	0.1321	0.59	28	0.0069
1-Apr-08	1:27	0.1321	0.59	28	0.0069
1-Apr-08	1:28	0.1321	0.6	28	0.007
1-Apr-08	1:29	0.1321	0.61	28	0.0071
1-Apr-08	1:30	0.1321	0.62	28	0.0072
1-Apr-08	1:31	0.1321	0.62	28	0.0072
1-Apr-08	1:32	0.1321	0.63	28	0.0073
1-Apr-08	1:33	0.1321	0.64	28	0.0074
1-Apr-08	1:34	0.1321	0.65	28	0.0075
1-Apr-08	1:35	0.1321	0.65	28	0.0076
1-Apr-08	1:36	0.1321	0.66	28	0.0076

1-Apr-08	1:37	0.1321	0.67	28	0.0077
1-Apr-08	1:38	0.1321	0.68	28	0.0078
1-Apr-08	1:39	0.1321	0.68	28	0.0079
1-Apr-08	1:40	0.1321	0.69	28	0.0079
1-Apr-08	1:41	0.1321	0.7	28	0.008
1-Apr-08	1:42	0.1321	0.71	28	0.0081
1-Apr-08	1:43	0.1321	0.71	28	0.0082
1-Apr-08	1:44	0.1321	0.72	28	0.0082
1-Apr-08	1:45	0.1321	0.73	28	0.0083
1-Apr-08	1:46	0.1321	0.74	28	0.0084
1-Apr-08	1:47	0.1321	0.74	28	0.0085
1-Apr-08	1:48	0.1321	0.75	28	0.0086
1-Apr-08	1:49	0.1321	0.76	28	0.0086
1-Apr-08	1:50	0.1321	0.76	28	0.0087
1-Apr-08	1:51	0.1321	0.77	28	0.0088
1-Apr-08	1:52	0.1321	0.78	28	0.0089
1-Apr-08	1:53	0.1321	0.79	28	0.0089
1-Apr-08	1:54	0.1321	0.79	28	0.009
1-Apr-08	1:55	0.1321	0.8	28	0.0091
1-Apr-08	1:56	0.1321	0.81	28	0.0092
1-Apr-08	1:57	0.1321	0.82	28	0.0092
1-Apr-08	1:58	0.1321	0.82	28	0.0093
1-Apr-08	1:59	0.1321	0.83	28	0.0094
1-Apr-08	2:00	0.1321	0.84	28	0.0095
1-Apr-08	2:01	0.1321	0.85	28	0.0095
1-Apr-08	2:02	0.1321	0.85	28	0.0096
1-Apr-08	2:03	0.1321	0.86	28	0.0097
1-Apr-08	2:04	0.1321	0.87	28	0.0098
1-Apr-08	2:05	0.1321	0.88	28	0.0098
1-Apr-08	2:06	0.1321	0.88	28	0.0099
1-Apr-08	2:07	0.1321	0.89	28	0.01
1-Apr-08	2:08	0.1321	0.9	28	0.0101
1-Apr-08	2:09	0.1321	0.9	28	0.0101
1-Apr-08	2:10	0.1321	0.91	28	0.0102
1-Apr-08	2:11	0.1321	0.92	28	0.0103
1-Apr-08	2:12	0.1321	0.93	28	0.0104
1-Apr-08	2:13	0.1321	0.93	28	0.0104
1-Apr-08	2:14	0.1321	0.94	28	0.0105
1-Apr-08	2:15	0.1321	0.95	28	0.0106
1-Apr-08	2:16	0.1321	0.96	28	0.0107
1-Apr-08	2:17	0.1321	0.96	28	0.0107
1-Apr-08	2:18	0.1321	0.97	28	0.0108
1-Apr-08	2:19	0.1321	0.98	28	0.0109
1-Apr-08	2:20	0.1321	0.99	28	0.011
1-Apr-08	2:21	0.1321	0.99	28	0.011
1-Apr-08	2:22	0.1321	1	28	0.0111
1-Apr-08	2:23	0.1321	1.01	28	0.0112
1-Apr-08	2:24	0.1321	1.01	28	0.0113
1-Apr-08	2:25	0.1321	1.02	28	0.0113
1-Apr-08	2:26	0.1321	1.03	28	0.0114

1-Apr-08	2:27	0.1321	1.04	28	0.0115
1-Apr-08	2:28	0.1321	1.04	28	0.0116
1-Apr-08	2:29	0.1321	1.05	28	0.0116
1-Apr-08	2:30	0.1321	1.06	28	0.0117
1-Apr-08	2:31	0.1321	1.06	28	0.0118
1-Apr-08	2:32	0.1321	1.07	28	0.0119
1-Apr-08	2:33	0.1321	1.08	28	0.0119
1-Apr-08	2:34	0.1321	1.09	28	0.012
1-Apr-08	2:35	0.1321	1.09	28	0.0121
1-Apr-08	2:36	0.1321	1.1	28	0.0121
1-Apr-08	2:37	0.1321	1.11	28	0.0122
1-Apr-08	2:38	0.1321	1.12	28	0.0123
1-Apr-08	2:39	0.1321	1.12	28	0.0123
1-Apr-08	2:40	0.1321	1.13	28	0.0124
1-Apr-08	2:41	0.1321	1.14	28	0.0125
1-Apr-08	2:42	0.1321	1.14	28	0.0125
1-Apr-08	2:43	0.1321	1.15	28	0.0126
1-Apr-08	2:44	0.1321	1.16	28	0.0126
1-Apr-08	2:45	0.1321	1.17	28	0.0127
1-Apr-08	2:46	0.1321	1.17	28	0.0128
1-Apr-08	2:47	0.1321	1.18	28	0.0128
1-Apr-08	2:48	0.1321	1.19	28	0.0129
1-Apr-08	2:49	0.1321	1.19	28	0.013
1-Apr-08	2:50	0.1321	1.2	28	0.013
1-Apr-08	2:51	0.1321	1.21	28	0.0131
1-Apr-08	2:52	0.1321	1.22	28	0.0132
1-Apr-08	2:53	0.1321	1.22	28	0.0132
1-Apr-08	2:54	0.1321	1.23	28	0.0133
1-Apr-08	2:55	0.1321	1.24	28	0.0134
1-Apr-08	2:56	0.1321	1.24	28	0.0134
1-Apr-08	2:57	0.1321	1.25	28	0.0135
1-Apr-08	2:58	0.1321	1.26	28	0.0135
1-Apr-08	2:59	0.1321	1.27	28	0.0136
1-Apr-08	3:00	0.1321	1.27	28	0.0137
1-Apr-08	3:01	0.1321	1.28	28	0.0137
1-Apr-08	3:02	0.1321	1.29	28	0.0138
1-Apr-08	3:03	0.1321	1.29	28	0.0139
1-Apr-08	3:04	0.1321	1.3	28	0.0139
1-Apr-08	3:05	0.1321	1.31	28	0.014
1-Apr-08	3:06	0.1321	1.32	28	0.0141
1-Apr-08	3:07	0.1321	1.32	28	0.0141
1-Apr-08	3:08	0.1321	1.33	28	0.0142
1-Apr-08	3:09	0.1321	1.34	28	0.0142
1-Apr-08	3:10	0.1321	1.34	28	0.0143
1-Apr-08	3:11	0.1321	1.35	28	0.0144
1-Apr-08	3:12	0.1321	1.36	28	0.0144
1-Apr-08	3:13	0.1321	1.36	28	0.0145
1-Apr-08	3:14	0.1321	1.37	28	0.0146
1-Apr-08	3:15	0.1321	1.38	28	0.0146
1-Apr-08	3:16	0.1321	1.39	28	0.0147

1-Apr-08	3:17	0.1321	1.39	28	0.0148
1-Apr-08	3:18	0.1321	1.4	28	0.0148
1-Apr-08	3:19	0.1321	1.41	28	0.0149
1-Apr-08	3:20	0.1321	1.41	28	0.0149
1-Apr-08	3:21	0.1321	1.42	28	0.015
1-Apr-08	3:22	0.1321	1.43	28	0.0151
1-Apr-08	3:23	0.1321	1.43	28	0.0151
1-Apr-08	3:24	0.1321	1.44	28	0.0152
1-Apr-08	3:25	0.1321	1.45	28	0.0153
1-Apr-08	3:26	0.1321	1.46	28	0.0153
1-Apr-08	3:27	0.1321	1.46	28	0.0154
1-Apr-08	3:28	0.1321	1.47	28	0.0154
1-Apr-08	3:29	0.1321	1.48	28	0.0155
1-Apr-08	3:30	0.1321	1.48	28	0.0156
1-Apr-08	3:31	0.1321	1.49	28	0.0156
1-Apr-08	3:32	0.1321	1.5	28	0.0157
1-Apr-08	3:33	0.1321	1.5	28	0.0158
1-Apr-08	3:34	0.1321	1.51	28	0.0158
1-Apr-08	3:35	0.1321	1.52	28	0.0159
1-Apr-08	3:36	0.1321	1.53	28	0.0159
1-Apr-08	3:37	0.1321	1.53	28	0.016
1-Apr-08	3:38	0.1321	1.54	28	0.0161
1-Apr-08	3:39	0.1321	1.55	28	0.0161
1-Apr-08	3:40	0.1321	1.55	28	0.0162
1-Apr-08	3:41	0.1321	1.56	28	0.0163
1-Apr-08	3:42	0.1321	1.57	28	0.0163
1-Apr-08	3:43	0.1321	1.57	28	0.0164
1-Apr-08	3:44	0.1321	1.58	28	0.0164
1-Apr-08	3:45	0.1321	1.59	28	0.0165
1-Apr-08	3:46	0.1321	1.6	28	0.0166
1-Apr-08	3:47	0.1322	1.6	28	0.0166
1-Apr-08	3:48	0.1322	1.61	28	0.0167
1-Apr-08	3:49	0.1322	1.62	28	0.0168
1-Apr-08	3:50	0.1322	1.62	28	0.0168
1-Apr-08	3:51	0.1322	1.63	28	0.0169
1-Apr-08	3:52	0.1322	1.64	28	0.0169
1-Apr-08	3:53	0.1322	1.64	28	0.017
1-Apr-08	3:54	0.1322	1.65	28	0.0171
1-Apr-08	3:55	0.1322	1.66	28	0.0171
1-Apr-08	3:56	0.1322	1.66	28	0.0172
1-Apr-08	3:57	0.1322	1.67	28	0.0173
1-Apr-08	3:58	0.1323	1.68	28	0.0173
1-Apr-08	3:59	0.1323	1.69	28	0.0174
1-Apr-08	4:00	0.1323	1.69	28	0.0174
1-Apr-08	4:01	0.1323	1.7	28	0.0175
1-Apr-08	4:02	0.1323	1.71	28	0.0176
1-Apr-08	4:03	0.1323	1.71	28	0.0176
1-Apr-08	4:04	0.1323	1.72	28	0.0177
1-Apr-08	4:05	0.1323	1.73	28	0.0177
1-Apr-08	4:06	0.1323	1.73	28	0.0178

1-Apr-08	4:07	0.1324	1.74	28	0.0179
1-Apr-08	4:08	0.1324	1.75	28	0.0179
1-Apr-08	4:09	0.1324	1.75	28	0.018
1-Apr-08	4:10	0.1324	1.76	28	0.0181
1-Apr-08	4:11	0.1324	1.77	28	0.0181
1-Apr-08	4:12	0.1324	1.77	28	0.0182
1-Apr-08	4:13	0.1324	1.78	28	0.0182
1-Apr-08	4:14	0.1324	1.79	28	0.0183
1-Apr-08	4:15	0.1324	1.8	28	0.0184
1-Apr-08	4:16	0.1325	1.8	28	0.0184
1-Apr-08	4:17	0.1325	1.81	28	0.0185
1-Apr-08	4:18	0.1325	1.82	28	0.0185
1-Apr-08	4:19	0.1325	1.82	28	0.0186
1-Apr-08	4:20	0.1325	1.83	28	0.0187
1-Apr-08	4:21	0.1325	1.84	28	0.0187
1-Apr-08	4:22	0.1325	1.84	28	0.0188
1-Apr-08	4:23	0.1325	1.85	28	0.0189
1-Apr-08	4:24	0.1325	1.86	28	0.0189
1-Apr-08	4:25	0.1326	1.86	28	0.019
1-Apr-08	4:26	0.1326	1.87	28	0.019
1-Apr-08	4:27	0.1326	1.88	28	0.0191
1-Apr-08	4:28	0.1326	1.88	28	0.0192
1-Apr-08	4:29	0.1326	1.89	28	0.0192
1-Apr-08	4:30	0.1326	1.9	28	0.0193
1-Apr-08	4:31	0.1326	1.9	28	0.0193
1-Apr-08	4:32	0.1326	1.91	28	0.0194
1-Apr-08	4:33	0.1326	1.92	28	0.0195
1-Apr-08	4:34	0.1327	1.92	28	0.0195
1-Apr-08	4:35	0.1327	1.93	28	0.0196
1-Apr-08	4:36	0.1327	1.94	28	0.0196
1-Apr-08	4:37	0.1327	1.95	28	0.0197
1-Apr-08	4:38	0.1327	1.95	28	0.0198
1-Apr-08	4:39	0.1327	1.96	28	0.0198
1-Apr-08	4:40	0.1327	1.97	28	0.0199
1-Apr-08	4:41	0.1327	1.97	28	0.0199
1-Apr-08	4:42	0.1327	1.98	28	0.02
1-Apr-08	4:43	0.1327	1.99	28	0.02
1-Apr-08	4:44	0.1328	1.99	28	0.0201
1-Apr-08	4:45	0.1328	2	28	0.0201
1-Apr-08	4:46	0.1328	2.01	28	0.0201
1-Apr-08	4:47	0.1328	2.01	28	0.0202
1-Apr-08	4:48	0.1328	2.02	28	0.0202
1-Apr-08	4:49	0.1328	2.03	28	0.0202
1-Apr-08	4:50	0.1328	2.03	28	0.0203
1-Apr-08	4:51	0.1328	2.04	28	0.0203
1-Apr-08	4:52	0.1328	2.05	28	0.0203
1-Apr-08	4:53	0.1329	2.05	28	0.0204
1-Apr-08	4:54	0.1329	2.06	28	0.0204
1-Apr-08	4:55	0.1329	2.07	28	0.0204
1-Apr-08	4:56	0.1329	2.07	28	0.0204

1-Apr-08	4:57	0.1329	2.08	28	0.0205
1-Apr-08	4:58	0.1329	2.09	28	0.0205
1-Apr-08	4:59	0.1329	2.09	28	0.0205
1-Apr-08	5:00	0.1329	2.1	28	0.0206
1-Apr-08	5:01	0.1329	2.11	28	0.0206
1-Apr-08	5:02	0.1329	2.11	28	0.0206
1-Apr-08	5:03	0.133	2.12	28	0.0207
1-Apr-08	5:04	0.133	2.13	28	0.0207
1-Apr-08	5:05	0.133	2.13	28	0.0207
1-Apr-08	5:06	0.133	2.14	28	0.0208
1-Apr-08	5:07	0.133	2.15	28	0.0208
1-Apr-08	5:08	0.133	2.15	28	0.0208
1-Apr-08	5:09	0.133	2.16	28	0.0209
1-Apr-08	5:10	0.133	2.17	28	0.0209
1-Apr-08	5:11	0.133	2.17	28	0.0209
1-Apr-08	5:12	0.1331	2.18	28	0.0209
1-Apr-08	5:13	0.1331	2.19	28	0.021
1-Apr-08	5:14	0.1331	2.19	28	0.021
1-Apr-08	5:15	0.1331	2.2	28	0.021
1-Apr-08	5:16	0.1331	2.21	28	0.0211
1-Apr-08	5:17	0.1331	2.21	28	0.0211
1-Apr-08	5:18	0.1331	2.22	28	0.0211
1-Apr-08	5:19	0.1331	2.23	28	0.0212
1-Apr-08	5:20	0.1331	2.24	28	0.0212
1-Apr-08	5:21	0.1331	2.24	28	0.0212
1-Apr-08	5:22	0.1332	2.25	28	0.0213
1-Apr-08	5:23	0.1332	2.26	28	0.0213
1-Apr-08	5:24	0.1332	2.26	28	0.0213
1-Apr-08	5:25	0.1332	2.27	28	0.0214
1-Apr-08	5:26	0.1332	2.28	28	0.0214
1-Apr-08	5:27	0.1332	2.28	28	0.0214
1-Apr-08	5:28	0.1332	2.29	28	0.0215
1-Apr-08	5:29	0.1332	2.3	28	0.0215
1-Apr-08	5:30	0.1332	2.3	28	0.0215
1-Apr-08	5:31	0.1332	2.31	28	0.0215
1-Apr-08	5:32	0.1333	2.32	28	0.0216
1-Apr-08	5:33	0.1333	2.32	28	0.0216
1-Apr-08	5:34	0.1333	2.33	28	0.0216
1-Apr-08	5:35	0.1333	2.34	28	0.0217
1-Apr-08	5:36	0.1333	2.34	28	0.0217
1-Apr-08	5:37	0.1333	2.35	28	0.0217
1-Apr-08	5:38	0.1333	2.36	28	0.0218
1-Apr-08	5:39	0.1333	2.36	28	0.0218
1-Apr-08	5:40	0.1333	2.37	28	0.0218
1-Apr-08	5:41	0.1334	2.38	28	0.0219
1-Apr-08	5:42	0.1334	2.38	28	0.0219
1-Apr-08	5:43	0.1334	2.39	28	0.0219
1-Apr-08	5:44	0.1334	2.4	28	0.022
1-Apr-08	5:45	0.1334	2.4	28	0.022
1-Apr-08	5:46	0.1334	2.41	28	0.022

1-Apr-08	5:47	0.1334	2.42	28	0.022
1-Apr-08	5:48	0.1334	2.42	28	0.0221
1-Apr-08	5:49	0.1334	2.43	28	0.0221
1-Apr-08	5:50	0.1334	2.44	28	0.0221
1-Apr-08	5:51	0.1335	2.44	28	0.0222
1-Apr-08	5:52	0.1335	2.45	28	0.0222
1-Apr-08	5:53	0.1335	2.46	28	0.0222
1-Apr-08	5:54	0.1335	2.46	28	0.0223
1-Apr-08	5:55	0.1335	2.47	28	0.0223
1-Apr-08	5:56	0.1342	2.48	28	0.0223
1-Apr-08	5:57	0.1363	2.48	28	0.0224
1-Apr-08	5:58	0.1403	2.49	28	0.0224
1-Apr-08	5:59	0.147	2.5	28	0.0224
1-Apr-08	6:00	0.157	2.5	28	0.0225
1-Apr-08	6:01	0.1695	2.51	28	0.0225
1-Apr-08	6:02	0.1836	2.52	28	0.0225
1-Apr-08	6:03	0.1982	2.53	28	0.0226
1-Apr-08	6:04	0.2125	2.54	28	0.0226
1-Apr-08	6:05	0.2257	2.56	28	0.0227
1-Apr-08	6:06	0.2375	2.57	28	0.0228
1-Apr-08	6:07	0.2477	2.58	28	0.0228
1-Apr-08	6:08	0.2558	2.59	28	0.0229
1-Apr-08	6:09	0.2623	2.61	28	0.0229
1-Apr-08	6:10	0.2675	2.62	28	0.023
1-Apr-08	6:11	0.2718	2.64	28	0.0231
1-Apr-08	6:12	0.2754	2.65	28	0.0232
1-Apr-08	6:13	0.2783	2.67	28	0.0232
1-Apr-08	6:14	0.2808	2.68	28	0.0233
1-Apr-08	6:15	0.2827	2.7	28	0.0234
1-Apr-08	6:16	0.2844	2.71	28	0.0234
1-Apr-08	6:17	0.2857	2.73	28	0.0235
1-Apr-08	6:18	0.2868	2.75	28	0.0236
1-Apr-08	6:19	0.2877	2.76	28	0.0237
1-Apr-08	6:20	0.2885	2.78	28	0.0237
1-Apr-08	6:21	0.2891	2.79	28	0.0238
1-Apr-08	6:22	0.2896	2.81	28	0.0239
1-Apr-08	6:23	0.29	2.83	28	0.024
1-Apr-08	6:24	0.2904	2.84	28	0.024
1-Apr-08	6:25	0.2907	2.86	28	0.0241
1-Apr-08	6:26	0.291	2.87	28	0.0242
1-Apr-08	6:27	0.2912	2.89	28	0.0243
1-Apr-08	6:28	0.2914	2.91	28	0.0243
1-Apr-08	6:29	0.2915	2.92	28	0.0244
1-Apr-08	6:30	0.2917	2.94	28	0.0245
1-Apr-08	6:31	0.2918	2.95	28	0.0246
1-Apr-08	6:32	0.2919	2.97	28	0.0246
1-Apr-08	6:33	0.292	2.99	28	0.0247
1-Apr-08	6:34	0.2921	3	28	0.0248
1-Apr-08	6:35	0.2921	3.02	28	0.0249
1-Apr-08	6:36	0.2922	3.03	28	0.0249

1-Apr-08	6:37	0.2922	3.05	28	0.025
1-Apr-08	6:38	0.2923	3.07	28	0.0251
1-Apr-08	6:39	0.2923	3.08	28	0.0251
1-Apr-08	6:40	0.2924	3.1	28	0.0252
1-Apr-08	6:41	0.2924	3.11	28	0.0252
1-Apr-08	6:42	0.2925	3.13	28	0.0253
1-Apr-08	6:43	0.2925	3.15	28	0.0254
1-Apr-08	6:44	0.2926	3.16	28	0.0254
1-Apr-08	6:45	0.2926	3.18	28	0.0255
1-Apr-08	6:46	0.2926	3.19	28	0.0255
1-Apr-08	6:47	0.2927	3.21	28	0.0256
1-Apr-08	6:48	0.2927	3.23	28	0.0257
1-Apr-08	6:49	0.2928	3.24	28	0.0257
1-Apr-08	6:50	0.2928	3.26	28	0.0258
1-Apr-08	6:51	0.2929	3.27	28	0.0258
1-Apr-08	6:52	0.2929	3.29	28	0.0259
1-Apr-08	6:53	0.2929	3.31	28	0.0259
1-Apr-08	6:54	0.293	3.32	28	0.026
1-Apr-08	6:55	0.293	3.34	28	0.0261
1-Apr-08	6:56	0.2931	3.35	28	0.0261
1-Apr-08	6:57	0.2931	3.37	28	0.0262
1-Apr-08	6:58	0.2932	3.39	28	0.0262
1-Apr-08	6:59	0.2932	3.4	28	0.0263
1-Apr-08	7:00	0.2933	3.42	28	0.0264
1-Apr-08	7:01	0.2933	3.43	28	0.0264
1-Apr-08	7:02	0.2933	3.45	28	0.0265
1-Apr-08	7:03	0.2934	3.47	28	0.0265
1-Apr-08	7:04	0.2934	3.48	28	0.0266
1-Apr-08	7:05	0.2935	3.5	28	0.0267
1-Apr-08	7:06	0.2935	3.51	28	0.0267
1-Apr-08	7:07	0.2936	3.53	28	0.0268
1-Apr-08	7:08	0.2936	3.55	28	0.0268
1-Apr-08	7:09	0.2936	3.56	28	0.0269
1-Apr-08	7:10	0.2937	3.58	28	0.027
1-Apr-08	7:11	0.2937	3.59	28	0.027
1-Apr-08	7:12	0.2938	3.61	28	0.0271
1-Apr-08	7:13	0.2938	3.63	28	0.0271
1-Apr-08	7:14	0.2939	3.64	28	0.0272
1-Apr-08	7:15	0.2939	3.66	28	0.0272
1-Apr-08	7:16	0.2939	3.67	28	0.0273
1-Apr-08	7:17	0.294	3.69	28	0.0274
1-Apr-08	7:18	0.294	3.71	28	0.0274
1-Apr-08	7:19	0.2941	3.72	28	0.0275
1-Apr-08	7:20	0.2941	3.74	28	0.0275
1-Apr-08	7:21	0.2942	3.75	28	0.0276
1-Apr-08	7:22	0.2942	3.77	28	0.0277
1-Apr-08	7:23	0.2942	3.79	28	0.0277
1-Apr-08	7:24	0.2943	3.8	28	0.0278
1-Apr-08	7:25	0.2943	3.82	28	0.0278
1-Apr-08	7:26	0.2944	3.83	28	0.0279

1-Apr-08	7:27	0.2944	3.85	28	0.028
1-Apr-08	7:28	0.2944	3.87	28	0.028
1-Apr-08	7:29	0.2945	3.88	28	0.0281
1-Apr-08	7:30	0.2945	3.9	28	0.0281
1-Apr-08	7:31	0.2946	3.91	28	0.0282
1-Apr-08	7:32	0.2946	3.93	28	0.0282
1-Apr-08	7:33	0.2946	3.95	28	0.0283
1-Apr-08	7:34	0.2947	3.96	28	0.0284
1-Apr-08	7:35	0.2947	3.98	28	0.0284
1-Apr-08	7:36	0.2948	3.99	28	0.0285
1-Apr-08	7:37	0.2948	4.01	28	0.0285
1-Apr-08	7:38	0.2949	4.03	28	0.0286
1-Apr-08	7:39	0.2949	4.04	28	0.0287
1-Apr-08	7:40	0.2949	4.06	28	0.0287
1-Apr-08	7:41	0.295	4.07	28	0.0288
1-Apr-08	7:42	0.295	4.09	28	0.0288
1-Apr-08	7:43	0.2951	4.11	28	0.0289
1-Apr-08	7:44	0.2951	4.12	28	0.029
1-Apr-08	7:45	0.2951	4.14	28	0.029
1-Apr-08	7:46	0.2952	4.15	28	0.0291
1-Apr-08	7:47	0.2952	4.17	28	0.0291
1-Apr-08	7:48	0.2953	4.19	28	0.0292
1-Apr-08	7:49	0.2953	4.2	28	0.0292
1-Apr-08	7:50	0.2953	4.22	28	0.0293
1-Apr-08	7:51	0.2954	4.23	28	0.0294
1-Apr-08	7:52	0.2954	4.25	28	0.0294
1-Apr-08	7:53	0.2955	4.27	28	0.0295
1-Apr-08	7:54	0.2955	4.28	28	0.0295
1-Apr-08	7:55	0.2955	4.3	28	0.0296
1-Apr-08	7:56	0.2956	4.31	28	0.0297
1-Apr-08	7:57	0.2956	4.33	28	0.0297
1-Apr-08	7:58	0.2957	4.35	28	0.0298
1-Apr-08	7:59	0.2957	4.36	28	0.0298
1-Apr-08	8:00	0.2957	4.38	28	0.0299
1-Apr-08	8:01	0.2958	4.39	28	0.0299
1-Apr-08	8:02	0.2958	4.41	28	0.03
1-Apr-08	8:03	0.2959	4.43	28	0.0301
1-Apr-08	8:04	0.2959	4.44	28	0.0301
1-Apr-08	8:05	0.2959	4.46	28	0.0302
1-Apr-08	8:06	0.296	4.47	28	0.0302
1-Apr-08	8:07	0.296	4.49	28	0.0303
1-Apr-08	8:08	0.2961	4.51	28	0.0303
1-Apr-08	8:09	0.2961	4.52	28	0.0304
1-Apr-08	8:10	0.2961	4.54	28	0.0305
1-Apr-08	8:11	0.2962	4.55	28	0.0305
1-Apr-08	8:12	0.2962	4.57	28	0.0306
1-Apr-08	8:13	0.2962	4.59	28	0.0306
1-Apr-08	8:14	0.2963	4.6	28	0.0307
1-Apr-08	8:15	0.2963	4.62	28	0.0308
1-Apr-08	8:16	0.2964	4.63	28	0.0308

1-Apr-08	8:17	0.2964	4.65	28	0.0309
1-Apr-08	8:18	0.2964	4.66	28	0.0309
1-Apr-08	8:19	0.2965	4.68	28	0.031
1-Apr-08	8:20	0.2965	4.7	28	0.031
1-Apr-08	8:21	0.2966	4.71	28	0.0311
1-Apr-08	8:22	0.2966	4.73	28	0.0312
1-Apr-08	8:23	0.2966	4.74	28	0.0312
1-Apr-08	8:24	0.2967	4.76	28	0.0313
1-Apr-08	8:25	0.2967	4.78	28	0.0313
1-Apr-08	8:26	0.2967	4.79	28	0.0314
1-Apr-08	8:27	0.2968	4.81	28	0.0314
1-Apr-08	8:28	0.2968	4.82	28	0.0315
1-Apr-08	8:29	0.2969	4.84	28	0.0316
1-Apr-08	8:30	0.2969	4.86	28	0.0316
1-Apr-08	8:31	0.2969	4.87	28	0.0317
1-Apr-08	8:32	0.297	4.89	28	0.0317
1-Apr-08	8:33	0.297	4.9	28	0.0318
1-Apr-08	8:34	0.297	4.92	28	0.0318
1-Apr-08	8:35	0.2971	4.94	28	0.0319
1-Apr-08	8:36	0.2971	4.95	28	0.032
1-Apr-08	8:37	0.2972	4.97	28	0.032
1-Apr-08	8:38	0.2972	4.98	28	0.0321
1-Apr-08	8:39	0.2972	5	28	0.0321
1-Apr-08	8:40	0.2973	5.01	28	0.0322
1-Apr-08	8:41	0.2973	5.03	28	0.0323
1-Apr-08	8:42	0.2973	5.05	28	0.0323
1-Apr-08	8:43	0.2974	5.06	28	0.0324
1-Apr-08	8:44	0.2974	5.08	28	0.0324
1-Apr-08	8:45	0.2975	5.09	28	0.0325
1-Apr-08	8:46	0.2975	5.11	28	0.0325
1-Apr-08	8:47	0.2975	5.13	28	0.0326
1-Apr-08	8:48	0.2976	5.14	28	0.0327
1-Apr-08	8:49	0.2976	5.16	28	0.0327
1-Apr-08	8:50	0.2976	5.17	28	0.0328
1-Apr-08	8:51	0.2977	5.19	28	0.0328
1-Apr-08	8:52	0.2977	5.21	28	0.0329
1-Apr-08	8:53	0.2977	5.22	28	0.0329
1-Apr-08	8:54	0.2978	5.24	28	0.033
1-Apr-08	8:55	0.2978	5.25	28	0.033
1-Apr-08	8:56	0.2982	5.27	28	0.0331
1-Apr-08	8:57	0.2994	5.29	28	0.0331
1-Apr-08	8:58	0.3017	5.3	28	0.0332
1-Apr-08	8:59	0.3055	5.32	28	0.0332
1-Apr-08	9:00	0.3112	5.33	28	0.0333
1-Apr-08	9:01	0.3183	5.35	28	0.0333
1-Apr-08	9:02	0.3263	5.37	28	0.0334
1-Apr-08	9:03	0.3346	5.39	28	0.0334
1-Apr-08	9:04	0.3427	5.4	28	0.0335
1-Apr-08	9:05	0.3501	5.42	28	0.0335
1-Apr-08	9:06	0.3568	5.44	28	0.0336

1-Apr-08	9:07	0.3626	5.46	28	0.0336
1-Apr-08	9:08	0.3672	5.48	28	0.0337
1-Apr-08	9:09	0.3709	5.5	28	0.0337
1-Apr-08	9:10	0.3739	5.52	28	0.0338
1-Apr-08	9:11	0.3763	5.54	28	0.0338
1-Apr-08	9:12	0.3784	5.56	28	0.0339
1-Apr-08	9:13	0.3801	5.58	28	0.0339
1-Apr-08	9:14	0.3815	5.6	28	0.034
1-Apr-08	9:15	0.3826	5.63	28	0.034
1-Apr-08	9:16	0.3836	5.65	28	0.0341
1-Apr-08	9:17	0.3844	5.67	28	0.0342
1-Apr-08	9:18	0.385	5.69	28	0.0342
1-Apr-08	9:19	0.3856	5.71	28	0.0343
1-Apr-08	9:20	0.386	5.73	28	0.0343
1-Apr-08	9:21	0.3864	5.75	28	0.0344
1-Apr-08	9:22	0.3867	5.77	28	0.0344
1-Apr-08	9:23	0.387	5.79	28	0.0345
1-Apr-08	9:24	0.3873	5.82	28	0.0346
1-Apr-08	9:25	0.3875	5.84	28	0.0346
1-Apr-08	9:26	0.3876	5.86	28	0.0347
1-Apr-08	9:27	0.3878	5.88	28	0.0347
1-Apr-08	9:28	0.3879	5.9	28	0.0348
1-Apr-08	9:29	0.3881	5.92	28	0.0348
1-Apr-08	9:30	0.3882	5.94	28	0.0349
1-Apr-08	9:31	0.3883	5.96	28	0.035
1-Apr-08	9:32	0.3884	5.98	28	0.035
1-Apr-08	9:33	0.3885	6.01	28	0.0351
1-Apr-08	9:34	0.3885	6.03	28	0.0351
1-Apr-08	9:35	0.3886	6.05	28	0.0352
1-Apr-08	9:36	0.3886	6.07	28	0.0352
1-Apr-08	9:37	0.3887	6.09	28	0.0353
1-Apr-08	9:38	0.3888	6.11	28	0.0354
1-Apr-08	9:39	0.3888	6.13	28	0.0354
1-Apr-08	9:40	0.3889	6.15	28	0.0355
1-Apr-08	9:41	0.3889	6.18	28	0.0355
1-Apr-08	9:42	0.389	6.2	28	0.0356
1-Apr-08	9:43	0.389	6.22	28	0.0356
1-Apr-08	9:44	0.3891	6.24	28	0.0357
1-Apr-08	9:45	0.3892	6.26	28	0.0358
1-Apr-08	9:46	0.3892	6.28	28	0.0358
1-Apr-08	9:47	0.3893	6.3	28	0.0359
1-Apr-08	9:48	0.3893	6.32	28	0.0359
1-Apr-08	9:49	0.3894	6.35	28	0.036
1-Apr-08	9:50	0.3894	6.37	28	0.0361
1-Apr-08	9:51	0.3895	6.39	28	0.0361
1-Apr-08	9:52	0.3895	6.41	28	0.0362
1-Apr-08	9:53	0.3896	6.43	28	0.0363
1-Apr-08	9:54	0.3896	6.45	28	0.0364
1-Apr-08	9:55	0.3897	6.47	28	0.0364
1-Apr-08	9:56	0.3905	6.49	28	0.0365

1-Apr-08	9:57	0.3929	6.52	28	0.0366
1-Apr-08	9:58	0.3975	6.54	28	0.0367
1-Apr-08	9:59	0.4052	6.56	28	0.0367
1-Apr-08	10:00	0.4166	6.58	28	0.0368
1-Apr-08	10:01	0.431	6.6	28	0.0369
1-Apr-08	10:02	0.4471	6.63	28	0.037
1-Apr-08	10:03	0.4637	6.65	28	0.0371
1-Apr-08	10:04	0.48	6.68	28	0.0372
1-Apr-08	10:05	0.4951	6.71	28	0.0373
1-Apr-08	10:06	0.5086	6.73	28	0.0374
1-Apr-08	10:07	0.5203	6.76	28	0.0375
1-Apr-08	10:08	0.5295	6.79	28	0.0376
1-Apr-08	10:09	0.5369	6.82	28	0.0377
1-Apr-08	10:10	0.543	6.85	28	0.0378
1-Apr-08	10:11	0.5479	6.88	28	0.0379
1-Apr-08	10:12	0.552	6.91	28	0.038
1-Apr-08	10:13	0.5555	6.94	28	0.0381
1-Apr-08	10:14	0.5583	6.98	28	0.0382
1-Apr-08	10:15	0.5606	7.01	28	0.0383
1-Apr-08	10:16	0.5625	7.04	28	0.0384
1-Apr-08	10:17	0.5641	7.07	28	0.0385
1-Apr-08	10:18	0.5654	7.1	28	0.0386
1-Apr-08	10:19	0.5665	7.13	28	0.0388
1-Apr-08	10:20	0.5674	7.16	28	0.0389
1-Apr-08	10:21	0.5681	7.2	28	0.039
1-Apr-08	10:22	0.5688	7.23	28	0.0391
1-Apr-08	10:23	0.5693	7.26	28	0.0392
1-Apr-08	10:24	0.5698	7.29	28	0.0393
1-Apr-08	10:25	0.5702	7.32	28	0.0394
1-Apr-08	10:26	0.5706	7.36	28	0.0395
1-Apr-08	10:27	0.5709	7.39	28	0.0397
1-Apr-08	10:28	0.5711	7.42	28	0.0398
1-Apr-08	10:29	0.5714	7.45	28	0.0399
1-Apr-08	10:30	0.5716	7.48	28	0.04
1-Apr-08	10:31	0.5718	7.51	28	0.0401
1-Apr-08	10:32	0.572	7.55	28	0.0401
1-Apr-08	10:33	0.5722	7.58	28	0.0402
1-Apr-08	10:34	0.5723	7.61	28	0.0402
1-Apr-08	10:35	0.5724	7.64	28	0.0403
1-Apr-08	10:36	0.5725	7.67	28	0.0403
1-Apr-08	10:37	0.5726	7.71	28	0.0404
1-Apr-08	10:38	0.5727	7.74	28	0.0404
1-Apr-08	10:39	0.5728	7.77	28	0.0405
1-Apr-08	10:40	0.5729	7.8	28	0.0406
1-Apr-08	10:41	0.573	7.83	28	0.0406
1-Apr-08	10:42	0.5731	7.87	28	0.0407
1-Apr-08	10:43	0.5732	7.9	28	0.0407
1-Apr-08	10:44	0.5733	7.93	28	0.0408
1-Apr-08	10:45	0.5734	7.96	28	0.0408
1-Apr-08	10:46	0.5735	7.99	28	0.0409

1-Apr-08	10:47	0.5736	8.03	28	0.0409
1-Apr-08	10:48	0.5738	8.06	28	0.041
1-Apr-08	10:49	0.5739	8.09	28	0.0411
1-Apr-08	10:50	0.574	8.12	28	0.0411
1-Apr-08	10:51	0.5741	8.15	28	0.0412
1-Apr-08	10:52	0.5742	8.19	28	0.0412
1-Apr-08	10:53	0.5743	8.22	28	0.0413
1-Apr-08	10:54	0.5744	8.25	28	0.0413
1-Apr-08	10:55	0.5745	8.28	28	0.0414
1-Apr-08	10:56	0.576	8.31	28	0.0414
1-Apr-08	10:57	0.5804	8.35	28	0.0415
1-Apr-08	10:58	0.5888	8.38	28	0.0416
1-Apr-08	10:59	0.6029	8.41	28	0.0416
1-Apr-08	11:00	0.624	8.45	28	0.0417
1-Apr-08	11:01	0.6504	8.48	28	0.0417
1-Apr-08	11:02	0.68	8.52	28	0.0418
1-Apr-08	11:03	0.7105	8.56	28	0.0419
1-Apr-08	11:04	0.7405	8.6	28	0.0419
1-Apr-08	11:05	0.7682	8.64	28	0.0425
1-Apr-08	11:06	0.7932	8.69	28	0.0446
1-Apr-08	11:07	0.8146	8.73	28	0.0467
1-Apr-08	11:08	0.8317	8.78	28	0.0488
1-Apr-08	11:09	0.8453	8.83	28	0.051
1-Apr-08	11:10	0.8564	8.87	28	0.0533
1-Apr-08	11:11	0.8655	8.92	28	0.0555
1-Apr-08	11:12	0.8731	8.97	28	0.0578
1-Apr-08	11:13	0.8794	9.02	28	0.0601
1-Apr-08	11:14	0.8846	9.07	28	0.0623
1-Apr-08	11:15	0.8889	9.12	28	0.0646
1-Apr-08	11:16	0.8924	9.17	28	0.0669
1-Apr-08	11:17	0.8954	9.22	28	0.0692
1-Apr-08	11:18	0.8978	9.27	28	0.0715
1-Apr-08	11:19	0.8998	9.32	28	0.0738
1-Apr-08	11:20	0.9015	9.37	28	0.0761
1-Apr-08	11:21	0.9029	9.42	28	0.0784
1-Apr-08	11:22	0.9042	9.46	28	0.0807
1-Apr-08	11:23	0.9052	9.51	28	0.083
1-Apr-08	11:24	0.9061	9.56	28	0.0853
1-Apr-08	11:25	0.9068	9.61	28	0.0876
1-Apr-08	11:26	0.9103	9.66	28	0.0899
1-Apr-08	11:27	0.9196	9.71	28	0.0922
1-Apr-08	11:28	0.937	9.76	28	0.0945
1-Apr-08	11:29	0.9657	9.81	28	0.0976
1-Apr-08	11:30	1.0083	9.87	28	0.1019
1-Apr-08	11:31	1.0618	9.92	28	0.1065
1-Apr-08	11:32	1.1215	9.98	28	0.1113
1-Apr-08	11:33	1.1832	10.04	28	0.1164
1-Apr-08	11:34	1.2439	10.11	28	0.1217
1-Apr-08	11:35	1.2998	10.18	28	0.1274
1-Apr-08	11:36	1.3519	10.25	28	0.1332

1-Apr-08	11:37	1.4007	10.32	28	0.1393
1-Apr-08	11:38	1.4458	10.4	28	0.1456
1-Apr-08	11:39	1.491	10.48	28	0.152
1-Apr-08	11:40	1.54	10.56	28	0.1587
1-Apr-08	11:41	1.5918	10.65	28	0.1655
1-Apr-08	11:42	1.6446	10.73	28	0.1726
1-Apr-08	11:43	1.696	10.82	28	0.1799
1-Apr-08	11:44	1.7445	10.91	28	0.1875
1-Apr-08	11:45	1.7882	11.01	28	0.196
1-Apr-08	11:46	1.8339	11.11	28	0.206
1-Apr-08	11:47	1.8885	11.2	28	0.2162
1-Apr-08	11:48	1.9565	11.31	28	0.2267
1-Apr-08	11:49	2.0473	11.41	28	0.2376
1-Apr-08	11:50	2.1687	11.52	28	0.2492
1-Apr-08	11:51	2.3138	11.64	28	0.2615
1-Apr-08	11:52	2.4724	11.77	28	0.2746
1-Apr-08	11:53	2.6338	11.91	28	0.2887
1-Apr-08	11:54	2.7912	12.05	28	0.3036
1-Apr-08	11:55	2.9357	12.21	28	0.3201
1-Apr-08	11:56	3.0789	12.37	28	0.3396
1-Apr-08	11:57	3.2319	12.53	28	0.3599
1-Apr-08	11:58	3.4014	12.71	28	0.3813
1-Apr-08	11:59	3.6074	12.9	28	0.4038
1-Apr-08	12:00	3.8674	13.1	28	0.4279
1-Apr-08	12:01	4.1691	13.31	28	0.4539
1-Apr-08	12:02	4.4939	13.54	28	0.4843
1-Apr-08	12:03	4.8212	13.79	28	0.5179
1-Apr-08	12:04	5.1386	14.06	28	0.5538
1-Apr-08	12:05	5.4291	14.34	28	0.5919
1-Apr-08	12:06	5.6703	14.64	28	0.6324
1-Apr-08	12:07	5.8365	14.94	28	0.6771
1-Apr-08	12:08	5.9048	15.25	28	0.7224
1-Apr-08	12:09	5.8621	15.56	28.01	0.7674
1-Apr-08	12:10	5.7017	15.86	28.01	0.8115
1-Apr-08	12:11	5.4483	16.15	28.01	0.8564
1-Apr-08	12:12	5.1372	16.41	28.01	0.8983
1-Apr-08	12:13	4.7997	16.66	28.01	0.9366
1-Apr-08	12:14	4.4563	16.88	28.01	0.9715
1-Apr-08	12:15	4.1344	17.07	28.01	1.0028
1-Apr-08	12:16	3.8386	17.25	28.01	1.0323
1-Apr-08	12:17	3.5766	17.41	28.01	1.0588
1-Apr-08	12:18	3.3583	17.56	28.01	1.0827
1-Apr-08	12:19	3.1697	17.69	28.01	1.1043
1-Apr-08	12:20	2.9951	17.8	28.01	1.124
1-Apr-08	12:21	2.8326	17.91	28.01	1.1417
1-Apr-08	12:22	2.6803	18.01	28.01	1.1577
1-Apr-08	12:23	2.5416	18.09	28.01	1.1721
1-Apr-08	12:24	2.4172	18.17	28.01	1.1851
1-Apr-08	12:25	2.3087	18.24	28.01	1.1968
1-Apr-08	12:26	2.2129	18.31	28.01	1.2074

1-Apr-08	12:27	2.1267	18.36	28.01	1.2169
1-Apr-08	12:28	2.0495	18.42	28.01	1.2261
1-Apr-08	12:29	1.9755	18.46	28.01	1.2343
1-Apr-08	12:30	1.8991	18.5	28.01	1.2417
1-Apr-08	12:31	1.8212	18.54	28.01	1.2482
1-Apr-08	12:32	1.7435	18.57	28.01	1.2538
1-Apr-08	12:33	1.6692	18.6	28.01	1.2585
1-Apr-08	12:34	1.5998	18.62	28.01	1.2625
1-Apr-08	12:35	1.5376	18.64	28.01	1.2657
1-Apr-08	12:36	1.4829	18.66	28.01	1.2683
1-Apr-08	12:37	1.4364	18.67	28.01	1.2703
1-Apr-08	12:38	1.3992	18.68	28.01	1.2718
1-Apr-08	12:39	1.3693	18.68	28.01	1.273
1-Apr-08	12:40	1.345	18.69	28.01	1.2739
1-Apr-08	12:41	1.3252	18.69	28.01	1.2745
1-Apr-08	12:42	1.3089	18.69	28.01	1.275
1-Apr-08	12:43	1.2958	18.7	28.01	1.2753
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1-Apr-08	12:45	1.2773	18.7	28.01	1.2755
1-Apr-08	12:46	1.2709	18.7	28.01	1.2755
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1-Apr-08	12:48	1.2615	18.7	28.01	1.2753
1-Apr-08	12:49	1.258	18.69	28.01	1.2751
1-Apr-08	12:50	1.2553	18.69	28.01	1.2749
1-Apr-08	12:51	1.253	18.69	28.01	1.2747
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1-Apr-08	12:56	1.2452	18.68	28.01	1.2734
1-Apr-08	12:57	1.238	18.68	28.01	1.2731
1-Apr-08	12:58	1.2245	18.68	28.01	1.2726
1-Apr-08	12:59	1.2023	18.68	28.01	1.272
1-Apr-08	13:00	1.1693	18.67	28.01	1.2711
1-Apr-08	13:01	1.1279	18.66	28.01	1.2698
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1-Apr-08	13:03	1.034	18.64	28.01	1.2659
1-Apr-08	13:04	0.9872	18.63	28.01	1.2632
1-Apr-08	13:05	0.9441	18.61	28.01	1.2601
1-Apr-08	13:06	0.9054	18.59	28.01	1.2566
1-Apr-08	13:07	0.8722	18.57	28.01	1.2527
1-Apr-08	13:08	0.8458	18.54	28.01	1.2486
1-Apr-08	13:09	0.8249	18.52	28.01	1.2442
1-Apr-08	13:10	0.8079	18.49	28.01	1.2397
1-Apr-08	13:11	0.794	18.47	28.01	1.2351
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1-Apr-08	13:13	0.7729	18.41	28.01	1.2257
1-Apr-08	13:14	0.7652	18.39	28.01	1.2209
1-Apr-08	13:15	0.7589	18.36	28.01	1.2161
1-Apr-08	13:16	0.7538	18.33	28.01	1.2115

1-Apr-08	13:17	0.7496	18.3	28.01	1.207
1-Apr-08	13:18	0.7462	18.28	28.01	1.2024
1-Apr-08	13:19	0.7435	18.25	28.01	1.1979
1-Apr-08	13:20	0.7412	18.22	28.01	1.1934
1-Apr-08	13:21	0.7394	18.19	28.01	1.1889
1-Apr-08	13:22	0.7379	18.17	28.01	1.1844
1-Apr-08	13:23	0.7367	18.14	28.01	1.18
1-Apr-08	13:24	0.7357	18.11	28.01	1.1756
1-Apr-08	13:25	0.7349	18.09	28.01	1.1712
1-Apr-08	13:26	0.7342	18.06	28.01	1.1669
1-Apr-08	13:27	0.7337	18.04	28.01	1.1626
1-Apr-08	13:28	0.7333	18.01	28.01	1.1583
1-Apr-08	13:29	0.7329	17.99	28.01	1.1541
1-Apr-08	13:30	0.7326	17.96	28.01	1.1499
1-Apr-08	13:31	0.7324	17.94	28.01	1.1458
1-Apr-08	13:32	0.7323	17.91	28.01	1.1417
1-Apr-08	13:33	0.7322	17.89	28.01	1.1376
1-Apr-08	13:34	0.7322	17.86	28.01	1.1336
1-Apr-08	13:35	0.7322	17.84	28.01	1.1296
1-Apr-08	13:36	0.7322	17.81	28.01	1.1257
1-Apr-08	13:37	0.7323	17.79	28.01	1.1218
1-Apr-08	13:38	0.7323	17.77	28.01	1.1179
1-Apr-08	13:39	0.7324	17.74	28.01	1.1141
1-Apr-08	13:40	0.7324	17.72	28.01	1.1103
1-Apr-08	13:41	0.7325	17.7	28.01	1.1066
1-Apr-08	13:42	0.7325	17.68	28.01	1.1028
1-Apr-08	13:43	0.7326	17.65	28.01	1.0992
1-Apr-08	13:44	0.7327	17.63	28.01	1.0955
1-Apr-08	13:45	0.7327	17.61	28.01	1.0919
1-Apr-08	13:46	0.7328	17.59	28.01	1.0884
1-Apr-08	13:47	0.7328	17.57	28.01	1.0848
1-Apr-08	13:48	0.7329	17.55	28.01	1.0814
1-Apr-08	13:49	0.7329	17.53	28.01	1.0779
1-Apr-08	13:50	0.733	17.51	28.01	1.0745
1-Apr-08	13:51	0.733	17.49	28.01	1.0711
1-Apr-08	13:52	0.7331	17.47	28.01	1.0677
1-Apr-08	13:53	0.7331	17.45	28.01	1.0644
1-Apr-08	13:54	0.7332	17.43	28.01	1.0611
1-Apr-08	13:55	0.7332	17.41	28.01	1.0579
1-Apr-08	13:56	0.7323	17.39	28.01	1.0547
1-Apr-08	13:57	0.7296	17.37	28.01	1.0514
1-Apr-08	13:58	0.7241	17.35	28.01	1.0482
1-Apr-08	13:59	0.715	17.33	28.01	1.045
1-Apr-08	14:00	0.7013	17.31	28.01	1.0416
1-Apr-08	14:01	0.6841	17.29	28.01	1.0382
1-Apr-08	14:02	0.6648	17.27	28.01	1.0346
1-Apr-08	14:03	0.645	17.24	28.01	1.0308
1-Apr-08	14:04	0.6254	17.22	28.01	1.0269
1-Apr-08	14:05	0.6073	17.2	28.01	1.0228
1-Apr-08	14:06	0.5911	17.17	28.01	1.0186

1-Apr-08	14:07	0.5772	17.14	28.01	1.0143
1-Apr-08	14:08	0.5662	17.12	28.01	1.0099
1-Apr-08	14:09	0.5574	17.09	28.01	1.0054
1-Apr-08	14:10	0.5503	17.06	28.01	1.0012
1-Apr-08	14:11	0.5445	17.04	28.01	0.9969
1-Apr-08	14:12	0.5397	17.01	28.01	0.9926
1-Apr-08	14:13	0.5357	16.98	28.01	0.9883
1-Apr-08	14:14	0.5325	16.96	28.01	0.984
1-Apr-08	14:15	0.5298	16.93	28.01	0.9798
1-Apr-08	14:16	0.5277	16.9	28.01	0.9755
1-Apr-08	14:17	0.5259	16.87	28.01	0.9713
1-Apr-08	14:18	0.5245	16.85	28.01	0.9671
1-Apr-08	14:19	0.5234	16.82	28.01	0.9629
1-Apr-08	14:20	0.5224	16.8	28.01	0.9587
1-Apr-08	14:21	0.5216	16.77	28.01	0.9546
1-Apr-08	14:22	0.521	16.74	28.01	0.9505
1-Apr-08	14:23	0.5205	16.72	28.01	0.9465
1-Apr-08	14:24	0.5201	16.69	28.01	0.9425
1-Apr-08	14:25	0.5198	16.67	28.01	0.9385
1-Apr-08	14:26	0.5195	16.64	28.01	0.9345
1-Apr-08	14:27	0.5193	16.62	28.01	0.9306
1-Apr-08	14:28	0.5191	16.59	28.01	0.9267
1-Apr-08	14:29	0.519	16.57	28.01	0.9229
1-Apr-08	14:30	0.5188	16.54	28.01	0.9191
1-Apr-08	14:31	0.5188	16.52	28.01	0.9153
1-Apr-08	14:32	0.5187	16.5	28.01	0.9116
1-Apr-08	14:33	0.5187	16.47	28.01	0.9079
1-Apr-08	14:34	0.5186	16.45	28.01	0.9042
1-Apr-08	14:35	0.5187	16.43	28.01	0.9006
1-Apr-08	14:36	0.5187	16.4	28.01	0.897
1-Apr-08	14:37	0.5187	16.38	28.01	0.8934
1-Apr-08	14:38	0.5187	16.36	28.01	0.8899
1-Apr-08	14:39	0.5187	16.34	28.01	0.8864
1-Apr-08	14:40	0.5188	16.31	28.01	0.8829
1-Apr-08	14:41	0.5188	16.29	28.01	0.8795
1-Apr-08	14:42	0.5188	16.27	28.01	0.8761
1-Apr-08	14:43	0.5188	16.25	28.01	0.8727
1-Apr-08	14:44	0.5189	16.23	28.01	0.8694
1-Apr-08	14:45	0.5189	16.21	28.01	0.8661
1-Apr-08	14:46	0.5189	16.19	28.01	0.8628
1-Apr-08	14:47	0.5189	16.17	28.01	0.8595
1-Apr-08	14:48	0.519	16.15	28.01	0.8563
1-Apr-08	14:49	0.519	16.13	28.01	0.8531
1-Apr-08	14:50	0.519	16.11	28.01	0.85
1-Apr-08	14:51	0.519	16.09	28.01	0.8469
1-Apr-08	14:52	0.519	16.07	28.01	0.8438
1-Apr-08	14:53	0.5191	16.05	28.01	0.8407
1-Apr-08	14:54	0.5191	16.03	28.01	0.8377
1-Apr-08	14:55	0.5191	16.01	28.01	0.8347
1-Apr-08	14:56	0.5183	15.99	28.01	0.8317

1-Apr-08	14:57	0.5158	15.97	28.01	0.8287
1-Apr-08	14:58	0.5108	15.95	28.01	0.8258
1-Apr-08	14:59	0.5026	15.93	28.01	0.8228
1-Apr-08	15:00	0.4902	15.91	28.01	0.8197
1-Apr-08	15:01	0.4747	15.89	28.01	0.8165
1-Apr-08	15:02	0.4573	15.87	28.01	0.8132
1-Apr-08	15:03	0.4393	15.85	28.01	0.8098
1-Apr-08	15:04	0.4216	15.83	28.01	0.8062
1-Apr-08	15:05	0.4053	15.81	28.01	0.8028
1-Apr-08	15:06	0.3907	15.78	28.01	0.7993
1-Apr-08	15:07	0.3781	15.76	28.01	0.7957
1-Apr-08	15:08	0.3681	15.73	28.01	0.792
1-Apr-08	15:09	0.3602	15.71	28.01	0.7882
1-Apr-08	15:10	0.3538	15.68	28.01	0.7845
1-Apr-08	15:11	0.3485	15.65	28.01	0.7807
1-Apr-08	15:12	0.3441	15.63	28.01	0.7769
1-Apr-08	15:13	0.3405	15.6	28.01	0.7731
1-Apr-08	15:14	0.3376	15.58	28.01	0.7693
1-Apr-08	15:15	0.3352	15.55	28.01	0.7655
1-Apr-08	15:16	0.3333	15.52	28.01	0.7618
1-Apr-08	15:17	0.3317	15.5	28.01	0.758
1-Apr-08	15:18	0.3304	15.47	28.01	0.7543
1-Apr-08	15:19	0.3293	15.45	28.01	0.7506
1-Apr-08	15:20	0.3284	15.42	28.01	0.7469
1-Apr-08	15:21	0.3277	15.4	28.01	0.7433
1-Apr-08	15:22	0.3272	15.37	28.01	0.7396
1-Apr-08	15:23	0.3267	15.35	28	0.736
1-Apr-08	15:24	0.3263	15.32	28	0.7325
1-Apr-08	15:25	0.326	15.3	28	0.7289
1-Apr-08	15:26	0.3257	15.28	28	0.7254
1-Apr-08	15:27	0.3255	15.25	28	0.7219
1-Apr-08	15:28	0.3254	15.23	28	0.7184
1-Apr-08	15:29	0.3252	15.2	28	0.715
1-Apr-08	15:30	0.3251	15.18	28	0.7116
1-Apr-08	15:31	0.325	15.16	28	0.7082
1-Apr-08	15:32	0.3249	15.14	28	0.7049
1-Apr-08	15:33	0.3249	15.11	28	0.7016
1-Apr-08	15:34	0.3249	15.09	28	0.6983
1-Apr-08	15:35	0.3249	15.07	28	0.695
1-Apr-08	15:36	0.3249	15.05	28	0.6918
1-Apr-08	15:37	0.3249	15.02	28	0.6886
1-Apr-08	15:38	0.3249	15	28	0.6854
1-Apr-08	15:39	0.3249	14.98	28	0.6823
1-Apr-08	15:40	0.3249	14.96	28	0.6792
1-Apr-08	15:41	0.3249	14.94	28	0.6761
1-Apr-08	15:42	0.3249	14.92	28	0.673
1-Apr-08	15:43	0.3249	14.9	28	0.67
1-Apr-08	15:44	0.3249	14.88	28	0.667
1-Apr-08	15:45	0.3249	14.85	28	0.664
1-Apr-08	15:46	0.3249	14.83	28	0.661

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1-Apr-08	15:48	0.325	14.79	28	0.6552
1-Apr-08	15:49	0.325	14.77	28	0.6523
1-Apr-08	15:50	0.325	14.76	28	0.6494
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1-Apr-08	15:52	0.325	14.72	28	0.6438
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1-Apr-08	15:54	0.325	14.68	28	0.6383
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1-Apr-08	15:56	0.325	14.64	28	0.6328
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1-Apr-08	15:58	0.325	14.61	28	0.6275
1-Apr-08	15:59	0.3251	14.59	28	0.6249
1-Apr-08	16:00	0.3251	14.57	28	0.6225
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1-Apr-08	16:11	0.3252	14.38	28	0.5972
1-Apr-08	16:12	0.3252	14.36	28	0.595
1-Apr-08	16:13	0.3252	14.35	28	0.5928
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1-Apr-08	16:21	0.3252	14.22	28	0.5761
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1-Apr-08	16:23	0.3253	14.19	28	0.572
1-Apr-08	16:24	0.3253	14.18	28	0.57
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1-Apr-08	16:27	0.3253	14.14	28	0.5642
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1-Apr-08	16:33	0.3253	14.05	28	0.5529
1-Apr-08	16:34	0.3253	14.04	28	0.551
1-Apr-08	16:35	0.3254	14.03	28	0.5492
1-Apr-08	16:36	0.3254	14.01	28	0.5474

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1-Apr-08	16:39	0.3254	13.97	28	0.5421
1-Apr-08	16:40	0.3254	13.96	28	0.5403
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1-Apr-08	16:42	0.3254	13.93	28	0.5369
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1-Apr-08	16:47	0.3255	13.87	28	0.5285
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1-Apr-08	16:51	0.3255	13.82	28	0.522
1-Apr-08	16:52	0.3255	13.81	28	0.5205
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1-Apr-08	17:31	0.3258	13.42	28	0.4678
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1-Apr-08	17:35	0.3258	13.39	28	0.4632
1-Apr-08	17:36	0.3258	13.38	28	0.4621
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1-Apr-08	17:58	0.3195	13.21	28	0.4419
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1-Apr-08	18:01	0.2912	13.19	28	0.439
1-Apr-08	18:02	0.2776	13.18	28	0.4379
1-Apr-08	18:03	0.2635	13.17	28	0.4367
1-Apr-08	18:04	0.2497	13.16	28	0.4354
1-Apr-08	18:05	0.237	13.15	28	0.434
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1-Apr-08	18:10	0.1967	13.08	28	0.4261
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1-Apr-08	18:12	0.1891	13.05	28	0.4228
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1-Apr-08	18:14	0.184	13.03	28	0.4194
1-Apr-08	18:15	0.1821	13.01	28	0.4177
1-Apr-08	18:16	0.1806	13	28	0.416

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1-Apr-08	18:19	0.1775	12.96	28	0.4109
1-Apr-08	18:20	0.1768	12.94	28	0.4092
1-Apr-08	18:21	0.1763	12.93	28	0.4075
1-Apr-08	18:22	0.1758	12.91	28	0.4058
1-Apr-08	18:23	0.1755	12.9	28	0.4041
1-Apr-08	18:24	0.1751	12.89	28	0.4025
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1-Apr-08	18:26	0.1747	12.86	28	0.3992
1-Apr-08	18:27	0.1745	12.85	28	0.3976
1-Apr-08	18:28	0.1744	12.83	28	0.396
1-Apr-08	18:29	0.1743	12.82	28	0.3944
1-Apr-08	18:30	0.1742	12.81	28	0.3928
1-Apr-08	18:31	0.1741	12.79	28	0.3912
1-Apr-08	18:32	0.174	12.78	28	0.3896
1-Apr-08	18:33	0.174	12.77	28	0.3881
1-Apr-08	18:34	0.174	12.75	28	0.3865
1-Apr-08	18:35	0.174	12.74	28	0.385
1-Apr-08	18:36	0.174	12.73	28	0.3835
1-Apr-08	18:37	0.174	12.72	28	0.382
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1-Apr-08	18:40	0.174	12.68	28	0.3775
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1-Apr-08	18:42	0.174	12.66	28	0.3746
1-Apr-08	18:43	0.174	12.64	28	0.3731
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1-Apr-08	18:45	0.174	12.62	28	0.3702
1-Apr-08	18:46	0.174	12.61	28	0.3688
1-Apr-08	18:47	0.174	12.6	28	0.3674
1-Apr-08	18:48	0.174	12.59	28	0.366
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1-Apr-08	19:04	0.174	12.41	28	0.345
1-Apr-08	19:05	0.174	12.4	28	0.3437
1-Apr-08	19:06	0.174	12.39	28	0.3425

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1-Apr-08	19:08	0.174	12.37	28	0.3401
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1-Apr-08	19:15	0.174	12.3	28	0.3319
1-Apr-08	19:16	0.174	12.29	28	0.3307
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1-Apr-08	19:22	0.1741	12.24	28	0.3241
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1-Apr-08	19:24	0.1741	12.22	28	0.3219
1-Apr-08	19:25	0.1741	12.21	28	0.3208
1-Apr-08	19:26	0.1741	12.2	28	0.3198
1-Apr-08	19:27	0.1741	12.19	28	0.3187
1-Apr-08	19:28	0.1741	12.19	28	0.3177
1-Apr-08	19:29	0.1741	12.18	28	0.3166
1-Apr-08	19:30	0.1741	12.17	28	0.3156
1-Apr-08	19:31	0.1741	12.16	28	0.3146
1-Apr-08	19:32	0.1741	12.15	28	0.3138
1-Apr-08	19:33	0.1741	12.14	28	0.3129
1-Apr-08	19:34	0.1741	12.13	28	0.3121
1-Apr-08	19:35	0.1741	12.13	28	0.3112
1-Apr-08	19:36	0.1741	12.12	28	0.3104
1-Apr-08	19:37	0.1741	12.11	28	0.3095
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1-Apr-08	19:39	0.1741	12.09	28	0.3079
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1-Apr-08	19:42	0.1741	12.07	28	0.3054
1-Apr-08	19:43	0.1741	12.06	28	0.3046
1-Apr-08	19:44	0.1741	12.05	28	0.3038
1-Apr-08	19:45	0.1741	12.05	28	0.303
1-Apr-08	19:46	0.1741	12.04	28	0.3022
1-Apr-08	19:47	0.1741	12.03	28	0.3014
1-Apr-08	19:48	0.1741	12.02	28	0.3006
1-Apr-08	19:49	0.1741	12.02	28	0.2998
1-Apr-08	19:50	0.1741	12.01	28	0.2991
1-Apr-08	19:51	0.1741	12	28	0.2983
1-Apr-08	19:52	0.1741	11.99	28	0.2975
1-Apr-08	19:53	0.1741	11.99	28	0.2968
1-Apr-08	19:54	0.1741	11.98	28	0.296
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1-Apr-08	19:56	0.1741	11.96	28	0.2945

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1-Apr-08	19:59	0.1741	11.94	28	0.2923
1-Apr-08	20:00	0.1741	11.94	28	0.2916
1-Apr-08	20:01	0.1741	11.93	28	0.2908
1-Apr-08	20:02	0.1741	11.92	28	0.2901
1-Apr-08	20:03	0.1741	11.91	28	0.2894
1-Apr-08	20:04	0.1741	11.91	28	0.2887
1-Apr-08	20:05	0.1741	11.9	28	0.288
1-Apr-08	20:06	0.1742	11.89	28	0.2873
1-Apr-08	20:07	0.1742	11.89	28	0.2866
1-Apr-08	20:08	0.1742	11.88	28	0.2859
1-Apr-08	20:09	0.1742	11.87	28	0.2852
1-Apr-08	20:10	0.1742	11.87	28	0.2845
1-Apr-08	20:11	0.1742	11.86	28	0.2838
1-Apr-08	20:12	0.1742	11.85	28	0.2832
1-Apr-08	20:13	0.1742	11.85	28	0.2825
1-Apr-08	20:14	0.1742	11.84	28	0.2818
1-Apr-08	20:15	0.1742	11.83	28	0.2812
1-Apr-08	20:16	0.1742	11.83	28	0.2805
1-Apr-08	20:17	0.1742	11.82	28	0.2798
1-Apr-08	20:18	0.1742	11.82	28	0.2792
1-Apr-08	20:19	0.1742	11.81	28	0.2785
1-Apr-08	20:20	0.1742	11.8	28	0.2779
1-Apr-08	20:21	0.1742	11.8	28	0.2773
1-Apr-08	20:22	0.1742	11.79	28	0.2766
1-Apr-08	20:23	0.1742	11.78	28	0.276
1-Apr-08	20:24	0.1742	11.78	28	0.2754
1-Apr-08	20:25	0.1742	11.77	28	0.2747
1-Apr-08	20:26	0.1742	11.77	28	0.2741
1-Apr-08	20:27	0.1742	11.76	28	0.2735
1-Apr-08	20:28	0.1742	11.75	28	0.2729
1-Apr-08	20:29	0.1742	11.75	28	0.2723
1-Apr-08	20:30	0.1742	11.74	28	0.2717
1-Apr-08	20:31	0.1742	11.74	28	0.2711
1-Apr-08	20:32	0.1742	11.73	28	0.2705
1-Apr-08	20:33	0.1742	11.73	28	0.2699
1-Apr-08	20:34	0.1742	11.72	28	0.2693
1-Apr-08	20:35	0.1742	11.71	28	0.2687
1-Apr-08	20:36	0.1742	11.71	28	0.2681
1-Apr-08	20:37	0.1742	11.7	28	0.2676
1-Apr-08	20:38	0.1742	11.7	28	0.267
1-Apr-08	20:39	0.1742	11.69	28	0.2664
1-Apr-08	20:40	0.1742	11.69	28	0.2658
1-Apr-08	20:41	0.1742	11.68	28	0.2653
1-Apr-08	20:42	0.1742	11.68	28	0.2647
1-Apr-08	20:43	0.1742	11.67	28	0.2642
1-Apr-08	20:44	0.1742	11.66	28	0.2636
1-Apr-08	20:45	0.1742	11.66	28	0.263
1-Apr-08	20:46	0.1742	11.65	28	0.2625

1-Apr-08	20:47	0.1742	11.65	28	0.262
1-Apr-08	20:48	0.1742	11.64	28	0.2614
1-Apr-08	20:49	0.1742	11.64	28	0.2609
1-Apr-08	20:50	0.1742	11.63	28	0.2603
1-Apr-08	20:51	0.1742	11.63	28	0.2598
1-Apr-08	20:52	0.1742	11.62	28	0.2593
1-Apr-08	20:53	0.1742	11.62	28	0.2588
1-Apr-08	20:54	0.1742	11.61	28	0.2582
1-Apr-08	20:55	0.1742	11.61	28	0.2577
1-Apr-08	20:56	0.1743	11.6	28	0.2572
1-Apr-08	20:57	0.1743	11.6	28	0.2567
1-Apr-08	20:58	0.1743	11.59	28	0.2562
1-Apr-08	20:59	0.1743	11.59	28	0.2557
1-Apr-08	21:00	0.1743	11.58	28	0.2552
1-Apr-08	21:01	0.1743	11.58	28	0.2547
1-Apr-08	21:02	0.1743	11.57	28	0.2542
1-Apr-08	21:03	0.1743	11.57	28	0.2537
1-Apr-08	21:04	0.1743	11.56	28	0.2532
1-Apr-08	21:05	0.1743	11.56	28	0.2527
1-Apr-08	21:06	0.1743	11.55	28	0.2522
1-Apr-08	21:07	0.1743	11.55	28	0.2517
1-Apr-08	21:08	0.1743	11.54	28	0.2513
1-Apr-08	21:09	0.1743	11.54	28	0.2508
1-Apr-08	21:10	0.1743	11.54	28	0.2503
1-Apr-08	21:11	0.1743	11.53	28	0.2499
1-Apr-08	21:12	0.1743	11.53	28	0.2494
1-Apr-08	21:13	0.1743	11.52	28	0.2489
1-Apr-08	21:14	0.1743	11.52	28	0.2485
1-Apr-08	21:15	0.1743	11.51	28	0.248
1-Apr-08	21:16	0.1743	11.51	28	0.2476
1-Apr-08	21:17	0.1743	11.5	28	0.2471
1-Apr-08	21:18	0.1743	11.5	28	0.2467
1-Apr-08	21:19	0.1743	11.5	28	0.2462
1-Apr-08	21:20	0.1743	11.49	28	0.2458
1-Apr-08	21:21	0.1743	11.49	28	0.2453
1-Apr-08	21:22	0.1743	11.48	28	0.2449
1-Apr-08	21:23	0.1743	11.48	28	0.2444
1-Apr-08	21:24	0.1743	11.47	28	0.244
1-Apr-08	21:25	0.1743	11.47	28	0.2436
1-Apr-08	21:26	0.1743	11.47	28	0.2432
1-Apr-08	21:27	0.1743	11.46	28	0.2427
1-Apr-08	21:28	0.1743	11.46	28	0.2423
1-Apr-08	21:29	0.1743	11.45	28	0.2419
1-Apr-08	21:30	0.1743	11.45	28	0.2415
1-Apr-08	21:31	0.1743	11.45	28	0.2411
1-Apr-08	21:32	0.1743	11.44	28	0.2406
1-Apr-08	21:33	0.1743	11.44	28	0.2402
1-Apr-08	21:34	0.1743	11.43	28	0.2398
1-Apr-08	21:35	0.1743	11.43	28	0.2394
1-Apr-08	21:36	0.1743	11.43	28	0.239

1-Apr-08	21:37	0.1743	11.42	28	0.2386
1-Apr-08	21:38	0.1743	11.42	28	0.2382
1-Apr-08	21:39	0.1743	11.41	28	0.2378
1-Apr-08	21:40	0.1743	11.41	28	0.2374
1-Apr-08	21:41	0.1743	11.41	28	0.2371
1-Apr-08	21:42	0.1743	11.4	28	0.2367
1-Apr-08	21:43	0.1743	11.4	28	0.2363
1-Apr-08	21:44	0.1743	11.4	28	0.2359
1-Apr-08	21:45	0.1743	11.39	28	0.2355
1-Apr-08	21:46	0.1743	11.39	28	0.2351
1-Apr-08	21:47	0.1743	11.38	28	0.2348
1-Apr-08	21:48	0.1744	11.38	28	0.2344
1-Apr-08	21:49	0.1744	11.38	28	0.234
1-Apr-08	21:50	0.1744	11.37	28	0.2337
1-Apr-08	21:51	0.1744	11.37	28	0.2333
1-Apr-08	21:52	0.1744	11.37	28	0.2329
1-Apr-08	21:53	0.1744	11.36	28	0.2326
1-Apr-08	21:54	0.1744	11.36	28	0.2322
1-Apr-08	21:55	0.1744	11.36	28	0.2319
1-Apr-08	21:56	0.1744	11.35	28	0.2315
1-Apr-08	21:57	0.1744	11.35	28	0.2311
1-Apr-08	21:58	0.1744	11.35	28	0.2308
1-Apr-08	21:59	0.1744	11.34	28	0.2305
1-Apr-08	22:00	0.1744	11.34	28	0.2301
1-Apr-08	22:01	0.1744	11.34	28	0.2298
1-Apr-08	22:02	0.1744	11.33	28	0.2294
1-Apr-08	22:03	0.1744	11.33	28	0.2291
1-Apr-08	22:04	0.1744	11.33	28	0.2287
1-Apr-08	22:05	0.1744	11.32	28	0.2284
1-Apr-08	22:06	0.1744	11.32	28	0.2281
1-Apr-08	22:07	0.1744	11.32	28	0.2277
1-Apr-08	22:08	0.1744	11.31	28	0.2274
1-Apr-08	22:09	0.1744	11.31	28	0.2271
1-Apr-08	22:10	0.1744	11.31	28	0.2268
1-Apr-08	22:11	0.1744	11.3	28	0.2264
1-Apr-08	22:12	0.1744	11.3	28	0.2261
1-Apr-08	22:13	0.1744	11.3	28	0.2258
1-Apr-08	22:14	0.1744	11.29	28	0.2255
1-Apr-08	22:15	0.1744	11.29	28	0.2252
1-Apr-08	22:16	0.1744	11.29	28	0.2249
1-Apr-08	22:17	0.1744	11.29	28	0.2245
1-Apr-08	22:18	0.1744	11.28	28	0.2242
1-Apr-08	22:19	0.1744	11.28	28	0.2239
1-Apr-08	22:20	0.1744	11.28	28	0.2236
1-Apr-08	22:21	0.1744	11.27	28	0.2233
1-Apr-08	22:22	0.1744	11.27	28	0.223
1-Apr-08	22:23	0.1744	11.27	28	0.2227
1-Apr-08	22:24	0.1744	11.27	28	0.2224
1-Apr-08	22:25	0.1744	11.26	28	0.2221
1-Apr-08	22:26	0.1744	11.26	28	0.2218

1-Apr-08	22:27	0.1744	11.26	28	0.2215
1-Apr-08	22:28	0.1744	11.25	28	0.2212
1-Apr-08	22:29	0.1744	11.25	28	0.221
1-Apr-08	22:30	0.1744	11.25	28	0.2207
1-Apr-08	22:31	0.1744	11.25	28	0.2204
1-Apr-08	22:32	0.1744	11.24	28	0.2201
1-Apr-08	22:33	0.1744	11.24	28	0.2198
1-Apr-08	22:34	0.1744	11.24	28	0.2195
1-Apr-08	22:35	0.1744	11.23	28	0.2193
1-Apr-08	22:36	0.1744	11.23	28	0.219
1-Apr-08	22:37	0.1744	11.23	28	0.2187
1-Apr-08	22:38	0.1744	11.23	28	0.2184
1-Apr-08	22:39	0.1744	11.22	28	0.2182
1-Apr-08	22:40	0.1745	11.22	28	0.2179
1-Apr-08	22:41	0.1745	11.22	28	0.2176
1-Apr-08	22:42	0.1745	11.22	28	0.2174
1-Apr-08	22:43	0.1745	11.21	28	0.2171
1-Apr-08	22:44	0.1745	11.21	28	0.2168
1-Apr-08	22:45	0.1745	11.21	28	0.2166
1-Apr-08	22:46	0.1745	11.21	28	0.2163
1-Apr-08	22:47	0.1745	11.2	28	0.2161
1-Apr-08	22:48	0.1745	11.2	28	0.2158
1-Apr-08	22:49	0.1745	11.2	28	0.2155
1-Apr-08	22:50	0.1745	11.2	28	0.2153
1-Apr-08	22:51	0.1745	11.19	28	0.215
1-Apr-08	22:52	0.1745	11.19	28	0.2148
1-Apr-08	22:53	0.1745	11.19	28	0.2145
1-Apr-08	22:54	0.1745	11.19	28	0.2143
1-Apr-08	22:55	0.1745	11.18	28	0.214
1-Apr-08	22:56	0.1745	11.18	28	0.2138
1-Apr-08	22:57	0.1745	11.18	28	0.2136
1-Apr-08	22:58	0.1745	11.18	28	0.2133
1-Apr-08	22:59	0.1745	11.17	28	0.2131
1-Apr-08	23:00	0.1745	11.17	28	0.2128
1-Apr-08	23:01	0.1745	11.17	28	0.2126
1-Apr-08	23:02	0.1745	11.17	28	0.2124
1-Apr-08	23:03	0.1745	11.17	28	0.2121
1-Apr-08	23:04	0.1745	11.16	28	0.2119
1-Apr-08	23:05	0.1745	11.16	28	0.2117
1-Apr-08	23:06	0.1745	11.16	28	0.2114
1-Apr-08	23:07	0.1745	11.16	28	0.2112
1-Apr-08	23:08	0.1745	11.15	28	0.211
1-Apr-08	23:09	0.1745	11.15	28	0.2108
1-Apr-08	23:10	0.1745	11.15	28	0.2105
1-Apr-08	23:11	0.1745	11.15	28	0.2103
1-Apr-08	23:12	0.1745	11.15	28	0.2101
1-Apr-08	23:13	0.1745	11.14	28	0.2099
1-Apr-08	23:14	0.1745	11.14	28	0.2097
1-Apr-08	23:15	0.1745	11.14	28	0.2094
1-Apr-08	23:16	0.1745	11.14	28	0.2092

1-Apr-08	23:17	0.1745	11.14	28	0.209
1-Apr-08	23:18	0.1745	11.13	28	0.2088
1-Apr-08	23:19	0.1745	11.13	28	0.2086
1-Apr-08	23:20	0.1745	11.13	28	0.2084
1-Apr-08	23:21	0.1745	11.13	28	0.2082
1-Apr-08	23:22	0.1745	11.12	28	0.208
1-Apr-08	23:23	0.1745	11.12	28	0.2078
1-Apr-08	23:24	0.1745	11.12	28	0.2076
1-Apr-08	23:25	0.1745	11.12	28	0.2074
1-Apr-08	23:26	0.1745	11.12	28	0.2071
1-Apr-08	23:27	0.1745	11.11	28	0.2069
1-Apr-08	23:28	0.1745	11.11	28	0.2067
1-Apr-08	23:29	0.1745	11.11	28	0.2065
1-Apr-08	23:30	0.1745	11.11	28	0.2064
1-Apr-08	23:31	0.1745	11.11	28	0.2062
1-Apr-08	23:32	0.1745	11.11	28	0.206
1-Apr-08	23:33	0.1745	11.1	28	0.2058
1-Apr-08	23:34	0.1746	11.1	28	0.2056
1-Apr-08	23:35	0.1746	11.1	28	0.2054
1-Apr-08	23:36	0.1746	11.1	28	0.2052
1-Apr-08	23:37	0.1746	11.1	28	0.205
1-Apr-08	23:38	0.1746	11.09	28	0.2048
1-Apr-08	23:39	0.1746	11.09	28	0.2046
1-Apr-08	23:40	0.1746	11.09	28	0.2044
1-Apr-08	23:41	0.1746	11.09	28	0.2043
1-Apr-08	23:42	0.1746	11.09	28	0.2041
1-Apr-08	23:43	0.1746	11.09	28	0.2039
1-Apr-08	23:44	0.1746	11.08	28	0.2037
1-Apr-08	23:45	0.1746	11.08	28	0.2035
1-Apr-08	23:46	0.1746	11.08	28	0.2034
1-Apr-08	23:47	0.1746	11.08	28	0.2032
1-Apr-08	23:48	0.1746	11.08	28	0.203
1-Apr-08	23:49	0.1746	11.08	28	0.2028
1-Apr-08	23:50	0.1746	11.07	28	0.2027
1-Apr-08	23:51	0.1746	11.07	28	0.2025
1-Apr-08	23:52	0.1746	11.07	28	0.2023
1-Apr-08	23:53	0.1746	11.07	28	0.2021
1-Apr-08	23:54	0.1746	11.07	28	0.202
1-Apr-08	23:55	0.1746	11.07	28	0.2018
1-Apr-08	23:56	0.1738	11.06	28	0.2016
1-Apr-08	23:57	0.1715	11.06	28	0.2014
1-Apr-08	23:58	0.1671	11.06	28	0.2013
1-Apr-08	23:59	0.1597	11.06	28	0.201
2-Apr-08	24	0.1486	11.05	28	0.2007

Highgate - 5yr - Time Series Inflow (Wetland)					
Date	Time	Inflow m3/s	Storage	Elevation m	Outflow m3/s
1-Apr-08	0:00	0	0	28	0
1-Apr-08	0:01	0.0008	0	28	0
1-Apr-08	0:02	0.0033	0	28	0
1-Apr-08	0:03	0.008	0	28	0
1-Apr-08	0:04	0.016	0	28	0
1-Apr-08	0:05	0.0279	0	28	0
1-Apr-08	0:06	0.0429	0	28	0.0001
1-Apr-08	0:07	0.0597	0.01	28	0.0001
1-Apr-08	0:08	0.077	0.01	28	0.0002
1-Apr-08	0:09	0.0941	0.02	28	0.0002
1-Apr-08	0:10	0.1098	0.02	28	0.0003
1-Apr-08	0:11	0.1239	0.03	28	0.0004
1-Apr-08	0:12	0.136	0.04	28	0.0005
1-Apr-08	0:13	0.1456	0.05	28	0.0006
1-Apr-08	0:14	0.1533	0.06	28	0.0007
1-Apr-08	0:15	0.1595	0.06	28	0.0008
1-Apr-08	0:16	0.1646	0.07	28	0.001
1-Apr-08	0:17	0.1688	0.08	28	0.0011
1-Apr-08	0:18	0.1723	0.09	28	0.0012
1-Apr-08	0:19	0.1751	0.1	28	0.0014
1-Apr-08	0:20	0.1774	0.12	28	0.0015
1-Apr-08	0:21	0.1793	0.13	28	0.0016
1-Apr-08	0:22	0.1808	0.14	28	0.0018
1-Apr-08	0:23	0.1821	0.15	28	0.0019
1-Apr-08	0:24	0.1831	0.16	28	0.0021
1-Apr-08	0:25	0.184	0.17	28	0.0022
1-Apr-08	0:26	0.1846	0.18	28	0.0023
1-Apr-08	0:27	0.1852	0.19	28	0.0025
1-Apr-08	0:28	0.1857	0.2	28	0.0026
1-Apr-08	0:29	0.186	0.21	28	0.0028
1-Apr-08	0:30	0.1864	0.22	28	0.0029
1-Apr-08	0:31	0.1866	0.23	28	0.0031
1-Apr-08	0:32	0.1868	0.25	28	0.0032
1-Apr-08	0:33	0.187	0.26	28	0.0033
1-Apr-08	0:34	0.1871	0.27	28	0.0035
1-Apr-08	0:35	0.1873	0.28	28	0.0036
1-Apr-08	0:36	0.1874	0.29	28	0.0038
1-Apr-08	0:37	0.1874	0.3	28	0.0039
1-Apr-08	0:38	0.1875	0.31	28	0.004
1-Apr-08	0:39	0.1875	0.32	28	0.0042
1-Apr-08	0:40	0.1875	0.33	28	0.0043
1-Apr-08	0:41	0.1875	0.34	28	0.0044
1-Apr-08	0:42	0.1875	0.36	28	0.0045
1-Apr-08	0:43	0.1875	0.37	28	0.0046
1-Apr-08	0:44	0.1875	0.38	28	0.0047
1-Apr-08	0:45	0.1875	0.39	28	0.0048
1-Apr-08	0:46	0.1875	0.4	28	0.005

1-Apr-08	0:47	0.1875	0.41	28	0.0051
1-Apr-08	0:48	0.1875	0.42	28	0.0052
1-Apr-08	0:49	0.1875	0.43	28	0.0053
1-Apr-08	0:50	0.1875	0.44	28	0.0054
1-Apr-08	0:51	0.1875	0.45	28	0.0055
1-Apr-08	0:52	0.1875	0.47	28	0.0056
1-Apr-08	0:53	0.1875	0.48	28	0.0057
1-Apr-08	0:54	0.1875	0.49	28	0.0058
1-Apr-08	0:55	0.1875	0.5	28	0.006
1-Apr-08	0:56	0.1875	0.51	28	0.0061
1-Apr-08	0:57	0.1875	0.52	28	0.0062
1-Apr-08	0:58	0.1875	0.53	28	0.0063
1-Apr-08	0:59	0.1875	0.54	28	0.0064
1-Apr-08	1:00	0.1875	0.55	28	0.0065
1-Apr-08	1:01	0.1875	0.56	28	0.0066
1-Apr-08	1:02	0.1875	0.57	28	0.0067
1-Apr-08	1:03	0.1875	0.58	28	0.0069
1-Apr-08	1:04	0.1875	0.6	28	0.007
1-Apr-08	1:05	0.1875	0.61	28	0.0071
1-Apr-08	1:06	0.1875	0.62	28	0.0072
1-Apr-08	1:07	0.1875	0.63	28	0.0073
1-Apr-08	1:08	0.1875	0.64	28	0.0074
1-Apr-08	1:09	0.1875	0.65	28	0.0075
1-Apr-08	1:10	0.1875	0.66	28	0.0076
1-Apr-08	1:11	0.1875	0.67	28	0.0077
1-Apr-08	1:12	0.1875	0.68	28	0.0079
1-Apr-08	1:13	0.1875	0.69	28	0.008
1-Apr-08	1:14	0.1875	0.7	28	0.0081
1-Apr-08	1:15	0.1875	0.71	28	0.0082
1-Apr-08	1:16	0.1875	0.73	28	0.0083
1-Apr-08	1:17	0.1875	0.74	28	0.0084
1-Apr-08	1:18	0.1875	0.75	28	0.0085
1-Apr-08	1:19	0.1875	0.76	28	0.0086
1-Apr-08	1:20	0.1875	0.77	28	0.0087
1-Apr-08	1:21	0.1875	0.78	28	0.0088
1-Apr-08	1:22	0.1875	0.79	28	0.009
1-Apr-08	1:23	0.1875	0.8	28	0.0091
1-Apr-08	1:24	0.1875	0.81	28	0.0092
1-Apr-08	1:25	0.1875	0.82	28	0.0093
1-Apr-08	1:26	0.1875	0.83	28	0.0094
1-Apr-08	1:27	0.1875	0.84	28	0.0095
1-Apr-08	1:28	0.1875	0.85	28	0.0096
1-Apr-08	1:29	0.1875	0.86	28	0.0097
1-Apr-08	1:30	0.1875	0.88	28	0.0098
1-Apr-08	1:31	0.1875	0.89	28	0.0099
1-Apr-08	1:32	0.1875	0.9	28	0.0101
1-Apr-08	1:33	0.1875	0.91	28	0.0102
1-Apr-08	1:34	0.1875	0.92	28	0.0103
1-Apr-08	1:35	0.1875	0.93	28	0.0104
1-Apr-08	1:36	0.1875	0.94	28	0.0105

1-Apr-08	1:37	0.1875	0.95	28	0.0106
1-Apr-08	1:38	0.1875	0.96	28	0.0107
1-Apr-08	1:39	0.1875	0.97	28	0.0108
1-Apr-08	1:40	0.1875	0.98	28	0.0109
1-Apr-08	1:41	0.1875	0.99	28	0.011
1-Apr-08	1:42	0.1875	1	28	0.0111
1-Apr-08	1:43	0.1875	1.01	28	0.0113
1-Apr-08	1:44	0.1875	1.02	28	0.0114
1-Apr-08	1:45	0.1875	1.03	28	0.0115
1-Apr-08	1:46	0.1875	1.04	28	0.0116
1-Apr-08	1:47	0.1875	1.06	28	0.0117
1-Apr-08	1:48	0.1875	1.07	28	0.0118
1-Apr-08	1:49	0.1875	1.08	28	0.0119
1-Apr-08	1:50	0.1875	1.09	28	0.012
1-Apr-08	1:51	0.1875	1.1	28	0.0121
1-Apr-08	1:52	0.1875	1.11	28	0.0122
1-Apr-08	1:53	0.1875	1.12	28	0.0123
1-Apr-08	1:54	0.1875	1.13	28	0.0124
1-Apr-08	1:55	0.1875	1.14	28	0.0125
1-Apr-08	1:56	0.1875	1.15	28	0.0126
1-Apr-08	1:57	0.1875	1.16	28	0.0127
1-Apr-08	1:58	0.1875	1.17	28	0.0128
1-Apr-08	1:59	0.1875	1.18	28	0.0129
1-Apr-08	2:00	0.1875	1.19	28	0.013
1-Apr-08	2:01	0.1875	1.2	28	0.013
1-Apr-08	2:02	0.1875	1.21	28	0.0131
1-Apr-08	2:03	0.1875	1.22	28	0.0132
1-Apr-08	2:04	0.1875	1.23	28	0.0133
1-Apr-08	2:05	0.1875	1.24	28	0.0134
1-Apr-08	2:06	0.1875	1.25	28	0.0135
1-Apr-08	2:07	0.1875	1.27	28	0.0136
1-Apr-08	2:08	0.1875	1.28	28	0.0137
1-Apr-08	2:09	0.1875	1.29	28	0.0138
1-Apr-08	2:10	0.1875	1.3	28	0.0139
1-Apr-08	2:11	0.1875	1.31	28	0.014
1-Apr-08	2:12	0.1875	1.32	28	0.0141
1-Apr-08	2:13	0.1875	1.33	28	0.0142
1-Apr-08	2:14	0.1875	1.34	28	0.0143
1-Apr-08	2:15	0.1875	1.35	28	0.0144
1-Apr-08	2:16	0.1875	1.36	28	0.0144
1-Apr-08	2:17	0.1875	1.37	28	0.0145
1-Apr-08	2:18	0.1875	1.38	28	0.0146
1-Apr-08	2:19	0.1875	1.39	28	0.0147
1-Apr-08	2:20	0.1875	1.4	28	0.0148
1-Apr-08	2:21	0.1875	1.41	28	0.0149
1-Apr-08	2:22	0.1875	1.42	28	0.015
1-Apr-08	2:23	0.1875	1.43	28	0.0151
1-Apr-08	2:24	0.1875	1.44	28	0.0152
1-Apr-08	2:25	0.1875	1.45	28	0.0153
1-Apr-08	2:26	0.1875	1.46	28	0.0154

1-Apr-08	2:27	0.1875	1.47	28	0.0155
1-Apr-08	2:28	0.1875	1.48	28	0.0156
1-Apr-08	2:29	0.1875	1.49	28	0.0157
1-Apr-08	2:30	0.1875	1.5	28	0.0157
1-Apr-08	2:31	0.1875	1.51	28	0.0158
1-Apr-08	2:32	0.1875	1.52	28	0.0159
1-Apr-08	2:33	0.1875	1.53	28	0.016
1-Apr-08	2:34	0.1875	1.55	28	0.0161
1-Apr-08	2:35	0.1875	1.56	28	0.0162
1-Apr-08	2:36	0.1875	1.57	28	0.0163
1-Apr-08	2:37	0.1875	1.58	28	0.0164
1-Apr-08	2:38	0.1875	1.59	28	0.0165
1-Apr-08	2:39	0.1875	1.6	28	0.0166
1-Apr-08	2:40	0.1876	1.61	28	0.0167
1-Apr-08	2:41	0.1876	1.62	28	0.0168
1-Apr-08	2:42	0.1876	1.63	28	0.0169
1-Apr-08	2:43	0.1876	1.64	28	0.0169
1-Apr-08	2:44	0.1876	1.65	28	0.017
1-Apr-08	2:45	0.1876	1.66	28	0.0171
1-Apr-08	2:46	0.1876	1.67	28	0.0172
1-Apr-08	2:47	0.1877	1.68	28	0.0173
1-Apr-08	2:48	0.1877	1.69	28	0.0174
1-Apr-08	2:49	0.1877	1.7	28	0.0175
1-Apr-08	2:50	0.1877	1.71	28	0.0176
1-Apr-08	2:51	0.1877	1.72	28	0.0177
1-Apr-08	2:52	0.1878	1.73	28	0.0178
1-Apr-08	2:53	0.1878	1.74	28	0.0179
1-Apr-08	2:54	0.1878	1.75	28	0.018
1-Apr-08	2:55	0.1878	1.76	28	0.018
1-Apr-08	2:56	0.1878	1.77	28	0.0181
1-Apr-08	2:57	0.1879	1.78	28	0.0182
1-Apr-08	2:58	0.1879	1.79	28	0.0183
1-Apr-08	2:59	0.1879	1.8	28	0.0184
1-Apr-08	3:00	0.1879	1.81	28	0.0185
1-Apr-08	3:01	0.188	1.82	28	0.0186
1-Apr-08	3:02	0.188	1.83	28	0.0187
1-Apr-08	3:03	0.188	1.84	28	0.0188
1-Apr-08	3:04	0.188	1.85	28	0.0189
1-Apr-08	3:05	0.188	1.86	28	0.019
1-Apr-08	3:06	0.1881	1.87	28	0.019
1-Apr-08	3:07	0.1881	1.88	28	0.0191
1-Apr-08	3:08	0.1881	1.89	28	0.0192
1-Apr-08	3:09	0.1881	1.9	28	0.0193
1-Apr-08	3:10	0.1882	1.91	28	0.0194
1-Apr-08	3:11	0.1882	1.92	28	0.0195
1-Apr-08	3:12	0.1882	1.93	28	0.0196
1-Apr-08	3:13	0.1882	1.94	28	0.0197
1-Apr-08	3:14	0.1882	1.95	28	0.0198
1-Apr-08	3:15	0.1883	1.96	28	0.0199
1-Apr-08	3:16	0.1883	1.97	28	0.02

1-Apr-08	3:17	0.1883	1.98	28	0.02
1-Apr-08	3:18	0.1883	1.99	28	0.0201
1-Apr-08	3:19	0.1883	2	28	0.0201
1-Apr-08	3:20	0.1884	2.01	28	0.0202
1-Apr-08	3:21	0.1884	2.02	28	0.0202
1-Apr-08	3:22	0.1884	2.03	28	0.0203
1-Apr-08	3:23	0.1884	2.04	28	0.0203
1-Apr-08	3:24	0.1885	2.05	28	0.0204
1-Apr-08	3:25	0.1885	2.06	28	0.0204
1-Apr-08	3:26	0.1885	2.07	28	0.0204
1-Apr-08	3:27	0.1885	2.08	28	0.0205
1-Apr-08	3:28	0.1885	2.09	28	0.0205
1-Apr-08	3:29	0.1886	2.1	28	0.0206
1-Apr-08	3:30	0.1886	2.11	28	0.0206
1-Apr-08	3:31	0.1886	2.12	28	0.0207
1-Apr-08	3:32	0.1886	2.13	28	0.0207
1-Apr-08	3:33	0.1886	2.14	28	0.0208
1-Apr-08	3:34	0.1887	2.15	28	0.0208
1-Apr-08	3:35	0.1887	2.16	28	0.0209
1-Apr-08	3:36	0.1887	2.17	28	0.0209
1-Apr-08	3:37	0.1887	2.18	28	0.021
1-Apr-08	3:38	0.1888	2.19	28	0.021
1-Apr-08	3:39	0.1888	2.2	28	0.0211
1-Apr-08	3:40	0.1888	2.21	28	0.0211
1-Apr-08	3:41	0.1888	2.22	28	0.0212
1-Apr-08	3:42	0.1888	2.24	28	0.0212
1-Apr-08	3:43	0.1889	2.25	28	0.0212
1-Apr-08	3:44	0.1889	2.26	28	0.0213
1-Apr-08	3:45	0.1889	2.27	28	0.0213
1-Apr-08	3:46	0.1889	2.28	28	0.0214
1-Apr-08	3:47	0.1889	2.29	28	0.0214
1-Apr-08	3:48	0.189	2.3	28	0.0215
1-Apr-08	3:49	0.189	2.31	28	0.0215
1-Apr-08	3:50	0.189	2.32	28	0.0216
1-Apr-08	3:51	0.189	2.33	28	0.0216
1-Apr-08	3:52	0.189	2.34	28	0.0217
1-Apr-08	3:53	0.1891	2.35	28	0.0217
1-Apr-08	3:54	0.1891	2.36	28	0.0218
1-Apr-08	3:55	0.1891	2.37	28	0.0218
1-Apr-08	3:56	0.1891	2.38	28	0.0219
1-Apr-08	3:57	0.1891	2.39	28	0.0219
1-Apr-08	3:58	0.1892	2.4	28	0.022
1-Apr-08	3:59	0.1892	2.41	28	0.022
1-Apr-08	4:00	0.1892	2.42	28	0.022
1-Apr-08	4:01	0.1892	2.43	28	0.0221
1-Apr-08	4:02	0.1893	2.44	28	0.0221
1-Apr-08	4:03	0.1893	2.45	28	0.0222
1-Apr-08	4:04	0.1893	2.46	28	0.0222
1-Apr-08	4:05	0.1893	2.47	28	0.0223
1-Apr-08	4:06	0.1893	2.48	28	0.0223

1-Apr-08	4:07	0.1894	2.49	28	0.0224
1-Apr-08	4:08	0.1894	2.5	28	0.0224
1-Apr-08	4:09	0.1894	2.51	28	0.0225
1-Apr-08	4:10	0.1894	2.52	28	0.0225
1-Apr-08	4:11	0.1894	2.53	28	0.0226
1-Apr-08	4:12	0.1895	2.54	28	0.0226
1-Apr-08	4:13	0.1895	2.55	28	0.0227
1-Apr-08	4:14	0.1895	2.56	28	0.0227
1-Apr-08	4:15	0.1895	2.57	28	0.0227
1-Apr-08	4:16	0.1895	2.58	28	0.0228
1-Apr-08	4:17	0.1896	2.59	28	0.0228
1-Apr-08	4:18	0.1896	2.6	28	0.0229
1-Apr-08	4:19	0.1896	2.61	28	0.0229
1-Apr-08	4:20	0.1896	2.62	28	0.023
1-Apr-08	4:21	0.1896	2.63	28	0.023
1-Apr-08	4:22	0.1897	2.64	28	0.0231
1-Apr-08	4:23	0.1897	2.65	28	0.0231
1-Apr-08	4:24	0.1897	2.66	28	0.0232
1-Apr-08	4:25	0.1897	2.67	28	0.0232
1-Apr-08	4:26	0.1897	2.68	28	0.0233
1-Apr-08	4:27	0.1898	2.69	28	0.0233
1-Apr-08	4:28	0.1898	2.7	28	0.0234
1-Apr-08	4:29	0.1898	2.71	28	0.0234
1-Apr-08	4:30	0.1898	2.72	28	0.0234
1-Apr-08	4:31	0.1898	2.73	28	0.0235
1-Apr-08	4:32	0.1899	2.74	28	0.0235
1-Apr-08	4:33	0.1899	2.75	28	0.0236
1-Apr-08	4:34	0.1899	2.76	28	0.0236
1-Apr-08	4:35	0.1899	2.77	28	0.0237
1-Apr-08	4:36	0.1899	2.78	28	0.0237
1-Apr-08	4:37	0.19	2.79	28	0.0238
1-Apr-08	4:38	0.19	2.8	28	0.0238
1-Apr-08	4:39	0.19	2.81	28	0.0239
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1-Apr-08	4:41	0.19	2.83	28	0.024
1-Apr-08	4:42	0.1901	2.84	28	0.024
1-Apr-08	4:43	0.1901	2.85	28	0.0241
1-Apr-08	4:44	0.1901	2.86	28	0.0241
1-Apr-08	4:45	0.1901	2.87	28	0.0241
1-Apr-08	4:46	0.1901	2.88	28	0.0242
1-Apr-08	4:47	0.1902	2.89	28	0.0242
1-Apr-08	4:48	0.1902	2.9	28	0.0243
1-Apr-08	4:49	0.1902	2.91	28	0.0243
1-Apr-08	4:50	0.1902	2.92	28	0.0244
1-Apr-08	4:51	0.1902	2.93	28	0.0244
1-Apr-08	4:52	0.1903	2.94	28	0.0245
1-Apr-08	4:53	0.1903	2.95	28	0.0245
1-Apr-08	4:54	0.1903	2.96	28	0.0246
1-Apr-08	4:55	0.1903	2.97	28	0.0246
1-Apr-08	4:56	0.1903	2.98	28	0.0247

1-Apr-08	4:57	0.1903	2.98	28	0.0247
1-Apr-08	4:58	0.1904	2.99	28	0.0247
1-Apr-08	4:59	0.1904	3	28	0.0248
1-Apr-08	5:00	0.1904	3.01	28	0.0248
1-Apr-08	5:01	0.1904	3.02	28	0.0249
1-Apr-08	5:02	0.1904	3.03	28	0.0249
1-Apr-08	5:03	0.1905	3.04	28	0.025
1-Apr-08	5:04	0.1905	3.05	28	0.025
1-Apr-08	5:05	0.1905	3.06	28	0.0251
1-Apr-08	5:06	0.1905	3.07	28	0.0251
1-Apr-08	5:07	0.1905	3.08	28	0.0251
1-Apr-08	5:08	0.1906	3.09	28	0.0252
1-Apr-08	5:09	0.1906	3.1	28	0.0252
1-Apr-08	5:10	0.1906	3.11	28	0.0252
1-Apr-08	5:11	0.1906	3.12	28	0.0253
1-Apr-08	5:12	0.1906	3.13	28	0.0253
1-Apr-08	5:13	0.1907	3.14	28	0.0253
1-Apr-08	5:14	0.1907	3.15	28	0.0254
1-Apr-08	5:15	0.1907	3.16	28	0.0254
1-Apr-08	5:16	0.1907	3.17	28	0.0255
1-Apr-08	5:17	0.1907	3.18	28	0.0255
1-Apr-08	5:18	0.1908	3.19	28	0.0255
1-Apr-08	5:19	0.1908	3.2	28	0.0256
1-Apr-08	5:20	0.1908	3.21	28	0.0256
1-Apr-08	5:21	0.1908	3.22	28	0.0256
1-Apr-08	5:22	0.1908	3.23	28	0.0257
1-Apr-08	5:23	0.1908	3.24	28	0.0257
1-Apr-08	5:24	0.1909	3.25	28	0.0258
1-Apr-08	5:25	0.1909	3.26	28	0.0258
1-Apr-08	5:26	0.1909	3.27	28	0.0258
1-Apr-08	5:27	0.1909	3.28	28	0.0259
1-Apr-08	5:28	0.1909	3.29	28	0.0259
1-Apr-08	5:29	0.191	3.3	28	0.0259
1-Apr-08	5:30	0.191	3.31	28	0.026
1-Apr-08	5:31	0.191	3.32	28	0.026
1-Apr-08	5:32	0.191	3.33	28	0.026
1-Apr-08	5:33	0.191	3.34	28	0.0261
1-Apr-08	5:34	0.1911	3.35	28	0.0261
1-Apr-08	5:35	0.1911	3.36	28	0.0262
1-Apr-08	5:36	0.1911	3.37	28	0.0262
1-Apr-08	5:37	0.1911	3.38	28	0.0262
1-Apr-08	5:38	0.1911	3.39	28	0.0263
1-Apr-08	5:39	0.1911	3.4	28	0.0263
1-Apr-08	5:40	0.1912	3.41	28	0.0263
1-Apr-08	5:41	0.1912	3.42	28	0.0264
1-Apr-08	5:42	0.1912	3.43	28	0.0264
1-Apr-08	5:43	0.1912	3.44	28	0.0264
1-Apr-08	5:44	0.1912	3.45	28	0.0265
1-Apr-08	5:45	0.1913	3.46	28	0.0265
1-Apr-08	5:46	0.1913	3.47	28	0.0266

1-Apr-08	5:47	0.1913	3.48	28	0.0266
1-Apr-08	5:48	0.1913	3.49	28	0.0266
1-Apr-08	5:49	0.1913	3.5	28	0.0267
1-Apr-08	5:50	0.1913	3.51	28	0.0267
1-Apr-08	5:51	0.1914	3.52	28	0.0267
1-Apr-08	5:52	0.1914	3.53	28	0.0268
1-Apr-08	5:53	0.1914	3.54	28	0.0268
1-Apr-08	5:54	0.1914	3.55	28	0.0268
1-Apr-08	5:55	0.1914	3.56	28	0.0269
1-Apr-08	5:56	0.1924	3.57	28	0.0269
1-Apr-08	5:57	0.1954	3.58	28	0.027
1-Apr-08	5:58	0.2011	3.59	28	0.027
1-Apr-08	5:59	0.2108	3.6	28	0.027
1-Apr-08	6:00	0.2251	3.61	28	0.0271
1-Apr-08	6:01	0.2432	3.62	28	0.0271
1-Apr-08	6:02	0.2634	3.64	28	0.0272
1-Apr-08	6:03	0.2843	3.65	28	0.0272
1-Apr-08	6:04	0.3048	3.67	28	0.0273
1-Apr-08	6:05	0.3237	3.69	28	0.0273
1-Apr-08	6:06	0.3408	3.7	28	0.0274
1-Apr-08	6:07	0.3554	3.72	28	0.0275
1-Apr-08	6:08	0.367	3.74	28	0.0276
1-Apr-08	6:09	0.3763	3.76	28	0.0276
1-Apr-08	6:10	0.3838	3.79	28	0.0277
1-Apr-08	6:11	0.39	3.81	28	0.0278
1-Apr-08	6:12	0.3951	3.83	28	0.0279
1-Apr-08	6:13	0.3994	3.85	28	0.028
1-Apr-08	6:14	0.4029	3.87	28	0.028
1-Apr-08	6:15	0.4057	3.9	28	0.0281
1-Apr-08	6:16	0.4081	3.92	28	0.0282
1-Apr-08	6:17	0.41	3.94	28	0.0283
1-Apr-08	6:18	0.4116	3.96	28	0.0284
1-Apr-08	6:19	0.4129	3.99	28	0.0285
1-Apr-08	6:20	0.414	4.01	28	0.0285
1-Apr-08	6:21	0.4149	4.03	28	0.0286
1-Apr-08	6:22	0.4157	4.06	28	0.0287
1-Apr-08	6:23	0.4163	4.08	28	0.0288
1-Apr-08	6:24	0.4169	4.1	28	0.0289
1-Apr-08	6:25	0.4173	4.13	28	0.029
1-Apr-08	6:26	0.4177	4.15	28	0.0291
1-Apr-08	6:27	0.418	4.17	28	0.0291
1-Apr-08	6:28	0.4183	4.2	28	0.0292
1-Apr-08	6:29	0.4186	4.22	28	0.0293
1-Apr-08	6:30	0.4188	4.24	28	0.0294
1-Apr-08	6:31	0.419	4.27	28	0.0295
1-Apr-08	6:32	0.4192	4.29	28	0.0296
1-Apr-08	6:33	0.4193	4.31	28	0.0296
1-Apr-08	6:34	0.4194	4.34	28	0.0297
1-Apr-08	6:35	0.4195	4.36	28	0.0298
1-Apr-08	6:36	0.4196	4.38	28	0.0299

1-Apr-08	6:37	0.4197	4.41	28	0.03
1-Apr-08	6:38	0.4198	4.43	28	0.0301
1-Apr-08	6:39	0.4199	4.45	28	0.0302
1-Apr-08	6:40	0.4199	4.48	28	0.0302
1-Apr-08	6:41	0.42	4.5	28	0.0303
1-Apr-08	6:42	0.4201	4.52	28	0.0304
1-Apr-08	6:43	0.4202	4.55	28	0.0305
1-Apr-08	6:44	0.4203	4.57	28	0.0306
1-Apr-08	6:45	0.4203	4.59	28	0.0307
1-Apr-08	6:46	0.4204	4.62	28	0.0308
1-Apr-08	6:47	0.4205	4.64	28	0.0308
1-Apr-08	6:48	0.4206	4.66	28	0.0309
1-Apr-08	6:49	0.4206	4.69	28	0.031
1-Apr-08	6:50	0.4207	4.71	28	0.0311
1-Apr-08	6:51	0.4208	4.73	28	0.0312
1-Apr-08	6:52	0.4209	4.76	28	0.0313
1-Apr-08	6:53	0.421	4.78	28	0.0313
1-Apr-08	6:54	0.421	4.8	28	0.0314
1-Apr-08	6:55	0.4211	4.83	28	0.0315
1-Apr-08	6:56	0.4212	4.85	28	0.0316
1-Apr-08	6:57	0.4213	4.87	28	0.0317
1-Apr-08	6:58	0.4213	4.9	28	0.0318
1-Apr-08	6:59	0.4214	4.92	28	0.0319
1-Apr-08	7:00	0.4215	4.94	28	0.0319
1-Apr-08	7:01	0.4216	4.97	28	0.032
1-Apr-08	7:02	0.4216	4.99	28	0.0321
1-Apr-08	7:03	0.4217	5.01	28	0.0322
1-Apr-08	7:04	0.4218	5.04	28	0.0323
1-Apr-08	7:05	0.4219	5.06	28	0.0324
1-Apr-08	7:06	0.4219	5.08	28	0.0325
1-Apr-08	7:07	0.422	5.11	28	0.0325
1-Apr-08	7:08	0.4221	5.13	28	0.0326
1-Apr-08	7:09	0.4222	5.15	28	0.0327
1-Apr-08	7:10	0.4222	5.18	28	0.0328
1-Apr-08	7:11	0.4223	5.2	28	0.0329
1-Apr-08	7:12	0.4224	5.23	28	0.033
1-Apr-08	7:13	0.4225	5.25	28	0.033
1-Apr-08	7:14	0.4225	5.27	28	0.0331
1-Apr-08	7:15	0.4226	5.3	28	0.0332
1-Apr-08	7:16	0.4227	5.32	28	0.0332
1-Apr-08	7:17	0.4228	5.34	28	0.0333
1-Apr-08	7:18	0.4228	5.37	28	0.0333
1-Apr-08	7:19	0.4229	5.39	28	0.0334
1-Apr-08	7:20	0.423	5.41	28	0.0335
1-Apr-08	7:21	0.423	5.44	28	0.0335
1-Apr-08	7:22	0.4231	5.46	28	0.0336
1-Apr-08	7:23	0.4232	5.48	28	0.0337
1-Apr-08	7:24	0.4233	5.51	28	0.0337
1-Apr-08	7:25	0.4233	5.53	28	0.0338
1-Apr-08	7:26	0.4234	5.55	28	0.0339

1-Apr-08	7:27	0.4235	5.58	28	0.0339
1-Apr-08	7:28	0.4236	5.6	28	0.034
1-Apr-08	7:29	0.4236	5.62	28	0.034
1-Apr-08	7:30	0.4237	5.65	28	0.0341
1-Apr-08	7:31	0.4238	5.67	28	0.0342
1-Apr-08	7:32	0.4238	5.69	28	0.0342
1-Apr-08	7:33	0.4239	5.72	28	0.0343
1-Apr-08	7:34	0.424	5.74	28	0.0344
1-Apr-08	7:35	0.424	5.76	28	0.0344
1-Apr-08	7:36	0.4241	5.79	28	0.0345
1-Apr-08	7:37	0.4242	5.81	28	0.0345
1-Apr-08	7:38	0.4243	5.83	28	0.0346
1-Apr-08	7:39	0.4243	5.86	28	0.0347
1-Apr-08	7:40	0.4244	5.88	28	0.0347
1-Apr-08	7:41	0.4245	5.9	28	0.0348
1-Apr-08	7:42	0.4245	5.93	28	0.0349
1-Apr-08	7:43	0.4246	5.95	28	0.0349
1-Apr-08	7:44	0.4247	5.97	28	0.035
1-Apr-08	7:45	0.4247	6	28	0.035
1-Apr-08	7:46	0.4248	6.02	28	0.0351
1-Apr-08	7:47	0.4249	6.04	28	0.0352
1-Apr-08	7:48	0.4249	6.07	28	0.0352
1-Apr-08	7:49	0.425	6.09	28	0.0353
1-Apr-08	7:50	0.4251	6.11	28	0.0354
1-Apr-08	7:51	0.4252	6.14	28	0.0354
1-Apr-08	7:52	0.4252	6.16	28	0.0355
1-Apr-08	7:53	0.4253	6.18	28	0.0355
1-Apr-08	7:54	0.4254	6.21	28	0.0356
1-Apr-08	7:55	0.4254	6.23	28	0.0357
1-Apr-08	7:56	0.4255	6.25	28	0.0357
1-Apr-08	7:57	0.4256	6.28	28	0.0358
1-Apr-08	7:58	0.4256	6.3	28	0.0359
1-Apr-08	7:59	0.4257	6.32	28	0.0359
1-Apr-08	8:00	0.4258	6.35	28	0.036
1-Apr-08	8:01	0.4258	6.37	28	0.0361
1-Apr-08	8:02	0.4259	6.39	28	0.0361
1-Apr-08	8:03	0.426	6.42	28	0.0362
1-Apr-08	8:04	0.426	6.44	28	0.0363
1-Apr-08	8:05	0.4261	6.46	28	0.0364
1-Apr-08	8:06	0.4262	6.49	28	0.0365
1-Apr-08	8:07	0.4262	6.51	28	0.0366
1-Apr-08	8:08	0.4263	6.53	28	0.0366
1-Apr-08	8:09	0.4264	6.56	28	0.0367
1-Apr-08	8:10	0.4264	6.58	28	0.0368
1-Apr-08	8:11	0.4265	6.6	28	0.0369
1-Apr-08	8:12	0.4266	6.63	28	0.037
1-Apr-08	8:13	0.4266	6.65	28	0.0371
1-Apr-08	8:14	0.4267	6.67	28	0.0371
1-Apr-08	8:15	0.4267	6.7	28	0.0372
1-Apr-08	8:16	0.4268	6.72	28	0.0373

1-Apr-08	8:17	0.4269	6.74	28	0.0374
1-Apr-08	8:18	0.4269	6.77	28	0.0375
1-Apr-08	8:19	0.427	6.79	28	0.0376
1-Apr-08	8:20	0.4271	6.81	28	0.0376
1-Apr-08	8:21	0.4271	6.84	28	0.0377
1-Apr-08	8:22	0.4272	6.86	28	0.0378
1-Apr-08	8:23	0.4273	6.88	28	0.0379
1-Apr-08	8:24	0.4273	6.91	28	0.038
1-Apr-08	8:25	0.4274	6.93	28	0.038
1-Apr-08	8:26	0.4275	6.95	28	0.0381
1-Apr-08	8:27	0.4275	6.98	28	0.0382
1-Apr-08	8:28	0.4276	7	28	0.0383
1-Apr-08	8:29	0.4276	7.02	28	0.0384
1-Apr-08	8:30	0.4277	7.05	28	0.0385
1-Apr-08	8:31	0.4278	7.07	28	0.0385
1-Apr-08	8:32	0.4278	7.09	28	0.0386
1-Apr-08	8:33	0.4279	7.12	28	0.0387
1-Apr-08	8:34	0.428	7.14	28	0.0388
1-Apr-08	8:35	0.428	7.17	28	0.0389
1-Apr-08	8:36	0.4281	7.19	28	0.039
1-Apr-08	8:37	0.4281	7.21	28	0.039
1-Apr-08	8:38	0.4282	7.24	28	0.0391
1-Apr-08	8:39	0.4283	7.26	28	0.0392
1-Apr-08	8:40	0.4283	7.28	28	0.0393
1-Apr-08	8:41	0.4284	7.31	28	0.0394
1-Apr-08	8:42	0.4285	7.33	28	0.0395
1-Apr-08	8:43	0.4285	7.35	28	0.0395
1-Apr-08	8:44	0.4286	7.38	28	0.0396
1-Apr-08	8:45	0.4286	7.4	28	0.0397
1-Apr-08	8:46	0.4287	7.42	28	0.0398
1-Apr-08	8:47	0.4288	7.45	28	0.0399
1-Apr-08	8:48	0.4288	7.47	28	0.0399
1-Apr-08	8:49	0.4289	7.49	28	0.04
1-Apr-08	8:50	0.4289	7.52	28	0.0401
1-Apr-08	8:51	0.429	7.54	28	0.0401
1-Apr-08	8:52	0.4291	7.56	28	0.0401
1-Apr-08	8:53	0.4291	7.59	28	0.0402
1-Apr-08	8:54	0.4292	7.61	28	0.0402
1-Apr-08	8:55	0.4292	7.63	28	0.0403
1-Apr-08	8:56	0.4298	7.66	28	0.0403
1-Apr-08	8:57	0.4316	7.68	28	0.0403
1-Apr-08	8:58	0.4349	7.7	28	0.0404
1-Apr-08	8:59	0.4404	7.73	28	0.0404
1-Apr-08	9:00	0.4486	7.75	28	0.0405
1-Apr-08	9:01	0.4589	7.78	28	0.0405
1-Apr-08	9:02	0.4704	7.8	28	0.0406
1-Apr-08	9:03	0.4822	7.83	28	0.0406
1-Apr-08	9:04	0.4939	7.85	28	0.0406
1-Apr-08	9:05	0.5047	7.88	28	0.0407
1-Apr-08	9:06	0.5144	7.91	28	0.0407

1-Apr-08	9:07	0.5228	7.94	28	0.0408
1-Apr-08	9:08	0.5294	7.97	28	0.0408
1-Apr-08	9:09	0.5347	8	28	0.0409
1-Apr-08	9:10	0.539	8.03	28	0.0409
1-Apr-08	9:11	0.5426	8.06	28	0.041
1-Apr-08	9:12	0.5455	8.09	28	0.0411
1-Apr-08	9:13	0.548	8.12	28	0.0411
1-Apr-08	9:14	0.55	8.15	28	0.0412
1-Apr-08	9:15	0.5517	8.18	28	0.0412
1-Apr-08	9:16	0.5531	8.21	28	0.0413
1-Apr-08	9:17	0.5542	8.24	28	0.0413
1-Apr-08	9:18	0.5552	8.27	28	0.0414
1-Apr-08	9:19	0.556	8.3	28	0.0414
1-Apr-08	9:20	0.5566	8.33	28	0.0415
1-Apr-08	9:21	0.5572	8.36	28	0.0415
1-Apr-08	9:22	0.5577	8.39	28	0.0416
1-Apr-08	9:23	0.5581	8.42	28	0.0416
1-Apr-08	9:24	0.5584	8.46	28	0.0417
1-Apr-08	9:25	0.5587	8.49	28	0.0417
1-Apr-08	9:26	0.559	8.52	28	0.0418
1-Apr-08	9:27	0.5592	8.55	28	0.0419
1-Apr-08	9:28	0.5595	8.58	28	0.0419
1-Apr-08	9:29	0.5596	8.61	28	0.042
1-Apr-08	9:30	0.5598	8.64	28	0.0425
1-Apr-08	9:31	0.56	8.67	28	0.0439
1-Apr-08	9:32	0.5601	8.7	28	0.0454
1-Apr-08	9:33	0.5603	8.73	28	0.0468
1-Apr-08	9:34	0.5604	8.77	28	0.0482
1-Apr-08	9:35	0.5605	8.8	28	0.0497
1-Apr-08	9:36	0.5606	8.83	28	0.0511
1-Apr-08	9:37	0.5607	8.86	28	0.0525
1-Apr-08	9:38	0.5607	8.89	28	0.0539
1-Apr-08	9:39	0.5608	8.92	28	0.0553
1-Apr-08	9:40	0.5609	8.95	28	0.0567
1-Apr-08	9:41	0.561	8.98	28	0.0581
1-Apr-08	9:42	0.5611	9.01	28	0.0595
1-Apr-08	9:43	0.5612	9.04	28	0.0609
1-Apr-08	9:44	0.5613	9.07	28	0.0623
1-Apr-08	9:45	0.5614	9.1	28	0.0637
1-Apr-08	9:46	0.5615	9.13	28	0.0651
1-Apr-08	9:47	0.5615	9.16	28	0.0665
1-Apr-08	9:48	0.5616	9.19	28	0.0679
1-Apr-08	9:49	0.5617	9.22	28	0.0692
1-Apr-08	9:50	0.5618	9.25	28	0.0706
1-Apr-08	9:51	0.5619	9.28	28	0.072
1-Apr-08	9:52	0.562	9.31	28	0.0733
1-Apr-08	9:53	0.5621	9.33	28	0.0747
1-Apr-08	9:54	0.5622	9.36	28	0.0761
1-Apr-08	9:55	0.5623	9.39	28	0.0774
1-Apr-08	9:56	0.5634	9.42	28	0.0788

1-Apr-08	9:57	0.5669	9.45	28	0.0801
1-Apr-08	9:58	0.5736	9.48	28	0.0815
1-Apr-08	9:59	0.5846	9.51	28	0.0829
1-Apr-08	10:00	0.6011	9.54	28	0.0843
1-Apr-08	10:01	0.6219	9.57	28	0.0858
1-Apr-08	10:02	0.6451	9.61	28	0.0873
1-Apr-08	10:03	0.6691	9.64	28	0.0889
1-Apr-08	10:04	0.6927	9.68	28	0.0905
1-Apr-08	10:05	0.7144	9.71	28	0.0922
1-Apr-08	10:06	0.734	9.75	28	0.094
1-Apr-08	10:07	0.7508	9.79	28	0.0958
1-Apr-08	10:08	0.7642	9.83	28	0.0989
1-Apr-08	10:09	0.7748	9.87	28	0.1021
1-Apr-08	10:10	0.7836	9.91	28	0.1055
1-Apr-08	10:11	0.7907	9.95	28	0.1088
1-Apr-08	10:12	0.7967	9.99	28	0.1121
1-Apr-08	10:13	0.8016	10.03	28	0.1155
1-Apr-08	10:14	0.8057	10.07	28	0.1188
1-Apr-08	10:15	0.809	10.11	28	0.1222
1-Apr-08	10:16	0.8118	10.16	28	0.1256
1-Apr-08	10:17	0.8141	10.2	28	0.1289
1-Apr-08	10:18	0.816	10.24	28	0.1323
1-Apr-08	10:19	0.8176	10.28	28	0.1356
1-Apr-08	10:20	0.8189	10.32	28	0.1389
1-Apr-08	10:21	0.82	10.36	28	0.1423
1-Apr-08	10:22	0.821	10.4	28	0.1456
1-Apr-08	10:23	0.8218	10.44	28	0.1489
1-Apr-08	10:24	0.8225	10.48	28	0.1522
1-Apr-08	10:25	0.8231	10.52	28	0.1554
1-Apr-08	10:26	0.8236	10.56	28	0.1587
1-Apr-08	10:27	0.824	10.6	28	0.1619
1-Apr-08	10:28	0.8244	10.64	28	0.1652
1-Apr-08	10:29	0.8248	10.68	28	0.1684
1-Apr-08	10:30	0.8252	10.72	28	0.1716
1-Apr-08	10:31	0.8255	10.76	28	0.1748
1-Apr-08	10:32	0.8257	10.8	28	0.178
1-Apr-08	10:33	0.826	10.84	28	0.1811
1-Apr-08	10:34	0.8262	10.88	28	0.1843
1-Apr-08	10:35	0.8263	10.91	28	0.1874
1-Apr-08	10:36	0.8265	10.95	28	0.1905
1-Apr-08	10:37	0.8267	10.99	28	0.1941
1-Apr-08	10:38	0.8268	11.03	28	0.198
1-Apr-08	10:39	0.827	11.07	28	0.2018
1-Apr-08	10:40	0.8272	11.1	28	0.2057
1-Apr-08	10:41	0.8273	11.14	28	0.2095
1-Apr-08	10:42	0.8275	11.18	28	0.2133
1-Apr-08	10:43	0.8276	11.21	28	0.2171
1-Apr-08	10:44	0.8278	11.25	28	0.2209
1-Apr-08	10:45	0.8279	11.29	28	0.2246
1-Apr-08	10:46	0.8281	11.32	28	0.2284

1-Apr-08	10:47	0.8283	11.36	28	0.2321
1-Apr-08	10:48	0.8284	11.39	28	0.2357
1-Apr-08	10:49	0.8286	11.43	28	0.2394
1-Apr-08	10:50	0.8287	11.46	28	0.243
1-Apr-08	10:51	0.8289	11.5	28	0.2466
1-Apr-08	10:52	0.829	11.53	28	0.2502
1-Apr-08	10:53	0.8292	11.57	28	0.2538
1-Apr-08	10:54	0.8293	11.6	28	0.2574
1-Apr-08	10:55	0.8295	11.64	28	0.2609
1-Apr-08	10:56	0.8317	11.67	28	0.2644
1-Apr-08	10:57	0.8381	11.71	28	0.2679
1-Apr-08	10:58	0.8503	11.74	28	0.2715
1-Apr-08	10:59	0.8706	11.78	28	0.2751
1-Apr-08	11:00	0.901	11.81	28	0.2789
1-Apr-08	11:01	0.9392	11.85	28	0.2828
1-Apr-08	11:02	0.9819	11.89	28	0.287
1-Apr-08	11:03	1.026	11.93	28	0.2914
1-Apr-08	11:04	1.0694	11.98	28	0.2961
1-Apr-08	11:05	1.1094	12.03	28	0.301
1-Apr-08	11:06	1.1454	12.08	28	0.3061
1-Apr-08	11:07	1.1764	12.13	28	0.3113
1-Apr-08	11:08	1.201	12.18	28	0.3171
1-Apr-08	11:09	1.2207	12.23	28	0.3235
1-Apr-08	11:10	1.2367	12.29	28	0.3301
1-Apr-08	11:11	1.2499	12.34	28	0.3367
1-Apr-08	11:12	1.2609	12.4	28	0.3433
1-Apr-08	11:13	1.2701	12.45	28	0.35
1-Apr-08	11:14	1.2776	12.51	28	0.3566
1-Apr-08	11:15	1.2837	12.56	28	0.3633
1-Apr-08	11:16	1.2888	12.62	28	0.37
1-Apr-08	11:17	1.2931	12.67	28	0.3766
1-Apr-08	11:18	1.2966	12.73	28	0.3833
1-Apr-08	11:19	1.2996	12.78	28	0.3899
1-Apr-08	11:20	1.302	12.84	28	0.3965
1-Apr-08	11:21	1.3041	12.89	28	0.403
1-Apr-08	11:22	1.3058	12.95	28	0.4095
1-Apr-08	11:23	1.3073	13	28	0.416
1-Apr-08	11:24	1.3086	13.05	28	0.4225
1-Apr-08	11:25	1.3097	13.11	28	0.4289
1-Apr-08	11:26	1.3148	13.16	28	0.4352
1-Apr-08	11:27	1.3283	13.21	28	0.4416
1-Apr-08	11:28	1.3533	13.26	28	0.4481
1-Apr-08	11:29	1.3948	13.32	28	0.4548
1-Apr-08	11:30	1.4563	13.38	28	0.4619
1-Apr-08	11:31	1.5335	13.44	28	0.4703
1-Apr-08	11:32	1.6199	13.51	28	0.4792
1-Apr-08	11:33	1.7089	13.58	28	0.4887
1-Apr-08	11:34	1.7966	13.65	28	0.4989
1-Apr-08	11:35	1.8774	13.73	28	0.5097
1-Apr-08	11:36	1.9527	13.82	28	0.521

1-Apr-08	11:37	2.0231	13.9	28	0.5328
1-Apr-08	11:38	2.0882	13.99	28	0.5451
1-Apr-08	11:39	2.1535	14.09	28	0.5578
1-Apr-08	11:40	2.2243	14.19	28	0.5709
1-Apr-08	11:41	2.2991	14.29	28	0.5845
1-Apr-08	11:42	2.3754	14.39	28	0.5987
1-Apr-08	11:43	2.4496	14.5	28	0.6133
1-Apr-08	11:44	2.5196	14.61	28	0.6286
1-Apr-08	11:45	2.5828	14.73	28	0.6453
1-Apr-08	11:46	2.6488	14.85	28	0.6625
1-Apr-08	11:47	2.7276	14.97	28	0.6802
1-Apr-08	11:48	2.8258	15.09	28	0.6985
1-Apr-08	11:49	2.9569	15.22	28	0.7176
1-Apr-08	11:50	3.1322	15.36	28.01	0.7379
1-Apr-08	11:51	3.3417	15.51	28.01	0.7598
1-Apr-08	11:52	3.5708	15.67	28.01	0.7833
1-Apr-08	11:53	3.8037	15.85	28.01	0.8088
1-Apr-08	11:54	4.0309	16.03	28.01	0.8381
1-Apr-08	11:55	4.2395	16.23	28.01	0.8692
1-Apr-08	11:56	4.4462	16.44	28.01	0.9019
1-Apr-08	11:57	4.6671	16.65	28.01	0.9364
1-Apr-08	11:58	4.9117	16.88	28.01	0.9727
1-Apr-08	11:59	5.2089	17.13	28.01	1.0116
1-Apr-08	12:00	5.5841	17.39	28.01	1.0551
1-Apr-08	12:01	6.0194	17.67	28.01	1.1021
1-Apr-08	12:02	6.4879	17.98	28.01	1.1532
1-Apr-08	12:03	6.96	18.31	28.01	1.2085
1-Apr-08	12:04	7.4178	18.67	28.01	1.2708
1-Apr-08	12:05	7.8366	19.05	28.01	1.3375
1-Apr-08	12:06	8.1843	19.45	28.01	1.4075
1-Apr-08	12:07	8.4235	19.86	28.01	1.4812
1-Apr-08	12:08	8.5215	20.28	28.01	1.5572
1-Apr-08	12:09	8.4594	20.69	28.01	1.6325
1-Apr-08	12:10	8.2274	21.09	28.01	1.7066
1-Apr-08	12:11	7.8613	21.47	28.01	1.7784
1-Apr-08	12:12	7.4121	21.82	28.01	1.8447
1-Apr-08	12:13	6.9248	22.14	28.01	1.905
1-Apr-08	12:14	6.429	22.42	28.01	1.986
1-Apr-08	12:15	5.9643	22.67	28.01	2.0763
1-Apr-08	12:16	5.5372	22.89	28.01	2.1552
1-Apr-08	12:17	5.1591	23.08	28.01	2.2237
1-Apr-08	12:18	4.8439	23.24	28.01	2.2833
1-Apr-08	12:19	4.5716	23.39	28.01	2.3354
1-Apr-08	12:20	4.3196	23.51	28.01	2.3807
1-Apr-08	12:21	4.085	23.62	28.01	2.4231
1-Apr-08	12:22	3.8652	23.71	28.01	2.4689
1-Apr-08	12:23	3.665	23.79	28.01	2.5071
1-Apr-08	12:24	3.4854	23.85	28.01	2.5386
1-Apr-08	12:25	3.3289	23.9	28.01	2.5643
1-Apr-08	12:26	3.1906	23.94	28.01	2.5848

1-Apr-08	12:27	3.0661	23.98	28.01	2.6008
1-Apr-08	12:28	2.9548	24	28.01	2.6129
1-Apr-08	12:29	2.848	24.02	28.01	2.6214
1-Apr-08	12:30	2.7377	24.03	28.01	2.6265
1-Apr-08	12:31	2.6253	24.03	28.01	2.6281
1-Apr-08	12:32	2.5133	24.03	28.01	2.6264
1-Apr-08	12:33	2.4061	24.02	28.01	2.6215
1-Apr-08	12:34	2.3059	24	28.01	2.6136
1-Apr-08	12:35	2.2162	23.98	28.01	2.6032
1-Apr-08	12:36	2.1373	23.95	28.01	2.5906
1-Apr-08	12:37	2.0703	23.93	28.01	2.5763
1-Apr-08	12:38	2.0165	23.89	28.01	2.5605
1-Apr-08	12:39	1.9735	23.86	28.01	2.5439
1-Apr-08	12:40	1.9383	23.83	28.01	2.5265
1-Apr-08	12:41	1.9098	23.79	28.01	2.5087
1-Apr-08	12:42	1.8863	23.75	28.01	2.4907
1-Apr-08	12:43	1.8673	23.72	28.01	2.4726
1-Apr-08	12:44	1.8522	23.68	28.01	2.4545
1-Apr-08	12:45	1.8405	23.65	28.01	2.4365
1-Apr-08	12:46	1.8313	23.61	28.01	2.4188
1-Apr-08	12:47	1.8237	23.58	28.01	2.404
1-Apr-08	12:48	1.8176	23.54	28.01	2.3915
1-Apr-08	12:49	1.8126	23.51	28.01	2.3791
1-Apr-08	12:50	1.8085	23.47	28.01	2.3669
1-Apr-08	12:51	1.8053	23.44	28.01	2.3549
1-Apr-08	12:52	1.8027	23.41	28.01	2.3431
1-Apr-08	12:53	1.8006	23.37	28.01	2.3314
1-Apr-08	12:54	1.799	23.34	28.01	2.32
1-Apr-08	12:55	1.7979	23.31	28.01	2.3088
1-Apr-08	12:56	1.7938	23.28	28.01	2.2978
1-Apr-08	12:57	1.7834	23.25	28.01	2.2869
1-Apr-08	12:58	1.764	23.22	28.01	2.2759
1-Apr-08	12:59	1.7319	23.19	28.01	2.2645
1-Apr-08	13:00	1.6844	23.16	28.01	2.2526
1-Apr-08	13:01	1.6248	23.12	28.01	2.2398
1-Apr-08	13:02	1.5581	23.08	28.01	2.2259
1-Apr-08	13:03	1.4894	23.04	28.01	2.2108
1-Apr-08	13:04	1.4219	23	28.01	2.1946
1-Apr-08	13:05	1.3598	22.95	28.01	2.1773
1-Apr-08	13:06	1.3041	22.9	28.01	2.1592
1-Apr-08	13:07	1.2562	22.85	28.01	2.1403
1-Apr-08	13:08	1.2182	22.79	28.01	2.1209
1-Apr-08	13:09	1.1881	22.74	28.01	2.1012
1-Apr-08	13:10	1.1635	22.68	28.01	2.0814
1-Apr-08	13:11	1.1435	22.63	28.01	2.0615
1-Apr-08	13:12	1.1269	22.57	28.01	2.0416
1-Apr-08	13:13	1.1132	22.52	28.01	2.0218
1-Apr-08	13:14	1.102	22.46	28.01	2.0022
1-Apr-08	13:15	1.093	22.41	28.01	1.9828
1-Apr-08	13:16	1.0856	22.36	28.01	1.9636

1-Apr-08	13:17	1.0795	22.31	28.01	1.9447
1-Apr-08	13:18	1.0746	22.25	28.01	1.9274
1-Apr-08	13:19	1.0706	22.2	28.01	1.9178
1-Apr-08	13:20	1.0674	22.15	28.01	1.9082
1-Apr-08	13:21	1.0647	22.1	28.01	1.8986
1-Apr-08	13:22	1.0625	22.05	28.01	1.8892
1-Apr-08	13:23	1.0608	22	28.01	1.8798
1-Apr-08	13:24	1.0593	21.95	28.01	1.8705
1-Apr-08	13:25	1.0582	21.91	28.01	1.8613
1-Apr-08	13:26	1.0573	21.86	28.01	1.8522
1-Apr-08	13:27	1.0565	21.81	28.01	1.8432
1-Apr-08	13:28	1.0559	21.76	28.01	1.8343
1-Apr-08	13:29	1.0553	21.72	28.01	1.8255
1-Apr-08	13:30	1.0549	21.67	28.01	1.8167
1-Apr-08	13:31	1.0546	21.63	28.01	1.8081
1-Apr-08	13:32	1.0544	21.58	28.01	1.7996
1-Apr-08	13:33	1.0542	21.54	28.01	1.7911
1-Apr-08	13:34	1.0541	21.49	28.01	1.7828
1-Apr-08	13:35	1.0542	21.45	28.01	1.7745
1-Apr-08	13:36	1.0542	21.41	28.01	1.7664
1-Apr-08	13:37	1.0543	21.36	28.01	1.7583
1-Apr-08	13:38	1.0544	21.32	28.01	1.7504
1-Apr-08	13:39	1.0544	21.28	28.01	1.7425
1-Apr-08	13:40	1.0545	21.24	28.01	1.7347
1-Apr-08	13:41	1.0545	21.2	28.01	1.727
1-Apr-08	13:42	1.0546	21.16	28.01	1.7194
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1-Apr-08	13:46	1.0549	21	28.01	1.6898
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1-Apr-08	13:50	1.0551	20.85	28.01	1.6622
1-Apr-08	13:51	1.0552	20.82	28.01	1.6556
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1-Apr-08	13:55	1.0554	20.68	28.01	1.6299
1-Apr-08	13:56	1.0541	20.64	28.01	1.6237
1-Apr-08	13:57	1.0501	20.61	28.01	1.6174
1-Apr-08	13:58	1.0423	20.57	28.01	1.6112
1-Apr-08	13:59	1.0291	20.54	28.01	1.605
1-Apr-08	14:00	1.0094	20.5	28.01	1.5986
1-Apr-08	14:01	0.9847	20.47	28.01	1.5921
1-Apr-08	14:02	0.9569	20.43	28.01	1.5853
1-Apr-08	14:03	0.9283	20.39	28.01	1.5783
1-Apr-08	14:04	0.9001	20.35	28.01	1.5711
1-Apr-08	14:05	0.8741	20.31	28.01	1.5637
1-Apr-08	14:06	0.8508	20.27	28.01	1.556

1-Apr-08	14:07	0.8308	20.23	28.01	1.5483
1-Apr-08	14:08	0.8149	20.18	28.01	1.5404
1-Apr-08	14:09	0.8023	20.14	28.01	1.5324
1-Apr-08	14:10	0.792	20.1	28.01	1.5244
1-Apr-08	14:11	0.7836	20.05	28.01	1.5164
1-Apr-08	14:12	0.7767	20.01	28.01	1.5084
1-Apr-08	14:13	0.7709	19.96	28.01	1.5004
1-Apr-08	14:14	0.7663	19.92	28.01	1.4925
1-Apr-08	14:15	0.7625	19.88	28.01	1.4846
1-Apr-08	14:16	0.7594	19.83	28.01	1.4767
1-Apr-08	14:17	0.7569	19.79	28.01	1.4689
1-Apr-08	14:18	0.7548	19.75	28.01	1.4611
1-Apr-08	14:19	0.7531	19.71	28.01	1.4535
1-Apr-08	14:20	0.7518	19.67	28.01	1.4458
1-Apr-08	14:21	0.7507	19.62	28.01	1.4384
1-Apr-08	14:22	0.7498	19.58	28.01	1.4312
1-Apr-08	14:23	0.749	19.54	28.01	1.424
1-Apr-08	14:24	0.7484	19.5	28.01	1.417
1-Apr-08	14:25	0.7479	19.46	28.01	1.4099
1-Apr-08	14:26	0.7475	19.42	28.01	1.403
1-Apr-08	14:27	0.7472	19.38	28.01	1.3961
1-Apr-08	14:28	0.747	19.34	28.01	1.3893
1-Apr-08	14:29	0.7467	19.31	28.01	1.3826
1-Apr-08	14:30	0.7466	19.27	28.01	1.3759
1-Apr-08	14:31	0.7464	19.23	28.01	1.3693
1-Apr-08	14:32	0.7463	19.19	28.01	1.3628
1-Apr-08	14:33	0.7463	19.16	28.01	1.3563
1-Apr-08	14:34	0.7463	19.12	28.01	1.3499
1-Apr-08	14:35	0.7463	19.08	28.01	1.3436
1-Apr-08	14:36	0.7463	19.05	28.01	1.3373
1-Apr-08	14:37	0.7463	19.01	28.01	1.3311
1-Apr-08	14:38	0.7463	18.98	28.01	1.325
1-Apr-08	14:39	0.7464	18.94	28.01	1.3189
1-Apr-08	14:40	0.7464	18.91	28.01	1.3129
1-Apr-08	14:41	0.7464	18.88	28.01	1.307
1-Apr-08	14:42	0.7465	18.84	28.01	1.3011
1-Apr-08	14:43	0.7465	18.81	28.01	1.2953
1-Apr-08	14:44	0.7465	18.78	28.01	1.2895
1-Apr-08	14:45	0.7465	18.74	28.01	1.2838
1-Apr-08	14:46	0.7466	18.71	28.01	1.2782
1-Apr-08	14:47	0.7466	18.68	28.01	1.2726
1-Apr-08	14:48	0.7466	18.65	28.01	1.2671
1-Apr-08	14:49	0.7466	18.62	28.01	1.2616
1-Apr-08	14:50	0.7467	18.59	28.01	1.2562
1-Apr-08	14:51	0.7467	18.56	28.01	1.2509
1-Apr-08	14:52	0.7467	18.53	28.01	1.2456
1-Apr-08	14:53	0.7468	18.5	28.01	1.2404
1-Apr-08	14:54	0.7468	18.47	28.01	1.2352
1-Apr-08	14:55	0.7468	18.44	28.01	1.2301
1-Apr-08	14:56	0.7456	18.41	28.01	1.225

1-Apr-08	14:57	0.742	18.38	28.01	1.2199
1-Apr-08	14:58	0.7349	18.35	28.01	1.2149
1-Apr-08	14:59	0.723	18.32	28.01	1.2101
1-Apr-08	15:00	0.7052	18.29	28.01	1.2052
1-Apr-08	15:01	0.6828	18.26	28.01	1.2001
1-Apr-08	15:02	0.6578	18.23	28.01	1.1949
1-Apr-08	15:03	0.6319	18.2	28.01	1.1894
1-Apr-08	15:04	0.6065	18.16	28.01	1.1838
1-Apr-08	15:05	0.583	18.13	28.01	1.1779
1-Apr-08	15:06	0.562	18.09	28.01	1.1719
1-Apr-08	15:07	0.5439	18.06	28.01	1.1658
1-Apr-08	15:08	0.5295	18.02	28.01	1.1595
1-Apr-08	15:09	0.5181	17.98	28.01	1.1532
1-Apr-08	15:10	0.5089	17.94	28.01	1.1469
1-Apr-08	15:11	0.5013	17.9	28.01	1.1405
1-Apr-08	15:12	0.495	17.87	28.01	1.1342
1-Apr-08	15:13	0.4898	17.83	28.01	1.1278
1-Apr-08	15:14	0.4856	17.79	28.01	1.1214
1-Apr-08	15:15	0.4822	17.75	28.01	1.1151
1-Apr-08	15:16	0.4794	17.71	28.01	1.1088
1-Apr-08	15:17	0.4771	17.68	28.01	1.1026
1-Apr-08	15:18	0.4752	17.64	28.01	1.0964
1-Apr-08	15:19	0.4737	17.6	28.01	1.0902
1-Apr-08	15:20	0.4724	17.56	28.01	1.0841
1-Apr-08	15:21	0.4714	17.53	28.01	1.078
1-Apr-08	15:22	0.4706	17.49	28.01	1.072
1-Apr-08	15:23	0.4699	17.46	28.01	1.066
1-Apr-08	15:24	0.4693	17.42	28.01	1.0601
1-Apr-08	15:25	0.4689	17.38	28.01	1.0542
1-Apr-08	15:26	0.4685	17.35	28.01	1.0484
1-Apr-08	15:27	0.4682	17.31	28.01	1.0427
1-Apr-08	15:28	0.468	17.28	28.01	1.037
1-Apr-08	15:29	0.4678	17.25	28.01	1.0313
1-Apr-08	15:30	0.4676	17.21	28.01	1.0257
1-Apr-08	15:31	0.4674	17.18	28.01	1.0202
1-Apr-08	15:32	0.4673	17.15	28.01	1.0147
1-Apr-08	15:33	0.4673	17.11	28.01	1.0093
1-Apr-08	15:34	0.4672	17.08	28.01	1.004
1-Apr-08	15:35	0.4672	17.05	28.01	0.9989
1-Apr-08	15:36	0.4672	17.02	28.01	0.9939
1-Apr-08	15:37	0.4672	16.99	28.01	0.9889
1-Apr-08	15:38	0.4673	16.95	28.01	0.984
1-Apr-08	15:39	0.4673	16.92	28.01	0.9791
1-Apr-08	15:40	0.4673	16.89	28.01	0.9743
1-Apr-08	15:41	0.4673	16.86	28.01	0.9695
1-Apr-08	15:42	0.4673	16.83	28.01	0.9648
1-Apr-08	15:43	0.4673	16.8	28.01	0.9601
1-Apr-08	15:44	0.4673	16.77	28.01	0.9554
1-Apr-08	15:45	0.4673	16.74	28.01	0.9508
1-Apr-08	15:46	0.4673	16.72	28.01	0.9463

1-Apr-08	15:47	0.4673	16.69	28.01	0.9418
1-Apr-08	15:48	0.4674	16.66	28.01	0.9373
1-Apr-08	15:49	0.4674	16.63	28.01	0.9329
1-Apr-08	15:50	0.4674	16.6	28.01	0.9285
1-Apr-08	15:51	0.4674	16.58	28.01	0.9241
1-Apr-08	15:52	0.4674	16.55	28.01	0.9198
1-Apr-08	15:53	0.4674	16.52	28.01	0.9156
1-Apr-08	15:54	0.4674	16.49	28.01	0.9113
1-Apr-08	15:55	0.4674	16.47	28.01	0.9071
1-Apr-08	15:56	0.4674	16.44	28.01	0.903
1-Apr-08	15:57	0.4674	16.42	28.01	0.8989
1-Apr-08	15:58	0.4674	16.39	28.01	0.8948
1-Apr-08	15:59	0.4675	16.36	28.01	0.8908
1-Apr-08	16:00	0.4675	16.34	28.01	0.8868
1-Apr-08	16:01	0.4675	16.31	28.01	0.8828
1-Apr-08	16:02	0.4675	16.29	28.01	0.8789
1-Apr-08	16:03	0.4675	16.26	28.01	0.875
1-Apr-08	16:04	0.4675	16.24	28.01	0.8712
1-Apr-08	16:05	0.4675	16.22	28.01	0.8674
1-Apr-08	16:06	0.4675	16.19	28.01	0.8636
1-Apr-08	16:07	0.4675	16.17	28.01	0.8599
1-Apr-08	16:08	0.4675	16.15	28.01	0.8562
1-Apr-08	16:09	0.4676	16.12	28.01	0.8525
1-Apr-08	16:10	0.4676	16.1	28.01	0.8489
1-Apr-08	16:11	0.4676	16.08	28.01	0.8453
1-Apr-08	16:12	0.4676	16.05	28.01	0.8417
1-Apr-08	16:13	0.4676	16.03	28.01	0.8382
1-Apr-08	16:14	0.4676	16.01	28.01	0.8347
1-Apr-08	16:15	0.4676	15.99	28.01	0.8313
1-Apr-08	16:16	0.4676	15.97	28.01	0.8278
1-Apr-08	16:17	0.4676	15.94	28.01	0.8244
1-Apr-08	16:18	0.4676	15.92	28.01	0.8211
1-Apr-08	16:19	0.4676	15.9	28.01	0.8177
1-Apr-08	16:20	0.4677	15.88	28.01	0.8144
1-Apr-08	16:21	0.4677	15.86	28.01	0.8112
1-Apr-08	16:22	0.4677	15.84	28.01	0.8079
1-Apr-08	16:23	0.4677	15.82	28.01	0.8049
1-Apr-08	16:24	0.4677	15.8	28.01	0.8019
1-Apr-08	16:25	0.4677	15.78	28.01	0.799
1-Apr-08	16:26	0.4677	15.76	28.01	0.7961
1-Apr-08	16:27	0.4677	15.74	28.01	0.7933
1-Apr-08	16:28	0.4677	15.72	28.01	0.7904
1-Apr-08	16:29	0.4677	15.7	28.01	0.7876
1-Apr-08	16:30	0.4678	15.68	28.01	0.7848
1-Apr-08	16:31	0.4678	15.66	28.01	0.7821
1-Apr-08	16:32	0.4678	15.64	28.01	0.7793
1-Apr-08	16:33	0.4678	15.63	28.01	0.7766
1-Apr-08	16:34	0.4678	15.61	28.01	0.7739
1-Apr-08	16:35	0.4678	15.59	28.01	0.7712
1-Apr-08	16:36	0.4678	15.57	28.01	0.7686

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1-Apr-08	16:38	0.4678	15.54	28.01	0.7634
1-Apr-08	16:39	0.4678	15.52	28.01	0.7608
1-Apr-08	16:40	0.4678	15.5	28.01	0.7582
1-Apr-08	16:41	0.4679	15.48	28.01	0.7557
1-Apr-08	16:42	0.4679	15.47	28.01	0.7532
1-Apr-08	16:43	0.4679	15.45	28.01	0.7507
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1-Apr-08	16:49	0.4679	15.35	28	0.7362
1-Apr-08	16:50	0.4679	15.33	28	0.7339
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1-Apr-08	16:58	0.468	15.21	28	0.7158
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1-Apr-08	17:14	0.4682	14.99	28	0.6834
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1-Apr-08	17:16	0.4682	14.96	28	0.6797
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1-Apr-08	17:19	0.4682	14.92	28	0.6742
1-Apr-08	17:20	0.4682	14.91	28	0.6724
1-Apr-08	17:21	0.4682	14.9	28	0.6706
1-Apr-08	17:22	0.4682	14.89	28	0.6689
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1-Apr-08	17:25	0.4683	14.85	28	0.6636
1-Apr-08	17:26	0.4683	14.84	28	0.6619

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1-Apr-08	17:39	0.4684	14.7	28	0.6411
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1-Apr-08	17:58	0.4592	14.52	28	0.6154
1-Apr-08	17:59	0.4499	14.51	28	0.6141
1-Apr-08	18:00	0.436	14.5	28	0.6127
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1-Apr-08	18:02	0.3989	14.47	28	0.6096
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1-Apr-08	18:05	0.3406	14.43	28	0.6038
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1-Apr-08	19:26	0.2501	13.18	28	0.4382
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1-Apr-08	20:37	0.2503	12.56	28	0.3625
1-Apr-08	20:38	0.2503	12.55	28	0.3617
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1-Apr-08	20:51	0.2503	12.47	28	0.3517
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1-Apr-08	20:55	0.2503	12.44	28	0.3488
1-Apr-08	20:56	0.2503	12.44	28	0.3481
1-Apr-08	20:57	0.2503	12.43	28	0.3474
1-Apr-08	20:58	0.2503	12.43	28	0.3467
1-Apr-08	20:59	0.2503	12.42	28	0.346
1-Apr-08	21:00	0.2503	12.41	28	0.3453
1-Apr-08	21:01	0.2503	12.41	28	0.3446
1-Apr-08	21:02	0.2503	12.4	28	0.3439
1-Apr-08	21:03	0.2503	12.4	28	0.3432
1-Apr-08	21:04	0.2503	12.39	28	0.3426
1-Apr-08	21:05	0.2503	12.39	28	0.3419
1-Apr-08	21:06	0.2503	12.38	28	0.3412
1-Apr-08	21:07	0.2503	12.37	28	0.3406
1-Apr-08	21:08	0.2503	12.37	28	0.3399
1-Apr-08	21:09	0.2503	12.36	28	0.3393
1-Apr-08	21:10	0.2503	12.36	28	0.3386
1-Apr-08	21:11	0.2503	12.35	28	0.338
1-Apr-08	21:12	0.2503	12.35	28	0.3374
1-Apr-08	21:13	0.2503	12.34	28	0.3367
1-Apr-08	21:14	0.2503	12.34	28	0.3361
1-Apr-08	21:15	0.2504	12.33	28	0.3355
1-Apr-08	21:16	0.2504	12.33	28	0.3349
1-Apr-08	21:17	0.2504	12.32	28	0.3343
1-Apr-08	21:18	0.2504	12.32	28	0.3337
1-Apr-08	21:19	0.2504	12.31	28	0.3331
1-Apr-08	21:20	0.2504	12.31	28	0.3325
1-Apr-08	21:21	0.2504	12.3	28	0.3319
1-Apr-08	21:22	0.2504	12.3	28	0.3313
1-Apr-08	21:23	0.2504	12.29	28	0.3307
1-Apr-08	21:24	0.2504	12.29	28	0.3301
1-Apr-08	21:25	0.2504	12.28	28	0.3295
1-Apr-08	21:26	0.2504	12.28	28	0.329
1-Apr-08	21:27	0.2504	12.27	28	0.3284
1-Apr-08	21:28	0.2504	12.27	28	0.3278
1-Apr-08	21:29	0.2504	12.26	28	0.3273
1-Apr-08	21:30	0.2504	12.26	28	0.3267
1-Apr-08	21:31	0.2504	12.26	28	0.3262
1-Apr-08	21:32	0.2504	12.25	28	0.3256
1-Apr-08	21:33	0.2504	12.25	28	0.3251
1-Apr-08	21:34	0.2504	12.24	28	0.3245
1-Apr-08	21:35	0.2504	12.24	28	0.324
1-Apr-08	21:36	0.2504	12.23	28	0.3235

1-Apr-08	21:37	0.2504	12.23	28	0.3229
1-Apr-08	21:38	0.2504	12.22	28	0.3224
1-Apr-08	21:39	0.2504	12.22	28	0.3219
1-Apr-08	21:40	0.2504	12.22	28	0.3214
1-Apr-08	21:41	0.2504	12.21	28	0.3209
1-Apr-08	21:42	0.2504	12.21	28	0.3204
1-Apr-08	21:43	0.2504	12.2	28	0.3199
1-Apr-08	21:44	0.2504	12.2	28	0.3194
1-Apr-08	21:45	0.2504	12.19	28	0.3189
1-Apr-08	21:46	0.2504	12.19	28	0.3184
1-Apr-08	21:47	0.2504	12.19	28	0.3179
1-Apr-08	21:48	0.2504	12.18	28	0.3174
1-Apr-08	21:49	0.2504	12.18	28	0.3169
1-Apr-08	21:50	0.2504	12.17	28	0.3164
1-Apr-08	21:51	0.2504	12.17	28	0.3159
1-Apr-08	21:52	0.2504	12.17	28	0.3155
1-Apr-08	21:53	0.2504	12.16	28	0.315
1-Apr-08	21:54	0.2504	12.16	28	0.3146
1-Apr-08	21:55	0.2504	12.16	28	0.3142
1-Apr-08	21:56	0.2504	12.15	28	0.3138
1-Apr-08	21:57	0.2504	12.15	28	0.3134
1-Apr-08	21:58	0.2504	12.14	28	0.313
1-Apr-08	21:59	0.2504	12.14	28	0.3126
1-Apr-08	22:00	0.2504	12.14	28	0.3123
1-Apr-08	22:01	0.2505	12.13	28	0.3119
1-Apr-08	22:02	0.2505	12.13	28	0.3115
1-Apr-08	22:03	0.2505	12.13	28	0.3111
1-Apr-08	22:04	0.2505	12.12	28	0.3108
1-Apr-08	22:05	0.2505	12.12	28	0.3104
1-Apr-08	22:06	0.2505	12.11	28	0.31
1-Apr-08	22:07	0.2505	12.11	28	0.3096
1-Apr-08	22:08	0.2505	12.11	28	0.3093
1-Apr-08	22:09	0.2505	12.1	28	0.3089
1-Apr-08	22:10	0.2505	12.1	28	0.3086
1-Apr-08	22:11	0.2505	12.1	28	0.3082
1-Apr-08	22:12	0.2505	12.09	28	0.3078
1-Apr-08	22:13	0.2505	12.09	28	0.3075
1-Apr-08	22:14	0.2505	12.09	28	0.3071
1-Apr-08	22:15	0.2505	12.08	28	0.3068
1-Apr-08	22:16	0.2505	12.08	28	0.3064
1-Apr-08	22:17	0.2505	12.08	28	0.3061
1-Apr-08	22:18	0.2505	12.07	28	0.3058
1-Apr-08	22:19	0.2505	12.07	28	0.3054
1-Apr-08	22:20	0.2505	12.07	28	0.3051
1-Apr-08	22:21	0.2505	12.06	28	0.3047
1-Apr-08	22:22	0.2505	12.06	28	0.3044
1-Apr-08	22:23	0.2505	12.06	28	0.3041
1-Apr-08	22:24	0.2505	12.05	28	0.3037
1-Apr-08	22:25	0.2505	12.05	28	0.3034
1-Apr-08	22:26	0.2505	12.05	28	0.3031

1-Apr-08	22:27	0.2505	12.04	28	0.3028
1-Apr-08	22:28	0.2505	12.04	28	0.3024
1-Apr-08	22:29	0.2505	12.04	28	0.3021
1-Apr-08	22:30	0.2505	12.03	28	0.3018
1-Apr-08	22:31	0.2505	12.03	28	0.3015
1-Apr-08	22:32	0.2505	12.03	28	0.3012
1-Apr-08	22:33	0.2505	12.03	28	0.3009
1-Apr-08	22:34	0.2505	12.02	28	0.3005
1-Apr-08	22:35	0.2505	12.02	28	0.3002
1-Apr-08	22:36	0.2505	12.02	28	0.2999
1-Apr-08	22:37	0.2505	12.01	28	0.2996
1-Apr-08	22:38	0.2505	12.01	28	0.2993
1-Apr-08	22:39	0.2505	12.01	28	0.299
1-Apr-08	22:40	0.2505	12.01	28	0.2987
1-Apr-08	22:41	0.2505	12	28	0.2984
1-Apr-08	22:42	0.2505	12	28	0.2981
1-Apr-08	22:43	0.2505	12	28	0.2978
1-Apr-08	22:44	0.2505	11.99	28	0.2975
1-Apr-08	22:45	0.2505	11.99	28	0.2973
1-Apr-08	22:46	0.2505	11.99	28	0.297
1-Apr-08	22:47	0.2505	11.99	28	0.2967
1-Apr-08	22:48	0.2505	11.98	28	0.2964
1-Apr-08	22:49	0.2506	11.98	28	0.2961
1-Apr-08	22:50	0.2506	11.98	28	0.2958
1-Apr-08	22:51	0.2506	11.97	28	0.2956
1-Apr-08	22:52	0.2506	11.97	28	0.2953
1-Apr-08	22:53	0.2506	11.97	28	0.295
1-Apr-08	22:54	0.2506	11.97	28	0.2947
1-Apr-08	22:55	0.2506	11.96	28	0.2945
1-Apr-08	22:56	0.2506	11.96	28	0.2942
1-Apr-08	22:57	0.2506	11.96	28	0.2939
1-Apr-08	22:58	0.2506	11.96	28	0.2936
1-Apr-08	22:59	0.2506	11.95	28	0.2934
1-Apr-08	23:00	0.2506	11.95	28	0.2931
1-Apr-08	23:01	0.2506	11.95	28	0.2929
1-Apr-08	23:02	0.2506	11.95	28	0.2926
1-Apr-08	23:03	0.2506	11.94	28	0.2923
1-Apr-08	23:04	0.2506	11.94	28	0.2921
1-Apr-08	23:05	0.2506	11.94	28	0.2918
1-Apr-08	23:06	0.2506	11.94	28	0.2916
1-Apr-08	23:07	0.2506	11.93	28	0.2913
1-Apr-08	23:08	0.2506	11.93	28	0.2911
1-Apr-08	23:09	0.2506	11.93	28	0.2908
1-Apr-08	23:10	0.2506	11.93	28	0.2906
1-Apr-08	23:11	0.2506	11.92	28	0.2903
1-Apr-08	23:12	0.2506	11.92	28	0.2901
1-Apr-08	23:13	0.2506	11.92	28	0.2898
1-Apr-08	23:14	0.2506	11.92	28	0.2896
1-Apr-08	23:15	0.2506	11.91	28	0.2893
1-Apr-08	23:16	0.2506	11.91	28	0.2891

1-Apr-08	23:17	0.2506	11.91	28	0.2889
1-Apr-08	23:18	0.2506	11.91	28	0.2886
1-Apr-08	23:19	0.2506	11.91	28	0.2884
1-Apr-08	23:20	0.2506	11.9	28	0.2882
1-Apr-08	23:21	0.2506	11.9	28	0.2879
1-Apr-08	23:22	0.2506	11.9	28	0.2877
1-Apr-08	23:23	0.2506	11.9	28	0.2875
1-Apr-08	23:24	0.2506	11.89	28	0.2873
1-Apr-08	23:25	0.2506	11.89	28	0.287
1-Apr-08	23:26	0.2506	11.89	28	0.2868
1-Apr-08	23:27	0.2506	11.89	28	0.2866
1-Apr-08	23:28	0.2506	11.89	28	0.2864
1-Apr-08	23:29	0.2506	11.88	28	0.2861
1-Apr-08	23:30	0.2506	11.88	28	0.2859
1-Apr-08	23:31	0.2506	11.88	28	0.2857
1-Apr-08	23:32	0.2506	11.88	28	0.2855
1-Apr-08	23:33	0.2506	11.87	28	0.2853
1-Apr-08	23:34	0.2506	11.87	28	0.2851
1-Apr-08	23:35	0.2506	11.87	28	0.2848
1-Apr-08	23:36	0.2506	11.87	28	0.2846
1-Apr-08	23:37	0.2506	11.87	28	0.2844
1-Apr-08	23:38	0.2507	11.86	28	0.2842
1-Apr-08	23:39	0.2507	11.86	28	0.284
1-Apr-08	23:40	0.2507	11.86	28	0.2838
1-Apr-08	23:41	0.2507	11.86	28	0.2836
1-Apr-08	23:42	0.2507	11.86	28	0.2834
1-Apr-08	23:43	0.2507	11.85	28	0.2832
1-Apr-08	23:44	0.2507	11.85	28	0.283
1-Apr-08	23:45	0.2507	11.85	28	0.2828
1-Apr-08	23:46	0.2507	11.85	28	0.2826
1-Apr-08	23:47	0.2507	11.85	28	0.2824
1-Apr-08	23:48	0.2507	11.84	28	0.2822
1-Apr-08	23:49	0.2507	11.84	28	0.282
1-Apr-08	23:50	0.2507	11.84	28	0.2818
1-Apr-08	23:51	0.2507	11.84	28	0.2816
1-Apr-08	23:52	0.2507	11.84	28	0.2814
1-Apr-08	23:53	0.2507	11.84	28	0.2812
1-Apr-08	23:54	0.2507	11.83	28	0.2811
1-Apr-08	23:55	0.2507	11.83	28	0.2809
1-Apr-08	23:56	0.2496	11.83	28	0.2807
1-Apr-08	23:57	0.2463	11.83	28	0.2805
1-Apr-08	23:58	0.24	11.83	28	0.2802
1-Apr-08	23:59	0.2293	11.82	28	0.28
2-Apr-08	0:00	0.2134	11.82	28	0.2796

Highgate - 10yr - Time Series Inflow (Wetland)						
Date	Time	Inflow m3/s	Storage	Elevation m	Outflow m3/s	4.185
1-Apr-08	0:00	0	0	28	0	
1-Apr-08	0:01	0.001	0	28	0	
1-Apr-08	0:02	0.004	0	28	0	
1-Apr-08	0:03	0.0098	0	28	0	
1-Apr-08	0:04	0.0195	0	28	0	
1-Apr-08	0:05	0.0341	0	28	0	
1-Apr-08	0:06	0.0524	0.01	28	0.0001	
1-Apr-08	0:07	0.0729	0.01	28	0.0001	
1-Apr-08	0:08	0.094	0.01	28	0.0002	
1-Apr-08	0:09	0.1148	0.02	28.01	0.0003	
1-Apr-08	0:10	0.134	0.03	28.01	0.0004	
1-Apr-08	0:11	0.1512	0.04	28.01	0.0005	
1-Apr-08	0:12	0.166	0.05	28.02	0.0006	
1-Apr-08	0:13	0.1778	0.06	28.02	0.0007	
1-Apr-08	0:14	0.1871	0.07	28.02	0.0009	
1-Apr-08	0:15	0.1947	0.08	28.03	0.001	
1-Apr-08	0:16	0.2009	0.09	28.03	0.0012	
1-Apr-08	0:17	0.206	0.1	28.03	0.0013	
1-Apr-08	0:18	0.2103	0.12	28.04	0.0015	
1-Apr-08	0:19	0.2137	0.13	28.04	0.0017	
1-Apr-08	0:20	0.2165	0.14	28.05	0.0018	
1-Apr-08	0:21	0.2188	0.15	28.05	0.002	
1-Apr-08	0:22	0.2207	0.17	28.05	0.0022	
1-Apr-08	0:23	0.2223	0.18	28.06	0.0023	
1-Apr-08	0:24	0.2235	0.19	28.06	0.0025	
1-Apr-08	0:25	0.2246	0.21	28.07	0.0027	
1-Apr-08	0:26	0.2254	0.22	28.07	0.0029	
1-Apr-08	0:27	0.2261	0.23	28.08	0.003	
1-Apr-08	0:28	0.2266	0.25	28.08	0.0032	
1-Apr-08	0:29	0.2271	0.26	28.08	0.0034	
1-Apr-08	0:30	0.2275	0.27	28.09	0.0036	
1-Apr-08	0:31	0.2278	0.29	28.09	0.0037	
1-Apr-08	0:32	0.228	0.3	28.1	0.0039	
1-Apr-08	0:33	0.2283	0.31	28.1	0.0041	
1-Apr-08	0:34	0.2284	0.33	28.1	0.0042	
1-Apr-08	0:35	0.2286	0.34	28.1	0.0044	
1-Apr-08	0:36	0.2287	0.35	28.11	0.0045	
1-Apr-08	0:37	0.2288	0.37	28.11	0.0046	
1-Apr-08	0:38	0.2289	0.38	28.11	0.0048	
1-Apr-08	0:39	0.2289	0.39	28.11	0.0049	
1-Apr-08	0:40	0.2289	0.41	28.11	0.0051	
1-Apr-08	0:41	0.2289	0.42	28.11	0.0052	
1-Apr-08	0:42	0.2289	0.43	28.12	0.0054	
1-Apr-08	0:43	0.2289	0.45	28.12	0.0055	
1-Apr-08	0:44	0.2289	0.46	28.12	0.0057	
1-Apr-08	0:45	0.2289	0.47	28.12	0.0058	
1-Apr-08	0:46	0.2289	0.49	28.12	0.006	

1-Apr-08	0:47	0.2289	0.5	28.12	0.0061
1-Apr-08	0:48	0.2289	0.51	28.13	0.0062
1-Apr-08	0:49	0.2289	0.53	28.13	0.0064
1-Apr-08	0:50	0.2289	0.54	28.13	0.0065
1-Apr-08	0:51	0.2289	0.55	28.13	0.0067
1-Apr-08	0:52	0.2289	0.57	28.13	0.0068
1-Apr-08	0:53	0.2289	0.58	28.14	0.007
1-Apr-08	0:54	0.2289	0.59	28.14	0.0071
1-Apr-08	0:55	0.2289	0.61	28.14	0.0072
1-Apr-08	0:56	0.2289	0.62	28.14	0.0074
1-Apr-08	0:57	0.2289	0.63	28.14	0.0075
1-Apr-08	0:58	0.2289	0.65	28.14	0.0077
1-Apr-08	0:59	0.2289	0.66	28.15	0.0078
1-Apr-08	1:00	0.2289	0.67	28.15	0.008
1-Apr-08	1:01	0.2289	0.69	28.15	0.0081
1-Apr-08	1:02	0.2289	0.7	28.15	0.0082
1-Apr-08	1:03	0.2289	0.71	28.15	0.0084
1-Apr-08	1:04	0.2289	0.73	28.15	0.0085
1-Apr-08	1:05	0.2289	0.74	28.16	0.0087
1-Apr-08	1:06	0.2289	0.75	28.16	0.0088
1-Apr-08	1:07	0.2289	0.77	28.16	0.009
1-Apr-08	1:08	0.2289	0.78	28.16	0.0091
1-Apr-08	1:09	0.2289	0.79	28.16	0.0092
1-Apr-08	1:10	0.2289	0.81	28.16	0.0094
1-Apr-08	1:11	0.2289	0.82	28.17	0.0095
1-Apr-08	1:12	0.2289	0.83	28.17	0.0097
1-Apr-08	1:13	0.2289	0.85	28.17	0.0098
1-Apr-08	1:14	0.2289	0.86	28.17	0.01
1-Apr-08	1:15	0.2289	0.87	28.17	0.0101
1-Apr-08	1:16	0.2289	0.89	28.17	0.0102
1-Apr-08	1:17	0.2289	0.9	28.18	0.0104
1-Apr-08	1:18	0.2289	0.91	28.18	0.0105
1-Apr-08	1:19	0.2289	0.92	28.18	0.0107
1-Apr-08	1:20	0.2289	0.94	28.18	0.0108
1-Apr-08	1:21	0.2289	0.95	28.18	0.0109
1-Apr-08	1:22	0.2289	0.96	28.18	0.0111
1-Apr-08	1:23	0.2289	0.98	28.19	0.0112
1-Apr-08	1:24	0.2289	0.99	28.19	0.0114
1-Apr-08	1:25	0.2289	1	28.19	0.0115
1-Apr-08	1:26	0.2289	1.02	28.19	0.0116
1-Apr-08	1:27	0.2289	1.03	28.19	0.0118
1-Apr-08	1:28	0.2289	1.04	28.19	0.0119
1-Apr-08	1:29	0.2289	1.06	28.2	0.0121
1-Apr-08	1:30	0.2289	1.07	28.2	0.0122
1-Apr-08	1:31	0.2289	1.08	28.2	0.0123
1-Apr-08	1:32	0.2289	1.09	28.2	0.0125
1-Apr-08	1:33	0.2289	1.11	28.2	0.0126
1-Apr-08	1:34	0.2289	1.12	28.2	0.0127
1-Apr-08	1:35	0.2289	1.13	28.21	0.0128
1-Apr-08	1:36	0.2289	1.15	28.21	0.0129

1-Apr-08	1:37	0.2289	1.16	28.21	0.013
1-Apr-08	1:38	0.2289	1.17	28.21	0.0131
1-Apr-08	1:39	0.2289	1.19	28.21	0.0132
1-Apr-08	1:40	0.2289	1.2	28.21	0.0133
1-Apr-08	1:41	0.2289	1.21	28.21	0.0134
1-Apr-08	1:42	0.2289	1.22	28.22	0.0135
1-Apr-08	1:43	0.2289	1.24	28.22	0.0136
1-Apr-08	1:44	0.2289	1.25	28.22	0.0137
1-Apr-08	1:45	0.2289	1.26	28.22	0.0138
1-Apr-08	1:46	0.2289	1.28	28.22	0.014
1-Apr-08	1:47	0.2289	1.29	28.22	0.0141
1-Apr-08	1:48	0.2289	1.3	28.22	0.0142
1-Apr-08	1:49	0.2289	1.31	28.23	0.0143
1-Apr-08	1:50	0.2289	1.33	28.23	0.0144
1-Apr-08	1:51	0.2289	1.34	28.23	0.0145
1-Apr-08	1:52	0.2289	1.35	28.23	0.0146
1-Apr-08	1:53	0.2289	1.37	28.23	0.0147
1-Apr-08	1:54	0.2289	1.38	28.23	0.0148
1-Apr-08	1:55	0.2289	1.39	28.23	0.0149
1-Apr-08	1:56	0.2289	1.4	28.24	0.015
1-Apr-08	1:57	0.2289	1.42	28.24	0.0151
1-Apr-08	1:58	0.2289	1.43	28.24	0.0152
1-Apr-08	1:59	0.2289	1.44	28.24	0.0153
1-Apr-08	2:00	0.2289	1.46	28.24	0.0154
1-Apr-08	2:01	0.2289	1.47	28.24	0.0155
1-Apr-08	2:02	0.2289	1.48	28.24	0.0156
1-Apr-08	2:03	0.2289	1.49	28.25	0.0157
1-Apr-08	2:04	0.2289	1.51	28.25	0.0158
1-Apr-08	2:05	0.2289	1.52	28.25	0.0159
1-Apr-08	2:06	0.2289	1.53	28.25	0.0161
1-Apr-08	2:07	0.2289	1.54	28.25	0.0162
1-Apr-08	2:08	0.2289	1.56	28.25	0.0163
1-Apr-08	2:09	0.2289	1.57	28.25	0.0164
1-Apr-08	2:10	0.2289	1.58	28.26	0.0165
1-Apr-08	2:11	0.2289	1.6	28.26	0.0166
1-Apr-08	2:12	0.229	1.61	28.26	0.0167
1-Apr-08	2:13	0.229	1.62	28.26	0.0168
1-Apr-08	2:14	0.229	1.63	28.26	0.0169
1-Apr-08	2:15	0.229	1.65	28.26	0.017
1-Apr-08	2:16	0.229	1.66	28.26	0.0171
1-Apr-08	2:17	0.229	1.67	28.27	0.0172
1-Apr-08	2:18	0.2291	1.69	28.27	0.0173
1-Apr-08	2:19	0.2291	1.7	28.27	0.0174
1-Apr-08	2:20	0.2291	1.71	28.27	0.0175
1-Apr-08	2:21	0.2292	1.72	28.27	0.0176
1-Apr-08	2:22	0.2292	1.74	28.27	0.0177
1-Apr-08	2:23	0.2292	1.75	28.27	0.0178
1-Apr-08	2:24	0.2292	1.76	28.28	0.0179
1-Apr-08	2:25	0.2293	1.77	28.28	0.018
1-Apr-08	2:26	0.2293	1.79	28.28	0.0181

1-Apr-08	2:27	0.2293	1.8	28.28	0.0182
1-Apr-08	2:28	0.2294	1.81	28.28	0.0183
1-Apr-08	2:29	0.2294	1.82	28.28	0.0184
1-Apr-08	2:30	0.2294	1.84	28.28	0.0185
1-Apr-08	2:31	0.2295	1.85	28.29	0.0187
1-Apr-08	2:32	0.2295	1.86	28.29	0.0188
1-Apr-08	2:33	0.2295	1.88	28.29	0.0189
1-Apr-08	2:34	0.2296	1.89	28.29	0.019
1-Apr-08	2:35	0.2296	1.9	28.29	0.0191
1-Apr-08	2:36	0.2296	1.91	28.29	0.0192
1-Apr-08	2:37	0.2297	1.93	28.29	0.0193
1-Apr-08	2:38	0.2297	1.94	28.3	0.0194
1-Apr-08	2:39	0.2297	1.95	28.3	0.0195
1-Apr-08	2:40	0.2298	1.96	28.3	0.0196
1-Apr-08	2:41	0.2298	1.98	28.3	0.0197
1-Apr-08	2:42	0.2298	1.99	28.3	0.0198
1-Apr-08	2:43	0.2299	2	28.3	0.0198
1-Apr-08	2:44	0.2299	2.01	28.3	0.0199
1-Apr-08	2:45	0.2299	2.03	28.3	0.0199
1-Apr-08	2:46	0.23	2.04	28.31	0.02
1-Apr-08	2:47	0.23	2.05	28.31	0.0201
1-Apr-08	2:48	0.23	2.06	28.31	0.0201
1-Apr-08	2:49	0.23	2.08	28.31	0.0202
1-Apr-08	2:50	0.2301	2.09	28.31	0.0203
1-Apr-08	2:51	0.2301	2.1	28.31	0.0203
1-Apr-08	2:52	0.2301	2.11	28.31	0.0204
1-Apr-08	2:53	0.2302	2.13	28.31	0.0204
1-Apr-08	2:54	0.2302	2.14	28.32	0.0205
1-Apr-08	2:55	0.2302	2.15	28.32	0.0206
1-Apr-08	2:56	0.2303	2.17	28.32	0.0206
1-Apr-08	2:57	0.2303	2.18	28.32	0.0207
1-Apr-08	2:58	0.2303	2.19	28.32	0.0208
1-Apr-08	2:59	0.2304	2.2	28.32	0.0208
1-Apr-08	3:00	0.2304	2.22	28.32	0.0209
1-Apr-08	3:01	0.2304	2.23	28.32	0.0209
1-Apr-08	3:02	0.2305	2.24	28.32	0.021
1-Apr-08	3:03	0.2305	2.25	28.33	0.0211
1-Apr-08	3:04	0.2305	2.27	28.33	0.0211
1-Apr-08	3:05	0.2306	2.28	28.33	0.0212
1-Apr-08	3:06	0.2306	2.29	28.33	0.0212
1-Apr-08	3:07	0.2306	2.3	28.33	0.0213
1-Apr-08	3:08	0.2306	2.32	28.33	0.0214
1-Apr-08	3:09	0.2307	2.33	28.33	0.0214
1-Apr-08	3:10	0.2307	2.34	28.33	0.0215
1-Apr-08	3:11	0.2307	2.35	28.34	0.0216
1-Apr-08	3:12	0.2308	2.37	28.34	0.0216
1-Apr-08	3:13	0.2308	2.38	28.34	0.0217
1-Apr-08	3:14	0.2308	2.39	28.34	0.0217
1-Apr-08	3:15	0.2309	2.4	28.34	0.0218
1-Apr-08	3:16	0.2309	2.42	28.34	0.0219

1-Apr-08	3:17	0.2309	2.43	28.34	0.0219
1-Apr-08	3:18	0.231	2.44	28.34	0.022
1-Apr-08	3:19	0.231	2.45	28.34	0.0221
1-Apr-08	3:20	0.231	2.47	28.35	0.0221
1-Apr-08	3:21	0.231	2.48	28.35	0.0222
1-Apr-08	3:22	0.2311	2.49	28.35	0.0222
1-Apr-08	3:23	0.2311	2.5	28.35	0.0223
1-Apr-08	3:24	0.2311	2.52	28.35	0.0224
1-Apr-08	3:25	0.2312	2.53	28.35	0.0224
1-Apr-08	3:26	0.2312	2.54	28.35	0.0225
1-Apr-08	3:27	0.2312	2.55	28.35	0.0226
1-Apr-08	3:28	0.2313	2.57	28.35	0.0226
1-Apr-08	3:29	0.2313	2.58	28.36	0.0227
1-Apr-08	3:30	0.2313	2.59	28.36	0.0227
1-Apr-08	3:31	0.2314	2.6	28.36	0.0228
1-Apr-08	3:32	0.2314	2.62	28.36	0.0229
1-Apr-08	3:33	0.2314	2.63	28.36	0.0229
1-Apr-08	3:34	0.2314	2.64	28.36	0.023
1-Apr-08	3:35	0.2315	2.65	28.36	0.023
1-Apr-08	3:36	0.2315	2.67	28.36	0.0231
1-Apr-08	3:37	0.2315	2.68	28.37	0.0232
1-Apr-08	3:38	0.2316	2.69	28.37	0.0232
1-Apr-08	3:39	0.2316	2.7	28.37	0.0233
1-Apr-08	3:40	0.2316	2.72	28.37	0.0234
1-Apr-08	3:41	0.2317	2.73	28.37	0.0234
1-Apr-08	3:42	0.2317	2.74	28.37	0.0235
1-Apr-08	3:43	0.2317	2.75	28.37	0.0235
1-Apr-08	3:44	0.2317	2.77	28.37	0.0236
1-Apr-08	3:45	0.2318	2.78	28.37	0.0237
1-Apr-08	3:46	0.2318	2.79	28.38	0.0237
1-Apr-08	3:47	0.2318	2.8	28.38	0.0238
1-Apr-08	3:48	0.2319	2.82	28.38	0.0238
1-Apr-08	3:49	0.2319	2.83	28.38	0.0239
1-Apr-08	3:50	0.2319	2.84	28.38	0.024
1-Apr-08	3:51	0.2319	2.85	28.38	0.024
1-Apr-08	3:52	0.232	2.87	28.38	0.0241
1-Apr-08	3:53	0.232	2.88	28.38	0.0242
1-Apr-08	3:54	0.232	2.89	28.39	0.0242
1-Apr-08	3:55	0.2321	2.9	28.39	0.0243
1-Apr-08	3:56	0.2321	2.92	28.39	0.0243
1-Apr-08	3:57	0.2321	2.93	28.39	0.0244
1-Apr-08	3:58	0.2322	2.94	28.39	0.0245
1-Apr-08	3:59	0.2322	2.95	28.39	0.0245
1-Apr-08	4:00	0.2322	2.97	28.39	0.0246
1-Apr-08	4:01	0.2322	2.98	28.39	0.0247
1-Apr-08	4:02	0.2323	2.99	28.39	0.0247
1-Apr-08	4:03	0.2323	3	28.4	0.0248
1-Apr-08	4:04	0.2323	3.02	28.4	0.0248
1-Apr-08	4:05	0.2324	3.03	28.4	0.0249
1-Apr-08	4:06	0.2324	3.04	28.4	0.025

1-Apr-08	4:07	0.2324	3.05	28.4	0.025
1-Apr-08	4:08	0.2324	3.07	28.4	0.0251
1-Apr-08	4:09	0.2325	3.08	28.4	0.0251
1-Apr-08	4:10	0.2325	3.09	28.4	0.0252
1-Apr-08	4:11	0.2325	3.1	28.4	0.0252
1-Apr-08	4:12	0.2326	3.12	28.41	0.0253
1-Apr-08	4:13	0.2326	3.13	28.41	0.0253
1-Apr-08	4:14	0.2326	3.14	28.41	0.0254
1-Apr-08	4:15	0.2326	3.15	28.41	0.0254
1-Apr-08	4:16	0.2327	3.17	28.41	0.0255
1-Apr-08	4:17	0.2327	3.18	28.41	0.0255
1-Apr-08	4:18	0.2327	3.19	28.41	0.0256
1-Apr-08	4:19	0.2328	3.2	28.41	0.0256
1-Apr-08	4:20	0.2328	3.22	28.42	0.0257
1-Apr-08	4:21	0.2328	3.23	28.42	0.0257
1-Apr-08	4:22	0.2328	3.24	28.42	0.0258
1-Apr-08	4:23	0.2329	3.25	28.42	0.0258
1-Apr-08	4:24	0.2329	3.26	28.42	0.0259
1-Apr-08	4:25	0.2329	3.28	28.42	0.0259
1-Apr-08	4:26	0.233	3.29	28.42	0.026
1-Apr-08	4:27	0.233	3.3	28.42	0.026
1-Apr-08	4:28	0.233	3.31	28.42	0.0261
1-Apr-08	4:29	0.233	3.33	28.43	0.0261
1-Apr-08	4:30	0.2331	3.34	28.43	0.0261
1-Apr-08	4:31	0.2331	3.35	28.43	0.0262
1-Apr-08	4:32	0.2331	3.36	28.43	0.0262
1-Apr-08	4:33	0.2332	3.38	28.43	0.0263
1-Apr-08	4:34	0.2332	3.39	28.43	0.0263
1-Apr-08	4:35	0.2332	3.4	28.43	0.0264
1-Apr-08	4:36	0.2332	3.41	28.43	0.0264
1-Apr-08	4:37	0.2333	3.43	28.43	0.0265
1-Apr-08	4:38	0.2333	3.44	28.44	0.0265
1-Apr-08	4:39	0.2333	3.45	28.44	0.0266
1-Apr-08	4:40	0.2333	3.46	28.44	0.0266
1-Apr-08	4:41	0.2334	3.48	28.44	0.0267
1-Apr-08	4:42	0.2334	3.49	28.44	0.0267
1-Apr-08	4:43	0.2334	3.5	28.44	0.0268
1-Apr-08	4:44	0.2335	3.51	28.44	0.0268
1-Apr-08	4:45	0.2335	3.53	28.44	0.0269
1-Apr-08	4:46	0.2335	3.54	28.45	0.0269
1-Apr-08	4:47	0.2335	3.55	28.45	0.027
1-Apr-08	4:48	0.2336	3.56	28.45	0.027
1-Apr-08	4:49	0.2336	3.57	28.45	0.0271
1-Apr-08	4:50	0.2336	3.59	28.45	0.0271
1-Apr-08	4:51	0.2336	3.6	28.45	0.0272
1-Apr-08	4:52	0.2337	3.61	28.45	0.0272
1-Apr-08	4:53	0.2337	3.62	28.45	0.0273
1-Apr-08	4:54	0.2337	3.64	28.45	0.0273
1-Apr-08	4:55	0.2338	3.65	28.46	0.0274
1-Apr-08	4:56	0.2338	3.66	28.46	0.0274

1-Apr-08	4:57	0.2338	3.67	28.46	0.0275
1-Apr-08	4:58	0.2338	3.69	28.46	0.0275
1-Apr-08	4:59	0.2339	3.7	28.46	0.0276
1-Apr-08	5:00	0.2339	3.71	28.46	0.0276
1-Apr-08	5:01	0.2339	3.72	28.46	0.0277
1-Apr-08	5:02	0.2339	3.74	28.46	0.0277
1-Apr-08	5:03	0.234	3.75	28.46	0.0278
1-Apr-08	5:04	0.234	3.76	28.47	0.0278
1-Apr-08	5:05	0.234	3.77	28.47	0.0279
1-Apr-08	5:06	0.2341	3.79	28.47	0.0279
1-Apr-08	5:07	0.2341	3.8	28.47	0.028
1-Apr-08	5:08	0.2341	3.81	28.47	0.028
1-Apr-08	5:09	0.2341	3.82	28.47	0.0281
1-Apr-08	5:10	0.2342	3.83	28.47	0.0281
1-Apr-08	5:11	0.2342	3.85	28.47	0.0282
1-Apr-08	5:12	0.2342	3.86	28.47	0.0282
1-Apr-08	5:13	0.2342	3.87	28.48	0.0283
1-Apr-08	5:14	0.2343	3.88	28.48	0.0283
1-Apr-08	5:15	0.2343	3.9	28.48	0.0284
1-Apr-08	5:16	0.2343	3.91	28.48	0.0284
1-Apr-08	5:17	0.2343	3.92	28.48	0.0285
1-Apr-08	5:18	0.2344	3.93	28.48	0.0285
1-Apr-08	5:19	0.2344	3.95	28.48	0.0286
1-Apr-08	5:20	0.2344	3.96	28.48	0.0286
1-Apr-08	5:21	0.2344	3.97	28.48	0.0286
1-Apr-08	5:22	0.2345	3.98	28.49	0.0287
1-Apr-08	5:23	0.2345	4	28.49	0.0287
1-Apr-08	5:24	0.2345	4.01	28.49	0.0288
1-Apr-08	5:25	0.2346	4.02	28.49	0.0288
1-Apr-08	5:26	0.2346	4.03	28.49	0.0289
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1-Apr-08	5:29	0.2347	4.07	28.49	0.029
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1-Apr-08	5:31	0.2347	4.09	28.5	0.0291
1-Apr-08	5:32	0.2347	4.11	28.5	0.0292
1-Apr-08	5:33	0.2348	4.12	28.5	0.0292
1-Apr-08	5:34	0.2348	4.13	28.5	0.0293
1-Apr-08	5:35	0.2348	4.14	28.5	0.0293
1-Apr-08	5:36	0.2348	4.16	28.5	0.0294
1-Apr-08	5:37	0.2349	4.17	28.5	0.0294
1-Apr-08	5:38	0.2349	4.18	28.5	0.0295
1-Apr-08	5:39	0.2349	4.19	28.51	0.0295
1-Apr-08	5:40	0.2349	4.21	28.51	0.0295
1-Apr-08	5:41	0.235	4.22	28.51	0.0296
1-Apr-08	5:42	0.235	4.23	28.51	0.0296
1-Apr-08	5:43	0.235	4.24	28.51	0.0297
1-Apr-08	5:44	0.235	4.25	28.51	0.0297
1-Apr-08	5:45	0.2351	4.27	28.51	0.0298
1-Apr-08	5:46	0.2351	4.28	28.51	0.0298

1-Apr-08	5:47	0.2351	4.29	28.51	0.0298
1-Apr-08	5:48	0.2351	4.3	28.52	0.0299
1-Apr-08	5:49	0.2352	4.32	28.52	0.0299
1-Apr-08	5:50	0.2352	4.33	28.52	0.03
1-Apr-08	5:51	0.2352	4.34	28.52	0.03
1-Apr-08	5:52	0.2352	4.35	28.52	0.0301
1-Apr-08	5:53	0.2353	4.37	28.52	0.0301
1-Apr-08	5:54	0.2353	4.38	28.52	0.0301
1-Apr-08	5:55	0.2353	4.39	28.52	0.0302
1-Apr-08	5:56	0.2365	4.4	28.52	0.0302
1-Apr-08	5:57	0.2402	4.41	28.53	0.0303
1-Apr-08	5:58	0.2473	4.43	28.53	0.0303
1-Apr-08	5:59	0.2591	4.44	28.53	0.0304
1-Apr-08	6:00	0.2767	4.46	28.53	0.0304
1-Apr-08	6:01	0.2989	4.47	28.53	0.0305
1-Apr-08	6:02	0.3238	4.49	28.53	0.0305
1-Apr-08	6:03	0.3495	4.51	28.53	0.0306
1-Apr-08	6:04	0.3747	4.53	28.54	0.0306
1-Apr-08	6:05	0.398	4.55	28.54	0.0307
1-Apr-08	6:06	0.4189	4.57	28.54	0.0308
1-Apr-08	6:07	0.4369	4.59	28.54	0.0309
1-Apr-08	6:08	0.4512	4.62	28.54	0.031
1-Apr-08	6:09	0.4626	4.64	28.55	0.0311
1-Apr-08	6:10	0.4719	4.67	28.55	0.0311
1-Apr-08	6:11	0.4795	4.7	28.55	0.0312
1-Apr-08	6:12	0.4859	4.72	28.55	0.0313
1-Apr-08	6:13	0.4911	4.75	28.56	0.0314
1-Apr-08	6:14	0.4954	4.78	28.56	0.0315
1-Apr-08	6:15	0.4989	4.81	28.56	0.0316
1-Apr-08	6:16	0.5018	4.83	28.56	0.0317
1-Apr-08	6:17	0.5042	4.86	28.57	0.0318
1-Apr-08	6:18	0.5062	4.89	28.57	0.0319
1-Apr-08	6:19	0.5078	4.92	28.57	0.032
1-Apr-08	6:20	0.5092	4.95	28.57	0.0321
1-Apr-08	6:21	0.5103	4.98	28.58	0.0322
1-Apr-08	6:22	0.5112	5.01	28.58	0.0323
1-Apr-08	6:23	0.512	5.03	28.58	0.0324
1-Apr-08	6:24	0.5127	5.06	28.58	0.0325
1-Apr-08	6:25	0.5133	5.09	28.59	0.0326
1-Apr-08	6:26	0.5138	5.12	28.59	0.0327
1-Apr-08	6:27	0.5142	5.15	28.59	0.0328
1-Apr-08	6:28	0.5145	5.18	28.59	0.0329
1-Apr-08	6:29	0.5149	5.21	28.6	0.033
1-Apr-08	6:30	0.5152	5.24	28.6	0.0331
1-Apr-08	6:31	0.5154	5.27	28.6	0.0332
1-Apr-08	6:32	0.5156	5.29	28.61	0.0333
1-Apr-08	6:33	0.5158	5.32	28.61	0.0334
1-Apr-08	6:34	0.516	5.35	28.61	0.0335
1-Apr-08	6:35	0.5161	5.38	28.61	0.0335
1-Apr-08	6:36	0.5162	5.41	28.62	0.0336

1-Apr-08	6:37	0.5163	5.44	28.62	0.0337
1-Apr-08	6:38	0.5164	5.47	28.62	0.0338
1-Apr-08	6:39	0.5165	5.5	28.62	0.0339
1-Apr-08	6:40	0.5167	5.53	28.63	0.034
1-Apr-08	6:41	0.5168	5.56	28.63	0.0341
1-Apr-08	6:42	0.5169	5.58	28.63	0.0342
1-Apr-08	6:43	0.517	5.61	28.63	0.0342
1-Apr-08	6:44	0.5171	5.64	28.64	0.0343
1-Apr-08	6:45	0.5172	5.67	28.64	0.0344
1-Apr-08	6:46	0.5173	5.7	28.64	0.0345
1-Apr-08	6:47	0.5174	5.73	28.64	0.0346
1-Apr-08	6:48	0.5175	5.76	28.65	0.0347
1-Apr-08	6:49	0.5176	5.79	28.65	0.0348
1-Apr-08	6:50	0.5177	5.82	28.65	0.0349
1-Apr-08	6:51	0.5178	5.85	28.65	0.035
1-Apr-08	6:52	0.5179	5.87	28.66	0.035
1-Apr-08	6:53	0.518	5.9	28.66	0.0351
1-Apr-08	6:54	0.5181	5.93	28.66	0.0352
1-Apr-08	6:55	0.5182	5.96	28.66	0.0353
1-Apr-08	6:56	0.5183	5.99	28.67	0.0354
1-Apr-08	6:57	0.5184	6.02	28.67	0.0355
1-Apr-08	6:58	0.5185	6.05	28.67	0.0356
1-Apr-08	6:59	0.5186	6.08	28.68	0.0357
1-Apr-08	7:00	0.5187	6.11	28.68	0.0357
1-Apr-08	7:01	0.5189	6.13	28.68	0.0358
1-Apr-08	7:02	0.519	6.16	28.68	0.0359
1-Apr-08	7:03	0.5191	6.19	28.69	0.036
1-Apr-08	7:04	0.5192	6.22	28.69	0.0361
1-Apr-08	7:05	0.5193	6.25	28.69	0.0362
1-Apr-08	7:06	0.5194	6.28	28.69	0.0363
1-Apr-08	7:07	0.5195	6.31	28.7	0.0364
1-Apr-08	7:08	0.5196	6.34	28.7	0.0365
1-Apr-08	7:09	0.5197	6.37	28.7	0.0365
1-Apr-08	7:10	0.5198	6.4	28.7	0.0366
1-Apr-08	7:11	0.5199	6.42	28.71	0.0367
1-Apr-08	7:12	0.52	6.45	28.71	0.0368
1-Apr-08	7:13	0.5201	6.48	28.71	0.0369
1-Apr-08	7:14	0.5202	6.51	28.71	0.0369
1-Apr-08	7:15	0.5203	6.54	28.72	0.037
1-Apr-08	7:16	0.5203	6.57	28.72	0.0371
1-Apr-08	7:17	0.5204	6.6	28.72	0.0372
1-Apr-08	7:18	0.5205	6.63	28.72	0.0373
1-Apr-08	7:19	0.5206	6.66	28.73	0.0373
1-Apr-08	7:20	0.5207	6.69	28.73	0.0374
1-Apr-08	7:21	0.5208	6.71	28.73	0.0375
1-Apr-08	7:22	0.5209	6.74	28.73	0.0376
1-Apr-08	7:23	0.521	6.77	28.74	0.0377
1-Apr-08	7:24	0.5211	6.8	28.74	0.0377
1-Apr-08	7:25	0.5212	6.83	28.74	0.0378
1-Apr-08	7:26	0.5213	6.86	28.74	0.0379

1-Apr-08	7:27	0.5214	6.89	28.75	0.038
1-Apr-08	7:28	0.5215	6.92	28.75	0.038
1-Apr-08	7:29	0.5216	6.95	28.75	0.0381
1-Apr-08	7:30	0.5217	6.98	28.76	0.0382
1-Apr-08	7:31	0.5218	7	28.76	0.0383
1-Apr-08	7:32	0.5219	7.03	28.76	0.0384
1-Apr-08	7:33	0.522	7.06	28.76	0.0384
1-Apr-08	7:34	0.5221	7.09	28.77	0.0385
1-Apr-08	7:35	0.5222	7.12	28.77	0.0386
1-Apr-08	7:36	0.5223	7.15	28.77	0.0387
1-Apr-08	7:37	0.5224	7.18	28.77	0.0388
1-Apr-08	7:38	0.5224	7.21	28.78	0.0388
1-Apr-08	7:39	0.5225	7.24	28.78	0.0389
1-Apr-08	7:40	0.5226	7.27	28.78	0.039
1-Apr-08	7:41	0.5227	7.29	28.78	0.0391
1-Apr-08	7:42	0.5228	7.32	28.79	0.0392
1-Apr-08	7:43	0.5229	7.35	28.79	0.0392
1-Apr-08	7:44	0.523	7.38	28.79	0.0393
1-Apr-08	7:45	0.5231	7.41	28.79	0.0394
1-Apr-08	7:46	0.5232	7.44	28.8	0.0395
1-Apr-08	7:47	0.5233	7.47	28.8	0.0396
1-Apr-08	7:48	0.5234	7.5	28.8	0.0396
1-Apr-08	7:49	0.5235	7.53	28.8	0.0397
1-Apr-08	7:50	0.5235	7.56	28.81	0.0398
1-Apr-08	7:51	0.5236	7.59	28.81	0.0398
1-Apr-08	7:52	0.5237	7.61	28.81	0.0399
1-Apr-08	7:53	0.5238	7.64	28.81	0.04
1-Apr-08	7:54	0.5239	7.67	28.82	0.0401
1-Apr-08	7:55	0.524	7.7	28.82	0.0401
1-Apr-08	7:56	0.5241	7.73	28.82	0.0402
1-Apr-08	7:57	0.5242	7.76	28.82	0.0403
1-Apr-08	7:58	0.5243	7.79	28.83	0.0403
1-Apr-08	7:59	0.5243	7.82	28.83	0.0404
1-Apr-08	8:00	0.5244	7.85	28.83	0.0405
1-Apr-08	8:01	0.5245	7.88	28.83	0.0406
1-Apr-08	8:02	0.5246	7.9	28.84	0.0406
1-Apr-08	8:03	0.5247	7.93	28.84	0.0407
1-Apr-08	8:04	0.5248	7.96	28.84	0.0408
1-Apr-08	8:05	0.5249	7.99	28.84	0.0408
1-Apr-08	8:06	0.525	8.02	28.85	0.0409
1-Apr-08	8:07	0.525	8.05	28.85	0.041
1-Apr-08	8:08	0.5251	8.08	28.85	0.0411
1-Apr-08	8:09	0.5252	8.11	28.85	0.0411
1-Apr-08	8:10	0.5253	8.14	28.86	0.0412
1-Apr-08	8:11	0.5254	8.17	28.86	0.0413
1-Apr-08	8:12	0.5255	8.19	28.86	0.0413
1-Apr-08	8:13	0.5256	8.22	28.86	0.0414
1-Apr-08	8:14	0.5256	8.25	28.87	0.0415
1-Apr-08	8:15	0.5257	8.28	28.87	0.0415
1-Apr-08	8:16	0.5258	8.31	28.87	0.0416

1-Apr-08	8:17	0.5259	8.34	28.87	0.0417
1-Apr-08	8:18	0.526	8.37	28.88	0.0418
1-Apr-08	8:19	0.5261	8.4	28.88	0.0418
1-Apr-08	8:20	0.5262	8.43	28.88	0.0419
1-Apr-08	8:21	0.5262	8.46	28.88	0.042
1-Apr-08	8:22	0.5263	8.49	28.89	0.042
1-Apr-08	8:23	0.5264	8.51	28.89	0.0421
1-Apr-08	8:24	0.5265	8.54	28.89	0.0422
1-Apr-08	8:25	0.5266	8.57	28.89	0.0423
1-Apr-08	8:26	0.5267	8.6	28.9	0.0423
1-Apr-08	8:27	0.5267	8.63	28.9	0.0424
1-Apr-08	8:28	0.5268	8.66	28.9	0.0437
1-Apr-08	8:29	0.5269	8.69	28.9	0.0451
1-Apr-08	8:30	0.527	8.72	28.91	0.0464
1-Apr-08	8:31	0.5271	8.75	28.91	0.0477
1-Apr-08	8:32	0.5271	8.78	28.91	0.0491
1-Apr-08	8:33	0.5272	8.8	28.91	0.0504
1-Apr-08	8:34	0.5273	8.83	28.92	0.0517
1-Apr-08	8:35	0.5274	8.86	28.92	0.053
1-Apr-08	8:36	0.5275	8.89	28.92	0.0544
1-Apr-08	8:37	0.5276	8.92	28.92	0.0557
1-Apr-08	8:38	0.5276	8.95	28.93	0.057
1-Apr-08	8:39	0.5277	8.97	28.93	0.0583
1-Apr-08	8:40	0.5278	9	28.93	0.0596
1-Apr-08	8:41	0.5279	9.03	28.93	0.0609
1-Apr-08	8:42	0.528	9.06	28.94	0.0622
1-Apr-08	8:43	0.528	9.09	28.94	0.0635
1-Apr-08	8:44	0.5281	9.11	28.94	0.0648
1-Apr-08	8:45	0.5282	9.14	28.94	0.066
1-Apr-08	8:46	0.5283	9.17	28.95	0.0673
1-Apr-08	8:47	0.5283	9.2	28.95	0.0686
1-Apr-08	8:48	0.5284	9.22	28.95	0.0699
1-Apr-08	8:49	0.5285	9.25	28.95	0.0712
1-Apr-08	8:50	0.5286	9.28	28.96	0.0724
1-Apr-08	8:51	0.5287	9.31	28.96	0.0737
1-Apr-08	8:52	0.5287	9.33	28.96	0.0749
1-Apr-08	8:53	0.5288	9.36	28.96	0.0762
1-Apr-08	8:54	0.5289	9.39	28.97	0.0775
1-Apr-08	8:55	0.529	9.42	28.97	0.0787
1-Apr-08	8:56	0.5297	9.44	28.97	0.08
1-Apr-08	8:57	0.5319	9.47	28.97	0.0812
1-Apr-08	8:58	0.5359	9.5	28.97	0.0825
1-Apr-08	8:59	0.5427	9.52	28.98	0.0837
1-Apr-08	9:00	0.5528	9.55	28.98	0.085
1-Apr-08	9:01	0.5655	9.58	28.98	0.0863
1-Apr-08	9:02	0.5797	9.61	28.98	0.0877
1-Apr-08	9:03	0.5943	9.64	28.99	0.0891
1-Apr-08	9:04	0.6087	9.67	28.99	0.0905
1-Apr-08	9:05	0.622	9.7	28.99	0.092
1-Apr-08	9:06	0.634	9.73	28.99	0.0934

1-Apr-08	9:07	0.6443	9.77	29	0.095
1-Apr-08	9:08	0.6525	9.8	29	0.0967
1-Apr-08	9:09	0.659	9.83	29	0.0994
1-Apr-08	9:10	0.6643	9.87	29.01	0.1022
1-Apr-08	9:11	0.6687	9.9	29.01	0.1049
1-Apr-08	9:12	0.6724	9.93	29.01	0.1077
1-Apr-08	9:13	0.6754	9.97	29.01	0.1105
1-Apr-08	9:14	0.6779	10	29.02	0.1132
1-Apr-08	9:15	0.68	10.04	29.02	0.116
1-Apr-08	9:16	0.6817	10.07	29.02	0.1187
1-Apr-08	9:17	0.6831	10.1	29.03	0.1215
1-Apr-08	9:18	0.6843	10.14	29.03	0.1242
1-Apr-08	9:19	0.6853	10.17	29.03	0.127
1-Apr-08	9:20	0.6861	10.2	29.03	0.1297
1-Apr-08	9:21	0.6868	10.24	29.04	0.1324
1-Apr-08	9:22	0.6874	10.27	29.04	0.1351
1-Apr-08	9:23	0.6879	10.3	29.04	0.1378
1-Apr-08	9:24	0.6883	10.34	29.05	0.1405
1-Apr-08	9:25	0.6887	10.37	29.05	0.1431
1-Apr-08	9:26	0.689	10.4	29.05	0.1458
1-Apr-08	9:27	0.6893	10.43	29.05	0.1485
1-Apr-08	9:28	0.6896	10.47	29.06	0.1511
1-Apr-08	9:29	0.6898	10.5	29.06	0.1537
1-Apr-08	9:30	0.6901	10.53	29.06	0.1563
1-Apr-08	9:31	0.6903	10.56	29.07	0.1589
1-Apr-08	9:32	0.6904	10.59	29.07	0.1615
1-Apr-08	9:33	0.6906	10.63	29.07	0.1641
1-Apr-08	9:34	0.6907	10.66	29.07	0.1667
1-Apr-08	9:35	0.6909	10.69	29.08	0.1692
1-Apr-08	9:36	0.691	10.72	29.08	0.1718
1-Apr-08	9:37	0.6911	10.75	29.08	0.1743
1-Apr-08	9:38	0.6912	10.78	29.08	0.1768
1-Apr-08	9:39	0.6913	10.81	29.09	0.1793
1-Apr-08	9:40	0.6914	10.84	29.09	0.1818
1-Apr-08	9:41	0.6916	10.87	29.09	0.1843
1-Apr-08	9:42	0.6917	10.9	29.09	0.1868
1-Apr-08	9:43	0.6918	10.94	29.1	0.1893
1-Apr-08	9:44	0.6919	10.97	29.1	0.1917
1-Apr-08	9:45	0.692	11	29.1	0.1947
1-Apr-08	9:46	0.6921	11.02	29.1	0.1978
1-Apr-08	9:47	0.6922	11.05	29.11	0.2008
1-Apr-08	9:48	0.6924	11.08	29.11	0.2039
1-Apr-08	9:49	0.6925	11.11	29.11	0.2069
1-Apr-08	9:50	0.6926	11.14	29.11	0.2099
1-Apr-08	9:51	0.6927	11.17	29.12	0.2129
1-Apr-08	9:52	0.6928	11.2	29.12	0.2158
1-Apr-08	9:53	0.6929	11.23	29.12	0.2188
1-Apr-08	9:54	0.693	11.26	29.12	0.2217
1-Apr-08	9:55	0.6931	11.28	29.13	0.2246
1-Apr-08	9:56	0.6946	11.31	29.13	0.2275

1-Apr-08	9:57	0.6989	11.34	29.13	0.2304
1-Apr-08	9:58	0.7071	11.37	29.13	0.2334
1-Apr-08	9:59	0.7207	11.4	29.14	0.2363
1-Apr-08	10:00	0.7411	11.43	29.14	0.2394
1-Apr-08	10:01	0.7667	11.46	29.14	0.2426
1-Apr-08	10:02	0.7953	11.49	29.14	0.2459
1-Apr-08	10:03	0.8248	11.52	29.15	0.2494
1-Apr-08	10:04	0.8539	11.56	29.15	0.253
1-Apr-08	10:05	0.8807	11.6	29.15	0.2568
1-Apr-08	10:06	0.9048	11.63	29.16	0.2608
1-Apr-08	10:07	0.9256	11.67	29.16	0.2648
1-Apr-08	10:08	0.9421	11.71	29.16	0.2689
1-Apr-08	10:09	0.9553	11.75	29.17	0.2731
1-Apr-08	10:10	0.966	11.8	29.17	0.2774
1-Apr-08	10:11	0.9748	11.84	29.17	0.2817
1-Apr-08	10:12	0.9822	11.88	29.18	0.286
1-Apr-08	10:13	0.9883	11.92	29.18	0.2903
1-Apr-08	10:14	0.9933	11.96	29.18	0.2946
1-Apr-08	10:15	0.9974	12	29.19	0.299
1-Apr-08	10:16	1.0009	12.05	29.19	0.3033
1-Apr-08	10:17	1.0037	12.09	29.19	0.3076
1-Apr-08	10:18	1.006	12.13	29.2	0.3119
1-Apr-08	10:19	1.008	12.17	29.2	0.3164
1-Apr-08	10:20	1.0096	12.21	29.2	0.3214
1-Apr-08	10:21	1.011	12.25	29.21	0.3263
1-Apr-08	10:22	1.0122	12.29	29.21	0.3312
1-Apr-08	10:23	1.0132	12.34	29.21	0.3362
1-Apr-08	10:24	1.014	12.38	29.22	0.341
1-Apr-08	10:25	1.0148	12.42	29.22	0.3459
1-Apr-08	10:26	1.0154	12.46	29.22	0.3507
1-Apr-08	10:27	1.016	12.5	29.23	0.3555
1-Apr-08	10:28	1.0165	12.54	29.23	0.3602
1-Apr-08	10:29	1.0169	12.57	29.23	0.365
1-Apr-08	10:30	1.0173	12.61	29.24	0.3697
1-Apr-08	10:31	1.0177	12.65	29.24	0.3743
1-Apr-08	10:32	1.018	12.69	29.24	0.379
1-Apr-08	10:33	1.0183	12.73	29.25	0.3836
1-Apr-08	10:34	1.0186	12.77	29.25	0.3881
1-Apr-08	10:35	1.0188	12.8	29.25	0.3927
1-Apr-08	10:36	1.019	12.84	29.26	0.3972
1-Apr-08	10:37	1.0192	12.88	29.26	0.4017
1-Apr-08	10:38	1.0194	12.92	29.26	0.4061
1-Apr-08	10:39	1.0196	12.95	29.27	0.4105
1-Apr-08	10:40	1.0198	12.99	29.27	0.4149
1-Apr-08	10:41	1.02	13.03	29.27	0.4193
1-Apr-08	10:42	1.0202	13.06	29.27	0.4236
1-Apr-08	10:43	1.0204	13.1	29.28	0.4279
1-Apr-08	10:44	1.0206	13.13	29.28	0.4322
1-Apr-08	10:45	1.0208	13.17	29.28	0.4364
1-Apr-08	10:46	1.021	13.2	29.29	0.4406

1-Apr-08	10:47	1.0212	13.24	29.29	0.4448
1-Apr-08	10:48	1.0214	13.27	29.29	0.4489
1-Apr-08	10:49	1.0216	13.31	29.29	0.4531
1-Apr-08	10:50	1.0217	13.34	29.3	0.4572
1-Apr-08	10:51	1.0219	13.37	29.3	0.4613
1-Apr-08	10:52	1.0221	13.41	29.3	0.4658
1-Apr-08	10:53	1.0223	13.44	29.31	0.4703
1-Apr-08	10:54	1.0225	13.47	29.31	0.4747
1-Apr-08	10:55	1.0227	13.51	29.31	0.4791
1-Apr-08	10:56	1.0254	13.54	29.31	0.4835
1-Apr-08	10:57	1.0333	13.57	29.32	0.4879
1-Apr-08	10:58	1.0483	13.6	29.32	0.4923
1-Apr-08	10:59	1.0734	13.64	29.32	0.4969
1-Apr-08	11:00	1.1109	13.67	29.32	0.5017
1-Apr-08	11:01	1.1579	13.71	29.33	0.5068
1-Apr-08	11:02	1.2106	13.75	29.33	0.5122
1-Apr-08	11:03	1.2649	13.8	29.33	0.518
1-Apr-08	11:04	1.3184	13.84	29.34	0.5243
1-Apr-08	11:05	1.3678	13.89	29.34	0.5308
1-Apr-08	11:06	1.4122	13.94	29.35	0.5378
1-Apr-08	11:07	1.4503	14	29.35	0.5449
1-Apr-08	11:08	1.4807	14.05	29.36	0.5523
1-Apr-08	11:09	1.5049	14.11	29.36	0.5599
1-Apr-08	11:10	1.5247	14.16	29.36	0.5676
1-Apr-08	11:11	1.541	14.22	29.37	0.5753
1-Apr-08	11:12	1.5546	14.28	29.37	0.5832
1-Apr-08	11:13	1.5658	14.34	29.38	0.591
1-Apr-08	11:14	1.575	14.4	29.38	0.5989
1-Apr-08	11:15	1.5827	14.46	29.39	0.6068
1-Apr-08	11:16	1.5889	14.51	29.39	0.6147
1-Apr-08	11:17	1.5942	14.57	29.4	0.6225
1-Apr-08	11:18	1.5985	14.63	29.4	0.6308
1-Apr-08	11:19	1.6021	14.69	29.41	0.6393
1-Apr-08	11:20	1.6051	14.75	29.41	0.6477
1-Apr-08	11:21	1.6077	14.8	29.42	0.6561
1-Apr-08	11:22	1.6098	14.86	29.42	0.6644
1-Apr-08	11:23	1.6117	14.92	29.43	0.6727
1-Apr-08	11:24	1.6133	14.97	29.43	0.681
1-Apr-08	11:25	1.6146	15.03	29.43	0.6891
1-Apr-08	11:26	1.6209	15.08	29.44	0.6973
1-Apr-08	11:27	1.6374	15.14	29.44	0.7054
1-Apr-08	11:28	1.6683	15.2	29.45	0.7137
1-Apr-08	11:29	1.7194	15.25	29.45	0.7223
1-Apr-08	11:30	1.7953	15.32	29.46	0.7314
1-Apr-08	11:31	1.8904	15.38	29.46	0.7411
1-Apr-08	11:32	1.9969	15.45	29.47	0.7517
1-Apr-08	11:33	2.1066	15.53	29.48	0.7631
1-Apr-08	11:34	2.2147	15.62	29.48	0.7753
1-Apr-08	11:35	2.3143	15.7	29.49	0.7883
1-Apr-08	11:36	2.407	15.8	29.5	0.8021

1-Apr-08	11:37	2.4938	15.9	29.51	0.8172
1-Apr-08	11:38	2.574	16	29.51	0.8334
1-Apr-08	11:39	2.6545	16.11	29.52	0.8501
1-Apr-08	11:40	2.7417	16.22	29.53	0.8675
1-Apr-08	11:41	2.8338	16.33	29.54	0.8855
1-Apr-08	11:42	2.9278	16.45	29.55	0.9042
1-Apr-08	11:43	3.0192	16.57	29.56	0.9237
1-Apr-08	11:44	3.1055	16.7	29.57	0.9438
1-Apr-08	11:45	3.1833	16.83	29.58	0.9645
1-Apr-08	11:46	3.2645	16.97	29.59	0.9857
1-Apr-08	11:47	3.3616	17.11	29.6	1.0077
1-Apr-08	11:48	3.4826	17.25	29.61	1.0318
1-Apr-08	11:49	3.644	17.4	29.62	1.057
1-Apr-08	11:50	3.86	17.56	29.64	1.0838
1-Apr-08	11:51	4.1181	17.74	29.65	1.1127
1-Apr-08	11:52	4.4002	17.92	29.67	1.144
1-Apr-08	11:53	4.687	18.13	29.68	1.1778
1-Apr-08	11:54	4.9669	18.35	29.7	1.2141
1-Apr-08	11:55	5.2238	18.58	29.72	1.2546
1-Apr-08	11:56	5.4782	18.82	29.74	1.2974
1-Apr-08	11:57	5.7502	19.08	29.76	1.3425
1-Apr-08	11:58	6.0512	19.35	29.78	1.3902
1-Apr-08	11:59	6.4171	19.64	29.8	1.4408
1-Apr-08	12:00	6.8789	19.95	29.82	1.4976
1-Apr-08	12:01	7.4147	20.29	29.85	1.5593
1-Apr-08	12:02	7.9914	20.65	29.88	1.6264
1-Apr-08	12:03	8.5723	21.05	29.91	1.6997
1-Apr-08	12:04	9.1355	21.48	29.94	1.7808
1-Apr-08	12:05	9.6506	21.93	29.97	1.867
1-Apr-08	12:06	10.0781	22.41	30.01	1.9825
1-Apr-08	12:07	10.3721	22.9	30.05	2.1591
1-Apr-08	12:08	10.4921	23.39	30.08	2.3363
1-Apr-08	12:09	10.415	23.87	30.12	2.548
1-Apr-08	12:10	10.1289	24.33	30.15	2.7762
1-Apr-08	12:11	9.6778	24.75	30.19	2.9869
1-Apr-08	12:12	9.1243	25.13	30.21	3.1925
1-Apr-08	12:13	8.5241	25.46	30.24	3.3879
1-Apr-08	12:14	7.9135	25.74	30.26	3.5556
1-Apr-08	12:15	7.3411	25.98	30.28	3.6969
1-Apr-08	12:16	6.8151	26.18	30.29	3.8142
1-Apr-08	12:17	6.3494	26.35	30.3	3.9101
1-Apr-08	12:18	5.9613	26.48	30.31	3.9872
1-Apr-08	12:19	5.6259	26.58	30.32	4.0492
1-Apr-08	12:20	5.3156	26.67	30.32	4.0981
1-Apr-08	12:21	5.0267	26.73	30.33	4.1349
1-Apr-08	12:22	4.7561	26.78	30.33	4.1609
1-Apr-08	12:23	4.5096	26.8	30.33	4.1771
1-Apr-08	12:24	4.2884	26.82	30.33	4.1848
1-Apr-08	12:25	4.0957	26.82	30.33	4.185
1-Apr-08	12:26	3.9253	26.81	30.33	4.179

1-Apr-08	12:27	3.7721	26.79	30.33	4.1677
1-Apr-08	12:28	3.635	26.76	30.33	4.1517
1-Apr-08	12:29	3.5036	26.73	30.33	4.1317
1-Apr-08	12:30	3.3678	26.69	30.32	4.1078
1-Apr-08	12:31	3.2295	26.64	30.32	4.08
1-Apr-08	12:32	3.0915	26.58	30.32	4.0484
1-Apr-08	12:33	2.9596	26.52	30.31	4.0133
1-Apr-08	12:34	2.8364	26.46	30.31	3.975
1-Apr-08	12:35	2.7259	26.39	30.31	3.934
1-Apr-08	12:36	2.6289	26.31	30.3	3.8908
1-Apr-08	12:37	2.5463	26.24	30.29	3.8456
1-Apr-08	12:38	2.4801	26.16	30.29	3.7994
1-Apr-08	12:39	2.4271	26.08	30.28	3.7527
1-Apr-08	12:40	2.3838	26	30.28	3.7059
1-Apr-08	12:41	2.3487	25.92	30.27	3.6594
1-Apr-08	12:42	2.3198	25.84	30.27	3.6134
1-Apr-08	12:43	2.2964	25.76	30.26	3.5681
1-Apr-08	12:44	2.2778	25.69	30.25	3.5237
1-Apr-08	12:45	2.2634	25.62	30.25	3.4802
1-Apr-08	12:46	2.252	25.54	30.24	3.4377
1-Apr-08	12:47	2.2427	25.47	30.24	3.3964
1-Apr-08	12:48	2.2351	25.4	30.23	3.3563
1-Apr-08	12:49	2.2289	25.34	30.23	3.3172
1-Apr-08	12:50	2.2239	25.27	30.22	3.2794
1-Apr-08	12:51	2.2198	25.21	30.22	3.2427
1-Apr-08	12:52	2.2166	25.15	30.22	3.2071
1-Apr-08	12:53	2.214	25.09	30.21	3.1727
1-Apr-08	12:54	2.212	25.04	30.21	3.1394
1-Apr-08	12:55	2.2106	24.98	30.2	3.1072
1-Apr-08	12:56	2.2056	24.93	30.2	3.0772
1-Apr-08	12:57	2.1927	24.88	30.2	3.0513
1-Apr-08	12:58	2.1688	24.83	30.19	3.0256
1-Apr-08	12:59	2.1294	24.77	30.19	2.9997
1-Apr-08	13:00	2.0709	24.72	30.18	2.9731
1-Apr-08	13:01	1.9976	24.66	30.18	2.9453
1-Apr-08	13:02	1.9156	24.61	30.18	2.9161
1-Apr-08	13:03	1.8312	24.54	30.17	2.8853
1-Apr-08	13:04	1.7481	24.48	30.17	2.8529
1-Apr-08	13:05	1.6718	24.41	30.16	2.8191
1-Apr-08	13:06	1.6032	24.34	30.16	2.7842
1-Apr-08	13:07	1.5444	24.27	30.15	2.7484
1-Apr-08	13:08	1.4976	24.2	30.14	2.7122
1-Apr-08	13:09	1.4606	24.13	30.14	2.6757
1-Apr-08	13:10	1.4304	24.05	30.13	2.6394
1-Apr-08	13:11	1.4058	23.98	30.13	2.6033
1-Apr-08	13:12	1.3853	23.91	30.12	2.5676
1-Apr-08	13:13	1.3684	23.84	30.12	2.5324
1-Apr-08	13:14	1.3547	23.77	30.11	2.4978
1-Apr-08	13:15	1.3436	23.7	30.11	2.4639
1-Apr-08	13:16	1.3345	23.64	30.1	2.4306

1-Apr-08	13:17	1.327	23.57	30.1	2.4015
1-Apr-08	13:18	1.3209	23.51	30.09	2.3784
1-Apr-08	13:19	1.316	23.44	30.09	2.3557
1-Apr-08	13:20	1.312	23.38	30.08	2.3334
1-Apr-08	13:21	1.3088	23.32	30.08	2.3115
1-Apr-08	13:22	1.3061	23.26	30.07	2.29
1-Apr-08	13:23	1.3039	23.2	30.07	2.2689
1-Apr-08	13:24	1.3021	23.15	30.07	2.2482
1-Apr-08	13:25	1.3007	23.09	30.06	2.2279
1-Apr-08	13:26	1.2995	23.03	30.06	2.2081
1-Apr-08	13:27	1.2986	22.98	30.05	2.1886
1-Apr-08	13:28	1.2978	22.93	30.05	2.1695
1-Apr-08	13:29	1.2971	22.88	30.05	2.1508
1-Apr-08	13:30	1.2966	22.82	30.04	2.1326
1-Apr-08	13:31	1.2962	22.78	30.04	2.1146
1-Apr-08	13:32	1.2959	22.73	30.03	2.0971
1-Apr-08	13:33	1.2957	22.68	30.03	2.08
1-Apr-08	13:34	1.2956	22.63	30.03	2.0632
1-Apr-08	13:35	1.2956	22.59	30.02	2.0467
1-Apr-08	13:36	1.2957	22.54	30.02	2.0306
1-Apr-08	13:37	1.2958	22.5	30.02	2.0149
1-Apr-08	13:38	1.2958	22.46	30.01	1.9995
1-Apr-08	13:39	1.2959	22.41	30.01	1.9844
1-Apr-08	13:40	1.296	22.37	30.01	1.9697
1-Apr-08	13:41	1.296	22.33	30.01	1.9552
1-Apr-08	13:42	1.2961	22.29	30	1.9411
1-Apr-08	13:43	1.2962	22.26	30	1.9283
1-Apr-08	13:44	1.2962	22.22	30	1.9212
1-Apr-08	13:45	1.2963	22.18	29.99	1.9141
1-Apr-08	13:46	1.2964	22.14	29.99	1.9071
1-Apr-08	13:47	1.2964	22.11	29.99	1.9002
1-Apr-08	13:48	1.2965	22.07	29.99	1.8934
1-Apr-08	13:49	1.2966	22.04	29.98	1.8866
1-Apr-08	13:50	1.2966	22	29.98	1.8799
1-Apr-08	13:51	1.2967	21.97	29.98	1.8733
1-Apr-08	13:52	1.2968	21.93	29.97	1.8668
1-Apr-08	13:53	1.2968	21.9	29.97	1.8603
1-Apr-08	13:54	1.2969	21.86	29.97	1.8539
1-Apr-08	13:55	1.2969	21.83	29.97	1.8476
1-Apr-08	13:56	1.2954	21.8	29.96	1.8414
1-Apr-08	13:57	1.2904	21.77	29.96	1.8352
1-Apr-08	13:58	1.2808	21.73	29.96	1.829
1-Apr-08	13:59	1.2646	21.7	29.96	1.8227
1-Apr-08	14:00	1.2404	21.67	29.95	1.8162
1-Apr-08	14:01	1.21	21.63	29.95	1.8095
1-Apr-08	14:02	1.1758	21.59	29.95	1.8025
1-Apr-08	14:03	1.1406	21.55	29.95	1.7952
1-Apr-08	14:04	1.106	21.51	29.94	1.7876
1-Apr-08	14:05	1.0741	21.47	29.94	1.7797
1-Apr-08	14:06	1.0454	21.43	29.94	1.7716

1-Apr-08	14:07	1.0208	21.39	29.93	1.7632
1-Apr-08	14:08	1.0013	21.34	29.93	1.7547
1-Apr-08	14:09	0.9858	21.3	29.93	1.7461
1-Apr-08	14:10	0.9731	21.25	29.92	1.7374
1-Apr-08	14:11	0.9629	21.2	29.92	1.7287
1-Apr-08	14:12	0.9543	21.16	29.92	1.7199
1-Apr-08	14:13	0.9473	21.11	29.91	1.7112
1-Apr-08	14:14	0.9415	21.07	29.91	1.7025
1-Apr-08	14:15	0.9369	21.02	29.91	1.6939
1-Apr-08	14:16	0.9331	20.98	29.9	1.6853
1-Apr-08	14:17	0.9299	20.93	29.9	1.6769
1-Apr-08	14:18	0.9274	20.89	29.9	1.6687
1-Apr-08	14:19	0.9254	20.84	29.89	1.6606
1-Apr-08	14:20	0.9237	20.8	29.89	1.6526
1-Apr-08	14:21	0.9223	20.75	29.89	1.6446
1-Apr-08	14:22	0.9212	20.71	29.88	1.6367
1-Apr-08	14:23	0.9203	20.67	29.88	1.6289
1-Apr-08	14:24	0.9195	20.63	29.88	1.6212
1-Apr-08	14:25	0.9189	20.58	29.87	1.6135
1-Apr-08	14:26	0.9185	20.54	29.87	1.6059
1-Apr-08	14:27	0.9181	20.5	29.87	1.5984
1-Apr-08	14:28	0.9177	20.46	29.86	1.591
1-Apr-08	14:29	0.9175	20.42	29.86	1.5836
1-Apr-08	14:30	0.9172	20.38	29.86	1.5763
1-Apr-08	14:31	0.9171	20.34	29.85	1.5692
1-Apr-08	14:32	0.9169	20.3	29.85	1.562
1-Apr-08	14:33	0.9169	20.26	29.85	1.555
1-Apr-08	14:34	0.9168	20.23	29.84	1.548
1-Apr-08	14:35	0.9168	20.19	29.84	1.5411
1-Apr-08	14:36	0.9169	20.15	29.84	1.5343
1-Apr-08	14:37	0.9169	20.11	29.84	1.5276
1-Apr-08	14:38	0.9169	20.08	29.83	1.5209
1-Apr-08	14:39	0.9169	20.04	29.83	1.5143
1-Apr-08	14:40	0.917	20.01	29.83	1.5078
1-Apr-08	14:41	0.917	19.97	29.83	1.5013
1-Apr-08	14:42	0.917	19.94	29.82	1.495
1-Apr-08	14:43	0.9171	19.9	29.82	1.4887
1-Apr-08	14:44	0.9171	19.87	29.82	1.4824
1-Apr-08	14:45	0.9171	19.83	29.81	1.4763
1-Apr-08	14:46	0.9171	19.8	29.81	1.4701
1-Apr-08	14:47	0.9172	19.77	29.81	1.4641
1-Apr-08	14:48	0.9172	19.73	29.81	1.4581
1-Apr-08	14:49	0.9172	19.7	29.8	1.4522
1-Apr-08	14:50	0.9173	19.67	29.8	1.4464
1-Apr-08	14:51	0.9173	19.64	29.8	1.4407
1-Apr-08	14:52	0.9173	19.61	29.8	1.4352
1-Apr-08	14:53	0.9173	19.58	29.79	1.4298
1-Apr-08	14:54	0.9174	19.55	29.79	1.4244
1-Apr-08	14:55	0.9174	19.52	29.79	1.4191
1-Apr-08	14:56	0.916	19.49	29.79	1.4139

1-Apr-08	14:57	0.9115	19.46	29.79	1.4086
1-Apr-08	14:58	0.9028	19.43	29.78	1.4034
1-Apr-08	14:59	0.8881	19.4	29.78	1.3981
1-Apr-08	15:00	0.8663	19.37	29.78	1.3926
1-Apr-08	15:01	0.8388	19.33	29.78	1.387
1-Apr-08	15:02	0.808	19.3	29.77	1.3811
1-Apr-08	15:03	0.7762	19.26	29.77	1.375
1-Apr-08	15:04	0.745	19.23	29.77	1.3685
1-Apr-08	15:05	0.7162	19.19	29.76	1.3619
1-Apr-08	15:06	0.6903	19.15	29.76	1.355
1-Apr-08	15:07	0.6681	19.11	29.76	1.3479
1-Apr-08	15:08	0.6505	19.07	29.76	1.3407
1-Apr-08	15:09	0.6365	19.03	29.75	1.3334
1-Apr-08	15:10	0.6251	18.98	29.75	1.3261
1-Apr-08	15:11	0.6158	18.94	29.75	1.3187
1-Apr-08	15:12	0.608	18.9	29.74	1.3113
1-Apr-08	15:13	0.6017	18.86	29.74	1.3039
1-Apr-08	15:14	0.5965	18.82	29.74	1.2966
1-Apr-08	15:15	0.5923	18.77	29.73	1.2892
1-Apr-08	15:16	0.5888	18.73	29.73	1.2819
1-Apr-08	15:17	0.586	18.69	29.73	1.2747
1-Apr-08	15:18	0.5837	18.65	29.72	1.2675
1-Apr-08	15:19	0.5818	18.61	29.72	1.2603
1-Apr-08	15:20	0.5803	18.57	29.72	1.2532
1-Apr-08	15:21	0.579	18.53	29.71	1.2462
1-Apr-08	15:22	0.578	18.49	29.71	1.2392
1-Apr-08	15:23	0.5772	18.45	29.71	1.2323
1-Apr-08	15:24	0.5765	18.41	29.7	1.2254
1-Apr-08	15:25	0.5759	18.37	29.7	1.2186
1-Apr-08	15:26	0.5755	18.33	29.7	1.2121
1-Apr-08	15:27	0.5751	18.29	29.7	1.2058
1-Apr-08	15:28	0.5748	18.26	29.69	1.1995
1-Apr-08	15:29	0.5745	18.22	29.69	1.1933
1-Apr-08	15:30	0.5743	18.18	29.69	1.1871
1-Apr-08	15:31	0.5741	18.15	29.68	1.181
1-Apr-08	15:32	0.574	18.11	29.68	1.175
1-Apr-08	15:33	0.5739	18.07	29.68	1.169
1-Apr-08	15:34	0.5739	18.04	29.67	1.1631
1-Apr-08	15:35	0.5739	18	29.67	1.1572
1-Apr-08	15:36	0.5739	17.97	29.67	1.1514
1-Apr-08	15:37	0.5739	17.93	29.67	1.1457
1-Apr-08	15:38	0.5739	17.9	29.66	1.14
1-Apr-08	15:39	0.5739	17.87	29.66	1.1343
1-Apr-08	15:40	0.5739	17.83	29.66	1.1288
1-Apr-08	15:41	0.5739	17.8	29.66	1.1232
1-Apr-08	15:42	0.5739	17.77	29.65	1.1178
1-Apr-08	15:43	0.5739	17.73	29.65	1.1124
1-Apr-08	15:44	0.574	17.7	29.65	1.107
1-Apr-08	15:45	0.574	17.67	29.65	1.1017
1-Apr-08	15:46	0.574	17.64	29.64	1.0965

1-Apr-08	15:47	0.574	17.61	29.64	1.0913
1-Apr-08	15:48	0.574	17.58	29.64	1.0861
1-Apr-08	15:49	0.574	17.55	29.64	1.081
1-Apr-08	15:50	0.574	17.52	29.63	1.076
1-Apr-08	15:51	0.574	17.49	29.63	1.071
1-Apr-08	15:52	0.574	17.46	29.63	1.066
1-Apr-08	15:53	0.574	17.43	29.63	1.0611
1-Apr-08	15:54	0.5741	17.4	29.62	1.0563
1-Apr-08	15:55	0.5741	17.37	29.62	1.0515
1-Apr-08	15:56	0.5741	17.34	29.62	1.0467
1-Apr-08	15:57	0.5741	17.31	29.62	1.042
1-Apr-08	15:58	0.5741	17.28	29.62	1.0374
1-Apr-08	15:59	0.5741	17.26	29.61	1.0328
1-Apr-08	16:00	0.5741	17.23	29.61	1.0282
1-Apr-08	16:01	0.5741	17.2	29.61	1.0237
1-Apr-08	16:02	0.5741	17.18	29.61	1.0192
1-Apr-08	16:03	0.5741	17.15	29.6	1.0148
1-Apr-08	16:04	0.5742	17.12	29.6	1.0104
1-Apr-08	16:05	0.5742	17.1	29.6	1.006
1-Apr-08	16:06	0.5742	17.07	29.6	1.0019
1-Apr-08	16:07	0.5742	17.05	29.6	0.9979
1-Apr-08	16:08	0.5742	17.02	29.59	0.9939
1-Apr-08	16:09	0.5742	16.99	29.59	0.99
1-Apr-08	16:10	0.5742	16.97	29.59	0.9861
1-Apr-08	16:11	0.5742	16.95	29.59	0.9822
1-Apr-08	16:12	0.5742	16.92	29.59	0.9784
1-Apr-08	16:13	0.5742	16.9	29.58	0.9746
1-Apr-08	16:14	0.5743	16.87	29.58	0.9708
1-Apr-08	16:15	0.5743	16.85	29.58	0.9671
1-Apr-08	16:16	0.5743	16.83	29.58	0.9634
1-Apr-08	16:17	0.5743	16.8	29.58	0.9597
1-Apr-08	16:18	0.5743	16.78	29.58	0.9561
1-Apr-08	16:19	0.5743	16.76	29.57	0.9525
1-Apr-08	16:20	0.5743	16.73	29.57	0.949
1-Apr-08	16:21	0.5743	16.71	29.57	0.9454
1-Apr-08	16:22	0.5743	16.69	29.57	0.942
1-Apr-08	16:23	0.5743	16.67	29.57	0.9385
1-Apr-08	16:24	0.5744	16.65	29.56	0.9351
1-Apr-08	16:25	0.5744	16.62	29.56	0.9317
1-Apr-08	16:26	0.5744	16.6	29.56	0.9283
1-Apr-08	16:27	0.5744	16.58	29.56	0.925
1-Apr-08	16:28	0.5744	16.56	29.56	0.9217
1-Apr-08	16:29	0.5744	16.54	29.56	0.9185
1-Apr-08	16:30	0.5744	16.52	29.55	0.9152
1-Apr-08	16:31	0.5744	16.5	29.55	0.912
1-Apr-08	16:32	0.5744	16.48	29.55	0.9088
1-Apr-08	16:33	0.5744	16.46	29.55	0.9057
1-Apr-08	16:34	0.5745	16.44	29.55	0.9026
1-Apr-08	16:35	0.5745	16.42	29.55	0.8995
1-Apr-08	16:36	0.5745	16.4	29.55	0.8965

1-Apr-08	16:37	0.5745	16.38	29.54	0.8934
1-Apr-08	16:38	0.5745	16.36	29.54	0.8904
1-Apr-08	16:39	0.5745	16.34	29.54	0.8875
1-Apr-08	16:40	0.5745	16.32	29.54	0.8845
1-Apr-08	16:41	0.5745	16.31	29.54	0.8816
1-Apr-08	16:42	0.5745	16.29	29.54	0.8787
1-Apr-08	16:43	0.5745	16.27	29.53	0.8759
1-Apr-08	16:44	0.5745	16.25	29.53	0.873
1-Apr-08	16:45	0.5746	16.23	29.53	0.8702
1-Apr-08	16:46	0.5746	16.22	29.53	0.8675
1-Apr-08	16:47	0.5746	16.2	29.53	0.8647
1-Apr-08	16:48	0.5746	16.18	29.53	0.862
1-Apr-08	16:49	0.5746	16.16	29.53	0.8593
1-Apr-08	16:50	0.5746	16.15	29.52	0.8566
1-Apr-08	16:51	0.5746	16.13	29.52	0.8539
1-Apr-08	16:52	0.5746	16.11	29.52	0.8513
1-Apr-08	16:53	0.5746	16.1	29.52	0.8487
1-Apr-08	16:54	0.5746	16.08	29.52	0.8461
1-Apr-08	16:55	0.5747	16.06	29.52	0.8436
1-Apr-08	16:56	0.5747	16.05	29.52	0.8411
1-Apr-08	16:57	0.5747	16.03	29.52	0.8386
1-Apr-08	16:58	0.5747	16.02	29.51	0.8361
1-Apr-08	16:59	0.5747	16	29.51	0.8336
1-Apr-08	17:00	0.5747	15.99	29.51	0.8312
1-Apr-08	17:01	0.5747	15.97	29.51	0.8288
1-Apr-08	17:02	0.5747	15.96	29.51	0.8264
1-Apr-08	17:03	0.5747	15.94	29.51	0.824
1-Apr-08	17:04	0.5747	15.93	29.51	0.8217
1-Apr-08	17:05	0.5747	15.91	29.51	0.8194
1-Apr-08	17:06	0.5748	15.9	29.5	0.8171
1-Apr-08	17:07	0.5748	15.88	29.5	0.8148
1-Apr-08	17:08	0.5748	15.87	29.5	0.8125
1-Apr-08	17:09	0.5748	15.85	29.5	0.8103
1-Apr-08	17:10	0.5748	15.84	29.5	0.8081
1-Apr-08	17:11	0.5748	15.83	29.5	0.806
1-Apr-08	17:12	0.5748	15.81	29.5	0.804
1-Apr-08	17:13	0.5748	15.8	29.5	0.802
1-Apr-08	17:14	0.5748	15.78	29.5	0.8
1-Apr-08	17:15	0.5748	15.77	29.49	0.798
1-Apr-08	17:16	0.5748	15.76	29.49	0.796
1-Apr-08	17:17	0.5749	15.74	29.49	0.7941
1-Apr-08	17:18	0.5749	15.73	29.49	0.7922
1-Apr-08	17:19	0.5749	15.72	29.49	0.7903
1-Apr-08	17:20	0.5749	15.71	29.49	0.7884
1-Apr-08	17:21	0.5749	15.69	29.49	0.7865
1-Apr-08	17:22	0.5749	15.68	29.49	0.7847
1-Apr-08	17:23	0.5749	15.67	29.49	0.7828
1-Apr-08	17:24	0.5749	15.65	29.49	0.781
1-Apr-08	17:25	0.5749	15.64	29.48	0.7792
1-Apr-08	17:26	0.5749	15.63	29.48	0.7774

1-Apr-08	17:27	0.5749	15.62	29.48	0.7756
1-Apr-08	17:28	0.575	15.61	29.48	0.7739
1-Apr-08	17:29	0.575	15.59	29.48	0.7721
1-Apr-08	17:30	0.575	15.58	29.48	0.7704
1-Apr-08	17:31	0.575	15.57	29.48	0.7687
1-Apr-08	17:32	0.575	15.56	29.48	0.767
1-Apr-08	17:33	0.575	15.55	29.48	0.7653
1-Apr-08	17:34	0.575	15.54	29.48	0.7637
1-Apr-08	17:35	0.575	15.53	29.48	0.762
1-Apr-08	17:36	0.575	15.51	29.47	0.7604
1-Apr-08	17:37	0.575	15.5	29.47	0.7587
1-Apr-08	17:38	0.575	15.49	29.47	0.7571
1-Apr-08	17:39	0.5751	15.48	29.47	0.7555
1-Apr-08	17:40	0.5751	15.47	29.47	0.754
1-Apr-08	17:41	0.5751	15.46	29.47	0.7524
1-Apr-08	17:42	0.5751	15.45	29.47	0.7508
1-Apr-08	17:43	0.5751	15.44	29.47	0.7493
1-Apr-08	17:44	0.5751	15.43	29.47	0.7478
1-Apr-08	17:45	0.5751	15.42	29.47	0.7463
1-Apr-08	17:46	0.5751	15.41	29.47	0.7448
1-Apr-08	17:47	0.5751	15.4	29.46	0.7433
1-Apr-08	17:48	0.5751	15.39	29.46	0.7418
1-Apr-08	17:49	0.5751	15.38	29.46	0.7403
1-Apr-08	17:50	0.5752	15.37	29.46	0.7389
1-Apr-08	17:51	0.5752	15.36	29.46	0.7375
1-Apr-08	17:52	0.5752	15.35	29.46	0.736
1-Apr-08	17:53	0.5752	15.34	29.46	0.7346
1-Apr-08	17:54	0.5752	15.33	29.46	0.7332
1-Apr-08	17:55	0.5752	15.32	29.46	0.7318
1-Apr-08	17:56	0.5741	15.31	29.46	0.7305
1-Apr-08	17:57	0.5705	15.3	29.46	0.7291
1-Apr-08	17:58	0.5637	15.29	29.46	0.7277
1-Apr-08	17:59	0.5523	15.28	29.46	0.7262
1-Apr-08	18:00	0.5353	15.27	29.45	0.7246
1-Apr-08	18:01	0.5138	15.26	29.45	0.7228
1-Apr-08	18:02	0.4898	15.24	29.45	0.7209
1-Apr-08	18:03	0.465	15.23	29.45	0.7188
1-Apr-08	18:04	0.4406	15.21	29.45	0.7164
1-Apr-08	18:05	0.4181	15.2	29.45	0.7139
1-Apr-08	18:06	0.3979	15.18	29.45	0.7112
1-Apr-08	18:07	0.3806	15.16	29.45	0.7084
1-Apr-08	18:08	0.3668	15.14	29.44	0.7055
1-Apr-08	18:09	0.3559	15.12	29.44	0.7025
1-Apr-08	18:10	0.347	15.1	29.44	0.6994
1-Apr-08	18:11	0.3397	15.08	29.44	0.6963
1-Apr-08	18:12	0.3337	15.06	29.44	0.6931
1-Apr-08	18:13	0.3287	15.03	29.44	0.69
1-Apr-08	18:14	0.3247	15.01	29.43	0.6868
1-Apr-08	18:15	0.3214	14.99	29.43	0.6836
1-Apr-08	18:16	0.3187	14.97	29.43	0.6804

1-Apr-08	18:17	0.3164	14.95	29.43	0.6772
1-Apr-08	18:18	0.3146	14.93	29.43	0.6741
1-Apr-08	18:19	0.3132	14.9	29.42	0.6709
1-Apr-08	18:20	0.312	14.88	29.42	0.6678
1-Apr-08	18:21	0.311	14.86	29.42	0.6646
1-Apr-08	18:22	0.3102	14.84	29.42	0.6615
1-Apr-08	18:23	0.3095	14.82	29.42	0.6585
1-Apr-08	18:24	0.309	14.8	29.42	0.6554
1-Apr-08	18:25	0.3086	14.78	29.41	0.6524
1-Apr-08	18:26	0.3082	14.76	29.41	0.6493
1-Apr-08	18:27	0.3079	14.74	29.41	0.6464
1-Apr-08	18:28	0.3077	14.72	29.41	0.6434
1-Apr-08	18:29	0.3074	14.7	29.41	0.6404
1-Apr-08	18:30	0.3073	14.68	29.41	0.6375
1-Apr-08	18:31	0.3071	14.66	29.4	0.6346
1-Apr-08	18:32	0.307	14.64	29.4	0.6318
1-Apr-08	18:33	0.3069	14.62	29.4	0.6289
1-Apr-08	18:34	0.3069	14.6	29.4	0.6261
1-Apr-08	18:35	0.3069	14.58	29.4	0.6235
1-Apr-08	18:36	0.3069	14.56	29.4	0.6209
1-Apr-08	18:37	0.3069	14.54	29.4	0.6184
1-Apr-08	18:38	0.3069	14.52	29.39	0.6159
1-Apr-08	18:39	0.3069	14.5	29.39	0.6134
1-Apr-08	18:40	0.3069	14.49	29.39	0.611
1-Apr-08	18:41	0.3069	14.47	29.39	0.6085
1-Apr-08	18:42	0.3069	14.45	29.39	0.6061
1-Apr-08	18:43	0.3069	14.43	29.39	0.6037
1-Apr-08	18:44	0.3069	14.41	29.39	0.6013
1-Apr-08	18:45	0.3069	14.4	29.38	0.5989
1-Apr-08	18:46	0.3069	14.38	29.38	0.5966
1-Apr-08	18:47	0.3069	14.36	29.38	0.5943
1-Apr-08	18:48	0.3069	14.34	29.38	0.5919
1-Apr-08	18:49	0.3069	14.33	29.38	0.5897
1-Apr-08	18:50	0.3069	14.31	29.38	0.5874
1-Apr-08	18:51	0.3069	14.29	29.38	0.5851
1-Apr-08	18:52	0.3069	14.28	29.37	0.5829
1-Apr-08	18:53	0.3069	14.26	29.37	0.5807
1-Apr-08	18:54	0.3069	14.24	29.37	0.5785
1-Apr-08	18:55	0.3069	14.23	29.37	0.5763
1-Apr-08	18:56	0.3069	14.21	29.37	0.5741
1-Apr-08	18:57	0.3069	14.2	29.37	0.572
1-Apr-08	18:58	0.3069	14.18	29.37	0.5698
1-Apr-08	18:59	0.3069	14.16	29.36	0.5677
1-Apr-08	19:00	0.307	14.15	29.36	0.5656
1-Apr-08	19:01	0.307	14.13	29.36	0.5636
1-Apr-08	19:02	0.307	14.12	29.36	0.5615
1-Apr-08	19:03	0.307	14.1	29.36	0.5594
1-Apr-08	19:04	0.307	14.09	29.36	0.5574
1-Apr-08	19:05	0.307	14.07	29.36	0.5554
1-Apr-08	19:06	0.307	14.06	29.36	0.5534

1-Apr-08	19:07	0.307	14.04	29.35	0.5514
1-Apr-08	19:08	0.307	14.03	29.35	0.5495
1-Apr-08	19:09	0.307	14.01	29.35	0.5475
1-Apr-08	19:10	0.307	14	29.35	0.5456
1-Apr-08	19:11	0.307	13.99	29.35	0.5436
1-Apr-08	19:12	0.307	13.97	29.35	0.5417
1-Apr-08	19:13	0.307	13.96	29.35	0.5399
1-Apr-08	19:14	0.307	13.94	29.35	0.538
1-Apr-08	19:15	0.307	13.93	29.35	0.5361
1-Apr-08	19:16	0.307	13.92	29.34	0.5343
1-Apr-08	19:17	0.307	13.9	29.34	0.5325
1-Apr-08	19:18	0.307	13.89	29.34	0.5306
1-Apr-08	19:19	0.307	13.88	29.34	0.5288
1-Apr-08	19:20	0.307	13.86	29.34	0.5271
1-Apr-08	19:21	0.307	13.85	29.34	0.5253
1-Apr-08	19:22	0.307	13.84	29.34	0.5235
1-Apr-08	19:23	0.307	13.82	29.34	0.5218
1-Apr-08	19:24	0.307	13.81	29.34	0.5201
1-Apr-08	19:25	0.307	13.8	29.33	0.5184
1-Apr-08	19:26	0.307	13.79	29.33	0.5167
1-Apr-08	19:27	0.307	13.77	29.33	0.515
1-Apr-08	19:28	0.307	13.76	29.33	0.5133
1-Apr-08	19:29	0.307	13.75	29.33	0.5116
1-Apr-08	19:30	0.307	13.74	29.33	0.51
1-Apr-08	19:31	0.307	13.72	29.33	0.5084
1-Apr-08	19:32	0.307	13.71	29.33	0.5067
1-Apr-08	19:33	0.307	13.7	29.33	0.5051
1-Apr-08	19:34	0.307	13.69	29.33	0.5035
1-Apr-08	19:35	0.307	13.68	29.32	0.502
1-Apr-08	19:36	0.307	13.66	29.32	0.5004
1-Apr-08	19:37	0.307	13.65	29.32	0.4988
1-Apr-08	19:38	0.307	13.64	29.32	0.4973
1-Apr-08	19:39	0.307	13.63	29.32	0.4958
1-Apr-08	19:40	0.307	13.62	29.32	0.4943
1-Apr-08	19:41	0.307	13.61	29.32	0.4927
1-Apr-08	19:42	0.3071	13.6	29.32	0.4913
1-Apr-08	19:43	0.3071	13.59	29.32	0.4898
1-Apr-08	19:44	0.3071	13.57	29.32	0.4883
1-Apr-08	19:45	0.3071	13.56	29.32	0.4868
1-Apr-08	19:46	0.3071	13.55	29.31	0.4854
1-Apr-08	19:47	0.3071	13.54	29.31	0.484
1-Apr-08	19:48	0.3071	13.53	29.31	0.4825
1-Apr-08	19:49	0.3071	13.52	29.31	0.4811
1-Apr-08	19:50	0.3071	13.51	29.31	0.4797
1-Apr-08	19:51	0.3071	13.5	29.31	0.4783
1-Apr-08	19:52	0.3071	13.49	29.31	0.477
1-Apr-08	19:53	0.3071	13.48	29.31	0.4756
1-Apr-08	19:54	0.3071	13.47	29.31	0.4742
1-Apr-08	19:55	0.3071	13.46	29.31	0.4729
1-Apr-08	19:56	0.3071	13.45	29.31	0.4716

1-Apr-08	19:57	0.3071	13.44	29.31	0.4702
1-Apr-08	19:58	0.3071	13.43	29.3	0.4689
1-Apr-08	19:59	0.3071	13.42	29.3	0.4676
1-Apr-08	20:00	0.3071	13.41	29.3	0.4663
1-Apr-08	20:01	0.3071	13.4	29.3	0.4651
1-Apr-08	20:02	0.3071	13.39	29.3	0.4638
1-Apr-08	20:03	0.3071	13.38	29.3	0.4625
1-Apr-08	20:04	0.3071	13.37	29.3	0.4613
1-Apr-08	20:05	0.3071	13.36	29.3	0.4601
1-Apr-08	20:06	0.3071	13.36	29.3	0.459
1-Apr-08	20:07	0.3071	13.35	29.3	0.4579
1-Apr-08	20:08	0.3071	13.34	29.3	0.4569
1-Apr-08	20:09	0.3071	13.33	29.3	0.4558
1-Apr-08	20:10	0.3071	13.32	29.3	0.4547
1-Apr-08	20:11	0.3071	13.31	29.3	0.4536
1-Apr-08	20:12	0.3071	13.3	29.29	0.4526
1-Apr-08	20:13	0.3071	13.29	29.29	0.4515
1-Apr-08	20:14	0.3071	13.28	29.29	0.4505
1-Apr-08	20:15	0.3071	13.28	29.29	0.4495
1-Apr-08	20:16	0.3071	13.27	29.29	0.4484
1-Apr-08	20:17	0.3071	13.26	29.29	0.4474
1-Apr-08	20:18	0.3071	13.25	29.29	0.4464
1-Apr-08	20:19	0.3071	13.24	29.29	0.4454
1-Apr-08	20:20	0.3071	13.23	29.29	0.4444
1-Apr-08	20:21	0.3071	13.23	29.29	0.4434
1-Apr-08	20:22	0.3071	13.22	29.29	0.4424
1-Apr-08	20:23	0.3071	13.21	29.29	0.4415
1-Apr-08	20:24	0.3071	13.2	29.29	0.4405
1-Apr-08	20:25	0.3072	13.19	29.29	0.4395
1-Apr-08	20:26	0.3072	13.19	29.28	0.4386
1-Apr-08	20:27	0.3072	13.18	29.28	0.4376
1-Apr-08	20:28	0.3072	13.17	29.28	0.4367
1-Apr-08	20:29	0.3072	13.16	29.28	0.4358
1-Apr-08	20:30	0.3072	13.15	29.28	0.4348
1-Apr-08	20:31	0.3072	13.15	29.28	0.4339
1-Apr-08	20:32	0.3072	13.14	29.28	0.433
1-Apr-08	20:33	0.3072	13.13	29.28	0.4321
1-Apr-08	20:34	0.3072	13.12	29.28	0.4312
1-Apr-08	20:35	0.3072	13.12	29.28	0.4303
1-Apr-08	20:36	0.3072	13.11	29.28	0.4294
1-Apr-08	20:37	0.3072	13.1	29.28	0.4285
1-Apr-08	20:38	0.3072	13.1	29.28	0.4277
1-Apr-08	20:39	0.3072	13.09	29.28	0.4268
1-Apr-08	20:40	0.3072	13.08	29.28	0.4259
1-Apr-08	20:41	0.3072	13.07	29.28	0.4251
1-Apr-08	20:42	0.3072	13.07	29.27	0.4242
1-Apr-08	20:43	0.3072	13.06	29.27	0.4234
1-Apr-08	20:44	0.3072	13.05	29.27	0.4226
1-Apr-08	20:45	0.3072	13.05	29.27	0.4217
1-Apr-08	20:46	0.3072	13.04	29.27	0.4209

1-Apr-08	20:47	0.3072	13.03	29.27	0.4201
1-Apr-08	20:48	0.3072	13.03	29.27	0.4193
1-Apr-08	20:49	0.3072	13.02	29.27	0.4185
1-Apr-08	20:50	0.3072	13.01	29.27	0.4177
1-Apr-08	20:51	0.3072	13.01	29.27	0.4169
1-Apr-08	20:52	0.3072	13	29.27	0.4161
1-Apr-08	20:53	0.3072	12.99	29.27	0.4153
1-Apr-08	20:54	0.3072	12.99	29.27	0.4145
1-Apr-08	20:55	0.3072	12.98	29.27	0.4137
1-Apr-08	20:56	0.3072	12.97	29.27	0.413
1-Apr-08	20:57	0.3072	12.97	29.27	0.4122
1-Apr-08	20:58	0.3072	12.96	29.27	0.4115
1-Apr-08	20:59	0.3072	12.95	29.27	0.4107
1-Apr-08	21:00	0.3072	12.95	29.26	0.41
1-Apr-08	21:01	0.3072	12.94	29.26	0.4092
1-Apr-08	21:02	0.3072	12.94	29.26	0.4085
1-Apr-08	21:03	0.3072	12.93	29.26	0.4078
1-Apr-08	21:04	0.3072	12.92	29.26	0.407
1-Apr-08	21:05	0.3072	12.92	29.26	0.4063
1-Apr-08	21:06	0.3072	12.91	29.26	0.4056
1-Apr-08	21:07	0.3072	12.91	29.26	0.4049
1-Apr-08	21:08	0.3072	12.9	29.26	0.4042
1-Apr-08	21:09	0.3072	12.89	29.26	0.4035
1-Apr-08	21:10	0.3073	12.89	29.26	0.4028
1-Apr-08	21:11	0.3073	12.88	29.26	0.4021
1-Apr-08	21:12	0.3073	12.88	29.26	0.4014
1-Apr-08	21:13	0.3073	12.87	29.26	0.4008
1-Apr-08	21:14	0.3073	12.87	29.26	0.4001
1-Apr-08	21:15	0.3073	12.86	29.26	0.3994
1-Apr-08	21:16	0.3073	12.85	29.26	0.3987
1-Apr-08	21:17	0.3073	12.85	29.26	0.3981
1-Apr-08	21:18	0.3073	12.84	29.26	0.3974
1-Apr-08	21:19	0.3073	12.84	29.26	0.3968
1-Apr-08	21:20	0.3073	12.83	29.26	0.3961
1-Apr-08	21:21	0.3073	12.83	29.26	0.3955
1-Apr-08	21:22	0.3073	12.82	29.25	0.3949
1-Apr-08	21:23	0.3073	12.82	29.25	0.3942
1-Apr-08	21:24	0.3073	12.81	29.25	0.3936
1-Apr-08	21:25	0.3073	12.81	29.25	0.393
1-Apr-08	21:26	0.3073	12.8	29.25	0.3924
1-Apr-08	21:27	0.3073	12.8	29.25	0.3918
1-Apr-08	21:28	0.3073	12.79	29.25	0.3911
1-Apr-08	21:29	0.3073	12.79	29.25	0.3905
1-Apr-08	21:30	0.3073	12.78	29.25	0.3899
1-Apr-08	21:31	0.3073	12.78	29.25	0.3894
1-Apr-08	21:32	0.3073	12.77	29.25	0.3888
1-Apr-08	21:33	0.3073	12.77	29.25	0.3882
1-Apr-08	21:34	0.3073	12.76	29.25	0.3876
1-Apr-08	21:35	0.3073	12.76	29.25	0.387
1-Apr-08	21:36	0.3073	12.75	29.25	0.3864

1-Apr-08	21:37	0.3073	12.75	29.25	0.3859
1-Apr-08	21:38	0.3073	12.74	29.25	0.3853
1-Apr-08	21:39	0.3073	12.74	29.25	0.3847
1-Apr-08	21:40	0.3073	12.73	29.25	0.3842
1-Apr-08	21:41	0.3073	12.73	29.25	0.3836
1-Apr-08	21:42	0.3073	12.72	29.25	0.3831
1-Apr-08	21:43	0.3073	12.72	29.25	0.3825
1-Apr-08	21:44	0.3073	12.72	29.25	0.382
1-Apr-08	21:45	0.3073	12.71	29.25	0.3815
1-Apr-08	21:46	0.3073	12.71	29.25	0.3809
1-Apr-08	21:47	0.3073	12.7	29.24	0.3804
1-Apr-08	21:48	0.3073	12.7	29.24	0.3799
1-Apr-08	21:49	0.3073	12.69	29.24	0.3793
1-Apr-08	21:50	0.3073	12.69	29.24	0.3788
1-Apr-08	21:51	0.3073	12.69	29.24	0.3783
1-Apr-08	21:52	0.3073	12.68	29.24	0.3778
1-Apr-08	21:53	0.3073	12.68	29.24	0.3773
1-Apr-08	21:54	0.3073	12.67	29.24	0.3768
1-Apr-08	21:55	0.3073	12.67	29.24	0.3763
1-Apr-08	21:56	0.3074	12.66	29.24	0.3758
1-Apr-08	21:57	0.3074	12.66	29.24	0.3753
1-Apr-08	21:58	0.3074	12.66	29.24	0.3748
1-Apr-08	21:59	0.3074	12.65	29.24	0.3743
1-Apr-08	22:00	0.3074	12.65	29.24	0.3738
1-Apr-08	22:01	0.3074	12.64	29.24	0.3734
1-Apr-08	22:02	0.3074	12.64	29.24	0.3729
1-Apr-08	22:03	0.3074	12.64	29.24	0.3724
1-Apr-08	22:04	0.3074	12.63	29.24	0.3719
1-Apr-08	22:05	0.3074	12.63	29.24	0.3715
1-Apr-08	22:06	0.3074	12.62	29.24	0.371
1-Apr-08	22:07	0.3074	12.62	29.24	0.3706
1-Apr-08	22:08	0.3074	12.62	29.24	0.3701
1-Apr-08	22:09	0.3074	12.61	29.24	0.3697
1-Apr-08	22:10	0.3074	12.61	29.24	0.3692
1-Apr-08	22:11	0.3074	12.61	29.24	0.3688
1-Apr-08	22:12	0.3074	12.6	29.24	0.3683
1-Apr-08	22:13	0.3074	12.6	29.24	0.3679
1-Apr-08	22:14	0.3074	12.6	29.24	0.3674
1-Apr-08	22:15	0.3074	12.59	29.24	0.367
1-Apr-08	22:16	0.3074	12.59	29.24	0.3666
1-Apr-08	22:17	0.3074	12.58	29.23	0.3662
1-Apr-08	22:18	0.3074	12.58	29.23	0.3657
1-Apr-08	22:19	0.3074	12.58	29.23	0.3653
1-Apr-08	22:20	0.3074	12.57	29.23	0.3649
1-Apr-08	22:21	0.3074	12.57	29.23	0.3645
1-Apr-08	22:22	0.3074	12.57	29.23	0.3641
1-Apr-08	22:23	0.3074	12.56	29.23	0.3637
1-Apr-08	22:24	0.3074	12.56	29.23	0.3633
1-Apr-08	22:25	0.3074	12.56	29.23	0.3629
1-Apr-08	22:26	0.3074	12.55	29.23	0.3625

1-Apr-08	22:27	0.3074	12.55	29.23	0.3621
1-Apr-08	22:28	0.3074	12.55	29.23	0.3617
1-Apr-08	22:29	0.3074	12.54	29.23	0.3613
1-Apr-08	22:30	0.3074	12.54	29.23	0.3609
1-Apr-08	22:31	0.3074	12.54	29.23	0.3605
1-Apr-08	22:32	0.3074	12.53	29.23	0.3601
1-Apr-08	22:33	0.3074	12.53	29.23	0.3597
1-Apr-08	22:34	0.3074	12.53	29.23	0.3594
1-Apr-08	22:35	0.3074	12.52	29.23	0.359
1-Apr-08	22:36	0.3074	12.52	29.23	0.3586
1-Apr-08	22:37	0.3074	12.52	29.23	0.3583
1-Apr-08	22:38	0.3074	12.52	29.23	0.3579
1-Apr-08	22:39	0.3074	12.51	29.23	0.3575
1-Apr-08	22:40	0.3074	12.51	29.23	0.3572
1-Apr-08	22:41	0.3074	12.51	29.23	0.3568
1-Apr-08	22:42	0.3074	12.5	29.23	0.3565
1-Apr-08	22:43	0.3075	12.5	29.23	0.3561
1-Apr-08	22:44	0.3075	12.5	29.23	0.3557
1-Apr-08	22:45	0.3075	12.5	29.23	0.3554
1-Apr-08	22:46	0.3075	12.49	29.23	0.3551
1-Apr-08	22:47	0.3075	12.49	29.23	0.3547
1-Apr-08	22:48	0.3075	12.49	29.23	0.3544
1-Apr-08	22:49	0.3075	12.48	29.23	0.354
1-Apr-08	22:50	0.3075	12.48	29.23	0.3537
1-Apr-08	22:51	0.3075	12.48	29.23	0.3534
1-Apr-08	22:52	0.3075	12.48	29.23	0.353
1-Apr-08	22:53	0.3075	12.47	29.23	0.3527
1-Apr-08	22:54	0.3075	12.47	29.23	0.3524
1-Apr-08	22:55	0.3075	12.47	29.23	0.3521
1-Apr-08	22:56	0.3075	12.46	29.22	0.3517
1-Apr-08	22:57	0.3075	12.46	29.22	0.3514
1-Apr-08	22:58	0.3075	12.46	29.22	0.3511
1-Apr-08	22:59	0.3075	12.46	29.22	0.3508
1-Apr-08	23:00	0.3075	12.45	29.22	0.3505
1-Apr-08	23:01	0.3075	12.45	29.22	0.3502
1-Apr-08	23:02	0.3075	12.45	29.22	0.3499
1-Apr-08	23:03	0.3075	12.45	29.22	0.3496
1-Apr-08	23:04	0.3075	12.44	29.22	0.3493
1-Apr-08	23:05	0.3075	12.44	29.22	0.349
1-Apr-08	23:06	0.3075	12.44	29.22	0.3487
1-Apr-08	23:07	0.3075	12.44	29.22	0.3484
1-Apr-08	23:08	0.3075	12.43	29.22	0.3481
1-Apr-08	23:09	0.3075	12.43	29.22	0.3478
1-Apr-08	23:10	0.3075	12.43	29.22	0.3475
1-Apr-08	23:11	0.3075	12.43	29.22	0.3472
1-Apr-08	23:12	0.3075	12.42	29.22	0.3469
1-Apr-08	23:13	0.3075	12.42	29.22	0.3466
1-Apr-08	23:14	0.3075	12.42	29.22	0.3463
1-Apr-08	23:15	0.3075	12.42	29.22	0.3461
1-Apr-08	23:16	0.3075	12.42	29.22	0.3458

1-Apr-08	23:17	0.3075	12.41	29.22	0.3455
1-Apr-08	23:18	0.3075	12.41	29.22	0.3452
1-Apr-08	23:19	0.3075	12.41	29.22	0.345
1-Apr-08	23:20	0.3075	12.41	29.22	0.3447
1-Apr-08	23:21	0.3075	12.4	29.22	0.3444
1-Apr-08	23:22	0.3075	12.4	29.22	0.3442
1-Apr-08	23:23	0.3075	12.4	29.22	0.3439
1-Apr-08	23:24	0.3075	12.4	29.22	0.3436
1-Apr-08	23:25	0.3075	12.4	29.22	0.3434
1-Apr-08	23:26	0.3075	12.39	29.22	0.3431
1-Apr-08	23:27	0.3075	12.39	29.22	0.3429
1-Apr-08	23:28	0.3075	12.39	29.22	0.3426
1-Apr-08	23:29	0.3075	12.39	29.22	0.3424
1-Apr-08	23:30	0.3075	12.38	29.22	0.3421
1-Apr-08	23:31	0.3076	12.38	29.22	0.3419
1-Apr-08	23:32	0.3076	12.38	29.22	0.3416
1-Apr-08	23:33	0.3076	12.38	29.22	0.3414
1-Apr-08	23:34	0.3076	12.38	29.22	0.3411
1-Apr-08	23:35	0.3076	12.37	29.22	0.3409
1-Apr-08	23:36	0.3076	12.37	29.22	0.3406
1-Apr-08	23:37	0.3076	12.37	29.22	0.3404
1-Apr-08	23:38	0.3076	12.37	29.22	0.3402
1-Apr-08	23:39	0.3076	12.37	29.22	0.3399
1-Apr-08	23:40	0.3076	12.36	29.22	0.3397
1-Apr-08	23:41	0.3076	12.36	29.22	0.3395
1-Apr-08	23:42	0.3076	12.36	29.22	0.3392
1-Apr-08	23:43	0.3076	12.36	29.22	0.339
1-Apr-08	23:44	0.3076	12.36	29.22	0.3388
1-Apr-08	23:45	0.3076	12.36	29.22	0.3386
1-Apr-08	23:46	0.3076	12.35	29.22	0.3383
1-Apr-08	23:47	0.3076	12.35	29.22	0.3381
1-Apr-08	23:48	0.3076	12.35	29.22	0.3379
1-Apr-08	23:49	0.3076	12.35	29.22	0.3377
1-Apr-08	23:50	0.3076	12.35	29.22	0.3375
1-Apr-08	23:51	0.3076	12.34	29.22	0.3372
1-Apr-08	23:52	0.3076	12.34	29.21	0.337
1-Apr-08	23:53	0.3076	12.34	29.21	0.3368
1-Apr-08	23:54	0.3076	12.34	29.21	0.3366
1-Apr-08	23:55	0.3076	12.34	29.21	0.3364
1-Apr-08	23:56	0.3063	12.34	29.21	0.3362
1-Apr-08	23:57	0.3022	12.33	29.21	0.336
1-Apr-08	23:58	0.2944	12.33	29.21	0.3357
1-Apr-08	23:59	0.2814	12.33	29.21	0.3353
2-Apr-08	24	0.2618	12.32	29.21	0.3349

Highgate - 20yr CC - Time Series Inflow (Wetland)						
Date	Time	Inflow m3/s	Storage	Elevation m	Outflow m3/s	5.7565
1-Apr-08	0:00	0.0000	0.00	28	0.0000	
1-Apr-08	0:01	0.0011	0.00	28	0.0000	
1-Apr-08	0:02	0.0045	0.00	28	0.0000	
1-Apr-08	0:03	0.0110	0.00	28	0.0000	
1-Apr-08	0:04	0.0219	0.00	28	0.0000	
1-Apr-08	0:05	0.0381	0.00	28	0.0000	
1-Apr-08	0:06	0.0586	0.01	28	0.0001	
1-Apr-08	0:07	0.0815	0.01	28	0.0001	
1-Apr-08	0:08	0.1052	0.02	28	0.0002	
1-Apr-08	0:09	0.1284	0.02	28	0.0003	
1-Apr-08	0:10	0.1499	0.03	28	0.0004	
1-Apr-08	0:11	0.1691	0.04	28	0.0005	
1-Apr-08	0:12	0.1857	0.05	28	0.0007	
1-Apr-08	0:13	0.1988	0.06	28	0.0008	
1-Apr-08	0:14	0.2092	0.08	28	0.0010	
1-Apr-08	0:15	0.2177	0.09	28	0.0011	
1-Apr-08	0:16	0.2246	0.10	28	0.0013	
1-Apr-08	0:17	0.2304	0.11	28	0.0015	
1-Apr-08	0:18	0.2352	0.13	28	0.0017	
1-Apr-08	0:19	0.2390	0.14	28	0.0019	
1-Apr-08	0:20	0.2422	0.16	28	0.0020	
1-Apr-08	0:21	0.2448	0.17	28	0.0022	
1-Apr-08	0:22	0.2469	0.19	28	0.0024	
1-Apr-08	0:23	0.2486	0.20	28	0.0026	
1-Apr-08	0:24	0.2500	0.22	28	0.0028	
1-Apr-08	0:25	0.2511	0.23	28	0.0030	
1-Apr-08	0:26	0.2521	0.25	28	0.0032	
1-Apr-08	0:27	0.2528	0.26	28	0.0034	
1-Apr-08	0:28	0.2535	0.28	28	0.0036	
1-Apr-08	0:29	0.2540	0.29	28	0.0038	
1-Apr-08	0:30	0.2544	0.31	28	0.0040	
1-Apr-08	0:31	0.2548	0.32	28	0.0041	
1-Apr-08	0:32	0.2550	0.34	28	0.0043	
1-Apr-08	0:33	0.2553	0.35	28	0.0044	
1-Apr-08	0:34	0.2555	0.37	28	0.0046	
1-Apr-08	0:35	0.2557	0.38	28	0.0048	
1-Apr-08	0:36	0.2558	0.40	28	0.0049	
1-Apr-08	0:37	0.2559	0.41	28	0.0051	
1-Apr-08	0:38	0.2560	0.43	28	0.0052	
1-Apr-08	0:39	0.2560	0.44	28	0.0054	
1-Apr-08	0:40	0.2560	0.46	28	0.0055	
1-Apr-08	0:41	0.2560	0.47	28	0.0057	
1-Apr-08	0:42	0.2560	0.49	28	0.0058	
1-Apr-08	0:43	0.2560	0.50	28	0.0060	
1-Apr-08	0:44	0.2560	0.52	28	0.0061	
1-Apr-08	0:45	0.2560	0.53	28	0.0063	
1-Apr-08	0:46	0.2560	0.55	28	0.0065	

1-Apr-08	0:47	0.2560	0.56	28	0.0066
1-Apr-08	0:48	0.2560	0.58	28	0.0068
1-Apr-08	0:49	0.2560	0.59	28	0.0069
1-Apr-08	0:50	0.2560	0.61	28	0.0071
1-Apr-08	0:51	0.2560	0.62	28	0.0072
1-Apr-08	0:52	0.2560	0.64	28	0.0074
1-Apr-08	0:53	0.2560	0.65	28	0.0075
1-Apr-08	0:54	0.2560	0.67	28	0.0077
1-Apr-08	0:55	0.2560	0.68	28	0.0078
1-Apr-08	0:56	0.2560	0.70	28	0.0080
1-Apr-08	0:57	0.2560	0.71	28	0.0081
1-Apr-08	0:58	0.2560	0.72	28	0.0083
1-Apr-08	0:59	0.2560	0.74	28	0.0084
1-Apr-08	1:00	0.2560	0.75	28	0.0086
1-Apr-08	1:01	0.2560	0.77	28	0.0087
1-Apr-08	1:02	0.2560	0.78	28	0.0089
1-Apr-08	1:03	0.2560	0.80	28	0.0091
1-Apr-08	1:04	0.2560	0.81	28	0.0092
1-Apr-08	1:05	0.2560	0.83	28	0.0094
1-Apr-08	1:06	0.2560	0.84	28	0.0095
1-Apr-08	1:07	0.2560	0.86	28	0.0097
1-Apr-08	1:08	0.2560	0.87	28	0.0098
1-Apr-08	1:09	0.2560	0.89	28	0.0100
1-Apr-08	1:10	0.2560	0.90	28	0.0101
1-Apr-08	1:11	0.2560	0.92	28	0.0103
1-Apr-08	1:12	0.2560	0.93	28	0.0104
1-Apr-08	1:13	0.2560	0.95	28	0.0106
1-Apr-08	1:14	0.2560	0.96	28	0.0107
1-Apr-08	1:15	0.2560	0.98	28	0.0109
1-Apr-08	1:16	0.2560	0.99	28	0.0110
1-Apr-08	1:17	0.2560	1.01	28	0.0112
1-Apr-08	1:18	0.2560	1.02	28	0.0113
1-Apr-08	1:19	0.2560	1.04	28	0.0115
1-Apr-08	1:20	0.2560	1.05	28	0.0116
1-Apr-08	1:21	0.2560	1.06	28	0.0118
1-Apr-08	1:22	0.2560	1.08	28	0.0119
1-Apr-08	1:23	0.2560	1.09	28	0.0121
1-Apr-08	1:24	0.2560	1.11	28	0.0122
1-Apr-08	1:25	0.2560	1.12	28	0.0123
1-Apr-08	1:26	0.2560	1.14	28	0.0125
1-Apr-08	1:27	0.2560	1.15	28	0.0126
1-Apr-08	1:28	0.2560	1.17	28	0.0127
1-Apr-08	1:29	0.2560	1.18	28	0.0129
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1-Apr-08	1:31	0.2560	1.21	28	0.0131
1-Apr-08	1:32	0.2560	1.23	28	0.0132
1-Apr-08	1:33	0.2560	1.24	28	0.0134
1-Apr-08	1:34	0.2560	1.25	28	0.0135
1-Apr-08	1:35	0.2560	1.27	28	0.0136
1-Apr-08	1:36	0.2560	1.28	28	0.0138

1-Apr-08	1:37	0.2560	1.30	28	0.0139
1-Apr-08	1:38	0.2560	1.31	28	0.0140
1-Apr-08	1:39	0.2560	1.33	28	0.0142
1-Apr-08	1:40	0.2560	1.34	28	0.0143
1-Apr-08	1:41	0.2560	1.36	28	0.0144
1-Apr-08	1:42	0.2560	1.37	28	0.0146
1-Apr-08	1:43	0.2560	1.38	28	0.0147
1-Apr-08	1:44	0.2560	1.40	28	0.0148
1-Apr-08	1:45	0.2560	1.41	28	0.0149
1-Apr-08	1:46	0.2560	1.43	28	0.0151
1-Apr-08	1:47	0.2560	1.44	28	0.0152
1-Apr-08	1:48	0.2560	1.46	28	0.0153
1-Apr-08	1:49	0.2560	1.47	28	0.0155
1-Apr-08	1:50	0.2560	1.49	28	0.0156
1-Apr-08	1:51	0.2560	1.50	28	0.0157
1-Apr-08	1:52	0.2560	1.51	28	0.0158
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1-Apr-08	1:54	0.2560	1.54	28	0.0161
1-Apr-08	1:55	0.2560	1.56	28	0.0162
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1-Apr-08	1:57	0.2560	1.59	28	0.0165
1-Apr-08	1:58	0.2560	1.60	28	0.0166
1-Apr-08	1:59	0.2561	1.62	28	0.0167
1-Apr-08	2:00	0.2561	1.63	28	0.0169
1-Apr-08	2:01	0.2561	1.64	28	0.0170
1-Apr-08	2:02	0.2561	1.66	28	0.0171
1-Apr-08	2:03	0.2562	1.67	28	0.0173
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1-Apr-08	2:05	0.2562	1.70	28	0.0175
1-Apr-08	2:06	0.2563	1.72	28	0.0176
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1-Apr-08	2:08	0.2563	1.74	28	0.0179
1-Apr-08	2:09	0.2564	1.76	28	0.0180
1-Apr-08	2:10	0.2564	1.77	28	0.0182
1-Apr-08	2:11	0.2564	1.79	28	0.0183
1-Apr-08	2:12	0.2565	1.80	28	0.0184
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1-Apr-08	2:15	0.2566	1.84	28	0.0188
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1-Apr-08	2:17	0.2567	1.87	28	0.0191
1-Apr-08	2:18	0.2567	1.89	28	0.0192
1-Apr-08	2:19	0.2568	1.90	28	0.0193
1-Apr-08	2:20	0.2568	1.92	28	0.0194
1-Apr-08	2:21	0.2568	1.93	28	0.0196
1-Apr-08	2:22	0.2569	1.94	28	0.0197
1-Apr-08	2:23	0.2569	1.96	28	0.0198
1-Apr-08	2:24	0.2570	1.97	28	0.0200
1-Apr-08	2:25	0.2570	1.99	28	0.0200
1-Apr-08	2:26	0.2570	2.00	28	0.0201

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1-Apr-08	2:28	0.2571	2.03	28	0.0202
1-Apr-08	2:29	0.2572	2.04	28	0.0203
1-Apr-08	2:30	0.2572	2.06	28	0.0204
1-Apr-08	2:31	0.2572	2.07	28	0.0204
1-Apr-08	2:32	0.2573	2.09	28	0.0205
1-Apr-08	2:33	0.2573	2.10	28	0.0206
1-Apr-08	2:34	0.2574	2.11	28	0.0206
1-Apr-08	2:35	0.2574	2.13	28	0.0207
1-Apr-08	2:36	0.2574	2.14	28	0.0208
1-Apr-08	2:37	0.2575	2.16	28	0.0208
1-Apr-08	2:38	0.2575	2.17	28	0.0209
1-Apr-08	2:39	0.2576	2.19	28	0.0210
1-Apr-08	2:40	0.2576	2.20	28	0.0210
1-Apr-08	2:41	0.2576	2.21	28	0.0211
1-Apr-08	2:42	0.2577	2.23	28	0.0212
1-Apr-08	2:43	0.2577	2.24	28	0.0212
1-Apr-08	2:44	0.2578	2.26	28	0.0213
1-Apr-08	2:45	0.2578	2.27	28	0.0214
1-Apr-08	2:46	0.2578	2.29	28	0.0214
1-Apr-08	2:47	0.2579	2.30	28	0.0215
1-Apr-08	2:48	0.2579	2.31	28	0.0216
1-Apr-08	2:49	0.2579	2.33	28	0.0216
1-Apr-08	2:50	0.2580	2.34	28	0.0217
1-Apr-08	2:51	0.2580	2.36	28	0.0218
1-Apr-08	2:52	0.2581	2.37	28	0.0218
1-Apr-08	2:53	0.2581	2.38	28	0.0219
1-Apr-08	2:54	0.2581	2.40	28	0.0220
1-Apr-08	2:55	0.2582	2.41	28	0.0220
1-Apr-08	2:56	0.2582	2.43	28	0.0221
1-Apr-08	2:57	0.2583	2.44	28	0.0222
1-Apr-08	2:58	0.2583	2.46	28	0.0222
1-Apr-08	2:59	0.2583	2.47	28	0.0223
1-Apr-08	3:00	0.2584	2.48	28	0.0224
1-Apr-08	3:01	0.2584	2.50	28	0.0224
1-Apr-08	3:02	0.2584	2.51	28	0.0225
1-Apr-08	3:03	0.2585	2.53	28	0.0226
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1-Apr-08	3:05	0.2586	2.55	28	0.0227
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1-Apr-08	3:08	0.2587	2.60	28	0.0229
1-Apr-08	3:09	0.2587	2.61	28	0.0230
1-Apr-08	3:10	0.2588	2.63	28	0.0230
1-Apr-08	3:11	0.2588	2.64	28	0.0231
1-Apr-08	3:12	0.2588	2.65	28	0.0232
1-Apr-08	3:13	0.2589	2.67	28	0.0232
1-Apr-08	3:14	0.2589	2.68	28	0.0233
1-Apr-08	3:15	0.2589	2.70	28	0.0234
1-Apr-08	3:16	0.2590	2.71	28	0.0234

1-Apr-08	3:17	0.2590	2.72	28	0.0235
1-Apr-08	3:18	0.2591	2.74	28	0.0235
1-Apr-08	3:19	0.2591	2.75	28	0.0236
1-Apr-08	3:20	0.2591	2.77	28	0.0237
1-Apr-08	3:21	0.2592	2.78	28	0.0237
1-Apr-08	3:22	0.2592	2.79	28	0.0238
1-Apr-08	3:23	0.2592	2.81	28	0.0239
1-Apr-08	3:24	0.2593	2.82	28	0.0239
1-Apr-08	3:25	0.2593	2.84	28	0.0240
1-Apr-08	3:26	0.2593	2.85	28	0.0241
1-Apr-08	3:27	0.2594	2.87	28	0.0241
1-Apr-08	3:28	0.2594	2.88	28	0.0242
1-Apr-08	3:29	0.2595	2.89	28	0.0243
1-Apr-08	3:30	0.2595	2.91	28	0.0243
1-Apr-08	3:31	0.2595	2.92	28	0.0244
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1-Apr-08	3:35	0.2597	2.98	28	0.0247
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1-Apr-08	3:37	0.2598	3.01	28	0.0248
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1-Apr-08	3:46	0.2601	3.13	28	0.0253
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1-Apr-08	3:54	0.2604	3.25	28	0.0257
1-Apr-08	3:55	0.2604	3.26	28	0.0258
1-Apr-08	3:56	0.2604	3.27	28	0.0258
1-Apr-08	3:57	0.2605	3.29	28	0.0259
1-Apr-08	3:58	0.2605	3.30	28	0.0259
1-Apr-08	3:59	0.2605	3.32	28	0.0260
1-Apr-08	4:00	0.2606	3.33	28	0.0260
1-Apr-08	4:01	0.2606	3.34	28	0.0261
1-Apr-08	4:02	0.2606	3.36	28	0.0261
1-Apr-08	4:03	0.2607	3.37	28	0.0262
1-Apr-08	4:04	0.2607	3.39	28	0.0262
1-Apr-08	4:05	0.2607	3.40	28	0.0263
1-Apr-08	4:06	0.2608	3.41	28	0.0263

1-Apr-08	4:07	0.2608	3.43	28	0.0264
1-Apr-08	4:08	0.2609	3.44	28	0.0265
1-Apr-08	4:09	0.2609	3.46	28	0.0265
1-Apr-08	4:10	0.2609	3.47	28	0.0266
1-Apr-08	4:11	0.2610	3.48	28	0.0266
1-Apr-08	4:12	0.2610	3.50	28	0.0267
1-Apr-08	4:13	0.2610	3.51	28	0.0267
1-Apr-08	4:14	0.2611	3.53	28	0.0268
1-Apr-08	4:15	0.2611	3.54	28	0.0268
1-Apr-08	4:16	0.2611	3.56	28	0.0269
1-Apr-08	4:17	0.2612	3.57	28	0.0269
1-Apr-08	4:18	0.2612	3.58	28	0.0270
1-Apr-08	4:19	0.2612	3.60	28	0.0270
1-Apr-08	4:20	0.2613	3.61	28	0.0271
1-Apr-08	4:21	0.2613	3.63	28	0.0271
1-Apr-08	4:22	0.2613	3.64	28	0.0272
1-Apr-08	4:23	0.2614	3.65	28	0.0272
1-Apr-08	4:24	0.2614	3.67	28	0.0273
1-Apr-08	4:25	0.2614	3.68	28	0.0273
1-Apr-08	4:26	0.2615	3.70	28	0.0274
1-Apr-08	4:27	0.2615	3.71	28	0.0274
1-Apr-08	4:28	0.2615	3.72	28	0.0275
1-Apr-08	4:29	0.2616	3.74	28	0.0275
1-Apr-08	4:30	0.2616	3.75	28	0.0276
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1-Apr-08	4:32	0.2617	3.78	28	0.0277
1-Apr-08	4:33	0.2617	3.79	28	0.0277
1-Apr-08	4:34	0.2617	3.81	28	0.0278
1-Apr-08	4:35	0.2618	3.82	28	0.0278
1-Apr-08	4:36	0.2618	3.84	28	0.0279
1-Apr-08	4:37	0.2618	3.85	28	0.0280
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1-Apr-08	4:41	0.2620	3.91	28	0.0282
1-Apr-08	4:42	0.2620	3.92	28	0.0282
1-Apr-08	4:43	0.2620	3.93	28	0.0283
1-Apr-08	4:44	0.2621	3.95	28	0.0283
1-Apr-08	4:45	0.2621	3.96	28	0.0284
1-Apr-08	4:46	0.2621	3.98	28	0.0284
1-Apr-08	4:47	0.2622	3.99	28	0.0285
1-Apr-08	4:48	0.2622	4.00	28	0.0285
1-Apr-08	4:49	0.2622	4.02	28	0.0286
1-Apr-08	4:50	0.2623	4.03	28	0.0286
1-Apr-08	4:51	0.2623	4.05	28	0.0287
1-Apr-08	4:52	0.2623	4.06	28	0.0287
1-Apr-08	4:53	0.2624	4.07	28	0.0288
1-Apr-08	4:54	0.2624	4.09	28	0.0288
1-Apr-08	4:55	0.2624	4.10	28	0.0289
1-Apr-08	4:56	0.2625	4.12	28	0.0289

1-Apr-08	4:57	0.2625	4.13	28	0.0290
1-Apr-08	4:58	0.2625	4.14	28	0.0290
1-Apr-08	4:59	0.2626	4.16	28	0.0291
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1-Apr-08	5:01	0.2626	4.19	28	0.0292
1-Apr-08	5:02	0.2627	4.20	28	0.0292
1-Apr-08	5:03	0.2627	4.21	28	0.0293
1-Apr-08	5:04	0.2627	4.23	28	0.0293
1-Apr-08	5:05	0.2628	4.24	28	0.0294
1-Apr-08	5:06	0.2628	4.26	28	0.0294
1-Apr-08	5:07	0.2628	4.27	28	0.0295
1-Apr-08	5:08	0.2629	4.28	28	0.0295
1-Apr-08	5:09	0.2629	4.30	28	0.0296
1-Apr-08	5:10	0.2629	4.31	28	0.0296
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1-Apr-08	5:12	0.2630	4.34	28	0.0297
1-Apr-08	5:13	0.2630	4.35	28	0.0298
1-Apr-08	5:14	0.2630	4.37	28	0.0298
1-Apr-08	5:15	0.2631	4.38	28	0.0299
1-Apr-08	5:16	0.2631	4.40	28	0.0300
1-Apr-08	5:17	0.2631	4.41	28	0.0300
1-Apr-08	5:18	0.2632	4.42	28	0.0301
1-Apr-08	5:19	0.2632	4.44	28	0.0301
1-Apr-08	5:20	0.2632	4.45	28	0.0302
1-Apr-08	5:21	0.2633	4.47	28	0.0302
1-Apr-08	5:22	0.2633	4.48	28	0.0303
1-Apr-08	5:23	0.2633	4.49	28	0.0303
1-Apr-08	5:24	0.2634	4.51	28	0.0304
1-Apr-08	5:25	0.2634	4.52	28	0.0304
1-Apr-08	5:26	0.2634	4.54	28	0.0305
1-Apr-08	5:27	0.2634	4.55	28	0.0305
1-Apr-08	5:28	0.2635	4.56	28	0.0306
1-Apr-08	5:29	0.2635	4.58	28	0.0306
1-Apr-08	5:30	0.2635	4.59	28	0.0307
1-Apr-08	5:31	0.2636	4.61	28	0.0307
1-Apr-08	5:32	0.2636	4.62	28	0.0308
1-Apr-08	5:33	0.2636	4.63	28	0.0308
1-Apr-08	5:34	0.2637	4.65	28	0.0309
1-Apr-08	5:35	0.2637	4.66	28	0.0309
1-Apr-08	5:36	0.2637	4.68	28	0.0310
1-Apr-08	5:37	0.2638	4.69	28	0.0310
1-Apr-08	5:38	0.2638	4.70	28	0.0311
1-Apr-08	5:39	0.2638	4.72	28	0.0311
1-Apr-08	5:40	0.2638	4.73	28	0.0312
1-Apr-08	5:41	0.2639	4.75	28	0.0312
1-Apr-08	5:42	0.2639	4.76	28	0.0313
1-Apr-08	5:43	0.2639	4.77	28	0.0313
1-Apr-08	5:44	0.2640	4.79	28	0.0314
1-Apr-08	5:45	0.2640	4.80	28	0.0314
1-Apr-08	5:46	0.2640	4.82	28	0.0315

1-Apr-08	5:47	0.2641	4.83	28	0.0315
1-Apr-08	5:48	0.2641	4.84	28	0.0316
1-Apr-08	5:49	0.2641	4.86	28	0.0316
1-Apr-08	5:50	0.2642	4.87	28	0.0317
1-Apr-08	5:51	0.2656	4.89	28	0.0317
1-Apr-08	5:52	0.2698	4.90	28	0.0318
1-Apr-08	5:53	0.2780	4.91	28	0.0318
1-Apr-08	5:54	0.2916	4.93	28	0.0319
1-Apr-08	5:55	0.3121	4.95	28	0.0319
1-Apr-08	5:56	0.3378	4.96	28	0.0320
1-Apr-08	5:57	0.3665	4.98	28	0.0321
1-Apr-08	5:58	0.3962	5.00	28	0.0322
1-Apr-08	5:59	0.4254	5.03	28	0.0322
1-Apr-08	6:00	0.4523	5.05	28	0.0323
1-Apr-08	6:01	0.4766	5.08	28	0.0324
1-Apr-08	6:02	0.4974	5.10	28	0.0325
1-Apr-08	6:03	0.5139	5.13	28	0.0326
1-Apr-08	6:04	0.5271	5.16	28	0.0327
1-Apr-08	6:05	0.5379	5.19	28	0.0328
1-Apr-08	6:06	0.5467	5.22	28	0.0329
1-Apr-08	6:07	0.5540	5.25	28	0.0330
1-Apr-08	6:08	0.5601	5.28	28	0.0331
1-Apr-08	6:09	0.5651	5.32	28	0.0332
1-Apr-08	6:10	0.5691	5.35	28	0.0333
1-Apr-08	6:11	0.5725	5.38	28	0.0334
1-Apr-08	6:12	0.5753	5.41	28	0.0335
1-Apr-08	6:13	0.5776	5.45	28	0.0336
1-Apr-08	6:14	0.5795	5.48	28	0.0337
1-Apr-08	6:15	0.5810	5.51	28	0.0337
1-Apr-08	6:16	0.5823	5.54	28	0.0338
1-Apr-08	6:17	0.5834	5.58	28	0.0339
1-Apr-08	6:18	0.5844	5.61	28	0.0340
1-Apr-08	6:19	0.5851	5.64	28	0.0341
1-Apr-08	6:20	0.5858	5.68	28	0.0342
1-Apr-08	6:21	0.5864	5.71	28	0.0343
1-Apr-08	6:22	0.5869	5.74	28	0.0344
1-Apr-08	6:23	0.5873	5.78	28	0.0344
1-Apr-08	6:24	0.5877	5.81	28	0.0345
1-Apr-08	6:25	0.5880	5.84	28	0.0346
1-Apr-08	6:26	0.5883	5.87	28	0.0347
1-Apr-08	6:27	0.5886	5.91	28	0.0348
1-Apr-08	6:28	0.5888	5.94	28	0.0349
1-Apr-08	6:29	0.5890	5.97	28	0.0350
1-Apr-08	6:30	0.5892	6.01	28	0.0351
1-Apr-08	6:31	0.5893	6.04	28	0.0352
1-Apr-08	6:32	0.5894	6.07	28	0.0353
1-Apr-08	6:33	0.5896	6.11	28	0.0353
1-Apr-08	6:34	0.5897	6.14	28	0.0354
1-Apr-08	6:35	0.5898	6.17	28	0.0355
1-Apr-08	6:36	0.5900	6.21	28	0.0356

1-Apr-08	6:37	0.5901	6.24	28	0.0357
1-Apr-08	6:38	0.5902	6.27	28	0.0358
1-Apr-08	6:39	0.5904	6.31	28	0.0359
1-Apr-08	6:40	0.5905	6.34	28	0.0360
1-Apr-08	6:41	0.5906	6.37	28	0.0361
1-Apr-08	6:42	0.5908	6.41	28	0.0362
1-Apr-08	6:43	0.5909	6.44	28	0.0363
1-Apr-08	6:44	0.5910	6.47	28	0.0364
1-Apr-08	6:45	0.5911	6.51	28	0.0365
1-Apr-08	6:46	0.5913	6.54	28	0.0367
1-Apr-08	6:47	0.5914	6.57	28	0.0368
1-Apr-08	6:48	0.5915	6.61	28	0.0369
1-Apr-08	6:49	0.5916	6.64	28	0.0370
1-Apr-08	6:50	0.5918	6.67	28	0.0371
1-Apr-08	6:51	0.5919	6.71	28	0.0373
1-Apr-08	6:52	0.5920	6.74	28	0.0374
1-Apr-08	6:53	0.5921	6.77	28	0.0375
1-Apr-08	6:54	0.5923	6.81	28	0.0376
1-Apr-08	6:55	0.5924	6.84	28	0.0377
1-Apr-08	6:56	0.5925	6.87	28	0.0378
1-Apr-08	6:57	0.5926	6.91	28	0.0380
1-Apr-08	6:58	0.5928	6.94	28	0.0381
1-Apr-08	6:59	0.5929	6.97	28	0.0382
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1-Apr-08	7:01	0.5931	7.04	28	0.0384
1-Apr-08	7:02	0.5933	7.07	28	0.0385
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1-Apr-08	7:11	0.5943	7.37	28	0.0396
1-Apr-08	7:12	0.5945	7.41	28	0.0397
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1-Apr-08	7:15	0.5948	7.51	28	0.0400
1-Apr-08	7:16	0.5949	7.54	28	0.0401
1-Apr-08	7:17	0.5950	7.57	28	0.0402
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1-Apr-08	7:19	0.5953	7.64	28	0.0403
1-Apr-08	7:20	0.5954	7.67	28	0.0403
1-Apr-08	7:21	0.5955	7.70	28	0.0404
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1-Apr-08	7:25	0.5960	7.84	28	0.0406
1-Apr-08	7:26	0.5961	7.87	28	0.0407

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1-Apr-08	7:28	0.5963	7.94	28	0.0408
1-Apr-08	7:29	0.5964	7.97	28	0.0409
1-Apr-08	7:30	0.5965	8.00	28	0.0409
1-Apr-08	7:31	0.5966	8.04	28	0.0410
1-Apr-08	7:32	0.5968	8.07	28	0.0410
1-Apr-08	7:33	0.5969	8.10	28	0.0411
1-Apr-08	7:34	0.5970	8.14	28	0.0411
1-Apr-08	7:35	0.5971	8.17	28	0.0412
1-Apr-08	7:36	0.5972	8.20	28	0.0413
1-Apr-08	7:37	0.5973	8.24	28	0.0413
1-Apr-08	7:38	0.5974	8.27	28	0.0414
1-Apr-08	7:39	0.5975	8.31	28	0.0414
1-Apr-08	7:40	0.5976	8.34	28	0.0415
1-Apr-08	7:41	0.5978	8.37	28	0.0415
1-Apr-08	7:42	0.5979	8.41	28	0.0416
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1-Apr-08	7:45	0.5982	8.51	28	0.0418
1-Apr-08	7:46	0.5983	8.54	28	0.0418
1-Apr-08	7:47	0.5984	8.57	28	0.0419
1-Apr-08	7:48	0.5985	8.61	28	0.0420
1-Apr-08	7:49	0.5986	8.64	28	0.0424
1-Apr-08	7:50	0.5987	8.67	28	0.0439
1-Apr-08	7:51	0.5988	8.71	28	0.0455
1-Apr-08	7:52	0.5989	8.74	28	0.0470
1-Apr-08	7:53	0.5990	8.77	28	0.0485
1-Apr-08	7:54	0.5991	8.80	28	0.0501
1-Apr-08	7:55	0.5993	8.84	28	0.0516
1-Apr-08	7:56	0.5994	8.87	28	0.0531
1-Apr-08	7:57	0.5995	8.90	28	0.0546
1-Apr-08	7:58	0.5996	8.94	28	0.0562
1-Apr-08	7:59	0.5997	8.97	28	0.0577
1-Apr-08	8:00	0.5998	9.00	28	0.0592
1-Apr-08	8:01	0.5999	9.03	28	0.0607
1-Apr-08	8:02	0.6000	9.07	28	0.0622
1-Apr-08	8:03	0.6001	9.10	28	0.0637
1-Apr-08	8:04	0.6002	9.13	28	0.0652
1-Apr-08	8:05	0.6003	9.16	28	0.0667
1-Apr-08	8:06	0.6004	9.19	28	0.0682
1-Apr-08	8:07	0.6005	9.23	28	0.0696
1-Apr-08	8:08	0.6006	9.26	28	0.0711
1-Apr-08	8:09	0.6007	9.29	28	0.0726
1-Apr-08	8:10	0.6008	9.32	28	0.0741
1-Apr-08	8:11	0.6009	9.35	28	0.0755
1-Apr-08	8:12	0.6010	9.38	28	0.0770
1-Apr-08	8:13	0.6011	9.42	28	0.0785
1-Apr-08	8:14	0.6012	9.45	28	0.0799
1-Apr-08	8:15	0.6013	9.48	28	0.0814
1-Apr-08	8:16	0.6014	9.51	28	0.0828

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1-Apr-08	8:18	0.6016	9.57	28	0.0857
1-Apr-08	8:19	0.6017	9.60	28	0.0871
1-Apr-08	8:20	0.6018	9.63	28	0.0886
1-Apr-08	8:21	0.6019	9.66	28	0.0900
1-Apr-08	8:22	0.6020	9.69	28	0.0914
1-Apr-08	8:23	0.6021	9.72	28	0.0928
1-Apr-08	8:24	0.6022	9.76	28	0.0943
1-Apr-08	8:25	0.6023	9.79	28	0.0957
1-Apr-08	8:26	0.6024	9.82	28	0.0979
1-Apr-08	8:27	0.6025	9.85	28	0.1004
1-Apr-08	8:28	0.6026	9.88	28	0.1028
1-Apr-08	8:29	0.6027	9.91	28	0.1052
1-Apr-08	8:30	0.6028	9.94	28	0.1077
1-Apr-08	8:31	0.6029	9.97	28	0.1101
1-Apr-08	8:32	0.6030	10.00	28	0.1125
1-Apr-08	8:33	0.6031	10.02	28	0.1149
1-Apr-08	8:34	0.6032	10.05	28	0.1173
1-Apr-08	8:35	0.6032	10.08	28	0.1197
1-Apr-08	8:36	0.6033	10.11	28	0.1220
1-Apr-08	8:37	0.6034	10.14	28	0.1244
1-Apr-08	8:38	0.6035	10.17	28	0.1267
1-Apr-08	8:39	0.6036	10.20	28	0.1290
1-Apr-08	8:40	0.6037	10.23	28	0.1313
1-Apr-08	8:41	0.6038	10.25	28	0.1337
1-Apr-08	8:42	0.6039	10.28	28	0.1359
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1-Apr-08	8:57	0.6634	10.70	28	0.1697
1-Apr-08	8:58	0.6804	10.73	28	0.1722
1-Apr-08	8:59	0.6971	10.76	28	0.1747
1-Apr-08	9:00	0.7125	10.79	28	0.1773
1-Apr-08	9:01	0.7264	10.82	28	0.1799
1-Apr-08	9:02	0.7383	10.86	28	0.1826
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1-Apr-08	9:04	0.7553	10.92	28	0.1881
1-Apr-08	9:05	0.7615	10.96	28	0.1909
1-Apr-08	9:06	0.7666	10.99	28	0.1942

1-Apr-08	9:07	0.7709	11.03	28	0.1977
1-Apr-08	9:08	0.7744	11.06	28	0.2013
1-Apr-08	9:09	0.7773	11.09	28	0.2048
1-Apr-08	9:10	0.7797	11.13	28	0.2083
1-Apr-08	9:11	0.7816	11.16	28	0.2119
1-Apr-08	9:12	0.7833	11.20	28	0.2154
1-Apr-08	9:13	0.7847	11.23	28	0.2189
1-Apr-08	9:14	0.7858	11.26	28	0.2224
1-Apr-08	9:15	0.7868	11.30	28	0.2259
1-Apr-08	9:16	0.7876	11.33	28	0.2293
1-Apr-08	9:17	0.7883	11.37	28	0.2328
1-Apr-08	9:18	0.7888	11.40	28	0.2362
1-Apr-08	9:19	0.7894	11.43	28	0.2396
1-Apr-08	9:20	0.7898	11.46	28	0.2430
1-Apr-08	9:21	0.7902	11.50	28	0.2464
1-Apr-08	9:22	0.7905	11.53	28	0.2497
1-Apr-08	9:23	0.7908	11.56	28	0.2531
1-Apr-08	9:24	0.7911	11.59	28	0.2564
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1-Apr-08	9:26	0.7916	11.66	28	0.2630
1-Apr-08	9:27	0.7918	11.69	28	0.2662
1-Apr-08	9:28	0.7920	11.72	28	0.2695
1-Apr-08	9:29	0.7922	11.75	28	0.2727
1-Apr-08	9:30	0.7923	11.78	28	0.2759
1-Apr-08	9:31	0.7925	11.81	28	0.2791
1-Apr-08	9:32	0.7926	11.85	28	0.2822
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1-Apr-08	9:35	0.7930	11.94	28	0.2916
1-Apr-08	9:36	0.7931	11.97	28	0.2947
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1-Apr-08	9:42	0.7939	12.14	28	0.3129
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1-Apr-08	9:51	0.7967	12.39	28	0.3430
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1-Apr-08	9:53	0.8115	12.45	28	0.3496
1-Apr-08	9:54	0.8277	12.48	28	0.3530
1-Apr-08	9:55	0.8518	12.51	28	0.3565
1-Apr-08	9:56	0.8821	12.54	28	0.3602

1-Apr-08	9:57	0.9161	12.57	28	0.3641
1-Apr-08	9:58	0.9511	12.60	28	0.3682
1-Apr-08	9:59	0.9855	12.64	28	0.3726
1-Apr-08	10:00	1.0173	12.68	28	0.3771
1-Apr-08	10:01	1.0459	12.72	28	0.3818
1-Apr-08	10:02	1.0705	12.76	28	0.3867
1-Apr-08	10:03	1.0901	12.80	28	0.3917
1-Apr-08	10:04	1.1057	12.84	28	0.3968
1-Apr-08	10:05	1.1184	12.88	28	0.4020
1-Apr-08	10:06	1.1289	12.93	28	0.4072
1-Apr-08	10:07	1.1376	12.97	28	0.4125
1-Apr-08	10:08	1.1448	13.01	28	0.4177
1-Apr-08	10:09	1.1508	13.06	28	0.4230
1-Apr-08	10:10	1.1557	13.10	28	0.4283
1-Apr-08	10:11	1.1597	13.14	28	0.4335
1-Apr-08	10:12	1.1631	13.19	28	0.4388
1-Apr-08	10:13	1.1659	13.23	28	0.4440
1-Apr-08	10:14	1.1682	13.27	28	0.4493
1-Apr-08	10:15	1.1701	13.32	28	0.4545
1-Apr-08	10:16	1.1718	13.36	28	0.4596
1-Apr-08	10:17	1.1731	13.40	28	0.4652
1-Apr-08	10:18	1.1743	13.44	28	0.4709
1-Apr-08	10:19	1.1753	13.49	28	0.4766
1-Apr-08	10:20	1.1762	13.53	28	0.4822
1-Apr-08	10:21	1.1769	13.57	28	0.4878
1-Apr-08	10:22	1.1776	13.61	28	0.4934
1-Apr-08	10:23	1.1782	13.65	28	0.4989
1-Apr-08	10:24	1.1787	13.69	28	0.5044
1-Apr-08	10:25	1.1792	13.73	28	0.5098
1-Apr-08	10:26	1.1797	13.77	28	0.5152
1-Apr-08	10:27	1.1801	13.81	28	0.5206
1-Apr-08	10:28	1.1804	13.85	28	0.5259
1-Apr-08	10:29	1.1807	13.89	28	0.5312
1-Apr-08	10:30	1.1810	13.93	28	0.5364
1-Apr-08	10:31	1.1812	13.97	28	0.5416
1-Apr-08	10:32	1.1814	14.01	28	0.5467
1-Apr-08	10:33	1.1817	14.04	28	0.5518
1-Apr-08	10:34	1.1819	14.08	28	0.5569
1-Apr-08	10:35	1.1821	14.12	28	0.5620
1-Apr-08	10:36	1.1824	14.16	28	0.5670
1-Apr-08	10:37	1.1826	14.19	28	0.5719
1-Apr-08	10:38	1.1828	14.23	28	0.5768
1-Apr-08	10:39	1.1831	14.27	28	0.5817
1-Apr-08	10:40	1.1833	14.30	28	0.5866
1-Apr-08	10:41	1.1835	14.34	28	0.5914
1-Apr-08	10:42	1.1837	14.37	28	0.5961
1-Apr-08	10:43	1.1840	14.41	28	0.6009
1-Apr-08	10:44	1.1842	14.44	28	0.6056
1-Apr-08	10:45	1.1844	14.48	28	0.6102
1-Apr-08	10:46	1.1846	14.51	28	0.6149

1-Apr-08	10:47	1.1848	14.55	28	0.6195
1-Apr-08	10:48	1.1851	14.58	28	0.6240
1-Apr-08	10:49	1.1853	14.61	28	0.6287
1-Apr-08	10:50	1.1855	14.65	28	0.6336
1-Apr-08	10:51	1.1886	14.68	28	0.6384
1-Apr-08	10:52	1.1978	14.71	28	0.6433
1-Apr-08	10:53	1.2152	14.75	28	0.6482
1-Apr-08	10:54	1.2443	14.78	28	0.6533
1-Apr-08	10:55	1.2877	14.82	28	0.6586
1-Apr-08	10:56	1.3422	14.86	28	0.6643
1-Apr-08	10:57	1.4033	14.90	28	0.6705
1-Apr-08	10:58	1.4663	14.95	28	0.6772
1-Apr-08	10:59	1.5283	14.99	28	0.6843
1-Apr-08	11:00	1.5855	15.05	28	0.6920
1-Apr-08	11:01	1.6370	15.10	28	0.7000
1-Apr-08	11:02	1.6812	15.16	28	0.7084
1-Apr-08	11:03	1.7165	15.22	28	0.7170
1-Apr-08	11:04	1.7445	15.28	28	0.7258
1-Apr-08	11:05	1.7675	15.34	28	0.7348
1-Apr-08	11:06	1.7863	15.40	28	0.7439
1-Apr-08	11:07	1.8020	15.46	28	0.7531
1-Apr-08	11:08	1.8151	15.53	28	0.7623
1-Apr-08	11:09	1.8258	15.59	28	0.7715
1-Apr-08	11:10	1.8346	15.65	28	0.7808
1-Apr-08	11:11	1.8419	15.72	28	0.7900
1-Apr-08	11:12	1.8480	15.78	28	0.7992
1-Apr-08	11:13	1.8530	15.84	28	0.8085
1-Apr-08	11:14	1.8571	15.91	28	0.8184
1-Apr-08	11:15	1.8607	15.97	28	0.8282
1-Apr-08	11:16	1.8636	16.03	28	0.8379
1-Apr-08	11:17	1.8661	16.09	28	0.8476
1-Apr-08	11:18	1.8682	16.15	28	0.8572
1-Apr-08	11:19	1.8700	16.21	28	0.8668
1-Apr-08	11:20	1.8716	16.27	28	0.8762
1-Apr-08	11:21	1.8789	16.33	28	0.8856
1-Apr-08	11:22	1.8983	16.39	28	0.8951
1-Apr-08	11:23	1.9346	16.45	28	0.9047
1-Apr-08	11:24	1.9945	16.52	28	0.9147
1-Apr-08	11:25	2.0835	16.58	28	0.9253
1-Apr-08	11:26	2.1952	16.66	28	0.9368
1-Apr-08	11:27	2.3201	16.73	28	0.9492
1-Apr-08	11:28	2.4489	16.82	28	0.9628
1-Apr-08	11:29	2.5757	16.91	28	0.9774
1-Apr-08	11:30	2.6925	17.01	28	0.9930
1-Apr-08	11:31	2.8014	17.12	28	1.0098
1-Apr-08	11:32	2.9036	17.23	28	1.0280
1-Apr-08	11:33	2.9983	17.34	28	1.0471
1-Apr-08	11:34	3.0937	17.46	28	1.0669
1-Apr-08	11:35	3.1975	17.58	28	1.0876
1-Apr-08	11:36	3.3075	17.71	28	1.1090

1-Apr-08	11:37	3.4199	17.85	28	1.1314
1-Apr-08	11:38	3.5293	17.99	28	1.1546
1-Apr-08	11:39	3.6327	18.13	28	1.1787
1-Apr-08	11:40	3.7259	18.28	28	1.2035
1-Apr-08	11:41	3.8232	18.44	28	1.2298
1-Apr-08	11:42	3.9392	18.59	28	1.2576
1-Apr-08	11:43	4.0834	18.76	28	1.2865
1-Apr-08	11:44	4.2757	18.93	28	1.3168
1-Apr-08	11:45	4.5327	19.12	28	1.3492
1-Apr-08	11:46	4.8396	19.32	28	1.3842
1-Apr-08	11:47	5.1751	19.53	28	1.4222
1-Apr-08	11:48	5.5162	19.77	28	1.4641
1-Apr-08	11:49	5.8489	20.02	28	1.5100
1-Apr-08	11:50	6.1543	20.29	28	1.5588
1-Apr-08	11:51	6.4570	20.57	28	1.6104
1-Apr-08	11:52	6.7813	20.87	28	1.6649
1-Apr-08	11:53	7.1412	21.18	28	1.7242
1-Apr-08	11:54	7.5795	21.52	28	1.7881
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1-Apr-08	11:56	8.7769	22.28	28	1.9338
1-Apr-08	11:57	9.4696	22.70	28	2.0881
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1-Apr-08	12:00	11.4632	24.17	28	2.6959
1-Apr-08	12:01	11.9767	24.70	28	2.9622
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1-Apr-08	12:03	12.4732	25.78	28	3.5771
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1-Apr-08	12:06	11.4912	27.24	28	4.4312
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1-Apr-08	12:09	9.3666	28.26	28	5.1216
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1-Apr-08	12:18	5.2886	29.01	28	5.7403
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1-Apr-08	12:20	4.7989	28.93	28	5.6737
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1-Apr-08	12:31	3.0693	27.98	28	4.8858
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1-Apr-08	12:39	2.6558	27.11	28	4.3564
1-Apr-08	12:40	2.6388	27.01	28	4.2977
1-Apr-08	12:41	2.6254	26.91	28	4.2405
1-Apr-08	12:42	2.6144	26.82	28	4.1848
1-Apr-08	12:43	2.6055	26.73	28	4.1307
1-Apr-08	12:44	2.5982	26.64	28	4.0781
1-Apr-08	12:45	2.5923	26.55	28	4.0272
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1-Apr-08	12:49	2.5783	26.22	28	3.8383
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1-Apr-08	12:58	2.1298	25.58	28	3.4565
1-Apr-08	12:59	2.0321	25.49	28	3.4087
1-Apr-08	13:00	1.9422	25.41	28	3.3594
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1-Apr-08	13:02	1.7923	25.24	28	3.2574
1-Apr-08	13:03	1.7373	25.15	28	3.2056
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1-Apr-08	13:05	1.6581	24.97	28	3.1025
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1-Apr-08	13:07	1.6050	24.80	28	3.0142
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1-Apr-08	13:29	1.4993	23.35	28	2.3229
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1-Apr-08	13:33	1.4995	23.16	28	2.2544
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1-Apr-08	13:42	1.5001	22.79	28	2.1206
1-Apr-08	13:43	1.5002	22.76	28	2.1073
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1-Apr-08	14:54	1.0192	20.12	28	1.5290
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1-Apr-08	16:19	0.6642	17.27	28	1.0348
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1-Apr-08	16:22	0.6643	17.20	28	1.0238
1-Apr-08	16:23	0.6643	17.18	28	1.0203
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1-Apr-08	16:25	0.6643	17.14	28	1.0133
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1-Apr-08	21:27	0.3463	13.13	28	0.4321
1-Apr-08	21:28	0.3464	13.13	28	0.4314
1-Apr-08	21:29	0.3464	13.12	28	0.4308
1-Apr-08	21:30	0.3464	13.12	28	0.4302
1-Apr-08	21:31	0.3464	13.11	28	0.4296
1-Apr-08	21:32	0.3464	13.11	28	0.4290
1-Apr-08	21:33	0.3464	13.10	28	0.4284
1-Apr-08	21:34	0.3464	13.10	28	0.4278
1-Apr-08	21:35	0.3464	13.09	28	0.4272
1-Apr-08	21:36	0.3464	13.09	28	0.4267

1-Apr-08	21:37	0.3464	13.08	28	0.4261
1-Apr-08	21:38	0.3464	13.08	28	0.4255
1-Apr-08	21:39	0.3464	13.07	28	0.4249
1-Apr-08	21:40	0.3464	13.07	28	0.4244
1-Apr-08	21:41	0.3464	13.06	28	0.4238
1-Apr-08	21:42	0.3464	13.06	28	0.4232
1-Apr-08	21:43	0.3464	13.05	28	0.4227
1-Apr-08	21:44	0.3464	13.05	28	0.4221
1-Apr-08	21:45	0.3464	13.04	28	0.4216
1-Apr-08	21:46	0.3464	13.04	28	0.4210
1-Apr-08	21:47	0.3464	13.04	28	0.4205
1-Apr-08	21:48	0.3464	13.03	28	0.4200
1-Apr-08	21:49	0.3464	13.03	28	0.4194
1-Apr-08	21:50	0.3464	13.02	28	0.4189
1-Apr-08	21:51	0.3464	13.02	28	0.4184
1-Apr-08	21:52	0.3464	13.01	28	0.4179
1-Apr-08	21:53	0.3464	13.01	28	0.4173
1-Apr-08	21:54	0.3464	13.01	28	0.4168
1-Apr-08	21:55	0.3464	13.00	28	0.4163
1-Apr-08	21:56	0.3464	13.00	28	0.4158
1-Apr-08	21:57	0.3464	12.99	28	0.4153
1-Apr-08	21:58	0.3464	12.99	28	0.4148
1-Apr-08	21:59	0.3464	12.98	28	0.4143
1-Apr-08	22:00	0.3464	12.98	28	0.4138
1-Apr-08	22:01	0.3464	12.98	28	0.4133
1-Apr-08	22:02	0.3464	12.97	28	0.4129
1-Apr-08	22:03	0.3464	12.97	28	0.4124
1-Apr-08	22:04	0.3464	12.96	28	0.4119
1-Apr-08	22:05	0.3464	12.96	28	0.4114
1-Apr-08	22:06	0.3464	12.96	28	0.4110
1-Apr-08	22:07	0.3464	12.95	28	0.4105
1-Apr-08	22:08	0.3464	12.95	28	0.4100
1-Apr-08	22:09	0.3464	12.95	28	0.4096
1-Apr-08	22:10	0.3464	12.94	28	0.4091
1-Apr-08	22:11	0.3464	12.94	28	0.4087
1-Apr-08	22:12	0.3464	12.93	28	0.4082
1-Apr-08	22:13	0.3464	12.93	28	0.4078
1-Apr-08	22:14	0.3464	12.93	28	0.4073
1-Apr-08	22:15	0.3464	12.92	28	0.4069
1-Apr-08	22:16	0.3464	12.92	28	0.4064
1-Apr-08	22:17	0.3465	12.92	28	0.4060
1-Apr-08	22:18	0.3465	12.91	28	0.4056
1-Apr-08	22:19	0.3465	12.91	28	0.4052
1-Apr-08	22:20	0.3465	12.91	28	0.4047
1-Apr-08	22:21	0.3465	12.90	28	0.4043
1-Apr-08	22:22	0.3465	12.90	28	0.4039
1-Apr-08	22:23	0.3465	12.90	28	0.4035
1-Apr-08	22:24	0.3465	12.89	28	0.4031
1-Apr-08	22:25	0.3465	12.89	28	0.4027
1-Apr-08	22:26	0.3465	12.88	28	0.4023

1-Apr-08	22:27	0.3465	12.88	28	0.4018
1-Apr-08	22:28	0.3465	12.88	28	0.4014
1-Apr-08	22:29	0.3465	12.87	28	0.4011
1-Apr-08	22:30	0.3465	12.87	28	0.4007
1-Apr-08	22:31	0.3465	12.87	28	0.4003
1-Apr-08	22:32	0.3465	12.87	28	0.3999
1-Apr-08	22:33	0.3465	12.86	28	0.3995
1-Apr-08	22:34	0.3465	12.86	28	0.3991
1-Apr-08	22:35	0.3465	12.86	28	0.3987
1-Apr-08	22:36	0.3465	12.85	28	0.3984
1-Apr-08	22:37	0.3465	12.85	28	0.3980
1-Apr-08	22:38	0.3465	12.85	28	0.3976
1-Apr-08	22:39	0.3465	12.84	28	0.3972
1-Apr-08	22:40	0.3465	12.84	28	0.3969
1-Apr-08	22:41	0.3465	12.84	28	0.3965
1-Apr-08	22:42	0.3465	12.83	28	0.3961
1-Apr-08	22:43	0.3465	12.83	28	0.3958
1-Apr-08	22:44	0.3465	12.83	28	0.3954
1-Apr-08	22:45	0.3465	12.83	28	0.3951
1-Apr-08	22:46	0.3465	12.82	28	0.3947
1-Apr-08	22:47	0.3465	12.82	28	0.3944
1-Apr-08	22:48	0.3465	12.82	28	0.3940
1-Apr-08	22:49	0.3465	12.81	28	0.3937
1-Apr-08	22:50	0.3465	12.81	28	0.3933
1-Apr-08	22:51	0.3465	12.81	28	0.3930
1-Apr-08	22:52	0.3465	12.81	28	0.3927
1-Apr-08	22:53	0.3465	12.80	28	0.3923
1-Apr-08	22:54	0.3465	12.80	28	0.3920
1-Apr-08	22:55	0.3465	12.80	28	0.3917
1-Apr-08	22:56	0.3465	12.79	28	0.3914
1-Apr-08	22:57	0.3465	12.79	28	0.3910
1-Apr-08	22:58	0.3465	12.79	28	0.3907
1-Apr-08	22:59	0.3465	12.79	28	0.3904
1-Apr-08	23:00	0.3465	12.78	28	0.3901
1-Apr-08	23:01	0.3465	12.78	28	0.3898
1-Apr-08	23:02	0.3465	12.78	28	0.3894
1-Apr-08	23:03	0.3465	12.78	28	0.3891
1-Apr-08	23:04	0.3465	12.77	28	0.3888
1-Apr-08	23:05	0.3465	12.77	28	0.3885
1-Apr-08	23:06	0.3465	12.77	28	0.3882
1-Apr-08	23:07	0.3466	12.77	28	0.3879
1-Apr-08	23:08	0.3466	12.76	28	0.3876
1-Apr-08	23:09	0.3466	12.76	28	0.3873
1-Apr-08	23:10	0.3466	12.76	28	0.3870
1-Apr-08	23:11	0.3466	12.76	28	0.3867
1-Apr-08	23:12	0.3466	12.75	28	0.3864
1-Apr-08	23:13	0.3466	12.75	28	0.3862
1-Apr-08	23:14	0.3466	12.75	28	0.3859
1-Apr-08	23:15	0.3466	12.75	28	0.3856
1-Apr-08	23:16	0.3466	12.74	28	0.3853

1-Apr-08	23:17	0.3466	12.74	28	0.3850
1-Apr-08	23:18	0.3466	12.74	28	0.3847
1-Apr-08	23:19	0.3466	12.74	28	0.3845
1-Apr-08	23:20	0.3466	12.74	28	0.3842
1-Apr-08	23:21	0.3466	12.73	28	0.3839
1-Apr-08	23:22	0.3466	12.73	28	0.3837
1-Apr-08	23:23	0.3466	12.73	28	0.3834
1-Apr-08	23:24	0.3466	12.73	28	0.3831
1-Apr-08	23:25	0.3466	12.72	28	0.3829
1-Apr-08	23:26	0.3466	12.72	28	0.3826
1-Apr-08	23:27	0.3466	12.72	28	0.3823
1-Apr-08	23:28	0.3466	12.72	28	0.3821
1-Apr-08	23:29	0.3466	12.72	28	0.3818
1-Apr-08	23:30	0.3466	12.71	28	0.3816
1-Apr-08	23:31	0.3466	12.71	28	0.3813
1-Apr-08	23:32	0.3466	12.71	28	0.3811
1-Apr-08	23:33	0.3466	12.71	28	0.3808
1-Apr-08	23:34	0.3466	12.71	28	0.3806
1-Apr-08	23:35	0.3466	12.70	28	0.3803
1-Apr-08	23:36	0.3466	12.70	28	0.3801
1-Apr-08	23:37	0.3466	12.70	28	0.3798
1-Apr-08	23:38	0.3466	12.70	28	0.3796
1-Apr-08	23:39	0.3466	12.70	28	0.3794
1-Apr-08	23:40	0.3466	12.69	28	0.3791
1-Apr-08	23:41	0.3466	12.69	28	0.3789
1-Apr-08	23:42	0.3466	12.69	28	0.3787
1-Apr-08	23:43	0.3466	12.69	28	0.3784
1-Apr-08	23:44	0.3466	12.69	28	0.3782
1-Apr-08	23:45	0.3466	12.68	28	0.3780
1-Apr-08	23:46	0.3466	12.68	28	0.3777
1-Apr-08	23:47	0.3466	12.68	28	0.3775
1-Apr-08	23:48	0.3466	12.68	28	0.3773
1-Apr-08	23:49	0.3466	12.68	28	0.3771
1-Apr-08	23:50	0.3466	12.67	28	0.3768
1-Apr-08	23:51	0.3466	12.67	28	0.3766
1-Apr-08	23:52	0.3466	12.67	28	0.3764
1-Apr-08	23:53	0.3466	12.67	28	0.3762
1-Apr-08	23:54	0.3466	12.67	28	0.3760
1-Apr-08	23:55	0.3466	12.67	28	0.3758
1-Apr-08	23:56	0.3466	12.66	28	0.3756
1-Apr-08	23:57	0.3466	12.66	28	0.3754
1-Apr-08	23:58	0.3466	12.66	28	0.3751
1-Apr-08	23:59	0.3467	12.66	28	0.3749
2-Apr-08	0:00	0.3467	12.66	28	0.3747

Highgate - 20yr NO CC - Time Series Inflow (Wetland)						
Date	Time	Inflow m3/s	Storage	Elevation m	Outflow m3/s	4.1759
1-Apr-08	0:00	0.0000	0.00	28	0.0000	
1-Apr-08	0:01	0.0010	0.00	28	0.0000	
1-Apr-08	0:02	0.0040	0.00	28	0.0000	
1-Apr-08	0:03	0.0098	0.00	28	0.0000	
1-Apr-08	0:04	0.0195	0.00	28	0.0000	
1-Apr-08	0:05	0.0341	0.00	28	0.0000	
1-Apr-08	0:06	0.0524	0.01	28	0.0001	
1-Apr-08	0:07	0.0729	0.01	28	0.0001	
1-Apr-08	0:08	0.0940	0.01	28	0.0002	
1-Apr-08	0:09	0.1148	0.02	28	0.0003	
1-Apr-08	0:10	0.1340	0.03	28	0.0004	
1-Apr-08	0:11	0.1512	0.04	28	0.0005	
1-Apr-08	0:12	0.1660	0.05	28	0.0006	
1-Apr-08	0:13	0.1777	0.06	28	0.0007	
1-Apr-08	0:14	0.1870	0.07	28	0.0009	
1-Apr-08	0:15	0.1946	0.08	28	0.0010	
1-Apr-08	0:16	0.2008	0.09	28	0.0012	
1-Apr-08	0:17	0.2059	0.10	28	0.0013	
1-Apr-08	0:18	0.2102	0.11	28	0.0015	
1-Apr-08	0:19	0.2136	0.13	28	0.0017	
1-Apr-08	0:20	0.2165	0.14	28	0.0018	
1-Apr-08	0:21	0.2188	0.15	28	0.0020	
1-Apr-08	0:22	0.2206	0.17	28	0.0022	
1-Apr-08	0:23	0.2222	0.18	28	0.0023	
1-Apr-08	0:24	0.2234	0.19	28	0.0025	
1-Apr-08	0:25	0.2245	0.21	28	0.0027	
1-Apr-08	0:26	0.2253	0.22	28	0.0029	
1-Apr-08	0:27	0.2260	0.23	28	0.0030	
1-Apr-08	0:28	0.2266	0.25	28	0.0032	
1-Apr-08	0:29	0.2270	0.26	28	0.0034	
1-Apr-08	0:30	0.2274	0.27	28	0.0036	
1-Apr-08	0:31	0.2277	0.29	28	0.0037	
1-Apr-08	0:32	0.2280	0.30	28	0.0039	
1-Apr-08	0:33	0.2282	0.31	28	0.0041	
1-Apr-08	0:34	0.2283	0.33	28	0.0042	
1-Apr-08	0:35	0.2285	0.34	28	0.0043	
1-Apr-08	0:36	0.2286	0.35	28	0.0045	
1-Apr-08	0:37	0.2287	0.37	28	0.0046	
1-Apr-08	0:38	0.2288	0.38	28	0.0048	
1-Apr-08	0:39	0.2288	0.39	28	0.0049	
1-Apr-08	0:40	0.2288	0.41	28	0.0050	
1-Apr-08	0:41	0.2288	0.42	28	0.0052	
1-Apr-08	0:42	0.2288	0.43	28	0.0053	
1-Apr-08	0:43	0.2288	0.45	28	0.0054	
1-Apr-08	0:44	0.2288	0.46	28	0.0056	
1-Apr-08	0:45	0.2288	0.47	28	0.0057	
1-Apr-08	0:46	0.2288	0.49	28	0.0059	

1-Apr-08	0:47	0.2288	0.50	28	0.0060
1-Apr-08	0:48	0.2288	0.51	28	0.0061
1-Apr-08	0:49	0.2288	0.53	28	0.0063
1-Apr-08	0:50	0.2288	0.54	28	0.0064
1-Apr-08	0:51	0.2288	0.55	28	0.0065
1-Apr-08	0:52	0.2288	0.57	28	0.0067
1-Apr-08	0:53	0.2288	0.58	28	0.0068
1-Apr-08	0:54	0.2288	0.59	28	0.0070
1-Apr-08	0:55	0.2288	0.61	28	0.0071
1-Apr-08	0:56	0.2288	0.62	28	0.0072
1-Apr-08	0:57	0.2288	0.63	28	0.0074
1-Apr-08	0:58	0.2288	0.65	28	0.0075
1-Apr-08	0:59	0.2288	0.66	28	0.0076
1-Apr-08	1:00	0.2288	0.67	28	0.0078
1-Apr-08	1:01	0.2288	0.69	28	0.0079
1-Apr-08	1:02	0.2288	0.70	28	0.0080
1-Apr-08	1:03	0.2288	0.71	28	0.0082
1-Apr-08	1:04	0.2288	0.73	28	0.0083
1-Apr-08	1:05	0.2288	0.74	28	0.0085
1-Apr-08	1:06	0.2288	0.75	28	0.0086
1-Apr-08	1:07	0.2288	0.77	28	0.0087
1-Apr-08	1:08	0.2288	0.78	28	0.0089
1-Apr-08	1:09	0.2288	0.79	28	0.0090
1-Apr-08	1:10	0.2288	0.81	28	0.0091
1-Apr-08	1:11	0.2288	0.82	28	0.0093
1-Apr-08	1:12	0.2288	0.83	28	0.0094
1-Apr-08	1:13	0.2288	0.85	28	0.0095
1-Apr-08	1:14	0.2288	0.86	28	0.0097
1-Apr-08	1:15	0.2288	0.87	28	0.0098
1-Apr-08	1:16	0.2288	0.89	28	0.0099
1-Apr-08	1:17	0.2288	0.90	28	0.0101
1-Apr-08	1:18	0.2288	0.91	28	0.0102
1-Apr-08	1:19	0.2288	0.92	28	0.0103
1-Apr-08	1:20	0.2288	0.94	28	0.0105
1-Apr-08	1:21	0.2288	0.95	28	0.0106
1-Apr-08	1:22	0.2288	0.96	28	0.0107
1-Apr-08	1:23	0.2288	0.98	28	0.0109
1-Apr-08	1:24	0.2288	0.99	28	0.0110
1-Apr-08	1:25	0.2288	1.00	28	0.0112
1-Apr-08	1:26	0.2288	1.02	28	0.0113
1-Apr-08	1:27	0.2288	1.03	28	0.0114
1-Apr-08	1:28	0.2288	1.04	28	0.0116
1-Apr-08	1:29	0.2288	1.06	28	0.0117
1-Apr-08	1:30	0.2288	1.07	28	0.0118
1-Apr-08	1:31	0.2288	1.08	28	0.0120
1-Apr-08	1:32	0.2288	1.09	28	0.0121
1-Apr-08	1:33	0.2288	1.11	28	0.0122
1-Apr-08	1:34	0.2288	1.12	28	0.0123
1-Apr-08	1:35	0.2288	1.13	28	0.0124
1-Apr-08	1:36	0.2288	1.15	28	0.0125

1-Apr-08	1:37	0.2288	1.16	28	0.0127
1-Apr-08	1:38	0.2288	1.17	28	0.0128
1-Apr-08	1:39	0.2288	1.19	28	0.0129
1-Apr-08	1:40	0.2288	1.20	28	0.0130
1-Apr-08	1:41	0.2288	1.21	28	0.0131
1-Apr-08	1:42	0.2288	1.22	28	0.0132
1-Apr-08	1:43	0.2288	1.24	28	0.0134
1-Apr-08	1:44	0.2288	1.25	28	0.0135
1-Apr-08	1:45	0.2288	1.26	28	0.0136
1-Apr-08	1:46	0.2288	1.28	28	0.0137
1-Apr-08	1:47	0.2288	1.29	28	0.0138
1-Apr-08	1:48	0.2288	1.30	28	0.0139
1-Apr-08	1:49	0.2288	1.31	28	0.0141
1-Apr-08	1:50	0.2288	1.33	28	0.0142
1-Apr-08	1:51	0.2288	1.34	28	0.0143
1-Apr-08	1:52	0.2288	1.35	28	0.0144
1-Apr-08	1:53	0.2288	1.37	28	0.0145
1-Apr-08	1:54	0.2288	1.38	28	0.0146
1-Apr-08	1:55	0.2288	1.39	28	0.0147
1-Apr-08	1:56	0.2288	1.40	28	0.0149
1-Apr-08	1:57	0.2288	1.42	28	0.0150
1-Apr-08	1:58	0.2288	1.43	28	0.0151
1-Apr-08	1:59	0.2288	1.44	28	0.0152
1-Apr-08	2:00	0.2288	1.46	28	0.0153
1-Apr-08	2:01	0.2288	1.47	28	0.0154
1-Apr-08	2:02	0.2288	1.48	28	0.0155
1-Apr-08	2:03	0.2288	1.49	28	0.0157
1-Apr-08	2:04	0.2288	1.51	28	0.0158
1-Apr-08	2:05	0.2288	1.52	28	0.0159
1-Apr-08	2:06	0.2288	1.53	28	0.0160
1-Apr-08	2:07	0.2288	1.55	28	0.0161
1-Apr-08	2:08	0.2288	1.56	28	0.0162
1-Apr-08	2:09	0.2288	1.57	28	0.0163
1-Apr-08	2:10	0.2288	1.58	28	0.0165
1-Apr-08	2:11	0.2288	1.60	28	0.0166
1-Apr-08	2:12	0.2289	1.61	28	0.0167
1-Apr-08	2:13	0.2289	1.62	28	0.0168
1-Apr-08	2:14	0.2289	1.63	28	0.0169
1-Apr-08	2:15	0.2289	1.65	28	0.0170
1-Apr-08	2:16	0.2289	1.66	28	0.0171
1-Apr-08	2:17	0.2289	1.67	28	0.0173
1-Apr-08	2:18	0.2290	1.69	28	0.0174
1-Apr-08	2:19	0.2290	1.70	28	0.0175
1-Apr-08	2:20	0.2290	1.71	28	0.0176
1-Apr-08	2:21	0.2291	1.72	28	0.0177
1-Apr-08	2:22	0.2291	1.74	28	0.0178
1-Apr-08	2:23	0.2291	1.75	28	0.0179
1-Apr-08	2:24	0.2291	1.76	28	0.0181
1-Apr-08	2:25	0.2292	1.77	28	0.0182
1-Apr-08	2:26	0.2292	1.79	28	0.0183

1-Apr-08	2:27	0.2292	1.80	28	0.0184
1-Apr-08	2:28	0.2293	1.81	28	0.0185
1-Apr-08	2:29	0.2293	1.82	28	0.0186
1-Apr-08	2:30	0.2293	1.84	28	0.0187
1-Apr-08	2:31	0.2294	1.85	28	0.0189
1-Apr-08	2:32	0.2294	1.86	28	0.0190
1-Apr-08	2:33	0.2294	1.88	28	0.0191
1-Apr-08	2:34	0.2295	1.89	28	0.0192
1-Apr-08	2:35	0.2295	1.90	28	0.0193
1-Apr-08	2:36	0.2295	1.91	28	0.0194
1-Apr-08	2:37	0.2296	1.93	28	0.0195
1-Apr-08	2:38	0.2296	1.94	28	0.0196
1-Apr-08	2:39	0.2296	1.95	28	0.0198
1-Apr-08	2:40	0.2297	1.96	28	0.0199
1-Apr-08	2:41	0.2297	1.98	28	0.0200
1-Apr-08	2:42	0.2297	1.99	28	0.0201
1-Apr-08	2:43	0.2298	2.00	28	0.0201
1-Apr-08	2:44	0.2298	2.01	28	0.0202
1-Apr-08	2:45	0.2298	2.03	28	0.0202
1-Apr-08	2:46	0.2299	2.04	28	0.0203
1-Apr-08	2:47	0.2299	2.05	28	0.0203
1-Apr-08	2:48	0.2299	2.06	28	0.0204
1-Apr-08	2:49	0.2300	2.08	28	0.0205
1-Apr-08	2:50	0.2300	2.09	28	0.0205
1-Apr-08	2:51	0.2300	2.10	28	0.0206
1-Apr-08	2:52	0.2300	2.11	28	0.0206
1-Apr-08	2:53	0.2301	2.13	28	0.0207
1-Apr-08	2:54	0.2301	2.14	28	0.0208
1-Apr-08	2:55	0.2301	2.15	28	0.0208
1-Apr-08	2:56	0.2302	2.16	28	0.0209
1-Apr-08	2:57	0.2302	2.18	28	0.0209
1-Apr-08	2:58	0.2302	2.19	28	0.0210
1-Apr-08	2:59	0.2303	2.20	28	0.0210
1-Apr-08	3:00	0.2303	2.21	28	0.0211
1-Apr-08	3:01	0.2303	2.23	28	0.0212
1-Apr-08	3:02	0.2304	2.24	28	0.0212
1-Apr-08	3:03	0.2304	2.25	28	0.0213
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1-Apr-08	3:05	0.2305	2.28	28	0.0214
1-Apr-08	3:06	0.2305	2.29	28	0.0215
1-Apr-08	3:07	0.2305	2.30	28	0.0215
1-Apr-08	3:08	0.2305	2.32	28	0.0216
1-Apr-08	3:09	0.2306	2.33	28	0.0216
1-Apr-08	3:10	0.2306	2.34	28	0.0217
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1-Apr-08	3:12	0.2307	2.37	28	0.0218
1-Apr-08	3:13	0.2307	2.38	28	0.0219
1-Apr-08	3:14	0.2307	2.39	28	0.0219
1-Apr-08	3:15	0.2308	2.40	28	0.0220
1-Apr-08	3:16	0.2308	2.42	28	0.0220

1-Apr-08	3:17	0.2308	2.43	28	0.0221
1-Apr-08	3:18	0.2309	2.44	28	0.0222
1-Apr-08	3:19	0.2309	2.45	28	0.0222
1-Apr-08	3:20	0.2309	2.47	28	0.0223
1-Apr-08	3:21	0.2309	2.48	28	0.0223
1-Apr-08	3:22	0.2310	2.49	28	0.0224
1-Apr-08	3:23	0.2310	2.50	28	0.0225
1-Apr-08	3:24	0.2310	2.52	28	0.0225
1-Apr-08	3:25	0.2311	2.53	28	0.0226
1-Apr-08	3:26	0.2311	2.54	28	0.0226
1-Apr-08	3:27	0.2311	2.55	28	0.0227
1-Apr-08	3:28	0.2312	2.57	28	0.0227
1-Apr-08	3:29	0.2312	2.58	28	0.0228
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1-Apr-08	3:31	0.2313	2.60	28	0.0229
1-Apr-08	3:32	0.2313	2.62	28	0.0230
1-Apr-08	3:33	0.2313	2.63	28	0.0230
1-Apr-08	3:34	0.2313	2.64	28	0.0231
1-Apr-08	3:35	0.2314	2.65	28	0.0232
1-Apr-08	3:36	0.2314	2.67	28	0.0232
1-Apr-08	3:37	0.2314	2.68	28	0.0233
1-Apr-08	3:38	0.2315	2.69	28	0.0233
1-Apr-08	3:39	0.2315	2.70	28	0.0234
1-Apr-08	3:40	0.2315	2.72	28	0.0234
1-Apr-08	3:41	0.2316	2.73	28	0.0235
1-Apr-08	3:42	0.2316	2.74	28	0.0236
1-Apr-08	3:43	0.2316	2.75	28	0.0236
1-Apr-08	3:44	0.2316	2.77	28	0.0237
1-Apr-08	3:45	0.2317	2.78	28	0.0237
1-Apr-08	3:46	0.2317	2.79	28	0.0238
1-Apr-08	3:47	0.2317	2.80	28	0.0239
1-Apr-08	3:48	0.2318	2.82	28	0.0239
1-Apr-08	3:49	0.2318	2.83	28	0.0240
1-Apr-08	3:50	0.2318	2.84	28	0.0240
1-Apr-08	3:51	0.2318	2.85	28	0.0241
1-Apr-08	3:52	0.2319	2.87	28	0.0241
1-Apr-08	3:53	0.2319	2.88	28	0.0242
1-Apr-08	3:54	0.2319	2.89	28	0.0243
1-Apr-08	3:55	0.2320	2.90	28	0.0243
1-Apr-08	3:56	0.2320	2.92	28	0.0244
1-Apr-08	3:57	0.2320	2.93	28	0.0244
1-Apr-08	3:58	0.2321	2.94	28	0.0245
1-Apr-08	3:59	0.2321	2.95	28	0.0245
1-Apr-08	4:00	0.2321	2.97	28	0.0246
1-Apr-08	4:01	0.2321	2.98	28	0.0247
1-Apr-08	4:02	0.2322	2.99	28	0.0247
1-Apr-08	4:03	0.2322	3.00	28	0.0248
1-Apr-08	4:04	0.2322	3.01	28	0.0248
1-Apr-08	4:05	0.2323	3.03	28	0.0249
1-Apr-08	4:06	0.2323	3.04	28	0.0250

1-Apr-08	4:07	0.2323	3.05	28	0.0250
1-Apr-08	4:08	0.2323	3.06	28	0.0251
1-Apr-08	4:09	0.2324	3.08	28	0.0251
1-Apr-08	4:10	0.2324	3.09	28	0.0251
1-Apr-08	4:11	0.2324	3.10	28	0.0252
1-Apr-08	4:12	0.2325	3.11	28	0.0252
1-Apr-08	4:13	0.2325	3.13	28	0.0253
1-Apr-08	4:14	0.2325	3.14	28	0.0253
1-Apr-08	4:15	0.2325	3.15	28	0.0254
1-Apr-08	4:16	0.2326	3.16	28	0.0254
1-Apr-08	4:17	0.2326	3.18	28	0.0255
1-Apr-08	4:18	0.2326	3.19	28	0.0255
1-Apr-08	4:19	0.2327	3.20	28	0.0256
1-Apr-08	4:20	0.2327	3.21	28	0.0256
1-Apr-08	4:21	0.2327	3.23	28	0.0257
1-Apr-08	4:22	0.2327	3.24	28	0.0257
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1-Apr-08	4:25	0.2328	3.28	28	0.0258
1-Apr-08	4:26	0.2329	3.29	28	0.0259
1-Apr-08	4:27	0.2329	3.30	28	0.0259
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1-Apr-08	4:29	0.2329	3.33	28	0.0260
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1-Apr-08	4:41	0.2333	3.47	28	0.0266
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1-Apr-08	4:52	0.2336	3.61	28	0.0271
1-Apr-08	4:53	0.2336	3.62	28	0.0271
1-Apr-08	4:54	0.2336	3.64	28	0.0272
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1-Apr-08	4:56	0.2337	3.66	28	0.0273

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1-Apr-08	4:58	0.2337	3.69	28	0.0273
1-Apr-08	4:59	0.2338	3.70	28	0.0274
1-Apr-08	5:00	0.2338	3.71	28	0.0274
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1-Apr-08	5:02	0.2338	3.73	28	0.0275
1-Apr-08	5:03	0.2339	3.75	28	0.0276
1-Apr-08	5:04	0.2339	3.76	28	0.0276
1-Apr-08	5:05	0.2339	3.77	28	0.0277
1-Apr-08	5:06	0.2340	3.78	28	0.0277
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1-Apr-08	5:13	0.2341	3.87	28	0.0280
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1-Apr-08	5:15	0.2342	3.90	28	0.0281
1-Apr-08	5:16	0.2342	3.91	28	0.0282
1-Apr-08	5:17	0.2342	3.92	28	0.0282
1-Apr-08	5:18	0.2343	3.93	28	0.0283
1-Apr-08	5:19	0.2343	3.94	28	0.0283
1-Apr-08	5:20	0.2343	3.96	28	0.0283
1-Apr-08	5:21	0.2343	3.97	28	0.0284
1-Apr-08	5:22	0.2344	3.98	28	0.0284
1-Apr-08	5:23	0.2344	3.99	28	0.0285
1-Apr-08	5:24	0.2344	4.01	28	0.0285
1-Apr-08	5:25	0.2345	4.02	28	0.0286
1-Apr-08	5:26	0.2345	4.03	28	0.0286
1-Apr-08	5:27	0.2345	4.04	28	0.0287
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1-Apr-08	5:29	0.2346	4.07	28	0.0288
1-Apr-08	5:30	0.2346	4.08	28	0.0288
1-Apr-08	5:31	0.2346	4.09	28	0.0288
1-Apr-08	5:32	0.2346	4.11	28	0.0289
1-Apr-08	5:33	0.2347	4.12	28	0.0289
1-Apr-08	5:34	0.2347	4.13	28	0.0290
1-Apr-08	5:35	0.2347	4.14	28	0.0290
1-Apr-08	5:36	0.2347	4.15	28	0.0291
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1-Apr-08	5:38	0.2348	4.18	28	0.0292
1-Apr-08	5:39	0.2348	4.19	28	0.0292
1-Apr-08	5:40	0.2348	4.20	28	0.0293
1-Apr-08	5:41	0.2349	4.22	28	0.0293
1-Apr-08	5:42	0.2349	4.23	28	0.0293
1-Apr-08	5:43	0.2349	4.24	28	0.0294
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1-Apr-08	5:45	0.2350	4.27	28	0.0295
1-Apr-08	5:46	0.2350	4.28	28	0.0295

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1-Apr-08	5:48	0.2350	4.30	28	0.0296
1-Apr-08	5:49	0.2351	4.32	28	0.0297
1-Apr-08	5:50	0.2351	4.33	28	0.0297
1-Apr-08	5:51	0.2363	4.34	28	0.0297
1-Apr-08	5:52	0.2400	4.35	28	0.0298
1-Apr-08	5:53	0.2470	4.37	28	0.0298
1-Apr-08	5:54	0.2588	4.38	28	0.0299
1-Apr-08	5:55	0.2765	4.39	28	0.0299
1-Apr-08	5:56	0.2987	4.41	28	0.0300
1-Apr-08	5:57	0.3235	4.43	28	0.0301
1-Apr-08	5:58	0.3491	4.44	28	0.0301
1-Apr-08	5:59	0.3744	4.46	28	0.0302
1-Apr-08	6:00	0.3976	4.48	28	0.0303
1-Apr-08	6:01	0.4185	4.51	28	0.0304
1-Apr-08	6:02	0.4365	4.53	28	0.0304
1-Apr-08	6:03	0.4508	4.56	28	0.0305
1-Apr-08	6:04	0.4622	4.58	28	0.0306
1-Apr-08	6:05	0.4715	4.61	28	0.0307
1-Apr-08	6:06	0.4791	4.63	28	0.0308
1-Apr-08	6:07	0.4854	4.66	28	0.0309
1-Apr-08	6:08	0.4906	4.69	28	0.0310
1-Apr-08	6:09	0.4949	4.72	28	0.0311
1-Apr-08	6:10	0.4984	4.74	28	0.0312
1-Apr-08	6:11	0.5013	4.77	28	0.0313
1-Apr-08	6:12	0.5037	4.80	28	0.0314
1-Apr-08	6:13	0.5057	4.83	28	0.0315
1-Apr-08	6:14	0.5073	4.86	28	0.0316
1-Apr-08	6:15	0.5087	4.89	28	0.0317
1-Apr-08	6:16	0.5098	4.92	28	0.0318
1-Apr-08	6:17	0.5108	4.94	28	0.0319
1-Apr-08	6:18	0.5116	4.97	28	0.0320
1-Apr-08	6:19	0.5122	5.00	28	0.0321
1-Apr-08	6:20	0.5128	5.03	28	0.0323
1-Apr-08	6:21	0.5133	5.06	28	0.0324
1-Apr-08	6:22	0.5137	5.09	28	0.0325
1-Apr-08	6:23	0.5141	5.12	28	0.0326
1-Apr-08	6:24	0.5144	5.15	28	0.0327
1-Apr-08	6:25	0.5147	5.17	28	0.0328
1-Apr-08	6:26	0.5149	5.20	28	0.0329
1-Apr-08	6:27	0.5152	5.23	28	0.0330
1-Apr-08	6:28	0.5154	5.26	28	0.0331
1-Apr-08	6:29	0.5155	5.29	28	0.0331
1-Apr-08	6:30	0.5156	5.32	28	0.0332
1-Apr-08	6:31	0.5157	5.35	28	0.0333
1-Apr-08	6:32	0.5159	5.38	28	0.0334
1-Apr-08	6:33	0.5160	5.41	28	0.0335
1-Apr-08	6:34	0.5161	5.44	28	0.0335
1-Apr-08	6:35	0.5162	5.46	28	0.0336
1-Apr-08	6:36	0.5163	5.49	28	0.0337

1-Apr-08	6:37	0.5164	5.52	28	0.0338
1-Apr-08	6:38	0.5165	5.55	28	0.0338
1-Apr-08	6:39	0.5166	5.58	28	0.0339
1-Apr-08	6:40	0.5167	5.61	28	0.0340
1-Apr-08	6:41	0.5168	5.64	28	0.0341
1-Apr-08	6:42	0.5169	5.67	28	0.0342
1-Apr-08	6:43	0.5170	5.70	28	0.0342
1-Apr-08	6:44	0.5171	5.72	28	0.0343
1-Apr-08	6:45	0.5172	5.75	28	0.0344
1-Apr-08	6:46	0.5174	5.78	28	0.0345
1-Apr-08	6:47	0.5175	5.81	28	0.0345
1-Apr-08	6:48	0.5176	5.84	28	0.0346
1-Apr-08	6:49	0.5177	5.87	28	0.0347
1-Apr-08	6:50	0.5178	5.90	28	0.0348
1-Apr-08	6:51	0.5179	5.93	28	0.0349
1-Apr-08	6:52	0.5180	5.96	28	0.0349
1-Apr-08	6:53	0.5181	5.99	28	0.0350
1-Apr-08	6:54	0.5182	6.01	28	0.0351
1-Apr-08	6:55	0.5183	6.04	28	0.0352
1-Apr-08	6:56	0.5184	6.07	28	0.0352
1-Apr-08	6:57	0.5185	6.10	28	0.0353
1-Apr-08	6:58	0.5186	6.13	28	0.0354
1-Apr-08	6:59	0.5187	6.16	28	0.0355
1-Apr-08	7:00	0.5188	6.19	28	0.0356
1-Apr-08	7:01	0.5189	6.22	28	0.0356
1-Apr-08	7:02	0.5190	6.25	28	0.0357
1-Apr-08	7:03	0.5191	6.28	28	0.0358
1-Apr-08	7:04	0.5192	6.30	28	0.0359
1-Apr-08	7:05	0.5193	6.33	28	0.0359
1-Apr-08	7:06	0.5194	6.36	28	0.0360
1-Apr-08	7:07	0.5195	6.39	28	0.0361
1-Apr-08	7:08	0.5196	6.42	28	0.0362
1-Apr-08	7:09	0.5197	6.45	28	0.0363
1-Apr-08	7:10	0.5198	6.48	28	0.0364
1-Apr-08	7:11	0.5199	6.51	28	0.0365
1-Apr-08	7:12	0.5200	6.54	28	0.0367
1-Apr-08	7:13	0.5201	6.57	28	0.0368
1-Apr-08	7:14	0.5202	6.59	28	0.0369
1-Apr-08	7:15	0.5203	6.62	28	0.0370
1-Apr-08	7:16	0.5204	6.65	28	0.0371
1-Apr-08	7:17	0.5205	6.68	28	0.0372
1-Apr-08	7:18	0.5206	6.71	28	0.0373
1-Apr-08	7:19	0.5207	6.74	28	0.0374
1-Apr-08	7:20	0.5208	6.77	28	0.0375
1-Apr-08	7:21	0.5209	6.80	28	0.0376
1-Apr-08	7:22	0.5210	6.83	28	0.0377
1-Apr-08	7:23	0.5211	6.86	28	0.0378
1-Apr-08	7:24	0.5212	6.88	28	0.0379
1-Apr-08	7:25	0.5213	6.91	28	0.0380
1-Apr-08	7:26	0.5213	6.94	28	0.0381

1-Apr-08	7:27	0.5214	6.97	28	0.0382
1-Apr-08	7:28	0.5215	7.00	28	0.0383
1-Apr-08	7:29	0.5216	7.03	28	0.0384
1-Apr-08	7:30	0.5217	7.06	28	0.0385
1-Apr-08	7:31	0.5218	7.09	28	0.0386
1-Apr-08	7:32	0.5219	7.12	28	0.0387
1-Apr-08	7:33	0.5220	7.15	28	0.0388
1-Apr-08	7:34	0.5221	7.17	28	0.0389
1-Apr-08	7:35	0.5222	7.20	28	0.0390
1-Apr-08	7:36	0.5223	7.23	28	0.0391
1-Apr-08	7:37	0.5224	7.26	28	0.0392
1-Apr-08	7:38	0.5225	7.29	28	0.0393
1-Apr-08	7:39	0.5226	7.32	28	0.0394
1-Apr-08	7:40	0.5227	7.35	28	0.0395
1-Apr-08	7:41	0.5227	7.38	28	0.0396
1-Apr-08	7:42	0.5228	7.41	28	0.0397
1-Apr-08	7:43	0.5229	7.44	28	0.0398
1-Apr-08	7:44	0.5230	7.46	28	0.0399
1-Apr-08	7:45	0.5231	7.49	28	0.0400
1-Apr-08	7:46	0.5232	7.52	28	0.0401
1-Apr-08	7:47	0.5233	7.55	28	0.0401
1-Apr-08	7:48	0.5234	7.58	28	0.0402
1-Apr-08	7:49	0.5235	7.61	28	0.0402
1-Apr-08	7:50	0.5236	7.64	28	0.0403
1-Apr-08	7:51	0.5236	7.67	28	0.0403
1-Apr-08	7:52	0.5237	7.70	28	0.0404
1-Apr-08	7:53	0.5238	7.73	28	0.0404
1-Apr-08	7:54	0.5239	7.75	28	0.0405
1-Apr-08	7:55	0.5240	7.78	28	0.0405
1-Apr-08	7:56	0.5241	7.81	28	0.0406
1-Apr-08	7:57	0.5242	7.84	28	0.0406
1-Apr-08	7:58	0.5243	7.87	28	0.0407
1-Apr-08	7:59	0.5244	7.90	28	0.0407
1-Apr-08	8:00	0.5244	7.93	28	0.0408
1-Apr-08	8:01	0.5245	7.96	28	0.0408
1-Apr-08	8:02	0.5246	7.99	28	0.0409
1-Apr-08	8:03	0.5247	8.02	28	0.0409
1-Apr-08	8:04	0.5248	8.04	28	0.0410
1-Apr-08	8:05	0.5249	8.07	28	0.0410
1-Apr-08	8:06	0.5250	8.10	28	0.0411
1-Apr-08	8:07	0.5250	8.13	28	0.0411
1-Apr-08	8:08	0.5251	8.16	28	0.0412
1-Apr-08	8:09	0.5252	8.19	28	0.0412
1-Apr-08	8:10	0.5253	8.22	28	0.0413
1-Apr-08	8:11	0.5254	8.25	28	0.0413
1-Apr-08	8:12	0.5255	8.28	28	0.0414
1-Apr-08	8:13	0.5256	8.31	28	0.0414
1-Apr-08	8:14	0.5256	8.33	28	0.0415
1-Apr-08	8:15	0.5257	8.36	28	0.0415
1-Apr-08	8:16	0.5258	8.39	28	0.0416

1-Apr-08	8:17	0.5259	8.42	28	0.0416
1-Apr-08	8:18	0.5260	8.45	28	0.0417
1-Apr-08	8:19	0.5261	8.48	28	0.0417
1-Apr-08	8:20	0.5261	8.51	28	0.0418
1-Apr-08	8:21	0.5262	8.54	28	0.0418
1-Apr-08	8:22	0.5263	8.57	28	0.0419
1-Apr-08	8:23	0.5264	8.60	28	0.0419
1-Apr-08	8:24	0.5265	8.63	28	0.0420
1-Apr-08	8:25	0.5266	8.65	28	0.0431
1-Apr-08	8:26	0.5266	8.68	28	0.0444
1-Apr-08	8:27	0.5267	8.71	28	0.0458
1-Apr-08	8:28	0.5268	8.74	28	0.0471
1-Apr-08	8:29	0.5269	8.77	28	0.0484
1-Apr-08	8:30	0.5270	8.80	28	0.0498
1-Apr-08	8:31	0.5271	8.83	28	0.0511
1-Apr-08	8:32	0.5271	8.86	28	0.0524
1-Apr-08	8:33	0.5272	8.88	28	0.0538
1-Apr-08	8:34	0.5273	8.91	28	0.0551
1-Apr-08	8:35	0.5274	8.94	28	0.0564
1-Apr-08	8:36	0.5275	8.97	28	0.0577
1-Apr-08	8:37	0.5275	9.00	28	0.0590
1-Apr-08	8:38	0.5276	9.03	28	0.0603
1-Apr-08	8:39	0.5277	9.05	28	0.0616
1-Apr-08	8:40	0.5278	9.08	28	0.0629
1-Apr-08	8:41	0.5279	9.11	28	0.0642
1-Apr-08	8:42	0.5279	9.14	28	0.0655
1-Apr-08	8:43	0.5280	9.16	28	0.0668
1-Apr-08	8:44	0.5281	9.19	28	0.0681
1-Apr-08	8:45	0.5282	9.22	28	0.0694
1-Apr-08	8:46	0.5282	9.25	28	0.0706
1-Apr-08	8:47	0.5283	9.27	28	0.0719
1-Apr-08	8:48	0.5284	9.30	28	0.0732
1-Apr-08	8:49	0.5285	9.33	28	0.0744
1-Apr-08	8:50	0.5286	9.36	28	0.0757
1-Apr-08	8:51	0.5293	9.38	28	0.0770
1-Apr-08	8:52	0.5315	9.41	28	0.0782
1-Apr-08	8:53	0.5355	9.44	28	0.0795
1-Apr-08	8:54	0.5423	9.47	28	0.0808
1-Apr-08	8:55	0.5524	9.49	28	0.0821
1-Apr-08	8:56	0.5651	9.52	28	0.0834
1-Apr-08	8:57	0.5792	9.55	28	0.0848
1-Apr-08	8:58	0.5939	9.58	28	0.0862
1-Apr-08	8:59	0.6083	9.61	28	0.0876
1-Apr-08	9:00	0.6216	9.64	28	0.0891
1-Apr-08	9:01	0.6335	9.68	28	0.0906
1-Apr-08	9:02	0.6438	9.71	28	0.0921
1-Apr-08	9:03	0.6520	9.74	28	0.0936
1-Apr-08	9:04	0.6585	9.78	28	0.0952
1-Apr-08	9:05	0.6638	9.81	28	0.0974
1-Apr-08	9:06	0.6682	9.84	28	0.1001

1-Apr-08	9:07	0.6719	9.88	28	0.1029
1-Apr-08	9:08	0.6749	9.91	28	0.1057
1-Apr-08	9:09	0.6774	9.95	28	0.1085
1-Apr-08	9:10	0.6795	9.98	28	0.1113
1-Apr-08	9:11	0.6812	10.01	28	0.1141
1-Apr-08	9:12	0.6826	10.05	28	0.1168
1-Apr-08	9:13	0.6838	10.08	28	0.1196
1-Apr-08	9:14	0.6847	10.12	28	0.1223
1-Apr-08	9:15	0.6856	10.15	28	0.1251
1-Apr-08	9:16	0.6863	10.18	28	0.1278
1-Apr-08	9:17	0.6869	10.22	28	0.1306
1-Apr-08	9:18	0.6874	10.25	28	0.1333
1-Apr-08	9:19	0.6878	10.28	28	0.1360
1-Apr-08	9:20	0.6882	10.32	28	0.1387
1-Apr-08	9:21	0.6885	10.35	28	0.1414
1-Apr-08	9:22	0.6888	10.38	28	0.1440
1-Apr-08	9:23	0.6891	10.41	28	0.1467
1-Apr-08	9:24	0.6893	10.45	28	0.1493
1-Apr-08	9:25	0.6895	10.48	28	0.1520
1-Apr-08	9:26	0.6897	10.51	28	0.1546
1-Apr-08	9:27	0.6899	10.54	28	0.1572
1-Apr-08	9:28	0.6901	10.58	28	0.1598
1-Apr-08	9:29	0.6902	10.61	28	0.1624
1-Apr-08	9:30	0.6904	10.64	28	0.1650
1-Apr-08	9:31	0.6905	10.67	28	0.1675
1-Apr-08	9:32	0.6906	10.70	28	0.1701
1-Apr-08	9:33	0.6907	10.73	28	0.1726
1-Apr-08	9:34	0.6908	10.76	28	0.1752
1-Apr-08	9:35	0.6909	10.79	28	0.1777
1-Apr-08	9:36	0.6911	10.83	28	0.1802
1-Apr-08	9:37	0.6912	10.86	28	0.1827
1-Apr-08	9:38	0.6913	10.89	28	0.1852
1-Apr-08	9:39	0.6914	10.92	28	0.1876
1-Apr-08	9:40	0.6915	10.95	28	0.1901
1-Apr-08	9:41	0.6916	10.98	28	0.1927
1-Apr-08	9:42	0.6917	11.01	28	0.1958
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1-Apr-08	9:47	0.6923	11.15	28	0.2109
1-Apr-08	9:48	0.6924	11.18	28	0.2139
1-Apr-08	9:49	0.6925	11.21	28	0.2168
1-Apr-08	9:50	0.6926	11.24	28	0.2197
1-Apr-08	9:51	0.6941	11.27	28	0.2227
1-Apr-08	9:52	0.6984	11.30	28	0.2256
1-Apr-08	9:53	0.7066	11.32	28	0.2285
1-Apr-08	9:54	0.7202	11.35	28	0.2315
1-Apr-08	9:55	0.7406	11.38	28	0.2346
1-Apr-08	9:56	0.7661	11.41	28	0.2378

1-Apr-08	9:57	0.7947	11.45	28	0.2411
1-Apr-08	9:58	0.8242	11.48	28	0.2446
1-Apr-08	9:59	0.8533	11.52	28	0.2483
1-Apr-08	10:00	0.8801	11.55	28	0.2521
1-Apr-08	10:01	0.9042	11.59	28	0.2561
1-Apr-08	10:02	0.9249	11.63	28	0.2601
1-Apr-08	10:03	0.9414	11.67	28	0.2643
1-Apr-08	10:04	0.9546	11.71	28	0.2685
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1-Apr-08	10:06	0.9741	11.79	28	0.2771
1-Apr-08	10:07	0.9815	11.84	28	0.2814
1-Apr-08	10:08	0.9876	11.88	28	0.2857
1-Apr-08	10:09	0.9926	11.92	28	0.2901
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1-Apr-08	10:11	1.0001	12.01	28	0.2987
1-Apr-08	10:12	1.0030	12.05	28	0.3031
1-Apr-08	10:13	1.0053	12.09	28	0.3074
1-Apr-08	10:14	1.0073	12.13	28	0.3117
1-Apr-08	10:15	1.0089	12.17	28	0.3162
1-Apr-08	10:16	1.0103	12.21	28	0.3212
1-Apr-08	10:17	1.0115	12.26	28	0.3262
1-Apr-08	10:18	1.0125	12.30	28	0.3311
1-Apr-08	10:19	1.0133	12.34	28	0.3361
1-Apr-08	10:20	1.0141	12.38	28	0.3410
1-Apr-08	10:21	1.0147	12.42	28	0.3458
1-Apr-08	10:22	1.0153	12.46	28	0.3507
1-Apr-08	10:23	1.0158	12.50	28	0.3555
1-Apr-08	10:24	1.0162	12.54	28	0.3602
1-Apr-08	10:25	1.0166	12.58	28	0.3650
1-Apr-08	10:26	1.0170	12.62	28	0.3697
1-Apr-08	10:27	1.0173	12.65	28	0.3744
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1-Apr-08	10:29	1.0179	12.73	28	0.3836
1-Apr-08	10:30	1.0181	12.77	28	0.3882
1-Apr-08	10:31	1.0183	12.81	28	0.3928
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1-Apr-08	10:33	1.0187	12.88	28	0.4018
1-Apr-08	10:34	1.0189	12.92	28	0.4062
1-Apr-08	10:35	1.0191	12.95	28	0.4107
1-Apr-08	10:36	1.0193	12.99	28	0.4151
1-Apr-08	10:37	1.0195	13.03	28	0.4194
1-Apr-08	10:38	1.0197	13.06	28	0.4238
1-Apr-08	10:39	1.0199	13.10	28	0.4281
1-Apr-08	10:40	1.0201	13.13	28	0.4323
1-Apr-08	10:41	1.0203	13.17	28	0.4366
1-Apr-08	10:42	1.0205	13.20	28	0.4408
1-Apr-08	10:43	1.0207	13.24	28	0.4450
1-Apr-08	10:44	1.0209	13.27	28	0.4492
1-Apr-08	10:45	1.0211	13.31	28	0.4533
1-Apr-08	10:46	1.0213	13.34	28	0.4574

1-Apr-08	10:47	1.0214	13.37	28	0.4615
1-Apr-08	10:48	1.0216	13.41	28	0.4660
1-Apr-08	10:49	1.0218	13.44	28	0.4705
1-Apr-08	10:50	1.0220	13.47	28	0.4749
1-Apr-08	10:51	1.0247	13.51	28	0.4794
1-Apr-08	10:52	1.0326	13.54	28	0.4838
1-Apr-08	10:53	1.0476	13.57	28	0.4883
1-Apr-08	10:54	1.0727	13.61	28	0.4929
1-Apr-08	10:55	1.1101	13.64	28	0.4977
1-Apr-08	10:56	1.1571	13.68	28	0.5028
1-Apr-08	10:57	1.2098	13.72	28	0.5083
1-Apr-08	10:58	1.2641	13.77	28	0.5142
1-Apr-08	10:59	1.3176	13.81	28	0.5204
1-Apr-08	11:00	1.3669	13.86	28	0.5271
1-Apr-08	11:01	1.4112	13.91	28	0.5340
1-Apr-08	11:02	1.4494	13.97	28	0.5412
1-Apr-08	11:03	1.4798	14.02	28	0.5487
1-Apr-08	11:04	1.5040	14.08	28	0.5563
1-Apr-08	11:05	1.5238	14.13	28	0.5640
1-Apr-08	11:06	1.5400	14.19	28	0.5718
1-Apr-08	11:07	1.5536	14.25	28	0.5796
1-Apr-08	11:08	1.5648	14.31	28	0.5875
1-Apr-08	11:09	1.5740	14.37	28	0.5954
1-Apr-08	11:10	1.5816	14.43	28	0.6033
1-Apr-08	11:11	1.5879	14.49	28	0.6112
1-Apr-08	11:12	1.5932	14.54	28	0.6191
1-Apr-08	11:13	1.5975	14.60	28	0.6271
1-Apr-08	11:14	1.6011	14.66	28	0.6356
1-Apr-08	11:15	1.6041	14.72	28	0.6440
1-Apr-08	11:16	1.6067	14.78	28	0.6524
1-Apr-08	11:17	1.6088	14.83	28	0.6607
1-Apr-08	11:18	1.6107	14.89	28	0.6690
1-Apr-08	11:19	1.6122	14.95	28	0.6772
1-Apr-08	11:20	1.6136	15.00	28	0.6854
1-Apr-08	11:21	1.6198	15.06	28	0.6935
1-Apr-08	11:22	1.6364	15.11	28	0.7017
1-Apr-08	11:23	1.6673	15.17	28	0.7100
1-Apr-08	11:24	1.7183	15.23	28	0.7185
1-Apr-08	11:25	1.7941	15.29	28	0.7276
1-Apr-08	11:26	1.8892	15.36	28	0.7373
1-Apr-08	11:27	1.9956	15.43	28	0.7478
1-Apr-08	11:28	2.1053	15.51	28	0.7592
1-Apr-08	11:29	2.2133	15.59	28	0.7714
1-Apr-08	11:30	2.3128	15.68	28	0.7844
1-Apr-08	11:31	2.4055	15.77	28	0.7982
1-Apr-08	11:32	2.4922	15.87	28	0.8130
1-Apr-08	11:33	2.5724	15.97	28	0.8293
1-Apr-08	11:34	2.6528	16.08	28	0.8461
1-Apr-08	11:35	2.7400	16.19	28	0.8635
1-Apr-08	11:36	2.8321	16.31	28	0.8816

1-Apr-08	11:37	2.9260	16.43	28	0.9005
1-Apr-08	11:38	3.0173	16.55	28	0.9200
1-Apr-08	11:39	3.1036	16.68	28	0.9402
1-Apr-08	11:40	3.1814	16.81	28	0.9610
1-Apr-08	11:41	3.2626	16.94	28	0.9823
1-Apr-08	11:42	3.3596	17.08	28	1.0042
1-Apr-08	11:43	3.4805	17.23	28	1.0282
1-Apr-08	11:44	3.6419	17.38	28	1.0533
1-Apr-08	11:45	3.8577	17.54	28	1.0800
1-Apr-08	11:46	4.1156	17.71	28	1.1089
1-Apr-08	11:47	4.3976	17.90	28	1.1401
1-Apr-08	11:48	4.6843	18.10	28	1.1738
1-Apr-08	11:49	4.9640	18.32	28	1.2100
1-Apr-08	11:50	5.2208	18.55	28	1.2504
1-Apr-08	11:51	5.4751	18.80	28	1.2934
1-Apr-08	11:52	5.7469	19.06	28	1.3387
1-Apr-08	11:53	6.0478	19.33	28	1.3865
1-Apr-08	11:54	6.4135	19.62	28	1.4373
1-Apr-08	11:55	6.8750	19.93	28	1.4937
1-Apr-08	11:56	7.4105	20.27	28	1.5551
1-Apr-08	11:57	7.9869	20.63	28	1.6219
1-Apr-08	11:58	8.5675	21.03	28	1.6949
1-Apr-08	11:59	9.1305	21.46	28	1.7759
1-Apr-08	12:00	9.6453	21.91	28	1.8621
1-Apr-08	12:01	10.0726	22.39	28	1.9739
1-Apr-08	12:02	10.3665	22.88	28	2.1509
1-Apr-08	12:03	10.4864	23.37	28	2.3285
1-Apr-08	12:04	10.4094	23.85	28	2.5372
1-Apr-08	12:05	10.1235	24.30	28	2.7653
1-Apr-08	12:06	9.6726	24.73	28	2.9758
1-Apr-08	12:07	9.1195	25.11	28	3.1796
1-Apr-08	12:08	8.5195	25.44	28	3.3754
1-Apr-08	12:09	7.9093	25.72	28	3.5433
1-Apr-08	12:10	7.3373	25.96	28	3.6849
1-Apr-08	12:11	6.8116	26.16	28	3.8026
1-Apr-08	12:12	6.3461	26.33	28	3.8988
1-Apr-08	12:13	5.9582	26.46	28	3.9763
1-Apr-08	12:14	5.6230	26.57	28	4.0386
1-Apr-08	12:15	5.3129	26.65	28	4.0877
1-Apr-08	12:16	5.0241	26.72	28	4.1249
1-Apr-08	12:17	4.7536	26.76	28	4.1511
1-Apr-08	12:18	4.5072	26.79	28	4.1676
1-Apr-08	12:19	4.2862	26.80	28	4.1754
1-Apr-08	12:20	4.0936	26.80	28	4.1759
1-Apr-08	12:21	3.9233	26.79	28	4.1702
1-Apr-08	12:22	3.7702	26.77	28	4.1591
1-Apr-08	12:23	3.6332	26.75	28	4.1434
1-Apr-08	12:24	3.5018	26.71	28	4.1236
1-Apr-08	12:25	3.3661	26.67	28	4.0999
1-Apr-08	12:26	3.2278	26.62	28	4.0723

1-Apr-08	12:27	3.0900	26.57	28	4.0409
1-Apr-08	12:28	2.9581	26.51	28	4.0060
1-Apr-08	12:29	2.8349	26.45	28	3.9678
1-Apr-08	12:30	2.7245	26.38	28	3.9270
1-Apr-08	12:31	2.6275	26.30	28	3.8840
1-Apr-08	12:32	2.5450	26.23	28	3.8390
1-Apr-08	12:33	2.4789	26.15	28	3.7929
1-Apr-08	12:34	2.4259	26.07	28	3.7464
1-Apr-08	12:35	2.3826	25.99	28	3.6998
1-Apr-08	12:36	2.3475	25.91	28	3.6535
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1-Apr-08	12:38	2.2952	25.76	28	3.5625
1-Apr-08	12:39	2.2767	25.68	28	3.5182
1-Apr-08	12:40	2.2622	25.61	28	3.4748
1-Apr-08	12:41	2.2509	25.54	28	3.4325
1-Apr-08	12:42	2.2416	25.47	28	3.3914
1-Apr-08	12:43	2.2340	25.40	28	3.3513
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1-Apr-08	12:45	2.2228	25.27	28	3.2747
1-Apr-08	12:46	2.2187	25.20	28	3.2381
1-Apr-08	12:47	2.2155	25.14	28	3.2027
1-Apr-08	12:48	2.2129	25.09	28	3.1684
1-Apr-08	12:49	2.2109	25.03	28	3.1352
1-Apr-08	12:50	2.2095	24.98	28	3.1031
1-Apr-08	12:51	2.2045	24.92	28	3.0738
1-Apr-08	12:52	2.1916	24.87	28	3.0479
1-Apr-08	12:53	2.1677	24.82	28	3.0223
1-Apr-08	12:54	2.1283	24.77	28	2.9965
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1-Apr-08	12:56	1.9966	24.66	28	2.9424
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1-Apr-08	12:58	1.8303	24.54	28	2.8825
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1-Apr-08	13:00	1.6709	24.41	28	2.8166
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1-Apr-08	13:02	1.5436	24.27	28	2.7461
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1-Apr-08	13:05	1.4297	24.05	28	2.6373
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1-Apr-08	13:07	1.3846	23.90	28	2.5657
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1-Apr-08	13:09	1.3541	23.77	28	2.4960
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1-Apr-08	13:12	1.3264	23.57	28	2.4005
1-Apr-08	13:13	1.3203	23.50	28	2.3774
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1-Apr-08	13:21	1.2989	23.03	28	2.2068
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1-Apr-08	13:42	1.2958	22.10	28	1.8991
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1-Apr-08	13:48	1.2962	21.89	28	1.8593
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1-Apr-08	14:16	0.9219	20.75	28	1.6439
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1-Apr-08	14:36	0.9166	19.97	28	1.5012
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1-Apr-08	14:39	0.9167	19.87	28	1.4824
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1-Apr-08	17:30	0.5748	15.52	28	0.7616
1-Apr-08	17:31	0.5748	15.51	28	0.7600
1-Apr-08	17:32	0.5748	15.50	28	0.7584
1-Apr-08	17:33	0.5748	15.49	28	0.7568
1-Apr-08	17:34	0.5748	15.48	28	0.7552
1-Apr-08	17:35	0.5748	15.47	28	0.7536
1-Apr-08	17:36	0.5748	15.46	28	0.7521
1-Apr-08	17:37	0.5748	15.45	28	0.7505
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1-Apr-08	17:39	0.5748	15.43	28	0.7475
1-Apr-08	17:40	0.5748	15.42	28	0.7460
1-Apr-08	17:41	0.5748	15.41	28	0.7445
1-Apr-08	17:42	0.5749	15.40	28	0.7430
1-Apr-08	17:43	0.5749	15.39	28	0.7415
1-Apr-08	17:44	0.5749	15.38	28	0.7401
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1-Apr-08	17:48	0.5749	15.34	28	0.7344
1-Apr-08	17:49	0.5749	15.33	28	0.7330
1-Apr-08	17:50	0.5749	15.32	28	0.7316
1-Apr-08	17:51	0.5738	15.31	28	0.7302
1-Apr-08	17:52	0.5703	15.30	28	0.7288
1-Apr-08	17:53	0.5635	15.29	28	0.7274
1-Apr-08	17:54	0.5521	15.28	28	0.7260
1-Apr-08	17:55	0.5350	15.27	28	0.7244
1-Apr-08	17:56	0.5136	15.26	28	0.7226
1-Apr-08	17:57	0.4895	15.24	28	0.7207
1-Apr-08	17:58	0.4648	15.23	28	0.7186
1-Apr-08	17:59	0.4404	15.21	28	0.7162
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1-Apr-08	18:09	0.3245	15.01	28	0.6867
1-Apr-08	18:10	0.3212	14.99	28	0.6835
1-Apr-08	18:11	0.3185	14.97	28	0.6803
1-Apr-08	18:12	0.3163	14.95	28	0.6772
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1-Apr-08	18:14	0.3130	14.90	28	0.6709
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1-Apr-08	19:09	0.3068	13.94	28	0.5379
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1-Apr-08	19:12	0.3068	13.90	28	0.5324
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1-Apr-08	19:15	0.3069	13.86	28	0.5270
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1-Apr-08	19:18	0.3069	13.82	28	0.5217
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1-Apr-08	19:29	0.3069	13.69	28	0.5034
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1-Apr-08	20:05	0.3070	13.32	28	0.4545
1-Apr-08	20:06	0.3070	13.31	28	0.4534
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1-Apr-08	20:10	0.3070	13.27	28	0.4493
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1-Apr-08	22:22	0.3073	12.55	28	0.3617
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1-Apr-08	22:26	0.3073	12.54	28	0.3602

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1-Apr-08	22:29	0.3073	12.53	28	0.3590
1-Apr-08	22:30	0.3073	12.52	28	0.3586
1-Apr-08	22:31	0.3073	12.52	28	0.3583
1-Apr-08	22:32	0.3073	12.52	28	0.3579
1-Apr-08	22:33	0.3073	12.51	28	0.3575
1-Apr-08	22:34	0.3073	12.51	28	0.3572
1-Apr-08	22:35	0.3073	12.51	28	0.3568
1-Apr-08	22:36	0.3073	12.51	28	0.3565
1-Apr-08	22:37	0.3073	12.50	28	0.3561
1-Apr-08	22:38	0.3073	12.50	28	0.3558
1-Apr-08	22:39	0.3073	12.50	28	0.3554
1-Apr-08	22:40	0.3073	12.49	28	0.3551
1-Apr-08	22:41	0.3073	12.49	28	0.3547
1-Apr-08	22:42	0.3073	12.49	28	0.3544
1-Apr-08	22:43	0.3073	12.49	28	0.3540
1-Apr-08	22:44	0.3073	12.48	28	0.3537
1-Apr-08	22:45	0.3073	12.48	28	0.3534
1-Apr-08	22:46	0.3073	12.48	28	0.3530
1-Apr-08	22:47	0.3073	12.47	28	0.3527
1-Apr-08	22:48	0.3073	12.47	28	0.3524
1-Apr-08	22:49	0.3073	12.47	28	0.3520
1-Apr-08	22:50	0.3073	12.47	28	0.3517
1-Apr-08	22:51	0.3073	12.46	28	0.3514
1-Apr-08	22:52	0.3073	12.46	28	0.3511
1-Apr-08	22:53	0.3073	12.46	28	0.3508
1-Apr-08	22:54	0.3073	12.46	28	0.3504
1-Apr-08	22:55	0.3073	12.45	28	0.3501
1-Apr-08	22:56	0.3073	12.45	28	0.3498
1-Apr-08	22:57	0.3074	12.45	28	0.3495
1-Apr-08	22:58	0.3074	12.45	28	0.3492
1-Apr-08	22:59	0.3074	12.44	28	0.3489
1-Apr-08	23:00	0.3074	12.44	28	0.3486
1-Apr-08	23:01	0.3074	12.44	28	0.3483
1-Apr-08	23:02	0.3074	12.44	28	0.3480
1-Apr-08	23:03	0.3074	12.43	28	0.3477
1-Apr-08	23:04	0.3074	12.43	28	0.3474
1-Apr-08	23:05	0.3074	12.43	28	0.3471
1-Apr-08	23:06	0.3074	12.43	28	0.3469
1-Apr-08	23:07	0.3074	12.42	28	0.3466
1-Apr-08	23:08	0.3074	12.42	28	0.3463
1-Apr-08	23:09	0.3074	12.42	28	0.3460
1-Apr-08	23:10	0.3074	12.42	28	0.3457
1-Apr-08	23:11	0.3074	12.41	28	0.3455
1-Apr-08	23:12	0.3074	12.41	28	0.3452
1-Apr-08	23:13	0.3074	12.41	28	0.3449
1-Apr-08	23:14	0.3074	12.41	28	0.3446
1-Apr-08	23:15	0.3074	12.41	28	0.3444
1-Apr-08	23:16	0.3074	12.40	28	0.3441

1-Apr-08	23:17	0.3074	12.40	28	0.3438
1-Apr-08	23:18	0.3074	12.40	28	0.3436
1-Apr-08	23:19	0.3074	12.40	28	0.3433
1-Apr-08	23:20	0.3074	12.40	28	0.3430
1-Apr-08	23:21	0.3074	12.39	28	0.3428
1-Apr-08	23:22	0.3074	12.39	28	0.3425
1-Apr-08	23:23	0.3074	12.39	28	0.3423
1-Apr-08	23:24	0.3074	12.39	28	0.3420
1-Apr-08	23:25	0.3074	12.38	28	0.3418
1-Apr-08	23:26	0.3074	12.38	28	0.3415
1-Apr-08	23:27	0.3074	12.38	28	0.3413
1-Apr-08	23:28	0.3074	12.38	28	0.3410
1-Apr-08	23:29	0.3074	12.38	28	0.3408
1-Apr-08	23:30	0.3074	12.37	28	0.3406
1-Apr-08	23:31	0.3074	12.37	28	0.3403
1-Apr-08	23:32	0.3074	12.37	28	0.3401
1-Apr-08	23:33	0.3074	12.37	28	0.3398
1-Apr-08	23:34	0.3074	12.37	28	0.3396
1-Apr-08	23:35	0.3074	12.36	28	0.3394
1-Apr-08	23:36	0.3074	12.36	28	0.3391
1-Apr-08	23:37	0.3074	12.36	28	0.3389
1-Apr-08	23:38	0.3074	12.36	28	0.3387
1-Apr-08	23:39	0.3074	12.36	28	0.3385
1-Apr-08	23:40	0.3074	12.36	28	0.3382
1-Apr-08	23:41	0.3074	12.35	28	0.3380
1-Apr-08	23:42	0.3074	12.35	28	0.3378
1-Apr-08	23:43	0.3074	12.35	28	0.3376
1-Apr-08	23:44	0.3074	12.35	28	0.3374
1-Apr-08	23:45	0.3074	12.35	28	0.3371
1-Apr-08	23:46	0.3075	12.34	28	0.3369
1-Apr-08	23:47	0.3075	12.34	28	0.3367
1-Apr-08	23:48	0.3075	12.34	28	0.3365
1-Apr-08	23:49	0.3075	12.34	28	0.3363
1-Apr-08	23:50	0.3075	12.34	28	0.3361
1-Apr-08	23:51	0.3075	12.34	28	0.3359
1-Apr-08	23:52	0.3075	12.33	28	0.3357
1-Apr-08	23:53	0.3075	12.33	28	0.3355
1-Apr-08	23:54	0.3075	12.33	28	0.3353
1-Apr-08	23:55	0.3075	12.33	28	0.3351
1-Apr-08	23:56	0.3075	12.33	28	0.3349
1-Apr-08	23:57	0.3075	12.33	28	0.3347
1-Apr-08	23:58	0.3075	12.32	28	0.3345
1-Apr-08	23:59	0.3075	12.32	28	0.3343
2-Apr-08	0:00	0.3075	12.32	28	0.3341

Highgate - 50yr CC - Time Series Inflow (Wetland)						
Date	Time	Inflow m3/s	Storage	Elevation m	Outflow m3/s	6.3195
1-Apr-08	0:00	0.0000	0.00	28	0.0000	
1-Apr-08	0:01	0.0013	0.00	28	0.0000	
1-Apr-08	0:02	0.0053	0.00	28	0.0000	
1-Apr-08	0:03	0.0131	0.00	28	0.0000	
1-Apr-08	0:04	0.0261	0.00	28	0.0000	
1-Apr-08	0:05	0.0455	0.00	28	0.0001	
1-Apr-08	0:06	0.0700	0.01	28	0.0001	
1-Apr-08	0:07	0.0973	0.01	28	0.0002	
1-Apr-08	0:08	0.1256	0.02	28	0.0003	
1-Apr-08	0:09	0.1533	0.03	28	0.0004	
1-Apr-08	0:10	0.1789	0.04	28	0.0005	
1-Apr-08	0:11	0.2019	0.05	28	0.0006	
1-Apr-08	0:12	0.2217	0.06	28	0.0008	
1-Apr-08	0:13	0.2374	0.08	28	0.0010	
1-Apr-08	0:14	0.2498	0.09	28	0.0012	
1-Apr-08	0:15	0.2599	0.11	28	0.0014	
1-Apr-08	0:16	0.2682	0.12	28	0.0016	
1-Apr-08	0:17	0.2751	0.14	28	0.0018	
1-Apr-08	0:18	0.2808	0.15	28	0.0020	
1-Apr-08	0:19	0.2854	0.17	28	0.0022	
1-Apr-08	0:20	0.2891	0.19	28	0.0024	
1-Apr-08	0:21	0.2922	0.20	28	0.0027	
1-Apr-08	0:22	0.2947	0.22	28	0.0029	
1-Apr-08	0:23	0.2968	0.24	28	0.0031	
1-Apr-08	0:24	0.2984	0.26	28	0.0034	
1-Apr-08	0:25	0.2998	0.28	28	0.0036	
1-Apr-08	0:26	0.3009	0.29	28	0.0038	
1-Apr-08	0:27	0.3019	0.31	28	0.0040	
1-Apr-08	0:28	0.3026	0.33	28	0.0042	
1-Apr-08	0:29	0.3032	0.35	28	0.0044	
1-Apr-08	0:30	0.3037	0.36	28	0.0046	
1-Apr-08	0:31	0.3041	0.38	28	0.0048	
1-Apr-08	0:32	0.3045	0.40	28	0.0050	
1-Apr-08	0:33	0.3048	0.42	28	0.0051	
1-Apr-08	0:34	0.3050	0.44	28	0.0053	
1-Apr-08	0:35	0.3052	0.45	28	0.0055	
1-Apr-08	0:36	0.3054	0.47	28	0.0057	
1-Apr-08	0:37	0.3055	0.49	28	0.0059	
1-Apr-08	0:38	0.3056	0.51	28	0.0061	
1-Apr-08	0:39	0.3056	0.53	28	0.0063	
1-Apr-08	0:40	0.3057	0.54	28	0.0064	
1-Apr-08	0:41	0.3057	0.56	28	0.0066	
1-Apr-08	0:42	0.3057	0.58	28	0.0068	
1-Apr-08	0:43	0.3057	0.60	28	0.0070	
1-Apr-08	0:44	0.3057	0.62	28	0.0072	
1-Apr-08	0:45	0.3057	0.63	28	0.0074	
1-Apr-08	0:46	0.3057	0.65	28	0.0075	

1-Apr-08	0:47	0.3057	0.67	28	0.0077
1-Apr-08	0:48	0.3057	0.69	28	0.0079
1-Apr-08	0:49	0.3057	0.71	28	0.0081
1-Apr-08	0:50	0.3057	0.72	28	0.0083
1-Apr-08	0:51	0.3057	0.74	28	0.0085
1-Apr-08	0:52	0.3057	0.76	28	0.0086
1-Apr-08	0:53	0.3057	0.78	28	0.0088
1-Apr-08	0:54	0.3057	0.79	28	0.0090
1-Apr-08	0:55	0.3057	0.81	28	0.0092
1-Apr-08	0:56	0.3057	0.83	28	0.0094
1-Apr-08	0:57	0.3057	0.85	28	0.0096
1-Apr-08	0:58	0.3057	0.87	28	0.0097
1-Apr-08	0:59	0.3057	0.88	28	0.0099
1-Apr-08	1:00	0.3057	0.90	28	0.0101
1-Apr-08	1:01	0.3057	0.92	28	0.0103
1-Apr-08	1:02	0.3057	0.94	28	0.0105
1-Apr-08	1:03	0.3057	0.95	28	0.0106
1-Apr-08	1:04	0.3057	0.97	28	0.0108
1-Apr-08	1:05	0.3057	0.99	28	0.0110
1-Apr-08	1:06	0.3057	1.01	28	0.0112
1-Apr-08	1:07	0.3057	1.03	28	0.0114
1-Apr-08	1:08	0.3057	1.04	28	0.0116
1-Apr-08	1:09	0.3057	1.06	28	0.0117
1-Apr-08	1:10	0.3057	1.08	28	0.0119
1-Apr-08	1:11	0.3057	1.10	28	0.0121
1-Apr-08	1:12	0.3057	1.11	28	0.0122
1-Apr-08	1:13	0.3057	1.13	28	0.0124
1-Apr-08	1:14	0.3057	1.15	28	0.0126
1-Apr-08	1:15	0.3057	1.17	28	0.0127
1-Apr-08	1:16	0.3057	1.18	28	0.0129
1-Apr-08	1:17	0.3057	1.20	28	0.0130
1-Apr-08	1:18	0.3057	1.22	28	0.0132
1-Apr-08	1:19	0.3057	1.24	28	0.0133
1-Apr-08	1:20	0.3057	1.25	28	0.0135
1-Apr-08	1:21	0.3057	1.27	28	0.0137
1-Apr-08	1:22	0.3057	1.29	28	0.0138
1-Apr-08	1:23	0.3057	1.31	28	0.0140
1-Apr-08	1:24	0.3057	1.32	28	0.0141
1-Apr-08	1:25	0.3057	1.34	28	0.0143
1-Apr-08	1:26	0.3057	1.36	28	0.0144
1-Apr-08	1:27	0.3057	1.38	28	0.0146
1-Apr-08	1:28	0.3057	1.39	28	0.0148
1-Apr-08	1:29	0.3057	1.41	28	0.0149
1-Apr-08	1:30	0.3057	1.43	28	0.0151
1-Apr-08	1:31	0.3057	1.45	28	0.0152
1-Apr-08	1:32	0.3057	1.46	28	0.0154
1-Apr-08	1:33	0.3057	1.48	28	0.0155
1-Apr-08	1:34	0.3057	1.50	28	0.0157
1-Apr-08	1:35	0.3057	1.52	28	0.0159
1-Apr-08	1:36	0.3057	1.53	28	0.0160

1-Apr-08	1:37	0.3057	1.55	28	0.0162
1-Apr-08	1:38	0.3057	1.57	28	0.0163
1-Apr-08	1:39	0.3057	1.59	28	0.0165
1-Apr-08	1:40	0.3057	1.60	28	0.0166
1-Apr-08	1:41	0.3057	1.62	28	0.0168
1-Apr-08	1:42	0.3057	1.64	28	0.0169
1-Apr-08	1:43	0.3058	1.65	28	0.0171
1-Apr-08	1:44	0.3058	1.67	28	0.0173
1-Apr-08	1:45	0.3058	1.69	28	0.0174
1-Apr-08	1:46	0.3059	1.71	28	0.0176
1-Apr-08	1:47	0.3059	1.72	28	0.0177
1-Apr-08	1:48	0.3060	1.74	28	0.0179
1-Apr-08	1:49	0.3060	1.76	28	0.0180
1-Apr-08	1:50	0.3061	1.78	28	0.0182
1-Apr-08	1:51	0.3061	1.79	28	0.0183
1-Apr-08	1:52	0.3062	1.81	28	0.0185
1-Apr-08	1:53	0.3062	1.83	28	0.0186
1-Apr-08	1:54	0.3063	1.84	28	0.0188
1-Apr-08	1:55	0.3064	1.86	28	0.0190
1-Apr-08	1:56	0.3064	1.88	28	0.0191
1-Apr-08	1:57	0.3065	1.90	28	0.0193
1-Apr-08	1:58	0.3065	1.91	28	0.0194
1-Apr-08	1:59	0.3066	1.93	28	0.0196
1-Apr-08	2:00	0.3066	1.95	28	0.0197
1-Apr-08	2:01	0.3067	1.97	28	0.0199
1-Apr-08	2:02	0.3068	1.98	28	0.0200
1-Apr-08	2:03	0.3068	2.00	28	0.0201
1-Apr-08	2:04	0.3069	2.02	28	0.0202
1-Apr-08	2:05	0.3069	2.03	28	0.0203
1-Apr-08	2:06	0.3070	2.05	28	0.0203
1-Apr-08	2:07	0.3070	2.07	28	0.0204
1-Apr-08	2:08	0.3071	2.09	28	0.0205
1-Apr-08	2:09	0.3072	2.10	28	0.0206
1-Apr-08	2:10	0.3072	2.12	28	0.0207
1-Apr-08	2:11	0.3073	2.14	28	0.0207
1-Apr-08	2:12	0.3073	2.15	28	0.0208
1-Apr-08	2:13	0.3074	2.17	28	0.0209
1-Apr-08	2:14	0.3074	2.19	28	0.0210
1-Apr-08	2:15	0.3075	2.21	28	0.0211
1-Apr-08	2:16	0.3075	2.22	28	0.0211
1-Apr-08	2:17	0.3076	2.24	28	0.0212
1-Apr-08	2:18	0.3077	2.26	28	0.0213
1-Apr-08	2:19	0.3077	2.27	28	0.0214
1-Apr-08	2:20	0.3078	2.29	28	0.0215
1-Apr-08	2:21	0.3078	2.31	28	0.0215
1-Apr-08	2:22	0.3079	2.33	28	0.0216
1-Apr-08	2:23	0.3079	2.34	28	0.0217
1-Apr-08	2:24	0.3080	2.36	28	0.0218
1-Apr-08	2:25	0.3080	2.38	28	0.0219
1-Apr-08	2:26	0.3081	2.39	28	0.0219

1-Apr-08	2:27	0.3082	2.41	28	0.0220
1-Apr-08	2:28	0.3082	2.43	28	0.0221
1-Apr-08	2:29	0.3083	2.45	28	0.0222
1-Apr-08	2:30	0.3083	2.46	28	0.0223
1-Apr-08	2:31	0.3084	2.48	28	0.0223
1-Apr-08	2:32	0.3084	2.50	28	0.0224
1-Apr-08	2:33	0.3085	2.52	28	0.0225
1-Apr-08	2:34	0.3085	2.53	28	0.0226
1-Apr-08	2:35	0.3086	2.55	28	0.0227
1-Apr-08	2:36	0.3087	2.57	28	0.0227
1-Apr-08	2:37	0.3087	2.58	28	0.0228
1-Apr-08	2:38	0.3088	2.60	28	0.0229
1-Apr-08	2:39	0.3088	2.62	28	0.0230
1-Apr-08	2:40	0.3089	2.64	28	0.0231
1-Apr-08	2:41	0.3089	2.65	28	0.0231
1-Apr-08	2:42	0.3090	2.67	28	0.0232
1-Apr-08	2:43	0.3090	2.69	28	0.0233
1-Apr-08	2:44	0.3091	2.70	28	0.0234
1-Apr-08	2:45	0.3091	2.72	28	0.0235
1-Apr-08	2:46	0.3092	2.74	28	0.0235
1-Apr-08	2:47	0.3092	2.76	28	0.0236
1-Apr-08	2:48	0.3093	2.77	28	0.0237
1-Apr-08	2:49	0.3093	2.79	28	0.0238
1-Apr-08	2:50	0.3094	2.81	28	0.0239
1-Apr-08	2:51	0.3095	2.82	28	0.0239
1-Apr-08	2:52	0.3095	2.84	28	0.0240
1-Apr-08	2:53	0.3096	2.86	28	0.0241
1-Apr-08	2:54	0.3096	2.88	28	0.0242
1-Apr-08	2:55	0.3097	2.89	28	0.0243
1-Apr-08	2:56	0.3097	2.91	28	0.0243
1-Apr-08	2:57	0.3098	2.93	28	0.0244
1-Apr-08	2:58	0.3098	2.94	28	0.0245
1-Apr-08	2:59	0.3099	2.96	28	0.0246
1-Apr-08	3:00	0.3099	2.98	28	0.0247
1-Apr-08	3:01	0.3100	2.99	28	0.0247
1-Apr-08	3:02	0.3100	3.01	28	0.0248
1-Apr-08	3:03	0.3101	3.03	28	0.0249
1-Apr-08	3:04	0.3101	3.05	28	0.0250
1-Apr-08	3:05	0.3102	3.06	28	0.0251
1-Apr-08	3:06	0.3102	3.08	28	0.0251
1-Apr-08	3:07	0.3103	3.10	28	0.0252
1-Apr-08	3:08	0.3103	3.11	28	0.0252
1-Apr-08	3:09	0.3104	3.13	28	0.0253
1-Apr-08	3:10	0.3104	3.15	28	0.0254
1-Apr-08	3:11	0.3105	3.17	28	0.0254
1-Apr-08	3:12	0.3105	3.18	28	0.0255
1-Apr-08	3:13	0.3106	3.20	28	0.0256
1-Apr-08	3:14	0.3106	3.22	28	0.0256
1-Apr-08	3:15	0.3107	3.23	28	0.0257
1-Apr-08	3:16	0.3107	3.25	28	0.0257

1-Apr-08	3:17	0.3108	3.27	28	0.0258
1-Apr-08	3:18	0.3108	3.29	28	0.0259
1-Apr-08	3:19	0.3109	3.30	28	0.0259
1-Apr-08	3:20	0.3110	3.32	28	0.0260
1-Apr-08	3:21	0.3110	3.34	28	0.0261
1-Apr-08	3:22	0.3111	3.35	28	0.0261
1-Apr-08	3:23	0.3111	3.37	28	0.0262
1-Apr-08	3:24	0.3112	3.39	28	0.0262
1-Apr-08	3:25	0.3112	3.41	28	0.0263
1-Apr-08	3:26	0.3113	3.42	28	0.0264
1-Apr-08	3:27	0.3113	3.44	28	0.0264
1-Apr-08	3:28	0.3114	3.46	28	0.0265
1-Apr-08	3:29	0.3114	3.47	28	0.0266
1-Apr-08	3:30	0.3114	3.49	28	0.0266
1-Apr-08	3:31	0.3115	3.51	28	0.0267
1-Apr-08	3:32	0.3115	3.52	28	0.0268
1-Apr-08	3:33	0.3116	3.54	28	0.0268
1-Apr-08	3:34	0.3116	3.56	28	0.0269
1-Apr-08	3:35	0.3117	3.58	28	0.0269
1-Apr-08	3:36	0.3117	3.59	28	0.0270
1-Apr-08	3:37	0.3118	3.61	28	0.0271
1-Apr-08	3:38	0.3118	3.63	28	0.0271
1-Apr-08	3:39	0.3119	3.64	28	0.0272
1-Apr-08	3:40	0.3119	3.66	28	0.0273
1-Apr-08	3:41	0.3120	3.68	28	0.0273
1-Apr-08	3:42	0.3120	3.70	28	0.0274
1-Apr-08	3:43	0.3121	3.71	28	0.0274
1-Apr-08	3:44	0.3121	3.73	28	0.0275
1-Apr-08	3:45	0.3122	3.75	28	0.0276
1-Apr-08	3:46	0.3122	3.76	28	0.0276
1-Apr-08	3:47	0.3123	3.78	28	0.0277
1-Apr-08	3:48	0.3123	3.80	28	0.0278
1-Apr-08	3:49	0.3124	3.82	28	0.0278
1-Apr-08	3:50	0.3124	3.83	28	0.0279
1-Apr-08	3:51	0.3125	3.85	28	0.0279
1-Apr-08	3:52	0.3125	3.87	28	0.0280
1-Apr-08	3:53	0.3126	3.88	28	0.0281
1-Apr-08	3:54	0.3126	3.90	28	0.0281
1-Apr-08	3:55	0.3127	3.92	28	0.0282
1-Apr-08	3:56	0.3127	3.93	28	0.0283
1-Apr-08	3:57	0.3128	3.95	28	0.0283
1-Apr-08	3:58	0.3128	3.97	28	0.0284
1-Apr-08	3:59	0.3128	3.99	28	0.0285
1-Apr-08	4:00	0.3129	4.00	28	0.0285
1-Apr-08	4:01	0.3129	4.02	28	0.0286
1-Apr-08	4:02	0.3130	4.04	28	0.0286
1-Apr-08	4:03	0.3130	4.05	28	0.0287
1-Apr-08	4:04	0.3131	4.07	28	0.0288
1-Apr-08	4:05	0.3131	4.09	28	0.0288
1-Apr-08	4:06	0.3132	4.11	28	0.0289

1-Apr-08	4:07	0.3132	4.12	28	0.0290
1-Apr-08	4:08	0.3133	4.14	28	0.0290
1-Apr-08	4:09	0.3133	4.16	28	0.0291
1-Apr-08	4:10	0.3134	4.17	28	0.0291
1-Apr-08	4:11	0.3134	4.19	28	0.0292
1-Apr-08	4:12	0.3135	4.21	28	0.0293
1-Apr-08	4:13	0.3135	4.22	28	0.0293
1-Apr-08	4:14	0.3135	4.24	28	0.0294
1-Apr-08	4:15	0.3136	4.26	28	0.0295
1-Apr-08	4:16	0.3136	4.28	28	0.0295
1-Apr-08	4:17	0.3137	4.29	28	0.0296
1-Apr-08	4:18	0.3137	4.31	28	0.0296
1-Apr-08	4:19	0.3138	4.33	28	0.0297
1-Apr-08	4:20	0.3138	4.34	28	0.0298
1-Apr-08	4:21	0.3139	4.36	28	0.0298
1-Apr-08	4:22	0.3139	4.38	28	0.0299
1-Apr-08	4:23	0.3140	4.40	28	0.0299
1-Apr-08	4:24	0.3140	4.41	28	0.0300
1-Apr-08	4:25	0.3140	4.43	28	0.0301
1-Apr-08	4:26	0.3141	4.45	28	0.0301
1-Apr-08	4:27	0.3141	4.46	28	0.0302
1-Apr-08	4:28	0.3142	4.48	28	0.0303
1-Apr-08	4:29	0.3142	4.50	28	0.0303
1-Apr-08	4:30	0.3143	4.51	28	0.0304
1-Apr-08	4:31	0.3143	4.53	28	0.0304
1-Apr-08	4:32	0.3144	4.55	28	0.0305
1-Apr-08	4:33	0.3144	4.57	28	0.0306
1-Apr-08	4:34	0.3144	4.58	28	0.0306
1-Apr-08	4:35	0.3145	4.60	28	0.0307
1-Apr-08	4:36	0.3145	4.62	28	0.0308
1-Apr-08	4:37	0.3146	4.63	28	0.0308
1-Apr-08	4:38	0.3146	4.65	28	0.0309
1-Apr-08	4:39	0.3147	4.67	28	0.0309
1-Apr-08	4:40	0.3147	4.68	28	0.0310
1-Apr-08	4:41	0.3148	4.70	28	0.0311
1-Apr-08	4:42	0.3148	4.72	28	0.0311
1-Apr-08	4:43	0.3148	4.74	28	0.0312
1-Apr-08	4:44	0.3149	4.75	28	0.0312
1-Apr-08	4:45	0.3149	4.77	28	0.0313
1-Apr-08	4:46	0.3150	4.79	28	0.0314
1-Apr-08	4:47	0.3150	4.80	28	0.0314
1-Apr-08	4:48	0.3151	4.82	28	0.0315
1-Apr-08	4:49	0.3151	4.84	28	0.0316
1-Apr-08	4:50	0.3152	4.85	28	0.0316
1-Apr-08	4:51	0.3152	4.87	28	0.0317
1-Apr-08	4:52	0.3152	4.89	28	0.0317
1-Apr-08	4:53	0.3153	4.91	28	0.0318
1-Apr-08	4:54	0.3153	4.92	28	0.0319
1-Apr-08	4:55	0.3154	4.94	28	0.0319
1-Apr-08	4:56	0.3154	4.96	28	0.0320

1-Apr-08	4:57	0.3155	4.97	28	0.0320
1-Apr-08	4:58	0.3155	4.99	28	0.0321
1-Apr-08	4:59	0.3155	5.01	28	0.0322
1-Apr-08	5:00	0.3156	5.03	28	0.0322
1-Apr-08	5:01	0.3156	5.04	28	0.0323
1-Apr-08	5:02	0.3157	5.06	28	0.0324
1-Apr-08	5:03	0.3157	5.08	28	0.0324
1-Apr-08	5:04	0.3158	5.09	28	0.0325
1-Apr-08	5:05	0.3158	5.11	28	0.0325
1-Apr-08	5:06	0.3158	5.13	28	0.0326
1-Apr-08	5:07	0.3159	5.14	28	0.0327
1-Apr-08	5:08	0.3159	5.16	28	0.0327
1-Apr-08	5:09	0.3160	5.18	28	0.0328
1-Apr-08	5:10	0.3160	5.19	28	0.0329
1-Apr-08	5:11	0.3160	5.21	28	0.0329
1-Apr-08	5:12	0.3161	5.23	28	0.0330
1-Apr-08	5:13	0.3161	5.25	28	0.0330
1-Apr-08	5:14	0.3162	5.26	28	0.0331
1-Apr-08	5:15	0.3162	5.28	28	0.0331
1-Apr-08	5:16	0.3163	5.30	28	0.0332
1-Apr-08	5:17	0.3163	5.31	28	0.0332
1-Apr-08	5:18	0.3163	5.33	28	0.0333
1-Apr-08	5:19	0.3164	5.35	28	0.0333
1-Apr-08	5:20	0.3164	5.36	28	0.0333
1-Apr-08	5:21	0.3165	5.38	28	0.0334
1-Apr-08	5:22	0.3165	5.40	28	0.0334
1-Apr-08	5:23	0.3165	5.42	28	0.0335
1-Apr-08	5:24	0.3166	5.43	28	0.0335
1-Apr-08	5:25	0.3166	5.45	28	0.0336
1-Apr-08	5:26	0.3167	5.47	28	0.0336
1-Apr-08	5:27	0.3167	5.48	28	0.0337
1-Apr-08	5:28	0.3167	5.50	28	0.0337
1-Apr-08	5:29	0.3168	5.52	28	0.0338
1-Apr-08	5:30	0.3168	5.53	28	0.0338
1-Apr-08	5:31	0.3169	5.55	28	0.0338
1-Apr-08	5:32	0.3169	5.57	28	0.0339
1-Apr-08	5:33	0.3170	5.59	28	0.0339
1-Apr-08	5:34	0.3170	5.60	28	0.0340
1-Apr-08	5:35	0.3170	5.62	28	0.0340
1-Apr-08	5:36	0.3171	5.64	28	0.0341
1-Apr-08	5:37	0.3171	5.65	28	0.0341
1-Apr-08	5:38	0.3172	5.67	28	0.0342
1-Apr-08	5:39	0.3172	5.69	28	0.0342
1-Apr-08	5:40	0.3172	5.70	28	0.0343
1-Apr-08	5:41	0.3173	5.72	28	0.0343
1-Apr-08	5:42	0.3173	5.74	28	0.0344
1-Apr-08	5:43	0.3174	5.76	28	0.0344
1-Apr-08	5:44	0.3174	5.77	28	0.0344
1-Apr-08	5:45	0.3174	5.79	28	0.0345
1-Apr-08	5:46	0.3175	5.81	28	0.0345

1-Apr-08	5:47	0.3175	5.82	28	0.0346
1-Apr-08	5:48	0.3176	5.84	28	0.0346
1-Apr-08	5:49	0.3176	5.86	28	0.0347
1-Apr-08	5:50	0.3176	5.87	28	0.0347
1-Apr-08	5:51	0.3193	5.89	28	0.0348
1-Apr-08	5:52	0.3244	5.91	28	0.0348
1-Apr-08	5:53	0.3343	5.93	28	0.0349
1-Apr-08	5:54	0.3507	5.94	28	0.0349
1-Apr-08	5:55	0.3753	5.96	28	0.0350
1-Apr-08	5:56	0.4062	5.99	28	0.0350
1-Apr-08	5:57	0.4408	6.01	28	0.0351
1-Apr-08	5:58	0.4764	6.03	28	0.0351
1-Apr-08	5:59	0.5116	6.06	28	0.0352
1-Apr-08	6:00	0.5440	6.09	28	0.0353
1-Apr-08	6:01	0.5731	6.12	28	0.0354
1-Apr-08	6:02	0.5982	6.16	28	0.0355
1-Apr-08	6:03	0.6181	6.19	28	0.0356
1-Apr-08	6:04	0.6339	6.23	28	0.0357
1-Apr-08	6:05	0.6469	6.26	28	0.0358
1-Apr-08	6:06	0.6575	6.30	28	0.0359
1-Apr-08	6:07	0.6663	6.34	28	0.0360
1-Apr-08	6:08	0.6736	6.37	28	0.0361
1-Apr-08	6:09	0.6796	6.41	28	0.0362
1-Apr-08	6:10	0.6846	6.45	28	0.0364
1-Apr-08	6:11	0.6886	6.49	28	0.0365
1-Apr-08	6:12	0.6920	6.53	28	0.0366
1-Apr-08	6:13	0.6947	6.57	28	0.0368
1-Apr-08	6:14	0.6970	6.61	28	0.0369
1-Apr-08	6:15	0.6989	6.65	28	0.0370
1-Apr-08	6:16	0.7005	6.69	28	0.0372
1-Apr-08	6:17	0.7018	6.73	28	0.0373
1-Apr-08	6:18	0.7030	6.77	28	0.0375
1-Apr-08	6:19	0.7039	6.81	28	0.0376
1-Apr-08	6:20	0.7047	6.85	28	0.0378
1-Apr-08	6:21	0.7054	6.89	28	0.0379
1-Apr-08	6:22	0.7060	6.93	28	0.0380
1-Apr-08	6:23	0.7066	6.97	28	0.0382
1-Apr-08	6:24	0.7071	7.01	28	0.0383
1-Apr-08	6:25	0.7075	7.05	28	0.0385
1-Apr-08	6:26	0.7079	7.09	28	0.0386
1-Apr-08	6:27	0.7082	7.13	28	0.0387
1-Apr-08	6:28	0.7085	7.17	28	0.0389
1-Apr-08	6:29	0.7087	7.21	28	0.0390
1-Apr-08	6:30	0.7089	7.25	28	0.0392
1-Apr-08	6:31	0.7091	7.29	28	0.0393
1-Apr-08	6:32	0.7092	7.33	28	0.0395
1-Apr-08	6:33	0.7094	7.37	28	0.0396
1-Apr-08	6:34	0.7096	7.41	28	0.0397
1-Apr-08	6:35	0.7097	7.45	28	0.0399
1-Apr-08	6:36	0.7099	7.49	28	0.0400

1-Apr-08	6:37	0.7101	7.53	28	0.0401
1-Apr-08	6:38	0.7103	7.57	28	0.0402
1-Apr-08	6:39	0.7104	7.61	28	0.0402
1-Apr-08	6:40	0.7106	7.65	28	0.0403
1-Apr-08	6:41	0.7107	7.69	28	0.0404
1-Apr-08	6:42	0.7109	7.73	28	0.0404
1-Apr-08	6:43	0.7111	7.77	28	0.0405
1-Apr-08	6:44	0.7112	7.81	28	0.0406
1-Apr-08	6:45	0.7114	7.85	28	0.0406
1-Apr-08	6:46	0.7116	7.89	28	0.0407
1-Apr-08	6:47	0.7117	7.93	28	0.0408
1-Apr-08	6:48	0.7119	7.97	28	0.0409
1-Apr-08	6:49	0.7121	8.01	28	0.0409
1-Apr-08	6:50	0.7122	8.05	28	0.0410
1-Apr-08	6:51	0.7124	8.09	28	0.0411
1-Apr-08	6:52	0.7125	8.13	28	0.0411
1-Apr-08	6:53	0.7127	8.17	28	0.0412
1-Apr-08	6:54	0.7129	8.21	28	0.0413
1-Apr-08	6:55	0.7130	8.26	28	0.0413
1-Apr-08	6:56	0.7132	8.30	28	0.0414
1-Apr-08	6:57	0.7133	8.34	28	0.0415
1-Apr-08	6:58	0.7135	8.38	28	0.0416
1-Apr-08	6:59	0.7136	8.42	28	0.0416
1-Apr-08	7:00	0.7138	8.46	28	0.0417
1-Apr-08	7:01	0.7139	8.50	28	0.0418
1-Apr-08	7:02	0.7141	8.54	28	0.0418
1-Apr-08	7:03	0.7143	8.58	28	0.0419
1-Apr-08	7:04	0.7144	8.62	28	0.0420
1-Apr-08	7:05	0.7146	8.66	28	0.0433
1-Apr-08	7:06	0.7147	8.70	28	0.0451
1-Apr-08	7:07	0.7149	8.74	28	0.0470
1-Apr-08	7:08	0.7150	8.78	28	0.0489
1-Apr-08	7:09	0.7152	8.82	28	0.0507
1-Apr-08	7:10	0.7153	8.86	28	0.0526
1-Apr-08	7:11	0.7155	8.90	28	0.0544
1-Apr-08	7:12	0.7156	8.94	28	0.0563
1-Apr-08	7:13	0.7158	8.98	28	0.0581
1-Apr-08	7:14	0.7159	9.02	28	0.0599
1-Apr-08	7:15	0.7161	9.06	28	0.0617
1-Apr-08	7:16	0.7162	9.10	28	0.0636
1-Apr-08	7:17	0.7164	9.13	28	0.0654
1-Apr-08	7:18	0.7165	9.17	28	0.0672
1-Apr-08	7:19	0.7167	9.21	28	0.0690
1-Apr-08	7:20	0.7168	9.25	28	0.0708
1-Apr-08	7:21	0.7169	9.29	28	0.0726
1-Apr-08	7:22	0.7171	9.33	28	0.0744
1-Apr-08	7:23	0.7172	9.37	28	0.0762
1-Apr-08	7:24	0.7174	9.41	28	0.0780
1-Apr-08	7:25	0.7175	9.44	28	0.0798
1-Apr-08	7:26	0.7177	9.48	28	0.0815

1-Apr-08	7:27	0.7178	9.52	28	0.0833
1-Apr-08	7:28	0.7179	9.56	28	0.0851
1-Apr-08	7:29	0.7181	9.60	28	0.0868
1-Apr-08	7:30	0.7182	9.63	28	0.0886
1-Apr-08	7:31	0.7184	9.67	28	0.0903
1-Apr-08	7:32	0.7185	9.71	28	0.0921
1-Apr-08	7:33	0.7187	9.75	28	0.0938
1-Apr-08	7:34	0.7188	9.78	28	0.0956
1-Apr-08	7:35	0.7189	9.82	28	0.0983
1-Apr-08	7:36	0.7191	9.86	28	0.1013
1-Apr-08	7:37	0.7192	9.90	28	0.1044
1-Apr-08	7:38	0.7193	9.93	28	0.1074
1-Apr-08	7:39	0.7195	9.97	28	0.1103
1-Apr-08	7:40	0.7196	10.01	28	0.1133
1-Apr-08	7:41	0.7198	10.04	28	0.1163
1-Apr-08	7:42	0.7199	10.08	28	0.1192
1-Apr-08	7:43	0.7200	10.11	28	0.1222
1-Apr-08	7:44	0.7202	10.15	28	0.1251
1-Apr-08	7:45	0.7203	10.19	28	0.1280
1-Apr-08	7:46	0.7204	10.22	28	0.1309
1-Apr-08	7:47	0.7206	10.26	28	0.1338
1-Apr-08	7:48	0.7207	10.29	28	0.1366
1-Apr-08	7:49	0.7208	10.33	28	0.1395
1-Apr-08	7:50	0.7210	10.36	28	0.1423
1-Apr-08	7:51	0.7211	10.40	28	0.1451
1-Apr-08	7:52	0.7212	10.43	28	0.1479
1-Apr-08	7:53	0.7214	10.46	28	0.1507
1-Apr-08	7:54	0.7215	10.50	28	0.1535
1-Apr-08	7:55	0.7216	10.53	28	0.1563
1-Apr-08	7:56	0.7218	10.57	28	0.1591
1-Apr-08	7:57	0.7219	10.60	28	0.1618
1-Apr-08	7:58	0.7220	10.63	28	0.1645
1-Apr-08	7:59	0.7221	10.67	28	0.1673
1-Apr-08	8:00	0.7223	10.70	28	0.1700
1-Apr-08	8:01	0.7224	10.73	28	0.1727
1-Apr-08	8:02	0.7225	10.77	28	0.1754
1-Apr-08	8:03	0.7227	10.80	28	0.1780
1-Apr-08	8:04	0.7228	10.83	28	0.1807
1-Apr-08	8:05	0.7229	10.86	28	0.1833
1-Apr-08	8:06	0.7230	10.90	28	0.1860
1-Apr-08	8:07	0.7232	10.93	28	0.1886
1-Apr-08	8:08	0.7233	10.96	28	0.1912
1-Apr-08	8:09	0.7234	10.99	28	0.1943
1-Apr-08	8:10	0.7235	11.02	28	0.1975
1-Apr-08	8:11	0.7237	11.06	28	0.2008
1-Apr-08	8:12	0.7238	11.09	28	0.2040
1-Apr-08	8:13	0.7239	11.12	28	0.2072
1-Apr-08	8:14	0.7240	11.15	28	0.2104
1-Apr-08	8:15	0.7242	11.18	28	0.2136
1-Apr-08	8:16	0.7243	11.21	28	0.2167

1-Apr-08	8:17	0.7244	11.24	28	0.2198
1-Apr-08	8:18	0.7245	11.27	28	0.2230
1-Apr-08	8:19	0.7246	11.30	28	0.2261
1-Apr-08	8:20	0.7248	11.33	28	0.2291
1-Apr-08	8:21	0.7249	11.36	28	0.2322
1-Apr-08	8:22	0.7250	11.39	28	0.2352
1-Apr-08	8:23	0.7251	11.42	28	0.2382
1-Apr-08	8:24	0.7252	11.45	28	0.2412
1-Apr-08	8:25	0.7254	11.48	28	0.2442
1-Apr-08	8:26	0.7255	11.51	28	0.2472
1-Apr-08	8:27	0.7256	11.53	28	0.2502
1-Apr-08	8:28	0.7257	11.56	28	0.2531
1-Apr-08	8:29	0.7258	11.59	28	0.2560
1-Apr-08	8:30	0.7260	11.62	28	0.2589
1-Apr-08	8:31	0.7261	11.65	28	0.2618
1-Apr-08	8:32	0.7262	11.67	28	0.2646
1-Apr-08	8:33	0.7263	11.70	28	0.2675
1-Apr-08	8:34	0.7264	11.73	28	0.2703
1-Apr-08	8:35	0.7265	11.76	28	0.2731
1-Apr-08	8:36	0.7267	11.78	28	0.2759
1-Apr-08	8:37	0.7268	11.81	28	0.2787
1-Apr-08	8:38	0.7269	11.84	28	0.2815
1-Apr-08	8:39	0.7270	11.86	28	0.2842
1-Apr-08	8:40	0.7271	11.89	28	0.2869
1-Apr-08	8:41	0.7272	11.92	28	0.2897
1-Apr-08	8:42	0.7273	11.94	28	0.2924
1-Apr-08	8:43	0.7275	11.97	28	0.2950
1-Apr-08	8:44	0.7276	12.00	28	0.2977
1-Apr-08	8:45	0.7277	12.02	28	0.3004
1-Apr-08	8:46	0.7278	12.05	28	0.3030
1-Apr-08	8:47	0.7279	12.07	28	0.3056
1-Apr-08	8:48	0.7280	12.10	28	0.3082
1-Apr-08	8:49	0.7281	12.12	28	0.3108
1-Apr-08	8:50	0.7282	12.15	28	0.3134
1-Apr-08	8:51	0.7293	12.17	28	0.3161
1-Apr-08	8:52	0.7323	12.20	28	0.3191
1-Apr-08	8:53	0.7380	12.22	28	0.3221
1-Apr-08	8:54	0.7475	12.25	28	0.3252
1-Apr-08	8:55	0.7615	12.27	28	0.3283
1-Apr-08	8:56	0.7792	12.30	28	0.3314
1-Apr-08	8:57	0.7991	12.33	28	0.3348
1-Apr-08	8:58	0.8195	12.35	28	0.3382
1-Apr-08	8:59	0.8396	12.38	28	0.3417
1-Apr-08	9:00	0.8582	12.41	28	0.3454
1-Apr-08	9:01	0.8749	12.45	28	0.3492
1-Apr-08	9:02	0.8892	12.48	28	0.3530
1-Apr-08	9:03	0.9006	12.51	28	0.3569
1-Apr-08	9:04	0.9098	12.54	28	0.3609
1-Apr-08	9:05	0.9172	12.58	28	0.3649
1-Apr-08	9:06	0.9233	12.61	28	0.3689

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1-Apr-08	9:08	0.9327	12.68	28	0.3770
1-Apr-08	9:09	0.9362	12.71	28	0.3810
1-Apr-08	9:10	0.9391	12.74	28	0.3850
1-Apr-08	9:11	0.9414	12.78	28	0.3890
1-Apr-08	9:12	0.9434	12.81	28	0.3930
1-Apr-08	9:13	0.9451	12.84	28	0.3970
1-Apr-08	9:14	0.9465	12.87	28	0.4010
1-Apr-08	9:15	0.9476	12.91	28	0.4049
1-Apr-08	9:16	0.9486	12.94	28	0.4088
1-Apr-08	9:17	0.9494	12.97	28	0.4127
1-Apr-08	9:18	0.9501	13.00	28	0.4166
1-Apr-08	9:19	0.9507	13.04	28	0.4205
1-Apr-08	9:20	0.9513	13.07	28	0.4243
1-Apr-08	9:21	0.9517	13.10	28	0.4281
1-Apr-08	9:22	0.9522	13.13	28	0.4319
1-Apr-08	9:23	0.9525	13.16	28	0.4357
1-Apr-08	9:24	0.9529	13.19	28	0.4394
1-Apr-08	9:25	0.9532	13.22	28	0.4431
1-Apr-08	9:26	0.9535	13.25	28	0.4468
1-Apr-08	9:27	0.9537	13.28	28	0.4505
1-Apr-08	9:28	0.9539	13.31	28	0.4541
1-Apr-08	9:29	0.9541	13.34	28	0.4577
1-Apr-08	9:30	0.9543	13.37	28	0.4613
1-Apr-08	9:31	0.9545	13.40	28	0.4653
1-Apr-08	9:32	0.9546	13.43	28	0.4692
1-Apr-08	9:33	0.9548	13.46	28	0.4732
1-Apr-08	9:34	0.9550	13.49	28	0.4770
1-Apr-08	9:35	0.9551	13.52	28	0.4809
1-Apr-08	9:36	0.9553	13.55	28	0.4847
1-Apr-08	9:37	0.9555	13.57	28	0.4885
1-Apr-08	9:38	0.9556	13.60	28	0.4923
1-Apr-08	9:39	0.9558	13.63	28	0.4960
1-Apr-08	9:40	0.9559	13.66	28	0.4997
1-Apr-08	9:41	0.9561	13.69	28	0.5034
1-Apr-08	9:42	0.9562	13.71	28	0.5070
1-Apr-08	9:43	0.9564	13.74	28	0.5106
1-Apr-08	9:44	0.9566	13.77	28	0.5142
1-Apr-08	9:45	0.9567	13.79	28	0.5178
1-Apr-08	9:46	0.9569	13.82	28	0.5213
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1-Apr-08	9:48	0.9572	13.87	28	0.5283
1-Apr-08	9:49	0.9573	13.90	28	0.5318
1-Apr-08	9:50	0.9575	13.92	28	0.5352
1-Apr-08	9:51	0.9596	13.95	28	0.5386
1-Apr-08	9:52	0.9657	13.97	28	0.5420
1-Apr-08	9:53	0.9774	14.00	28	0.5455
1-Apr-08	9:54	0.9969	14.02	28	0.5490
1-Apr-08	9:55	1.0259	14.05	28	0.5528
1-Apr-08	9:56	1.0624	14.08	28	0.5567

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1-Apr-08	9:58	1.1455	14.15	28	0.5655
1-Apr-08	9:59	1.1870	14.18	28	0.5703
1-Apr-08	10:00	1.2253	14.22	28	0.5755
1-Apr-08	10:01	1.2597	14.26	28	0.5808
1-Apr-08	10:02	1.2893	14.30	28	0.5864
1-Apr-08	10:03	1.3129	14.34	28	0.5922
1-Apr-08	10:04	1.3316	14.39	28	0.5981
1-Apr-08	10:05	1.3470	14.43	28	0.6040
1-Apr-08	10:06	1.3595	14.48	28	0.6101
1-Apr-08	10:07	1.3701	14.52	28	0.6162
1-Apr-08	10:08	1.3788	14.57	28	0.6223
1-Apr-08	10:09	1.3859	14.61	28	0.6286
1-Apr-08	10:10	1.3918	14.66	28	0.6352
1-Apr-08	10:11	1.3967	14.70	28	0.6418
1-Apr-08	10:12	1.4007	14.75	28	0.6484
1-Apr-08	10:13	1.4041	14.79	28	0.6550
1-Apr-08	10:14	1.4068	14.84	28	0.6616
1-Apr-08	10:15	1.4092	14.88	28	0.6681
1-Apr-08	10:16	1.4111	14.93	28	0.6746
1-Apr-08	10:17	1.4128	14.97	28	0.6810
1-Apr-08	10:18	1.4142	15.02	28	0.6874
1-Apr-08	10:19	1.4154	15.06	28	0.6937
1-Apr-08	10:20	1.4164	15.10	28	0.7000
1-Apr-08	10:21	1.4173	15.14	28	0.7063
1-Apr-08	10:22	1.4181	15.19	28	0.7125
1-Apr-08	10:23	1.4188	15.23	28	0.7187
1-Apr-08	10:24	1.4195	15.27	28	0.7248
1-Apr-08	10:25	1.4201	15.31	28	0.7308
1-Apr-08	10:26	1.4206	15.35	28	0.7369
1-Apr-08	10:27	1.4211	15.39	28	0.7428
1-Apr-08	10:28	1.4215	15.44	28	0.7488
1-Apr-08	10:29	1.4218	15.48	28	0.7546
1-Apr-08	10:30	1.4221	15.52	28	0.7605
1-Apr-08	10:31	1.4224	15.55	28	0.7662
1-Apr-08	10:32	1.4227	15.59	28	0.7720
1-Apr-08	10:33	1.4229	15.63	28	0.7776
1-Apr-08	10:34	1.4232	15.67	28	0.7833
1-Apr-08	10:35	1.4235	15.71	28	0.7889
1-Apr-08	10:36	1.4237	15.75	28	0.7944
1-Apr-08	10:37	1.4240	15.79	28	0.7999
1-Apr-08	10:38	1.4243	15.82	28	0.8053
1-Apr-08	10:39	1.4245	15.86	28	0.8110
1-Apr-08	10:40	1.4248	15.90	28	0.8168
1-Apr-08	10:41	1.4251	15.93	28	0.8226
1-Apr-08	10:42	1.4253	15.97	28	0.8282
1-Apr-08	10:43	1.4256	16.00	28	0.8339
1-Apr-08	10:44	1.4258	16.04	28	0.8394
1-Apr-08	10:45	1.4261	16.07	28	0.8450
1-Apr-08	10:46	1.4264	16.11	28	0.8505

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1-Apr-08	10:48	1.4269	16.18	28	0.8613
1-Apr-08	10:49	1.4271	16.21	28	0.8666
1-Apr-08	10:50	1.4274	16.24	28	0.8719
1-Apr-08	10:51	1.4311	16.28	28	0.8771
1-Apr-08	10:52	1.4421	16.31	28	0.8824
1-Apr-08	10:53	1.4631	16.35	28	0.8878
1-Apr-08	10:54	1.4981	16.38	28	0.8934
1-Apr-08	10:55	1.5504	16.42	28	0.8993
1-Apr-08	10:56	1.6160	16.46	28	0.9058
1-Apr-08	10:57	1.6895	16.50	28	0.9128
1-Apr-08	10:58	1.7653	16.55	28	0.9205
1-Apr-08	10:59	1.8400	16.61	28	0.9288
1-Apr-08	11:00	1.9088	16.66	28	0.9377
1-Apr-08	11:01	1.9707	16.72	28	0.9472
1-Apr-08	11:02	2.0240	16.78	28	0.9571
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1-Apr-08	11:05	2.1278	16.98	28	0.9886
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1-Apr-08	11:08	2.1850	17.19	28	1.0222
1-Apr-08	11:09	2.1978	17.26	28	1.0338
1-Apr-08	11:10	2.2084	17.33	28	1.0454
1-Apr-08	11:11	2.2171	17.40	28	1.0570
1-Apr-08	11:12	2.2244	17.47	28	1.0685
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1-Apr-08	11:18	2.2487	17.88	28	1.1365
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1-Apr-08	11:21	2.2614	18.08	28	1.1694
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1-Apr-08	11:23	2.3283	18.21	28	1.1915
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1-Apr-08	11:25	2.5075	18.36	28	1.2155
1-Apr-08	11:26	2.6418	18.44	28	1.2298
1-Apr-08	11:27	2.7921	18.53	28	1.2454
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1-Apr-08	11:30	3.2401	18.84	28	1.3007
1-Apr-08	11:31	3.3711	18.96	28	1.3217
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1-Apr-08	11:34	3.7225	19.35	28	1.3911
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1-Apr-08	11:36	3.9796	19.65	28	1.4424

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1-Apr-08	11:39	4.3705	20.13	28	1.5307
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1-Apr-08	11:49	7.0341	22.33	28	1.9520
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1-Apr-08	11:54	9.1128	24.05	28	2.6364
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1-Apr-08	11:56	10.5508	24.88	28	3.0537
1-Apr-08	11:57	11.3826	25.35	28	3.3230
1-Apr-08	11:58	12.2205	25.85	28	3.6173
1-Apr-08	11:59	13.0329	26.38	28	3.9295
1-Apr-08	12:00	13.7756	26.94	28	4.2551
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1-Apr-08	12:02	14.8147	28.11	28	4.9935
1-Apr-08	12:03	14.9860	28.69	28	5.4710
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1-Apr-08	12:10	10.4218	31.67	28	6.2742
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1-Apr-08	12:26	4.5331	32.06	28	6.2953

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1-Apr-08	12:30	3.8208	31.55	28	6.2680
1-Apr-08	12:31	3.6836	31.40	28	6.2599
1-Apr-08	12:32	3.5668	31.24	28	6.2514
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1-Apr-08	12:34	3.3982	30.91	28	6.2335
1-Apr-08	12:35	3.3369	30.74	28	6.2242
1-Apr-08	12:36	3.2872	30.57	28	6.2148
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1-Apr-08	12:38	3.2131	30.21	28	6.1285
1-Apr-08	12:39	3.1868	30.04	28	6.0775
1-Apr-08	12:40	3.1664	29.87	28	6.0269
1-Apr-08	12:41	3.1503	29.70	28	5.9768
1-Apr-08	12:42	3.1370	29.53	28	5.9274
1-Apr-08	12:43	3.1263	29.36	28	5.8787
1-Apr-08	12:44	3.1175	29.20	28	5.8306
1-Apr-08	12:45	3.1103	29.04	28	5.7589
1-Apr-08	12:46	3.1046	28.88	28	5.6311
1-Apr-08	12:47	3.0999	28.73	28	5.5092
1-Apr-08	12:48	3.0962	28.59	28	5.3930
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1-Apr-08	12:50	3.0912	28.33	28	5.1767
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1-Apr-08	12:53	3.0320	27.98	28	4.8865
1-Apr-08	12:54	2.9763	27.87	28	4.7958
1-Apr-08	12:55	2.8936	27.76	28	4.7319
1-Apr-08	12:56	2.7901	27.65	28	4.6669
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1-Apr-08	12:58	2.5551	27.41	28	4.5322
1-Apr-08	12:59	2.4378	27.29	28	4.4623
1-Apr-08	13:00	2.3299	27.17	28	4.3909
1-Apr-08	13:01	2.2331	27.05	28	4.3184
1-Apr-08	13:02	2.1500	26.92	28	4.2453
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1-Apr-08	13:05	1.9890	26.55	28	4.0277
1-Apr-08	13:06	1.9543	26.43	28	3.9571
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1-Apr-08	13:08	1.9015	26.19	28	3.8192
1-Apr-08	13:09	1.8821	26.08	28	3.7523
1-Apr-08	13:10	1.8663	25.97	28	3.6872
1-Apr-08	13:11	1.8535	25.86	28	3.6237
1-Apr-08	13:12	1.8429	25.76	28	3.5621
1-Apr-08	13:13	1.8343	25.65	28	3.5023
1-Apr-08	13:14	1.8274	25.55	28	3.4443
1-Apr-08	13:15	1.8217	25.46	28	3.3880
1-Apr-08	13:16	1.8170	25.37	28	3.3336

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1-Apr-08	13:18	1.8101	25.19	28	3.2299
1-Apr-08	13:19	1.8076	25.11	28	3.1806
1-Apr-08	13:20	1.8055	25.03	28	3.1329
1-Apr-08	13:21	1.8039	24.95	28	3.0868
1-Apr-08	13:22	1.8025	24.87	28	3.0485
1-Apr-08	13:23	1.8014	24.80	28	3.0117
1-Apr-08	13:24	1.8004	24.73	28	2.9760
1-Apr-08	13:25	1.7996	24.66	28	2.9412
1-Apr-08	13:26	1.7990	24.59	28	2.9075
1-Apr-08	13:27	1.7986	24.52	28	2.8748
1-Apr-08	13:28	1.7983	24.46	28	2.8431
1-Apr-08	13:29	1.7981	24.40	28	2.8122
1-Apr-08	13:30	1.7981	24.34	28	2.7823
1-Apr-08	13:31	1.7982	24.28	28	2.7532
1-Apr-08	13:32	1.7983	24.22	28	2.7251
1-Apr-08	13:33	1.7983	24.17	28	2.6977
1-Apr-08	13:34	1.7984	24.12	28	2.6712
1-Apr-08	13:35	1.7985	24.06	28	2.6454
1-Apr-08	13:36	1.7986	24.01	28	2.6204
1-Apr-08	13:37	1.7986	23.97	28	2.5962
1-Apr-08	13:38	1.7987	23.92	28	2.5726
1-Apr-08	13:39	1.7988	23.87	28	2.5498
1-Apr-08	13:40	1.7988	23.83	28	2.5276
1-Apr-08	13:41	1.7989	23.79	28	2.5061
1-Apr-08	13:42	1.7990	23.74	28	2.4852
1-Apr-08	13:43	1.7990	23.70	28	2.4650
1-Apr-08	13:44	1.7991	23.66	28	2.4453
1-Apr-08	13:45	1.7992	23.63	28	2.4263
1-Apr-08	13:46	1.7992	23.59	28	2.4086
1-Apr-08	13:47	1.7993	23.55	28	2.3956
1-Apr-08	13:48	1.7994	23.52	28	2.3828
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1-Apr-08	13:50	1.7995	23.45	28	2.3580
1-Apr-08	13:51	1.7972	23.42	28	2.3460
1-Apr-08	13:52	1.7902	23.38	28	2.3341
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1-Apr-08	13:55	1.7194	23.28	28	2.2980
1-Apr-08	13:56	1.6763	23.25	28	2.2852
1-Apr-08	13:57	1.6280	23.21	28	2.2716
1-Apr-08	13:58	1.5781	23.17	28	2.2572
1-Apr-08	13:59	1.5291	23.13	28	2.2421
1-Apr-08	14:00	1.4839	23.08	28	2.2263
1-Apr-08	14:01	1.4433	23.04	28	2.2100
1-Apr-08	14:02	1.4085	22.99	28	2.1931
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1-Apr-08	14:04	1.3589	22.90	28	2.1587
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1-Apr-08	14:09	1.2962	22.66	28	2.0727
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1-Apr-08	14:14	1.2732	22.43	28	1.9915
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1-Apr-08	14:19	1.2650	22.23	28	1.9227
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1-Apr-08	15:03	0.8995	20.75	28	1.6426
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1-Apr-08	18:29	0.4145	15.87	28	0.8128
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1-Apr-08	18:32	0.4145	15.80	28	0.8021
1-Apr-08	18:33	0.4145	15.78	28	0.7987
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1-Apr-08	18:36	0.4145	15.71	28	0.7887
1-Apr-08	18:37	0.4145	15.69	28	0.7854
1-Apr-08	18:38	0.4145	15.66	28	0.7822
1-Apr-08	18:39	0.4145	15.64	28	0.7790
1-Apr-08	18:40	0.4145	15.62	28	0.7758
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1-Apr-08	23:31	0.4151	13.27	28	0.4490
1-Apr-08	23:32	0.4151	13.27	28	0.4488
1-Apr-08	23:33	0.4151	13.27	28	0.4485
1-Apr-08	23:34	0.4151	13.27	28	0.4483
1-Apr-08	23:35	0.4151	13.26	28	0.4480
1-Apr-08	23:36	0.4151	13.26	28	0.4478
1-Apr-08	23:37	0.4151	13.26	28	0.4476
1-Apr-08	23:38	0.4152	13.26	28	0.4473
1-Apr-08	23:39	0.4152	13.26	28	0.4471
1-Apr-08	23:40	0.4152	13.25	28	0.4469
1-Apr-08	23:41	0.4152	13.25	28	0.4466
1-Apr-08	23:42	0.4152	13.25	28	0.4464
1-Apr-08	23:43	0.4152	13.25	28	0.4462
1-Apr-08	23:44	0.4152	13.25	28	0.4460
1-Apr-08	23:45	0.4152	13.24	28	0.4457
1-Apr-08	23:46	0.4152	13.24	28	0.4455
1-Apr-08	23:47	0.4152	13.24	28	0.4453
1-Apr-08	23:48	0.4152	13.24	28	0.4451
1-Apr-08	23:49	0.4152	13.24	28	0.4449
1-Apr-08	23:50	0.4152	13.24	28	0.4447
1-Apr-08	23:51	0.4152	13.23	28	0.4444
1-Apr-08	23:52	0.4152	13.23	28	0.4442
1-Apr-08	23:53	0.4152	13.23	28	0.4440
1-Apr-08	23:54	0.4152	13.23	28	0.4438
1-Apr-08	23:55	0.4152	13.23	28	0.4436
1-Apr-08	23:56	0.4152	13.23	28	0.4434
1-Apr-08	23:57	0.4152	13.22	28	0.4432
1-Apr-08	23:58	0.4152	13.22	28	0.4430
1-Apr-08	23:59	0.4152	13.22	28	0.4428
2-Apr-08	0:00	0.4152	13.22	28	0.4426

Highgate - 50yr NO CC - Time Series Inflow (Wetland)						
Date	Time	Inflow m3/s	Storage	Elevation m	Outflow m3/s	5.8174
1-Apr-08	0:00	0.0000	0.00	28	0.0000	
1-Apr-08	0:01	0.0012	0.00	28	0.0000	
1-Apr-08	0:02	0.0047	0.00	28	0.0000	
1-Apr-08	0:03	0.0115	0.00	28	0.0000	
1-Apr-08	0:04	0.0230	0.00	28	0.0000	
1-Apr-08	0:05	0.0401	0.00	28	0.0000	
1-Apr-08	0:06	0.0616	0.01	28	0.0001	
1-Apr-08	0:07	0.0857	0.01	28	0.0001	
1-Apr-08	0:08	0.1106	0.02	28	0.0002	
1-Apr-08	0:09	0.1351	0.02	28	0.0003	
1-Apr-08	0:10	0.1576	0.03	28	0.0004	
1-Apr-08	0:11	0.1779	0.04	28	0.0006	
1-Apr-08	0:12	0.1952	0.05	28	0.0007	
1-Apr-08	0:13	0.2091	0.07	28	0.0009	
1-Apr-08	0:14	0.2200	0.08	28	0.0010	
1-Apr-08	0:15	0.2289	0.09	28	0.0012	
1-Apr-08	0:16	0.2362	0.11	28	0.0014	
1-Apr-08	0:17	0.2423	0.12	28	0.0016	
1-Apr-08	0:18	0.2473	0.14	28	0.0018	
1-Apr-08	0:19	0.2513	0.15	28	0.0020	
1-Apr-08	0:20	0.2547	0.17	28	0.0022	
1-Apr-08	0:21	0.2574	0.18	28	0.0024	
1-Apr-08	0:22	0.2596	0.20	28	0.0026	
1-Apr-08	0:23	0.2614	0.21	28	0.0028	
1-Apr-08	0:24	0.2629	0.23	28	0.0030	
1-Apr-08	0:25	0.2641	0.24	28	0.0032	
1-Apr-08	0:26	0.2651	0.26	28	0.0034	
1-Apr-08	0:27	0.2659	0.27	28	0.0036	
1-Apr-08	0:28	0.2665	0.29	28	0.0038	
1-Apr-08	0:29	0.2671	0.31	28	0.0040	
1-Apr-08	0:30	0.2675	0.32	28	0.0041	
1-Apr-08	0:31	0.2679	0.34	28	0.0043	
1-Apr-08	0:32	0.2682	0.35	28	0.0045	
1-Apr-08	0:33	0.2684	0.37	28	0.0046	
1-Apr-08	0:34	0.2686	0.38	28	0.0048	
1-Apr-08	0:35	0.2688	0.40	28	0.0050	
1-Apr-08	0:36	0.2690	0.42	28	0.0051	
1-Apr-08	0:37	0.2691	0.43	28	0.0053	
1-Apr-08	0:38	0.2691	0.45	28	0.0054	
1-Apr-08	0:39	0.2692	0.46	28	0.0056	
1-Apr-08	0:40	0.2692	0.48	28	0.0058	
1-Apr-08	0:41	0.2692	0.50	28	0.0059	
1-Apr-08	0:42	0.2692	0.51	28	0.0061	
1-Apr-08	0:43	0.2692	0.53	28	0.0063	
1-Apr-08	0:44	0.2692	0.54	28	0.0064	
1-Apr-08	0:45	0.2692	0.56	28	0.0066	
1-Apr-08	0:46	0.2692	0.57	28	0.0067	

1-Apr-08	0:47	0.2692	0.59	28	0.0069
1-Apr-08	0:48	0.2692	0.61	28	0.0071
1-Apr-08	0:49	0.2692	0.62	28	0.0072
1-Apr-08	0:50	0.2692	0.64	28	0.0074
1-Apr-08	0:51	0.2692	0.65	28	0.0075
1-Apr-08	0:52	0.2692	0.67	28	0.0077
1-Apr-08	0:53	0.2692	0.68	28	0.0079
1-Apr-08	0:54	0.2692	0.70	28	0.0080
1-Apr-08	0:55	0.2692	0.72	28	0.0082
1-Apr-08	0:56	0.2692	0.73	28	0.0084
1-Apr-08	0:57	0.2692	0.75	28	0.0085
1-Apr-08	0:58	0.2692	0.76	28	0.0087
1-Apr-08	0:59	0.2692	0.78	28	0.0088
1-Apr-08	1:00	0.2692	0.79	28	0.0090
1-Apr-08	1:01	0.2692	0.81	28	0.0092
1-Apr-08	1:02	0.2692	0.82	28	0.0093
1-Apr-08	1:03	0.2692	0.84	28	0.0095
1-Apr-08	1:04	0.2692	0.86	28	0.0096
1-Apr-08	1:05	0.2692	0.87	28	0.0098
1-Apr-08	1:06	0.2692	0.89	28	0.0100
1-Apr-08	1:07	0.2692	0.90	28	0.0101
1-Apr-08	1:08	0.2692	0.92	28	0.0103
1-Apr-08	1:09	0.2692	0.93	28	0.0104
1-Apr-08	1:10	0.2692	0.95	28	0.0106
1-Apr-08	1:11	0.2692	0.96	28	0.0108
1-Apr-08	1:12	0.2692	0.98	28	0.0109
1-Apr-08	1:13	0.2692	1.00	28	0.0111
1-Apr-08	1:14	0.2692	1.01	28	0.0112
1-Apr-08	1:15	0.2692	1.03	28	0.0114
1-Apr-08	1:16	0.2692	1.04	28	0.0115
1-Apr-08	1:17	0.2692	1.06	28	0.0117
1-Apr-08	1:18	0.2692	1.07	28	0.0119
1-Apr-08	1:19	0.2692	1.09	28	0.0120
1-Apr-08	1:20	0.2692	1.10	28	0.0122
1-Apr-08	1:21	0.2692	1.12	28	0.0123
1-Apr-08	1:22	0.2692	1.13	28	0.0124
1-Apr-08	1:23	0.2692	1.15	28	0.0126
1-Apr-08	1:24	0.2692	1.17	28	0.0127
1-Apr-08	1:25	0.2692	1.18	28	0.0129
1-Apr-08	1:26	0.2692	1.20	28	0.0130
1-Apr-08	1:27	0.2692	1.21	28	0.0131
1-Apr-08	1:28	0.2692	1.23	28	0.0133
1-Apr-08	1:29	0.2692	1.24	28	0.0134
1-Apr-08	1:30	0.2692	1.26	28	0.0135
1-Apr-08	1:31	0.2692	1.27	28	0.0137
1-Apr-08	1:32	0.2692	1.29	28	0.0138
1-Apr-08	1:33	0.2692	1.30	28	0.0140
1-Apr-08	1:34	0.2692	1.32	28	0.0141
1-Apr-08	1:35	0.2692	1.33	28	0.0142
1-Apr-08	1:36	0.2692	1.35	28	0.0144

1-Apr-08	1:37	0.2692	1.36	28	0.0145
1-Apr-08	1:38	0.2692	1.38	28	0.0146
1-Apr-08	1:39	0.2692	1.40	28	0.0148
1-Apr-08	1:40	0.2692	1.41	28	0.0149
1-Apr-08	1:41	0.2692	1.43	28	0.0150
1-Apr-08	1:42	0.2692	1.44	28	0.0152
1-Apr-08	1:43	0.2692	1.46	28	0.0153
1-Apr-08	1:44	0.2692	1.47	28	0.0155
1-Apr-08	1:45	0.2692	1.49	28	0.0156
1-Apr-08	1:46	0.2692	1.50	28	0.0157
1-Apr-08	1:47	0.2692	1.52	28	0.0159
1-Apr-08	1:48	0.2692	1.53	28	0.0160
1-Apr-08	1:49	0.2692	1.55	28	0.0161
1-Apr-08	1:50	0.2692	1.56	28	0.0163
1-Apr-08	1:51	0.2692	1.58	28	0.0164
1-Apr-08	1:52	0.2692	1.59	28	0.0165
1-Apr-08	1:53	0.2692	1.61	28	0.0167
1-Apr-08	1:54	0.2693	1.62	28	0.0168
1-Apr-08	1:55	0.2693	1.64	28	0.0170
1-Apr-08	1:56	0.2693	1.65	28	0.0171
1-Apr-08	1:57	0.2693	1.67	28	0.0172
1-Apr-08	1:58	0.2694	1.68	28	0.0174
1-Apr-08	1:59	0.2694	1.70	28	0.0175
1-Apr-08	2:00	0.2694	1.71	28	0.0176
1-Apr-08	2:01	0.2695	1.73	28	0.0178
1-Apr-08	2:02	0.2695	1.74	28	0.0179
1-Apr-08	2:03	0.2696	1.76	28	0.0180
1-Apr-08	2:04	0.2696	1.77	28	0.0182
1-Apr-08	2:05	0.2696	1.79	28	0.0183
1-Apr-08	2:06	0.2697	1.80	28	0.0184
1-Apr-08	2:07	0.2697	1.82	28	0.0186
1-Apr-08	2:08	0.2698	1.83	28	0.0187
1-Apr-08	2:09	0.2698	1.85	28	0.0189
1-Apr-08	2:10	0.2699	1.87	28	0.0190
1-Apr-08	2:11	0.2699	1.88	28	0.0191
1-Apr-08	2:12	0.2699	1.90	28	0.0193
1-Apr-08	2:13	0.2700	1.91	28	0.0194
1-Apr-08	2:14	0.2700	1.93	28	0.0195
1-Apr-08	2:15	0.2701	1.94	28	0.0197
1-Apr-08	2:16	0.2701	1.96	28	0.0198
1-Apr-08	2:17	0.2702	1.97	28	0.0199
1-Apr-08	2:18	0.2702	1.99	28	0.0200
1-Apr-08	2:19	0.2703	2.00	28	0.0201
1-Apr-08	2:20	0.2703	2.02	28	0.0202
1-Apr-08	2:21	0.2703	2.03	28	0.0202
1-Apr-08	2:22	0.2704	2.05	28	0.0203
1-Apr-08	2:23	0.2704	2.06	28	0.0204
1-Apr-08	2:24	0.2705	2.08	28	0.0205
1-Apr-08	2:25	0.2705	2.09	28	0.0205
1-Apr-08	2:26	0.2706	2.11	28	0.0206

1-Apr-08	2:27	0.2706	2.12	28	0.0207
1-Apr-08	2:28	0.2707	2.14	28	0.0207
1-Apr-08	2:29	0.2707	2.15	28	0.0208
1-Apr-08	2:30	0.2707	2.17	28	0.0209
1-Apr-08	2:31	0.2708	2.18	28	0.0209
1-Apr-08	2:32	0.2708	2.20	28	0.0210
1-Apr-08	2:33	0.2709	2.21	28	0.0211
1-Apr-08	2:34	0.2709	2.23	28	0.0212
1-Apr-08	2:35	0.2710	2.24	28	0.0212
1-Apr-08	2:36	0.2710	2.26	28	0.0213
1-Apr-08	2:37	0.2710	2.27	28	0.0214
1-Apr-08	2:38	0.2711	2.29	28	0.0214
1-Apr-08	2:39	0.2711	2.30	28	0.0215
1-Apr-08	2:40	0.2712	2.32	28	0.0216
1-Apr-08	2:41	0.2712	2.33	28	0.0216
1-Apr-08	2:42	0.2713	2.35	28	0.0217
1-Apr-08	2:43	0.2713	2.36	28	0.0218
1-Apr-08	2:44	0.2713	2.38	28	0.0219
1-Apr-08	2:45	0.2714	2.39	28	0.0219
1-Apr-08	2:46	0.2714	2.41	28	0.0220
1-Apr-08	2:47	0.2715	2.42	28	0.0221
1-Apr-08	2:48	0.2715	2.43	28	0.0221
1-Apr-08	2:49	0.2716	2.45	28	0.0222
1-Apr-08	2:50	0.2716	2.46	28	0.0223
1-Apr-08	2:51	0.2716	2.48	28	0.0223
1-Apr-08	2:52	0.2717	2.49	28	0.0224
1-Apr-08	2:53	0.2717	2.51	28	0.0225
1-Apr-08	2:54	0.2718	2.52	28	0.0226
1-Apr-08	2:55	0.2718	2.54	28	0.0226
1-Apr-08	2:56	0.2719	2.55	28	0.0227
1-Apr-08	2:57	0.2719	2.57	28	0.0228
1-Apr-08	2:58	0.2719	2.58	28	0.0228
1-Apr-08	2:59	0.2720	2.60	28	0.0229
1-Apr-08	3:00	0.2720	2.61	28	0.0230
1-Apr-08	3:01	0.2721	2.63	28	0.0230
1-Apr-08	3:02	0.2721	2.64	28	0.0231
1-Apr-08	3:03	0.2722	2.66	28	0.0232
1-Apr-08	3:04	0.2722	2.67	28	0.0232
1-Apr-08	3:05	0.2722	2.69	28	0.0233
1-Apr-08	3:06	0.2723	2.70	28	0.0234
1-Apr-08	3:07	0.2723	2.72	28	0.0235
1-Apr-08	3:08	0.2724	2.73	28	0.0235
1-Apr-08	3:09	0.2724	2.75	28	0.0236
1-Apr-08	3:10	0.2724	2.76	28	0.0237
1-Apr-08	3:11	0.2725	2.78	28	0.0237
1-Apr-08	3:12	0.2725	2.79	28	0.0238
1-Apr-08	3:13	0.2726	2.81	28	0.0239
1-Apr-08	3:14	0.2726	2.82	28	0.0239
1-Apr-08	3:15	0.2726	2.84	28	0.0240
1-Apr-08	3:16	0.2727	2.85	28	0.0241

1-Apr-08	3:17	0.2727	2.87	28	0.0242
1-Apr-08	3:18	0.2728	2.88	28	0.0242
1-Apr-08	3:19	0.2728	2.90	28	0.0243
1-Apr-08	3:20	0.2729	2.91	28	0.0244
1-Apr-08	3:21	0.2729	2.93	28	0.0244
1-Apr-08	3:22	0.2729	2.94	28	0.0245
1-Apr-08	3:23	0.2730	2.96	28	0.0246
1-Apr-08	3:24	0.2730	2.97	28	0.0246
1-Apr-08	3:25	0.2731	2.99	28	0.0247
1-Apr-08	3:26	0.2731	3.00	28	0.0248
1-Apr-08	3:27	0.2731	3.02	28	0.0249
1-Apr-08	3:28	0.2732	3.03	28	0.0249
1-Apr-08	3:29	0.2732	3.05	28	0.0250
1-Apr-08	3:30	0.2733	3.06	28	0.0250
1-Apr-08	3:31	0.2733	3.08	28	0.0251
1-Apr-08	3:32	0.2733	3.09	28	0.0252
1-Apr-08	3:33	0.2734	3.11	28	0.0252
1-Apr-08	3:34	0.2734	3.12	28	0.0253
1-Apr-08	3:35	0.2735	3.14	28	0.0253
1-Apr-08	3:36	0.2735	3.15	28	0.0254
1-Apr-08	3:37	0.2735	3.17	28	0.0254
1-Apr-08	3:38	0.2736	3.18	28	0.0255
1-Apr-08	3:39	0.2736	3.20	28	0.0255
1-Apr-08	3:40	0.2736	3.21	28	0.0256
1-Apr-08	3:41	0.2737	3.23	28	0.0257
1-Apr-08	3:42	0.2737	3.24	28	0.0257
1-Apr-08	3:43	0.2738	3.26	28	0.0258
1-Apr-08	3:44	0.2738	3.27	28	0.0258
1-Apr-08	3:45	0.2738	3.29	28	0.0259
1-Apr-08	3:46	0.2739	3.30	28	0.0259
1-Apr-08	3:47	0.2739	3.31	28	0.0260
1-Apr-08	3:48	0.2740	3.33	28	0.0260
1-Apr-08	3:49	0.2740	3.34	28	0.0261
1-Apr-08	3:50	0.2740	3.36	28	0.0261
1-Apr-08	3:51	0.2741	3.37	28	0.0262
1-Apr-08	3:52	0.2741	3.39	28	0.0263
1-Apr-08	3:53	0.2742	3.40	28	0.0263
1-Apr-08	3:54	0.2742	3.42	28	0.0264
1-Apr-08	3:55	0.2742	3.43	28	0.0264
1-Apr-08	3:56	0.2743	3.45	28	0.0265
1-Apr-08	3:57	0.2743	3.46	28	0.0265
1-Apr-08	3:58	0.2743	3.48	28	0.0266
1-Apr-08	3:59	0.2744	3.49	28	0.0266
1-Apr-08	4:00	0.2744	3.51	28	0.0267
1-Apr-08	4:01	0.2745	3.52	28	0.0267
1-Apr-08	4:02	0.2745	3.54	28	0.0268
1-Apr-08	4:03	0.2745	3.55	28	0.0269
1-Apr-08	4:04	0.2746	3.57	28	0.0269
1-Apr-08	4:05	0.2746	3.58	28	0.0270
1-Apr-08	4:06	0.2747	3.60	28	0.0270

1-Apr-08	4:07	0.2747	3.61	28	0.0271
1-Apr-08	4:08	0.2747	3.63	28	0.0271
1-Apr-08	4:09	0.2748	3.64	28	0.0272
1-Apr-08	4:10	0.2748	3.66	28	0.0272
1-Apr-08	4:11	0.2748	3.67	28	0.0273
1-Apr-08	4:12	0.2749	3.69	28	0.0273
1-Apr-08	4:13	0.2749	3.70	28	0.0274
1-Apr-08	4:14	0.2750	3.72	28	0.0275
1-Apr-08	4:15	0.2750	3.73	28	0.0275
1-Apr-08	4:16	0.2750	3.75	28	0.0276
1-Apr-08	4:17	0.2751	3.76	28	0.0276
1-Apr-08	4:18	0.2751	3.78	28	0.0277
1-Apr-08	4:19	0.2751	3.79	28	0.0277
1-Apr-08	4:20	0.2752	3.81	28	0.0278
1-Apr-08	4:21	0.2752	3.82	28	0.0278
1-Apr-08	4:22	0.2753	3.84	28	0.0279
1-Apr-08	4:23	0.2753	3.85	28	0.0279
1-Apr-08	4:24	0.2753	3.86	28	0.0280
1-Apr-08	4:25	0.2754	3.88	28	0.0281
1-Apr-08	4:26	0.2754	3.89	28	0.0281
1-Apr-08	4:27	0.2754	3.91	28	0.0282
1-Apr-08	4:28	0.2755	3.92	28	0.0282
1-Apr-08	4:29	0.2755	3.94	28	0.0283
1-Apr-08	4:30	0.2755	3.95	28	0.0283
1-Apr-08	4:31	0.2756	3.97	28	0.0284
1-Apr-08	4:32	0.2756	3.98	28	0.0284
1-Apr-08	4:33	0.2757	4.00	28	0.0285
1-Apr-08	4:34	0.2757	4.01	28	0.0286
1-Apr-08	4:35	0.2757	4.03	28	0.0286
1-Apr-08	4:36	0.2758	4.04	28	0.0287
1-Apr-08	4:37	0.2758	4.06	28	0.0287
1-Apr-08	4:38	0.2758	4.07	28	0.0288
1-Apr-08	4:39	0.2759	4.09	28	0.0288
1-Apr-08	4:40	0.2759	4.10	28	0.0289
1-Apr-08	4:41	0.2759	4.12	28	0.0289
1-Apr-08	4:42	0.2760	4.13	28	0.0290
1-Apr-08	4:43	0.2760	4.15	28	0.0290
1-Apr-08	4:44	0.2761	4.16	28	0.0291
1-Apr-08	4:45	0.2761	4.18	28	0.0291
1-Apr-08	4:46	0.2761	4.19	28	0.0292
1-Apr-08	4:47	0.2762	4.21	28	0.0293
1-Apr-08	4:48	0.2762	4.22	28	0.0293
1-Apr-08	4:49	0.2762	4.24	28	0.0294
1-Apr-08	4:50	0.2763	4.25	28	0.0294
1-Apr-08	4:51	0.2763	4.26	28	0.0295
1-Apr-08	4:52	0.2763	4.28	28	0.0295
1-Apr-08	4:53	0.2764	4.29	28	0.0296
1-Apr-08	4:54	0.2764	4.31	28	0.0296
1-Apr-08	4:55	0.2764	4.32	28	0.0297
1-Apr-08	4:56	0.2765	4.34	28	0.0297

1-Apr-08	4:57	0.2765	4.35	28	0.0298
1-Apr-08	4:58	0.2765	4.37	28	0.0298
1-Apr-08	4:59	0.2766	4.38	28	0.0299
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1-Apr-08	5:02	0.2767	4.43	28	0.0301
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1-Apr-08	5:10	0.2770	4.55	28	0.0305
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1-Apr-08	5:12	0.2770	4.58	28	0.0306
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1-Apr-08	5:25	0.2775	4.77	28	0.0313
1-Apr-08	5:26	0.2775	4.78	28	0.0314
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1-Apr-08	5:28	0.2776	4.81	28	0.0315
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1-Apr-08	5:30	0.2776	4.84	28	0.0316
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1-Apr-08	5:37	0.2779	4.94	28	0.0319
1-Apr-08	5:38	0.2779	4.96	28	0.0320
1-Apr-08	5:39	0.2779	4.97	28	0.0320
1-Apr-08	5:40	0.2780	4.99	28	0.0321
1-Apr-08	5:41	0.2780	5.00	28	0.0322
1-Apr-08	5:42	0.2780	5.02	28	0.0322
1-Apr-08	5:43	0.2781	5.03	28	0.0323
1-Apr-08	5:44	0.2781	5.05	28	0.0323
1-Apr-08	5:45	0.2781	5.06	28	0.0324
1-Apr-08	5:46	0.2782	5.08	28	0.0324

1-Apr-08	5:47	0.2782	5.09	28	0.0325
1-Apr-08	5:48	0.2782	5.11	28	0.0325
1-Apr-08	5:49	0.2783	5.12	28	0.0326
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1-Apr-08	5:51	0.2797	5.15	28	0.0327
1-Apr-08	5:52	0.2841	5.17	28	0.0327
1-Apr-08	5:53	0.2924	5.18	28	0.0328
1-Apr-08	5:54	0.3064	5.20	28	0.0329
1-Apr-08	5:55	0.3273	5.21	28	0.0329
1-Apr-08	5:56	0.3536	5.23	28	0.0330
1-Apr-08	5:57	0.3830	5.25	28	0.0330
1-Apr-08	5:58	0.4133	5.28	28	0.0331
1-Apr-08	5:59	0.4432	5.30	28	0.0332
1-Apr-08	6:00	0.4708	5.32	28	0.0332
1-Apr-08	6:01	0.4955	5.35	28	0.0333
1-Apr-08	6:02	0.5168	5.38	28	0.0334
1-Apr-08	6:03	0.5338	5.41	28	0.0335
1-Apr-08	6:04	0.5472	5.44	28	0.0335
1-Apr-08	6:05	0.5582	5.47	28	0.0336
1-Apr-08	6:06	0.5672	5.50	28	0.0337
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1-Apr-08	6:09	0.5861	5.60	28	0.0340
1-Apr-08	6:10	0.5902	5.63	28	0.0341
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1-Apr-08	6:14	0.6008	5.77	28	0.0344
1-Apr-08	6:15	0.6024	5.80	28	0.0345
1-Apr-08	6:16	0.6037	5.84	28	0.0346
1-Apr-08	6:17	0.6049	5.87	28	0.0347
1-Apr-08	6:18	0.6058	5.91	28	0.0348
1-Apr-08	6:19	0.6066	5.94	28	0.0349
1-Apr-08	6:20	0.6073	5.97	28	0.0350
1-Apr-08	6:21	0.6079	6.01	28	0.0351
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1-Apr-08	6:24	0.6093	6.11	28	0.0354
1-Apr-08	6:25	0.6096	6.15	28	0.0354
1-Apr-08	6:26	0.6099	6.18	28	0.0355
1-Apr-08	6:27	0.6102	6.21	28	0.0356
1-Apr-08	6:28	0.6104	6.25	28	0.0357
1-Apr-08	6:29	0.6106	6.28	28	0.0358
1-Apr-08	6:30	0.6108	6.32	28	0.0359
1-Apr-08	6:31	0.6109	6.35	28	0.0360
1-Apr-08	6:32	0.6111	6.39	28	0.0361
1-Apr-08	6:33	0.6112	6.42	28	0.0362
1-Apr-08	6:34	0.6113	6.46	28	0.0364
1-Apr-08	6:35	0.6115	6.49	28	0.0365
1-Apr-08	6:36	0.6116	6.53	28	0.0366

1-Apr-08	6:37	0.6117	6.56	28	0.0367
1-Apr-08	6:38	0.6119	6.59	28	0.0369
1-Apr-08	6:39	0.6120	6.63	28	0.0370
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1-Apr-08	6:41	0.6123	6.70	28	0.0372
1-Apr-08	6:42	0.6124	6.73	28	0.0373
1-Apr-08	6:43	0.6126	6.77	28	0.0375
1-Apr-08	6:44	0.6127	6.80	28	0.0376
1-Apr-08	6:45	0.6128	6.84	28	0.0377
1-Apr-08	6:46	0.6130	6.87	28	0.0378
1-Apr-08	6:47	0.6131	6.90	28	0.0380
1-Apr-08	6:48	0.6132	6.94	28	0.0381
1-Apr-08	6:49	0.6133	6.97	28	0.0382
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1-Apr-08	6:59	0.6146	7.32	28	0.0394
1-Apr-08	7:00	0.6148	7.35	28	0.0395
1-Apr-08	7:01	0.6149	7.39	28	0.0397
1-Apr-08	7:02	0.6150	7.42	28	0.0398
1-Apr-08	7:03	0.6152	7.46	28	0.0399
1-Apr-08	7:04	0.6153	7.49	28	0.0400
1-Apr-08	7:05	0.6154	7.53	28	0.0401
1-Apr-08	7:06	0.6155	7.56	28	0.0401
1-Apr-08	7:07	0.6157	7.59	28	0.0402
1-Apr-08	7:08	0.6158	7.63	28	0.0403
1-Apr-08	7:09	0.6159	7.66	28	0.0403
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1-Apr-08	7:11	0.6162	7.73	28	0.0404
1-Apr-08	7:12	0.6163	7.77	28	0.0405
1-Apr-08	7:13	0.6164	7.80	28	0.0406
1-Apr-08	7:14	0.6165	7.84	28	0.0406
1-Apr-08	7:15	0.6166	7.87	28	0.0407
1-Apr-08	7:16	0.6168	7.91	28	0.0407
1-Apr-08	7:17	0.6169	7.94	28	0.0408
1-Apr-08	7:18	0.6170	7.97	28	0.0409
1-Apr-08	7:19	0.6171	8.01	28	0.0409
1-Apr-08	7:20	0.6172	8.04	28	0.0410
1-Apr-08	7:21	0.6174	8.08	28	0.0410
1-Apr-08	7:22	0.6175	8.11	28	0.0411
1-Apr-08	7:23	0.6176	8.15	28	0.0412
1-Apr-08	7:24	0.6177	8.18	28	0.0412
1-Apr-08	7:25	0.6178	8.22	28	0.0413
1-Apr-08	7:26	0.6180	8.25	28	0.0413

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1-Apr-08	7:28	0.6182	8.32	28	0.0415
1-Apr-08	7:29	0.6183	8.36	28	0.0415
1-Apr-08	7:30	0.6184	8.39	28	0.0416
1-Apr-08	7:31	0.6185	8.42	28	0.0416
1-Apr-08	7:32	0.6187	8.46	28	0.0417
1-Apr-08	7:33	0.6188	8.49	28	0.0418
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1-Apr-08	7:35	0.6190	8.56	28	0.0419
1-Apr-08	7:36	0.6191	8.60	28	0.0419
1-Apr-08	7:37	0.6192	8.63	28	0.0421
1-Apr-08	7:38	0.6194	8.67	28	0.0437
1-Apr-08	7:39	0.6195	8.70	28	0.0453
1-Apr-08	7:40	0.6196	8.74	28	0.0469
1-Apr-08	7:41	0.6197	8.77	28	0.0485
1-Apr-08	7:42	0.6198	8.80	28	0.0501
1-Apr-08	7:43	0.6199	8.84	28	0.0516
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1-Apr-08	7:49	0.6206	9.04	28	0.0611
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1-Apr-08	7:52	0.6209	9.14	28	0.0657
1-Apr-08	7:53	0.6210	9.18	28	0.0673
1-Apr-08	7:54	0.6211	9.21	28	0.0688
1-Apr-08	7:55	0.6213	9.24	28	0.0704
1-Apr-08	7:56	0.6214	9.27	28	0.0719
1-Apr-08	7:57	0.6215	9.31	28	0.0734
1-Apr-08	7:58	0.6216	9.34	28	0.0750
1-Apr-08	7:59	0.6217	9.37	28	0.0765
1-Apr-08	8:00	0.6218	9.41	28	0.0780
1-Apr-08	8:01	0.6219	9.44	28	0.0795
1-Apr-08	8:02	0.6220	9.47	28	0.0810
1-Apr-08	8:03	0.6221	9.50	28	0.0825
1-Apr-08	8:04	0.6222	9.54	28	0.0840
1-Apr-08	8:05	0.6223	9.57	28	0.0855
1-Apr-08	8:06	0.6224	9.60	28	0.0870
1-Apr-08	8:07	0.6225	9.63	28	0.0885
1-Apr-08	8:08	0.6226	9.66	28	0.0900
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1-Apr-08	8:10	0.6229	9.73	28	0.0930
1-Apr-08	8:11	0.6230	9.76	28	0.0944
1-Apr-08	8:12	0.6231	9.79	28	0.0959
1-Apr-08	8:13	0.6232	9.82	28	0.0984
1-Apr-08	8:14	0.6233	9.85	28	0.1010
1-Apr-08	8:15	0.6234	9.89	28	0.1035
1-Apr-08	8:16	0.6235	9.92	28	0.1061

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1-Apr-08	8:20	0.6239	10.04	28	0.1161
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1-Apr-08	8:23	0.6242	10.13	28	0.1235
1-Apr-08	8:24	0.6243	10.16	28	0.1260
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1-Apr-08	8:27	0.6246	10.25	28	0.1332
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1-Apr-08	8:29	0.6248	10.31	28	0.1380
1-Apr-08	8:30	0.6249	10.34	28	0.1404
1-Apr-08	8:31	0.6250	10.37	28	0.1427
1-Apr-08	8:32	0.6251	10.40	28	0.1451
1-Apr-08	8:33	0.6252	10.42	28	0.1474
1-Apr-08	8:34	0.6253	10.45	28	0.1498
1-Apr-08	8:35	0.6254	10.48	28	0.1521
1-Apr-08	8:36	0.6255	10.51	28	0.1544
1-Apr-08	8:37	0.6256	10.54	28	0.1567
1-Apr-08	8:38	0.6257	10.57	28	0.1590
1-Apr-08	8:39	0.6258	10.59	28	0.1613
1-Apr-08	8:40	0.6259	10.62	28	0.1635
1-Apr-08	8:41	0.6260	10.65	28	0.1658
1-Apr-08	8:42	0.6261	10.68	28	0.1680
1-Apr-08	8:43	0.6262	10.70	28	0.1703
1-Apr-08	8:44	0.6263	10.73	28	0.1725
1-Apr-08	8:45	0.6264	10.76	28	0.1747
1-Apr-08	8:46	0.6264	10.79	28	0.1769
1-Apr-08	8:47	0.6265	10.81	28	0.1791
1-Apr-08	8:48	0.6266	10.84	28	0.1813
1-Apr-08	8:49	0.6267	10.87	28	0.1835
1-Apr-08	8:50	0.6268	10.89	28	0.1856
1-Apr-08	8:51	0.6277	10.92	28	0.1878
1-Apr-08	8:52	0.6303	10.94	28	0.1900
1-Apr-08	8:53	0.6351	10.97	28	0.1922
1-Apr-08	8:54	0.6431	11.00	28	0.1949
1-Apr-08	8:55	0.6551	11.03	28	0.1977
1-Apr-08	8:56	0.6701	11.05	28	0.2006
1-Apr-08	8:57	0.6870	11.08	28	0.2035
1-Apr-08	8:58	0.7043	11.11	28	0.2066
1-Apr-08	8:59	0.7214	11.14	28	0.2097
1-Apr-08	9:00	0.7371	11.17	28	0.2129
1-Apr-08	9:01	0.7513	11.20	28	0.2162
1-Apr-08	9:02	0.7635	11.24	28	0.2195
1-Apr-08	9:03	0.7732	11.27	28	0.2229
1-Apr-08	9:04	0.7809	11.30	28	0.2263
1-Apr-08	9:05	0.7873	11.34	28	0.2297
1-Apr-08	9:06	0.7925	11.37	28	0.2332

1-Apr-08	9:07	0.7968	11.40	28	0.2367
1-Apr-08	9:08	0.8004	11.44	28	0.2401
1-Apr-08	9:09	0.8034	11.47	28	0.2436
1-Apr-08	9:10	0.8058	11.50	28	0.2470
1-Apr-08	9:11	0.8078	11.54	28	0.2505
1-Apr-08	9:12	0.8095	11.57	28	0.2539
1-Apr-08	9:13	0.8109	11.60	28	0.2574
1-Apr-08	9:14	0.8121	11.64	28	0.2608
1-Apr-08	9:15	0.8131	11.67	28	0.2642
1-Apr-08	9:16	0.8139	11.70	28	0.2676
1-Apr-08	9:17	0.8146	11.74	28	0.2710
1-Apr-08	9:18	0.8152	11.77	28	0.2743
1-Apr-08	9:19	0.8157	11.80	28	0.2776
1-Apr-08	9:20	0.8162	11.83	28	0.2810
1-Apr-08	9:21	0.8166	11.86	28	0.2843
1-Apr-08	9:22	0.8169	11.90	28	0.2876
1-Apr-08	9:23	0.8173	11.93	28	0.2908
1-Apr-08	9:24	0.8176	11.96	28	0.2941
1-Apr-08	9:25	0.8178	11.99	28	0.2973
1-Apr-08	9:26	0.8181	12.02	28	0.3005
1-Apr-08	9:27	0.8183	12.05	28	0.3037
1-Apr-08	9:28	0.8185	12.08	28	0.3069
1-Apr-08	9:29	0.8186	12.11	28	0.3100
1-Apr-08	9:30	0.8188	12.15	28	0.3132
1-Apr-08	9:31	0.8189	12.18	28	0.3165
1-Apr-08	9:32	0.8191	12.21	28	0.3201
1-Apr-08	9:33	0.8192	12.24	28	0.3237
1-Apr-08	9:34	0.8193	12.26	28	0.3273
1-Apr-08	9:35	0.8195	12.29	28	0.3309
1-Apr-08	9:36	0.8196	12.32	28	0.3344
1-Apr-08	9:37	0.8198	12.35	28	0.3379
1-Apr-08	9:38	0.8199	12.38	28	0.3414
1-Apr-08	9:39	0.8200	12.41	28	0.3449
1-Apr-08	9:40	0.8202	12.44	28	0.3483
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1-Apr-08	9:42	0.8204	12.49	28	0.3551
1-Apr-08	9:43	0.8206	12.52	28	0.3584
1-Apr-08	9:44	0.8207	12.55	28	0.3618
1-Apr-08	9:45	0.8208	12.58	28	0.3651
1-Apr-08	9:46	0.8210	12.60	28	0.3684
1-Apr-08	9:47	0.8211	12.63	28	0.3717
1-Apr-08	9:48	0.8212	12.66	28	0.3749
1-Apr-08	9:49	0.8214	12.69	28	0.3781
1-Apr-08	9:50	0.8215	12.71	28	0.3813
1-Apr-08	9:51	0.8233	12.74	28	0.3845
1-Apr-08	9:52	0.8283	12.76	28	0.3877
1-Apr-08	9:53	0.8380	12.79	28	0.3909
1-Apr-08	9:54	0.8542	12.82	28	0.3942
1-Apr-08	9:55	0.8783	12.85	28	0.3976
1-Apr-08	9:56	0.9087	12.88	28	0.4012

1-Apr-08	9:57	0.9426	12.91	28	0.4050
1-Apr-08	9:58	0.9776	12.94	28	0.4090
1-Apr-08	9:59	1.0121	12.98	28	0.4133
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1-Apr-08	10:01	1.0724	13.05	28	0.4223
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1-Apr-08	10:03	1.1166	13.13	28	0.4320
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1-Apr-08	10:05	1.1449	13.21	28	0.4421
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1-Apr-08	10:07	1.1641	13.30	28	0.4524
1-Apr-08	10:08	1.1714	13.34	28	0.4575
1-Apr-08	10:09	1.1773	13.39	28	0.4629
1-Apr-08	10:10	1.1822	13.43	28	0.4687
1-Apr-08	10:11	1.1862	13.47	28	0.4744
1-Apr-08	10:12	1.1896	13.51	28	0.4802
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1-Apr-08	10:34	1.2084	14.39	28	0.5981
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1-Apr-08	10:36	1.2089	14.46	28	0.6079
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1-Apr-08	10:41	1.2100	14.64	28	0.6322
1-Apr-08	10:42	1.2102	14.67	28	0.6372
1-Apr-08	10:43	1.2105	14.71	28	0.6422
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1-Apr-08	10:45	1.2109	14.77	28	0.6521
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1-Apr-08	10:49	1.2118	14.91	28	0.6714
1-Apr-08	10:50	1.2120	14.94	28	0.6761
1-Apr-08	10:51	1.2152	14.97	28	0.6808
1-Apr-08	10:52	1.2245	15.00	28	0.6855
1-Apr-08	10:53	1.2424	15.03	28	0.6903
1-Apr-08	10:54	1.2721	15.07	28	0.6952
1-Apr-08	10:55	1.3165	15.10	28	0.7004
1-Apr-08	10:56	1.3722	15.14	28	0.7061
1-Apr-08	10:57	1.4346	15.18	28	0.7121
1-Apr-08	10:58	1.4990	15.23	28	0.7187
1-Apr-08	10:59	1.5624	15.28	28	0.7258
1-Apr-08	11:00	1.6209	15.33	28	0.7334
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1-Apr-08	11:02	1.7187	15.44	28	0.7497
1-Apr-08	11:03	1.7547	15.50	28	0.7583
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1-Apr-08	11:05	1.8069	15.62	28	0.7761
1-Apr-08	11:06	1.8261	15.68	28	0.7852
1-Apr-08	11:07	1.8422	15.75	28	0.7943
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1-Apr-08	11:09	1.8664	15.87	28	0.8132
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1-Apr-08	11:11	1.8829	16.00	28	0.8331
1-Apr-08	11:12	1.8891	16.06	28	0.8431
1-Apr-08	11:13	1.8942	16.13	28	0.8530
1-Apr-08	11:14	1.8984	16.19	28	0.8628
1-Apr-08	11:15	1.9020	16.25	28	0.8726
1-Apr-08	11:16	1.9050	16.31	28	0.8823
1-Apr-08	11:17	1.9075	16.37	28	0.8920
1-Apr-08	11:18	1.9097	16.43	28	0.9015
1-Apr-08	11:19	1.9116	16.49	28	0.9111
1-Apr-08	11:20	1.9132	16.55	28	0.9205
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1-Apr-08	11:22	1.9401	16.67	28	0.9393
1-Apr-08	11:23	1.9767	16.73	28	0.9489
1-Apr-08	11:24	2.0372	16.80	28	0.9589
1-Apr-08	11:25	2.1271	16.86	28	0.9695
1-Apr-08	11:26	2.2398	16.94	28	0.9809
1-Apr-08	11:27	2.3659	17.01	28	0.9934
1-Apr-08	11:28	2.4959	17.10	28	1.0071
1-Apr-08	11:29	2.6239	17.19	28	1.0225
1-Apr-08	11:30	2.7418	17.29	28	1.0389
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1-Apr-08	11:33	3.0495	17.62	28	1.0938
1-Apr-08	11:34	3.1447	17.74	28	1.1137
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1-Apr-08	11:43	4.1250	19.04	28	1.3358
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1-Apr-08	13:29	1.5309	23.42	28	2.3473
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1-Apr-08	13:39	1.5315	22.98	28	2.1881
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1-Apr-08	14:10	1.1067	21.83	28	1.8463
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1-Apr-08	14:13	1.0955	21.69	28	1.8213
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1-Apr-08	14:15	1.0911	21.61	28	1.8049
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1-Apr-08	14:27	1.0831	21.12	28	1.7130
1-Apr-08	14:28	1.0830	21.09	28	1.7059
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1-Apr-08	14:30	1.0830	21.01	28	1.6918
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1-Apr-08	19:32	0.3624	14.19	28	0.5708
1-Apr-08	19:33	0.3624	14.17	28	0.5691
1-Apr-08	19:34	0.3624	14.16	28	0.5675
1-Apr-08	19:35	0.3624	14.15	28	0.5658
1-Apr-08	19:36	0.3624	14.14	28	0.5642
1-Apr-08	19:37	0.3624	14.12	28	0.5625
1-Apr-08	19:38	0.3624	14.11	28	0.5609
1-Apr-08	19:39	0.3624	14.10	28	0.5593
1-Apr-08	19:40	0.3624	14.09	28	0.5577
1-Apr-08	19:41	0.3625	14.08	28	0.5562
1-Apr-08	19:42	0.3625	14.07	28	0.5546
1-Apr-08	19:43	0.3625	14.05	28	0.5531
1-Apr-08	19:44	0.3625	14.04	28	0.5515
1-Apr-08	19:45	0.3625	14.03	28	0.5500
1-Apr-08	19:46	0.3625	14.02	28	0.5485
1-Apr-08	19:47	0.3625	14.01	28	0.5470
1-Apr-08	19:48	0.3625	14.00	28	0.5455
1-Apr-08	19:49	0.3625	13.99	28	0.5440
1-Apr-08	19:50	0.3625	13.98	28	0.5426
1-Apr-08	19:51	0.3625	13.97	28	0.5411
1-Apr-08	19:52	0.3625	13.95	28	0.5397
1-Apr-08	19:53	0.3625	13.94	28	0.5383
1-Apr-08	19:54	0.3625	13.93	28	0.5368
1-Apr-08	19:55	0.3625	13.92	28	0.5354
1-Apr-08	19:56	0.3625	13.91	28	0.5340

1-Apr-08	19:57	0.3625	13.90	28	0.5327
1-Apr-08	19:58	0.3625	13.89	28	0.5313
1-Apr-08	19:59	0.3625	13.88	28	0.5299
1-Apr-08	20:00	0.3625	13.87	28	0.5286
1-Apr-08	20:01	0.3625	13.86	28	0.5272
1-Apr-08	20:02	0.3625	13.85	28	0.5259
1-Apr-08	20:03	0.3625	13.84	28	0.5246
1-Apr-08	20:04	0.3625	13.83	28	0.5233
1-Apr-08	20:05	0.3625	13.82	28	0.5220
1-Apr-08	20:06	0.3625	13.81	28	0.5207
1-Apr-08	20:07	0.3625	13.80	28	0.5194
1-Apr-08	20:08	0.3625	13.80	28	0.5182
1-Apr-08	20:09	0.3625	13.79	28	0.5169
1-Apr-08	20:10	0.3625	13.78	28	0.5157
1-Apr-08	20:11	0.3625	13.77	28	0.5144
1-Apr-08	20:12	0.3625	13.76	28	0.5132
1-Apr-08	20:13	0.3625	13.75	28	0.5120
1-Apr-08	20:14	0.3625	13.74	28	0.5108
1-Apr-08	20:15	0.3625	13.73	28	0.5096
1-Apr-08	20:16	0.3625	13.72	28	0.5084
1-Apr-08	20:17	0.3625	13.71	28	0.5072
1-Apr-08	20:18	0.3625	13.71	28	0.5061
1-Apr-08	20:19	0.3625	13.70	28	0.5049
1-Apr-08	20:20	0.3625	13.69	28	0.5038
1-Apr-08	20:21	0.3625	13.68	28	0.5026
1-Apr-08	20:22	0.3625	13.67	28	0.5015
1-Apr-08	20:23	0.3625	13.66	28	0.5004
1-Apr-08	20:24	0.3626	13.65	28	0.4993
1-Apr-08	20:25	0.3626	13.65	28	0.4982
1-Apr-08	20:26	0.3626	13.64	28	0.4971
1-Apr-08	20:27	0.3626	13.63	28	0.4960
1-Apr-08	20:28	0.3626	13.62	28	0.4949
1-Apr-08	20:29	0.3626	13.61	28	0.4939
1-Apr-08	20:30	0.3626	13.61	28	0.4928
1-Apr-08	20:31	0.3626	13.60	28	0.4918
1-Apr-08	20:32	0.3626	13.59	28	0.4907
1-Apr-08	20:33	0.3626	13.58	28	0.4897
1-Apr-08	20:34	0.3626	13.58	28	0.4887
1-Apr-08	20:35	0.3626	13.57	28	0.4876
1-Apr-08	20:36	0.3626	13.56	28	0.4866
1-Apr-08	20:37	0.3626	13.55	28	0.4856
1-Apr-08	20:38	0.3626	13.55	28	0.4846
1-Apr-08	20:39	0.3626	13.54	28	0.4837
1-Apr-08	20:40	0.3626	13.53	28	0.4827
1-Apr-08	20:41	0.3626	13.52	28	0.4817
1-Apr-08	20:42	0.3626	13.52	28	0.4808
1-Apr-08	20:43	0.3626	13.51	28	0.4798
1-Apr-08	20:44	0.3626	13.50	28	0.4789
1-Apr-08	20:45	0.3626	13.50	28	0.4779
1-Apr-08	20:46	0.3626	13.49	28	0.4770

1-Apr-08	20:47	0.3626	13.48	28	0.4761
1-Apr-08	20:48	0.3626	13.48	28	0.4752
1-Apr-08	20:49	0.3626	13.47	28	0.4743
1-Apr-08	20:50	0.3626	13.46	28	0.4734
1-Apr-08	20:51	0.3626	13.46	28	0.4725
1-Apr-08	20:52	0.3626	13.45	28	0.4716
1-Apr-08	20:53	0.3626	13.44	28	0.4707
1-Apr-08	20:54	0.3626	13.44	28	0.4698
1-Apr-08	20:55	0.3626	13.43	28	0.4690
1-Apr-08	20:56	0.3626	13.42	28	0.4681
1-Apr-08	20:57	0.3626	13.42	28	0.4673
1-Apr-08	20:58	0.3626	13.41	28	0.4664
1-Apr-08	20:59	0.3626	13.40	28	0.4656
1-Apr-08	21:00	0.3626	13.40	28	0.4648
1-Apr-08	21:01	0.3626	13.39	28	0.4639
1-Apr-08	21:02	0.3626	13.39	28	0.4631
1-Apr-08	21:03	0.3626	13.38	28	0.4623
1-Apr-08	21:04	0.3626	13.37	28	0.4615
1-Apr-08	21:05	0.3626	13.37	28	0.4607
1-Apr-08	21:06	0.3626	13.36	28	0.4600
1-Apr-08	21:07	0.3626	13.36	28	0.4593
1-Apr-08	21:08	0.3626	13.35	28	0.4586
1-Apr-08	21:09	0.3627	13.35	28	0.4579
1-Apr-08	21:10	0.3627	13.34	28	0.4572
1-Apr-08	21:11	0.3627	13.33	28	0.4566
1-Apr-08	21:12	0.3627	13.33	28	0.4559
1-Apr-08	21:13	0.3627	13.32	28	0.4552
1-Apr-08	21:14	0.3627	13.32	28	0.4545
1-Apr-08	21:15	0.3627	13.31	28	0.4539
1-Apr-08	21:16	0.3627	13.31	28	0.4532
1-Apr-08	21:17	0.3627	13.30	28	0.4526
1-Apr-08	21:18	0.3627	13.30	28	0.4519
1-Apr-08	21:19	0.3627	13.29	28	0.4513
1-Apr-08	21:20	0.3627	13.29	28	0.4506
1-Apr-08	21:21	0.3627	13.28	28	0.4500
1-Apr-08	21:22	0.3627	13.27	28	0.4494
1-Apr-08	21:23	0.3627	13.27	28	0.4487
1-Apr-08	21:24	0.3627	13.26	28	0.4481
1-Apr-08	21:25	0.3627	13.26	28	0.4475
1-Apr-08	21:26	0.3627	13.25	28	0.4469
1-Apr-08	21:27	0.3627	13.25	28	0.4463
1-Apr-08	21:28	0.3627	13.24	28	0.4457
1-Apr-08	21:29	0.3627	13.24	28	0.4451
1-Apr-08	21:30	0.3627	13.23	28	0.4445
1-Apr-08	21:31	0.3627	13.23	28	0.4439
1-Apr-08	21:32	0.3627	13.22	28	0.4433
1-Apr-08	21:33	0.3627	13.22	28	0.4427
1-Apr-08	21:34	0.3627	13.21	28	0.4421
1-Apr-08	21:35	0.3627	13.21	28	0.4416
1-Apr-08	21:36	0.3627	13.21	28	0.4410

1-Apr-08	21:37	0.3627	13.20	28	0.4404
1-Apr-08	21:38	0.3627	13.20	28	0.4399
1-Apr-08	21:39	0.3627	13.19	28	0.4393
1-Apr-08	21:40	0.3627	13.19	28	0.4388
1-Apr-08	21:41	0.3627	13.18	28	0.4382
1-Apr-08	21:42	0.3627	13.18	28	0.4377
1-Apr-08	21:43	0.3627	13.17	28	0.4371
1-Apr-08	21:44	0.3627	13.17	28	0.4366
1-Apr-08	21:45	0.3627	13.16	28	0.4360
1-Apr-08	21:46	0.3627	13.16	28	0.4355
1-Apr-08	21:47	0.3627	13.16	28	0.4350
1-Apr-08	21:48	0.3627	13.15	28	0.4345
1-Apr-08	21:49	0.3627	13.15	28	0.4340
1-Apr-08	21:50	0.3627	13.14	28	0.4334
1-Apr-08	21:51	0.3627	13.14	28	0.4329
1-Apr-08	21:52	0.3627	13.13	28	0.4324
1-Apr-08	21:53	0.3627	13.13	28	0.4319
1-Apr-08	21:54	0.3627	13.13	28	0.4314
1-Apr-08	21:55	0.3628	13.12	28	0.4309
1-Apr-08	21:56	0.3628	13.12	28	0.4304
1-Apr-08	21:57	0.3628	13.11	28	0.4299
1-Apr-08	21:58	0.3628	13.11	28	0.4295
1-Apr-08	21:59	0.3628	13.11	28	0.4290
1-Apr-08	22:00	0.3628	13.10	28	0.4285
1-Apr-08	22:01	0.3628	13.10	28	0.4280
1-Apr-08	22:02	0.3628	13.09	28	0.4275
1-Apr-08	22:03	0.3628	13.09	28	0.4271
1-Apr-08	22:04	0.3628	13.09	28	0.4266
1-Apr-08	22:05	0.3628	13.08	28	0.4262
1-Apr-08	22:06	0.3628	13.08	28	0.4257
1-Apr-08	22:07	0.3628	13.08	28	0.4252
1-Apr-08	22:08	0.3628	13.07	28	0.4248
1-Apr-08	22:09	0.3628	13.07	28	0.4243
1-Apr-08	22:10	0.3628	13.06	28	0.4239
1-Apr-08	22:11	0.3628	13.06	28	0.4235
1-Apr-08	22:12	0.3628	13.06	28	0.4230
1-Apr-08	22:13	0.3628	13.05	28	0.4226
1-Apr-08	22:14	0.3628	13.05	28	0.4221
1-Apr-08	22:15	0.3628	13.05	28	0.4217
1-Apr-08	22:16	0.3628	13.04	28	0.4213
1-Apr-08	22:17	0.3628	13.04	28	0.4209
1-Apr-08	22:18	0.3628	13.04	28	0.4205
1-Apr-08	22:19	0.3628	13.03	28	0.4200
1-Apr-08	22:20	0.3628	13.03	28	0.4196
1-Apr-08	22:21	0.3628	13.03	28	0.4192
1-Apr-08	22:22	0.3628	13.02	28	0.4188
1-Apr-08	22:23	0.3628	13.02	28	0.4184
1-Apr-08	22:24	0.3628	13.02	28	0.4180
1-Apr-08	22:25	0.3628	13.01	28	0.4176
1-Apr-08	22:26	0.3628	13.01	28	0.4172

1-Apr-08	22:27	0.3628	13.01	28	0.4168
1-Apr-08	22:28	0.3628	13.00	28	0.4164
1-Apr-08	22:29	0.3628	13.00	28	0.4160
1-Apr-08	22:30	0.3628	13.00	28	0.4156
1-Apr-08	22:31	0.3628	12.99	28	0.4153
1-Apr-08	22:32	0.3628	12.99	28	0.4149
1-Apr-08	22:33	0.3628	12.99	28	0.4145
1-Apr-08	22:34	0.3628	12.98	28	0.4141
1-Apr-08	22:35	0.3628	12.98	28	0.4138
1-Apr-08	22:36	0.3628	12.98	28	0.4134
1-Apr-08	22:37	0.3628	12.97	28	0.4130
1-Apr-08	22:38	0.3628	12.97	28	0.4127
1-Apr-08	22:39	0.3628	12.97	28	0.4123
1-Apr-08	22:40	0.3628	12.97	28	0.4120
1-Apr-08	22:41	0.3628	12.96	28	0.4116
1-Apr-08	22:42	0.3629	12.96	28	0.4112
1-Apr-08	22:43	0.3629	12.96	28	0.4109
1-Apr-08	22:44	0.3629	12.95	28	0.4105
1-Apr-08	22:45	0.3629	12.95	28	0.4102
1-Apr-08	22:46	0.3629	12.95	28	0.4099
1-Apr-08	22:47	0.3629	12.95	28	0.4095
1-Apr-08	22:48	0.3629	12.94	28	0.4092
1-Apr-08	22:49	0.3629	12.94	28	0.4089
1-Apr-08	22:50	0.3629	12.94	28	0.4085
1-Apr-08	22:51	0.3629	12.93	28	0.4082
1-Apr-08	22:52	0.3629	12.93	28	0.4079
1-Apr-08	22:53	0.3629	12.93	28	0.4075
1-Apr-08	22:54	0.3629	12.93	28	0.4072
1-Apr-08	22:55	0.3629	12.92	28	0.4069
1-Apr-08	22:56	0.3629	12.92	28	0.4066
1-Apr-08	22:57	0.3629	12.92	28	0.4063
1-Apr-08	22:58	0.3629	12.92	28	0.4059
1-Apr-08	22:59	0.3629	12.91	28	0.4056
1-Apr-08	23:00	0.3629	12.91	28	0.4053
1-Apr-08	23:01	0.3629	12.91	28	0.4050
1-Apr-08	23:02	0.3629	12.91	28	0.4047
1-Apr-08	23:03	0.3629	12.90	28	0.4044
1-Apr-08	23:04	0.3629	12.90	28	0.4041
1-Apr-08	23:05	0.3629	12.90	28	0.4038
1-Apr-08	23:06	0.3629	12.90	28	0.4035
1-Apr-08	23:07	0.3629	12.89	28	0.4032
1-Apr-08	23:08	0.3629	12.89	28	0.4029
1-Apr-08	23:09	0.3629	12.89	28	0.4026
1-Apr-08	23:10	0.3629	12.89	28	0.4024
1-Apr-08	23:11	0.3629	12.88	28	0.4021
1-Apr-08	23:12	0.3629	12.88	28	0.4018
1-Apr-08	23:13	0.3629	12.88	28	0.4015
1-Apr-08	23:14	0.3629	12.88	28	0.4012
1-Apr-08	23:15	0.3629	12.87	28	0.4010
1-Apr-08	23:16	0.3629	12.87	28	0.4007

1-Apr-08	23:17	0.3629	12.87	28	0.4004
1-Apr-08	23:18	0.3629	12.87	28	0.4001
1-Apr-08	23:19	0.3629	12.87	28	0.3999
1-Apr-08	23:20	0.3629	12.86	28	0.3996
1-Apr-08	23:21	0.3629	12.86	28	0.3993
1-Apr-08	23:22	0.3629	12.86	28	0.3991
1-Apr-08	23:23	0.3629	12.86	28	0.3988
1-Apr-08	23:24	0.3629	12.85	28	0.3986
1-Apr-08	23:25	0.3629	12.85	28	0.3983
1-Apr-08	23:26	0.3629	12.85	28	0.3980
1-Apr-08	23:27	0.3629	12.85	28	0.3978
1-Apr-08	23:28	0.3629	12.85	28	0.3975
1-Apr-08	23:29	0.3629	12.84	28	0.3973
1-Apr-08	23:30	0.3629	12.84	28	0.3970
1-Apr-08	23:31	0.3630	12.84	28	0.3968
1-Apr-08	23:32	0.3630	12.84	28	0.3965
1-Apr-08	23:33	0.3630	12.84	28	0.3963
1-Apr-08	23:34	0.3630	12.83	28	0.3961
1-Apr-08	23:35	0.3630	12.83	28	0.3958
1-Apr-08	23:36	0.3630	12.83	28	0.3956
1-Apr-08	23:37	0.3630	12.83	28	0.3953
1-Apr-08	23:38	0.3630	12.83	28	0.3951
1-Apr-08	23:39	0.3630	12.82	28	0.3949
1-Apr-08	23:40	0.3630	12.82	28	0.3947
1-Apr-08	23:41	0.3630	12.82	28	0.3944
1-Apr-08	23:42	0.3630	12.82	28	0.3942
1-Apr-08	23:43	0.3630	12.82	28	0.3940
1-Apr-08	23:44	0.3630	12.81	28	0.3937
1-Apr-08	23:45	0.3630	12.81	28	0.3935
1-Apr-08	23:46	0.3630	12.81	28	0.3933
1-Apr-08	23:47	0.3630	12.81	28	0.3931
1-Apr-08	23:48	0.3630	12.81	28	0.3929
1-Apr-08	23:49	0.3630	12.81	28	0.3927
1-Apr-08	23:50	0.3630	12.80	28	0.3924
1-Apr-08	23:51	0.3630	12.80	28	0.3922
1-Apr-08	23:52	0.3630	12.80	28	0.3920
1-Apr-08	23:53	0.3630	12.80	28	0.3918
1-Apr-08	23:54	0.3630	12.80	28	0.3916
1-Apr-08	23:55	0.3630	12.80	28	0.3914
1-Apr-08	23:56	0.3630	12.79	28	0.3912
1-Apr-08	23:57	0.3630	12.79	28	0.3910
1-Apr-08	23:58	0.3630	12.79	28	0.3908
1-Apr-08	23:59	0.3630	12.79	28	0.3906
2-Apr-08	0:00	0.3630	12.79	28	0.3904

Highgate - 100yr - Time Series Inflow (Wetland)					
Date	Time	Inflow m3/s	Storage	Elevation m	Outflow m3/s
1-Apr-08	0:00	0	0	28	0
1-Apr-08	0:01	0.0015	0	28	0
1-Apr-08	0:02	0.0062	0	28	0
1-Apr-08	0:03	0.0151	0	28	0
1-Apr-08	0:04	0.0302	0	28	0
1-Apr-08	0:05	0.0526	0	28	0.0001
1-Apr-08	0:06	0.0809	0.01	28	0.0001
1-Apr-08	0:07	0.1126	0.01	28	0.0002
1-Apr-08	0:08	0.1452	0.02	28	0.0003
1-Apr-08	0:09	0.1773	0.03	28	0.0004
1-Apr-08	0:10	0.2069	0.04	28	0.0006
1-Apr-08	0:11	0.2335	0.06	28	0.0007
1-Apr-08	0:12	0.2564	0.07	28	0.0009
1-Apr-08	0:13	0.2745	0.09	28	0.0011
1-Apr-08	0:14	0.2889	0.1	28	0.0014
1-Apr-08	0:15	0.3006	0.12	28	0.0016
1-Apr-08	0:16	0.3102	0.14	28	0.0018
1-Apr-08	0:17	0.3181	0.16	28	0.0021
1-Apr-08	0:18	0.3247	0.18	28	0.0023
1-Apr-08	0:19	0.33	0.2	28	0.0026
1-Apr-08	0:20	0.3344	0.22	28	0.0028
1-Apr-08	0:21	0.3379	0.24	28	0.0031
1-Apr-08	0:22	0.3409	0.26	28	0.0033
1-Apr-08	0:23	0.3432	0.28	28	0.0036
1-Apr-08	0:24	0.3452	0.3	28	0.0039
1-Apr-08	0:25	0.3468	0.32	28	0.0041
1-Apr-08	0:26	0.348	0.34	28	0.0043
1-Apr-08	0:27	0.3491	0.36	28	0.0045
1-Apr-08	0:28	0.35	0.38	28	0.0048
1-Apr-08	0:29	0.3507	0.4	28	0.005
1-Apr-08	0:30	0.3513	0.42	28	0.0052
1-Apr-08	0:31	0.3518	0.44	28	0.0054
1-Apr-08	0:32	0.3521	0.46	28	0.0056
1-Apr-08	0:33	0.3525	0.48	28	0.0058
1-Apr-08	0:34	0.3528	0.5	28	0.006
1-Apr-08	0:35	0.353	0.53	28	0.0062
1-Apr-08	0:36	0.3532	0.55	28	0.0065
1-Apr-08	0:37	0.3533	0.57	28	0.0067
1-Apr-08	0:38	0.3534	0.59	28	0.0069
1-Apr-08	0:39	0.3535	0.61	28	0.0071
1-Apr-08	0:40	0.3535	0.63	28	0.0073
1-Apr-08	0:41	0.3535	0.65	28	0.0075
1-Apr-08	0:42	0.3535	0.67	28	0.0077
1-Apr-08	0:43	0.3535	0.69	28	0.008
1-Apr-08	0:44	0.3535	0.71	28	0.0082
1-Apr-08	0:45	0.3535	0.73	28	0.0084
1-Apr-08	0:46	0.3535	0.75	28	0.0086

1-Apr-08	0:47	0.3535	0.77	28	0.0088
1-Apr-08	0:48	0.3535	0.8	28	0.009
1-Apr-08	0:49	0.3535	0.82	28	0.0092
1-Apr-08	0:50	0.3535	0.84	28	0.0094
1-Apr-08	0:51	0.3535	0.86	28	0.0097
1-Apr-08	0:52	0.3535	0.88	28	0.0099
1-Apr-08	0:53	0.3535	0.9	28	0.0101
1-Apr-08	0:54	0.3535	0.92	28	0.0103
1-Apr-08	0:55	0.3535	0.94	28	0.0105
1-Apr-08	0:56	0.3535	0.96	28	0.0107
1-Apr-08	0:57	0.3535	0.98	28	0.0109
1-Apr-08	0:58	0.3535	1	28	0.0111
1-Apr-08	0:59	0.3535	1.02	28	0.0113
1-Apr-08	1:00	0.3535	1.04	28	0.0116
1-Apr-08	1:01	0.3535	1.06	28	0.0118
1-Apr-08	1:02	0.3535	1.08	28	0.012
1-Apr-08	1:03	0.3535	1.1	28	0.0122
1-Apr-08	1:04	0.3535	1.12	28	0.0123
1-Apr-08	1:05	0.3535	1.14	28	0.0125
1-Apr-08	1:06	0.3535	1.17	28	0.0127
1-Apr-08	1:07	0.3535	1.19	28	0.0129
1-Apr-08	1:08	0.3535	1.21	28	0.0131
1-Apr-08	1:09	0.3535	1.23	28	0.0133
1-Apr-08	1:10	0.3535	1.25	28	0.0134
1-Apr-08	1:11	0.3535	1.27	28	0.0136
1-Apr-08	1:12	0.3535	1.29	28	0.0138
1-Apr-08	1:13	0.3535	1.31	28	0.014
1-Apr-08	1:14	0.3535	1.33	28	0.0142
1-Apr-08	1:15	0.3535	1.35	28	0.0144
1-Apr-08	1:16	0.3535	1.37	28	0.0145
1-Apr-08	1:17	0.3535	1.39	28	0.0147
1-Apr-08	1:18	0.3535	1.41	28	0.0149
1-Apr-08	1:19	0.3535	1.43	28	0.0151
1-Apr-08	1:20	0.3535	1.45	28	0.0153
1-Apr-08	1:21	0.3535	1.47	28	0.0155
1-Apr-08	1:22	0.3535	1.49	28	0.0156
1-Apr-08	1:23	0.3535	1.51	28	0.0158
1-Apr-08	1:24	0.3535	1.53	28	0.016
1-Apr-08	1:25	0.3535	1.55	28	0.0162
1-Apr-08	1:26	0.3535	1.57	28	0.0164
1-Apr-08	1:27	0.3535	1.59	28	0.0165
1-Apr-08	1:28	0.3536	1.61	28	0.0167
1-Apr-08	1:29	0.3536	1.63	28	0.0169
1-Apr-08	1:30	0.3536	1.65	28	0.0171
1-Apr-08	1:31	0.3537	1.67	28	0.0173
1-Apr-08	1:32	0.3537	1.69	28	0.0174
1-Apr-08	1:33	0.3538	1.71	28	0.0176
1-Apr-08	1:34	0.3538	1.73	28	0.0178
1-Apr-08	1:35	0.3539	1.75	28	0.018
1-Apr-08	1:36	0.354	1.77	28	0.0182

1-Apr-08	1:37	0.354	1.79	28	0.0184
1-Apr-08	1:38	0.3541	1.81	28	0.0185
1-Apr-08	1:39	0.3542	1.83	28	0.0187
1-Apr-08	1:40	0.3543	1.85	28	0.0189
1-Apr-08	1:41	0.3543	1.87	28	0.0191
1-Apr-08	1:42	0.3544	1.89	28	0.0193
1-Apr-08	1:43	0.3545	1.91	28	0.0194
1-Apr-08	1:44	0.3546	1.94	28	0.0196
1-Apr-08	1:45	0.3546	1.96	28	0.0198
1-Apr-08	1:46	0.3547	1.98	28	0.02
1-Apr-08	1:47	0.3548	2	28	0.0201
1-Apr-08	1:48	0.3549	2.02	28	0.0202
1-Apr-08	1:49	0.3549	2.04	28	0.0203
1-Apr-08	1:50	0.355	2.06	28	0.0204
1-Apr-08	1:51	0.3551	2.08	28	0.0205
1-Apr-08	1:52	0.3552	2.1	28	0.0205
1-Apr-08	1:53	0.3552	2.12	28	0.0206
1-Apr-08	1:54	0.3553	2.14	28	0.0207
1-Apr-08	1:55	0.3554	2.16	28	0.0208
1-Apr-08	1:56	0.3555	2.18	28	0.0209
1-Apr-08	1:57	0.3555	2.2	28	0.021
1-Apr-08	1:58	0.3556	2.22	28	0.0211
1-Apr-08	1:59	0.3557	2.24	28	0.0212
1-Apr-08	2:00	0.3558	2.26	28	0.0213
1-Apr-08	2:01	0.3558	2.28	28	0.0214
1-Apr-08	2:02	0.3559	2.3	28	0.0215
1-Apr-08	2:03	0.356	2.32	28	0.0216
1-Apr-08	2:04	0.3561	2.34	28	0.0217
1-Apr-08	2:05	0.3561	2.36	28	0.0218
1-Apr-08	2:06	0.3562	2.38	28	0.0219
1-Apr-08	2:07	0.3563	2.4	28	0.022
1-Apr-08	2:08	0.3564	2.42	28	0.022
1-Apr-08	2:09	0.3564	2.44	28	0.0221
1-Apr-08	2:10	0.3565	2.46	28	0.0222
1-Apr-08	2:11	0.3566	2.48	28	0.0223
1-Apr-08	2:12	0.3567	2.5	28	0.0224
1-Apr-08	2:13	0.3567	2.52	28	0.0225
1-Apr-08	2:14	0.3568	2.54	28	0.0226
1-Apr-08	2:15	0.3569	2.56	28	0.0227
1-Apr-08	2:16	0.3569	2.58	28	0.0228
1-Apr-08	2:17	0.357	2.6	28	0.0229
1-Apr-08	2:18	0.3571	2.62	28	0.023
1-Apr-08	2:19	0.3572	2.64	28	0.0231
1-Apr-08	2:20	0.3572	2.66	28	0.0232
1-Apr-08	2:21	0.3573	2.68	28	0.0233
1-Apr-08	2:22	0.3574	2.7	28	0.0234
1-Apr-08	2:23	0.3575	2.72	28	0.0235
1-Apr-08	2:24	0.3575	2.74	28	0.0235
1-Apr-08	2:25	0.3576	2.76	28	0.0236
1-Apr-08	2:26	0.3577	2.78	28	0.0237

1-Apr-08	2:27	0.3577	2.8	28	0.0238
1-Apr-08	2:28	0.3578	2.82	28	0.0239
1-Apr-08	2:29	0.3579	2.84	28	0.024
1-Apr-08	2:30	0.3579	2.86	28	0.0241
1-Apr-08	2:31	0.358	2.88	28	0.0242
1-Apr-08	2:32	0.3581	2.9	28	0.0243
1-Apr-08	2:33	0.3582	2.92	28	0.0244
1-Apr-08	2:34	0.3582	2.94	28	0.0245
1-Apr-08	2:35	0.3583	2.96	28	0.0246
1-Apr-08	2:36	0.3584	2.98	28	0.0247
1-Apr-08	2:37	0.3584	3	28	0.0248
1-Apr-08	2:38	0.3585	3.02	28	0.0249
1-Apr-08	2:39	0.3586	3.04	28	0.0249
1-Apr-08	2:40	0.3586	3.06	28	0.025
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1-Apr-08	2:42	0.3588	3.1	28	0.0252
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1-Apr-08	2:45	0.359	3.16	28	0.0254
1-Apr-08	2:46	0.3591	3.18	28	0.0255
1-Apr-08	2:47	0.3591	3.2	28	0.0255
1-Apr-08	2:48	0.3592	3.22	28	0.0256
1-Apr-08	2:49	0.3593	3.24	28	0.0257
1-Apr-08	2:50	0.3593	3.26	28	0.0258
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1-Apr-08	2:56	0.3597	3.38	28	0.0262
1-Apr-08	2:57	0.3598	3.4	28	0.0263
1-Apr-08	2:58	0.3599	3.42	28	0.0264
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1-Apr-08	3:04	0.3603	3.54	28	0.0268
1-Apr-08	3:05	0.3603	3.56	28	0.0269
1-Apr-08	3:06	0.3604	3.58	28	0.0269
1-Apr-08	3:07	0.3605	3.6	28	0.027
1-Apr-08	3:08	0.3605	3.62	28	0.0271
1-Apr-08	3:09	0.3606	3.64	28	0.0272
1-Apr-08	3:10	0.3607	3.66	28	0.0272
1-Apr-08	3:11	0.3607	3.68	28	0.0273
1-Apr-08	3:12	0.3608	3.7	28	0.0274
1-Apr-08	3:13	0.3609	3.72	28	0.0275
1-Apr-08	3:14	0.3609	3.74	28	0.0275
1-Apr-08	3:15	0.361	3.76	28	0.0276
1-Apr-08	3:16	0.3611	3.78	28	0.0277

1-Apr-08	3:17	0.3611	3.8	28	0.0278
1-Apr-08	3:18	0.3612	3.82	28	0.0278
1-Apr-08	3:19	0.3612	3.84	28	0.0279
1-Apr-08	3:20	0.3613	3.86	28	0.028
1-Apr-08	3:21	0.3614	3.88	28	0.0281
1-Apr-08	3:22	0.3614	3.9	28	0.0281
1-Apr-08	3:23	0.3615	3.92	28	0.0282
1-Apr-08	3:24	0.3616	3.94	28	0.0283
1-Apr-08	3:25	0.3616	3.96	28	0.0283
1-Apr-08	3:26	0.3617	3.98	28	0.0284
1-Apr-08	3:27	0.3618	4	28	0.0285
1-Apr-08	3:28	0.3618	4.02	28	0.0286
1-Apr-08	3:29	0.3619	4.04	28	0.0286
1-Apr-08	3:30	0.3619	4.06	28	0.0287
1-Apr-08	3:31	0.362	4.08	28	0.0288
1-Apr-08	3:32	0.3621	4.1	28	0.0289
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1-Apr-08	3:34	0.3622	4.14	28	0.029
1-Apr-08	3:35	0.3623	4.16	28	0.0291
1-Apr-08	3:36	0.3623	4.18	28	0.0292
1-Apr-08	3:37	0.3624	4.2	28	0.0292
1-Apr-08	3:38	0.3624	4.22	28	0.0293
1-Apr-08	3:39	0.3625	4.24	28	0.0294
1-Apr-08	3:40	0.3626	4.26	28	0.0294
1-Apr-08	3:41	0.3626	4.28	28	0.0295
1-Apr-08	3:42	0.3627	4.3	28	0.0296
1-Apr-08	3:43	0.3627	4.32	28	0.0297
1-Apr-08	3:44	0.3628	4.34	28	0.0297
1-Apr-08	3:45	0.3629	4.36	28	0.0298
1-Apr-08	3:46	0.3629	4.38	28	0.0299
1-Apr-08	3:47	0.363	4.4	28	0.03
1-Apr-08	3:48	0.3631	4.42	28	0.03
1-Apr-08	3:49	0.3631	4.44	28	0.0301
1-Apr-08	3:50	0.3632	4.46	28	0.0302
1-Apr-08	3:51	0.3632	4.48	28	0.0302
1-Apr-08	3:52	0.3633	4.5	28	0.0303
1-Apr-08	3:53	0.3634	4.52	28	0.0304
1-Apr-08	3:54	0.3634	4.54	28	0.0305
1-Apr-08	3:55	0.3635	4.56	28	0.0305
1-Apr-08	3:56	0.3635	4.58	28	0.0306
1-Apr-08	3:57	0.3636	4.6	28	0.0307
1-Apr-08	3:58	0.3637	4.62	28	0.0308
1-Apr-08	3:59	0.3637	4.64	28	0.0308
1-Apr-08	4:00	0.3638	4.66	28	0.0309
1-Apr-08	4:01	0.3638	4.68	28	0.031
1-Apr-08	4:02	0.3639	4.7	28	0.031
1-Apr-08	4:03	0.3639	4.72	28	0.0311
1-Apr-08	4:04	0.364	4.74	28	0.0312
1-Apr-08	4:05	0.3641	4.76	28	0.0313
1-Apr-08	4:06	0.3641	4.78	28	0.0313

1-Apr-08	4:07	0.3642	4.8	28	0.0314
1-Apr-08	4:08	0.3642	4.82	28	0.0315
1-Apr-08	4:09	0.3643	4.84	28	0.0316
1-Apr-08	4:10	0.3644	4.86	28	0.0316
1-Apr-08	4:11	0.3644	4.88	28	0.0317
1-Apr-08	4:12	0.3645	4.9	28	0.0318
1-Apr-08	4:13	0.3645	4.92	28	0.0318
1-Apr-08	4:14	0.3646	4.94	28	0.0319
1-Apr-08	4:15	0.3646	4.96	28	0.032
1-Apr-08	4:16	0.3647	4.98	28	0.0321
1-Apr-08	4:17	0.3648	5	28	0.0321
1-Apr-08	4:18	0.3648	5.02	28	0.0322
1-Apr-08	4:19	0.3649	5.04	28	0.0323
1-Apr-08	4:20	0.3649	5.06	28	0.0324
1-Apr-08	4:21	0.365	5.08	28	0.0324
1-Apr-08	4:22	0.365	5.1	28	0.0325
1-Apr-08	4:23	0.3651	5.12	28	0.0326
1-Apr-08	4:24	0.3652	5.14	28	0.0326
1-Apr-08	4:25	0.3652	5.16	28	0.0327
1-Apr-08	4:26	0.3653	5.18	28	0.0328
1-Apr-08	4:27	0.3653	5.2	28	0.0329
1-Apr-08	4:28	0.3654	5.22	28	0.0329
1-Apr-08	4:29	0.3654	5.24	28	0.033
1-Apr-08	4:30	0.3655	5.26	28	0.0331
1-Apr-08	4:31	0.3656	5.28	28	0.0331
1-Apr-08	4:32	0.3656	5.3	28	0.0332
1-Apr-08	4:33	0.3657	5.32	28	0.0332
1-Apr-08	4:34	0.3657	5.34	28	0.0333
1-Apr-08	4:35	0.3658	5.36	28	0.0333
1-Apr-08	4:36	0.3658	5.38	28	0.0334
1-Apr-08	4:37	0.3659	5.4	28	0.0334
1-Apr-08	4:38	0.3659	5.42	28	0.0335
1-Apr-08	4:39	0.366	5.44	28	0.0335
1-Apr-08	4:40	0.3661	5.46	28	0.0336
1-Apr-08	4:41	0.3661	5.48	28	0.0336
1-Apr-08	4:42	0.3662	5.5	28	0.0337
1-Apr-08	4:43	0.3662	5.52	28	0.0338
1-Apr-08	4:44	0.3663	5.54	28	0.0338
1-Apr-08	4:45	0.3663	5.56	28	0.0339
1-Apr-08	4:46	0.3664	5.58	28	0.0339
1-Apr-08	4:47	0.3664	5.6	28	0.034
1-Apr-08	4:48	0.3665	5.62	28	0.034
1-Apr-08	4:49	0.3665	5.64	28	0.0341
1-Apr-08	4:50	0.3666	5.66	28	0.0341
1-Apr-08	4:51	0.3667	5.68	28	0.0342
1-Apr-08	4:52	0.3667	5.7	28	0.0342
1-Apr-08	4:53	0.3668	5.72	28	0.0343
1-Apr-08	4:54	0.3668	5.74	28	0.0343
1-Apr-08	4:55	0.3669	5.76	28	0.0344
1-Apr-08	4:56	0.3669	5.78	28	0.0344

1-Apr-08	4:57	0.367	5.8	28	0.0345
1-Apr-08	4:58	0.367	5.82	28	0.0346
1-Apr-08	4:59	0.3671	5.84	28	0.0346
1-Apr-08	5:00	0.3671	5.86	28	0.0347
1-Apr-08	5:01	0.3672	5.87	28	0.0347
1-Apr-08	5:02	0.3672	5.89	28	0.0348
1-Apr-08	5:03	0.3673	5.91	28	0.0348
1-Apr-08	5:04	0.3673	5.93	28	0.0349
1-Apr-08	5:05	0.3674	5.95	28	0.0349
1-Apr-08	5:06	0.3675	5.97	28	0.035
1-Apr-08	5:07	0.3675	5.99	28	0.035
1-Apr-08	5:08	0.3676	6.01	28	0.0351
1-Apr-08	5:09	0.3676	6.03	28	0.0351
1-Apr-08	5:10	0.3677	6.05	28	0.0352
1-Apr-08	5:11	0.3677	6.07	28	0.0353
1-Apr-08	5:12	0.3678	6.09	28	0.0353
1-Apr-08	5:13	0.3678	6.11	28	0.0354
1-Apr-08	5:14	0.3679	6.13	28	0.0354
1-Apr-08	5:15	0.3679	6.15	28	0.0355
1-Apr-08	5:16	0.368	6.17	28	0.0355
1-Apr-08	5:17	0.368	6.19	28	0.0356
1-Apr-08	5:18	0.3681	6.21	28	0.0356
1-Apr-08	5:19	0.3681	6.23	28	0.0357
1-Apr-08	5:20	0.3682	6.25	28	0.0357
1-Apr-08	5:21	0.3682	6.27	28	0.0358
1-Apr-08	5:22	0.3683	6.29	28	0.0358
1-Apr-08	5:23	0.3683	6.31	28	0.0359
1-Apr-08	5:24	0.3684	6.33	28	0.036
1-Apr-08	5:25	0.3684	6.35	28	0.036
1-Apr-08	5:26	0.3685	6.37	28	0.0361
1-Apr-08	5:27	0.3685	6.39	28	0.0361
1-Apr-08	5:28	0.3686	6.41	28	0.0362
1-Apr-08	5:29	0.3686	6.43	28	0.0363
1-Apr-08	5:30	0.3687	6.45	28	0.0364
1-Apr-08	5:31	0.3687	6.47	28	0.0364
1-Apr-08	5:32	0.3688	6.49	28	0.0365
1-Apr-08	5:33	0.3688	6.51	28	0.0366
1-Apr-08	5:34	0.3689	6.53	28	0.0366
1-Apr-08	5:35	0.3689	6.55	28	0.0367
1-Apr-08	5:36	0.369	6.57	28	0.0368
1-Apr-08	5:37	0.369	6.59	28	0.0369
1-Apr-08	5:38	0.3691	6.61	28	0.0369
1-Apr-08	5:39	0.3691	6.63	28	0.037
1-Apr-08	5:40	0.3692	6.65	28	0.0371
1-Apr-08	5:41	0.3692	6.67	28	0.0371
1-Apr-08	5:42	0.3693	6.69	28	0.0372
1-Apr-08	5:43	0.3693	6.71	28	0.0373
1-Apr-08	5:44	0.3694	6.73	28	0.0373
1-Apr-08	5:45	0.3694	6.75	28	0.0374
1-Apr-08	5:46	0.3695	6.77	28	0.0375

1-Apr-08	5:47	0.3695	6.79	28	0.0376
1-Apr-08	5:48	0.3696	6.81	28	0.0376
1-Apr-08	5:49	0.3696	6.83	28	0.0377
1-Apr-08	5:50	0.3697	6.85	28	0.0378
1-Apr-08	5:51	0.3697	6.87	28	0.0378
1-Apr-08	5:52	0.3698	6.89	28	0.0379
1-Apr-08	5:53	0.3698	6.91	28	0.038
1-Apr-08	5:54	0.3699	6.93	28	0.038
1-Apr-08	5:55	0.3699	6.95	28	0.0381
1-Apr-08	5:56	0.3718	6.97	28	0.0382
1-Apr-08	5:57	0.3776	6.99	28	0.0383
1-Apr-08	5:58	0.3887	7.01	28	0.0383
1-Apr-08	5:59	0.4073	7.03	28	0.0384
1-Apr-08	6:00	0.4351	7.06	28	0.0385
1-Apr-08	6:01	0.47	7.08	28	0.0386
1-Apr-08	6:02	0.5091	7.11	28	0.0387
1-Apr-08	6:03	0.5495	7.14	28	0.0388
1-Apr-08	6:04	0.5892	7.17	28	0.0389
1-Apr-08	6:05	0.6258	7.2	28	0.039
1-Apr-08	6:06	0.6588	7.24	28	0.0391
1-Apr-08	6:07	0.6871	7.28	28	0.0393
1-Apr-08	6:08	0.7096	7.32	28	0.0394
1-Apr-08	6:09	0.7275	7.36	28	0.0396
1-Apr-08	6:10	0.7422	7.4	28	0.0397
1-Apr-08	6:11	0.7542	7.44	28	0.0399
1-Apr-08	6:12	0.7642	7.49	28	0.04
1-Apr-08	6:13	0.7725	7.53	28	0.0401
1-Apr-08	6:14	0.7792	7.57	28	0.0402
1-Apr-08	6:15	0.7848	7.62	28	0.0402
1-Apr-08	6:16	0.7894	7.66	28	0.0403
1-Apr-08	6:17	0.7932	7.71	28	0.0404
1-Apr-08	6:18	0.7963	7.75	28	0.0405
1-Apr-08	6:19	0.7989	7.8	28	0.0405
1-Apr-08	6:20	0.8011	7.84	28	0.0406
1-Apr-08	6:21	0.8029	7.89	28	0.0407
1-Apr-08	6:22	0.8044	7.94	28	0.0408
1-Apr-08	6:23	0.8057	7.98	28	0.0409
1-Apr-08	6:24	0.8068	8.03	28	0.0409
1-Apr-08	6:25	0.8077	8.07	28	0.041
1-Apr-08	6:26	0.8085	8.12	28	0.0411
1-Apr-08	6:27	0.8092	8.17	28	0.0412
1-Apr-08	6:28	0.8098	8.21	28	0.0413
1-Apr-08	6:29	0.8104	8.26	28	0.0413
1-Apr-08	6:30	0.8108	8.3	28	0.0414
1-Apr-08	6:31	0.8113	8.35	28	0.0415
1-Apr-08	6:32	0.8117	8.4	28	0.0416
1-Apr-08	6:33	0.812	8.44	28	0.0417
1-Apr-08	6:34	0.8123	8.49	28	0.0418
1-Apr-08	6:35	0.8125	8.54	28	0.0418
1-Apr-08	6:36	0.8127	8.58	28	0.0419

1-Apr-08	6:37	0.8129	8.63	28	0.042
1-Apr-08	6:38	0.8131	8.67	28	0.044
1-Apr-08	6:39	0.8133	8.72	28	0.0461
1-Apr-08	6:40	0.8135	8.77	28	0.0483
1-Apr-08	6:41	0.8137	8.81	28	0.0504
1-Apr-08	6:42	0.8139	8.86	28	0.0525
1-Apr-08	6:43	0.8141	8.9	28	0.0546
1-Apr-08	6:44	0.8142	8.95	28	0.0568
1-Apr-08	6:45	0.8144	8.99	28	0.0589
1-Apr-08	6:46	0.8146	9.04	28	0.061
1-Apr-08	6:47	0.8148	9.08	28	0.0631
1-Apr-08	6:48	0.815	9.13	28	0.0652
1-Apr-08	6:49	0.8152	9.17	28	0.0673
1-Apr-08	6:50	0.8154	9.22	28	0.0693
1-Apr-08	6:51	0.8156	9.26	28	0.0714
1-Apr-08	6:52	0.8158	9.31	28	0.0735
1-Apr-08	6:53	0.816	9.35	28	0.0756
1-Apr-08	6:54	0.8161	9.4	28	0.0776
1-Apr-08	6:55	0.8163	9.44	28	0.0797
1-Apr-08	6:56	0.8165	9.49	28	0.0817
1-Apr-08	6:57	0.8167	9.53	28	0.0838
1-Apr-08	6:58	0.8169	9.57	28	0.0858
1-Apr-08	6:59	0.8171	9.62	28	0.0879
1-Apr-08	7:00	0.8173	9.66	28	0.0899
1-Apr-08	7:01	0.8174	9.7	28	0.0919
1-Apr-08	7:02	0.8176	9.75	28	0.0939
1-Apr-08	7:03	0.8178	9.79	28	0.0959
1-Apr-08	7:04	0.818	9.83	28	0.0994
1-Apr-08	7:05	0.8182	9.88	28	0.1029
1-Apr-08	7:06	0.8183	9.92	28	0.1064
1-Apr-08	7:07	0.8185	9.96	28	0.1099
1-Apr-08	7:08	0.8187	10.01	28	0.1134
1-Apr-08	7:09	0.8189	10.05	28	0.1168
1-Apr-08	7:10	0.8191	10.09	28	0.1202
1-Apr-08	7:11	0.8192	10.13	28	0.1236
1-Apr-08	7:12	0.8194	10.17	28	0.127
1-Apr-08	7:13	0.8196	10.22	28	0.1304
1-Apr-08	7:14	0.8198	10.26	28	0.1338
1-Apr-08	7:15	0.8199	10.3	28	0.1371
1-Apr-08	7:16	0.8201	10.34	28	0.1405
1-Apr-08	7:17	0.8203	10.38	28	0.1438
1-Apr-08	7:18	0.8204	10.42	28	0.1471
1-Apr-08	7:19	0.8206	10.46	28	0.1504
1-Apr-08	7:20	0.8208	10.5	28	0.1537
1-Apr-08	7:21	0.821	10.54	28	0.1569
1-Apr-08	7:22	0.8211	10.58	28	0.1601
1-Apr-08	7:23	0.8213	10.62	28	0.1634
1-Apr-08	7:24	0.8215	10.66	28	0.1666
1-Apr-08	7:25	0.8216	10.7	28	0.1698
1-Apr-08	7:26	0.8218	10.74	28	0.173

1-Apr-08	7:27	0.822	10.78	28	0.1761
1-Apr-08	7:28	0.8221	10.81	28	0.1793
1-Apr-08	7:29	0.8223	10.85	28	0.1824
1-Apr-08	7:30	0.8225	10.89	28	0.1856
1-Apr-08	7:31	0.8226	10.93	28	0.1887
1-Apr-08	7:32	0.8228	10.97	28	0.1918
1-Apr-08	7:33	0.8229	11	28	0.1956
1-Apr-08	7:34	0.8231	11.04	28	0.1995
1-Apr-08	7:35	0.8233	11.08	28	0.2033
1-Apr-08	7:36	0.8234	11.12	28	0.2071
1-Apr-08	7:37	0.8236	11.15	28	0.2109
1-Apr-08	7:38	0.8238	11.19	28	0.2147
1-Apr-08	7:39	0.8239	11.23	28	0.2185
1-Apr-08	7:40	0.8241	11.26	28	0.2222
1-Apr-08	7:41	0.8242	11.3	28	0.2259
1-Apr-08	7:42	0.8244	11.33	28	0.2296
1-Apr-08	7:43	0.8245	11.37	28	0.2333
1-Apr-08	7:44	0.8247	11.41	28	0.2369
1-Apr-08	7:45	0.8249	11.44	28	0.2405
1-Apr-08	7:46	0.825	11.48	28	0.2441
1-Apr-08	7:47	0.8252	11.51	28	0.2477
1-Apr-08	7:48	0.8253	11.55	28	0.2513
1-Apr-08	7:49	0.8255	11.58	28	0.2548
1-Apr-08	7:50	0.8256	11.61	28	0.2583
1-Apr-08	7:51	0.8258	11.65	28	0.2618
1-Apr-08	7:52	0.8259	11.68	28	0.2653
1-Apr-08	7:53	0.8261	11.71	28	0.2688
1-Apr-08	7:54	0.8262	11.75	28	0.2722
1-Apr-08	7:55	0.8264	11.78	28	0.2756
1-Apr-08	7:56	0.8265	11.81	28	0.279
1-Apr-08	7:57	0.8267	11.85	28	0.2824
1-Apr-08	7:58	0.8268	11.88	28	0.2858
1-Apr-08	7:59	0.827	11.91	28	0.2891
1-Apr-08	8:00	0.8271	11.94	28	0.2924
1-Apr-08	8:01	0.8273	11.98	28	0.2957
1-Apr-08	8:02	0.8274	12.01	28	0.299
1-Apr-08	8:03	0.8276	12.04	28	0.3023
1-Apr-08	8:04	0.8277	12.07	28	0.3055
1-Apr-08	8:05	0.8279	12.1	28	0.3087
1-Apr-08	8:06	0.828	12.13	28	0.3119
1-Apr-08	8:07	0.8282	12.16	28	0.3151
1-Apr-08	8:08	0.8283	12.19	28	0.3188
1-Apr-08	8:09	0.8285	12.23	28	0.3225
1-Apr-08	8:10	0.8286	12.26	28	0.3262
1-Apr-08	8:11	0.8288	12.29	28	0.3298
1-Apr-08	8:12	0.8289	12.32	28	0.3334
1-Apr-08	8:13	0.829	12.34	28	0.337
1-Apr-08	8:14	0.8292	12.37	28	0.3405
1-Apr-08	8:15	0.8293	12.4	28	0.3441
1-Apr-08	8:16	0.8295	12.43	28	0.3476

1-Apr-08	8:17	0.8296	12.46	28	0.3511
1-Apr-08	8:18	0.8297	12.49	28	0.3545
1-Apr-08	8:19	0.8299	12.52	28	0.358
1-Apr-08	8:20	0.83	12.55	28	0.3614
1-Apr-08	8:21	0.8302	12.57	28	0.3648
1-Apr-08	8:22	0.8303	12.6	28	0.3681
1-Apr-08	8:23	0.8304	12.63	28	0.3715
1-Apr-08	8:24	0.8306	12.66	28	0.3748
1-Apr-08	8:25	0.8307	12.68	28	0.3781
1-Apr-08	8:26	0.8309	12.71	28	0.3813
1-Apr-08	8:27	0.831	12.74	28	0.3846
1-Apr-08	8:28	0.8311	12.77	28	0.3878
1-Apr-08	8:29	0.8313	12.79	28	0.391
1-Apr-08	8:30	0.8314	12.82	28	0.3942
1-Apr-08	8:31	0.8315	12.84	28	0.3974
1-Apr-08	8:32	0.8317	12.87	28	0.4005
1-Apr-08	8:33	0.8318	12.9	28	0.4036
1-Apr-08	8:34	0.8319	12.92	28	0.4067
1-Apr-08	8:35	0.8321	12.95	28	0.4098
1-Apr-08	8:36	0.8322	12.97	28	0.4128
1-Apr-08	8:37	0.8323	13	28	0.4159
1-Apr-08	8:38	0.8325	13.02	28	0.4189
1-Apr-08	8:39	0.8326	13.05	28	0.4219
1-Apr-08	8:40	0.8327	13.07	28	0.4248
1-Apr-08	8:41	0.8328	13.1	28	0.4278
1-Apr-08	8:42	0.833	13.12	28	0.4307
1-Apr-08	8:43	0.8331	13.14	28	0.4336
1-Apr-08	8:44	0.8332	13.17	28	0.4365
1-Apr-08	8:45	0.8334	13.19	28	0.4394
1-Apr-08	8:46	0.8335	13.22	28	0.4422
1-Apr-08	8:47	0.8336	13.24	28	0.445
1-Apr-08	8:48	0.8337	13.26	28	0.4478
1-Apr-08	8:49	0.8339	13.29	28	0.4506
1-Apr-08	8:50	0.834	13.31	28	0.4534
1-Apr-08	8:51	0.8341	13.33	28	0.4562
1-Apr-08	8:52	0.8343	13.35	28	0.4589
1-Apr-08	8:53	0.8344	13.38	28	0.4617
1-Apr-08	8:54	0.8345	13.4	28	0.4647
1-Apr-08	8:55	0.8346	13.42	28	0.4677
1-Apr-08	8:56	0.8358	13.44	28	0.4706
1-Apr-08	8:57	0.8392	13.46	28	0.4736
1-Apr-08	8:58	0.8456	13.49	28	0.4765
1-Apr-08	8:59	0.8563	13.51	28	0.4796
1-Apr-08	9:00	0.8723	13.53	28	0.4827
1-Apr-08	9:01	0.8923	13.56	28	0.4859
1-Apr-08	9:02	0.9147	13.58	28	0.4892
1-Apr-08	9:03	0.9378	13.61	28	0.4928
1-Apr-08	9:04	0.9605	13.63	28	0.4964
1-Apr-08	9:05	0.9815	13.66	28	0.5003
1-Apr-08	9:06	1.0004	13.69	28	0.5042

1-Apr-08	9:07	1.0166	13.72	28	0.5083
1-Apr-08	9:08	1.0295	13.75	28	0.5124
1-Apr-08	9:09	1.0398	13.78	28	0.5166
1-Apr-08	9:10	1.0482	13.82	28	0.5209
1-Apr-08	9:11	1.0551	13.85	28	0.5252
1-Apr-08	9:12	1.0609	13.88	28	0.5294
1-Apr-08	9:13	1.0657	13.91	28	0.5337
1-Apr-08	9:14	1.0697	13.94	28	0.538
1-Apr-08	9:15	1.0729	13.97	28	0.5423
1-Apr-08	9:16	1.0756	14.01	28	0.5466
1-Apr-08	9:17	1.0779	14.04	28	0.5509
1-Apr-08	9:18	1.0797	14.07	28	0.5552
1-Apr-08	9:19	1.0813	14.1	28	0.5594
1-Apr-08	9:20	1.0826	14.13	28	0.5636
1-Apr-08	9:21	1.0837	14.16	28	0.5678
1-Apr-08	9:22	1.0846	14.19	28	0.5719
1-Apr-08	9:23	1.0854	14.22	28	0.5761
1-Apr-08	9:24	1.0861	14.26	28	0.5802
1-Apr-08	9:25	1.0867	14.29	28	0.5843
1-Apr-08	9:26	1.0872	14.32	28	0.5883
1-Apr-08	9:27	1.0877	14.35	28	0.5923
1-Apr-08	9:28	1.0881	14.37	28	0.5963
1-Apr-08	9:29	1.0885	14.4	28	0.6003
1-Apr-08	9:30	1.0888	14.43	28	0.6042
1-Apr-08	9:31	1.0891	14.46	28	0.6081
1-Apr-08	9:32	1.0894	14.49	28	0.612
1-Apr-08	9:33	1.0897	14.52	28	0.6158
1-Apr-08	9:34	1.0899	14.55	28	0.6197
1-Apr-08	9:35	1.0901	14.58	28	0.6234
1-Apr-08	9:36	1.0903	14.6	28	0.6273
1-Apr-08	9:37	1.0904	14.63	28	0.6313
1-Apr-08	9:38	1.0906	14.66	28	0.6354
1-Apr-08	9:39	1.0908	14.69	28	0.6393
1-Apr-08	9:40	1.091	14.71	28	0.6433
1-Apr-08	9:41	1.0912	14.74	28	0.6472
1-Apr-08	9:42	1.0913	14.77	28	0.6511
1-Apr-08	9:43	1.0915	14.79	28	0.6549
1-Apr-08	9:44	1.0917	14.82	28	0.6587
1-Apr-08	9:45	1.0919	14.84	28	0.6625
1-Apr-08	9:46	1.092	14.87	28	0.6662
1-Apr-08	9:47	1.0922	14.9	28	0.67
1-Apr-08	9:48	1.0924	14.92	28	0.6736
1-Apr-08	9:49	1.0925	14.95	28	0.6773
1-Apr-08	9:50	1.0927	14.97	28	0.6809
1-Apr-08	9:51	1.0929	15	28	0.6845
1-Apr-08	9:52	1.0931	15.02	28	0.6881
1-Apr-08	9:53	1.0932	15.04	28	0.6916
1-Apr-08	9:54	1.0934	15.07	28	0.6951
1-Apr-08	9:55	1.0936	15.09	28	0.6986
1-Apr-08	9:56	1.0959	15.12	28	0.7021

1-Apr-08	9:57	1.1027	15.14	28	0.7055
1-Apr-08	9:58	1.1156	15.16	28	0.709
1-Apr-08	9:59	1.1371	15.19	28	0.7127
1-Apr-08	10:00	1.1692	15.21	28	0.7165
1-Apr-08	10:01	1.2095	15.24	28	0.7207
1-Apr-08	10:02	1.2547	15.27	28	0.7251
1-Apr-08	10:03	1.3013	15.31	28	0.7299
1-Apr-08	10:04	1.3471	15.34	28	0.7351
1-Apr-08	10:05	1.3894	15.38	28.01	0.7407
1-Apr-08	10:06	1.4275	15.42	28.01	0.7465
1-Apr-08	10:07	1.4602	15.46	28.01	0.7526
1-Apr-08	10:08	1.4862	15.5	28.01	0.7589
1-Apr-08	10:09	1.5069	15.55	28.01	0.7653
1-Apr-08	10:10	1.5239	15.59	28.01	0.7718
1-Apr-08	10:11	1.5378	15.64	28.01	0.7785
1-Apr-08	10:12	1.5494	15.68	28.01	0.7851
1-Apr-08	10:13	1.559	15.73	28.01	0.7919
1-Apr-08	10:14	1.5669	15.78	28.01	0.7986
1-Apr-08	10:15	1.5734	15.82	28.01	0.8053
1-Apr-08	10:16	1.5787	15.87	28.01	0.8124
1-Apr-08	10:17	1.5832	15.91	28.01	0.8197
1-Apr-08	10:18	1.5869	15.96	28.01	0.8269
1-Apr-08	10:19	1.59	16.01	28.01	0.8341
1-Apr-08	10:20	1.5925	16.05	28.01	0.8412
1-Apr-08	10:21	1.5947	16.1	28.01	0.8483
1-Apr-08	10:22	1.5965	16.14	28.01	0.8554
1-Apr-08	10:23	1.598	16.18	28.01	0.8624
1-Apr-08	10:24	1.5994	16.23	28.01	0.8693
1-Apr-08	10:25	1.6005	16.27	28.01	0.8762
1-Apr-08	10:26	1.6015	16.32	28.01	0.883
1-Apr-08	10:27	1.6023	16.36	28.01	0.8898
1-Apr-08	10:28	1.6031	16.4	28.01	0.8965
1-Apr-08	10:29	1.6038	16.44	28.01	0.9032
1-Apr-08	10:30	1.6044	16.49	28.01	0.9098
1-Apr-08	10:31	1.605	16.53	28.01	0.9164
1-Apr-08	10:32	1.6055	16.57	28.01	0.9229
1-Apr-08	10:33	1.6059	16.61	28.01	0.9293
1-Apr-08	10:34	1.6063	16.65	28.01	0.9357
1-Apr-08	10:35	1.6066	16.69	28.01	0.942
1-Apr-08	10:36	1.6069	16.73	28.01	0.9483
1-Apr-08	10:37	1.6072	16.77	28.01	0.9545
1-Apr-08	10:38	1.6075	16.81	28.01	0.9606
1-Apr-08	10:39	1.6078	16.85	28.01	0.9667
1-Apr-08	10:40	1.6081	16.88	28.01	0.9728
1-Apr-08	10:41	1.6084	16.92	28.01	0.9788
1-Apr-08	10:42	1.6087	16.96	28.01	0.9847
1-Apr-08	10:43	1.6089	17	28.01	0.9906
1-Apr-08	10:44	1.6092	17.03	28.01	0.9964
1-Apr-08	10:45	1.6095	17.07	28.01	1.0022
1-Apr-08	10:46	1.6098	17.11	28.01	1.0081

1-Apr-08	10:47	1.6101	17.14	28.01	1.0141
1-Apr-08	10:48	1.6103	17.18	28.01	1.02
1-Apr-08	10:49	1.6106	17.21	28.01	1.0258
1-Apr-08	10:50	1.6109	17.25	28.01	1.0316
1-Apr-08	10:51	1.6111	17.28	28.01	1.0374
1-Apr-08	10:52	1.6114	17.32	28.01	1.0431
1-Apr-08	10:53	1.6117	17.35	28.01	1.0487
1-Apr-08	10:54	1.6119	17.38	28.01	1.0543
1-Apr-08	10:55	1.6122	17.42	28.01	1.0598
1-Apr-08	10:56	1.6164	17.45	28.01	1.0653
1-Apr-08	10:57	1.6288	17.48	28.01	1.0709
1-Apr-08	10:58	1.6525	17.52	28.01	1.0765
1-Apr-08	10:59	1.692	17.55	28.01	1.0824
1-Apr-08	11:00	1.751	17.59	28.01	1.0888
1-Apr-08	11:01	1.8251	17.63	28.01	1.0957
1-Apr-08	11:02	1.9081	17.68	28.01	1.1033
1-Apr-08	11:03	1.9937	17.73	28.01	1.1117
1-Apr-08	11:04	2.078	17.79	28.01	1.1209
1-Apr-08	11:05	2.1557	17.85	28.01	1.1308
1-Apr-08	11:06	2.2256	17.91	28.01	1.1413
1-Apr-08	11:07	2.2857	17.97	28.01	1.1524
1-Apr-08	11:08	2.3336	18.04	28.01	1.1638
1-Apr-08	11:09	2.3716	18.11	28.01	1.1756
1-Apr-08	11:10	2.4028	18.19	28.01	1.1876
1-Apr-08	11:11	2.4283	18.26	28.01	1.1998
1-Apr-08	11:12	2.4496	18.33	28.01	1.2121
1-Apr-08	11:13	2.4673	18.41	28.01	1.225
1-Apr-08	11:14	2.4817	18.48	28.01	1.2381
1-Apr-08	11:15	2.4937	18.56	28.01	1.2512
1-Apr-08	11:16	2.5035	18.63	28.01	1.2643
1-Apr-08	11:17	2.5117	18.71	28.01	1.2773
1-Apr-08	11:18	2.5184	18.78	28.01	1.2903
1-Apr-08	11:19	2.524	18.85	28.01	1.3032
1-Apr-08	11:20	2.5287	18.93	28.01	1.316
1-Apr-08	11:21	2.5326	19	28.01	1.3288
1-Apr-08	11:22	2.5359	19.07	28.01	1.3414
1-Apr-08	11:23	2.5388	19.14	28.01	1.354
1-Apr-08	11:24	2.5412	19.21	28.01	1.3664
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1-Apr-08	11:26	2.553	19.35	28.01	1.391
1-Apr-08	11:27	2.5789	19.42	28.01	1.4033
1-Apr-08	11:28	2.6275	19.5	28.01	1.4159
1-Apr-08	11:29	2.7078	19.57	28.01	1.429
1-Apr-08	11:30	2.8272	19.65	28.01	1.4431
1-Apr-08	11:31	2.9769	19.74	28.01	1.459
1-Apr-08	11:32	3.1443	19.83	28.01	1.4764
1-Apr-08	11:33	3.317	19.94	28.01	1.4955
1-Apr-08	11:34	3.487	20.05	28.01	1.5162
1-Apr-08	11:35	3.6436	20.17	28.01	1.5385
1-Apr-08	11:36	3.7894	20.3	28.01	1.5621

1-Apr-08	11:37	3.9258	20.44	28.01	1.5871
1-Apr-08	11:38	4.0519	20.58	28.01	1.6132
1-Apr-08	11:39	4.1783	20.73	28.01	1.6404
1-Apr-08	11:40	4.3153	20.89	28.01	1.6687
1-Apr-08	11:41	4.46	21.05	28.01	1.6991
1-Apr-08	11:42	4.6077	21.22	28.01	1.7312
1-Apr-08	11:43	4.7511	21.4	28.01	1.7646
1-Apr-08	11:44	4.8867	21.58	28.01	1.7992
1-Apr-08	11:45	5.0087	21.77	28.01	1.8348
1-Apr-08	11:46	5.1362	21.96	28.01	1.8715
1-Apr-08	11:47	5.2886	22.16	28.01	1.9093
1-Apr-08	11:48	5.4784	22.37	28.01	1.9663
1-Apr-08	11:49	5.7319	22.58	28.01	2.0444
1-Apr-08	11:50	6.0709	22.81	28.01	2.1272
1-Apr-08	11:51	6.4761	23.06	28.01	2.2162
1-Apr-08	11:52	6.919	23.32	28.01	2.3123
1-Apr-08	11:53	7.3693	23.61	28.01	2.4179
1-Apr-08	11:54	7.8085	23.91	28.01	2.5705
1-Apr-08	11:55	8.2114	24.24	28.01	2.7311
1-Apr-08	11:56	8.6103	24.57	28.01	2.8987
1-Apr-08	11:57	9.0366	24.92	28.01	3.0736
1-Apr-08	11:58	9.5084	25.29	28.01	3.2869
1-Apr-08	11:59	10.0817	25.67	28.01	3.5128
1-Apr-08	12:00	10.8054	26.08	28.01	3.7534
1-Apr-08	12:01	11.6448	26.52	28.01	4.0114
1-Apr-08	12:02	12.5482	27	28.01	4.2892
1-Apr-08	12:03	13.4579	27.51	28.01	4.5887
1-Apr-08	12:04	14.3394	28.06	28.01	4.9539
1-Apr-08	12:05	15.1452	28.63	28.01	5.4257
1-Apr-08	12:06	15.8132	29.22	28.01	5.838
1-Apr-08	12:07	16.2717	29.83	28.01	6.0159
1-Apr-08	12:08	16.4571	30.45	28.01	6.1964
1-Apr-08	12:09	16.3337	31.06	28.01	6.2413
1-Apr-08	12:10	15.8828	31.65	28.01	6.2732
1-Apr-08	12:11	15.1735	32.2	28.01	6.3027
1-Apr-08	12:12	14.304	32.71	28.01	6.3293
1-Apr-08	12:13	13.3615	33.16	28.01	6.353
1-Apr-08	12:14	12.403	33.54	28.01	6.4606
1-Apr-08	12:15	11.5046	33.87	28.01	6.6358
1-Apr-08	12:16	10.6791	34.13	28.01	6.778
1-Apr-08	12:17	9.9482	34.34	28.01	6.8908
1-Apr-08	12:18	9.3391	34.5	28.01	6.9787
1-Apr-08	12:19	8.8127	34.63	28.01	7.0456
1-Apr-08	12:20	8.3258	34.72	28.01	7.0942
1-Apr-08	12:21	7.8724	34.78	28.01	7.1263
1-Apr-08	12:22	7.4479	34.81	28.01	7.1433
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1-Apr-08	12:24	6.7144	34.8	28.01	7.1386
1-Apr-08	12:25	6.412	34.77	28.01	7.1202
1-Apr-08	12:26	6.1448	34.72	28.01	7.0934

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1-Apr-08	12:28	5.6894	34.58	28.01	7.019
1-Apr-08	12:29	5.4833	34.49	28.01	6.9733
1-Apr-08	12:30	5.2705	34.4	28.01	6.9223
1-Apr-08	12:31	5.0537	34.3	28.01	6.8662
1-Apr-08	12:32	4.8376	34.18	28.01	6.8049
1-Apr-08	12:33	4.6309	34.06	28.01	6.7388
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1-Apr-08	12:35	4.2647	33.79	28.01	6.5945
1-Apr-08	12:36	4.1126	33.65	28.01	6.5178
1-Apr-08	12:37	3.9833	33.5	28.01	6.439
1-Apr-08	12:38	3.8796	33.36	28.01	6.3635
1-Apr-08	12:39	3.7965	33.21	28.01	6.3555
1-Apr-08	12:40	3.7286	33.05	28.01	6.3474
1-Apr-08	12:41	3.6735	32.89	28.01	6.339
1-Apr-08	12:42	3.628	32.73	28.01	6.3305
1-Apr-08	12:43	3.5913	32.57	28.01	6.322
1-Apr-08	12:44	3.5622	32.4	28.01	6.3133
1-Apr-08	12:45	3.5394	32.24	28.01	6.3046
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1-Apr-08	12:47	3.5068	31.9	28.01	6.2871
1-Apr-08	12:48	3.4948	31.74	28.01	6.2781
1-Apr-08	12:49	3.485	31.57	28.01	6.269
1-Apr-08	12:50	3.477	31.4	28.01	6.26
1-Apr-08	12:51	3.4706	31.24	28.01	6.251
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1-Apr-08	12:53	3.4612	30.9	28.01	6.233
1-Apr-08	12:54	3.458	30.74	28.01	6.2241
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1-Apr-08	12:56	3.4477	30.41	28.01	6.1851
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1-Apr-08	13:00	3.2368	29.75	28.01	5.9939
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1-Apr-08	13:02	2.9939	29.42	28.01	5.8945
1-Apr-08	13:03	2.8619	29.24	28.01	5.8427
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1-Apr-08	13:10	2.2351	28.01	28.01	4.9176
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1-Apr-08	13:15	2.0993	27.26	28.01	4.4441
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1-Apr-08	13:19	2.0561	26.73	28.01	4.1348
1-Apr-08	13:20	2.0497	26.61	28.01	4.0633
1-Apr-08	13:21	2.0446	26.49	28.01	3.994
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1-Apr-08	13:25	2.0318	26.05	28.01	3.7371
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1-Apr-08	13:27	2.0285	25.85	28.01	3.6207
1-Apr-08	13:28	2.0272	25.76	28.01	3.5654
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1-Apr-08	13:30	2.0253	25.58	28.01	3.4604
1-Apr-08	13:31	2.0246	25.5	28.01	3.4106
1-Apr-08	13:32	2.0241	25.42	28.01	3.3625
1-Apr-08	13:33	2.0238	25.34	28.01	3.316
1-Apr-08	13:34	2.0236	25.26	28.01	3.2712
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1-Apr-08	13:36	2.0237	25.12	28.01	3.1861
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1-Apr-08	13:38	2.0238	24.98	28.01	3.1068
1-Apr-08	13:39	2.0239	24.92	28.01	3.0714
1-Apr-08	13:40	2.0239	24.86	28.01	3.0405
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1-Apr-08	13:42	2.0241	24.74	28.01	2.9814
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1-Apr-08	13:45	2.0243	24.57	28.01	2.8991
1-Apr-08	13:46	2.0243	24.52	28.01	2.8733
1-Apr-08	13:47	2.0244	24.47	28.01	2.8482
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1-Apr-08	13:51	2.0247	24.28	28.01	2.7552
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1-Apr-08	13:56	2.0224	24.08	28.01	2.6536
1-Apr-08	13:57	2.0147	24.04	28.01	2.6348
1-Apr-08	13:58	1.9996	24.01	28.01	2.6163
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1-Apr-08	14:00	1.9365	23.93	28.01	2.5788
1-Apr-08	14:01	1.889	23.89	28.01	2.5591
1-Apr-08	14:02	1.8357	23.85	28.01	2.5386
1-Apr-08	14:03	1.7807	23.81	28.01	2.517
1-Apr-08	14:04	1.7266	23.76	28.01	2.4945
1-Apr-08	14:05	1.6767	23.72	28.01	2.4711
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1-Apr-08	14:09	1.5388	23.52	28.01	2.3829
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1-Apr-08	14:15	1.4623	23.22	28.01	2.2742
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1-Apr-08	14:17	1.4515	23.12	28.01	2.2395
1-Apr-08	14:18	1.4475	23.07	28.01	2.2225
1-Apr-08	14:19	1.4443	23.03	28.01	2.2059
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1-Apr-08	14:21	1.4395	22.94	28.01	2.1734
1-Apr-08	14:22	1.4377	22.89	28.01	2.1577
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1-Apr-08	14:26	1.4334	22.73	28.01	2.0976
1-Apr-08	14:27	1.4328	22.69	28.01	2.0833
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1-Apr-08	14:29	1.4318	22.61	28.01	2.0557
1-Apr-08	14:30	1.4314	22.58	28.01	2.0423
1-Apr-08	14:31	1.4312	22.54	28.01	2.0292
1-Apr-08	14:32	1.4309	22.5	28.01	2.0164
1-Apr-08	14:33	1.4308	22.47	28.01	2.0038
1-Apr-08	14:34	1.4307	22.43	28.01	1.9915
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1-Apr-08	14:36	1.4308	22.37	28.01	1.9677
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1-Apr-08	14:38	1.4308	22.31	28.01	1.9449
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1-Apr-08	14:40	1.4309	22.25	28.01	1.9259
1-Apr-08	14:41	1.4309	22.22	28.01	1.9203
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1-Apr-08	14:58	1.4084	21.76	28.01	1.8339
1-Apr-08	14:59	1.3856	21.73	28.01	1.8289
1-Apr-08	15:00	1.3515	21.71	28.01	1.8237
1-Apr-08	15:01	1.3086	21.68	28.01	1.8181
1-Apr-08	15:02	1.2605	21.65	28.01	1.8121
1-Apr-08	15:03	1.211	21.61	28.01	1.8056
1-Apr-08	15:04	1.1622	21.57	28.01	1.7986
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1-Apr-08	15:08	1.0147	21.41	28.01	1.7666
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1-Apr-08	15:10	0.9751	21.31	28.01	1.7492
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1-Apr-08	15:13	0.9386	21.17	28.01	1.7225
1-Apr-08	15:14	0.9305	21.13	28.01	1.7136
1-Apr-08	15:15	0.9239	21.08	28.01	1.7047
1-Apr-08	15:16	0.9185	21.03	28.01	1.6958
1-Apr-08	15:17	0.9141	20.99	28.01	1.687
1-Apr-08	15:18	0.9105	20.94	28.01	1.6782
1-Apr-08	15:19	0.9075	20.89	28.01	1.6699
1-Apr-08	15:20	0.9051	20.85	28.01	1.6616
1-Apr-08	15:21	0.9032	20.8	28.01	1.6533
1-Apr-08	15:22	0.9016	20.76	28.01	1.6452
1-Apr-08	15:23	0.9003	20.71	28.01	1.6371
1-Apr-08	15:24	0.8992	20.67	28.01	1.6291
1-Apr-08	15:25	0.8983	20.63	28.01	1.6211
1-Apr-08	15:26	0.8976	20.58	28.01	1.6133
1-Apr-08	15:27	0.897	20.54	28.01	1.6055
1-Apr-08	15:28	0.8965	20.5	28.01	1.5978
1-Apr-08	15:29	0.8961	20.46	28.01	1.5902
1-Apr-08	15:30	0.8958	20.42	28.01	1.5826
1-Apr-08	15:31	0.8955	20.37	28.01	1.5751
1-Apr-08	15:32	0.8953	20.33	28.01	1.5678
1-Apr-08	15:33	0.8952	20.29	28.01	1.5604
1-Apr-08	15:34	0.8951	20.25	28.01	1.5532
1-Apr-08	15:35	0.8951	20.22	28.01	1.5461
1-Apr-08	15:36	0.8951	20.18	28.01	1.539
1-Apr-08	15:37	0.8951	20.14	28.01	1.532
1-Apr-08	15:38	0.8951	20.1	28.01	1.5251
1-Apr-08	15:39	0.8951	20.06	28.01	1.5182
1-Apr-08	15:40	0.8951	20.03	28.01	1.5114
1-Apr-08	15:41	0.8951	19.99	28.01	1.5047
1-Apr-08	15:42	0.8951	19.95	28.01	1.4981
1-Apr-08	15:43	0.8951	19.92	28.01	1.4916
1-Apr-08	15:44	0.8951	19.88	28.01	1.4851
1-Apr-08	15:45	0.8952	19.85	28.01	1.4787
1-Apr-08	15:46	0.8952	19.81	28.01	1.4723

1-Apr-08	15:47	0.8952	19.78	28.01	1.466
1-Apr-08	15:48	0.8952	19.74	28.01	1.4598
1-Apr-08	15:49	0.8952	19.71	28.01	1.4537
1-Apr-08	15:50	0.8952	19.67	28.01	1.4476
1-Apr-08	15:51	0.8952	19.64	28.01	1.4416
1-Apr-08	15:52	0.8952	19.61	28.01	1.4359
1-Apr-08	15:53	0.8952	19.58	28.01	1.4302
1-Apr-08	15:54	0.8952	19.55	28.01	1.4246
1-Apr-08	15:55	0.8953	19.51	28.01	1.4191
1-Apr-08	15:56	0.8953	19.48	28.01	1.4136
1-Apr-08	15:57	0.8953	19.45	28.01	1.4081
1-Apr-08	15:58	0.8953	19.42	28.01	1.4028
1-Apr-08	15:59	0.8953	19.39	28.01	1.3974
1-Apr-08	16:00	0.8953	19.36	28.01	1.3922
1-Apr-08	16:01	0.8953	19.33	28.01	1.387
1-Apr-08	16:02	0.8953	19.3	28.01	1.3818
1-Apr-08	16:03	0.8953	19.27	28.01	1.3767
1-Apr-08	16:04	0.8953	19.24	28.01	1.3716
1-Apr-08	16:05	0.8954	19.22	28.01	1.3667
1-Apr-08	16:06	0.8954	19.19	28.01	1.3617
1-Apr-08	16:07	0.8954	19.16	28.01	1.3568
1-Apr-08	16:08	0.8954	19.13	28.01	1.352
1-Apr-08	16:09	0.8954	19.1	28.01	1.3472
1-Apr-08	16:10	0.8954	19.08	28.01	1.3425
1-Apr-08	16:11	0.8954	19.05	28.01	1.3378
1-Apr-08	16:12	0.8954	19.02	28.01	1.3331
1-Apr-08	16:13	0.8954	19	28.01	1.3285
1-Apr-08	16:14	0.8954	18.97	28.01	1.324
1-Apr-08	16:15	0.8955	18.95	28.01	1.3195
1-Apr-08	16:16	0.8955	18.92	28.01	1.315
1-Apr-08	16:17	0.8955	18.9	28.01	1.3106
1-Apr-08	16:18	0.8955	18.87	28.01	1.3063
1-Apr-08	16:19	0.8955	18.85	28.01	1.302
1-Apr-08	16:20	0.8955	18.82	28.01	1.2977
1-Apr-08	16:21	0.8955	18.8	28.01	1.2935
1-Apr-08	16:22	0.8955	18.78	28.01	1.2893
1-Apr-08	16:23	0.8955	18.75	28.01	1.2852
1-Apr-08	16:24	0.8955	18.73	28.01	1.2811
1-Apr-08	16:25	0.8955	18.71	28.01	1.2771
1-Apr-08	16:26	0.8956	18.68	28.01	1.2731
1-Apr-08	16:27	0.8956	18.66	28.01	1.2691
1-Apr-08	16:28	0.8956	18.64	28.01	1.2652
1-Apr-08	16:29	0.8956	18.62	28.01	1.2613
1-Apr-08	16:30	0.8956	18.59	28.01	1.2575
1-Apr-08	16:31	0.8956	18.57	28.01	1.2537
1-Apr-08	16:32	0.8956	18.55	28.01	1.2499
1-Apr-08	16:33	0.8956	18.53	28.01	1.2462
1-Apr-08	16:34	0.8956	18.51	28.01	1.2425
1-Apr-08	16:35	0.8956	18.49	28.01	1.2389
1-Apr-08	16:36	0.8957	18.47	28.01	1.2353

1-Apr-08	16:37	0.8957	18.45	28.01	1.2317
1-Apr-08	16:38	0.8957	18.43	28.01	1.2282
1-Apr-08	16:39	0.8957	18.41	28.01	1.2247
1-Apr-08	16:40	0.8957	18.39	28.01	1.2213
1-Apr-08	16:41	0.8957	18.37	28.01	1.2178
1-Apr-08	16:42	0.8957	18.35	28.01	1.2145
1-Apr-08	16:43	0.8957	18.33	28.01	1.2114
1-Apr-08	16:44	0.8957	18.31	28.01	1.2083
1-Apr-08	16:45	0.8957	18.29	28.01	1.2052
1-Apr-08	16:46	0.8957	18.27	28.01	1.2021
1-Apr-08	16:47	0.8958	18.26	28.01	1.199
1-Apr-08	16:48	0.8958	18.24	28.01	1.196
1-Apr-08	16:49	0.8958	18.22	28.01	1.1931
1-Apr-08	16:50	0.8958	18.2	28.01	1.1901
1-Apr-08	16:51	0.8958	18.18	28.01	1.1872
1-Apr-08	16:52	0.8958	18.17	28.01	1.1843
1-Apr-08	16:53	0.8958	18.15	28.01	1.1814
1-Apr-08	16:54	0.8958	18.13	28.01	1.1786
1-Apr-08	16:55	0.8958	18.12	28.01	1.1758
1-Apr-08	16:56	0.8958	18.1	28.01	1.173
1-Apr-08	16:57	0.8958	18.08	28.01	1.1703
1-Apr-08	16:58	0.8959	18.07	28.01	1.1676
1-Apr-08	16:59	0.8959	18.05	28.01	1.1649
1-Apr-08	17:00	0.8959	18.03	28.01	1.1622
1-Apr-08	17:01	0.8959	18.02	28.01	1.1595
1-Apr-08	17:02	0.8959	18	28.01	1.1569
1-Apr-08	17:03	0.8959	17.99	28.01	1.1543
1-Apr-08	17:04	0.8959	17.97	28.01	1.1518
1-Apr-08	17:05	0.8959	17.96	28.01	1.1492
1-Apr-08	17:06	0.8959	17.94	28.01	1.1467
1-Apr-08	17:07	0.8959	17.93	28.01	1.1442
1-Apr-08	17:08	0.8959	17.91	28.01	1.1418
1-Apr-08	17:09	0.896	17.9	28.01	1.1393
1-Apr-08	17:10	0.896	17.88	28.01	1.1369
1-Apr-08	17:11	0.896	17.87	28.01	1.1345
1-Apr-08	17:12	0.896	17.85	28.01	1.1322
1-Apr-08	17:13	0.896	17.84	28.01	1.1298
1-Apr-08	17:14	0.896	17.83	28.01	1.1275
1-Apr-08	17:15	0.896	17.81	28.01	1.1252
1-Apr-08	17:16	0.896	17.8	28.01	1.1229
1-Apr-08	17:17	0.896	17.78	28.01	1.1207
1-Apr-08	17:18	0.896	17.77	28.01	1.1185
1-Apr-08	17:19	0.896	17.76	28.01	1.1163
1-Apr-08	17:20	0.8961	17.74	28.01	1.1141
1-Apr-08	17:21	0.8961	17.73	28.01	1.1119
1-Apr-08	17:22	0.8961	17.72	28.01	1.1098
1-Apr-08	17:23	0.8961	17.71	28.01	1.1076
1-Apr-08	17:24	0.8961	17.69	28.01	1.1055
1-Apr-08	17:25	0.8961	17.68	28.01	1.1035
1-Apr-08	17:26	0.8961	17.67	28.01	1.1014

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1-Apr-08	17:28	0.8961	17.64	28.01	1.0974
1-Apr-08	17:29	0.8961	17.63	28.01	1.0954
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1-Apr-08	17:31	0.8962	17.61	28.01	1.0914
1-Apr-08	17:32	0.8962	17.6	28.01	1.0895
1-Apr-08	17:33	0.8962	17.59	28.01	1.0876
1-Apr-08	17:34	0.8962	17.57	28.01	1.0857
1-Apr-08	17:35	0.8962	17.56	28.01	1.0838
1-Apr-08	17:36	0.8962	17.55	28.01	1.0819
1-Apr-08	17:37	0.8962	17.54	28.01	1.0801
1-Apr-08	17:38	0.8962	17.53	28.01	1.0783
1-Apr-08	17:39	0.8962	17.52	28.01	1.0765
1-Apr-08	17:40	0.8962	17.51	28.01	1.0747
1-Apr-08	17:41	0.8962	17.5	28.01	1.0729
1-Apr-08	17:42	0.8962	17.49	28.01	1.0712
1-Apr-08	17:43	0.8963	17.48	28.01	1.0694
1-Apr-08	17:44	0.8963	17.47	28.01	1.0677
1-Apr-08	17:45	0.8963	17.46	28.01	1.066
1-Apr-08	17:46	0.8963	17.45	28.01	1.0643
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1-Apr-08	17:51	0.8963	17.4	28.01	1.0562
1-Apr-08	17:52	0.8963	17.39	28.01	1.0546
1-Apr-08	17:53	0.8963	17.38	28.01	1.053
1-Apr-08	17:54	0.8964	17.37	28.01	1.0514
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1-Apr-08	17:57	0.8891	17.34	28.01	1.0468
1-Apr-08	17:58	0.8785	17.33	28.01	1.0452
1-Apr-08	17:59	0.8607	17.32	28.01	1.0435
1-Apr-08	18:00	0.8341	17.31	28.01	1.0415
1-Apr-08	18:01	0.8007	17.29	28.01	1.0393
1-Apr-08	18:02	0.7632	17.28	28.01	1.0367
1-Apr-08	18:03	0.7246	17.26	28.01	1.0338
1-Apr-08	18:04	0.6866	17.24	28.01	1.0306
1-Apr-08	18:05	0.6515	17.22	28.01	1.027
1-Apr-08	18:06	0.6201	17.2	28.01	1.0231
1-Apr-08	18:07	0.593	17.17	28.01	1.019
1-Apr-08	18:08	0.5716	17.15	28.01	1.0146
1-Apr-08	18:09	0.5546	17.12	28.01	1.0102
1-Apr-08	18:10	0.5407	17.09	28.01	1.0056
1-Apr-08	18:11	0.5294	17.06	28.01	1.0011
1-Apr-08	18:12	0.5199	17.03	28.01	0.9966
1-Apr-08	18:13	0.5122	17.01	28.01	0.9921
1-Apr-08	18:14	0.5059	16.98	28.01	0.9875
1-Apr-08	18:15	0.5007	16.95	28.01	0.983
1-Apr-08	18:16	0.4965	16.92	28.01	0.9784

1-Apr-08	18:17	0.4931	16.89	28.01	0.9738
1-Apr-08	18:18	0.4903	16.86	28.01	0.9693
1-Apr-08	18:19	0.488	16.83	28.01	0.9648
1-Apr-08	18:20	0.4861	16.8	28.01	0.9603
1-Apr-08	18:21	0.4846	16.78	28.01	0.9558
1-Apr-08	18:22	0.4833	16.75	28.01	0.9513
1-Apr-08	18:23	0.4823	16.72	28.01	0.9469
1-Apr-08	18:24	0.4815	16.69	28.01	0.9425
1-Apr-08	18:25	0.4808	16.66	28.01	0.9382
1-Apr-08	18:26	0.4802	16.64	28.01	0.9339
1-Apr-08	18:27	0.4798	16.61	28.01	0.9296
1-Apr-08	18:28	0.4794	16.58	28.01	0.9253
1-Apr-08	18:29	0.479	16.56	28.01	0.9211
1-Apr-08	18:30	0.4788	16.53	28.01	0.917
1-Apr-08	18:31	0.4785	16.5	28.01	0.9128
1-Apr-08	18:32	0.4784	16.48	28.01	0.9087
1-Apr-08	18:33	0.4783	16.45	28.01	0.9047
1-Apr-08	18:34	0.4782	16.43	28.01	0.9007
1-Apr-08	18:35	0.4782	16.4	28.01	0.8967
1-Apr-08	18:36	0.4782	16.38	28.01	0.8927
1-Apr-08	18:37	0.4782	16.35	28.01	0.8888
1-Apr-08	18:38	0.4782	16.33	28.01	0.885
1-Apr-08	18:39	0.4782	16.3	28.01	0.8811
1-Apr-08	18:40	0.4782	16.28	28.01	0.8773
1-Apr-08	18:41	0.4782	16.26	28.01	0.8736
1-Apr-08	18:42	0.4782	16.23	28.01	0.8698
1-Apr-08	18:43	0.4782	16.21	28.01	0.8661
1-Apr-08	18:44	0.4782	16.19	28.01	0.8625
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1-Apr-08	18:46	0.4782	16.14	28.01	0.8553
1-Apr-08	18:47	0.4782	16.12	28.01	0.8517
1-Apr-08	18:48	0.4782	16.09	28.01	0.8482
1-Apr-08	18:49	0.4782	16.07	28.01	0.8447
1-Apr-08	18:50	0.4782	16.05	28.01	0.8412
1-Apr-08	18:51	0.4782	16.03	28.01	0.8378
1-Apr-08	18:52	0.4782	16.01	28.01	0.8344
1-Apr-08	18:53	0.4782	15.99	28.01	0.8311
1-Apr-08	18:54	0.4782	15.97	28.01	0.8277
1-Apr-08	18:55	0.4782	15.94	28.01	0.8244
1-Apr-08	18:56	0.4782	15.92	28.01	0.8212
1-Apr-08	18:57	0.4782	15.9	28.01	0.8179
1-Apr-08	18:58	0.4782	15.88	28.01	0.8147
1-Apr-08	18:59	0.4782	15.86	28.01	0.8116
1-Apr-08	19:00	0.4782	15.84	28.01	0.8084
1-Apr-08	19:01	0.4782	15.82	28.01	0.8054
1-Apr-08	19:02	0.4782	15.8	28.01	0.8026
1-Apr-08	19:03	0.4782	15.78	28.01	0.7998
1-Apr-08	19:04	0.4782	15.77	28.01	0.797
1-Apr-08	19:05	0.4782	15.75	28.01	0.7942
1-Apr-08	19:06	0.4782	15.73	28.01	0.7914

1-Apr-08	19:07	0.4782	15.71	28.01	0.7887
1-Apr-08	19:08	0.4783	15.69	28.01	0.786
1-Apr-08	19:09	0.4783	15.67	28.01	0.7833
1-Apr-08	19:10	0.4783	15.65	28.01	0.7806
1-Apr-08	19:11	0.4783	15.64	28.01	0.778
1-Apr-08	19:12	0.4783	15.62	28.01	0.7754
1-Apr-08	19:13	0.4783	15.6	28.01	0.7728
1-Apr-08	19:14	0.4783	15.58	28.01	0.7702
1-Apr-08	19:15	0.4783	15.56	28.01	0.7677
1-Apr-08	19:16	0.4783	15.55	28.01	0.7651
1-Apr-08	19:17	0.4783	15.53	28.01	0.7626
1-Apr-08	19:18	0.4783	15.51	28.01	0.7601
1-Apr-08	19:19	0.4783	15.5	28.01	0.7577
1-Apr-08	19:20	0.4783	15.48	28.01	0.7552
1-Apr-08	19:21	0.4783	15.46	28.01	0.7528
1-Apr-08	19:22	0.4783	15.45	28.01	0.7504
1-Apr-08	19:23	0.4783	15.43	28.01	0.7481
1-Apr-08	19:24	0.4783	15.41	28.01	0.7457
1-Apr-08	19:25	0.4783	15.4	28.01	0.7434
1-Apr-08	19:26	0.4783	15.38	28.01	0.7411
1-Apr-08	19:27	0.4783	15.37	28.01	0.7388
1-Apr-08	19:28	0.4783	15.35	28.01	0.7365
1-Apr-08	19:29	0.4783	15.34	28	0.7342
1-Apr-08	19:30	0.4783	15.32	28	0.732
1-Apr-08	19:31	0.4783	15.31	28	0.7298
1-Apr-08	19:32	0.4783	15.29	28	0.7276
1-Apr-08	19:33	0.4783	15.28	28	0.7254
1-Apr-08	19:34	0.4783	15.26	28	0.7233
1-Apr-08	19:35	0.4783	15.25	28	0.7211
1-Apr-08	19:36	0.4783	15.23	28	0.719
1-Apr-08	19:37	0.4783	15.22	28	0.7169
1-Apr-08	19:38	0.4783	15.2	28	0.7148
1-Apr-08	19:39	0.4783	15.19	28	0.7128
1-Apr-08	19:40	0.4783	15.17	28	0.7107
1-Apr-08	19:41	0.4783	15.16	28	0.7087
1-Apr-08	19:42	0.4783	15.15	28	0.7067
1-Apr-08	19:43	0.4783	15.13	28	0.7047
1-Apr-08	19:44	0.4783	15.12	28	0.7027
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1-Apr-08	19:51	0.4783	15.03	28	0.6894
1-Apr-08	19:52	0.4783	15.02	28	0.6875
1-Apr-08	19:53	0.4784	15	28	0.6857
1-Apr-08	19:54	0.4784	14.99	28	0.6839
1-Apr-08	19:55	0.4784	14.98	28	0.6821
1-Apr-08	19:56	0.4784	14.97	28	0.6803

1-Apr-08	19:57	0.4784	14.95	28	0.6785
1-Apr-08	19:58	0.4784	14.94	28	0.6768
1-Apr-08	19:59	0.4784	14.93	28	0.6751
1-Apr-08	20:00	0.4784	14.92	28	0.6734
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APPENDIX D

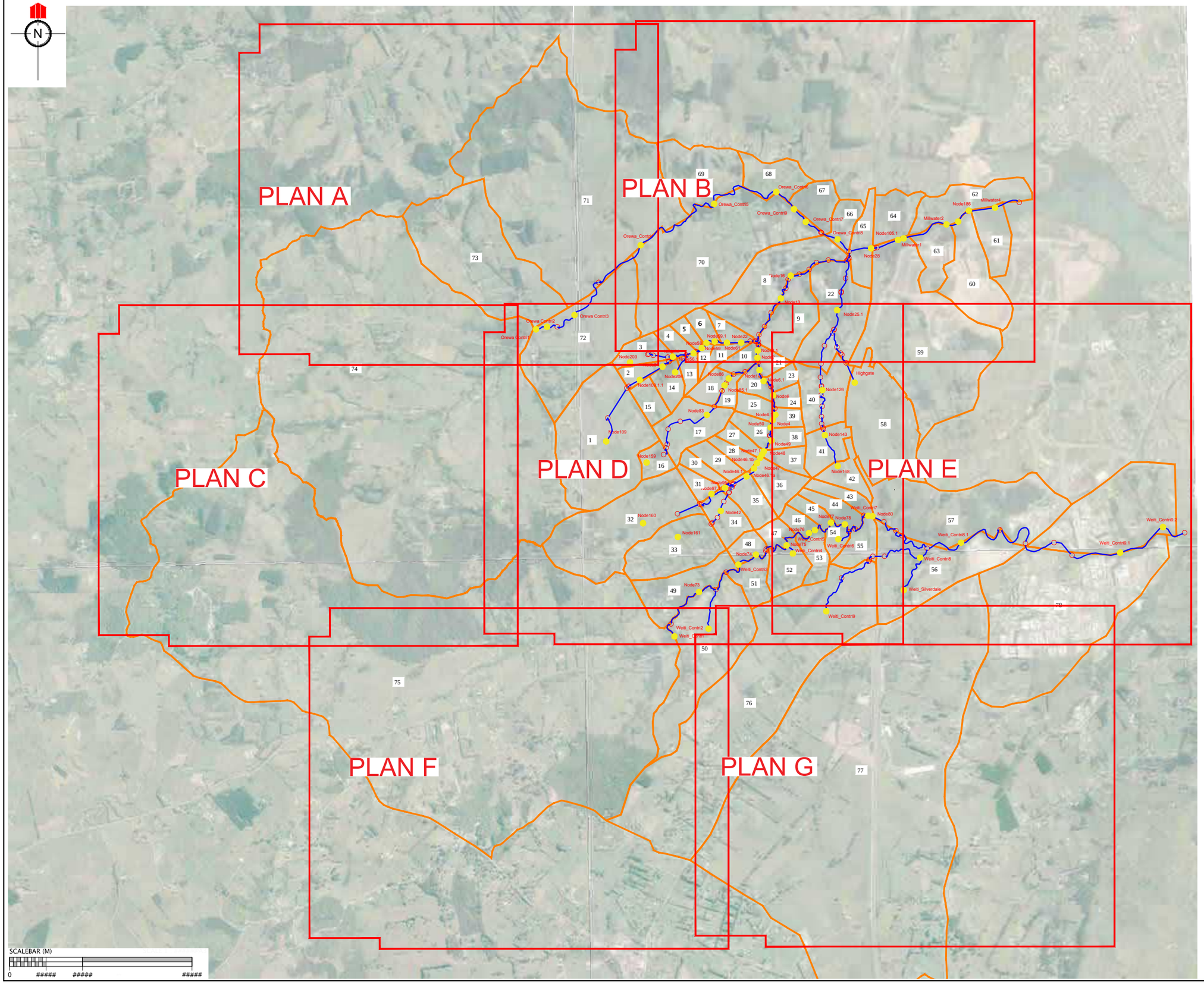
CATCHMENT & XP STORM MODEL PLANS

Catchment Number with Corresponding XP Storm Loading Node

Catchment No	Loading Nodes
1	Node 109
2	Node 54
3	Node 203
4	Node 56
5	Node 58
6	Node 59.1
7	Node 22
8	Node 16
9	Node 13
10	Node 8.1
11	Node 61
12	Node 59
13	Node 56.1
14	Node 206
15	Node 109.1.1
16	Node 159
17	Node 83
18	Node 86
19	Node 85.1
20	Node 108
21	Node 8
22	Node 25.1
23	Node 6.1
24	Node 6
25	Node 4.1
26	Node 50
27	Node 47.1
28	Node 46.1b
29	Node 46.1
30	Node 95
31	Node 97.1
32	Node 160
33	Node 161
34	Node 42
35	Node 46.1a
36	Node 47
37	Node 48
38	Node 49
39	Node 4

Catchment No	Loading Nodes
40	Node 126
41	Node 143
42	Node 168
43	Node 80
44	Node 78
45	Node 77
46	Node 76
47	Node 75
48	Node 74
49	Node 73
50	Weiti_Contri 2
51	Weiti_Contri 3
52	Weiti_Contri 4
53	Weiti_Contri 5
54	Weiti_Contri 6
55	Weiti_Contri 7
56	Weiti_Contri 8
57	Weiti_Contri8.1
58	Highgate
59	Millwater 1
60	Millwater 3
61	Millwater 4
62	Node 186
63	Millwater 2
64	Node 105.1
65	Node 28
66	Orewa-Contri 8
67	Orewa-Contri 7
68	Orewa-Contri 6
69	Orewa-Contri 5
70	Orewa-Contri 9
71	Orewa-Contri 4
72	Orewa-Contri 3
73	Orewa-Contri 2
74	Orewa-Contri 1
75	Weiti_Contri
76	Weiti_Contri 9
77	Weiti_Silverdale

XP CATCHMENT PLANS



REVISION DETAILS	NAME	DATE
1. ISSUED FOR INFORMATION	ZY	05-07-16

LEGEND:

- XP Storm Model Subcatchments
- XP Storm Model Links
- XP Storm Model Nodes
- XP Storm Catchment Loading Nodes

CLIENT:

Fulton Hogan

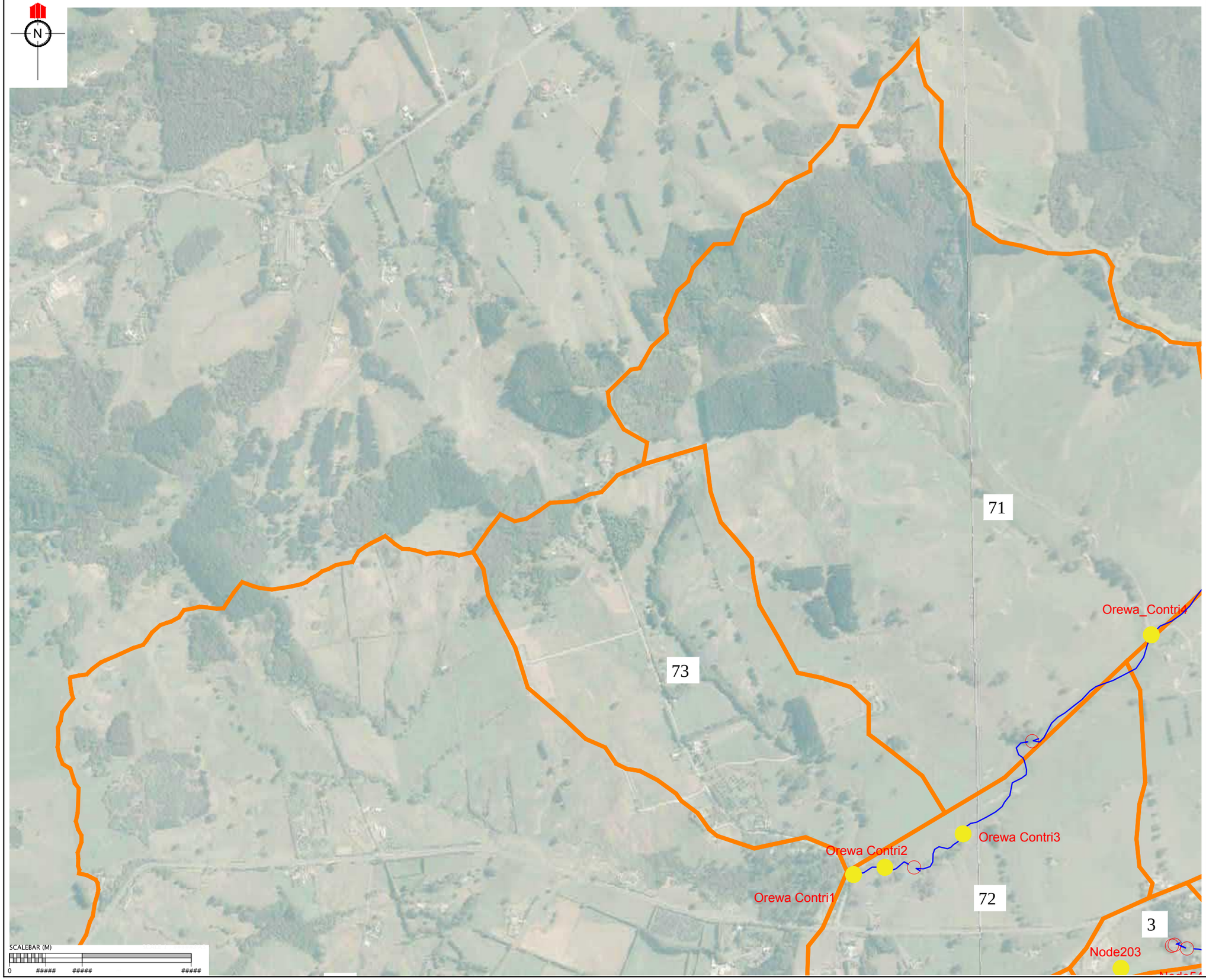
WOODS
Engineers. Surveyors. Planners.

ARGENT LANE SPECIAL HOUSING AREA

STORMWATER BASE PLAN

AUCKLAND COUNCIL

DESIGNED: ZY	ISSUED FOR INFORMATION
CHECKED:	DRAWN: ZY
APPROVED:	SURVEYED: WOODS
JOB NUMBER: 31720	SCALE: NOT TO SCALE
ISSUED: JULY 2016	
DWG. NO. 31720 – SW Overview	REV. 1



REVISION DETAILS	NAME	DATE
1. ISSUED FOR INFORMATION	ZY	05-07-16

LEGEND:

- XP Storm Model Subcatchments
- XP Storm Model Links
- XP Storm Model Nodes
- XP Storm Catchment Loading Nodes

CLIENT:

Fulton Hogan

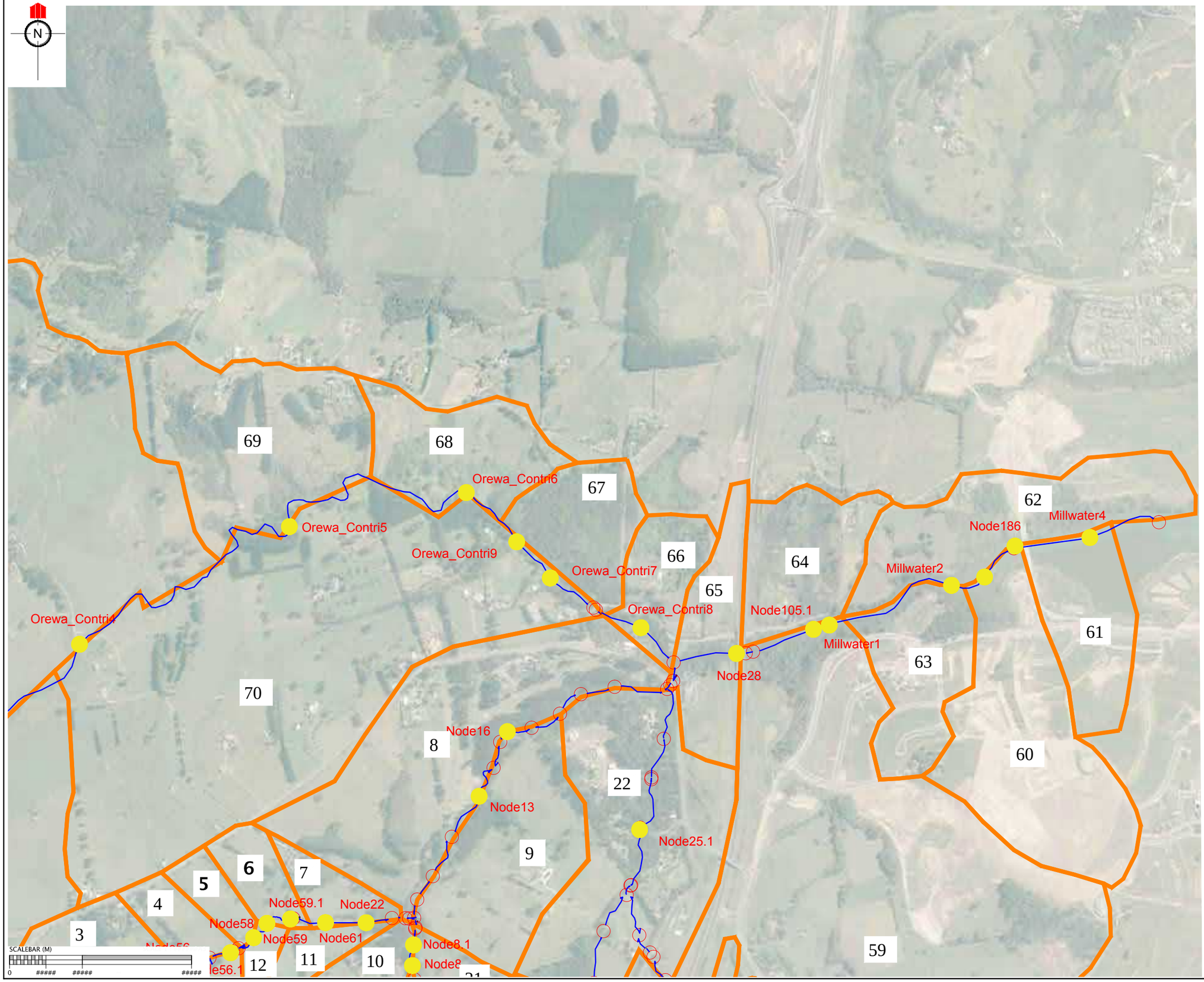
WOODS
Engineers. Surveyors. Planners.

ARGENT LANE SPECIAL HOUSING AREA

STORMWATER BASE PLAN

AUCKLAND COUNCIL

DESIGNED: ZY	ISSUED FOR INFORMATION
CHECKED:	DRAWN: ZY
APPROVED:	SURVEYED: WOODS
JOB NUMBER: 31720	SCALE: 1:10000 @ A3
ISSUED: JULY 2016	
DWG. NO. 31720 – SW – Plan A	REV. 1



REVISION DETAILS	NAME	DATE
1. ISSUED FOR INFORMATION	ZY	05-07-16

LEGEND:

- XP Storm Model Subcatchments
- XP Storm Model Links
- XP Storm Model Nodes
- XP Storm Catchment Loading Nodes

CLIENT:

Fulton Hogan

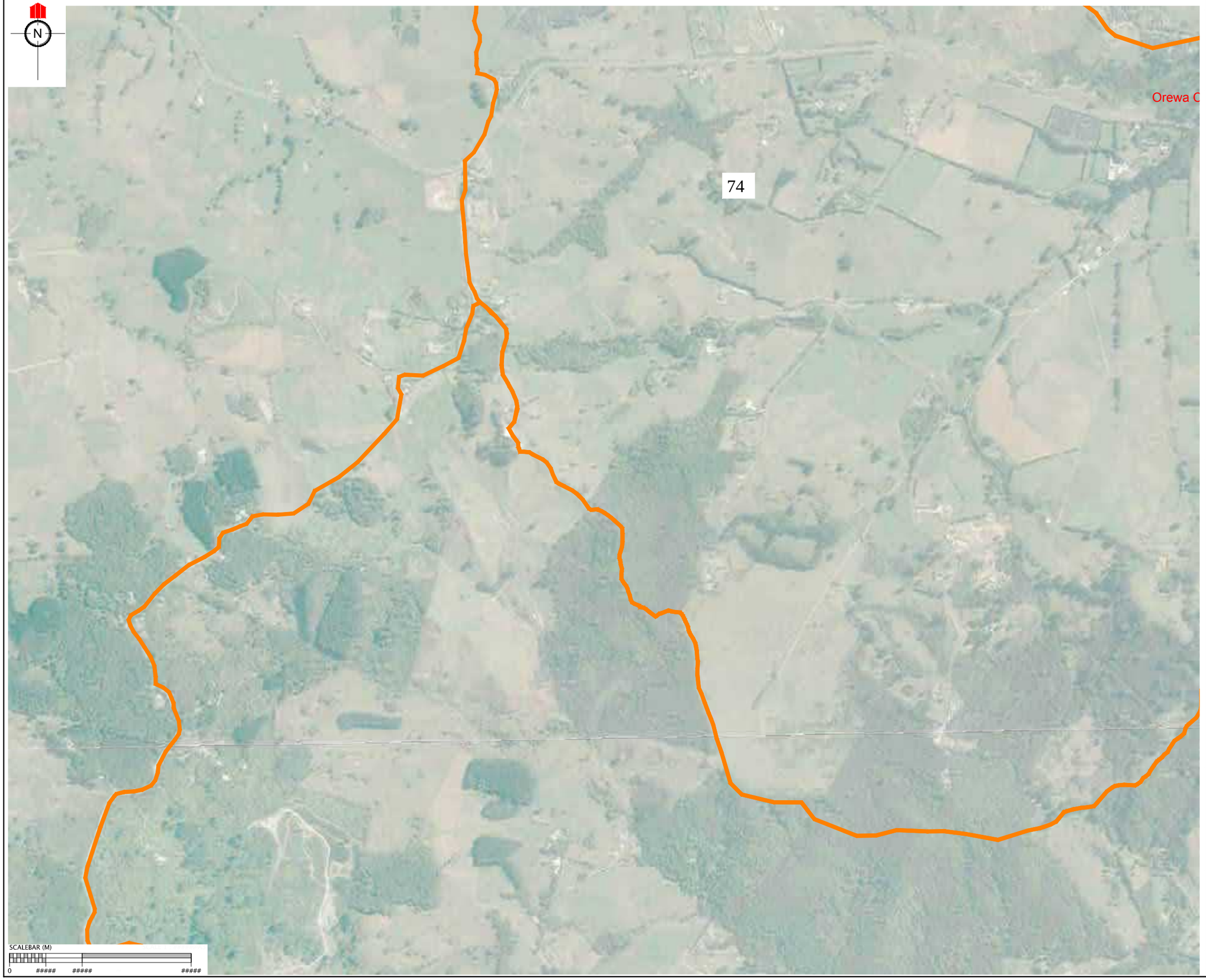
WOODS
Engineers. Surveyors. Planners.

ARGENT LANE SPECIAL HOUSING AREA

STORMWATER BASE PLAN

AUCKLAND COUNCIL

DESIGNED: ZY	ISSUED FOR INFORMATION
CHECKED:	DRAWN: ZY
APPROVED:	SURVEYED: WOODS
JOB NUMBER: 31720	SCALE: 1:10000 @ A3
ISSUED: JULY 2016	
DWG. NO. 31720 – SW – Plan B	REV. 1



REVISION DETAILS	NAME	DATE
1. ISSUED FOR INFORMATION	ZY	05-07-16

LEGEND:

- XP Storm Model Subcatchments
- XP Storm Model Links
- XP Storm Model Nodes
- XP Storm Catchment Loading Nodes

CLIENT:

Fulton Hogan

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ARGENT LANE SPECIAL HOUSING AREA

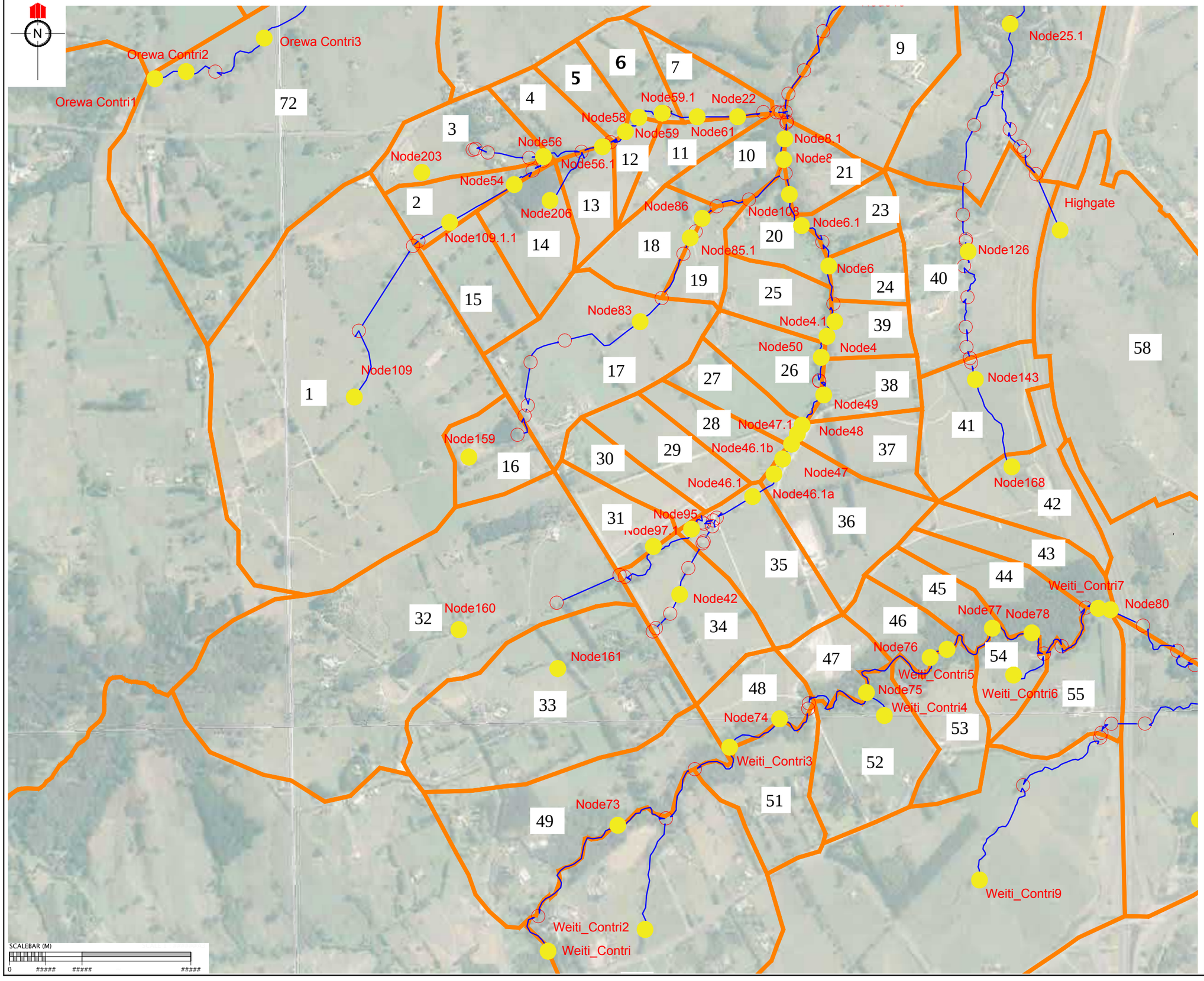
STORMWATER BASE PLAN

AUCKLAND COUNCIL

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APPROVED:	SURVEYED: WOODS
JOB NUMBER: 31720	SCALE: 1:10000 @ A3
ISSUED: JULY 2016	

DWG. NO. 31720 - SW - Plan C

REV. 1



REVISION DETAILS	NAME	DATE
1. ISSUED FOR INFORMATION	ZY	05-07-16

LEGEND:

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- XP Storm Model Links
- XP Storm Model Nodes
- XP Storm Catchment Loading Nodes

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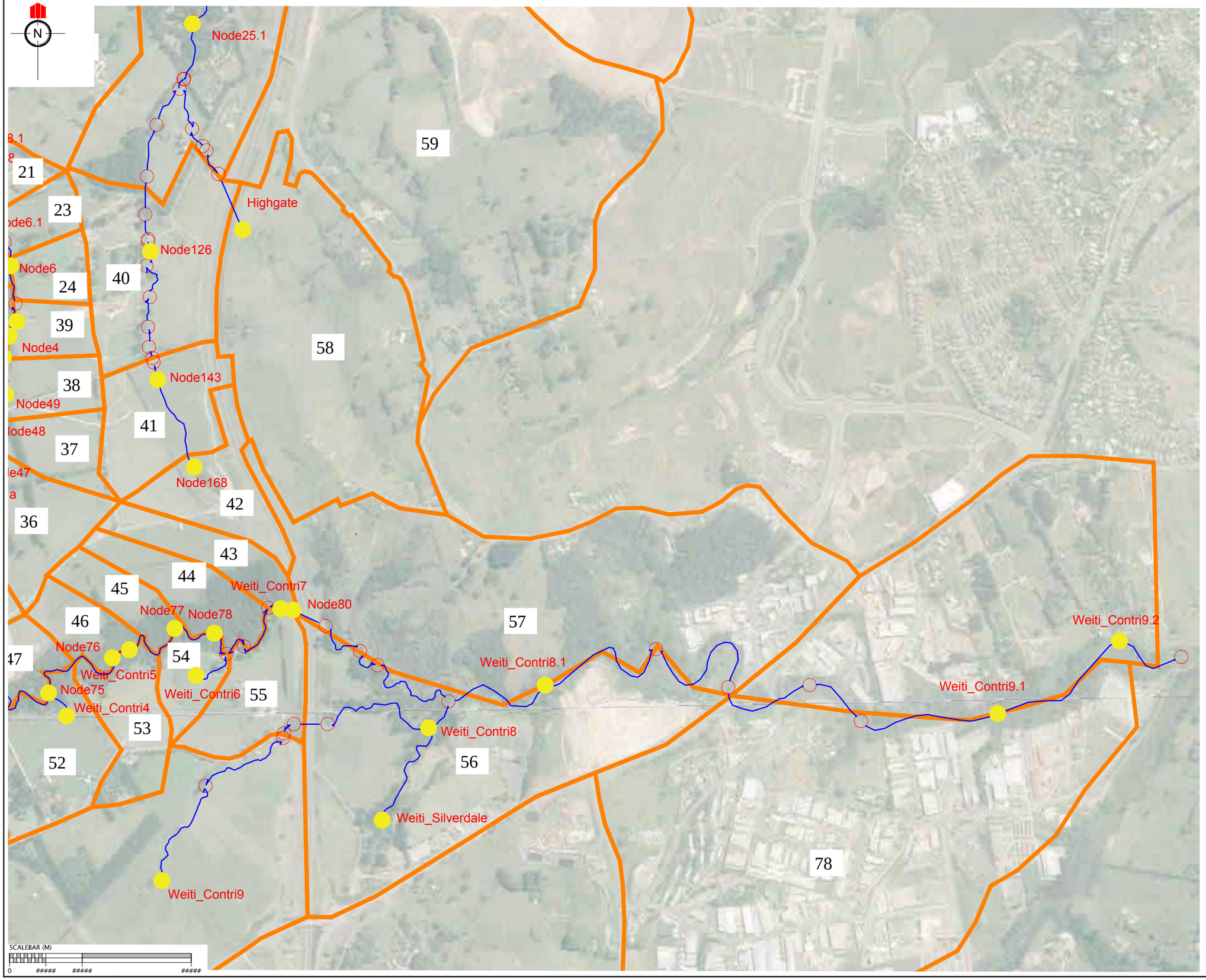
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ARGENT LANE SPECIAL HOUSING AREA

STORMWATER BASE PLAN

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APPROVED:	SURVEYED: WOODS
JOB NUMBER: 31720	SCALE: 1:10000 @ A3
ISSUED: JULY 2016	
DWG. NO. 31720 – SW – Plan D	REV. 1



REVISION DETAILS	NAME	DATE
1. ISSUED FOR INFORMATION	ZY	05-07-16

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- XP Storm Model Links
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- XP Storm Catchment Loading Nodes

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ARGENT LANE SPECIAL HOUSING AREA

STORMWATER BASE PLAN

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ISSUED: JULY 2016	
DWG. NO. 31720 – SW – Plan E	REV. 1



REVISION DETAILS	NAME	DATE
1. ISSUED FOR INFORMATION	ZY	05-07-16

LEGEND:

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- XP Storm Model Links
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ARGENT LANE SPECIAL HOUSING AREA

STORMWATER BASE PLAN

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JOB NUMBER: 31720	SCALE: 1:10000 @ A3
ISSUED: JULY 2016	
DWG. NO. 31720 – SW – Plan F	REV. 1



REVISION DETAILS	NAME	DATE
1. ISSUED FOR INFORMATION	ZY	05-07-16

LEGEND:

- XP Storm Model Subcatchments
- XP Storm Model Links
- XP Storm Model Nodes
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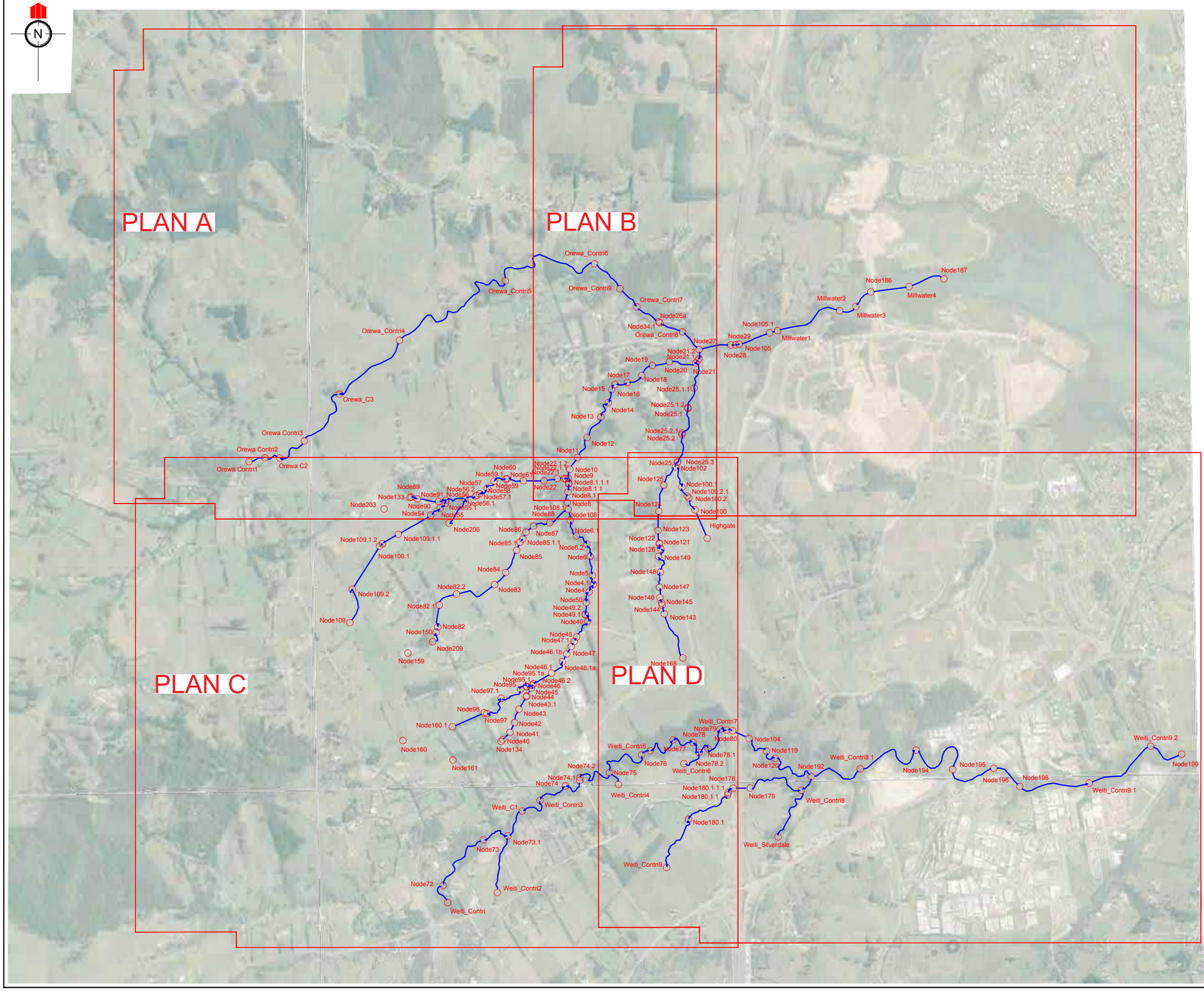
ARGENT LANE SPECIAL HOUSING AREA

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ISSUED: JULY 2016	
DWG. NO. 31720 – SW – Plan G	REV. 1

XP NODE LOCATION PLANS



REVISION DETAILS	NAME	DATE
1. ISSUED FOR INFORMATION	ZY	11-07-16

LEGEND:

- XP STORM MODELLED LINK
- XP STORM MODELLED NODE
- PLAN BOUNDARY

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WAINUI EAST FUTURE URBAN ZONE

XP STORM MODELLED NODE LOCATIONS

AUCKLAND COUNCIL

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APPROVED:	SURVEYED: WOODS
JOB NUMBER: 31720	SCALE: NOT TO SCALE
ISSUED: JULY 2016	
DWG. NO. 31720 – SW Overview	REV. 1



REVISION DETAILS	NAME	DATE
1. ISSUED FOR INFORMATION	ZY	11-07-16

LEGEND:

XP STORM MODELLED LINK

XP STORM MODELLED NODE

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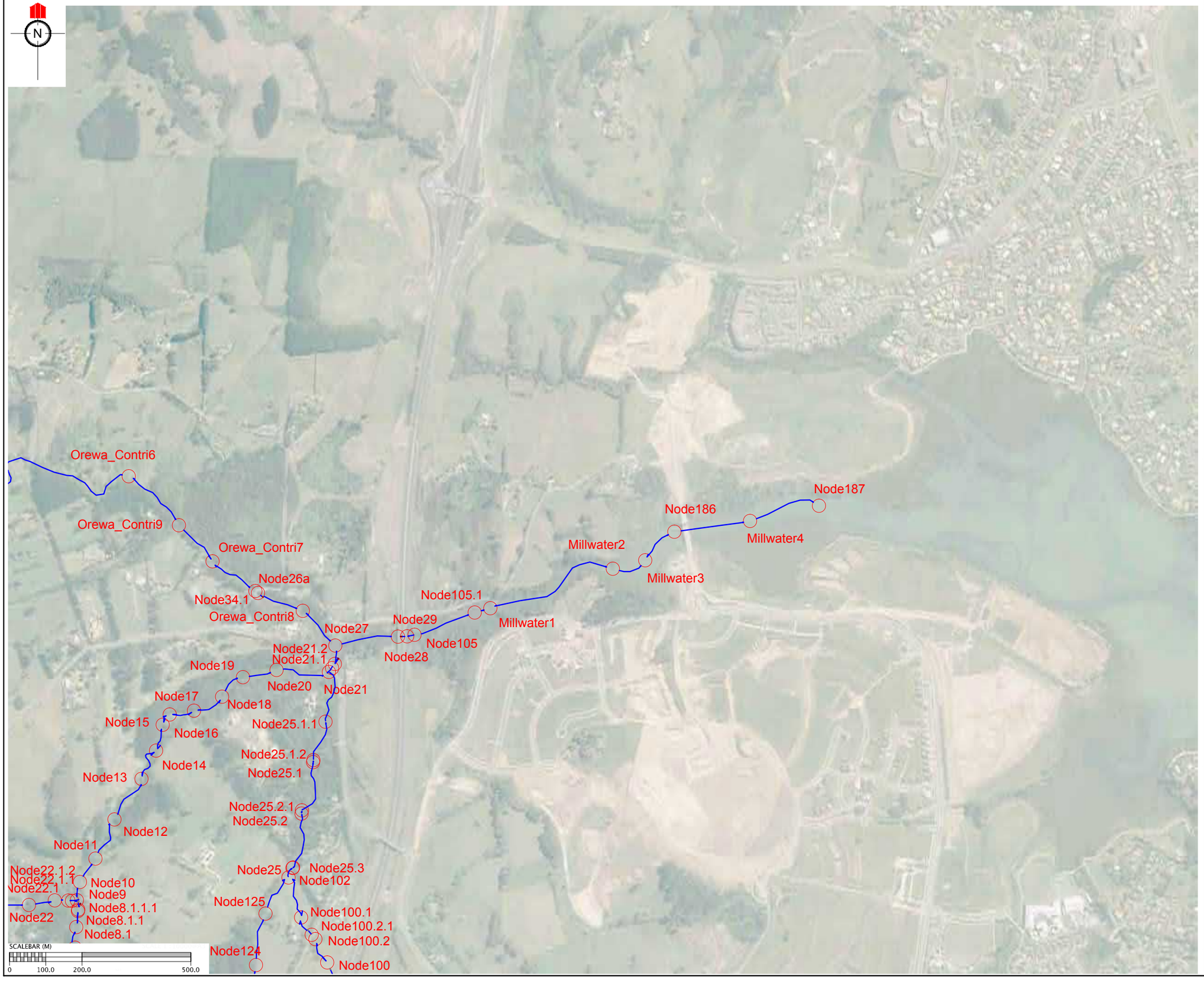
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WAINUI EAST FUTURE URBAN ZONE

XP STORM MODELLED NODE LOCATIONS

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DWG. NO. 31720 – SW – Plan A	REV. 1



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1. ISSUED FOR INFORMATION	ZY	11-07-16

LEGEND:

XP STORM MODELLED LINK

XP STORM MODELLED NODE

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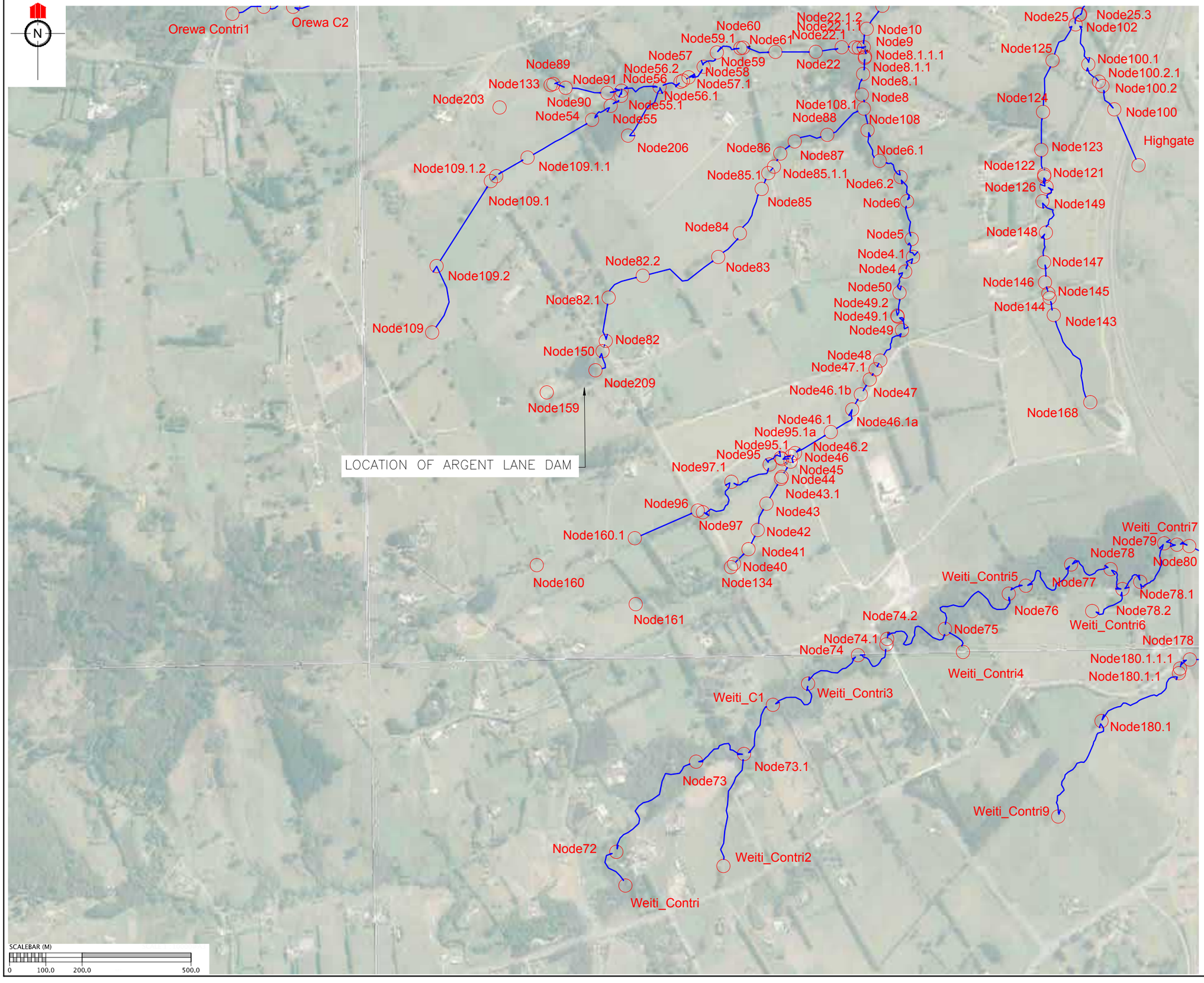
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WAINUI EAST FUTURE URBAN ZONE

XP STORM MODELLED NODE LOCATIONS

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ISSUED: JULY 2016	
DWG. NO. 31720 - SW - Plan B	REV. 1



REVISION DETAILS	NAME	DATE
1. ISSUED FOR INFORMATION	ZY	11-07-16

LEGEND:

XP STORM MODELLED LINK

XP STORM MODELLED NODE

CLIENT:

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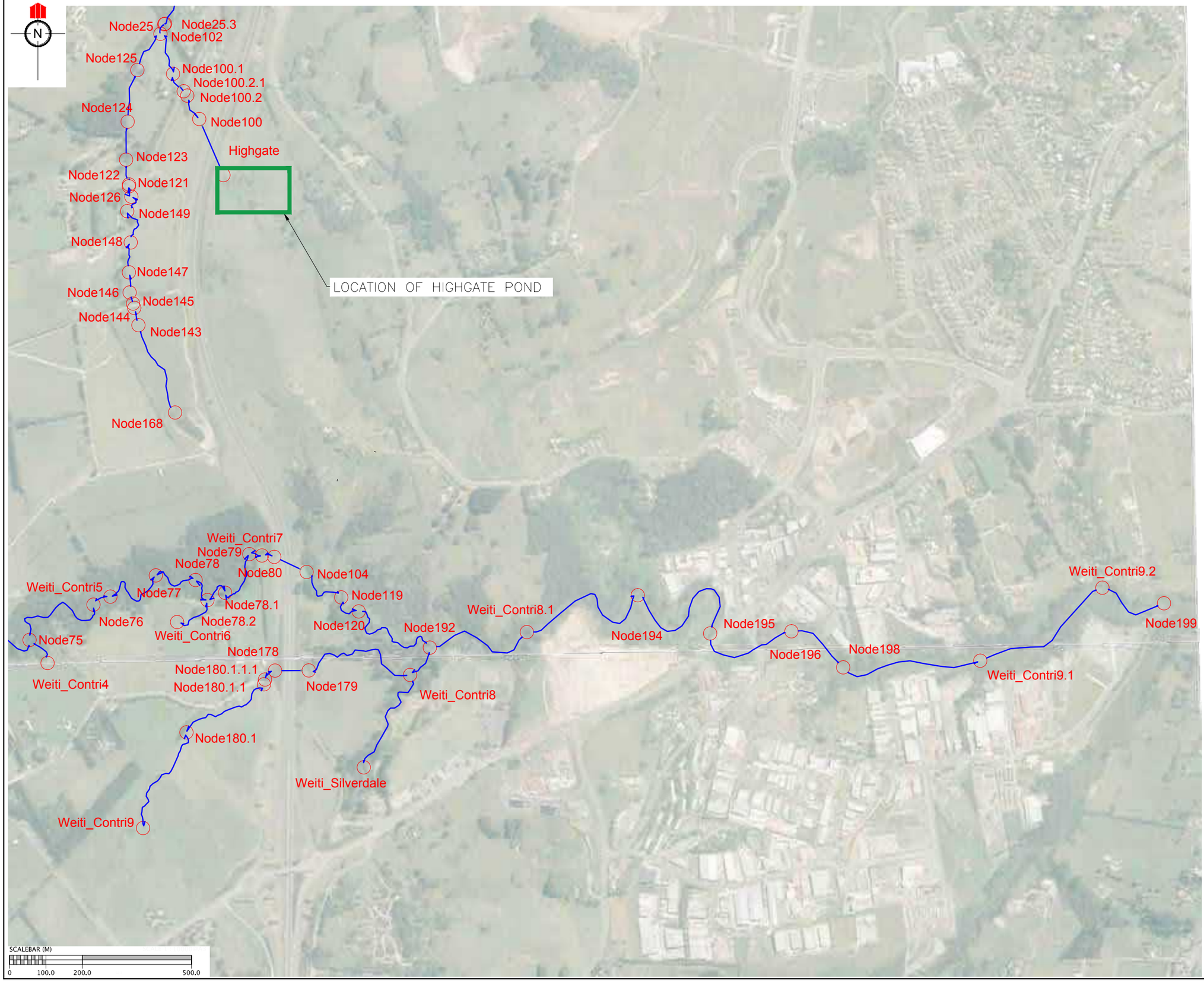
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WAINUI EAST FUTURE URBAN ZONE

XP STORM MODELLED NODE LOCATIONS

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DWG. NO. 31720 - SW - Plan C	REV. 1



REVISION DETAILS	NAME	DATE
1. ISSUED FOR INFORMATION	ZY	11-07-16

LEGEND:

XP STORM MODELLED LINK

XP STORM MODELLED NODE

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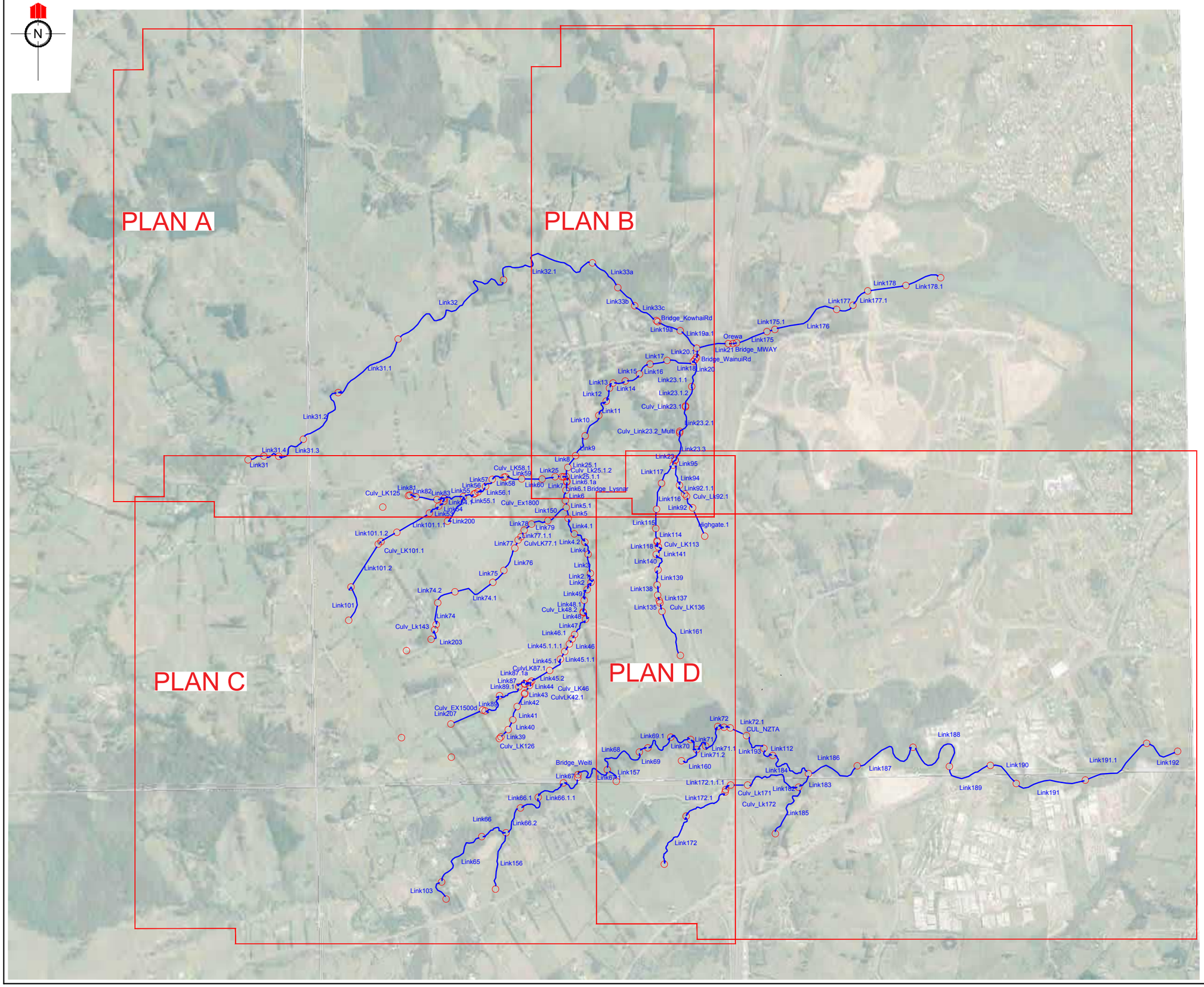
WAINUI EAST FUTURE URBAN ZONE

XP STORM MODELLED NODE LOCATIONS

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ISSUED: JULY 2016	
DWG. NO. 31720 - SW - Plan D	REV. 1

XP LINK LOCATION PLANS



REVISION DETAILS	NAME	DATE
1. ISSUED FOR INFORMATION	ZY	11-07-16

LEGEND:

- XP STORM MODELLED LINK
- XP STORM MODELLED NODE
- PLAN BOUNDARY

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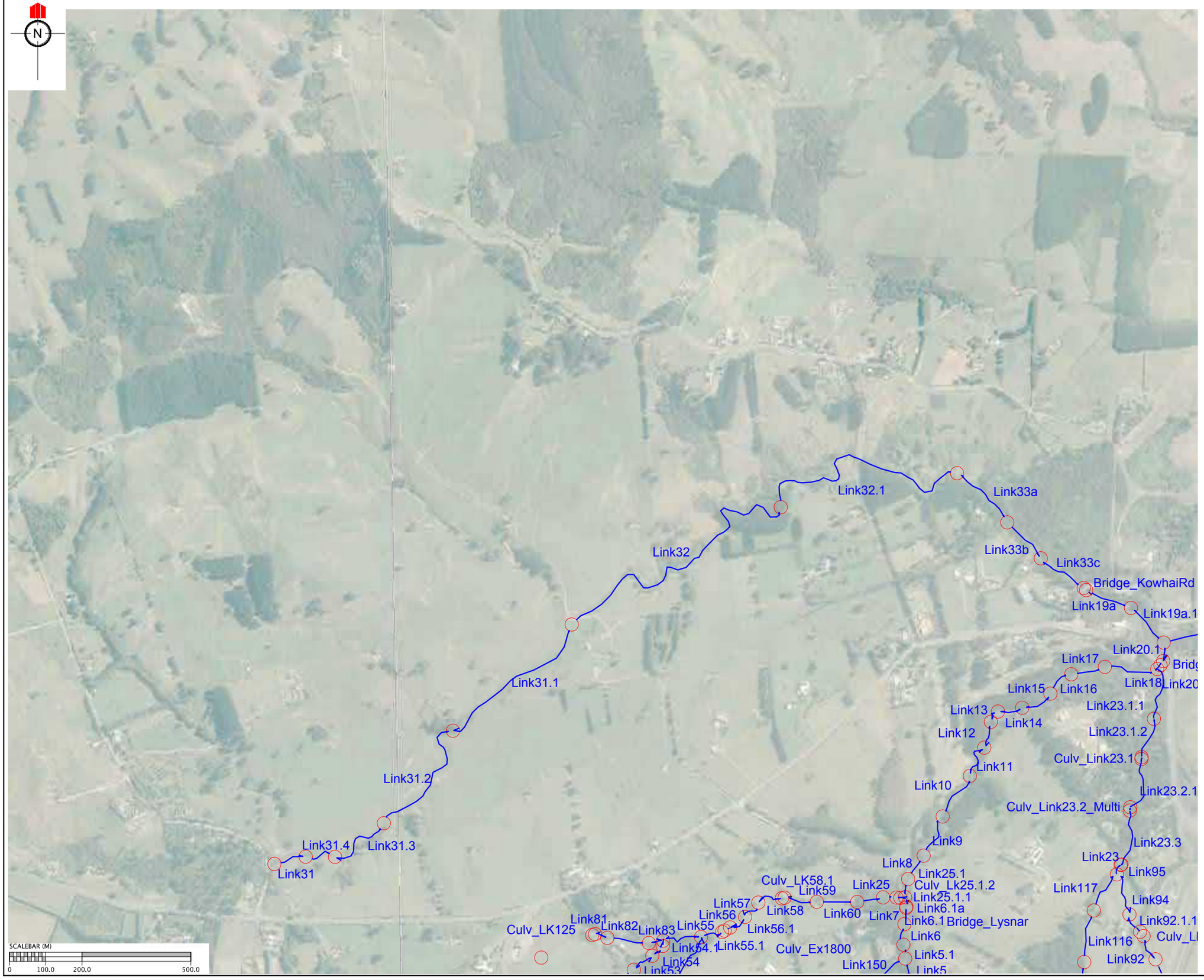
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WAINUI EAST FUTURE URBAN ZONE

XP STORM MODELLED LINK LOCATIONS

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DWG. NO. 31720 – SW Overview	REV. 1



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1. ISSUED FOR INFORMATION	ZY	11-07-16

LEGEND:

XP STORM MODELLED LINK

XP STORM MODELLED NODE

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WAINUI EAST FUTURE URBAN ZONE

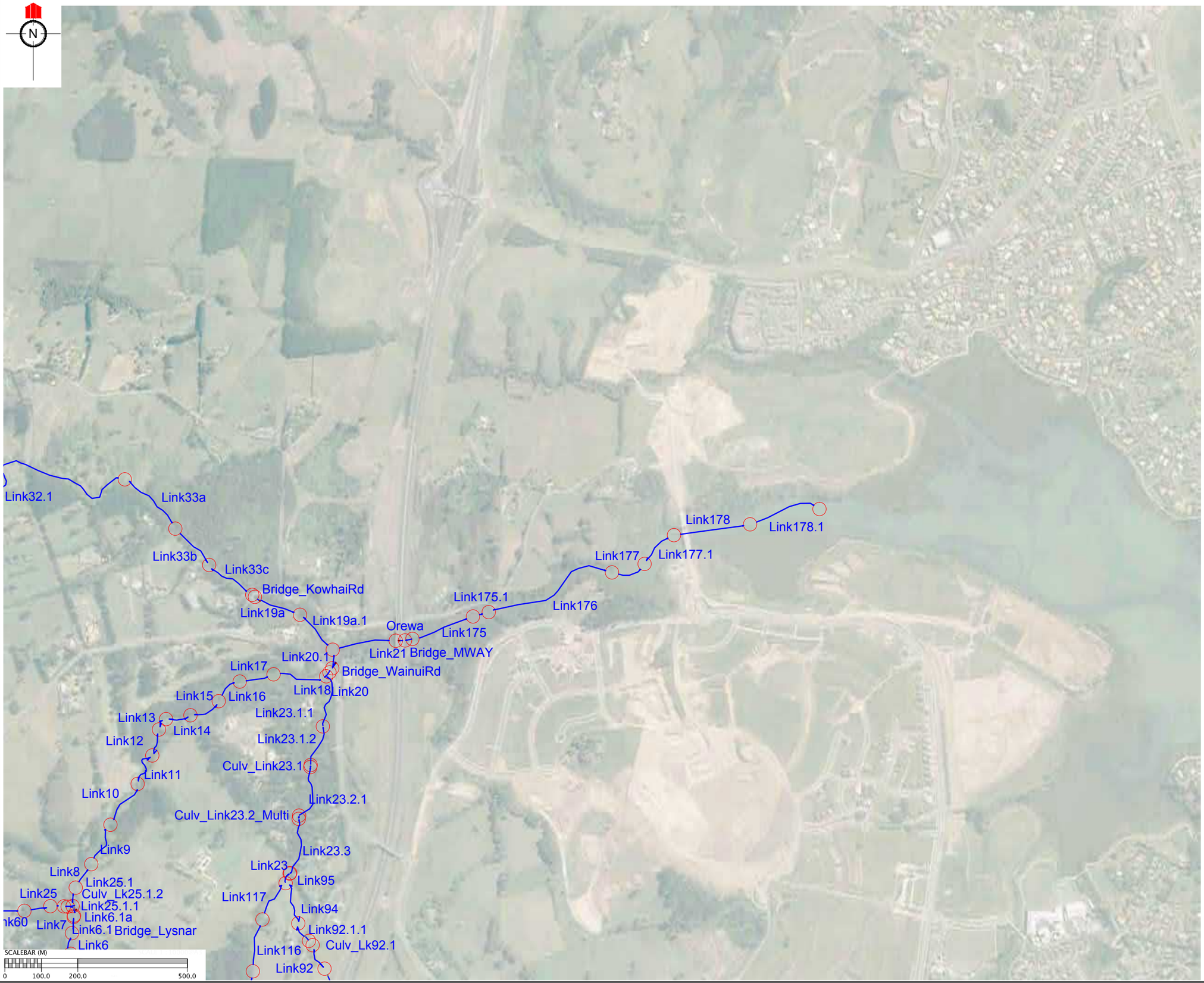
XP STORM MODELLED LINK LOCATIONS

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DWG. NO. 31720 - SW - Plan A

REV. 1



REVISION DETAILS	NAME	DATE
1. ISSUED FOR INFORMATION	ZY	11-07-16

LEGEND:

XP STORM MODELLED LINK

XP STORM MODELLED NODE

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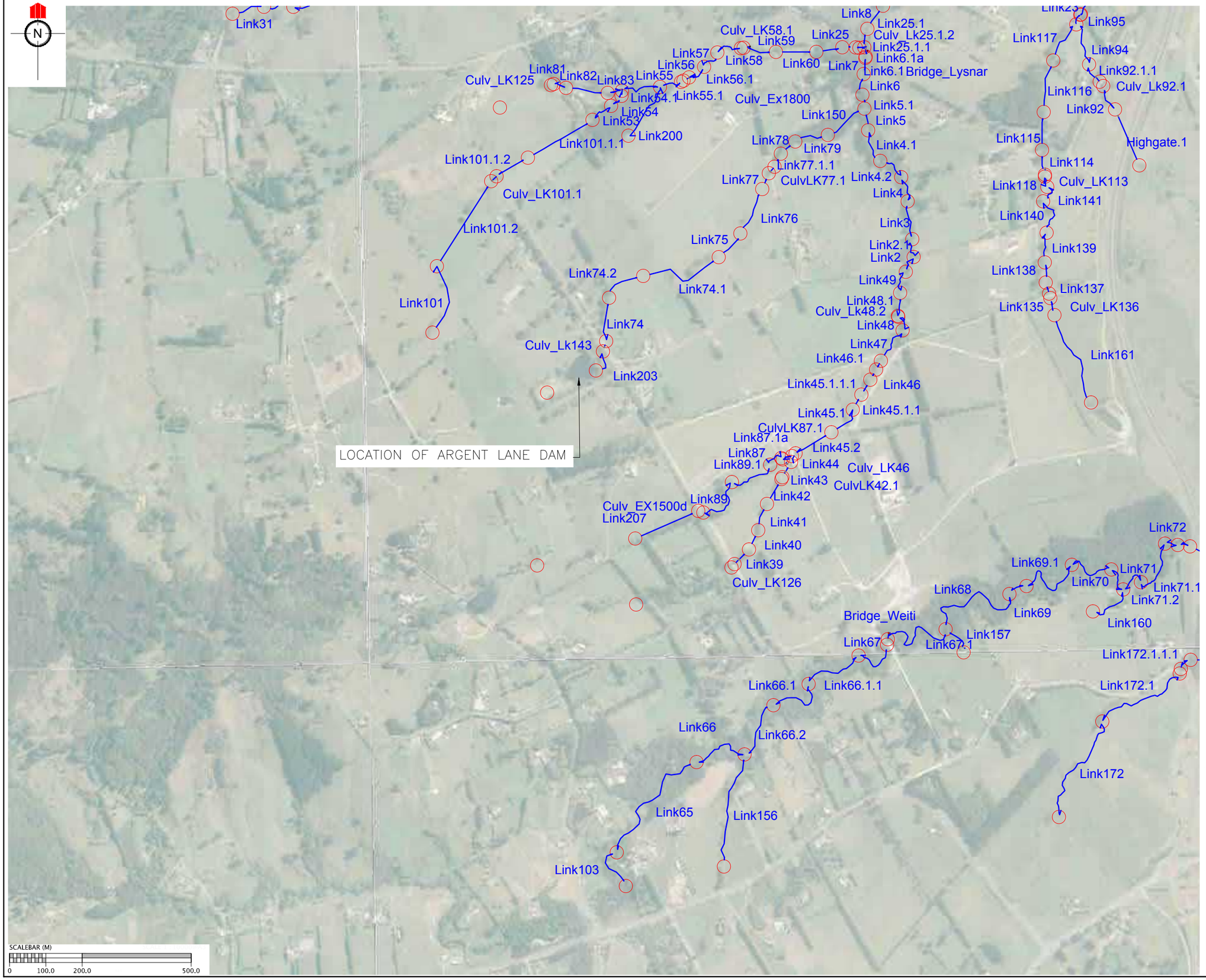
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WAINUI EAST FUTURE URBAN ZONE

XP STORM MODELLED LINK LOCATIONS

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DWG. NO. 31720 - SW - Plan B	REV. 1



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XP STORM MODELLED LINK

XP STORM MODELLED NODE

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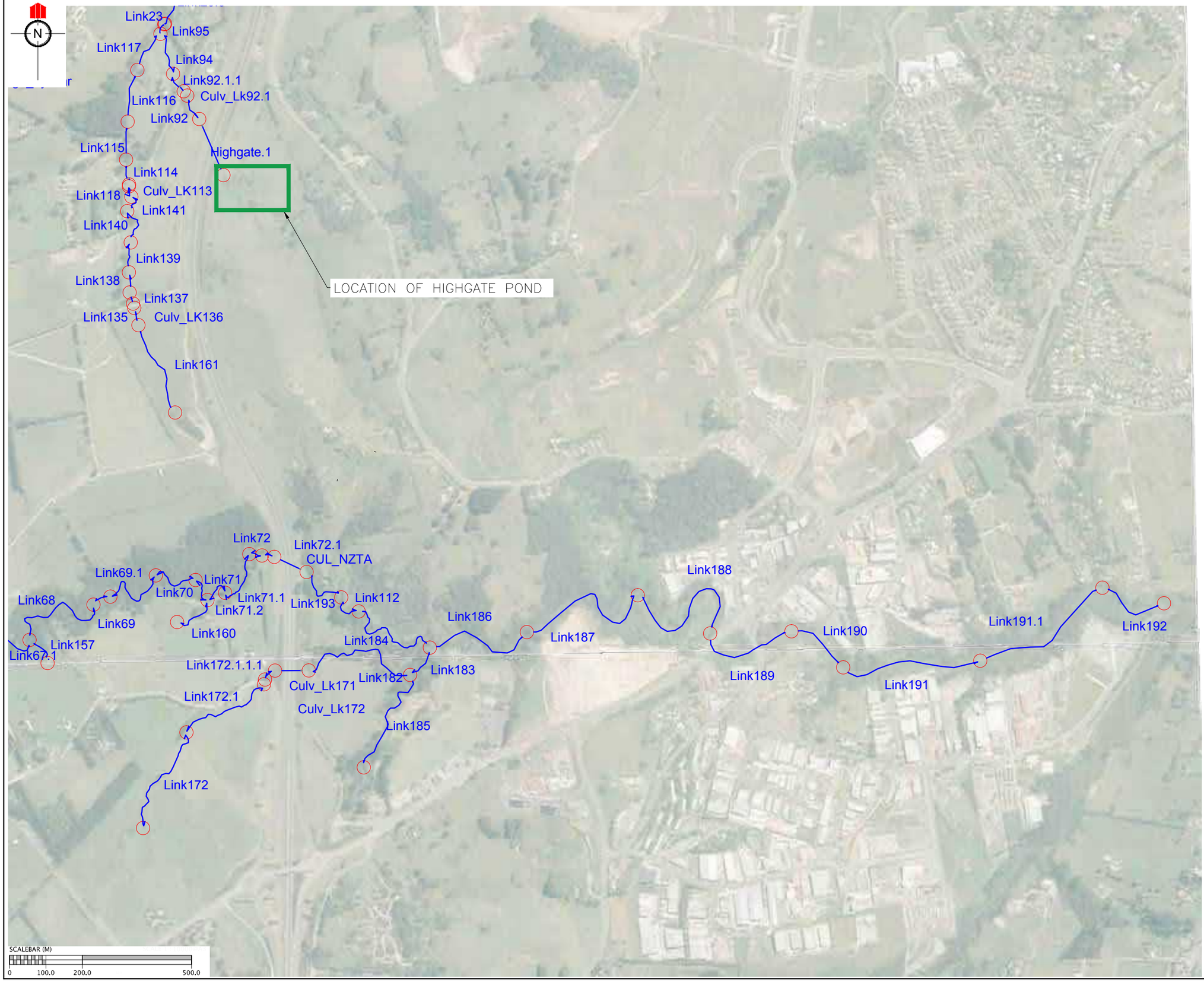
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WAINUI EAST FUTURE URBAN ZONE

XP STORM MODELLED LINK LOCATIONS

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DWG. NO. 31720 - SW - Plan C	REV. 1



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LEGEND:

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XP STORM MODELLED NODE

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WAINUI EAST FUTURE URBAN ZONE

XP STORM MODELLED LINK LOCATIONS

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ISSUED: JULY 2016	

DWG. NO. 31720 - SW - Plan D

REV. 1

APPENDIX E

WAINUI 1 PRECINCT ZONING PLAN

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ROAD AND STREET TYPOLOGIES

PROJECT NUMBER: 31720
ADDRESS: Wainui East
BY: ZY
DATE: 24/05/2016

Result Summary

Road/street	Total area (m2)	Impervious area (m2)	%IMP
Wainui Road Upgrade 22.6m	23.90	18.15	75.94%
Argent Lane Road	30.00	22.42	74.73%
Argent Lane - Interim	30.00	20.42	68.07%
Collector Road 24.0m	24.00	20.00	83.33%
Collector Road (Town Centre Edge) From 24.0m	24.00	18.71	77.96%
Local Road (Urban Area) 14.8m	15.20	11.40	75.00%
Local Road (Suburban Area) 16.6m	16.60	12.90	77.71%
Green Street 30.2m	30.40	16.80	55.26%
Reserve Edge Road 2 From 13.0m	17.50	12.30	70.29%

Total area (m2)	211.60
Total impervious area (m2)	153.10
Impervious percentage (%)	**72.35%**

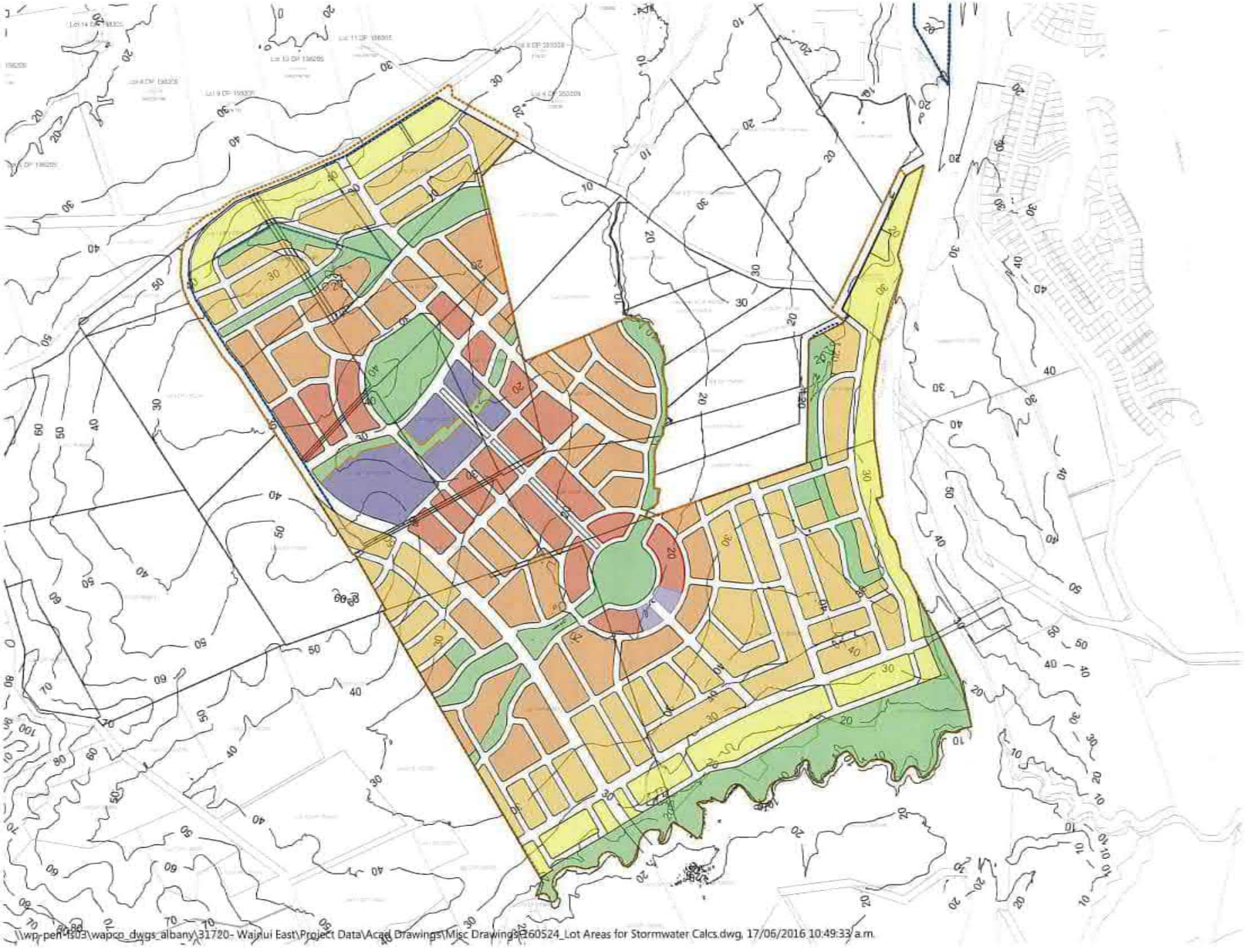
ARGENT LANE SHA: MAXIMUM IMPREVIOUS COVERAGES

27% Road to total SHA Area (inclusive parks)
48% Road to Development Blocks

OVERALL SITE

ZONE	TYPE	COVERAGE	AREA		IMPERVIOUS AREA
SINGLE HOUSE ZONE	DETACHED	60%	193083		115849.8
MIXED HOUSING SUBURBAN	> 300m² DETACHED	60%	188728	*ASSUMES 50% DETACHED / 50% ATTACHED*	113236.8
	< 300m² ATTACHED / DETACHED	70%	188728		132109.6
MIXED HOUSING URBAN	> 300m² DETACHED	60%	158856	*ASSUMES 50% DETACHED / 50% ATTACHED*	95313.6
	< 300m² ATTACHED / DETACHED	70%	158856		111199.2
MIXED HOUSING URBAN SUB PRECINCT	> 300m² DETACHED	60%		*ASSUMES ALL ATTACHED*	0
	< 300m² DETACHED	70%			0
	< 300m² ATTACHED	75%	148845		111633.75
NEIGHBOURHOOD CENTRE		100%	5427		5427
LOCAL CENTRE		100%	67738		67738
PARKS, STREAMS		40%	193423		77369.2
WEITI COVENANT AREA		40%	122380		48952
ROADS		73%	534466		390160.18
TOTAL SHA AREA			**1960530**		
AVERAGE IMPREVIOUS %					**65%**

1042



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APPENDIX F

MODELLING INPUTS

APPLIED IMPERVIOUS PERCENTAGE

Zone Type	IMP %
Millwater (Single House)	65
Single Hose	60
Large Lot	10
Future Urban	65
Mixed Rural	10
Rural Production	10
Countryside Living	10
Heavy Industry	80
Light Industry	80
General Business	80
Town Centre	100
Public Open Space (Conservation/ Community/ Information Recreation)	Lesser of 10% or 5000 m2

APPLIED IMPERVIOUS PERCENTAGE COMMENTS

XPNode	Comment
Millwater1	Applied Millwater 65% IMP
Millwater2	Applied Millwater 65% IMP
Millwater3	Applied Millwater 65% IMP
Millwater4	Applied Millwater 65% IMP
Node105.1	Applied Open Space (2.0234 ha) 10% IMP and Single House (10.0936 ha) 60% IMP
Node108	Applied Future Urban 65% IMP
Node109	Applied Future Urban 65% IMP
Node109.1.1	Applied Future Urban 65% IMP
Node126	Applied Future Urban 65% IMP
Node13	Applied Future Urban 65% IMP
Node143	Applied Future Urban 65% IMP
Node159	Applied Future Urban 65% IMP
Node16	Applied Future Urban 65% IMP
Node160	Applied Future urban (40.7363 ha) 65% IMP and Mixed Rural (11.2907 ha) 10% IMP
Node161	Applied Future Urban 65% IMP
Node168	Applied Future Urban 65% IMP
Node186	Applied Single House 60% IMP
Node203	Applied Future Urban 65% IMP
Node206	Applied Future Urban 65% IMP
Node22	Applied Future Urban 65% IMP
Node25.1	Applied Future Urban 65% IMP
Node28	Applied Rural Production 10% IMP
Node4	Applied Future Urban 65% IMP
Node4.1	Applied Future Urban 65% IMP
Node42	Applied Future Urban 65% IMP
Node46.1	Applied Future Urban 65% IMP
Node46.1a	Applied Future Urban 65% IMP
Node46.1b	Applied Future Urban 65% IMP
Node47	Applied Future Urban 65% IMP
Node47.1	Applied Future Urban 65% IMP
Node48	Applied Future Urban 65% IMP
Node49	Applied Future Urban 65% IMP
Node50	Applied Future Urban 65% IMP
Node54	Applied Future Urban 65% IMP
Node56	Applied Future Urban 65% IMP
Node56.1	Applied Future Urban 65% IMP
Node58	Applied Future Urban 65% IMP
Node59	Applied Future Urban 65% IMP
Node59.1	Applied Future Urban 65% IMP
Node6	Applied Future Urban 65% IMP
Node6.1	Applied Future Urban 65% IMP
Node61	Applied Future Urban 65% IMP
Node73	Applied Future Urban 65% IMP
Node74	Applied Future Urban 65% IMP
Node75	Applied Future Urban 65% IMP
Node76	Applied Future Urban 65% IMP
Node77	Applied Future Urban 65% IMP
Node78	Applied Future Urban 65% IMP
Node8	Applied Future Urban 65% IMP
Node8.1	Applied Future Urban 65% IMP
Node80	Applied Future Urban 65% IMP
Node83	Applied Future Urban 65% IMP
Node85.1	Applied Future Urban 65% IMP
Node86	Applied Future Urban 65% IMP
Node95	Applied Future Urban 65% IMP
Node97.1	Applied Future Urban 65% IMP

Orewa Contri1	Applied Rural Production and Mixed Rural (Area of Cemetery is considered negligible) 10%IMP
Orewa Contri2	Applied Rural Production 10% IMP
Orewa Contri3	Applied Future urban (53.1231 ha) 65% IMP and Rural production (5.2539ha) 10% IMP
Orewa_Contri4	Applied Rural Production 10% IMP
Orewa_Contri5	Applied Rural Production 10% IMP
Orewa_Contri6	Applied Rural Production 10% IMP
Orewa_Contri7	Applied Rural Production + Public Open Space 10%IMP
Orewa_Contri8	Applied Rural Production 10% IMP
Orewa_Contri9	Applied Future Urban 65% IMP
Weiti_Contri	Applied Future urban (40.8810 ha) 65% IMP and Rural Mixed/Production (673.613ha) 10% IMP
Weiti_Contri2	Applied Mixed Rural 10%IMP
Weiti_Contri3	Applied Mixed Rural 10%IMP
Weiti_Contri4	Applied Mixed Rural 10%IMP
Weiti_Contri5	Applied Mixed Rural 10%IMP
Weiti_Contri6	Applied Mixed Rural 10%IMP
Weiti_Contri7	Applied Mixed Rural 10%IMP
Weiti_Contri8	Applied Public Open Space (11.12 ha) at max 0.5ha IMP, General Business 80%IMP
Weiti_Contri8.1	Applied General Business (9.08 ha) 80% IMP, Large lot (7.97 ha) 10% IMP, Single house (24.8 ha) 60% IMP, Public Open Space Conservation/Community/Information Recreation (8.23 ha) at max 0.5ha IMP, Town Centre (13.5 ha)100 %IMP
Weiti_Contri9	Applied Mixed Rural 10%IMP
Weiti_Contri9.1	Applied General Business (12.01 ha) 80% IMP, Light Industry (69.03 ha) 80% IMP, Heavy Industry (21.29 ha) 80% IMP, Future Urban (14.41 ha) 65% IMP
Weiti_Contri9.2	Applied Large Lot (33.56 ha) 10% IMP, Light Industry (15.15 ha) 80% IMP, General Business (3.9 ha) 80%IMP
Weiti_Silverdale	Applied General Business (54.94 ha) 80%IMP, Countryside Living (54.88 ha) 10% IMP, Future Urban (329.66 ha) 65%

ED SCENARIO INPUTS

ED SCENARIO LOADING NODES (EXISTING TOPO)

	Pervious	Impervious
Channelisation Factor	1.00	0.60
CN	74.00	98.00
Impervious Coverage Pre Dev	95%	5%
Impervious - Millwater	35%	65%
Impervious - Weiti Industry	Varies	Varies

						Separated Tc	
XPNode	**Total Area (Ha)**	**Catchment Length (km)**	**Slope (m/m)**	**Pre Pervious (Ha)**	**Pre Impervious (Ha)**	**Tc - Pervious (Min)**	**Tc - Impervious (Min)**
Highgate	User Inflow Hydrograph						
Millwater1	93.7290	1.711	0.0378	32.8052	60.9239	42.8650	19.6193
Millwater2	12.2820	0.541	0.0588	4.2987	7.9833	17.5591	10.0000
Millwater3	27.1560	0.94	0.058	9.5046	17.6514	25.3888	11.6204
Millwater4	11.9340	0.556	0.0546	4.1769	7.7571	18.2809	10.0000
Node105.1	12.1170	0.4050	0.1330	11.5112	0.6059	11.3546	10.0000
Node108	4.6420	0.2480	0.0456	4.4099	0.2321	11.3254	10.0000
Node109	61.5170	0.6310	0.0573	58.4412	3.0759	19.5875	10.0000
Node109.1.1	6.3650	0.3570	0.0264	6.0468	0.3183	16.9701	10.0000
Node126	18.5870	0.303	0.0526	17.6577	0.9294	12.3840	10.0000
Node13	19.0690	0.4960	0.0745	18.1156	0.9535	15.4446	10.0000
Node143	10.6510	0.552	0.0332	10.1185	0.5326	21.1224	10.0000
Node159	5.4660	0.12	0.0847	5.1927	0.2733	10.0000	10.0000
Node16	34.1710	0.712	0.0438	32.4625	1.7086	22.9932	10.5240
Node160	52.0270	0.752	0.186	49.4257	2.6014	15.4474	10.0000
Node161	26.3860	0.432	0.0847	25.0667	1.3193	13.5663	10.0000
Node168	8.0340	0.385	0.0193	7.6323	0.4017	19.5949	10.0000
Node186	19.3610	0.261	0.185	18.3930	0.9681	10.0000	10.0000
Node203	7.8210	0.129	0.109	7.4300	0.3911	10.0000	10.0000
Node206	6.6800	0.347	0.0675	6.3460	0.3340	12.5670	10.0000
Node22	4.1070	0.348	0.0637	3.9017	0.2054	12.8117	10.0000
Node25.1	32.1000	0.7140	0.0422	30.4950	1.6050	23.2945	10.6619
Node28	10.4370	0.4580	0.0585	9.9152	0.5219	15.7554	10.0000
Node4	3.4580	0.245	0.0488	3.2851	0.1729	11.0085	10.0000
Node4.1	4.8800	0.206	0.018	4.6360	0.2440	13.2427	10.0000

Node42	9.9990	0.295	0.0432	9.4991	0.5000	12.9075	10.0000
Node46.1	6.1040	0.3900	0.03	5.7988	0.3052	17.3130	10.0000
Node46.1a	9.6020	0.35	0.0314	9.1219	0.4801	15.9005	10.0000
Node46.1b	4.2720	0.3420	0.0264	4.0584	0.2136	16.4961	10.0000
Node47	10.6520	0.3840	0.065	10.1194	0.5326	13.5891	10.0000
Node47.1	4.1700	0.29	0.02	3.9615	0.2085	16.0798	10.0000
Node48	5.2420	0.395	0.06	4.9799	0.2621	14.1812	10.0000
Node49	4.4280	0.29	0.0452	4.2066	0.2214	12.5906	10.0000
Node50	5.5340	0.252	0.0175	5.2573	0.2767	15.2552	10.0000
Node54	4.3030	0.4040	0.0528	4.0879	0.2152	14.9564	10.0000
Node56	4.0730	0.29	0.07	3.8694	0.2037	11.0423	10.0000
Node56.1	3.6410	0.328	0.0786	3.4590	0.1821	11.5679	10.0000
Node58	3.0630	0.29	0.07	2.9099	0.1532	11.0423	10.0000
Node59	1.9300	0.223	0.043	1.8335	0.0965	10.7460	10.0000
Node59.1	4.3900	0.3300	0.0716	4.1705	0.2195	11.9440	10.0000
Node6	3.4410	0.1930	0.0708	3.2690	0.1721	10.0000	10.0000
Node6.1	3.5370	0.2450	0.104	3.3602	0.1769	10.0000	10.0000
Node61	3.8430	0.3600	0.043	3.6509	0.1922	14.7409	10.0000
Node73	19.0230	0.8000	0.0564	18.0719	0.9512	23.0177	10.5352
Node74	5.4370	0.2610	0.0835	5.1652	0.2719	10.0000	10.0000
Node75	4.4090	0.2800	0.075	4.1886	0.2205	10.5685	10.0000
Node76	4.1190	0.2830	0.06	3.9131	0.2060	11.3799	10.0000
Node77	4.2630	0.3070	0.0844	4.0499	0.2132	10.8396	10.0000
Node78	6.7550	0.4780	0.073	6.4173	0.3378	15.1646	10.0000
Node8	3.9020	0.228	0.114	3.7069	0.1951	10.0000	10.0000
Node8.1	4.4750	0.3700	0.0329	4.2513	0.2238	16.2682	10.0000
Node80	5.6990	0.494	0.0711	5.4141	0.2850	15.6208	10.0000
Node83	16.9450	0.666	0.0538	16.0978	0.8473	20.6854	10.0000
Node85.1	3.1860	0.1950	0.0386	3.0267	0.1593	10.1590	10.0000
Node86	5.7380	0.3760	0.0694	5.4511	0.2869	13.1408	10.0000
Node95	4.0010	0.3550	0.0682	3.8010	0.2001	12.7181	10.0000
Node97.1	4.3830	0.5150	0.057	4.1639	0.2192	17.1568	10.0000
Orewa Contri1	505.5340	2.6420	0.04339	480.2573	25.2767	54.7853	25.0752
Orewa Contri2	72.5880	1.4450	0.0476	68.9586	3.6294	35.7797	16.3763
Orewa Contri3	58.3770	0.9210	0.0615	55.4582	2.9189	24.6124	11.2651
Orewa_Contri4	195.0410	1.9330	0.0375	185.2890	9.7521	46.5703	21.3152

Orewa_Contri5	25.7030	0.8120	0.0785	24.4179	1.2852	21.0500	10.0000
Orewa_Contri6	13.4230	0.2880	0.1090	12.7519	0.6712	10.0000	10.0000
Orewa_Contri7	10.0020	0.4180	0.1354	9.5019	0.5001	11.5318	10.0000
Orewa_Contri8	7.2650	0.3490	0.1554	6.9018	0.3633	10.0000	10.0000
Orewa_Contri9	83.7540	1.609	0.0251	79.5663	4.1877	46.5404	21.3015
Weiti_Contri	714.4940	4.65	0.0147	678.7693	35.7247	110.0853	50.3860
Weiti_Contri2	52.9940	1.6130	0.0401	50.3443	2.6497	40.5043	18.5388
Weiti_Contri3	8.6100	0.3650	0.0438	8.1795	0.4305	14.7937	10.0000
Weiti_Contri4	10.7970	0.4590	0.0393	10.2572	0.5399	17.7781	10.0000
Weiti_Contri5	7.3340	0.4710	0.031	6.9673	0.3667	19.4174	10.0000
Weiti_Contri6	4.0060	0.2350	0.0368	3.8057	0.2003	11.6562	10.0000
Weiti_Contri7	8.4490	0.5170	0.0317	8.0266	0.4225	20.5112	10.0000
Weiti_Contri8	45.9140	0.311	0.0713	43.6183	2.2957	11.5001	10.0000
Weiti_Contri8.1	63.5770	0.713	0.0956	53.7861	9.7909	18.2099	10.0000
Weiti_Contri9	161.2220	2.282	0.0257	153.1609	8.0611	58.1988	26.6376
Weiti_Contri9.1	116.7390	1.619	0.0393	53.1162	63.6228	40.8499	18.6970
Weiti_Contri9.2	52.6110	0.65	0.0968	36.4594	16.1516	17.0673	10.0000
Weiti_Silverdale	439.4640	3.101	0.0097	417.4908	21.9732	95.4477	43.6864
Total	3335.4340			3003.6829	331.7511		

MPD SCENARIO INPUTS

MPD SCENARIO LOADING NODES (FUTURE TOPO)

	Pervious	Impervious
Channelisation Factor	1.00	0.60
CN	74.00	98.00
Impervious Coverage Future Urban Post Dev	35%	65%

						Separated Tc					
XPNode	**Total Area (Ha)**	**Catchment Length (km)**	**Slope (m/m)**	**Post Pervious (Ha)**	**Post Impervious (Ha)**	**Tc - Pervious (Min)**	**c - Impervious (Mi**	**Percentage within FU**	**Area Inside FU (Ha)**	**Zone Types**	**IMP%**
Highgate	User Inflow Hydrograph										
Millwater1	93.7290	1.711	0.0378	32.8052	60.9239	42.8650	19.6193	N/A	N/A	Single House	65%
Millwater2	12.2820	0.541	0.0588	4.2987	7.9833	17.5591	10.0000	N/A	N/A	Single House	65%
Millwater3	27.1560	0.94	0.058	9.5046	17.6514	25.3888	11.6204	N/A	N/A	Single House	65%
Millwater4	11.9340	0.556	0.0546	4.1769	7.7571	18.2809	10.0000	N/A	N/A	Single House	65%
Node105.1	12.1170	0.4050	0.1330	5.8585	6.2585	11.3546	10.0000	N/A	N/A	Single House + Public Open Space	N/A
Node108	4.6420	0.3800	0.0203	1.6247	3.0173	19.1485	10.0000	100%	4.6420	Future Urban	65%
Node109	61.5170	0.6310	0.0573	21.5310	39.9861	19.5875	10.0000	100%	61.5170	Future Urban	65%
Node109.1.1	6.3650	0.3470	0.0254	2.2278	4.1373	16.8490	10.0000	100%	6.3650	Future Urban	65%
Node126	18.5870	0.342	0.0526	6.5055	12.0816	13.4143	10.0000	100%	18.5870	Future Urban	65%
Node13	19.0690	0.4960	0.0745	6.6742	12.3949	15.4446	10.0000	100%	19.0690	Future Urban	65%
Node143	10.6510	0.313	0.0548	3.7279	6.9232	12.4977	10.0000	100%	10.6510	Future Urban	65%
Node159	5.4660	0.12	0.0847	1.9131	3.5529	10.0000	10.0000	100%	5.4660	Future Urban	65%
Node16	34.1710	0.712	0.0438	11.9599	22.2112	22.9932	10.5240	100%	34.1710	Future Urban	65%
Node160	52.0270	0.752	0.186	24.4193	27.6077	15.4474	10.0000	78%	40.7363	Future urban + Mixed Rural	N/A
Node161	26.3860	0.432	0.0847	9.2351	17.1509	13.5663	10.0000	100%	26.3860	Future Urban	65%
Node168	8.0340	0.39	0.00468	2.8119	5.2221	30.2297	13.8361	100%	8.0340	Future Urban	65%
Node186	19.3610	0.261	0.185	7.7444	11.6166	10.0000	10.0000	N/A	N/A	Single House	60%
Node203	7.8210	0.136	0.0793	2.7374	5.0837	10.0000	10.0000	100%	7.8210	Future Urban	65%
Node206	6.6800	0.26	0.058	2.3380	4.3420	10.8708	10.0000	100%	6.6800	Future Urban	65%
Node22	4.1070	0.348	0.0637	1.4375	2.6696	12.8117	10.0000	100%	4.1070	Future Urban	65%
Node25.1	32.1000	0.7140	0.0422	11.2350	20.8650	23.2945	10.6619	100%	32.1000	Future Urban	65%
Node28	10.4370	0.4580	0.0585	9.3933	1.0437	15.7554	10.0000	N/A	N/A	Rural Production	10%
Node4	3.4580	0.245	0.0488	1.2103	2.2477	11.0085	10.0000	100%	3.4580	Future Urban	65%
Node4.1	4.8800	0.206	0.018	1.7080	3.1720	13.2427	10.0000	100%	4.8800	Future Urban	65%
Node42	9.9990	0.314	0.0358	3.4997	6.4994	14.2303	10.0000	100%	9.9990	Future Urban	65%
Node46.1	6.1040	0.5250	0.0328	2.1364	3.9676	20.5092	10.0000	100%	6.1040	Future Urban	65%
Node46.1a	9.6020	0.587	0.008	3.3607	6.2413	33.7116	15.4298	100%	9.6020	Future Urban	65%
Node46.1b	4.2720	0.4190	0.026	1.4952	2.7768	18.9485	10.0000	100%	4.2720	Future Urban	65%
Node47	10.6520	0.3980	0.0401	3.7282	6.9238	16.0837	10.0000	100%	10.6520	Future Urban	65%
Node47.1	4.1700	0.384	0.01711	1.4595	2.7105	20.2810	10.0000	100%	4.1700	Future Urban	65%
Node48	5.2420	0.387	0.0365	1.8347	3.4073	16.2408	10.0000	100%	5.2420	Future Urban	65%
Node49	4.4280	0.377	0.039	1.5498	2.8782	15.6485	10.0000	100%	4.4280	Future Urban	65%
Node50	5.5340	0.389	0.0211	1.9369	3.5971	19.2082	10.0000	100%	5.5340	Future Urban	65%
Node54	4.3030	0.3230	0.0582	1.5061	2.7970	12.5328	10.0000	100%	4.3030	Future Urban	65%
Node56	4.0730	0.253	0.0972	1.4256	2.6475	10.0000	10.0000	100%	4.0730	Future Urban	65%
Node56.1	3.6410	0.369	0.0611	1.2744	2.3667	13.4844	10.0000	100%	3.6410	Future Urban	65%
Node58	3.0630	0.288	0.094	1.0721	1.9910	10.0616	10.0000	100%	3.0630	Future Urban	65%
Node59	1.9300	0.292	0.0409	0.6755	1.2545	13.0329	10.0000	100%	1.9300	Future Urban	65%
Node59.1	4.3900	0.3050	0.0792	1.5365	2.8535	11.0008	10.0000	100%	4.3900	Future Urban	65%
Node6	3.4410	0.1930	0.0708	1.2044	2.2367	10.0000	10.0000	100%	3.4410	Future Urban	65%
Node6.1	3.5370	0.2450	0.104	1.2380	2.2991	10.0000	10.0000	100%	3.5370	Future Urban	65%
Node61	3.8430	0.3510	0.036	1.3451	2.4980	15.2904	10.0000	100%	3.8430	Future Urban	65%
Node73	19.0230	0.8000	0.0564	6.6581	12.3650	23.0177	10.5352	100%	19.0230	Future Urban	65%
Node74	5.4370	0.2120	0.0771	1.9030	3.5341	10.0000	10.0000	100%	5.4370	Future Urban	65%
Node75	4.4090	0.3780	0.0438	1.5432	2.8659	15.1394	10.0000	100%	4.4090	Future Urban	65%
Node76	4.1190	0.2850	0.0746	1.4417	2.6774	10.7098	10.0000	100%	4.1190	Future Urban	65%

Node77	4.2630	0.3510	0.0719	1.4921	2.7710	12.4248	10.0000	100%	4.2630	Future Urban	65%
Node78	6.7550	0.4780	0.0678	2.3643	4.3908	15.5045	10.0000	100%	6.7550	Future Urban	65%
Node8	3.9020	0.228	0.114	1.3657	2.5363	10.0000	10.0000	100%	3.9020	Future Urban	65%
Node8.1	4.4750	0.3700	0.0329	1.5663	2.9088	16.2682	10.0000	100%	4.4750	Future Urban	65%
Node80	5.6990	0.506	0.0672	1.9947	3.7044	16.1411	10.0000	100%	5.6990	Future Urban	65%
Node83	16.9450	0.581	0.0602	5.9308	11.0143	18.2761	10.0000	100%	16.9450	Future Urban	65%
Node85.1	3.1860	0.1970	0.0299	1.1151	2.0709	11.0443	10.0000	100%	3.1860	Future Urban	65%
Node86	5.7380	0.3200	0.0732	2.0083	3.7297	11.6266	10.0000	100%	5.7380	Future Urban	65%
Node95	4.0010	0.4140	0.0739	1.4004	2.6007	13.7414	10.0000	100%	4.0010	Future Urban	65%
Node97.1	4.3830	0.3360	0.102	1.5341	2.8490	10.8695	10.0000	100%	4.3830	Future Urban	65%
Orewa Contri1	505.5340	2.6420	0.04339	454.9806	50.5534	54.7853	25.0752	N/A	N/A	Rural Production+Mixed Rural	10%
Orewa Contri2	72.5880	1.4450	0.0476	65.3292	7.2588	35.7797	16.3763	N/A	N/A	Rural Production	10%
Orewa Contri3	58.3770	0.9210	0.0615	23.3216	35.0554	24.6124	11.2651	91%	53.1231	Future urban + Rural Production	N/A
Orewa_Contri4	195.0410	1.9330	0.0375	175.5369	19.5041	46.5703	21.3152	N/A	N/A	Rural Production	10%
Orewa_Contri5	25.7030	0.8120	0.0785	23.1327	2.5703	21.0500	10.0000	N/A	N/A	Rural Production	10%
Orewa_Contri6	13.4230	0.2880	0.1090	12.0807	1.3423	10.0000	10.0000	N/A	N/A	Rural Production	10%
Orewa_Contri7	10.0020	0.4180	0.1354	9.0018	1.0002	11.5318	10.0000	N/A	N/A	Rural Production+Public Open Space	10%
Orewa_Contri8	7.2650	0.3490	0.1554	6.5385	0.7265	10.0000	10.0000	N/A	N/A	Rural Production	10%
Orewa_Contri9	83.7540	1.609	0.0251	29.3139	54.4401	46.5404	21.3015	100%	83.7540	Future Urban	65%
Weiti_Contri	714.4940	4.65	0.0147	620.5601	93.9340	110.0853	50.3860	6%	40.8810	Future urban + Rural Mixed+Rural Production	N/A
Weiti_Contri2	52.9940	1.6130	0.0401	47.6946	5.2994	40.5043	18.5388	N/A	N/A	Mixed Rural	10%
Weiti_Contri3	8.6100	0.3650	0.0438	7.7490	0.8610	14.7937	10.0000	N/A	N/A	Mixed Rural	10%
Weiti_Contri4	10.7970	0.4590	0.0393	9.7173	1.0797	17.7781	10.0000	N/A	N/A	Mixed Rural	10%
Weiti_Contri5	7.3340	0.4710	0.031	6.6006	0.7334	19.4174	10.0000	N/A	N/A	Mixed Rural	10%
Weiti_Contri6	4.0060	0.2350	0.0368	3.6054	0.4006	11.6562	10.0000	N/A	N/A	Mixed Rural	10%
Weiti_Contri7	8.4490	0.5170	0.0317	7.6041	0.8449	20.5112	10.0000	N/A	N/A	Mixed Rural	10%
Weiti_Contri8	45.9140	0.311	0.0713	17.5788	28.3352	11.5001	10.0000	N/A	N/A	Public Open Space + General Business	N/A
Weiti_Contri8.1	63.5770	0.713	0.0956	26.6360	36.9410	18.2099	10.0000	N/A	N/A	General Business + Large Lot+ Single House + Public Open Space + Town Centre	N/A
Weiti_Contri9	161.2220	2.282	0.0257	145.0998	16.1222	58.1988	26.6376	N/A	N/A	Mixed Rural	10%
Weiti_Contri9.1	116.7390	1.619	0.0393	25.5301	91.2089	40.8499	18.6970	N/A	N/A	General Business + Light Industry +Heavy Industry +Future Urban	N/A
Weiti_Contri9.2	52.6110	0.65	0.0968	34.0150	18.5960	17.0673	10.0000	N/A	N/A	Large Lot + Light Industry + General Business	N/A
Weiti_Silverdale	439.4640	3.101	0.0097	175.7450	263.7190	95.4477	43.6864	N/A	N/A	Future Urban + General Business + Countryside Living	N/A
Total	3335.4340			2179.0451	1156.3889						

ARGENT LANE SHA

SCENARIO INPUTS

ARGENT LANE SHA SCENARIO LOADING NODES (FUTURE TOPO)

	Pervious	Impervious
Channelisation Factor	1.00	0.60
CN	74.00	98.00
Impervious Coverage Post Dev	95%	5%
Impervious - Millwater	35%	65%
Impervious SHA Coverage Post Dev	35%	65%
Impervious - Weiti Industry	Varies	Varies

						Seperated Tc			
XPNode	**Total Area (Ha)**	**Catchment Length (km)**	**Slope (m/m)**	**Post Pervious (Ha)**	**Post Impervious (Ha)**	**Tc - Pervious (Min)**	**Tc - Impervious (Min)**	**Percentage within SHA**	**Area Inside SHA (Ha)**
Highgate	User Inflow Hydrograph								
Millwater1	93.7290	1.711	0.0378	32.8052	60.9239	42.8650	19.6193	0%	93.729
Millwater2	12.2820	0.541	0.0588	4.2987	7.9833	17.5591	10.0000	0%	12.282
Millwater3	27.1560	0.94	0.058	9.5046	17.6514	25.3888	11.6204	0%	27.156
Millwater4	11.9340	0.556	0.0546	4.1769	7.7571	18.2809	10.0000	0%	11.934
Node105.1	12.1170	0.4050	0.1330	11.5112	0.6059	11.3546	10.0000	0%	12.117
Node108	4.6420	0.3800	0.0203	3.0359	1.6061	19.1485	10.0000	49%	2.2900
Node109	61.5170	0.6310	0.0573	58.4412	3.0759	19.5875	10.0000	0%	61.517
Node109.1.1	6.3650	0.3470	0.0254	2.2278	4.1373	16.8490	10.0000	100%	6.3650
Node126	18.5870	0.342	0.0526	12.5026	6.0844	13.4143	10.0000	46%	8.5917
Node13	19.0690	0.4960	0.0745	18.1156	0.9535	15.4446	10.0000	0%	19.069
Node143	10.6510	0.313	0.0548	4.1437	6.5074	12.4977	10.0000	93%	9.9580
Node159	5.4660	0.12	0.0847	5.1927	0.2733	10.0000	10.0000	0%	5.466
Node16	34.1710	0.712	0.0438	32.4625	1.7086	22.9932	10.5240	0%	34.171
Node160	52.0270	0.752	0.186	49.4257	2.6014	15.4474	10.0000	0%	52.027
Node161	26.3860	0.432	0.0847	25.0667	1.3193	13.5663	10.0000	0%	26.386
Node168	8.0340	0.39	0.00468	4.1103	3.9237	30.2297	13.8361	73%	5.8700
Node186	19.3610	0.261	0.185	18.3930	0.9681	10.0000	10.0000	0%	19.361
Node203	7.8210	0.136	0.0793	2.7374	5.0837	10.0000	10.0000	100%	7.8210
Node206	6.6800	0.26	0.058	2.3380	4.3420	10.8708	10.0000	100%	6.6800
Node22	4.1070	0.348	0.0637	3.5037	0.6033	12.8117	10.0000	16%	0.6632
Node25.1	32.1000	0.7140	0.0422	11.9439	20.1561	23.2945	10.6619	4%	30.9185
Node28	10.4370	0.4580	0.0585	9.9152	0.5219	15.7554	10.0000	0%	10.437
Node4	3.4580	0.245	0.0488	3.2851	0.1729	11.0085	10.0000	0%	3.458
Node4.1	4.8800	0.206	0.018	1.7080	3.1720	13.2427	10.0000	100%	4.8800
Node42	9.9990	0.314	0.0358	3.4997	6.4994	14.2303	10.0000	100%	9.9990
Node46.1	6.1040	0.5250	0.0328	2.1364	3.9676	20.5092	10.0000	100%	6.1040
Node46.1a	9.6020	0.587	0.008	3.3607	6.2413	33.7116	15.4298	100%	9.6020
Node46.1b	4.2720	0.4190	0.026	1.4952	2.7768	18.9485	10.0000	100%	4.2720
Node47	10.6520	0.3980	0.0401	3.7282	6.9238	16.0837	10.0000	100%	10.6520
Node47.1	4.1700	0.384	0.01711	1.4595	2.7105	20.2810	10.0000	100%	4.1700
Node48	5.2420	0.387	0.0365	1.8347	3.4073	16.2408	10.0000	100%	5.2420
Node49	4.4280	0.377	0.039	2.9838	1.4442	15.6485	10.0000	46%	2.0380
Node50	5.5340	0.389	0.0211	1.9369	3.5971	19.2082	10.0000	100%	5.5340
Node54	4.3030	0.3230	0.0582	1.5061	2.7970	12.5328	10.0000	100%	4.3030

Node56	4.0730	0.253	0.0972	1.4256	2.6475	10.0000	10.0000	100%	4.0730
Node56.1	3.6410	0.369	0.0611	1.2744	2.3667	13.4844	10.0000	100%	3.6410
Node58	3.0630	0.288	0.094	1.0721	1.9910	10.0616	10.0000	100%	3.0630
Node59	1.9300	0.292	0.0409	0.6755	1.2545	13.0329	10.0000	100%	1.9300
Node59.1	4.3900	0.3050	0.0792	3.9682	0.4218	11.0008	10.0000	92%	0.3372
Node6	3.4410	0.1930	0.0708	3.2690	0.1721	10.0000	10.0000	0%	3.441
Node6.1	3.5370	0.2450	0.104	3.3602	0.1769	10.0000	10.0000	0%	3.537
Node61	3.8430	0.3510	0.036	2.4344	1.4086	15.2904	10.0000	53%	2.0274
Node73	19.0230	0.8000	0.0564	18.0719	0.9512	23.0177	10.5352	0%	19.023
Node74	5.4370	0.2120	0.0771	1.9030	3.5341	10.0000	10.0000	100%	5.4370
Node75	4.4090	0.3780	0.0438	1.5432	2.8659	15.1394	10.0000	100%	4.4090
Node76	4.1190	0.2850	0.0746	1.4417	2.6774	10.7098	10.0000	100%	4.1190
Node77	4.2630	0.3510	0.0719	1.4921	2.7710	12.4248	10.0000	100%	4.2630
Node78	6.7550	0.4780	0.0678	2.3643	4.3908	15.5045	10.0000	100%	6.7550
Node8	3.9020	0.228	0.114	3.7069	0.1951	10.0000	10.0000	0%	3.902
Node8.1	4.4750	0.3700	0.0329	4.2513	0.2238	16.2682	10.0000	0%	4.475
Node80	5.6990	0.506	0.0672	1.9947	3.7044	16.1411	10.0000	100%	5.6990
Node83	16.9450	0.581	0.0602	5.9308	11.0143	18.2761	10.0000	100%	16.9450
Node85.1	3.1860	0.1970	0.0299	2.2511	0.9349	11.0443	10.0000	59%	1.2927
Node86	5.7380	0.3200	0.0732	5.1540	0.5840	11.6266	10.0000	9%	0.4952
Node95	4.0010	0.4140	0.0739	1.4004	2.6007	13.7414	10.0000	100%	4.0010
Node97.1	4.3830	0.3360	0.102	1.5341	2.8490	10.8695	10.0000	100%	4.3830
Orewa Contri1	505.5340	2.6420	0.04339	480.2573	25.2767	54.7853	25.0752	0%	505.534
Orewa Contri2	72.5880	1.4450	0.0476	68.9586	3.6294	35.7797	16.3763	0%	72.588
Orewa Contri3	58.3770	0.9210	0.0615	55.4582	2.9189	24.6124	11.2651	0%	58.377
Orewa_Contri4	195.0410	1.9330	0.0375	185.2890	9.7521	46.5703	21.3152	0%	195.041
Orewa_Contri5	25.7030	0.8120	0.0785	24.4179	1.2852	21.0500	10.0000	0%	25.703
Orewa_Contri6	13.4230	0.2880	0.1090	12.7519	0.6712	10.0000	10.0000	0%	13.423
Orewa_Contri7	10.0020	0.4180	0.1354	9.5019	0.5001	11.5318	10.0000	0%	10.002
Orewa_Contri8	7.2650	0.3490	0.1554	6.9018	0.3633	10.0000	10.0000	0%	7.265
Orewa_Contri9	83.7540	1.609	0.0251	79.5663	4.1877	46.5404	21.3015	0%	83.754
Weiti_Contri	714.4940	4.65	0.0147	678.7693	35.7247	110.0853	50.3860	0%	714.494
Weiti_Contri2	52.9940	1.6130	0.0401	50.3443	2.6497	40.5043	18.5388	0%	52.994
Weiti_Contri3	8.6100	0.3650	0.0438	8.1795	0.4305	14.7937	10.0000	0%	8.61
Weiti_Contri4	10.7970	0.4590	0.0393	10.2572	0.5399	17.7781	10.0000	0%	10.797
Weiti_Contri5	7.3340	0.4710	0.031	6.9673	0.3667	19.4174	10.0000	0%	7.334
Weiti_Contri6	4.0060	0.2350	0.0368	3.8057	0.2003	11.6562	10.0000	0%	4.006
Weiti_Contri7	8.4490	0.5170	0.0317	8.0266	0.4225	20.5112	10.0000	0%	8.449
Weiti_Contri8	45.9140	0.311	0.0713	43.6183	2.2957	11.5001	10.0000	0%	45.914
Weiti_Contri8.1	63.5770	0.713	0.0956	53.7861	9.7909	18.2099	10.0000	0%	63.577
Weiti_Contri9	161.2220	2.282	0.0257	153.1609	8.0611	58.1988	26.6376	0%	161.222
Weiti_Contri9.1	116.7390	1.619	0.0393	53.1162	63.6228	40.8499	18.6970	0%	116.739
Weiti_Contri9.2	52.6110	0.65	0.0968	36.4594	16.1516	17.0673	10.0000	0%	52.611
Weiti_Silverdale	439.4640	3.101	0.0097	417.4908	21.9732	95.4477	43.6864	0%	439.464
Total	3335.4340			2872.3885	463.0455				

APPENDIX G

TP108 VALIDATION

TP 108 Validation ED (Existing Rainfall)

Rainfall 100 Yr ARI No CC
Rainfall Depth 225 mm

Pervious Area	Impervious Area
CN = 74	CN = 98
C = 1	C = 0.6

(0.6 piped; 0.8 engineered grass channel; 1.0 Natural)

	Area	Catchment Length	Catchment Slope	Weighted Curve Number	Weighted Initial Abstraction	24hr Rainfall depth	Time of concentration	Soil storage parameter	Runoff depth	Runoff index	Column reference from TP108 table	Specific Peak flow	Peak flow rate	Peak flow rate in XP Storm	Variance	Variance (%)
TP108 notation	A	L	Sc	CN	IA	P_{24}	Tc	S	Q_{24}	c*		q*	q_p			
Units	ha	km	m/m		mm	mm	Hrs	mm	mm			$m^3/s/(km^2 mm)$	m^3/s	m3/s		
Millwater1	32.805	1.711	0.038	74	5	225	0.71	89.24	156.51	0.55	51.00	0.08	5.596	5.633	0.037	0.65%
Millwater1	60.924	1.711	0.038	98	1	225	0.33	5.18	218.93	0.96	92.00	0.14	18.999	18.968	-0.031	-0.17%
Millwater2	4.299	0.541	0.059	74	5	225	0.29	89.24	156.51	0.55	51.00	0.11	1.089	1.096	0.007	0.61%
Millwater2	7.983	0.541	0.059	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	2.988	3.088	0.100	3.36%
Millwater3	9.505	0.94	0.058	74	5	225	0.42	89.24	156.51	0.55	51.00	0.10	2.069	2.083	0.014	0.69%
Millwater3	17.651	0.94	0.058	98	1	225	0.19	5.18	218.93	0.96	92.00	0.16	6.383	6.571	0.188	2.94%
Millwater4	4.177	0.556	0.055	74	5	225	0.30	89.24	156.51	0.55	51.00	0.11	1.045	1.049	0.004	0.35%
Millwater4	7.757	0.556	0.055	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	2.903	3.001	0.098	3.38%
Node105.1	11.511	0.4050	0.133	74	5	225	0.19	89.24	156.51	0.55	51.00	0.13	3.333	3.407	0.074	2.22%
Node105.1	0.606	0.4050	0.133	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.227	0.234	0.007	3.18%
Node108	4.41	0.2480	0.046	74	5	225	0.19	89.24	156.51	0.55	51.00	0.13	1.277	1.306	0.029	2.28%
Node108	0.232	0.2480	0.046	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.087	0.09	0.003	3.66%
Node109	58.441	0.6310	0.057	74	5	225	0.33	89.24	156.51	0.55	51.00	0.11	14.271	14.279	0.008	0.06%
Node109	3.076	0.6310	0.057	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	1.151	1.19	0.039	3.38%
Node109.1.1	6.047	0.3570	0.026	74	5	225	0.28	89.24	156.51	0.55	51.00	0.11	1.552	1.562	0.010	0.67%
Node109.1.1	0.318	0.3570	0.026	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.119	0.123	0.004	3.36%
Node126	17.658	0.303	0.053	74	5	225	0.21	89.24	156.51	0.55	51.00	0.13	4.989	5.082	0.093	1.87%
Node126	0.929	0.303	0.053	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.348	0.359	0.011	3.26%
Node13	18.116	0.4960	0.074	74	5	225	0.26	89.24	156.51	0.55	51.00	0.12	4.822	4.846	0.024	0.50%
Node13	0.954	0.4960	0.074	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.357	0.369	0.012	3.36%
Node143	10.118	0.552	0.033	74	5	225	0.35	89.24	156.51	0.55	51.00	0.10	2.383	2.397	0.014	0.59%
Node143	0.533	0.552	0.033	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.199	0.206	0.007	3.28%
Node159	5.193	0.12	0.085	74	5	225	0.17	89.24	156.51	0.55	51.00	0.13	1.542	1.589	0.047	3.02%
Node159	0.273	0.12	0.085	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.102	0.106	0.004	3.75%
Node16	32.462	0.712	0.044	74	5	225	0.38	89.24	156.51	0.55	51.00	0.10	7.384	7.422	0.038	0.51%
Node16	1.709	0.712	0.044	98	1	225	0.18	5.18	218.93	0.96	92.00	0.16	0.632	0.652	0.020	3.15%
Node160	49.426	0.752	0.186	74	5	225	0.26	89.24	156.51	0.55	51.00	0.12	13.155	13.221	0.066	0.50%
Node160	2.601	0.752	0.186	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.973	1.006	0.033	3.35%
Node161	25.067	0.432	0.085	74	5	225	0.23	89.24	156.51	0.55	51.00	0.12	6.913	7.017	0.104	1.51%
Node161	1.319	0.432	0.085	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.494	0.51	0.016	3.32%
Node168	7.632	0.385	0.019	74	5	225	0.33	89.24	156.51	0.55	51.00	0.11	1.864	1.864	0.000	0.02%
Node168	0.402	0.385	0.019	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.150	0.156	0.006	3.69%
Node186	18.393	0.261	0.185	74	5	225	0.17	89.24	156.51	0.55	51.00	0.13	5.463	5.627	0.164	3.01%
Node186	0.968	0.261	0.185	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.362	0.374	0.012	3.24%
Node203	7.43	0.129	0.109	74	5	225	0.17	89.24	156.51	0.55	51.00	0.13	2.207	2.273	0.066	3.00%
Node203	0.391	0.129	0.109	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.146	0.151	0.005	3.19%
Node206	6.346	0.347	0.068	74	5	225	0.21	89.24	156.51	0.55	51.00	0.13	1.793	1.82	0.027	1.52%
Node206	0.334	0.347	1	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.125	0.129	0.004	3.20%
Node22	3.902	0.348	0.064	74	5	225	0.21	89.24	156.51	0.55	51.00	0.12	1.089	1.113	0.024	2.20%

Node22	0.205	0.348	0.064	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.077	0.079	0.002	2.97%
Node25.1	30.495	0.7140	0.042	74	5	225	0.39	89.24	156.51	0.55	51.00	0.10	6.937	6.931	-0.006	-0.08%
Node25.1	1.605	0.7140	0.042	98	1	225	0.18	5.18	218.93	0.96	92.00	0.16	0.594	0.61	0.016	2.76%
Node28	9.915	0.4580	0.059	74	5	225	0.26	89.24	156.51	0.55	51.00	0.12	2.608	2.63	0.022	0.86%
Node28	0.522	0.4580	0.059	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.195	0.202	0.007	3.40%
Node4	3.285	0.245	0.049	74	5	225	0.18	89.24	156.51	0.55	51.00	0.13	0.951	0.98	0.029	3.03%
Node4	0.173	0.245	0.049	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.065	0.067	0.002	3.49%
Node4.1	4.636	0.206	0.018	74	5	225	0.22	89.24	156.51	0.55	51.00	0.12	1.278	1.309	0.031	2.39%
Node4.1	0.244	0.206	0.018	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.091	0.094	0.003	2.94%
Node42	9.499	0.295	0.043	74	5	225	0.22	89.24	156.51	0.55	51.00	0.12	2.651	2.703	0.052	1.95%
Node42	0.5	0.295	0.043	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.187	0.193	0.006	3.14%
Node46.1	5.799	0.3900	0.03	74	5	225	0.29	89.24	156.51	0.55	51.00	0.11	1.488	1.486	-0.002	-0.13%
Node46.1	0.305	0.3900	0.03	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.114	0.118	0.004	3.38%
Node46.1a	9.122	0.35	0.031	74	5	225	0.27	89.24	156.51	0.55	51.00	0.12	2.399	2.413	0.014	0.58%
Node46.1a	0.48	0.35	0.031	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.180	0.186	0.006	3.54%
Node46.1b	4.058	0.3420	0.026	74	5	225	0.28	89.24	156.51	0.55	51.00	0.12	1.054	1.06	0.006	0.55%
Node46.1b	0.214	0.3420	0.026	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.080	0.083	0.003	3.64%
Node47	10.119	0.3840	0.065	74	5	225	0.23	89.24	156.51	0.55	51.00	0.12	2.791	2.831	0.040	1.45%
Node47	0.533	0.3840	0.065	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.199	0.206	0.007	3.28%
Node47.1	3.962	0.29	0.02	74	5	225	0.27	89.24	156.51	0.55	51.00	0.12	1.042	1.044	0.002	0.19%
Node47.1	0.208	0.29	0.02	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.078	0.08	0.002	2.77%
Node48	4.98	0.395	0.06	74	5	225	0.24	89.24	156.51	0.55	51.00	0.12	1.357	1.372	0.015	1.10%
Node48	0.262	0.395	0.06	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.098	0.101	0.003	3.01%
Node49	4.207	0.29	0.045	74	5	225	0.21	89.24	156.51	0.55	51.00	0.12	1.174	1.206	0.032	2.71%
Node49	0.221	0.29	0.045	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.083	0.085	0.002	2.77%
Node50	5.257	0.252	0.018	74	5	225	0.25	89.24	156.51	0.55	51.00	0.12	1.399	1.413	0.014	0.99%
Node50	0.277	0.252	0.018	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.104	0.107	0.003	3.22%
Node54	4.088	0.4040	0.053	74	5	225	0.25	89.24	156.51	0.55	51.00	0.12	1.101	1.107	0.006	0.55%
Node54	0.215	0.4040	0.053	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.080	0.083	0.003	3.16%
Node56	3.869	0.29	0.07	74	5	225	0.18	89.24	156.51	0.55	51.00	0.13	1.120	1.154	0.034	3.01%
Node56	0.204	0.29	0.07	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.076	0.079	0.003	3.48%
Node56.1	3.459	0.328	0.079	74	5	225	0.19	89.24	156.51	0.55	51.00	0.13	0.989	1.018	0.029	2.90%
Node56.1	0.182	0.328	0.079	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.068	0.07	0.002	2.77%
Node58	2.91	0.29	0.07	74	5	225	0.18	89.24	156.51	0.55	51.00	0.13	0.843	0.868	0.025	3.02%
Node58	0.153	0.29	0.07	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.057	0.059	0.002	3.04%
Node59	1.833	0.223	0.043	74	5	225	0.18	89.24	156.51	0.55	51.00	0.13	0.537	0.55	0.013	2.34%
Node59	0.097	0.223	0.043	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.036	0.038	0.002	4.68%
Node59.1	4.17	0.3300	0.072	74	5	225	0.20	89.24	156.51	0.55	51.00	0.13	1.193	1.215	0.022	1.88%
Node59.1	0.22	0.3300	0.072	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.082	0.085	0.003	3.24%
Node6	3.269	0.1930	0.071	74	5	225	0.17	89.24	156.51	0.55	51.00	0.13	0.971	1	0.029	3.00%
Node6	0.172	0.1930	0.071	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.064	0.067	0.003	4.09%
Node6.1	3.36	0.2450	0.104	74	5	225	0.17	89.24	156.51	0.55	51.00	0.13	0.998	1.028	0.030	3.01%
Node6.1	0.177	0.2450	0.104	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.066	0.068	0.002	2.66%
Node61	3.651	0.3600	0.043	74	5	225	0.25	89.24	156.51	0.55	51.00	0.12	0.983	0.994	0.011	1.09%
Node61	0.192	0.3600	0.043	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.072	0.074	0.002	2.99%
Node73	18.072	0.8000	0.056	74	5	225	0.38	89.24	156.51	0.55	51.00	0.10	4.111	4.13	0.019	0.47%
Node73	0.951	0.8000	0.056	98	1	225	0.18	5.18	218.93	0.96	92.00	0.16	0.352	0.363	0.011	3.20%
Node74	5.165	0.2610	0.084	74	5	225	0.17	89.24	156.51	0.55	51.00	0.13	1.534	1.58	0.046	3.00%
Node74	0.272	0.2610	0.084	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.102	0.105	0.003	3.15%
Node75	4.189	0.2800	0.075	74	5	225	0.18	89.24	156.51	0.55	51.00	0.13	1.228	1.262	0.034	2.76%
Node75	0.221	0.2800	0.075	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.083	0.085	0.002	2.77%
Node76	3.913	0.2830	0.06	74	5	225	0.19	89.24	156.51	0.55	51.00	0.13	1.133	1.158	0.025	2.21%

Node76	0.206	0.2830	0.06	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.077	0.08	0.003	3.77%
Node77	4.05	0.3070	0.084	74	5	225	0.18	89.24	156.51	0.55	51.00	0.13	1.173	1.213	0.040	3.44%
Node77	0.213	0.3070	0.084	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.080	0.082	0.002	2.87%
Node78	6.417	0.4780	0.073	74	5	225	0.25	89.24	156.51	0.55	51.00	0.12	1.708	1.729	0.021	1.23%
Node78	0.338	0.4780	0.073	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.126	0.131	0.005	3.56%
Node8	3.707	0.228	0.114	74	5	225	0.17	89.24	156.51	0.55	51.00	0.13	1.101	1.134	0.033	3.00%
Node8	0.195	0.228	0.114	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.073	0.075	0.002	2.77%
Node8.1	4.251	0.3700	0.033	74	5	225	0.27	89.24	156.51	0.55	51.00	0.12	1.104	1.116	0.012	1.05%
Node8.1	0.224	0.3700	0.033	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.084	0.087	0.003	3.78%
Node80	5.414	0.494	0.071	74	5	225	0.26	89.24	156.51	0.55	51.00	0.12	1.424	1.442	0.018	1.27%
Node80	0.285	0.494	0.071	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.107	0.11	0.003	3.13%
Node83	16.098	0.666	0.054	74	5	225	0.34	89.24	156.51	0.55	51.00	0.11	3.837	3.845	0.008	0.21%
Node83	0.847	0.666	0.054	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.317	0.328	0.011	3.48%
Node85.1	3.027	0.1950	0.039	74	5	225	0.17	89.24	156.51	0.55	51.00	0.13	0.899	0.922	0.023	2.55%
Node85.1	0.159	0.1950	0.039	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.060	0.062	0.002	4.20%
Node86	5.451	0.3760	0.069	74	5	225	0.22	89.24	156.51	0.55	51.00	0.12	1.521	1.543	0.022	1.42%
Node86	0.287	0.3760	0.069	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.107	0.111	0.004	3.35%
Node95	3.801	0.3550	0.068	74	5	225	0.21	89.24	156.51	0.55	51.00	0.12	1.061	1.086	0.025	2.37%
Node95	0.2	0.3550	0.068	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.075	0.077	0.002	2.88%
Node97.1	4.164	0.5150	0.057	74	5	225	0.29	89.24	156.51	0.55	51.00	0.11	1.068	1.071	0.003	0.24%
Node97.1	0.219	0.5150	0.057	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.082	0.085	0.003	3.71%
Orewa Contri1	480.257	2.6420	0.043	74	5	225	0.92	89.24	156.51	0.55	51.00	0.07	72.360	72.703	0.343	0.47%
Orewa Contri1	25.277	2.6420	0.043	98	1	225	0.42	5.18	218.93	0.96	92.00	0.13	7.115	7.129	0.014	0.19%
Orewa Contri2	68.959	1.4450	0.048	74	5	225	0.59	89.24	156.51	0.55	51.00	0.08	12.896	12.93	0.034	0.27%
Orewa Contri2	3.629	1.4450	0.048	98	1	225	0.27	5.18	218.93	0.96	92.00	0.15	1.201	1.209	0.008	0.65%
Orewa Contri3	55.458	0.9210	0.061	74	5	225	0.41	89.24	156.51	0.55	51.00	0.10	12.202	12.315	0.113	0.93%
Orewa Contri3	2.919	0.9210	0.061	98	1	225	0.19	5.18	218.93	0.96	92.00	0.16	1.068	1.095	0.027	2.57%
Orewa_Contri4	185.289	1.9330	0.037	74	5	225	0.78	89.24	156.51	0.55	51.00	0.07	30.403	30.519	0.116	0.38%
Orewa_Contri4	9.752	1.9330	0.037	98	1	225	0.36	5.18	218.93	0.96	92.00	0.13	2.933	2.939	0.006	0.20%
Orewa_Contri5	24.418	0.8120	0.079	74	5	225	0.35	89.24	156.51	0.55	51.00	0.10	5.751	5.793	0.042	0.73%
Orewa_Contri5	1.285	0.8120	0.079	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.481	0.497	0.016	3.35%
Orewa_Contri6	12.752	0.2880	0.109	74	5	225	0.17	89.24	156.51	0.55	51.00	0.13	3.787	3.901	0.114	3.00%
Orewa_Contri6	0.671	0.2880	0.109	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.251	0.26	0.009	3.54%
Orewa_Contri7	9.502	0.4180	0.135	74	5	225	0.19	89.24	156.51	0.55	51.00	0.13	2.718	2.8	0.082	3.03%
Orewa_Contri7	0.5	0.4180	0.135	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.187	0.193	0.006	3.14%
Orewa_Contri8	6.902	0.3490	0.155	74	5	225	0.17	89.24	156.51	0.55	51.00	0.13	2.050	2.112	0.062	3.03%
Orewa_Contri8	0.363	0.3490	0.155	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.136	0.14	0.004	3.06%
Orewa_Contri9	79.566	1.609	0.025	74	5	225	0.78	89.24	156.51	0.55	51.00	0.07	13.055	13.11	0.055	0.42%
Orewa_Contri9	4.188	1.609	0.025	98	1	225	0.36	5.18	218.93	0.96	92.00	0.13	1.260	1.262	0.002	0.19%
Weiti_Contri	678.769	4.65	0.015	74	5	225	1.82	89.24	156.51	0.55	51.00	0.05	69.345	69.815	0.470	0.68%
Weiti_Contri	35.725	4.65	0.015	98	1	225	0.83	5.18	218.93	0.96	92.00	0.09	7.248	7.28	0.032	0.44%
Weiti_Contri2	50.344	1.6130	0.04	74	5	225	0.68	89.24	156.51	0.55	51.00	0.08	8.835	8.889	0.054	0.61%
Weiti_Contri2	2.65	1.6130	0.04	98	1	225	0.31	5.18	218.93	0.96	92.00	0.14	0.847	0.844	-0.003	-0.30%
Weiti_Contri3	8.18	0.3650	0.044	74	5	225	0.25	89.24	156.51	0.55	51.00	0.12	2.203	2.224	0.021	0.95%
Weiti_Contri3	0.43	0.3650	0.044	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.161	0.166	0.005	3.16%
Weiti_Contri4	10.257	0.4590	0.039	74	5	225	0.30	89.24	156.51	0.55	51.00	0.11	2.599	2.603	0.004	0.15%
Weiti_Contri4	0.54	0.4590	0.039	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.202	0.209	0.007	3.42%
Weiti_Contri5	6.967	0.4710	0.031	74	5	225	0.32	89.24	156.51	0.55	51.00	0.11	1.701	1.708	0.007	0.39%
Weiti_Contri5	0.367	0.4710	0.031	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.137	0.142	0.005	3.39%
Weiti_Contri6	3.806	0.2350	0.037	74	5	225	0.19	89.24	156.51	0.55	51.00	0.13	1.089	1.118	0.029	2.71%
Weiti_Contri6	0.2	0.2350	0.037	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.075	0.077	0.002	2.88%
Weiti_Contri7	8.027	0.5170	0.032	74	5	225	0.34	89.24	156.51	0.55	51.00	0.11	1.913	1.923	0.010	0.51%

Weiti_Contri7	0.422	0.5170	0.032	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.158	0.163	0.005	3.21%
Weiti_Contri8	43.618	0.311	0.071	74	5	225	0.19	89.24	156.51	0.55	51.00	0.13	12.475	12.863	0.388	3.11%
Weiti_Contri8	2.296	0.311	0.071	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	0.859	0.888	0.029	3.35%
Weiti_Contri8.1	53.786	0.713	0.096	74	5	225	0.30	89.24	156.51	0.55	51.00	0.11	13.460	13.529	0.069	0.51%
Weiti_Contri8.1	9.791	0.713	0.096	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	3.664	3.787	0.123	3.35%
Weiti_Contri9	153.161	2.282	0.026	74	5	225	0.97	89.24	156.51	0.55	51.00	0.07	22.426	22.449	0.023	0.10%
Weiti_Contri9	8.061	2.282	0.026	98	1	225	0.44	5.18	218.93	0.96	92.00	0.12	2.201	2.216	0.015	0.69%
Weiti_Contri9.1	53.116	1.619	0.039	74	5	225	0.68	89.24	156.51	0.55	51.00	0.08	9.254	9.341	0.087	0.94%
Weiti_Contri9.1	63.623	1.619	0.039	98	1	225	0.31	5.18	218.93	0.96	92.00	0.14	20.083	20.2	0.117	0.58%
Weiti_Contri9.2	36.459	0.65	0.097	74	5	225	0.28	89.24	156.51	0.55	51.00	0.11	9.355	9.399	0.044	0.47%
Weiti_Contri9.2	16.152	0.65	0.097	98	1	225	0.17	5.18	218.93	0.96	92.00	0.17	6.045	6.248	0.203	3.36%
Weiti_Silverdale	417.491	3.101	0.01	74	5	225	1.58	89.24	156.51	0.55	51.00	0.05	46.441	46.568	0.127	0.27%
Weiti_Silverdale	21.973	3.101	0.01	98	1	225	0.72	5.18	218.93	0.96	92.00	0.10	4.789	4.809	0.020	0.42%

*Note: Tc = 0.167 hrs has been adopted if it is less than 0.167 hrs.

Sum of TP 108 Peak Flow Rate (m3/s)	601.236	Maximum Positive Variance	0.470	Sum of Total Variance	5.256
Sum of XP Storm Peak Flow Rate (m3/s)	606.492	Maximum Negative Variance	-0.031	Sum of Total Variance (%)	0.87%

APPENDIX H

LINZ SECONDARY PORT TABLES

Pranil Wadan

From: Rowan Hallam
Sent: Friday, 10 June 2016 9:50 a.m.
To: Pranil Wadan
Subject: Millwater MHWS

Hi Pranil,

The source of the MHWS was by way of LINZ secondary port tables
http://www.linz.govt.nz/sea/tides/tide-predictions
http://www.linz.govt.nz/docs/hydro/tidal-info/tide-tables/sec-ports/auckland.pdf

Weiti is the closest secondary port table to Millwater. Tiritiri Matangi is the next closest and provides a good check.

Tiritiri Matangi Island is a secondary port and has a MHWS of 1.258
Weiti River Entrance is a secondary port and has a MHWS of 1.258 also

The tide charts are in "Chart Datum" so these have been converted to "Auckland Vertical Datum 1946" using the Primary Auckland port datum offsets.

Cheers

Check out our laser scanning service at www.woodslaserscanning.co.nz

WOODS
ENGINEERS. SURVEYORS. PLANNERS

Rowan Hallam
Registered Professional Surveyor
Licensed Cadastral Surveyor
MNZIS,

[redacted]

PO BOX 6752, WELLESLEY STREET, AUCKLAND 1141, NEW ZEALAND
LEVEL 1, BUILDING B, 8 NUGENT ST, GRAFTON, AUCKLAND, NEW ZEALAND WWW.WOODS.CO.NZ

SECONDARY PORTS TABLE

No.	Port	Lat. °	S. ′	Long. °	E. ′	Time Differences High Water Mean	Time Differences High Water Range	Time Differences Low Water Mean	Time Differences Low Water Range	Mean Spring, Neap and Sea Level Heights (metres) MHWS	MHWN	MLWN	MLWS	MSL	Range Ratio	
6400	**AUCKLAND**	**36**	**51**	**174**	**46**	**hhmm**	**hhmm to hhmm**	**hhmm**	**hhmm to hhmm**	**3.3**	**2.8**	**0.9**	**0.4**	**1.89**		
6399b	Devonport Naval Base	36	50	174	47	0000	-0007 to +0003	0000	-0007 to +0004	3.2	2.7	0.9	0.4	1.8	0.97	
6402	Maraetai	36	52	175	03	-0015	-	-0015	-	-	-	-	-	-	-	*
6399c	Onetaunga Bay	36	49	174	42	+0004	-	-0007	-	3.4	2.9	0.9	0.5	2.0	1.00	*
	Coromandel Peninsula						-		-							
6405	Coromandel Harbour - Whanganui Island	36	47	175	27	-0021	-0044 to +0011	-0015	-0048 to +0011	2.9	2.5	0.7	0.2	1.6	0.93	
6404	Thames - Rocky Point	37	06	175	31	-0017	-0027 to -0009	-0010	-0017 to +0003	4.0	3.1	1.2	0.3	2.2	1.28	
	Hauraki Gulf / Tīkapa Moana															
6398	Mahurangi Harbour	36	29	174	43	+0002	-	+0012	-	-	-	-	-	-	-	*
6396a	Mangawhai Heads	36	05	174	36	+0005	-	+0005	-	-	-	-	-	-	-	*
6397a	Matakana River - Sandspit	36	24	174	44	+0005	-	+0005	-	2.7	2.4	0.9	0.5	1.6	0.76	*
6399a	Murrays Bay	36	44	174	45	-0025	-	-0003	-	2.9	2.6	0.7	0.5	1.7	0.83	*
6396b	Omaha Cove	36	17	174	48	-0008	-0016 to +0001	+0003	-0005 to +0011	2.6	2.2	0.7	0.3	1.4	0.79	
6398a	Tiritiri Matangi Island	36	36	174	53	+0010	-0011 to +0042	-0003	-0029 to +0029	3.0	2.5	0.8	0.3	1.6	0.93	
6399	Weiti River Entrance	36	39	174	44	+0001	-0020 to +0022	+0007	-0023 to +0025	3.0	2.5	0.8	0.2	1.7	0.97	
6396c	Whangateau Harbour	36	19	174	47	-	-	-	-	2.7	2.3	0.6	0.2	1.5	0.86	*
	Kawau Island															
6397	Bon Accord Harbour – Mansion House Bay	36	26	174	49	-0015	-0035 to +0036	-0004	-0023 to +0043	2.7	2.3	0.8	0.3	1.5	0.83	
	Waiheke Island															
6401	Man o'War Bay	36	47	175	09	-0018	-0035 to -0002	-0008	-0025 to +0006	3.0	2.5	0.7	0.2	1.6	0.97	
6401a	Matiatia Bay	36	47	174	59	0000	-0024 to +0032	+0010	-0016 to +0039	2.9	2.4	0.7	0.2	1.5	0.93	
6504	**BLUFF**	**46**	**36**	**168**	**21**	**hhmm**	**hhmm to hhmm**	**hhmm**	**hhmm to hhmm**	**2.8**	**2.4**	**0.9**	**0.5**	**1.74**		
6506	Colac Bay / Ōraka	46	22	167	54	-	-	-	-	2.3	1.8	0.9	0.4	1.3	0.83	*
6503a	Dog Island	46	39	168	25	-0017	-0028 to -0002	-0035	-0047 to -0015	2.8	2.3	1.0	0.5	1.7	1.00	
6506a	Kawakaputa Bay	46	23	167	49	-0115	-0148 to -0035	-0119	-0148 to -0048	2.8	2.3	0.9	0.4	1.6	1.04	
6505	New River Entrance	46	32	168	15	-0022	-	-0022	-	2.8	2.5	0.7	0.4	1.6	1.04	*
6500	Nugget Point	46	27	169	49	+0107	+0012 to +0213	+0108	+0019 to +0200	2.4	2.1	1.0	0.5	1.5	0.83	*
6510c	Port Craig	46	13	167	22	-0203	-0236 to -0138	-0205	-0230 to -0142	3.1	2.6	1.3	0.7	1.9	1.04	
6505a	Riverton / Aparima	46	22	168	01	-0054	-0135 to -0033	-0052	-0114 to -0034	2.9	2.4	1.2	0.7	1.8	0.96	
6503	Ruapuke Island	46	47	168	30	-0011	-0035 to +0018	-0019	-0040 to +0009	2.7	2.3	0.9	0.5	1.6	0.96	
6501	Waikawa Harbour	46	39	169	10	+0122	+0057 to +0138	+0114	+0057 to +0128	2.5	2.2	0.9	0.5	1.5	0.87	
6502	Waipapa Point	46	39	168	51	-	-	-	-	2.7	2.5	0.9	0.6	1.7	0.91	*

* Data Approximate - No Data

APPENDIX I

HYDROLOGICAL CALIBRATION MEMO

Memorandum

WOODS

TO: Jon Rix, Mark Iszard

FROM: Sakti Gounder

DATE: 07 July 2016

FILE REF# 31720

PAGES: 11

RE: Wainui East – Orewa River Flow Gauge Calibration

Introduction

This memo summarises the calibration undertaken against the flow gauge located under the Kowhai Ave Bridge. The calibration has been carried out on the request of Auckland Council to determine whether the curve numbers have been accurately used to represent the catchments in the Wainui East XPStorm model.

Woods have been provided with rainfall data from the rain gauge located at the Orewa Treatment Ponds, which has been used in conjunction with the flow gauge data at the Kowhai Ave bridge.

As the work undertaken is for hydrological calibration purposes, a HEC-HMS model was set up to compare outflow hydrographs from the catchments discharging to the Orewa River against the Kowhai Ave flow gauge hydrograph.

Site description

The catchments discharging to the Orewa River are predominantly rural and comprises significant amounts of grassed area. The catchments slope steeply towards the stream, which discharges to the Hauraki Gulf. This can be seen in Figure 1.



Figure 1: Orewa River and contributing catchments

In order to quantify flows, the total contributing catchment area to the Kowhai Ave bridge was extracted from the XPStorm model. This was a total of approximately 964 hectares.

A schematic of the HEC-HMS model set up can be seen in Figure 2.

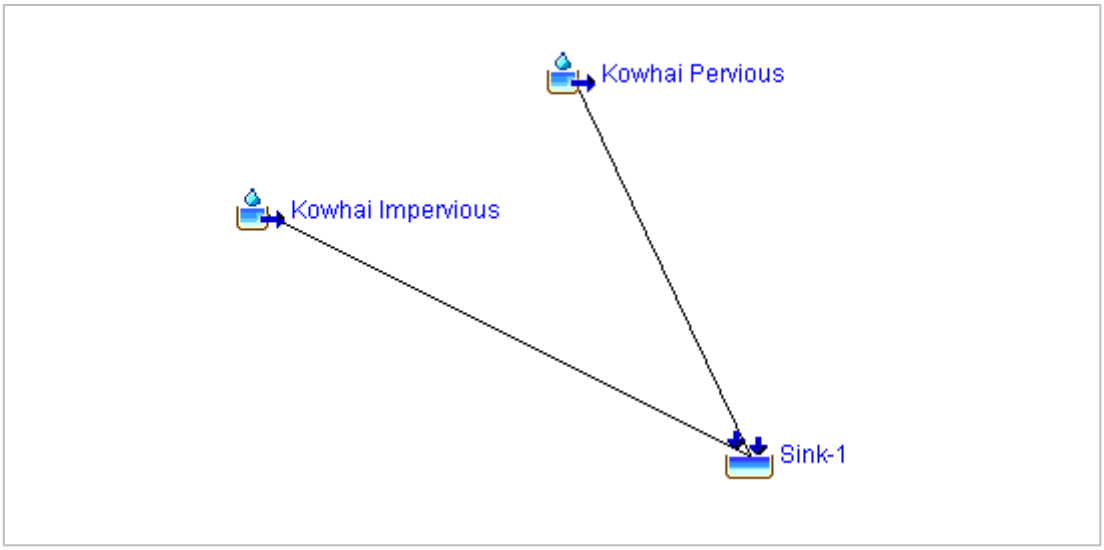


Figure 2: HEC-HMS model schematic

The basin model was set up with the contributing catchment at 5% impervious. The default curve numbers used were 74 and 98. The times of concentration were calculated separately for the pervious and impervious components at 73.73 minutes and 33.75 minutes respectively. These parameters have been summarised in Table 1.

Table 1: HEC-HMS Model Initial Inputs

	5% Impervious Basin Model	10% Impervious Basin Models
Pervious Area (km^2)	9.16	8.68
Impervious Area (km^2)	0.48	0.96
Pervious lag time (mins)	73.73	73.73
Impervious lag time (mins)	33.75	33.75
Pervious curve number	74	74
Impervious curve number	98	98

It should be noted that SCS curve number loss method (curve numbers and initial abstraction) and the SCS unit hydrograph transform method (lag time) were used to simulate the pervious and impervious catchments.

The lag times used for calibrating runoff from pervious areas have been summarised in Table 2.

Table 2: Lag time

Curve Number	Time of Concentration (mins)	Lag time (mins)
85	97.46	64.97
90	92.16	61.44
98	84.37	56.24

Flow Gauge Data – Higher Flows

Three sets of flow gauge and corresponding rainfall data have been provided. These can be seen in Figures 3 – 4.

It can be seen that there is good agreement with the rainfall data overlaid on top of the flow data for Flow Gauges 1 and 2.

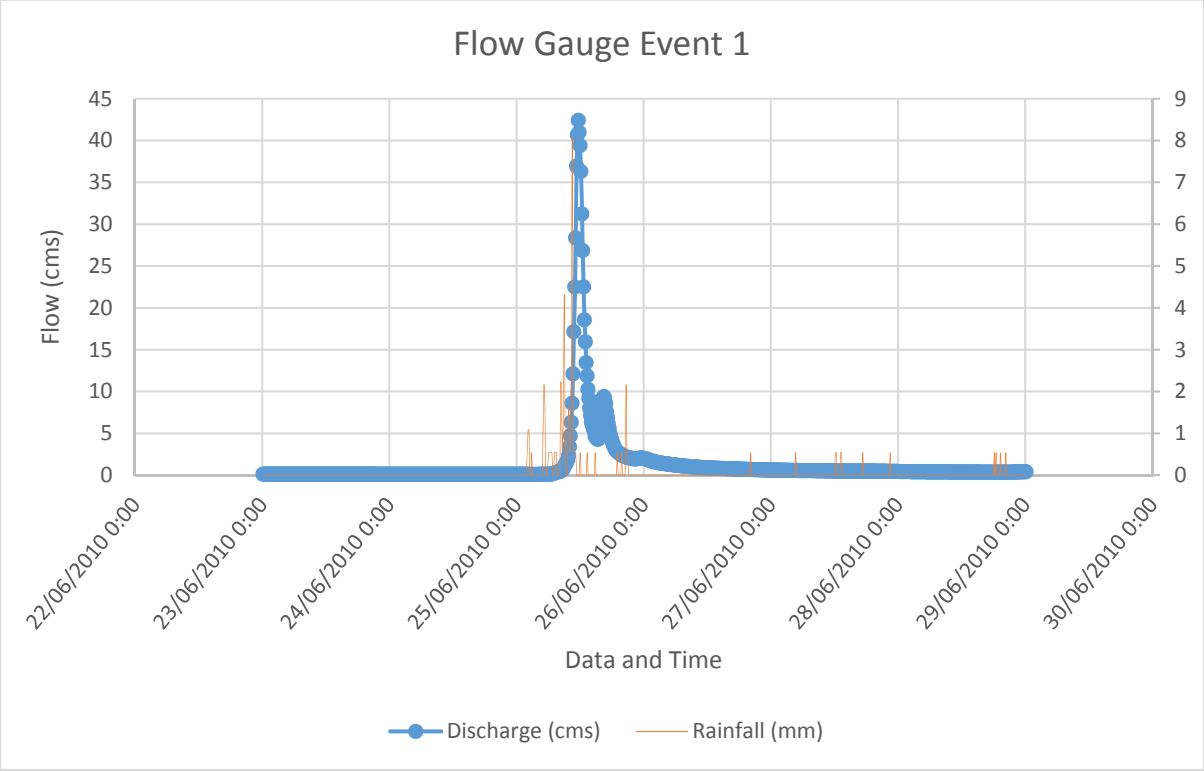


Figure 3: Flow Gauge 1

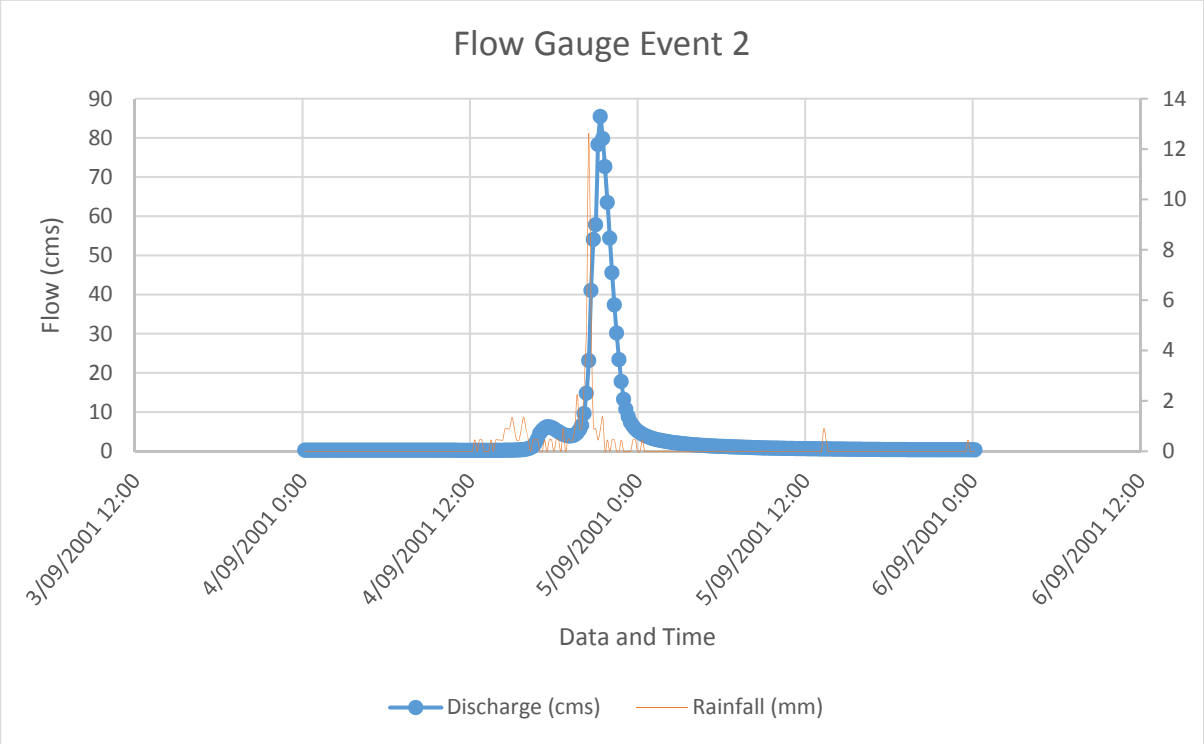


Figure 4: Flow Gauge 2

The following curve numbers were trialled during the calibration process for pervious areas for the high flow gauges:

- 74,
- 90, and
- 98.

It was found that for Flow Gauges 1 and 2, there was generally good agreement with the time to peak and shape of the flow hydrographs. This is as a result of using the separately calculated times of concentration for the pervious and impervious components of each catchment. The flow hydrographs for the different trial runs can be seen in Figures 5 – 6.

The figures show that the peak flows predicted in the HEC-HMS model were significantly lower than those in the flow gauge data across the range of curve numbers tested. The final run simulated the pervious areas with a CN = 90 and Ia =0 (time of concentration calculated using the appropriate CN and channelization factors). These runs still could not reach the peak flows predicted by Flow Gauges 1 and 3.

The curve number would have to be greater than 98 for the peak flows to align with the flow gauge data. Given this result, it is likely that one of two scenarios exist:

- The flow gauge readings are predicting higher flows than normal (we note that there is good correlation between the flows and rainfall graph shapes for Flow Gauges 1 and 3); or
- There are unknown sources of flows contributing to the stream which haven't been accounted for in the calibration.

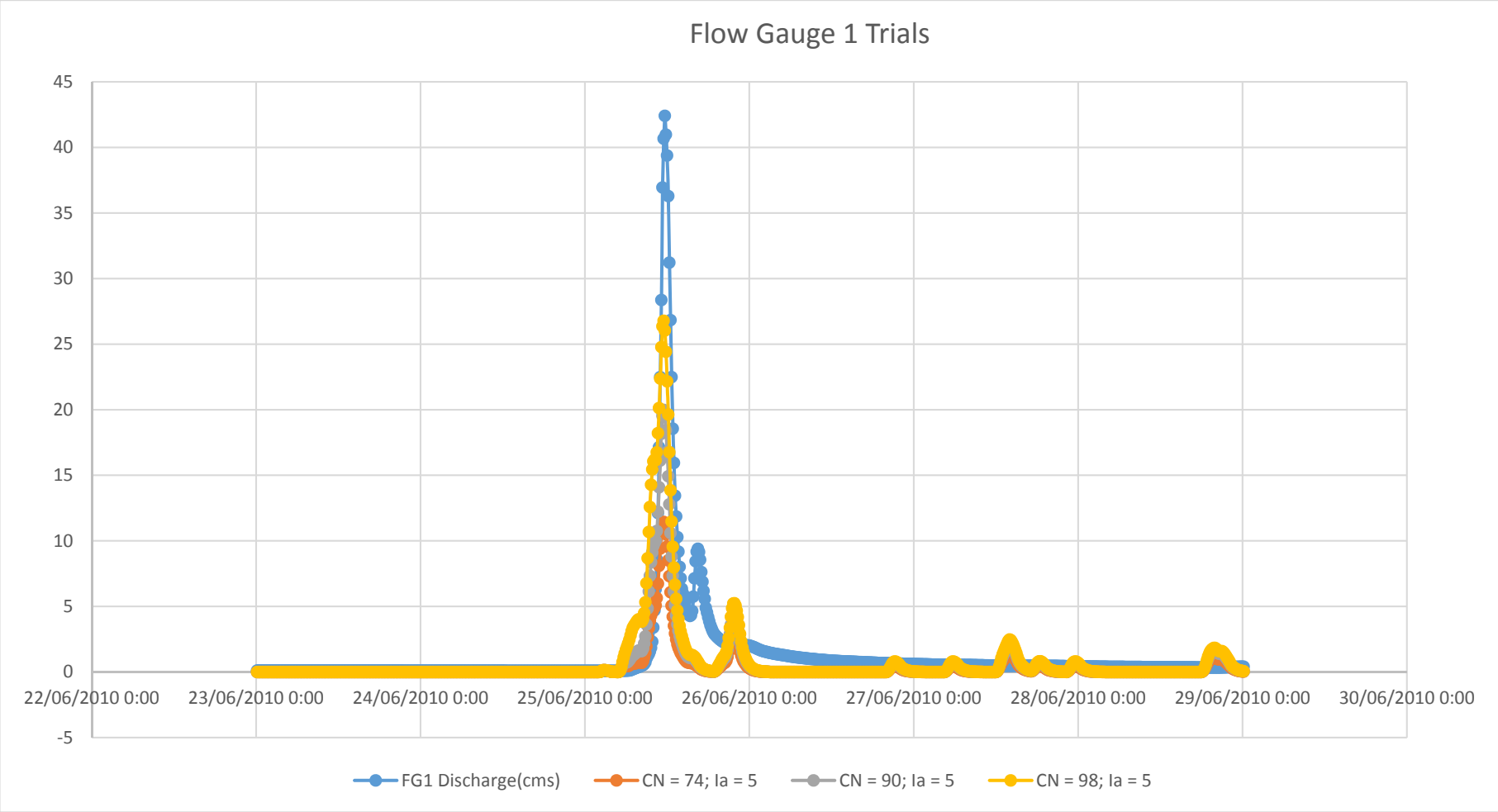


Figure 5: Flow Gauge 1 Calibration Trials

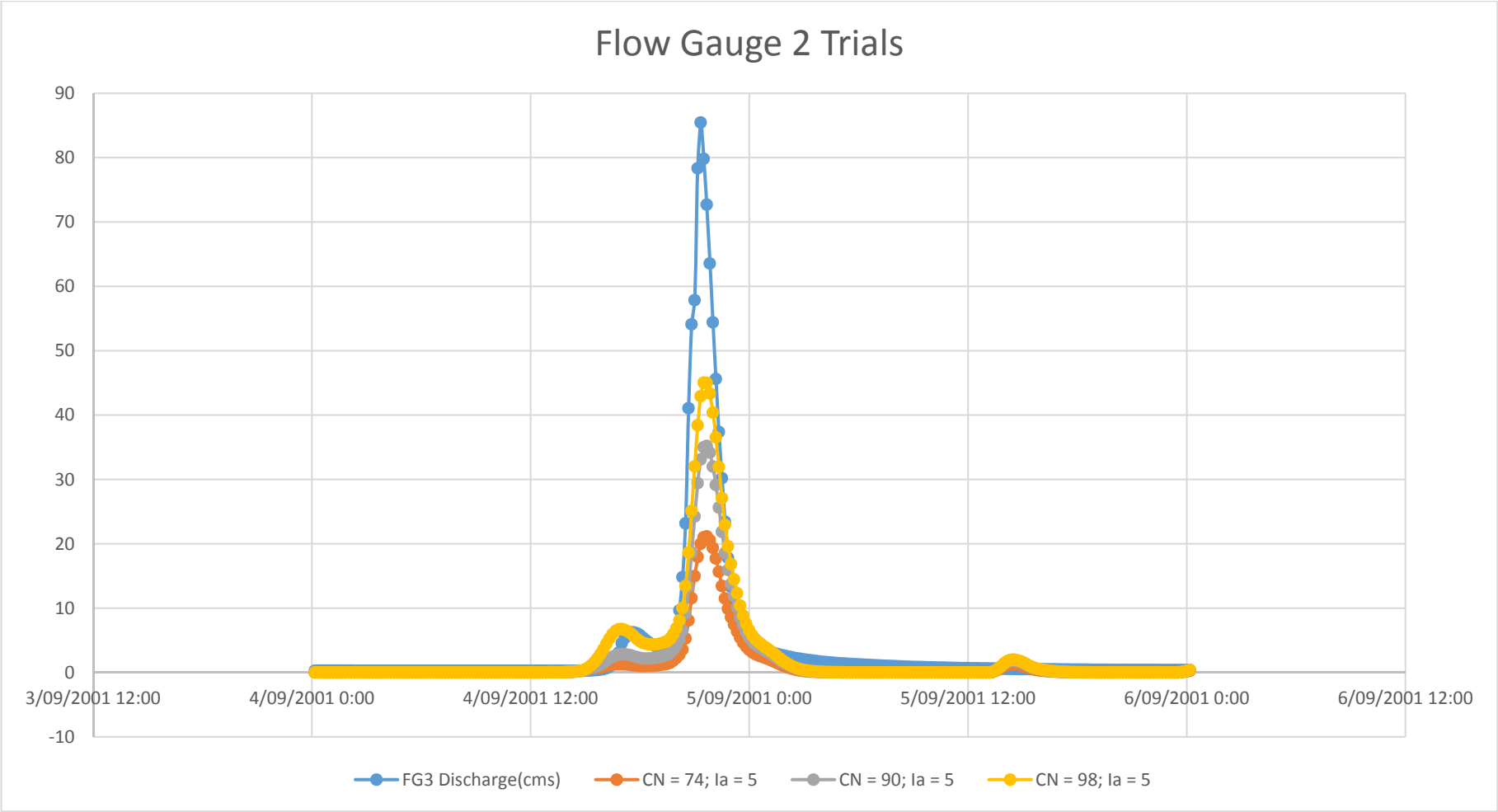


Figure 6: Flow Gauge 2 Calibration Trials

Flow Gauge Data – Lower Flows

Discussions with Auckland Council found that the flow gauge in the Orewa River is not calibrated for flows at a high stage. The highest calibrated flow is approximately 15 m^3/s. Consequently, three further events with a peak gauged flow between 10 – 20 m^3/s were used to attempt calibration.

The following curve numbers were trialled during the calibration process for pervious areas for the high flow gauges:

- 74,
- 85, and
- 90.

The flow hydrographs from the calibration process can be seen in Figures 9 - 11. The discrepancies between the peak flows and volumes have been summarised in Table 3-5.

Table 3: Flow Gauge 3 Results Summary

	Runoff Volume (m^3)	% Discrepancy	Peak Flow (m^3/s)	% Discrepancy
Flow Gauge	**158,927**	**-**	**16.51**	**-**
CN = 74	53,062	-67%	3.95	-76%
CN = 85	85,095	-46%	6.22	-62%
CN = 90	110,772	-30%	8.19	-50%
CN = 98	193,078	+21%	13.58	-18%

Table 4: Flow Gauge 4 Results Summary

	Runoff Volume (m^3)	% Discrepancy	Peak Flow (m^3/s)	% Discrepancy
Flow Gauge	**183,782**	-	**8.26**	-
CN = 74	87,044	-53%	6.80	-18%
CN = 85	134,091	-27%	11.14	+35%
CN = 90	169,129	-8%	14.28	+73%
CN = 98	267,902	+46%	21.19	+156%

Table 5: Flow Gauge 5 Results Summary

	Runoff Volume (m^3)	% Discrepancy	Peak Flow (m^3/s)	% Discrepancy
Flow Gauge	**264,912**	-	**21.06**	-
CN = 74	109,152	-59%	11.00	-48%
CN = 85	164,806	-38%	17.15	-19%
CN = 90	204,789	-23%	21.09	0%
CN = 98	311,280	18%	29.01	+38%

The best fit for volume seen is in Flow Gauge 4 with a CN of 90, however there still remains a large discrepancy in peak flows. Overall, the calibration results are inconclusive, as shown in Tables 3 - 5.

Recommendations

It should be noted that while meeting the peak is possible, the amount of volume generated in the storm events do not generally match the volume associated with the flow gauge data. This may be attributed to the following:

- Spatial variance in the rainfall data provided with the flow gauge data. The rain gauge from which rainfall data has been used is located at the Orewa Treatment Ponds, which is approximately 7km away from the top of the catchment. Wind direction may also have an influence.
- High flows haven't been calibrated so the flow gauge over predicts peaks and volumes for events with flows greater than 15 m^3/s.
- Low flows can be calibrated using CNs in the range of 85 – 90 for the peak; meeting the volumes requires a CN of 98, which is unrealistic for representing a catchment with very little impervious coverage.

Based on the above, it is noted that the CN is likely to be higher than 74.

While there are no conclusive results from the calibration to support what the CN should be, it has been discussed with Council that a CN of 74 will be appropriate for those models that are used for assessment of effects (refer Appendix A – Correspondence).

It is recommended that rainfall data be collected located in the midpoint of the catchment in order to remove spatial variance as a potential reason for calibration not being successful. It is also recommended that the flow gauge at Kowhai Ave be calibrated for high flow events so that more events can be examined in the calibration process.

Council have advised that they are looking into the rating curve for the Kowhai Avenue Bridge flow gauge, which will further advise the curve number being used in the modelling.

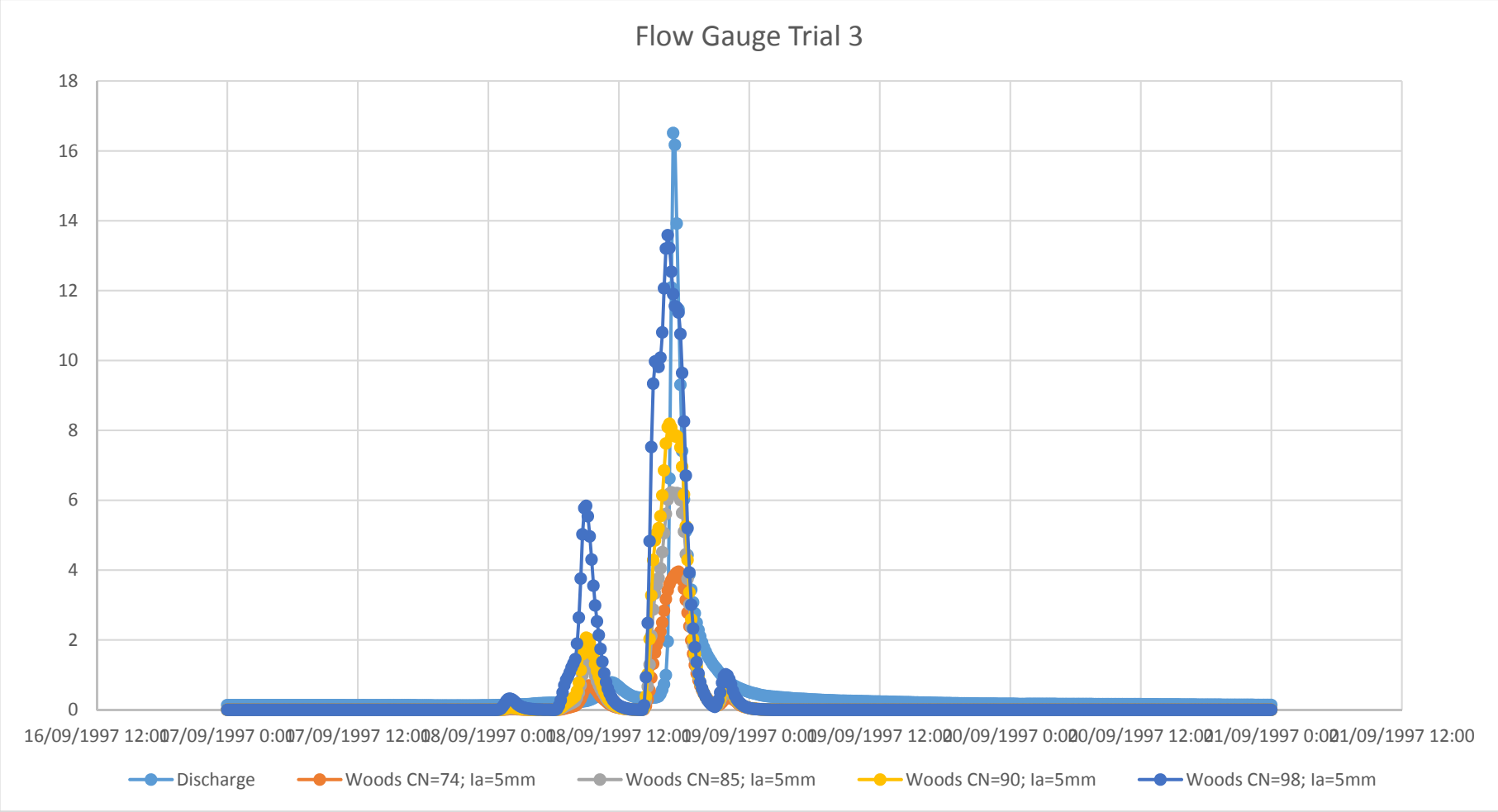


Figure 7: Flow Gauge 3 Calibration Trials

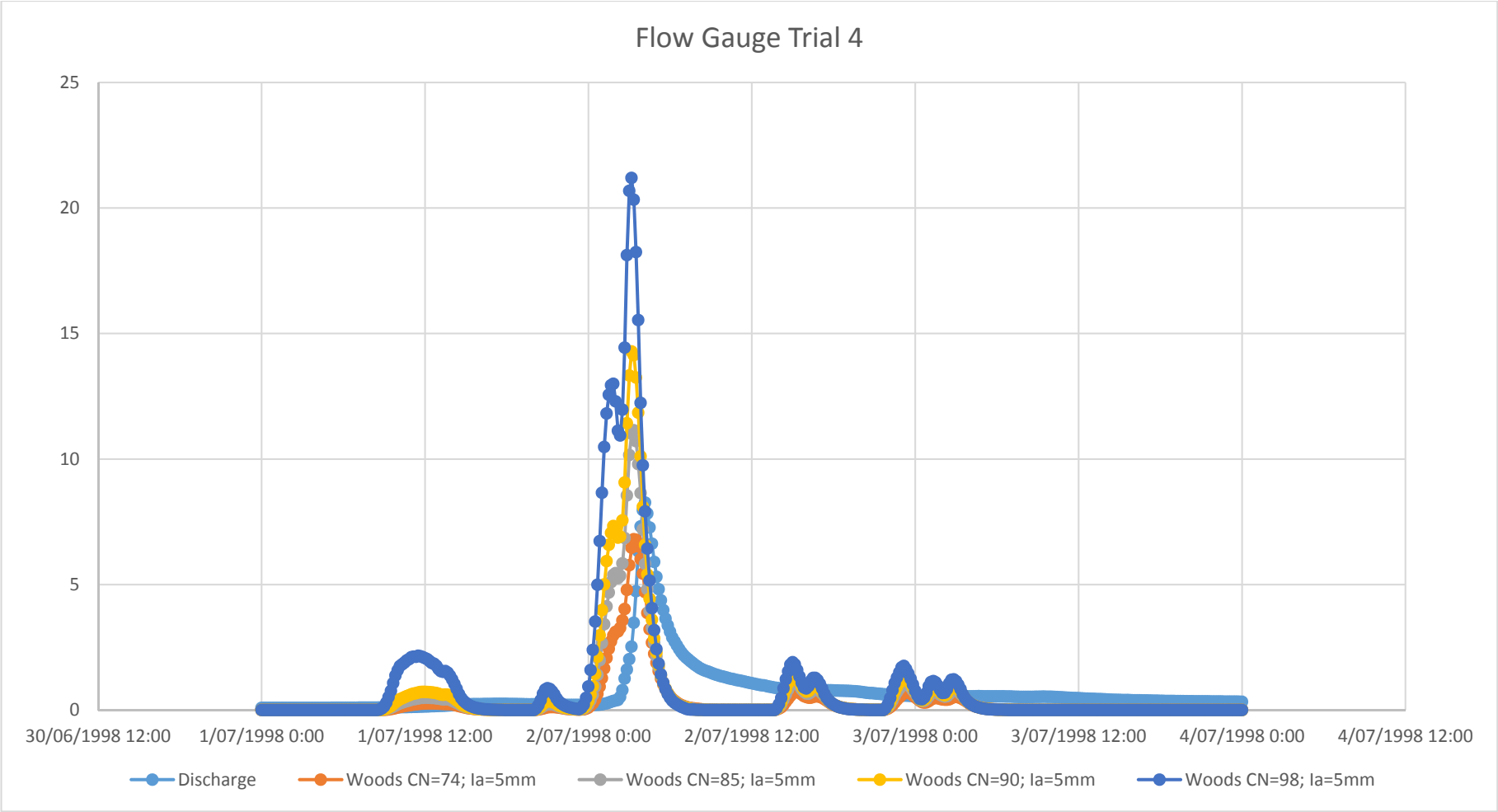


Figure 8: Flow Gauge 4 Calibration Trials

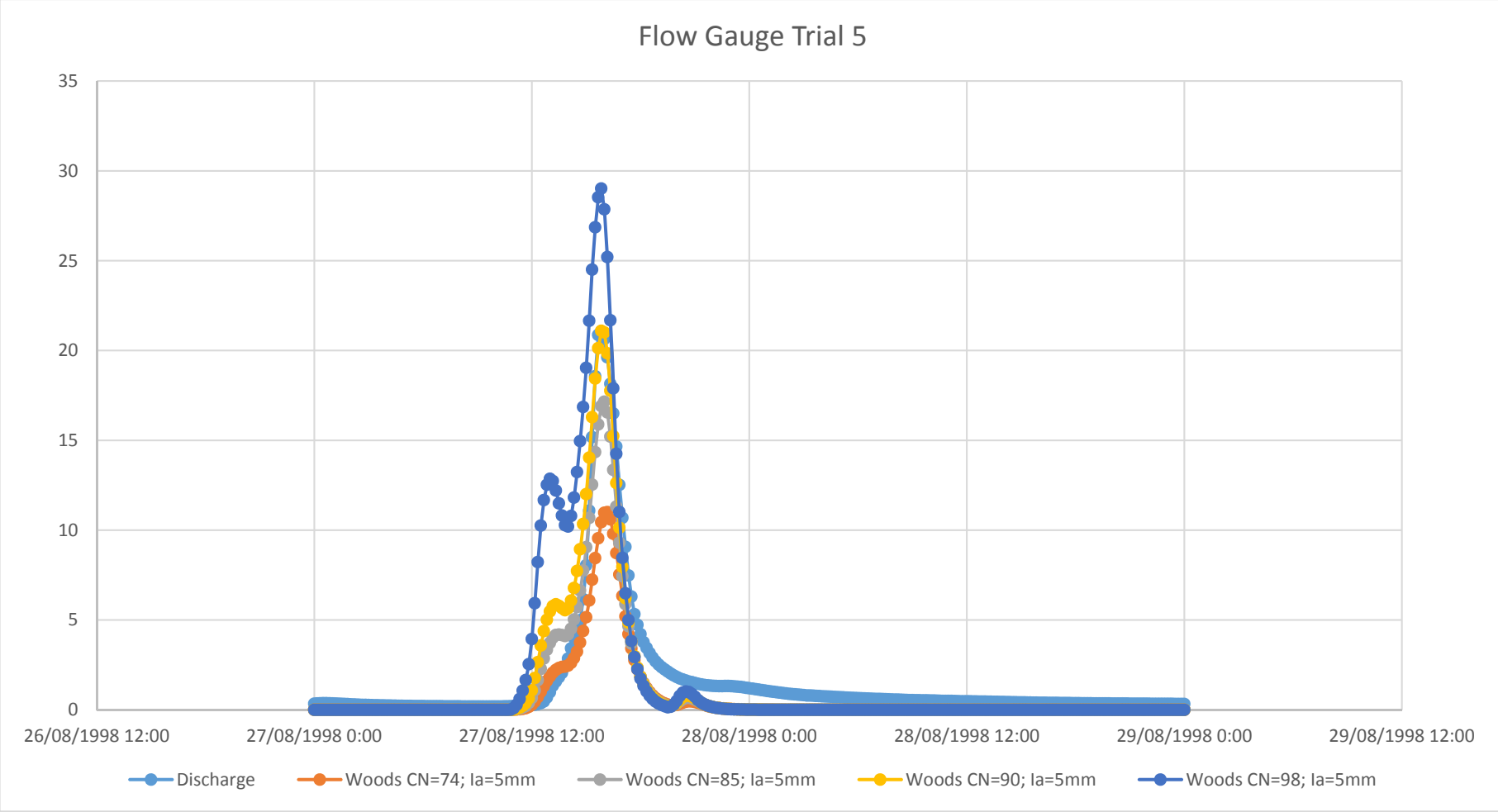


Figure 9: Flow Gauge 5 Calibration Trial

APPENDIX A

CORRESPONDENCE

From: Jon Rix
To: Pranil Wadan; Jon Rix
Cc: Mark Iszard; Jamie Whyte; Sakti Gounder; Kris Fordham; Nick Brown
Subject: RE: Wainui East SHA - Flow Gauge and Rainfall data
Date: Thursday, 7 July 2016 4:17:09 p.m.
Attachments: image002.png
image006.png

Hi Pranil,

Thanks for sending through your hydrological calibration of the Kowhai Avenue Bridge flow gauge.

As you have identified, the results highlight a potentially significant uncertainty relating to the catchment rainfall runoff response. Thanks for liaising with Council on this - to have continued without getting this agreed could lead to potential disagreement later - we appreciate the discussion.

We will look into the rating curve issue further which may be used at a later stage to improve the hydrological calibration. However we are aware that this may not meet your timelines so there is an alternative approach which we would be satisfied with for the purposes of your assessment of effects. The suggestion is detailed below:

1. Proceed with the land use effects based on a pervious CN from your TP108 calculation (i.e. 74). Continue to separate out your pervious and impervious catchment, so that the ratio of pervious to impervious changes from ED to MPD based on your impervious land use assumptions.
2. Where you are proposing to elevate ground levels above the 100 year ARI floodplain, use the MPD scenario and a CN no less than 85 to establish the 100 year ARI level (i.e. not the 74!).

We consider that this approach is precautionary for the effects assessment of land use and landform changes. The precautionary approach is appropriate given the uncertainty highlighted by your calibration.

This approach is not currently approved for setting floor levels or ground levels. When we have looked into the rating curve for Kowhai Avenue Bridge flow gauge further, we will update you with the results.

If you have any queries, please feel free to call.

Regards

Jon

From: Pranil Wadan [redacted]
Sent: Wednesday, 6 July 2016 6:20 p.m.
To: Jon Rix; Kris Fordham
Cc: Mark Iszard; Jon Rix; Jamie Whyte; Sakti Gounder
Subject: RE: Wainui East SHA - Flow Gauge and Rainfall data

Hi Jon

Updated memo attached for the calibration, Overall the results still remain inconclusive.

The findings do however suggest that the CN should likely be increased from 74 to a higher value. We were unable with confidence to ascertain what the CN should be through calibration, but are recommending a CN of 85.

Could you please review and get back us, Will give you a call in the morning to discuss.

Kind Regards

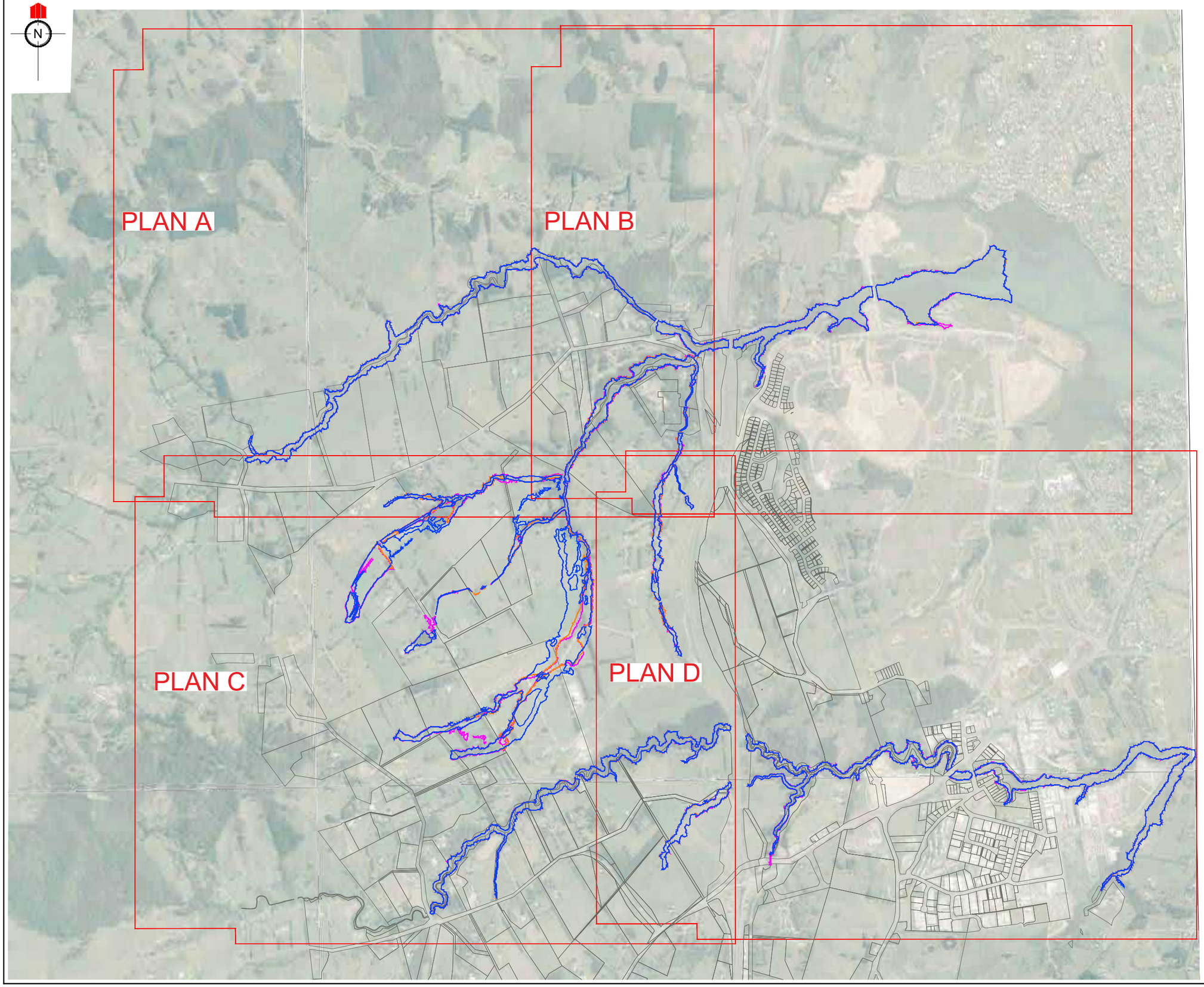
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ENGINEERS. SURVEYORS. PLANNERS. URBAN DESIGNERS. ARCHITECTS
Pranil Wadan
BE (Civil), CPEng, IntPE(NZ), MIPENZ
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PO BOX 6752, WELLESLEY STREET, AUCKLAND 1141, NEW ZEALAND
BLDG B, LEVEL 1, 8 NUGENT STREET, GRAFTON, AUCKLAND, NEW ZEALAND WWW.WOODS.CO.NZ

APPENDIX J

FLOOD MAPS

FLOOD MAPS

10YR EXISTING RAINFALL



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WAINUI EAST FUTURE URBAN ZONE

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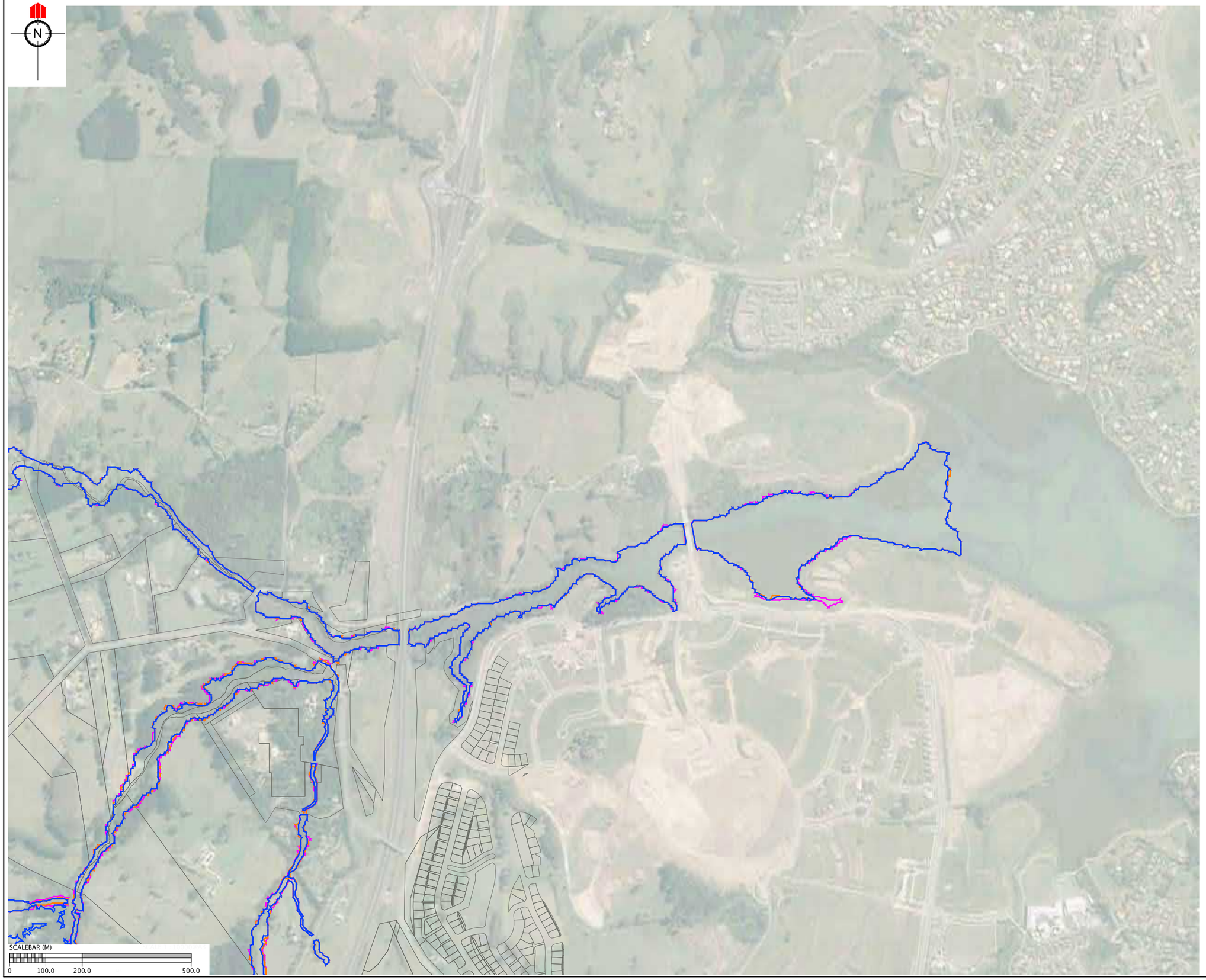
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WAINUI EAST FUTURE URBAN ZONE

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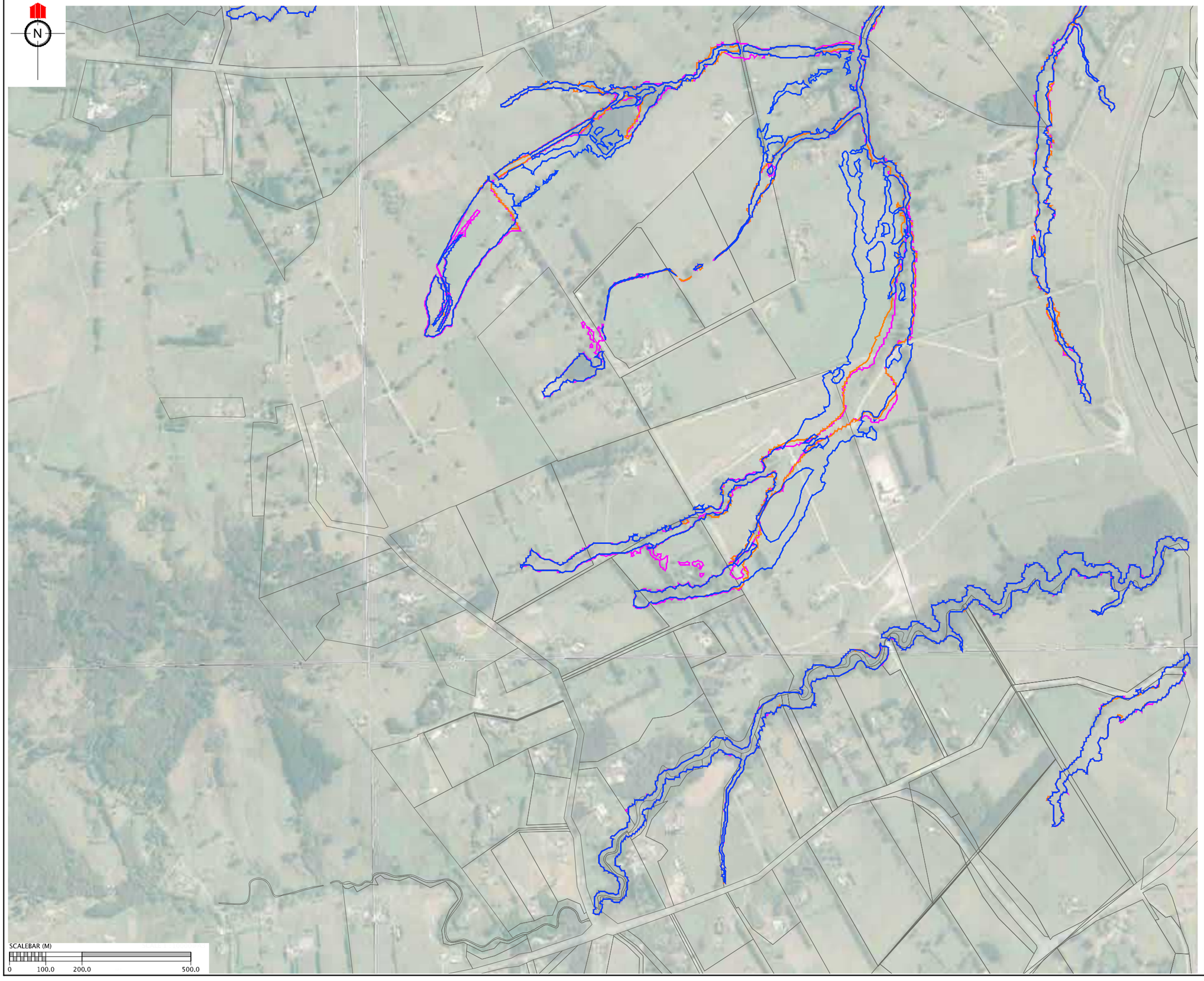
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WAINUI EAST FUTURE URBAN ZONE

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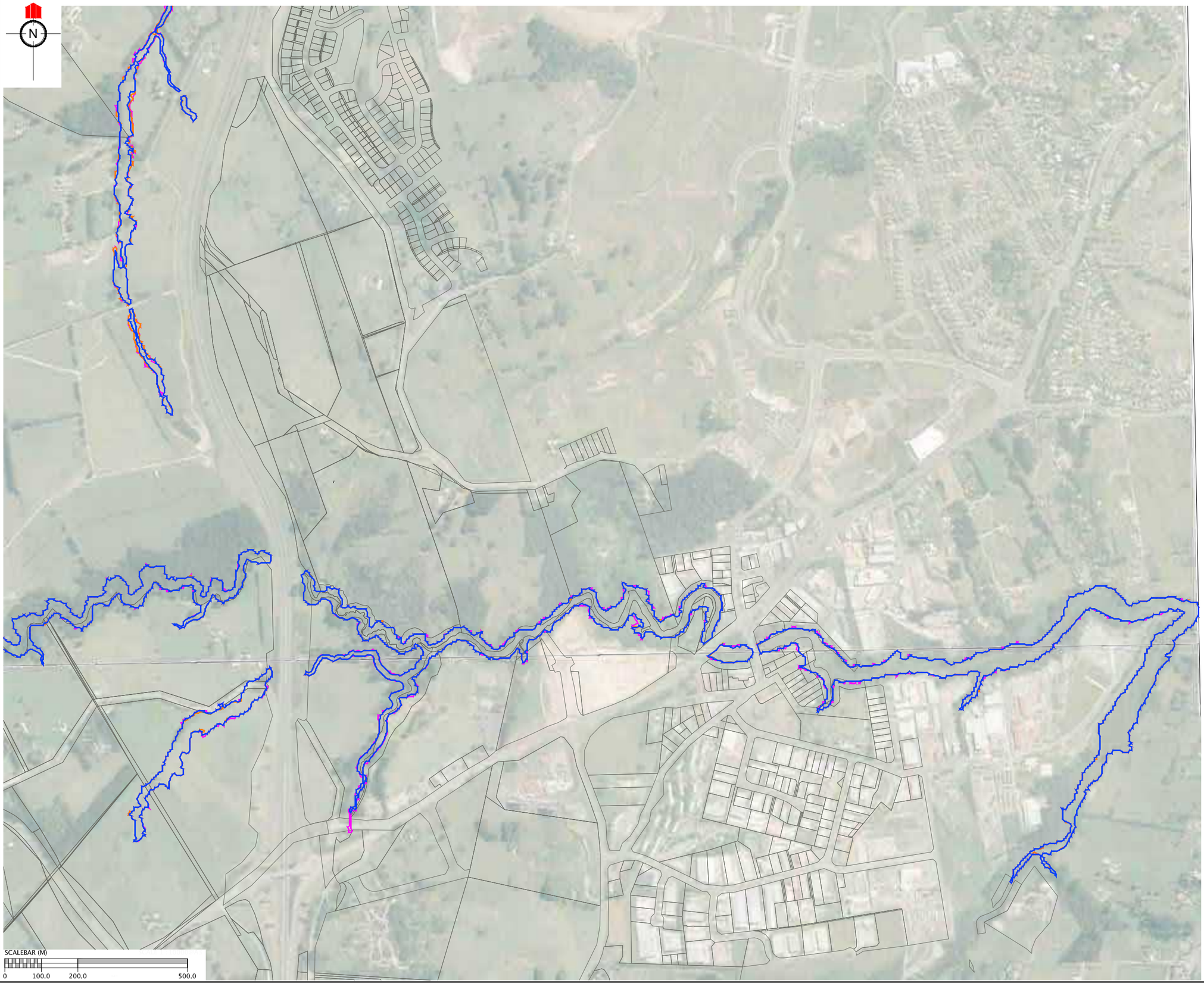
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WAINUI EAST FUTURE URBAN ZONE

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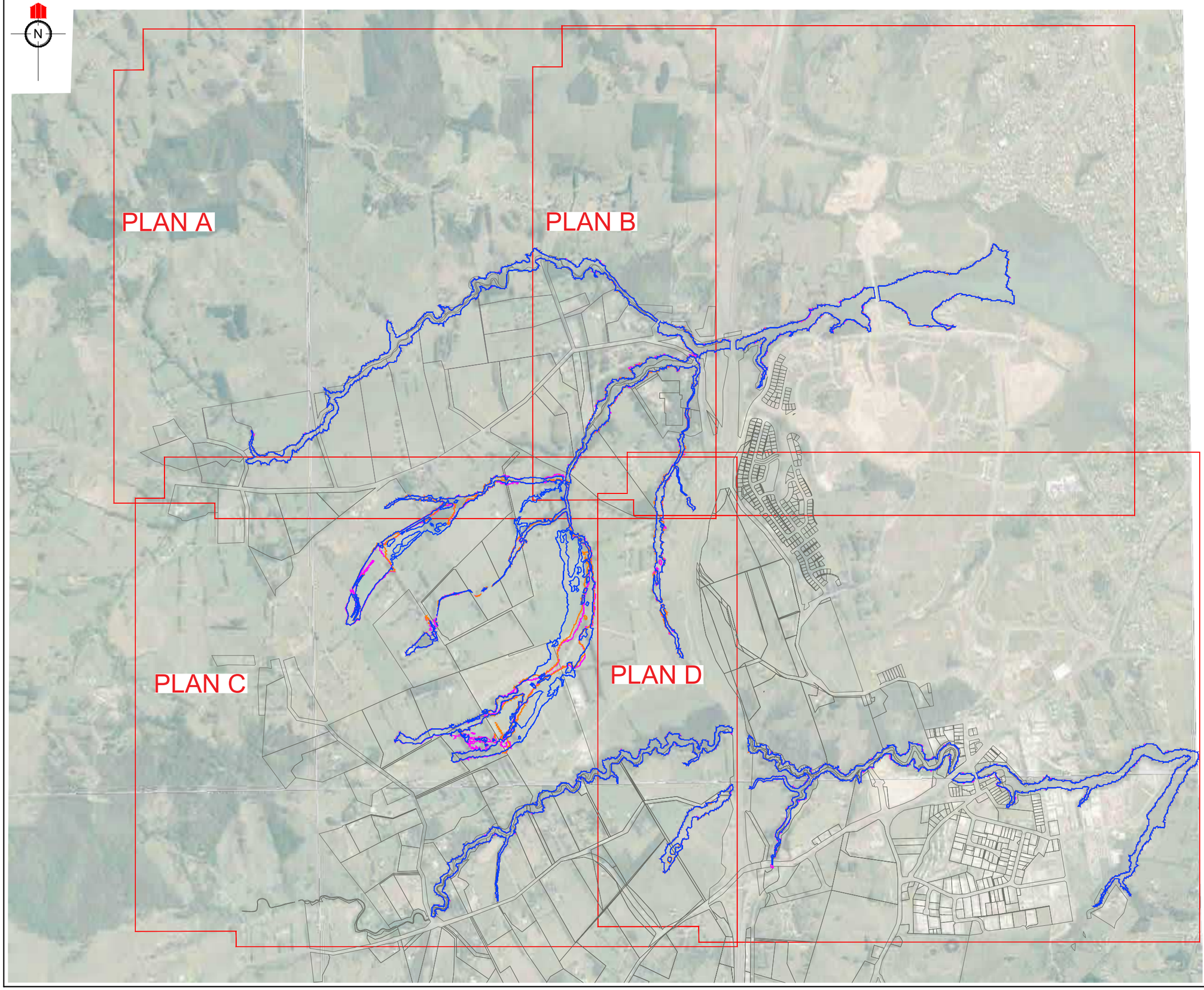
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FLOOD MAPS

10YR FUTURE RAINFALL



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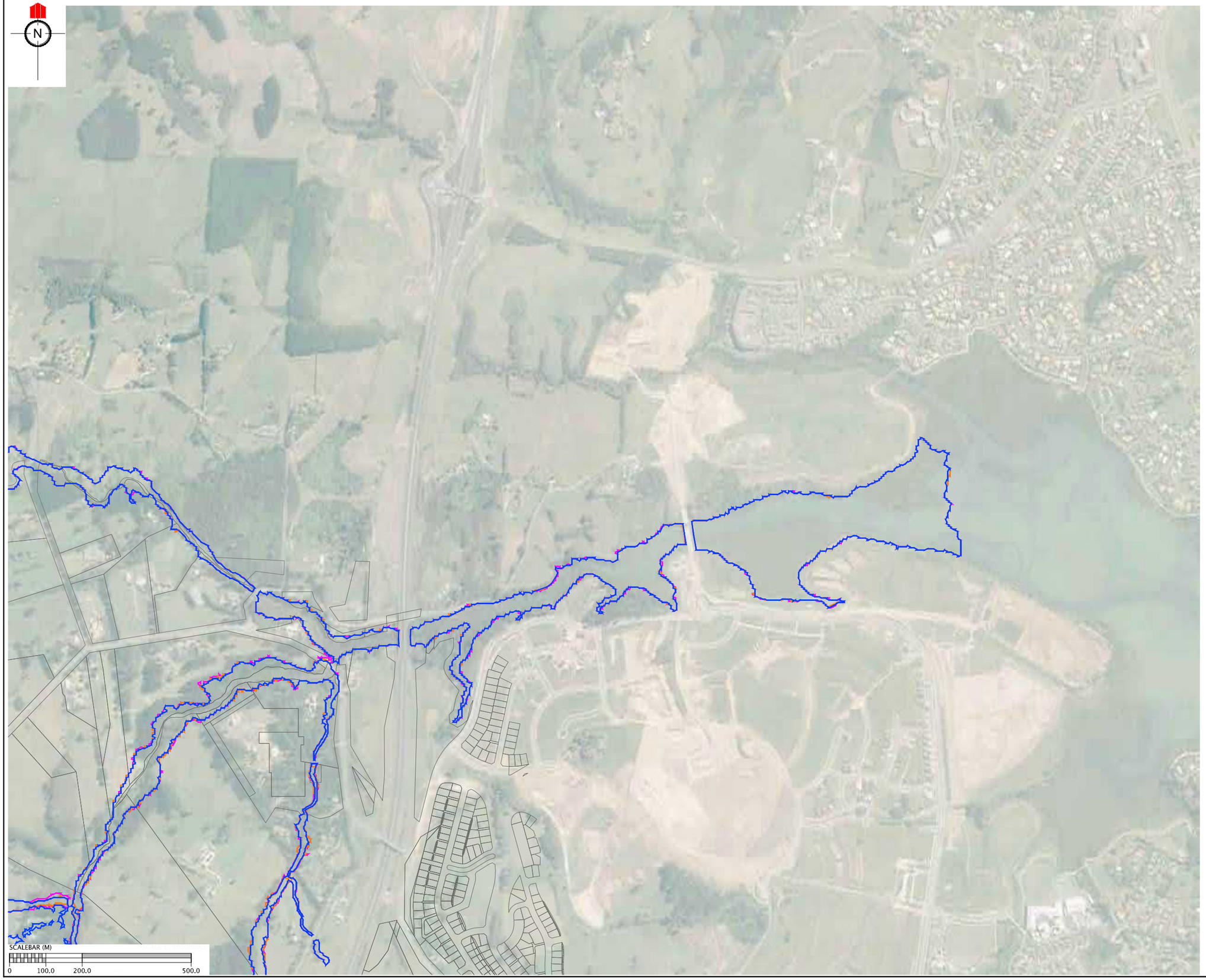
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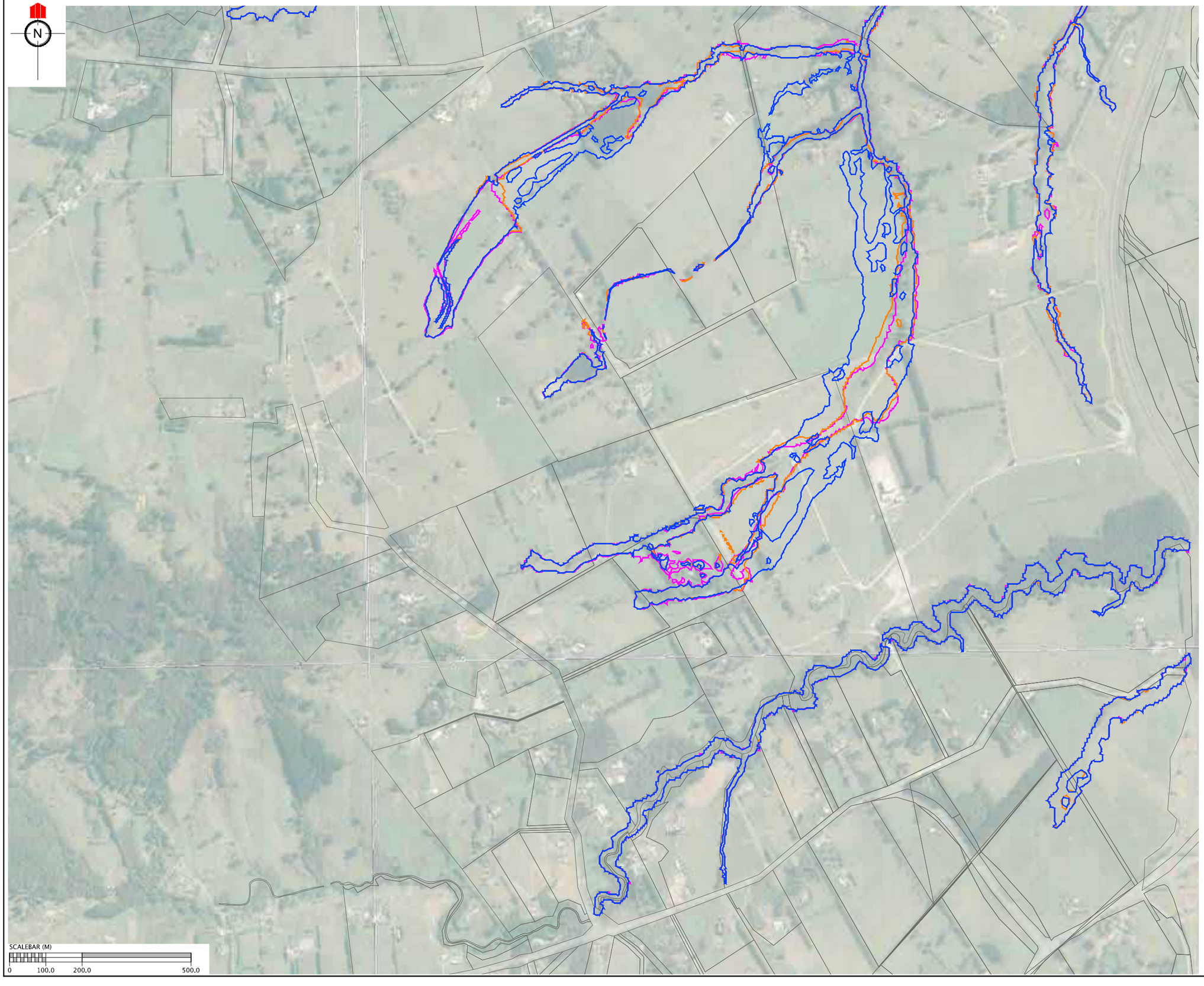
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FLOOD MAP
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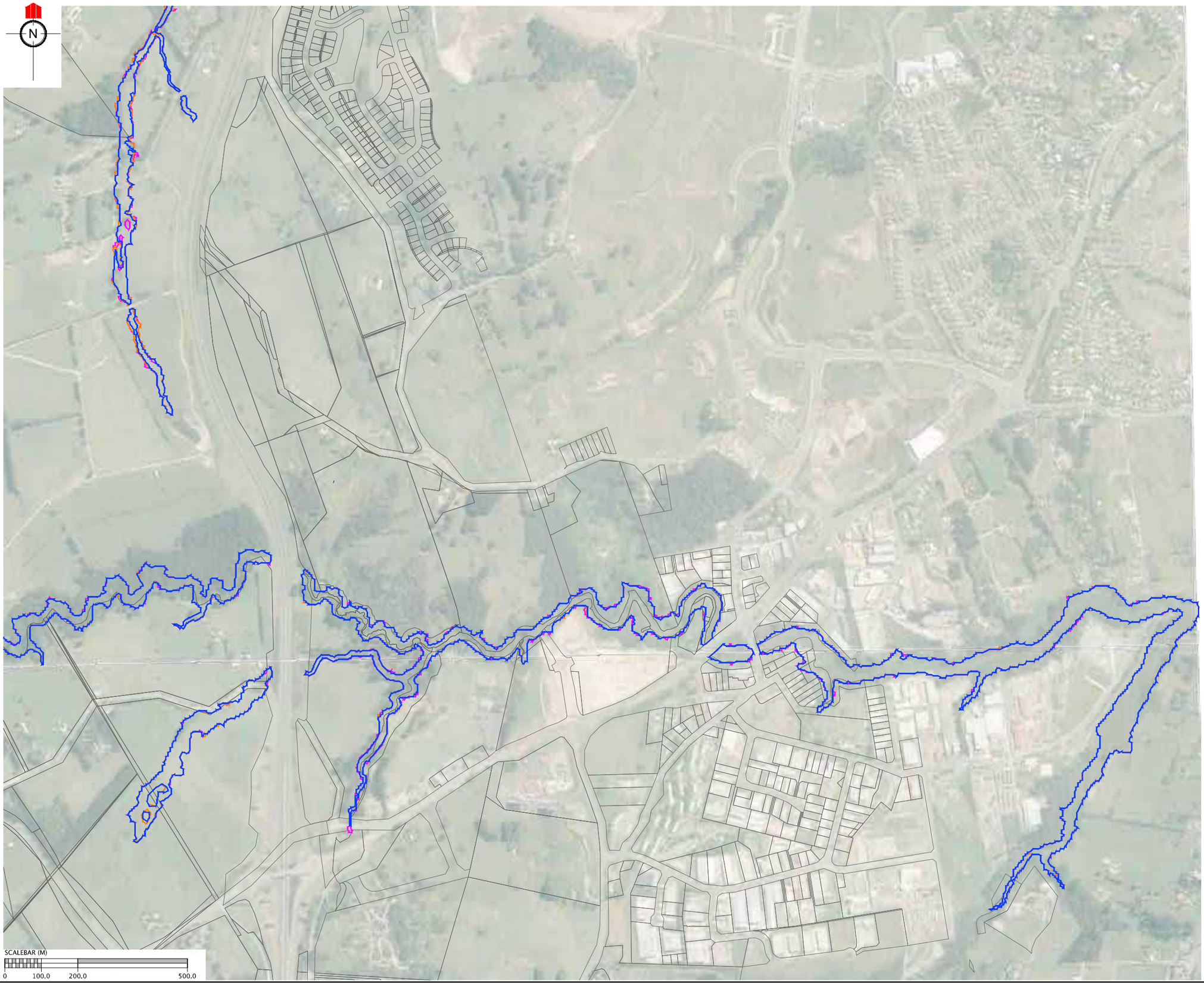
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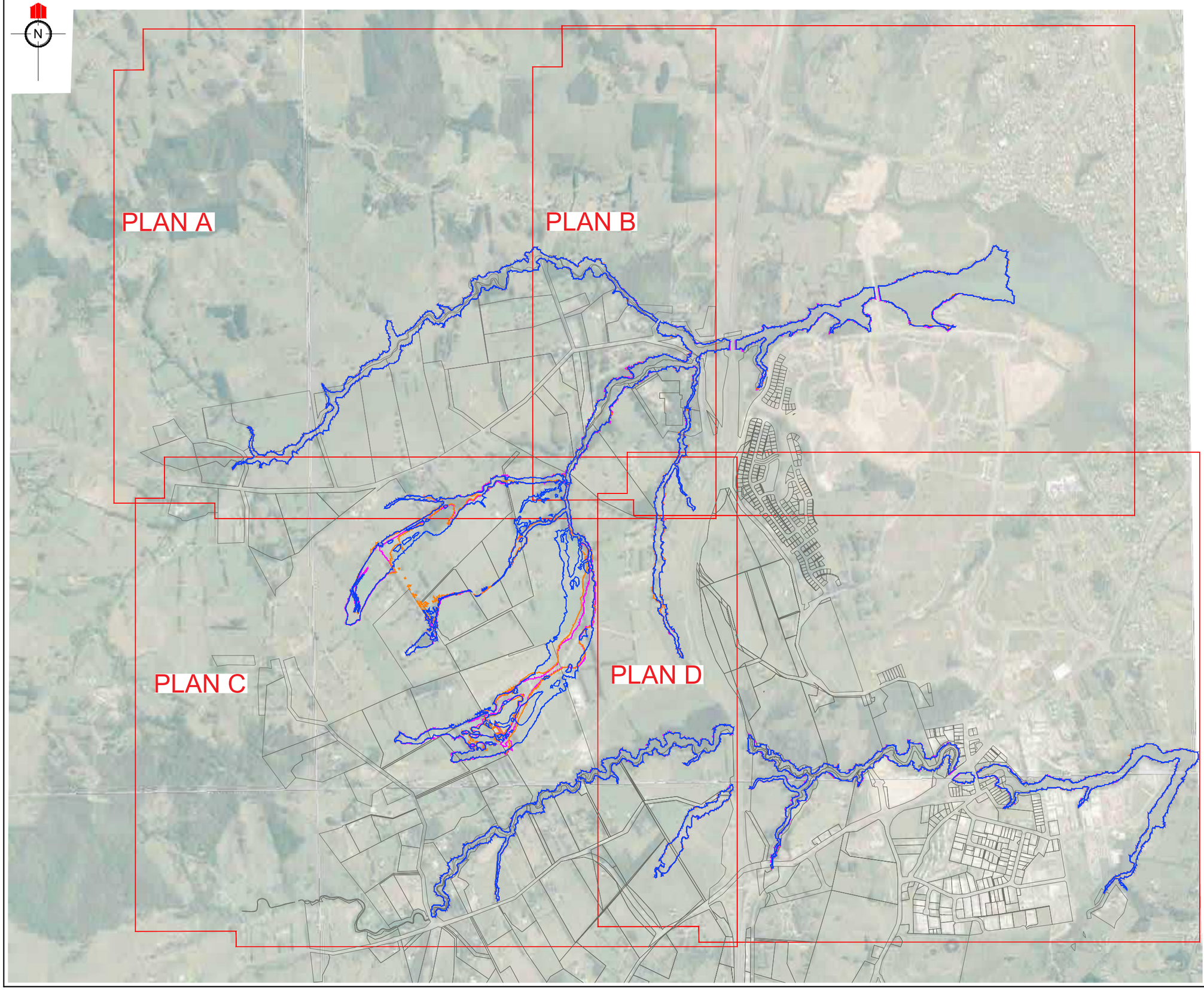
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FLOOD MAPS

100YR EXISTING RAINFALL



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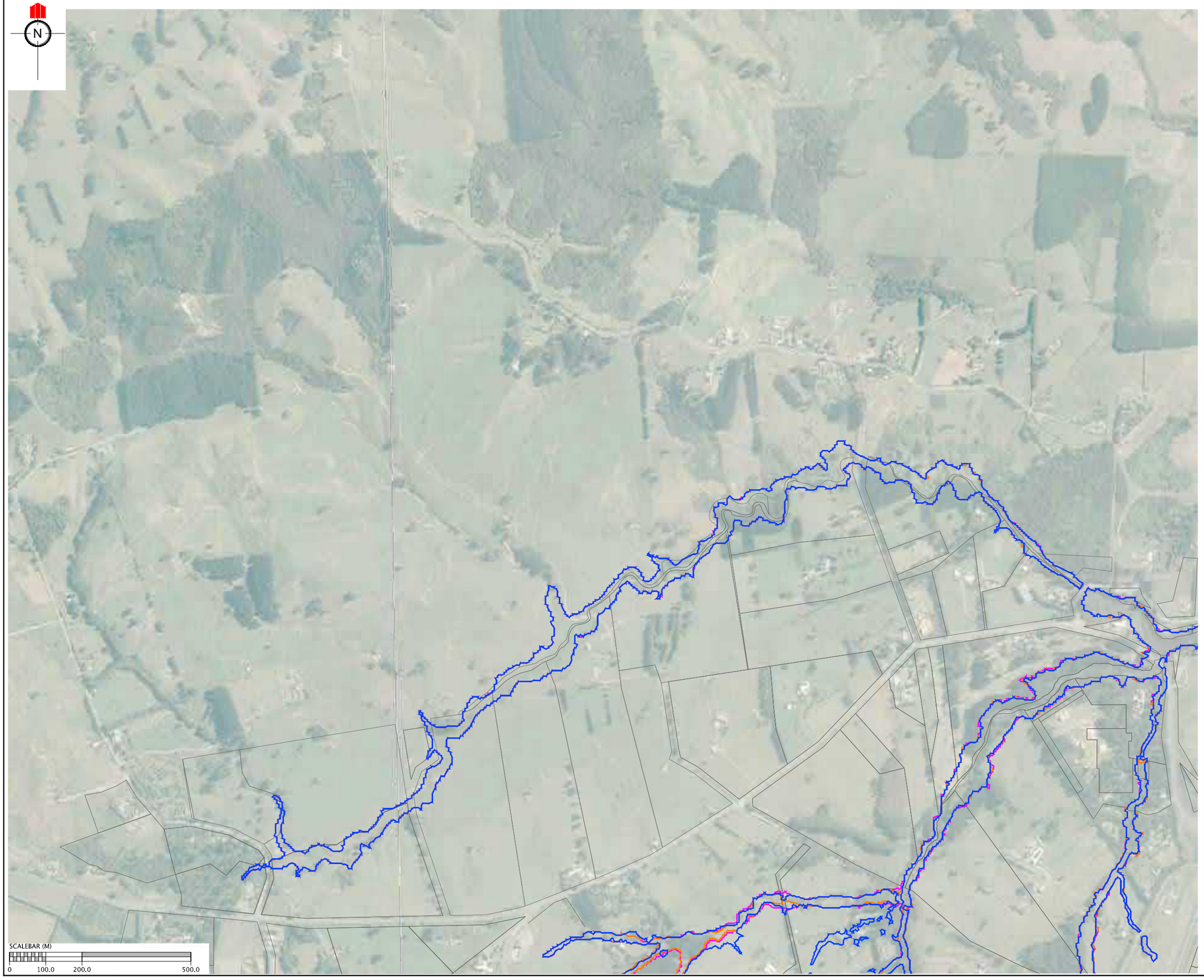
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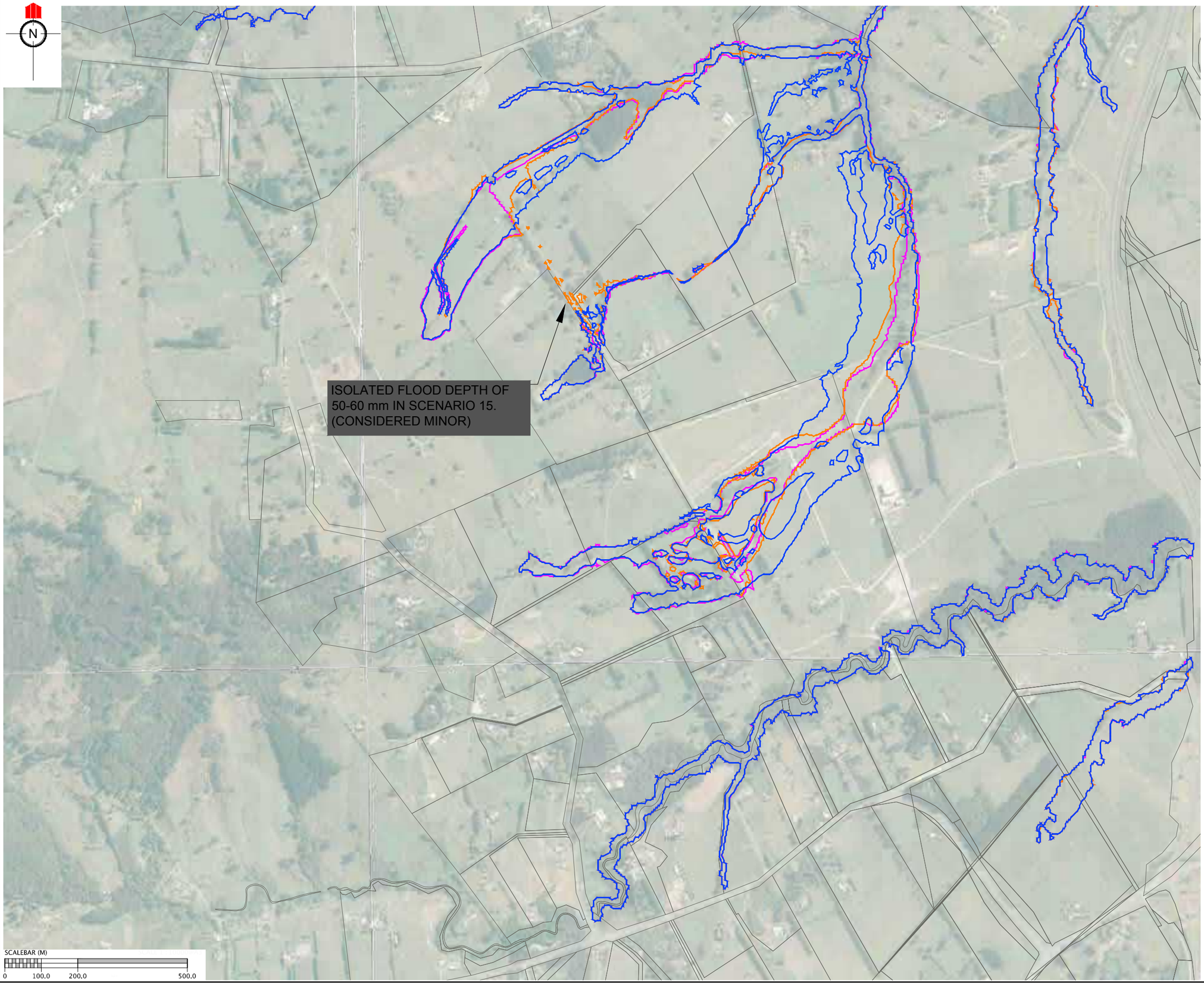
WOODS
Engineers. Surveyors. Planners.

WAINUI EAST FUTURE URBAN ZONE

FLOOD MAP SET 3 – 100 YEAR NO CC

AUCKLAND COUNCIL

DESIGNED: ZY	ISSUED FOR INFORMATION
CHECKED:	DRAWN: ZY
APPROVED:	SURVEYED: WOODS
JOB NUMBER: 31720	SCALE: 1:10000 @ A3
ISSUED: JULY 2016	
DWG. NO. 31720 – SW – Plan B	REV. 1



REVISION DETAILS	NAME	DATE
1. ISSUED FOR INFORMATION	ZY	11-07-16

LEGEND:

- ED (SCENARIO 3)
- MPD (SCENARIO 31)
- POST DEVELOPMENT ARGENT LANE SHA (SCENARIO 15)

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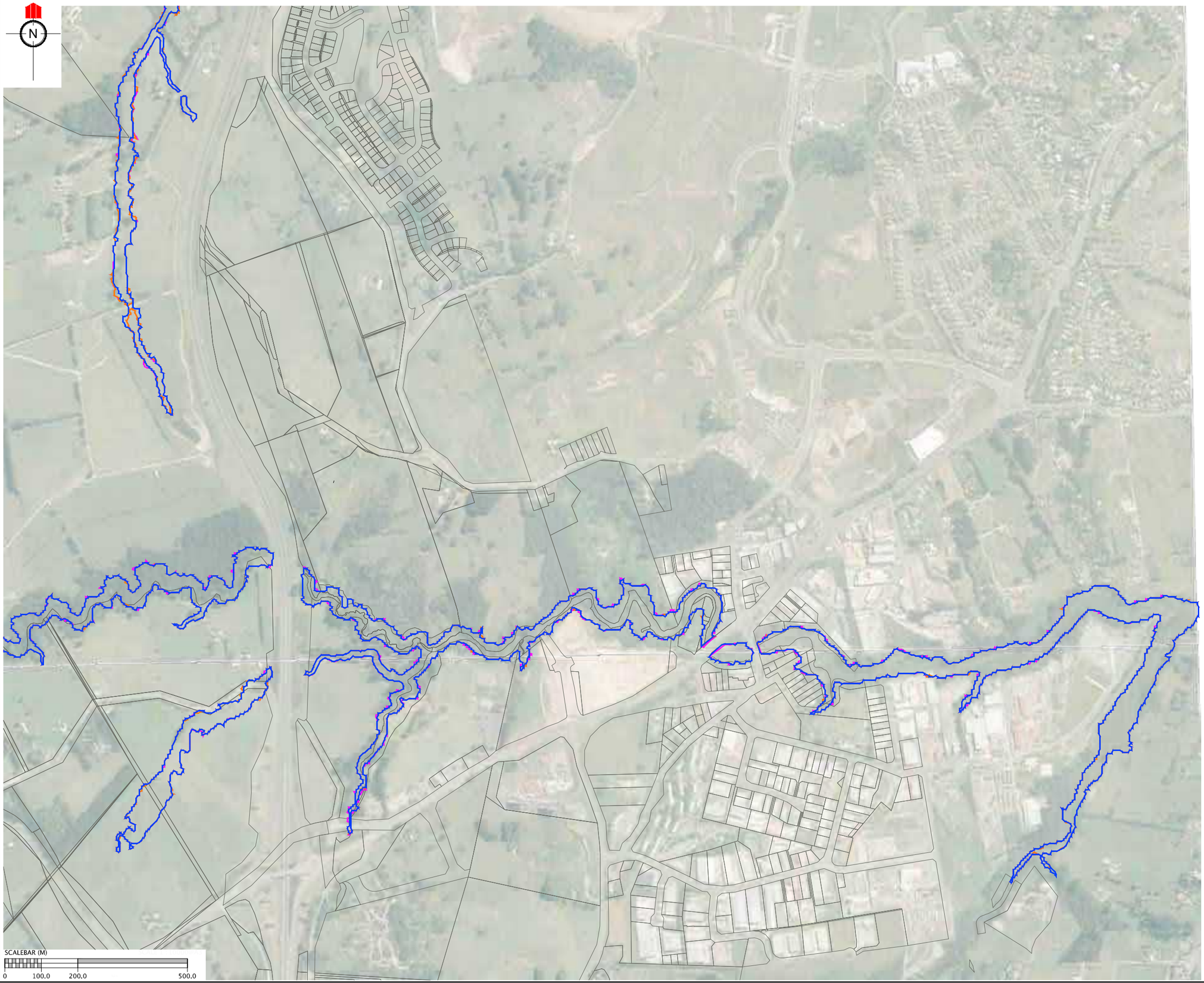
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WAINUI EAST FUTURE URBAN ZONE

FLOOD MAP
SET 3 – 100 YEAR NO CC

AUCKLAND COUNCIL

DESIGNED: ZY	ISSUED FOR INFORMATION
CHECKED:	DRAWN: ZY
APPROVED:	SURVEYED: WOODS
JOB NUMBER: 31720	SCALE: 1:10000 @ A3
ISSUED: JULY 2016	
DWG, NO. 31720 – SW – Plan C	REV. 1



REVISION DETAILS	NAME	DATE
1. ISSUED FOR INFORMATION	ZY	11-07-16

LEGEND:

- ED (SCENARIO 3)
- MPD (SCENARIO 31)
- POST DEVELOPMENT ARGENT LANE SHA (SCENARIO 15)

CLIENT:

Fulton Hogan

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WAINUI EAST FUTURE URBAN ZONE

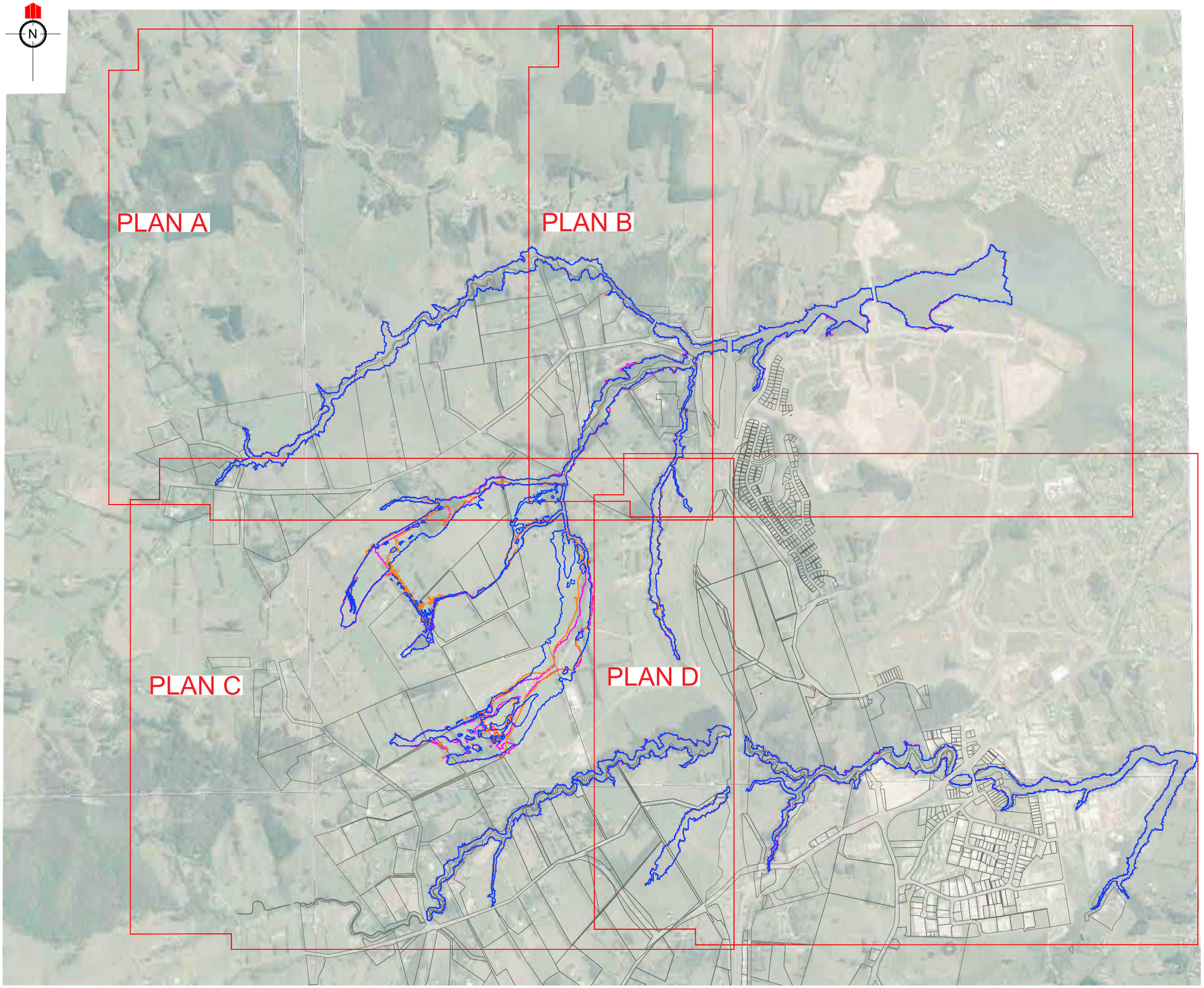
FLOOD MAP
SET 3 – 100 YEAR NO CC

AUCKLAND COUNCIL

DESIGNED: ZY	ISSUED FOR INFORMATION
CHECKED:	DRAWN: ZY
APPROVED:	SURVEYED: WOODS
JOB NUMBER: 31720	SCALE: 1:10000 @ A3
ISSUED: JULY 2016	
DWG. NO. 31720 – SW – Plan D	REV. 1

FLOOD MAPS

100YR FUTURE RAINFALL



REVISION DETAILS	NAME	DATE
1. ISSUED FOR INFORMATION	ZY	11-07-16

LEGEND:

- ED (SCENARIO 6)
- MPD (SCENARIO 28)
- POST DEVELOPMENT ARGENT LANE SHA (SCENARIO 19)
- PLAN BOUNDARY

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WAINUI EAST FUTURE URBAN ZONE

FLOOD MAPS SET 4 – 100 YEAR + CC

AUCKLAND COUNCIL

DESIGNED: ZY	ISSUED FOR INFORMATION
CHECKED:	DRAWN: ZY
APPROVED:	SURVEYED: WOODS
JOB NUMBER: 31720	SCALE: NOT TO SCALE
ISSUED: JULY 2016	
DWG. NO. 31720 – SW Overview	REV. 1



REVISION DETAILS	NAME	DATE
1. ISSUED FOR INFORMATION	ZY	11-07-16

LEGEND:

- ED (SCENARIO 6)
- MPD (SCENARIO 28)
- POST DEVELOPMENT ARGENT LANE SHA (SCENARIO 19)

CLIENT:

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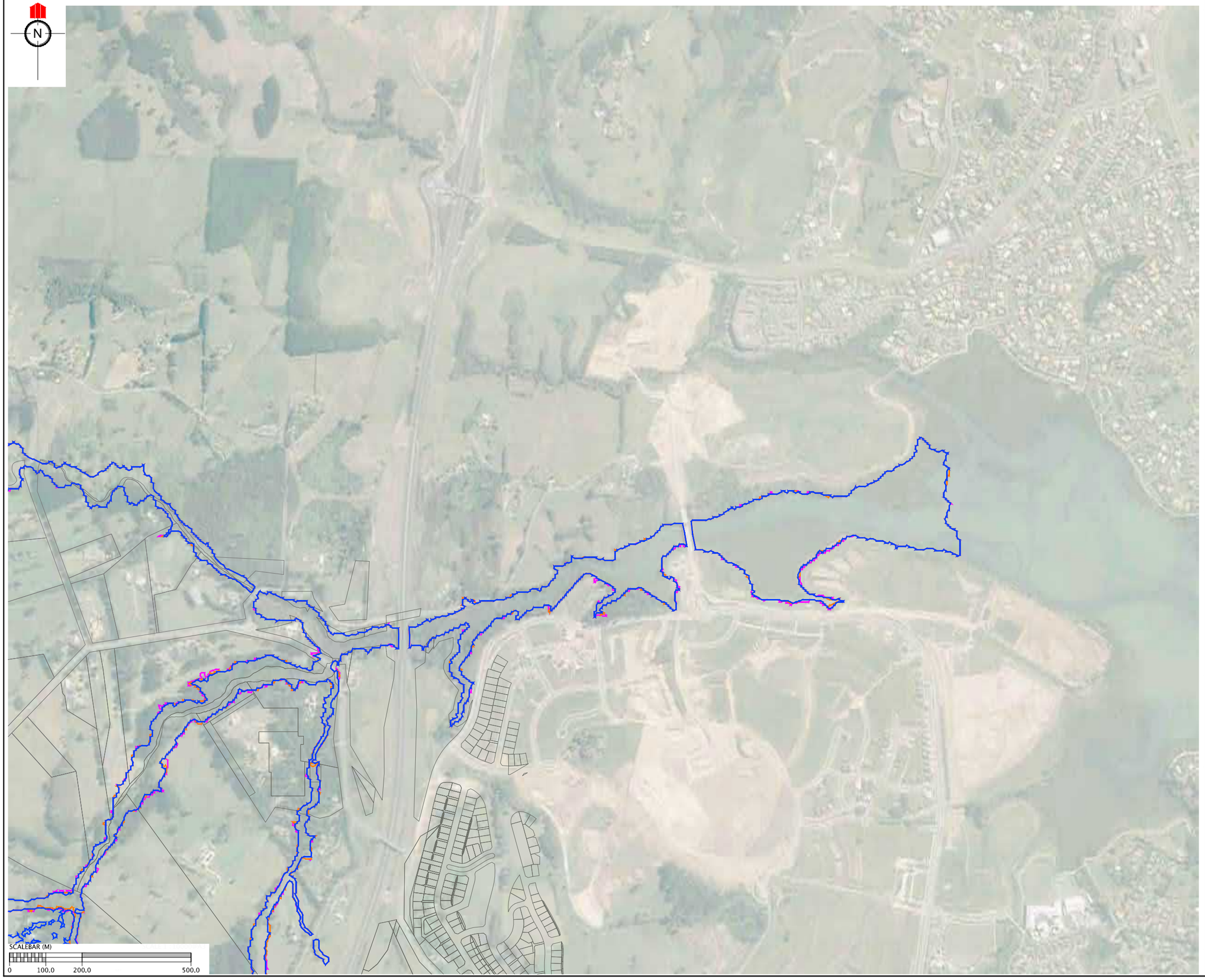
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WAINUI EAST FUTURE URBAN ZONE

FLOOD MAP SET 4 – 100 YEAR + CC

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DESIGNED: ZY	ISSUED FOR INFORMATION
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DWG. NO. 31720 – SW – Plan A	REV. 1



REVISION DETAILS	NAME	DATE
1. ISSUED FOR INFORMATION	ZY	11-07-16

LEGEND:

- ED (SCENARIO 6)
- MPD (SCENARIO 28)
- POST DEVELOPMENT ARGENT LANE SHA (SCENARIO 19)

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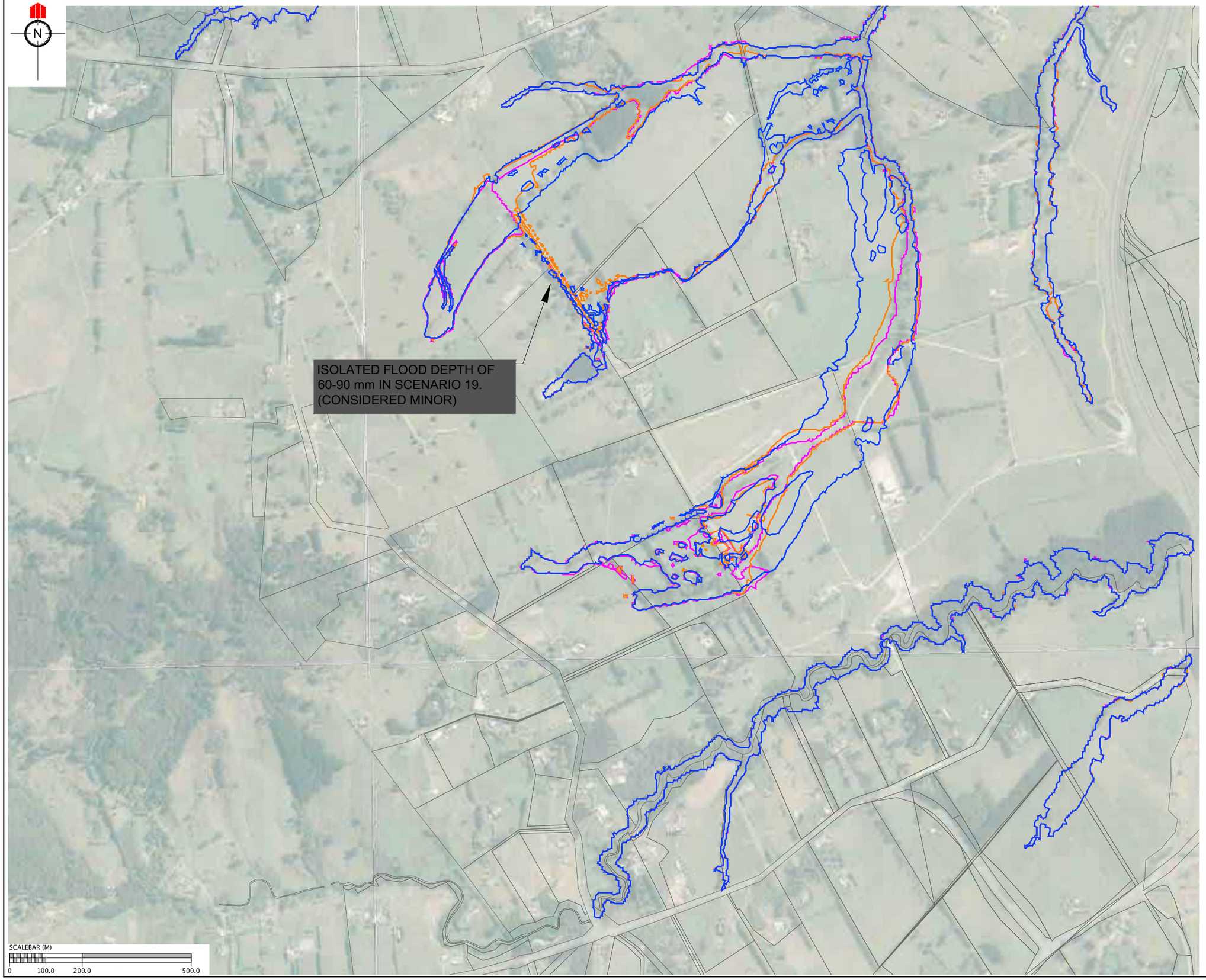
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WAINUI EAST FUTURE URBAN ZONE

FLOOD MAP SET 4 – 100 YEAR + CC

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JOB NUMBER: 31720	SCALE: 1:10000 @ A3
ISSUED: JULY 2016	
DWG. NO. 31720 – SW – Plan B	REV. 1



REVISION DETAILS	NAME	DATE
1. ISSUED FOR INFORMATION	ZY	11-07-16

LEGEND:

- ED (SCENARIO 6)
- MPD (SCENARIO 28)
- POST DEVELOPMENT ARGENT LANE SHA (SCENARIO 19)

CLIENT:

Fulton Hogan

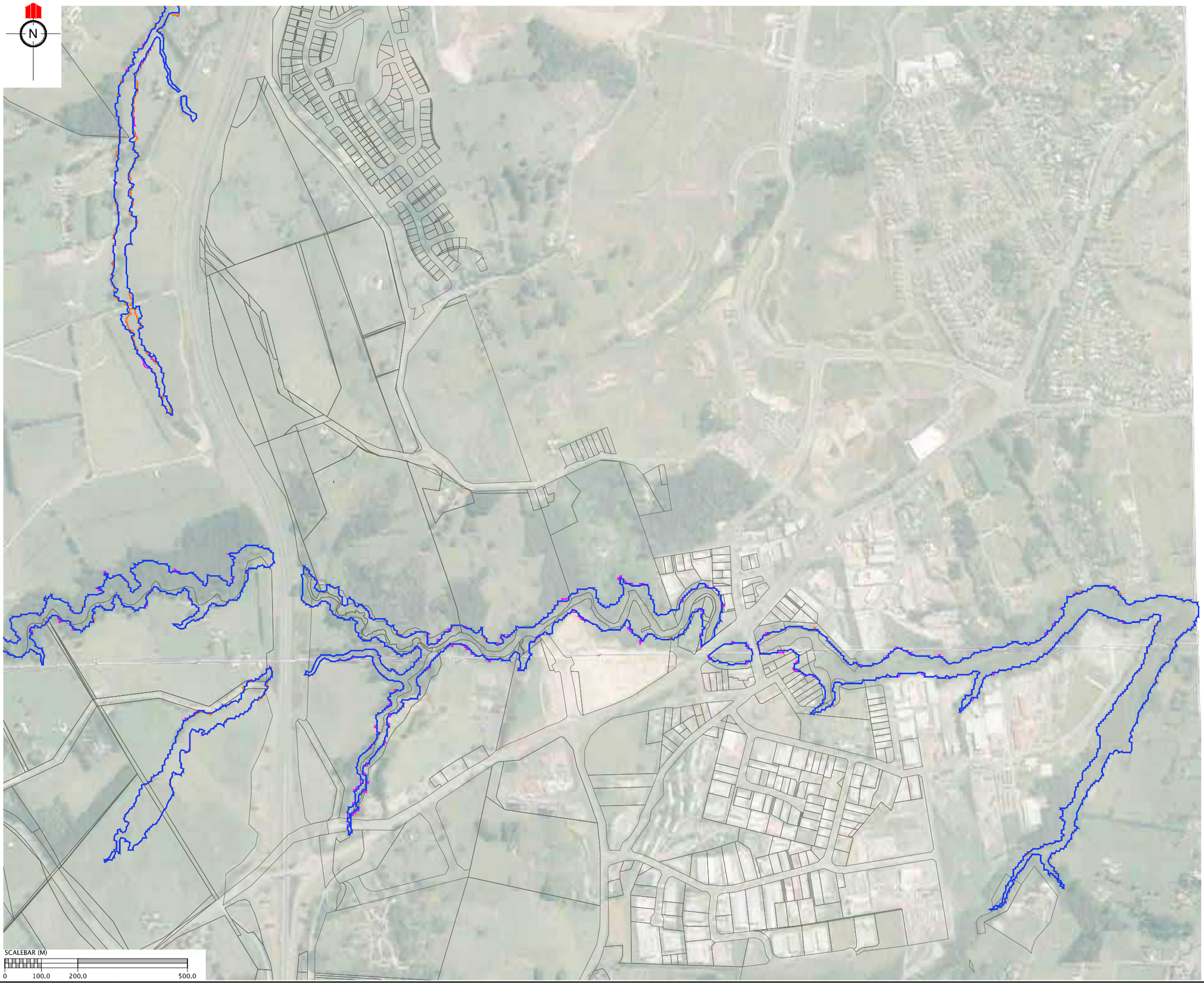
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WAINUI EAST FUTURE URBAN ZONE

FLOOD MAP SET 4 – 100 YEAR + CC

AUCKLAND COUNCIL

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APPROVED:	SURVEYED: WOODS
JOB NUMBER: 31720	SCALE: 1:10000 @ A3
ISSUED: JULY 2016	
DWG. NO. 31720 – SW – Plan C	REV. 1



REVISION DETAILS	NAME	DATE
1. ISSUED FOR INFORMATION	ZY	11-07-16

LEGEND:

- ED (SCENARIO 6)
- MPD (SCENARIO 28)
- POST DEVELOPMENT ARGENT LANE SHA (SCENARIO 19)

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WAINUI EAST FUTURE URBAN ZONE

FLOOD MAP
SET 4 – 100 YEAR + CC

AUCKLAND COUNCIL

DESIGNED: ZY	ISSUED FOR INFORMATION
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APPROVED:	SURVEYED: WOODS
JOB NUMBER: 31720	SCALE: 1:10000 @ A3
ISSUED: JULY 2016	
DWG. NO. 31720 – SW – Plan D	REV. 1

APPENDIX K

XP STORM MODEL OUTPUTS

SCENARIO 2 – ED

10YR EXISTING RAINFALL

XP STORM OUTPUTS - SUBCATCHMENT RESULTS (SCENARIO 2)

Name	Subcatchment	Area ha	Impervious Percentage %	Catchment Max Flow cms	Max Flow cms
Highgate	User Inflow Hydrograph				
Millwater1	1	32.805	0	3.062	14.306
Millwater1	2	60.924	100	12.189	
Millwater2	1	4.299	0	0.598	2.513
Millwater2	2	7.983	100	1.985	
Millwater3	1	9.505	0	1.134	5.094
Millwater3	2	17.651	100	4.223	
Millwater4	1	4.177	0	0.572	2.426
Millwater4	2	7.757	100	1.928	
Node105.1	1	11.511	0	1.863	2.012
Node105.1	2	0.606	100	0.151	
Node108	1	4.41	0	0.714	0.771
Node108	2	0.232	100	0.058	
Node109	1	58.441	0	7.78	8.318
Node109	2	3.076	100	0.765	
Node109.1.1	1	6.047	0	0.852	0.917
Node109.1.1	2	0.318	100	0.079	
Node126	1	17.658	0	2.779	3
Node126	2	0.929	100	0.231	
Node13	1	18.116	0	2.642	2.855
Node13	2	0.954	100	0.237	
Node143	1	10.118	0	1.306	1.39
Node143	2	0.533	100	0.133	
Node159	1	5.193	0	0.869	0.937
Node159	2	0.273	100	0.068	
Node16	1	32.462	0	4.039	4.294
Node16	2	1.709	100	0.419	
Node160	1	49.426	0	7.208	7.788
Node160	2	2.601	100	0.647	
Node161	1	25.067	0	3.83	4.143
Node161	2	1.319	100	0.328	
Node168	1	7.632	0	1.016	1.086
Node168	2	0.402	100	0.1	
Node186	1	18.393	0	3.077	3.318
Node186	2	0.968	100	0.241	
Node203	1	7.43	0	1.243	1.34
Node203	2	0.391	100	0.097	
Node206	1	6.346	0	0.995	1.074
Node206	2	0.334	100	0.083	
Node22	1	3.902	0	0.608	0.657
Node22	2	0.205	100	0.051	
Node25.1	1	30.495	0	3.774	4.013
Node25.1	2	1.605	100	0.392	
Node28	1	9.915	0	1.436	1.55
Node28	2	0.522	100	0.13	
Node4	1	3.285	0	0.536	0.579

Node4	2	0.173	100	0.043	
Node4.1	1	4.636	0	0.715	0.773
Node4.1	2	0.244	100	0.061	
Node42	1	9.499	0	1.477	1.596
Node42	2	0.5	100	0.124	
Node46.1	1	5.799	0	0.81	0.872
Node46.1	2	0.305	100	0.076	
Node46.1a	1	9.122	0	1.317	1.42
Node46.1a	2	0.48	100	0.119	
Node46.1b	1	4.058	0	0.578	0.622
Node46.1b	2	0.214	100	0.053	
Node47	1	10.119	0	1.545	1.671
Node47	2	0.533	100	0.133	
Node47.1	1	3.962	0	0.57	0.614
Node47.1	2	0.208	100	0.052	
Node48	1	4.98	0	0.749	0.809
Node48	2	0.262	100	0.065	
Node49	1	4.207	0	0.659	0.712
Node49	2	0.221	100	0.055	
Node50	1	5.257	0	0.771	0.832
Node50	2	0.277	100	0.069	
Node54	1	4.088	0	0.604	0.652
Node54	2	0.215	100	0.053	
Node56	1	3.869	0	0.631	0.681
Node56	2	0.204	100	0.051	
Node56.1	1	3.459	0	0.556	0.601
Node56.1	2	0.182	100	0.045	
Node58	1	2.91	0	0.475	0.512
Node58	2	0.153	100	0.038	
Node59	1	1.833	0	0.301	0.325
Node59	2	0.097	100	0.024	
Node59.1	1	4.17	0	0.664	0.718
Node59.1	2	0.22	100	0.055	
Node6	1	3.269	0	0.547	0.59
Node6	2	0.172	100	0.043	
Node6.1	1	3.36	0	0.562	0.606
Node6.1	2	0.177	100	0.044	
Node61	1	3.651	0	0.542	0.585
Node61	2	0.192	100	0.048	
Node73	1	18.072	0	2.248	2.389
Node73	2	0.951	100	0.233	
Node74	1	5.165	0	0.864	0.932
Node74	2	0.272	100	0.068	
Node75	1	4.189	0	0.691	0.745
Node75	2	0.221	100	0.055	
Node76	1	3.913	0	0.633	0.684
Node76	2	0.206	100	0.051	
Node77	1	4.05	0	0.664	0.716
Node77	2	0.213	100	0.053	
Node78	1	6.417	0	0.943	1.018

Node78	2	0.338	100	0.084	
Node8	1	3.707	0	0.62	0.669
Node8	2	0.195	100	0.048	
Node8.1	1	4.251	0	0.609	0.655
Node8.1	2	0.224	100	0.056	
Node80	1	5.414	0	0.786	0.849
Node80	2	0.285	100	0.071	
Node83	1	16.098	0	2.095	2.235
Node83	2	0.847	100	0.211	
Node85.1	1	3.027	0	0.504	0.543
Node85.1	2	0.159	100	0.04	
Node86	1	5.451	0	0.843	0.911
Node86	2	0.287	100	0.071	
Node95	1	3.801	0	0.594	0.641
Node95	2	0.2	100	0.05	
Node97.1	1	4.164	0	0.584	0.629
Node97.1	2	0.219	100	0.054	
Orewa Contri1	1	480.257	0	39.494	41.83
Orewa Contri1	2	25.277	100	4.58	
Orewa Contri2	1	68.959	0	7.03	7.46
Orewa Contri2	2	3.629	100	0.777	
Orewa Contri3	1	55.458	0	6.703	7.125
Orewa Contri3	2	2.919	100	0.704	
Orewa_Contri4	1	185.289	0	16.584	17.582
Orewa_Contri4	2	9.752	100	1.889	
Orewa_Contri5	1	24.418	0	3.156	3.361
Orewa_Contri5	2	1.285	100	0.319	
Orewa_Contri6	1	12.752	0	2.133	2.3
Orewa_Contri6	2	0.671	100	0.167	
Orewa_Contri7	1	9.502	0	1.53	1.653
Orewa_Contri7	2	0.5	100	0.124	
Orewa_Contri8	1	6.902	0	1.155	1.245
Orewa_Contri8	2	0.363	100	0.09	
Orewa_Contri9	1	79.566	0	7.124	7.552
Orewa_Contri9	2	4.188	100	0.811	
Weiti_Contri	1	678.769	0	37.928	40.077
Weiti_Contri	2	35.725	100	4.676	
Weiti_Contri2	1	50.344	0	4.833	5.125
Weiti_Contri2	2	2.65	100	0.542	
Weiti_Contri3	1	8.18	0	1.214	1.309
Weiti_Contri3	2	0.43	100	0.107	
Weiti_Contri4	1	10.257	0	1.42	1.525
Weiti_Contri4	2	0.54	100	0.134	
Weiti_Contri5	1	6.967	0	0.931	0.996
Weiti_Contri5	2	0.367	100	0.091	
Weiti_Contri6	1	3.806	0	0.611	0.66
Weiti_Contri6	2	0.2	100	0.05	
Weiti_Contri7	1	8.027	0	1.048	1.119
Weiti_Contri7	2	0.422	100	0.105	
Weiti_Contri8	1	43.618	0	7.031	7.596

Weiti_Contri8	2	2.296	100	0.571	
Weiti_Contri8.1	1	53.786	0	7.373	9.368
Weiti_Contri8.1	2	9.791	100	2.434	
Weiti_Contri9	1	153.161	0	12.196	12.912
Weiti_Contri9	2	8.061	100	1.424	
Weiti_Contri9.1	1	53.116	0	5.077	16.56
Weiti_Contri9.1	2	63.623	100	12.98	
Weiti_Contri9.2	1	36.459	0	5.121	8.768
Weiti_Contri9.2	2	16.152	100	4.015	
Weiti_Silverdale	1	417.491	0	25.3	26.748
Weiti_Silverdale	2	21.973	100	3.089	

XP STORM OUTPUTS - BASIC CONDUIT DATA (SCENARIO 2)

Name	Link Name	Length m	Shape	Diameter (Height) m	Downstream Invert Elevation m	Upstream Invert Elevation m
1	Culv_Link23.2_Mult	7.44	Circular	0.7	9.54	9.74
2	Culv_Link23.2_Mult	7.44	Circular	0.7	8.83	8.92
3	Culv_Link23.2_Mult	7.44	Circular	0.7	8.88	8.88
Bridge_KowhaiRd	Bridge_KowhaiRd	9.06	Natural	0	2.62	2.64
Bridge_KowhaiRd#w	Bridge_KowhaiRd					
Bridge_Lysnar	Bridge_Lysnar	3.41	Natural	0	4.32	4.46
Bridge_Lysnar#w	Bridge_Lysnar					
Bridge_MWAY	Bridge_MWAY	25.53	Natural	0	-0.74	-0.71
Bridge_WainuiRd	Bridge_WainuiRd	13.75	Natural	0	-0.47	-0.34
Bridge_WainuiRd#w	Bridge_WainuiRd					
Bridge_Weiti	Bridge_Weiti	15.16	Natural	0	9.83	11.6
Bridge_Weiti#w	Bridge_Weiti					
CUL_NZTA	CUL_NZTA	98.3	Circular	4.5	4.74	5.19
Culv_EX1500d	Culv_EX1500d	14.96	Circular	1.5	24.98	25.06
Culv_Ex1800	Culv_Ex1800	7.83	Circular	1.8	13.733	13.984
Culv_Link23.1	Culv_Link23.1	5.45	User Defined	1.75	6.16	6.17
Culv_LK101.1	Culv_LK101.1	20.01	Circular	1.5	22.77	22.85
Culv_LK113	Culv_LK113	5.15	Circular	0.6	17.24	17.39
Culv_LK125	Culv_LK125	8.09	Circular	0.4	24.86	25.1
Culv_LK126	Culv_LK126	12.62	Circular	0.9	23.78	23.88
Culv_LK136	Culv_LK136	12.44	Circular	0.9	21.75	21.83
Culv_Lk143	Culv_Lk143	29.72	Circular	0.6	34.8	36.54
Culv_Lk171	Culv_Lk171	92.64	Circular	2.55	6.76	7.99
Culv_Lk172	Culv_Lk172	13.41	Rectangular	2.35 x 3.7	9.34	9.62
Culv_Lk25.1.2	Culv_Lk25.1.2	10.5	Circular	1.85	4.45	4.66
Culv_LK46	Culv_LK46	12.49	Circular	1.2	19.84	19.98
Culv_Lk48.2	Culv_Lk48.2	2.38	Circular	0.6	15.08	15.19
Culv_LK58.1	Culv_LK58.1	7.9	Circular	1.85	10.83	11.17
Culv_Lk92.1	Culv_Lk92.1	15.41	Circular	1.2	14.27	14.45
CulvLK42.1	CulvLK42.1	5.72	Circular	1.05	20.83	20.92
CulvLK77.1	CulvLK77.1	23.45	Circular	0.45	14.78	14.81
CulvLK87.1	CulvLK87.1	5.02	Circular	0.6	20.22	20.45
Highgate.1	Highgate.1	168.1	Circular	1.6	15.63	19.08
Link10	Link10	141.49	Natural	0	0.16	0.67
Link101	Link101	202.17	Natural	0	29.841	33.066
Link101.1.1	Link101.1.1	206.54	Natural	0	18.287	21.611
Link101.1.2	Link101.1.2	100.39	Natural	0	21.611	22.77
Link101.2	Link101.2	277.81	Natural	0	22.85	29.841
Link103	Link103	137.17	Natural	0	19.051	19.113
Link11	Link11	113.22	Natural	0	0.22	0.16
Link112	Link112	92.55	Natural	0	4.782	4.883
Link114	Link114	69.17	Natural	0	16.58	17.24
Link115	Link115	104.95	Natural	0	15.508	16.58
Link116	Link116	147.29	Natural	0	13.93	15.508
Link117	Link117	125.09	Natural	0	10.56	13.982
Link118	Link118	33.24	Natural	0	17.643	17.945
Link12	Link12	75.88	Natural	0	-0.077	0.22
Link13	Link13	39.44	Natural	0	0.274	-0.077
Link135	Link135	48.58	Natural	0	22.069	22.464
Link137	Link137	31.81	Natural	0	21.435	21.756
Link138	Link138	56.01	Natural	0	20.868	21.435
Link139	Link139	87.01	Natural	0	19.58	20.868
Link14	Link14	70.07	Natural	0	0.004	0.274
Link140	Link140	112.52	Natural	0	18.333	19.58
Link141	Link141	59.69	Natural	0	17.915	18.333
Link15	Link15	93	Natural	0	-0.134	0.004
Link150	Link150	127.36	Natural	0	4.82	9.86
Link156	Link156	326.91	Natural	0	15.994	22.926

Link157	Link157	89.18	Natural	0	10.198	17.257
Link16	Link16	84.25	Natural	0	-0.12	-0.134
Link160	Link160	131.12	Natural	0	6.35	15.517
Link161	Link161	271.8	Natural	0	22.464	26.837
Link17	Link17	95.65	Natural	0	-0.25	-0.12
Link172	Link172	332.34	Natural	0	11.988	15.232
Link172.1	Link172.1	280.43	Natural	0	12.04	11.988
Link172.1.1.1	Link172.1.1.1	40.25	Natural	0	10.547	10.965
Link175	Link175	177.46	Natural	0	-0.9	-0.8
Link175.1	Link175.1	45.03	Natural	0	-1	-0.9
Link176	Link176	383.8	Natural	0	-1.15	-0.1
Link177	Link177	102.08	Natural	0	-1.24	-1.15
Link177.1	Link177.1	116.73	Natural	0	-1.28	-1.24
Link178	Link178	210.95	Natural	0	-1.3	-1.28
Link178.1	Link178.1	206.61	Natural	0	-1.34	-1.3
Link18	Link18	152.17	Natural	0	-0.25	-0.25
Link182	Link182	366.22	Natural	0	1.419	6.76
Link183	Link183	99.41	Natural	0	1.277	1.419
Link184	Link184	332.74	Natural	0	1.277	4.782
Link185	Link185	338.69	Natural	0	1.419	4.656
Link186	Link186	326.75	Natural	0	0.647	1.277
Link187	Link187	435.61	Natural	0	-0.016	0.647
Link188	Link188	458.5	Natural	0	0.03	-0.016
Link189	Link189	284.68	Natural	0	-0.285	0.03
Link190	Link190	185.13	Natural	0	-0.509	-0.285
Link191	Link191	397.39	Natural	0	-0.64	-0.51
Link191.1	Link191.1	413.61	Natural	0	-0.78	-0.64
Link192	Link192	208.09	Natural	0	-0.678	-0.776
Link193	Link193	154.24	Natural	0	4.883	4.74
Link19a	Link19a	133.6	Natural	0	-0.2	2.62
Link19a.1	Link19a.1	132.35	Natural	0	-0.52	-0.2
Link2	Link2	54.59	Natural	0	13.473	13.19
Link2.1	Link2.1	61.12	Natural	0	11.637	13.473
Link20	Link20	14.09	Natural	0	-0.34	-0.25
Link20.1	Link20.1	51.59	Natural	0	-0.52	-0.47
Link200	Link200	167.18	Natural	0	14.65	18.815
Link203	Link203	75.72	Natural	0	36.54	43.97
Link207	Link207	189.59	Natural	0	25.06	30.2
Link21	Link21	175.83	Natural	0	-0.71	-0.52
Link23	Link23	2.66	Natural	0	10.33	10.19
Link23.1.1	Link23.1.1	153.98	Natural	0	-0.25	4.68
Link23.1.2	Link23.1.2	116.65	Natural	0	4.68	6.16
Link23.2.1	Link23.2.1	155.44	Natural	0	6.17	8.83
Link23.3	Link23.3	161.27	Natural	0	8.88	10.33
Link25	Link25	72.62	Natural	0	4.51	5.87
Link25.1	Link25.1	37.03	Natural	0	4.66	4.51
Link25.1.1	Link25.1.1	13.53	Natural	0	3.99	4.45
Link3	Link3	108.63	Natural	0	10.849	11.637
Link31	Link31	91.63	Natural	0	15.59	15.86
Link31.1	Link31.1	465.46	Natural	0	11.7	13.69
Link31.2	Link31.2	386.31	Natural	0	13.69	14.77
Link31.3	Link31.3	194.9	Natural	0	14.77	15.32
Link31.4	Link31.4	93.24	Natural	0	15.32	15.59
Link32	Link32	865.06	Natural	0	8.908	11.7
Link32.1	Link32.1	688.18	Natural	0	5.132	8.908
Link33a	Link33a	198.81	Natural	0	4.09	5.13
Link33b	Link33b	137.99	Natural	0	3.57	4.09
Link33c	Link33c	147.58	Natural	0	2.64	3.57
Link39	Link39	56.29	Natural	0	22.81	23.78
Link4	Link4	78.42	Natural	0	8.575	10.849
Link4.1	Link4.1	97.95	Natural	0	5.04	8.103
Link4.2	Link4.2	82.58	Natural	0	8.103	8.575

Link40	Link40	58.73	Natural	0	22.311	22.81
Link41	Link41	78.25	Natural	0	21.52	22.311
Link42	Link42	79.01	Natural	0	20.92	21.52
Link43	Link43	48.21	Natural	0	20.551	20.83
Link44	Link44	17.22	Natural	0	19.98	20.551
Link45.1	Link45.1	95.72	Natural	0	17.97	18.11
Link45.1.1	Link45.1.1	47.86	Natural	0	17.9	17.97
Link45.1.1.1	Link45.1.1.1	47.86	Natural	0	17.83	17.9
Link45.2	Link45.2	114.74	Natural	0	18.114	19.84
Link46	Link46	32.11	Natural	0	16.882	17.83
Link46.1	Link46.1	27.5	Natural	0	17.239	16.882
Link47	Link47	113.64	Natural	0	15.25	17.239
Link48	Link48	55.74	Natural	0	15.19	15.25
Link48.1	Link48.1	65.21	Natural	0	14.14	15.08
Link49	Link49	70.45	Natural	0	13.19	14.143
Link5	Link5	60.92	Natural	0	4.82	5.04
Link5.1	Link5.1	39.19	Natural	0	4.59	4.82
Link53	Link53	69.15	Natural	0	17.237	18.287
Link54	Link54	41.08	Natural	0	16.873	17.237
Link54.1	Link54.1	15.06	Natural	0	16.432	16.873
Link55	Link55	116.8	Natural	0	14.65	16.432
Link55.1	Link55.1	64.57	Natural	0	13.984	14.65
Link56	Link56	17.49	Natural	0	13.652	13.733
Link56.1	Link56.1	60.44	Natural	0	13.027	13.652
Link57	Link57	66.25	Natural	0	12.015	13.027
Link58	Link58	76.81	Natural	0	13.103	12.015
Link59	Link59	91.29	Natural	0	9.04	10.83
Link6	Link6	61.11	Natural	0	4.56	4.59
Link6.1	Link6.1	44.98	Natural	0	4.46	4.56
Link6.1a	Link6.1a	26.8	Natural	0	3.99	4.32
Link60	Link60	111.63	Natural	0	5.87	9.04
Link65	Link65	384.85	Natural	0	17.146	19.051
Link66	Link66	169.44	Natural	0	15.994	17.146
Link66.1	Link66.1	174.58	Natural	0	13.72	14.769
Link66.1.1	Link66.1.1	177.17	Natural	0	12.039	13.72
Link66.2	Link66.2	173.2	Natural	0	14.769	15.994
Link67	Link67	134.88	Natural	0	11.6	12.039
Link67.1	Link67.1	284.75	Natural	0	10.198	11.895
Link68	Link68	335.52	Natural	0	9.055	10.198
Link69	Link69	55.84	Natural	0	9.439	9.055
Link69.1	Link69.1	226.86	Natural	0	8.3	9.439
Link7	Link7	51.83	Natural	0	1.258	3.99
Link70	Link70	143.23	Natural	0	7.11	8.3
Link71	Link71	77.14	Natural	0	6.35	7.11
Link71.1	Link71.1	163.65	Natural	0	6.315	7.11
Link71.2	Link71.2	82.49	Natural	0	7.11	6.35
Link72	Link72	38.13	Natural	0	6.404	6.315
Link72.1	Link72.1	39.12	Natural	0	5.19	6.2
Link74	Link74	122.63	Natural	0	28.994	34.8
Link74.1	Link74.1	245.26	Natural	0	20.836	26.368
Link74.2	Link74.2	122.63	Natural	0	26.368	28.994
Link75	Link75	89.68	Natural	0	18.293	19.441
Link76	Link76	138.38	Natural	0	16.371	18.293
Link77	Link77	47.66	Natural	0	15.15	16.371
Link77.1.1	Link77.1.1	40.12	Natural	0	14.23	14.78
Link78	Link78	51.92	Natural	0	11.74	14.23
Link79	Link79	96.79	Natural	0	9.86	11.74
Link8	Link8	77.32	Natural	0	0.19	1.258
Link81	Link81	37.06	Natural	0	23.846	24.86
Link82	Link82	116.13	Natural	0	18.818	23.846
Link83	Link83	40.79	Natural	0	16.432	18.818
Link87	Link87	56.35	Natural	0	20.22	20.91

Link87.1a	Link87.1a	28.31	Natural	0	19.98	20.22
Link89	Link89	156.52	Natural	0	22.531	24.98
Link89.1	Link89.1	135.63	Natural	0	20.91	22.531
Link9	Link9	130.9	Natural	0	0.67	0.19
Link92	Link92	76.63	Natural	0	14.72	15.63
Link92.1.1	Link92.1.1	60.87	Natural	0	12.66	14.27
Link94	Link94	126.39	Natural	0	10.56	12.66
Link95	Link95	31.62	Natural	0	10.19	10.56
Orewa	Orewa	20.73	Natural	0	-0.8	-0.74

XP STORM OUTPUTS - JUNCTION DATA (SCENARIO 2)

Name	Node Name	Invert Elevation m	Node X	Node Y	Ponding Type	Inlet Capacity Type
Highgate	Highgate	19.08	390760.744	830148.545	Link Invert to 2D	Maximum Capacity
Millwater1	Millwater1	-1	391144.141	831278.612	Link Invert to 2D	Maximum Capacity
Millwater2	Millwater2	-1.15	391481.677	831387.439	Link Invert to 2D	Maximum Capacity
Millwater3	Millwater3	-1.24	391570.934	831410.567	Link Invert to 2D	Maximum Capacity
Millwater4	Millwater4	-1.3	391860.414	831519.05	Link Invert to 2D	Maximum Capacity
Node10	Node10	1.258	390011.681	830524.418	Link Invert to 2D	Maximum Capacity
Node100	Node100	15.63	390694.008	830302.827	Link Invert to 2D	Maximum Capacity
Node100.1	Node100.1	12.66	390622.118	830426.675	Link Invert to 2D	Maximum Capacity
Node100.2	Node100.2	14.45	390661.171	830366.907	Link Invert to 2D	Maximum Capacity
Node100.2.1	Node100.2.1	14.27	390651.341	830378.777	Link Invert to 2D	Maximum Capacity
Node102	Node102	10.56	390587.268	830536.871	Link Invert to 2D	Maximum Capacity
Node104	Node104	4.74	390989.368	829058.139	Link Invert to 2D	Maximum Capacity
Node105	Node105	-0.8	390934.933	831205.359	Link Invert to 2D	Maximum Capacity
Node105.1	Node105.1	-0.9	391100.667	831266.89	Link Invert to 2D	Maximum Capacity
Node108	Node108	5.04	390014.062	830245.239	Link Invert to 2D	Maximum Capacity
Node108.1	Node108.1	4.82	390003.818	830304.98	Link Invert to 2D	Maximum Capacity
Node109	Node109	33.066	388814.038	829688.32	Link Invert to 2D	Maximum Capacity
Node109.1	Node109.1	22.85	388976.008	830105.067	Link Invert to 2D	Maximum Capacity
Node109.1.1	Node109.1.1	21.611	389076.916	830169.74	Link Invert to 2D	Maximum Capacity
Node109.1.2	Node109.1.2	22.77	388990.761	830118.588	Link Invert to 2D	Maximum Capacity
Node109.2	Node109.2	29.841	388826.55	829870.888	Link Invert to 2D	Maximum Capacity
Node11	Node11	0.19	390054.553	830588.569	Link Invert to 2D	Maximum Capacity
Node119	Node119	4.883	391084.228	828988.566	Link Invert to 2D	Maximum Capacity
Node12	Node12	0.67	390107.166	830696.479	Link Invert to 2D	Maximum Capacity
Node120	Node120	4.782	391132.149	828949.835	Link Invert to 2D	Maximum Capacity
Node121	Node121	17.39	390500.65	830117.826	Link Invert to 2D	Maximum Capacity
Node122	Node122	17.24	390500.816	830122.97	Link Invert to 2D	Maximum Capacity
Node123	Node123	16.58	390492.934	830190.884	Link Invert to 2D	Maximum Capacity
Node124	Node124	15.508	390497.396	830295.447	Link Invert to 2D	Maximum Capacity
Node125	Node125	13.93	390523.844	830437.416	Link Invert to 2D	Maximum Capacity
Node126	Node126	17.915	390507.197	830089.527	Link Invert to 2D	Maximum Capacity
Node13	Node13	0.1603	390181.707	830808.359	Link Invert to 2D	Maximum Capacity
Node133	Node133	25.1	389140.561	830369.699	Link Invert to 2D	Maximum Capacity
Node134	Node134	23.88	389637.57	829041.964	Link Invert to 2D	Maximum Capacity
Node14	Node14	0.22	390221.859	830886.276	Link Invert to 2D	Maximum Capacity
Node143	Node143	22.464	390527.054	829736.499	Link Invert to 2D	Maximum Capacity
Node144	Node144	21.83	390515.505	829783.568	Link Invert to 2D	Maximum Capacity
Node145	Node145	21.75	390512.138	829795.544	Link Invert to 2D	Maximum Capacity
Node146	Node146	21.435	390502.851	829825.972	Link Invert to 2D	Maximum Capacity
Node147	Node147	20.868	390500.521	829881.384	Link Invert to 2D	Maximum Capacity
Node148	Node148	19.58	390505.475	829963.454	Link Invert to 2D	Maximum Capacity
Node149	Node149	18.333	390495.782	830049.403	Link Invert to 2D	Maximum Capacity
Node15	Node15	-0.077	390239.982	830957.369	Link Invert to 2D	Maximum Capacity
Node150	Node150	36.54	389283.652	829636.661	Link Invert to 2D	Maximum Capacity
Node159	Node159	44.824	389130.157	829523.01	Link Invert to 2D	Maximum Capacity

Node16	Node16	0.274	390259.45	830985.84	Link Invert to 2D	Maximum Capacity
Node160	Node160	36.06	389102.492	829047.246	Link Invert to 2D	Maximum Capacity
Node160.1	Node160.1	30.2	389372.452	829121.34	Link Invert to 2D	Maximum Capacity
Node161	Node161	29.993	389375.219	828939.943	Link Invert to 2D	Maximum Capacity
Node168	Node168	26.837	390627.699	829496.156	Link Invert to 2D	Maximum Capacity
Node17	Node17	0.004	390326.41	830996.417	Link Invert to 2D	Maximum Capacity
Node178	Node178	7.99	390902.335	828787.492	Link Invert to 2D	Maximum Capacity
Node179	Node179	6.76	390994.978	828787.897	Link Invert to 2D	Maximum Capacity
Node18	Node18	-0.134	390404.117	831034.954	Link Invert to 2D	Maximum Capacity
Node180.1	Node180.1	11.988	390658.86	828617.787	Link Invert to 2D	Maximum Capacity
Node180.1.1	Node180.1.1	9.62	390872.05	828749.519	Link Invert to 2D	Maximum Capacity
Node180.1.1.1	Node180.1.1.1	9.34	390874.93	828762.612	Link Invert to 2D	Maximum Capacity
Node186	Node186	-1.28	391651.599	831489.29	Link Invert to 2D	Maximum Capacity
Node187	Node187	-1.34	392050.291	831561.049	Link Invert to 2D	Maximum Capacity
Node19	Node19	-0.12	390461.56	831088.471	Link Invert to 2D	Maximum Capacity
Node192	Node192	1.277	391327.868	828850.408	Link Invert to 2D	Maximum Capacity
Node194	Node194	-0.016	391899.237	828994.355	Link Invert to 2D	Maximum Capacity
Node195	Node195	0.03	392098.433	828889.23	Link Invert to 2D	Maximum Capacity
Node196	Node196	-0.285	392322.117	828895.377	Link Invert to 2D	Maximum Capacity
Node198	Node198	-0.51	392464.001	828796.297	Link Invert to 2D	Maximum Capacity
Node199	Node199	-0.678	393345.847	828972.505	Link Invert to 2D	Maximum Capacity
Node20	Node20	-0.25	390554.347	831108.65	Link Invert to 2D	Maximum Capacity
Node203	Node203	34.96	389000.188	830307.602	Link Invert to 2D	Maximum Capacity
Node206	Node206	18.815	389353.844	830230.372	Link Invert to 2D	Maximum Capacity
Node209	Node209	43.97	389264.177	829584.071	Link Invert to 2D	Maximum Capacity
Node21	Node21	-0.25	390698.628	831102.846	Link Invert to 2D	Maximum Capacity
Node21.1	Node21.1	-0.47	390715.127	831125.017	Link Invert to 2D	Maximum Capacity
Node21.2	Node21.2	-0.34	390707.67	831113.468	Link Invert to 2D	Maximum Capacity
Node22	Node22	5.87	389871.336	830460.858	Link Invert to 2D	Maximum Capacity
Node22.1	Node22.1	4.51	389942.611	830473.624	Link Invert to 2D	Maximum Capacity
Node22.1.1	Node22.1.1	4.45	389989.974	830472.236	Link Invert to 2D	Maximum Capacity
Node22.1.2	Node22.1.2	4.66	389979.511	830473.164	Link Invert to 2D	Maximum Capacity
Node25	Node25	10.19	390598.139	830562.993	Link Invert to 2D	Maximum Capacity
Node25.1	Node25.1	6.17	390655.048	830854.742	Link Invert to 2D	Maximum Capacity
Node25.1.1	Node25.1.1	4.68	390689.475	830965.836	Link Invert to 2D	Maximum Capacity
Node25.1.2	Node25.1.2	6.16	390655.717	830860.108	Link Invert to 2D	Maximum Capacity
Node25.2	Node25.2	8.88	390623.024	830712.798	Link Invert to 2D	Maximum Capacity
Node25.2.1	Node25.2.1	8.83	390624.175	830721.726	Link Invert to 2D	Maximum Capacity
Node25.3	Node25.3	10.33	390599.933	830564.242	Link Invert to 2D	Maximum Capacity
Node26a	Node26a	2.62	390502.824	831320.516	Link Invert to 2D	Maximum Capacity
Node27	Node27	-0.52	390716.358	831175.835	Link Invert to 2D	Maximum Capacity
Node28	Node28	-0.71	390889.117	831200.507	Link Invert to 2D	Maximum Capacity
Node29	Node29	-0.74	390914.635	831201.149	Link Invert to 2D	Maximum Capacity
Node34.1	Node34.1	2.64	390495.833	831326.28	Link Invert to 2D	Maximum Capacity
Node4	Node4	13.19	390117.819	829855.792	Link Invert to 2D	Maximum Capacity
Node4.1	Node4.1	13.473	390139.264	829896.454	Link Invert to 2D	Maximum Capacity
Node40	Node40	23.78	389646.077	829051.292	Link Invert to 2D	Maximum Capacity
Node41	Node41	22.81	389685.814	829091.165	Link Invert to 2D	Maximum Capacity
Node42	Node42	22.311	389711.315	829144.066	Link Invert to 2D	Maximum Capacity
Node43	Node43	21.52	389735.503	829216.797	Link Invert to 2D	Maximum Capacity

Node43.1	Node43.1	20.92	389775.027	829285.21	Link Invert to 2D	Maximum Capacity
Node44	Node44	20.83	389777.726	829290.258	Link Invert to 2D	Maximum Capacity
Node45	Node45	20.551	389801.673	829332.1	Link Invert to 2D	Maximum Capacity
Node46	Node46	19.98	389804.147	829348.198	Link Invert to 2D	Maximum Capacity
Node46.1	Node46.1	18.11	389912.608	829413.981	Link Invert to 2D	Maximum Capacity
Node46.1a	Node46.1a	17.97	389971.566	829476.09	Link Invert to 2D	Maximum Capacity
Node46.1b	Node46.1b	17.9	389995.357	829517.609	Link Invert to 2D	Maximum Capacity
Node46.2	Node46.2	19.84	389814.117	829355.719	Link Invert to 2D	Maximum Capacity
Node47	Node47	17.83	390020.041	829558.612	Link Invert to 2D	Maximum Capacity
Node47.1	Node47.1	16.882	390035.963	829586.499	Link Invert to 2D	Maximum Capacity
Node48	Node48	17.239	390048.943	829610.74	Link Invert to 2D	Maximum Capacity
Node49	Node49	15.25	390108.692	829694.422	Link Invert to 2D	Maximum Capacity
Node49.1	Node49.1	15.08	390096.026	829734.191	Link Invert to 2D	Maximum Capacity
Node49.2	Node49.2	15.19	390096.748	829731.925	Link Invert to 2D	Maximum Capacity
Node5	Node5	11.637	390135.622	829945.409	Link Invert to 2D	Maximum Capacity
Node50	Node50	14.14	390101.888	829797.933	Link Invert to 2D	Maximum Capacity
Node54	Node54	18.287	389254.992	830274.073	Link Invert to 2D	Maximum Capacity
Node55	Node55	17.237	389305.867	830312.606	Link Invert to 2D	Maximum Capacity
Node55.1	Node55.1	16.873	389334.759	830339.766	Link Invert to 2D	Maximum Capacity
Node56	Node56	16.432	389336.173	830354.135	Link Invert to 2D	Maximum Capacity
Node56.1	Node56.1	13.984	389498.551	830378.391	Link Invert to 2D	Maximum Capacity
Node56.2	Node56.2	14.65	389440.835	830364.371	Link Invert to 2D	Maximum Capacity
Node57	Node57	13.733	389505.49	830382.026	Link Invert to 2D	Maximum Capacity
Node57.1	Node57.1	13.652	389520.745	830390.58	Link Invert to 2D	Maximum Capacity
Node58	Node58	13.027	389562.004	830419.89	Link Invert to 2D	Maximum Capacity
Node59	Node59	12.015	389598.735	830459.228	Link Invert to 2D	Maximum Capacity
Node59.1	Node59.1	11.17	389663.227	830471.068	Link Invert to 2D	Maximum Capacity
Node6	Node6	10.849	390122.582	830049.539	Link Invert to 2D	Maximum Capacity
Node6.1	Node6.1	8.103	390047.33	830160.953	Link Invert to 2D	Maximum Capacity
Node6.2	Node6.2	8.575	390105.058	830116.041	Link Invert to 2D	Maximum Capacity
Node60	Node60	10.83	389670.982	830472.569	Link Invert to 2D	Maximum Capacity
Node61	Node61	9.04	389759.707	830461.047	Link Invert to 2D	Maximum Capacity
Node72	Node72	19.051	389321.668	828257.5	Link Invert to 2D	Maximum Capacity
Node73	Node73	17.146	389541.656	828505.942	Link Invert to 2D	Maximum Capacity
Node73.1	Node73.1	15.994	389673.745	828527.036	Link Invert to 2D	Maximum Capacity
Node74	Node74	12.039	389987.849	828799.277	Link Invert to 2D	Maximum Capacity
Node74.1	Node74.1	9.83	390068.106	828844.096	Link Invert to 2D	Maximum Capacity
Node74.2	Node74.2	11.6	390066.018	828829.077	Link Invert to 2D	Maximum Capacity
Node75	Node75	10.198	390227.444	828871.677	Link Invert to 2D	Maximum Capacity
Node76	Node76	9.055	390403.128	828968.39	Link Invert to 2D	Maximum Capacity
Node77	Node77	8.3	390574.816	829048.966	Link Invert to 2D	Maximum Capacity
Node78	Node78	7.11	390683.738	829036.302	Link Invert to 2D	Maximum Capacity
Node78.1	Node78.1	7.11	390765.2	829001.294	Link Invert to 2D	Maximum Capacity
Node78.2	Node78.2	6.35	390716.455	828981.236	Link Invert to 2D	Maximum Capacity
Node79	Node79	6.315	390831.54	829107.537	Link Invert to 2D	Maximum Capacity
Node8	Node8	4.59	389998.384	830343.08	Link Invert to 2D	Maximum Capacity
Node8.1	Node8.1	4.56	390001.515	830399.956	Link Invert to 2D	Maximum Capacity
Node8.1.1	Node8.1.1	4.46	390006.175	830444.532	Link Invert to 2D	Maximum Capacity
Node8.1.1.1	Node8.1.1.1	4.32	390007.196	830447.784	Link Invert to 2D	Maximum Capacity
Node80	Node80	5.19	390900.4	829099.932	Link Invert to 2D	Maximum Capacity

Node82	Node82	34.8	389292.649	829664.986	Link Invert to 2D	Maximum Capacity
Node82.1	Node82.1	26.368	389394.601	829844.178	Link Invert to 2D	Maximum Capacity
Node82.2	Node82.2	28.994	389300.418	829784.319	Link Invert to 2D	Maximum Capacity
Node83	Node83	19.441	389602.462	829896.157	Link Invert to 2D	Maximum Capacity
Node84	Node84	18.293	389662.074	829961.1	Link Invert to 2D	Maximum Capacity
Node85	Node85	16.371	389722.053	830083.34	Link Invert to 2D	Maximum Capacity
Node85.1	Node85.1	14.81	389740.551	830127.262	Link Invert to 2D	Maximum Capacity
Node85.1.1	Node85.1.1	14.78	389756.101	830144.817	Link Invert to 2D	Maximum Capacity
Node86	Node86	14.23	389773.508	830180.966	Link Invert to 2D	Maximum Capacity
Node87	Node87	11.74	389813.454	830214.091	Link Invert to 2D	Maximum Capacity
Node88	Node88	9.86	389902.906	830232.576	Link Invert to 2D	Maximum Capacity
Node89	Node89	24.86	389148.187	830372.404	Link Invert to 2D	Maximum Capacity
Node9	Node9	3.99	390003.36	830473.919	Link Invert to 2D	Maximum Capacity
Node90	Node90	23.846	389182.093	830362.075	Link Invert to 2D	Maximum Capacity
Node91	Node91	18.818	389296.699	830347.944	Link Invert to 2D	Maximum Capacity
Node95	Node95	20.91	389744.113	829324.369	Link Invert to 2D	Maximum Capacity
Node95.1	Node95.1	20.22	389774.744	829342.565	Link Invert to 2D	Maximum Capacity
Node95.1a	Node95.1a	20.22	389778.418	829339.137	Link Invert to 2D	Maximum Capacity
Node96	Node96	25.06	389546.04	829197.565	Link Invert to 2D	Maximum Capacity
Node97	Node97	24.98	389560.25	829192.891	Link Invert to 2D	Maximum Capacity
Node97.1	Node97.1	22.531	389638.956	829276.626	Link Invert to 2D	Maximum Capacity
Orewa C2	Orewa C2	15.32	388430.922	830585.273	Link Invert to 2D	Maximum Capacity
Orewa Contri1	Orewa Contri1	15.86	388263.823	830565.82	Link Invert to 2D	Maximum Capacity
Orewa Contri2	Orewa Contri2	15.59	388350.139	830585.522	Link Invert to 2D	Maximum Capacity
Orewa Contri3	Orewa Contri3	14.77	388565.501	830677.966	Link Invert to 2D	Maximum Capacity
Orewa_C3	Orewa_C3	13.69	388756.013	830932.835	Link Invert to 2D	Maximum Capacity
Orewa_Contri4	Orewa_Contri4	11.7	389083.635	831225.761	Link Invert to 2D	Maximum Capacity
Orewa_Contri5	Orewa_Contri5	8.908	389660.232	831548.956	Link Invert to 2D	Maximum Capacity
Orewa_Contri6	Orewa_Contri6	5.13	390146.566	831642.474	Link Invert to 2D	Maximum Capacity
Orewa_Contri7	Orewa_Contri7	3.57	390377.523	831407.877	Link Invert to 2D	Maximum Capacity
Orewa_Contri8	Orewa_Contri8	-0.2	390626.424	831271.403	Link Invert to 2D	Maximum Capacity
Orewa_Contri9	Orewa_Contri9	4.09	390285.039	831507.218	Link Invert to 2D	Maximum Capacity
Weiti_C1	Weiti_C1	14.769	389753.249	828662.428	Link Invert to 2D	Maximum Capacity
Weiti_Contri	Weiti_Contri	19.113	389346.741	828164.723	Link Invert to 2D	Maximum Capacity
Weiti_Contri2	Weiti_Contri2	22.926	389616.84	828218.568	Link Invert to 2D	Maximum Capacity
Weiti_Contri3	Weiti_Contri3	13.72	389850.037	828720.837	Link Invert to 2D	Maximum Capacity
Weiti_Contri4	Weiti_Contri4	17.257	390276.888	828808.223	Link Invert to 2D	Maximum Capacity
Weiti_Contri5	Weiti_Contri5	9.439	390449.796	828990.714	Link Invert to 2D	Maximum Capacity
Weiti_Contri6	Weiti_Contri6	15.517	390632.979	828920.551	Link Invert to 2D	Maximum Capacity
Weiti_Contri7	Weiti_Contri7	6.2	390866.521	829103.717	Link Invert to 2D	Maximum Capacity
Weiti_Contri8	Weiti_Contri8	1.419	391273.799	828775.679	Link Invert to 2D	Maximum Capacity
Weiti_Contri8.1	Weiti_Contri8.1	0.647	391594.469	828893	Link Invert to 2D	Maximum Capacity
Weiti_Contri9	Weiti_Contri9	15.232	390539.344	828354.986	Link Invert to 2D	Maximum Capacity
Weiti_Contri9.1	Weiti_Contri9.1	-0.64	392841.08	828814.576	Link Invert to 2D	Maximum Capacity
Weiti_Contri9.2	Weiti_Contri9.2	-0.78	393176.511	829015.146	Link Invert to 2D	Maximum Capacity
Weiti_Silverdale	Weiti_Silverdale	4.656	391146.039	828521.651	Link Invert to 2D	Maximum Capacity

XP STORM OUTPUTS -CHANNEL MANNINGS COEFFICENTS (SCENARIO 2)

Name	Main Channel Manning's n	Left Overbank Manning's n	Right Overbank Manning's n
Bridge_MWAY_SHP	0.06	0.08	0.08
Link101.1.1_SHP	0.06	0.08	0.08
Link101.1.2_SHP	0.06	0.08	0.08
Link101.2_SHP	0.06	0.08	0.08
Link101_SHP	0.06	0.08	0.08
Link103_SHP	0.06	0.08	0.08
Link10_SHP	0.06	0.08	0.08
Link110_SHP	0.06	0.08	0.08
Link112_SHP	0.06	0.08	0.08
Link114_SHP	0.06	0.08	0.08
Link115_SHP	0.06	0.08	0.08
Link116_SHP	0.06	0.08	0.08
Link117_SHP	0.06	0.08	0.08
Link118_SHP	0.06	0.08	0.08
Link11_SHP	0.06	0.08	0.08
Link12_SHP	0.06	0.08	0.08
Link135_SHP	0.06	0.08	0.08
Link137_SHP	0.06	0.08	0.08
Link138_SHP	0.06	0.08	0.08
Link139_SHP	0.06	0.08	0.08
Link140_SHP	0.06	0.08	0.08
Link141_SHP	0.06	0.08	0.08
Link14_SHP	0.06	0.08	0.08
Link150_SHP	0.06	0.08	0.08
Link156_SHP	0.06	0.08	0.08
Link157_SHP	0.06	0.08	0.08
Link15_SHP	0.06	0.08	0.08
Link160_SHP	0.06	0.08	0.08
Link161_SHP	0.06	0.08	0.08
Link16_SHP	0.06	0.08	0.08
Link172.1.1.1_SHP	0.06	0.08	0.08
Link172.1_SHP	0.06	0.08	0.08
Link172_SHP	0.06	0.08	0.08
Link175.1_SHP	0.06	0.08	0.08
Link175_SHP	0.06	0.08	0.08
Link176_SHP	0.06	0.08	0.08
Link177.1_SHP	0.06	0.08	0.08
Link177_SHP	0.06	0.08	0.08
Link178.1_SHP	0.06	0.08	0.08
Link178_SHP	0.06	0.08	0.08
Link17_SHP	0.06	0.08	0.08
Link182_SHP	0.06	0.08	0.08
Link183_SHP	0.06	0.08	0.08
Link184_SHP	0.06	0.08	0.08
Link185_SHP	0.06	0.08	0.08
Link186_SHP	0.06	0.08	0.08

Link187_SHP	0.06	0.08	0.08
Link188_SHP	0.06	0.08	0.08
Link189_SHP	0.06	0.08	0.08
Link18_SHP	0.06	0.08	0.08
Link190_SHP	0.06	0.08	0.08
Link191.1_SHP	0.06	0.08	0.08
Link191_SHP	0.06	0.08	0.08
Link192_SHP	0.06	0.08	0.08
Link193_SHP	0.06	0.08	0.08
Link19a.1_SHP	0.06	0.08	0.08
Link19a_SHP	0.06	0.08	0.08
Link2.1_SHP	0.06	0.08	0.08
Link20.1_SHP	0.06	0.08	0.08
Link200_SHP	0.06	0.08	0.08
Link203_SHP	0.06	0.08	0.08
Link207_SHP	0.06	0.08	0.08
Link20_SHP	0.06	0.08	0.08
Link21_SHP	0.06	0.08	0.08
Link23.1.1_SHP	0.06	0.08	0.08
Link23.1_SHP	0.06	0.08	0.08
Link23.2.1_SHP	0.06	0.08	0.08
Link23.3_SHP	0.06	0.08	0.08
Link23_SHP	0.06	0.08	0.08
Link25_SHP	0.06	0.08	0.08
Link2_SHP	0.06	0.08	0.08
Link31.1_SHP	0.06	0.08	0.08
Link31.2_SHP	0.06	0.08	0.08
Link31.3_SHP	0.06	0.08	0.08
Link31.4_SHP	0.06	0.08	0.08
Link31_SHP	0.06	0.08	0.08
Link32.1_SHP	0.06	0.08	0.08
Link32_SHP	0.06	0.08	0.08
Link33a_SHP	0.06	0.08	0.08
Link33b_SHP	0.06	0.08	0.08
Link33c_SHP	0.06	0.08	0.08
Link39_SHP	0.06	0.08	0.08
Link3_SHP	0.06	0.08	0.08
Link4.1_SHP	0.06	0.08	0.08
Link4.2_SHP	0.06	0.08	0.08
Link40_SHP	0.06	0.08	0.08
Link41_SHP	0.06	0.08	0.08
Link42_SHP	0.06	0.08	0.08
Link43_SHP	0.06	0.08	0.08
Link44_SHP	0.06	0.08	0.08
Link45.1.1.1_SHP	0.06	0.08	0.08
Link45.1.1_SHP	0.06	0.08	0.08
Link45.1_SHP	0.06	0.08	0.08
Link45.2_SHP	0.06	0.08	0.08
Link46.1_SHP	0.06	0.08	0.08
Link46_SHP	0.06	0.08	0.08

Link47_SHP	0.06	0.08	0.08
Link48.1_SHP	0.06	0.08	0.08
Link48_SHP	0.06	0.08	0.08
Link49_SHP	0.06	0.08	0.08
Link4_SHP	0.06	0.08	0.08
Link50.1_SHP	0.06	0.08	0.08
Link51_SHP	0.06	0.08	0.08
Link53_SHP	0.06	0.08	0.08
Link54.1_SHP	0.06	0.08	0.08
Link54_SHP	0.06	0.08	0.08
Link55.1_SHP	0.06	0.08	0.08
Link55_SHP	0.06	0.08	0.08
Link56.1_SHP	0.06	0.08	0.08
Link56_SHP	0.06	0.08	0.08
Link57_SHP	0.06	0.08	0.08
Link58_SHP	0.06	0.08	0.08
Link59_SHP	0.06	0.08	0.08
Link5_SHP	0.06	0.08	0.08
Link6.1.1.1_SHP	0.06	0.08	0.08
Link6.1_SHP	0.06	0.08	0.08
Link60_SHP	0.06	0.08	0.08
Link65_SHP	0.06	0.08	0.08
Link66.1.1_SHP	0.06	0.08	0.08
Link66.1_SHP	0.06	0.08	0.08
Link66.2_SHP	0.06	0.08	0.08
Link66_SHP	0.06	0.08	0.08
Link67.1_SHP	0.06	0.08	0.08
Link67_SHP	0.06	0.08	0.08
Link68_SHP	0.06	0.08	0.08
Link69.1_SHP	0.06	0.08	0.08
Link69_SHP	0.06	0.08	0.08
Link70_SHP	0.06	0.08	0.08
Link71.1_SHP	0.06	0.08	0.08
Link71.2_SHP	0.06	0.08	0.08
Link71_SHP	0.06	0.08	0.08
Link72.1_SHP	0.06	0.08	0.08
Link72_SHP	0.06	0.08	0.08
Link74.1_SHP	0.06	0.08	0.08
Link74.2_SHP	0.06	0.08	0.08
Link74_SHP	0.06	0.08	0.08
Link75_SHP	0.06	0.08	0.08
Link76_SHP	0.06	0.08	0.08
Link77.1.1_SHP	0.06	0.08	0.08
Link77_SHP	0.06	0.08	0.08
Link78_SHP	0.06	0.08	0.08
Link79_SHP	0.06	0.08	0.08
Link7_SHP	0.06	0.08	0.08
Link81_SHP	0.06	0.08	0.08
Link82_SHP	0.06	0.08	0.08
Link83_SHP	0.06	0.08	0.08

Link87.1a_SHP	0.06	0.08	0.08
Link87_SHP	0.06	0.08	0.08
Link89.1_SHP	0.06	0.08	0.08
Link89_SHP	0.06	0.08	0.08
Link92.1.1_SHP	0.06	0.08	0.08
Link92_SHP	0.06	0.08	0.08
Link94_SHP	0.06	0.08	0.08
Link95_SHP	0.06	0.08	0.08
Link9_SHP	0.06	0.08	0.08
Orewa_SHP	0.06	0.08	0.08

XP STORM OUTPUTS - RAIN + INFILTRATION (SCENARIO 2)

Name	Node Name	Catchment Number	Routing Method	Time of Concentration (or Parameter 2) min	Curve Number	Initial Abstraction Method	Initial Abstraction Depth mm
Highgate	User Inflow Hydrograph						
Millwater1	Millwater1	1	SCS Hydrology	42.865	74	Depth	5
Millwater1		2	SCS Hydrology	19.619	98	Depth	1
Millwater2	Millwater2	1	SCS Hydrology	17.559	74	Depth	5
Millwater2		2	SCS Hydrology	10	98	Depth	1
Millwater3	Millwater3	1	SCS Hydrology	25.389	74	Depth	5
Millwater3		2	SCS Hydrology	11.62	98	Depth	1
Millwater4	Millwater4	1	SCS Hydrology	18.281	74	Depth	5
Millwater4		2	SCS Hydrology	10	98	Depth	1
Node105.1	Node105.1	1	SCS Hydrology	11.355	74	Depth	5
Node105.1		2	SCS Hydrology	10	98	Depth	1
Node108	Node108	1	SCS Hydrology	11.325	74	Depth	5
Node108		2	SCS Hydrology	10	98	Depth	1
Node109	Node109	1	SCS Hydrology	19.587	74	Depth	5
Node109		2	SCS Hydrology	10	98	Depth	1
Node109.1.1	Node109.1.1	1	SCS Hydrology	16.97	74	Depth	5
Node109.1.1		2	SCS Hydrology	10	98	Depth	1
Node126	Node126	1	SCS Hydrology	12.384	74	Depth	5
Node126		2	SCS Hydrology	10	98	Depth	1
Node13	Node13	1	SCS Hydrology	15.445	74	Depth	5
Node13		2	SCS Hydrology	10	98	Depth	1
Node143	Node143	1	SCS Hydrology	21.122	74	Depth	5
Node143		2	SCS Hydrology	10	98	Depth	1
Node159	Node159	1	SCS Hydrology	10	74	Depth	5
Node159		2	SCS Hydrology	10	98	Depth	1
Node16	Node16	1	SCS Hydrology	22.993	74	Depth	5
Node16		2	SCS Hydrology	10.524	98	Depth	1
Node160	Node160	1	SCS Hydrology	15.447	74	Depth	5
Node160		2	SCS Hydrology	10	98	Depth	1
Node161	Node161	1	SCS Hydrology	13.566	74	Depth	5
Node161		2	SCS Hydrology	10	98	Depth	1
Node168	Node168	1	SCS Hydrology	19.595	74	Depth	5
Node168		2	SCS Hydrology	10	98	Depth	1
Node186	Node186	1	SCS Hydrology	10	74	Depth	5
Node186		2	SCS Hydrology	10	98	Depth	1
Node203	Node203	1	SCS Hydrology	10	74	Depth	5
Node203		2	SCS Hydrology	10	98	Depth	1
Node206	Node206	1	SCS Hydrology	12.567	74	Depth	5
Node206		2	SCS Hydrology	10	98	Depth	1
Node22	Node22	1	SCS Hydrology	12.812	74	Depth	5
Node22		2	SCS Hydrology	10	98	Depth	1
Node25.1	Node25.1	1	SCS Hydrology	23.294	74	Depth	5
Node25.1		2	SCS Hydrology	10.662	98	Depth	1
Node28	Node28	1	SCS Hydrology	15.755	74	Depth	5
Node28		2	SCS Hydrology	10	98	Depth	1
Node4	Node4	1	SCS Hydrology	11.009	74	Depth	5
Node4		2	SCS Hydrology	10	98	Depth	1
Node4.1	Node4.1	1	SCS Hydrology	13.243	74	Depth	5
Node4.1		2	SCS Hydrology	10	98	Depth	1
Node42	Node42	1	SCS Hydrology	12.908	74	Depth	5
Node42		2	SCS Hydrology	10	98	Depth	1
Node46.1	Node46.1	1	SCS Hydrology	17.313	74	Depth	5
Node46.1		2	SCS Hydrology	10	98	Depth	1
Node46.1a	Node46.1a	1	SCS Hydrology	15.9	74	Depth	5
Node46.1a		2	SCS Hydrology	10	98	Depth	1
Node46.1b	Node46.1b	1	SCS Hydrology	16.496	74	Depth	5
Node46.1b		2	SCS Hydrology	10	98	Depth	1
Node47	Node47	1	SCS Hydrology	13.589	74	Depth	5
Node47		2	SCS Hydrology	10	98	Depth	1
Node47.1	Node47.1	1	SCS Hydrology	16.08	74	Depth	5
Node47.1		2	SCS Hydrology	10	98	Depth	1
Node48	Node48	1	SCS Hydrology	14.181	74	Depth	5
Node48		2	SCS Hydrology	10	98	Depth	1
Node49	Node49	1	SCS Hydrology	12.591	74	Depth	5
Node49		2	SCS Hydrology	10	98	Depth	1
Node50	Node50	1	SCS Hydrology	15.255	74	Depth	5
Node50		2	SCS Hydrology	10	98	Depth	1
Node54	Node54	1	SCS Hydrology	14.956	74	Depth	5
Node54		2	SCS Hydrology	10	98	Depth	1

Node56	Node56	1	SCS Hydrology	11.042	74	Depth	5
Node56		2	SCS Hydrology	10	98	Depth	1
Node56.1	Node56.1	1	SCS Hydrology	11.568	74	Depth	5
Node56.1		2	SCS Hydrology	10	98	Depth	1
Node58	Node58	1	SCS Hydrology	11.042	74	Depth	5
Node58		2	SCS Hydrology	10	98	Depth	1
Node59	Node59	1	SCS Hydrology	10.746	74	Depth	5
Node59		2	SCS Hydrology	10	98	Depth	1
Node59.1	Node59.1	1	SCS Hydrology	11.944	74	Depth	5
Node59.1		2	SCS Hydrology	10	98	Depth	1
Node6	Node6	1	SCS Hydrology	10	74	Depth	5
Node6		2	SCS Hydrology	10	98	Depth	1
Node6.1	Node6.1	1	SCS Hydrology	10	74	Depth	5
Node6.1		2	SCS Hydrology	10	98	Depth	1
Node61	Node61	1	SCS Hydrology	14.741	74	Depth	5
Node61		2	SCS Hydrology	10	98	Depth	1
Node73	Node73	1	SCS Hydrology	23.018	74	Depth	5
Node73		2	SCS Hydrology	10.535	98	Depth	1
Node74	Node74	1	SCS Hydrology	10	74	Depth	5
Node74		2	SCS Hydrology	10	98	Depth	1
Node75	Node75	1	SCS Hydrology	10.569	74	Depth	5
Node75		2	SCS Hydrology	10	98	Depth	1
Node76	Node76	1	SCS Hydrology	11.38	74	Depth	5
Node76		2	SCS Hydrology	10	98	Depth	1
Node77	Node77	1	SCS Hydrology	10.84	74	Depth	5
Node77		2	SCS Hydrology	10	98	Depth	1
Node78	Node78	1	SCS Hydrology	15.165	74	Depth	5
Node78		2	SCS Hydrology	10	98	Depth	1
Node8	Node8	1	SCS Hydrology	10	74	Depth	5
Node8		2	SCS Hydrology	10	98	Depth	1
Node8.1	Node8.1	1	SCS Hydrology	16.268	74	Depth	5
Node8.1		2	SCS Hydrology	10	98	Depth	1
Node80	Node80	1	SCS Hydrology	15.621	74	Depth	5
Node80		2	SCS Hydrology	10	98	Depth	1
Node83	Node83	1	SCS Hydrology	20.685	74	Depth	5
Node83		2	SCS Hydrology	10	98	Depth	1
Node85.1	Node85.1	1	SCS Hydrology	10.159	74	Depth	5
Node85.1		2	SCS Hydrology	10	98	Depth	1
Node86	Node86	1	SCS Hydrology	13.141	74	Depth	5
Node86		2	SCS Hydrology	10	98	Depth	1
Node95	Node95	1	SCS Hydrology	12.718	74	Depth	5
Node95		2	SCS Hydrology	10	98	Depth	1
Node97.1	Node97.1	1	SCS Hydrology	17.157	74	Depth	5
Node97.1		2	SCS Hydrology	10	98	Depth	1
Orewa Contri1	Orewa Contri1	1	SCS Hydrology	54.785	74	Depth	5
Orewa Contri1		2	SCS Hydrology	25.075	98	Depth	1
Orewa Contri2	Orewa Contri2	1	SCS Hydrology	35.78	74	Depth	5
Orewa Contri2		2	SCS Hydrology	16.376	98	Depth	1
Orewa Contri3	Orewa Contri3	1	SCS Hydrology	24.612	74	Depth	5
Orewa Contri3		2	SCS Hydrology	11.265	98	Depth	1
Orewa_Contri4	Orewa_Contri4	1	SCS Hydrology	46.57	74	Depth	5
Orewa_Contri4		2	SCS Hydrology	21.315	98	Depth	1
Orewa_Contri5	Orewa_Contri5	1	SCS Hydrology	21.05	74	Depth	5
Orewa_Contri5		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri6	Orewa_Contri6	1	SCS Hydrology	10	74	Depth	5
Orewa_Contri6		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri7	Orewa_Contri7	1	SCS Hydrology	11.532	74	Depth	5
Orewa_Contri7		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri8	Orewa_Contri8	1	SCS Hydrology	10	74	Depth	5
Orewa_Contri8		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri9	Orewa_Contri9	1	SCS Hydrology	46.54	74	Depth	5
Orewa_Contri9		2	SCS Hydrology	21.302	98	Depth	1
Weiti_Contri	Weiti_Contri	1	SCS Hydrology	110.085	74	Depth	5
Weiti_Contri		2	SCS Hydrology	50.386	98	Depth	1
Weiti_Contri2	Weiti_Contri2	1	SCS Hydrology	40.504	74	Depth	5
Weiti_Contri2		2	SCS Hydrology	18.539	98	Depth	1
Weiti_Contri3	Weiti_Contri3	1	SCS Hydrology	14.794	74	Depth	5
Weiti_Contri3		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri4	Weiti_Contri4	1	SCS Hydrology	17.778	74	Depth	5
Weiti_Contri4		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri5	Weiti_Contri5	1	SCS Hydrology	19.417	74	Depth	5
Weiti_Contri5		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri6	Weiti_Contri6	1	SCS Hydrology	11.656	74	Depth	5
Weiti_Contri6		2	SCS Hydrology	10	98	Depth	1

Weiti_Contri7	Weiti_Contri7	1	SCS Hydrology	20.511	74	Depth	5
Weiti_Contri7		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri8	Weiti_Contri8	1	SCS Hydrology	11.5	74	Depth	5
Weiti_Contri8		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri8.1	Weiti_Contri8.1	1	SCS Hydrology	18.21	74	Depth	5
Weiti_Contri8.1		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri9	Weiti_Contri9	1	SCS Hydrology	58.199	74	Depth	5
Weiti_Contri9		2	SCS Hydrology	26.638	98	Depth	1
Weiti_Contri9.1	Weiti_Contri9.1	1	SCS Hydrology	40.85	74	Depth	5
Weiti_Contri9.1		2	SCS Hydrology	18.697	98	Depth	1
Weiti_Contri9.2	Weiti_Contri9.2	1	SCS Hydrology	17.067	74	Depth	5
Weiti_Contri9.2		2	SCS Hydrology	10	98	Depth	1
Weiti_Silverdale	Weiti_Silverdale	1	SCS Hydrology	95.448	74	Depth	5
Weiti_Silverdale		2	SCS Hydrology	43.686	98	Depth	1

SCENARIO 3 – ED

100YR EXISTING RAINFALL

XP STORM OUTPUTS - SUBCATCHMENT RESULTS (SCENARIO 3)

Name	Subcatchment	Area ha	Impervious Percentage %	Catchment Max Flow cms	Max Flow cms
Millwater1	1	32.805	0	5.633	22.976
Millwater1	2	60.924	100	18.968	
Millwater2	1	4.299	0	1.096	4.071
Millwater2	2	7.983	100	3.088	
Millwater3	1	9.505	0	2.083	8.206
Millwater3	2	17.651	100	6.571	
Millwater4	1	4.177	0	1.049	3.926
Millwater4	2	7.757	100	3.001	
Node105.1	1	11.511	0	3.407	3.639
Node105.1	2	0.606	100	0.234	
Node108	1	4.41	0	1.306	1.395
Node108	2	0.232	100	0.09	
Node109	1	58.441	0	14.279	15.127
Node109	2	3.076	100	1.19	
Node109.1.1	1	6.047	0	1.562	1.664
Node109.1.1	2	0.318	100	0.123	
Node126	1	17.658	0	5.082	5.433
Node126	2	0.929	100	0.359	
Node13	1	18.116	0	4.846	5.177
Node13	2	0.954	100	0.369	
Node143	1	10.118	0	2.397	2.531
Node143	2	0.533	100	0.206	
Node159	1	5.193	0	1.589	1.694
Node159	2	0.273	100	0.106	
Node16	1	32.462	0	7.422	7.82
Node16	2	1.709	100	0.652	
Node160	1	49.426	0	13.221	14.123
Node160	2	2.601	100	1.006	
Node161	1	25.067	0	7.017	7.504
Node161	2	1.319	100	0.51	
Node168	1	7.632	0	1.864	1.975
Node168	2	0.402	100	0.156	
Node186	1	18.393	0	5.627	6.001
Node186	2	0.968	100	0.374	
Node203	1	7.43	0	2.273	2.424
Node203	2	0.391	100	0.151	
Node206	1	6.346	0	1.82	1.943
Node206	2	0.334	100	0.129	
Node22	1	3.902	0	1.113	1.188
Node22	2	0.205	100	0.079	
Node25.1	1	30.495	0	6.931	7.307
Node25.1	2	1.605	100	0.61	
Node28	1	9.915	0	2.63	2.812
Node28	2	0.522	100	0.202	
Node4	1	3.285	0	0.98	1.047
Node4	2	0.173	100	0.067	

Node4.1	1	4.636	0	1.309	1.399
Node4.1	2	0.244	100	0.094	
Node42	1	9.499	0	2.703	2.888
Node42	2	0.5	100	0.193	
Node46.1	1	5.799	0	1.486	1.584
Node46.1	2	0.305	100	0.118	
Node46.1a	1	9.122	0	2.413	2.577
Node46.1a	2	0.48	100	0.186	
Node46.1b	1	4.058	0	1.06	1.129
Node46.1b	2	0.214	100	0.083	
Node47	1	10.119	0	2.831	3.028
Node47	2	0.533	100	0.206	
Node47.1	1	3.962	0	1.044	1.114
Node47.1	2	0.208	100	0.08	
Node48	1	4.98	0	1.372	1.467
Node48	2	0.262	100	0.101	
Node49	1	4.207	0	1.206	1.287
Node49	2	0.221	100	0.085	
Node50	1	5.257	0	1.413	1.509
Node50	2	0.277	100	0.107	
Node54	1	4.088	0	1.107	1.182
Node54	2	0.215	100	0.083	
Node56	1	3.869	0	1.154	1.232
Node56	2	0.204	100	0.079	
Node56.1	1	3.459	0	1.018	1.088
Node56.1	2	0.182	100	0.07	
Node58	1	2.91	0	0.868	0.926
Node58	2	0.153	100	0.059	
Node59	1	1.833	0	0.55	0.587
Node59	2	0.097	100	0.038	
Node59.1	1	4.17	0	1.215	1.299
Node59.1	2	0.22	100	0.085	
Node6	1	3.269	0	1	1.067
Node6	2	0.172	100	0.067	
Node6.1	1	3.36	0	1.028	1.096
Node6.1	2	0.177	100	0.068	
Node61	1	3.651	0	0.994	1.06
Node61	2	0.192	100	0.074	
Node73	1	18.072	0	4.13	4.351
Node73	2	0.951	100	0.363	
Node74	1	5.165	0	1.58	1.685
Node74	2	0.272	100	0.105	
Node75	1	4.189	0	1.262	1.346
Node75	2	0.221	100	0.085	
Node76	1	3.913	0	1.158	1.236
Node76	2	0.206	100	0.08	
Node77	1	4.05	0	1.213	1.295
Node77	2	0.213	100	0.082	
Node78	1	6.417	0	1.729	1.846
Node78	2	0.338	100	0.131	

Node8	1	3.707	0	1.134	1.21
Node8	2	0.195	100	0.075	
Node8.1	1	4.251	0	1.116	1.189
Node8.1	2	0.224	100	0.087	
Node80	1	5.414	0	1.442	1.54
Node80	2	0.285	100	0.11	
Node83	1	16.098	0	3.845	4.066
Node83	2	0.847	100	0.328	
Node85.1	1	3.027	0	0.922	0.983
Node85.1	2	0.159	100	0.062	
Node86	1	5.451	0	1.543	1.648
Node86	2	0.287	100	0.111	
Node95	1	3.801	0	1.086	1.16
Node95	2	0.2	100	0.077	
Node97.1	1	4.164	0	1.071	1.141
Node97.1	2	0.219	100	0.085	
Orewa Contri1	1	480.257	0	72.703	76.408
Orewa Contri1	2	25.277	100	7.129	
Orewa Contri2	1	68.959	0	12.93	13.611
Orewa Contri2	2	3.629	100	1.209	
Orewa Contri3	1	55.458	0	12.315	12.976
Orewa Contri3	2	2.919	100	1.095	
Orewa_Contri4	1	185.289	0	30.519	32.093
Orewa_Contri4	2	9.752	100	2.939	
Orewa_Contri5	1	24.418	0	5.793	6.118
Orewa_Contri5	2	1.285	100	0.497	
Orewa_Contri6	1	12.752	0	3.901	4.161
Orewa_Contri6	2	0.671	100	0.26	
Orewa_Contri7	1	9.502	0	2.8	2.991
Orewa_Contri7	2	0.5	100	0.193	
Orewa_Contri8	1	6.902	0	2.112	2.252
Orewa_Contri8	2	0.363	100	0.14	
Orewa_Contri9	1	79.566	0	13.11	13.786
Orewa_Contri9	2	4.188	100	1.262	
Weiti_Contri	1	678.769	0	69.815	73.252
Weiti_Contri	2	35.725	100	7.28	
Weiti_Contri2	1	50.344	0	8.889	9.352
Weiti_Contri2	2	2.65	100	0.844	
Weiti_Contri3	1	8.18	0	2.224	2.373
Weiti_Contri3	2	0.43	100	0.166	
Weiti_Contri4	1	10.257	0	2.603	2.769
Weiti_Contri4	2	0.54	100	0.209	
Weiti_Contri5	1	6.967	0	1.708	1.811
Weiti_Contri5	2	0.367	100	0.142	
Weiti_Contri6	1	3.806	0	1.118	1.194
Weiti_Contri6	2	0.2	100	0.077	
Weiti_Contri7	1	8.027	0	1.923	2.035
Weiti_Contri7	2	0.422	100	0.163	
Weiti_Contri8	1	43.618	0	12.863	13.742
Weiti_Contri8	2	2.296	100	0.888	

Weiti_Contri8.1	1	53.786	0	13.529	16.629
Weiti_Contri8.1	2	9.791	100	3.787	
Weiti_Contri9	1	153.161	0	22.449	23.587
Weiti_Contri9	2	8.061	100	2.216	
Weiti_Contri9.1	1	53.116	0	9.341	26.967
Weiti_Contri9.1	2	63.623	100	20.2	
Weiti_Contri9.2	1	36.459	0	9.399	15.057
Weiti_Contri9.2	2	16.152	100	6.248	
Weiti_Silverdale	1	417.491	0	46.568	48.878
Weiti_Silverdale	2	21.973	100	4.809	

XP STORM OUTPUTS - BASIC CONDUIT DATA (SCENARIO 3)

Name	Link Name	Length m	Shape	Diameter (Height) m	Downstream Invert Elevation m	Upstream Invert Elevation m
1	Culv_Link23.2_Multi	7.44	Circular	0.7	9.54	9.74
2	Culv_Link23.2_Multi	7.44	Circular	0.7	8.83	8.92
3	Culv_Link23.2_Multi	7.44	Circular	0.7	8.88	8.88
Bridge_KowhaiRd	Bridge_KowhaiRd	9.06	Natural	0	2.62	2.64
Bridge_KowhaiRd#w	Bridge_KowhaiRd					
Bridge_Lysnar	Bridge_Lysnar	3.41	Natural	0	4.32	4.46
Bridge_Lysnar#w	Bridge_Lysnar					
Bridge_MWAY	Bridge_MWAY	25.53	Natural	0	-0.74	-0.71
Bridge_WainuiRd	Bridge_WainuiRd	13.75	Natural	0	-0.47	-0.34
Bridge_WainuiRd#w	Bridge_WainuiRd					
Bridge_Weiti	Bridge_Weiti	15.16	Natural	0	9.83	11.6
Bridge_Weiti#w	Bridge_Weiti					
CUL_NZTA	CUL_NZTA	98.3	Circular	4.5	4.74	5.19
Culv_EX1500d	Culv_EX1500d	14.96	Circular	1.5	24.98	25.06
Culv_Ex1800	Culv_Ex1800	7.83	Circular	1.8	13.733	13.984
Culv_Link23.1	Culv_Link23.1	5.45	User Defined	1.75	6.16	6.17
Culv_LK101.1	Culv_LK101.1	20.01	Circular	1.5	22.77	22.85
Culv_LK113	Culv_LK113	5.15	Circular	0.6	17.24	17.39
Culv_LK125	Culv_LK125	8.09	Circular	0.4	24.86	25.1
Culv_LK126	Culv_LK126	12.62	Circular	0.9	23.78	23.88
Culv_LK136	Culv_LK136	12.44	Circular	0.9	21.75	21.83
Culv_Lk143	Culv_Lk143	29.72	Circular	0.6	34.8	36.54
Culv_Lk171	Culv_Lk171	92.64	Circular	2.55	6.76	7.99
Culv_Lk172	Culv_Lk172	13.41	Rectangular	2.35 x 3.7	9.34	9.62
Culv_Lk25.1.2	Culv_Lk25.1.2	10.5	Circular	1.85	4.45	4.66
Culv_LK46	Culv_LK46	12.49	Circular	1.2	19.84	19.98
Culv_Lk48.2	Culv_Lk48.2	2.38	Circular	0.6	15.08	15.19
Culv_LK58.1	Culv_LK58.1	7.9	Circular	1.85	10.83	11.17
Culv_Lk92.1	Culv_Lk92.1	15.41	Circular	1.2	14.27	14.45
CulvLK42.1	CulvLK42.1	5.72	Circular	1.05	20.83	20.92
CulvLK77.1	CulvLK77.1	23.45	Circular	0.45	14.78	14.81
CulvLK87.1	CulvLK87.1	5.02	Circular	0.6	20.22	20.45
Highgate.1	Highgate.1	168.1	Circular	1.6	15.63	19.08
Link10	Link10	141.49	Natural	0	0.16	0.67
Link101	Link101	202.17	Natural	0	29.841	33.066
Link101.1.1	Link101.1.1	206.54	Natural	0	18.287	21.611
Link101.1.2	Link101.1.2	100.39	Natural	0	21.611	22.77
Link101.2	Link101.2	277.81	Natural	0	22.85	29.841
Link103	Link103	137.17	Natural	0	19.051	19.113
Link11	Link11	113.22	Natural	0	0.22	0.16
Link112	Link112	92.55	Natural	0	4.782	4.883
Link114	Link114	69.17	Natural	0	16.58	17.24
Link115	Link115	104.95	Natural	0	15.508	16.58
Link116	Link116	147.29	Natural	0	13.93	15.508
Link117	Link117	125.09	Natural	0	10.56	13.982
Link118	Link118	33.24	Natural	0	17.643	17.945
Link12	Link12	75.88	Natural	0	-0.077	0.22
Link13	Link13	39.44	Natural	0	0.274	-0.077
Link135	Link135	48.58	Natural	0	22.069	22.464
Link137	Link137	31.81	Natural	0	21.435	21.756

Link138	Link138	56.01	Natural	0	20.868	21.435
Link139	Link139	87.01	Natural	0	19.58	20.868
Link14	Link14	70.07	Natural	0	0.004	0.274
Link140	Link140	112.52	Natural	0	18.333	19.58
Link141	Link141	59.69	Natural	0	17.915	18.333
Link15	Link15	93	Natural	0	-0.134	0.004
Link150	Link150	127.36	Natural	0	4.82	9.86
Link156	Link156	326.91	Natural	0	15.994	22.926
Link157	Link157	89.18	Natural	0	10.198	17.257
Link16	Link16	84.25	Natural	0	-0.12	-0.134
Link160	Link160	131.12	Natural	0	6.35	15.517
Link161	Link161	271.8	Natural	0	22.464	26.837
Link17	Link17	95.65	Natural	0	-0.25	-0.12
Link172	Link172	332.34	Natural	0	11.988	15.232
Link172.1	Link172.1	280.43	Natural	0	12.04	11.988
Link172.1.1.1	Link172.1.1.1	40.25	Natural	0	10.547	10.965
Link175	Link175	177.46	Natural	0	-0.9	-0.8
Link175.1	Link175.1	45.03	Natural	0	-1	-0.9
Link176	Link176	383.8	Natural	0	-1.15	-0.1
Link177	Link177	102.08	Natural	0	-1.24	-1.15
Link177.1	Link177.1	116.73	Natural	0	-1.28	-1.24
Link178	Link178	210.95	Natural	0	-1.3	-1.28
Link178.1	Link178.1	206.61	Natural	0	-1.34	-1.3
Link18	Link18	152.17	Natural	0	-0.25	-0.25
Link182	Link182	366.22	Natural	0	1.419	6.76
Link183	Link183	99.41	Natural	0	1.277	1.419
Link184	Link184	332.74	Natural	0	1.277	4.782
Link185	Link185	338.69	Natural	0	1.419	4.656
Link186	Link186	326.75	Natural	0	0.647	1.277
Link187	Link187	435.61	Natural	0	-0.016	0.647
Link188	Link188	458.5	Natural	0	0.03	-0.016
Link189	Link189	284.68	Natural	0	-0.285	0.03
Link190	Link190	185.13	Natural	0	-0.509	-0.285
Link191	Link191	397.39	Natural	0	-0.64	-0.51
Link191.1	Link191.1	413.61	Natural	0	-0.78	-0.64
Link192	Link192	208.09	Natural	0	-0.678	-0.776
Link193	Link193	154.24	Natural	0	4.883	4.74
Link19a	Link19a	133.6	Natural	0	-0.2	2.62
Link19a.1	Link19a.1	132.35	Natural	0	-0.52	-0.2
Link2	Link2	54.59	Natural	0	13.473	13.19
Link2.1	Link2.1	61.12	Natural	0	11.637	13.473
Link20	Link20	14.09	Natural	0	-0.34	-0.25
Link20.1	Link20.1	51.59	Natural	0	-0.52	-0.47
Link200	Link200	167.18	Natural	0	14.65	18.815
Link203	Link203	75.72	Natural	0	36.54	43.97
Link207	Link207	189.59	Natural	0	25.06	30.2
Link21	Link21	175.83	Natural	0	-0.71	-0.52
Link23	Link23	2.66	Natural	0	10.33	10.19
Link23.1.1	Link23.1.1	153.98	Natural	0	-0.25	4.68
Link23.1.2	Link23.1.2	116.65	Natural	0	4.68	6.16
Link23.2.1	Link23.2.1	155.44	Natural	0	6.17	8.83
Link23.3	Link23.3	161.27	Natural	0	8.88	10.33
Link25	Link25	72.62	Natural	0	4.51	5.87
Link25.1	Link25.1	37.03	Natural	0	4.66	4.51

Link25.1.1	Link25.1.1	13.53	Natural	0	3.99	4.45
Link3	Link3	108.63	Natural	0	10.849	11.637
Link31	Link31	91.63	Natural	0	15.59	15.86
Link31.1	Link31.1	465.46	Natural	0	11.7	13.69
Link31.2	Link31.2	386.31	Natural	0	13.69	14.77
Link31.3	Link31.3	194.9	Natural	0	14.77	15.32
Link31.4	Link31.4	93.24	Natural	0	15.32	15.59
Link32	Link32	865.06	Natural	0	8.908	11.7
Link32.1	Link32.1	688.18	Natural	0	5.132	8.908
Link33a	Link33a	198.81	Natural	0	4.09	5.13
Link33b	Link33b	137.99	Natural	0	3.57	4.09
Link33c	Link33c	147.58	Natural	0	2.64	3.57
Link39	Link39	56.29	Natural	0	22.81	23.78
Link4	Link4	78.42	Natural	0	8.575	10.849
Link4.1	Link4.1	97.95	Natural	0	5.04	8.103
Link4.2	Link4.2	82.58	Natural	0	8.103	8.575
Link40	Link40	58.73	Natural	0	22.311	22.81
Link41	Link41	78.25	Natural	0	21.52	22.311
Link42	Link42	79.01	Natural	0	20.92	21.52
Link43	Link43	48.21	Natural	0	20.551	20.83
Link44	Link44	17.22	Natural	0	19.98	20.551
Link45.1	Link45.1	95.72	Natural	0	17.97	18.11
Link45.1.1	Link45.1.1	47.86	Natural	0	17.9	17.97
Link45.1.1.1	Link45.1.1.1	47.86	Natural	0	17.83	17.9
Link45.2	Link45.2	114.74	Natural	0	18.114	19.84
Link46	Link46	32.11	Natural	0	16.882	17.83
Link46.1	Link46.1	27.5	Natural	0	17.239	16.882
Link47	Link47	113.64	Natural	0	15.25	17.239
Link48	Link48	55.74	Natural	0	15.19	15.25
Link48.1	Link48.1	65.21	Natural	0	14.14	15.08
Link49	Link49	70.45	Natural	0	13.19	14.143
Link5	Link5	60.92	Natural	0	4.82	5.04
Link5.1	Link5.1	39.19	Natural	0	4.59	4.82
Link53	Link53	69.15	Natural	0	17.237	18.287
Link54	Link54	41.08	Natural	0	16.873	17.237
Link54.1	Link54.1	15.06	Natural	0	16.432	16.873
Link55	Link55	116.8	Natural	0	14.65	16.432
Link55.1	Link55.1	64.57	Natural	0	13.984	14.65
Link56	Link56	17.49	Natural	0	13.652	13.733
Link56.1	Link56.1	60.44	Natural	0	13.027	13.652
Link57	Link57	66.25	Natural	0	12.015	13.027
Link58	Link58	76.81	Natural	0	13.103	12.015
Link59	Link59	91.29	Natural	0	9.04	10.83
Link6	Link6	61.11	Natural	0	4.56	4.59
Link6.1	Link6.1	44.98	Natural	0	4.46	4.56
Link6.1a	Link6.1a	26.8	Natural	0	3.99	4.32
Link60	Link60	111.63	Natural	0	5.87	9.04
Link65	Link65	384.85	Natural	0	17.146	19.051
Link66	Link66	169.44	Natural	0	15.994	17.146
Link66.1	Link66.1	174.58	Natural	0	13.72	14.769
Link66.1.1	Link66.1.1	177.17	Natural	0	12.039	13.72
Link66.2	Link66.2	173.2	Natural	0	14.769	15.994
Link67	Link67	134.88	Natural	0	11.6	12.039
Link67.1	Link67.1	284.75	Natural	0	10.198	11.895

Link68	Link68	335.52	Natural	0	9.055	10.198
Link69	Link69	55.84	Natural	0	9.439	9.055
Link69.1	Link69.1	226.86	Natural	0	8.3	9.439
Link7	Link7	51.83	Natural	0	1.258	3.99
Link70	Link70	143.23	Natural	0	7.11	8.3
Link71	Link71	77.14	Natural	0	6.35	7.11
Link71.1	Link71.1	163.65	Natural	0	6.315	7.11
Link71.2	Link71.2	82.49	Natural	0	7.11	6.35
Link72	Link72	38.13	Natural	0	6.404	6.315
Link72.1	Link72.1	39.12	Natural	0	5.19	6.2
Link74	Link74	122.63	Natural	0	28.994	34.8
Link74.1	Link74.1	245.26	Natural	0	20.836	26.368
Link74.2	Link74.2	122.63	Natural	0	26.368	28.994
Link75	Link75	89.68	Natural	0	18.293	19.441
Link76	Link76	138.38	Natural	0	16.371	18.293
Link77	Link77	47.66	Natural	0	15.15	16.371
Link77.1.1	Link77.1.1	40.12	Natural	0	14.23	14.78
Link78	Link78	51.92	Natural	0	11.74	14.23
Link79	Link79	96.79	Natural	0	9.86	11.74
Link8	Link8	77.32	Natural	0	0.19	1.258
Link81	Link81	37.06	Natural	0	23.846	24.86
Link82	Link82	116.13	Natural	0	18.818	23.846
Link83	Link83	40.79	Natural	0	16.432	18.818

XP STORM OUTPUTS - JUNCTION DATA (SCENARIO 3)

Name	Node Name	Invert Elevation m	Node X	Node Y	Ponding Type	Inlet Capacity Type
Highgate	Highgate	19.08	390760.744	830148.545	Link Invert to 2D	Maximum Capacity
Millwater1	Millwater1	-1	391144.141	831278.612	Link Invert to 2D	Maximum Capacity
Millwater2	Millwater2	-1.15	391481.677	831387.439	Link Invert to 2D	Maximum Capacity
Millwater3	Millwater3	-1.24	391570.934	831410.567	Link Invert to 2D	Maximum Capacity
Millwater4	Millwater4	-1.3	391860.414	831519.05	Link Invert to 2D	Maximum Capacity
Node10	Node10	1.258	390011.681	830524.418	Link Invert to 2D	Maximum Capacity
Node100	Node100	15.63	390694.008	830302.827	Link Invert to 2D	Maximum Capacity
Node100.1	Node100.1	12.66	390622.118	830426.675	Link Invert to 2D	Maximum Capacity
Node100.2	Node100.2	14.45	390661.171	830366.907	Link Invert to 2D	Maximum Capacity
Node100.2.1	Node100.2.1	14.27	390651.341	830378.777	Link Invert to 2D	Maximum Capacity
Node102	Node102	10.56	390587.268	830536.871	Link Invert to 2D	Maximum Capacity
Node104	Node104	4.74	390989.368	829058.139	Link Invert to 2D	Maximum Capacity
Node105	Node105	-0.8	390934.933	831205.359	Link Invert to 2D	Maximum Capacity
Node105.1	Node105.1	-0.9	391100.667	831266.89	Link Invert to 2D	Maximum Capacity
Node108	Node108	5.04	390014.062	830245.239	Link Invert to 2D	Maximum Capacity
Node108.1	Node108.1	4.82	390003.818	830304.98	Link Invert to 2D	Maximum Capacity
Node109	Node109	33.066	388814.038	829688.32	Link Invert to 2D	Maximum Capacity
Node109.1	Node109.1	22.85	388976.008	830105.067	Link Invert to 2D	Maximum Capacity
Node109.1.1	Node109.1.1	21.611	389076.916	830169.74	Link Invert to 2D	Maximum Capacity
Node109.1.2	Node109.1.2	22.77	388990.761	830118.588	Link Invert to 2D	Maximum Capacity
Node109.2	Node109.2	29.841	388826.55	829870.888	Link Invert to 2D	Maximum Capacity
Node11	Node11	0.19	390054.553	830588.569	Link Invert to 2D	Maximum Capacity
Node119	Node119	4.883	391084.228	828988.566	Link Invert to 2D	Maximum Capacity
Node12	Node12	0.67	390107.166	830696.479	Link Invert to 2D	Maximum Capacity
Node120	Node120	4.782	391132.149	828949.835	Link Invert to 2D	Maximum Capacity
Node121	Node121	17.39	390500.65	830117.826	Link Invert to 2D	Maximum Capacity
Node122	Node122	17.24	390500.816	830122.97	Link Invert to 2D	Maximum Capacity
Node123	Node123	16.58	390492.934	830190.884	Link Invert to 2D	Maximum Capacity
Node124	Node124	15.508	390497.396	830295.447	Link Invert to 2D	Maximum Capacity
Node125	Node125	13.93	390523.844	830437.416	Link Invert to 2D	Maximum Capacity
Node126	Node126	17.915	390507.197	830089.527	Link Invert to 2D	Maximum Capacity
Node13	Node13	0.1603	390181.707	830808.359	Link Invert to 2D	Maximum Capacity
Node133	Node133	25.1	389140.561	830369.699	Link Invert to 2D	Maximum Capacity
Node134	Node134	23.88	389637.57	829041.964	Link Invert to 2D	Maximum Capacity
Node14	Node14	0.22	390221.859	830886.276	Link Invert to 2D	Maximum Capacity
Node143	Node143	22.464	390527.054	829736.499	Link Invert to 2D	Maximum Capacity
Node144	Node144	21.83	390515.505	829783.568	Link Invert to 2D	Maximum Capacity
Node145	Node145	21.75	390512.138	829795.544	Link Invert to 2D	Maximum Capacity
Node146	Node146	21.435	390502.851	829825.972	Link Invert to 2D	Maximum Capacity
Node147	Node147	20.868	390500.521	829881.384	Link Invert to 2D	Maximum Capacity
Node148	Node148	19.58	390505.475	829963.454	Link Invert to 2D	Maximum Capacity
Node149	Node149	18.333	390495.782	830049.403	Link Invert to 2D	Maximum Capacity
Node15	Node15	-0.077	390239.982	830957.369	Link Invert to 2D	Maximum Capacity
Node150	Node150	36.54	389283.652	829636.661	Link Invert to 2D	Maximum Capacity
Node159	Node159	44.824	389130.157	829523.01	Link Invert to 2D	Maximum Capacity

Node16	Node16	0.274	390259.45	830985.84	Link Invert to 2D	Maximum Capacity
Node160	Node160	36.06	389102.492	829047.246	Link Invert to 2D	Maximum Capacity
Node160.1	Node160.1	30.2	389372.452	829121.34	Link Invert to 2D	Maximum Capacity
Node161	Node161	29.993	389375.219	828939.943	Link Invert to 2D	Maximum Capacity
Node168	Node168	26.837	390627.699	829496.156	Link Invert to 2D	Maximum Capacity
Node17	Node17	0.004	390326.41	830996.417	Link Invert to 2D	Maximum Capacity
Node178	Node178	7.99	390902.335	828787.492	Link Invert to 2D	Maximum Capacity
Node179	Node179	6.76	390994.978	828787.897	Link Invert to 2D	Maximum Capacity
Node18	Node18	-0.134	390404.117	831034.954	Link Invert to 2D	Maximum Capacity
Node180.1	Node180.1	11.988	390658.86	828617.787	Link Invert to 2D	Maximum Capacity
Node180.1.1	Node180.1.1	9.62	390872.05	828749.519	Link Invert to 2D	Maximum Capacity
Node180.1.1.1	Node180.1.1.1	9.34	390874.93	828762.612	Link Invert to 2D	Maximum Capacity
Node186	Node186	-1.28	391651.599	831489.29	Link Invert to 2D	Maximum Capacity
Node187	Node187	-1.34	392050.291	831561.049	Link Invert to 2D	Maximum Capacity
Node19	Node19	-0.12	390461.56	831088.471	Link Invert to 2D	Maximum Capacity
Node192	Node192	1.277	391327.868	828850.408	Link Invert to 2D	Maximum Capacity
Node194	Node194	-0.016	391899.237	828994.355	Link Invert to 2D	Maximum Capacity
Node195	Node195	0.03	392098.433	828889.23	Link Invert to 2D	Maximum Capacity
Node196	Node196	-0.285	392322.117	828895.377	Link Invert to 2D	Maximum Capacity
Node198	Node198	-0.51	392464.001	828796.297	Link Invert to 2D	Maximum Capacity
Node199	Node199	-0.678	393345.847	828972.505	Link Invert to 2D	Maximum Capacity
Node20	Node20	-0.25	390554.347	831108.65	Link Invert to 2D	Maximum Capacity
Node203	Node203	34.96	389000.188	830307.602	Link Invert to 2D	Maximum Capacity
Node206	Node206	18.815	389353.844	830230.372	Link Invert to 2D	Maximum Capacity
Node209	Node209	43.97	389264.177	829584.071	Link Invert to 2D	Maximum Capacity
Node21	Node21	-0.25	390698.628	831102.846	Link Invert to 2D	Maximum Capacity
Node21.1	Node21.1	-0.47	390715.127	831125.017	Link Invert to 2D	Maximum Capacity
Node21.2	Node21.2	-0.34	390707.67	831113.468	Link Invert to 2D	Maximum Capacity
Node22	Node22	5.87	389871.336	830460.858	Link Invert to 2D	Maximum Capacity
Node22.1	Node22.1	4.51	389942.611	830473.624	Link Invert to 2D	Maximum Capacity
Node22.1.1	Node22.1.1	4.45	389989.974	830472.236	Link Invert to 2D	Maximum Capacity
Node22.1.2	Node22.1.2	4.66	389979.511	830473.164	Link Invert to 2D	Maximum Capacity
Node25	Node25	10.19	390598.139	830562.993	Link Invert to 2D	Maximum Capacity
Node25.1	Node25.1	6.17	390655.048	830854.742	Link Invert to 2D	Maximum Capacity
Node25.1.1	Node25.1.1	4.68	390689.475	830965.836	Link Invert to 2D	Maximum Capacity
Node25.1.2	Node25.1.2	6.16	390655.717	830860.108	Link Invert to 2D	Maximum Capacity
Node25.2	Node25.2	8.88	390623.024	830712.798	Link Invert to 2D	Maximum Capacity
Node25.2.1	Node25.2.1	8.83	390624.175	830721.726	Link Invert to 2D	Maximum Capacity
Node25.3	Node25.3	10.33	390599.933	830564.242	Link Invert to 2D	Maximum Capacity
Node26a	Node26a	2.62	390502.824	831320.516	Link Invert to 2D	Maximum Capacity
Node27	Node27	-0.52	390716.358	831175.835	Link Invert to 2D	Maximum Capacity
Node28	Node28	-0.71	390889.117	831200.507	Link Invert to 2D	Maximum Capacity
Node29	Node29	-0.74	390914.635	831201.149	Link Invert to 2D	Maximum Capacity
Node34.1	Node34.1	2.64	390495.833	831326.28	Link Invert to 2D	Maximum Capacity
Node4	Node4	13.19	390117.819	829855.792	Link Invert to 2D	Maximum Capacity
Node4.1	Node4.1	13.473	390139.264	829896.454	Link Invert to 2D	Maximum Capacity
Node40	Node40	23.78	389646.077	829051.292	Link Invert to 2D	Maximum Capacity
Node41	Node41	22.81	389685.814	829091.165	Link Invert to 2D	Maximum Capacity
Node42	Node42	22.311	389711.315	829144.066	Link Invert to 2D	Maximum Capacity
Node43	Node43	21.52	389735.503	829216.797	Link Invert to 2D	Maximum Capacity

Node43.1	Node43.1	20.92	389775.027	829285.21	Link Invert to 2D	Maximum Capacity
Node44	Node44	20.83	389777.726	829290.258	Link Invert to 2D	Maximum Capacity
Node45	Node45	20.551	389801.673	829332.1	Link Invert to 2D	Maximum Capacity
Node46	Node46	19.98	389804.147	829348.198	Link Invert to 2D	Maximum Capacity
Node46.1	Node46.1	18.11	389912.608	829413.981	Link Invert to 2D	Maximum Capacity
Node46.1a	Node46.1a	17.97	389971.566	829476.09	Link Invert to 2D	Maximum Capacity
Node46.1b	Node46.1b	17.9	389995.357	829517.609	Link Invert to 2D	Maximum Capacity
Node46.2	Node46.2	19.84	389814.117	829355.719	Link Invert to 2D	Maximum Capacity
Node47	Node47	17.83	390020.041	829558.612	Link Invert to 2D	Maximum Capacity
Node47.1	Node47.1	16.882	390035.963	829586.499	Link Invert to 2D	Maximum Capacity
Node48	Node48	17.239	390048.943	829610.74	Link Invert to 2D	Maximum Capacity
Node49	Node49	15.25	390108.692	829694.422	Link Invert to 2D	Maximum Capacity
Node49.1	Node49.1	15.08	390096.026	829734.191	Link Invert to 2D	Maximum Capacity
Node49.2	Node49.2	15.19	390096.748	829731.925	Link Invert to 2D	Maximum Capacity
Node5	Node5	11.637	390135.622	829945.409	Link Invert to 2D	Maximum Capacity
Node50	Node50	14.14	390101.888	829797.933	Link Invert to 2D	Maximum Capacity
Node54	Node54	18.287	389254.992	830274.073	Link Invert to 2D	Maximum Capacity
Node55	Node55	17.237	389305.867	830312.606	Link Invert to 2D	Maximum Capacity
Node55.1	Node55.1	16.873	389334.759	830339.766	Link Invert to 2D	Maximum Capacity
Node56	Node56	16.432	389336.173	830354.135	Link Invert to 2D	Maximum Capacity
Node56.1	Node56.1	13.984	389498.551	830378.391	Link Invert to 2D	Maximum Capacity
Node56.2	Node56.2	14.65	389440.835	830364.371	Link Invert to 2D	Maximum Capacity
Node57	Node57	13.733	389505.49	830382.026	Link Invert to 2D	Maximum Capacity
Node57.1	Node57.1	13.652	389520.745	830390.58	Link Invert to 2D	Maximum Capacity
Node58	Node58	13.027	389562.004	830419.89	Link Invert to 2D	Maximum Capacity
Node59	Node59	12.015	389598.735	830459.228	Link Invert to 2D	Maximum Capacity
Node59.1	Node59.1	11.17	389663.227	830471.068	Link Invert to 2D	Maximum Capacity
Node6	Node6	10.849	390122.582	830049.539	Link Invert to 2D	Maximum Capacity
Node6.1	Node6.1	8.103	390047.33	830160.953	Link Invert to 2D	Maximum Capacity
Node6.2	Node6.2	8.575	390105.058	830116.041	Link Invert to 2D	Maximum Capacity
Node60	Node60	10.83	389670.982	830472.569	Link Invert to 2D	Maximum Capacity
Node61	Node61	9.04	389759.707	830461.047	Link Invert to 2D	Maximum Capacity
Node72	Node72	19.051	389321.668	828257.5	Link Invert to 2D	Maximum Capacity
Node73	Node73	17.146	389541.656	828505.942	Link Invert to 2D	Maximum Capacity
Node73.1	Node73.1	15.994	389673.745	828527.036	Link Invert to 2D	Maximum Capacity
Node74	Node74	12.039	389987.849	828799.277	Link Invert to 2D	Maximum Capacity
Node74.1	Node74.1	9.83	390068.106	828844.096	Link Invert to 2D	Maximum Capacity
Node74.2	Node74.2	11.6	390066.018	828829.077	Link Invert to 2D	Maximum Capacity
Node75	Node75	10.198	390227.444	828871.677	Link Invert to 2D	Maximum Capacity
Node76	Node76	9.055	390403.128	828968.39	Link Invert to 2D	Maximum Capacity
Node77	Node77	8.3	390574.816	829048.966	Link Invert to 2D	Maximum Capacity
Node78	Node78	7.11	390683.738	829036.302	Link Invert to 2D	Maximum Capacity
Node78.1	Node78.1	7.11	390765.2	829001.294	Link Invert to 2D	Maximum Capacity
Node78.2	Node78.2	6.35	390716.455	828981.236	Link Invert to 2D	Maximum Capacity
Node79	Node79	6.315	390831.54	829107.537	Link Invert to 2D	Maximum Capacity
Node8	Node8	4.59	389998.384	830343.08	Link Invert to 2D	Maximum Capacity
Node8.1	Node8.1	4.56	390001.515	830399.956	Link Invert to 2D	Maximum Capacity
Node8.1.1	Node8.1.1	4.46	390006.175	830444.532	Link Invert to 2D	Maximum Capacity
Node8.1.1.1	Node8.1.1.1	4.32	390007.196	830447.784	Link Invert to 2D	Maximum Capacity
Node80	Node80	5.19	390900.4	829099.932	Link Invert to 2D	Maximum Capacity

Node82	Node82	34.8	389292.649	829664.986	Link Invert to 2D	Maximum Capacity
Node82.1	Node82.1	26.368	389394.601	829844.178	Link Invert to 2D	Maximum Capacity
Node82.2	Node82.2	28.994	389300.418	829784.319	Link Invert to 2D	Maximum Capacity
Node83	Node83	19.441	389602.462	829896.157	Link Invert to 2D	Maximum Capacity
Node84	Node84	18.293	389662.074	829961.1	Link Invert to 2D	Maximum Capacity
Node85	Node85	16.371	389722.053	830083.34	Link Invert to 2D	Maximum Capacity
Node85.1	Node85.1	14.81	389740.551	830127.262	Link Invert to 2D	Maximum Capacity
Node85.1.1	Node85.1.1	14.78	389756.101	830144.817	Link Invert to 2D	Maximum Capacity
Node86	Node86	14.23	389773.508	830180.966	Link Invert to 2D	Maximum Capacity
Node87	Node87	11.74	389813.454	830214.091	Link Invert to 2D	Maximum Capacity
Node88	Node88	9.86	389902.906	830232.576	Link Invert to 2D	Maximum Capacity
Node89	Node89	24.86	389148.187	830372.404	Link Invert to 2D	Maximum Capacity
Node9	Node9	3.99	390003.36	830473.919	Link Invert to 2D	Maximum Capacity
Node90	Node90	23.846	389182.093	830362.075	Link Invert to 2D	Maximum Capacity
Node91	Node91	18.818	389296.699	830347.944	Link Invert to 2D	Maximum Capacity
Node95	Node95	20.91	389744.113	829324.369	Link Invert to 2D	Maximum Capacity
Node95.1	Node95.1	20.22	389774.744	829342.565	Link Invert to 2D	Maximum Capacity
Node95.1a	Node95.1a	20.22	389778.418	829339.137	Link Invert to 2D	Maximum Capacity
Node96	Node96	25.06	389546.04	829197.565	Link Invert to 2D	Maximum Capacity
Node97	Node97	24.98	389560.25	829192.891	Link Invert to 2D	Maximum Capacity
Node97.1	Node97.1	22.531	389638.956	829276.626	Link Invert to 2D	Maximum Capacity
Orewa C2	Orewa C2	15.32	388430.922	830585.273	Link Invert to 2D	Maximum Capacity
Orewa Contri1	Orewa Contri1	15.86	388263.823	830565.82	Link Invert to 2D	Maximum Capacity
Orewa Contri2	Orewa Contri2	15.59	388350.139	830585.522	Link Invert to 2D	Maximum Capacity
Orewa Contri3	Orewa Contri3	14.77	388565.501	830677.966	Link Invert to 2D	Maximum Capacity
Orewa_C3	Orewa_C3	13.69	388756.013	830932.835	Link Invert to 2D	Maximum Capacity
Orewa_Contri4	Orewa_Contri4	11.7	389083.635	831225.761	Link Invert to 2D	Maximum Capacity
Orewa_Contri5	Orewa_Contri5	8.908	389660.232	831548.956	Link Invert to 2D	Maximum Capacity
Orewa_Contri6	Orewa_Contri6	5.13	390146.566	831642.474	Link Invert to 2D	Maximum Capacity
Orewa_Contri7	Orewa_Contri7	3.57	390377.523	831407.877	Link Invert to 2D	Maximum Capacity
Orewa_Contri8	Orewa_Contri8	-0.2	390626.424	831271.403	Link Invert to 2D	Maximum Capacity
Orewa_Contri9	Orewa_Contri9	4.09	390285.039	831507.218	Link Invert to 2D	Maximum Capacity
Weiti_C1	Weiti_C1	14.769	389753.249	828662.428	Link Invert to 2D	Maximum Capacity
Weiti_Contri	Weiti_Contri	19.113	389346.741	828164.723	Link Invert to 2D	Maximum Capacity
Weiti_Contri2	Weiti_Contri2	22.926	389616.84	828218.568	Link Invert to 2D	Maximum Capacity
Weiti_Contri3	Weiti_Contri3	13.72	389850.037	828720.837	Link Invert to 2D	Maximum Capacity
Weiti_Contri4	Weiti_Contri4	17.257	390276.888	828808.223	Link Invert to 2D	Maximum Capacity
Weiti_Contri5	Weiti_Contri5	9.439	390449.796	828990.714	Link Invert to 2D	Maximum Capacity
Weiti_Contri6	Weiti_Contri6	15.517	390632.979	828920.551	Link Invert to 2D	Maximum Capacity
Weiti_Contri7	Weiti_Contri7	6.2	390866.521	829103.717	Link Invert to 2D	Maximum Capacity
Weiti_Contri8	Weiti_Contri8	1.419	391273.799	828775.679	Link Invert to 2D	Maximum Capacity
Weiti_Contri8.1	Weiti_Contri8.1	0.647	391594.469	828893	Link Invert to 2D	Maximum Capacity

XP STORM OUTPUTS -CHANNEL MANNINGS COEFFICENTS (SCENARIO 3)

Name	Main Channel Manning's n	Left Overbank Manning's n	Right Overbank Manning's n
Link50.1_SHP	0.06	0.08	0.08
Link51_SHP	0.06	0.08	0.08
Link110_SHP	0.06	0.08	0.08
Link40_SHP	0.06	0.08	0.08
Link49_SHP	0.06	0.08	0.08
Link75_SHP	0.06	0.08	0.08
Link76_SHP	0.06	0.08	0.08
Link77_SHP	0.06	0.08	0.08
Link78_SHP	0.06	0.08	0.08
Link101.2_SHP	0.06	0.08	0.08
Link101_SHP	0.06	0.08	0.08
Link101.1.2_SHP	0.06	0.08	0.08
Link82_SHP	0.06	0.08	0.08
Link81_SHP	0.06	0.08	0.08
Link118_SHP	0.06	0.08	0.08
Link114_SHP	0.06	0.08	0.08
Link115_SHP	0.06	0.08	0.08
Link77.1.1_SHP	0.06	0.08	0.08
Link103_SHP	0.06	0.08	0.08
Link138_SHP	0.06	0.08	0.08
Link137_SHP	0.06	0.08	0.08
Link79_SHP	0.06	0.08	0.08
Link6.1.1.1_SHP	0.06	0.08	0.08
Link48.1_SHP	0.06	0.08	0.08
Link156_SHP	0.06	0.08	0.08
Link33b_SHP	0.06	0.08	0.08
Link33c_SHP	0.06	0.08	0.08
Link182_SHP	0.06	0.08	0.08
Link183_SHP	0.06	0.08	0.08
Link185_SHP	0.06	0.08	0.08
Link186_SHP	0.06	0.08	0.08
Link187_SHP	0.06	0.08	0.08
Link190_SHP	0.06	0.08	0.08
Link192_SHP	0.06	0.08	0.08
Link172.1.1.1_SHP	0.06	0.08	0.08
Link172_SHP	0.06	0.08	0.08
Link172.1_SHP	0.06	0.08	0.08
Link189_SHP	0.06	0.08	0.08
Link188_SHP	0.06	0.08	0.08
Link200_SHP	0.06	0.08	0.08
Link177.1_SHP	0.06	0.08	0.08
Link178_SHP	0.06	0.08	0.08
Link178.1_SHP	0.06	0.08	0.08
Link92.1.1_SHP	0.06	0.08	0.08
Link160_SHP	0.06	0.08	0.08
Link65_SHP	0.06	0.08	0.08

Link66_SHP	0.06	0.08	0.08
Link66.2_SHP	0.06	0.08	0.08
Link66.1_SHP	0.06	0.08	0.08
Link66.1.1_SHP	0.06	0.08	0.08
Link67_SHP	0.06	0.08	0.08
Link67.1_SHP	0.06	0.08	0.08
Link157_SHP	0.06	0.08	0.08
Link68_SHP	0.06	0.08	0.08
Link69_SHP	0.06	0.08	0.08
Link69.1_SHP	0.06	0.08	0.08
Link70_SHP	0.06	0.08	0.08
Link71_SHP	0.06	0.08	0.08
Link71.2_SHP	0.06	0.08	0.08
Link71.1_SHP	0.06	0.08	0.08
Link72_SHP	0.06	0.08	0.08
Link193_SHP	0.06	0.08	0.08
Link112_SHP	0.06	0.08	0.08
Link184_SHP	0.06	0.08	0.08
Link191_SHP	0.06	0.08	0.08
Link191.1_SHP	0.06	0.08	0.08
Link20_SHP	0.06	0.08	0.08
Link31_SHP	0.06	0.08	0.08
Link31.4_SHP	0.06	0.08	0.08
Link31.3_SHP	0.06	0.08	0.08
Link31.2_SHP	0.06	0.08	0.08
Link31.1_SHP	0.06	0.08	0.08
Link32_SHP	0.06	0.08	0.08
Link32.1_SHP	0.06	0.08	0.08
Link33a_SHP	0.06	0.08	0.08
Link19a_SHP	0.06	0.08	0.08
Link177_SHP	0.06	0.08	0.08
Link176_SHP	0.06	0.08	0.08
Link175.1_SHP	0.06	0.08	0.08
Link117_SHP	0.06	0.08	0.08
Link92_SHP	0.06	0.08	0.08
Link60_SHP	0.06	0.08	0.08
Link72.1_SHP	0.06	0.08	0.08
Link4.1_SHP	0.06	0.08	0.08
Link150_SHP	0.06	0.08	0.08
Link5_SHP	0.06	0.08	0.08
Link6.1_SHP	0.06	0.08	0.08
Link25_SHP	0.06	0.08	0.08
Link7_SHP	0.06	0.08	0.08
Link9_SHP	0.06	0.08	0.08
Link10_SHP	0.06	0.08	0.08
Link11_SHP	0.06	0.08	0.08
Link12_SHP	0.06	0.08	0.08
Link116_SHP	0.06	0.08	0.08
Link94_SHP	0.06	0.08	0.08
Link95_SHP	0.06	0.08	0.08

Link23.1.1_SHP	0.06	0.08	0.08
Link23.1_SHP	0.06	0.08	0.08
Link203_SHP	0.06	0.08	0.08
Link87_SHP	0.06	0.08	0.08
Link89.1_SHP	0.06	0.08	0.08
Link87.1a_SHP	0.06	0.08	0.08
Link44_SHP	0.06	0.08	0.08
Link43_SHP	0.06	0.08	0.08
Link42_SHP	0.06	0.08	0.08
Link45.2_SHP	0.06	0.08	0.08
Link45.1_SHP	0.06	0.08	0.08
Link41_SHP	0.06	0.08	0.08
Link89_SHP	0.06	0.08	0.08
Link39_SHP	0.06	0.08	0.08
Link55_SHP	0.06	0.08	0.08
Link55.1_SHP	0.06	0.08	0.08
Link56_SHP	0.06	0.08	0.08
Link54_SHP	0.06	0.08	0.08
Link53_SHP	0.06	0.08	0.08
Link101.1.1_SHP	0.06	0.08	0.08
Link54.1_SHP	0.06	0.08	0.08
Link83_SHP	0.06	0.08	0.08
Link58_SHP	0.06	0.08	0.08
Link57_SHP	0.06	0.08	0.08
Link56.1_SHP	0.06	0.08	0.08
Link59_SHP	0.06	0.08	0.08
Link4.2_SHP	0.06	0.08	0.08
Link4_SHP	0.06	0.08	0.08
Link3_SHP	0.06	0.08	0.08
Link2.1_SHP	0.06	0.08	0.08
Link2_SHP	0.06	0.08	0.08
Link48_SHP	0.06	0.08	0.08
Link47_SHP	0.06	0.08	0.08
Link46.1_SHP	0.06	0.08	0.08
Link46_SHP	0.06	0.08	0.08
Link45.1.1.1_SHP	0.06	0.08	0.08
Link45.1.1_SHP	0.06	0.08	0.08
Link161_SHP	0.06	0.08	0.08
Link135_SHP	0.06	0.08	0.08
Link140_SHP	0.06	0.08	0.08
Link141_SHP	0.06	0.08	0.08
Link139_SHP	0.06	0.08	0.08
Link74.1_SHP	0.06	0.08	0.08
Link74.2_SHP	0.06	0.08	0.08
Link74_SHP	0.06	0.08	0.08
Link14_SHP	0.06	0.08	0.08
Link15_SHP	0.06	0.08	0.08
Link16_SHP	0.06	0.08	0.08
Link17_SHP	0.06	0.08	0.08
Link18_SHP	0.06	0.08	0.08

Link19a.1_SHP	0.06	0.08	0.08
Link21_SHP	0.06	0.08	0.08
Orewa_SHP	0.06	0.08	0.08
Link175_SHP	0.06	0.08	0.08
Link20.1_SHP	0.06	0.08	0.08
Bridge_MWAY_SHP	0.06	0.08	0.08
Link207_SHP	0.06	0.08	0.08
Link23_SHP	0.06	0.08	0.08

XP STORM OUTPUTS - RAIN + INFILTRATION (SCENARIO 3)

Name	Node Name	Catchment Number	Routing Method	Time of Concentration (or Parameter 2) min	Curve Number	Initial Abstraction Method	Initial Abstraction Depth mm
Highgate	User Inflow Hydrograph						
Millwater1	Millwater1	1	SCS Hydrology	42.865	74	Depth	5
Millwater1		2	SCS Hydrology	19.619	98	Depth	1
Millwater2	Millwater2	1	SCS Hydrology	17.559	74	Depth	5
Millwater2		2	SCS Hydrology	10	98	Depth	1
Millwater3	Millwater3	1	SCS Hydrology	25.389	74	Depth	5
Millwater3		2	SCS Hydrology	11.62	98	Depth	1
Millwater4	Millwater4	1	SCS Hydrology	18.281	74	Depth	5
Millwater4		2	SCS Hydrology	10	98	Depth	1
Node105.1	Node105.1	1	SCS Hydrology	11.355	74	Depth	5
Node105.1		2	SCS Hydrology	10	98	Depth	1
Node108	Node108	1	SCS Hydrology	11.325	74	Depth	5
Node108		2	SCS Hydrology	10	98	Depth	1
Node109	Node109	1	SCS Hydrology	19.587	74	Depth	5
Node109		2	SCS Hydrology	10	98	Depth	1
Node109.1.1	Node109.1.1	1	SCS Hydrology	16.97	74	Depth	5
Node109.1.1		2	SCS Hydrology	10	98	Depth	1
Node126	Node126	1	SCS Hydrology	12.384	74	Depth	5
Node126		2	SCS Hydrology	10	98	Depth	1
Node13	Node13	1	SCS Hydrology	15.445	74	Depth	5
Node13		2	SCS Hydrology	10	98	Depth	1
Node143	Node143	1	SCS Hydrology	21.122	74	Depth	5
Node143		2	SCS Hydrology	10	98	Depth	1
Node159	Node159	1	SCS Hydrology	10	74	Depth	5
Node159		2	SCS Hydrology	10	98	Depth	1
Node16	Node16	1	SCS Hydrology	22.993	74	Depth	5
Node16		2	SCS Hydrology	10.524	98	Depth	1
Node160	Node160	1	SCS Hydrology	15.447	74	Depth	5
Node160		2	SCS Hydrology	10	98	Depth	1
Node161	Node161	1	SCS Hydrology	13.566	74	Depth	5
Node161		2	SCS Hydrology	10	98	Depth	1
Node168	Node168	1	SCS Hydrology	19.595	74	Depth	5
Node168		2	SCS Hydrology	10	98	Depth	1
Node186	Node186	1	SCS Hydrology	10	74	Depth	5
Node186		2	SCS Hydrology	10	98	Depth	1
Node203	Node203	1	SCS Hydrology	10	74	Depth	5
Node203		2	SCS Hydrology	10	98	Depth	1
Node206	Node206	1	SCS Hydrology	12.567	74	Depth	5
Node206		2	SCS Hydrology	10	98	Depth	1
Node22	Node22	1	SCS Hydrology	12.812	74	Depth	5
Node22		2	SCS Hydrology	10	98	Depth	1
Node25.1	Node25.1	1	SCS Hydrology	23.294	74	Depth	5
Node25.1		2	SCS Hydrology	10.662	98	Depth	1
Node28	Node28	1	SCS Hydrology	15.755	74	Depth	5
Node28		2	SCS Hydrology	10	98	Depth	1
Node4	Node4	1	SCS Hydrology	11.009	74	Depth	5
Node4		2	SCS Hydrology	10	98	Depth	1
Node4.1	Node4.1	1	SCS Hydrology	13.243	74	Depth	5
Node4.1		2	SCS Hydrology	10	98	Depth	1
Node42	Node42	1	SCS Hydrology	12.908	74	Depth	5
Node42		2	SCS Hydrology	10	98	Depth	1
Node46.1	Node46.1	1	SCS Hydrology	17.313	74	Depth	5
Node46.1		2	SCS Hydrology	10	98	Depth	1
Node46.1a	Node46.1a	1	SCS Hydrology	15.9	74	Depth	5
Node46.1a		2	SCS Hydrology	10	98	Depth	1
Node46.1b	Node46.1b	1	SCS Hydrology	16.496	74	Depth	5

Node46.1b		2	SCS Hydrology	10	98	Depth	1
Node47	Node47	1	SCS Hydrology	13.589	74	Depth	5
Node47		2	SCS Hydrology	10	98	Depth	1
Node47.1	Node47.1	1	SCS Hydrology	16.08	74	Depth	5
Node47.1		2	SCS Hydrology	10	98	Depth	1
Node48	Node48	1	SCS Hydrology	14.181	74	Depth	5
Node48		2	SCS Hydrology	10	98	Depth	1
Node49	Node49	1	SCS Hydrology	12.591	74	Depth	5
Node49		2	SCS Hydrology	10	98	Depth	1
Node50	Node50	1	SCS Hydrology	15.255	74	Depth	5
Node50		2	SCS Hydrology	10	98	Depth	1
Node54	Node54	1	SCS Hydrology	14.956	74	Depth	5
Node54		2	SCS Hydrology	10	98	Depth	1
Node56	Node56	1	SCS Hydrology	11.042	74	Depth	5
Node56		2	SCS Hydrology	10	98	Depth	1
Node56.1	Node56.1	1	SCS Hydrology	11.568	74	Depth	5
Node56.1		2	SCS Hydrology	10	98	Depth	1
Node58	Node58	1	SCS Hydrology	11.042	74	Depth	5
Node58		2	SCS Hydrology	10	98	Depth	1
Node59	Node59	1	SCS Hydrology	10.746	74	Depth	5
Node59		2	SCS Hydrology	10	98	Depth	1
Node59.1	Node59.1	1	SCS Hydrology	11.944	74	Depth	5
Node59.1		2	SCS Hydrology	10	98	Depth	1
Node6	Node6	1	SCS Hydrology	10	74	Depth	5
Node6		2	SCS Hydrology	10	98	Depth	1
Node6.1	Node6.1	1	SCS Hydrology	10	74	Depth	5
Node6.1		2	SCS Hydrology	10	98	Depth	1
Node61	Node61	1	SCS Hydrology	14.741	74	Depth	5
Node61		2	SCS Hydrology	10	98	Depth	1
Node73	Node73	1	SCS Hydrology	23.018	74	Depth	5
Node73		2	SCS Hydrology	10.535	98	Depth	1
Node74	Node74	1	SCS Hydrology	10	74	Depth	5
Node74		2	SCS Hydrology	10	98	Depth	1
Node75	Node75	1	SCS Hydrology	10.569	74	Depth	5
Node75		2	SCS Hydrology	10	98	Depth	1
Node76	Node76	1	SCS Hydrology	11.38	74	Depth	5
Node76		2	SCS Hydrology	10	98	Depth	1
Node77	Node77	1	SCS Hydrology	10.84	74	Depth	5
Node77		2	SCS Hydrology	10	98	Depth	1
Node78	Node78	1	SCS Hydrology	15.165	74	Depth	5
Node78		2	SCS Hydrology	10	98	Depth	1
Node8	Node8	1	SCS Hydrology	10	74	Depth	5
Node8		2	SCS Hydrology	10	98	Depth	1
Node8.1	Node8.1	1	SCS Hydrology	16.268	74	Depth	5
Node8.1		2	SCS Hydrology	10	98	Depth	1
Node80	Node80	1	SCS Hydrology	15.621	74	Depth	5
Node80		2	SCS Hydrology	10	98	Depth	1
Node83	Node83	1	SCS Hydrology	20.685	74	Depth	5
Node83		2	SCS Hydrology	10	98	Depth	1
Node85.1	Node85.1	1	SCS Hydrology	10.159	74	Depth	5
Node85.1		2	SCS Hydrology	10	98	Depth	1
Node86	Node86	1	SCS Hydrology	13.141	74	Depth	5
Node86		2	SCS Hydrology	10	98	Depth	1
Node95	Node95	1	SCS Hydrology	12.718	74	Depth	5
Node95		2	SCS Hydrology	10	98	Depth	1
Node97.1	Node97.1	1	SCS Hydrology	17.157	74	Depth	5
Node97.1		2	SCS Hydrology	10	98	Depth	1
Orewa Contri1	Orewa Contri1	1	SCS Hydrology	54.785	74	Depth	5
Orewa Contri1		2	SCS Hydrology	25.075	98	Depth	1
Orewa Contri2	Orewa Contri2	1	SCS Hydrology	35.78	74	Depth	5
Orewa Contri2		2	SCS Hydrology	16.376	98	Depth	1
Orewa Contri3	Orewa Contri3	1	SCS Hydrology	24.612	74	Depth	5

Orewa Contri3		2	SCS Hydrology	11.265	98	Depth	1
Orewa_Contri4	Orewa_Contri4	1	SCS Hydrology	46.57	74	Depth	5
Orewa_Contri4		2	SCS Hydrology	21.315	98	Depth	1
Orewa_Contri5	Orewa_Contri5	1	SCS Hydrology	21.05	74	Depth	5
Orewa_Contri5		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri6	Orewa_Contri6	1	SCS Hydrology	10	74	Depth	5
Orewa_Contri6		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri7	Orewa_Contri7	1	SCS Hydrology	11.532	74	Depth	5
Orewa_Contri7		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri8	Orewa_Contri8	1	SCS Hydrology	10	74	Depth	5
Orewa_Contri8		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri9	Orewa_Contri9	1	SCS Hydrology	46.54	74	Depth	5
Orewa_Contri9		2	SCS Hydrology	21.302	98	Depth	1
Weiti_Contri	Weiti_Contri	1	SCS Hydrology	110.085	74	Depth	5
Weiti_Contri		2	SCS Hydrology	50.386	98	Depth	1
Weiti_Contri2	Weiti_Contri2	1	SCS Hydrology	40.504	74	Depth	5
Weiti_Contri2		2	SCS Hydrology	18.539	98	Depth	1
Weiti_Contri3	Weiti_Contri3	1	SCS Hydrology	14.794	74	Depth	5
Weiti_Contri3		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri4	Weiti_Contri4	1	SCS Hydrology	17.778	74	Depth	5
Weiti_Contri4		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri5	Weiti_Contri5	1	SCS Hydrology	19.417	74	Depth	5

SCENARIO 5 – ED

10YR FUTURE RAINFALL

XP STORM OUTPUTS - SUBCATCHMENT RESULTS (SCENARIO 5)

Name	Subcatchment	Area ha	Impervious Percentage %	Catchment Max Flow cms	Max Flow cms
Highgate	User Inflow Hydrograph				
Millwater1	1	32.805	0	3.734	16.756
Millwater1	2	60.924	100	14.165	
Millwater2	1	4.299	0	0.732	2.961
Millwater2	2	7.983	100	2.312	
Millwater3	1	9.505	0	1.387	5.985
Millwater3	2	17.651	100	4.918	
Millwater4	1	4.177	0	0.7	2.857
Millwater4	2	7.757	100	2.247	
Node105.1	1	11.511	0	2.284	2.457
Node105.1	2	0.606	100	0.176	
Node108	1	4.41	0	0.876	0.942
Node108	2	0.232	100	0.067	
Node109	1	58.441	0	9.525	10.15
Node109	2	3.076	100	0.891	
Node109.1.1	1	6.047	0	1.043	1.119
Node109.1.1	2	0.318	100	0.092	
Node126	1	17.658	0	3.406	3.664
Node126	2	0.929	100	0.269	
Node13	1	18.116	0	3.238	3.485
Node13	2	0.954	100	0.276	
Node143	1	10.118	0	1.598	1.697
Node143	2	0.533	100	0.154	
Node159	1	5.193	0	1.065	1.145
Node159	2	0.273	100	0.079	
Node16	1	32.462	0	4.943	5.237
Node16	2	1.709	100	0.488	
Node160	1	49.426	0	8.833	9.508
Node160	2	2.601	100	0.753	
Node161	1	25.067	0	4.695	5.058
Node161	2	1.319	100	0.382	
Node168	1	7.632	0	1.244	1.325
Node168	2	0.402	100	0.116	
Node186	1	18.393	0	3.774	4.054
Node186	2	0.968	100	0.28	
Node203	1	7.43	0	1.524	1.638
Node203	2	0.391	100	0.113	
Node206	1	6.346	0	1.219	1.311
Node206	2	0.334	100	0.097	
Node22	1	3.902	0	0.745	0.802
Node22	2	0.205	100	0.059	
Node25.1	1	30.495	0	4.616	4.894
Node25.1	2	1.605	100	0.457	
Node28	1	9.915	0	1.759	1.892
Node28	2	0.522	100	0.151	
Node4	1	3.285	0	0.658	0.707

Node4	2	0.173	100	0.05	
Node4.1	1	4.636	0	0.876	0.943
Node4.1	2	0.244	100	0.071	
Node42	1	9.499	0	1.81	1.948
Node42	2	0.5	100	0.145	
Node46.1	1	5.799	0	0.992	1.064
Node46.1	2	0.305	100	0.088	
Node46.1a	1	9.122	0	1.613	1.734
Node46.1a	2	0.48	100	0.139	
Node46.1b	1	4.058	0	0.708	0.759
Node46.1b	2	0.214	100	0.062	
Node47	1	10.119	0	1.894	2.041
Node47	2	0.533	100	0.154	
Node47.1	1	3.962	0	0.698	0.749
Node47.1	2	0.208	100	0.06	
Node48	1	4.98	0	0.918	0.988
Node48	2	0.262	100	0.076	
Node49	1	4.207	0	0.808	0.869
Node49	2	0.221	100	0.064	
Node50	1	5.257	0	0.944	1.016
Node50	2	0.277	100	0.08	
Node54	1	4.088	0	0.74	0.796
Node54	2	0.215	100	0.062	
Node56	1	3.869	0	0.774	0.832
Node56	2	0.204	100	0.059	
Node56.1	1	3.459	0	0.682	0.734
Node56.1	2	0.182	100	0.053	
Node58	1	2.91	0	0.582	0.626
Node58	2	0.153	100	0.044	
Node59	1	1.833	0	0.369	0.397
Node59	2	0.097	100	0.028	
Node59.1	1	4.17	0	0.814	0.877
Node59.1	2	0.22	100	0.064	
Node6	1	3.269	0	0.671	0.721
Node6	2	0.172	100	0.05	
Node6.1	1	3.36	0	0.689	0.741
Node6.1	2	0.177	100	0.051	
Node61	1	3.651	0	0.665	0.714
Node61	2	0.192	100	0.056	
Node73	1	18.072	0	2.75	2.914
Node73	2	0.951	100	0.272	
Node74	1	5.165	0	1.06	1.139
Node74	2	0.272	100	0.079	
Node75	1	4.189	0	0.847	0.91
Node75	2	0.221	100	0.064	
Node76	1	3.913	0	0.776	0.835
Node76	2	0.206	100	0.06	
Node77	1	4.05	0	0.814	0.875
Node77	2	0.213	100	0.062	
Node78	1	6.417	0	1.156	1.243

Node78	2	0.338	100	0.098	
Node8	1	3.707	0	0.761	0.817
Node8	2	0.195	100	0.056	
Node8.1	1	4.251	0	0.746	0.8
Node8.1	2	0.224	100	0.065	
Node80	1	5.414	0	0.963	1.037
Node80	2	0.285	100	0.083	
Node83	1	16.098	0	2.564	2.727
Node83	2	0.847	100	0.245	
Node85.1	1	3.027	0	0.618	0.664
Node85.1	2	0.159	100	0.046	
Node86	1	5.451	0	1.033	1.112
Node86	2	0.287	100	0.083	
Node95	1	3.801	0	0.728	0.783
Node95	2	0.2	100	0.058	
Node97.1	1	4.164	0	0.715	0.767
Node97.1	2	0.219	100	0.063	
Orewa Contri1	1	480.257	0	48.117	50.813
Orewa Contri1	2	25.277	100	5.317	
Orewa Contri2	1	68.959	0	8.581	9.081
Orewa Contri2	2	3.629	100	0.904	
Orewa Contri3	1	55.458	0	8.196	8.687
Orewa Contri3	2	2.919	100	0.82	
Orewa_Contri4	1	185.289	0	20.22	21.374
Orewa_Contri4	2	9.752	100	2.194	
Orewa_Contri5	1	24.418	0	3.862	4.101
Orewa_Contri5	2	1.285	100	0.372	
Orewa_Contri6	1	12.752	0	2.616	2.811
Orewa_Contri6	2	0.671	100	0.194	
Orewa_Contri7	1	9.502	0	1.876	2.019
Orewa_Contri7	2	0.5	100	0.145	
Orewa_Contri8	1	6.902	0	1.416	1.521
Orewa_Contri8	2	0.363	100	0.105	
Orewa_Contri9	1	79.566	0	8.686	9.181
Orewa_Contri9	2	4.188	100	0.942	
Weiti_Contri	1	678.769	0	46.038	48.524
Weiti_Contri	2	35.725	100	5.409	
Weiti_Contri2	1	50.344	0	5.897	6.235
Weiti_Contri2	2	2.65	100	0.63	
Weiti_Contri3	1	8.18	0	1.487	1.598
Weiti_Contri3	2	0.43	100	0.125	
Weiti_Contri4	1	10.257	0	1.738	1.861
Weiti_Contri4	2	0.54	100	0.156	
Weiti_Contri5	1	6.967	0	1.14	1.215
Weiti_Contri5	2	0.367	100	0.106	
Weiti_Contri6	1	3.806	0	0.749	0.806
Weiti_Contri6	2	0.2	100	0.058	
Weiti_Contri7	1	8.027	0	1.283	1.365
Weiti_Contri7	2	0.422	100	0.122	
Weiti_Contri8	1	43.618	0	8.62	9.278

Weiti_Contri8	2	2.296	100	0.665	
Weiti_Contri8.1	1	53.786	0	9.029	11.345
Weiti_Contri8.1	2	9.791	100	2.836	
Weiti_Contri9	1	153.161	0	14.852	15.681
Weiti_Contri9	2	8.061	100	1.652	
Weiti_Contri9.1	1	53.116	0	6.195	19.47
Weiti_Contri9.1	2	63.623	100	15.089	
Weiti_Contri9.2	1	36.459	0	6.274	10.512
Weiti_Contri9.2	2	16.152	100	4.678	
Weiti_Silverdale	1	417.491	0	30.732	32.406
Weiti_Silverdale	2	21.973	100	3.576	

XP STORM OUTPUTS - BASIC CONDUIT DATA (SCENARIO 5)

Name	Link Name	Length m	Shape	Diameter (Height) m	Downstream Invert Elevation m	Upstream Invert Elevation m
1	Culv_Link23.2_Multi	7.44	Circular	0.7	9.54	9.74
2	Culv_Link23.2_Multi	7.44	Circular	0.7	8.83	8.92
3	Culv_Link23.2_Multi	7.44	Circular	0.7	8.88	8.88
Bridge_KowhaiRd	Bridge_KowhaiRd	9.06	Natural	0	2.62	2.64
Bridge_KowhaiRd#w	Bridge_KowhaiRd					
Bridge_Lysnar	Bridge_Lysnar	3.41	Natural	0	4.32	4.46
Bridge_Lysnar#w	Bridge_Lysnar					
Bridge_MWAY	Bridge_MWAY	25.53	Natural	0	-0.74	-0.71
Bridge_WainuiRd	Bridge_WainuiRd	13.75	Natural	0	-0.47	-0.34
Bridge_WainuiRd#w	Bridge_WainuiRd					
Bridge_Weiti	Bridge_Weiti	15.16	Natural	0	9.83	11.6
Bridge_Weiti#w	Bridge_Weiti					
CUL_NZTA	CUL_NZTA	98.3	Circular	4.5	4.74	5.19
Culv_EX1500d	Culv_EX1500d	14.96	Circular	1.5	24.98	25.06
Culv_Ex1800	Culv_Ex1800	7.83	Circular	1.8	13.733	13.984
Culv_Link23.1	Culv_Link23.1	5.45	User Defined	1.75	6.16	6.17
Culv_LK101.1	Culv_LK101.1	20.01	Circular	1.5	22.77	22.85
Culv_LK113	Culv_LK113	5.15	Circular	0.6	17.24	17.39
Culv_LK125	Culv_LK125	8.09	Circular	0.4	24.86	25.1
Culv_LK126	Culv_LK126	12.62	Circular	0.9	23.78	23.88
Culv_LK136	Culv_LK136	12.44	Circular	0.9	21.75	21.83
Culv_Lk143	Culv_Lk143	29.72	Circular	0.6	34.8	36.54
Culv_Lk171	Culv_Lk171	92.64	Circular	2.55	6.76	7.99
Culv_Lk172	Culv_Lk172	13.41	Rectangular	2.35 x 3.7	9.34	9.62
Culv_Lk25.1.2	Culv_Lk25.1.2	10.5	Circular	1.85	4.45	4.66
Culv_LK46	Culv_LK46	12.49	Circular	1.2	19.84	19.98
Culv_Lk48.2	Culv_Lk48.2	2.38	Circular	0.6	15.08	15.19
Culv_LK58.1	Culv_LK58.1	7.9	Circular	1.85	10.83	11.17
Culv_Lk92.1	Culv_Lk92.1	15.41	Circular	1.2	14.27	14.45
CulvLK42.1	CulvLK42.1	5.72	Circular	1.05	20.83	20.92
CulvLK77.1	CulvLK77.1	23.45	Circular	0.45	14.78	14.81
CulvLK87.1	CulvLK87.1	5.02	Circular	0.6	20.22	20.45
Highgate.1	Highgate.1	168.1	Circular	1.6	15.63	19.08
Link10	Link10	141.49	Natural	0	0.16	0.67
Link101	Link101	202.17	Natural	0	29.841	33.066
Link101.1.1	Link101.1.1	206.54	Natural	0	18.287	21.611
Link101.1.2	Link101.1.2	100.39	Natural	0	21.611	22.77
Link101.2	Link101.2	277.81	Natural	0	22.85	29.841
Link103	Link103	137.17	Natural	0	19.051	19.113
Link11	Link11	113.22	Natural	0	0.22	0.16
Link112	Link112	92.55	Natural	0	4.782	4.883
Link114	Link114	69.17	Natural	0	16.58	17.24
Link115	Link115	104.95	Natural	0	15.508	16.58
Link116	Link116	147.29	Natural	0	13.93	15.508
Link117	Link117	125.09	Natural	0	10.56	13.982
Link118	Link118	33.24	Natural	0	17.643	17.945
Link12	Link12	75.88	Natural	0	-0.077	0.22
Link13	Link13	39.44	Natural	0	0.274	-0.077
Link135	Link135	48.58	Natural	0	22.069	22.464
Link137	Link137	31.81	Natural	0	21.435	21.756

Link138	Link138	56.01	Natural	0	20.868	21.435
Link139	Link139	87.01	Natural	0	19.58	20.868
Link14	Link14	70.07	Natural	0	0.004	0.274
Link140	Link140	112.52	Natural	0	18.333	19.58
Link141	Link141	59.69	Natural	0	17.915	18.333
Link15	Link15	93	Natural	0	-0.134	0.004
Link150	Link150	127.36	Natural	0	4.82	9.86
Link156	Link156	326.91	Natural	0	15.994	22.926
Link157	Link157	89.18	Natural	0	10.198	17.257
Link16	Link16	84.25	Natural	0	-0.12	-0.134
Link160	Link160	131.12	Natural	0	6.35	15.517
Link161	Link161	271.8	Natural	0	22.464	26.837
Link17	Link17	95.65	Natural	0	-0.25	-0.12
Link172	Link172	332.34	Natural	0	11.988	15.232
Link172.1	Link172.1	280.43	Natural	0	12.04	11.988
Link172.1.1.1	Link172.1.1.1	40.25	Natural	0	10.547	10.965
Link175	Link175	177.46	Natural	0	-0.9	-0.8
Link175.1	Link175.1	45.03	Natural	0	-1	-0.9
Link176	Link176	383.8	Natural	0	-1.15	-0.1
Link177	Link177	102.08	Natural	0	-1.24	-1.15
Link177.1	Link177.1	116.73	Natural	0	-1.28	-1.24
Link178	Link178	210.95	Natural	0	-1.3	-1.28
Link178.1	Link178.1	206.61	Natural	0	-1.34	-1.3
Link18	Link18	152.17	Natural	0	-0.25	-0.25
Link182	Link182	366.22	Natural	0	1.419	6.76
Link183	Link183	99.41	Natural	0	1.277	1.419
Link184	Link184	332.74	Natural	0	1.277	4.782
Link185	Link185	338.69	Natural	0	1.419	4.656
Link186	Link186	326.75	Natural	0	0.647	1.277
Link187	Link187	435.61	Natural	0	-0.016	0.647
Link188	Link188	458.5	Natural	0	0.03	-0.016
Link189	Link189	284.68	Natural	0	-0.285	0.03
Link190	Link190	185.13	Natural	0	-0.509	-0.285
Link191	Link191	397.39	Natural	0	-0.64	-0.51
Link191.1	Link191.1	413.61	Natural	0	-0.78	-0.64
Link192	Link192	208.09	Natural	0	-0.678	-0.776
Link193	Link193	154.24	Natural	0	4.883	4.74
Link19a	Link19a	133.6	Natural	0	-0.2	2.62
Link19a.1	Link19a.1	132.35	Natural	0	-0.52	-0.2
Link2	Link2	54.59	Natural	0	13.473	13.19
Link2.1	Link2.1	61.12	Natural	0	11.637	13.473
Link20	Link20	14.09	Natural	0	-0.34	-0.25
Link20.1	Link20.1	51.59	Natural	0	-0.52	-0.47
Link200	Link200	167.18	Natural	0	14.65	18.815
Link203	Link203	75.72	Natural	0	36.54	43.97
Link207	Link207	189.59	Natural	0	25.06	30.2
Link21	Link21	175.83	Natural	0	-0.71	-0.52
Link23	Link23	2.66	Natural	0	10.33	10.19
Link23.1.1	Link23.1.1	153.98	Natural	0	-0.25	4.68
Link23.1.2	Link23.1.2	116.65	Natural	0	4.68	6.16
Link23.2.1	Link23.2.1	155.44	Natural	0	6.17	8.83
Link23.3	Link23.3	161.27	Natural	0	8.88	10.33
Link25	Link25	72.62	Natural	0	4.51	5.87
Link25.1	Link25.1	37.03	Natural	0	4.66	4.51

Link25.1.1	Link25.1.1	13.53	Natural	0	3.99	4.45
Link3	Link3	108.63	Natural	0	10.849	11.637
Link31	Link31	91.63	Natural	0	15.59	15.86
Link31.1	Link31.1	465.46	Natural	0	11.7	13.69
Link31.2	Link31.2	386.31	Natural	0	13.69	14.77
Link31.3	Link31.3	194.9	Natural	0	14.77	15.32
Link31.4	Link31.4	93.24	Natural	0	15.32	15.59
Link32	Link32	865.06	Natural	0	8.908	11.7
Link32.1	Link32.1	688.18	Natural	0	5.132	8.908
Link33a	Link33a	198.81	Natural	0	4.09	5.13
Link33b	Link33b	137.99	Natural	0	3.57	4.09
Link33c	Link33c	147.58	Natural	0	2.64	3.57
Link39	Link39	56.29	Natural	0	22.81	23.78
Link4	Link4	78.42	Natural	0	8.575	10.849
Link4.1	Link4.1	97.95	Natural	0	5.04	8.103
Link4.2	Link4.2	82.58	Natural	0	8.103	8.575
Link40	Link40	58.73	Natural	0	22.311	22.81
Link41	Link41	78.25	Natural	0	21.52	22.311
Link42	Link42	79.01	Natural	0	20.92	21.52
Link43	Link43	48.21	Natural	0	20.551	20.83
Link44	Link44	17.22	Natural	0	19.98	20.551
Link45.1	Link45.1	95.72	Natural	0	17.97	18.11
Link45.1.1	Link45.1.1	47.86	Natural	0	17.9	17.97
Link45.1.1.1	Link45.1.1.1	47.86	Natural	0	17.83	17.9
Link45.2	Link45.2	114.74	Natural	0	18.114	19.84
Link46	Link46	32.11	Natural	0	16.882	17.83
Link46.1	Link46.1	27.5	Natural	0	17.239	16.882
Link47	Link47	113.64	Natural	0	15.25	17.239
Link48	Link48	55.74	Natural	0	15.19	15.25
Link48.1	Link48.1	65.21	Natural	0	14.14	15.08
Link49	Link49	70.45	Natural	0	13.19	14.143
Link5	Link5	60.92	Natural	0	4.82	5.04
Link5.1	Link5.1	39.19	Natural	0	4.59	4.82
Link53	Link53	69.15	Natural	0	17.237	18.287
Link54	Link54	41.08	Natural	0	16.873	17.237
Link54.1	Link54.1	15.06	Natural	0	16.432	16.873
Link55	Link55	116.8	Natural	0	14.65	16.432
Link55.1	Link55.1	64.57	Natural	0	13.984	14.65
Link56	Link56	17.49	Natural	0	13.652	13.733
Link56.1	Link56.1	60.44	Natural	0	13.027	13.652
Link57	Link57	66.25	Natural	0	12.015	13.027
Link58	Link58	76.81	Natural	0	13.103	12.015
Link59	Link59	91.29	Natural	0	9.04	10.83
Link6	Link6	61.11	Natural	0	4.56	4.59
Link6.1	Link6.1	44.98	Natural	0	4.46	4.56
Link6.1a	Link6.1a	26.8	Natural	0	3.99	4.32
Link60	Link60	111.63	Natural	0	5.87	9.04
Link65	Link65	384.85	Natural	0	17.146	19.051
Link66	Link66	169.44	Natural	0	15.994	17.146
Link66.1	Link66.1	174.58	Natural	0	13.72	14.769
Link66.1.1	Link66.1.1	177.17	Natural	0	12.039	13.72
Link66.2	Link66.2	173.2	Natural	0	14.769	15.994
Link67	Link67	134.88	Natural	0	11.6	12.039
Link67.1	Link67.1	284.75	Natural	0	10.198	11.895

Link68	Link68	335.52	Natural	0	9.055	10.198
Link69	Link69	55.84	Natural	0	9.439	9.055
Link69.1	Link69.1	226.86	Natural	0	8.3	9.439
Link7	Link7	51.83	Natural	0	1.258	3.99
Link70	Link70	143.23	Natural	0	7.11	8.3
Link71	Link71	77.14	Natural	0	6.35	7.11
Link71.1	Link71.1	163.65	Natural	0	6.315	7.11
Link71.2	Link71.2	82.49	Natural	0	7.11	6.35
Link72	Link72	38.13	Natural	0	6.404	6.315
Link72.1	Link72.1	39.12	Natural	0	5.19	6.2
Link74	Link74	122.63	Natural	0	28.994	34.8
Link74.1	Link74.1	245.26	Natural	0	20.836	26.368
Link74.2	Link74.2	122.63	Natural	0	26.368	28.994
Link75	Link75	89.68	Natural	0	18.293	19.441
Link76	Link76	138.38	Natural	0	16.371	18.293
Link77	Link77	47.66	Natural	0	15.15	16.371
Link77.1.1	Link77.1.1	40.12	Natural	0	14.23	14.78
Link78	Link78	51.92	Natural	0	11.74	14.23
Link79	Link79	96.79	Natural	0	9.86	11.74
Link8	Link8	77.32	Natural	0	0.19	1.258
Link81	Link81	37.06	Natural	0	23.846	24.86
Link82	Link82	116.13	Natural	0	18.818	23.846
Link83	Link83	40.79	Natural	0	16.432	18.818
Link87	Link87	56.35	Natural	0	20.22	20.91
Link87.1a	Link87.1a	28.31	Natural	0	19.98	20.22
Link89	Link89	156.52	Natural	0	22.531	24.98
Link89.1	Link89.1	135.63	Natural	0	20.91	22.531

XP STORM OUTPUTS - JUNCTION DATA (SCENARIO 5)

Name	Node Name	Invert Elevation m	Node X	Node Y	Ponding Type	Inlet Capacity Type
Highgate	Highgate	19.08	390760.744	830148.545	Link Invert to 2D	Maximum Capacity
Millwater1	Millwater1	-1	391144.141	831278.612	Link Invert to 2D	Maximum Capacity
Millwater2	Millwater2	-1.15	391481.677	831387.439	Link Invert to 2D	Maximum Capacity
Millwater3	Millwater3	-1.24	391570.934	831410.567	Link Invert to 2D	Maximum Capacity
Millwater4	Millwater4	-1.3	391860.414	831519.05	Link Invert to 2D	Maximum Capacity
Node10	Node10	1.258	390011.681	830524.418	Link Invert to 2D	Maximum Capacity
Node100	Node100	15.63	390694.008	830302.827	Link Invert to 2D	Maximum Capacity
Node100.1	Node100.1	12.66	390622.118	830426.675	Link Invert to 2D	Maximum Capacity
Node100.2	Node100.2	14.45	390661.171	830366.907	Link Invert to 2D	Maximum Capacity
Node100.2.1	Node100.2.1	14.27	390651.341	830378.777	Link Invert to 2D	Maximum Capacity
Node102	Node102	10.56	390587.268	830536.871	Link Invert to 2D	Maximum Capacity
Node104	Node104	4.74	390989.368	829058.139	Link Invert to 2D	Maximum Capacity
Node105	Node105	-0.8	390934.933	831205.359	Link Invert to 2D	Maximum Capacity
Node105.1	Node105.1	-0.9	391100.667	831266.89	Link Invert to 2D	Maximum Capacity
Node108	Node108	5.04	390014.062	830245.239	Link Invert to 2D	Maximum Capacity
Node108.1	Node108.1	4.82	390003.818	830304.98	Link Invert to 2D	Maximum Capacity
Node109	Node109	33.066	388814.038	829688.32	Link Invert to 2D	Maximum Capacity
Node109.1	Node109.1	22.85	388976.008	830105.067	Link Invert to 2D	Maximum Capacity
Node109.1.1	Node109.1.1	21.611	389076.916	830169.74	Link Invert to 2D	Maximum Capacity
Node109.1.2	Node109.1.2	22.77	388990.761	830118.588	Link Invert to 2D	Maximum Capacity
Node109.2	Node109.2	29.841	388826.55	829870.888	Link Invert to 2D	Maximum Capacity
Node11	Node11	0.19	390054.553	830588.569	Link Invert to 2D	Maximum Capacity
Node119	Node119	4.883	391084.228	828988.566	Link Invert to 2D	Maximum Capacity
Node12	Node12	0.67	390107.166	830696.479	Link Invert to 2D	Maximum Capacity
Node120	Node120	4.782	391132.149	828949.835	Link Invert to 2D	Maximum Capacity
Node121	Node121	17.39	390500.65	830117.826	Link Invert to 2D	Maximum Capacity
Node122	Node122	17.24	390500.816	830122.97	Link Invert to 2D	Maximum Capacity
Node123	Node123	16.58	390492.934	830190.884	Link Invert to 2D	Maximum Capacity
Node124	Node124	15.508	390497.396	830295.447	Link Invert to 2D	Maximum Capacity
Node125	Node125	13.93	390523.844	830437.416	Link Invert to 2D	Maximum Capacity
Node126	Node126	17.915	390507.197	830089.527	Link Invert to 2D	Maximum Capacity
Node13	Node13	0.1603	390181.707	830808.359	Link Invert to 2D	Maximum Capacity
Node133	Node133	25.1	389140.561	830369.699	Link Invert to 2D	Maximum Capacity
Node134	Node134	23.88	389637.57	829041.964	Link Invert to 2D	Maximum Capacity
Node14	Node14	0.22	390221.859	830886.276	Link Invert to 2D	Maximum Capacity
Node143	Node143	22.464	390527.054	829736.499	Link Invert to 2D	Maximum Capacity
Node144	Node144	21.83	390515.505	829783.568	Link Invert to 2D	Maximum Capacity
Node145	Node145	21.75	390512.138	829795.544	Link Invert to 2D	Maximum Capacity
Node146	Node146	21.435	390502.851	829825.972	Link Invert to 2D	Maximum Capacity
Node147	Node147	20.868	390500.521	829881.384	Link Invert to 2D	Maximum Capacity
Node148	Node148	19.58	390505.475	829963.454	Link Invert to 2D	Maximum Capacity
Node149	Node149	18.333	390495.782	830049.403	Link Invert to 2D	Maximum Capacity
Node15	Node15	-0.077	390239.982	830957.369	Link Invert to 2D	Maximum Capacity
Node150	Node150	36.54	389283.652	829636.661	Link Invert to 2D	Maximum Capacity
Node159	Node159	44.824	389130.157	829523.01	Link Invert to 2D	Maximum Capacity

Node16	Node16	0.274	390259.45	830985.84	Link Invert to 2D	Maximum Capacity
Node160	Node160	36.06	389102.492	829047.246	Link Invert to 2D	Maximum Capacity
Node160.1	Node160.1	30.2	389372.452	829121.34	Link Invert to 2D	Maximum Capacity
Node161	Node161	29.993	389375.219	828939.943	Link Invert to 2D	Maximum Capacity
Node168	Node168	26.837	390627.699	829496.156	Link Invert to 2D	Maximum Capacity
Node17	Node17	0.004	390326.41	830996.417	Link Invert to 2D	Maximum Capacity
Node178	Node178	7.99	390902.335	828787.492	Link Invert to 2D	Maximum Capacity
Node179	Node179	6.76	390994.978	828787.897	Link Invert to 2D	Maximum Capacity
Node18	Node18	-0.134	390404.117	831034.954	Link Invert to 2D	Maximum Capacity
Node180.1	Node180.1	11.988	390658.86	828617.787	Link Invert to 2D	Maximum Capacity
Node180.1.1	Node180.1.1	9.62	390872.05	828749.519	Link Invert to 2D	Maximum Capacity
Node180.1.1.1	Node180.1.1.1	9.34	390874.93	828762.612	Link Invert to 2D	Maximum Capacity
Node186	Node186	-1.28	391651.599	831489.29	Link Invert to 2D	Maximum Capacity
Node187	Node187	-1.34	392050.291	831561.049	Link Invert to 2D	Maximum Capacity
Node19	Node19	-0.12	390461.56	831088.471	Link Invert to 2D	Maximum Capacity
Node192	Node192	1.277	391327.868	828850.408	Link Invert to 2D	Maximum Capacity
Node194	Node194	-0.016	391899.237	828994.355	Link Invert to 2D	Maximum Capacity
Node195	Node195	0.03	392098.433	828889.23	Link Invert to 2D	Maximum Capacity
Node196	Node196	-0.285	392322.117	828895.377	Link Invert to 2D	Maximum Capacity
Node198	Node198	-0.51	392464.001	828796.297	Link Invert to 2D	Maximum Capacity
Node199	Node199	-0.678	393345.847	828972.505	Link Invert to 2D	Maximum Capacity
Node20	Node20	-0.25	390554.347	831108.65	Link Invert to 2D	Maximum Capacity
Node203	Node203	34.96	389000.188	830307.602	Link Invert to 2D	Maximum Capacity
Node206	Node206	18.815	389353.844	830230.372	Link Invert to 2D	Maximum Capacity
Node209	Node209	43.97	389264.177	829584.071	Link Invert to 2D	Maximum Capacity
Node21	Node21	-0.25	390698.628	831102.846	Link Invert to 2D	Maximum Capacity
Node21.1	Node21.1	-0.47	390715.127	831125.017	Link Invert to 2D	Maximum Capacity
Node21.2	Node21.2	-0.34	390707.67	831113.468	Link Invert to 2D	Maximum Capacity
Node22	Node22	5.87	389871.336	830460.858	Link Invert to 2D	Maximum Capacity
Node22.1	Node22.1	4.51	389942.611	830473.624	Link Invert to 2D	Maximum Capacity
Node22.1.1	Node22.1.1	4.45	389989.974	830472.236	Link Invert to 2D	Maximum Capacity
Node22.1.2	Node22.1.2	4.66	389979.511	830473.164	Link Invert to 2D	Maximum Capacity
Node25	Node25	10.19	390598.139	830562.993	Link Invert to 2D	Maximum Capacity
Node25.1	Node25.1	6.17	390655.048	830854.742	Link Invert to 2D	Maximum Capacity
Node25.1.1	Node25.1.1	4.68	390689.475	830965.836	Link Invert to 2D	Maximum Capacity
Node25.1.2	Node25.1.2	6.16	390655.717	830860.108	Link Invert to 2D	Maximum Capacity
Node25.2	Node25.2	8.88	390623.024	830712.798	Link Invert to 2D	Maximum Capacity
Node25.2.1	Node25.2.1	8.83	390624.175	830721.726	Link Invert to 2D	Maximum Capacity
Node25.3	Node25.3	10.33	390599.933	830564.242	Link Invert to 2D	Maximum Capacity
Node26a	Node26a	2.62	390502.824	831320.516	Link Invert to 2D	Maximum Capacity
Node27	Node27	-0.52	390716.358	831175.835	Link Invert to 2D	Maximum Capacity
Node28	Node28	-0.71	390889.117	831200.507	Link Invert to 2D	Maximum Capacity
Node29	Node29	-0.74	390914.635	831201.149	Link Invert to 2D	Maximum Capacity
Node34.1	Node34.1	2.64	390495.833	831326.28	Link Invert to 2D	Maximum Capacity
Node4	Node4	13.19	390117.819	829855.792	Link Invert to 2D	Maximum Capacity
Node4.1	Node4.1	13.473	390139.264	829896.454	Link Invert to 2D	Maximum Capacity
Node40	Node40	23.78	389646.077	829051.292	Link Invert to 2D	Maximum Capacity
Node41	Node41	22.81	389685.814	829091.165	Link Invert to 2D	Maximum Capacity
Node42	Node42	22.311	389711.315	829144.066	Link Invert to 2D	Maximum Capacity
Node43	Node43	21.52	389735.503	829216.797	Link Invert to 2D	Maximum Capacity

Node43.1	Node43.1	20.92	389775.027	829285.21	Link Invert to 2D	Maximum Capacity
Node44	Node44	20.83	389777.726	829290.258	Link Invert to 2D	Maximum Capacity
Node45	Node45	20.551	389801.673	829332.1	Link Invert to 2D	Maximum Capacity
Node46	Node46	19.98	389804.147	829348.198	Link Invert to 2D	Maximum Capacity
Node46.1	Node46.1	18.11	389912.608	829413.981	Link Invert to 2D	Maximum Capacity
Node46.1a	Node46.1a	17.97	389971.566	829476.09	Link Invert to 2D	Maximum Capacity
Node46.1b	Node46.1b	17.9	389995.357	829517.609	Link Invert to 2D	Maximum Capacity
Node46.2	Node46.2	19.84	389814.117	829355.719	Link Invert to 2D	Maximum Capacity
Node47	Node47	17.83	390020.041	829558.612	Link Invert to 2D	Maximum Capacity
Node47.1	Node47.1	16.882	390035.963	829586.499	Link Invert to 2D	Maximum Capacity
Node48	Node48	17.239	390048.943	829610.74	Link Invert to 2D	Maximum Capacity
Node49	Node49	15.25	390108.692	829694.422	Link Invert to 2D	Maximum Capacity
Node49.1	Node49.1	15.08	390096.026	829734.191	Link Invert to 2D	Maximum Capacity
Node49.2	Node49.2	15.19	390096.748	829731.925	Link Invert to 2D	Maximum Capacity
Node5	Node5	11.637	390135.622	829945.409	Link Invert to 2D	Maximum Capacity
Node50	Node50	14.14	390101.888	829797.933	Link Invert to 2D	Maximum Capacity
Node54	Node54	18.287	389254.992	830274.073	Link Invert to 2D	Maximum Capacity
Node55	Node55	17.237	389305.867	830312.606	Link Invert to 2D	Maximum Capacity
Node55.1	Node55.1	16.873	389334.759	830339.766	Link Invert to 2D	Maximum Capacity
Node56	Node56	16.432	389336.173	830354.135	Link Invert to 2D	Maximum Capacity
Node56.1	Node56.1	13.984	389498.551	830378.391	Link Invert to 2D	Maximum Capacity
Node56.2	Node56.2	14.65	389440.835	830364.371	Link Invert to 2D	Maximum Capacity
Node57	Node57	13.733	389505.49	830382.026	Link Invert to 2D	Maximum Capacity
Node57.1	Node57.1	13.652	389520.745	830390.58	Link Invert to 2D	Maximum Capacity
Node58	Node58	13.027	389562.004	830419.89	Link Invert to 2D	Maximum Capacity
Node59	Node59	12.015	389598.735	830459.228	Link Invert to 2D	Maximum Capacity
Node59.1	Node59.1	11.17	389663.227	830471.068	Link Invert to 2D	Maximum Capacity
Node6	Node6	10.849	390122.582	830049.539	Link Invert to 2D	Maximum Capacity
Node6.1	Node6.1	8.103	390047.33	830160.953	Link Invert to 2D	Maximum Capacity
Node6.2	Node6.2	8.575	390105.058	830116.041	Link Invert to 2D	Maximum Capacity
Node60	Node60	10.83	389670.982	830472.569	Link Invert to 2D	Maximum Capacity
Node61	Node61	9.04	389759.707	830461.047	Link Invert to 2D	Maximum Capacity
Node72	Node72	19.051	389321.668	828257.5	Link Invert to 2D	Maximum Capacity
Node73	Node73	17.146	389541.656	828505.942	Link Invert to 2D	Maximum Capacity
Node73.1	Node73.1	15.994	389673.745	828527.036	Link Invert to 2D	Maximum Capacity
Node74	Node74	12.039	389987.849	828799.277	Link Invert to 2D	Maximum Capacity
Node74.1	Node74.1	9.83	390068.106	828844.096	Link Invert to 2D	Maximum Capacity
Node74.2	Node74.2	11.6	390066.018	828829.077	Link Invert to 2D	Maximum Capacity
Node75	Node75	10.198	390227.444	828871.677	Link Invert to 2D	Maximum Capacity
Node76	Node76	9.055	390403.128	828968.39	Link Invert to 2D	Maximum Capacity
Node77	Node77	8.3	390574.816	829048.966	Link Invert to 2D	Maximum Capacity
Node78	Node78	7.11	390683.738	829036.302	Link Invert to 2D	Maximum Capacity
Node78.1	Node78.1	7.11	390765.2	829001.294	Link Invert to 2D	Maximum Capacity
Node78.2	Node78.2	6.35	390716.455	828981.236	Link Invert to 2D	Maximum Capacity
Node79	Node79	6.315	390831.54	829107.537	Link Invert to 2D	Maximum Capacity
Node8	Node8	4.59	389998.384	830343.08	Link Invert to 2D	Maximum Capacity
Node8.1	Node8.1	4.56	390001.515	830399.956	Link Invert to 2D	Maximum Capacity
Node8.1.1	Node8.1.1	4.46	390006.175	830444.532	Link Invert to 2D	Maximum Capacity
Node8.1.1.1	Node8.1.1.1	4.32	390007.196	830447.784	Link Invert to 2D	Maximum Capacity
Node80	Node80	5.19	390900.4	829099.932	Link Invert to 2D	Maximum Capacity

Node82	Node82	34.8	389292.649	829664.986	Link Invert to 2D	Maximum Capacity
Node82.1	Node82.1	26.368	389394.601	829844.178	Link Invert to 2D	Maximum Capacity
Node82.2	Node82.2	28.994	389300.418	829784.319	Link Invert to 2D	Maximum Capacity
Node83	Node83	19.441	389602.462	829896.157	Link Invert to 2D	Maximum Capacity
Node84	Node84	18.293	389662.074	829961.1	Link Invert to 2D	Maximum Capacity
Node85	Node85	16.371	389722.053	830083.34	Link Invert to 2D	Maximum Capacity
Node85.1	Node85.1	14.81	389740.551	830127.262	Link Invert to 2D	Maximum Capacity
Node85.1.1	Node85.1.1	14.78	389756.101	830144.817	Link Invert to 2D	Maximum Capacity
Node86	Node86	14.23	389773.508	830180.966	Link Invert to 2D	Maximum Capacity
Node87	Node87	11.74	389813.454	830214.091	Link Invert to 2D	Maximum Capacity
Node88	Node88	9.86	389902.906	830232.576	Link Invert to 2D	Maximum Capacity
Node89	Node89	24.86	389148.187	830372.404	Link Invert to 2D	Maximum Capacity
Node9	Node9	3.99	390003.36	830473.919	Link Invert to 2D	Maximum Capacity
Node90	Node90	23.846	389182.093	830362.075	Link Invert to 2D	Maximum Capacity
Node91	Node91	18.818	389296.699	830347.944	Link Invert to 2D	Maximum Capacity
Node95	Node95	20.91	389744.113	829324.369	Link Invert to 2D	Maximum Capacity
Node95.1	Node95.1	20.22	389774.744	829342.565	Link Invert to 2D	Maximum Capacity
Node95.1a	Node95.1a	20.22	389778.418	829339.137	Link Invert to 2D	Maximum Capacity
Node96	Node96	25.06	389546.04	829197.565	Link Invert to 2D	Maximum Capacity
Node97	Node97	24.98	389560.25	829192.891	Link Invert to 2D	Maximum Capacity
Node97.1	Node97.1	22.531	389638.956	829276.626	Link Invert to 2D	Maximum Capacity
Orewa C2	Orewa C2	15.32	388430.922	830585.273	Link Invert to 2D	Maximum Capacity
Orewa Contri1	Orewa Contri1	15.86	388263.823	830565.82	Link Invert to 2D	Maximum Capacity
Orewa Contri2	Orewa Contri2	15.59	388350.139	830585.522	Link Invert to 2D	Maximum Capacity
Orewa Contri3	Orewa Contri3	14.77	388565.501	830677.966	Link Invert to 2D	Maximum Capacity
Orewa_C3	Orewa_C3	13.69	388756.013	830932.835	Link Invert to 2D	Maximum Capacity
Orewa_Contri4	Orewa_Contri4	11.7	389083.635	831225.761	Link Invert to 2D	Maximum Capacity
Orewa_Contri5	Orewa_Contri5	8.908	389660.232	831548.956	Link Invert to 2D	Maximum Capacity
Orewa_Contri6	Orewa_Contri6	5.13	390146.566	831642.474	Link Invert to 2D	Maximum Capacity
Orewa_Contri7	Orewa_Contri7	3.57	390377.523	831407.877	Link Invert to 2D	Maximum Capacity
Orewa_Contri8	Orewa_Contri8	-0.2	390626.424	831271.403	Link Invert to 2D	Maximum Capacity
Orewa_Contri9	Orewa_Contri9	4.09	390285.039	831507.218	Link Invert to 2D	Maximum Capacity
Weiti_C1	Weiti_C1	14.769	389753.249	828662.428	Link Invert to 2D	Maximum Capacity
Weiti_Contri	Weiti_Contri	19.113	389346.741	828164.723	Link Invert to 2D	Maximum Capacity
Weiti_Contri2	Weiti_Contri2	22.926	389616.84	828218.568	Link Invert to 2D	Maximum Capacity
Weiti_Contri3	Weiti_Contri3	13.72	389850.037	828720.837	Link Invert to 2D	Maximum Capacity
Weiti_Contri4	Weiti_Contri4	17.257	390276.888	828808.223	Link Invert to 2D	Maximum Capacity
Weiti_Contri5	Weiti_Contri5	9.439	390449.796	828990.714	Link Invert to 2D	Maximum Capacity
Weiti_Contri6	Weiti_Contri6	15.517	390632.979	828920.551	Link Invert to 2D	Maximum Capacity
Weiti_Contri7	Weiti_Contri7	6.2	390866.521	829103.717	Link Invert to 2D	Maximum Capacity
Weiti_Contri8	Weiti_Contri8	1.419	391273.799	828775.679	Link Invert to 2D	Maximum Capacity
Weiti_Contri8.1	Weiti_Contri8.1	0.647	391594.469	828893	Link Invert to 2D	Maximum Capacity

XP STORM OUTPUTS -CHANNEL MANNINGS COEFFICENTS (SCENARIO 5)

Name	Main Channel Manning's n	Left Overbank Manning's n	Right Overbank Manning's n
Link50.1_SHP	0.06	0.08	0.08
Link51_SHP	0.06	0.08	0.08
Link110_SHP	0.06	0.08	0.08
Link40_SHP	0.06	0.08	0.08
Link49_SHP	0.06	0.08	0.08
Link75_SHP	0.06	0.08	0.08
Link76_SHP	0.06	0.08	0.08
Link77_SHP	0.06	0.08	0.08
Link78_SHP	0.06	0.08	0.08
Link101.2_SHP	0.06	0.08	0.08
Link101_SHP	0.06	0.08	0.08
Link101.1.2_SHP	0.06	0.08	0.08
Link82_SHP	0.06	0.08	0.08
Link81_SHP	0.06	0.08	0.08
Link118_SHP	0.06	0.08	0.08
Link114_SHP	0.06	0.08	0.08
Link115_SHP	0.06	0.08	0.08
Link77.1.1_SHP	0.06	0.08	0.08
Link103_SHP	0.06	0.08	0.08
Link138_SHP	0.06	0.08	0.08
Link137_SHP	0.06	0.08	0.08
Link79_SHP	0.06	0.08	0.08
Link6.1.1.1_SHP	0.06	0.08	0.08
Link48.1_SHP	0.06	0.08	0.08
Link156_SHP	0.06	0.08	0.08
Link33b_SHP	0.06	0.08	0.08
Link33c_SHP	0.06	0.08	0.08
Link182_SHP	0.06	0.08	0.08
Link183_SHP	0.06	0.08	0.08
Link185_SHP	0.06	0.08	0.08
Link186_SHP	0.06	0.08	0.08
Link187_SHP	0.06	0.08	0.08
Link190_SHP	0.06	0.08	0.08
Link192_SHP	0.06	0.08	0.08
Link172.1.1.1_SHP	0.06	0.08	0.08
Link172_SHP	0.06	0.08	0.08
Link172.1_SHP	0.06	0.08	0.08
Link189_SHP	0.06	0.08	0.08
Link188_SHP	0.06	0.08	0.08
Link200_SHP	0.06	0.08	0.08
Link177.1_SHP	0.06	0.08	0.08
Link178_SHP	0.06	0.08	0.08
Link178.1_SHP	0.06	0.08	0.08
Link92.1.1_SHP	0.06	0.08	0.08
Link160_SHP	0.06	0.08	0.08
Link65_SHP	0.06	0.08	0.08

Link66_SHP	0.06	0.08	0.08
Link66.2_SHP	0.06	0.08	0.08
Link66.1_SHP	0.06	0.08	0.08
Link66.1.1_SHP	0.06	0.08	0.08
Link67_SHP	0.06	0.08	0.08
Link67.1_SHP	0.06	0.08	0.08
Link157_SHP	0.06	0.08	0.08
Link68_SHP	0.06	0.08	0.08
Link69_SHP	0.06	0.08	0.08
Link69.1_SHP	0.06	0.08	0.08
Link70_SHP	0.06	0.08	0.08
Link71_SHP	0.06	0.08	0.08
Link71.2_SHP	0.06	0.08	0.08
Link71.1_SHP	0.06	0.08	0.08
Link72_SHP	0.06	0.08	0.08
Link193_SHP	0.06	0.08	0.08
Link112_SHP	0.06	0.08	0.08
Link184_SHP	0.06	0.08	0.08
Link191_SHP	0.06	0.08	0.08
Link191.1_SHP	0.06	0.08	0.08
Link20_SHP	0.06	0.08	0.08
Link31_SHP	0.06	0.08	0.08
Link31.4_SHP	0.06	0.08	0.08
Link31.3_SHP	0.06	0.08	0.08
Link31.2_SHP	0.06	0.08	0.08
Link31.1_SHP	0.06	0.08	0.08
Link32_SHP	0.06	0.08	0.08
Link32.1_SHP	0.06	0.08	0.08
Link33a_SHP	0.06	0.08	0.08
Link19a_SHP	0.06	0.08	0.08
Link177_SHP	0.06	0.08	0.08
Link176_SHP	0.06	0.08	0.08
Link175.1_SHP	0.06	0.08	0.08
Link117_SHP	0.06	0.08	0.08
Link92_SHP	0.06	0.08	0.08
Link60_SHP	0.06	0.08	0.08
Link72.1_SHP	0.06	0.08	0.08
Link4.1_SHP	0.06	0.08	0.08
Link150_SHP	0.06	0.08	0.08
Link5_SHP	0.06	0.08	0.08
Link6.1_SHP	0.06	0.08	0.08
Link25_SHP	0.06	0.08	0.08
Link7_SHP	0.06	0.08	0.08
Link9_SHP	0.06	0.08	0.08
Link10_SHP	0.06	0.08	0.08
Link11_SHP	0.06	0.08	0.08
Link12_SHP	0.06	0.08	0.08
Link116_SHP	0.06	0.08	0.08
Link94_SHP	0.06	0.08	0.08
Link95_SHP	0.06	0.08	0.08

Link23.1.1_SHP	0.06	0.08	0.08
Link23.1_SHP	0.06	0.08	0.08
Link203_SHP	0.06	0.08	0.08
Link87_SHP	0.06	0.08	0.08
Link89.1_SHP	0.06	0.08	0.08
Link87.1a_SHP	0.06	0.08	0.08
Link44_SHP	0.06	0.08	0.08
Link43_SHP	0.06	0.08	0.08
Link42_SHP	0.06	0.08	0.08
Link45.2_SHP	0.06	0.08	0.08
Link45.1_SHP	0.06	0.08	0.08
Link41_SHP	0.06	0.08	0.08
Link89_SHP	0.06	0.08	0.08
Link39_SHP	0.06	0.08	0.08
Link55_SHP	0.06	0.08	0.08
Link55.1_SHP	0.06	0.08	0.08
Link56_SHP	0.06	0.08	0.08
Link54_SHP	0.06	0.08	0.08
Link53_SHP	0.06	0.08	0.08
Link101.1.1_SHP	0.06	0.08	0.08
Link54.1_SHP	0.06	0.08	0.08
Link83_SHP	0.06	0.08	0.08
Link58_SHP	0.06	0.08	0.08
Link57_SHP	0.06	0.08	0.08
Link56.1_SHP	0.06	0.08	0.08
Link59_SHP	0.06	0.08	0.08
Link4.2_SHP	0.06	0.08	0.08
Link4_SHP	0.06	0.08	0.08
Link3_SHP	0.06	0.08	0.08
Link2.1_SHP	0.06	0.08	0.08
Link2_SHP	0.06	0.08	0.08
Link48_SHP	0.06	0.08	0.08
Link47_SHP	0.06	0.08	0.08
Link46.1_SHP	0.06	0.08	0.08
Link46_SHP	0.06	0.08	0.08
Link45.1.1.1_SHP	0.06	0.08	0.08
Link45.1.1_SHP	0.06	0.08	0.08
Link161_SHP	0.06	0.08	0.08
Link135_SHP	0.06	0.08	0.08
Link140_SHP	0.06	0.08	0.08
Link141_SHP	0.06	0.08	0.08
Link139_SHP	0.06	0.08	0.08
Link74.1_SHP	0.06	0.08	0.08
Link74.2_SHP	0.06	0.08	0.08
Link74_SHP	0.06	0.08	0.08
Link14_SHP	0.06	0.08	0.08
Link15_SHP	0.06	0.08	0.08
Link16_SHP	0.06	0.08	0.08
Link17_SHP	0.06	0.08	0.08
Link18_SHP	0.06	0.08	0.08

Link19a.1_SHP	0.06	0.08	0.08
Link21_SHP	0.06	0.08	0.08
Orewa_SHP	0.06	0.08	0.08
Link175_SHP	0.06	0.08	0.08
Link20.1_SHP	0.06	0.08	0.08
Bridge_MWAY_SHP	0.06	0.08	0.08
Link207_SHP	0.06	0.08	0.08
Link23_SHP	0.06	0.08	0.08

XP STORM OUTPUTS - RAIN + INFILTRATION (SCENARIO 5)

Name	Node Name	Catchment Number	Routing Method	Time of Concentration (or Parameter 2) min	Curve Number	Initial Abstraction Method	Initial Abstraction Depth mm
Highgate	User Inflow Hydrograph						
Millwater1	Millwater1	1	SCS Hydrology	42.865	74	Depth	5
Millwater1		2	SCS Hydrology	19.619	98	Depth	1
Millwater2	Millwater2	1	SCS Hydrology	17.559	74	Depth	5
Millwater2		2	SCS Hydrology	10	98	Depth	1
Millwater3	Millwater3	1	SCS Hydrology	25.389	74	Depth	5
Millwater3		2	SCS Hydrology	11.62	98	Depth	1
Millwater4	Millwater4	1	SCS Hydrology	18.281	74	Depth	5
Millwater4		2	SCS Hydrology	10	98	Depth	1
Node105.1	Node105.1	1	SCS Hydrology	11.355	74	Depth	5
Node105.1		2	SCS Hydrology	10	98	Depth	1
Node108	Node108	1	SCS Hydrology	11.325	74	Depth	5
Node108		2	SCS Hydrology	10	98	Depth	1
Node109	Node109	1	SCS Hydrology	19.587	74	Depth	5
Node109		2	SCS Hydrology	10	98	Depth	1
Node109.1.1	Node109.1.1	1	SCS Hydrology	16.97	74	Depth	5
Node109.1.1		2	SCS Hydrology	10	98	Depth	1
Node126	Node126	1	SCS Hydrology	12.384	74	Depth	5
Node126		2	SCS Hydrology	10	98	Depth	1
Node13	Node13	1	SCS Hydrology	15.445	74	Depth	5
Node13		2	SCS Hydrology	10	98	Depth	1
Node143	Node143	1	SCS Hydrology	21.122	74	Depth	5
Node143		2	SCS Hydrology	10	98	Depth	1
Node159	Node159	1	SCS Hydrology	10	74	Depth	5
Node159		2	SCS Hydrology	10	98	Depth	1
Node16	Node16	1	SCS Hydrology	22.993	74	Depth	5
Node16		2	SCS Hydrology	10.524	98	Depth	1
Node160	Node160	1	SCS Hydrology	15.447	74	Depth	5
Node160		2	SCS Hydrology	10	98	Depth	1
Node161	Node161	1	SCS Hydrology	13.566	74	Depth	5
Node161		2	SCS Hydrology	10	98	Depth	1
Node168	Node168	1	SCS Hydrology	19.595	74	Depth	5
Node168		2	SCS Hydrology	10	98	Depth	1
Node186	Node186	1	SCS Hydrology	10	74	Depth	5
Node186		2	SCS Hydrology	10	98	Depth	1
Node203	Node203	1	SCS Hydrology	10	74	Depth	5
Node203		2	SCS Hydrology	10	98	Depth	1
Node206	Node206	1	SCS Hydrology	12.567	74	Depth	5
Node206		2	SCS Hydrology	10	98	Depth	1
Node22	Node22	1	SCS Hydrology	12.812	74	Depth	5
Node22		2	SCS Hydrology	10	98	Depth	1
Node25.1	Node25.1	1	SCS Hydrology	23.294	74	Depth	5
Node25.1		2	SCS Hydrology	10.662	98	Depth	1
Node28	Node28	1	SCS Hydrology	15.755	74	Depth	5
Node28		2	SCS Hydrology	10	98	Depth	1
Node4	Node4	1	SCS Hydrology	11.009	74	Depth	5
Node4		2	SCS Hydrology	10	98	Depth	1
Node4.1	Node4.1	1	SCS Hydrology	13.243	74	Depth	5
Node4.1		2	SCS Hydrology	10	98	Depth	1
Node42	Node42	1	SCS Hydrology	12.908	74	Depth	5
Node42		2	SCS Hydrology	10	98	Depth	1
Node46.1	Node46.1	1	SCS Hydrology	17.313	74	Depth	5
Node46.1		2	SCS Hydrology	10	98	Depth	1
Node46.1a	Node46.1a	1	SCS Hydrology	15.9	74	Depth	5
Node46.1a		2	SCS Hydrology	10	98	Depth	1
Node46.1b	Node46.1b	1	SCS Hydrology	16.496	74	Depth	5
Node46.1b		2	SCS Hydrology	10	98	Depth	1
Node47	Node47	1	SCS Hydrology	13.589	74	Depth	5
Node47		2	SCS Hydrology	10	98	Depth	1
Node47.1	Node47.1	1	SCS Hydrology	16.08	74	Depth	5
Node47.1		2	SCS Hydrology	10	98	Depth	1
Node48	Node48	1	SCS Hydrology	14.181	74	Depth	5
Node48		2	SCS Hydrology	10	98	Depth	1
Node49	Node49	1	SCS Hydrology	12.591	74	Depth	5
Node49		2	SCS Hydrology	10	98	Depth	1
Node50	Node50	1	SCS Hydrology	15.255	74	Depth	5
Node50		2	SCS Hydrology	10	98	Depth	1
Node54	Node54	1	SCS Hydrology	14.956	74	Depth	5
Node54		2	SCS Hydrology	10	98	Depth	1

Node56	Node56	1	SCS Hydrology	11.042	74	Depth	5
Node56		2	SCS Hydrology	10	98	Depth	1
Node56.1	Node56.1	1	SCS Hydrology	11.568	74	Depth	5
Node56.1		2	SCS Hydrology	10	98	Depth	1
Node58	Node58	1	SCS Hydrology	11.042	74	Depth	5
Node58		2	SCS Hydrology	10	98	Depth	1
Node59	Node59	1	SCS Hydrology	10.746	74	Depth	5
Node59		2	SCS Hydrology	10	98	Depth	1
Node59.1	Node59.1	1	SCS Hydrology	11.944	74	Depth	5
Node59.1		2	SCS Hydrology	10	98	Depth	1
Node6	Node6	1	SCS Hydrology	10	74	Depth	5
Node6		2	SCS Hydrology	10	98	Depth	1
Node6.1	Node6.1	1	SCS Hydrology	10	74	Depth	5
Node6.1		2	SCS Hydrology	10	98	Depth	1
Node61	Node61	1	SCS Hydrology	14.741	74	Depth	5
Node61		2	SCS Hydrology	10	98	Depth	1
Node73	Node73	1	SCS Hydrology	23.018	74	Depth	5
Node73		2	SCS Hydrology	10.535	98	Depth	1
Node74	Node74	1	SCS Hydrology	10	74	Depth	5
Node74		2	SCS Hydrology	10	98	Depth	1
Node75	Node75	1	SCS Hydrology	10.569	74	Depth	5
Node75		2	SCS Hydrology	10	98	Depth	1
Node76	Node76	1	SCS Hydrology	11.38	74	Depth	5
Node76		2	SCS Hydrology	10	98	Depth	1
Node77	Node77	1	SCS Hydrology	10.84	74	Depth	5
Node77		2	SCS Hydrology	10	98	Depth	1
Node78	Node78	1	SCS Hydrology	15.165	74	Depth	5
Node78		2	SCS Hydrology	10	98	Depth	1
Node8	Node8	1	SCS Hydrology	10	74	Depth	5
Node8		2	SCS Hydrology	10	98	Depth	1
Node8.1	Node8.1	1	SCS Hydrology	16.268	74	Depth	5
Node8.1		2	SCS Hydrology	10	98	Depth	1
Node80	Node80	1	SCS Hydrology	15.621	74	Depth	5
Node80		2	SCS Hydrology	10	98	Depth	1
Node83	Node83	1	SCS Hydrology	20.685	74	Depth	5
Node83		2	SCS Hydrology	10	98	Depth	1
Node85.1	Node85.1	1	SCS Hydrology	10.159	74	Depth	5
Node85.1		2	SCS Hydrology	10	98	Depth	1
Node86	Node86	1	SCS Hydrology	13.141	74	Depth	5
Node86		2	SCS Hydrology	10	98	Depth	1
Node95	Node95	1	SCS Hydrology	12.718	74	Depth	5
Node95		2	SCS Hydrology	10	98	Depth	1
Node97.1	Node97.1	1	SCS Hydrology	17.157	74	Depth	5
Node97.1		2	SCS Hydrology	10	98	Depth	1
Orewa Contri1	Orewa Contri1	1	SCS Hydrology	54.785	74	Depth	5
Orewa Contri1		2	SCS Hydrology	25.075	98	Depth	1
Orewa Contri2	Orewa Contri2	1	SCS Hydrology	35.78	74	Depth	5
Orewa Contri2		2	SCS Hydrology	16.376	98	Depth	1
Orewa Contri3	Orewa Contri3	1	SCS Hydrology	24.612	74	Depth	5
Orewa Contri3		2	SCS Hydrology	11.265	98	Depth	1
Orewa_Contri4	Orewa_Contri4	1	SCS Hydrology	46.57	74	Depth	5
Orewa_Contri4		2	SCS Hydrology	21.315	98	Depth	1
Orewa_Contri5	Orewa_Contri5	1	SCS Hydrology	21.05	74	Depth	5
Orewa_Contri5		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri6	Orewa_Contri6	1	SCS Hydrology	10	74	Depth	5
Orewa_Contri6		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri7	Orewa_Contri7	1	SCS Hydrology	11.532	74	Depth	5
Orewa_Contri7		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri8	Orewa_Contri8	1	SCS Hydrology	10	74	Depth	5
Orewa_Contri8		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri9	Orewa_Contri9	1	SCS Hydrology	46.54	74	Depth	5
Orewa_Contri9		2	SCS Hydrology	21.302	98	Depth	1
Weiti_Contri	Weiti_Contri	1	SCS Hydrology	110.085	74	Depth	5
Weiti_Contri		2	SCS Hydrology	50.386	98	Depth	1
Weiti_Contri2	Weiti_Contri2	1	SCS Hydrology	40.504	74	Depth	5
Weiti_Contri2		2	SCS Hydrology	18.539	98	Depth	1
Weiti_Contri3	Weiti_Contri3	1	SCS Hydrology	14.794	74	Depth	5
Weiti_Contri3		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri4	Weiti_Contri4	1	SCS Hydrology	17.778	74	Depth	5
Weiti_Contri4		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri5	Weiti_Contri5	1	SCS Hydrology	19.417	74	Depth	5
Weiti_Contri5		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri6	Weiti_Contri6	1	SCS Hydrology	11.656	74	Depth	5
Weiti_Contri6		2	SCS Hydrology	10	98	Depth	1

Weiti_Contri7	Weiti_Contri7	1	SCS Hydrology	20.511	74	Depth	5
Weiti_Contri7		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri8	Weiti_Contri8	1	SCS Hydrology	11.5	74	Depth	5
Weiti_Contri8		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri8.1	Weiti_Contri8.1	1	SCS Hydrology	18.21	74	Depth	5
Weiti_Contri8.1		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri9	Weiti_Contri9	1	SCS Hydrology	58.199	74	Depth	5
Weiti_Contri9		2	SCS Hydrology	26.638	98	Depth	1
Weiti_Contri9.1	Weiti_Contri9.1	1	SCS Hydrology	40.85	74	Depth	5
Weiti_Contri9.1		2	SCS Hydrology	18.697	98	Depth	1
Weiti_Contri9.2	Weiti_Contri9.2	1	SCS Hydrology	17.067	74	Depth	5
Weiti_Contri9.2		2	SCS Hydrology	10	98	Depth	1
Weiti_Silverdale	Weiti_Silverdale	1	SCS Hydrology	95.448	74	Depth	5
Weiti_Silverdale		2	SCS Hydrology	43.686	98	Depth	1

SCENARIO 6 – ED

100YR FUTURE RAINFALL

XP STORM OUTPUTS - SUBCATCHMENT RESULTS (SCENARIO 6)

Name	Subcatchment	Area ha	Impervious Percentage %	Catchment Max Flow cms	Max Flow cms
Highgate	User Inflow Hydrograph				
Millwater1	1	32.805	0	7.029	27.761
Millwater1	2	60.924	100	22.74	
Millwater2	1	4.299	0	1.372	4.944
Millwater2	2	7.983	100	3.711	
Millwater3	1	9.505	0	2.605	9.946
Millwater3	2	17.651	100	7.894	
Millwater4	1	4.177	0	1.314	4.768
Millwater4	2	7.757	100	3.606	
Node105.1	1	11.511	0	4.271	4.55
Node105.1	2	0.606	100	0.282	
Node108	1	4.41	0	1.637	1.744
Node108	2	0.232	100	0.108	
Node109	1	58.441	0	17.875	18.897
Node109	2	3.076	100	1.43	
Node109.1.1	1	6.047	0	1.957	2.079
Node109.1.1	2	0.318	100	0.148	
Node126	1	17.658	0	6.368	6.793
Node126	2	0.929	100	0.432	
Node13	1	18.116	0	6.072	6.469
Node13	2	0.954	100	0.443	
Node143	1	10.118	0	3	3.162
Node143	2	0.533	100	0.248	
Node159	1	5.193	0	1.992	2.119
Node159	2	0.273	100	0.127	
Node16	1	32.462	0	9.287	9.765
Node16	2	1.709	100	0.784	
Node160	1	49.426	0	16.566	17.649
Node160	2	2.601	100	1.209	
Node161	1	25.067	0	8.795	9.379
Node161	2	1.319	100	0.613	
Node168	1	7.632	0	2.334	2.467
Node168	2	0.402	100	0.187	
Node186	1	18.393	0	7.056	7.506
Node186	2	0.968	100	0.45	
Node203	1	7.43	0	2.85	3.032
Node203	2	0.391	100	0.182	
Node206	1	6.346	0	2.28	2.428
Node206	2	0.334	100	0.155	
Node22	1	3.902	0	1.395	1.485
Node22	2	0.205	100	0.095	
Node25.1	1	30.495	0	8.674	9.122
Node25.1	2	1.605	100	0.733	
Node28	1	9.915	0	3.296	3.514
Node28	2	0.522	100	0.243	
Node4	1	3.285	0	1.229	1.308

Node4	2	0.173	100	0.08	
Node4.1	1	4.636	0	1.64	1.748
Node4.1	2	0.244	100	0.113	
Node42	1	9.499	0	3.388	3.609
Node42	2	0.5	100	0.232	
Node46.1	1	5.799	0	1.861	1.978
Node46.1	2	0.305	100	0.142	
Node46.1a	1	9.122	0	3.022	3.22
Node46.1a	2	0.48	100	0.223	
Node46.1b	1	4.058	0	1.328	1.41
Node46.1b	2	0.214	100	0.099	
Node47	1	10.119	0	3.548	3.784
Node47	2	0.533	100	0.248	
Node47.1	1	3.962	0	1.308	1.392
Node47.1	2	0.208	100	0.097	
Node48	1	4.98	0	1.718	1.834
Node48	2	0.262	100	0.122	
Node49	1	4.207	0	1.511	1.609
Node49	2	0.221	100	0.103	
Node50	1	5.257	0	1.771	1.886
Node50	2	0.277	100	0.129	
Node54	1	4.088	0	1.387	1.476
Node54	2	0.215	100	0.1	
Node56	1	3.869	0	1.446	1.54
Node56	2	0.204	100	0.095	
Node56.1	1	3.459	0	1.276	1.36
Node56.1	2	0.182	100	0.085	
Node58	1	2.91	0	1.088	1.158
Node58	2	0.153	100	0.071	
Node59	1	1.833	0	0.69	0.734
Node59	2	0.097	100	0.045	
Node59.1	1	4.17	0	1.523	1.624
Node59.1	2	0.22	100	0.102	
Node6	1	3.269	0	1.254	1.334
Node6	2	0.172	100	0.08	
Node6.1	1	3.36	0	1.289	1.371
Node6.1	2	0.177	100	0.082	
Node61	1	3.651	0	1.245	1.325
Node61	2	0.192	100	0.089	
Node73	1	18.072	0	5.168	5.433
Node73	2	0.951	100	0.436	
Node74	1	5.165	0	1.981	2.108
Node74	2	0.272	100	0.126	
Node75	1	4.189	0	1.581	1.683
Node75	2	0.221	100	0.103	
Node76	1	3.913	0	1.451	1.546
Node76	2	0.206	100	0.096	
Node77	1	4.05	0	1.521	1.619
Node77	2	0.213	100	0.099	
Node78	1	6.417	0	2.166	2.307

Node78	2	0.338	100	0.157	
Node8	1	3.707	0	1.422	1.513
Node8	2	0.195	100	0.091	
Node8.1	1	4.251	0	1.398	1.486
Node8.1	2	0.224	100	0.104	
Node80	1	5.414	0	1.806	1.925
Node80	2	0.285	100	0.132	
Node83	1	16.098	0	4.812	5.079
Node83	2	0.847	100	0.394	
Node85.1	1	3.027	0	1.156	1.23
Node85.1	2	0.159	100	0.074	
Node86	1	5.451	0	1.933	2.06
Node86	2	0.287	100	0.133	
Node95	1	3.801	0	1.361	1.45
Node95	2	0.2	100	0.093	
Node97.1	1	4.164	0	1.342	1.426
Node97.1	2	0.219	100	0.102	
Orewa Contri1	1	480.257	0	90.611	95.052
Orewa Contri1	2	25.277	100	8.536	
Orewa Contri2	1	68.959	0	16.148	16.963
Orewa Contri2	2	3.629	100	1.45	
Orewa Contri3	1	55.458	0	15.407	16.195
Orewa Contri3	2	2.919	100	1.316	
Orewa_Contri4	1	185.289	0	38.065	39.945
Orewa_Contri4	2	9.752	100	3.522	
Orewa_Contri5	1	24.418	0	7.25	7.642
Orewa_Contri5	2	1.285	100	0.597	
Orewa_Contri6	1	12.752	0	4.892	5.204
Orewa_Contri6	2	0.671	100	0.312	
Orewa_Contri7	1	9.502	0	3.51	3.74
Orewa_Contri7	2	0.5	100	0.232	
Orewa_Contri8	1	6.902	0	2.648	2.816
Orewa_Contri8	2	0.363	100	0.169	
Orewa_Contri9	1	79.566	0	16.351	17.159
Orewa_Contri9	2	4.188	100	1.513	
Weiti_Contri	1	678.769	0	86.74	90.845
Weiti_Contri	2	35.725	100	8.686	
Weiti_Contri2	1	50.344	0	11.093	11.649
Weiti_Contri2	2	2.65	100	1.012	
Weiti_Contri3	1	8.18	0	2.786	2.965
Weiti_Contri3	2	0.43	100	0.2	
Weiti_Contri4	1	10.257	0	3.26	3.46
Weiti_Contri4	2	0.54	100	0.251	
Weiti_Contri5	1	6.967	0	2.138	2.262
Weiti_Contri5	2	0.367	100	0.171	
Weiti_Contri6	1	3.806	0	1.401	1.493
Weiti_Contri6	2	0.2	100	0.093	
Weiti_Contri7	1	8.027	0	2.408	2.542
Weiti_Contri7	2	0.422	100	0.196	
Weiti_Contri8	1	43.618	0	16.124	17.18

Weiti_Contri8	2	2.296	100	1.067	
Weiti_Contri8.1	1	53.786	0	16.941	20.661
Weiti_Contri8.1	2	9.791	100	4.552	
Weiti_Contri9	1	153.161	0	27.975	29.333
Weiti_Contri9	2	8.061	100	2.652	
Weiti_Contri9.1	1	53.116	0	11.656	32.706
Weiti_Contri9.1	2	63.623	100	24.222	
Weiti_Contri9.2	1	36.459	0	11.773	18.564
Weiti_Contri9.2	2	16.152	100	7.509	
Weiti_Silverdale	1	417.491	0	57.896	60.652
Weiti_Silverdale	2	21.973	100	5.742	

XP STORM OUTPUTS - RAIN + INFILTRATION (SCENARIO 6)

Name	Node Name	Catchment Number	Routing Method	Time of Concentration (or Parameter 2) min	Curve Number	Initial Abstraction Method	Initial Abstraction Depth mm
Highgate	User Inflow Hydrograph						
Millwater1	Millwater1	1	SCS Hydrology	42.865	74	Depth	5
Millwater1		2	SCS Hydrology	19.619	98	Depth	1
Millwater2	Millwater2	1	SCS Hydrology	17.559	74	Depth	5
Millwater2		2	SCS Hydrology	10	98	Depth	1
Millwater3	Millwater3	1	SCS Hydrology	25.389	74	Depth	5
Millwater3		2	SCS Hydrology	11.62	98	Depth	1
Millwater4	Millwater4	1	SCS Hydrology	18.281	74	Depth	5
Millwater4		2	SCS Hydrology	10	98	Depth	1
Node105.1	Node105.1	1	SCS Hydrology	11.355	74	Depth	5
Node105.1		2	SCS Hydrology	10	98	Depth	1
Node108	Node108	1	SCS Hydrology	11.325	74	Depth	5
Node108		2	SCS Hydrology	10	98	Depth	1
Node109	Node109	1	SCS Hydrology	19.587	74	Depth	5
Node109		2	SCS Hydrology	10	98	Depth	1
Node109.1.1	Node109.1.1	1	SCS Hydrology	16.97	74	Depth	5
Node109.1.1		2	SCS Hydrology	10	98	Depth	1
Node126	Node126	1	SCS Hydrology	12.384	74	Depth	5
Node126		2	SCS Hydrology	10	98	Depth	1
Node13	Node13	1	SCS Hydrology	15.445	74	Depth	5
Node13		2	SCS Hydrology	10	98	Depth	1
Node143	Node143	1	SCS Hydrology	21.122	74	Depth	5
Node143		2	SCS Hydrology	10	98	Depth	1
Node159	Node159	1	SCS Hydrology	10	74	Depth	5
Node159		2	SCS Hydrology	10	98	Depth	1
Node16	Node16	1	SCS Hydrology	22.993	74	Depth	5
Node16		2	SCS Hydrology	10.524	98	Depth	1
Node160	Node160	1	SCS Hydrology	15.447	74	Depth	5
Node160		2	SCS Hydrology	10	98	Depth	1
Node161	Node161	1	SCS Hydrology	13.566	74	Depth	5
Node161		2	SCS Hydrology	10	98	Depth	1
Node168	Node168	1	SCS Hydrology	19.595	74	Depth	5
Node168		2	SCS Hydrology	10	98	Depth	1
Node186	Node186	1	SCS Hydrology	10	74	Depth	5
Node186		2	SCS Hydrology	10	98	Depth	1
Node203	Node203	1	SCS Hydrology	10	74	Depth	5
Node203		2	SCS Hydrology	10	98	Depth	1
Node206	Node206	1	SCS Hydrology	12.567	74	Depth	5
Node206		2	SCS Hydrology	10	98	Depth	1
Node22	Node22	1	SCS Hydrology	12.812	74	Depth	5
Node22		2	SCS Hydrology	10	98	Depth	1
Node25.1	Node25.1	1	SCS Hydrology	23.294	74	Depth	5
Node25.1		2	SCS Hydrology	10.662	98	Depth	1
Node28	Node28	1	SCS Hydrology	15.755	74	Depth	5
Node28		2	SCS Hydrology	10	98	Depth	1
Node4	Node4	1	SCS Hydrology	11.009	74	Depth	5
Node4		2	SCS Hydrology	10	98	Depth	1
Node4.1	Node4.1	1	SCS Hydrology	13.243	74	Depth	5
Node4.1		2	SCS Hydrology	10	98	Depth	1
Node42	Node42	1	SCS Hydrology	12.908	74	Depth	5
Node42		2	SCS Hydrology	10	98	Depth	1
Node46.1	Node46.1	1	SCS Hydrology	17.313	74	Depth	5
Node46.1		2	SCS Hydrology	10	98	Depth	1
Node46.1a	Node46.1a	1	SCS Hydrology	15.9	74	Depth	5
Node46.1a		2	SCS Hydrology	10	98	Depth	1
Node46.1b	Node46.1b	1	SCS Hydrology	16.496	74	Depth	5
Node46.1b		2	SCS Hydrology	10	98	Depth	1
Node47	Node47	1	SCS Hydrology	13.589	74	Depth	5
Node47		2	SCS Hydrology	10	98	Depth	1
Node47.1	Node47.1	1	SCS Hydrology	16.08	74	Depth	5
Node47.1		2	SCS Hydrology	10	98	Depth	1
Node48	Node48	1	SCS Hydrology	14.181	74	Depth	5
Node48		2	SCS Hydrology	10	98	Depth	1
Node49	Node49	1	SCS Hydrology	12.591	74	Depth	5
Node49		2	SCS Hydrology	10	98	Depth	1
Node50	Node50	1	SCS Hydrology	15.255	74	Depth	5
Node50		2	SCS Hydrology	10	98	Depth	1
Node54	Node54	1	SCS Hydrology	14.956	74	Depth	5
Node54		2	SCS Hydrology	10	98	Depth	1

Node56	Node56	1	SCS Hydrology	11.042	74	Depth	5
Node56		2	SCS Hydrology	10	98	Depth	1
Node56.1	Node56.1	1	SCS Hydrology	11.568	74	Depth	5
Node56.1		2	SCS Hydrology	10	98	Depth	1
Node58	Node58	1	SCS Hydrology	11.042	74	Depth	5
Node58		2	SCS Hydrology	10	98	Depth	1
Node59	Node59	1	SCS Hydrology	10.746	74	Depth	5
Node59		2	SCS Hydrology	10	98	Depth	1
Node59.1	Node59.1	1	SCS Hydrology	11.944	74	Depth	5
Node59.1		2	SCS Hydrology	10	98	Depth	1
Node6	Node6	1	SCS Hydrology	10	74	Depth	5
Node6		2	SCS Hydrology	10	98	Depth	1
Node6.1	Node6.1	1	SCS Hydrology	10	74	Depth	5
Node6.1		2	SCS Hydrology	10	98	Depth	1
Node61	Node61	1	SCS Hydrology	14.741	74	Depth	5
Node61		2	SCS Hydrology	10	98	Depth	1
Node73	Node73	1	SCS Hydrology	23.018	74	Depth	5
Node73		2	SCS Hydrology	10.535	98	Depth	1
Node74	Node74	1	SCS Hydrology	10	74	Depth	5
Node74		2	SCS Hydrology	10	98	Depth	1
Node75	Node75	1	SCS Hydrology	10.569	74	Depth	5
Node75		2	SCS Hydrology	10	98	Depth	1
Node76	Node76	1	SCS Hydrology	11.38	74	Depth	5
Node76		2	SCS Hydrology	10	98	Depth	1
Node77	Node77	1	SCS Hydrology	10.84	74	Depth	5
Node77		2	SCS Hydrology	10	98	Depth	1
Node78	Node78	1	SCS Hydrology	15.165	74	Depth	5
Node78		2	SCS Hydrology	10	98	Depth	1
Node8	Node8	1	SCS Hydrology	10	74	Depth	5
Node8		2	SCS Hydrology	10	98	Depth	1
Node8.1	Node8.1	1	SCS Hydrology	16.268	74	Depth	5
Node8.1		2	SCS Hydrology	10	98	Depth	1
Node80	Node80	1	SCS Hydrology	15.621	74	Depth	5
Node80		2	SCS Hydrology	10	98	Depth	1
Node83	Node83	1	SCS Hydrology	20.685	74	Depth	5
Node83		2	SCS Hydrology	10	98	Depth	1
Node85.1	Node85.1	1	SCS Hydrology	10.159	74	Depth	5
Node85.1		2	SCS Hydrology	10	98	Depth	1
Node86	Node86	1	SCS Hydrology	13.141	74	Depth	5
Node86		2	SCS Hydrology	10	98	Depth	1
Node95	Node95	1	SCS Hydrology	12.718	74	Depth	5
Node95		2	SCS Hydrology	10	98	Depth	1
Node97.1	Node97.1	1	SCS Hydrology	17.157	74	Depth	5
Node97.1		2	SCS Hydrology	10	98	Depth	1
Orewa Contri1	Orewa Contri1	1	SCS Hydrology	54.785	74	Depth	5
Orewa Contri1		2	SCS Hydrology	25.075	98	Depth	1
Orewa Contri2	Orewa Contri2	1	SCS Hydrology	35.78	74	Depth	5
Orewa Contri2		2	SCS Hydrology	16.376	98	Depth	1
Orewa Contri3	Orewa Contri3	1	SCS Hydrology	24.612	74	Depth	5
Orewa Contri3		2	SCS Hydrology	11.265	98	Depth	1
Orewa_Contri4	Orewa_Contri4	1	SCS Hydrology	46.57	74	Depth	5
Orewa_Contri4		2	SCS Hydrology	21.315	98	Depth	1
Orewa_Contri5	Orewa_Contri5	1	SCS Hydrology	21.05	74	Depth	5
Orewa_Contri5		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri6	Orewa_Contri6	1	SCS Hydrology	10	74	Depth	5
Orewa_Contri6		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri7	Orewa_Contri7	1	SCS Hydrology	11.532	74	Depth	5
Orewa_Contri7		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri8	Orewa_Contri8	1	SCS Hydrology	10	74	Depth	5
Orewa_Contri8		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri9	Orewa_Contri9	1	SCS Hydrology	46.54	74	Depth	5
Orewa_Contri9		2	SCS Hydrology	21.302	98	Depth	1
Weiti_Contri	Weiti_Contri	1	SCS Hydrology	110.085	74	Depth	5
Weiti_Contri		2	SCS Hydrology	50.386	98	Depth	1
Weiti_Contri2	Weiti_Contri2	1	SCS Hydrology	40.504	74	Depth	5
Weiti_Contri2		2	SCS Hydrology	18.539	98	Depth	1
Weiti_Contri3	Weiti_Contri3	1	SCS Hydrology	14.794	74	Depth	5
Weiti_Contri3		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri4	Weiti_Contri4	1	SCS Hydrology	17.778	74	Depth	5
Weiti_Contri4		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri5	Weiti_Contri5	1	SCS Hydrology	19.417	74	Depth	5
Weiti_Contri5		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri6	Weiti_Contri6	1	SCS Hydrology	11.656	74	Depth	5
Weiti_Contri6		2	SCS Hydrology	10	98	Depth	1

Weiti_Contri7	Weiti_Contri7	1	SCS Hydrology	20.511	74	Depth	5
Weiti_Contri7		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri8	Weiti_Contri8	1	SCS Hydrology	11.5	74	Depth	5
Weiti_Contri8		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri8.1	Weiti_Contri8.1	1	SCS Hydrology	18.21	74	Depth	5
Weiti_Contri8.1		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri9	Weiti_Contri9	1	SCS Hydrology	58.199	74	Depth	5
Weiti_Contri9		2	SCS Hydrology	26.638	98	Depth	1
Weiti_Contri9.1	Weiti_Contri9.1	1	SCS Hydrology	40.85	74	Depth	5
Weiti_Contri9.1		2	SCS Hydrology	18.697	98	Depth	1
Weiti_Contri9.2	Weiti_Contri9.2	1	SCS Hydrology	17.067	74	Depth	5
Weiti_Contri9.2		2	SCS Hydrology	10	98	Depth	1
Weiti_Silverdale	Weiti_Silverdale	1	SCS Hydrology	95.448	74	Depth	5
Weiti_Silverdale		2	SCS Hydrology	43.686	98	Depth	1

XP STORM OUTPUTS - BASIC CONDUIT DATA (SCENARIO 6)

Name	Link Name	Length m	Shape	Diameter (Height) m	Downstream Invert Elevation m	Upstream Invert Elevation m
1	Culv_Link23.2_Multi	7.44	Circular	0.7	9.54	9.74
2	Culv_Link23.2_Multi	7.44	Circular	0.7	8.83	8.92
3	Culv_Link23.2_Multi	7.44	Circular	0.7	8.88	8.88
Bridge_KowhaiRd	Bridge_KowhaiRd	9.06	Natural	0	2.62	2.64
Bridge_KowhaiRd#w	Bridge_KowhaiRd					
Bridge_Lysnar	Bridge_Lysnar	3.41	Natural	0	4.32	4.46
Bridge_Lysnar#w	Bridge_Lysnar					
Bridge_MWAY	Bridge_MWAY	25.53	Natural	0	-0.74	-0.71
Bridge_WainuiRd	Bridge_WainuiRd	13.75	Natural	0	-0.47	-0.34
Bridge_WainuiRd#w	Bridge_WainuiRd					
Bridge_Weiti	Bridge_Weiti	15.16	Natural	0	9.83	11.6
Bridge_Weiti#w	Bridge_Weiti					
CUL_NZTA	CUL_NZTA	98.3	Circular	4.5	4.74	5.19
Culv_EX1500d	Culv_EX1500d	14.96	Circular	1.5	24.98	25.06
Culv_Ex1800	Culv_Ex1800	7.83	Circular	1.8	13.733	13.984
Culv_Link23.1	Culv_Link23.1	5.45	User Defined	1.75	6.16	6.17
Culv_LK101.1	Culv_LK101.1	20.01	Circular	1.5	22.77	22.85
Culv_LK113	Culv_LK113	5.15	Circular	0.6	17.24	17.39
Culv_LK125	Culv_LK125	8.09	Circular	0.4	24.86	25.1
Culv_LK126	Culv_LK126	12.62	Circular	0.9	23.78	23.88
Culv_LK136	Culv_LK136	12.44	Circular	0.9	21.75	21.83
Culv_Lk143	Culv_Lk143	29.72	Circular	0.6	34.8	36.54
Culv_Lk171	Culv_Lk171	92.64	Circular	2.55	6.76	7.99
Culv_Lk172	Culv_Lk172	13.41	Rectangular	2.35 x 3.7	9.34	9.62
Culv_Lk25.1.2	Culv_Lk25.1.2	10.5	Circular	1.85	4.45	4.66
Culv_LK46	Culv_LK46	12.49	Circular	1.2	19.84	19.98
Culv_Lk48.2	Culv_Lk48.2	2.38	Circular	0.6	15.08	15.19
Culv_LK58.1	Culv_LK58.1	7.9	Circular	1.85	10.83	11.17
Culv_Lk92.1	Culv_Lk92.1	15.41	Circular	1.2	14.27	14.45
CulvLK42.1	CulvLK42.1	5.72	Circular	1.05	20.83	20.92
CulvLK77.1	CulvLK77.1	23.45	Circular	0.45	14.78	14.81
CulvLK87.1	CulvLK87.1	5.02	Circular	0.6	20.22	20.45
Highgate.1	Highgate.1	168.1	Circular	1.6	15.63	19.08
Link10	Link10	141.49	Natural	0	0.16	0.67
Link101	Link101	202.17	Natural	0	29.841	33.066
Link101.1.1	Link101.1.1	206.54	Natural	0	18.287	21.611
Link101.1.2	Link101.1.2	100.39	Natural	0	21.611	22.77
Link101.2	Link101.2	277.81	Natural	0	22.85	29.841
Link103	Link103	137.17	Natural	0	19.051	19.113
Link11	Link11	113.22	Natural	0	0.22	0.16
Link112	Link112	92.55	Natural	0	4.782	4.883
Link114	Link114	69.17	Natural	0	16.58	17.24
Link115	Link115	104.95	Natural	0	15.508	16.58
Link116	Link116	147.29	Natural	0	13.93	15.508
Link117	Link117	125.09	Natural	0	10.56	13.982
Link118	Link118	33.24	Natural	0	17.643	17.945
Link12	Link12	75.88	Natural	0	-0.077	0.22
Link13	Link13	39.44	Natural	0	0.274	-0.077
Link135	Link135	48.58	Natural	0	22.069	22.464
Link137	Link137	31.81	Natural	0	21.435	21.756
Link138	Link138	56.01	Natural	0	20.868	21.435
Link139	Link139	87.01	Natural	0	19.58	20.868
Link14	Link14	70.07	Natural	0	0.004	0.274
Link140	Link140	112.52	Natural	0	18.333	19.58
Link141	Link141	59.69	Natural	0	17.915	18.333
Link15	Link15	93	Natural	0	-0.134	0.004
Link150	Link150	127.36	Natural	0	4.82	9.86
Link156	Link156	326.91	Natural	0	15.994	22.926

Link157	Link157	89.18	Natural	0	10.198	17.257
Link16	Link16	84.25	Natural	0	-0.12	-0.134
Link160	Link160	131.12	Natural	0	6.35	15.517
Link161	Link161	271.8	Natural	0	22.464	26.837
Link17	Link17	95.65	Natural	0	-0.25	-0.12
Link172	Link172	332.34	Natural	0	11.988	15.232
Link172.1	Link172.1	280.43	Natural	0	12.04	11.988
Link172.1.1.1	Link172.1.1.1	40.25	Natural	0	10.547	10.965
Link175	Link175	177.46	Natural	0	-0.9	-0.8
Link175.1	Link175.1	45.03	Natural	0	-1	-0.9
Link176	Link176	383.8	Natural	0	-1.15	-0.1
Link177	Link177	102.08	Natural	0	-1.24	-1.15
Link177.1	Link177.1	116.73	Natural	0	-1.28	-1.24
Link178	Link178	210.95	Natural	0	-1.3	-1.28
Link178.1	Link178.1	206.61	Natural	0	-1.34	-1.3
Link18	Link18	152.17	Natural	0	-0.25	-0.25
Link182	Link182	366.22	Natural	0	1.419	6.76
Link183	Link183	99.41	Natural	0	1.277	1.419
Link184	Link184	332.74	Natural	0	1.277	4.782
Link185	Link185	338.69	Natural	0	1.419	4.656
Link186	Link186	326.75	Natural	0	0.647	1.277
Link187	Link187	435.61	Natural	0	-0.016	0.647
Link188	Link188	458.5	Natural	0	0.03	-0.016
Link189	Link189	284.68	Natural	0	-0.285	0.03
Link190	Link190	185.13	Natural	0	-0.509	-0.285
Link191	Link191	397.39	Natural	0	-0.64	-0.51
Link191.1	Link191.1	413.61	Natural	0	-0.78	-0.64
Link192	Link192	208.09	Natural	0	-0.678	-0.776
Link193	Link193	154.24	Natural	0	4.883	4.74
Link19a	Link19a	133.6	Natural	0	-0.2	2.62
Link19a.1	Link19a.1	132.35	Natural	0	-0.52	-0.2
Link2	Link2	54.59	Natural	0	13.473	13.19
Link2.1	Link2.1	61.12	Natural	0	11.637	13.473
Link20	Link20	14.09	Natural	0	-0.34	-0.25
Link20.1	Link20.1	51.59	Natural	0	-0.52	-0.47
Link200	Link200	167.18	Natural	0	14.65	18.815
Link203	Link203	75.72	Natural	0	36.54	43.97
Link207	Link207	189.59	Natural	0	25.06	30.2
Link21	Link21	175.83	Natural	0	-0.71	-0.52
Link23	Link23	2.66	Natural	0	10.33	10.19
Link23.1.1	Link23.1.1	153.98	Natural	0	-0.25	4.68
Link23.1.2	Link23.1.2	116.65	Natural	0	4.68	6.16
Link23.2.1	Link23.2.1	155.44	Natural	0	6.17	8.83
Link23.3	Link23.3	161.27	Natural	0	8.88	10.33
Link25	Link25	72.62	Natural	0	4.51	5.87
Link25.1	Link25.1	37.03	Natural	0	4.66	4.51
Link25.1.1	Link25.1.1	13.53	Natural	0	3.99	4.45
Link3	Link3	108.63	Natural	0	10.849	11.637
Link31	Link31	91.63	Natural	0	15.59	15.86
Link31.1	Link31.1	465.46	Natural	0	11.7	13.69
Link31.2	Link31.2	386.31	Natural	0	13.69	14.77
Link31.3	Link31.3	194.9	Natural	0	14.77	15.32
Link31.4	Link31.4	93.24	Natural	0	15.32	15.59
Link32	Link32	865.06	Natural	0	8.908	11.7
Link32.1	Link32.1	688.18	Natural	0	5.132	8.908
Link33a	Link33a	198.81	Natural	0	4.09	5.13
Link33b	Link33b	137.99	Natural	0	3.57	4.09
Link33c	Link33c	147.58	Natural	0	2.64	3.57
Link39	Link39	56.29	Natural	0	22.81	23.78
Link4	Link4	78.42	Natural	0	8.575	10.849
Link4.1	Link4.1	97.95	Natural	0	5.04	8.103
Link4.2	Link4.2	82.58	Natural	0	8.103	8.575

Link40	Link40	58.73	Natural	0	22.311	22.81
Link41	Link41	78.25	Natural	0	21.52	22.311
Link42	Link42	79.01	Natural	0	20.92	21.52
Link43	Link43	48.21	Natural	0	20.551	20.83
Link44	Link44	17.22	Natural	0	19.98	20.551
Link45.1	Link45.1	95.72	Natural	0	17.97	18.11
Link45.1.1	Link45.1.1	47.86	Natural	0	17.9	17.97
Link45.1.1.1	Link45.1.1.1	47.86	Natural	0	17.83	17.9
Link45.2	Link45.2	114.74	Natural	0	18.114	19.84
Link46	Link46	32.11	Natural	0	16.882	17.83
Link46.1	Link46.1	27.5	Natural	0	17.239	16.882
Link47	Link47	113.64	Natural	0	15.25	17.239
Link48	Link48	55.74	Natural	0	15.19	15.25
Link48.1	Link48.1	65.21	Natural	0	14.14	15.08
Link49	Link49	70.45	Natural	0	13.19	14.143
Link5	Link5	60.92	Natural	0	4.82	5.04
Link5.1	Link5.1	39.19	Natural	0	4.59	4.82
Link53	Link53	69.15	Natural	0	17.237	18.287
Link54	Link54	41.08	Natural	0	16.873	17.237
Link54.1	Link54.1	15.06	Natural	0	16.432	16.873
Link55	Link55	116.8	Natural	0	14.65	16.432
Link55.1	Link55.1	64.57	Natural	0	13.984	14.65
Link56	Link56	17.49	Natural	0	13.652	13.733
Link56.1	Link56.1	60.44	Natural	0	13.027	13.652
Link57	Link57	66.25	Natural	0	12.015	13.027
Link58	Link58	76.81	Natural	0	13.103	12.015
Link59	Link59	91.29	Natural	0	9.04	10.83
Link6	Link6	61.11	Natural	0	4.56	4.59
Link6.1	Link6.1	44.98	Natural	0	4.46	4.56
Link6.1a	Link6.1a	26.8	Natural	0	3.99	4.32
Link60	Link60	111.63	Natural	0	5.87	9.04
Link65	Link65	384.85	Natural	0	17.146	19.051
Link66	Link66	169.44	Natural	0	15.994	17.146
Link66.1	Link66.1	174.58	Natural	0	13.72	14.769
Link66.1.1	Link66.1.1	177.17	Natural	0	12.039	13.72
Link66.2	Link66.2	173.2	Natural	0	14.769	15.994
Link67	Link67	134.88	Natural	0	11.6	12.039
Link67.1	Link67.1	284.75	Natural	0	10.198	11.895
Link68	Link68	335.52	Natural	0	9.055	10.198
Link69	Link69	55.84	Natural	0	9.439	9.055
Link69.1	Link69.1	226.86	Natural	0	8.3	9.439
Link7	Link7	51.83	Natural	0	1.258	3.99
Link70	Link70	143.23	Natural	0	7.11	8.3
Link71	Link71	77.14	Natural	0	6.35	7.11
Link71.1	Link71.1	163.65	Natural	0	6.315	7.11
Link71.2	Link71.2	82.49	Natural	0	7.11	6.35
Link72	Link72	38.13	Natural	0	6.404	6.315
Link72.1	Link72.1	39.12	Natural	0	5.19	6.2
Link74	Link74	122.63	Natural	0	28.994	34.8
Link74.1	Link74.1	245.26	Natural	0	20.836	26.368
Link74.2	Link74.2	122.63	Natural	0	26.368	28.994
Link75	Link75	89.68	Natural	0	18.293	19.441
Link76	Link76	138.38	Natural	0	16.371	18.293
Link77	Link77	47.66	Natural	0	15.15	16.371
Link77.1.1	Link77.1.1	40.12	Natural	0	14.23	14.78
Link78	Link78	51.92	Natural	0	11.74	14.23
Link79	Link79	96.79	Natural	0	9.86	11.74
Link8	Link8	77.32	Natural	0	0.19	1.258
Link81	Link81	37.06	Natural	0	23.846	24.86
Link82	Link82	116.13	Natural	0	18.818	23.846
Link83	Link83	40.79	Natural	0	16.432	18.818
Link87	Link87	56.35	Natural	0	20.22	20.91

Link87.1a	Link87.1a	28.31	Natural	0	19.98	20.22
Link89	Link89	156.52	Natural	0	22.531	24.98
Link89.1	Link89.1	135.63	Natural	0	20.91	22.531
Link9	Link9	130.9	Natural	0	0.67	0.19
Link92	Link92	76.63	Natural	0	14.72	15.63
Link92.1.1	Link92.1.1	60.87	Natural	0	12.66	14.27
Link94	Link94	126.39	Natural	0	10.56	12.66
Link95	Link95	31.62	Natural	0	10.19	10.56
Orewa	Orewa	20.73	Natural	0	-0.8	-0.74

XP STORM OUTPUTS - JUNCTION DATA (SCENARIO 6)

Name	Node Name	Invert Elevation m	Node X	Node Y	Ponding Type	Inlet Capacity Type
Highgate	Highgate	19.08	390760.744	830148.545	Link Invert to 2D	Maximum Capacity
Millwater1	Millwater1	-1	391144.141	831278.612	Link Invert to 2D	Maximum Capacity
Millwater2	Millwater2	-1.15	391481.677	831387.439	Link Invert to 2D	Maximum Capacity
Millwater3	Millwater3	-1.24	391570.934	831410.567	Link Invert to 2D	Maximum Capacity
Millwater4	Millwater4	-1.3	391860.414	831519.05	Link Invert to 2D	Maximum Capacity
Node10	Node10	1.258	390011.681	830524.418	Link Invert to 2D	Maximum Capacity
Node100	Node100	15.63	390694.008	830302.827	Link Invert to 2D	Maximum Capacity
Node100.1	Node100.1	12.66	390622.118	830426.675	Link Invert to 2D	Maximum Capacity
Node100.2	Node100.2	14.45	390661.171	830366.907	Link Invert to 2D	Maximum Capacity
Node100.2.1	Node100.2.1	14.27	390651.341	830378.777	Link Invert to 2D	Maximum Capacity
Node102	Node102	10.56	390587.268	830536.871	Link Invert to 2D	Maximum Capacity
Node104	Node104	4.74	390989.368	829058.139	Link Invert to 2D	Maximum Capacity
Node105	Node105	-0.8	390934.933	831205.359	Link Invert to 2D	Maximum Capacity
Node105.1	Node105.1	-0.9	391100.667	831266.89	Link Invert to 2D	Maximum Capacity
Node108	Node108	5.04	390014.062	830245.239	Link Invert to 2D	Maximum Capacity
Node108.1	Node108.1	4.82	390003.818	830304.98	Link Invert to 2D	Maximum Capacity
Node109	Node109	33.066	388814.038	829688.32	Link Invert to 2D	Maximum Capacity
Node109.1	Node109.1	22.85	388976.008	830105.067	Link Invert to 2D	Maximum Capacity
Node109.1.1	Node109.1.1	21.611	389076.916	830169.74	Link Invert to 2D	Maximum Capacity
Node109.1.2	Node109.1.2	22.77	388990.761	830118.588	Link Invert to 2D	Maximum Capacity
Node109.2	Node109.2	29.841	388826.55	829870.888	Link Invert to 2D	Maximum Capacity
Node11	Node11	0.19	390054.553	830588.569	Link Invert to 2D	Maximum Capacity
Node119	Node119	4.883	391084.228	828988.566	Link Invert to 2D	Maximum Capacity
Node12	Node12	0.67	390107.166	830696.479	Link Invert to 2D	Maximum Capacity
Node120	Node120	4.782	391132.149	828949.835	Link Invert to 2D	Maximum Capacity
Node121	Node121	17.39	390500.65	830117.826	Link Invert to 2D	Maximum Capacity
Node122	Node122	17.24	390500.816	830122.97	Link Invert to 2D	Maximum Capacity
Node123	Node123	16.58	390492.934	830190.884	Link Invert to 2D	Maximum Capacity
Node124	Node124	15.508	390497.396	830295.447	Link Invert to 2D	Maximum Capacity
Node125	Node125	13.93	390523.844	830437.416	Link Invert to 2D	Maximum Capacity
Node126	Node126	17.915	390507.197	830089.527	Link Invert to 2D	Maximum Capacity
Node13	Node13	0.1603	390181.707	830808.359	Link Invert to 2D	Maximum Capacity
Node133	Node133	25.1	389140.561	830369.699	Link Invert to 2D	Maximum Capacity
Node134	Node134	23.88	389637.57	829041.964	Link Invert to 2D	Maximum Capacity
Node14	Node14	0.22	390221.859	830886.276	Link Invert to 2D	Maximum Capacity
Node143	Node143	22.464	390527.054	829736.499	Link Invert to 2D	Maximum Capacity
Node144	Node144	21.83	390515.505	829783.568	Link Invert to 2D	Maximum Capacity
Node145	Node145	21.75	390512.138	829795.544	Link Invert to 2D	Maximum Capacity
Node146	Node146	21.435	390502.851	829825.972	Link Invert to 2D	Maximum Capacity
Node147	Node147	20.868	390500.521	829881.384	Link Invert to 2D	Maximum Capacity
Node148	Node148	19.58	390505.475	829963.454	Link Invert to 2D	Maximum Capacity
Node149	Node149	18.333	390495.782	830049.403	Link Invert to 2D	Maximum Capacity
Node15	Node15	-0.077	390239.982	830957.369	Link Invert to 2D	Maximum Capacity
Node150	Node150	36.54	389283.652	829636.661	Link Invert to 2D	Maximum Capacity
Node159	Node159	44.824	389130.157	829523.01	Link Invert to 2D	Maximum Capacity

Node16	Node16	0.274	390259.45	830985.84	Link Invert to 2D	Maximum Capacity
Node160	Node160	36.06	389102.492	829047.246	Link Invert to 2D	Maximum Capacity
Node160.1	Node160.1	30.2	389372.452	829121.34	Link Invert to 2D	Maximum Capacity
Node161	Node161	29.993	389375.219	828939.943	Link Invert to 2D	Maximum Capacity
Node168	Node168	26.837	390627.699	829496.156	Link Invert to 2D	Maximum Capacity
Node17	Node17	0.004	390326.41	830996.417	Link Invert to 2D	Maximum Capacity
Node178	Node178	7.99	390902.335	828787.492	Link Invert to 2D	Maximum Capacity
Node179	Node179	6.76	390994.978	828787.897	Link Invert to 2D	Maximum Capacity
Node18	Node18	-0.134	390404.117	831034.954	Link Invert to 2D	Maximum Capacity
Node180.1	Node180.1	11.988	390658.86	828617.787	Link Invert to 2D	Maximum Capacity
Node180.1.1	Node180.1.1	9.62	390872.05	828749.519	Link Invert to 2D	Maximum Capacity
Node180.1.1.1	Node180.1.1.1	9.34	390874.93	828762.612	Link Invert to 2D	Maximum Capacity
Node186	Node186	-1.28	391651.599	831489.29	Link Invert to 2D	Maximum Capacity
Node187	Node187	-1.34	392050.291	831561.049	Link Invert to 2D	Maximum Capacity
Node19	Node19	-0.12	390461.56	831088.471	Link Invert to 2D	Maximum Capacity
Node192	Node192	1.277	391327.868	828850.408	Link Invert to 2D	Maximum Capacity
Node194	Node194	-0.016	391899.237	828994.355	Link Invert to 2D	Maximum Capacity
Node195	Node195	0.03	392098.433	828889.23	Link Invert to 2D	Maximum Capacity
Node196	Node196	-0.285	392322.117	828895.377	Link Invert to 2D	Maximum Capacity
Node198	Node198	-0.51	392464.001	828796.297	Link Invert to 2D	Maximum Capacity
Node199	Node199	-0.678	393345.847	828972.505	Link Invert to 2D	Maximum Capacity
Node20	Node20	-0.25	390554.347	831108.65	Link Invert to 2D	Maximum Capacity
Node203	Node203	34.96	389000.188	830307.602	Link Invert to 2D	Maximum Capacity
Node206	Node206	18.815	389353.844	830230.372	Link Invert to 2D	Maximum Capacity
Node209	Node209	43.97	389264.177	829584.071	Link Invert to 2D	Maximum Capacity
Node21	Node21	-0.25	390698.628	831102.846	Link Invert to 2D	Maximum Capacity
Node21.1	Node21.1	-0.47	390715.127	831125.017	Link Invert to 2D	Maximum Capacity
Node21.2	Node21.2	-0.34	390707.67	831113.468	Link Invert to 2D	Maximum Capacity
Node22	Node22	5.87	389871.336	830460.858	Link Invert to 2D	Maximum Capacity
Node22.1	Node22.1	4.51	389942.611	830473.624	Link Invert to 2D	Maximum Capacity
Node22.1.1	Node22.1.1	4.45	389989.974	830472.236	Link Invert to 2D	Maximum Capacity
Node22.1.2	Node22.1.2	4.66	389979.511	830473.164	Link Invert to 2D	Maximum Capacity
Node25	Node25	10.19	390598.139	830562.993	Link Invert to 2D	Maximum Capacity
Node25.1	Node25.1	6.17	390655.048	830854.742	Link Invert to 2D	Maximum Capacity
Node25.1.1	Node25.1.1	4.68	390689.475	830965.836	Link Invert to 2D	Maximum Capacity
Node25.1.2	Node25.1.2	6.16	390655.717	830860.108	Link Invert to 2D	Maximum Capacity
Node25.2	Node25.2	8.88	390623.024	830712.798	Link Invert to 2D	Maximum Capacity
Node25.2.1	Node25.2.1	8.83	390624.175	830721.726	Link Invert to 2D	Maximum Capacity
Node25.3	Node25.3	10.33	390599.933	830564.242	Link Invert to 2D	Maximum Capacity
Node26a	Node26a	2.62	390502.824	831320.516	Link Invert to 2D	Maximum Capacity
Node27	Node27	-0.52	390716.358	831175.835	Link Invert to 2D	Maximum Capacity
Node28	Node28	-0.71	390889.117	831200.507	Link Invert to 2D	Maximum Capacity
Node29	Node29	-0.74	390914.635	831201.149	Link Invert to 2D	Maximum Capacity
Node34.1	Node34.1	2.64	390495.833	831326.28	Link Invert to 2D	Maximum Capacity
Node4	Node4	13.19	390117.819	829855.792	Link Invert to 2D	Maximum Capacity
Node4.1	Node4.1	13.473	390139.264	829896.454	Link Invert to 2D	Maximum Capacity
Node40	Node40	23.78	389646.077	829051.292	Link Invert to 2D	Maximum Capacity
Node41	Node41	22.81	389685.814	829091.165	Link Invert to 2D	Maximum Capacity
Node42	Node42	22.311	389711.315	829144.066	Link Invert to 2D	Maximum Capacity
Node43	Node43	21.52	389735.503	829216.797	Link Invert to 2D	Maximum Capacity

Node43.1	Node43.1	20.92	389775.027	829285.21	Link Invert to 2D	Maximum Capacity
Node44	Node44	20.83	389777.726	829290.258	Link Invert to 2D	Maximum Capacity
Node45	Node45	20.551	389801.673	829332.1	Link Invert to 2D	Maximum Capacity
Node46	Node46	19.98	389804.147	829348.198	Link Invert to 2D	Maximum Capacity
Node46.1	Node46.1	18.11	389912.608	829413.981	Link Invert to 2D	Maximum Capacity
Node46.1a	Node46.1a	17.97	389971.566	829476.09	Link Invert to 2D	Maximum Capacity
Node46.1b	Node46.1b	17.9	389995.357	829517.609	Link Invert to 2D	Maximum Capacity
Node46.2	Node46.2	19.84	389814.117	829355.719	Link Invert to 2D	Maximum Capacity
Node47	Node47	17.83	390020.041	829558.612	Link Invert to 2D	Maximum Capacity
Node47.1	Node47.1	16.882	390035.963	829586.499	Link Invert to 2D	Maximum Capacity
Node48	Node48	17.239	390048.943	829610.74	Link Invert to 2D	Maximum Capacity
Node49	Node49	15.25	390108.692	829694.422	Link Invert to 2D	Maximum Capacity
Node49.1	Node49.1	15.08	390096.026	829734.191	Link Invert to 2D	Maximum Capacity
Node49.2	Node49.2	15.19	390096.748	829731.925	Link Invert to 2D	Maximum Capacity
Node5	Node5	11.637	390135.622	829945.409	Link Invert to 2D	Maximum Capacity
Node50	Node50	14.14	390101.888	829797.933	Link Invert to 2D	Maximum Capacity
Node54	Node54	18.287	389254.992	830274.073	Link Invert to 2D	Maximum Capacity
Node55	Node55	17.237	389305.867	830312.606	Link Invert to 2D	Maximum Capacity
Node55.1	Node55.1	16.873	389334.759	830339.766	Link Invert to 2D	Maximum Capacity
Node56	Node56	16.432	389336.173	830354.135	Link Invert to 2D	Maximum Capacity
Node56.1	Node56.1	13.984	389498.551	830378.391	Link Invert to 2D	Maximum Capacity
Node56.2	Node56.2	14.65	389440.835	830364.371	Link Invert to 2D	Maximum Capacity
Node57	Node57	13.733	389505.49	830382.026	Link Invert to 2D	Maximum Capacity
Node57.1	Node57.1	13.652	389520.745	830390.58	Link Invert to 2D	Maximum Capacity
Node58	Node58	13.027	389562.004	830419.89	Link Invert to 2D	Maximum Capacity
Node59	Node59	12.015	389598.735	830459.228	Link Invert to 2D	Maximum Capacity
Node59.1	Node59.1	11.17	389663.227	830471.068	Link Invert to 2D	Maximum Capacity
Node6	Node6	10.849	390122.582	830049.539	Link Invert to 2D	Maximum Capacity
Node6.1	Node6.1	8.103	390047.33	830160.953	Link Invert to 2D	Maximum Capacity
Node6.2	Node6.2	8.575	390105.058	830116.041	Link Invert to 2D	Maximum Capacity
Node60	Node60	10.83	389670.982	830472.569	Link Invert to 2D	Maximum Capacity
Node61	Node61	9.04	389759.707	830461.047	Link Invert to 2D	Maximum Capacity
Node72	Node72	19.051	389321.668	828257.5	Link Invert to 2D	Maximum Capacity
Node73	Node73	17.146	389541.656	828505.942	Link Invert to 2D	Maximum Capacity
Node73.1	Node73.1	15.994	389673.745	828527.036	Link Invert to 2D	Maximum Capacity
Node74	Node74	12.039	389987.849	828799.277	Link Invert to 2D	Maximum Capacity
Node74.1	Node74.1	9.83	390068.106	828844.096	Link Invert to 2D	Maximum Capacity
Node74.2	Node74.2	11.6	390066.018	828829.077	Link Invert to 2D	Maximum Capacity
Node75	Node75	10.198	390227.444	828871.677	Link Invert to 2D	Maximum Capacity
Node76	Node76	9.055	390403.128	828968.39	Link Invert to 2D	Maximum Capacity
Node77	Node77	8.3	390574.816	829048.966	Link Invert to 2D	Maximum Capacity
Node78	Node78	7.11	390683.738	829036.302	Link Invert to 2D	Maximum Capacity
Node78.1	Node78.1	7.11	390765.2	829001.294	Link Invert to 2D	Maximum Capacity
Node78.2	Node78.2	6.35	390716.455	828981.236	Link Invert to 2D	Maximum Capacity
Node79	Node79	6.315	390831.54	829107.537	Link Invert to 2D	Maximum Capacity
Node8	Node8	4.59	389998.384	830343.08	Link Invert to 2D	Maximum Capacity
Node8.1	Node8.1	4.56	390001.515	830399.956	Link Invert to 2D	Maximum Capacity
Node8.1.1	Node8.1.1	4.46	390006.175	830444.532	Link Invert to 2D	Maximum Capacity
Node8.1.1.1	Node8.1.1.1	4.32	390007.196	830447.784	Link Invert to 2D	Maximum Capacity
Node80	Node80	5.19	390900.4	829099.932	Link Invert to 2D	Maximum Capacity

Node82	Node82	34.8	389292.649	829664.986	Link Invert to 2D	Maximum Capacity
Node82.1	Node82.1	26.368	389394.601	829844.178	Link Invert to 2D	Maximum Capacity
Node82.2	Node82.2	28.994	389300.418	829784.319	Link Invert to 2D	Maximum Capacity
Node83	Node83	19.441	389602.462	829896.157	Link Invert to 2D	Maximum Capacity
Node84	Node84	18.293	389662.074	829961.1	Link Invert to 2D	Maximum Capacity
Node85	Node85	16.371	389722.053	830083.34	Link Invert to 2D	Maximum Capacity
Node85.1	Node85.1	14.81	389740.551	830127.262	Link Invert to 2D	Maximum Capacity
Node85.1.1	Node85.1.1	14.78	389756.101	830144.817	Link Invert to 2D	Maximum Capacity
Node86	Node86	14.23	389773.508	830180.966	Link Invert to 2D	Maximum Capacity
Node87	Node87	11.74	389813.454	830214.091	Link Invert to 2D	Maximum Capacity
Node88	Node88	9.86	389902.906	830232.576	Link Invert to 2D	Maximum Capacity
Node89	Node89	24.86	389148.187	830372.404	Link Invert to 2D	Maximum Capacity
Node9	Node9	3.99	390003.36	830473.919	Link Invert to 2D	Maximum Capacity
Node90	Node90	23.846	389182.093	830362.075	Link Invert to 2D	Maximum Capacity
Node91	Node91	18.818	389296.699	830347.944	Link Invert to 2D	Maximum Capacity
Node95	Node95	20.91	389744.113	829324.369	Link Invert to 2D	Maximum Capacity
Node95.1	Node95.1	20.22	389774.744	829342.565	Link Invert to 2D	Maximum Capacity
Node95.1a	Node95.1a	20.22	389778.418	829339.137	Link Invert to 2D	Maximum Capacity
Node96	Node96	25.06	389546.04	829197.565	Link Invert to 2D	Maximum Capacity
Node97	Node97	24.98	389560.25	829192.891	Link Invert to 2D	Maximum Capacity
Node97.1	Node97.1	22.531	389638.956	829276.626	Link Invert to 2D	Maximum Capacity
Orewa C2	Orewa C2	15.32	388430.922	830585.273	Link Invert to 2D	Maximum Capacity
Orewa Contri1	Orewa Contri1	15.86	388263.823	830565.82	Link Invert to 2D	Maximum Capacity
Orewa Contri2	Orewa Contri2	15.59	388350.139	830585.522	Link Invert to 2D	Maximum Capacity
Orewa Contri3	Orewa Contri3	14.77	388565.501	830677.966	Link Invert to 2D	Maximum Capacity
Orewa_C3	Orewa_C3	13.69	388756.013	830932.835	Link Invert to 2D	Maximum Capacity
Orewa_Contri4	Orewa_Contri4	11.7	389083.635	831225.761	Link Invert to 2D	Maximum Capacity
Orewa_Contri5	Orewa_Contri5	8.908	389660.232	831548.956	Link Invert to 2D	Maximum Capacity
Orewa_Contri6	Orewa_Contri6	5.13	390146.566	831642.474	Link Invert to 2D	Maximum Capacity
Orewa_Contri7	Orewa_Contri7	3.57	390377.523	831407.877	Link Invert to 2D	Maximum Capacity
Orewa_Contri8	Orewa_Contri8	-0.2	390626.424	831271.403	Link Invert to 2D	Maximum Capacity
Orewa_Contri9	Orewa_Contri9	4.09	390285.039	831507.218	Link Invert to 2D	Maximum Capacity
Weiti_C1	Weiti_C1	14.769	389753.249	828662.428	Link Invert to 2D	Maximum Capacity
Weiti_Contri	Weiti_Contri	19.113	389346.741	828164.723	Link Invert to 2D	Maximum Capacity
Weiti_Contri2	Weiti_Contri2	22.926	389616.84	828218.568	Link Invert to 2D	Maximum Capacity
Weiti_Contri3	Weiti_Contri3	13.72	389850.037	828720.837	Link Invert to 2D	Maximum Capacity
Weiti_Contri4	Weiti_Contri4	17.257	390276.888	828808.223	Link Invert to 2D	Maximum Capacity
Weiti_Contri5	Weiti_Contri5	9.439	390449.796	828990.714	Link Invert to 2D	Maximum Capacity
Weiti_Contri6	Weiti_Contri6	15.517	390632.979	828920.551	Link Invert to 2D	Maximum Capacity
Weiti_Contri7	Weiti_Contri7	6.2	390866.521	829103.717	Link Invert to 2D	Maximum Capacity
Weiti_Contri8	Weiti_Contri8	1.419	391273.799	828775.679	Link Invert to 2D	Maximum Capacity
Weiti_Contri8.1	Weiti_Contri8.1	0.647	391594.469	828893	Link Invert to 2D	Maximum Capacity
Weiti_Contri9	Weiti_Contri9	15.232	390539.344	828354.986	Link Invert to 2D	Maximum Capacity
Weiti_Contri9.1	Weiti_Contri9.1	-0.64	392841.08	828814.576	Link Invert to 2D	Maximum Capacity
Weiti_Contri9.2	Weiti_Contri9.2	-0.78	393176.511	829015.146	Link Invert to 2D	Maximum Capacity
Weiti_Silverdale	Weiti_Silverdale	4.656	391146.039	828521.651	Link Invert to 2D	Maximum Capacity

XP STORM OUTPUTS -CHANNEL MANNINGS COEFFICENTS (SCENARIO 6)

Name	Main Channel Manning's n	Left Overbank Manning's n	Right Overbank Manning's n
Bridge_MWAY_SHP	0.06	0.08	0.08
Link101.1.1_SHP	0.06	0.08	0.08
Link101.1.2_SHP	0.06	0.08	0.08
Link101.2_SHP	0.06	0.08	0.08
Link101_SHP	0.06	0.08	0.08
Link103_SHP	0.06	0.08	0.08
Link10_SHP	0.06	0.08	0.08
Link110_SHP	0.06	0.08	0.08
Link112_SHP	0.06	0.08	0.08
Link114_SHP	0.06	0.08	0.08
Link115_SHP	0.06	0.08	0.08
Link116_SHP	0.06	0.08	0.08
Link117_SHP	0.06	0.08	0.08
Link118_SHP	0.06	0.08	0.08
Link11_SHP	0.06	0.08	0.08
Link12_SHP	0.06	0.08	0.08
Link135_SHP	0.06	0.08	0.08
Link137_SHP	0.06	0.08	0.08
Link138_SHP	0.06	0.08	0.08
Link139_SHP	0.06	0.08	0.08
Link140_SHP	0.06	0.08	0.08
Link141_SHP	0.06	0.08	0.08
Link14_SHP	0.06	0.08	0.08
Link150_SHP	0.06	0.08	0.08
Link156_SHP	0.06	0.08	0.08
Link157_SHP	0.06	0.08	0.08
Link15_SHP	0.06	0.08	0.08
Link160_SHP	0.06	0.08	0.08
Link161_SHP	0.06	0.08	0.08
Link16_SHP	0.06	0.08	0.08
Link172.1.1.1_SHP	0.06	0.08	0.08
Link172.1_SHP	0.06	0.08	0.08
Link172_SHP	0.06	0.08	0.08
Link175.1_SHP	0.06	0.08	0.08
Link175_SHP	0.06	0.08	0.08
Link176_SHP	0.06	0.08	0.08
Link177.1_SHP	0.06	0.08	0.08
Link177_SHP	0.06	0.08	0.08
Link178.1_SHP	0.06	0.08	0.08
Link178_SHP	0.06	0.08	0.08
Link17_SHP	0.06	0.08	0.08
Link182_SHP	0.06	0.08	0.08
Link183_SHP	0.06	0.08	0.08
Link184_SHP	0.06	0.08	0.08
Link185_SHP	0.06	0.08	0.08
Link186_SHP	0.06	0.08	0.08

Link187_SHP	0.06	0.08	0.08
Link188_SHP	0.06	0.08	0.08
Link189_SHP	0.06	0.08	0.08
Link18_SHP	0.06	0.08	0.08
Link190_SHP	0.06	0.08	0.08
Link191.1_SHP	0.06	0.08	0.08
Link191_SHP	0.06	0.08	0.08
Link192_SHP	0.06	0.08	0.08
Link193_SHP	0.06	0.08	0.08
Link19a.1_SHP	0.06	0.08	0.08
Link19a_SHP	0.06	0.08	0.08
Link2.1_SHP	0.06	0.08	0.08
Link20.1_SHP	0.06	0.08	0.08
Link200_SHP	0.06	0.08	0.08
Link203_SHP	0.06	0.08	0.08
Link207_SHP	0.06	0.08	0.08
Link20_SHP	0.06	0.08	0.08
Link21_SHP	0.06	0.08	0.08
Link23.1.1_SHP	0.06	0.08	0.08
Link23.1_SHP	0.06	0.08	0.08
Link23.2.1_SHP	0.06	0.08	0.08
Link23.3_SHP	0.06	0.08	0.08
Link23_SHP	0.06	0.08	0.08
Link25_SHP	0.06	0.08	0.08
Link2_SHP	0.06	0.08	0.08
Link31.1_SHP	0.06	0.08	0.08
Link31.2_SHP	0.06	0.08	0.08
Link31.3_SHP	0.06	0.08	0.08
Link31.4_SHP	0.06	0.08	0.08
Link31_SHP	0.06	0.08	0.08
Link32.1_SHP	0.06	0.08	0.08
Link32_SHP	0.06	0.08	0.08
Link33a_SHP	0.06	0.08	0.08
Link33b_SHP	0.06	0.08	0.08
Link33c_SHP	0.06	0.08	0.08
Link39_SHP	0.06	0.08	0.08
Link3_SHP	0.06	0.08	0.08
Link4.1_SHP	0.06	0.08	0.08
Link4.2_SHP	0.06	0.08	0.08
Link40_SHP	0.06	0.08	0.08
Link41_SHP	0.06	0.08	0.08
Link42_SHP	0.06	0.08	0.08
Link43_SHP	0.06	0.08	0.08
Link44_SHP	0.06	0.08	0.08
Link45.1.1.1_SHP	0.06	0.08	0.08
Link45.1.1_SHP	0.06	0.08	0.08
Link45.1_SHP	0.06	0.08	0.08
Link45.2_SHP	0.06	0.08	0.08
Link46.1_SHP	0.06	0.08	0.08
Link46_SHP	0.06	0.08	0.08

Link47_SHP	0.06	0.08	0.08
Link48.1_SHP	0.06	0.08	0.08
Link48_SHP	0.06	0.08	0.08
Link49_SHP	0.06	0.08	0.08
Link4_SHP	0.06	0.08	0.08
Link50.1_SHP	0.06	0.08	0.08
Link51_SHP	0.06	0.08	0.08
Link53_SHP	0.06	0.08	0.08
Link54.1_SHP	0.06	0.08	0.08
Link54_SHP	0.06	0.08	0.08
Link55.1_SHP	0.06	0.08	0.08
Link55_SHP	0.06	0.08	0.08
Link56.1_SHP	0.06	0.08	0.08
Link56_SHP	0.06	0.08	0.08
Link57_SHP	0.06	0.08	0.08
Link58_SHP	0.06	0.08	0.08
Link59_SHP	0.06	0.08	0.08
Link5_SHP	0.06	0.08	0.08
Link6.1.1.1_SHP	0.06	0.08	0.08
Link6.1_SHP	0.06	0.08	0.08
Link60_SHP	0.06	0.08	0.08
Link65_SHP	0.06	0.08	0.08
Link66.1.1_SHP	0.06	0.08	0.08
Link66.1_SHP	0.06	0.08	0.08
Link66.2_SHP	0.06	0.08	0.08
Link66_SHP	0.06	0.08	0.08
Link67.1_SHP	0.06	0.08	0.08
Link67_SHP	0.06	0.08	0.08
Link68_SHP	0.06	0.08	0.08
Link69.1_SHP	0.06	0.08	0.08
Link69_SHP	0.06	0.08	0.08
Link70_SHP	0.06	0.08	0.08
Link71.1_SHP	0.06	0.08	0.08
Link71.2_SHP	0.06	0.08	0.08
Link71_SHP	0.06	0.08	0.08
Link72.1_SHP	0.06	0.08	0.08
Link72_SHP	0.06	0.08	0.08
Link74.1_SHP	0.06	0.08	0.08
Link74.2_SHP	0.06	0.08	0.08
Link74_SHP	0.06	0.08	0.08
Link75_SHP	0.06	0.08	0.08
Link76_SHP	0.06	0.08	0.08
Link77.1.1_SHP	0.06	0.08	0.08
Link77_SHP	0.06	0.08	0.08
Link78_SHP	0.06	0.08	0.08
Link79_SHP	0.06	0.08	0.08
Link7_SHP	0.06	0.08	0.08
Link81_SHP	0.06	0.08	0.08
Link82_SHP	0.06	0.08	0.08
Link83_SHP	0.06	0.08	0.08

Link87.1a_SHP	0.06	0.08	0.08
Link87_SHP	0.06	0.08	0.08
Link89.1_SHP	0.06	0.08	0.08
Link89_SHP	0.06	0.08	0.08
Link92.1.1_SHP	0.06	0.08	0.08
Link92_SHP	0.06	0.08	0.08
Link94_SHP	0.06	0.08	0.08
Link95_SHP	0.06	0.08	0.08
Link9_SHP	0.06	0.08	0.08
Orewa_SHP	0.06	0.08	0.08

SCENARIO 14 – ARGENT LANE SHA

10YR EXISTING RAINFALL

XP STORM OUTPUTS - SUBCATCHMENT RESULTS (SCENARIO 14)

Name	Subcatchment	Area ha	Impervious Percentage %	Catchment Max Flow cms	Max Flow cms
Highgate	User Inflow Hydrograph				
Millwater1	1	32.805	0	3.062	14.306
Millwater1	2	60.924	100	12.189	
Millwater2	1	4.299	0	0.598	2.513
Millwater2	2	7.983	100	1.985	
Millwater3	1	9.505	0	1.134	5.094
Millwater3	2	17.651	100	4.223	
Millwater4	1	4.177	0	0.572	2.426
Millwater4	2	7.757	100	1.928	
Node105.1	1	11.511	0	1.863	2.012
Node105.1	2	0.606	100	0.151	
Node108	1	3.036	0	0.408	0.76
Node108	2	1.606	100	0.399	
Node109	1	58.441	0	7.78	8.317
Node109	2	3.076	100	0.765	
Node109.1.1	1	2.228	0	0.315	1.311
Node109.1.1	2	4.137	100	1.029	
Node126	1	12.503	0	1.918	3.389
Node126	2	6.084	100	1.513	
Node13	1	18.116	0	2.642	2.855
Node13	2	0.954	100	0.237	
Node143	1	4.144	0	0.651	2.25
Node143	2	6.507	100	1.618	
Node159	1	5.193	0	0.869	0.937
Node159	2	0.273	100	0.068	
Node16	1	32.462	0	4.039	4.294
Node16	2	1.709	100	0.419	
Node160	1	49.426	0	7.208	7.788
Node160	2	2.601	100	0.647	
Node161	1	25.067	0	3.83	4.143
Node161	2	1.319	100	0.328	
Node168	1	4.11	0	0.453	1.234
Node168	2	3.924	100	0.891	
Node186	1	18.393	0	3.077	3.318
Node186	2	0.968	100	0.241	
Node203	1	2.737	0	0.458	1.722
Node203	2	5.084	100	1.264	
Node206	1	2.338	0	0.383	1.459
Node206	2	4.342	100	1.079	
Node22	1	3.504	0	0.546	0.69
Node22	2	0.603	100	0.15	
Node25.1	1	11.944	0	1.478	6.108
Node25.1	2	20.156	100	4.923	
Node28	1	9.915	0	1.436	1.55
Node28	2	0.522	100	0.13	
Node4	1	3.285	0	0.536	0.579

Node4	2	0.173	100	0.043	
Node4.1	1	1.708	0	0.263	1.041
Node4.1	2	3.172	100	0.789	
Node42	1	3.5	0	0.526	2.112
Node42	2	6.499	100	1.616	
Node46.1	1	2.136	0	0.279	1.216
Node46.1	2	3.968	100	0.986	
Node46.1a	1	3.361	0	0.353	1.622
Node46.1a	2	6.241	100	1.366	
Node46.1b	1	1.495	0	0.202	0.863
Node46.1b	2	2.777	100	0.69	
Node47	1	3.728	0	0.536	2.211
Node47	2	6.924	100	1.721	
Node47.1	1	1.46	0	0.191	0.833
Node47.1	2	2.711	100	0.674	
Node48	1	1.835	0	0.263	1.086
Node48	2	3.407	100	0.847	
Node49	1	2.984	0	0.433	0.769
Node49	2	1.444	100	0.359	
Node50	1	1.937	0	0.26	1.115
Node50	2	3.597	100	0.894	
Node54	1	1.506	0	0.236	0.925
Node54	2	2.797	100	0.695	
Node56	1	1.426	0	0.239	0.897
Node56	2	2.648	100	0.658	
Node56.1	1	1.274	0	0.195	0.775
Node56.1	2	2.367	100	0.588	
Node58	1	1.072	0	0.179	0.674
Node58	2	1.991	100	0.495	
Node59	1	0.675	0	0.105	0.413
Node59	2	1.254	100	0.312	
Node59.1	1	3.968	0	0.648	0.752
Node59.1	2	0.422	100	0.105	
Node6	1	3.269	0	0.547	0.59
Node6	2	0.172	100	0.043	
Node6.1	1	3.36	0	0.562	0.606
Node6.1	2	0.177	100	0.044	
Node61	1	2.434	0	0.357	0.689
Node61	2	1.409	100	0.35	
Node73	1	18.072	0	2.248	2.39
Node73	2	0.951	100	0.233	
Node74	1	1.903	0	0.318	1.197
Node74	2	3.534	100	0.879	
Node75	1	1.543	0	0.227	0.923
Node75	2	2.866	100	0.712	
Node76	1	1.442	0	0.237	0.901
Node76	2	2.677	100	0.666	
Node77	1	1.492	0	0.235	0.917
Node77	2	2.771	100	0.689	
Node78	1	2.364	0	0.344	1.41

Node78	2	4.391	100	1.092	
Node8	1	3.707	0	0.62	0.669
Node8	2	0.195	100	0.049	
Node8.1	1	4.251	0	0.609	0.655
Node8.1	2	0.224	100	0.056	
Node80	1	1.995	0	0.287	1.182
Node80	2	3.704	100	0.921	
Node83	1	5.931	0	0.812	3.444
Node83	2	11.014	100	2.738	
Node85.1	1	2.251	0	0.367	0.597
Node85.1	2	0.935	100	0.232	
Node86	1	5.154	0	0.828	0.971
Node86	2	0.584	100	0.145	
Node95	1	1.4	0	0.213	0.849
Node95	2	2.601	100	0.647	
Node97.1	1	1.534	0	0.251	0.958
Node97.1	2	2.849	100	0.708	
Orewa Contri1	1	480.257	0	39.494	41.83
Orewa Contri1	2	25.277	100	4.58	
Orewa Contri2	1	68.959	0	7.03	7.46
Orewa Contri2	2	3.629	100	0.777	
Orewa Contri3	1	55.458	0	6.703	7.125
Orewa Contri3	2	2.919	100	0.704	
Orewa_Contri4	1	185.289	0	16.584	17.582
Orewa_Contri4	2	9.752	100	1.889	
Orewa_Contri5	1	24.418	0	3.156	3.361
Orewa_Contri5	2	1.285	100	0.32	
Orewa_Contri6	1	12.752	0	2.133	2.3
Orewa_Contri6	2	0.671	100	0.167	
Orewa_Contri7	1	9.502	0	1.53	1.653
Orewa_Contri7	2	0.5	100	0.124	
Orewa_Contri8	1	6.902	0	1.155	1.245
Orewa_Contri8	2	0.363	100	0.09	
Orewa_Contri9	1	79.566	0	7.124	7.552
Orewa_Contri9	2	4.188	100	0.811	
Weiti_Contri	1	678.769	0	37.928	40.077
Weiti_Contri	2	35.725	100	4.676	
Weiti_Contri2	1	50.344	0	4.833	5.125
Weiti_Contri2	2	2.65	100	0.542	
Weiti_Contri3	1	8.18	0	1.214	1.31
Weiti_Contri3	2	0.43	100	0.107	
Weiti_Contri4	1	10.257	0	1.42	1.525
Weiti_Contri4	2	0.54	100	0.134	
Weiti_Contri5	1	6.967	0	0.931	0.996
Weiti_Contri5	2	0.367	100	0.091	
Weiti_Contri6	1	3.806	0	0.611	0.66
Weiti_Contri6	2	0.2	100	0.05	
Weiti_Contri7	1	8.027	0	1.048	1.119
Weiti_Contri7	2	0.422	100	0.105	
Weiti_Contri8	1	43.618	0	7.031	7.596

Weiti_Contri8	2	2.296	100	0.571	
Weiti_Contri8.1	1	53.786	0	7.373	9.368
Weiti_Contri8.1	2	9.791	100	2.434	
Weiti_Contri9	1	153.161	0	12.196	12.912
Weiti_Contri9	2	8.061	100	1.424	
Weiti_Contri9.1	1	53.116	0	5.077	16.56
Weiti_Contri9.1	2	63.623	100	12.98	
Weiti_Contri9.2	1	36.459	0	5.121	8.768
Weiti_Contri9.2	2	16.152	100	4.015	
Weiti_Silverdale	1	417.491	0	25.3	26.748
Weiti_Silverdale	2	21.973	100	3.089	

XP STORM OUTPUTS - BASIC CONDUIT DATA (SCENARIO 14)

Name	Link Name	Length m	Shape	Diameter (Height) m	Downstream Invert Elevation m	Upstream Invert Elevation m
1	Culv_Link23.2_Multi	7.44	Circular	0.7	9.54	9.74
2	Culv_Link23.2_Multi	7.44	Circular	0.7	8.83	8.92
3	Culv_Link23.2_Multi	7.44	Circular	0.7	8.88	8.88
Bridge_KowhaiRd	Bridge_KowhaiRd	9.06	Natural	0	2.62	2.64
Bridge_KowhaiRd#w	Bridge_KowhaiRd					
Bridge_Lysnar	Bridge_Lysnar	3.41	Natural	0	4.32	4.46
Bridge_Lysnar#w	Bridge_Lysnar					
Bridge_MWAY	Bridge_MWAY	25.53	Natural	0	-0.74	-0.71
Bridge_WainuiRd	Bridge_WainuiRd	13.75	Natural	0	-0.47	-0.34
Bridge_WainuiRd#w	Bridge_WainuiRd					
Bridge_Weiti	Bridge_Weiti	15.16	Natural	0	9.83	11.6
Bridge_Weiti#w	Bridge_Weiti					
CUL_NZTA	CUL_NZTA	98.3	Circular	4.5	4.74	5.19
Culv_EX1500d	Culv_EX1500d	14.96	Circular	1.5	24.98	25.06
Culv_Ex1800	Culv_Ex1800	7.83	Natural	1.8	13.733	13.984
Culv_Link23.1	Culv_Link23.1	5.45	User Defined	0	6.16	6.17
Culv_LK101.1	Culv_LK101.1	20.01	Circular	1.5	22.77	22.85
Culv_LK113	Culv_LK113	5.15	Circular	0.6	17.24	17.39
Culv_LK126	Culv_LK126	12.62	Circular	0.9	23.78	23.88
Culv_LK136	Culv_LK136	12.44	Natural	0.9	21.75	21.83
Culv_Lk143	Culv_Lk143	29.72	Circular	0.6	34.8	36.54
Culv_Lk171	Culv_Lk171	92.64	Circular	2.55	6.76	7.99
Culv_Lk172	Culv_Lk172	13.41	Rectangular	2.35 x 3.7	9.34	9.62
Culv_Lk25.1.2	Culv_Lk25.1.2	10.5	Circular	1.85	4.45	4.66
Culv_LK46	Culv_LK46	12.49	Natural	1.2	19.84	19.98
Culv_Lk48.2	Culv_Lk48.2	2.38	Circular	0.6	15.08	15.19
Culv_LK58.1	Culv_LK58.1	7.9	Natural	1.85	10.83	11.17
Culv_Lk92.1	Culv_Lk92.1	15.41	Circular	1.2	14.27	14.45
CulvLK42.1	CulvLK42.1	5.72	Natural	1.05	20.83	20.92
CulvLK77.1	CulvLK77.1	23.45	Natural	0.45	14.78	14.81
CulvLK87.1	CulvLK87.1	5.02	Natural	0.6	20.22	20.45
Highgate.1	Highgate.1	168.1	Circular	1.6	15.63	19.08
Link10	Link10	141.49	Natural	0	0.16	0.67
Link101	Link101	202.17	Natural	0	29.841	33.066
Link101.1.1	Link101.1.1	206.54	Natural	0	18.287	21.611
Link101.1.2	Link101.1.2	100.39	Natural	0	21.611	22.77
Link101.2	Link101.2	277.81	Natural	0	22.85	29.841
Link103	Link103	137.17	Natural	0	19.051	19.113
Link11	Link11	113.22	Natural	0	0.22	0.16
Link112	Link112	92.55	Natural	0	4.782	4.883
Link114	Link114	69.17	Natural	0	16.58	17.24
Link115	Link115	104.95	Natural	0	15.508	16.58
Link116	Link116	147.29	Natural	0	13.93	15.508
Link117	Link117	125.09	Natural	0	10.56	13.982
Link118	Link118	33.24	Natural	0	17.643	17.945
Link12	Link12	75.88	Natural	0	-0.077	0.22
Link13	Link13	39.44	Natural	0	0.274	-0.077
Link135	Link135	48.58	Natural	0	22.069	22.464
Link137	Link137	31.81	Natural	0	21.435	21.756
Link138	Link138	56.01	Natural	0	20.868	21.435
Link139	Link139	87.01	Natural	0	19.58	20.868
Link14	Link14	70.07	Natural	0	0.004	0.274
Link140	Link140	112.52	Natural	0	18.333	19.58
Link141	Link141	59.69	Natural	0	17.915	18.333
Link15	Link15	93	Natural	0	-0.134	0.004
Link150	Link150	127.36	Natural	0	4.82	9.86
Link156	Link156	326.91	Natural	0	15.994	22.926
Link157	Link157	89.18	Natural	0	10.198	17.257

Link16	Link16	84.25	Natural	0	-0.12	-0.134
Link160	Link160	131.12	Natural	0	6.35	15.517
Link161	Link161	271.8	Natural	0	22.464	26.837
Link17	Link17	95.65	Natural	0	-0.25	-0.12
Link172	Link172	332.34	Natural	0	11.988	15.232
Link172.1	Link172.1	280.43	Natural	0	12.04	11.988
Link172.1.1.1	Link172.1.1.1	40.25	Natural	0	10.547	10.965
Link175	Link175	177.46	Natural	0	-0.9	-0.8
Link175.1	Link175.1	45.03	Natural	0	-1	-0.9
Link176	Link176	383.8	Natural	0	-1.15	-0.1
Link177	Link177	102.08	Natural	0	-1.24	-1.15
Link177.1	Link177.1	116.73	Natural	0	-1.28	-1.24
Link178	Link178	210.95	Natural	0	-1.3	-1.28
Link178.1	Link178.1	206.61	Natural	0	-1.34	-1.3
Link18	Link18	152.17	Natural	0	-0.25	-0.25
Link182	Link182	366.22	Natural	0	1.419	6.76
Link183	Link183	99.41	Natural	0	1.277	1.419
Link184	Link184	332.74	Natural	0	1.277	4.782
Link185	Link185	338.69	Natural	0	1.419	4.656
Link186	Link186	326.75	Natural	0	0.647	1.277
Link187	Link187	435.61	Natural	0	-0.016	0.647
Link188	Link188	458.5	Natural	0	0.03	-0.016
Link189	Link189	284.68	Natural	0	-0.285	0.03
Link190	Link190	185.13	Natural	0	-0.509	-0.285
Link191	Link191	397.39	Natural	0	-0.64	-0.51
Link191.1	Link191.1	413.61	Natural	0	-0.78	-0.64
Link192	Link192	208.09	Natural	0	-0.678	-0.776
Link193	Link193	154.24	Natural	0	4.883	4.74
Link19a	Link19a	133.6	Natural	0	-0.2	2.62
Link19a.1	Link19a.1	132.35	Natural	0	-0.52	-0.2
Link2	Link2	54.59	Natural	0	13.473	13.19
Link2.1	Link2.1	61.12	Natural	0	11.637	13.473
Link20	Link20	14.09	Natural	0	-0.34	-0.25
Link20.1	Link20.1	51.59	Natural	0	-0.52	-0.47
Link200	Link200	167.18	Natural	0	14.65	18.815
Link203	Link203	75.72	Natural	0	36.54	43.97
Link207	Link207	189.59	Natural	0	25.06	30.2
Link21	Link21	175.83	Natural	0	-0.71	-0.52
Link23	Link23	2.66	Natural	0	10.33	10.19
Link23.1.1	Link23.1.1	153.98	Natural	0	-0.25	4.68
Link23.1.2	Link23.1.2	116.74	Natural	0	4.68	6.16
Link23.2.1	Link23.2.1	154.99	Natural	0	6.17	8.83
Link23.3	Link23.3	161.13	Natural	0	8.88	10.33
Link25	Link25	72.62	Natural	0	4.51	5.87
Link25.1	Link25.1	37.03	Natural	0	4.66	4.51
Link25.1.1	Link25.1.1	13.53	Natural	0	3.99	4.45
Link3	Link3	108.63	Natural	0	10.849	11.637
Link31	Link31	91.63	Natural	0	15.59	15.86
Link31.1	Link31.1	465.46	Natural	0	11.7	13.69
Link31.2	Link31.2	386.31	Natural	0	13.69	14.77
Link31.3	Link31.3	194.9	Natural	0	14.77	15.32
Link31.4	Link31.4	93.24	Natural	0	15.32	15.59
Link32	Link32	865.06	Natural	0	8.908	11.7
Link32.1	Link32.1	688.18	Natural	0	5.132	8.908
Link33a	Link33a	198.81	Natural	0	4.09	5.13
Link33b	Link33b	137.99	Natural	0	3.57	4.09
Link33c	Link33c	147.58	Natural	0	2.64	3.57
Link39	Link39	56.29	Natural	0	22.81	23.78
Link4	Link4	78.42	Natural	0	8.575	10.849
Link4.1	Link4.1	97.95	Natural	0	5.04	8.103
Link4.2	Link4.2	82.58	Natural	0	8.103	8.575
Link40	Link40	58.73	Natural	0	22.311	22.81

Link41	Link41	78.25	Natural	0	21.52	22.311
Link42	Link42	79.01	Natural	0	20.92	21.52
Link43	Link43	48.21	Natural	0	20.551	20.83
Link44	Link44	17.22	Natural	0	19.98	20.551
Link45.1	Link45.1	95.72	Natural	0	17.97	18.11
Link45.1.1	Link45.1.1	47.86	Natural	0	17.9	17.97
Link45.1.1.1	Link45.1.1.1	47.86	Natural	0	17.83	17.9
Link45.2	Link45.2	114.74	Natural	0	18.114	19.84
Link46	Link46	32.11	Natural	0	16.882	17.83
Link46.1	Link46.1	27.5	Natural	0	17.239	16.882
Link47	Link47	113.64	Natural	0	15.25	17.239
Link48	Link48	55.74	Natural	0	15.19	15.25
Link48.1	Link48.1	65.21	Natural	0	14.14	15.08
Link49	Link49	70.45	Natural	0	13.19	14.143
Link5	Link5	60.92	Natural	0	4.82	5.04
Link5.1	Link5.1	39.19	Natural	0	4.59	4.82
Link53	Link53	69.15	Natural	0	17.237	18.287
Link54	Link54	41.08	Natural	0	16.873	17.237
Link54.1	Link54.1	15.06	Natural	0	16.432	16.873
Link55	Link55	116.8	Natural	0	14.65	16.432
Link55.1	Link55.1	64.57	Natural	0	13.984	14.65
Link56	Link56	17.49	Natural	0	13.652	13.733
Link56.1	Link56.1	60.44	Natural	0	13.027	13.652
Link57	Link57	66.25	Natural	0	12.015	13.027
Link58	Link58	76.81	Natural	0	13.103	12.015
Link59	Link59	91.29	Natural	0	9.04	10.83
Link6	Link6	61.11	Natural	0	4.56	4.59
Link6.1	Link6.1	44.98	Natural	0	4.46	4.56
Link6.1a	Link6.1a	26.8	Natural	0	3.99	4.32
Link60	Link60	111.63	Natural	0	5.87	9.04
Link65	Link65	384.85	Natural	0	17.146	19.051
Link66	Link66	169.44	Natural	0	15.994	17.146
Link66.1	Link66.1	174.58	Natural	0	13.72	14.769
Link66.1.1	Link66.1.1	177.17	Natural	0	12.039	13.72
Link66.2	Link66.2	173.2	Natural	0	14.769	15.994
Link67	Link67	134.88	Natural	0	11.6	12.039
Link67.1	Link67.1	284.75	Natural	0	10.198	11.895
Link68	Link68	335.52	Natural	0	9.055	10.198
Link69	Link69	55.84	Natural	0	9.439	9.055
Link69.1	Link69.1	226.86	Natural	0	8.3	9.439
Link7	Link7	51.83	Natural	0	1.258	3.99
Link70	Link70	143.23	Natural	0	7.11	8.3
Link71	Link71	77.14	Natural	0	6.35	7.11
Link71.1	Link71.1	163.65	Natural	0	6.315	7.11
Link71.2	Link71.2	82.49	Natural	0	7.11	6.35
Link72	Link72	38.13	Natural	0	6.404	6.315
Link72.1	Link72.1	39.12	Natural	0	5.19	6.2
Link74	Link74	122.63	Natural	0	28.994	34.8
Link74.1	Link74.1	245.26	Natural	0	20.836	26.368
Link74.2	Link74.2	122.63	Natural	0	26.368	28.994
Link75	Link75	89.68	Natural	0	18.293	19.441
Link76	Link76	138.38	Natural	0	16.371	18.293
Link77	Link77	47.66	Natural	0	15.15	16.371
Link77.1.1	Link77.1.1	40.12	Natural	0	14.23	14.78
Link78	Link78	51.92	Natural	0	11.74	14.23
Link79	Link79	96.79	Natural	0	9.86	11.74
Link8	Link8	77.32	Natural	0	0.19	1.258
Link81	Link81	37.06	Natural	0	23.846	24.86
Link82	Link82	116.13	Natural	0	18.818	23.846
Link83	Link83	40.79	Natural	0	16.432	18.818
Link87	Link87	56.35	Natural	0	20.22	20.91
Link87.1a	Link87.1a	28.31	Natural	0	19.98	20.22

Link89	Link89	156.52	Natural	0	22.531	24.98
Link89.1	Link89.1	135.63	Natural	0	20.91	22.531
Link9	Link9	130.9	Natural	0	0.67	0.19
Link92	Link92	76.63	Natural	0	14.72	15.63
Link92.1.1	Link92.1.1	60.87	Natural	0	12.66	14.27
Link94	Link94	126.39	Natural	0	10.56	12.66
Link95	Link95	22.06	Natural	0	10.19	10.56
Orewa	Orewa	20.73	Natural	0	-0.8	-0.74

XP STORM OUTPUTS - JUNCTION DATA (SCENARIO 14)

Name	Node Name	Invert Elevation m	Node X	Node Y	Ponding Type	Inlet Capacity Type
Highgate	Highgate	19.08	390760.744	830148.545	Link Invert to 2D	Maximum Capacity
Millwater1	Millwater1	-1	391144.141	831278.612	Link Invert to 2D	Maximum Capacity
Millwater2	Millwater2	-1.15	391481.677	831387.439	Link Invert to 2D	Maximum Capacity
Millwater3	Millwater3	-1.24	391570.934	831410.567	Link Invert to 2D	Maximum Capacity
Millwater4	Millwater4	-1.3	391860.414	831519.05	Link Invert to 2D	Maximum Capacity
Node10	Node10	1.258	390011.681	830524.418	Link Invert to 2D	Maximum Capacity
Node100	Node100	15.63	390694.008	830302.827	Link Invert to 2D	Maximum Capacity
Node100.1	Node100.1	12.66	390622.118	830426.675	Link Invert to 2D	Maximum Capacity
Node100.2	Node100.2	14.45	390661.171	830366.907	Link Invert to 2D	Maximum Capacity
Node100.2.1	Node100.2.1	14.27	390651.341	830378.777	Link Invert to 2D	Maximum Capacity
Node102	Node102	10.56	390587.268	830536.871	Link Invert to 2D	Maximum Capacity
Node104	Node104	4.74	390989.368	829058.139	Link Invert to 2D	Maximum Capacity
Node105	Node105	-0.8	390934.933	831205.359	Link Invert to 2D	Maximum Capacity
Node105.1	Node105.1	-0.9	391100.667	831266.89	Link Invert to 2D	Maximum Capacity
Node108	Node108	5.04	390014.062	830245.239	Link Invert to 2D	Maximum Capacity
Node108.1	Node108.1	4.82	390003.818	830304.98	Link Invert to 2D	Maximum Capacity
Node109	Node109	33.066	388814.038	829688.32	Link Invert to 2D	Maximum Capacity
Node109.1	Node109.1	22.85	388976.008	830105.067	Link Invert to 2D	Maximum Capacity
Node109.1.1	Node109.1.1	21.611	389076.916	830169.74	Link Invert to 2D	Maximum Capacity
Node109.1.2	Node109.1.2	22.77	388990.761	830118.588	Link Invert to 2D	Maximum Capacity
Node109.2	Node109.2	29.841	388826.55	829870.888	Link Invert to 2D	Maximum Capacity
Node11	Node11	0.19	390054.553	830588.569	Link Invert to 2D	Maximum Capacity
Node119	Node119	4.883	391084.228	828988.566	Link Invert to 2D	Maximum Capacity
Node12	Node12	0.67	390107.166	830696.479	Link Invert to 2D	Maximum Capacity
Node120	Node120	4.782	391132.149	828949.835	Link Invert to 2D	Maximum Capacity
Node121	Node121	17.39	390500.65	830117.826	Link Invert to 2D	Maximum Capacity
Node122	Node122	17.24	390500.816	830122.97	Link Invert to 2D	Maximum Capacity
Node123	Node123	16.58	390492.934	830190.884	Link Invert to 2D	Maximum Capacity
Node124	Node124	15.508	390497.396	830295.447	Link Invert to 2D	Maximum Capacity
Node125	Node125	13.93	390523.844	830437.416	Link Invert to 2D	Maximum Capacity
Node126	Node126	17.915	390507.197	830089.527	Link Invert to 2D	Maximum Capacity
Node13	Node13	0.1603	390181.707	830808.359	Link Invert to 2D	Maximum Capacity
Node134	Node134	23.88	389637.57	829041.964	Link Invert to 2D	Maximum Capacity
Node14	Node14	0.22	390221.859	830886.276	Link Invert to 2D	Maximum Capacity
Node143	Node143	22.464	390527.054	829736.499	Link Invert to 2D	Maximum Capacity
Node144	Node144	21.83	390515.505	829783.568	Link Invert to 2D	Maximum Capacity
Node145	Node145	21.75	390512.138	829795.544	Link Invert to 2D	Maximum Capacity
Node146	Node146	21.435	390502.851	829825.972	Link Invert to 2D	Maximum Capacity
Node147	Node147	20.868	390500.521	829881.384	Link Invert to 2D	Maximum Capacity
Node148	Node148	19.58	390505.475	829963.454	Link Invert to 2D	Maximum Capacity
Node149	Node149	18.333	390495.782	830049.403	Link Invert to 2D	Maximum Capacity
Node15	Node15	-0.077	390239.982	830957.369	Link Invert to 2D	Maximum Capacity
Node150	Node150	36.54	389283.652	829636.661	Link Invert to 2D	Maximum Capacity
Node159	Node159	44.824	389130.157	829523.01	Link Invert to 2D	Maximum Capacity
Node16	Node16	0.274	390259.45	830985.84	Link Invert to 2D	Maximum Capacity

Node160	Node160	36.06	389102.492	829047.246	Link Invert to 2D	Maximum Capacity
Node160.1	Node160.1	30.2	389372.452	829121.34	Link Invert to 2D	Maximum Capacity
Node161	Node161	29.993	389375.219	828939.943	Link Invert to 2D	Maximum Capacity
Node168	Node168	26.837	390627.699	829496.156	Link Invert to 2D	Maximum Capacity
Node17	Node17	0.004	390326.41	830996.417	Link Invert to 2D	Maximum Capacity
Node178	Node178	7.99	390902.335	828787.492	Link Invert to 2D	Maximum Capacity
Node179	Node179	6.76	390994.978	828787.897	Link Invert to 2D	Maximum Capacity
Node18	Node18	-0.134	390404.117	831034.954	Link Invert to 2D	Maximum Capacity
Node180.1	Node180.1	11.988	390658.86	828617.787	Link Invert to 2D	Maximum Capacity
Node180.1.1	Node180.1.1	9.62	390872.05	828749.519	Link Invert to 2D	Maximum Capacity
Node180.1.1.1	Node180.1.1.1	9.34	390874.93	828762.612	Link Invert to 2D	Maximum Capacity
Node186	Node186	-1.28	391651.599	831489.29	Link Invert to 2D	Maximum Capacity
Node187	Node187	-1.34	392050.291	831561.049	Link Invert to 2D	Maximum Capacity
Node19	Node19	-0.12	390461.56	831088.471	Link Invert to 2D	Maximum Capacity
Node192	Node192	1.277	391327.868	828850.408	Link Invert to 2D	Maximum Capacity
Node194	Node194	-0.016	391899.237	828994.355	Link Invert to 2D	Maximum Capacity
Node195	Node195	0.03	392098.433	828889.23	Link Invert to 2D	Maximum Capacity
Node196	Node196	-0.285	392322.117	828895.377	Link Invert to 2D	Maximum Capacity
Node198	Node198	-0.51	392464.001	828796.297	Link Invert to 2D	Maximum Capacity
Node199	Node199	-0.678	393345.847	828972.505	Link Invert to 2D	Maximum Capacity
Node20	Node20	-0.25	390554.347	831108.65	Link Invert to 2D	Maximum Capacity
Node203	Node203	34.96	389000.188	830307.602	Link Invert to 2D	Maximum Capacity
Node206	Node206	18.815	389353.844	830230.372	Link Invert to 2D	Maximum Capacity
Node209	Node209	43.97	389264.177	829584.071	Link Invert to 2D	Maximum Capacity
Node21	Node21	-0.25	390698.628	831102.846	Link Invert to 2D	Maximum Capacity
Node21.1	Node21.1	-0.47	390715.127	831125.017	Link Invert to 2D	Maximum Capacity
Node21.2	Node21.2	-0.34	390707.67	831113.468	Link Invert to 2D	Maximum Capacity
Node22	Node22	5.87	389871.336	830460.858	Link Invert to 2D	Maximum Capacity
Node22.1	Node22.1	4.51	389942.611	830473.624	Link Invert to 2D	Maximum Capacity
Node22.1.1	Node22.1.1	4.45	389989.974	830472.236	Link Invert to 2D	Maximum Capacity
Node22.1.2	Node22.1.2	4.66	389979.511	830473.164	Link Invert to 2D	Maximum Capacity
Node25	Node25	10.19	390597.981	830563.128	Link Invert to 2D	Maximum Capacity
Node25.1	Node25.1	6.17	390654.909	830854.759	Link Invert to 2D	Maximum Capacity
Node25.1.1	Node25.1.1	4.68	390689.475	830965.836	Link Invert to 2D	Maximum Capacity
Node25.1.2	Node25.1.2	6.16	390655.814	830860.117	Link Invert to 2D	Maximum Capacity
Node25.2	Node25.2	8.88	390622.999	830712.94	Link Invert to 2D	Maximum Capacity
Node25.2.1	Node25.2.1	8.83	390624.174	830721.768	Link Invert to 2D	Maximum Capacity
Node25.3	Node25.3	10.33	390600.069	830564.397	Link Invert to 2D	Maximum Capacity
Node26a	Node26a	2.62	390502.824	831320.516	Link Invert to 2D	Maximum Capacity
Node27	Node27	-0.52	390716.358	831175.835	Link Invert to 2D	Maximum Capacity
Node28	Node28	-0.71	390889.117	831200.507	Link Invert to 2D	Maximum Capacity
Node29	Node29	-0.74	390914.635	831201.149	Link Invert to 2D	Maximum Capacity
Node34.1	Node34.1	2.64	390495.833	831326.28	Link Invert to 2D	Maximum Capacity
Node4	Node4	13.19	390117.819	829855.792	Link Invert to 2D	Maximum Capacity
Node4.1	Node4.1	13.473	390139.264	829896.454	Link Invert to 2D	Maximum Capacity
Node40	Node40	23.78	389646.077	829051.292	Link Invert to 2D	Maximum Capacity
Node41	Node41	22.81	389685.814	829091.165	Link Invert to 2D	Maximum Capacity
Node42	Node42	22.311	389711.315	829144.066	Link Invert to 2D	Maximum Capacity
Node43	Node43	21.52	389735.503	829216.797	Link Invert to 2D	Maximum Capacity
Node43.1	Node43.1	20.92	389775.027	829285.21	Link Invert to 2D	Maximum Capacity

Node44	Node44	20.83	389777.726	829290.258	Link Invert to 2D	Maximum Capacity
Node45	Node45	20.551	389801.673	829332.1	Link Invert to 2D	Maximum Capacity
Node46	Node46	19.98	389804.147	829348.198	Link Invert to 2D	Maximum Capacity
Node46.1	Node46.1	18.11	389912.608	829413.981	Link Invert to 2D	Maximum Capacity
Node46.1a	Node46.1a	17.97	389971.566	829476.09	Link Invert to 2D	Maximum Capacity
Node46.1b	Node46.1b	17.9	389995.357	829517.609	Link Invert to 2D	Maximum Capacity
Node46.2	Node46.2	19.84	389814.117	829355.719	Link Invert to 2D	Maximum Capacity
Node47	Node47	17.83	390020.041	829558.612	Link Invert to 2D	Maximum Capacity
Node47.1	Node47.1	16.882	390035.963	829586.499	Link Invert to 2D	Maximum Capacity
Node48	Node48	17.239	390048.943	829610.74	Link Invert to 2D	Maximum Capacity
Node49	Node49	15.25	390108.692	829694.422	Link Invert to 2D	Maximum Capacity
Node49.1	Node49.1	15.08	390096.026	829734.191	Link Invert to 2D	Maximum Capacity
Node49.2	Node49.2	15.19	390096.748	829731.925	Link Invert to 2D	Maximum Capacity
Node5	Node5	11.637	390135.622	829945.409	Link Invert to 2D	Maximum Capacity
Node50	Node50	14.14	390101.888	829797.933	Link Invert to 2D	Maximum Capacity
Node54	Node54	18.287	389254.992	830274.073	Link Invert to 2D	Maximum Capacity
Node55	Node55	17.237	389305.867	830312.606	Link Invert to 2D	Maximum Capacity
Node55.1	Node55.1	16.873	389334.759	830339.766	Link Invert to 2D	Maximum Capacity
Node56	Node56	16.432	389336.173	830354.135	Link Invert to 2D	Maximum Capacity
Node56.1	Node56.1	13.984	389498.551	830378.391	Link Invert to 2D	Maximum Capacity
Node56.2	Node56.2	14.65	389440.835	830364.371	Link Invert to 2D	Maximum Capacity
Node57	Node57	13.733	389505.49	830382.026	Link Invert to 2D	Maximum Capacity
Node57.1	Node57.1	13.652	389520.745	830390.58	Link Invert to 2D	Maximum Capacity
Node58	Node58	13.027	389562.004	830419.89	Link Invert to 2D	Maximum Capacity
Node59	Node59	12.015	389598.735	830459.228	Link Invert to 2D	Maximum Capacity
Node59.1	Node59.1	11.17	389663.227	830471.068	Link Invert to 2D	Maximum Capacity
Node6	Node6	10.849	390122.582	830049.539	Link Invert to 2D	Maximum Capacity
Node6.1	Node6.1	8.103	390047.33	830160.953	Link Invert to 2D	Maximum Capacity
Node6.2	Node6.2	8.575	390105.058	830116.041	Link Invert to 2D	Maximum Capacity
Node60	Node60	10.83	389670.982	830472.569	Link Invert to 2D	Maximum Capacity
Node61	Node61	9.04	389759.707	830461.047	Link Invert to 2D	Maximum Capacity
Node72	Node72	19.051	389321.668	828257.5	Link Invert to 2D	Maximum Capacity
Node73	Node73	17.146	389541.656	828505.942	Link Invert to 2D	Maximum Capacity
Node73.1	Node73.1	15.994	389673.745	828527.036	Link Invert to 2D	Maximum Capacity
Node74	Node74	12.039	389987.849	828799.277	Link Invert to 2D	Maximum Capacity
Node74.1	Node74.1	9.83	390068.106	828844.096	Link Invert to 2D	Maximum Capacity
Node74.2	Node74.2	11.6	390066.018	828829.077	Link Invert to 2D	Maximum Capacity
Node75	Node75	10.198	390227.444	828871.677	Link Invert to 2D	Maximum Capacity
Node76	Node76	9.055	390403.128	828968.39	Link Invert to 2D	Maximum Capacity
Node77	Node77	8.3	390574.816	829048.966	Link Invert to 2D	Maximum Capacity
Node78	Node78	7.11	390683.738	829036.302	Link Invert to 2D	Maximum Capacity
Node78.1	Node78.1	7.11	390765.2	829001.294	Link Invert to 2D	Maximum Capacity
Node78.2	Node78.2	6.35	390716.455	828981.236	Link Invert to 2D	Maximum Capacity
Node79	Node79	6.315	390831.54	829107.537	Link Invert to 2D	Maximum Capacity
Node8	Node8	4.59	389998.384	830343.08	Link Invert to 2D	Maximum Capacity
Node8.1	Node8.1	4.56	390001.515	830399.956	Link Invert to 2D	Maximum Capacity
Node8.1.1	Node8.1.1	4.46	390006.175	830444.532	Link Invert to 2D	Maximum Capacity
Node8.1.1.1	Node8.1.1.1	4.32	390007.196	830447.784	Link Invert to 2D	Maximum Capacity
Node80	Node80	5.19	390900.4	829099.932	Link Invert to 2D	Maximum Capacity
Node82	Node82	34.8	389292.649	829664.986	Link Invert to 2D	Maximum Capacity

Node82.1	Node82.1	26.368	389394.601	829844.178	Link Invert to 2D	Maximum Capacity
Node82.2	Node82.2	28.994	389300.418	829784.319	Link Invert to 2D	Maximum Capacity
Node83	Node83	19.441	389602.462	829896.157	Link Invert to 2D	Maximum Capacity
Node84	Node84	18.293	389662.074	829961.1	Link Invert to 2D	Maximum Capacity
Node85	Node85	16.371	389722.053	830083.34	Link Invert to 2D	Maximum Capacity
Node85.1	Node85.1	14.81	389740.551	830127.262	Link Invert to 2D	Maximum Capacity
Node85.1.1	Node85.1.1	14.78	389756.101	830144.817	Link Invert to 2D	Maximum Capacity
Node86	Node86	14.23	389773.508	830180.966	Link Invert to 2D	Maximum Capacity
Node87	Node87	11.74	389813.454	830214.091	Link Invert to 2D	Maximum Capacity
Node88	Node88	9.86	389902.906	830232.576	Link Invert to 2D	Maximum Capacity
Node89	Node89	24.86	389148.187	830372.404	Link Invert to 2D	Maximum Capacity
Node9	Node9	3.99	390003.36	830473.919	Link Invert to 2D	Maximum Capacity
Node90	Node90	23.846	389182.093	830362.075	Link Invert to 2D	Maximum Capacity
Node91	Node91	18.818	389296.699	830347.944	Link Invert to 2D	Maximum Capacity
Node95	Node95	20.91	389744.113	829324.369	Link Invert to 2D	Maximum Capacity
Node95.1	Node95.1	20.22	389774.744	829342.565	Link Invert to 2D	Maximum Capacity
Node95.1a	Node95.1a	20.22	389778.418	829339.137	Link Invert to 2D	Maximum Capacity
Node96	Node96	25.06	389546.04	829197.565	Link Invert to 2D	Maximum Capacity
Node97	Node97	24.98	389560.25	829192.891	Link Invert to 2D	Maximum Capacity
Node97.1	Node97.1	22.531	389638.956	829276.626	Link Invert to 2D	Maximum Capacity
Orewa C2	Orewa C2	15.32	388430.922	830585.273	Link Invert to 2D	Maximum Capacity
Orewa Contri1	Orewa Contri1	15.86	388263.823	830565.82	Link Invert to 2D	Maximum Capacity
Orewa Contri2	Orewa Contri2	15.59	388350.139	830585.522	Link Invert to 2D	Maximum Capacity
Orewa Contri3	Orewa Contri3	14.77	388565.501	830677.966	Link Invert to 2D	Maximum Capacity
Orewa_C3	Orewa_C3	13.69	388756.013	830932.835	Link Invert to 2D	Maximum Capacity
Orewa_Contri4	Orewa_Contri4	11.7	389083.635	831225.761	Link Invert to 2D	Maximum Capacity
Orewa_Contri5	Orewa_Contri5	8.908	389660.232	831548.956	Link Invert to 2D	Maximum Capacity
Orewa_Contri6	Orewa_Contri6	5.13	390146.566	831642.474	Link Invert to 2D	Maximum Capacity
Orewa_Contri7	Orewa_Contri7	3.57	390377.523	831407.877	Link Invert to 2D	Maximum Capacity
Orewa_Contri8	Orewa_Contri8	-0.2	390626.424	831271.403	Link Invert to 2D	Maximum Capacity
Orewa_Contri9	Orewa_Contri9	4.09	390285.039	831507.218	Link Invert to 2D	Maximum Capacity
Weiti_C1	Weiti_C1	14.769	389753.249	828662.428	Link Invert to 2D	Maximum Capacity
Weiti_Contri	Weiti_Contri	19.113	389346.741	828164.723	Link Invert to 2D	Maximum Capacity
Weiti_Contri2	Weiti_Contri2	22.926	389616.84	828218.568	Link Invert to 2D	Maximum Capacity
Weiti_Contri3	Weiti_Contri3	13.72	389850.037	828720.837	Link Invert to 2D	Maximum Capacity
Weiti_Contri4	Weiti_Contri4	17.257	390276.888	828808.223	Link Invert to 2D	Maximum Capacity
Weiti_Contri5	Weiti_Contri5	9.439	390449.796	828990.714	Link Invert to 2D	Maximum Capacity
Weiti_Contri6	Weiti_Contri6	15.517	390632.979	828920.551	Link Invert to 2D	Maximum Capacity
Weiti_Contri7	Weiti_Contri7	6.2	390866.521	829103.717	Link Invert to 2D	Maximum Capacity
Weiti_Contri8	Weiti_Contri8	1.419	391273.799	828775.679	Link Invert to 2D	Maximum Capacity
Weiti_Contri8.1	Weiti_Contri8.1	0.647	391594.469	828893	Link Invert to 2D	Maximum Capacity
Weiti_Contri9	Weiti_Contri9	15.232	390539.344	828354.986	Link Invert to 2D	Maximum Capacity
Weiti_Contri9.1	Weiti_Contri9.1	-0.64	392841.08	828814.576	Link Invert to 2D	Maximum Capacity
Weiti_Contri9.2	Weiti_Contri9.2	-0.78	393176.511	829015.146	Link Invert to 2D	Maximum Capacity
Weiti_Silverdale	Weiti_Silverdale	4.656	391146.039	828521.651	Link Invert to 2D	Maximum Capacity

XP STORM OUTPUTS -CHANNEL MANNINGS COEFFICENTS (SCENARIO 14

Name	Main Channel Manning's n	Left Overbank Manning's n	Right Overbank Manning's n
Bridge_MWAY_SHP	0.06	0.08	0.08
Link101.1.1_SHP	0.06	0.08	0.08
Link101.1.2_SHP	0.06	0.08	0.08
Link101.2_SHP	0.06	0.08	0.08
Link101_SHP	0.06	0.08	0.08
Link103_SHP	0.06	0.08	0.08
Link10_SHP	0.06	0.08	0.08
Link110_SHP	0.06	0.08	0.08
Link112_SHP	0.06	0.08	0.08
Link114_SHP	0.06	0.08	0.08
Link115_SHP	0.06	0.08	0.08
Link116_SHP	0.06	0.08	0.08
Link117_SHP	0.06	0.08	0.08
Link118_SHP	0.06	0.08	0.08
Link11_SHP	0.06	0.08	0.08
Link12_SHP	0.06	0.08	0.08
Link135_SHP	0.06	0.08	0.08
Link137_SHP	0.06	0.08	0.08
Link138_SHP	0.06	0.08	0.08
Link139_SHP	0.06	0.08	0.08
Link140_SHP	0.06	0.08	0.08
Link141_SHP	0.06	0.08	0.08
Link14_SHP	0.06	0.08	0.08
Link150_SHP	0.06	0.08	0.08
Link156_SHP	0.06	0.08	0.08
Link157_SHP	0.06	0.08	0.08
Link15_SHP	0.06	0.08	0.08
Link160_SHP	0.06	0.08	0.08
Link161_SHP	0.06	0.08	0.08
Link16_SHP	0.06	0.08	0.08
Link172.1.1.1_SHP	0.06	0.08	0.08
Link172.1_SHP	0.06	0.08	0.08
Link172_SHP	0.06	0.08	0.08
Link175.1_SHP	0.06	0.08	0.08
Link175_SHP	0.06	0.08	0.08
Link176_SHP	0.06	0.08	0.08
Link177.1_SHP	0.06	0.08	0.08
Link177_SHP	0.06	0.08	0.08
Link178.1_SHP	0.06	0.08	0.08
Link178_SHP	0.06	0.08	0.08
Link17_SHP	0.06	0.08	0.08
Link182_SHP	0.06	0.08	0.08
Link183_SHP	0.06	0.08	0.08
Link184_SHP	0.06	0.08	0.08
Link185_SHP	0.06	0.08	0.08
Link186_SHP	0.06	0.08	0.08

Link187_SHP	0.06	0.08	0.08
Link188_SHP	0.06	0.08	0.08
Link189_SHP	0.06	0.08	0.08
Link18_SHP	0.06	0.08	0.08
Link190_SHP	0.06	0.08	0.08
Link191.1_SHP	0.06	0.08	0.08
Link191_SHP	0.06	0.08	0.08
Link192_SHP	0.06	0.08	0.08
Link193_SHP	0.06	0.08	0.08
Link19a.1_SHP	0.06	0.08	0.08
Link19a_SHP	0.06	0.08	0.08
Link2.1_SHP	0.06	0.08	0.08
Link20.1_SHP	0.06	0.08	0.08
Link200_SHP	0.06	0.08	0.08
Link203_SHP	0.06	0.08	0.08
Link207_SHP	0.06	0.08	0.08
Link20_SHP	0.06	0.08	0.08
Link21_SHP	0.06	0.08	0.08
Link23.1.1_SHP	0.06	0.08	0.08
Link23.1_SHP	0.06	0.08	0.08
Link23.2.1_SHP	0.06	0.08	0.08
Link23.3_SHP	0.06	0.08	0.08
Link23_SHP	0.06	0.08	0.08
Link25_SHP	0.06	0.08	0.08
Link2_SHP	0.06	0.08	0.08
Link31.1_SHP	0.06	0.08	0.08
Link31.2_SHP	0.06	0.08	0.08
Link31.3_SHP	0.06	0.08	0.08
Link31.4_SHP	0.06	0.08	0.08
Link31_SHP	0.06	0.08	0.08
Link32.1_SHP	0.06	0.08	0.08
Link32_SHP	0.06	0.08	0.08
Link33a_SHP	0.06	0.08	0.08
Link33b_SHP	0.06	0.08	0.08
Link33c_SHP	0.06	0.08	0.08
Link39_SHP	0.06	0.08	0.08
Link3_SHP	0.06	0.08	0.08
Link4.1_SHP	0.06	0.08	0.08
Link4.2_SHP	0.06	0.08	0.08
Link40_SHP	0.06	0.08	0.08
Link41_SHP	0.06	0.08	0.08
Link42_SHP	0.06	0.08	0.08
Link43_SHP	0.06	0.08	0.08
Link44_SHP	0.06	0.08	0.08
Link45.1.1.1_SHP	0.06	0.08	0.08
Link45.1.1_SHP	0.06	0.08	0.08
Link45.1_SHP	0.06	0.08	0.08
Link45.2_SHP	0.06	0.08	0.08
Link46.1_SHP	0.06	0.08	0.08
Link46_SHP	0.06	0.08	0.08

Link47_SHP	0.06	0.08	0.08
Link48.1_SHP	0.06	0.08	0.08
Link48_SHP	0.06	0.08	0.08
Link49_SHP	0.06	0.08	0.08
Link4_SHP	0.06	0.08	0.08
Link50.1_SHP	0.06	0.08	0.08
Link51_SHP	0.06	0.08	0.08
Link53_SHP	0.06	0.08	0.08
Link54.1_SHP	0.06	0.08	0.08
Link54_SHP	0.06	0.08	0.08
Link55.1_SHP	0.06	0.08	0.08
Link55_SHP	0.06	0.08	0.08
Link56.1_SHP	0.06	0.08	0.08
Link56_SHP	0.06	0.08	0.08
Link57_SHP	0.06	0.08	0.08
Link58_SHP	0.06	0.08	0.08
Link59_SHP	0.06	0.08	0.08
Link5_SHP	0.06	0.08	0.08
Link6.1.1.1_SHP	0.06	0.08	0.08
Link6.1_SHP	0.06	0.08	0.08
Link60_SHP	0.06	0.08	0.08
Link65_SHP	0.06	0.08	0.08
Link66.1.1_SHP	0.06	0.08	0.08
Link66.1_SHP	0.06	0.08	0.08
Link66.2_SHP	0.06	0.08	0.08
Link66_SHP	0.06	0.08	0.08
Link67.1_SHP	0.06	0.08	0.08
Link67_SHP	0.06	0.08	0.08
Link68_SHP	0.06	0.08	0.08
Link69.1_SHP	0.06	0.08	0.08
Link69_SHP	0.06	0.08	0.08
Link70_SHP	0.06	0.08	0.08
Link71.1_SHP	0.06	0.08	0.08
Link71.2_SHP	0.06	0.08	0.08
Link71_SHP	0.06	0.08	0.08
Link72.1_SHP	0.06	0.08	0.08
Link72_SHP	0.06	0.08	0.08
Link74.1_SHP	0.06	0.08	0.08
Link74.2_SHP	0.06	0.08	0.08
Link74_SHP	0.06	0.08	0.08
Link75_SHP	0.06	0.08	0.08
Link76_SHP	0.06	0.08	0.08
Link77.1.1_SHP	0.06	0.08	0.08
Link77_SHP	0.06	0.08	0.08
Link78_SHP	0.06	0.08	0.08
Link79_SHP	0.06	0.08	0.08
Link7_SHP	0.06	0.08	0.08
Link81_SHP	0.06	0.08	0.08
Link82_SHP	0.06	0.08	0.08
Link83_SHP	0.06	0.08	0.08

Link87.1a_SHP	0.06	0.08	0.08
Link87_SHP	0.06	0.08	0.08
Link89.1_SHP	0.06	0.08	0.08
Link89_SHP	0.06	0.08	0.08
Link92.1.1_SHP	0.06	0.08	0.08
Link92_SHP	0.06	0.08	0.08
Link94_SHP	0.06	0.08	0.08
Link95_SHP	0.06	0.08	0.08
Link9_SHP	0.06	0.08	0.08
Orewa_SHP	0.06	0.08	0.08

XP STORM OUTPUTS - RAIN + INFILTRATION (SCENARIO 14)

Name	Node Name	Catchment Number	Routing Method	Time of Concentration (or Parameter 2) min	Curve Number	Initial Abstraction Method	Initial Abstraction Depth mm
Highgate	Highgate	1	SCS Hydrology	0	0	Depth	5
Millwater1	Millwater1	1	SCS Hydrology	42.865	74	Depth	5
Millwater1		2	SCS Hydrology	19.619	98	Depth	1
Millwater2	Millwater2	1	SCS Hydrology	17.559	74	Depth	5
Millwater2		2	SCS Hydrology	10	98	Depth	1
Millwater3	Millwater3	1	SCS Hydrology	25.389	74	Depth	5
Millwater3		2	SCS Hydrology	11.62	98	Depth	1
Millwater4	Millwater4	1	SCS Hydrology	18.281	74	Depth	5
Millwater4		2	SCS Hydrology	10	98	Depth	1
Node105.1	Node105.1	1	SCS Hydrology	11.355	74	Depth	5
Node105.1		2	SCS Hydrology	10	98	Depth	1
Node108	Node108	1	SCS Hydrology	19.148	74	Depth	5
Node108		2	SCS Hydrology	10	98	Depth	1
Node109	Node109	1	SCS Hydrology	19.587	74	Depth	5
Node109		2	SCS Hydrology	10	98	Depth	1
Node109.1.1	Node109.1.1	1	SCS Hydrology	16.849	74	Depth	5
Node109.1.1		2	SCS Hydrology	10	98	Depth	1
Node126	Node126	1	SCS Hydrology	13.414	74	Depth	5
Node126		2	SCS Hydrology	10	98	Depth	1
Node13	Node13	1	SCS Hydrology	15.445	74	Depth	5
Node13		2	SCS Hydrology	10	98	Depth	1
Node143	Node143	1	SCS Hydrology	12.498	74	Depth	5
Node143		2	SCS Hydrology	10	98	Depth	1
Node159	Node159	1	SCS Hydrology	10	74	Depth	5
Node159		2	SCS Hydrology	10	98	Depth	1
Node16	Node16	1	SCS Hydrology	22.993	74	Depth	5
Node16		2	SCS Hydrology	10.524	98	Depth	1
Node160	Node160	1	SCS Hydrology	15.447	74	Depth	5
Node160		2	SCS Hydrology	10	98	Depth	1
Node161	Node161	1	SCS Hydrology	13.566	74	Depth	5
Node161		2	SCS Hydrology	10	98	Depth	1
Node168	Node168	1	SCS Hydrology	30.23	74	Depth	5
Node168		2	SCS Hydrology	13.836	98	Depth	1
Node186	Node186	1	SCS Hydrology	10	74	Depth	5
Node186		2	SCS Hydrology	10	98	Depth	1
Node203	Node203	1	SCS Hydrology	10	74	Depth	5
Node203		2	SCS Hydrology	10	98	Depth	1
Node206	Node206	1	SCS Hydrology	10.871	74	Depth	5
Node206		2	SCS Hydrology	10	98	Depth	1
Node22	Node22	1	SCS Hydrology	12.812	74	Depth	5
Node22		2	SCS Hydrology	10	98	Depth	1
Node25.1	Node25.1	1	SCS Hydrology	23.294	74	Depth	5
Node25.1		2	SCS Hydrology	10.662	98	Depth	1
Node28	Node28	1	SCS Hydrology	15.755	74	Depth	5
Node28		2	SCS Hydrology	10	98	Depth	1
Node4	Node4	1	SCS Hydrology	11.009	74	Depth	5
Node4		2	SCS Hydrology	10	98	Depth	1
Node4.1	Node4.1	1	SCS Hydrology	13.243	74	Depth	5
Node4.1		2	SCS Hydrology	10	98	Depth	1
Node42	Node42	1	SCS Hydrology	14.23	74	Depth	5
Node42		2	SCS Hydrology	10	98	Depth	1
Node46.1	Node46.1	1	SCS Hydrology	20.509	74	Depth	5
Node46.1		2	SCS Hydrology	10	98	Depth	1
Node46.1a	Node46.1a	1	SCS Hydrology	33.712	74	Depth	5
Node46.1a		2	SCS Hydrology	15.43	98	Depth	1
Node46.1b	Node46.1b	1	SCS Hydrology	18.948	74	Depth	5
Node46.1b		2	SCS Hydrology	10	98	Depth	1
Node47	Node47	1	SCS Hydrology	16.084	74	Depth	5
Node47		2	SCS Hydrology	10	98	Depth	1
Node47.1	Node47.1	1	SCS Hydrology	20.281	74	Depth	5
Node47.1		2	SCS Hydrology	10	98	Depth	1
Node48	Node48	1	SCS Hydrology	16.241	74	Depth	5
Node48		2	SCS Hydrology	10	98	Depth	1
Node49	Node49	1	SCS Hydrology	15.649	74	Depth	5
Node49		2	SCS Hydrology	10	98	Depth	1
Node50	Node50	1	SCS Hydrology	19.208	74	Depth	5
Node50		2	SCS Hydrology	10	98	Depth	1
Node54	Node54	1	SCS Hydrology	12.533	74	Depth	5
Node54		2	SCS Hydrology	10	98	Depth	1

Node56	Node56	1	SCS Hydrology	10	74	Depth	5
Node56		2	SCS Hydrology	10	98	Depth	1
Node56.1	Node56.1	1	SCS Hydrology	13.484	74	Depth	5
Node56.1		2	SCS Hydrology	10	98	Depth	1
Node58	Node58	1	SCS Hydrology	10.062	74	Depth	5
Node58		2	SCS Hydrology	10	98	Depth	1
Node59	Node59	1	SCS Hydrology	13.033	74	Depth	5
Node59		2	SCS Hydrology	10	98	Depth	1
Node59.1	Node59.1	1	SCS Hydrology	11.001	74	Depth	5
Node59.1		2	SCS Hydrology	10	98	Depth	1
Node6	Node6	1	SCS Hydrology	10	74	Depth	5
Node6		2	SCS Hydrology	10	98	Depth	1
Node6.1	Node6.1	1	SCS Hydrology	10	74	Depth	5
Node6.1		2	SCS Hydrology	10	98	Depth	1
Node61	Node61	1	SCS Hydrology	15.29	74	Depth	5
Node61		2	SCS Hydrology	10	98	Depth	1
Node73	Node73	1	SCS Hydrology	23.018	74	Depth	5
Node73		2	SCS Hydrology	10.535	98	Depth	1
Node74	Node74	1	SCS Hydrology	10	74	Depth	5
Node74		2	SCS Hydrology	10	98	Depth	1
Node75	Node75	1	SCS Hydrology	15.139	74	Depth	5
Node75		2	SCS Hydrology	10	98	Depth	1
Node76	Node76	1	SCS Hydrology	10.71	74	Depth	5
Node76		2	SCS Hydrology	10	98	Depth	1
Node77	Node77	1	SCS Hydrology	12.425	74	Depth	5
Node77		2	SCS Hydrology	10	98	Depth	1
Node78	Node78	1	SCS Hydrology	15.505	74	Depth	5
Node78		2	SCS Hydrology	10	98	Depth	1
Node8	Node8	1	SCS Hydrology	10	74	Depth	5
Node8		2	SCS Hydrology	10	98	Depth	1
Node8.1	Node8.1	1	SCS Hydrology	16.268	74	Depth	5
Node8.1		2	SCS Hydrology	10	98	Depth	1
Node80	Node80	1	SCS Hydrology	16.141	74	Depth	5
Node80		2	SCS Hydrology	10	98	Depth	1
Node83	Node83	1	SCS Hydrology	18.276	74	Depth	5
Node83		2	SCS Hydrology	10	98	Depth	1
Node85.1	Node85.1	1	SCS Hydrology	11.044	74	Depth	5
Node85.1		2	SCS Hydrology	10	98	Depth	1
Node86	Node86	1	SCS Hydrology	11.627	74	Depth	5
Node86		2	SCS Hydrology	10	98	Depth	1
Node95	Node95	1	SCS Hydrology	13.741	74	Depth	5
Node95		2	SCS Hydrology	10	98	Depth	1
Node97.1	Node97.1	1	SCS Hydrology	10.87	74	Depth	5
Node97.1		2	SCS Hydrology	10	98	Depth	1
Orewa Contri1	Orewa Contri1	1	SCS Hydrology	54.785	74	Depth	5
Orewa Contri1		2	SCS Hydrology	25.075	98	Depth	1
Orewa Contri2	Orewa Contri2	1	SCS Hydrology	35.78	74	Depth	5
Orewa Contri2		2	SCS Hydrology	16.376	98	Depth	1
Orewa Contri3	Orewa Contri3	1	SCS Hydrology	24.612	74	Depth	5
Orewa Contri3		2	SCS Hydrology	11.265	98	Depth	1
Orewa_Contri4	Orewa_Contri4	1	SCS Hydrology	46.57	74	Depth	5
Orewa_Contri4		2	SCS Hydrology	21.315	98	Depth	1
Orewa_Contri5	Orewa_Contri5	1	SCS Hydrology	21.05	74	Depth	5
Orewa_Contri5		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri6	Orewa_Contri6	1	SCS Hydrology	10	74	Depth	5
Orewa_Contri6		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri7	Orewa_Contri7	1	SCS Hydrology	11.532	74	Depth	5
Orewa_Contri7		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri8	Orewa_Contri8	1	SCS Hydrology	10	74	Depth	5
Orewa_Contri8		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri9	Orewa_Contri9	1	SCS Hydrology	46.54	74	Depth	5
Orewa_Contri9		2	SCS Hydrology	21.302	98	Depth	1
Weiti_Contri	Weiti_Contri	1	SCS Hydrology	110.085	74	Depth	5
Weiti_Contri		2	SCS Hydrology	50.386	98	Depth	1
Weiti_Contri2	Weiti_Contri2	1	SCS Hydrology	40.504	74	Depth	5
Weiti_Contri2		2	SCS Hydrology	18.539	98	Depth	1
Weiti_Contri3	Weiti_Contri3	1	SCS Hydrology	14.794	74	Depth	5
Weiti_Contri3		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri4	Weiti_Contri4	1	SCS Hydrology	17.778	74	Depth	5
Weiti_Contri4		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri5	Weiti_Contri5	1	SCS Hydrology	19.417	74	Depth	5
Weiti_Contri5		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri6	Weiti_Contri6	1	SCS Hydrology	11.656	74	Depth	5
Weiti_Contri6		2	SCS Hydrology	10	98	Depth	1

Weiti_Contri7	Weiti_Contri7	1	SCS Hydrology	20.511	74	Depth	5
Weiti_Contri7		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri8	Weiti_Contri8	1	SCS Hydrology	11.5	74	Depth	5
Weiti_Contri8		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri8.1	Weiti_Contri8.1	1	SCS Hydrology	18.21	74	Depth	5
Weiti_Contri8.1		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri9	Weiti_Contri9	1	SCS Hydrology	58.199	74	Depth	5
Weiti_Contri9		2	SCS Hydrology	26.638	98	Depth	1
Weiti_Contri9.1	Weiti_Contri9.1	1	SCS Hydrology	40.85	74	Depth	5
Weiti_Contri9.1		2	SCS Hydrology	18.697	98	Depth	1
Weiti_Contri9.2	Weiti_Contri9.2	1	SCS Hydrology	17.067	74	Depth	5
Weiti_Contri9.2		2	SCS Hydrology	10	98	Depth	1
Weiti_Silverdale	Weiti_Silverdale	1	SCS Hydrology	95.448	74	Depth	5
Weiti_Silverdale		2	SCS Hydrology	43.686	98	Depth	1

SCENARIO 15 – ARGENT LANE SHA

100YR EXISTING RAINFALL

XP STORM OUTPUTS - SUBCATCHMENT RESULTS (SCENARIO 15)

Name	Subcatchment	Area ha	Impervious Percentage %	Catchment Max Flow cms	Max Flow cms
Highgate	User Inflow Hydrograph				
Millwater1	1	32.805	0	5.633	22.976
Millwater1	2	60.924	100	18.968	
Millwater2	1	4.299	0	1.096	4.071
Millwater2	2	7.983	100	3.088	
Millwater3	1	9.505	0	2.083	8.206
Millwater3	2	17.651	100	6.571	
Millwater4	1	4.177	0	1.049	3.926
Millwater4	2	7.757	100	3.001	
Node105.1	1	11.511	0	3.407	3.639
Node105.1	2	0.606	100	0.234	
Node108	1	3.036	0	0.748	1.292
Node108	2	1.606	100	0.621	
Node109	1	58.441	0	14.279	15.127
Node109	2	3.076	100	1.19	
Node109.1.1	1	2.228	0	0.577	2.125
Node109.1.1	2	4.137	100	1.6	
Node126	1	12.503	0	3.514	5.803
Node126	2	6.084	100	2.353	
Node13	1	18.116	0	4.846	5.177
Node13	2	0.954	100	0.369	
Node143	1	4.144	0	1.19	3.679
Node143	2	6.507	100	2.517	
Node159	1	5.193	0	1.589	1.694
Node159	2	0.273	100	0.106	
Node16	1	32.462	0	7.422	7.82
Node16	2	1.709	100	0.652	
Node160	1	49.426	0	13.221	14.123
Node160	2	2.601	100	1.006	
Node161	1	25.067	0	7.017	7.504
Node161	2	1.319	100	0.51	
Node168	1	4.11	0	0.834	2.031
Node168	2	3.924	100	1.386	
Node186	1	18.393	0	5.627	6.001
Node186	2	0.968	100	0.374	
Node203	1	2.737	0	0.837	2.804
Node203	2	5.084	100	1.967	
Node206	1	2.338	0	0.7	2.376
Node206	2	4.342	100	1.68	
Node22	1	3.504	0	0.999	1.225
Node22	2	0.603	100	0.233	
Node25.1	1	11.944	0	2.715	9.871
Node25.1	2	20.156	100	7.661	
Node28	1	9.915	0	2.63	2.812
Node28	2	0.522	100	0.202	
Node4	1	3.285	0	0.98	1.047

Node4	2	0.173	100	0.067	
Node4.1	1	1.708	0	0.482	1.691
Node4.1	2	3.172	100	1.227	
Node42	1	3.5	0	0.963	3.432
Node42	2	6.499	100	2.514	
Node46.1	1	2.136	0	0.512	1.965
Node46.1	2	3.968	100	1.535	
Node46.1a	1	3.361	0	0.648	2.608
Node46.1a	2	6.241	100	2.126	
Node46.1b	1	1.495	0	0.37	1.396
Node46.1b	2	2.777	100	1.074	
Node47	1	3.728	0	0.983	3.585
Node47	2	6.924	100	2.678	
Node47.1	1	1.46	0	0.352	1.345
Node47.1	2	2.711	100	1.049	
Node48	1	1.835	0	0.482	1.761
Node48	2	3.407	100	1.318	
Node49	1	2.984	0	0.794	1.316
Node49	2	1.444	100	0.559	
Node50	1	1.937	0	0.477	1.804
Node50	2	3.597	100	1.391	
Node54	1	1.506	0	0.432	1.503
Node54	2	2.797	100	1.082	
Node56	1	1.426	0	0.436	1.461
Node56	2	2.648	100	1.024	
Node56.1	1	1.274	0	0.357	1.259
Node56.1	2	2.367	100	0.916	
Node58	1	1.072	0	0.327	1.098
Node58	2	1.991	100	0.77	
Node59	1	0.675	0	0.192	0.67
Node59	2	1.254	100	0.485	
Node59.1	1	3.968	0	1.185	1.346
Node59.1	2	0.422	100	0.163	
Node6	1	3.269	0	1	1.067
Node6	2	0.172	100	0.067	
Node6.1	1	3.36	0	1.028	1.096
Node6.1	2	0.177	100	0.068	
Node61	1	2.434	0	0.654	1.17
Node61	2	1.409	100	0.545	
Node73	1	18.072	0	4.13	4.351
Node73	2	0.951	100	0.363	
Node74	1	1.903	0	0.582	1.949
Node74	2	3.534	100	1.367	
Node75	1	1.543	0	0.416	1.499
Node75	2	2.866	100	1.109	
Node76	1	1.442	0	0.433	1.467
Node76	2	2.677	100	1.036	
Node77	1	1.492	0	0.429	1.491
Node77	2	2.771	100	1.072	
Node78	1	2.364	0	0.631	2.288

Node78	2	4.391	100	1.699	
Node8	1	3.707	0	1.134	1.21
Node8	2	0.195	100	0.075	
Node8.1	1	4.251	0	1.116	1.189
Node8.1	2	0.224	100	0.087	
Node80	1	1.995	0	0.525	1.917
Node80	2	3.704	100	1.433	
Node83	1	5.931	0	1.49	5.575
Node83	2	11.014	100	4.261	
Node85.1	1	2.251	0	0.671	1.029
Node85.1	2	0.935	100	0.362	
Node86	1	5.154	0	1.515	1.738
Node86	2	0.584	100	0.226	
Node95	1	1.4	0	0.39	1.38
Node95	2	2.601	100	1.006	
Node97.1	1	1.534	0	0.459	1.559
Node97.1	2	2.849	100	1.102	
Orewa Contri1	1	480.257	0	72.703	76.408
Orewa Contri1	2	25.277	100	7.128	
Orewa Contri2	1	68.959	0	12.93	13.611
Orewa Contri2	2	3.629	100	1.209	
Orewa Contri3	1	55.458	0	12.315	12.976
Orewa Contri3	2	2.919	100	1.095	
Orewa_Contri4	1	185.289	0	30.519	32.093
Orewa_Contri4	2	9.752	100	2.939	
Orewa_Contri5	1	24.418	0	5.793	6.118
Orewa_Contri5	2	1.285	100	0.497	
Orewa_Contri6	1	12.752	0	3.901	4.161
Orewa_Contri6	2	0.671	100	0.26	
Orewa_Contri7	1	9.502	0	2.8	2.991
Orewa_Contri7	2	0.5	100	0.193	
Orewa_Contri8	1	6.902	0	2.112	2.252
Orewa_Contri8	2	0.363	100	0.14	
Orewa_Contri9	1	79.566	0	13.11	13.786
Orewa_Contri9	2	4.188	100	1.263	
Weiti_Contri	1	678.769	0	69.815	73.252
Weiti_Contri	2	35.725	100	7.28	
Weiti_Contri2	1	50.344	0	8.889	9.352
Weiti_Contri2	2	2.65	100	0.844	
Weiti_Contri3	1	8.18	0	2.224	2.373
Weiti_Contri3	2	0.43	100	0.166	
Weiti_Contri4	1	10.257	0	2.603	2.769
Weiti_Contri4	2	0.54	100	0.209	
Weiti_Contri5	1	6.967	0	1.708	1.811
Weiti_Contri5	2	0.367	100	0.142	
Weiti_Contri6	1	3.806	0	1.118	1.194
Weiti_Contri6	2	0.2	100	0.077	
Weiti_Contri7	1	8.027	0	1.923	2.035
Weiti_Contri7	2	0.422	100	0.163	
Weiti_Contri8	1	43.618	0	12.863	13.742

Weiti_Contri8	2	2.296	100	0.888	
Weiti_Contri8.1	1	53.786	0	13.529	16.629
Weiti_Contri8.1	2	9.791	100	3.787	
Weiti_Contri9	1	153.161	0	22.449	23.587
Weiti_Contri9	2	8.061	100	2.216	
Weiti_Contri9.1	1	53.116	0	9.341	26.967
Weiti_Contri9.1	2	63.623	100	20.2	
Weiti_Contri9.2	1	36.459	0	9.399	15.057
Weiti_Contri9.2	2	16.152	100	6.248	
Weiti_Silverdale	1	417.491	0	46.568	48.878
Weiti_Silverdale	2	21.973	100	4.809	

XP STORM OUTPUTS - BASIC CONDUIT DATA (SCENARIO 15)

Name	Link Name	Length m	Shape	Diameter (Height) m	Downstream Invert Elevation m	Upstream Invert Elevation m
1	Culv_Link23.2_Mult	7.44	Circular	0.7	9.54	9.74
2	Culv_Link23.2_Mult	7.44	Circular	0.7	8.83	8.92
3	Culv_Link23.2_Mult	7.44	Circular	0.7	8.88	8.88
Bridge_KowhaiRd	Bridge_KowhaiRd	9.06	Natural	0	2.62	2.64
Bridge_KowhaiRd#w	Bridge_KowhaiRd					
Bridge_Lysnar	Bridge_Lysnar	3.41	Natural	0	4.32	4.46
Bridge_Lysnar#w	Bridge_Lysnar					
Bridge_MWAY	Bridge_MWAY	25.53	Natural	0	-0.74	-0.71
Bridge_WainuiRd	Bridge_WainuiRd	13.75	Natural	0	-0.47	-0.34
Bridge_WainuiRd#w	Bridge_WainuiRd					
Bridge_Weiti	Bridge_Weiti	15.16	Natural	0	9.83	11.6
Bridge_Weiti#w	Bridge_Weiti					
CUL_NZTA	CUL_NZTA	98.3	Circular	4.5	4.74	5.19
Culv_EX1500d	Culv_EX1500d	14.96	Circular	1.5	24.98	25.06
Culv_Ex1800	Culv_Ex1800	7.83	Natural	1.8	13.733	13.984
Culv_Link23.1	Culv_Link23.1	5.45	User Defined	1.75	6.16	6.17
Culv_LK101.1	Culv_LK101.1	20.01	Circular	1.5	22.77	22.85
Culv_LK113	Culv_LK113	5.15	Circular	0.6	17.24	17.39
Culv_LK126	Culv_LK126	12.62	Circular	0.9	23.78	23.88
Culv_LK136	Culv_LK136	12.44	Natural	0.9	21.75	21.83
Culv_Lk143	Culv_Lk143	29.72	Circular	0.6	34.8	36.54
Culv_Lk171	Culv_Lk171	92.64	Circular	2.55	6.76	7.99
Culv_Lk172	Culv_Lk172	13.41	Rectangular	2.35 x 3.7	9.34	9.62
Culv_Lk25.1.2	Culv_Lk25.1.2	10.5	Circular	1.85	4.45	4.66
Culv_LK46	Culv_LK46	12.49	Natural	1.2	19.84	19.98
Culv_Lk48.2	Culv_Lk48.2	2.38	Circular	0.6	15.08	15.19
Culv_LK58.1	Culv_LK58.1	7.9	Natural	1.85	10.83	11.17
Culv_Lk92.1	Culv_Lk92.1	15.41	Circular	1.2	14.27	14.45
CulvLK42.1	CulvLK42.1	5.72	Natural	1.05	20.83	20.92
CulvLK77.1	CulvLK77.1	23.45	Natural	0.45	14.78	14.81
CulvLK87.1	CulvLK87.1	5.02	Natural	0.6	20.22	20.45
Highgate.1	Highgate.1	168.1	Circular	1.6	15.63	19.08
Link10	Link10	141.49	Natural	0	0.16	0.67
Link101	Link101	202.17	Natural	0	29.841	33.066
Link101.1.1	Link101.1.1	206.54	Natural	0	18.287	21.611
Link101.1.2	Link101.1.2	100.39	Natural	0	21.611	22.77
Link101.2	Link101.2	277.81	Natural	0	22.85	29.841
Link103	Link103	137.17	Natural	0	19.051	19.113
Link11	Link11	113.22	Natural	0	0.22	0.16
Link112	Link112	92.55	Natural	0	4.782	4.883
Link114	Link114	69.17	Natural	0	16.58	17.24
Link115	Link115	104.95	Natural	0	15.508	16.58
Link116	Link116	147.29	Natural	0	13.93	15.508
Link117	Link117	125.09	Natural	0	10.56	13.982
Link118	Link118	33.24	Natural	0	17.643	17.945
Link12	Link12	75.88	Natural	0	-0.077	0.22
Link13	Link13	39.44	Natural	0	0.274	-0.077
Link135	Link135	48.58	Natural	0	22.069	22.464
Link137	Link137	31.81	Natural	0	21.435	21.756
Link138	Link138	56.01	Natural	0	20.868	21.435
Link139	Link139	87.01	Natural	0	19.58	20.868
Link14	Link14	70.07	Natural	0	0.004	0.274
Link140	Link140	112.52	Natural	0	18.333	19.58
Link141	Link141	59.69	Natural	0	17.915	18.333
Link15	Link15	93	Natural	0	-0.134	0.004
Link150	Link150	127.36	Natural	0	4.82	9.86
Link156	Link156	326.91	Natural	0	15.994	22.926
Link157	Link157	89.18	Natural	0	10.198	17.257

Link16	Link16	84.25	Natural	0	-0.12	-0.134
Link160	Link160	131.12	Natural	0	6.35	15.517
Link161	Link161	271.8	Natural	0	22.464	26.837
Link17	Link17	95.65	Natural	0	-0.25	-0.12
Link172	Link172	332.34	Natural	0	11.988	15.232
Link172.1	Link172.1	280.43	Natural	0	12.04	11.988
Link172.1.1.1	Link172.1.1.1	40.25	Natural	0	10.547	10.965
Link175	Link175	177.46	Natural	0	-0.9	-0.8
Link175.1	Link175.1	45.03	Natural	0	-1	-0.9
Link176	Link176	383.8	Natural	0	-1.15	-0.1
Link177	Link177	102.08	Natural	0	-1.24	-1.15
Link177.1	Link177.1	116.73	Natural	0	-1.28	-1.24
Link178	Link178	210.95	Natural	0	-1.3	-1.28
Link178.1	Link178.1	206.61	Natural	0	-1.34	-1.3
Link18	Link18	152.17	Natural	0	-0.25	-0.25
Link182	Link182	366.22	Natural	0	1.419	6.76
Link183	Link183	99.41	Natural	0	1.277	1.419
Link184	Link184	332.74	Natural	0	1.277	4.782
Link185	Link185	338.69	Natural	0	1.419	4.656
Link186	Link186	326.75	Natural	0	0.647	1.277
Link187	Link187	435.61	Natural	0	-0.016	0.647
Link188	Link188	458.5	Natural	0	0.03	-0.016
Link189	Link189	284.68	Natural	0	-0.285	0.03
Link190	Link190	185.13	Natural	0	-0.509	-0.285
Link191	Link191	397.39	Natural	0	-0.64	-0.51
Link191.1	Link191.1	413.61	Natural	0	-0.78	-0.64
Link192	Link192	208.09	Natural	0	-0.678	-0.776
Link193	Link193	154.24	Natural	0	4.883	4.74
Link19a	Link19a	133.6	Natural	0	-0.2	2.62
Link19a.1	Link19a.1	132.35	Natural	0	-0.52	-0.2
Link2	Link2	54.59	Natural	0	13.473	13.19
Link2.1	Link2.1	61.12	Natural	0	11.637	13.473
Link20	Link20	14.09	Natural	0	-0.34	-0.25
Link20.1	Link20.1	51.59	Natural	0	-0.52	-0.47
Link200	Link200	167.18	Natural	0	14.65	18.815
Link203	Link203	75.72	Natural	0	36.54	43.97
Link207	Link207	189.59	Natural	0	25.06	30.2
Link21	Link21	175.83	Natural	0	-0.71	-0.52
Link23	Link23	2.66	Natural	0	10.33	10.19
Link23.1.1	Link23.1.1	153.98	Natural	0	-0.25	4.68
Link23.1.2	Link23.1.2	116.74	Natural	0	4.68	6.16
Link23.2.1	Link23.2.1	154.99	Natural	0	6.17	8.83
Link23.3	Link23.3	161.13	Natural	0	8.88	10.33
Link25	Link25	72.62	Natural	0	4.51	5.87
Link25.1	Link25.1	37.03	Natural	0	4.66	4.51
Link25.1.1	Link25.1.1	13.53	Natural	0	3.99	4.45
Link3	Link3	108.63	Natural	0	10.849	11.637
Link31	Link31	91.63	Natural	0	15.59	15.86
Link31.1	Link31.1	465.46	Natural	0	11.7	13.69
Link31.2	Link31.2	386.31	Natural	0	13.69	14.77
Link31.3	Link31.3	194.9	Natural	0	14.77	15.32
Link31.4	Link31.4	93.24	Natural	0	15.32	15.59
Link32	Link32	865.06	Natural	0	8.908	11.7
Link32.1	Link32.1	688.18	Natural	0	5.132	8.908
Link33a	Link33a	198.81	Natural	0	4.09	5.13
Link33b	Link33b	137.99	Natural	0	3.57	4.09
Link33c	Link33c	147.58	Natural	0	2.64	3.57
Link39	Link39	56.29	Natural	0	22.81	23.78
Link4	Link4	78.42	Natural	0	8.575	10.849
Link4.1	Link4.1	97.95	Natural	0	5.04	8.103
Link4.2	Link4.2	82.58	Natural	0	8.103	8.575
Link40	Link40	58.73	Natural	0	22.311	22.81

Link41	Link41	78.25	Natural	0	21.52	22.311
Link42	Link42	79.01	Natural	0	20.92	21.52
Link43	Link43	48.21	Natural	0	20.551	20.83
Link44	Link44	17.22	Natural	0	19.98	20.551
Link45.1	Link45.1	95.72	Natural	0	17.97	18.11
Link45.1.1	Link45.1.1	47.86	Natural	0	17.9	17.97
Link45.1.1.1	Link45.1.1.1	47.86	Natural	0	17.83	17.9
Link45.2	Link45.2	114.74	Natural	0	18.114	19.84
Link46	Link46	32.11	Natural	0	16.882	17.83
Link46.1	Link46.1	27.5	Natural	0	17.239	16.882
Link47	Link47	113.64	Natural	0	15.25	17.239
Link48	Link48	55.74	Natural	0	15.19	15.25
Link48.1	Link48.1	65.21	Natural	0	14.14	15.08
Link49	Link49	70.45	Natural	0	13.19	14.143
Link5	Link5	60.92	Natural	0	4.82	5.04
Link5.1	Link5.1	39.19	Natural	0	4.59	4.82
Link53	Link53	69.15	Natural	0	17.237	18.287
Link54	Link54	41.08	Natural	0	16.873	17.237
Link54.1	Link54.1	15.06	Natural	0	16.432	16.873
Link55	Link55	116.8	Natural	0	14.65	16.432
Link55.1	Link55.1	64.57	Natural	0	13.984	14.65
Link56	Link56	17.49	Natural	0	13.652	13.733
Link56.1	Link56.1	60.44	Natural	0	13.027	13.652
Link57	Link57	66.25	Natural	0	12.015	13.027
Link58	Link58	76.81	Natural	0	13.103	12.015
Link59	Link59	91.29	Natural	0	9.04	10.83
Link6	Link6	61.11	Natural	0	4.56	4.59
Link6.1	Link6.1	44.98	Natural	0	4.46	4.56
Link6.1a	Link6.1a	26.8	Natural	0	3.99	4.32
Link60	Link60	111.63	Natural	0	5.87	9.04
Link65	Link65	384.85	Natural	0	17.146	19.051
Link66	Link66	169.44	Natural	0	15.994	17.146
Link66.1	Link66.1	174.58	Natural	0	13.72	14.769
Link66.1.1	Link66.1.1	177.17	Natural	0	12.039	13.72
Link66.2	Link66.2	173.2	Natural	0	14.769	15.994
Link67	Link67	134.88	Natural	0	11.6	12.039
Link67.1	Link67.1	284.75	Natural	0	10.198	11.895
Link68	Link68	335.52	Natural	0	9.055	10.198
Link69	Link69	55.84	Natural	0	9.439	9.055
Link69.1	Link69.1	226.86	Natural	0	8.3	9.439
Link7	Link7	51.83	Natural	0	1.258	3.99
Link70	Link70	143.23	Natural	0	7.11	8.3
Link71	Link71	77.14	Natural	0	6.35	7.11
Link71.1	Link71.1	163.65	Natural	0	6.315	7.11
Link71.2	Link71.2	82.49	Natural	0	7.11	6.35
Link72	Link72	38.13	Natural	0	6.404	6.315
Link72.1	Link72.1	39.12	Natural	0	5.19	6.2
Link74	Link74	122.63	Natural	0	28.994	34.8
Link74.1	Link74.1	245.26	Natural	0	20.836	26.368
Link74.2	Link74.2	122.63	Natural	0	26.368	28.994
Link75	Link75	89.68	Natural	0	18.293	19.441
Link76	Link76	138.38	Natural	0	16.371	18.293
Link77	Link77	47.66	Natural	0	15.15	16.371
Link77.1.1	Link77.1.1	40.12	Natural	0	14.23	14.78
Link78	Link78	51.92	Natural	0	11.74	14.23
Link79	Link79	96.79	Natural	0	9.86	11.74
Link8	Link8	77.32	Natural	0	0.19	1.258
Link81	Link81	37.06	Natural	0	23.846	24.86
Link82	Link82	116.13	Natural	0	18.818	23.846
Link83	Link83	40.79	Natural	0	16.432	18.818
Link87	Link87	56.35	Natural	0	20.22	20.91
Link87.1a	Link87.1a	28.31	Natural	0	19.98	20.22

Link89	Link89	156.52	Natural	0	22.531	24.98
Link89.1	Link89.1	135.63	Natural	0	20.91	22.531
Link9	Link9	130.9	Natural	0	0.67	0.19
Link92	Link92	76.63	Natural	0	14.72	15.63
Link92.1.1	Link92.1.1	60.87	Natural	0	12.66	14.27
Link94	Link94	126.39	Natural	0	10.56	12.66
Link95	Link95	22.06	Natural	0	10.19	10.56
Orewa	Orewa	20.73	Natural	0	-0.8	-0.74

XP STORM OUTPUTS - JUNCTION DATA (SCENARIO 15)

Name	Node Name	Invert Elevation m	Node X	Node Y	Ponding Type	Inlet Capacity Type
Highgate	Highgate	19.08	390760.744	830148.545	Link Invert to 2D	Maximum Capacity
Millwater1	Millwater1	-1	391144.141	831278.612	Link Invert to 2D	Maximum Capacity
Millwater2	Millwater2	-1.15	391481.677	831387.439	Link Invert to 2D	Maximum Capacity
Millwater3	Millwater3	-1.24	391570.934	831410.567	Link Invert to 2D	Maximum Capacity
Millwater4	Millwater4	-1.3	391860.414	831519.05	Link Invert to 2D	Maximum Capacity
Node10	Node10	1.258	390011.681	830524.418	Link Invert to 2D	Maximum Capacity
Node100	Node100	15.63	390694.008	830302.827	Link Invert to 2D	Maximum Capacity
Node100.1	Node100.1	12.66	390622.118	830426.675	Link Invert to 2D	Maximum Capacity
Node100.2	Node100.2	14.45	390661.171	830366.907	Link Invert to 2D	Maximum Capacity
Node100.2.1	Node100.2.1	14.27	390651.341	830378.777	Link Invert to 2D	Maximum Capacity
Node102	Node102	10.56	390587.268	830536.871	Link Invert to 2D	Maximum Capacity
Node104	Node104	4.74	390989.368	829058.139	Link Invert to 2D	Maximum Capacity
Node105	Node105	-0.8	390934.933	831205.359	Link Invert to 2D	Maximum Capacity
Node105.1	Node105.1	-0.9	391100.667	831266.89	Link Invert to 2D	Maximum Capacity
Node108	Node108	5.04	390014.062	830245.239	Link Invert to 2D	Maximum Capacity
Node108.1	Node108.1	4.82	390003.818	830304.98	Link Invert to 2D	Maximum Capacity
Node109	Node109	33.066	388814.038	829688.32	Link Invert to 2D	Maximum Capacity
Node109.1	Node109.1	22.85	388976.008	830105.067	Link Invert to 2D	Maximum Capacity
Node109.1.1	Node109.1.1	21.611	389076.916	830169.74	Link Invert to 2D	Maximum Capacity
Node109.1.2	Node109.1.2	22.77	388990.761	830118.588	Link Invert to 2D	Maximum Capacity
Node109.2	Node109.2	29.841	388826.55	829870.888	Link Invert to 2D	Maximum Capacity
Node11	Node11	0.19	390054.553	830588.569	Link Invert to 2D	Maximum Capacity
Node119	Node119	4.883	391084.228	828988.566	Link Invert to 2D	Maximum Capacity
Node12	Node12	0.67	390107.166	830696.479	Link Invert to 2D	Maximum Capacity
Node120	Node120	4.782	391132.149	828949.835	Link Invert to 2D	Maximum Capacity
Node121	Node121	17.39	390500.65	830117.826	Link Invert to 2D	Maximum Capacity
Node122	Node122	17.24	390500.816	830122.97	Link Invert to 2D	Maximum Capacity
Node123	Node123	16.58	390492.934	830190.884	Link Invert to 2D	Maximum Capacity
Node124	Node124	15.508	390497.396	830295.447	Link Invert to 2D	Maximum Capacity
Node125	Node125	13.93	390523.844	830437.416	Link Invert to 2D	Maximum Capacity
Node126	Node126	17.915	390507.197	830089.527	Link Invert to 2D	Maximum Capacity
Node13	Node13	0.1603	390181.707	830808.359	Link Invert to 2D	Maximum Capacity
Node134	Node134	23.88	389637.57	829041.964	Link Invert to 2D	Maximum Capacity
Node14	Node14	0.22	390221.859	830886.276	Link Invert to 2D	Maximum Capacity
Node143	Node143	22.464	390527.054	829736.499	Link Invert to 2D	Maximum Capacity
Node144	Node144	21.83	390515.505	829783.568	Link Invert to 2D	Maximum Capacity
Node145	Node145	21.75	390512.138	829795.544	Link Invert to 2D	Maximum Capacity
Node146	Node146	21.435	390502.851	829825.972	Link Invert to 2D	Maximum Capacity
Node147	Node147	20.868	390500.521	829881.384	Link Invert to 2D	Maximum Capacity
Node148	Node148	19.58	390505.475	829963.454	Link Invert to 2D	Maximum Capacity
Node149	Node149	18.333	390495.782	830049.403	Link Invert to 2D	Maximum Capacity
Node15	Node15	-0.077	390239.982	830957.369	Link Invert to 2D	Maximum Capacity
Node150	Node150	36.54	389283.652	829636.661	Link Invert to 2D	Maximum Capacity
Node159	Node159	44.824	389130.157	829523.01	Link Invert to 2D	Maximum Capacity
Node16	Node16	0.274	390259.45	830985.84	Link Invert to 2D	Maximum Capacity

Node160	Node160	36.06	389102.492	829047.246	Link Invert to 2D	Maximum Capacity
Node160.1	Node160.1	30.2	389372.452	829121.34	Link Invert to 2D	Maximum Capacity
Node161	Node161	29.993	389375.219	828939.943	Link Invert to 2D	Maximum Capacity
Node168	Node168	26.837	390627.699	829496.156	Link Invert to 2D	Maximum Capacity
Node17	Node17	0.004	390326.41	830996.417	Link Invert to 2D	Maximum Capacity
Node178	Node178	7.99	390902.335	828787.492	Link Invert to 2D	Maximum Capacity
Node179	Node179	6.76	390994.978	828787.897	Link Invert to 2D	Maximum Capacity
Node18	Node18	-0.134	390404.117	831034.954	Link Invert to 2D	Maximum Capacity
Node180.1	Node180.1	11.988	390658.86	828617.787	Link Invert to 2D	Maximum Capacity
Node180.1.1	Node180.1.1	9.62	390872.05	828749.519	Link Invert to 2D	Maximum Capacity
Node180.1.1.1	Node180.1.1.1	9.34	390874.93	828762.612	Link Invert to 2D	Maximum Capacity
Node186	Node186	-1.28	391651.599	831489.29	Link Invert to 2D	Maximum Capacity
Node187	Node187	-1.34	392050.291	831561.049	Link Invert to 2D	Maximum Capacity
Node19	Node19	-0.12	390461.56	831088.471	Link Invert to 2D	Maximum Capacity
Node192	Node192	1.277	391327.868	828850.408	Link Invert to 2D	Maximum Capacity
Node194	Node194	-0.016	391899.237	828994.355	Link Invert to 2D	Maximum Capacity
Node195	Node195	0.03	392098.433	828889.23	Link Invert to 2D	Maximum Capacity
Node196	Node196	-0.285	392322.117	828895.377	Link Invert to 2D	Maximum Capacity
Node198	Node198	-0.51	392464.001	828796.297	Link Invert to 2D	Maximum Capacity
Node199	Node199	-0.678	393345.847	828972.505	Link Invert to 2D	Maximum Capacity
Node20	Node20	-0.25	390554.347	831108.65	Link Invert to 2D	Maximum Capacity
Node203	Node203	34.96	389000.188	830307.602	Link Invert to 2D	Maximum Capacity
Node206	Node206	18.815	389353.844	830230.372	Link Invert to 2D	Maximum Capacity
Node209	Node209	43.97	389264.177	829584.071	Link Invert to 2D	Maximum Capacity
Node21	Node21	-0.25	390698.628	831102.846	Link Invert to 2D	Maximum Capacity
Node21.1	Node21.1	-0.47	390715.127	831125.017	Link Invert to 2D	Maximum Capacity
Node21.2	Node21.2	-0.34	390707.67	831113.468	Link Invert to 2D	Maximum Capacity
Node22	Node22	5.87	389871.336	830460.858	Link Invert to 2D	Maximum Capacity
Node22.1	Node22.1	4.51	389942.611	830473.624	Link Invert to 2D	Maximum Capacity
Node22.1.1	Node22.1.1	4.45	389989.974	830472.236	Link Invert to 2D	Maximum Capacity
Node22.1.2	Node22.1.2	4.66	389979.511	830473.164	Link Invert to 2D	Maximum Capacity
Node25	Node25	10.19	390597.981	830563.128	Link Invert to 2D	Maximum Capacity
Node25.1	Node25.1	6.17	390654.909	830854.759	Link Invert to 2D	Maximum Capacity
Node25.1.1	Node25.1.1	4.68	390689.475	830965.836	Link Invert to 2D	Maximum Capacity
Node25.1.2	Node25.1.2	6.16	390655.814	830860.117	Link Invert to 2D	Maximum Capacity
Node25.2	Node25.2	8.88	390622.999	830712.94	Link Invert to 2D	Maximum Capacity
Node25.2.1	Node25.2.1	8.83	390624.174	830721.768	Link Invert to 2D	Maximum Capacity
Node25.3	Node25.3	10.33	390600.069	830564.397	Link Invert to 2D	Maximum Capacity
Node26a	Node26a	2.62	390502.824	831320.516	Link Invert to 2D	Maximum Capacity
Node27	Node27	-0.52	390716.358	831175.835	Link Invert to 2D	Maximum Capacity
Node28	Node28	-0.71	390889.117	831200.507	Link Invert to 2D	Maximum Capacity
Node29	Node29	-0.74	390914.635	831201.149	Link Invert to 2D	Maximum Capacity
Node34.1	Node34.1	2.64	390495.833	831326.28	Link Invert to 2D	Maximum Capacity
Node4	Node4	13.19	390117.819	829855.792	Link Invert to 2D	Maximum Capacity
Node4.1	Node4.1	13.473	390139.264	829896.454	Link Invert to 2D	Maximum Capacity
Node40	Node40	23.78	389646.077	829051.292	Link Invert to 2D	Maximum Capacity
Node41	Node41	22.81	389685.814	829091.165	Link Invert to 2D	Maximum Capacity
Node42	Node42	22.311	389711.315	829144.066	Link Invert to 2D	Maximum Capacity
Node43	Node43	21.52	389735.503	829216.797	Link Invert to 2D	Maximum Capacity
Node43.1	Node43.1	20.92	389775.027	829285.21	Link Invert to 2D	Maximum Capacity

Node44	Node44	20.83	389777.726	829290.258	Link Invert to 2D	Maximum Capacity
Node45	Node45	20.551	389801.673	829332.1	Link Invert to 2D	Maximum Capacity
Node46	Node46	19.98	389804.147	829348.198	Link Invert to 2D	Maximum Capacity
Node46.1	Node46.1	18.11	389912.608	829413.981	Link Invert to 2D	Maximum Capacity
Node46.1a	Node46.1a	17.97	389971.566	829476.09	Link Invert to 2D	Maximum Capacity
Node46.1b	Node46.1b	17.9	389995.357	829517.609	Link Invert to 2D	Maximum Capacity
Node46.2	Node46.2	19.84	389814.117	829355.719	Link Invert to 2D	Maximum Capacity
Node47	Node47	17.83	390020.041	829558.612	Link Invert to 2D	Maximum Capacity
Node47.1	Node47.1	16.882	390035.963	829586.499	Link Invert to 2D	Maximum Capacity
Node48	Node48	17.239	390048.943	829610.74	Link Invert to 2D	Maximum Capacity
Node49	Node49	15.25	390108.692	829694.422	Link Invert to 2D	Maximum Capacity
Node49.1	Node49.1	15.08	390096.026	829734.191	Link Invert to 2D	Maximum Capacity
Node49.2	Node49.2	15.19	390096.748	829731.925	Link Invert to 2D	Maximum Capacity
Node5	Node5	11.637	390135.622	829945.409	Link Invert to 2D	Maximum Capacity
Node50	Node50	14.14	390101.888	829797.933	Link Invert to 2D	Maximum Capacity
Node54	Node54	18.287	389254.992	830274.073	Link Invert to 2D	Maximum Capacity
Node55	Node55	17.237	389305.867	830312.606	Link Invert to 2D	Maximum Capacity
Node55.1	Node55.1	16.873	389334.759	830339.766	Link Invert to 2D	Maximum Capacity
Node56	Node56	16.432	389336.173	830354.135	Link Invert to 2D	Maximum Capacity
Node56.1	Node56.1	13.984	389498.551	830378.391	Link Invert to 2D	Maximum Capacity
Node56.2	Node56.2	14.65	389440.835	830364.371	Link Invert to 2D	Maximum Capacity
Node57	Node57	13.733	389505.49	830382.026	Link Invert to 2D	Maximum Capacity
Node57.1	Node57.1	13.652	389520.745	830390.58	Link Invert to 2D	Maximum Capacity
Node58	Node58	13.027	389562.004	830419.89	Link Invert to 2D	Maximum Capacity
Node59	Node59	12.015	389598.735	830459.228	Link Invert to 2D	Maximum Capacity
Node59.1	Node59.1	11.17	389663.227	830471.068	Link Invert to 2D	Maximum Capacity
Node6	Node6	10.849	390122.582	830049.539	Link Invert to 2D	Maximum Capacity
Node6.1	Node6.1	8.103	390047.33	830160.953	Link Invert to 2D	Maximum Capacity
Node6.2	Node6.2	8.575	390105.058	830116.041	Link Invert to 2D	Maximum Capacity
Node60	Node60	10.83	389670.982	830472.569	Link Invert to 2D	Maximum Capacity
Node61	Node61	9.04	389759.707	830461.047	Link Invert to 2D	Maximum Capacity
Node72	Node72	19.051	389321.668	828257.5	Link Invert to 2D	Maximum Capacity
Node73	Node73	17.146	389541.656	828505.942	Link Invert to 2D	Maximum Capacity
Node73.1	Node73.1	15.994	389673.745	828527.036	Link Invert to 2D	Maximum Capacity
Node74	Node74	12.039	389987.849	828799.277	Link Invert to 2D	Maximum Capacity
Node74.1	Node74.1	9.83	390068.106	828844.096	Link Invert to 2D	Maximum Capacity
Node74.2	Node74.2	11.6	390066.018	828829.077	Link Invert to 2D	Maximum Capacity
Node75	Node75	10.198	390227.444	828871.677	Link Invert to 2D	Maximum Capacity
Node76	Node76	9.055	390403.128	828968.39	Link Invert to 2D	Maximum Capacity
Node77	Node77	8.3	390574.816	829048.966	Link Invert to 2D	Maximum Capacity
Node78	Node78	7.11	390683.738	829036.302	Link Invert to 2D	Maximum Capacity
Node78.1	Node78.1	7.11	390765.2	829001.294	Link Invert to 2D	Maximum Capacity
Node78.2	Node78.2	6.35	390716.455	828981.236	Link Invert to 2D	Maximum Capacity
Node79	Node79	6.315	390831.54	829107.537	Link Invert to 2D	Maximum Capacity
Node8	Node8	4.59	389998.384	830343.08	Link Invert to 2D	Maximum Capacity
Node8.1	Node8.1	4.56	390001.515	830399.956	Link Invert to 2D	Maximum Capacity
Node8.1.1	Node8.1.1	4.46	390006.175	830444.532	Link Invert to 2D	Maximum Capacity
Node8.1.1.1	Node8.1.1.1	4.32	390007.196	830447.784	Link Invert to 2D	Maximum Capacity
Node80	Node80	5.19	390900.4	829099.932	Link Invert to 2D	Maximum Capacity
Node82	Node82	34.8	389292.649	829664.986	Link Invert to 2D	Maximum Capacity

Node82.1	Node82.1	26.368	389394.601	829844.178	Link Invert to 2D	Maximum Capacity
Node82.2	Node82.2	28.994	389300.418	829784.319	Link Invert to 2D	Maximum Capacity
Node83	Node83	19.441	389602.462	829896.157	Link Invert to 2D	Maximum Capacity
Node84	Node84	18.293	389662.074	829961.1	Link Invert to 2D	Maximum Capacity
Node85	Node85	16.371	389722.053	830083.34	Link Invert to 2D	Maximum Capacity
Node85.1	Node85.1	14.81	389740.551	830127.262	Link Invert to 2D	Maximum Capacity
Node85.1.1	Node85.1.1	14.78	389756.101	830144.817	Link Invert to 2D	Maximum Capacity
Node86	Node86	14.23	389773.508	830180.966	Link Invert to 2D	Maximum Capacity
Node87	Node87	11.74	389813.454	830214.091	Link Invert to 2D	Maximum Capacity
Node88	Node88	9.86	389902.906	830232.576	Link Invert to 2D	Maximum Capacity
Node89	Node89	24.86	389148.187	830372.404	Link Invert to 2D	Maximum Capacity
Node9	Node9	3.99	390003.36	830473.919	Link Invert to 2D	Maximum Capacity
Node90	Node90	23.846	389182.093	830362.075	Link Invert to 2D	Maximum Capacity
Node91	Node91	18.818	389296.699	830347.944	Link Invert to 2D	Maximum Capacity
Node95	Node95	20.91	389744.113	829324.369	Link Invert to 2D	Maximum Capacity
Node95.1	Node95.1	20.22	389774.744	829342.565	Link Invert to 2D	Maximum Capacity
Node95.1a	Node95.1a	20.22	389778.418	829339.137	Link Invert to 2D	Maximum Capacity
Node96	Node96	25.06	389546.04	829197.565	Link Invert to 2D	Maximum Capacity
Node97	Node97	24.98	389560.25	829192.891	Link Invert to 2D	Maximum Capacity
Node97.1	Node97.1	22.531	389638.956	829276.626	Link Invert to 2D	Maximum Capacity
Orewa C2	Orewa C2	15.32	388430.922	830585.273	Link Invert to 2D	Maximum Capacity
Orewa Contri1	Orewa Contri1	15.86	388263.823	830565.82	Link Invert to 2D	Maximum Capacity
Orewa Contri2	Orewa Contri2	15.59	388350.139	830585.522	Link Invert to 2D	Maximum Capacity
Orewa Contri3	Orewa Contri3	14.77	388565.501	830677.966	Link Invert to 2D	Maximum Capacity
Orewa_C3	Orewa_C3	13.69	388756.013	830932.835	Link Invert to 2D	Maximum Capacity
Orewa_Contri4	Orewa_Contri4	11.7	389083.635	831225.761	Link Invert to 2D	Maximum Capacity
Orewa_Contri5	Orewa_Contri5	8.908	389660.232	831548.956	Link Invert to 2D	Maximum Capacity
Orewa_Contri6	Orewa_Contri6	5.13	390146.566	831642.474	Link Invert to 2D	Maximum Capacity
Orewa_Contri7	Orewa_Contri7	3.57	390377.523	831407.877	Link Invert to 2D	Maximum Capacity
Orewa_Contri8	Orewa_Contri8	-0.2	390626.424	831271.403	Link Invert to 2D	Maximum Capacity
Orewa_Contri9	Orewa_Contri9	4.09	390285.039	831507.218	Link Invert to 2D	Maximum Capacity
Weiti_C1	Weiti_C1	14.769	389753.249	828662.428	Link Invert to 2D	Maximum Capacity
Weiti_Contri	Weiti_Contri	19.113	389346.741	828164.723	Link Invert to 2D	Maximum Capacity
Weiti_Contri2	Weiti_Contri2	22.926	389616.84	828218.568	Link Invert to 2D	Maximum Capacity
Weiti_Contri3	Weiti_Contri3	13.72	389850.037	828720.837	Link Invert to 2D	Maximum Capacity
Weiti_Contri4	Weiti_Contri4	17.257	390276.888	828808.223	Link Invert to 2D	Maximum Capacity
Weiti_Contri5	Weiti_Contri5	9.439	390449.796	828990.714	Link Invert to 2D	Maximum Capacity
Weiti_Contri6	Weiti_Contri6	15.517	390632.979	828920.551	Link Invert to 2D	Maximum Capacity
Weiti_Contri7	Weiti_Contri7	6.2	390866.521	829103.717	Link Invert to 2D	Maximum Capacity
Weiti_Contri8	Weiti_Contri8	1.419	391273.799	828775.679	Link Invert to 2D	Maximum Capacity
Weiti_Contri8.1	Weiti_Contri8.1	0.647	391594.469	828893	Link Invert to 2D	Maximum Capacity
Weiti_Contri9	Weiti_Contri9	15.232	390539.344	828354.986	Link Invert to 2D	Maximum Capacity
Weiti_Contri9.1	Weiti_Contri9.1	-0.64	392841.08	828814.576	Link Invert to 2D	Maximum Capacity
Weiti_Contri9.2	Weiti_Contri9.2	-0.78	393176.511	829015.146	Link Invert to 2D	Maximum Capacity
Weiti_Silverdale	Weiti_Silverdale	4.656	391146.039	828521.651	Link Invert to 2D	Maximum Capacity

XP STORM OUTPUTS -CHANNEL MANNINGS COEFFICENTS (SCENARIO 15)

Name	Main Channel Manning's n	Left Overbank Manning's n	Right Overbank Manning's n
Bridge_MWAY_SHP	0.06	0.08	0.08
Link101.1.1_SHP	0.06	0.08	0.08
Link101.1.2_SHP	0.06	0.08	0.08
Link101.2_SHP	0.06	0.08	0.08
Link101_SHP	0.06	0.08	0.08
Link103_SHP	0.06	0.08	0.08
Link10_SHP	0.06	0.08	0.08
Link110_SHP	0.06	0.08	0.08
Link112_SHP	0.06	0.08	0.08
Link114_SHP	0.06	0.08	0.08
Link115_SHP	0.06	0.08	0.08
Link116_SHP	0.06	0.08	0.08
Link117_SHP	0.06	0.08	0.08
Link118_SHP	0.06	0.08	0.08
Link11_SHP	0.06	0.08	0.08
Link12_SHP	0.06	0.08	0.08
Link135_SHP	0.06	0.08	0.08
Link137_SHP	0.06	0.08	0.08
Link138_SHP	0.06	0.08	0.08
Link139_SHP	0.06	0.08	0.08
Link140_SHP	0.06	0.08	0.08
Link141_SHP	0.06	0.08	0.08
Link14_SHP	0.06	0.08	0.08
Link150_SHP	0.06	0.08	0.08
Link156_SHP	0.06	0.08	0.08
Link157_SHP	0.06	0.08	0.08
Link15_SHP	0.06	0.08	0.08
Link160_SHP	0.06	0.08	0.08
Link161_SHP	0.06	0.08	0.08
Link16_SHP	0.06	0.08	0.08
Link172.1.1.1_SHP	0.06	0.08	0.08
Link172.1_SHP	0.06	0.08	0.08
Link172_SHP	0.06	0.08	0.08
Link175.1_SHP	0.06	0.08	0.08
Link175_SHP	0.06	0.08	0.08
Link176_SHP	0.06	0.08	0.08
Link177.1_SHP	0.06	0.08	0.08
Link177_SHP	0.06	0.08	0.08
Link178.1_SHP	0.06	0.08	0.08
Link178_SHP	0.06	0.08	0.08
Link17_SHP	0.06	0.08	0.08
Link182_SHP	0.06	0.08	0.08
Link183_SHP	0.06	0.08	0.08
Link184_SHP	0.06	0.08	0.08
Link185_SHP	0.06	0.08	0.08
Link186_SHP	0.06	0.08	0.08

Link187_SHP	0.06	0.08	0.08
Link188_SHP	0.06	0.08	0.08
Link189_SHP	0.06	0.08	0.08
Link18_SHP	0.06	0.08	0.08
Link190_SHP	0.06	0.08	0.08
Link191.1_SHP	0.06	0.08	0.08
Link191_SHP	0.06	0.08	0.08
Link192_SHP	0.06	0.08	0.08
Link193_SHP	0.06	0.08	0.08
Link19a.1_SHP	0.06	0.08	0.08
Link19a_SHP	0.06	0.08	0.08
Link2.1_SHP	0.06	0.08	0.08
Link20.1_SHP	0.06	0.08	0.08
Link200_SHP	0.06	0.08	0.08
Link203_SHP	0.06	0.08	0.08
Link207_SHP	0.06	0.08	0.08
Link20_SHP	0.06	0.08	0.08
Link21_SHP	0.06	0.08	0.08
Link23.1.1_SHP	0.06	0.08	0.08
Link23.1_SHP	0.06	0.08	0.08
Link23.2.1_SHP	0.06	0.08	0.08
Link23.3_SHP	0.06	0.08	0.08
Link23_SHP	0.06	0.08	0.08
Link25_SHP	0.06	0.08	0.08
Link2_SHP	0.06	0.08	0.08
Link31.1_SHP	0.06	0.08	0.08
Link31.2_SHP	0.06	0.08	0.08
Link31.3_SHP	0.06	0.08	0.08
Link31.4_SHP	0.06	0.08	0.08
Link31_SHP	0.06	0.08	0.08
Link32.1_SHP	0.06	0.08	0.08
Link32_SHP	0.06	0.08	0.08
Link33a_SHP	0.06	0.08	0.08
Link33b_SHP	0.06	0.08	0.08
Link33c_SHP	0.06	0.08	0.08
Link39_SHP	0.06	0.08	0.08
Link3_SHP	0.06	0.08	0.08
Link4.1_SHP	0.06	0.08	0.08
Link4.2_SHP	0.06	0.08	0.08
Link40_SHP	0.06	0.08	0.08
Link41_SHP	0.06	0.08	0.08
Link42_SHP	0.06	0.08	0.08
Link43_SHP	0.06	0.08	0.08
Link44_SHP	0.06	0.08	0.08
Link45.1.1.1_SHP	0.06	0.08	0.08
Link45.1.1_SHP	0.06	0.08	0.08
Link45.1_SHP	0.06	0.08	0.08
Link45.2_SHP	0.06	0.08	0.08
Link46.1_SHP	0.06	0.08	0.08
Link46_SHP	0.06	0.08	0.08

Link47_SHP	0.06	0.08	0.08
Link48.1_SHP	0.06	0.08	0.08
Link48_SHP	0.06	0.08	0.08
Link49_SHP	0.06	0.08	0.08
Link4_SHP	0.06	0.08	0.08
Link50.1_SHP	0.06	0.08	0.08
Link51_SHP	0.06	0.08	0.08
Link53_SHP	0.06	0.08	0.08
Link54.1_SHP	0.06	0.08	0.08
Link54_SHP	0.06	0.08	0.08
Link55.1_SHP	0.06	0.08	0.08
Link55_SHP	0.06	0.08	0.08
Link56.1_SHP	0.06	0.08	0.08
Link56_SHP	0.06	0.08	0.08
Link57_SHP	0.06	0.08	0.08
Link58_SHP	0.06	0.08	0.08
Link59_SHP	0.06	0.08	0.08
Link5_SHP	0.06	0.08	0.08
Link6.1.1.1_SHP	0.06	0.08	0.08
Link6.1_SHP	0.06	0.08	0.08
Link60_SHP	0.06	0.08	0.08
Link65_SHP	0.06	0.08	0.08
Link66.1.1_SHP	0.06	0.08	0.08
Link66.1_SHP	0.06	0.08	0.08
Link66.2_SHP	0.06	0.08	0.08
Link66_SHP	0.06	0.08	0.08
Link67.1_SHP	0.06	0.08	0.08
Link67_SHP	0.06	0.08	0.08
Link68_SHP	0.06	0.08	0.08
Link69.1_SHP	0.06	0.08	0.08
Link69_SHP	0.06	0.08	0.08
Link70_SHP	0.06	0.08	0.08
Link71.1_SHP	0.06	0.08	0.08
Link71.2_SHP	0.06	0.08	0.08
Link71_SHP	0.06	0.08	0.08
Link72.1_SHP	0.06	0.08	0.08
Link72_SHP	0.06	0.08	0.08
Link74.1_SHP	0.06	0.08	0.08
Link74.2_SHP	0.06	0.08	0.08
Link74_SHP	0.06	0.08	0.08
Link75_SHP	0.06	0.08	0.08
Link76_SHP	0.06	0.08	0.08
Link77.1.1_SHP	0.06	0.08	0.08
Link77_SHP	0.06	0.08	0.08
Link78_SHP	0.06	0.08	0.08
Link79_SHP	0.06	0.08	0.08
Link7_SHP	0.06	0.08	0.08
Link81_SHP	0.06	0.08	0.08
Link82_SHP	0.06	0.08	0.08
Link83_SHP	0.06	0.08	0.08

Link87.1a_SHP	0.06	0.08	0.08
Link87_SHP	0.06	0.08	0.08
Link89.1_SHP	0.06	0.08	0.08
Link89_SHP	0.06	0.08	0.08
Link92.1.1_SHP	0.06	0.08	0.08
Link92_SHP	0.06	0.08	0.08
Link94_SHP	0.06	0.08	0.08
Link95_SHP	0.06	0.08	0.08
Link9_SHP	0.06	0.08	0.08
Orewa_SHP	0.06	0.08	0.08

XP STORM OUTPUTS - RAIN + INFILTRATION (SCENARIO 15)

Name	Node Name	Catchment Number	Routing Method	Time of Concentration (or Parameter 2) min	Curve Number	Initial Abstraction Method	Initial Abstraction Depth mm
Highgate	User Inflow Hydrograph						
Millwater1	Millwater1	1	SCS Hydrology	42.865	74	Depth	5
Millwater1		2	SCS Hydrology	19.619	98	Depth	1
Millwater2	Millwater2	1	SCS Hydrology	17.559	74	Depth	5
Millwater2		2	SCS Hydrology	10	98	Depth	1
Millwater3	Millwater3	1	SCS Hydrology	25.389	74	Depth	5
Millwater3		2	SCS Hydrology	11.62	98	Depth	1
Millwater4	Millwater4	1	SCS Hydrology	18.281	74	Depth	5
Millwater4		2	SCS Hydrology	10	98	Depth	1
Node105.1	Node105.1	1	SCS Hydrology	11.355	74	Depth	5
Node105.1		2	SCS Hydrology	10	98	Depth	1
Node108	Node108	1	SCS Hydrology	19.148	74	Depth	5
Node108		2	SCS Hydrology	10	98	Depth	1
Node109	Node109	1	SCS Hydrology	19.587	74	Depth	5
Node109		2	SCS Hydrology	10	98	Depth	1
Node109.1.1	Node109.1.1	1	SCS Hydrology	16.849	74	Depth	5
Node109.1.1		2	SCS Hydrology	10	98	Depth	1
Node126	Node126	1	SCS Hydrology	13.414	74	Depth	5
Node126		2	SCS Hydrology	10	98	Depth	1
Node13	Node13	1	SCS Hydrology	15.445	74	Depth	5
Node13		2	SCS Hydrology	10	98	Depth	1
Node143	Node143	1	SCS Hydrology	12.498	74	Depth	5
Node143		2	SCS Hydrology	10	98	Depth	1
Node159	Node159	1	SCS Hydrology	10	74	Depth	5
Node159		2	SCS Hydrology	10	98	Depth	1
Node16	Node16	1	SCS Hydrology	22.993	74	Depth	5
Node16		2	SCS Hydrology	10.524	98	Depth	1
Node160	Node160	1	SCS Hydrology	15.447	74	Depth	5
Node160		2	SCS Hydrology	10	98	Depth	1
Node161	Node161	1	SCS Hydrology	13.566	74	Depth	5
Node161		2	SCS Hydrology	10	98	Depth	1
Node168	Node168	1	SCS Hydrology	30.23	74	Depth	5
Node168		2	SCS Hydrology	13.836	98	Depth	1
Node186	Node186	1	SCS Hydrology	10	74	Depth	5
Node186		2	SCS Hydrology	10	98	Depth	1
Node203	Node203	1	SCS Hydrology	10	74	Depth	5
Node203		2	SCS Hydrology	10	98	Depth	1
Node206	Node206	1	SCS Hydrology	10.871	74	Depth	5
Node206		2	SCS Hydrology	10	98	Depth	1
Node22	Node22	1	SCS Hydrology	12.812	74	Depth	5
Node22		2	SCS Hydrology	10	98	Depth	1
Node25.1	Node25.1	1	SCS Hydrology	23.294	74	Depth	5
Node25.1		2	SCS Hydrology	10.662	98	Depth	1
Node28	Node28	1	SCS Hydrology	15.755	74	Depth	5
Node28		2	SCS Hydrology	10	98	Depth	1
Node4	Node4	1	SCS Hydrology	11.009	74	Depth	5
Node4		2	SCS Hydrology	10	98	Depth	1
Node4.1	Node4.1	1	SCS Hydrology	13.243	74	Depth	5
Node4.1		2	SCS Hydrology	10	98	Depth	1
Node42	Node42	1	SCS Hydrology	14.23	74	Depth	5
Node42		2	SCS Hydrology	10	98	Depth	1
Node46.1	Node46.1	1	SCS Hydrology	20.509	74	Depth	5
Node46.1		2	SCS Hydrology	10	98	Depth	1
Node46.1a	Node46.1a	1	SCS Hydrology	33.712	74	Depth	5
Node46.1a		2	SCS Hydrology	15.43	98	Depth	1
Node46.1b	Node46.1b	1	SCS Hydrology	18.948	74	Depth	5
Node46.1b		2	SCS Hydrology	10	98	Depth	1
Node47	Node47	1	SCS Hydrology	16.084	74	Depth	5
Node47		2	SCS Hydrology	10	98	Depth	1
Node47.1	Node47.1	1	SCS Hydrology	20.281	74	Depth	5
Node47.1		2	SCS Hydrology	10	98	Depth	1
Node48	Node48	1	SCS Hydrology	16.241	74	Depth	5
Node48		2	SCS Hydrology	10	98	Depth	1
Node49	Node49	1	SCS Hydrology	15.649	74	Depth	5
Node49		2	SCS Hydrology	10	98	Depth	1
Node50	Node50	1	SCS Hydrology	19.208	74	Depth	5
Node50		2	SCS Hydrology	10	98	Depth	1
Node54	Node54	1	SCS Hydrology	12.533	74	Depth	5
Node54		2	SCS Hydrology	10	98	Depth	1

Node56	Node56	1	SCS Hydrology	10	74	Depth	5
Node56		2	SCS Hydrology	10	98	Depth	1
Node56.1	Node56.1	1	SCS Hydrology	13.484	74	Depth	5
Node56.1		2	SCS Hydrology	10	98	Depth	1
Node58	Node58	1	SCS Hydrology	10.062	74	Depth	5
Node58		2	SCS Hydrology	10	98	Depth	1
Node59	Node59	1	SCS Hydrology	13.033	74	Depth	5
Node59		2	SCS Hydrology	10	98	Depth	1
Node59.1	Node59.1	1	SCS Hydrology	11.001	74	Depth	5
Node59.1		2	SCS Hydrology	10	98	Depth	1
Node6	Node6	1	SCS Hydrology	10	74	Depth	5
Node6		2	SCS Hydrology	10	98	Depth	1
Node6.1	Node6.1	1	SCS Hydrology	10	74	Depth	5
Node6.1		2	SCS Hydrology	10	98	Depth	1
Node61	Node61	1	SCS Hydrology	15.29	74	Depth	5
Node61		2	SCS Hydrology	10	98	Depth	1
Node73	Node73	1	SCS Hydrology	23.018	74	Depth	5
Node73		2	SCS Hydrology	10.535	98	Depth	1
Node74	Node74	1	SCS Hydrology	10	74	Depth	5
Node74		2	SCS Hydrology	10	98	Depth	1
Node75	Node75	1	SCS Hydrology	15.139	74	Depth	5
Node75		2	SCS Hydrology	10	98	Depth	1
Node76	Node76	1	SCS Hydrology	10.71	74	Depth	5
Node76		2	SCS Hydrology	10	98	Depth	1
Node77	Node77	1	SCS Hydrology	12.425	74	Depth	5
Node77		2	SCS Hydrology	10	98	Depth	1
Node78	Node78	1	SCS Hydrology	15.505	74	Depth	5
Node78		2	SCS Hydrology	10	98	Depth	1
Node8	Node8	1	SCS Hydrology	10	74	Depth	5
Node8		2	SCS Hydrology	10	98	Depth	1
Node8.1	Node8.1	1	SCS Hydrology	16.268	74	Depth	5
Node8.1		2	SCS Hydrology	10	98	Depth	1
Node80	Node80	1	SCS Hydrology	16.141	74	Depth	5
Node80		2	SCS Hydrology	10	98	Depth	1
Node83	Node83	1	SCS Hydrology	18.276	74	Depth	5
Node83		2	SCS Hydrology	10	98	Depth	1
Node85.1	Node85.1	1	SCS Hydrology	11.044	74	Depth	5
Node85.1		2	SCS Hydrology	10	98	Depth	1
Node86	Node86	1	SCS Hydrology	11.627	74	Depth	5
Node86		2	SCS Hydrology	10	98	Depth	1
Node95	Node95	1	SCS Hydrology	13.741	74	Depth	5
Node95		2	SCS Hydrology	10	98	Depth	1
Node97.1	Node97.1	1	SCS Hydrology	10.87	74	Depth	5
Node97.1		2	SCS Hydrology	10	98	Depth	1
Orewa Contri1	Orewa Contri1	1	SCS Hydrology	54.785	74	Depth	5
Orewa Contri1		2	SCS Hydrology	25.075	98	Depth	1
Orewa Contri2	Orewa Contri2	1	SCS Hydrology	35.78	74	Depth	5
Orewa Contri2		2	SCS Hydrology	16.376	98	Depth	1
Orewa Contri3	Orewa Contri3	1	SCS Hydrology	24.612	74	Depth	5
Orewa Contri3		2	SCS Hydrology	11.265	98	Depth	1
Orewa_Contri4	Orewa_Contri4	1	SCS Hydrology	46.57	74	Depth	5
Orewa_Contri4		2	SCS Hydrology	21.315	98	Depth	1
Orewa_Contri5	Orewa_Contri5	1	SCS Hydrology	21.05	74	Depth	5
Orewa_Contri5		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri6	Orewa_Contri6	1	SCS Hydrology	10	74	Depth	5
Orewa_Contri6		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri7	Orewa_Contri7	1	SCS Hydrology	11.532	74	Depth	5
Orewa_Contri7		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri8	Orewa_Contri8	1	SCS Hydrology	10	74	Depth	5
Orewa_Contri8		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri9	Orewa_Contri9	1	SCS Hydrology	46.54	74	Depth	5
Orewa_Contri9		2	SCS Hydrology	21.302	98	Depth	1
Weiti_Contri	Weiti_Contri	1	SCS Hydrology	110.085	74	Depth	5
Weiti_Contri		2	SCS Hydrology	50.386	98	Depth	1
Weiti_Contri2	Weiti_Contri2	1	SCS Hydrology	40.504	74	Depth	5
Weiti_Contri2		2	SCS Hydrology	18.539	98	Depth	1
Weiti_Contri3	Weiti_Contri3	1	SCS Hydrology	14.794	74	Depth	5
Weiti_Contri3		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri4	Weiti_Contri4	1	SCS Hydrology	17.778	74	Depth	5
Weiti_Contri4		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri5	Weiti_Contri5	1	SCS Hydrology	19.417	74	Depth	5
Weiti_Contri5		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri6	Weiti_Contri6	1	SCS Hydrology	11.656	74	Depth	5
Weiti_Contri6		2	SCS Hydrology	10	98	Depth	1

Weiti_Contri7	Weiti_Contri7	1	SCS Hydrology	20.511	74	Depth	5
Weiti_Contri7		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri8	Weiti_Contri8	1	SCS Hydrology	11.5	74	Depth	5
Weiti_Contri8		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri8.1	Weiti_Contri8.1	1	SCS Hydrology	18.21	74	Depth	5
Weiti_Contri8.1		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri9	Weiti_Contri9	1	SCS Hydrology	58.199	74	Depth	5
Weiti_Contri9		2	SCS Hydrology	26.638	98	Depth	1
Weiti_Contri9.1	Weiti_Contri9.1	1	SCS Hydrology	40.85	74	Depth	5
Weiti_Contri9.1		2	SCS Hydrology	18.697	98	Depth	1
Weiti_Contri9.2	Weiti_Contri9.2	1	SCS Hydrology	17.067	74	Depth	5
Weiti_Contri9.2		2	SCS Hydrology	10	98	Depth	1
Weiti_Silverdale	Weiti_Silverdale	1	SCS Hydrology	95.448	74	Depth	5
Weiti_Silverdale		2	SCS Hydrology	43.686	98	Depth	1

SCENARIO 18 – ARGENT LANE SHA

10YR FUTURE RAINFALL

XP STORM OUTPUTS - RAIN + INFILTRATION (SCENARIO 18)

Name	Node Name	Catchment Number	Routing Method	Time of Concentration (or Parameter 2) min	Curve Number	Initial Abstraction Method	Initial Abstraction Depth mm
Highgate	User Inflow Hydrograph						
Millwater1	Millwater1	1	SCS Hydrology	42.865	74	Depth	5
Millwater1		2	SCS Hydrology	19.619	98	Depth	1
Millwater2	Millwater2	1	SCS Hydrology	17.559	74	Depth	5
Millwater2		2	SCS Hydrology	10	98	Depth	1
Millwater3	Millwater3	1	SCS Hydrology	25.389	74	Depth	5
Millwater3		2	SCS Hydrology	11.62	98	Depth	1
Millwater4	Millwater4	1	SCS Hydrology	18.281	74	Depth	5
Millwater4		2	SCS Hydrology	10	98	Depth	1
Node105.1	Node105.1	1	SCS Hydrology	11.355	74	Depth	5
Node105.1		2	SCS Hydrology	10	98	Depth	1
Node108	Node108	1	SCS Hydrology	19.148	74	Depth	5
Node108		2	SCS Hydrology	10	98	Depth	1
Node109	Node109	1	SCS Hydrology	19.587	74	Depth	5
Node109		2	SCS Hydrology	10	98	Depth	1
Node109.1.1	Node109.1.1	1	SCS Hydrology	16.849	74	Depth	5
Node109.1.1		2	SCS Hydrology	10	98	Depth	1
Node126	Node126	1	SCS Hydrology	13.414	74	Depth	5
Node126		2	SCS Hydrology	10	98	Depth	1
Node13	Node13	1	SCS Hydrology	15.445	74	Depth	5
Node13		2	SCS Hydrology	10	98	Depth	1
Node143	Node143	1	SCS Hydrology	12.498	74	Depth	5
Node143		2	SCS Hydrology	10	98	Depth	1
Node159	Node159	1	SCS Hydrology	10	74	Depth	5
Node159		2	SCS Hydrology	10	98	Depth	1
Node16	Node16	1	SCS Hydrology	22.993	74	Depth	5
Node16		2	SCS Hydrology	10.524	98	Depth	1
Node160	Node160	1	SCS Hydrology	15.447	74	Depth	5
Node160		2	SCS Hydrology	10	98	Depth	1
Node161	Node161	1	SCS Hydrology	13.566	74	Depth	5
Node161		2	SCS Hydrology	10	98	Depth	1
Node168	Node168	1	SCS Hydrology	30.23	74	Depth	5
Node168		2	SCS Hydrology	13.836	98	Depth	1
Node186	Node186	1	SCS Hydrology	10	74	Depth	5
Node186		2	SCS Hydrology	10	98	Depth	1
Node203	Node203	1	SCS Hydrology	10	74	Depth	5
Node203		2	SCS Hydrology	10	98	Depth	1
Node206	Node206	1	SCS Hydrology	10.871	74	Depth	5
Node206		2	SCS Hydrology	10	98	Depth	1
Node22	Node22	1	SCS Hydrology	12.812	74	Depth	5
Node22		2	SCS Hydrology	10	98	Depth	1
Node25.1	Node25.1	1	SCS Hydrology	23.294	74	Depth	5
Node25.1		2	SCS Hydrology	10.662	98	Depth	1
Node28	Node28	1	SCS Hydrology	15.755	74	Depth	5
Node28		2	SCS Hydrology	10	98	Depth	1
Node4	Node4	1	SCS Hydrology	11.009	74	Depth	5
Node4		2	SCS Hydrology	10	98	Depth	1
Node4.1	Node4.1	1	SCS Hydrology	13.243	74	Depth	5
Node4.1		2	SCS Hydrology	10	98	Depth	1
Node42	Node42	1	SCS Hydrology	14.23	74	Depth	5
Node42		2	SCS Hydrology	10	98	Depth	1
Node46.1	Node46.1	1	SCS Hydrology	20.509	74	Depth	5
Node46.1		2	SCS Hydrology	10	98	Depth	1
Node46.1a	Node46.1a	1	SCS Hydrology	33.712	74	Depth	5
Node46.1a		2	SCS Hydrology	15.43	98	Depth	1
Node46.1b	Node46.1b	1	SCS Hydrology	18.948	74	Depth	5
Node46.1b		2	SCS Hydrology	10	98	Depth	1
Node47	Node47	1	SCS Hydrology	16.084	74	Depth	5
Node47		2	SCS Hydrology	10	98	Depth	1
Node47.1	Node47.1	1	SCS Hydrology	20.281	74	Depth	5
Node47.1		2	SCS Hydrology	10	98	Depth	1
Node48	Node48	1	SCS Hydrology	16.241	74	Depth	5
Node48		2	SCS Hydrology	10	98	Depth	1
Node49	Node49	1	SCS Hydrology	15.649	74	Depth	5
Node49		2	SCS Hydrology	10	98	Depth	1

Node50	Node50	1	SCS Hydrology	19.208	74	Depth	5
Node50		2	SCS Hydrology	10	98	Depth	1
Node54	Node54	1	SCS Hydrology	12.533	74	Depth	5
Node54		2	SCS Hydrology	10	98	Depth	1
Node56	Node56	1	SCS Hydrology	10	74	Depth	5
Node56		2	SCS Hydrology	10	98	Depth	1
Node56.1	Node56.1	1	SCS Hydrology	13.484	74	Depth	5
Node56.1		2	SCS Hydrology	10	98	Depth	1
Node58	Node58	1	SCS Hydrology	10.062	74	Depth	5
Node58		2	SCS Hydrology	10	98	Depth	1
Node59	Node59	1	SCS Hydrology	13.033	74	Depth	5
Node59		2	SCS Hydrology	10	98	Depth	1
Node59.1	Node59.1	1	SCS Hydrology	11.001	74	Depth	5
Node59.1		2	SCS Hydrology	10	98	Depth	1
Node6	Node6	1	SCS Hydrology	10	74	Depth	5
Node6		2	SCS Hydrology	10	98	Depth	1
Node6.1	Node6.1	1	SCS Hydrology	10	74	Depth	5
Node6.1		2	SCS Hydrology	10	98	Depth	1
Node61	Node61	1	SCS Hydrology	15.29	74	Depth	5
Node61		2	SCS Hydrology	10	98	Depth	1
Node73	Node73	1	SCS Hydrology	23.018	74	Depth	5
Node73		2	SCS Hydrology	10.535	98	Depth	1
Node74	Node74	1	SCS Hydrology	10	74	Depth	5
Node74		2	SCS Hydrology	10	98	Depth	1
Node75	Node75	1	SCS Hydrology	15.139	74	Depth	5
Node75		2	SCS Hydrology	10	98	Depth	1
Node76	Node76	1	SCS Hydrology	10.71	74	Depth	5
Node76		2	SCS Hydrology	10	98	Depth	1
Node77	Node77	1	SCS Hydrology	12.425	74	Depth	5
Node77		2	SCS Hydrology	10	98	Depth	1
Node78	Node78	1	SCS Hydrology	15.505	74	Depth	5
Node78		2	SCS Hydrology	10	98	Depth	1
Node8	Node8	1	SCS Hydrology	10	74	Depth	5
Node8		2	SCS Hydrology	10	98	Depth	1
Node8.1	Node8.1	1	SCS Hydrology	16.268	74	Depth	5
Node8.1		2	SCS Hydrology	10	98	Depth	1
Node80	Node80	1	SCS Hydrology	16.141	74	Depth	5
Node80		2	SCS Hydrology	10	98	Depth	1
Node83	Node83	1	SCS Hydrology	18.276	74	Depth	5
Node83		2	SCS Hydrology	10	98	Depth	1
Node85.1	Node85.1	1	SCS Hydrology	11.044	74	Depth	5
Node85.1		2	SCS Hydrology	10	98	Depth	1
Node86	Node86	1	SCS Hydrology	11.627	74	Depth	5
Node86		2	SCS Hydrology	10	98	Depth	1
Node95	Node95	1	SCS Hydrology	13.741	74	Depth	5
Node95		2	SCS Hydrology	10	98	Depth	1
Node97.1	Node97.1	1	SCS Hydrology	10.87	74	Depth	5
Node97.1		2	SCS Hydrology	10	98	Depth	1
Orewa Contri1	Orewa Contri1	1	SCS Hydrology	54.785	74	Depth	5
Orewa Contri1		2	SCS Hydrology	25.075	98	Depth	1
Orewa Contri2	Orewa Contri2	1	SCS Hydrology	35.78	74	Depth	5
Orewa Contri2		2	SCS Hydrology	16.376	98	Depth	1
Orewa Contri3	Orewa Contri3	1	SCS Hydrology	24.612	74	Depth	5
Orewa Contri3		2	SCS Hydrology	11.265	98	Depth	1
Orewa_Contri4	Orewa_Contri4	1	SCS Hydrology	46.57	74	Depth	5
Orewa_Contri4		2	SCS Hydrology	21.315	98	Depth	1
Orewa_Contri5	Orewa_Contri5	1	SCS Hydrology	21.05	74	Depth	5
Orewa_Contri5		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri6	Orewa_Contri6	1	SCS Hydrology	10	74	Depth	5
Orewa_Contri6		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri7	Orewa_Contri7	1	SCS Hydrology	11.532	74	Depth	5
Orewa_Contri7		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri8	Orewa_Contri8	1	SCS Hydrology	10	74	Depth	5
Orewa_Contri8		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri9	Orewa_Contri9	1	SCS Hydrology	46.54	74	Depth	5
Orewa_Contri9		2	SCS Hydrology	21.302	98	Depth	1
Weiti_Contri	Weiti_Contri	1	SCS Hydrology	110.085	74	Depth	5
Weiti_Contri		2	SCS Hydrology	50.386	98	Depth	1
Weiti_Contri2	Weiti_Contri2	1	SCS Hydrology	40.504	74	Depth	5
Weiti_Contri2		2	SCS Hydrology	18.539	98	Depth	1

Weiti_Contri3	Weiti_Contri3	1	SCS Hydrology	14.794	74	Depth	5
Weiti_Contri3		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri4	Weiti_Contri4	1	SCS Hydrology	17.778	74	Depth	5
Weiti_Contri4		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri5	Weiti_Contri5	1	SCS Hydrology	19.417	74	Depth	5
Weiti_Contri5		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri6	Weiti_Contri6	1	SCS Hydrology	11.656	74	Depth	5
Weiti_Contri6		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri7	Weiti_Contri7	1	SCS Hydrology	20.511	74	Depth	5
Weiti_Contri7		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri8	Weiti_Contri8	1	SCS Hydrology	11.5	74	Depth	5
Weiti_Contri8		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri8.1	Weiti_Contri8.1	1	SCS Hydrology	18.21	74	Depth	5
Weiti_Contri8.1		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri9	Weiti_Contri9	1	SCS Hydrology	58.199	74	Depth	5
Weiti_Contri9		2	SCS Hydrology	26.638	98	Depth	1
Weiti_Contri9.1	Weiti_Contri9.1	1	SCS Hydrology	40.85	74	Depth	5
Weiti_Contri9.1		2	SCS Hydrology	18.697	98	Depth	1
Weiti_Contri9.2	Weiti_Contri9.2	1	SCS Hydrology	17.067	74	Depth	5
Weiti_Contri9.2		2	SCS Hydrology	10	98	Depth	1
Weiti_Silverdale	Weiti_Silverdale	1	SCS Hydrology	95.448	74	Depth	5
Weiti_Silverdale		2	SCS Hydrology	43.686	98	Depth	1

XP STORM OUTPUTS - SUBCATCHMENT RESULTS (SCENARIO 18)

Name	Subcatchment	Area ha	Impervious Percentage %	Catchment Max Flow cms	Max Flow cms
Highgate	User Inflow Hydrograph				
Millwater1	1	32.805	0	3.736	16.76
Millwater1	2	60.924	100	14.169	
Millwater2	1	4.299	0	0.732	2.962
Millwater2	2	7.983	100	2.313	
Millwater3	1	9.505	0	1.387	5.987
Millwater3	2	17.651	100	4.919	
Millwater4	1	4.177	0	0.7	2.858
Millwater4	2	7.757	100	2.247	
Node105.1	1	11.511	0	2.285	2.458
Node105.1	2	0.606	100	0.176	
Node108	1	3.036	0	0.499	0.908
Node108	2	1.606	100	0.465	
Node109	1	58.441	0	9.528	10.153
Node109	2	3.076	100	0.891	
Node109.1.1	1	2.228	0	0.386	1.546
Node109.1.1	2	4.137	100	1.198	
Node126	1	12.503	0	2.352	4.065
Node126	2	6.084	100	1.763	
Node13	1	18.116	0	3.239	3.486
Node13	2	0.954	100	0.276	
Node143	1	4.144	0	0.798	2.661
Node143	2	6.507	100	1.885	
Node159	1	5.193	0	1.066	1.145
Node159	2	0.273	100	0.079	
Node16	1	32.462	0	4.944	5.239
Node16	2	1.709	100	0.488	
Node160	1	49.426	0	8.836	9.511
Node160	2	2.601	100	0.754	
Node161	1	25.067	0	4.696	5.06
Node161	2	1.319	100	0.382	
Node168	1	4.11	0	0.554	1.457
Node168	2	3.924	100	1.037	
Node186	1	18.393	0	3.775	4.055
Node186	2	0.968	100	0.28	
Node203	1	2.737	0	0.562	2.035
Node203	2	5.084	100	1.473	
Node206	1	2.338	0	0.47	1.724
Node206	2	4.342	100	1.258	
Node22	1	3.504	0	0.67	0.838
Node22	2	0.603	100	0.175	
Node25.1	1	11.944	0	1.809	7.189
Node25.1	2	20.156	100	5.736	
Node28	1	9.915	0	1.76	1.893
Node28	2	0.522	100	0.151	
Node4	1	3.285	0	0.658	0.707

Node4	2	0.173	100	0.05	
Node4.1	1	1.708	0	0.323	1.229
Node4.1	2	3.172	100	0.919	
Node42	1	3.5	0	0.645	2.493
Node42	2	6.499	100	1.883	
Node46.1	1	2.136	0	0.342	1.432
Node46.1	2	3.968	100	1.15	
Node46.1a	1	3.361	0	0.431	1.903
Node46.1a	2	6.241	100	1.59	
Node46.1b	1	1.495	0	0.247	1.017
Node46.1b	2	2.777	100	0.804	
Node47	1	3.728	0	0.657	2.607
Node47	2	6.924	100	2.006	
Node47.1	1	1.46	0	0.234	0.98
Node47.1	2	2.711	100	0.785	
Node48	1	1.835	0	0.322	1.281
Node48	2	3.407	100	0.987	
Node49	1	2.984	0	0.531	0.921
Node49	2	1.444	100	0.418	
Node50	1	1.937	0	0.318	1.314
Node50	2	3.597	100	1.042	
Node54	1	1.506	0	0.29	1.092
Node54	2	2.797	100	0.81	
Node56	1	1.426	0	0.293	1.06
Node56	2	2.648	100	0.767	
Node56.1	1	1.274	0	0.239	0.914
Node56.1	2	2.367	100	0.686	
Node58	1	1.072	0	0.22	0.796
Node58	2	1.991	100	0.577	
Node59	1	0.675	0	0.128	0.487
Node59	2	1.254	100	0.363	
Node59.1	1	3.968	0	0.795	0.916
Node59.1	2	0.422	100	0.122	
Node6	1	3.269	0	0.671	0.721
Node6	2	0.172	100	0.05	
Node6.1	1	3.36	0	0.69	0.741
Node6.1	2	0.177	100	0.051	
Node61	1	2.434	0	0.437	0.824
Node61	2	1.409	100	0.408	
Node73	1	18.072	0	2.751	2.915
Node73	2	0.951	100	0.272	
Node74	1	1.903	0	0.391	1.414
Node74	2	3.534	100	1.024	
Node75	1	1.543	0	0.278	1.089
Node75	2	2.866	100	0.83	
Node76	1	1.442	0	0.291	1.065
Node76	2	2.677	100	0.776	
Node77	1	1.492	0	0.288	1.083
Node77	2	2.771	100	0.803	
Node78	1	2.364	0	0.422	1.663

Node78	2	4.391	100	1.272	
Node8	1	3.707	0	0.761	0.817
Node8	2	0.195	100	0.056	
Node8.1	1	4.251	0	0.746	0.8
Node8.1	2	0.224	100	0.065	
Node80	1	1.995	0	0.351	1.394
Node80	2	3.704	100	1.073	
Node83	1	5.931	0	0.994	4.058
Node83	2	11.014	100	3.191	
Node85.1	1	2.251	0	0.45	0.718
Node85.1	2	0.935	100	0.271	
Node86	1	5.154	0	1.015	1.183
Node86	2	0.584	100	0.169	
Node95	1	1.4	0	0.261	1.002
Node95	2	2.601	100	0.754	
Node97.1	1	1.534	0	0.308	1.131
Node97.1	2	2.849	100	0.825	
Orewa Contri1	1	480.257	0	48.133	50.831
Orewa Contri1	2	25.277	100	5.318	
Orewa Contri2	1	68.959	0	8.584	9.084
Orewa Contri2	2	3.629	100	0.904	
Orewa Contri3	1	55.458	0	8.199	8.69
Orewa Contri3	2	2.919	100	0.82	
Orewa_Contri4	1	185.289	0	20.227	21.381
Orewa_Contri4	2	9.752	100	2.195	
Orewa_Contri5	1	24.418	0	3.863	4.102
Orewa_Contri5	2	1.285	100	0.372	
Orewa_Contri6	1	12.752	0	2.617	2.812
Orewa_Contri6	2	0.671	100	0.194	
Orewa_Contri7	1	9.502	0	1.877	2.02
Orewa_Contri7	2	0.5	100	0.145	
Orewa_Contri8	1	6.902	0	1.417	1.522
Orewa_Contri8	2	0.363	100	0.105	
Orewa_Contri9	1	79.566	0	8.689	9.184
Orewa_Contri9	2	4.188	100	0.943	
Weiti_Contri	1	678.769	0	46.053	48.541
Weiti_Contri	2	35.725	100	5.411	
Weiti_Contri2	1	50.344	0	5.899	6.237
Weiti_Contri2	2	2.65	100	0.631	
Weiti_Contri3	1	8.18	0	1.487	1.599
Weiti_Contri3	2	0.43	100	0.125	
Weiti_Contri4	1	10.257	0	1.739	1.861
Weiti_Contri4	2	0.54	100	0.156	
Weiti_Contri5	1	6.967	0	1.14	1.216
Weiti_Contri5	2	0.367	100	0.106	
Weiti_Contri6	1	3.806	0	0.749	0.806
Weiti_Contri6	2	0.2	100	0.058	
Weiti_Contri7	1	8.027	0	1.283	1.365
Weiti_Contri7	2	0.422	100	0.122	
Weiti_Contri8	1	43.618	0	8.623	9.281

Weiti_Contri8	2	2.296	100	0.665	
Weiti_Contri8.1	1	53.786	0	9.032	11.349
Weiti_Contri8.1	2	9.791	100	2.836	
Weiti_Contri9	1	153.161	0	14.857	15.687
Weiti_Contri9	2	8.061	100	1.652	
Weiti_Contri9.1	1	53.116	0	6.197	19.475
Weiti_Contri9.1	2	63.623	100	15.092	
Weiti_Contri9.2	1	36.459	0	6.276	10.516
Weiti_Contri9.2	2	16.152	100	4.679	
Weiti_Silverdale	1	417.491	0	30.743	32.417
Weiti_Silverdale	2	21.973	100	3.577	

XP STORM OUTPUTS -CHANNEL MANNINGS COEFFICENTS (SCENARIO 18)

Name	Main Channel Manning's n	Left Overbank Manning's n	Right Overbank Manning's n
Bridge_MWAY_SHP	0.06	0.08	0.08
Link101.1.1_SHP	0.06	0.08	0.08
Link101.1.2_SHP	0.06	0.08	0.08
Link101.2_SHP	0.06	0.08	0.08
Link101_SHP	0.06	0.08	0.08
Link103_SHP	0.06	0.08	0.08
Link10_SHP	0.06	0.08	0.08
Link110_SHP	0.06	0.08	0.08
Link112_SHP	0.06	0.08	0.08
Link114_SHP	0.06	0.08	0.08
Link115_SHP	0.06	0.08	0.08
Link116_SHP	0.06	0.08	0.08
Link117_SHP	0.06	0.08	0.08
Link118_SHP	0.06	0.08	0.08
Link11_SHP	0.06	0.08	0.08
Link12_SHP	0.06	0.08	0.08
Link135_SHP	0.06	0.08	0.08
Link137_SHP	0.06	0.08	0.08
Link138_SHP	0.06	0.08	0.08
Link139_SHP	0.06	0.08	0.08
Link140_SHP	0.06	0.08	0.08
Link141_SHP	0.06	0.08	0.08
Link14_SHP	0.06	0.08	0.08
Link150_SHP	0.06	0.08	0.08
Link156_SHP	0.06	0.08	0.08
Link157_SHP	0.06	0.08	0.08
Link15_SHP	0.06	0.08	0.08
Link160_SHP	0.06	0.08	0.08
Link161_SHP	0.06	0.08	0.08
Link16_SHP	0.06	0.08	0.08
Link172.1.1.1_SHP	0.06	0.08	0.08
Link172.1_SHP	0.06	0.08	0.08
Link172_SHP	0.06	0.08	0.08
Link175.1_SHP	0.06	0.08	0.08
Link175_SHP	0.06	0.08	0.08
Link176_SHP	0.06	0.08	0.08
Link177.1_SHP	0.06	0.08	0.08
Link177_SHP	0.06	0.08	0.08
Link178.1_SHP	0.06	0.08	0.08
Link178_SHP	0.06	0.08	0.08
Link17_SHP	0.06	0.08	0.08
Link182_SHP	0.06	0.08	0.08
Link183_SHP	0.06	0.08	0.08
Link184_SHP	0.06	0.08	0.08
Link185_SHP	0.06	0.08	0.08
Link186_SHP	0.06	0.08	0.08

Link187_SHP	0.06	0.08	0.08
Link188_SHP	0.06	0.08	0.08
Link189_SHP	0.06	0.08	0.08
Link18_SHP	0.06	0.08	0.08
Link190_SHP	0.06	0.08	0.08
Link191.1_SHP	0.06	0.08	0.08
Link191_SHP	0.06	0.08	0.08
Link192_SHP	0.06	0.08	0.08
Link193_SHP	0.06	0.08	0.08
Link19a.1_SHP	0.06	0.08	0.08
Link19a_SHP	0.06	0.08	0.08
Link2.1_SHP	0.06	0.08	0.08
Link20.1_SHP	0.06	0.08	0.08
Link200_SHP	0.06	0.08	0.08
Link203_SHP	0.06	0.08	0.08
Link207_SHP	0.06	0.08	0.08
Link20_SHP	0.06	0.08	0.08
Link21_SHP	0.06	0.08	0.08
Link23.1.1_SHP	0.06	0.08	0.08
Link23.1_SHP	0.06	0.08	0.08
Link23.2.1_SHP	0.06	0.08	0.08
Link23.3_SHP	0.06	0.08	0.08
Link23_SHP	0.06	0.08	0.08
Link25_SHP	0.06	0.08	0.08
Link2_SHP	0.06	0.08	0.08
Link31.1_SHP	0.06	0.08	0.08
Link31.2_SHP	0.06	0.08	0.08
Link31.3_SHP	0.06	0.08	0.08
Link31.4_SHP	0.06	0.08	0.08
Link31_SHP	0.06	0.08	0.08
Link32.1_SHP	0.06	0.08	0.08
Link32_SHP	0.06	0.08	0.08
Link33a_SHP	0.06	0.08	0.08
Link33b_SHP	0.06	0.08	0.08
Link33c_SHP	0.06	0.08	0.08
Link39_SHP	0.06	0.08	0.08
Link3_SHP	0.06	0.08	0.08
Link4.1_SHP	0.06	0.08	0.08
Link4.2_SHP	0.06	0.08	0.08
Link40_SHP	0.06	0.08	0.08
Link41_SHP	0.06	0.08	0.08
Link42_SHP	0.06	0.08	0.08
Link43_SHP	0.06	0.08	0.08
Link44_SHP	0.06	0.08	0.08
Link45.1.1.1_SHP	0.06	0.08	0.08
Link45.1.1_SHP	0.06	0.08	0.08
Link45.1_SHP	0.06	0.08	0.08
Link45.2_SHP	0.06	0.08	0.08
Link46.1_SHP	0.06	0.08	0.08
Link46_SHP	0.06	0.08	0.08

Link47_SHP	0.06	0.08	0.08
Link48.1_SHP	0.06	0.08	0.08
Link48_SHP	0.06	0.08	0.08
Link49_SHP	0.06	0.08	0.08
Link4_SHP	0.06	0.08	0.08
Link50.1_SHP	0.06	0.08	0.08
Link51_SHP	0.06	0.08	0.08
Link53_SHP	0.06	0.08	0.08
Link54.1_SHP	0.06	0.08	0.08
Link54_SHP	0.06	0.08	0.08
Link55.1_SHP	0.06	0.08	0.08
Link55_SHP	0.06	0.08	0.08
Link56.1_SHP	0.06	0.08	0.08
Link56_SHP	0.06	0.08	0.08
Link57_SHP	0.06	0.08	0.08
Link58_SHP	0.06	0.08	0.08
Link59_SHP	0.06	0.08	0.08
Link5_SHP	0.06	0.08	0.08
Link6.1.1.1_SHP	0.06	0.08	0.08
Link6.1_SHP	0.06	0.08	0.08
Link60_SHP	0.06	0.08	0.08
Link65_SHP	0.06	0.08	0.08
Link66.1.1_SHP	0.06	0.08	0.08
Link66.1_SHP	0.06	0.08	0.08
Link66.2_SHP	0.06	0.08	0.08
Link66_SHP	0.06	0.08	0.08
Link67.1_SHP	0.06	0.08	0.08
Link67_SHP	0.06	0.08	0.08
Link68_SHP	0.06	0.08	0.08
Link69.1_SHP	0.06	0.08	0.08
Link69_SHP	0.06	0.08	0.08
Link70_SHP	0.06	0.08	0.08
Link71.1_SHP	0.06	0.08	0.08
Link71.2_SHP	0.06	0.08	0.08
Link71_SHP	0.06	0.08	0.08
Link72.1_SHP	0.06	0.08	0.08
Link72_SHP	0.06	0.08	0.08
Link74.1_SHP	0.06	0.08	0.08
Link74.2_SHP	0.06	0.08	0.08
Link74_SHP	0.06	0.08	0.08
Link75_SHP	0.06	0.08	0.08
Link76_SHP	0.06	0.08	0.08
Link77.1.1_SHP	0.06	0.08	0.08
Link77_SHP	0.06	0.08	0.08
Link78_SHP	0.06	0.08	0.08
Link79_SHP	0.06	0.08	0.08
Link7_SHP	0.06	0.08	0.08
Link81_SHP	0.06	0.08	0.08
Link82_SHP	0.06	0.08	0.08
Link83_SHP	0.06	0.08	0.08

Link87.1a_SHP	0.06	0.08	0.08
Link87_SHP	0.06	0.08	0.08
Link89.1_SHP	0.06	0.08	0.08
Link89_SHP	0.06	0.08	0.08
Link92.1.1_SHP	0.06	0.08	0.08
Link92_SHP	0.06	0.08	0.08
Link94_SHP	0.06	0.08	0.08
Link95_SHP	0.06	0.08	0.08
Link9_SHP	0.06	0.08	0.08
Orewa_SHP	0.06	0.08	0.08

XP STORM OUTPUTS - BASIC CONDUIT DATA (SCENARIO 18)

Name	Link Name	Length m	Shape	Diameter (Height) m	Downstream Invert Elevation m	Upstream Invert Elevation m
1	Culv_Link23.2_Multi	7.44	Circular	0.7	9.54	9.74
2	Culv_Link23.2_Multi	7.44	Circular	0.7	8.83	8.92
3	Culv_Link23.2_Multi	7.44	Circular	0.7	8.88	8.88
Bridge_KowhaiRd	Bridge_KowhaiRd	9.06	Natural	0	2.62	2.64
Bridge_KowhaiRd#w	Bridge_KowhaiRd					
Bridge_Lysnar	Bridge_Lysnar	3.41	Natural	0	4.32	4.46
Bridge_Lysnar#w	Bridge_Lysnar					
Bridge_MWAY	Bridge_MWAY	25.53	Natural	0	-0.74	-0.71
Bridge_WainuiRd	Bridge_WainuiRd	13.75	Natural	0	-0.47	-0.34
Bridge_WainuiRd#w	Bridge_WainuiRd					
Bridge_Weiti	Bridge_Weiti	15.16	Natural	0	9.83	11.6
Bridge_Weiti#w	Bridge_Weiti					
CUL_NZTA	CUL_NZTA	98.3	Circular	4.5	4.74	5.19
Culv_EX1500d	Culv_EX1500d	14.96	Circular	1.5	24.98	25.06
Culv_Ex1800	Culv_Ex1800	7.83	Natural	1.8	13.733	13.984
Culv_Link23.1	Culv_Link23.1	5.45	User Defined	1.75	6.16	6.17
Culv_LK101.1	Culv_LK101.1	20.01	Circular	1.5	22.77	22.85
Culv_LK113	Culv_LK113	5.15	Circular	0.6	17.24	17.39
Culv_LK126	Culv_LK126	12.62	Circular	0.9	23.78	23.88
Culv_LK136	Culv_LK136	12.44	Natural	0.9	21.75	21.83
Culv_Lk143	Culv_Lk143	29.72	Circular	0.6	34.8	36.54
Culv_Lk171	Culv_Lk171	92.64	Circular	2.55	6.76	7.99
Culv_Lk172	Culv_Lk172	13.41	Rectangular	2.35 x 3.7	9.34	9.62
Culv_Lk25.1.2	Culv_Lk25.1.2	10.5	Circular	1.85	4.45	4.66
Culv_LK46	Culv_LK46	12.49	Natural	1.2	19.84	19.98
Culv_Lk48.2	Culv_Lk48.2	2.38	Circular	0.6	15.08	15.19
Culv_LK58.1	Culv_LK58.1	7.9	Natural	1.85	10.83	11.17
Culv_Lk92.1	Culv_Lk92.1	15.41	Circular	1.2	14.27	14.45
CulvLK42.1	CulvLK42.1	5.72	Natural	1.05	20.83	20.92
CulvLK77.1	CulvLK77.1	23.45	Natural	0.45	14.78	14.81
CulvLK87.1	CulvLK87.1	5.02	Natural	0.6	20.22	20.45
Highgate.1	Highgate.1	168.1	Circular	1.6	15.63	19.08
Link10	Link10	141.49	Natural	0	0.16	0.67
Link101	Link101	202.17	Natural	0	29.841	33.066
Link101.1.1	Link101.1.1	206.54	Natural	0	18.287	21.611
Link101.1.2	Link101.1.2	100.39	Natural	0	21.611	22.77
Link101.2	Link101.2	277.81	Natural	0	22.85	29.841
Link103	Link103	137.17	Natural	0	19.051	19.113
Link11	Link11	113.22	Natural	0	0.22	0.16
Link112	Link112	92.55	Natural	0	4.782	4.883
Link114	Link114	69.17	Natural	0	16.58	17.24
Link115	Link115	104.95	Natural	0	15.508	16.58
Link116	Link116	147.29	Natural	0	13.93	15.508
Link117	Link117	125.09	Natural	0	10.56	13.982
Link118	Link118	33.24	Natural	0	17.643	17.945
Link12	Link12	75.88	Natural	0	-0.077	0.22
Link13	Link13	39.44	Natural	0	0.274	-0.077
Link135	Link135	48.58	Natural	0	22.069	22.464
Link137	Link137	31.81	Natural	0	21.435	21.756
Link138	Link138	56.01	Natural	0	20.868	21.435
Link139	Link139	87.01	Natural	0	19.58	20.868
Link14	Link14	70.07	Natural	0	0.004	0.274
Link140	Link140	112.52	Natural	0	18.333	19.58
Link141	Link141	59.69	Natural	0	17.915	18.333
Link15	Link15	93	Natural	0	-0.134	0.004
Link150	Link150	127.36	Natural	0	4.82	9.86

Link156	Link156	326.91	Natural	0	15.994	22.926
Link157	Link157	89.18	Natural	0	10.198	17.257
Link16	Link16	84.25	Natural	0	-0.12	-0.134
Link160	Link160	131.12	Natural	0	6.35	15.517
Link161	Link161	271.8	Natural	0	22.464	26.837
Link17	Link17	95.65	Natural	0	-0.25	-0.12
Link172	Link172	332.34	Natural	0	11.988	15.232
Link172.1	Link172.1	280.43	Natural	0	12.04	11.988
Link172.1.1.1	Link172.1.1.1	40.25	Natural	0	10.547	10.965
Link175	Link175	177.46	Natural	0	-0.9	-0.8
Link175.1	Link175.1	45.03	Natural	0	-1	-0.9
Link176	Link176	383.8	Natural	0	-1.15	-0.1
Link177	Link177	102.08	Natural	0	-1.24	-1.15
Link177.1	Link177.1	116.73	Natural	0	-1.28	-1.24
Link178	Link178	210.95	Natural	0	-1.3	-1.28
Link178.1	Link178.1	206.61	Natural	0	-1.34	-1.3
Link18	Link18	152.17	Natural	0	-0.25	-0.25
Link182	Link182	366.22	Natural	0	1.419	6.76
Link183	Link183	99.41	Natural	0	1.277	1.419
Link184	Link184	332.74	Natural	0	1.277	4.782
Link185	Link185	338.69	Natural	0	1.419	4.656
Link186	Link186	326.75	Natural	0	0.647	1.277
Link187	Link187	435.61	Natural	0	-0.016	0.647
Link188	Link188	458.5	Natural	0	0.03	-0.016
Link189	Link189	284.68	Natural	0	-0.285	0.03
Link190	Link190	185.13	Natural	0	-0.509	-0.285
Link191	Link191	397.39	Natural	0	-0.64	-0.51
Link191.1	Link191.1	413.61	Natural	0	-0.78	-0.64
Link192	Link192	208.09	Natural	0	-0.678	-0.776
Link193	Link193	154.24	Natural	0	4.883	4.74
Link19a	Link19a	133.6	Natural	0	-0.2	2.62
Link19a.1	Link19a.1	132.35	Natural	0	-0.52	-0.2
Link2	Link2	54.59	Natural	0	13.473	13.19
Link2.1	Link2.1	61.12	Natural	0	11.637	13.473
Link20	Link20	14.09	Natural	0	-0.34	-0.25
Link20.1	Link20.1	51.59	Natural	0	-0.52	-0.47
Link200	Link200	167.18	Natural	0	14.65	18.815
Link203	Link203	75.72	Natural	0	36.54	43.97
Link207	Link207	189.59	Natural	0	25.06	30.2
Link21	Link21	175.83	Natural	0	-0.71	-0.52
Link23	Link23	2.66	Natural	0	10.33	10.19
Link23.1.1	Link23.1.1	153.98	Natural	0	-0.25	4.68
Link23.1.2	Link23.1.2	116.74	Natural	0	4.68	6.16
Link23.2.1	Link23.2.1	154.99	Natural	0	6.17	8.83
Link23.3	Link23.3	161.13	Natural	0	8.88	10.33
Link25	Link25	72.62	Natural	0	4.51	5.87
Link25.1	Link25.1	37.03	Natural	0	4.66	4.51
Link25.1.1	Link25.1.1	13.53	Natural	0	3.99	4.45
Link3	Link3	108.63	Natural	0	10.849	11.637
Link31	Link31	91.63	Natural	0	15.59	15.86
Link31.1	Link31.1	465.46	Natural	0	11.7	13.69
Link31.2	Link31.2	386.31	Natural	0	13.69	14.77
Link31.3	Link31.3	194.9	Natural	0	14.77	15.32
Link31.4	Link31.4	93.24	Natural	0	15.32	15.59
Link32	Link32	865.06	Natural	0	8.908	11.7
Link32.1	Link32.1	688.18	Natural	0	5.132	8.908
Link33a	Link33a	198.81	Natural	0	4.09	5.13
Link33b	Link33b	137.99	Natural	0	3.57	4.09
Link33c	Link33c	147.58	Natural	0	2.64	3.57
Link39	Link39	56.29	Natural	0	22.81	23.78

Link4	Link4	78.42	Natural	0	8.575	10.849
Link4.1	Link4.1	97.95	Natural	0	5.04	8.103
Link4.2	Link4.2	82.58	Natural	0	8.103	8.575
Link40	Link40	58.73	Natural	0	22.311	22.81
Link41	Link41	78.25	Natural	0	21.52	22.311
Link42	Link42	79.01	Natural	0	20.92	21.52
Link43	Link43	48.21	Natural	0	20.551	20.83
Link44	Link44	17.22	Natural	0	19.98	20.551
Link45.1	Link45.1	95.72	Natural	0	17.97	18.11
Link45.1.1	Link45.1.1	47.86	Natural	0	17.9	17.97
Link45.1.1.1	Link45.1.1.1	47.86	Natural	0	17.83	17.9
Link45.2	Link45.2	114.74	Natural	0	18.114	19.84
Link46	Link46	32.11	Natural	0	16.882	17.83
Link46.1	Link46.1	27.5	Natural	0	17.239	16.882
Link47	Link47	113.64	Natural	0	15.25	17.239
Link48	Link48	55.74	Natural	0	15.19	15.25
Link48.1	Link48.1	65.21	Natural	0	14.14	15.08
Link49	Link49	70.45	Natural	0	13.19	14.143
Link5	Link5	60.92	Natural	0	4.82	5.04
Link5.1	Link5.1	39.19	Natural	0	4.59	4.82
Link53	Link53	69.15	Natural	0	17.237	18.287
Link54	Link54	41.08	Natural	0	16.873	17.237
Link54.1	Link54.1	15.06	Natural	0	16.432	16.873
Link55	Link55	116.8	Natural	0	14.65	16.432
Link55.1	Link55.1	64.57	Natural	0	13.984	14.65
Link56	Link56	17.49	Natural	0	13.652	13.733
Link56.1	Link56.1	60.44	Natural	0	13.027	13.652
Link57	Link57	66.25	Natural	0	12.015	13.027
Link58	Link58	76.81	Natural	0	13.103	12.015
Link59	Link59	91.29	Natural	0	9.04	10.83
Link6	Link6	61.11	Natural	0	4.56	4.59
Link6.1	Link6.1	44.98	Natural	0	4.46	4.56
Link6.1a	Link6.1a	26.8	Natural	0	3.99	4.32
Link60	Link60	111.63	Natural	0	5.87	9.04
Link65	Link65	384.85	Natural	0	17.146	19.051
Link66	Link66	169.44	Natural	0	15.994	17.146
Link66.1	Link66.1	174.58	Natural	0	13.72	14.769
Link66.1.1	Link66.1.1	177.17	Natural	0	12.039	13.72
Link66.2	Link66.2	173.2	Natural	0	14.769	15.994
Link67	Link67	134.88	Natural	0	11.6	12.039
Link67.1	Link67.1	284.75	Natural	0	10.198	11.895
Link68	Link68	335.52	Natural	0	9.055	10.198
Link69	Link69	55.84	Natural	0	9.439	9.055
Link69.1	Link69.1	226.86	Natural	0	8.3	9.439
Link7	Link7	51.83	Natural	0	1.258	3.99
Link70	Link70	143.23	Natural	0	7.11	8.3
Link71	Link71	77.14	Natural	0	6.35	7.11
Link71.1	Link71.1	163.65	Natural	0	6.315	7.11
Link71.2	Link71.2	82.49	Natural	0	7.11	6.35
Link72	Link72	38.13	Natural	0	6.404	6.315
Link72.1	Link72.1	39.12	Natural	0	5.19	6.2
Link74	Link74	122.63	Natural	0	28.994	34.8
Link74.1	Link74.1	245.26	Natural	0	20.836	26.368
Link74.2	Link74.2	122.63	Natural	0	26.368	28.994
Link75	Link75	89.68	Natural	0	18.293	19.441
Link76	Link76	138.38	Natural	0	16.371	18.293
Link77	Link77	47.66	Natural	0	15.15	16.371
Link77.1.1	Link77.1.1	40.12	Natural	0	14.23	14.78
Link78	Link78	51.92	Natural	0	11.74	14.23
Link79	Link79	96.79	Natural	0	9.86	11.74

Link8	Link8	77.32	Natural	0	0.19	1.258
Link81	Link81	37.06	Natural	0	23.846	24.86
Link82	Link82	116.13	Natural	0	18.818	23.846
Link83	Link83	40.79	Natural	0	16.432	18.818
Link87	Link87	56.35	Natural	0	20.22	20.91
Link87.1a	Link87.1a	28.31	Natural	0	19.98	20.22
Link89	Link89	156.52	Natural	0	22.531	24.98
Link89.1	Link89.1	135.63	Natural	0	20.91	22.531
Link9	Link9	130.9	Natural	0	0.67	0.19
Link92	Link92	76.63	Natural	0	14.72	15.63
Link92.1.1	Link92.1.1	60.87	Natural	0	12.66	14.27
Link94	Link94	126.39	Natural	0	10.56	12.66
Link95	Link95	22.06	Natural	0	10.19	10.56
Orewa	Orewa	20.73	Natural	0	-0.8	-0.74

XP STORM OUTPUTS - JUNCTION DATA (SCENARIO 18)

Name	Node Name	Invert Elevation m	Node X	Node Y	Ponding Type	Inlet Capacity Type
Highgate	Highgate	19.08	390760.744	830148.545	Link Invert to 2D	Maximum Capacity
Millwater1	Millwater1	-1	391144.141	831278.612	Link Invert to 2D	Maximum Capacity
Millwater2	Millwater2	-1.15	391481.677	831387.439	Link Invert to 2D	Maximum Capacity
Millwater3	Millwater3	-1.24	391570.934	831410.567	Link Invert to 2D	Maximum Capacity
Millwater4	Millwater4	-1.3	391860.414	831519.05	Link Invert to 2D	Maximum Capacity
Node10	Node10	1.258	390011.681	830524.418	Link Invert to 2D	Maximum Capacity
Node100	Node100	15.63	390694.008	830302.827	Link Invert to 2D	Maximum Capacity
Node100.1	Node100.1	12.66	390622.118	830426.675	Link Invert to 2D	Maximum Capacity
Node100.2	Node100.2	14.45	390661.171	830366.907	Link Invert to 2D	Maximum Capacity
Node100.2.1	Node100.2.1	14.27	390651.341	830378.777	Link Invert to 2D	Maximum Capacity
Node102	Node102	10.56	390587.268	830536.871	Link Invert to 2D	Maximum Capacity
Node104	Node104	4.74	390989.368	829058.139	Link Invert to 2D	Maximum Capacity
Node105	Node105	-0.8	390934.933	831205.359	Link Invert to 2D	Maximum Capacity
Node105.1	Node105.1	-0.9	391100.667	831266.89	Link Invert to 2D	Maximum Capacity
Node108	Node108	5.04	390014.062	830245.239	Link Invert to 2D	Maximum Capacity
Node108.1	Node108.1	4.82	390003.818	830304.98	Link Invert to 2D	Maximum Capacity
Node109	Node109	33.066	388814.038	829688.32	Link Invert to 2D	Maximum Capacity
Node109.1	Node109.1	22.85	388976.008	830105.067	Link Invert to 2D	Maximum Capacity
Node109.1.1	Node109.1.1	21.611	389076.916	830169.74	Link Invert to 2D	Maximum Capacity
Node109.1.2	Node109.1.2	22.77	388990.761	830118.588	Link Invert to 2D	Maximum Capacity
Node109.2	Node109.2	29.841	388826.55	829870.888	Link Invert to 2D	Maximum Capacity
Node11	Node11	0.19	390054.553	830588.569	Link Invert to 2D	Maximum Capacity
Node119	Node119	4.883	391084.228	828988.566	Link Invert to 2D	Maximum Capacity
Node12	Node12	0.67	390107.166	830696.479	Link Invert to 2D	Maximum Capacity
Node120	Node120	4.782	391132.149	828949.835	Link Invert to 2D	Maximum Capacity
Node121	Node121	17.39	390500.65	830117.826	Link Invert to 2D	Maximum Capacity
Node122	Node122	17.24	390500.816	830122.97	Link Invert to 2D	Maximum Capacity
Node123	Node123	16.58	390492.934	830190.884	Link Invert to 2D	Maximum Capacity
Node124	Node124	15.508	390497.396	830295.447	Link Invert to 2D	Maximum Capacity
Node125	Node125	13.93	390523.844	830437.416	Link Invert to 2D	Maximum Capacity
Node126	Node126	17.915	390507.197	830089.527	Link Invert to 2D	Maximum Capacity
Node13	Node13	0.1603	390181.707	830808.359	Link Invert to 2D	Maximum Capacity
Node134	Node134	23.88	389637.57	829041.964	Link Invert to 2D	Maximum Capacity
Node14	Node14	0.22	390221.859	830886.276	Link Invert to 2D	Maximum Capacity
Node143	Node143	22.464	390527.054	829736.499	Link Invert to 2D	Maximum Capacity
Node144	Node144	21.83	390515.505	829783.568	Link Invert to 2D	Maximum Capacity
Node145	Node145	21.75	390512.138	829795.544	Link Invert to 2D	Maximum Capacity
Node146	Node146	21.435	390502.851	829825.972	Link Invert to 2D	Maximum Capacity
Node147	Node147	20.868	390500.521	829881.384	Link Invert to 2D	Maximum Capacity
Node148	Node148	19.58	390505.475	829963.454	Link Invert to 2D	Maximum Capacity
Node149	Node149	18.333	390495.782	830049.403	Link Invert to 2D	Maximum Capacity
Node15	Node15	-0.077	390239.982	830957.369	Link Invert to 2D	Maximum Capacity
Node150	Node150	36.54	389283.652	829636.661	Link Invert to 2D	Maximum Capacity
Node159	Node159	44.824	389130.157	829523.01	Link Invert to 2D	Maximum Capacity
Node16	Node16	0.274	390259.45	830985.84	Link Invert to 2D	Maximum Capacity

Node160	Node160	36.06	389102.492	829047.246	Link Invert to 2D	Maximum Capacity
Node160.1	Node160.1	30.2	389372.452	829121.34	Link Invert to 2D	Maximum Capacity
Node161	Node161	29.993	389375.219	828939.943	Link Invert to 2D	Maximum Capacity
Node168	Node168	26.837	390627.699	829496.156	Link Invert to 2D	Maximum Capacity
Node17	Node17	0.004	390326.41	830996.417	Link Invert to 2D	Maximum Capacity
Node178	Node178	7.99	390902.335	828787.492	Link Invert to 2D	Maximum Capacity
Node179	Node179	6.76	390994.978	828787.897	Link Invert to 2D	Maximum Capacity
Node18	Node18	-0.134	390404.117	831034.954	Link Invert to 2D	Maximum Capacity
Node180.1	Node180.1	11.988	390658.86	828617.787	Link Invert to 2D	Maximum Capacity
Node180.1.1	Node180.1.1	9.62	390872.05	828749.519	Link Invert to 2D	Maximum Capacity
Node180.1.1.1	Node180.1.1.1	9.34	390874.93	828762.612	Link Invert to 2D	Maximum Capacity
Node186	Node186	-1.28	391651.599	831489.29	Link Invert to 2D	Maximum Capacity
Node187	Node187	-1.34	392050.291	831561.049	Link Invert to 2D	Maximum Capacity
Node19	Node19	-0.12	390461.56	831088.471	Link Invert to 2D	Maximum Capacity
Node192	Node192	1.277	391327.868	828850.408	Link Invert to 2D	Maximum Capacity
Node194	Node194	-0.016	391899.237	828994.355	Link Invert to 2D	Maximum Capacity
Node195	Node195	0.03	392098.433	828889.23	Link Invert to 2D	Maximum Capacity
Node196	Node196	-0.285	392322.117	828895.377	Link Invert to 2D	Maximum Capacity
Node198	Node198	-0.51	392464.001	828796.297	Link Invert to 2D	Maximum Capacity
Node199	Node199	-0.678	393345.847	828972.505	Link Invert to 2D	Maximum Capacity
Node20	Node20	-0.25	390554.347	831108.65	Link Invert to 2D	Maximum Capacity
Node203	Node203	34.96	389000.188	830307.602	Link Invert to 2D	Maximum Capacity
Node206	Node206	18.815	389353.844	830230.372	Link Invert to 2D	Maximum Capacity
Node209	Node209	43.97	389264.177	829584.071	Link Invert to 2D	Maximum Capacity
Node21	Node21	-0.25	390698.628	831102.846	Link Invert to 2D	Maximum Capacity
Node21.1	Node21.1	-0.47	390715.127	831125.017	Link Invert to 2D	Maximum Capacity
Node21.2	Node21.2	-0.34	390707.67	831113.468	Link Invert to 2D	Maximum Capacity
Node22	Node22	5.87	389871.336	830460.858	Link Invert to 2D	Maximum Capacity
Node22.1	Node22.1	4.51	389942.611	830473.624	Link Invert to 2D	Maximum Capacity
Node22.1.1	Node22.1.1	4.45	389989.974	830472.236	Link Invert to 2D	Maximum Capacity
Node22.1.2	Node22.1.2	4.66	389979.511	830473.164	Link Invert to 2D	Maximum Capacity
Node25	Node25	10.19	390597.981	830563.128	Link Invert to 2D	Maximum Capacity
Node25.1	Node25.1	6.17	390654.909	830854.759	Link Invert to 2D	Maximum Capacity
Node25.1.1	Node25.1.1	4.68	390689.475	830965.836	Link Invert to 2D	Maximum Capacity
Node25.1.2	Node25.1.2	6.16	390655.814	830860.117	Link Invert to 2D	Maximum Capacity
Node25.2	Node25.2	8.88	390622.999	830712.94	Link Invert to 2D	Maximum Capacity
Node25.2.1	Node25.2.1	8.83	390624.174	830721.768	Link Invert to 2D	Maximum Capacity
Node25.3	Node25.3	10.33	390600.069	830564.397	Link Invert to 2D	Maximum Capacity
Node26a	Node26a	2.62	390502.824	831320.516	Link Invert to 2D	Maximum Capacity
Node27	Node27	-0.52	390716.358	831175.835	Link Invert to 2D	Maximum Capacity
Node28	Node28	-0.71	390889.117	831200.507	Link Invert to 2D	Maximum Capacity
Node29	Node29	-0.74	390914.635	831201.149	Link Invert to 2D	Maximum Capacity
Node34.1	Node34.1	2.64	390495.833	831326.28	Link Invert to 2D	Maximum Capacity
Node4	Node4	13.19	390117.819	829855.792	Link Invert to 2D	Maximum Capacity
Node4.1	Node4.1	13.473	390139.264	829896.454	Link Invert to 2D	Maximum Capacity
Node40	Node40	23.78	389646.077	829051.292	Link Invert to 2D	Maximum Capacity
Node41	Node41	22.81	389685.814	829091.165	Link Invert to 2D	Maximum Capacity
Node42	Node42	22.311	389711.315	829144.066	Link Invert to 2D	Maximum Capacity
Node43	Node43	21.52	389735.503	829216.797	Link Invert to 2D	Maximum Capacity
Node43.1	Node43.1	20.92	389775.027	829285.21	Link Invert to 2D	Maximum Capacity

Node44	Node44	20.83	389777.726	829290.258	Link Invert to 2D	Maximum Capacity
Node45	Node45	20.551	389801.673	829332.1	Link Invert to 2D	Maximum Capacity
Node46	Node46	19.98	389804.147	829348.198	Link Invert to 2D	Maximum Capacity
Node46.1	Node46.1	18.11	389912.608	829413.981	Link Invert to 2D	Maximum Capacity
Node46.1a	Node46.1a	17.97	389971.566	829476.09	Link Invert to 2D	Maximum Capacity
Node46.1b	Node46.1b	17.9	389995.357	829517.609	Link Invert to 2D	Maximum Capacity
Node46.2	Node46.2	19.84	389814.117	829355.719	Link Invert to 2D	Maximum Capacity
Node47	Node47	17.83	390020.041	829558.612	Link Invert to 2D	Maximum Capacity
Node47.1	Node47.1	16.882	390035.963	829586.499	Link Invert to 2D	Maximum Capacity
Node48	Node48	17.239	390048.943	829610.74	Link Invert to 2D	Maximum Capacity
Node49	Node49	15.25	390108.692	829694.422	Link Invert to 2D	Maximum Capacity
Node49.1	Node49.1	15.08	390096.026	829734.191	Link Invert to 2D	Maximum Capacity
Node49.2	Node49.2	15.19	390096.748	829731.925	Link Invert to 2D	Maximum Capacity
Node5	Node5	11.637	390135.622	829945.409	Link Invert to 2D	Maximum Capacity
Node50	Node50	14.14	390101.888	829797.933	Link Invert to 2D	Maximum Capacity
Node54	Node54	18.287	389254.992	830274.073	Link Invert to 2D	Maximum Capacity
Node55	Node55	17.237	389305.867	830312.606	Link Invert to 2D	Maximum Capacity
Node55.1	Node55.1	16.873	389334.759	830339.766	Link Invert to 2D	Maximum Capacity
Node56	Node56	16.432	389336.173	830354.135	Link Invert to 2D	Maximum Capacity
Node56.1	Node56.1	13.984	389498.551	830378.391	Link Invert to 2D	Maximum Capacity
Node56.2	Node56.2	14.65	389440.835	830364.371	Link Invert to 2D	Maximum Capacity
Node57	Node57	13.733	389505.49	830382.026	Link Invert to 2D	Maximum Capacity
Node57.1	Node57.1	13.652	389520.745	830390.58	Link Invert to 2D	Maximum Capacity
Node58	Node58	13.027	389562.004	830419.89	Link Invert to 2D	Maximum Capacity
Node59	Node59	12.015	389598.735	830459.228	Link Invert to 2D	Maximum Capacity
Node59.1	Node59.1	11.17	389663.227	830471.068	Link Invert to 2D	Maximum Capacity
Node6	Node6	10.849	390122.582	830049.539	Link Invert to 2D	Maximum Capacity
Node6.1	Node6.1	8.103	390047.33	830160.953	Link Invert to 2D	Maximum Capacity
Node6.2	Node6.2	8.575	390105.058	830116.041	Link Invert to 2D	Maximum Capacity
Node60	Node60	10.83	389670.982	830472.569	Link Invert to 2D	Maximum Capacity
Node61	Node61	9.04	389759.707	830461.047	Link Invert to 2D	Maximum Capacity
Node72	Node72	19.051	389321.668	828257.5	Link Invert to 2D	Maximum Capacity
Node73	Node73	17.146	389541.656	828505.942	Link Invert to 2D	Maximum Capacity
Node73.1	Node73.1	15.994	389673.745	828527.036	Link Invert to 2D	Maximum Capacity
Node74	Node74	12.039	389987.849	828799.277	Link Invert to 2D	Maximum Capacity
Node74.1	Node74.1	9.83	390068.106	828844.096	Link Invert to 2D	Maximum Capacity
Node74.2	Node74.2	11.6	390066.018	828829.077	Link Invert to 2D	Maximum Capacity
Node75	Node75	10.198	390227.444	828871.677	Link Invert to 2D	Maximum Capacity
Node76	Node76	9.055	390403.128	828968.39	Link Invert to 2D	Maximum Capacity
Node77	Node77	8.3	390574.816	829048.966	Link Invert to 2D	Maximum Capacity
Node78	Node78	7.11	390683.738	829036.302	Link Invert to 2D	Maximum Capacity
Node78.1	Node78.1	7.11	390765.2	829001.294	Link Invert to 2D	Maximum Capacity
Node78.2	Node78.2	6.35	390716.455	828981.236	Link Invert to 2D	Maximum Capacity
Node79	Node79	6.315	390831.54	829107.537	Link Invert to 2D	Maximum Capacity
Node8	Node8	4.59	389998.384	830343.08	Link Invert to 2D	Maximum Capacity
Node8.1	Node8.1	4.56	390001.515	830399.956	Link Invert to 2D	Maximum Capacity
Node8.1.1	Node8.1.1	4.46	390006.175	830444.532	Link Invert to 2D	Maximum Capacity
Node8.1.1.1	Node8.1.1.1	4.32	390007.196	830447.784	Link Invert to 2D	Maximum Capacity
Node80	Node80	5.19	390900.4	829099.932	Link Invert to 2D	Maximum Capacity
Node82	Node82	34.8	389292.649	829664.986	Link Invert to 2D	Maximum Capacity

Node82.1	Node82.1	26.368	389394.601	829844.178	Link Invert to 2D	Maximum Capacity
Node82.2	Node82.2	28.994	389300.418	829784.319	Link Invert to 2D	Maximum Capacity
Node83	Node83	19.441	389602.462	829896.157	Link Invert to 2D	Maximum Capacity
Node84	Node84	18.293	389662.074	829961.1	Link Invert to 2D	Maximum Capacity
Node85	Node85	16.371	389722.053	830083.34	Link Invert to 2D	Maximum Capacity
Node85.1	Node85.1	14.81	389740.551	830127.262	Link Invert to 2D	Maximum Capacity
Node85.1.1	Node85.1.1	14.78	389756.101	830144.817	Link Invert to 2D	Maximum Capacity
Node86	Node86	14.23	389773.508	830180.966	Link Invert to 2D	Maximum Capacity
Node87	Node87	11.74	389813.454	830214.091	Link Invert to 2D	Maximum Capacity
Node88	Node88	9.86	389902.906	830232.576	Link Invert to 2D	Maximum Capacity
Node89	Node89	24.86	389148.187	830372.404	Link Invert to 2D	Maximum Capacity
Node9	Node9	3.99	390003.36	830473.919	Link Invert to 2D	Maximum Capacity
Node90	Node90	23.846	389182.093	830362.075	Link Invert to 2D	Maximum Capacity
Node91	Node91	18.818	389296.699	830347.944	Link Invert to 2D	Maximum Capacity
Node95	Node95	20.91	389744.113	829324.369	Link Invert to 2D	Maximum Capacity
Node95.1	Node95.1	20.22	389774.744	829342.565	Link Invert to 2D	Maximum Capacity
Node95.1a	Node95.1a	20.22	389778.418	829339.137	Link Invert to 2D	Maximum Capacity
Node96	Node96	25.06	389546.04	829197.565	Link Invert to 2D	Maximum Capacity
Node97	Node97	24.98	389560.25	829192.891	Link Invert to 2D	Maximum Capacity
Node97.1	Node97.1	22.531	389638.956	829276.626	Link Invert to 2D	Maximum Capacity
Orewa C2	Orewa C2	15.32	388430.922	830585.273	Link Invert to 2D	Maximum Capacity
Orewa Contri1	Orewa Contri1	15.86	388263.823	830565.82	Link Invert to 2D	Maximum Capacity
Orewa Contri2	Orewa Contri2	15.59	388350.139	830585.522	Link Invert to 2D	Maximum Capacity
Orewa Contri3	Orewa Contri3	14.77	388565.501	830677.966	Link Invert to 2D	Maximum Capacity
Orewa_C3	Orewa_C3	13.69	388756.013	830932.835	Link Invert to 2D	Maximum Capacity
Orewa_Contri4	Orewa_Contri4	11.7	389083.635	831225.761	Link Invert to 2D	Maximum Capacity
Orewa_Contri5	Orewa_Contri5	8.908	389660.232	831548.956	Link Invert to 2D	Maximum Capacity
Orewa_Contri6	Orewa_Contri6	5.13	390146.566	831642.474	Link Invert to 2D	Maximum Capacity
Orewa_Contri7	Orewa_Contri7	3.57	390377.523	831407.877	Link Invert to 2D	Maximum Capacity
Orewa_Contri8	Orewa_Contri8	-0.2	390626.424	831271.403	Link Invert to 2D	Maximum Capacity
Orewa_Contri9	Orewa_Contri9	4.09	390285.039	831507.218	Link Invert to 2D	Maximum Capacity
Weiti_C1	Weiti_C1	14.769	389753.249	828662.428	Link Invert to 2D	Maximum Capacity
Weiti_Contri	Weiti_Contri	19.113	389346.741	828164.723	Link Invert to 2D	Maximum Capacity
Weiti_Contri2	Weiti_Contri2	22.926	389616.84	828218.568	Link Invert to 2D	Maximum Capacity
Weiti_Contri3	Weiti_Contri3	13.72	389850.037	828720.837	Link Invert to 2D	Maximum Capacity
Weiti_Contri4	Weiti_Contri4	17.257	390276.888	828808.223	Link Invert to 2D	Maximum Capacity
Weiti_Contri5	Weiti_Contri5	9.439	390449.796	828990.714	Link Invert to 2D	Maximum Capacity
Weiti_Contri6	Weiti_Contri6	15.517	390632.979	828920.551	Link Invert to 2D	Maximum Capacity
Weiti_Contri7	Weiti_Contri7	6.2	390866.521	829103.717	Link Invert to 2D	Maximum Capacity
Weiti_Contri8	Weiti_Contri8	1.419	391273.799	828775.679	Link Invert to 2D	Maximum Capacity
Weiti_Contri8.1	Weiti_Contri8.1	0.647	391594.469	828893	Link Invert to 2D	Maximum Capacity
Weiti_Contri9	Weiti_Contri9	15.232	390539.344	828354.986	Link Invert to 2D	Maximum Capacity
Weiti_Contri9.1	Weiti_Contri9.1	-0.64	392841.08	828814.576	Link Invert to 2D	Maximum Capacity
Weiti_Contri9.2	Weiti_Contri9.2	-0.78	393176.511	829015.146	Link Invert to 2D	Maximum Capacity
Weiti_Silverdale	Weiti_Silverdale	4.656	391146.039	828521.651	Link Invert to 2D	Maximum Capacity

SCENARIO 19 – ARGENT LANE SHA

100YR FUTURE RAINFALL

XP STORM OUTPUTS - SUBCATCHMENT RESULTS (SCENARIO 19)

Name	Subcatchment	Area ha	Impervious Percentage %	Catchment Max Flow cms	Max Flow cms
Highgate	User Inflow Hydrograph				
Millwater1	1	32.805	0	7.029	27.76
Millwater1	2	60.924	100	22.74	
Millwater2	1	4.299	0	1.372	4.944
Millwater2	2	7.983	100	3.711	
Millwater3	1	9.505	0	2.605	9.945
Millwater3	2	17.651	100	7.894	
Millwater4	1	4.177	0	1.314	4.768
Millwater4	2	7.757	100	3.606	
Node105.1	1	11.511	0	4.271	4.55
Node105.1	2	0.606	100	0.282	
Node108	1	3.036	0	0.936	1.589
Node108	2	1.606	100	0.747	
Node109	1	58.441	0	17.875	18.897
Node109	2	3.076	100	1.43	
Node109.1.1	1	2.228	0	0.723	2.582
Node109.1.1	2	4.137	100	1.923	
Node126	1	12.503	0	4.404	7.155
Node126	2	6.084	100	2.828	
Node13	1	18.116	0	6.072	6.469
Node13	2	0.954	100	0.443	
Node143	1	4.144	0	1.491	4.482
Node143	2	6.507	100	3.025	
Node159	1	5.193	0	1.992	2.119
Node159	2	0.273	100	0.127	
Node16	1	32.462	0	9.287	9.765
Node16	2	1.709	100	0.784	
Node160	1	49.426	0	16.566	17.649
Node160	2	2.601	100	1.209	
Node161	1	25.067	0	8.795	9.379
Node161	2	1.319	100	0.613	
Node168	1	4.11	0	1.042	2.473
Node168	2	3.924	100	1.664	
Node186	1	18.393	0	7.056	7.506
Node186	2	0.968	100	0.45	
Node203	1	2.737	0	1.05	3.413
Node203	2	5.084	100	2.363	
Node206	1	2.338	0	0.877	2.891
Node206	2	4.342	100	2.019	
Node22	1	3.504	0	1.252	1.523
Node22	2	0.603	100	0.28	
Node25.1	1	11.944	0	3.397	11.976
Node25.1	2	20.156	100	9.205	
Node28	1	9.915	0	3.296	3.513
Node28	2	0.522	100	0.243	
Node4	1	3.285	0	1.229	1.308

Node4	2	0.173	100	0.08	
Node4.1	1	1.708	0	0.604	2.057
Node4.1	2	3.172	100	1.475	
Node42	1	3.5	0	1.207	4.173
Node42	2	6.499	100	3.021	
Node46.1	1	2.136	0	0.641	2.384
Node46.1	2	3.968	100	1.845	
Node46.1a	1	3.361	0	0.81	3.156
Node46.1a	2	6.241	100	2.551	
Node46.1b	1	1.495	0	0.463	1.695
Node46.1b	2	2.777	100	1.291	
Node47	1	3.728	0	1.231	4.357
Node47	2	6.924	100	3.219	
Node47.1	1	1.46	0	0.44	1.633
Node47.1	2	2.711	100	1.26	
Node48	1	1.835	0	0.604	2.141
Node48	2	3.407	100	1.584	
Node49	1	2.984	0	0.995	1.622
Node49	2	1.444	100	0.671	
Node50	1	1.937	0	0.597	2.19
Node50	2	3.597	100	1.672	
Node54	1	1.506	0	0.541	1.829
Node54	2	2.797	100	1.3	
Node56	1	1.426	0	0.547	1.778
Node56	2	2.648	100	1.231	
Node56.1	1	1.274	0	0.448	1.531
Node56.1	2	2.367	100	1.1	
Node58	1	1.072	0	0.41	1.336
Node58	2	1.991	100	0.926	
Node59	1	0.675	0	0.24	0.815
Node59	2	1.254	100	0.583	
Node59.1	1	3.968	0	1.485	1.679
Node59.1	2	0.422	100	0.196	
Node6	1	3.269	0	1.254	1.334
Node6	2	0.172	100	0.08	
Node6.1	1	3.36	0	1.289	1.371
Node6.1	2	0.177	100	0.082	
Node61	1	2.434	0	0.819	1.439
Node61	2	1.409	100	0.655	
Node73	1	18.072	0	5.168	5.433
Node73	2	0.951	100	0.436	
Node74	1	1.903	0	0.73	2.373
Node74	2	3.534	100	1.643	
Node75	1	1.543	0	0.521	1.822
Node75	2	2.866	100	1.332	
Node76	1	1.442	0	0.543	1.786
Node76	2	2.677	100	1.244	
Node77	1	1.492	0	0.538	1.814
Node77	2	2.771	100	1.288	
Node78	1	2.364	0	0.791	2.781

Node78	2	4.391	100	2.041	
Node8	1	3.707	0	1.422	1.513
Node8	2	0.195	100	0.091	
Node8.1	1	4.251	0	1.398	1.486
Node8.1	2	0.224	100	0.104	
Node80	1	1.995	0	0.658	2.33
Node80	2	3.704	100	1.722	
Node83	1	5.931	0	1.865	6.77
Node83	2	11.014	100	5.12	
Node85.1	1	2.251	0	0.841	1.271
Node85.1	2	0.935	100	0.435	
Node86	1	5.154	0	1.899	2.168
Node86	2	0.584	100	0.271	
Node95	1	1.4	0	0.489	1.678
Node95	2	2.601	100	1.209	
Node97.1	1	1.534	0	0.576	1.897
Node97.1	2	2.849	100	1.324	
Orewa Contri1	1	480.257	0	90.61	95.052
Orewa Contri1	2	25.277	100	8.536	
Orewa Contri2	1	68.959	0	16.148	16.963
Orewa Contri2	2	3.629	100	1.45	
Orewa Contri3	1	55.458	0	15.407	16.195
Orewa Contri3	2	2.919	100	1.316	
Orewa_Contri4	1	185.289	0	38.065	39.945
Orewa_Contri4	2	9.752	100	3.522	
Orewa_Contri5	1	24.418	0	7.25	7.642
Orewa_Contri5	2	1.285	100	0.597	
Orewa_Contri6	1	12.752	0	4.892	5.204
Orewa_Contri6	2	0.671	100	0.312	
Orewa_Contri7	1	9.502	0	3.51	3.74
Orewa_Contri7	2	0.5	100	0.232	
Orewa_Contri8	1	6.902	0	2.648	2.816
Orewa_Contri8	2	0.363	100	0.169	
Orewa_Contri9	1	79.566	0	16.351	17.159
Orewa_Contri9	2	4.188	100	1.513	
Weiti_Contri	1	678.769	0	86.74	90.845
Weiti_Contri	2	35.725	100	8.686	
Weiti_Contri2	1	50.344	0	11.093	11.649
Weiti_Contri2	2	2.65	100	1.012	
Weiti_Contri3	1	8.18	0	2.786	2.965
Weiti_Contri3	2	0.43	100	0.2	
Weiti_Contri4	1	10.257	0	3.26	3.46
Weiti_Contri4	2	0.54	100	0.251	
Weiti_Contri5	1	6.967	0	2.138	2.262
Weiti_Contri5	2	0.367	100	0.171	
Weiti_Contri6	1	3.806	0	1.401	1.493
Weiti_Contri6	2	0.2	100	0.093	
Weiti_Contri7	1	8.027	0	2.408	2.542
Weiti_Contri7	2	0.422	100	0.196	
Weiti_Contri8	1	43.618	0	16.124	17.18

Weiti_Contri8	2	2.296	100	1.067	
Weiti_Contri8.1	1	53.786	0	16.941	20.662
Weiti_Contri8.1	2	9.791	100	4.552	
Weiti_Contri9	1	153.161	0	27.975	29.333
Weiti_Contri9	2	8.061	100	2.652	
Weiti_Contri9.1	1	53.116	0	11.656	32.706
Weiti_Contri9.1	2	63.623	100	24.223	
Weiti_Contri9.2	1	36.459	0	11.773	18.564
Weiti_Contri9.2	2	16.152	100	7.509	
Weiti_Silverdale	1	417.491	0	57.896	60.652
Weiti_Silverdale	2	21.973	100	5.742	

XP STORM OUTPUTS - BASIC CONDUIT DATA (SCENARIO 19)

Name	Link Name	Length m	Shape	Diameter (Height) m	Downstream Invert Elevation m	Upstream Invert Elevation m
1	Culv_Link23.2_Mult	7.44	Circular	0.7	9.54	9.74
2	Culv_Link23.2_Mult	7.44	Circular	0.7	8.83	8.92
3	Culv_Link23.2_Mult	7.44	Circular	0.7	8.88	8.88
Bridge_KowhaiRd	Bridge_KowhaiRd	9.06	Natural	0	2.62	2.64
Bridge_KowhaiRd#w	Bridge_KowhaiRd					
Bridge_Lysnar	Bridge_Lysnar	3.41	Natural	0	4.32	4.46
Bridge_Lysnar#w	Bridge_Lysnar					
Bridge_MWAY	Bridge_MWAY	25.53	Natural	0	-0.74	-0.71
Bridge_WainuiRd	Bridge_WainuiRd	13.75	Natural	0	-0.47	-0.34
Bridge_WainuiRd#w	Bridge_WainuiRd					
Bridge_Weiti	Bridge_Weiti	15.16	Natural	0	9.83	11.6
Bridge_Weiti#w	Bridge_Weiti					
CUL_NZTA	CUL_NZTA	98.3	Circular	4.5	4.74	5.19
Culv_EX1500d	Culv_EX1500d	14.96	Circular	1.5	24.98	25.06
Culv_Ex1800	Culv_Ex1800	7.83	Natural	1.8	13.733	13.984
Culv_Link23.1	Culv_Link23.1	5.45	User Defined	0	6.16	6.17
Culv_LK101.1	Culv_LK101.1	20.01	Circular	1.5	22.77	22.85
Culv_LK113	Culv_LK113	5.15	Circular	0.6	17.24	17.39
Culv_LK126	Culv_LK126	12.62	Circular	0.9	23.78	23.88
Culv_LK136	Culv_LK136	12.44	Natural	0.9	21.75	21.83
Culv_Lk143	Culv_Lk143	29.72	Circular	0.6	34.8	36.54
Culv_Lk171	Culv_Lk171	92.64	Circular	2.55	6.76	7.99
Culv_Lk172	Culv_Lk172	13.41	Rectangular	2.35 x 3.7	9.34	9.62
Culv_Lk25.1.2	Culv_Lk25.1.2	10.5	Circular	1.85	4.45	4.66
Culv_LK46	Culv_LK46	12.49	Natural	1.2	19.84	19.98
Culv_Lk48.2	Culv_Lk48.2	2.38	Circular	0.6	15.08	15.19
Culv_LK58.1	Culv_LK58.1	7.9	Natural	1.85	10.83	11.17
Culv_Lk92.1	Culv_Lk92.1	15.41	Circular	1.2	14.27	14.45
CulvLK42.1	CulvLK42.1	5.72	Natural	1.05	20.83	20.92
CulvLK77.1	CulvLK77.1	23.45	Natural	0.45	14.78	14.81
CulvLK87.1	CulvLK87.1	5.02	Natural	0.6	20.22	20.45
Highgate.1	Highgate.1	168.1	Circular	1.6	15.63	19.08
Link10	Link10	141.49	Natural	0	0.16	0.67
Link101	Link101	202.17	Natural	0	29.841	33.066
Link101.1.1	Link101.1.1	206.54	Natural	0	18.287	21.611
Link101.1.2	Link101.1.2	100.39	Natural	0	21.611	22.77
Link101.2	Link101.2	277.81	Natural	0	22.85	29.841
Link103	Link103	137.17	Natural	0	19.051	19.113
Link11	Link11	113.22	Natural	0	0.22	0.16
Link112	Link112	92.55	Natural	0	4.782	4.883
Link114	Link114	69.17	Natural	0	16.58	17.24
Link115	Link115	104.95	Natural	0	15.508	16.58
Link116	Link116	147.29	Natural	0	13.93	15.508
Link117	Link117	125.09	Natural	0	10.56	13.982
Link118	Link118	33.24	Natural	0	17.643	17.945
Link12	Link12	75.88	Natural	0	-0.077	0.22
Link13	Link13	39.44	Natural	0	0.274	-0.077
Link135	Link135	48.58	Natural	0	22.069	22.464
Link137	Link137	31.81	Natural	0	21.435	21.756
Link138	Link138	56.01	Natural	0	20.868	21.435
Link139	Link139	87.01	Natural	0	19.58	20.868
Link14	Link14	70.07	Natural	0	0.004	0.274
Link140	Link140	112.52	Natural	0	18.333	19.58
Link141	Link141	59.69	Natural	0	17.915	18.333
Link15	Link15	93	Natural	0	-0.134	0.004
Link150	Link150	127.36	Natural	0	4.82	9.86
Link156	Link156	326.91	Natural	0	15.994	22.926
Link157	Link157	89.18	Natural	0	10.198	17.257

Link16	Link16	84.25	Natural	0	-0.12	-0.134
Link160	Link160	131.12	Natural	0	6.35	15.517
Link161	Link161	271.8	Natural	0	22.464	26.837
Link17	Link17	95.65	Natural	0	-0.25	-0.12
Link172	Link172	332.34	Natural	0	11.988	15.232
Link172.1	Link172.1	280.43	Natural	0	12.04	11.988
Link172.1.1.1	Link172.1.1.1	40.25	Natural	0	10.547	10.965
Link175	Link175	177.46	Natural	0	-0.9	-0.8
Link175.1	Link175.1	45.03	Natural	0	-1	-0.9
Link176	Link176	383.8	Natural	0	-1.15	-0.1
Link177	Link177	102.08	Natural	0	-1.24	-1.15
Link177.1	Link177.1	116.73	Natural	0	-1.28	-1.24
Link178	Link178	210.95	Natural	0	-1.3	-1.28
Link178.1	Link178.1	206.61	Natural	0	-1.34	-1.3
Link18	Link18	152.17	Natural	0	-0.25	-0.25
Link182	Link182	366.22	Natural	0	1.419	6.76
Link183	Link183	99.41	Natural	0	1.277	1.419
Link184	Link184	332.74	Natural	0	1.277	4.782
Link185	Link185	338.69	Natural	0	1.419	4.656
Link186	Link186	326.75	Natural	0	0.647	1.277
Link187	Link187	435.61	Natural	0	-0.016	0.647
Link188	Link188	458.5	Natural	0	0.03	-0.016
Link189	Link189	284.68	Natural	0	-0.285	0.03
Link190	Link190	185.13	Natural	0	-0.509	-0.285
Link191	Link191	397.39	Natural	0	-0.64	-0.51
Link191.1	Link191.1	413.61	Natural	0	-0.78	-0.64
Link192	Link192	208.09	Natural	0	-0.678	-0.776
Link193	Link193	154.24	Natural	0	4.883	4.74
Link19a	Link19a	133.6	Natural	0	-0.2	2.62
Link19a.1	Link19a.1	132.35	Natural	0	-0.52	-0.2
Link2	Link2	54.59	Natural	0	13.473	13.19
Link2.1	Link2.1	61.12	Natural	0	11.637	13.473
Link20	Link20	14.09	Natural	0	-0.34	-0.25
Link20.1	Link20.1	51.59	Natural	0	-0.52	-0.47
Link200	Link200	167.18	Natural	0	14.65	18.815
Link203	Link203	75.72	Natural	0	36.54	43.97
Link207	Link207	189.59	Natural	0	25.06	30.2
Link21	Link21	175.83	Natural	0	-0.71	-0.52
Link23	Link23	2.66	Natural	0	10.33	10.19
Link23.1.1	Link23.1.1	153.98	Natural	0	-0.25	4.68
Link23.1.2	Link23.1.2	116.74	Natural	0	4.68	6.16
Link23.2.1	Link23.2.1	154.99	Natural	0	6.17	8.83
Link23.3	Link23.3	161.13	Natural	0	8.88	10.33
Link25	Link25	72.62	Natural	0	4.51	5.87
Link25.1	Link25.1	37.03	Natural	0	4.66	4.51
Link25.1.1	Link25.1.1	13.53	Natural	0	3.99	4.45
Link3	Link3	108.63	Natural	0	10.849	11.637
Link31	Link31	91.63	Natural	0	15.59	15.86
Link31.1	Link31.1	465.46	Natural	0	11.7	13.69
Link31.2	Link31.2	386.31	Natural	0	13.69	14.77
Link31.3	Link31.3	194.9	Natural	0	14.77	15.32
Link31.4	Link31.4	93.24	Natural	0	15.32	15.59
Link32	Link32	865.06	Natural	0	8.908	11.7
Link32.1	Link32.1	688.18	Natural	0	5.132	8.908
Link33a	Link33a	198.81	Natural	0	4.09	5.13
Link33b	Link33b	137.99	Natural	0	3.57	4.09
Link33c	Link33c	147.58	Natural	0	2.64	3.57
Link39	Link39	56.29	Natural	0	22.81	23.78
Link4	Link4	78.42	Natural	0	8.575	10.849
Link4.1	Link4.1	97.95	Natural	0	5.04	8.103
Link4.2	Link4.2	82.58	Natural	0	8.103	8.575
Link40	Link40	58.73	Natural	0	22.311	22.81

Link41	Link41	78.25	Natural	0	21.52	22.311
Link42	Link42	79.01	Natural	0	20.92	21.52
Link43	Link43	48.21	Natural	0	20.551	20.83
Link44	Link44	17.22	Natural	0	19.98	20.551
Link45.1	Link45.1	95.72	Natural	0	17.97	18.11
Link45.1.1	Link45.1.1	47.86	Natural	0	17.9	17.97
Link45.1.1.1	Link45.1.1.1	47.86	Natural	0	17.83	17.9
Link45.2	Link45.2	114.74	Natural	0	18.114	19.84
Link46	Link46	32.11	Natural	0	16.882	17.83
Link46.1	Link46.1	27.5	Natural	0	17.239	16.882
Link47	Link47	113.64	Natural	0	15.25	17.239
Link48	Link48	55.74	Natural	0	15.19	15.25
Link48.1	Link48.1	65.21	Natural	0	14.14	15.08
Link49	Link49	70.45	Natural	0	13.19	14.143
Link5	Link5	60.92	Natural	0	4.82	5.04
Link5.1	Link5.1	39.19	Natural	0	4.59	4.82
Link53	Link53	69.15	Natural	0	17.237	18.287
Link54	Link54	41.08	Natural	0	16.873	17.237
Link54.1	Link54.1	15.06	Natural	0	16.432	16.873
Link55	Link55	116.8	Natural	0	14.65	16.432
Link55.1	Link55.1	64.57	Natural	0	13.984	14.65
Link56	Link56	17.49	Natural	0	13.652	13.733
Link56.1	Link56.1	60.44	Natural	0	13.027	13.652
Link57	Link57	66.25	Natural	0	12.015	13.027
Link58	Link58	76.81	Natural	0	13.103	12.015
Link59	Link59	91.29	Natural	0	9.04	10.83
Link6	Link6	61.11	Natural	0	4.56	4.59
Link6.1	Link6.1	44.98	Natural	0	4.46	4.56
Link6.1a	Link6.1a	26.8	Natural	0	3.99	4.32
Link60	Link60	111.63	Natural	0	5.87	9.04
Link65	Link65	384.85	Natural	0	17.146	19.051
Link66	Link66	169.44	Natural	0	15.994	17.146
Link66.1	Link66.1	174.58	Natural	0	13.72	14.769
Link66.1.1	Link66.1.1	177.17	Natural	0	12.039	13.72
Link66.2	Link66.2	173.2	Natural	0	14.769	15.994
Link67	Link67	134.88	Natural	0	11.6	12.039
Link67.1	Link67.1	284.75	Natural	0	10.198	11.895
Link68	Link68	335.52	Natural	0	9.055	10.198
Link69	Link69	55.84	Natural	0	9.439	9.055
Link69.1	Link69.1	226.86	Natural	0	8.3	9.439
Link7	Link7	51.83	Natural	0	1.258	3.99
Link70	Link70	143.23	Natural	0	7.11	8.3
Link71	Link71	77.14	Natural	0	6.35	7.11
Link71.1	Link71.1	163.65	Natural	0	6.315	7.11
Link71.2	Link71.2	82.49	Natural	0	7.11	6.35
Link72	Link72	38.13	Natural	0	6.404	6.315
Link72.1	Link72.1	39.12	Natural	0	5.19	6.2
Link74	Link74	122.63	Natural	0	28.994	34.8
Link74.1	Link74.1	245.26	Natural	0	20.836	26.368
Link74.2	Link74.2	122.63	Natural	0	26.368	28.994
Link75	Link75	89.68	Natural	0	18.293	19.441
Link76	Link76	138.38	Natural	0	16.371	18.293
Link77	Link77	47.66	Natural	0	15.15	16.371
Link77.1.1	Link77.1.1	40.12	Natural	0	14.23	14.78
Link78	Link78	51.92	Natural	0	11.74	14.23
Link79	Link79	96.79	Natural	0	9.86	11.74
Link8	Link8	77.32	Natural	0	0.19	1.258
Link81	Link81	37.06	Natural	0	23.846	24.86
Link82	Link82	116.13	Natural	0	18.818	23.846
Link83	Link83	40.79	Natural	0	16.432	18.818
Link87	Link87	56.35	Natural	0	20.22	20.91
Link87.1a	Link87.1a	28.31	Natural	0	19.98	20.22

Link89	Link89	156.52	Natural	0	22.531	24.98
Link89.1	Link89.1	135.63	Natural	0	20.91	22.531
Link9	Link9	130.9	Natural	0	0.67	0.19
Link92	Link92	76.63	Natural	0	14.72	15.63
Link92.1.1	Link92.1.1	60.87	Natural	0	12.66	14.27
Link94	Link94	126.39	Natural	0	10.56	12.66
Link95	Link95	22.06	Natural	0	10.19	10.56
Orewa	Orewa	20.73	Natural	0	-0.8	-0.74

XP STORM OUTPUTS - JUNCTION DATA (SCENARIO 19)

Name	Node Name	Invert Elevation m	Node X	Node Y	Ponding Type	Inlet Capacity Type
Weiti_Silverdale	Weiti_Silverdale	4.656	391146.039	828521.651	Link Invert to 2D	Maximum Capacity
Weiti_Contri9.2	Weiti_Contri9.2	-0.78	393176.511	829015.146	Link Invert to 2D	Maximum Capacity
Weiti_Contri9.1	Weiti_Contri9.1	-0.64	392841.08	828814.576	Link Invert to 2D	Maximum Capacity
Weiti_Contri9	Weiti_Contri9	15.232	390539.344	828354.986	Link Invert to 2D	Maximum Capacity
Weiti_Contri8.1	Weiti_Contri8.1	0.647	391594.469	828893	Link Invert to 2D	Maximum Capacity
Weiti_Contri8	Weiti_Contri8	1.419	391273.799	828775.679	Link Invert to 2D	Maximum Capacity
Weiti_Contri7	Weiti_Contri7	6.2	390866.521	829103.717	Link Invert to 2D	Maximum Capacity
Weiti_Contri6	Weiti_Contri6	15.517	390632.979	828920.551	Link Invert to 2D	Maximum Capacity
Weiti_Contri5	Weiti_Contri5	9.439	390449.796	828990.714	Link Invert to 2D	Maximum Capacity
Weiti_Contri4	Weiti_Contri4	17.257	390276.888	828808.223	Link Invert to 2D	Maximum Capacity
Weiti_Contri3	Weiti_Contri3	13.72	389850.037	828720.837	Link Invert to 2D	Maximum Capacity
Weiti_Contri2	Weiti_Contri2	22.926	389616.84	828218.568	Link Invert to 2D	Maximum Capacity
Weiti_Contri	Weiti_Contri	19.113	389346.741	828164.723	Link Invert to 2D	Maximum Capacity
Weiti_C1	Weiti_C1	14.769	389753.249	828662.428	Link Invert to 2D	Maximum Capacity
Orewa_Contri9	Orewa_Contri9	4.09	390285.039	831507.218	Link Invert to 2D	Maximum Capacity
Orewa_Contri8	Orewa_Contri8	-0.2	390626.424	831271.403	Link Invert to 2D	Maximum Capacity
Orewa_Contri7	Orewa_Contri7	3.57	390377.523	831407.877	Link Invert to 2D	Maximum Capacity
Orewa_Contri6	Orewa_Contri6	5.13	390146.566	831642.474	Link Invert to 2D	Maximum Capacity
Orewa_Contri5	Orewa_Contri5	8.908	389660.232	831548.956	Link Invert to 2D	Maximum Capacity
Orewa_Contri4	Orewa_Contri4	11.7	389083.635	831225.761	Link Invert to 2D	Maximum Capacity
Orewa_C3	Orewa_C3	13.69	388756.013	830932.835	Link Invert to 2D	Maximum Capacity
Orewa Contri3	Orewa Contri3	14.77	388565.501	830677.966	Link Invert to 2D	Maximum Capacity
Orewa Contri2	Orewa Contri2	15.59	388350.139	830585.522	Link Invert to 2D	Maximum Capacity
Orewa Contri1	Orewa Contri1	15.86	388263.823	830565.82	Link Invert to 2D	Maximum Capacity
Orewa C2	Orewa C2	15.32	388430.922	830585.273	Link Invert to 2D	Maximum Capacity
Node97.1	Node97.1	22.531	389638.956	829276.626	Link Invert to 2D	Maximum Capacity
Node97	Node97	24.98	389560.25	829192.891	Link Invert to 2D	Maximum Capacity
Node96	Node96	25.06	389546.04	829197.565	Link Invert to 2D	Maximum Capacity
Node95.1a	Node95.1a	20.22	389778.418	829339.137	Link Invert to 2D	Maximum Capacity
Node95.1	Node95.1	20.22	389774.744	829342.565	Link Invert to 2D	Maximum Capacity
Node95	Node95	20.91	389744.113	829324.369	Link Invert to 2D	Maximum Capacity
Node91	Node91	18.818	389296.699	830347.944	Link Invert to 2D	Maximum Capacity
Node90	Node90	23.846	389182.093	830362.075	Link Invert to 2D	Maximum Capacity
Node9	Node9	3.99	390003.36	830473.919	Link Invert to 2D	Maximum Capacity
Node89	Node89	24.86	389148.187	830372.404	Link Invert to 2D	Maximum Capacity
Node88	Node88	9.86	389902.906	830232.576	Link Invert to 2D	Maximum Capacity
Node87	Node87	11.74	389813.454	830214.091	Link Invert to 2D	Maximum Capacity
Node86	Node86	14.23	389773.508	830180.966	Link Invert to 2D	Maximum Capacity
Node85.1.1	Node85.1.1	14.78	389756.101	830144.817	Link Invert to 2D	Maximum Capacity
Node85.1	Node85.1	14.81	389740.551	830127.262	Link Invert to 2D	Maximum Capacity
Node85	Node85	16.371	389722.053	830083.34	Link Invert to 2D	Maximum Capacity
Node84	Node84	18.293	389662.074	829961.1	Link Invert to 2D	Maximum Capacity
Node83	Node83	19.441	389602.462	829896.157	Link Invert to 2D	Maximum Capacity
Node82.2	Node82.2	28.994	389300.418	829784.319	Link Invert to 2D	Maximum Capacity
Node82.1	Node82.1	26.368	389394.601	829844.178	Link Invert to 2D	Maximum Capacity

Node82	Node82	34.8	389292.649	829664.986	Link Invert to 2D	Maximum Capacity
Node80	Node80	5.19	390900.4	829099.932	Link Invert to 2D	Maximum Capacity
Node8.1.1.1	Node8.1.1.1	4.32	390007.196	830447.784	Link Invert to 2D	Maximum Capacity
Node8.1.1	Node8.1.1	4.46	390006.175	830444.532	Link Invert to 2D	Maximum Capacity
Node8.1	Node8.1	4.56	390001.515	830399.956	Link Invert to 2D	Maximum Capacity
Node8	Node8	4.59	389998.384	830343.08	Link Invert to 2D	Maximum Capacity
Node79	Node79	6.315	390831.54	829107.537	Link Invert to 2D	Maximum Capacity
Node78.2	Node78.2	6.35	390716.455	828981.236	Link Invert to 2D	Maximum Capacity
Node78.1	Node78.1	7.11	390765.2	829001.294	Link Invert to 2D	Maximum Capacity
Node78	Node78	7.11	390683.738	829036.302	Link Invert to 2D	Maximum Capacity
Node77	Node77	8.3	390574.816	829048.966	Link Invert to 2D	Maximum Capacity
Node76	Node76	9.055	390403.128	828968.39	Link Invert to 2D	Maximum Capacity
Node75	Node75	10.198	390227.444	828871.677	Link Invert to 2D	Maximum Capacity
Node74.2	Node74.2	11.6	390066.018	828829.077	Link Invert to 2D	Maximum Capacity
Node74.1	Node74.1	9.83	390068.106	828844.096	Link Invert to 2D	Maximum Capacity
Node74	Node74	12.039	389987.849	828799.277	Link Invert to 2D	Maximum Capacity
Node73.1	Node73.1	15.994	389673.745	828527.036	Link Invert to 2D	Maximum Capacity
Node73	Node73	17.146	389541.656	828505.942	Link Invert to 2D	Maximum Capacity
Node72	Node72	19.051	389321.668	828257.5	Link Invert to 2D	Maximum Capacity
Node61	Node61	9.04	389759.707	830461.047	Link Invert to 2D	Maximum Capacity
Node60	Node60	10.83	389670.982	830472.569	Link Invert to 2D	Maximum Capacity
Node6.2	Node6.2	8.575	390105.058	830116.041	Link Invert to 2D	Maximum Capacity
Node6.1	Node6.1	8.103	390047.33	830160.953	Link Invert to 2D	Maximum Capacity
Node6	Node6	10.849	390122.582	830049.539	Link Invert to 2D	Maximum Capacity
Node59.1	Node59.1	11.17	389663.227	830471.068	Link Invert to 2D	Maximum Capacity
Node59	Node59	12.015	389598.735	830459.228	Link Invert to 2D	Maximum Capacity
Node58	Node58	13.027	389562.004	830419.89	Link Invert to 2D	Maximum Capacity
Node57.1	Node57.1	13.652	389520.745	830390.58	Link Invert to 2D	Maximum Capacity
Node57	Node57	13.733	389505.49	830382.026	Link Invert to 2D	Maximum Capacity
Node56.2	Node56.2	14.65	389440.835	830364.371	Link Invert to 2D	Maximum Capacity
Node56.1	Node56.1	13.984	389498.551	830378.391	Link Invert to 2D	Maximum Capacity
Node56	Node56	16.432	389336.173	830354.135	Link Invert to 2D	Maximum Capacity
Node55.1	Node55.1	16.873	389334.759	830339.766	Link Invert to 2D	Maximum Capacity
Node55	Node55	17.237	389305.867	830312.606	Link Invert to 2D	Maximum Capacity
Node54	Node54	18.287	389254.992	830274.073	Link Invert to 2D	Maximum Capacity
Node50	Node50	14.14	390101.888	829797.933	Link Invert to 2D	Maximum Capacity
Node5	Node5	11.637	390135.622	829945.409	Link Invert to 2D	Maximum Capacity
Node49.2	Node49.2	15.19	390096.748	829731.925	Link Invert to 2D	Maximum Capacity
Node49.1	Node49.1	15.08	390096.026	829734.191	Link Invert to 2D	Maximum Capacity
Node49	Node49	15.25	390108.692	829694.422	Link Invert to 2D	Maximum Capacity
Node48	Node48	17.239	390048.943	829610.74	Link Invert to 2D	Maximum Capacity
Node47.1	Node47.1	16.882	390035.963	829586.499	Link Invert to 2D	Maximum Capacity
Node47	Node47	17.83	390020.041	829558.612	Link Invert to 2D	Maximum Capacity
Node46.2	Node46.2	19.84	389814.117	829355.719	Link Invert to 2D	Maximum Capacity
Node46.1b	Node46.1b	17.9	389995.357	829517.609	Link Invert to 2D	Maximum Capacity
Node46.1a	Node46.1a	17.97	389971.566	829476.09	Link Invert to 2D	Maximum Capacity
Node46.1	Node46.1	18.11	389912.608	829413.981	Link Invert to 2D	Maximum Capacity
Node46	Node46	19.98	389804.147	829348.198	Link Invert to 2D	Maximum Capacity
Node45	Node45	20.551	389801.673	829332.1	Link Invert to 2D	Maximum Capacity
Node44	Node44	20.83	389777.726	829290.258	Link Invert to 2D	Maximum Capacity

Node43.1	Node43.1	20.92	389775.027	829285.21	Link Invert to 2D	Maximum Capacity
Node43	Node43	21.52	389735.503	829216.797	Link Invert to 2D	Maximum Capacity
Node42	Node42	22.311	389711.315	829144.066	Link Invert to 2D	Maximum Capacity
Node41	Node41	22.81	389685.814	829091.165	Link Invert to 2D	Maximum Capacity
Node40	Node40	23.78	389646.077	829051.292	Link Invert to 2D	Maximum Capacity
Node4.1	Node4.1	13.473	390139.264	829896.454	Link Invert to 2D	Maximum Capacity
Node4	Node4	13.19	390117.819	829855.792	Link Invert to 2D	Maximum Capacity
Node34.1	Node34.1	2.64	390495.833	831326.28	Link Invert to 2D	Maximum Capacity
Node29	Node29	-0.74	390914.635	831201.149	Link Invert to 2D	Maximum Capacity
Node28	Node28	-0.71	390889.117	831200.507	Link Invert to 2D	Maximum Capacity
Node27	Node27	-0.52	390716.358	831175.835	Link Invert to 2D	Maximum Capacity
Node26a	Node26a	2.62	390502.824	831320.516	Link Invert to 2D	Maximum Capacity
Node25.3	Node25.3	10.33	390600.069	830564.397	Link Invert to 2D	Maximum Capacity
Node25.2.1	Node25.2.1	8.83	390624.174	830721.768	Link Invert to 2D	Maximum Capacity
Node25.2	Node25.2	8.88	390622.999	830712.94	Link Invert to 2D	Maximum Capacity
Node25.1.2	Node25.1.2	6.16	390655.814	830860.117	Link Invert to 2D	Maximum Capacity
Node25.1.1	Node25.1.1	4.68	390689.475	830965.836	Link Invert to 2D	Maximum Capacity
Node25.1	Node25.1	6.17	390654.909	830854.759	Link Invert to 2D	Maximum Capacity
Node25	Node25	10.19	390597.981	830563.128	Link Invert to 2D	Maximum Capacity
Node22.1.2	Node22.1.2	4.66	389979.511	830473.164	Link Invert to 2D	Maximum Capacity
Node22.1.1	Node22.1.1	4.45	389989.974	830472.236	Link Invert to 2D	Maximum Capacity
Node22.1	Node22.1	4.51	389942.611	830473.624	Link Invert to 2D	Maximum Capacity
Node22	Node22	5.87	389871.336	830460.858	Link Invert to 2D	Maximum Capacity
Node21.2	Node21.2	-0.34	390707.67	831113.468	Link Invert to 2D	Maximum Capacity
Node21.1	Node21.1	-0.47	390715.127	831125.017	Link Invert to 2D	Maximum Capacity
Node21	Node21	-0.25	390698.628	831102.846	Link Invert to 2D	Maximum Capacity
Node209	Node209	43.97	389264.177	829584.071	Link Invert to 2D	Maximum Capacity
Node206	Node206	18.815	389353.844	830230.372	Link Invert to 2D	Maximum Capacity
Node203	Node203	34.96	389000.188	830307.602	Link Invert to 2D	Maximum Capacity
Node20	Node20	-0.25	390554.347	831108.65	Link Invert to 2D	Maximum Capacity
Node199	Node199	-0.678	393345.847	828972.505	Link Invert to 2D	Maximum Capacity
Node198	Node198	-0.51	392464.001	828796.297	Link Invert to 2D	Maximum Capacity
Node196	Node196	-0.285	392322.117	828895.377	Link Invert to 2D	Maximum Capacity
Node195	Node195	0.03	392098.433	828889.23	Link Invert to 2D	Maximum Capacity
Node194	Node194	-0.016	391899.237	828994.355	Link Invert to 2D	Maximum Capacity
Node192	Node192	1.277	391327.868	828850.408	Link Invert to 2D	Maximum Capacity
Node19	Node19	-0.12	390461.56	831088.471	Link Invert to 2D	Maximum Capacity
Node187	Node187	-1.34	392050.291	831561.049	Link Invert to 2D	Maximum Capacity
Node186	Node186	-1.28	391651.599	831489.29	Link Invert to 2D	Maximum Capacity
Node180.1.1.1	Node180.1.1.1	9.34	390874.93	828762.612	Link Invert to 2D	Maximum Capacity
Node180.1.1	Node180.1.1	9.62	390872.05	828749.519	Link Invert to 2D	Maximum Capacity
Node180.1	Node180.1	11.988	390658.86	828617.787	Link Invert to 2D	Maximum Capacity
Node18	Node18	-0.134	390404.117	831034.954	Link Invert to 2D	Maximum Capacity
Node179	Node179	6.76	390994.978	828787.897	Link Invert to 2D	Maximum Capacity
Node178	Node178	7.99	390902.335	828787.492	Link Invert to 2D	Maximum Capacity
Node17	Node17	0.004	390326.41	830996.417	Link Invert to 2D	Maximum Capacity
Node168	Node168	26.837	390627.699	829496.156	Link Invert to 2D	Maximum Capacity
Node161	Node161	29.993	389375.219	828939.943	Link Invert to 2D	Maximum Capacity
Node160.1	Node160.1	30.2	389372.452	829121.34	Link Invert to 2D	Maximum Capacity
Node160	Node160	36.06	389102.492	829047.246	Link Invert to 2D	Maximum Capacity

Node16	Node16	0.274	390259.45	830985.84	Link Invert to 2D	Maximum Capacity
Node159	Node159	44.824	389130.157	829523.01	Link Invert to 2D	Maximum Capacity
Node150	Node150	36.54	389283.652	829636.661	Link Invert to 2D	Maximum Capacity
Node15	Node15	-0.077	390239.982	830957.369	Link Invert to 2D	Maximum Capacity
Node149	Node149	18.333	390495.782	830049.403	Link Invert to 2D	Maximum Capacity
Node148	Node148	19.58	390505.475	829963.454	Link Invert to 2D	Maximum Capacity
Node147	Node147	20.868	390500.521	829881.384	Link Invert to 2D	Maximum Capacity
Node146	Node146	21.435	390502.851	829825.972	Link Invert to 2D	Maximum Capacity
Node145	Node145	21.75	390512.138	829795.544	Link Invert to 2D	Maximum Capacity
Node144	Node144	21.83	390515.505	829783.568	Link Invert to 2D	Maximum Capacity
Node143	Node143	22.464	390527.054	829736.499	Link Invert to 2D	Maximum Capacity
Node14	Node14	0.22	390221.859	830886.276	Link Invert to 2D	Maximum Capacity
Node134	Node134	23.88	389637.57	829041.964	Link Invert to 2D	Maximum Capacity
Node13	Node13	0.1603	390181.707	830808.359	Link Invert to 2D	Maximum Capacity
Node126	Node126	17.915	390507.197	830089.527	Link Invert to 2D	Maximum Capacity
Node125	Node125	13.93	390523.844	830437.416	Link Invert to 2D	Maximum Capacity
Node124	Node124	15.508	390497.396	830295.447	Link Invert to 2D	Maximum Capacity
Node123	Node123	16.58	390492.934	830190.884	Link Invert to 2D	Maximum Capacity
Node122	Node122	17.24	390500.816	830122.97	Link Invert to 2D	Maximum Capacity
Node121	Node121	17.39	390500.65	830117.826	Link Invert to 2D	Maximum Capacity
Node120	Node120	4.782	391132.149	828949.835	Link Invert to 2D	Maximum Capacity
Node12	Node12	0.67	390107.166	830696.479	Link Invert to 2D	Maximum Capacity
Node119	Node119	4.883	391084.228	828988.566	Link Invert to 2D	Maximum Capacity
Node11	Node11	0.19	390054.553	830588.569	Link Invert to 2D	Maximum Capacity
Node109.2	Node109.2	29.841	388826.55	829870.888	Link Invert to 2D	Maximum Capacity
Node109.1.2	Node109.1.2	22.77	388990.761	830118.588	Link Invert to 2D	Maximum Capacity
Node109.1.1	Node109.1.1	21.611	389076.916	830169.74	Link Invert to 2D	Maximum Capacity
Node109.1	Node109.1	22.85	388976.008	830105.067	Link Invert to 2D	Maximum Capacity
Node109	Node109	33.066	388814.038	829688.32	Link Invert to 2D	Maximum Capacity
Node108.1	Node108.1	4.82	390003.818	830304.98	Link Invert to 2D	Maximum Capacity
Node108	Node108	5.04	390014.062	830245.239	Link Invert to 2D	Maximum Capacity
Node105.1	Node105.1	-0.9	391100.667	831266.89	Link Invert to 2D	Maximum Capacity
Node105	Node105	-0.8	390934.933	831205.359	Link Invert to 2D	Maximum Capacity
Node104	Node104	4.74	390989.368	829058.139	Link Invert to 2D	Maximum Capacity
Node102	Node102	10.56	390587.268	830536.871	Link Invert to 2D	Maximum Capacity
Node100.2.1	Node100.2.1	14.27	390651.341	830378.777	Link Invert to 2D	Maximum Capacity
Node100.2	Node100.2	14.45	390661.171	830366.907	Link Invert to 2D	Maximum Capacity
Node100.1	Node100.1	12.66	390622.118	830426.675	Link Invert to 2D	Maximum Capacity
Node100	Node100	15.63	390694.008	830302.827	Link Invert to 2D	Maximum Capacity
Node10	Node10	1.258	390011.681	830524.418	Link Invert to 2D	Maximum Capacity
Millwater4	Millwater4	-1.3	391860.414	831519.05	Link Invert to 2D	Maximum Capacity
Millwater3	Millwater3	-1.24	391570.934	831410.567	Link Invert to 2D	Maximum Capacity
Millwater2	Millwater2	-1.15	391481.677	831387.439	Link Invert to 2D	Maximum Capacity
Millwater1	Millwater1	-1	391144.141	831278.612	Link Invert to 2D	Maximum Capacity
Highgate	Highgate	19.08	390760.744	830148.545	Link Invert to 2D	Maximum Capacity

XP STORM OUTPUTS -CHANNEL MANNINGS COEFFICENTS (SCENARIO 19)

Name	Main Channel Manning's n	Left Overbank Manning's n	Right Overbank Manning's n
Link50.1_SHP	0.06	0.08	0.08
Link51_SHP	0.06	0.08	0.08
Link110_SHP	0.06	0.08	0.08
Link49_SHP	0.06	0.08	0.08
Link78_SHP	0.06	0.08	0.08
Link101.2_SHP	0.06	0.08	0.08
Link101_SHP	0.06	0.08	0.08
Link114_SHP	0.06	0.08	0.08
Link115_SHP	0.06	0.08	0.08
Link77.1.1_SHP	0.06	0.08	0.08
Link103_SHP	0.06	0.08	0.08
Link79_SHP	0.06	0.08	0.08
Link6.1.1.1_SHP	0.06	0.08	0.08
Link48.1_SHP	0.06	0.08	0.08
Link156_SHP	0.06	0.08	0.08
Link33b_SHP	0.06	0.08	0.08
Link33c_SHP	0.06	0.08	0.08
Link182_SHP	0.06	0.08	0.08
Link183_SHP	0.06	0.08	0.08
Link185_SHP	0.06	0.08	0.08
Link186_SHP	0.06	0.08	0.08
Link187_SHP	0.06	0.08	0.08
Link190_SHP	0.06	0.08	0.08
Link192_SHP	0.06	0.08	0.08
Link172.1.1.1_SHP	0.06	0.08	0.08
Link172_SHP	0.06	0.08	0.08
Link172.1_SHP	0.06	0.08	0.08
Link189_SHP	0.06	0.08	0.08
Link188_SHP	0.06	0.08	0.08
Link177.1_SHP	0.06	0.08	0.08
Link178_SHP	0.06	0.08	0.08
Link178.1_SHP	0.06	0.08	0.08
Link92.1.1_SHP	0.06	0.08	0.08
Link160_SHP	0.06	0.08	0.08
Link65_SHP	0.06	0.08	0.08
Link66_SHP	0.06	0.08	0.08
Link66.2_SHP	0.06	0.08	0.08
Link66.1_SHP	0.06	0.08	0.08
Link66.1.1_SHP	0.06	0.08	0.08
Link67_SHP	0.06	0.08	0.08
Link67.1_SHP	0.06	0.08	0.08
Link157_SHP	0.06	0.08	0.08
Link68_SHP	0.06	0.08	0.08
Link69_SHP	0.06	0.08	0.08
Link69.1_SHP	0.06	0.08	0.08
Link70_SHP	0.06	0.08	0.08

Link71_SHP	0.06	0.08	0.08
Link71.2_SHP	0.06	0.08	0.08
Link71.1_SHP	0.06	0.08	0.08
Link72_SHP	0.06	0.08	0.08
Link193_SHP	0.06	0.08	0.08
Link112_SHP	0.06	0.08	0.08
Link184_SHP	0.06	0.08	0.08
Link191_SHP	0.06	0.08	0.08
Link191.1_SHP	0.06	0.08	0.08
Link20_SHP	0.06	0.08	0.08
Link31_SHP	0.06	0.08	0.08
Link31.4_SHP	0.06	0.08	0.08
Link31.3_SHP	0.06	0.08	0.08
Link31.2_SHP	0.06	0.08	0.08
Link31.1_SHP	0.06	0.08	0.08
Link32_SHP	0.06	0.08	0.08
Link32.1_SHP	0.06	0.08	0.08
Link33a_SHP	0.06	0.08	0.08
Link19a_SHP	0.06	0.08	0.08
Link177_SHP	0.06	0.08	0.08
Link176_SHP	0.06	0.08	0.08
Link175.1_SHP	0.06	0.08	0.08
Link117_SHP	0.06	0.08	0.08
Link92_SHP	0.06	0.08	0.08
Link60_SHP	0.06	0.08	0.08
Link72.1_SHP	0.06	0.08	0.08
Link4.1_SHP	0.06	0.08	0.08
Link150_SHP	0.06	0.08	0.08
Link5_SHP	0.06	0.08	0.08
Link6.1_SHP	0.06	0.08	0.08
Link25_SHP	0.06	0.08	0.08
Link7_SHP	0.06	0.08	0.08
Link9_SHP	0.06	0.08	0.08
Link10_SHP	0.06	0.08	0.08
Link11_SHP	0.06	0.08	0.08
Link12_SHP	0.06	0.08	0.08
Link116_SHP	0.06	0.08	0.08
Link94_SHP	0.06	0.08	0.08
Link95_SHP	0.06	0.08	0.08
Link23.1.1_SHP	0.06	0.08	0.08
Link203_SHP	0.06	0.08	0.08
Link55_SHP	0.06	0.08	0.08
Link54.1_SHP	0.06	0.08	0.08
Link83_SHP	0.06	0.08	0.08
Link59_SHP	0.06	0.08	0.08
Link4.2_SHP	0.06	0.08	0.08
Link4_SHP	0.06	0.08	0.08
Link3_SHP	0.06	0.08	0.08
Link2.1_SHP	0.06	0.08	0.08
Link2_SHP	0.06	0.08	0.08

Link48_SHP	0.06	0.08	0.08
Link47_SHP	0.06	0.08	0.08
Link14_SHP	0.06	0.08	0.08
Link15_SHP	0.06	0.08	0.08
Link16_SHP	0.06	0.08	0.08
Link17_SHP	0.06	0.08	0.08
Link18_SHP	0.06	0.08	0.08
Link19a.1_SHP	0.06	0.08	0.08
Link21_SHP	0.06	0.08	0.08
Orewa_SHP	0.06	0.08	0.08
Link175_SHP	0.06	0.08	0.08
Link20.1_SHP	0.06	0.08	0.08
Bridge_MWAY_SHP	0.06	0.08	0.08
Link207_SHP	0.06	0.08	0.08
Link101.1.2_SHP	0.06	0.08	0.08
Link101.1.1_SHP	0.06	0.08	0.08
Link53_SHP	0.06	0.08	0.08
Link54_SHP	0.06	0.08	0.08
Link81_SHP	0.06	0.08	0.08
Link82_SHP	0.06	0.08	0.08
Link200_SHP	0.06	0.08	0.08
Link55.1_SHP	0.06	0.08	0.08
Link56_SHP	0.06	0.08	0.08
CulvEx1800_SHP	0.06	0.08	0.08
Link56.1_SHP	0.06	0.08	0.08
Link57_SHP	0.06	0.08	0.08
Link58_SHP	0.06	0.08	0.08
Link74_SHP	0.06	0.08	0.08
Link74.2_SHP	0.06	0.08	0.08
Link76_SHP	0.06	0.08	0.08
Link77_SHP	0.06	0.08	0.08
Link89_SHP	0.06	0.08	0.08
Link89.1_SHP	0.06	0.08	0.08
Link87.1a_SHP	0.06	0.08	0.08
Link39_SHP	0.06	0.08	0.08
Link40_SHP	0.06	0.08	0.08
Link41_SHP	0.06	0.08	0.08
Link42_SHP	0.06	0.08	0.08
Link43_SHP	0.06	0.08	0.08
Link44_SHP	0.06	0.08	0.08
Link45.2_SHP	0.06	0.08	0.08
Link45.1_SHP	0.06	0.08	0.08
Link45.1.1_SHP	0.06	0.08	0.08
Link45.1.1.1_SHP	0.06	0.08	0.08
Link46_SHP	0.06	0.08	0.08
Link46.1_SHP	0.06	0.08	0.08
Link161_SHP	0.06	0.08	0.08
Link135_SHP	0.06	0.08	0.08
Link137_SHP	0.06	0.08	0.08
Link138_SHP	0.06	0.08	0.08

Link139_SHP	0.06	0.08	0.08
Link140_SHP	0.06	0.08	0.08
Link141_SHP	0.06	0.08	0.08
Link118_SHP	0.06	0.08	0.08
Link87_SHP	0.06	0.08	0.08
Link74.1_SHP	0.06	0.08	0.08
Link75_SHP	0.06	0.08	0.08
Link23.3_SHP	0.06	0.08	0.08
Link23_SHP	0.06	0.08	0.08
Link23.1.2_SHP	0.06	0.08	0.08
Link23.2.1_SHP	0.06	0.08	0.08

XP STORM OUTPUTS - RAIN + INFILTRATION (SCENARIO 19)

Name	Node Name	Catchment Number	Routing Method	Time of Concentration (or Parameter 2) min	Curve Number	Initial Abstraction Method	Initial Abstraction Depth mm
Highgate	User Inflow Hydrograph						
Millwater1	Millwater1	1	SCS Hydrology	42.865	74	Depth	5
Millwater1		2	SCS Hydrology	19.619	98	Depth	1
Millwater2	Millwater2	1	SCS Hydrology	17.559	74	Depth	5
Millwater2		2	SCS Hydrology	10	98	Depth	1
Millwater3	Millwater3	1	SCS Hydrology	25.389	74	Depth	5
Millwater3		2	SCS Hydrology	11.62	98	Depth	1
Millwater4	Millwater4	1	SCS Hydrology	18.281	74	Depth	5
Millwater4		2	SCS Hydrology	10	98	Depth	1
Node105.1	Node105.1	1	SCS Hydrology	11.355	74	Depth	5
Node105.1		2	SCS Hydrology	10	98	Depth	1
Node108	Node108	1	SCS Hydrology	19.148	74	Depth	5
Node108		2	SCS Hydrology	10	98	Depth	1
Node109	Node109	1	SCS Hydrology	19.587	74	Depth	5
Node109		2	SCS Hydrology	10	98	Depth	1
Node109.1.1	Node109.1.1	1	SCS Hydrology	16.849	74	Depth	5
Node109.1.1		2	SCS Hydrology	10	98	Depth	1
Node126	Node126	1	SCS Hydrology	13.414	74	Depth	5
Node126		2	SCS Hydrology	10	98	Depth	1
Node13	Node13	1	SCS Hydrology	15.445	74	Depth	5
Node13		2	SCS Hydrology	10	98	Depth	1
Node143	Node143	1	SCS Hydrology	12.498	74	Depth	5
Node143		2	SCS Hydrology	10	98	Depth	1
Node159	Node159	1	SCS Hydrology	10	74	Depth	5
Node159		2	SCS Hydrology	10	98	Depth	1
Node16	Node16	1	SCS Hydrology	22.993	74	Depth	5
Node16		2	SCS Hydrology	10.524	98	Depth	1
Node160	Node160	1	SCS Hydrology	15.447	74	Depth	5
Node160		2	SCS Hydrology	10	98	Depth	1
Node161	Node161	1	SCS Hydrology	13.566	74	Depth	5
Node161		2	SCS Hydrology	10	98	Depth	1
Node168	Node168	1	SCS Hydrology	30.23	74	Depth	5
Node168		2	SCS Hydrology	13.836	98	Depth	1
Node186	Node186	1	SCS Hydrology	10	74	Depth	5
Node186		2	SCS Hydrology	10	98	Depth	1
Node203	Node203	1	SCS Hydrology	10	74	Depth	5
Node203		2	SCS Hydrology	10	98	Depth	1
Node206	Node206	1	SCS Hydrology	10.871	74	Depth	5
Node206		2	SCS Hydrology	10	98	Depth	1
Node22	Node22	1	SCS Hydrology	12.812	74	Depth	5
Node22		2	SCS Hydrology	10	98	Depth	1
Node25.1	Node25.1	1	SCS Hydrology	23.294	74	Depth	5
Node25.1		2	SCS Hydrology	10.662	98	Depth	1
Node28	Node28	1	SCS Hydrology	15.755	74	Depth	5
Node28		2	SCS Hydrology	10	98	Depth	1
Node4	Node4	1	SCS Hydrology	11.009	74	Depth	5
Node4		2	SCS Hydrology	10	98	Depth	1
Node4.1	Node4.1	1	SCS Hydrology	13.243	74	Depth	5
Node4.1		2	SCS Hydrology	10	98	Depth	1
Node42	Node42	1	SCS Hydrology	14.23	74	Depth	5
Node42		2	SCS Hydrology	10	98	Depth	1
Node46.1	Node46.1	1	SCS Hydrology	20.509	74	Depth	5
Node46.1		2	SCS Hydrology	10	98	Depth	1
Node46.1a	Node46.1a	1	SCS Hydrology	33.712	74	Depth	5
Node46.1a		2	SCS Hydrology	15.43	98	Depth	1
Node46.1b	Node46.1b	1	SCS Hydrology	18.948	74	Depth	5
Node46.1b		2	SCS Hydrology	10	98	Depth	1
Node47	Node47	1	SCS Hydrology	16.084	74	Depth	5
Node47		2	SCS Hydrology	10	98	Depth	1
Node47.1	Node47.1	1	SCS Hydrology	20.281	74	Depth	5
Node47.1		2	SCS Hydrology	10	98	Depth	1
Node48	Node48	1	SCS Hydrology	16.241	74	Depth	5
Node48		2	SCS Hydrology	10	98	Depth	1
Node49	Node49	1	SCS Hydrology	15.649	74	Depth	5
Node49		2	SCS Hydrology	10	98	Depth	1
Node50	Node50	1	SCS Hydrology	19.208	74	Depth	5
Node50		2	SCS Hydrology	10	98	Depth	1
Node54	Node54	1	SCS Hydrology	12.533	74	Depth	5
Node54		2	SCS Hydrology	10	98	Depth	1

Node56	Node56	1	SCS Hydrology	10	74	Depth	5
Node56		2	SCS Hydrology	10	98	Depth	1
Node56.1	Node56.1	1	SCS Hydrology	13.484	74	Depth	5
Node56.1		2	SCS Hydrology	10	98	Depth	1
Node58	Node58	1	SCS Hydrology	10.062	74	Depth	5
Node58		2	SCS Hydrology	10	98	Depth	1
Node59	Node59	1	SCS Hydrology	13.033	74	Depth	5
Node59		2	SCS Hydrology	10	98	Depth	1
Node59.1	Node59.1	1	SCS Hydrology	11.001	74	Depth	5
Node59.1		2	SCS Hydrology	10	98	Depth	1
Node6	Node6	1	SCS Hydrology	10	74	Depth	5
Node6		2	SCS Hydrology	10	98	Depth	1
Node6.1	Node6.1	1	SCS Hydrology	10	74	Depth	5
Node6.1		2	SCS Hydrology	10	98	Depth	1
Node61	Node61	1	SCS Hydrology	15.29	74	Depth	5
Node61		2	SCS Hydrology	10	98	Depth	1
Node73	Node73	1	SCS Hydrology	23.018	74	Depth	5
Node73		2	SCS Hydrology	10.535	98	Depth	1
Node74	Node74	1	SCS Hydrology	10	74	Depth	5
Node74		2	SCS Hydrology	10	98	Depth	1
Node75	Node75	1	SCS Hydrology	15.139	74	Depth	5
Node75		2	SCS Hydrology	10	98	Depth	1
Node76	Node76	1	SCS Hydrology	10.71	74	Depth	5
Node76		2	SCS Hydrology	10	98	Depth	1
Node77	Node77	1	SCS Hydrology	12.425	74	Depth	5
Node77		2	SCS Hydrology	10	98	Depth	1
Node78	Node78	1	SCS Hydrology	15.505	74	Depth	5
Node78		2	SCS Hydrology	10	98	Depth	1
Node8	Node8	1	SCS Hydrology	10	74	Depth	5
Node8		2	SCS Hydrology	10	98	Depth	1
Node8.1	Node8.1	1	SCS Hydrology	16.268	74	Depth	5
Node8.1		2	SCS Hydrology	10	98	Depth	1
Node80	Node80	1	SCS Hydrology	16.141	74	Depth	5
Node80		2	SCS Hydrology	10	98	Depth	1
Node83	Node83	1	SCS Hydrology	18.276	74	Depth	5
Node83		2	SCS Hydrology	10	98	Depth	1
Node85.1	Node85.1	1	SCS Hydrology	11.044	74	Depth	5
Node85.1		2	SCS Hydrology	10	98	Depth	1
Node86	Node86	1	SCS Hydrology	11.627	74	Depth	5
Node86		2	SCS Hydrology	10	98	Depth	1
Node95	Node95	1	SCS Hydrology	13.741	74	Depth	5
Node95		2	SCS Hydrology	10	98	Depth	1
Node97.1	Node97.1	1	SCS Hydrology	10.87	74	Depth	5
Node97.1		2	SCS Hydrology	10	98	Depth	1
Orewa Contri1	Orewa Contri1	1	SCS Hydrology	54.785	74	Depth	5
Orewa Contri1		2	SCS Hydrology	25.075	98	Depth	1
Orewa Contri2	Orewa Contri2	1	SCS Hydrology	35.78	74	Depth	5
Orewa Contri2		2	SCS Hydrology	16.376	98	Depth	1
Orewa Contri3	Orewa Contri3	1	SCS Hydrology	24.612	74	Depth	5
Orewa Contri3		2	SCS Hydrology	11.265	98	Depth	1
Orewa_Contri4	Orewa_Contri4	1	SCS Hydrology	46.57	74	Depth	5
Orewa_Contri4		2	SCS Hydrology	21.315	98	Depth	1
Orewa_Contri5	Orewa_Contri5	1	SCS Hydrology	21.05	74	Depth	5
Orewa_Contri5		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri6	Orewa_Contri6	1	SCS Hydrology	10	74	Depth	5
Orewa_Contri6		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri7	Orewa_Contri7	1	SCS Hydrology	11.532	74	Depth	5
Orewa_Contri7		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri8	Orewa_Contri8	1	SCS Hydrology	10	74	Depth	5
Orewa_Contri8		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri9	Orewa_Contri9	1	SCS Hydrology	46.54	74	Depth	5
Orewa_Contri9		2	SCS Hydrology	21.302	98	Depth	1
Weiti_Contri	Weiti_Contri	1	SCS Hydrology	110.085	74	Depth	5
Weiti_Contri		2	SCS Hydrology	50.386	98	Depth	1
Weiti_Contri2	Weiti_Contri2	1	SCS Hydrology	40.504	74	Depth	5
Weiti_Contri2		2	SCS Hydrology	18.539	98	Depth	1
Weiti_Contri3	Weiti_Contri3	1	SCS Hydrology	14.794	74	Depth	5
Weiti_Contri3		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri4	Weiti_Contri4	1	SCS Hydrology	17.778	74	Depth	5
Weiti_Contri4		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri5	Weiti_Contri5	1	SCS Hydrology	19.417	74	Depth	5
Weiti_Contri5		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri6	Weiti_Contri6	1	SCS Hydrology	11.656	74	Depth	5
Weiti_Contri6		2	SCS Hydrology	10	98	Depth	1

Weiti_Contri7	Weiti_Contri7	1	SCS Hydrology	20.511	74	Depth	5
Weiti_Contri7		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri8	Weiti_Contri8	1	SCS Hydrology	11.5	74	Depth	5
Weiti_Contri8		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri8.1	Weiti_Contri8.1	1	SCS Hydrology	18.21	74	Depth	5
Weiti_Contri8.1		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri9	Weiti_Contri9	1	SCS Hydrology	58.199	74	Depth	5
Weiti_Contri9		2	SCS Hydrology	26.638	98	Depth	1
Weiti_Contri9.1	Weiti_Contri9.1	1	SCS Hydrology	40.85	74	Depth	5
Weiti_Contri9.1		2	SCS Hydrology	18.697	98	Depth	1
Weiti_Contri9.2	Weiti_Contri9.2	1	SCS Hydrology	17.067	74	Depth	5
Weiti_Contri9.2		2	SCS Hydrology	10	98	Depth	1
Weiti_Silverdale	Weiti_Silverdale	1	SCS Hydrology	95.448	74	Depth	5
Weiti_Silverdale		2	SCS Hydrology	43.686	98	Depth	1

SCENARIO 30– MPD

10YR EXISTING RAINFALL

XP STORM OUTPUTS - SUBCATCHMENT RESULTS (SCENARIO 30)

Name	Subcatchment	Area ha	Impervious Percentage %	Catchment Max Flow cms	Max Flow cms
Highgate	User Inflow Hydrograph				
Millwater1	1	32.805	0	3.062	14.306
Millwater1	2	60.924	100	12.189	
Millwater2	1	4.299	0	0.598	2.513
Millwater2	2	7.983	100	1.985	
Millwater3	1	9.505	0	1.134	5.094
Millwater3	2	17.651	100	4.223	
Millwater4	1	4.177	0	0.572	2.426
Millwater4	2	7.757	100	1.928	
Node105.1	1	5.859	0	0.948	2.491
Node105.1	2	6.258	100	1.556	
Node108	1	1.625	0	0.218	0.936
Node108	2	3.017	100	0.75	
Node109	1	21.531	0	2.866	12.356
Node109	2	39.986	100	9.941	
Node109.1.1	1	2.228	0	0.315	1.311
Node109.1.1	2	4.137	100	1.029	
Node126	1	6.505	0	0.998	3.958
Node126	2	12.082	100	3.004	
Node13	1	6.674	0	0.973	3.982
Node13	2	12.395	100	3.082	
Node143	1	3.728	0	0.585	2.29
Node143	2	6.923	100	1.721	
Node159	1	1.913	0	0.32	1.203
Node159	2	3.553	100	0.883	
Node16	1	11.96	0	1.488	6.638
Node16	2	22.211	100	5.446	
Node160	1	24.419	0	3.561	10.204
Node160	2	27.608	100	6.864	
Node161	1	9.235	0	1.411	5.61
Node161	2	17.151	100	4.264	
Node168	1	2.812	0	0.31	1.417
Node168	2	5.222	100	1.185	
Node186	1	7.744	0	1.296	4.184
Node186	2	11.617	100	2.888	
Node203	1	2.737	0	0.458	1.722
Node203	2	5.084	100	1.264	
Node206	1	2.338	0	0.383	1.459
Node206	2	4.342	100	1.079	
Node22	1	1.438	0	0.224	0.88
Node22	2	2.67	100	0.664	
Node25.1	1	11.235	0	1.391	6.21
Node25.1	2	20.865	100	5.096	
Node28	1	9.393	0	1.361	1.591
Node28	2	1.044	100	0.259	
Node4	1	1.21	0	0.198	0.755

Node4	2	2.248	100	0.559	
Node4.1	1	1.708	0	0.263	1.041
Node4.1	2	3.172	100	0.789	
Node42	1	3.5	0	0.526	2.112
Node42	2	6.499	100	1.616	
Node46.1	1	2.136	0	0.279	1.216
Node46.1	2	3.968	100	0.986	
Node46.1a	1	3.361	0	0.353	1.622
Node46.1a	2	6.241	100	1.366	
Node46.1b	1	1.495	0	0.202	0.863
Node46.1b	2	2.777	100	0.69	
Node47	1	3.728	0	0.536	2.211
Node47	2	6.924	100	1.721	
Node47.1	1	1.46	0	0.191	0.833
Node47.1	2	2.711	100	0.674	
Node48	1	1.835	0	0.263	1.086
Node48	2	3.407	100	0.847	
Node49	1	1.55	0	0.225	0.923
Node49	2	2.878	100	0.716	
Node50	1	1.937	0	0.26	1.115
Node50	2	3.597	100	0.894	
Node54	1	1.506	0	0.236	0.925
Node54	2	2.797	100	0.695	
Node56	1	1.426	0	0.239	0.897
Node56	2	2.648	100	0.658	
Node56.1	1	1.274	0	0.195	0.775
Node56.1	2	2.367	100	0.588	
Node58	1	1.072	0	0.179	0.674
Node58	2	1.991	100	0.495	
Node59	1	0.675	0	0.105	0.413
Node59	2	1.254	100	0.312	
Node59.1	1	1.537	0	0.251	0.958
Node59.1	2	2.853	100	0.709	
Node6	1	1.204	0	0.202	0.758
Node6	2	2.237	100	0.556	
Node6.1	1	1.238	0	0.207	0.779
Node6.1	2	2.299	100	0.572	
Node61	1	1.345	0	0.197	0.804
Node61	2	2.498	100	0.621	
Node73	1	6.658	0	0.828	3.694
Node73	2	12.365	100	3.031	
Node74	1	1.903	0	0.318	1.197
Node74	2	3.534	100	0.879	
Node75	1	1.543	0	0.227	0.923
Node75	2	2.866	100	0.712	
Node76	1	1.442	0	0.237	0.901
Node76	2	2.677	100	0.666	
Node77	1	1.492	0	0.235	0.917
Node77	2	2.771	100	0.689	
Node78	1	2.364	0	0.344	1.41

Node78	2	4.391	100	1.092	
Node8	1	1.366	0	0.228	0.859
Node8	2	2.536	100	0.631	
Node8.1	1	1.566	0	0.224	0.927
Node8.1	2	2.909	100	0.723	
Node80	1	1.995	0	0.287	1.182
Node80	2	3.704	100	0.921	
Node83	1	5.931	0	0.812	3.444
Node83	2	11.014	100	2.738	
Node85.1	1	1.115	0	0.182	0.695
Node85.1	2	2.071	100	0.515	
Node86	1	2.008	0	0.323	1.245
Node86	2	3.73	100	0.927	
Node95	1	1.4	0	0.213	0.849
Node95	2	2.601	100	0.647	
Node97.1	1	1.534	0	0.251	0.958
Node97.1	2	2.849	100	0.708	
Orewa Contri1	1	454.981	0	37.415	42.312
Orewa Contri1	2	50.553	100	9.16	
Orewa Contri2	1	65.329	0	6.66	7.559
Orewa Contri2	2	7.259	100	1.554	
Orewa Contri3	1	23.322	0	2.819	10.659
Orewa Contri3	2	35.055	100	8.453	
Orewa_Contri4	1	175.537	0	15.711	17.791
Orewa_Contri4	2	19.504	100	3.777	
Orewa_Contri5	1	23.133	0	2.989	3.421
Orewa_Contri5	2	2.57	100	0.639	
Orewa_Contri6	1	12.081	0	2.021	2.355
Orewa_Contri6	2	1.342	100	0.334	
Orewa_Contri7	1	9.002	0	1.45	1.696
Orewa_Contri7	2	1	100	0.249	
Orewa_Contri8	1	6.539	0	1.094	1.275
Orewa_Contri8	2	0.727	100	0.181	
Orewa_Contri9	1	29.314	0	2.625	12.334
Orewa_Contri9	2	54.44	100	10.545	
Weiti_Contri	1	620.56	0	34.676	40.788
Weiti_Contri	2	93.934	100	12.296	
Weiti_Contri2	1	47.695	0	4.579	5.189
Weiti_Contri2	2	5.299	100	1.085	
Weiti_Contri3	1	7.749	0	1.15	1.344
Weiti_Contri3	2	0.861	100	0.214	
Weiti_Contri4	1	9.717	0	1.345	1.561
Weiti_Contri4	2	1.08	100	0.268	
Weiti_Contri5	1	6.601	0	0.882	1.017
Weiti_Contri5	2	0.733	100	0.182	
Weiti_Contri6	1	3.605	0	0.579	0.677
Weiti_Contri6	2	0.401	100	0.1	
Weiti_Contri7	1	7.604	0	0.993	1.14
Weiti_Contri7	2	0.845	100	0.21	
Weiti_Contri8	1	17.579	0	2.834	9.836

Weiti_Contri8	2	28.335	100	7.044	
Weiti_Contri8.1	1	26.636	0	3.651	12.397
Weiti_Contri8.1	2	36.941	100	9.184	
Weiti_Contri9	1	145.1	0	11.554	13.055
Weiti_Contri9	2	16.122	100	2.847	
Weiti_Contri9.1	1	25.53	0	2.44	20.28
Weiti_Contri9.1	2	91.209	100	18.608	
Weiti_Contri9.2	1	34.015	0	4.778	9.016
Weiti_Contri9.2	2	18.596	100	4.623	
Weiti_Silverdale	1	175.745	0	10.65	43.588
Weiti_Silverdale	2	263.719	100	37.079	

XP STORM OUTPUTS - BASIC CONDUIT DATA (SCENARIO 30)

Name	Link Name	Length m	Shape	Diameter (Height) m	Downstream Invert Elevation m	Upstream Invert Elevation m
1	CULV_Link23.2_MU	7.44	Circular	0.7	9.54	9.74
2	CULV_Link23.2_MU	7.44	Circular	0.7	8.83	8.92
3	CULV_Link23.2_MU	7.44	Circular	0.7	8.88	8.88
Bridge_KowhaiRd	Bridge_KowhaiRd	9.06	Natural	0	2.62	2.64
Bridge_KowhaiRd#w	Bridge_KowhaiRd					
Bridge_Lysnar	Bridge_Lysnar	3.41	Natural	0	4.32	4.46
Bridge_Lysnar#w	Bridge_Lysnar					
Bridge_MWAY	Bridge_MWAY	25.53	Natural	0	-0.74	-0.71
Bridge_WainuiRd	Bridge_WainuiRd	13.75	Natural	0	-0.47	-0.34
Bridge_WainuiRd#w	Bridge_WainuiRd					
Bridge_Weiti	Bridge_Weiti	15.16	Natural	0	9.83	11.6
Bridge_Weiti#w	Bridge_Weiti					
CUL_NZTA	CUL_NZTA	98.3	Circular	4.5	4.74	5.19
Culv_EX1500d	Culv_EX1500d	14.96	Natural	1.5	24.98	25.06
Culv_Ex1800	Culv_Ex1800	7.83	Natural	1.8	13.733	13.984
CULV_Link23.1	CULV_Link23.1	5.45	User Defined	1.75	6.16	6.17
Culv_LK101.1	Culv_LK101.1	20.01	Natural	1.5	22.77	22.85
Culv_LK113	Culv_LK113	5.15	Circular	0.6	17.24	17.39
Culv_LK126	Culv_LK126	12.62	Natural	0.9	23.78	23.88
Culv_LK136	Culv_LK136	12.44	Natural	0.9	21.75	21.83
Culv_Lk143	Culv_Lk143	29.72	Natural	0.6	34.8	36.54
Culv_Lk171	Culv_Lk171	92.64	Circular	2.55	6.76	7.99
Culv_Lk172	Culv_Lk172	13.41	Rectangular	2.35 x 3.7	9.34	9.62
Culv_Lk25.1.2	Culv_Lk25.1.2	10.5	Circular	1.85	4.45	4.66
Culv_LK46	Culv_LK46	12.49	Natural	1.2	19.84	19.98
Culv_Lk48.2	Culv_Lk48.2	2.38	Circular	0.6	15.08	15.19
Culv_LK58.1	Culv_LK58.1	7.9	Natural	1.85	13.421	13.103
Culv_Lk92.1	Culv_Lk92.1	15.41	Circular	1.2	14.27	14.45
CulvLK42.1	CulvLK42.1	5.72	Natural	1.05	20.83	20.92
CulvLK77.1	CulvLK77.1	23.45	Natural	0.45	14.78	14.81
CulvLK87.1	CulvLK87.1	5.02	Natural	0.6	20.22	20.45
Highgate.1	Highgate.1	168.1	Circular	1.6	15.63	19.08
Link10	Link10	141.49	Natural	0	0.16	0.67
Link101	Link101	202.17	Natural	0	29.841	33.066
Link101.1.1	Link101.1.1	206.54	Natural	0	18.287	21.611
Link101.1.2	Link101.1.2	100.39	Natural	0	21.611	22.77
Link101.2	Link101.2	277.81	Natural	0	22.85	29.841
Link103	Link103	137.17	Natural	0	19.051	19.113
Link11	Link11	113.22	Natural	0	0.22	0.16
Link112	Link112	92.55	Natural	0	4.782	4.883
Link114	Link114	69.17	Natural	0	16.58	17.24
Link115	Link115	104.95	Natural	0	15.508	16.58
Link116	Link116	147.29	Natural	0	13.93	15.508
Link117	Link117	125.09	Natural	0	10.56	13.982
Link118	Link118	33.24	Natural	0	17.643	17.945
Link12	Link12	75.88	Natural	0	-0.077	0.22
Link13	Link13	39.44	Natural	0	0.274	-0.077
Link135	Link135	48.58	Natural	0	22.069	22.464
Link137	Link137	31.81	Natural	0	21.435	21.756
Link138	Link138	56.01	Natural	0	20.868	21.435
Link139	Link139	87.01	Natural	0	19.58	20.868
Link14	Link14	70.07	Natural	0	0.004	0.274
Link140	Link140	112.52	Natural	0	18.333	19.58
Link141	Link141	59.69	Natural	0	17.915	18.333
Link15	Link15	93	Natural	0	-0.134	0.004
Link150	Link150	127.36	Natural	0	4.82	9.86
Link156	Link156	326.91	Natural	0	15.994	22.926
Link157	Link157	89.18	Natural	0	10.198	17.257

Link16	Link16	84.25	Natural	0	-0.12	-0.134
Link160	Link160	131.12	Natural	0	6.35	15.517
Link161	Link161	271.8	Natural	0	22.464	26.837
Link17	Link17	95.65	Natural	0	-0.25	-0.12
Link172	Link172	332.34	Natural	0	11.988	15.232
Link172.1	Link172.1	280.43	Natural	0	12.04	11.988
Link172.1.1.1	Link172.1.1.1	40.25	Natural	0	10.547	10.965
Link175	Link175	177.46	Natural	0	-0.9	-0.8
Link175.1	Link175.1	45.03	Natural	0	-1	-0.9
Link176	Link176	383.8	Natural	0	-1.15	-0.1
Link177	Link177	102.08	Natural	0	-1.24	-1.15
Link177.1	Link177.1	116.73	Natural	0	-1.28	-1.24
Link178	Link178	210.95	Natural	0	-1.3	-1.28
Link178.1	Link178.1	206.61	Natural	0	-1.34	-1.3
Link18	Link18	152.17	Natural	0	-0.25	-0.25
Link182	Link182	366.22	Natural	0	1.419	6.76
Link183	Link183	99.41	Natural	0	1.277	1.419
Link184	Link184	332.74	Natural	0	1.277	4.782
Link185	Link185	338.69	Natural	0	1.419	4.656
Link186	Link186	326.75	Natural	0	0.647	1.277
Link187	Link187	435.61	Natural	0	-0.016	0.647
Link188	Link188	458.5	Natural	0	0.03	-0.016
Link189	Link189	284.68	Natural	0	-0.285	0.03
Link190	Link190	185.13	Natural	0	-0.509	-0.285
Link191	Link191	397.39	Natural	0	-0.64	-0.51
Link191.1	Link191.1	413.61	Natural	0	-0.78	-0.64
Link192	Link192	208.09	Natural	0	-0.678	-0.776
Link193	Link193	154.24	Natural	0	4.883	4.74
Link19a	Link19a	133.6	Natural	0	-0.2	2.62
Link19a.1	Link19a.1	132.35	Natural	0	-0.52	-0.2
Link2	Link2	54.59	Natural	0	13.473	13.19
Link2.1	Link2.1	61.12	Natural	0	11.637	13.473
Link20	Link20	14.09	Natural	0	-0.34	-0.25
Link20.1	Link20.1	51.59	Natural	0	-0.52	-0.47
Link200	Link200	167.18	Natural	0	14.65	18.815
Link203	Link203	75.72	Natural	0	36.54	43.97
Link207	Link207	189.59	Natural	0	25.06	30.2
Link21	Link21	175.83	Natural	0	-0.71	-0.52
Link23	Link23	2.66	Natural	0	10.33	10.19
Link23.1.1	Link23.1.1	153.98	Natural	0	-0.25	4.68
Link23.1.2	Link23.1.2	116.55	Natural	0	4.68	6.16
Link23.2.1	Link23.2.1	155.22	Natural	0	6.17	8.83
Link23.3	Link23.3	161.01	Natural	0	8.88	10.33
Link25	Link25	72.62	Natural	0	4.51	5.87
Link25.1	Link25.1	37.03	Natural	0	4.66	4.51
Link25.1.1	Link25.1.1	13.53	Natural	0	3.99	4.45
Link3	Link3	108.63	Natural	0	10.849	11.637
Link31	Link31	91.63	Natural	0	15.59	15.86
Link31.1	Link31.1	465.46	Natural	0	11.7	13.69
Link31.2	Link31.2	386.31	Natural	0	13.69	14.77
Link31.3	Link31.3	194.9	Natural	0	14.77	15.32
Link31.4	Link31.4	93.24	Natural	0	15.32	15.59
Link32	Link32	865.06	Natural	0	8.908	11.7
Link32.1	Link32.1	688.18	Natural	0	5.132	8.908
Link33a	Link33a	198.81	Natural	0	4.09	5.13
Link33b	Link33b	137.99	Natural	0	3.57	4.09
Link33c	Link33c	147.58	Natural	0	2.64	3.57
Link39	Link39	56.29	Natural	0	22.81	23.78
Link4	Link4	78.42	Natural	0	8.575	10.849
Link4.1	Link4.1	97.95	Natural	0	5.04	8.103
Link4.2	Link4.2	82.58	Natural	0	8.103	8.575
Link40	Link40	58.73	Natural	0	22.311	22.81

Link41	Link41	78.25	Natural	0	21.52	22.311
Link42	Link42	79.01	Natural	0	20.92	21.52
Link43	Link43	48.21	Natural	0	20.551	20.83
Link44	Link44	17.22	Natural	0	19.98	20.551
Link45.1	Link45.1	95.72	Natural	0	17.97	18.11
Link45.1.1	Link45.1.1	47.86	Natural	0	17.9	17.97
Link45.1.1.1	Link45.1.1.1	47.86	Natural	0	17.83	17.9
Link45.2	Link45.2	114.74	Natural	0	18.114	19.84
Link46	Link46	32.11	Natural	0	16.882	17.83
Link46.1	Link46.1	27.5	Natural	0	17.239	16.882
Link47	Link47	113.64	Natural	0	15.25	17.239
Link48	Link48	55.74	Natural	0	15.19	15.25
Link48.1	Link48.1	65.21	Natural	0	14.14	15.08
Link49	Link49	70.45	Natural	0	13.19	14.143
Link5	Link5	60.92	Natural	0	4.82	5.04
Link5.1	Link5.1	39.19	Natural	0	4.59	4.82
Link53	Link53	69.15	Natural	0	17.237	18.287
Link54	Link54	41.08	Natural	0	16.873	17.237
Link54.1	Link54.1	15.06	Natural	0	16.432	16.873
Link55	Link55	116.8	Natural	0	14.65	16.432
Link55.1	Link55.1	64.57	Natural	0	13.984	14.65
Link56	Link56	17.49	Natural	0	13.652	13.733
Link56.1	Link56.1	60.44	Natural	0	13.027	13.652
Link57	Link57	66.25	Natural	0	12.015	13.027
Link58	Link58	76.81	Natural	0	13.103	12.015
Link59	Link59	91.29	Natural	0	9.04	10.83
Link6	Link6	61.11	Natural	0	4.56	4.59
Link6.1	Link6.1	44.98	Natural	0	4.46	4.56
Link6.1a	Link6.1a	26.8	Natural	0	3.99	4.32
Link60	Link60	111.63	Natural	0	5.87	9.04
Link65	Link65	384.85	Natural	0	17.146	19.051
Link66	Link66	169.44	Natural	0	15.994	17.146
Link66.1	Link66.1	174.58	Natural	0	13.72	14.769
Link66.1.1	Link66.1.1	177.17	Natural	0	12.039	13.72
Link66.2	Link66.2	173.2	Natural	0	14.769	15.994
Link67	Link67	134.88	Natural	0	11.6	12.039
Link67.1	Link67.1	284.75	Natural	0	10.198	11.895
Link68	Link68	335.52	Natural	0	9.055	10.198
Link69	Link69	55.84	Natural	0	9.439	9.055
Link69.1	Link69.1	226.86	Natural	0	8.3	9.439
Link7	Link7	51.83	Natural	0	1.258	3.99
Link70	Link70	143.23	Natural	0	7.11	8.3
Link71	Link71	77.14	Natural	0	6.35	7.11
Link71.1	Link71.1	163.65	Natural	0	6.315	7.11
Link71.2	Link71.2	82.49	Natural	0	7.11	6.35
Link72	Link72	38.13	Natural	0	6.404	6.315
Link72.1	Link72.1	39.12	Natural	0	5.19	6.2
Link74	Link74	122.63	Natural	0	28.994	34.8
Link74.1	Link74.1	245.26	Natural	0	20.836	26.368
Link74.2	Link74.2	122.63	Natural	0	26.368	28.994
Link75	Link75	89.68	Natural	0	18.293	19.441
Link76	Link76	138.38	Natural	0	16.371	18.293
Link77	Link77	47.66	Natural	0	15.15	16.371
Link77.1.1	Link77.1.1	40.12	Natural	0	14.23	14.78
Link78	Link78	51.92	Natural	0	11.74	14.23
Link79	Link79	96.79	Natural	0	9.86	11.74
Link8	Link8	77.32	Natural	0	0.19	1.258
Link81	Link81	37.06	Natural	0	23.846	24.86
Link82	Link82	116.13	Natural	0	18.818	23.846
Link83	Link83	40.79	Natural	0	16.432	18.818
Link87	Link87	56.35	Natural	0	20.22	20.91
Link87.1a	Link87.1a	28.31	Natural	0	19.98	20.22

Link89	Link89	156.52	Natural	0	22.531	24.98
Link89.1	Link89.1	135.63	Natural	0	20.91	22.531
Link9	Link9	130.9	Natural	0	0.67	0.19
Link92	Link92	76.63	Natural	0	14.72	15.63
Link92.1.1	Link92.1.1	60.87	Natural	0	12.66	14.27
Link94	Link94	126.39	Natural	0	10.56	12.66
Link95	Link95	31.28	Natural	0	10.19	10.56
Orewa	Orewa	20.73	Natural	0	-0.8	-0.74

XP STORM OUTPUTS - JUNCTION DATA (SCENARIO 30)

Name	Node Name	Invert Elevation m	Node X	Node Y	Ponding Type	Inlet Capacity Type
Highgate	Highgate	19.08	390760.744	830148.545	Link Invert to 2D	Maximum Capacity
Millwater1	Millwater1	-1	391144.141	831278.612	Link Invert to 2D	Maximum Capacity
Millwater2	Millwater2	-1.15	391481.677	831387.439	Link Invert to 2D	Maximum Capacity
Millwater3	Millwater3	-1.24	391570.934	831410.567	Link Invert to 2D	Maximum Capacity
Millwater4	Millwater4	-1.3	391860.414	831519.05	Link Invert to 2D	Maximum Capacity
Node10	Node10	1.258	390011.681	830524.418	Link Invert to 2D	Maximum Capacity
Node100	Node100	15.63	390694.008	830302.827	Link Invert to 2D	Maximum Capacity
Node100.1	Node100.1	12.66	390622.118	830426.675	Link Invert to 2D	Maximum Capacity
Node100.2	Node100.2	14.45	390661.171	830366.907	Link Invert to 2D	Maximum Capacity
Node100.2.1	Node100.2.1	14.27	390651.341	830378.777	Link Invert to 2D	Maximum Capacity
Node102	Node102	10.56	390587.268	830536.871	Link Invert to 2D	Maximum Capacity
Node104	Node104	4.74	390989.368	829058.139	Link Invert to 2D	Maximum Capacity
Node105	Node105	-0.8	390934.933	831205.359	Link Invert to 2D	Maximum Capacity
Node105.1	Node105.1	-0.9	391100.667	831266.89	Link Invert to 2D	Maximum Capacity
Node108	Node108	5.04	390014.062	830245.239	Link Invert to 2D	Maximum Capacity
Node108.1	Node108.1	4.82	390003.818	830304.98	Link Invert to 2D	Maximum Capacity
Node109	Node109	33.066	388814.038	829688.32	Link Invert to 2D	Maximum Capacity
Node109.1	Node109.1	22.85	388976.008	830105.067	Link Invert to 2D	Maximum Capacity
Node109.1.1	Node109.1.1	21.611	389076.916	830169.74	Link Invert to 2D	Maximum Capacity
Node109.1.2	Node109.1.2	22.77	388990.761	830118.588	Link Invert to 2D	Maximum Capacity
Node109.2	Node109.2	29.841	388826.55	829870.888	Link Invert to 2D	Maximum Capacity
Node11	Node11	0.19	390054.553	830588.569	Link Invert to 2D	Maximum Capacity
Node119	Node119	4.883	391084.228	828988.566	Link Invert to 2D	Maximum Capacity
Node12	Node12	0.67	390107.166	830696.479	Link Invert to 2D	Maximum Capacity
Node120	Node120	4.782	391132.149	828949.835	Link Invert to 2D	Maximum Capacity
Node121	Node121	17.39	390500.65	830117.826	Link Invert to 2D	Maximum Capacity
Node122	Node122	17.24	390500.816	830122.97	Link Invert to 2D	Maximum Capacity
Node123	Node123	16.58	390492.934	830190.884	Link Invert to 2D	Maximum Capacity
Node124	Node124	15.508	390497.396	830295.447	Link Invert to 2D	Maximum Capacity
Node125	Node125	13.93	390523.844	830437.416	Link Invert to 2D	Maximum Capacity
Node126	Node126	17.915	390507.197	830089.527	Link Invert to 2D	Maximum Capacity
Node13	Node13	0.1603	390181.707	830808.359	Link Invert to 2D	Maximum Capacity
Node134	Node134	23.88	389637.57	829041.964	Link Invert to 2D	Maximum Capacity
Node14	Node14	0.22	390221.859	830886.276	Link Invert to 2D	Maximum Capacity
Node143	Node143	22.464	390527.054	829736.499	Link Invert to 2D	Maximum Capacity
Node144	Node144	21.83	390515.505	829783.568	Link Invert to 2D	Maximum Capacity
Node145	Node145	21.75	390512.138	829795.544	Link Invert to 2D	Maximum Capacity
Node146	Node146	21.435	390502.851	829825.972	Link Invert to 2D	Maximum Capacity
Node147	Node147	20.868	390500.521	829881.384	Link Invert to 2D	Maximum Capacity
Node148	Node148	19.58	390505.475	829963.454	Link Invert to 2D	Maximum Capacity
Node149	Node149	18.333	390495.782	830049.403	Link Invert to 2D	Maximum Capacity
Node15	Node15	-0.077	390239.982	830957.369	Link Invert to 2D	Maximum Capacity
Node150	Node150	36.54	389283.652	829636.661	Link Invert to 2D	Maximum Capacity
Node159	Node159	44.824	389130.157	829523.01	Link Invert to 2D	Maximum Capacity
Node16	Node16	0.274	390259.45	830985.84	Link Invert to 2D	Maximum Capacity

Node160	Node160	36.06	389102.492	829047.246	Link Invert to 2D	Maximum Capacity
Node160.1	Node160.1	30.2	389372.452	829121.34	Link Invert to 2D	Maximum Capacity
Node161	Node161	29.993	389375.219	828939.943	Link Invert to 2D	Maximum Capacity
Node168	Node168	26.837	390627.699	829496.156	Link Invert to 2D	Maximum Capacity
Node17	Node17	0.004	390326.41	830996.417	Link Invert to 2D	Maximum Capacity
Node178	Node178	7.99	390902.335	828787.492	Link Invert to 2D	Maximum Capacity
Node179	Node179	6.76	390994.978	828787.897	Link Invert to 2D	Maximum Capacity
Node18	Node18	-0.134	390404.117	831034.954	Link Invert to 2D	Maximum Capacity
Node180.1	Node180.1	11.988	390658.86	828617.787	Link Invert to 2D	Maximum Capacity
Node180.1.1	Node180.1.1	9.62	390872.05	828749.519	Link Invert to 2D	Maximum Capacity
Node180.1.1.1	Node180.1.1.1	9.34	390874.93	828762.612	Link Invert to 2D	Maximum Capacity
Node186	Node186	-1.28	391651.599	831489.29	Link Invert to 2D	Maximum Capacity
Node187	Node187	-1.34	392050.291	831561.049	Link Invert to 2D	Maximum Capacity
Node19	Node19	-0.12	390461.56	831088.471	Link Invert to 2D	Maximum Capacity
Node192	Node192	1.277	391327.868	828850.408	Link Invert to 2D	Maximum Capacity
Node194	Node194	-0.016	391899.237	828994.355	Link Invert to 2D	Maximum Capacity
Node195	Node195	0.03	392098.433	828889.23	Link Invert to 2D	Maximum Capacity
Node196	Node196	-0.285	392322.117	828895.377	Link Invert to 2D	Maximum Capacity
Node198	Node198	-0.51	392464.001	828796.297	Link Invert to 2D	Maximum Capacity
Node199	Node199	-0.678	393345.847	828972.505	Link Invert to 2D	Maximum Capacity
Node20	Node20	-0.25	390554.347	831108.65	Link Invert to 2D	Maximum Capacity
Node203	Node203	34.96	389000.188	830307.602	Link Invert to 2D	Maximum Capacity
Node206	Node206	18.815	389353.844	830230.372	Link Invert to 2D	Maximum Capacity
Node209	Node209	43.97	389264.177	829584.071	Link Invert to 2D	Maximum Capacity
Node21	Node21	-0.25	390698.628	831102.846	Link Invert to 2D	Maximum Capacity
Node21.1	Node21.1	-0.47	390715.127	831125.017	Link Invert to 2D	Maximum Capacity
Node21.2	Node21.2	-0.34	390707.67	831113.468	Link Invert to 2D	Maximum Capacity
Node22	Node22	5.87	389871.336	830460.858	Link Invert to 2D	Maximum Capacity
Node22.1	Node22.1	4.51	389942.611	830473.624	Link Invert to 2D	Maximum Capacity
Node22.1.1	Node22.1.1	4.45	389989.974	830472.236	Link Invert to 2D	Maximum Capacity
Node22.1.2	Node22.1.2	4.66	389979.511	830473.164	Link Invert to 2D	Maximum Capacity
Node25	Node25	10.19	390597.722	830562.939	Link Invert to 2D	Maximum Capacity
Node25.1	Node25.1	6.17	390655.161	830854.86	Link Invert to 2D	Maximum Capacity
Node25.1.1	Node25.1.1	4.68	390689.475	830965.836	Link Invert to 2D	Maximum Capacity
Node25.1.2	Node25.1.2	6.16	390655.689	830860.234	Link Invert to 2D	Maximum Capacity
Node25.2	Node25.2	8.88	390623.037	830712.51	Link Invert to 2D	Maximum Capacity
Node25.2.1	Node25.2.1	8.83	390624.239	830721.461	Link Invert to 2D	Maximum Capacity
Node25.3	Node25.3	10.33	390600.156	830564.113	Link Invert to 2D	Maximum Capacity
Node26a	Node26a	2.62	390502.824	831320.516	Link Invert to 2D	Maximum Capacity
Node27	Node27	-0.52	390716.358	831175.835	Link Invert to 2D	Maximum Capacity
Node28	Node28	-0.71	390889.117	831200.507	Link Invert to 2D	Maximum Capacity
Node29	Node29	-0.74	390914.635	831201.149	Link Invert to 2D	Maximum Capacity
Node34.1	Node34.1	2.64	390495.833	831326.28	Link Invert to 2D	Maximum Capacity
Node4	Node4	13.19	390117.819	829855.792	Link Invert to 2D	Maximum Capacity
Node4.1	Node4.1	13.473	390139.264	829896.454	Link Invert to 2D	Maximum Capacity
Node40	Node40	23.78	389646.077	829051.292	Link Invert to 2D	Maximum Capacity
Node41	Node41	22.81	389685.814	829091.165	Link Invert to 2D	Maximum Capacity
Node42	Node42	22.311	389711.315	829144.066	Link Invert to 2D	Maximum Capacity
Node43	Node43	21.52	389735.503	829216.797	Link Invert to 2D	Maximum Capacity
Node43.1	Node43.1	20.92	389775.027	829285.21	Link Invert to 2D	Maximum Capacity

Node44	Node44	20.83	389777.726	829290.258	Link Invert to 2D	Maximum Capacity
Node45	Node45	20.551	389801.673	829332.1	Link Invert to 2D	Maximum Capacity
Node46	Node46	19.98	389804.147	829348.198	Link Invert to 2D	Maximum Capacity
Node46.1	Node46.1	18.11	389912.608	829413.981	Link Invert to 2D	Maximum Capacity
Node46.1a	Node46.1a	17.97	389971.566	829476.09	Link Invert to 2D	Maximum Capacity
Node46.1b	Node46.1b	17.9	389995.357	829517.609	Link Invert to 2D	Maximum Capacity
Node46.2	Node46.2	19.84	389814.117	829355.719	Link Invert to 2D	Maximum Capacity
Node47	Node47	17.83	390020.041	829558.612	Link Invert to 2D	Maximum Capacity
Node47.1	Node47.1	16.882	390035.963	829586.499	Link Invert to 2D	Maximum Capacity
Node48	Node48	17.239	390048.943	829610.74	Link Invert to 2D	Maximum Capacity
Node49	Node49	15.25	390108.692	829694.422	Link Invert to 2D	Maximum Capacity
Node49.1	Node49.1	15.08	390096.026	829734.191	Link Invert to 2D	Maximum Capacity
Node49.2	Node49.2	15.19	390096.748	829731.925	Link Invert to 2D	Maximum Capacity
Node5	Node5	11.637	390135.622	829945.409	Link Invert to 2D	Maximum Capacity
Node50	Node50	14.14	390101.888	829797.933	Link Invert to 2D	Maximum Capacity
Node54	Node54	18.287	389254.992	830274.073	Link Invert to 2D	Maximum Capacity
Node55	Node55	17.237	389305.867	830312.606	Link Invert to 2D	Maximum Capacity
Node55.1	Node55.1	16.873	389334.759	830339.766	Link Invert to 2D	Maximum Capacity
Node56	Node56	16.432	389336.173	830354.135	Link Invert to 2D	Maximum Capacity
Node56.1	Node56.1	13.984	389498.551	830378.391	Link Invert to 2D	Maximum Capacity
Node56.2	Node56.2	14.65	389440.835	830364.371	Link Invert to 2D	Maximum Capacity
Node57	Node57	13.733	389505.49	830382.026	Link Invert to 2D	Maximum Capacity
Node57.1	Node57.1	13.652	389520.745	830390.58	Link Invert to 2D	Maximum Capacity
Node58	Node58	13.027	389562.004	830419.89	Link Invert to 2D	Maximum Capacity
Node59	Node59	12.015	389598.735	830459.228	Link Invert to 2D	Maximum Capacity
Node59.1	Node59.1	11.17	389663.227	830471.068	Link Invert to 2D	Maximum Capacity
Node6	Node6	10.849	390122.582	830049.539	Link Invert to 2D	Maximum Capacity
Node6.1	Node6.1	8.103	390047.33	830160.953	Link Invert to 2D	Maximum Capacity
Node6.2	Node6.2	8.575	390105.058	830116.041	Link Invert to 2D	Maximum Capacity
Node60	Node60	10.83	389670.982	830472.569	Link Invert to 2D	Maximum Capacity
Node61	Node61	9.04	389759.707	830461.047	Link Invert to 2D	Maximum Capacity
Node72	Node72	19.051	389321.668	828257.5	Link Invert to 2D	Maximum Capacity
Node73	Node73	17.146	389541.656	828505.942	Link Invert to 2D	Maximum Capacity
Node73.1	Node73.1	15.994	389673.745	828527.036	Link Invert to 2D	Maximum Capacity
Node74	Node74	12.039	389987.849	828799.277	Link Invert to 2D	Maximum Capacity
Node74.1	Node74.1	9.83	390068.106	828844.096	Link Invert to 2D	Maximum Capacity
Node74.2	Node74.2	11.6	390066.018	828829.077	Link Invert to 2D	Maximum Capacity
Node75	Node75	10.198	390227.444	828871.677	Link Invert to 2D	Maximum Capacity
Node76	Node76	9.055	390403.128	828968.39	Link Invert to 2D	Maximum Capacity
Node77	Node77	8.3	390574.816	829048.966	Link Invert to 2D	Maximum Capacity
Node78	Node78	7.11	390683.738	829036.302	Link Invert to 2D	Maximum Capacity
Node78.1	Node78.1	7.11	390765.2	829001.294	Link Invert to 2D	Maximum Capacity
Node78.2	Node78.2	6.35	390716.455	828981.236	Link Invert to 2D	Maximum Capacity
Node79	Node79	6.315	390831.54	829107.537	Link Invert to 2D	Maximum Capacity
Node8	Node8	4.59	389998.384	830343.08	Link Invert to 2D	Maximum Capacity
Node8.1	Node8.1	4.56	390001.515	830399.956	Link Invert to 2D	Maximum Capacity
Node8.1.1	Node8.1.1	4.46	390006.175	830444.532	Link Invert to 2D	Maximum Capacity
Node8.1.1.1	Node8.1.1.1	4.32	390007.196	830447.784	Link Invert to 2D	Maximum Capacity
Node80	Node80	5.19	390900.4	829099.932	Link Invert to 2D	Maximum Capacity
Node82	Node82	34.8	389292.649	829664.986	Link Invert to 2D	Maximum Capacity

Node82.1	Node82.1	26.368	389394.601	829844.178	Link Invert to 2D	Maximum Capacity
Node82.2	Node82.2	28.994	389300.418	829784.319	Link Invert to 2D	Maximum Capacity
Node83	Node83	19.441	389602.462	829896.157	Link Invert to 2D	Maximum Capacity
Node84	Node84	18.293	389662.074	829961.1	Link Invert to 2D	Maximum Capacity
Node85	Node85	16.371	389722.053	830083.34	Link Invert to 2D	Maximum Capacity
Node85.1	Node85.1	14.81	389740.551	830127.262	Link Invert to 2D	Maximum Capacity
Node85.1.1	Node85.1.1	14.78	389756.101	830144.817	Link Invert to 2D	Maximum Capacity
Node86	Node86	14.23	389773.508	830180.966	Link Invert to 2D	Maximum Capacity
Node87	Node87	11.74	389813.454	830214.091	Link Invert to 2D	Maximum Capacity
Node88	Node88	9.86	389902.906	830232.576	Link Invert to 2D	Maximum Capacity
Node89	Node89	24.86	389148.187	830372.404	Link Invert to 2D	Maximum Capacity
Node9	Node9	3.99	390003.36	830473.919	Link Invert to 2D	Maximum Capacity
Node90	Node90	23.846	389182.093	830362.075	Link Invert to 2D	Maximum Capacity
Node91	Node91	18.818	389296.699	830347.944	Link Invert to 2D	Maximum Capacity
Node95	Node95	20.91	389744.113	829324.369	Link Invert to 2D	Maximum Capacity
Node95.1	Node95.1	20.22	389774.744	829342.565	Link Invert to 2D	Maximum Capacity
Node95.1a	Node95.1a	20.22	389778.418	829339.137	Link Invert to 2D	Maximum Capacity
Node96	Node96	25.06	389546.04	829197.565	Link Invert to 2D	Maximum Capacity
Node97	Node97	24.98	389560.25	829192.891	Link Invert to 2D	Maximum Capacity
Node97.1	Node97.1	22.531	389638.956	829276.626	Link Invert to 2D	Maximum Capacity
Orewa C2	Orewa C2	15.32	388430.922	830585.273	Link Invert to 2D	Maximum Capacity
Orewa Contri1	Orewa Contri1	15.86	388263.823	830565.82	Link Invert to 2D	Maximum Capacity
Orewa Contri2	Orewa Contri2	15.59	388350.139	830585.522	Link Invert to 2D	Maximum Capacity
Orewa Contri3	Orewa Contri3	14.77	388565.501	830677.966	Link Invert to 2D	Maximum Capacity
Orewa_C3	Orewa_C3	13.69	388756.013	830932.835	Link Invert to 2D	Maximum Capacity
Orewa_Contri4	Orewa_Contri4	11.7	389083.635	831225.761	Link Invert to 2D	Maximum Capacity
Orewa_Contri5	Orewa_Contri5	8.908	389660.232	831548.956	Link Invert to 2D	Maximum Capacity
Orewa_Contri6	Orewa_Contri6	5.13	390146.566	831642.474	Link Invert to 2D	Maximum Capacity
Orewa_Contri7	Orewa_Contri7	3.57	390377.523	831407.877	Link Invert to 2D	Maximum Capacity
Orewa_Contri8	Orewa_Contri8	-0.2	390626.424	831271.403	Link Invert to 2D	Maximum Capacity
Orewa_Contri9	Orewa_Contri9	4.09	390285.039	831507.218	Link Invert to 2D	Maximum Capacity
Weiti_C1	Weiti_C1	14.769	389753.249	828662.428	Link Invert to 2D	Maximum Capacity
Weiti_Contri	Weiti_Contri	19.113	389346.741	828164.723	Link Invert to 2D	Maximum Capacity
Weiti_Contri2	Weiti_Contri2	22.926	389616.84	828218.568	Link Invert to 2D	Maximum Capacity
Weiti_Contri3	Weiti_Contri3	13.72	389850.037	828720.837	Link Invert to 2D	Maximum Capacity
Weiti_Contri4	Weiti_Contri4	17.257	390276.888	828808.223	Link Invert to 2D	Maximum Capacity
Weiti_Contri5	Weiti_Contri5	9.439	390449.796	828990.714	Link Invert to 2D	Maximum Capacity
Weiti_Contri6	Weiti_Contri6	15.517	390632.979	828920.551	Link Invert to 2D	Maximum Capacity
Weiti_Contri7	Weiti_Contri7	6.2	390866.521	829103.717	Link Invert to 2D	Maximum Capacity
Weiti_Contri8	Weiti_Contri8	1.419	391273.799	828775.679	Link Invert to 2D	Maximum Capacity
Weiti_Contri8.1	Weiti_Contri8.1	0.647	391594.469	828893	Link Invert to 2D	Maximum Capacity
Weiti_Contri9	Weiti_Contri9	15.232	390539.344	828354.986	Link Invert to 2D	Maximum Capacity
Weiti_Contri9.1	Weiti_Contri9.1	-0.64	392841.08	828814.576	Link Invert to 2D	Maximum Capacity
Weiti_Contri9.2	Weiti_Contri9.2	-0.78	393176.511	829015.146	Link Invert to 2D	Maximum Capacity
Weiti_Silverdale	Weiti_Silverdale	4.656	391146.039	828521.651	Link Invert to 2D	Maximum Capacity

XP STORM OUTPUTS -CHANNEL MANNINGS COEFFICENTS (SCENARIO 30)

Name	Main Channel Manning's n	Left Overbank Manning's n	Right Overbank Manning's n
Link50.1_SHP	0.06	0.08	0.08
Link51_SHP	0.06	0.08	0.08
Link110_SHP	0.06	0.08	0.08
Link49_SHP	0.06	0.08	0.08
Link78_SHP	0.06	0.08	0.08
Link101.2_SHP	0.06	0.08	0.08
Link101_SHP	0.06	0.08	0.08
Link114_SHP	0.06	0.08	0.08
Link115_SHP	0.06	0.08	0.08
Link77.1.1_SHP	0.06	0.08	0.08
Link103_SHP	0.06	0.08	0.08
Link79_SHP	0.06	0.08	0.08
Link6.1.1.1_SHP	0.06	0.08	0.08
Link48.1_SHP	0.06	0.08	0.08
Link156_SHP	0.06	0.08	0.08
Link33b_SHP	0.06	0.08	0.08
Link33c_SHP	0.06	0.08	0.08
Link182_SHP	0.06	0.08	0.08
Link183_SHP	0.06	0.08	0.08
Link185_SHP	0.06	0.08	0.08
Link186_SHP	0.06	0.08	0.08
Link187_SHP	0.06	0.08	0.08
Link190_SHP	0.06	0.08	0.08
Link192_SHP	0.06	0.08	0.08
Link172.1.1.1_SHP	0.06	0.08	0.08
Link172_SHP	0.06	0.08	0.08
Link172.1_SHP	0.06	0.08	0.08
Link189_SHP	0.06	0.08	0.08
Link188_SHP	0.06	0.08	0.08
Link177.1_SHP	0.06	0.08	0.08
Link178_SHP	0.06	0.08	0.08
Link178.1_SHP	0.06	0.08	0.08
Link92.1.1_SHP	0.06	0.08	0.08
Link160_SHP	0.06	0.08	0.08
Link65_SHP	0.06	0.08	0.08
Link66_SHP	0.06	0.08	0.08
Link66.2_SHP	0.06	0.08	0.08
Link66.1_SHP	0.06	0.08	0.08
Link66.1.1_SHP	0.06	0.08	0.08
Link67_SHP	0.06	0.08	0.08
Link67.1_SHP	0.06	0.08	0.08
Link157_SHP	0.06	0.08	0.08
Link68_SHP	0.06	0.08	0.08
Link69_SHP	0.06	0.08	0.08
Link69.1_SHP	0.06	0.08	0.08
Link70_SHP	0.06	0.08	0.08

Link71_SHP	0.06	0.08	0.08
Link71.2_SHP	0.06	0.08	0.08
Link71.1_SHP	0.06	0.08	0.08
Link72_SHP	0.06	0.08	0.08
Link193_SHP	0.06	0.08	0.08
Link112_SHP	0.06	0.08	0.08
Link184_SHP	0.06	0.08	0.08
Link191_SHP	0.06	0.08	0.08
Link191.1_SHP	0.06	0.08	0.08
Link20_SHP	0.06	0.08	0.08
Link31_SHP	0.06	0.08	0.08
Link31.4_SHP	0.06	0.08	0.08
Link31.3_SHP	0.06	0.08	0.08
Link31.2_SHP	0.06	0.08	0.08
Link31.1_SHP	0.06	0.08	0.08
Link32_SHP	0.06	0.08	0.08
Link32.1_SHP	0.06	0.08	0.08
Link33a_SHP	0.06	0.08	0.08
Link19a_SHP	0.06	0.08	0.08
Link177_SHP	0.06	0.08	0.08
Link176_SHP	0.06	0.08	0.08
Link175.1_SHP	0.06	0.08	0.08
Link117_SHP	0.06	0.08	0.08
Link92_SHP	0.06	0.08	0.08
Link60_SHP	0.06	0.08	0.08
Link72.1_SHP	0.06	0.08	0.08
Link4.1_SHP	0.06	0.08	0.08
Link150_SHP	0.06	0.08	0.08
Link5_SHP	0.06	0.08	0.08
Link6.1_SHP	0.06	0.08	0.08
Link25_SHP	0.06	0.08	0.08
Link7_SHP	0.06	0.08	0.08
Link9_SHP	0.06	0.08	0.08
Link10_SHP	0.06	0.08	0.08
Link11_SHP	0.06	0.08	0.08
Link12_SHP	0.06	0.08	0.08
Link116_SHP	0.06	0.08	0.08
Link94_SHP	0.06	0.08	0.08
Link95_SHP	0.06	0.08	0.08
Link23.1.1_SHP	0.06	0.08	0.08
Link203_SHP	0.06	0.08	0.08
Link55_SHP	0.06	0.08	0.08
Link54.1_SHP	0.06	0.08	0.08
Link83_SHP	0.06	0.08	0.08
Link59_SHP	0.06	0.08	0.08
Link4.2_SHP	0.06	0.08	0.08
Link4_SHP	0.06	0.08	0.08
Link3_SHP	0.06	0.08	0.08
Link2.1_SHP	0.06	0.08	0.08
Link2_SHP	0.06	0.08	0.08

Link48_SHP	0.06	0.08	0.08
Link47_SHP	0.06	0.08	0.08
Link14_SHP	0.06	0.08	0.08
Link15_SHP	0.06	0.08	0.08
Link16_SHP	0.06	0.08	0.08
Link17_SHP	0.06	0.08	0.08
Link18_SHP	0.06	0.08	0.08
Link19a.1_SHP	0.06	0.07	0.08
Link21_SHP	0.06	0.08	0.08
Orewa_SHP	0.06	0.08	0.08
Link175_SHP	0.06	0.08	0.08
Link20.1_SHP	0.06	0.08	0.08
Bridge_MWAY_SHP	0.06	0.08	0.08
Link207_SHP	0.06	0.08	0.08
Link101.1.2_SHP	0.06	0.08	0.08
Link101.1.1_SHP	0.06	0.08	0.08
Link53_SHP	0.06	0.08	0.08
Link54_SHP	0.06	0.08	0.08
Link81_SHP	0.06	0.08	0.08
Link82_SHP	0.06	0.08	0.08
Link200_SHP	0.06	0.08	0.08
Link55.1_SHP	0.06	0.08	0.08
Link56_SHP	0.06	0.08	0.08
CulvEx1800_SHP	0.06	0.08	0.08
Link56.1_SHP	0.06	0.08	0.08
Link57_SHP	0.06	0.08	0.08
Link58_SHP	0.06	0.08	0.08
Link74_SHP	0.06	0.08	0.08
Link74.2_SHP	0.06	0.08	0.08
Link76_SHP	0.06	0.08	0.08
Link77_SHP	0.06	0.08	0.08
Link89_SHP	0.06	0.08	0.08
Link89.1_SHP	0.06	0.08	0.08
Link87.1a_SHP	0.06	0.08	0.08
Link39_SHP	0.06	0.08	0.08
Link40_SHP	0.06	0.08	0.08
Link41_SHP	0.06	0.08	0.08
Link42_SHP	0.06	0.08	0.08
Link43_SHP	0.06	0.08	0.08
Link44_SHP	0.06	0.08	0.08
Link45.2_SHP	0.06	0.08	0.08
Link45.1_SHP	0.06	0.08	0.08
Link45.1.1_SHP	0.06	0.08	0.08
Link45.1.1.1_SHP	0.06	0.08	0.08
Link46_SHP	0.06	0.08	0.08
Link46.1_SHP	0.06	0.08	0.08
Link161_SHP	0.06	0.08	0.08
Link135_SHP	0.06	0.08	0.08
Link137_SHP	0.06	0.08	0.08
Link138_SHP	0.06	0.08	0.08

Link139_SHP	0.06	0.08	0.08
Link140_SHP	0.06	0.08	0.08
Link141_SHP	0.06	0.08	0.08
Link118_SHP	0.06	0.08	0.08
Link87_SHP	0.06	0.08	0.08
Link74.1_SHP	0.06	0.08	0.08
Link75_SHP	0.06	0.08	0.08
Link23_SHP	0.06	0.08	0.08
Link23.3_SHP	0.06	0.08	0.08
Link23.2.1_SHP	0.06	0.08	0.08
Link23.1.2_SHP	0.06	0.08	0.08

XP STORM OUTPUTS - RAIN + INFILTRATION (SCENARIO 30)

Name	Node Name	Catchment Number	Routing Method	Time of Concentration (or Parameter 2) min	Curve Number	Initial Abstraction Method	Initial Abstraction Depth mm
Highgate	User Input Hydrograph						
Millwater1	Millwater1	1	SCS Hydrology	42.865	74	Depth	5
Millwater1		2	SCS Hydrology	19.619	98	Depth	1
Millwater2	Millwater2	1	SCS Hydrology	17.559	74	Depth	5
Millwater2		2	SCS Hydrology	10	98	Depth	1
Millwater3	Millwater3	1	SCS Hydrology	25.389	74	Depth	5
Millwater3		2	SCS Hydrology	11.62	98	Depth	1
Millwater4	Millwater4	1	SCS Hydrology	18.281	74	Depth	5
Millwater4		2	SCS Hydrology	10	98	Depth	1
Node105.1	Node105.1	1	SCS Hydrology	11.355	0	Depth	5
Node105.1		2	SCS Hydrology	10	0	Depth	5
Node108	Node108	1	SCS Hydrology	19.148	0	Depth	5
Node108		2	SCS Hydrology	10	0	Depth	5
Node109	Node109	1	SCS Hydrology	19.587	0	Depth	5
Node109		2	SCS Hydrology	10	0	Depth	5
Node109.1.1	Node109.1.1	1	SCS Hydrology	16.849	0	Depth	5
Node109.1.1		2	SCS Hydrology	10	0	Depth	5
Node126	Node126	1	SCS Hydrology	13.414	74	Depth	5
Node126		2	SCS Hydrology	10	98	Depth	1
Node13	Node13	1	SCS Hydrology	15.445	74	Depth	5
Node13		2	SCS Hydrology	10	98	Depth	1
Node143	Node143	1	SCS Hydrology	12.498	0	Depth	5
Node143		2	SCS Hydrology	10	74	Depth	5
Node159	Node159	1	SCS Hydrology	10	98	Depth	1
Node159		2	SCS Hydrology	10	0	Depth	5
Node16	Node16	1	SCS Hydrology	22.993	74	Depth	5
Node16		2	SCS Hydrology	10.524	98	Depth	1
Node160	Node160	1	SCS Hydrology	15.447	0	Depth	5
Node160		2	SCS Hydrology	10	0	Depth	5
Node161	Node161	1	SCS Hydrology	13.566	0	Depth	5
Node161		2	SCS Hydrology	10	0	Depth	5
Node168	Node168	1	SCS Hydrology	30.23	0	Depth	5
Node168		2	SCS Hydrology	13.836	0	Depth	5
Node186	Node186	1	SCS Hydrology	10	0	Depth	5
Node186		2	SCS Hydrology	10	0	Depth	5
Node203	Node203	1	SCS Hydrology	10	0	Depth	5
Node203		2	SCS Hydrology	10	0	Depth	5
Node206	Node206	1	SCS Hydrology	10.871	0	Depth	5
Node206		2	SCS Hydrology	10	74	Depth	5
Node22	Node22	1	SCS Hydrology	12.812	98	Depth	1
Node22		2	SCS Hydrology	10	74	Depth	5
Node25.1	Node25.1	1	SCS Hydrology	23.294	98	Depth	1
Node25.1		2	SCS Hydrology	10.662	74	Depth	5
Node28	Node28	1	SCS Hydrology	15.755	0	Depth	5
Node28		2	SCS Hydrology	10	74	Depth	5
Node4	Node4	1	SCS Hydrology	11.009	98	Depth	1
Node4		2	SCS Hydrology	10	0	Depth	5
Node4.1	Node4.1	1	SCS Hydrology	13.243	0	Depth	5
Node4.1		2	SCS Hydrology	10	0	Depth	5
Node42	Node42	1	SCS Hydrology	14.23	0	Depth	5
Node42		2	SCS Hydrology	10	0	Depth	5
Node46.1	Node46.1	1	SCS Hydrology	20.509	0	Depth	5
Node46.1		2	SCS Hydrology	10	0	Depth	5
Node46.1a	Node46.1a	1	SCS Hydrology	33.712	0	Depth	5
Node46.1a		2	SCS Hydrology	15.43	74	Depth	5
Node46.1b	Node46.1b	1	SCS Hydrology	18.948	98	Depth	1
Node46.1b		2	SCS Hydrology	10	74	Depth	5
Node47	Node47	1	SCS Hydrology	16.084	98	Depth	1
Node47		2	SCS Hydrology	10	74	Depth	5
Node47.1	Node47.1	1	SCS Hydrology	20.281	98	Depth	1
Node47.1		2	SCS Hydrology	10	0	Depth	5
Node48	Node48	1	SCS Hydrology	16.241	74	Depth	5
Node48		2	SCS Hydrology	10	98	Depth	1
Node49	Node49	1	SCS Hydrology	15.649	74	Depth	5
Node49		2	SCS Hydrology	10	98	Depth	1
Node50	Node50	1	SCS Hydrology	19.208	0	Depth	5
Node50		2	SCS Hydrology	10	0	Depth	5
Node54	Node54	1	SCS Hydrology	12.533	0	Depth	5
Node54		2	SCS Hydrology	10	0	Depth	5

Node56	Node56	1	SCS Hydrology	10	0	Depth	5
Node56		2	SCS Hydrology	10	0	Depth	5
Node56.1	Node56.1	1	SCS Hydrology	13.484	0	Depth	5
Node56.1		2	SCS Hydrology	10	74	Depth	5
Node58	Node58	1	SCS Hydrology	10.062	98	Depth	1
Node58		2	SCS Hydrology	10	0	Depth	5
Node59	Node59	1	SCS Hydrology	13.033	0	Depth	5
Node59		2	SCS Hydrology	10	0	Depth	5
Node59.1	Node59.1	1	SCS Hydrology	11.001	0	Depth	5
Node59.1		2	SCS Hydrology	10	0	Depth	5
Node6	Node6	1	SCS Hydrology	10	0	Depth	5
Node6		2	SCS Hydrology	10	0	Depth	5
Node6.1	Node6.1	1	SCS Hydrology	10	0	Depth	5
Node6.1		2	SCS Hydrology	10	0	Depth	5
Node61	Node61	1	SCS Hydrology	15.29	74	Depth	5
Node61		2	SCS Hydrology	10	98	Depth	1
Node73	Node73	1	SCS Hydrology	23.018	74	Depth	5
Node73		2	SCS Hydrology	10.535	98	Depth	1
Node74	Node74	1	SCS Hydrology	10	0	Depth	5
Node74		2	SCS Hydrology	10	74	Depth	5
Node75	Node75	1	SCS Hydrology	15.139	0	Depth	5
Node75		2	SCS Hydrology	10	0	Depth	5
Node76	Node76	1	SCS Hydrology	10.71	74	Depth	5
Node76		2	SCS Hydrology	10	98	Depth	1
Node77	Node77	1	SCS Hydrology	12.425	0	Depth	5
Node77		2	SCS Hydrology	10	0	Depth	5
Node78	Node78	1	SCS Hydrology	15.505	0	Depth	5
Node78		2	SCS Hydrology	10	74	Depth	5
Node8	Node8	1	SCS Hydrology	10	74	Depth	5
Node8		2	SCS Hydrology	10	98	Depth	1
Node8.1	Node8.1	1	SCS Hydrology	16.268	0	Depth	5
Node8.1		2	SCS Hydrology	10	0	Depth	5
Node80	Node80	1	SCS Hydrology	16.141	0	Depth	5
Node80		2	SCS Hydrology	10	74	Depth	5
Node83	Node83	1	SCS Hydrology	18.276	98	Depth	1
Node83		2	SCS Hydrology	10	0	Depth	5
Node85.1	Node85.1	1	SCS Hydrology	11.044	0	Depth	5
Node85.1		2	SCS Hydrology	10	74	Depth	5
Node86	Node86	1	SCS Hydrology	11.627	98	Depth	1
Node86		2	SCS Hydrology	10	74	Depth	5
Node95	Node95	1	SCS Hydrology	13.741	98	Depth	1
Node95		2	SCS Hydrology	10	74	Depth	5
Node97.1	Node97.1	1	SCS Hydrology	10.87	0	Depth	5
Node97.1		2	SCS Hydrology	10	74	Depth	5
Orewa Contri1	Orewa Contri1	1	SCS Hydrology	54.785	98	Depth	1
Orewa Contri1		2	SCS Hydrology	25.075	74	Depth	5
Orewa Contri2	Orewa Contri2	1	SCS Hydrology	35.78	0	Depth	5
Orewa Contri2		2	SCS Hydrology	16.376	74	Depth	5
Orewa Contri3	Orewa Contri3	1	SCS Hydrology	24.612	0	Depth	5
Orewa Contri3		2	SCS Hydrology	11.265	74	Depth	5
Orewa_Contri4	Orewa_Contri4	1	SCS Hydrology	46.57	74	Depth	5
Orewa_Contri4		2	SCS Hydrology	21.315	98	Depth	1
Orewa_Contri5	Orewa_Contri5	1	SCS Hydrology	21.05	74	Depth	5
Orewa_Contri5		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri6	Orewa_Contri6	1	SCS Hydrology	10	74	Depth	5
Orewa_Contri6		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri7	Orewa_Contri7	1	SCS Hydrology	11.532	0	Depth	5
Orewa_Contri7		2	SCS Hydrology	10	74	Depth	5
Orewa_Contri8	Orewa_Contri8	1	SCS Hydrology	10	98	Depth	1
Orewa_Contri8		2	SCS Hydrology	10	74	Depth	5
Orewa_Contri9	Orewa_Contri9	1	SCS Hydrology	46.54	98	Depth	1
Orewa_Contri9		2	SCS Hydrology	21.302	74	Depth	5
Weiti_Contri	Weiti_Contri	1	SCS Hydrology	110.085	98	Depth	1
Weiti_Contri		2	SCS Hydrology	50.386	74	Depth	5
Weiti_Contri2	Weiti_Contri2	1	SCS Hydrology	40.504	98	Depth	1
Weiti_Contri2		2	SCS Hydrology	18.539	0	Depth	5
Weiti_Contri3	Weiti_Contri3	1	SCS Hydrology	14.794	0	Depth	5
Weiti_Contri3		2	SCS Hydrology	10	0	Depth	5
Weiti_Contri4	Weiti_Contri4	1	SCS Hydrology	17.778	74	Depth	5
Weiti_Contri4		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri5	Weiti_Contri5	1	SCS Hydrology	19.417	74	Depth	5
Weiti_Contri5		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri6	Weiti_Contri6	1	SCS Hydrology	11.656	74	Depth	5
Weiti_Contri6		2	SCS Hydrology	10	74	Depth	5

Weiti_Contri7	Weiti_Contri7	1	SCS Hydrology	20.511	74	Depth	5
Weiti_Contri7		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri8	Weiti_Contri8	1	SCS Hydrology	11.5	74	Depth	5
Weiti_Contri8		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri8.1	Weiti_Contri8.1	1	SCS Hydrology	18.21	0	Depth	5
Weiti_Contri8.1		2	SCS Hydrology	10	74	Depth	5
Weiti_Contri9	Weiti_Contri9	1	SCS Hydrology	58.199	0	Depth	5
Weiti_Contri9		2	SCS Hydrology	26.638	74	Depth	5
Weiti_Contri9.1	Weiti_Contri9.1	1	SCS Hydrology	40.85	98	Depth	1
Weiti_Contri9.1		2	SCS Hydrology	18.697	74	Depth	5
Weiti_Contri9.2	Weiti_Contri9.2	1	SCS Hydrology	17.067	98	Depth	1
Weiti_Contri9.2		2	SCS Hydrology	10	74	Depth	5
Weiti_Silverdale	Weiti_Silverdale	1	SCS Hydrology	95.448	98	Depth	1
Weiti_Silverdale		2	SCS Hydrology	43.686	74	Depth	5

SCENARIO 31 – MPD

100YR EXISTING RAINFALL

XP STORM OUTPUTS - SUBCATCHMENT RESULTS (SCENARIO 31)

Name	Subcatchment	Area ha	Impervious Percentage %	Catchment Max Flow cms	Max Flow cms
Highgate	Hydrograph				
Millwater1	1	32.805	0	5.633	22.976
Millwater1	2	60.924	100	18.968	
Millwater2	1	4.299	0	1.096	4.071
Millwater2	2	7.983	100	3.088	
Millwater3	1	9.505	0	2.083	8.206
Millwater3	2	17.651	100	6.572	
Millwater4	1	4.177	0	1.049	3.926
Millwater4	2	7.757	100	3.001	
Node105.1	1	5.859	0	1.734	4.136
Node105.1	2	6.258	100	2.421	
Node108	1	1.625	0	0.4	1.514
Node108	2	3.017	100	1.167	
Node109	1	21.531	0	5.26	19.975
Node109	2	39.986	100	15.468	
Node109.1.1	1	2.228	0	0.577	2.125
Node109.1.1	2	4.137	100	1.6	
Node126	1	6.505	0	1.828	6.432
Node126	2	12.082	100	4.673	
Node13	1	6.674	0	1.785	6.462
Node13	2	12.395	100	4.795	
Node143	1	3.728	0	1.07	3.723
Node143	2	6.923	100	2.678	
Node159	1	1.913	0	0.585	1.96
Node159	2	3.553	100	1.374	
Node16	1	11.96	0	2.734	10.699
Node16	2	22.211	100	8.475	
Node160	1	24.419	0	6.532	16.852
Node160	2	27.608	100	10.679	
Node161	1	9.235	0	2.585	9.117
Node161	2	17.151	100	6.634	
Node168	1	2.812	0	0.57	2.279
Node168	2	5.222	100	1.845	
Node186	1	7.744	0	2.369	6.863
Node186	2	11.617	100	4.494	
Node203	1	2.737	0	0.837	2.804
Node203	2	5.084	100	1.967	
Node206	1	2.338	0	0.7	2.376
Node206	2	4.342	100	1.68	
Node22	1	1.438	0	0.41	1.431
Node22	2	2.67	100	1.033	
Node25.1	1	11.235	0	2.554	10.008
Node25.1	2	20.865	100	7.93	
Node28	1	9.393	0	2.492	2.854
Node28	2	1.044	100	0.404	
Node4	1	1.21	0	0.361	1.228

Node4	2	2.248	100	0.869	
Node4.1	1	1.708	0	0.482	1.691
Node4.1	2	3.172	100	1.227	
Node42	1	3.5	0	0.963	3.432
Node42	2	6.499	100	2.514	
Node46.1	1	2.136	0	0.512	1.964
Node46.1	2	3.968	100	1.535	
Node46.1a	1	3.361	0	0.648	2.608
Node46.1a	2	6.241	100	2.126	
Node46.1b	1	1.495	0	0.37	1.396
Node46.1b	2	2.777	100	1.074	
Node47	1	3.728	0	0.983	3.585
Node47	2	6.924	100	2.678	
Node47.1	1	1.46	0	0.351	1.345
Node47.1	2	2.711	100	1.048	
Node48	1	1.835	0	0.482	1.762
Node48	2	3.407	100	1.318	
Node49	1	1.55	0	0.412	1.497
Node49	2	2.878	100	1.113	
Node50	1	1.937	0	0.477	1.804
Node50	2	3.597	100	1.391	
Node54	1	1.506	0	0.432	1.504
Node54	2	2.797	100	1.082	
Node56	1	1.426	0	0.436	1.46
Node56	2	2.648	100	1.024	
Node56.1	1	1.274	0	0.358	1.259
Node56.1	2	2.367	100	0.916	
Node58	1	1.072	0	0.327	1.098
Node58	2	1.991	100	0.77	
Node59	1	0.675	0	0.192	0.671
Node59	2	1.254	100	0.485	
Node59.1	1	1.537	0	0.459	1.559
Node59.1	2	2.853	100	1.104	
Node6	1	1.204	0	0.368	1.234
Node6	2	2.237	100	0.865	
Node6.1	1	1.238	0	0.379	1.268
Node6.1	2	2.299	100	0.889	
Node61	1	1.345	0	0.361	1.304
Node61	2	2.498	100	0.966	
Node73	1	6.658	0	1.522	5.954
Node73	2	12.365	100	4.716	
Node74	1	1.903	0	0.582	1.949
Node74	2	3.534	100	1.367	
Node75	1	1.543	0	0.416	1.499
Node75	2	2.866	100	1.109	
Node76	1	1.442	0	0.433	1.467
Node76	2	2.677	100	1.036	
Node77	1	1.492	0	0.429	1.491
Node77	2	2.771	100	1.072	
Node78	1	2.364	0	0.631	2.288

Node78	2	4.391	100	1.698	
Node8	1	1.366	0	0.418	1.399
Node8	2	2.536	100	0.981	
Node8.1	1	1.566	0	0.411	1.503
Node8.1	2	2.909	100	1.125	
Node80	1	1.995	0	0.525	1.917
Node80	2	3.704	100	1.433	
Node83	1	5.931	0	1.49	5.575
Node83	2	11.014	100	4.261	
Node85.1	1	1.115	0	0.333	1.131
Node85.1	2	2.071	100	0.801	
Node86	1	2.008	0	0.59	2.025
Node86	2	3.73	100	1.443	
Node95	1	1.4	0	0.39	1.38
Node95	2	2.601	100	1.006	
Node97.1	1	1.534	0	0.459	1.559
Node97.1	2	2.849	100	1.102	
Orewa Contri1	1	454.981	0	68.876	76.59
Orewa Contri1	2	50.553	100	14.257	
Orewa Contri2	1	65.329	0	12.249	13.661
Orewa Contri2	2	7.259	100	2.418	
Orewa Contri3	1	23.322	0	5.179	17.271
Orewa Contri3	2	35.055	100	13.153	
Orewa_Contri4	1	175.537	0	28.913	32.185
Orewa_Contri4	2	19.504	100	5.878	
Orewa_Contri5	1	23.133	0	5.488	6.163
Orewa_Contri5	2	2.57	100	0.994	
Orewa_Contri6	1	12.081	0	3.696	4.215
Orewa_Contri6	2	1.342	100	0.519	
Orewa_Contri7	1	9.002	0	2.652	3.035
Orewa_Contri7	2	1	100	0.387	
Orewa_Contri8	1	6.539	0	2	2.281
Orewa_Contri8	2	0.727	100	0.281	
Orewa_Contri9	1	29.314	0	4.83	19.8
Orewa_Contri9	2	54.44	100	16.411	
Weiti_Contri	1	620.56	0	63.828	73.482
Weiti_Contri	2	93.934	100	19.141	
Weiti_Contri2	1	47.695	0	8.421	9.383
Weiti_Contri2	2	5.299	100	1.688	
Weiti_Contri3	1	7.749	0	2.106	2.41
Weiti_Contri3	2	0.861	100	0.333	
Weiti_Contri4	1	9.717	0	2.466	2.806
Weiti_Contri4	2	1.08	100	0.418	
Weiti_Contri5	1	6.601	0	1.618	1.829
Weiti_Contri5	2	0.733	100	0.284	
Weiti_Contri6	1	3.605	0	1.059	1.212
Weiti_Contri6	2	0.401	100	0.155	
Weiti_Contri7	1	7.604	0	1.822	2.053
Weiti_Contri7	2	0.845	100	0.327	
Weiti_Contri8	1	17.579	0	5.184	16.08

Weiti_Contri8	2	28.335	100	10.961	
Weiti_Contri8.1	1	26.636	0	6.7	20.261
Weiti_Contri8.1	2	36.941	100	14.29	
Weiti_Contri9	1	145.1	0	21.268	23.637
Weiti_Contri9	2	16.122	100	4.431	
Weiti_Contri9.1	1	25.53	0	4.489	32.107
Weiti_Contri9.1	2	91.209	100	28.959	
Weiti_Contri9.2	1	34.015	0	8.768	15.348
Weiti_Contri9.2	2	18.596	100	7.193	
Weiti_Silverdale	1	175.745	0	19.603	70.191
Weiti_Silverdale	2	263.719	100	57.715	

XP STORM OUTPUTS - BASIC CONDUIT DATA (SCENARIO 31)

Name	Link Name	Length m	Shape	Diameter (Height) m	Downstream Invert Elevation m	Upstream Invert Elevation m
1	CULV_Link23.2_MULTI	7.44	Circular	0.7	9.54	9.74
2	CULV_Link23.2_MULTI	7.44	Circular	0.7	8.83	8.92
3	CULV_Link23.2_MULTI	7.44	Circular	0.7	8.88	8.88
Bridge_KowhaiRd	Bridge_KowhaiRd	9.06	Natural	0	2.62	2.64
Bridge_KowhaiRd#w	Bridge_KowhaiRd					
Bridge_Lysnar	Bridge_Lysnar	3.41	Natural	0	4.32	4.46
Bridge_Lysnar#w	Bridge_Lysnar					
Bridge_MWAY	Bridge_MWAY	25.53	Natural	0	-0.74	-0.71
Bridge_WainuiRd	Bridge_WainuiRd	13.75	Natural	0	-0.47	-0.34
Bridge_WainuiRd#w	Bridge_WainuiRd					
Bridge_Weiti	Bridge_Weiti	15.16	Natural	0	9.83	11.6
Bridge_Weiti#w	Bridge_Weiti					
CUL_NZTA	CUL_NZTA	98.3	Circular	4.5	4.74	5.19
Culv_EX1500d	Culv_EX1500d	14.96	Natural	1.5	24.98	25.06
Culv_Ex1800	Culv_Ex1800	7.83	Natural	1.8	13.733	13.984
CULV_Link23.1	CULV_Link23.1	5.45	User Defined	1.75	6.16	6.17
Culv_LK101.1	Culv_LK101.1	20.01	Natural	1.5	22.77	22.85
Culv_LK113	Culv_LK113	5.15	Circular	0.6	17.24	17.39
Culv_LK126	Culv_LK126	12.62	Natural	0.9	23.78	23.88
Culv_LK136	Culv_LK136	12.44	Natural	0.9	21.75	21.83
Culv_Lk143	Culv_Lk143	29.72	Natural	0.6	34.8	36.54
Culv_Lk171	Culv_Lk171	92.64	Circular	2.55	6.76	7.99
Culv_Lk172	Culv_Lk172	13.41	Rectangular	2.35 x 3.7	9.34	9.62
Culv_Lk25.1.2	Culv_Lk25.1.2	10.5	Circular	1.85	4.45	4.66
Culv_LK46	Culv_LK46	12.49	Natural	1.2	19.84	19.98
Culv_Lk48.2	Culv_Lk48.2	2.38	Circular	0.6	15.08	15.19
Culv_LK58.1	Culv_LK58.1	7.9	Natural	1.85	13.421	13.103
Culv_Lk92.1	Culv_Lk92.1	15.41	Circular	1.2	14.27	14.45
CulvLK42.1	CulvLK42.1	5.72	Natural	1.05	20.83	20.92
CulvLK77.1	CulvLK77.1	23.45	Natural	0.45	14.78	14.81
CulvLK87.1	CulvLK87.1	5.02	Natural	0.6	20.22	20.45
Highgate.1	Highgate.1	168.1	Circular	1.6	15.63	19.08
Link10	Link10	141.49	Natural	0	0.16	0.67
Link101	Link101	202.17	Natural	0	29.841	33.066
Link101.1.1	Link101.1.1	206.54	Natural	0	18.287	21.611
Link101.1.2	Link101.1.2	100.39	Natural	0	21.611	22.77
Link101.2	Link101.2	277.81	Natural	0	22.85	29.841
Link103	Link103	137.17	Natural	0	19.051	19.113
Link11	Link11	113.22	Natural	0	0.22	0.16
Link112	Link112	92.55	Natural	0	4.782	4.883
Link114	Link114	69.17	Natural	0	16.58	17.24
Link115	Link115	104.95	Natural	0	15.508	16.58
Link116	Link116	147.29	Natural	0	13.93	15.508
Link117	Link117	125.09	Natural	0	10.56	13.982
Link118	Link118	33.24	Natural	0	17.643	17.945
Link12	Link12	75.88	Natural	0	-0.077	0.22
Link13	Link13	39.44	Natural	0	0.274	-0.077
Link135	Link135	48.58	Natural	0	22.069	22.464
Link137	Link137	31.81	Natural	0	21.435	21.756
Link138	Link138	56.01	Natural	0	20.868	21.435
Link139	Link139	87.01	Natural	0	19.58	20.868
Link14	Link14	70.07	Natural	0	0.004	0.274
Link140	Link140	112.52	Natural	0	18.333	19.58
Link141	Link141	59.69	Natural	0	17.915	18.333
Link15	Link15	93	Natural	0	-0.134	0.004
Link150	Link150	127.36	Natural	0	4.82	9.86
Link156	Link156	326.91	Natural	0	15.994	22.926
Link157	Link157	89.18	Natural	0	10.198	17.257
Link16	Link16	84.25	Natural	0	-0.12	-0.134
Link160	Link160	131.12	Natural	0	6.35	15.517
Link161	Link161	271.8	Natural	0	22.464	26.837

Link17	Link17	95.65	Natural	0	-0.25	-0.12
Link172	Link172	332.34	Natural	0	11.988	15.232
Link172.1	Link172.1	280.43	Natural	0	12.04	11.988
Link172.1.1.1	Link172.1.1.1	40.25	Natural	0	10.547	10.965
Link175	Link175	177.46	Natural	0	-0.9	-0.8
Link175.1	Link175.1	45.03	Natural	0	-1	-0.9
Link176	Link176	383.8	Natural	0	-1.15	-0.1
Link177	Link177	102.08	Natural	0	-1.24	-1.15
Link177.1	Link177.1	116.73	Natural	0	-1.28	-1.24
Link178	Link178	210.95	Natural	0	-1.3	-1.28
Link178.1	Link178.1	206.61	Natural	0	-1.34	-1.3
Link18	Link18	152.17	Natural	0	-0.25	-0.25
Link182	Link182	366.22	Natural	0	1.419	6.76
Link183	Link183	99.41	Natural	0	1.277	1.419
Link184	Link184	332.74	Natural	0	1.277	4.782
Link185	Link185	338.69	Natural	0	1.419	4.656
Link186	Link186	326.75	Natural	0	0.647	1.277
Link187	Link187	435.61	Natural	0	-0.016	0.647
Link188	Link188	458.5	Natural	0	0.03	-0.016
Link189	Link189	284.68	Natural	0	-0.285	0.03
Link190	Link190	185.13	Natural	0	-0.509	-0.285
Link191	Link191	397.39	Natural	0	-0.64	-0.51
Link191.1	Link191.1	413.61	Natural	0	-0.78	-0.64
Link192	Link192	208.09	Natural	0	-0.678	-0.776
Link193	Link193	154.24	Natural	0	4.883	4.74
Link19a	Link19a	133.6	Natural	0	-0.2	2.62
Link19a.1	Link19a.1	132.35	Natural	0	-0.52	-0.2
Link2	Link2	54.59	Natural	0	13.473	13.19
Link2.1	Link2.1	61.12	Natural	0	11.637	13.473
Link20	Link20	14.09	Natural	0	-0.34	-0.25
Link20.1	Link20.1	51.59	Natural	0	-0.52	-0.47
Link200	Link200	167.18	Natural	0	14.65	18.815
Link203	Link203	75.72	Natural	0	36.54	43.97
Link207	Link207	189.59	Natural	0	25.06	30.2
Link21	Link21	175.83	Natural	0	-0.71	-0.52
Link23	Link23	2.66	Natural	0	10.33	10.19
Link23.1.1	Link23.1.1	153.98	Natural	0	-0.25	4.68
Link23.1.2	Link23.1.2	116.55	Natural	0	4.68	6.16
Link23.2.1	Link23.2.1	155.22	Natural	0	6.17	8.83
Link23.3	Link23.3	161.01	Natural	0	8.88	10.33
Link25	Link25	72.62	Natural	0	4.51	5.87
Link25.1	Link25.1	37.03	Natural	0	4.66	4.51
Link25.1.1	Link25.1.1	13.53	Natural	0	3.99	4.45
Link3	Link3	108.63	Natural	0	10.849	11.637
Link31	Link31	91.63	Natural	0	15.59	15.86
Link31.1	Link31.1	465.46	Natural	0	11.7	13.69
Link31.2	Link31.2	386.31	Natural	0	13.69	14.77
Link31.3	Link31.3	194.9	Natural	0	14.77	15.32
Link31.4	Link31.4	93.24	Natural	0	15.32	15.59
Link32	Link32	865.06	Natural	0	8.908	11.7
Link32.1	Link32.1	688.18	Natural	0	5.132	8.908
Link33a	Link33a	198.81	Natural	0	4.09	5.13
Link33b	Link33b	137.99	Natural	0	3.57	4.09
Link33c	Link33c	147.58	Natural	0	2.64	3.57
Link39	Link39	56.29	Natural	0	22.81	23.78
Link4	Link4	78.42	Natural	0	8.575	10.849
Link4.1	Link4.1	97.95	Natural	0	5.04	8.103
Link4.2	Link4.2	82.58	Natural	0	8.103	8.575
Link40	Link40	58.73	Natural	0	22.311	22.81
Link41	Link41	78.25	Natural	0	21.52	22.311
Link42	Link42	79.01	Natural	0	20.92	21.52
Link43	Link43	48.21	Natural	0	20.551	20.83
Link44	Link44	17.22	Natural	0	19.98	20.551
Link45.1	Link45.1	95.72	Natural	0	17.97	18.11
Link45.1.1	Link45.1.1	47.86	Natural	0	17.9	17.97

Link45.1.1.1	Link45.1.1.1	47.86	Natural	0	17.83	17.9
Link45.2	Link45.2	114.74	Natural	0	18.114	19.84
Link46	Link46	32.11	Natural	0	16.882	17.83
Link46.1	Link46.1	27.5	Natural	0	17.239	16.882
Link47	Link47	113.64	Natural	0	15.25	17.239
Link48	Link48	55.74	Natural	0	15.19	15.25
Link48.1	Link48.1	65.21	Natural	0	14.14	15.08
Link49	Link49	70.45	Natural	0	13.19	14.143
Link5	Link5	60.92	Natural	0	4.82	5.04
Link5.1	Link5.1	39.19	Natural	0	4.59	4.82
Link53	Link53	69.15	Natural	0	17.237	18.287
Link54	Link54	41.08	Natural	0	16.873	17.237
Link54.1	Link54.1	15.06	Natural	0	16.432	16.873
Link55	Link55	116.8	Natural	0	14.65	16.432
Link55.1	Link55.1	64.57	Natural	0	13.984	14.65
Link56	Link56	17.49	Natural	0	13.652	13.733
Link56.1	Link56.1	60.44	Natural	0	13.027	13.652
Link57	Link57	66.25	Natural	0	12.015	13.027
Link58	Link58	76.81	Natural	0	13.103	12.015
Link59	Link59	91.29	Natural	0	9.04	10.83
Link6	Link6	61.11	Natural	0	4.56	4.59
Link6.1	Link6.1	44.98	Natural	0	4.46	4.56
Link6.1a	Link6.1a	26.8	Natural	0	3.99	4.32
Link60	Link60	111.63	Natural	0	5.87	9.04
Link65	Link65	384.85	Natural	0	17.146	19.051
Link66	Link66	169.44	Natural	0	15.994	17.146
Link66.1	Link66.1	174.58	Natural	0	13.72	14.769
Link66.1.1	Link66.1.1	177.17	Natural	0	12.039	13.72
Link66.2	Link66.2	173.2	Natural	0	14.769	15.994
Link67	Link67	134.88	Natural	0	11.6	12.039
Link67.1	Link67.1	284.75	Natural	0	10.198	11.895
Link68	Link68	335.52	Natural	0	9.055	10.198
Link69	Link69	55.84	Natural	0	9.439	9.055
Link69.1	Link69.1	226.86	Natural	0	8.3	9.439
Link7	Link7	51.83	Natural	0	1.258	3.99
Link70	Link70	143.23	Natural	0	7.11	8.3
Link71	Link71	77.14	Natural	0	6.35	7.11
Link71.1	Link71.1	163.65	Natural	0	6.315	7.11
Link71.2	Link71.2	82.49	Natural	0	7.11	6.35
Link72	Link72	38.13	Natural	0	6.404	6.315
Link72.1	Link72.1	39.12	Natural	0	5.19	6.2
Link74	Link74	122.63	Natural	0	28.994	34.8
Link74.1	Link74.1	245.26	Natural	0	20.836	26.368
Link74.2	Link74.2	122.63	Natural	0	26.368	28.994
Link75	Link75	89.68	Natural	0	18.293	19.441
Link76	Link76	138.38	Natural	0	16.371	18.293
Link77	Link77	47.66	Natural	0	15.15	16.371
Link77.1.1	Link77.1.1	40.12	Natural	0	14.23	14.78
Link78	Link78	51.92	Natural	0	11.74	14.23
Link79	Link79	96.79	Natural	0	9.86	11.74
Link8	Link8	77.32	Natural	0	0.19	1.258
Link81	Link81	37.06	Natural	0	23.846	24.86
Link82	Link82	116.13	Natural	0	18.818	23.846
Link83	Link83	40.79	Natural	0	16.432	18.818
Link87	Link87	56.35	Natural	0	20.22	20.91
Link87.1a	Link87.1a	28.31	Natural	0	19.98	20.22
Link89	Link89	156.52	Natural	0	22.531	24.98
Link89.1	Link89.1	135.63	Natural	0	20.91	22.531
Link9	Link9	130.9	Natural	0	0.67	0.19
Link92	Link92	76.63	Natural	0	14.72	15.63
Link92.1.1	Link92.1.1	60.87	Natural	0	12.66	14.27
Link94	Link94	126.39	Natural	0	10.56	12.66
Link95	Link95	31.28	Natural	0	10.19	10.56
Orewa	Orewa	20.73	Natural	0	-0.8	-0.74

XP STORM OUTPUTS - JUNCTION DATA (SCENARIO 31)

Name	Node Name	Invert Elevation m	Node X	Node Y	Ponding Type	Inlet Capacity Type
Highgate	Highgate	19.08	390760.744	830148.545	Link Invert to 2D	Maximum Capacity
Millwater1	Millwater1	-1	391144.141	831278.612	Link Invert to 2D	Maximum Capacity
Millwater2	Millwater2	-1.15	391481.677	831387.439	Link Invert to 2D	Maximum Capacity
Millwater3	Millwater3	-1.24	391570.934	831410.567	Link Invert to 2D	Maximum Capacity
Millwater4	Millwater4	-1.3	391860.414	831519.05	Link Invert to 2D	Maximum Capacity
Node10	Node10	1.258	390011.681	830524.418	Link Invert to 2D	Maximum Capacity
Node100	Node100	15.63	390694.008	830302.827	Link Invert to 2D	Maximum Capacity
Node100.1	Node100.1	12.66	390622.118	830426.675	Link Invert to 2D	Maximum Capacity
Node100.2	Node100.2	14.45	390661.171	830366.907	Link Invert to 2D	Maximum Capacity
Node100.2.1	Node100.2.1	14.27	390651.341	830378.777	Link Invert to 2D	Maximum Capacity
Node102	Node102	10.56	390587.268	830536.871	Link Invert to 2D	Maximum Capacity
Node104	Node104	4.74	390989.368	829058.139	Link Invert to 2D	Maximum Capacity
Node105	Node105	-0.8	390934.933	831205.359	Link Invert to 2D	Maximum Capacity
Node105.1	Node105.1	-0.9	391100.667	831266.89	Link Invert to 2D	Maximum Capacity
Node108	Node108	5.04	390014.062	830245.239	Link Invert to 2D	Maximum Capacity
Node108.1	Node108.1	4.82	390003.818	830304.98	Link Invert to 2D	Maximum Capacity
Node109	Node109	33.066	388814.038	829688.32	Link Invert to 2D	Maximum Capacity
Node109.1	Node109.1	22.85	388976.008	830105.067	Link Invert to 2D	Maximum Capacity
Node109.1.1	Node109.1.1	21.611	389076.916	830169.74	Link Invert to 2D	Maximum Capacity
Node109.1.2	Node109.1.2	22.77	388990.761	830118.588	Link Invert to 2D	Maximum Capacity
Node109.2	Node109.2	29.841	388826.55	829870.888	Link Invert to 2D	Maximum Capacity
Node11	Node11	0.19	390054.553	830588.569	Link Invert to 2D	Maximum Capacity
Node119	Node119	4.883	391084.228	828988.566	Link Invert to 2D	Maximum Capacity
Node12	Node12	0.67	390107.166	830696.479	Link Invert to 2D	Maximum Capacity
Node120	Node120	4.782	391132.149	828949.835	Link Invert to 2D	Maximum Capacity
Node121	Node121	17.39	390500.65	830117.826	Link Invert to 2D	Maximum Capacity
Node122	Node122	17.24	390500.816	830122.97	Link Invert to 2D	Maximum Capacity
Node123	Node123	16.58	390492.934	830190.884	Link Invert to 2D	Maximum Capacity
Node124	Node124	15.508	390497.396	830295.447	Link Invert to 2D	Maximum Capacity
Node125	Node125	13.93	390523.844	830437.416	Link Invert to 2D	Maximum Capacity
Node126	Node126	17.915	390507.197	830089.527	Link Invert to 2D	Maximum Capacity
Node13	Node13	0.1603	390181.707	830808.359	Link Invert to 2D	Maximum Capacity
Node134	Node134	23.88	389637.57	829041.964	Link Invert to 2D	Maximum Capacity
Node14	Node14	0.22	390221.859	830886.276	Link Invert to 2D	Maximum Capacity
Node143	Node143	22.464	390527.054	829736.499	Link Invert to 2D	Maximum Capacity
Node144	Node144	21.83	390515.505	829783.568	Link Invert to 2D	Maximum Capacity
Node145	Node145	21.75	390512.138	829795.544	Link Invert to 2D	Maximum Capacity
Node146	Node146	21.435	390502.851	829825.972	Link Invert to 2D	Maximum Capacity
Node147	Node147	20.868	390500.521	829881.384	Link Invert to 2D	Maximum Capacity
Node148	Node148	19.58	390505.475	829963.454	Link Invert to 2D	Maximum Capacity
Node149	Node149	18.333	390495.782	830049.403	Link Invert to 2D	Maximum Capacity
Node15	Node15	-0.077	390239.982	830957.369	Link Invert to 2D	Maximum Capacity
Node150	Node150	36.54	389283.652	829636.661	Link Invert to 2D	Maximum Capacity
Node159	Node159	44.824	389130.157	829523.01	Link Invert to 2D	Maximum Capacity
Node16	Node16	0.274	390259.45	830985.84	Link Invert to 2D	Maximum Capacity

Node160	Node160	36.06	389102.492	829047.246	Link Invert to 2D	Maximum Capacity
Node160.1	Node160.1	30.2	389372.452	829121.34	Link Invert to 2D	Maximum Capacity
Node161	Node161	29.993	389375.219	828939.943	Link Invert to 2D	Maximum Capacity
Node168	Node168	26.837	390627.699	829496.156	Link Invert to 2D	Maximum Capacity
Node17	Node17	0.004	390326.41	830996.417	Link Invert to 2D	Maximum Capacity
Node178	Node178	7.99	390902.335	828787.492	Link Invert to 2D	Maximum Capacity
Node179	Node179	6.76	390994.978	828787.897	Link Invert to 2D	Maximum Capacity
Node18	Node18	-0.134	390404.117	831034.954	Link Invert to 2D	Maximum Capacity
Node180.1	Node180.1	11.988	390658.86	828617.787	Link Invert to 2D	Maximum Capacity
Node180.1.1	Node180.1.1	9.62	390872.05	828749.519	Link Invert to 2D	Maximum Capacity
Node180.1.1.1	Node180.1.1.1	9.34	390874.93	828762.612	Link Invert to 2D	Maximum Capacity
Node186	Node186	-1.28	391651.599	831489.29	Link Invert to 2D	Maximum Capacity
Node187	Node187	-1.34	392050.291	831561.049	Link Invert to 2D	Maximum Capacity
Node19	Node19	-0.12	390461.56	831088.471	Link Invert to 2D	Maximum Capacity
Node192	Node192	1.277	391327.868	828850.408	Link Invert to 2D	Maximum Capacity
Node194	Node194	-0.016	391899.237	828994.355	Link Invert to 2D	Maximum Capacity
Node195	Node195	0.03	392098.433	828889.23	Link Invert to 2D	Maximum Capacity
Node196	Node196	-0.285	392322.117	828895.377	Link Invert to 2D	Maximum Capacity
Node198	Node198	-0.51	392464.001	828796.297	Link Invert to 2D	Maximum Capacity
Node199	Node199	-0.678	393345.847	828972.505	Link Invert to 2D	Maximum Capacity
Node20	Node20	-0.25	390554.347	831108.65	Link Invert to 2D	Maximum Capacity
Node203	Node203	34.96	389000.188	830307.602	Link Invert to 2D	Maximum Capacity
Node206	Node206	18.815	389353.844	830230.372	Link Invert to 2D	Maximum Capacity
Node209	Node209	43.97	389264.177	829584.071	Link Invert to 2D	Maximum Capacity
Node21	Node21	-0.25	390698.628	831102.846	Link Invert to 2D	Maximum Capacity
Node21.1	Node21.1	-0.47	390715.127	831125.017	Link Invert to 2D	Maximum Capacity
Node21.2	Node21.2	-0.34	390707.67	831113.468	Link Invert to 2D	Maximum Capacity
Node22	Node22	5.87	389871.336	830460.858	Link Invert to 2D	Maximum Capacity
Node22.1	Node22.1	4.51	389942.611	830473.624	Link Invert to 2D	Maximum Capacity
Node22.1.1	Node22.1.1	4.45	389989.974	830472.236	Link Invert to 2D	Maximum Capacity
Node22.1.2	Node22.1.2	4.66	389979.511	830473.164	Link Invert to 2D	Maximum Capacity
Node25	Node25	10.19	390597.722	830562.939	Link Invert to 2D	Maximum Capacity
Node25.1	Node25.1	6.17	390655.161	830854.86	Link Invert to 2D	Maximum Capacity
Node25.1.1	Node25.1.1	4.68	390689.475	830965.836	Link Invert to 2D	Maximum Capacity
Node25.1.2	Node25.1.2	6.16	390655.689	830860.234	Link Invert to 2D	Maximum Capacity
Node25.2	Node25.2	8.88	390623.037	830712.51	Link Invert to 2D	Maximum Capacity
Node25.2.1	Node25.2.1	8.83	390624.239	830721.461	Link Invert to 2D	Maximum Capacity
Node25.3	Node25.3	10.33	390600.156	830564.113	Link Invert to 2D	Maximum Capacity
Node26a	Node26a	2.62	390502.824	831320.516	Link Invert to 2D	Maximum Capacity
Node27	Node27	-0.52	390716.358	831175.835	Link Invert to 2D	Maximum Capacity
Node28	Node28	-0.71	390889.117	831200.507	Link Invert to 2D	Maximum Capacity
Node29	Node29	-0.74	390914.635	831201.149	Link Invert to 2D	Maximum Capacity
Node34.1	Node34.1	2.64	390495.833	831326.28	Link Invert to 2D	Maximum Capacity
Node4	Node4	13.19	390117.819	829855.792	Link Invert to 2D	Maximum Capacity
Node4.1	Node4.1	13.473	390139.264	829896.454	Link Invert to 2D	Maximum Capacity
Node40	Node40	23.78	389646.077	829051.292	Link Invert to 2D	Maximum Capacity
Node41	Node41	22.81	389685.814	829091.165	Link Invert to 2D	Maximum Capacity
Node42	Node42	22.311	389711.315	829144.066	Link Invert to 2D	Maximum Capacity
Node43	Node43	21.52	389735.503	829216.797	Link Invert to 2D	Maximum Capacity
Node43.1	Node43.1	20.92	389775.027	829285.21	Link Invert to 2D	Maximum Capacity

Node44	Node44	20.83	389777.726	829290.258	Link Invert to 2D	Maximum Capacity
Node45	Node45	20.551	389801.673	829332.1	Link Invert to 2D	Maximum Capacity
Node46	Node46	19.98	389804.147	829348.198	Link Invert to 2D	Maximum Capacity
Node46.1	Node46.1	18.11	389912.608	829413.981	Link Invert to 2D	Maximum Capacity
Node46.1a	Node46.1a	17.97	389971.566	829476.09	Link Invert to 2D	Maximum Capacity
Node46.1b	Node46.1b	17.9	389995.357	829517.609	Link Invert to 2D	Maximum Capacity
Node46.2	Node46.2	19.84	389814.117	829355.719	Link Invert to 2D	Maximum Capacity
Node47	Node47	17.83	390020.041	829558.612	Link Invert to 2D	Maximum Capacity
Node47.1	Node47.1	16.882	390035.963	829586.499	Link Invert to 2D	Maximum Capacity
Node48	Node48	17.239	390048.943	829610.74	Link Invert to 2D	Maximum Capacity
Node49	Node49	15.25	390108.692	829694.422	Link Invert to 2D	Maximum Capacity
Node49.1	Node49.1	15.08	390096.026	829734.191	Link Invert to 2D	Maximum Capacity
Node49.2	Node49.2	15.19	390096.748	829731.925	Link Invert to 2D	Maximum Capacity
Node5	Node5	11.637	390135.622	829945.409	Link Invert to 2D	Maximum Capacity
Node50	Node50	14.14	390101.888	829797.933	Link Invert to 2D	Maximum Capacity
Node54	Node54	18.287	389254.992	830274.073	Link Invert to 2D	Maximum Capacity
Node55	Node55	17.237	389305.867	830312.606	Link Invert to 2D	Maximum Capacity
Node55.1	Node55.1	16.873	389334.759	830339.766	Link Invert to 2D	Maximum Capacity
Node56	Node56	16.432	389336.173	830354.135	Link Invert to 2D	Maximum Capacity
Node56.1	Node56.1	13.984	389498.551	830378.391	Link Invert to 2D	Maximum Capacity
Node56.2	Node56.2	14.65	389440.835	830364.371	Link Invert to 2D	Maximum Capacity
Node57	Node57	13.733	389505.49	830382.026	Link Invert to 2D	Maximum Capacity
Node57.1	Node57.1	13.652	389520.745	830390.58	Link Invert to 2D	Maximum Capacity
Node58	Node58	13.027	389562.004	830419.89	Link Invert to 2D	Maximum Capacity
Node59	Node59	12.015	389598.735	830459.228	Link Invert to 2D	Maximum Capacity
Node59.1	Node59.1	11.17	389663.227	830471.068	Link Invert to 2D	Maximum Capacity
Node6	Node6	10.849	390122.582	830049.539	Link Invert to 2D	Maximum Capacity
Node6.1	Node6.1	8.103	390047.33	830160.953	Link Invert to 2D	Maximum Capacity
Node6.2	Node6.2	8.575	390105.058	830116.041	Link Invert to 2D	Maximum Capacity
Node60	Node60	10.83	389670.982	830472.569	Link Invert to 2D	Maximum Capacity
Node61	Node61	9.04	389759.707	830461.047	Link Invert to 2D	Maximum Capacity
Node72	Node72	19.051	389321.668	828257.5	Link Invert to 2D	Maximum Capacity
Node73	Node73	17.146	389541.656	828505.942	Link Invert to 2D	Maximum Capacity
Node73.1	Node73.1	15.994	389673.745	828527.036	Link Invert to 2D	Maximum Capacity
Node74	Node74	12.039	389987.849	828799.277	Link Invert to 2D	Maximum Capacity
Node74.1	Node74.1	9.83	390068.106	828844.096	Link Invert to 2D	Maximum Capacity
Node74.2	Node74.2	11.6	390066.018	828829.077	Link Invert to 2D	Maximum Capacity
Node75	Node75	10.198	390227.444	828871.677	Link Invert to 2D	Maximum Capacity
Node76	Node76	9.055	390403.128	828968.39	Link Invert to 2D	Maximum Capacity
Node77	Node77	8.3	390574.816	829048.966	Link Invert to 2D	Maximum Capacity
Node78	Node78	7.11	390683.738	829036.302	Link Invert to 2D	Maximum Capacity
Node78.1	Node78.1	7.11	390765.2	829001.294	Link Invert to 2D	Maximum Capacity
Node78.2	Node78.2	6.35	390716.455	828981.236	Link Invert to 2D	Maximum Capacity
Node79	Node79	6.315	390831.54	829107.537	Link Invert to 2D	Maximum Capacity
Node8	Node8	4.59	389998.384	830343.08	Link Invert to 2D	Maximum Capacity
Node8.1	Node8.1	4.56	390001.515	830399.956	Link Invert to 2D	Maximum Capacity
Node8.1.1	Node8.1.1	4.46	390006.175	830444.532	Link Invert to 2D	Maximum Capacity
Node8.1.1.1	Node8.1.1.1	4.32	390007.196	830447.784	Link Invert to 2D	Maximum Capacity
Node80	Node80	5.19	390900.4	829099.932	Link Invert to 2D	Maximum Capacity
Node82	Node82	34.8	389292.649	829664.986	Link Invert to 2D	Maximum Capacity

Node82.1	Node82.1	26.368	389394.601	829844.178	Link Invert to 2D	Maximum Capacity
Node82.2	Node82.2	28.994	389300.418	829784.319	Link Invert to 2D	Maximum Capacity
Node83	Node83	19.441	389602.462	829896.157	Link Invert to 2D	Maximum Capacity
Node84	Node84	18.293	389662.074	829961.1	Link Invert to 2D	Maximum Capacity
Node85	Node85	16.371	389722.053	830083.34	Link Invert to 2D	Maximum Capacity
Node85.1	Node85.1	14.81	389740.551	830127.262	Link Invert to 2D	Maximum Capacity
Node85.1.1	Node85.1.1	14.78	389756.101	830144.817	Link Invert to 2D	Maximum Capacity
Node86	Node86	14.23	389773.508	830180.966	Link Invert to 2D	Maximum Capacity
Node87	Node87	11.74	389813.454	830214.091	Link Invert to 2D	Maximum Capacity
Node88	Node88	9.86	389902.906	830232.576	Link Invert to 2D	Maximum Capacity
Node89	Node89	24.86	389148.187	830372.404	Link Invert to 2D	Maximum Capacity
Node9	Node9	3.99	390003.36	830473.919	Link Invert to 2D	Maximum Capacity
Node90	Node90	23.846	389182.093	830362.075	Link Invert to 2D	Maximum Capacity
Node91	Node91	18.818	389296.699	830347.944	Link Invert to 2D	Maximum Capacity
Node95	Node95	20.91	389744.113	829324.369	Link Invert to 2D	Maximum Capacity
Node95.1	Node95.1	20.22	389774.744	829342.565	Link Invert to 2D	Maximum Capacity
Node95.1a	Node95.1a	20.22	389778.418	829339.137	Link Invert to 2D	Maximum Capacity
Node96	Node96	25.06	389546.04	829197.565	Link Invert to 2D	Maximum Capacity
Node97	Node97	24.98	389560.25	829192.891	Link Invert to 2D	Maximum Capacity
Node97.1	Node97.1	22.531	389638.956	829276.626	Link Invert to 2D	Maximum Capacity
Orewa C2	Orewa C2	15.32	388430.922	830585.273	Link Invert to 2D	Maximum Capacity
Orewa Contri1	Orewa Contri1	15.86	388263.823	830565.82	Link Invert to 2D	Maximum Capacity
Orewa Contri2	Orewa Contri2	15.59	388350.139	830585.522	Link Invert to 2D	Maximum Capacity
Orewa Contri3	Orewa Contri3	14.77	388565.501	830677.966	Link Invert to 2D	Maximum Capacity
Orewa_C3	Orewa_C3	13.69	388756.013	830932.835	Link Invert to 2D	Maximum Capacity
Orewa_Contri4	Orewa_Contri4	11.7	389083.635	831225.761	Link Invert to 2D	Maximum Capacity
Orewa_Contri5	Orewa_Contri5	8.908	389660.232	831548.956	Link Invert to 2D	Maximum Capacity
Orewa_Contri6	Orewa_Contri6	5.13	390146.566	831642.474	Link Invert to 2D	Maximum Capacity
Orewa_Contri7	Orewa_Contri7	3.57	390377.523	831407.877	Link Invert to 2D	Maximum Capacity
Orewa_Contri8	Orewa_Contri8	-0.2	390626.424	831271.403	Link Invert to 2D	Maximum Capacity
Orewa_Contri9	Orewa_Contri9	4.09	390285.039	831507.218	Link Invert to 2D	Maximum Capacity
Weiti_C1	Weiti_C1	14.769	389753.249	828662.428	Link Invert to 2D	Maximum Capacity
Weiti_Contri	Weiti_Contri	19.113	389346.741	828164.723	Link Invert to 2D	Maximum Capacity
Weiti_Contri2	Weiti_Contri2	22.926	389616.84	828218.568	Link Invert to 2D	Maximum Capacity
Weiti_Contri3	Weiti_Contri3	13.72	389850.037	828720.837	Link Invert to 2D	Maximum Capacity
Weiti_Contri4	Weiti_Contri4	17.257	390276.888	828808.223	Link Invert to 2D	Maximum Capacity
Weiti_Contri5	Weiti_Contri5	9.439	390449.796	828990.714	Link Invert to 2D	Maximum Capacity
Weiti_Contri6	Weiti_Contri6	15.517	390632.979	828920.551	Link Invert to 2D	Maximum Capacity
Weiti_Contri7	Weiti_Contri7	6.2	390866.521	829103.717	Link Invert to 2D	Maximum Capacity
Weiti_Contri8	Weiti_Contri8	1.419	391273.799	828775.679	Link Invert to 2D	Maximum Capacity
Weiti_Contri8.1	Weiti_Contri8.1	0.647	391594.469	828893	Link Invert to 2D	Maximum Capacity
Weiti_Contri9	Weiti_Contri9	15.232	390539.344	828354.986	Link Invert to 2D	Maximum Capacity
Weiti_Contri9.1	Weiti_Contri9.1	-0.64	392841.08	828814.576	Link Invert to 2D	Maximum Capacity
Weiti_Contri9.2	Weiti_Contri9.2	-0.78	393176.511	829015.146	Link Invert to 2D	Maximum Capacity
Weiti_Silverdale	Weiti_Silverdale	4.656	391146.039	828521.651	Link Invert to 2D	Maximum Capacity

XP STORM OUTPUTS -CHANNEL MANNINGS COEFFICENTS (SCENARIO 31)

Name	Main Channel Manning's n	Left Overbank Manning's n	Right Overbank Manning's n
Link50.1_SHP	0.06	0.08	0.08
Link51_SHP	0.06	0.08	0.08
Link110_SHP	0.06	0.08	0.08
Link49_SHP	0.06	0.08	0.08
Link78_SHP	0.06	0.08	0.08
Link101.2_SHP	0.06	0.08	0.08
Link101_SHP	0.06	0.08	0.08
Link114_SHP	0.06	0.08	0.08
Link115_SHP	0.06	0.08	0.08
Link77.1.1_SHP	0.06	0.08	0.08
Link103_SHP	0.06	0.08	0.08
Link79_SHP	0.06	0.08	0.08
Link6.1.1.1_SHP	0.06	0.08	0.08
Link48.1_SHP	0.06	0.08	0.08
Link156_SHP	0.06	0.08	0.08
Link33b_SHP	0.06	0.08	0.08
Link33c_SHP	0.06	0.08	0.08
Link182_SHP	0.06	0.08	0.08
Link183_SHP	0.06	0.08	0.08
Link185_SHP	0.06	0.08	0.08
Link186_SHP	0.06	0.08	0.08
Link187_SHP	0.06	0.08	0.08
Link190_SHP	0.06	0.08	0.08
Link192_SHP	0.06	0.08	0.08
Link172.1.1.1_SHP	0.06	0.08	0.08
Link172_SHP	0.06	0.08	0.08
Link172.1_SHP	0.06	0.08	0.08
Link189_SHP	0.06	0.08	0.08
Link188_SHP	0.06	0.08	0.08
Link177.1_SHP	0.06	0.08	0.08
Link178_SHP	0.06	0.08	0.08
Link178.1_SHP	0.06	0.08	0.08
Link92.1.1_SHP	0.06	0.08	0.08
Link160_SHP	0.06	0.08	0.08
Link65_SHP	0.06	0.08	0.08
Link66_SHP	0.06	0.08	0.08
Link66.2_SHP	0.06	0.08	0.08
Link66.1_SHP	0.06	0.08	0.08
Link66.1.1_SHP	0.06	0.08	0.08
Link67_SHP	0.06	0.08	0.08
Link67.1_SHP	0.06	0.08	0.08
Link157_SHP	0.06	0.08	0.08
Link68_SHP	0.06	0.08	0.08
Link69_SHP	0.06	0.08	0.08
Link69.1_SHP	0.06	0.08	0.08
Link70_SHP	0.06	0.08	0.08

Link71_SHP	0.06	0.08	0.08
Link71.2_SHP	0.06	0.08	0.08
Link71.1_SHP	0.06	0.08	0.08
Link72_SHP	0.06	0.08	0.08
Link193_SHP	0.06	0.08	0.08
Link112_SHP	0.06	0.08	0.08
Link184_SHP	0.06	0.08	0.08
Link191_SHP	0.06	0.08	0.08
Link191.1_SHP	0.06	0.08	0.08
Link20_SHP	0.06	0.08	0.08
Link31_SHP	0.06	0.08	0.08
Link31.4_SHP	0.06	0.08	0.08
Link31.3_SHP	0.06	0.08	0.08
Link31.2_SHP	0.06	0.08	0.08
Link31.1_SHP	0.06	0.08	0.08
Link32_SHP	0.06	0.08	0.08
Link32.1_SHP	0.06	0.08	0.08
Link33a_SHP	0.06	0.08	0.08
Link19a_SHP	0.06	0.08	0.08
Link177_SHP	0.06	0.08	0.08
Link176_SHP	0.06	0.08	0.08
Link175.1_SHP	0.06	0.08	0.08
Link117_SHP	0.06	0.08	0.08
Link92_SHP	0.06	0.08	0.08
Link60_SHP	0.06	0.08	0.08
Link72.1_SHP	0.06	0.08	0.08
Link4.1_SHP	0.06	0.08	0.08
Link150_SHP	0.06	0.08	0.08
Link5_SHP	0.06	0.08	0.08
Link6.1_SHP	0.06	0.08	0.08
Link25_SHP	0.06	0.08	0.08
Link7_SHP	0.06	0.08	0.08
Link9_SHP	0.06	0.08	0.08
Link10_SHP	0.06	0.08	0.08
Link11_SHP	0.06	0.08	0.08
Link12_SHP	0.06	0.08	0.08
Link116_SHP	0.06	0.08	0.08
Link94_SHP	0.06	0.08	0.08
Link95_SHP	0.06	0.08	0.08
Link23.1.1_SHP	0.06	0.08	0.08
Link203_SHP	0.06	0.08	0.08
Link55_SHP	0.06	0.08	0.08
Link54.1_SHP	0.06	0.08	0.08
Link83_SHP	0.06	0.08	0.08
Link59_SHP	0.06	0.08	0.08
Link4.2_SHP	0.06	0.08	0.08
Link4_SHP	0.06	0.08	0.08
Link3_SHP	0.06	0.08	0.08
Link2.1_SHP	0.06	0.08	0.08
Link2_SHP	0.06	0.08	0.08

Link48_SHP	0.06	0.08	0.08
Link47_SHP	0.06	0.08	0.08
Link14_SHP	0.06	0.08	0.08
Link15_SHP	0.06	0.08	0.08
Link16_SHP	0.06	0.08	0.08
Link17_SHP	0.06	0.08	0.08
Link18_SHP	0.06	0.08	0.08
Link19a.1_SHP	0.06	0.08	0.08
Link21_SHP	0.06	0.08	0.08
Orewa_SHP	0.06	0.08	0.08
Link175_SHP	0.06	0.08	0.08
Link20.1_SHP	0.06	0.08	0.08
Bridge_MWAY_SHP	0.06	0.08	0.08
Link207_SHP	0.06	0.08	0.08
Link101.1.2_SHP	0.06	0.08	0.08
Link101.1.1_SHP	0.06	0.08	0.08
Link53_SHP	0.06	0.08	0.08
Link54_SHP	0.06	0.08	0.08
Link81_SHP	0.06	0.08	0.08
Link82_SHP	0.06	0.08	0.08
Link200_SHP	0.06	0.08	0.08
Link55.1_SHP	0.06	0.08	0.08
Link56_SHP	0.06	0.08	0.08
CulvEx1800_SHP	0.06	0.08	0.08
Link56.1_SHP	0.06	0.08	0.08
Link57_SHP	0.06	0.08	0.08
Link58_SHP	0.06	0.08	0.08
Link74_SHP	0.06	0.08	0.08
Link74.2_SHP	0.06	0.08	0.08
Link76_SHP	0.06	0.08	0.08
Link77_SHP	0.06	0.08	0.08
Link89_SHP	0.06	0.08	0.08
Link89.1_SHP	0.06	0.08	0.08
Link87.1a_SHP	0.06	0.08	0.08
Link39_SHP	0.06	0.08	0.08
Link40_SHP	0.06	0.08	0.08
Link41_SHP	0.06	0.08	0.08
Link42_SHP	0.06	0.08	0.08
Link43_SHP	0.06	0.08	0.08
Link44_SHP	0.06	0.08	0.08
Link45.2_SHP	0.06	0.08	0.08
Link45.1_SHP	0.06	0.08	0.08
Link45.1.1_SHP	0.06	0.08	0.08
Link45.1.1.1_SHP	0.06	0.08	0.08
Link46_SHP	0.06	0.08	0.08
Link46.1_SHP	0.06	0.08	0.08
Link161_SHP	0.06	0.08	0.08
Link135_SHP	0.06	0.08	0.08
Link137_SHP	0.06	0.08	0.08
Link138_SHP	0.06	0.08	0.08

Link139_SHP	0.06	0.08	0.08
Link140_SHP	0.06	0.08	0.08
Link141_SHP	0.06	0.08	0.08
Link118_SHP	0.06	0.08	0.08
Link87_SHP	0.06	0.08	0.08
Link74.1_SHP	0.06	0.08	0.08
Link75_SHP	0.06	0.08	0.08
Link23_SHP	0.06	0.08	0.08
Link23.3_SHP	0.06	0.08	0.08
Link23.2.1_SHP	0.06	0.08	0.08
Link23.1.2_SHP	0.06	0.08	0.08

XP STORM OUTPUTS - RAIN + INFILTRATION (SCENARIO 31)

Name	Node Name	Catchment Number	Routing Method	Time of Concentration (or Parameter 2) min	Curve Number	Initial Abstraction Method	Initial Abstraction Depth mm
Highgate	User Inflow Hydrograph						
Millwater1	Millwater1	1	SCS Hydrology	42.865	74	Depth	5
Millwater1		2	SCS Hydrology	19.619	98	Depth	1
Millwater2	Millwater2	1	SCS Hydrology	17.559	74	Depth	5
Millwater2		2	SCS Hydrology	10	98	Depth	1
Millwater3	Millwater3	1	SCS Hydrology	25.389	74	Depth	5
Millwater3		2	SCS Hydrology	11.62	98	Depth	1
Millwater4	Millwater4	1	SCS Hydrology	18.281	74	Depth	5
Millwater4		2	SCS Hydrology	10	98	Depth	1
Node105.1	Node105.1	1	SCS Hydrology	11.355	74	Depth	5
Node105.1		2	SCS Hydrology	10	98	Depth	1
Node108	Node108	1	SCS Hydrology	19.148	74	Depth	5
Node108		2	SCS Hydrology	10	98	Depth	1
Node109	Node109	1	SCS Hydrology	19.587	74	Depth	5
Node109		2	SCS Hydrology	10	98	Depth	1
Node109.1.1	Node109.1.1	1	SCS Hydrology	16.849	74	Depth	5
Node109.1.1		2	SCS Hydrology	10	98	Depth	1
Node126	Node126	1	SCS Hydrology	13.414	74	Depth	5
Node126		2	SCS Hydrology	10	98	Depth	1
Node13	Node13	1	SCS Hydrology	15.445	74	Depth	5
Node13		2	SCS Hydrology	10	98	Depth	1
Node143	Node143	1	SCS Hydrology	12.498	74	Depth	5
Node143		2	SCS Hydrology	10	98	Depth	1
Node159	Node159	1	SCS Hydrology	10	74	Depth	5
Node159		2	SCS Hydrology	10	98	Depth	1
Node16	Node16	1	SCS Hydrology	22.993	74	Depth	5
Node16		2	SCS Hydrology	10.524	98	Depth	1
Node160	Node160	1	SCS Hydrology	15.447	74	Depth	5
Node160		2	SCS Hydrology	10	98	Depth	1
Node161	Node161	1	SCS Hydrology	13.566	74	Depth	5
Node161		2	SCS Hydrology	10	98	Depth	1
Node168	Node168	1	SCS Hydrology	30.23	74	Depth	5
Node168		2	SCS Hydrology	13.836	98	Depth	1
Node186	Node186	1	SCS Hydrology	10	74	Depth	5
Node186		2	SCS Hydrology	10	98	Depth	1
Node203	Node203	1	SCS Hydrology	10	74	Depth	5
Node203		2	SCS Hydrology	10	98	Depth	1
Node206	Node206	1	SCS Hydrology	10.871	74	Depth	5
Node206		2	SCS Hydrology	10	98	Depth	1
Node22	Node22	1	SCS Hydrology	12.812	74	Depth	5
Node22		2	SCS Hydrology	10	98	Depth	1
Node25.1	Node25.1	1	SCS Hydrology	23.294	74	Depth	5
Node25.1		2	SCS Hydrology	10.662	98	Depth	1
Node28	Node28	1	SCS Hydrology	15.755	74	Depth	5
Node28		2	SCS Hydrology	10	98	Depth	1
Node4	Node4	1	SCS Hydrology	11.009	74	Depth	5
Node4		2	SCS Hydrology	10	98	Depth	1
Node4.1	Node4.1	1	SCS Hydrology	13.243	74	Depth	5
Node4.1		2	SCS Hydrology	10	98	Depth	1
Node42	Node42	1	SCS Hydrology	14.23	74	Depth	5
Node42		2	SCS Hydrology	10	98	Depth	1
Node46.1	Node46.1	1	SCS Hydrology	20.509	74	Depth	5
Node46.1		2	SCS Hydrology	10	98	Depth	1
Node46.1a	Node46.1a	1	SCS Hydrology	33.712	74	Depth	5
Node46.1a		2	SCS Hydrology	15.43	98	Depth	1
Node46.1b	Node46.1b	1	SCS Hydrology	18.948	74	Depth	5
Node46.1b		2	SCS Hydrology	10	98	Depth	1
Node47	Node47	1	SCS Hydrology	16.084	74	Depth	5
Node47		2	SCS Hydrology	10	98	Depth	1
Node47.1	Node47.1	1	SCS Hydrology	20.281	74	Depth	5
Node47.1		2	SCS Hydrology	10	98	Depth	1
Node48	Node48	1	SCS Hydrology	16.241	74	Depth	5
Node48		2	SCS Hydrology	10	98	Depth	1
Node49	Node49	1	SCS Hydrology	15.649	74	Depth	5
Node49		2	SCS Hydrology	10	98	Depth	1
Node50	Node50	1	SCS Hydrology	19.208	74	Depth	5
Node50		2	SCS Hydrology	10	98	Depth	1
Node54	Node54	1	SCS Hydrology	12.533	74	Depth	5
Node54		2	SCS Hydrology	10	98	Depth	1

Node56	Node56	1	SCS Hydrology	10	74	Depth	5
Node56		2	SCS Hydrology	10	98	Depth	1
Node56.1	Node56.1	1	SCS Hydrology	13.484	74	Depth	5
Node56.1		2	SCS Hydrology	10	98	Depth	1
Node58	Node58	1	SCS Hydrology	10.062	74	Depth	5
Node58		2	SCS Hydrology	10	98	Depth	1
Node59	Node59	1	SCS Hydrology	13.033	74	Depth	5
Node59		2	SCS Hydrology	10	98	Depth	1
Node59.1	Node59.1	1	SCS Hydrology	11.001	74	Depth	5
Node59.1		2	SCS Hydrology	10	98	Depth	1
Node6	Node6	1	SCS Hydrology	10	74	Depth	5
Node6		2	SCS Hydrology	10	98	Depth	1
Node6.1	Node6.1	1	SCS Hydrology	10	74	Depth	5
Node6.1		2	SCS Hydrology	10	98	Depth	1
Node61	Node61	1	SCS Hydrology	15.29	74	Depth	5
Node61		2	SCS Hydrology	10	98	Depth	1
Node73	Node73	1	SCS Hydrology	23.018	74	Depth	5
Node73		2	SCS Hydrology	10.535	98	Depth	1
Node74	Node74	1	SCS Hydrology	10	74	Depth	5
Node74		2	SCS Hydrology	10	98	Depth	1
Node75	Node75	1	SCS Hydrology	15.139	74	Depth	5
Node75		2	SCS Hydrology	10	98	Depth	1
Node76	Node76	1	SCS Hydrology	10.71	74	Depth	5
Node76		2	SCS Hydrology	10	98	Depth	1
Node77	Node77	1	SCS Hydrology	12.425	74	Depth	5
Node77		2	SCS Hydrology	10	98	Depth	1
Node78	Node78	1	SCS Hydrology	15.505	74	Depth	5
Node78		2	SCS Hydrology	10	98	Depth	1
Node8	Node8	1	SCS Hydrology	10	74	Depth	5
Node8		2	SCS Hydrology	10	98	Depth	1
Node8.1	Node8.1	1	SCS Hydrology	16.268	74	Depth	5
Node8.1		2	SCS Hydrology	10	98	Depth	1
Node80	Node80	1	SCS Hydrology	16.141	74	Depth	5
Node80		2	SCS Hydrology	10	98	Depth	1
Node83	Node83	1	SCS Hydrology	18.276	74	Depth	5
Node83		2	SCS Hydrology	10	98	Depth	1
Node85.1	Node85.1	1	SCS Hydrology	11.044	74	Depth	5
Node85.1		2	SCS Hydrology	10	98	Depth	1
Node86	Node86	1	SCS Hydrology	11.627	74	Depth	5
Node86		2	SCS Hydrology	10	98	Depth	1
Node95	Node95	1	SCS Hydrology	13.741	74	Depth	5
Node95		2	SCS Hydrology	10	98	Depth	1
Node97.1	Node97.1	1	SCS Hydrology	10.87	74	Depth	5
Node97.1		2	SCS Hydrology	10	98	Depth	1
Orewa Contri1	Orewa Contri1	1	SCS Hydrology	54.785	74	Depth	5
Orewa Contri1		2	SCS Hydrology	25.075	98	Depth	1
Orewa Contri2	Orewa Contri2	1	SCS Hydrology	35.78	74	Depth	5
Orewa Contri2		2	SCS Hydrology	16.376	98	Depth	1
Orewa Contri3	Orewa Contri3	1	SCS Hydrology	24.612	74	Depth	5
Orewa Contri3		2	SCS Hydrology	11.265	98	Depth	1
Orewa_Contri4	Orewa_Contri4	1	SCS Hydrology	46.57	74	Depth	5
Orewa_Contri4		2	SCS Hydrology	21.315	98	Depth	1
Orewa_Contri5	Orewa_Contri5	1	SCS Hydrology	21.05	74	Depth	5
Orewa_Contri5		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri6	Orewa_Contri6	1	SCS Hydrology	10	74	Depth	5
Orewa_Contri6		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri7	Orewa_Contri7	1	SCS Hydrology	11.532	74	Depth	5
Orewa_Contri7		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri8	Orewa_Contri8	1	SCS Hydrology	10	74	Depth	5
Orewa_Contri8		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri9	Orewa_Contri9	1	SCS Hydrology	46.54	74	Depth	5
Orewa_Contri9		2	SCS Hydrology	21.302	98	Depth	1
Weiti_Contri	Weiti_Contri	1	SCS Hydrology	110.085	74	Depth	5
Weiti_Contri		2	SCS Hydrology	50.386	98	Depth	1
Weiti_Contri2	Weiti_Contri2	1	SCS Hydrology	40.504	74	Depth	5
Weiti_Contri2		2	SCS Hydrology	18.539	98	Depth	1
Weiti_Contri3	Weiti_Contri3	1	SCS Hydrology	14.794	74	Depth	5
Weiti_Contri3		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri4	Weiti_Contri4	1	SCS Hydrology	17.778	74	Depth	5
Weiti_Contri4		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri5	Weiti_Contri5	1	SCS Hydrology	19.417	74	Depth	5
Weiti_Contri5		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri6	Weiti_Contri6	1	SCS Hydrology	11.656	74	Depth	5
Weiti_Contri6		2	SCS Hydrology	10	98	Depth	1

Weiti_Contri7	Weiti_Contri7	1	SCS Hydrology	20.511	74	Depth	5
Weiti_Contri7		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri8	Weiti_Contri8	1	SCS Hydrology	11.5	74	Depth	5
Weiti_Contri8		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri8.1	Weiti_Contri8.1	1	SCS Hydrology	18.21	74	Depth	5
Weiti_Contri8.1		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri9	Weiti_Contri9	1	SCS Hydrology	58.199	74	Depth	5
Weiti_Contri9		2	SCS Hydrology	26.638	98	Depth	1
Weiti_Contri9.1	Weiti_Contri9.1	1	SCS Hydrology	40.85	74	Depth	5
Weiti_Contri9.1		2	SCS Hydrology	18.697	98	Depth	1
Weiti_Contri9.2	Weiti_Contri9.2	1	SCS Hydrology	17.067	74	Depth	5
Weiti_Contri9.2		2	SCS Hydrology	10	98	Depth	1
Weiti_Silverdale	Weiti_Silverdale	1	SCS Hydrology	95.448	74	Depth	5
Weiti_Silverdale		2	SCS Hydrology	43.686	98	Depth	1

SCENARIO 27 – MPD

10YR FUTURE RAINFALL

XP STORM OUTPUTS - SUBCATCHMENT RESULTS (SCENARIO 27)

Name	Subcatchment	Area ha	Impervious Percentage %	Catchment Max Flow cms	Max Flow cms
Highgate	User Inflow Hydrograph				
Millwater1	1	32.805	0	3.734	16.756
Millwater1	2	60.924	100	14.165	
Millwater2	1	4.299	0	0.732	2.961
Millwater2	2	7.983	100	2.312	
Millwater3	1	9.505	0	1.387	5.985
Millwater3	2	17.651	100	4.918	
Millwater4	1	4.177	0	0.7	2.857
Millwater4	2	7.757	100	2.247	
Node105.1	1	5.859	0	1.162	2.96
Node105.1	2	6.258	100	1.813	
Node108	1	1.625	0	0.267	1.102
Node108	2	3.017	100	0.874	
Node109	1	21.531	0	3.509	14.546
Node109	2	39.986	100	11.581	
Node109.1.1	1	2.228	0	0.385	1.545
Node109.1.1	2	4.137	100	1.198	
Node126	1	6.505	0	1.224	4.67
Node126	2	12.082	100	3.499	
Node13	1	6.674	0	1.193	4.695
Node13	2	12.395	100	3.59	
Node143	1	3.728	0	0.717	2.703
Node143	2	6.923	100	2.005	
Node159	1	1.913	0	0.393	1.422
Node159	2	3.553	100	1.029	
Node16	1	11.96	0	1.821	7.805
Node16	2	22.211	100	6.344	
Node160	1	24.419	0	4.364	12.095
Node160	2	27.608	100	7.996	
Node161	1	9.235	0	1.73	6.619
Node161	2	17.151	100	4.967	
Node168	1	2.812	0	0.379	1.663
Node168	2	5.222	100	1.38	
Node186	1	7.744	0	1.589	4.953
Node186	2	11.617	100	3.365	
Node203	1	2.737	0	0.562	2.034
Node203	2	5.084	100	1.472	
Node206	1	2.338	0	0.47	1.724
Node206	2	4.342	100	1.258	
Node22	1	1.438	0	0.275	1.039
Node22	2	2.67	100	0.773	
Node25.1	1	11.235	0	1.701	7.301
Node25.1	2	20.865	100	5.936	
Node28	1	9.393	0	1.666	1.935
Node28	2	1.044	100	0.302	
Node4	1	1.21	0	0.242	0.891

Node4	2	2.248	100	0.651	
Node4.1	1	1.708	0	0.323	1.228
Node4.1	2	3.172	100	0.919	
Node42	1	3.5	0	0.645	2.492
Node42	2	6.499	100	1.882	
Node46.1	1	2.136	0	0.341	1.431
Node46.1	2	3.968	100	1.149	
Node46.1a	1	3.361	0	0.43	1.903
Node46.1a	2	6.241	100	1.589	
Node46.1b	1	1.495	0	0.247	1.016
Node46.1b	2	2.777	100	0.804	
Node47	1	3.728	0	0.657	2.606
Node47	2	6.924	100	2.005	
Node47.1	1	1.46	0	0.234	0.98
Node47.1	2	2.711	100	0.785	
Node48	1	1.835	0	0.322	1.28
Node48	2	3.407	100	0.987	
Node49	1	1.55	0	0.276	1.088
Node49	2	2.878	100	0.834	
Node50	1	1.937	0	0.318	1.313
Node50	2	3.597	100	1.042	
Node54	1	1.506	0	0.29	1.092
Node54	2	2.797	100	0.81	
Node56	1	1.426	0	0.292	1.059
Node56	2	2.648	100	0.767	
Node56.1	1	1.274	0	0.239	0.914
Node56.1	2	2.367	100	0.685	
Node58	1	1.072	0	0.22	0.796
Node58	2	1.991	100	0.577	
Node59	1	0.675	0	0.128	0.487
Node59	2	1.254	100	0.363	
Node59.1	1	1.537	0	0.308	1.131
Node59.1	2	2.853	100	0.826	
Node6	1	1.204	0	0.247	0.895
Node6	2	2.237	100	0.648	
Node6.1	1	1.238	0	0.254	0.92
Node6.1	2	2.299	100	0.666	
Node61	1	1.345	0	0.241	0.948
Node61	2	2.498	100	0.723	
Node73	1	6.658	0	1.013	4.343
Node73	2	12.365	100	3.531	
Node74	1	1.903	0	0.39	1.414
Node74	2	3.534	100	1.024	
Node75	1	1.543	0	0.278	1.089
Node75	2	2.866	100	0.83	
Node76	1	1.442	0	0.291	1.064
Node76	2	2.677	100	0.775	
Node77	1	1.492	0	0.288	1.083
Node77	2	2.771	100	0.803	
Node78	1	2.364	0	0.422	1.662

Node78	2	4.391	100	1.272	
Node8	1	1.366	0	0.28	1.015
Node8	2	2.536	100	0.735	
Node8.1	1	1.566	0	0.275	1.093
Node8.1	2	2.909	100	0.842	
Node80	1	1.995	0	0.351	1.393
Node80	2	3.704	100	1.073	
Node83	1	5.931	0	0.994	4.057
Node83	2	11.014	100	3.19	
Node85.1	1	1.115	0	0.223	0.821
Node85.1	2	2.071	100	0.6	
Node86	1	2.008	0	0.395	1.469
Node86	2	3.73	100	1.08	
Node95	1	1.4	0	0.261	1.002
Node95	2	2.601	100	0.753	
Node97.1	1	1.534	0	0.308	1.131
Node97.1	2	2.849	100	0.825	
Orewa Contri1	1	454.981	0	45.584	51.237
Orewa Contri1	2	50.553	100	10.634	
Orewa Contri2	1	65.329	0	8.129	9.17
Orewa Contri2	2	7.259	100	1.807	
Orewa Contri3	1	23.322	0	3.447	12.547
Orewa Contri3	2	35.055	100	9.844	
Orewa_Contri4	1	175.537	0	19.156	21.559
Orewa_Contri4	2	19.504	100	4.388	
Orewa_Contri5	1	23.133	0	3.659	4.16
Orewa_Contri5	2	2.57	100	0.744	
Orewa_Contri6	1	12.081	0	2.479	2.867
Orewa_Contri6	2	1.342	100	0.389	
Orewa_Contri7	1	9.002	0	1.777	2.064
Orewa_Contri7	2	1	100	0.29	
Orewa_Contri8	1	6.539	0	1.342	1.552
Orewa_Contri8	2	0.727	100	0.21	
Orewa_Contri9	1	29.314	0	3.2	14.44
Orewa_Contri9	2	54.44	100	12.251	
Weiti_Contri	1	620.56	0	42.09	49.135
Weiti_Contri	2	93.934	100	14.223	
Weiti_Contri2	1	47.695	0	5.586	6.292
Weiti_Contri2	2	5.299	100	1.261	
Weiti_Contri3	1	7.749	0	1.409	1.635
Weiti_Contri3	2	0.861	100	0.249	
Weiti_Contri4	1	9.717	0	1.647	1.899
Weiti_Contri4	2	1.08	100	0.313	
Weiti_Contri5	1	6.601	0	1.08	1.236
Weiti_Contri5	2	0.733	100	0.212	
Weiti_Contri6	1	3.605	0	0.709	0.824
Weiti_Contri6	2	0.401	100	0.116	
Weiti_Contri7	1	7.604	0	1.215	1.386
Weiti_Contri7	2	0.845	100	0.245	
Weiti_Contri8	1	17.579	0	3.474	11.63

Weiti_Contri8	2	28.335	100	8.207	
Weiti_Contri8.1	1	26.636	0	4.471	14.642
Weiti_Contri8.1	2	36.941	100	10.699	
Weiti_Contri9	1	145.1	0	14.071	15.805
Weiti_Contri9	2	16.122	100	3.304	
Weiti_Contri9.1	1	25.53	0	2.977	23.675
Weiti_Contri9.1	2	91.209	100	21.631	
Weiti_Contri9.2	1	34.015	0	5.853	10.781
Weiti_Contri9.2	2	18.596	100	5.386	
Weiti_Silverdale	1	175.745	0	12.937	50.866
Weiti_Silverdale	2	263.719	100	42.92	

XP STORM OUTPUTS - BASIC CONDUIT DATA (SCENARIO 27)

Name	Link Name	Length m	Shape	Diameter (Height) m	Downstream Invert Elevation m	Upstream Invert Elevation m
1	CULV_Link23.2_MU	7.44	Circular	0.7	9.54	9.74
2	CULV_Link23.2_MU	7.44	Circular	0.7	8.83	8.92
3	CULV_Link23.2_MU	7.44	Circular	0.7	8.88	8.88
Bridge_KowhaiRd	Bridge_KowhaiRd	9.06	Natural	0	2.62	2.64
Bridge_KowhaiRd#w	Bridge_KowhaiRd					
Bridge_Lysnar	Bridge_Lysnar	3.41	Natural	0	4.32	4.46
Bridge_Lysnar#w	Bridge_Lysnar					
Bridge_MWAY	Bridge_MWAY	25.53	Natural	0	-0.74	-0.71
Bridge_WainuiRd	Bridge_WainuiRd	13.75	Natural	0	-0.47	-0.34
Bridge_WainuiRd#w	Bridge_WainuiRd					
Bridge_Weiti	Bridge_Weiti	15.16	Natural	0	9.83	11.6
Bridge_Weiti#w	Bridge_Weiti					
CUL_NZTA	CUL_NZTA	98.3	Circular	4.5	4.74	5.19
Culv_EX1500d	Culv_EX1500d	14.96	Natural	1.5	24.98	25.06
Culv_Ex1800	Culv_Ex1800	7.83	Natural	1.8	13.733	13.984
CULV_Link23.1	CULV_Link23.1	5.45	User Defined	1.75	6.16	6.17
Culv_LK101.1	Culv_LK101.1	20.01	Natural	1.5	22.77	22.85
Culv_LK113	Culv_LK113	5.15	Circular	0.6	17.24	17.39
Culv_LK126	Culv_LK126	12.62	Natural	0.9	23.78	23.88
Culv_LK136	Culv_LK136	12.44	Natural	0.9	21.75	21.83
Culv_Lk143	Culv_Lk143	29.72	Natural	0.6	34.8	36.54
Culv_Lk171	Culv_Lk171	92.64	Circular	2.55	6.76	7.99
Culv_Lk172	Culv_Lk172	13.41	Rectangular	2.35 x 3.7	9.34	9.62
Culv_Lk25.1.2	Culv_Lk25.1.2	10.5	Circular	1.85	4.45	4.66
Culv_LK46	Culv_LK46	12.49	Natural	1.2	19.84	19.98
Culv_Lk48.2	Culv_Lk48.2	2.38	Circular	0.6	15.08	15.19
Culv_LK58.1	Culv_LK58.1	7.9	Natural	1.85	13.421	13.103
Culv_Lk92.1	Culv_Lk92.1	15.41	Circular	1.2	14.27	14.45
CulvLK42.1	CulvLK42.1	5.72	Natural	1.05	20.83	20.92
CulvLK77.1	CulvLK77.1	23.45	Natural	0.45	14.78	14.81
CulvLK87.1	CulvLK87.1	5.02	Natural	0.6	20.22	20.45
Highgate.1	Highgate.1	168.1	Circular	1.6	15.63	19.08
Link10	Link10	141.49	Natural	0	0.16	0.67
Link101	Link101	202.17	Natural	0	29.841	33.066
Link101.1.1	Link101.1.1	206.54	Natural	0	18.287	21.611
Link101.1.2	Link101.1.2	100.39	Natural	0	21.611	22.77
Link101.2	Link101.2	277.81	Natural	0	22.85	29.841
Link103	Link103	137.17	Natural	0	19.051	19.113
Link11	Link11	113.22	Natural	0	0.22	0.16
Link112	Link112	92.55	Natural	0	4.782	4.883
Link114	Link114	69.17	Natural	0	16.58	17.24
Link115	Link115	104.95	Natural	0	15.508	16.58
Link116	Link116	147.29	Natural	0	13.93	15.508
Link117	Link117	125.09	Natural	0	10.56	13.982
Link118	Link118	33.24	Natural	0	17.643	17.945
Link12	Link12	75.88	Natural	0	-0.077	0.22
Link13	Link13	39.44	Natural	0	0.274	-0.077
Link135	Link135	48.58	Natural	0	22.069	22.464
Link137	Link137	31.81	Natural	0	21.435	21.756
Link138	Link138	56.01	Natural	0	20.868	21.435
Link139	Link139	87.01	Natural	0	19.58	20.868
Link14	Link14	70.07	Natural	0	0.004	0.274
Link140	Link140	112.52	Natural	0	18.333	19.58
Link141	Link141	59.69	Natural	0	17.915	18.333
Link15	Link15	93	Natural	0	-0.134	0.004
Link150	Link150	127.36	Natural	0	4.82	9.86
Link156	Link156	326.91	Natural	0	15.994	22.926
Link157	Link157	89.18	Natural	0	10.198	17.257

Link16	Link16	84.25	Natural	0	-0.12	-0.134
Link160	Link160	131.12	Natural	0	6.35	15.517
Link161	Link161	271.8	Natural	0	22.464	26.837
Link17	Link17	95.65	Natural	0	-0.25	-0.12
Link172	Link172	332.34	Natural	0	11.988	15.232
Link172.1	Link172.1	280.43	Natural	0	12.04	11.988
Link172.1.1.1	Link172.1.1.1	40.25	Natural	0	10.547	10.965
Link175	Link175	177.46	Natural	0	-0.9	-0.8
Link175.1	Link175.1	45.03	Natural	0	-1	-0.9
Link176	Link176	383.8	Natural	0	-1.15	-0.1
Link177	Link177	102.08	Natural	0	-1.24	-1.15
Link177.1	Link177.1	116.73	Natural	0	-1.28	-1.24
Link178	Link178	210.95	Natural	0	-1.3	-1.28
Link178.1	Link178.1	206.61	Natural	0	-1.34	-1.3
Link18	Link18	152.17	Natural	0	-0.25	-0.25
Link182	Link182	366.22	Natural	0	1.419	6.76
Link183	Link183	99.41	Natural	0	1.277	1.419
Link184	Link184	332.74	Natural	0	1.277	4.782
Link185	Link185	338.69	Natural	0	1.419	4.656
Link186	Link186	326.75	Natural	0	0.647	1.277
Link187	Link187	435.61	Natural	0	-0.016	0.647
Link188	Link188	458.5	Natural	0	0.03	-0.016
Link189	Link189	284.68	Natural	0	-0.285	0.03
Link190	Link190	185.13	Natural	0	-0.509	-0.285
Link191	Link191	397.39	Natural	0	-0.64	-0.51
Link191.1	Link191.1	413.61	Natural	0	-0.78	-0.64
Link192	Link192	208.09	Natural	0	-0.678	-0.776
Link193	Link193	154.24	Natural	0	4.883	4.74
Link19a	Link19a	133.6	Natural	0	-0.2	2.62
Link19a.1	Link19a.1	132.35	Natural	0	-0.52	-0.2
Link2	Link2	54.59	Natural	0	13.473	13.19
Link2.1	Link2.1	61.12	Natural	0	11.637	13.473
Link20	Link20	14.09	Natural	0	-0.34	-0.25
Link20.1	Link20.1	51.59	Natural	0	-0.52	-0.47
Link200	Link200	167.18	Natural	0	14.65	18.815
Link203	Link203	75.72	Natural	0	36.54	43.97
Link207	Link207	189.59	Natural	0	25.06	30.2
Link21	Link21	175.83	Natural	0	-0.71	-0.52
Link23	Link23	2.66	Natural	0	10.33	10.19
Link23.1.1	Link23.1.1	153.98	Natural	0	-0.25	4.68
Link23.1.2	Link23.1.2	116.55	Natural	0	4.68	6.16
Link23.2.1	Link23.2.1	155.22	Natural	0	6.17	8.83
Link23.3	Link23.3	161.01	Natural	0	8.88	10.33
Link25	Link25	72.62	Natural	0	4.51	5.87
Link25.1	Link25.1	37.03	Natural	0	4.66	4.51
Link25.1.1	Link25.1.1	13.53	Natural	0	3.99	4.45
Link3	Link3	108.63	Natural	0	10.849	11.637
Link31	Link31	91.63	Natural	0	15.59	15.86
Link31.1	Link31.1	465.46	Natural	0	11.7	13.69
Link31.2	Link31.2	386.31	Natural	0	13.69	14.77
Link31.3	Link31.3	194.9	Natural	0	14.77	15.32
Link31.4	Link31.4	93.24	Natural	0	15.32	15.59
Link32	Link32	865.06	Natural	0	8.908	11.7
Link32.1	Link32.1	688.18	Natural	0	5.132	8.908
Link33a	Link33a	198.81	Natural	0	4.09	5.13
Link33b	Link33b	137.99	Natural	0	3.57	4.09
Link33c	Link33c	147.58	Natural	0	2.64	3.57
Link39	Link39	56.29	Natural	0	22.81	23.78
Link4	Link4	78.42	Natural	0	8.575	10.849
Link4.1	Link4.1	97.95	Natural	0	5.04	8.103
Link4.2	Link4.2	82.58	Natural	0	8.103	8.575
Link40	Link40	58.73	Natural	0	22.311	22.81

Link41	Link41	78.25	Natural	0	21.52	22.311
Link42	Link42	79.01	Natural	0	20.92	21.52
Link43	Link43	48.21	Natural	0	20.551	20.83
Link44	Link44	17.22	Natural	0	19.98	20.551
Link45.1	Link45.1	95.72	Natural	0	17.97	18.11
Link45.1.1	Link45.1.1	47.86	Natural	0	17.9	17.97
Link45.1.1.1	Link45.1.1.1	47.86	Natural	0	17.83	17.9
Link45.2	Link45.2	114.74	Natural	0	18.114	19.84
Link46	Link46	32.11	Natural	0	16.882	17.83
Link46.1	Link46.1	27.5	Natural	0	17.239	16.882
Link47	Link47	113.64	Natural	0	15.25	17.239
Link48	Link48	55.74	Natural	0	15.19	15.25
Link48.1	Link48.1	65.21	Natural	0	14.14	15.08
Link49	Link49	70.45	Natural	0	13.19	14.143
Link5	Link5	60.92	Natural	0	4.82	5.04
Link5.1	Link5.1	39.19	Natural	0	4.59	4.82
Link53	Link53	69.15	Natural	0	17.237	18.287
Link54	Link54	41.08	Natural	0	16.873	17.237
Link54.1	Link54.1	15.06	Natural	0	16.432	16.873
Link55	Link55	116.8	Natural	0	14.65	16.432
Link55.1	Link55.1	64.57	Natural	0	13.984	14.65
Link56	Link56	17.49	Natural	0	13.652	13.733
Link56.1	Link56.1	60.44	Natural	0	13.027	13.652
Link57	Link57	66.25	Natural	0	12.015	13.027
Link58	Link58	76.81	Natural	0	13.103	12.015
Link59	Link59	91.29	Natural	0	9.04	10.83
Link6	Link6	61.11	Natural	0	4.56	4.59
Link6.1	Link6.1	44.98	Natural	0	4.46	4.56
Link6.1a	Link6.1a	26.8	Natural	0	3.99	4.32
Link60	Link60	111.63	Natural	0	5.87	9.04
Link65	Link65	384.85	Natural	0	17.146	19.051
Link66	Link66	169.44	Natural	0	15.994	17.146
Link66.1	Link66.1	174.58	Natural	0	13.72	14.769
Link66.1.1	Link66.1.1	177.17	Natural	0	12.039	13.72
Link66.2	Link66.2	173.2	Natural	0	14.769	15.994
Link67	Link67	134.88	Natural	0	11.6	12.039
Link67.1	Link67.1	284.75	Natural	0	10.198	11.895
Link68	Link68	335.52	Natural	0	9.055	10.198
Link69	Link69	55.84	Natural	0	9.439	9.055
Link69.1	Link69.1	226.86	Natural	0	8.3	9.439
Link7	Link7	51.83	Natural	0	1.258	3.99
Link70	Link70	143.23	Natural	0	7.11	8.3
Link71	Link71	77.14	Natural	0	6.35	7.11
Link71.1	Link71.1	163.65	Natural	0	6.315	7.11
Link71.2	Link71.2	82.49	Natural	0	7.11	6.35
Link72	Link72	38.13	Natural	0	6.404	6.315
Link72.1	Link72.1	39.12	Natural	0	5.19	6.2
Link74	Link74	122.63	Natural	0	28.994	34.8
Link74.1	Link74.1	245.26	Natural	0	20.836	26.368
Link74.2	Link74.2	122.63	Natural	0	26.368	28.994
Link75	Link75	89.68	Natural	0	18.293	19.441
Link76	Link76	138.38	Natural	0	16.371	18.293
Link77	Link77	47.66	Natural	0	15.15	16.371
Link77.1.1	Link77.1.1	40.12	Natural	0	14.23	14.78
Link78	Link78	51.92	Natural	0	11.74	14.23
Link79	Link79	96.79	Natural	0	9.86	11.74
Link8	Link8	77.32	Natural	0	0.19	1.258
Link81	Link81	37.06	Natural	0	23.846	24.86
Link82	Link82	116.13	Natural	0	18.818	23.846
Link83	Link83	40.79	Natural	0	16.432	18.818
Link87	Link87	56.35	Natural	0	20.22	20.91
Link87.1a	Link87.1a	28.31	Natural	0	19.98	20.22

Link89	Link89	156.52	Natural	0	22.531	24.98
Link89.1	Link89.1	135.63	Natural	0	20.91	22.531
Link9	Link9	130.9	Natural	0	0.67	0.19
Link92	Link92	76.63	Natural	0	14.72	15.63
Link92.1.1	Link92.1.1	60.87	Natural	0	12.66	14.27
Link94	Link94	126.39	Natural	0	10.56	12.66
Link95	Link95	31.28	Natural	0	10.19	10.56
Orewa	Orewa	20.73	Natural	0	-0.8	-0.74

XP STORM OUTPUTS - JUNCTION DATA (SCENARIO 27)

Name	Node Name	Invert Elevation m	Node X	Node Y	Ponding Type	Inlet Capacity Type
Highgate	Highgate	19.08	390760.744	830148.545	Link Invert to 2D	Maximum Capacity
Millwater1	Millwater1	-1	391144.141	831278.612	Link Invert to 2D	Maximum Capacity
Millwater2	Millwater2	-1.15	391481.677	831387.439	Link Invert to 2D	Maximum Capacity
Millwater3	Millwater3	-1.24	391570.934	831410.567	Link Invert to 2D	Maximum Capacity
Millwater4	Millwater4	-1.3	391860.414	831519.05	Link Invert to 2D	Maximum Capacity
Node10	Node10	1.258	390011.681	830524.418	Link Invert to 2D	Maximum Capacity
Node100	Node100	15.63	390694.008	830302.827	Link Invert to 2D	Maximum Capacity
Node100.1	Node100.1	12.66	390622.118	830426.675	Link Invert to 2D	Maximum Capacity
Node100.2	Node100.2	14.45	390661.171	830366.907	Link Invert to 2D	Maximum Capacity
Node100.2.1	Node100.2.1	14.27	390651.341	830378.777	Link Invert to 2D	Maximum Capacity
Node102	Node102	10.56	390587.268	830536.871	Link Invert to 2D	Maximum Capacity
Node104	Node104	4.74	390989.368	829058.139	Link Invert to 2D	Maximum Capacity
Node105	Node105	-0.8	390934.933	831205.359	Link Invert to 2D	Maximum Capacity
Node105.1	Node105.1	-0.9	391100.667	831266.89	Link Invert to 2D	Maximum Capacity
Node108	Node108	5.04	390014.062	830245.239	Link Invert to 2D	Maximum Capacity
Node108.1	Node108.1	4.82	390003.818	830304.98	Link Invert to 2D	Maximum Capacity
Node109	Node109	33.066	388814.038	829688.32	Link Invert to 2D	Maximum Capacity
Node109.1	Node109.1	22.85	388976.008	830105.067	Link Invert to 2D	Maximum Capacity
Node109.1.1	Node109.1.1	21.611	389076.916	830169.74	Link Invert to 2D	Maximum Capacity
Node109.1.2	Node109.1.2	22.77	388990.761	830118.588	Link Invert to 2D	Maximum Capacity
Node109.2	Node109.2	29.841	388826.55	829870.888	Link Invert to 2D	Maximum Capacity
Node11	Node11	0.19	390054.553	830588.569	Link Invert to 2D	Maximum Capacity
Node119	Node119	4.883	391084.228	828988.566	Link Invert to 2D	Maximum Capacity
Node12	Node12	0.67	390107.166	830696.479	Link Invert to 2D	Maximum Capacity
Node120	Node120	4.782	391132.149	828949.835	Link Invert to 2D	Maximum Capacity
Node121	Node121	17.39	390500.65	830117.826	Link Invert to 2D	Maximum Capacity
Node122	Node122	17.24	390500.816	830122.97	Link Invert to 2D	Maximum Capacity
Node123	Node123	16.58	390492.934	830190.884	Link Invert to 2D	Maximum Capacity
Node124	Node124	15.508	390497.396	830295.447	Link Invert to 2D	Maximum Capacity
Node125	Node125	13.93	390523.844	830437.416	Link Invert to 2D	Maximum Capacity
Node126	Node126	17.915	390507.197	830089.527	Link Invert to 2D	Maximum Capacity
Node13	Node13	0.1603	390181.707	830808.359	Link Invert to 2D	Maximum Capacity
Node134	Node134	23.88	389637.57	829041.964	Link Invert to 2D	Maximum Capacity
Node14	Node14	0.22	390221.859	830886.276	Link Invert to 2D	Maximum Capacity
Node143	Node143	22.464	390527.054	829736.499	Link Invert to 2D	Maximum Capacity
Node144	Node144	21.83	390515.505	829783.568	Link Invert to 2D	Maximum Capacity
Node145	Node145	21.75	390512.138	829795.544	Link Invert to 2D	Maximum Capacity
Node146	Node146	21.435	390502.851	829825.972	Link Invert to 2D	Maximum Capacity
Node147	Node147	20.868	390500.521	829881.384	Link Invert to 2D	Maximum Capacity
Node148	Node148	19.58	390505.475	829963.454	Link Invert to 2D	Maximum Capacity
Node149	Node149	18.333	390495.782	830049.403	Link Invert to 2D	Maximum Capacity
Node15	Node15	-0.077	390239.982	830957.369	Link Invert to 2D	Maximum Capacity
Node150	Node150	36.54	389283.652	829636.661	Link Invert to 2D	Maximum Capacity
Node159	Node159	44.824	389130.157	829523.01	Link Invert to 2D	Maximum Capacity
Node16	Node16	0.274	390259.45	830985.84	Link Invert to 2D	Maximum Capacity

Node160	Node160	36.06	389102.492	829047.246	Link Invert to 2D	Maximum Capacity
Node160.1	Node160.1	30.2	389372.452	829121.34	Link Invert to 2D	Maximum Capacity
Node161	Node161	29.993	389375.219	828939.943	Link Invert to 2D	Maximum Capacity
Node168	Node168	26.837	390627.699	829496.156	Link Invert to 2D	Maximum Capacity
Node17	Node17	0.004	390326.41	830996.417	Link Invert to 2D	Maximum Capacity
Node178	Node178	7.99	390902.335	828787.492	Link Invert to 2D	Maximum Capacity
Node179	Node179	6.76	390994.978	828787.897	Link Invert to 2D	Maximum Capacity
Node18	Node18	-0.134	390404.117	831034.954	Link Invert to 2D	Maximum Capacity
Node180.1	Node180.1	11.988	390658.86	828617.787	Link Invert to 2D	Maximum Capacity
Node180.1.1	Node180.1.1	9.62	390872.05	828749.519	Link Invert to 2D	Maximum Capacity
Node180.1.1.1	Node180.1.1.1	9.34	390874.93	828762.612	Link Invert to 2D	Maximum Capacity
Node186	Node186	-1.28	391651.599	831489.29	Link Invert to 2D	Maximum Capacity
Node187	Node187	-1.34	392050.291	831561.049	Link Invert to 2D	Maximum Capacity
Node19	Node19	-0.12	390461.56	831088.471	Link Invert to 2D	Maximum Capacity
Node192	Node192	1.277	391327.868	828850.408	Link Invert to 2D	Maximum Capacity
Node194	Node194	-0.016	391899.237	828994.355	Link Invert to 2D	Maximum Capacity
Node195	Node195	0.03	392098.433	828889.23	Link Invert to 2D	Maximum Capacity
Node196	Node196	-0.285	392322.117	828895.377	Link Invert to 2D	Maximum Capacity
Node198	Node198	-0.51	392464.001	828796.297	Link Invert to 2D	Maximum Capacity
Node199	Node199	-0.678	393345.847	828972.505	Link Invert to 2D	Maximum Capacity
Node20	Node20	-0.25	390554.347	831108.65	Link Invert to 2D	Maximum Capacity
Node203	Node203	34.96	389000.188	830307.602	Link Invert to 2D	Maximum Capacity
Node206	Node206	18.815	389353.844	830230.372	Link Invert to 2D	Maximum Capacity
Node209	Node209	43.97	389264.177	829584.071	Link Invert to 2D	Maximum Capacity
Node21	Node21	-0.25	390698.628	831102.846	Link Invert to 2D	Maximum Capacity
Node21.1	Node21.1	-0.47	390715.127	831125.017	Link Invert to 2D	Maximum Capacity
Node21.2	Node21.2	-0.34	390707.67	831113.468	Link Invert to 2D	Maximum Capacity
Node22	Node22	5.87	389871.336	830460.858	Link Invert to 2D	Maximum Capacity
Node22.1	Node22.1	4.51	389942.611	830473.624	Link Invert to 2D	Maximum Capacity
Node22.1.1	Node22.1.1	4.45	389989.974	830472.236	Link Invert to 2D	Maximum Capacity
Node22.1.2	Node22.1.2	4.66	389979.511	830473.164	Link Invert to 2D	Maximum Capacity
Node25	Node25	10.19	390597.722	830562.939	Link Invert to 2D	Maximum Capacity
Node25.1	Node25.1	6.17	390655.161	830854.86	Link Invert to 2D	Maximum Capacity
Node25.1.1	Node25.1.1	4.68	390689.475	830965.836	Link Invert to 2D	Maximum Capacity
Node25.1.2	Node25.1.2	6.16	390655.689	830860.234	Link Invert to 2D	Maximum Capacity
Node25.2	Node25.2	8.88	390623.037	830712.51	Link Invert to 2D	Maximum Capacity
Node25.2.1	Node25.2.1	8.83	390624.239	830721.461	Link Invert to 2D	Maximum Capacity
Node25.3	Node25.3	10.33	390600.156	830564.113	Link Invert to 2D	Maximum Capacity
Node26a	Node26a	2.62	390502.824	831320.516	Link Invert to 2D	Maximum Capacity
Node27	Node27	-0.52	390716.358	831175.835	Link Invert to 2D	Maximum Capacity
Node28	Node28	-0.71	390889.117	831200.507	Link Invert to 2D	Maximum Capacity
Node29	Node29	-0.74	390914.635	831201.149	Link Invert to 2D	Maximum Capacity
Node34.1	Node34.1	2.64	390495.833	831326.28	Link Invert to 2D	Maximum Capacity
Node4	Node4	13.19	390117.819	829855.792	Link Invert to 2D	Maximum Capacity
Node4.1	Node4.1	13.473	390139.264	829896.454	Link Invert to 2D	Maximum Capacity
Node40	Node40	23.78	389646.077	829051.292	Link Invert to 2D	Maximum Capacity
Node41	Node41	22.81	389685.814	829091.165	Link Invert to 2D	Maximum Capacity
Node42	Node42	22.311	389711.315	829144.066	Link Invert to 2D	Maximum Capacity
Node43	Node43	21.52	389735.503	829216.797	Link Invert to 2D	Maximum Capacity
Node43.1	Node43.1	20.92	389775.027	829285.21	Link Invert to 2D	Maximum Capacity

Node44	Node44	20.83	389777.726	829290.258	Link Invert to 2D	Maximum Capacity
Node45	Node45	20.551	389801.673	829332.1	Link Invert to 2D	Maximum Capacity
Node46	Node46	19.98	389804.147	829348.198	Link Invert to 2D	Maximum Capacity
Node46.1	Node46.1	18.11	389912.608	829413.981	Link Invert to 2D	Maximum Capacity
Node46.1a	Node46.1a	17.97	389971.566	829476.09	Link Invert to 2D	Maximum Capacity
Node46.1b	Node46.1b	17.9	389995.357	829517.609	Link Invert to 2D	Maximum Capacity
Node46.2	Node46.2	19.84	389814.117	829355.719	Link Invert to 2D	Maximum Capacity
Node47	Node47	17.83	390020.041	829558.612	Link Invert to 2D	Maximum Capacity
Node47.1	Node47.1	16.882	390035.963	829586.499	Link Invert to 2D	Maximum Capacity
Node48	Node48	17.239	390048.943	829610.74	Link Invert to 2D	Maximum Capacity
Node49	Node49	15.25	390108.692	829694.422	Link Invert to 2D	Maximum Capacity
Node49.1	Node49.1	15.08	390096.026	829734.191	Link Invert to 2D	Maximum Capacity
Node49.2	Node49.2	15.19	390096.748	829731.925	Link Invert to 2D	Maximum Capacity
Node5	Node5	11.637	390135.622	829945.409	Link Invert to 2D	Maximum Capacity
Node50	Node50	14.14	390101.888	829797.933	Link Invert to 2D	Maximum Capacity
Node54	Node54	18.287	389254.992	830274.073	Link Invert to 2D	Maximum Capacity
Node55	Node55	17.237	389305.867	830312.606	Link Invert to 2D	Maximum Capacity
Node55.1	Node55.1	16.873	389334.759	830339.766	Link Invert to 2D	Maximum Capacity
Node56	Node56	16.432	389336.173	830354.135	Link Invert to 2D	Maximum Capacity
Node56.1	Node56.1	13.984	389498.551	830378.391	Link Invert to 2D	Maximum Capacity
Node56.2	Node56.2	14.65	389440.835	830364.371	Link Invert to 2D	Maximum Capacity
Node57	Node57	13.733	389505.49	830382.026	Link Invert to 2D	Maximum Capacity
Node57.1	Node57.1	13.652	389520.745	830390.58	Link Invert to 2D	Maximum Capacity
Node58	Node58	13.027	389562.004	830419.89	Link Invert to 2D	Maximum Capacity
Node59	Node59	12.015	389598.735	830459.228	Link Invert to 2D	Maximum Capacity
Node59.1	Node59.1	11.17	389663.227	830471.068	Link Invert to 2D	Maximum Capacity
Node6	Node6	10.849	390122.582	830049.539	Link Invert to 2D	Maximum Capacity
Node6.1	Node6.1	8.103	390047.33	830160.953	Link Invert to 2D	Maximum Capacity
Node6.2	Node6.2	8.575	390105.058	830116.041	Link Invert to 2D	Maximum Capacity
Node60	Node60	10.83	389670.982	830472.569	Link Invert to 2D	Maximum Capacity
Node61	Node61	9.04	389759.707	830461.047	Link Invert to 2D	Maximum Capacity
Node72	Node72	19.051	389321.668	828257.5	Link Invert to 2D	Maximum Capacity
Node73	Node73	17.146	389541.656	828505.942	Link Invert to 2D	Maximum Capacity
Node73.1	Node73.1	15.994	389673.745	828527.036	Link Invert to 2D	Maximum Capacity
Node74	Node74	12.039	389987.849	828799.277	Link Invert to 2D	Maximum Capacity
Node74.1	Node74.1	9.83	390068.106	828844.096	Link Invert to 2D	Maximum Capacity
Node74.2	Node74.2	11.6	390066.018	828829.077	Link Invert to 2D	Maximum Capacity
Node75	Node75	10.198	390227.444	828871.677	Link Invert to 2D	Maximum Capacity
Node76	Node76	9.055	390403.128	828968.39	Link Invert to 2D	Maximum Capacity
Node77	Node77	8.3	390574.816	829048.966	Link Invert to 2D	Maximum Capacity
Node78	Node78	7.11	390683.738	829036.302	Link Invert to 2D	Maximum Capacity
Node78.1	Node78.1	7.11	390765.2	829001.294	Link Invert to 2D	Maximum Capacity
Node78.2	Node78.2	6.35	390716.455	828981.236	Link Invert to 2D	Maximum Capacity
Node79	Node79	6.315	390831.54	829107.537	Link Invert to 2D	Maximum Capacity
Node8	Node8	4.59	389998.384	830343.08	Link Invert to 2D	Maximum Capacity
Node8.1	Node8.1	4.56	390001.515	830399.956	Link Invert to 2D	Maximum Capacity
Node8.1.1	Node8.1.1	4.46	390006.175	830444.532	Link Invert to 2D	Maximum Capacity
Node8.1.1.1	Node8.1.1.1	4.32	390007.196	830447.784	Link Invert to 2D	Maximum Capacity
Node80	Node80	5.19	390900.4	829099.932	Link Invert to 2D	Maximum Capacity
Node82	Node82	34.8	389292.649	829664.986	Link Invert to 2D	Maximum Capacity

Node82.1	Node82.1	26.368	389394.601	829844.178	Link Invert to 2D	Maximum Capacity
Node82.2	Node82.2	28.994	389300.418	829784.319	Link Invert to 2D	Maximum Capacity
Node83	Node83	19.441	389602.462	829896.157	Link Invert to 2D	Maximum Capacity
Node84	Node84	18.293	389662.074	829961.1	Link Invert to 2D	Maximum Capacity
Node85	Node85	16.371	389722.053	830083.34	Link Invert to 2D	Maximum Capacity
Node85.1	Node85.1	14.81	389740.551	830127.262	Link Invert to 2D	Maximum Capacity
Node85.1.1	Node85.1.1	14.78	389756.101	830144.817	Link Invert to 2D	Maximum Capacity
Node86	Node86	14.23	389773.508	830180.966	Link Invert to 2D	Maximum Capacity
Node87	Node87	11.74	389813.454	830214.091	Link Invert to 2D	Maximum Capacity
Node88	Node88	9.86	389902.906	830232.576	Link Invert to 2D	Maximum Capacity
Node89	Node89	24.86	389148.187	830372.404	Link Invert to 2D	Maximum Capacity
Node9	Node9	3.99	390003.36	830473.919	Link Invert to 2D	Maximum Capacity
Node90	Node90	23.846	389182.093	830362.075	Link Invert to 2D	Maximum Capacity
Node91	Node91	18.818	389296.699	830347.944	Link Invert to 2D	Maximum Capacity
Node95	Node95	20.91	389744.113	829324.369	Link Invert to 2D	Maximum Capacity
Node95.1	Node95.1	20.22	389774.744	829342.565	Link Invert to 2D	Maximum Capacity
Node95.1a	Node95.1a	20.22	389778.418	829339.137	Link Invert to 2D	Maximum Capacity
Node96	Node96	25.06	389546.04	829197.565	Link Invert to 2D	Maximum Capacity
Node97	Node97	24.98	389560.25	829192.891	Link Invert to 2D	Maximum Capacity
Node97.1	Node97.1	22.531	389638.956	829276.626	Link Invert to 2D	Maximum Capacity
Orewa C2	Orewa C2	15.32	388430.922	830585.273	Link Invert to 2D	Maximum Capacity
Orewa Contri1	Orewa Contri1	15.86	388263.823	830565.82	Link Invert to 2D	Maximum Capacity
Orewa Contri2	Orewa Contri2	15.59	388350.139	830585.522	Link Invert to 2D	Maximum Capacity
Orewa Contri3	Orewa Contri3	14.77	388565.501	830677.966	Link Invert to 2D	Maximum Capacity
Orewa_C3	Orewa_C3	13.69	388756.013	830932.835	Link Invert to 2D	Maximum Capacity
Orewa_Contri4	Orewa_Contri4	11.7	389083.635	831225.761	Link Invert to 2D	Maximum Capacity
Orewa_Contri5	Orewa_Contri5	8.908	389660.232	831548.956	Link Invert to 2D	Maximum Capacity
Orewa_Contri6	Orewa_Contri6	5.13	390146.566	831642.474	Link Invert to 2D	Maximum Capacity
Orewa_Contri7	Orewa_Contri7	3.57	390377.523	831407.877	Link Invert to 2D	Maximum Capacity
Orewa_Contri8	Orewa_Contri8	-0.2	390626.424	831271.403	Link Invert to 2D	Maximum Capacity
Orewa_Contri9	Orewa_Contri9	4.09	390285.039	831507.218	Link Invert to 2D	Maximum Capacity
Weiti_C1	Weiti_C1	14.769	389753.249	828662.428	Link Invert to 2D	Maximum Capacity
Weiti_Contri	Weiti_Contri	19.113	389346.741	828164.723	Link Invert to 2D	Maximum Capacity
Weiti_Contri2	Weiti_Contri2	22.926	389616.84	828218.568	Link Invert to 2D	Maximum Capacity
Weiti_Contri3	Weiti_Contri3	13.72	389850.037	828720.837	Link Invert to 2D	Maximum Capacity
Weiti_Contri4	Weiti_Contri4	17.257	390276.888	828808.223	Link Invert to 2D	Maximum Capacity
Weiti_Contri5	Weiti_Contri5	9.439	390449.796	828990.714	Link Invert to 2D	Maximum Capacity
Weiti_Contri6	Weiti_Contri6	15.517	390632.979	828920.551	Link Invert to 2D	Maximum Capacity
Weiti_Contri7	Weiti_Contri7	6.2	390866.521	829103.717	Link Invert to 2D	Maximum Capacity
Weiti_Contri8	Weiti_Contri8	1.419	391273.799	828775.679	Link Invert to 2D	Maximum Capacity
Weiti_Contri8.1	Weiti_Contri8.1	0.647	391594.469	828893	Link Invert to 2D	Maximum Capacity
Weiti_Contri9	Weiti_Contri9	15.232	390539.344	828354.986	Link Invert to 2D	Maximum Capacity
Weiti_Contri9.1	Weiti_Contri9.1	-0.64	392841.08	828814.576	Link Invert to 2D	Maximum Capacity
Weiti_Contri9.2	Weiti_Contri9.2	-0.78	393176.511	829015.146	Link Invert to 2D	Maximum Capacity
Weiti_Silverdale	Weiti_Silverdale	4.656	391146.039	828521.651	Link Invert to 2D	Maximum Capacity

XP STORM OUTPUTS -CHANNEL MANNINGS COEFFICENTS (SCENARIO 27)

Name	Main Channel Manning's n	Left Overbank Manning's n	Right Overbank Manning's n
Link50.1_SHP	0.06	0.08	0.08
Link51_SHP	0.06	0.08	0.08
Link110_SHP	0.06	0.08	0.08
Link49_SHP	0.06	0.08	0.08
Link78_SHP	0.06	0.08	0.08
Link101.2_SHP	0.06	0.08	0.08
Link101_SHP	0.06	0.08	0.08
Link114_SHP	0.06	0.08	0.08
Link115_SHP	0.06	0.08	0.08
Link77.1.1_SHP	0.06	0.08	0.08
Link103_SHP	0.06	0.08	0.08
Link79_SHP	0.06	0.08	0.08
Link6.1.1.1_SHP	0.06	0.08	0.08
Link48.1_SHP	0.06	0.08	0.08
Link156_SHP	0.06	0.08	0.08
Link33b_SHP	0.06	0.08	0.08
Link33c_SHP	0.06	0.08	0.08
Link182_SHP	0.06	0.08	0.08
Link183_SHP	0.06	0.08	0.08
Link185_SHP	0.06	0.08	0.08
Link186_SHP	0.06	0.08	0.08
Link187_SHP	0.06	0.08	0.08
Link190_SHP	0.06	0.08	0.08
Link192_SHP	0.06	0.08	0.08
Link172.1.1.1_SHP	0.06	0.08	0.08
Link172_SHP	0.06	0.08	0.08
Link172.1_SHP	0.06	0.08	0.08
Link189_SHP	0.06	0.08	0.08
Link188_SHP	0.06	0.08	0.08
Link177.1_SHP	0.06	0.08	0.08
Link178_SHP	0.06	0.08	0.08
Link178.1_SHP	0.06	0.08	0.08
Link92.1.1_SHP	0.06	0.08	0.08
Link160_SHP	0.06	0.08	0.08
Link65_SHP	0.06	0.08	0.08
Link66_SHP	0.06	0.08	0.08
Link66.2_SHP	0.06	0.08	0.08
Link66.1_SHP	0.06	0.08	0.08
Link66.1.1_SHP	0.06	0.08	0.08
Link67_SHP	0.06	0.08	0.08
Link67.1_SHP	0.06	0.08	0.08
Link157_SHP	0.06	0.08	0.08
Link68_SHP	0.06	0.08	0.08
Link69_SHP	0.06	0.08	0.08
Link69.1_SHP	0.06	0.08	0.08
Link70_SHP	0.06	0.08	0.08

Link71_SHP	0.06	0.08	0.08
Link71.2_SHP	0.06	0.08	0.08
Link71.1_SHP	0.06	0.08	0.08
Link72_SHP	0.06	0.08	0.08
Link193_SHP	0.06	0.08	0.08
Link112_SHP	0.06	0.08	0.08
Link184_SHP	0.06	0.08	0.08
Link191_SHP	0.06	0.08	0.08
Link191.1_SHP	0.06	0.08	0.08
Link20_SHP	0.06	0.08	0.08
Link31_SHP	0.06	0.08	0.08
Link31.4_SHP	0.06	0.08	0.08
Link31.3_SHP	0.06	0.08	0.08
Link31.2_SHP	0.06	0.08	0.08
Link31.1_SHP	0.06	0.08	0.08
Link32_SHP	0.06	0.08	0.08
Link32.1_SHP	0.06	0.08	0.08
Link33a_SHP	0.06	0.08	0.08
Link19a_SHP	0.06	0.08	0.08
Link177_SHP	0.06	0.08	0.08
Link176_SHP	0.06	0.08	0.08
Link175.1_SHP	0.06	0.08	0.08
Link117_SHP	0.06	0.08	0.08
Link92_SHP	0.06	0.08	0.08
Link60_SHP	0.06	0.08	0.08
Link72.1_SHP	0.06	0.08	0.08
Link4.1_SHP	0.06	0.08	0.08
Link150_SHP	0.06	0.08	0.08
Link5_SHP	0.06	0.08	0.08
Link6.1_SHP	0.06	0.08	0.08
Link25_SHP	0.06	0.08	0.08
Link7_SHP	0.06	0.08	0.08
Link9_SHP	0.06	0.08	0.08
Link10_SHP	0.06	0.08	0.08
Link11_SHP	0.06	0.08	0.08
Link12_SHP	0.06	0.08	0.08
Link116_SHP	0.06	0.08	0.08
Link94_SHP	0.06	0.08	0.08
Link95_SHP	0.06	0.08	0.08
Link23.1.1_SHP	0.06	0.08	0.08
Link203_SHP	0.06	0.08	0.08
Link55_SHP	0.06	0.08	0.08
Link54.1_SHP	0.06	0.08	0.08
Link83_SHP	0.06	0.08	0.08
Link59_SHP	0.06	0.08	0.08
Link4.2_SHP	0.06	0.08	0.08
Link4_SHP	0.06	0.08	0.08
Link3_SHP	0.06	0.08	0.08
Link2.1_SHP	0.06	0.08	0.08
Link2_SHP	0.06	0.08	0.08

Link48_SHP	0.06	0.08	0.08
Link47_SHP	0.06	0.08	0.08
Link14_SHP	0.06	0.08	0.08
Link15_SHP	0.06	0.08	0.08
Link16_SHP	0.06	0.08	0.08
Link17_SHP	0.06	0.08	0.08
Link18_SHP	0.06	0.08	0.08
Link19a.1_SHP	0.06	0.07	0.08
Link21_SHP	0.06	0.08	0.08
Orewa_SHP	0.06	0.08	0.08
Link175_SHP	0.06	0.08	0.08
Link20.1_SHP	0.06	0.08	0.08
Bridge_MWAY_SHP	0.06	0.08	0.08
Link207_SHP	0.06	0.08	0.08
Link101.1.2_SHP	0.06	0.08	0.08
Link101.1.1_SHP	0.06	0.08	0.08
Link53_SHP	0.06	0.08	0.08
Link54_SHP	0.06	0.08	0.08
Link81_SHP	0.06	0.08	0.08
Link82_SHP	0.06	0.08	0.08
Link200_SHP	0.06	0.08	0.08
Link55.1_SHP	0.06	0.08	0.08
Link56_SHP	0.06	0.08	0.08
CulvEx1800_SHP	0.06	0.08	0.08
Link56.1_SHP	0.06	0.08	0.08
Link57_SHP	0.06	0.08	0.08
Link58_SHP	0.06	0.08	0.08
Link74_SHP	0.06	0.08	0.08
Link74.2_SHP	0.06	0.08	0.08
Link76_SHP	0.06	0.08	0.08
Link77_SHP	0.06	0.08	0.08
Link89_SHP	0.06	0.08	0.08
Link89.1_SHP	0.06	0.08	0.08
Link87.1a_SHP	0.06	0.08	0.08
Link39_SHP	0.06	0.08	0.08
Link40_SHP	0.06	0.08	0.08
Link41_SHP	0.06	0.08	0.08
Link42_SHP	0.06	0.08	0.08
Link43_SHP	0.06	0.08	0.08
Link44_SHP	0.06	0.08	0.08
Link45.2_SHP	0.06	0.08	0.08
Link45.1_SHP	0.06	0.08	0.08
Link45.1.1_SHP	0.06	0.08	0.08
Link45.1.1.1_SHP	0.06	0.08	0.08
Link46_SHP	0.06	0.08	0.08
Link46.1_SHP	0.06	0.08	0.08
Link161_SHP	0.06	0.08	0.08
Link135_SHP	0.06	0.08	0.08
Link137_SHP	0.06	0.08	0.08
Link138_SHP	0.06	0.08	0.08

Link139_SHP	0.06	0.08	0.08
Link140_SHP	0.06	0.08	0.08
Link141_SHP	0.06	0.08	0.08
Link118_SHP	0.06	0.08	0.08
Link87_SHP	0.06	0.08	0.08
Link74.1_SHP	0.06	0.08	0.08
Link75_SHP	0.06	0.08	0.08
Link23_SHP	0.06	0.08	0.08
Link23.3_SHP	0.06	0.08	0.08
Link23.2.1_SHP	0.06	0.08	0.08
Link23.1.2_SHP	0.06	0.08	0.08

XP STORM OUTPUTS - RAIN + INFILTRATION (SCENARIO 27)

Name	Node Name	Catchment Number	Routing Method	Time of Concentration (or Parameter 2) min	Curve Number	Initial Abstraction Method	Initial Abstraction Depth mm
Highgate	User Inflow Hydrograph						
Millwater1	Millwater1	1	SCS Hydrology	42.865	74	Depth	5
Millwater1		2	SCS Hydrology	19.619	98	Depth	1
Millwater2	Millwater2	1	SCS Hydrology	17.559	74	Depth	5
Millwater2		2	SCS Hydrology	10	98	Depth	1
Millwater3	Millwater3	1	SCS Hydrology	25.389	74	Depth	5
Millwater3		2	SCS Hydrology	11.62	98	Depth	1
Millwater4	Millwater4	1	SCS Hydrology	18.281	74	Depth	5
Millwater4		2	SCS Hydrology	10	98	Depth	1
Node105.1	Node105.1	1	SCS Hydrology	11.355	74	Depth	5
Node105.1		2	SCS Hydrology	10	98	Depth	1
Node108	Node108	1	SCS Hydrology	19.148	74	Depth	5
Node108		2	SCS Hydrology	10	98	Depth	1
Node109	Node109	1	SCS Hydrology	19.587	74	Depth	5
Node109		2	SCS Hydrology	10	98	Depth	1
Node109.1.1	Node109.1.1	1	SCS Hydrology	16.849	74	Depth	5
Node109.1.1		2	SCS Hydrology	10	98	Depth	1
Node126	Node126	1	SCS Hydrology	13.414	74	Depth	5
Node126		2	SCS Hydrology	10	98	Depth	1
Node13	Node13	1	SCS Hydrology	15.445	74	Depth	5
Node13		2	SCS Hydrology	10	98	Depth	1
Node143	Node143	1	SCS Hydrology	12.498	74	Depth	5
Node143		2	SCS Hydrology	10	98	Depth	1
Node159	Node159	1	SCS Hydrology	10	74	Depth	5
Node159		2	SCS Hydrology	10	98	Depth	1
Node16	Node16	1	SCS Hydrology	22.993	74	Depth	5
Node16		2	SCS Hydrology	10.524	98	Depth	1
Node160	Node160	1	SCS Hydrology	15.447	74	Depth	5
Node160		2	SCS Hydrology	10	98	Depth	1
Node161	Node161	1	SCS Hydrology	13.566	74	Depth	5
Node161		2	SCS Hydrology	10	98	Depth	1
Node168	Node168	1	SCS Hydrology	30.23	74	Depth	5
Node168		2	SCS Hydrology	13.836	98	Depth	1
Node186	Node186	1	SCS Hydrology	10	74	Depth	5
Node186		2	SCS Hydrology	10	98	Depth	1
Node203	Node203	1	SCS Hydrology	10	74	Depth	5
Node203		2	SCS Hydrology	10	98	Depth	1
Node206	Node206	1	SCS Hydrology	10.871	74	Depth	5
Node206		2	SCS Hydrology	10	98	Depth	1
Node22	Node22	1	SCS Hydrology	12.812	74	Depth	5
Node22		2	SCS Hydrology	10	98	Depth	1
Node25.1	Node25.1	1	SCS Hydrology	23.294	74	Depth	5
Node25.1		2	SCS Hydrology	10.662	98	Depth	1
Node28	Node28	1	SCS Hydrology	15.755	74	Depth	5
Node28		2	SCS Hydrology	10	98	Depth	1
Node4	Node4	1	SCS Hydrology	11.009	74	Depth	5
Node4		2	SCS Hydrology	10	98	Depth	1
Node4.1	Node4.1	1	SCS Hydrology	13.243	74	Depth	5
Node4.1		2	SCS Hydrology	10	98	Depth	1
Node42	Node42	1	SCS Hydrology	14.23	74	Depth	5
Node42		2	SCS Hydrology	10	98	Depth	1
Node46.1	Node46.1	1	SCS Hydrology	20.509	74	Depth	5
Node46.1		2	SCS Hydrology	10	98	Depth	1
Node46.1a	Node46.1a	1	SCS Hydrology	33.712	74	Depth	5
Node46.1a		2	SCS Hydrology	15.43	98	Depth	1
Node46.1b	Node46.1b	1	SCS Hydrology	18.948	74	Depth	5
Node46.1b		2	SCS Hydrology	10	98	Depth	1
Node47	Node47	1	SCS Hydrology	16.084	74	Depth	5
Node47		2	SCS Hydrology	10	98	Depth	1
Node47.1	Node47.1	1	SCS Hydrology	20.281	74	Depth	5
Node47.1		2	SCS Hydrology	10	98	Depth	1
Node48	Node48	1	SCS Hydrology	16.241	74	Depth	5
Node48		2	SCS Hydrology	10	98	Depth	1
Node49	Node49	1	SCS Hydrology	15.649	74	Depth	5
Node49		2	SCS Hydrology	10	98	Depth	1
Node50	Node50	1	SCS Hydrology	19.208	74	Depth	5
Node50		2	SCS Hydrology	10	98	Depth	1
Node54	Node54	1	SCS Hydrology	12.533	74	Depth	5
Node54		2	SCS Hydrology	10	98	Depth	1

Node56	Node56	1	SCS Hydrology	10	74	Depth	5
Node56		2	SCS Hydrology	10	98	Depth	1
Node56.1	Node56.1	1	SCS Hydrology	13.484	74	Depth	5
Node56.1		2	SCS Hydrology	10	98	Depth	1
Node58	Node58	1	SCS Hydrology	10.062	74	Depth	5
Node58		2	SCS Hydrology	10	98	Depth	1
Node59	Node59	1	SCS Hydrology	13.033	74	Depth	5
Node59		2	SCS Hydrology	10	98	Depth	1
Node59.1	Node59.1	1	SCS Hydrology	11.001	74	Depth	5
Node59.1		2	SCS Hydrology	10	98	Depth	1
Node6	Node6	1	SCS Hydrology	10	74	Depth	5
Node6		2	SCS Hydrology	10	98	Depth	1
Node6.1	Node6.1	1	SCS Hydrology	10	74	Depth	5
Node6.1		2	SCS Hydrology	10	98	Depth	1
Node61	Node61	1	SCS Hydrology	15.29	74	Depth	5
Node61		2	SCS Hydrology	10	98	Depth	1
Node73	Node73	1	SCS Hydrology	23.018	74	Depth	5
Node73		2	SCS Hydrology	10.535	98	Depth	1
Node74	Node74	1	SCS Hydrology	10	74	Depth	5
Node74		2	SCS Hydrology	10	98	Depth	1
Node75	Node75	1	SCS Hydrology	15.139	74	Depth	5
Node75		2	SCS Hydrology	10	98	Depth	1
Node76	Node76	1	SCS Hydrology	10.71	74	Depth	5
Node76		2	SCS Hydrology	10	98	Depth	1
Node77	Node77	1	SCS Hydrology	12.425	74	Depth	5
Node77		2	SCS Hydrology	10	98	Depth	1
Node78	Node78	1	SCS Hydrology	15.505	74	Depth	5
Node78		2	SCS Hydrology	10	98	Depth	1
Node8	Node8	1	SCS Hydrology	10	74	Depth	5
Node8		2	SCS Hydrology	10	98	Depth	1
Node8.1	Node8.1	1	SCS Hydrology	16.268	74	Depth	5
Node8.1		2	SCS Hydrology	10	98	Depth	1
Node80	Node80	1	SCS Hydrology	16.141	74	Depth	5
Node80		2	SCS Hydrology	10	98	Depth	1
Node83	Node83	1	SCS Hydrology	18.276	74	Depth	5
Node83		2	SCS Hydrology	10	98	Depth	1
Node85.1	Node85.1	1	SCS Hydrology	11.044	74	Depth	5
Node85.1		2	SCS Hydrology	10	98	Depth	1
Node86	Node86	1	SCS Hydrology	11.627	74	Depth	5
Node86		2	SCS Hydrology	10	98	Depth	1
Node95	Node95	1	SCS Hydrology	13.741	74	Depth	5
Node95		2	SCS Hydrology	10	98	Depth	1
Node97.1	Node97.1	1	SCS Hydrology	10.87	74	Depth	5
Node97.1		2	SCS Hydrology	10	98	Depth	1
Orewa Contri1	Orewa Contri1	1	SCS Hydrology	54.785	74	Depth	5
Orewa Contri1		2	SCS Hydrology	25.075	98	Depth	1
Orewa Contri2	Orewa Contri2	1	SCS Hydrology	35.78	74	Depth	5
Orewa Contri2		2	SCS Hydrology	16.376	98	Depth	1
Orewa Contri3	Orewa Contri3	1	SCS Hydrology	24.612	74	Depth	5
Orewa Contri3		2	SCS Hydrology	11.265	98	Depth	1
Orewa_Contri4	Orewa_Contri4	1	SCS Hydrology	46.57	74	Depth	5
Orewa_Contri4		2	SCS Hydrology	21.315	98	Depth	1
Orewa_Contri5	Orewa_Contri5	1	SCS Hydrology	21.05	74	Depth	5
Orewa_Contri5		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri6	Orewa_Contri6	1	SCS Hydrology	10	74	Depth	5
Orewa_Contri6		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri7	Orewa_Contri7	1	SCS Hydrology	11.532	74	Depth	5
Orewa_Contri7		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri8	Orewa_Contri8	1	SCS Hydrology	10	74	Depth	5
Orewa_Contri8		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri9	Orewa_Contri9	1	SCS Hydrology	46.54	74	Depth	5
Orewa_Contri9		2	SCS Hydrology	21.302	98	Depth	1
Weiti_Contri	Weiti_Contri	1	SCS Hydrology	110.085	74	Depth	5
Weiti_Contri		2	SCS Hydrology	50.386	98	Depth	1
Weiti_Contri2	Weiti_Contri2	1	SCS Hydrology	40.504	74	Depth	5
Weiti_Contri2		2	SCS Hydrology	18.539	98	Depth	1
Weiti_Contri3	Weiti_Contri3	1	SCS Hydrology	14.794	74	Depth	5
Weiti_Contri3		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri4	Weiti_Contri4	1	SCS Hydrology	17.778	74	Depth	5
Weiti_Contri4		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri5	Weiti_Contri5	1	SCS Hydrology	19.417	74	Depth	5
Weiti_Contri5		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri6	Weiti_Contri6	1	SCS Hydrology	11.656	74	Depth	5
Weiti_Contri6		2	SCS Hydrology	10	98	Depth	1

Weiti_Contri7	Weiti_Contri7	1	SCS Hydrology	20.511	74	Depth	5
Weiti_Contri7		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri8	Weiti_Contri8	1	SCS Hydrology	11.5	74	Depth	5
Weiti_Contri8		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri8.1	Weiti_Contri8.1	1	SCS Hydrology	18.21	74	Depth	5
Weiti_Contri8.1		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri9	Weiti_Contri9	1	SCS Hydrology	58.199	74	Depth	5
Weiti_Contri9		2	SCS Hydrology	26.638	98	Depth	1
Weiti_Contri9.1	Weiti_Contri9.1	1	SCS Hydrology	40.85	74	Depth	5
Weiti_Contri9.1		2	SCS Hydrology	18.697	98	Depth	1
Weiti_Contri9.2	Weiti_Contri9.2	1	SCS Hydrology	17.067	74	Depth	5
Weiti_Contri9.2		2	SCS Hydrology	10	98	Depth	1
Weiti_Silverdale	Weiti_Silverdale	1	SCS Hydrology	95.448	74	Depth	5
Weiti_Silverdale		2	SCS Hydrology	43.686	98	Depth	1

SCENARIO 28 – MPD

100YR FUTURE RAINFALL

XP STORM OUTPUTS - SUBCATCHMENT RESULTS (SCENARIO 28)

Name	Subcatchment	Area ha	Impervious Percentage %	Catchment Max Flow cms	Max Flow cms
Highgate	User Inflow Hydrograph				
Millwater1	1	32.805	0	7.029	27.761
Millwater1	2	60.924	100	22.74	
Millwater2	1	4.299	0	1.372	4.944
Millwater2	2	7.983	100	3.711	
Millwater3	1	9.505	0	2.605	9.946
Millwater3	2	17.651	100	7.894	
Millwater4	1	4.177	0	1.314	4.768
Millwater4	2	7.757	100	3.606	
Node105.1	1	5.859	0	2.174	5.06
Node105.1	2	6.258	100	2.909	
Node108	1	1.625	0	0.501	1.838
Node108	2	3.017	100	1.403	
Node109	1	21.531	0	6.586	24.246
Node109	2	39.986	100	18.589	
Node109.1.1	1	2.228	0	0.723	2.582
Node109.1.1	2	4.137	100	1.923	
Node126	1	6.505	0	2.292	7.823
Node126	2	12.082	100	5.617	
Node13	1	6.674	0	2.237	7.855
Node13	2	12.395	100	5.762	
Node143	1	3.728	0	1.341	4.529
Node143	2	6.923	100	3.218	
Node159	1	1.913	0	0.734	2.386
Node159	2	3.553	100	1.652	
Node16	1	11.96	0	3.422	12.972
Node16	2	22.211	100	10.183	
Node160	1	24.419	0	8.185	20.58
Node160	2	27.608	100	12.834	
Node161	1	9.235	0	3.24	11.088
Node161	2	17.151	100	7.973	
Node168	1	2.812	0	0.713	2.759
Node168	2	5.222	100	2.215	
Node186	1	7.744	0	2.971	8.371
Node186	2	11.617	100	5.4	
Node203	1	2.737	0	1.05	3.413
Node203	2	5.084	100	2.363	
Node206	1	2.338	0	0.877	2.891
Node206	2	4.342	100	2.019	
Node22	1	1.438	0	0.514	1.74
Node22	2	2.67	100	1.241	
Node25.1	1	11.235	0	3.196	12.133
Node25.1	2	20.865	100	9.529	
Node28	1	9.393	0	3.123	3.557
Node28	2	1.044	100	0.485	
Node4	1	1.21	0	0.453	1.495

Node4	2	2.248	100	1.045	
Node4.1	1	1.708	0	0.604	2.057
Node4.1	2	3.172	100	1.475	
Node42	1	3.5	0	1.206	4.173
Node42	2	6.499	100	3.021	
Node46.1	1	2.136	0	0.641	2.384
Node46.1	2	3.968	100	1.844	
Node46.1a	1	3.361	0	0.809	3.156
Node46.1a	2	6.241	100	2.551	
Node46.1b	1	1.495	0	0.463	1.695
Node46.1b	2	2.777	100	1.291	
Node47	1	3.728	0	1.231	4.357
Node47	2	6.924	100	3.219	
Node47.1	1	1.46	0	0.44	1.632
Node47.1	2	2.711	100	1.26	
Node48	1	1.835	0	0.604	2.141
Node48	2	3.407	100	1.584	
Node49	1	1.55	0	0.517	1.82
Node49	2	2.878	100	1.338	
Node50	1	1.937	0	0.597	2.19
Node50	2	3.597	100	1.672	
Node54	1	1.506	0	0.542	1.829
Node54	2	2.797	100	1.3	
Node56	1	1.426	0	0.547	1.778
Node56	2	2.648	100	1.231	
Node56.1	1	1.274	0	0.448	1.531
Node56.1	2	2.367	100	1.1	
Node58	1	1.072	0	0.411	1.336
Node58	2	1.991	100	0.926	
Node59	1	0.675	0	0.24	0.816
Node59	2	1.254	100	0.583	
Node59.1	1	1.537	0	0.575	1.898
Node59.1	2	2.853	100	1.327	
Node6	1	1.204	0	0.462	1.502
Node6	2	2.237	100	1.04	
Node6.1	1	1.238	0	0.475	1.544
Node6.1	2	2.299	100	1.069	
Node61	1	1.345	0	0.453	1.586
Node61	2	2.498	100	1.161	
Node73	1	6.658	0	1.904	7.219
Node73	2	12.365	100	5.667	
Node74	1	1.903	0	0.73	2.373
Node74	2	3.534	100	1.643	
Node75	1	1.543	0	0.521	1.822
Node75	2	2.866	100	1.332	
Node76	1	1.442	0	0.543	1.786
Node76	2	2.677	100	1.245	
Node77	1	1.492	0	0.538	1.814
Node77	2	2.771	100	1.288	
Node78	1	2.364	0	0.791	2.781

Node78	2	4.391	100	2.041	
Node8	1	1.366	0	0.524	1.703
Node8	2	2.536	100	1.179	
Node8.1	1	1.566	0	0.515	1.827
Node8.1	2	2.909	100	1.352	
Node80	1	1.995	0	0.658	2.33
Node80	2	3.704	100	1.722	
Node83	1	5.931	0	1.865	6.77
Node83	2	11.014	100	5.12	
Node85.1	1	1.115	0	0.417	1.377
Node85.1	2	2.071	100	0.963	
Node86	1	2.008	0	0.74	2.464
Node86	2	3.73	100	1.734	
Node95	1	1.4	0	0.489	1.678
Node95	2	2.601	100	1.209	
Node97.1	1	1.534	0	0.576	1.897
Node97.1	2	2.849	100	1.324	
Orewa Contri1	1	454.981	0	85.842	95.063
Orewa Contri1	2	50.553	100	17.073	
Orewa Contri2	1	65.329	0	15.298	16.986
Orewa Contri2	2	7.259	100	2.901	
Orewa Contri3	1	23.322	0	6.479	20.967
Orewa Contri3	2	35.055	100	15.801	
Orewa_Contri4	1	175.537	0	36.061	39.973
Orewa_Contri4	2	19.504	100	7.044	
Orewa_Contri5	1	23.133	0	6.869	7.679
Orewa_Contri5	2	2.57	100	1.195	
Orewa_Contri6	1	12.081	0	4.634	5.258
Orewa_Contri6	2	1.342	100	0.624	
Orewa_Contri7	1	9.002	0	3.325	3.785
Orewa_Contri7	2	1	100	0.465	
Orewa_Contri8	1	6.539	0	2.508	2.846
Orewa_Contri8	2	0.727	100	0.338	
Orewa_Contri9	1	29.314	0	6.024	23.91
Orewa_Contri9	2	54.44	100	19.667	
Weiti_Contri	1	620.56	0	79.301	90.805
Weiti_Contri	2	93.934	100	22.839	
Weiti_Contri2	1	47.695	0	10.51	11.661
Weiti_Contri2	2	5.299	100	2.024	
Weiti_Contri3	1	7.749	0	2.639	3.004
Weiti_Contri3	2	0.861	100	0.4	
Weiti_Contri4	1	9.717	0	3.088	3.497
Weiti_Contri4	2	1.08	100	0.502	
Weiti_Contri5	1	6.601	0	2.026	2.279
Weiti_Contri5	2	0.733	100	0.341	
Weiti_Contri6	1	3.605	0	1.327	1.512
Weiti_Contri6	2	0.401	100	0.186	
Weiti_Contri7	1	7.604	0	2.281	2.558
Weiti_Contri7	2	0.845	100	0.393	
Weiti_Contri8	1	17.579	0	6.498	19.593

Weiti_Contri8	2	28.335	100	13.173	
Weiti_Contri8.1	1	26.636	0	8.39	24.666
Weiti_Contri8.1	2	36.941	100	17.173	
Weiti_Contri9	1	145.1	0	26.503	29.331
Weiti_Contri9	2	16.122	100	5.305	
Weiti_Contri9.1	1	25.53	0	5.603	38.667
Weiti_Contri9.1	2	91.209	100	34.725	
Weiti_Contri9.2	1	34.015	0	10.984	18.881
Weiti_Contri9.2	2	18.596	100	8.645	
Weiti_Silverdale	1	175.745	0	24.372	84.515
Weiti_Silverdale	2	263.719	100	68.914	

XP STORM OUTPUTS - BASIC CONDUIT DATA (SCENARIO 28)

Name	Link Name	Length m	Shape	Diameter (Height) m	Downstream Invert Elevation m	Upstream Invert Elevation m
1	CULV_Link23.2_MU	7.44	Circular	0.7	9.54	9.74
2	CULV_Link23.2_MU	7.44	Circular	0.7	8.83	8.92
3	CULV_Link23.2_MU	7.44	Circular	0.7	8.88	8.88
Bridge_KowhaiRd	Bridge_KowhaiRd	9.06	Natural	0	2.62	2.64
Bridge_KowhaiRd#w	Bridge_KowhaiRd					
Bridge_Lysnar	Bridge_Lysnar	3.41	Natural	0	4.32	4.46
Bridge_Lysnar#w	Bridge_Lysnar					
Bridge_MWAY	Bridge_MWAY	25.53	Natural	0	-0.74	-0.71
Bridge_WainuiRd	Bridge_WainuiRd	13.75	Natural	0	-0.47	-0.34
Bridge_WainuiRd#w	Bridge_WainuiRd					
Bridge_Weiti	Bridge_Weiti	15.16	Natural	0	9.83	11.6
Bridge_Weiti#w	Bridge_Weiti					
CUL_NZTA	CUL_NZTA	98.3	Circular	4.5	4.74	5.19
Culv_EX1500d	Culv_EX1500d	14.96	Natural	1.5	24.98	25.06
Culv_Ex1800	Culv_Ex1800	7.83	Natural	1.8	13.733	13.984
CULV_Link23.1	CULV_Link23.1	5.45	User Defined	1.75	6.16	6.17
Culv_LK101.1	Culv_LK101.1	20.01	Natural	1.5	22.77	22.85
Culv_LK113	Culv_LK113	5.15	Circular	0.6	17.24	17.39
Culv_LK126	Culv_LK126	12.62	Natural	0.9	23.78	23.88
Culv_LK136	Culv_LK136	12.44	Natural	0.9	21.75	21.83
Culv_Lk143	Culv_Lk143	29.72	Natural	0.6	34.8	36.54
Culv_Lk171	Culv_Lk171	92.64	Circular	2.55	6.76	7.99
Culv_Lk172	Culv_Lk172	13.41	Rectangular	2.35 x 3.7	9.34	9.62
Culv_Lk25.1.2	Culv_Lk25.1.2	10.5	Circular	1.85	4.45	4.66
Culv_LK46	Culv_LK46	12.49	Natural	1.2	19.84	19.98
Culv_Lk48.2	Culv_Lk48.2	2.38	Circular	0.6	15.08	15.19
Culv_LK58.1	Culv_LK58.1	7.9	Natural	1.85	13.421	13.103
Culv_Lk92.1	Culv_Lk92.1	15.41	Circular	1.2	14.27	14.45
CulvLK42.1	CulvLK42.1	5.72	Natural	1.05	20.83	20.92
CulvLK77.1	CulvLK77.1	23.45	Natural	0.45	14.78	14.81
CulvLK87.1	CulvLK87.1	5.02	Natural	0.6	20.22	20.45
Highgate.1	Highgate.1	168.1	Circular	1.6	15.63	19.08
Link10	Link10	141.49	Natural	0	0.16	0.67
Link101	Link101	202.17	Natural	0	29.841	33.066
Link101.1.1	Link101.1.1	206.54	Natural	0	18.287	21.611
Link101.1.2	Link101.1.2	100.39	Natural	0	21.611	22.77
Link101.2	Link101.2	277.81	Natural	0	22.85	29.841
Link103	Link103	137.17	Natural	0	19.051	19.113
Link11	Link11	113.22	Natural	0	0.22	0.16
Link112	Link112	92.55	Natural	0	4.782	4.883
Link114	Link114	69.17	Natural	0	16.58	17.24
Link115	Link115	104.95	Natural	0	15.508	16.58
Link116	Link116	147.29	Natural	0	13.93	15.508
Link117	Link117	125.09	Natural	0	10.56	13.982
Link118	Link118	33.24	Natural	0	17.643	17.945
Link12	Link12	75.88	Natural	0	-0.077	0.22
Link13	Link13	39.44	Natural	0	0.274	-0.077
Link135	Link135	48.58	Natural	0	22.069	22.464
Link137	Link137	31.81	Natural	0	21.435	21.756
Link138	Link138	56.01	Natural	0	20.868	21.435
Link139	Link139	87.01	Natural	0	19.58	20.868
Link14	Link14	70.07	Natural	0	0.004	0.274
Link140	Link140	112.52	Natural	0	18.333	19.58
Link141	Link141	59.69	Natural	0	17.915	18.333
Link15	Link15	93	Natural	0	-0.134	0.004
Link150	Link150	127.36	Natural	0	4.82	9.86
Link156	Link156	326.91	Natural	0	15.994	22.926
Link157	Link157	89.18	Natural	0	10.198	17.257

Link16	Link16	84.25	Natural	0	-0.12	-0.134
Link160	Link160	131.12	Natural	0	6.35	15.517
Link161	Link161	271.8	Natural	0	22.464	26.837
Link17	Link17	95.65	Natural	0	-0.25	-0.12
Link172	Link172	332.34	Natural	0	11.988	15.232
Link172.1	Link172.1	280.43	Natural	0	12.04	11.988
Link172.1.1.1	Link172.1.1.1	40.25	Natural	0	10.547	10.965
Link175	Link175	177.46	Natural	0	-0.9	-0.8
Link175.1	Link175.1	45.03	Natural	0	-1	-0.9
Link176	Link176	383.8	Natural	0	-1.15	-0.1
Link177	Link177	102.08	Natural	0	-1.24	-1.15
Link177.1	Link177.1	116.73	Natural	0	-1.28	-1.24
Link178	Link178	210.95	Natural	0	-1.3	-1.28
Link178.1	Link178.1	206.61	Natural	0	-1.34	-1.3
Link18	Link18	152.17	Natural	0	-0.25	-0.25
Link182	Link182	366.22	Natural	0	1.419	6.76
Link183	Link183	99.41	Natural	0	1.277	1.419
Link184	Link184	332.74	Natural	0	1.277	4.782
Link185	Link185	338.69	Natural	0	1.419	4.656
Link186	Link186	326.75	Natural	0	0.647	1.277
Link187	Link187	435.61	Natural	0	-0.016	0.647
Link188	Link188	458.5	Natural	0	0.03	-0.016
Link189	Link189	284.68	Natural	0	-0.285	0.03
Link190	Link190	185.13	Natural	0	-0.509	-0.285
Link191	Link191	397.39	Natural	0	-0.64	-0.51
Link191.1	Link191.1	413.61	Natural	0	-0.78	-0.64
Link192	Link192	208.09	Natural	0	-0.678	-0.776
Link193	Link193	154.24	Natural	0	4.883	4.74
Link19a	Link19a	133.6	Natural	0	-0.2	2.62
Link19a.1	Link19a.1	132.35	Natural	0	-0.52	-0.2
Link2	Link2	54.59	Natural	0	13.473	13.19
Link2.1	Link2.1	61.12	Natural	0	11.637	13.473
Link20	Link20	14.09	Natural	0	-0.34	-0.25
Link20.1	Link20.1	51.59	Natural	0	-0.52	-0.47
Link200	Link200	167.18	Natural	0	14.65	18.815
Link203	Link203	75.72	Natural	0	36.54	43.97
Link207	Link207	189.59	Natural	0	25.06	30.2
Link21	Link21	175.83	Natural	0	-0.71	-0.52
Link23	Link23	2.66	Natural	0	10.33	10.19
Link23.1.1	Link23.1.1	153.98	Natural	0	-0.25	4.68
Link23.1.2	Link23.1.2	116.55	Natural	0	4.68	6.16
Link23.2.1	Link23.2.1	155.22	Natural	0	6.17	8.83
Link23.3	Link23.3	161.01	Natural	0	8.88	10.33
Link25	Link25	72.62	Natural	0	4.51	5.87
Link25.1	Link25.1	37.03	Natural	0	4.66	4.51
Link25.1.1	Link25.1.1	13.53	Natural	0	3.99	4.45
Link3	Link3	108.63	Natural	0	10.849	11.637
Link31	Link31	91.63	Natural	0	15.59	15.86
Link31.1	Link31.1	465.46	Natural	0	11.7	13.69
Link31.2	Link31.2	386.31	Natural	0	13.69	14.77
Link31.3	Link31.3	194.9	Natural	0	14.77	15.32
Link31.4	Link31.4	93.24	Natural	0	15.32	15.59
Link32	Link32	865.06	Natural	0	8.908	11.7
Link32.1	Link32.1	688.18	Natural	0	5.132	8.908
Link33a	Link33a	198.81	Natural	0	4.09	5.13
Link33b	Link33b	137.99	Natural	0	3.57	4.09
Link33c	Link33c	147.58	Natural	0	2.64	3.57
Link39	Link39	56.29	Natural	0	22.81	23.78
Link4	Link4	78.42	Natural	0	8.575	10.849
Link4.1	Link4.1	97.95	Natural	0	5.04	8.103
Link4.2	Link4.2	82.58	Natural	0	8.103	8.575
Link40	Link40	58.73	Natural	0	22.311	22.81

Link41	Link41	78.25	Natural	0	21.52	22.311
Link42	Link42	79.01	Natural	0	20.92	21.52
Link43	Link43	48.21	Natural	0	20.551	20.83
Link44	Link44	17.22	Natural	0	19.98	20.551
Link45.1	Link45.1	95.72	Natural	0	17.97	18.11
Link45.1.1	Link45.1.1	47.86	Natural	0	17.9	17.97
Link45.1.1.1	Link45.1.1.1	47.86	Natural	0	17.83	17.9
Link45.2	Link45.2	114.74	Natural	0	18.114	19.84
Link46	Link46	32.11	Natural	0	16.882	17.83
Link46.1	Link46.1	27.5	Natural	0	17.239	16.882
Link47	Link47	113.64	Natural	0	15.25	17.239
Link48	Link48	55.74	Natural	0	15.19	15.25
Link48.1	Link48.1	65.21	Natural	0	14.14	15.08
Link49	Link49	70.45	Natural	0	13.19	14.143
Link5	Link5	60.92	Natural	0	4.82	5.04
Link5.1	Link5.1	39.19	Natural	0	4.59	4.82
Link53	Link53	69.15	Natural	0	17.237	18.287
Link54	Link54	41.08	Natural	0	16.873	17.237
Link54.1	Link54.1	15.06	Natural	0	16.432	16.873
Link55	Link55	116.8	Natural	0	14.65	16.432
Link55.1	Link55.1	64.57	Natural	0	13.984	14.65
Link56	Link56	17.49	Natural	0	13.652	13.733
Link56.1	Link56.1	60.44	Natural	0	13.027	13.652
Link57	Link57	66.25	Natural	0	12.015	13.027
Link58	Link58	76.81	Natural	0	13.103	12.015
Link59	Link59	91.29	Natural	0	9.04	10.83
Link6	Link6	61.11	Natural	0	4.56	4.59
Link6.1	Link6.1	44.98	Natural	0	4.46	4.56
Link6.1a	Link6.1a	26.8	Natural	0	3.99	4.32
Link60	Link60	111.63	Natural	0	5.87	9.04
Link65	Link65	384.85	Natural	0	17.146	19.051
Link66	Link66	169.44	Natural	0	15.994	17.146
Link66.1	Link66.1	174.58	Natural	0	13.72	14.769
Link66.1.1	Link66.1.1	177.17	Natural	0	12.039	13.72
Link66.2	Link66.2	173.2	Natural	0	14.769	15.994
Link67	Link67	134.88	Natural	0	11.6	12.039
Link67.1	Link67.1	284.75	Natural	0	10.198	11.895
Link68	Link68	335.52	Natural	0	9.055	10.198
Link69	Link69	55.84	Natural	0	9.439	9.055
Link69.1	Link69.1	226.86	Natural	0	8.3	9.439
Link7	Link7	51.83	Natural	0	1.258	3.99
Link70	Link70	143.23	Natural	0	7.11	8.3
Link71	Link71	77.14	Natural	0	6.35	7.11
Link71.1	Link71.1	163.65	Natural	0	6.315	7.11
Link71.2	Link71.2	82.49	Natural	0	7.11	6.35
Link72	Link72	38.13	Natural	0	6.404	6.315
Link72.1	Link72.1	39.12	Natural	0	5.19	6.2
Link74	Link74	122.63	Natural	0	28.994	34.8
Link74.1	Link74.1	245.26	Natural	0	20.836	26.368
Link74.2	Link74.2	122.63	Natural	0	26.368	28.994
Link75	Link75	89.68	Natural	0	18.293	19.441
Link76	Link76	138.38	Natural	0	16.371	18.293
Link77	Link77	47.66	Natural	0	15.15	16.371
Link77.1.1	Link77.1.1	40.12	Natural	0	14.23	14.78
Link78	Link78	51.92	Natural	0	11.74	14.23
Link79	Link79	96.79	Natural	0	9.86	11.74
Link8	Link8	77.32	Natural	0	0.19	1.258
Link81	Link81	37.06	Natural	0	23.846	24.86
Link82	Link82	116.13	Natural	0	18.818	23.846
Link83	Link83	40.79	Natural	0	16.432	18.818
Link87	Link87	56.35	Natural	0	20.22	20.91
Link87.1a	Link87.1a	28.31	Natural	0	19.98	20.22

Link89	Link89	156.52	Natural	0	22.531	24.98
Link89.1	Link89.1	135.63	Natural	0	20.91	22.531
Link9	Link9	130.9	Natural	0	0.67	0.19
Link92	Link92	76.63	Natural	0	14.72	15.63
Link92.1.1	Link92.1.1	60.87	Natural	0	12.66	14.27
Link94	Link94	126.39	Natural	0	10.56	12.66
Link95	Link95	31.28	Natural	0	10.19	10.56
Orewa	Orewa	20.73	Natural	0	-0.8	-0.74

XP STORM OUTPUTS - JUNCTION DATA (SCENARIO 28)

Name	Node Name	Invert Elevation m	Node X	Node Y	Ponding Type	Inlet Capacity Type
Highgate	Highgate	19.08	390760.744	830148.545	Link Invert to 2D	Maximum Capacity
Millwater1	Millwater1	-1	391144.141	831278.612	Link Invert to 2D	Maximum Capacity
Millwater2	Millwater2	-1.15	391481.677	831387.439	Link Invert to 2D	Maximum Capacity
Millwater3	Millwater3	-1.24	391570.934	831410.567	Link Invert to 2D	Maximum Capacity
Millwater4	Millwater4	-1.3	391860.414	831519.05	Link Invert to 2D	Maximum Capacity
Node10	Node10	1.258	390011.681	830524.418	Link Invert to 2D	Maximum Capacity
Node100	Node100	15.63	390694.008	830302.827	Link Invert to 2D	Maximum Capacity
Node100.1	Node100.1	12.66	390622.118	830426.675	Link Invert to 2D	Maximum Capacity
Node100.2	Node100.2	14.45	390661.171	830366.907	Link Invert to 2D	Maximum Capacity
Node100.2.1	Node100.2.1	14.27	390651.341	830378.777	Link Invert to 2D	Maximum Capacity
Node102	Node102	10.56	390587.268	830536.871	Link Invert to 2D	Maximum Capacity
Node104	Node104	4.74	390989.368	829058.139	Link Invert to 2D	Maximum Capacity
Node105	Node105	-0.8	390934.933	831205.359	Link Invert to 2D	Maximum Capacity
Node105.1	Node105.1	-0.9	391100.667	831266.89	Link Invert to 2D	Maximum Capacity
Node108	Node108	5.04	390014.062	830245.239	Link Invert to 2D	Maximum Capacity
Node108.1	Node108.1	4.82	390003.818	830304.98	Link Invert to 2D	Maximum Capacity
Node109	Node109	33.066	388814.038	829688.32	Link Invert to 2D	Maximum Capacity
Node109.1	Node109.1	22.85	388976.008	830105.067	Link Invert to 2D	Maximum Capacity
Node109.1.1	Node109.1.1	21.611	389076.916	830169.74	Link Invert to 2D	Maximum Capacity
Node109.1.2	Node109.1.2	22.77	388990.761	830118.588	Link Invert to 2D	Maximum Capacity
Node109.2	Node109.2	29.841	388826.55	829870.888	Link Invert to 2D	Maximum Capacity
Node11	Node11	0.19	390054.553	830588.569	Link Invert to 2D	Maximum Capacity
Node119	Node119	4.883	391084.228	828988.566	Link Invert to 2D	Maximum Capacity
Node12	Node12	0.67	390107.166	830696.479	Link Invert to 2D	Maximum Capacity
Node120	Node120	4.782	391132.149	828949.835	Link Invert to 2D	Maximum Capacity
Node121	Node121	17.39	390500.65	830117.826	Link Invert to 2D	Maximum Capacity
Node122	Node122	17.24	390500.816	830122.97	Link Invert to 2D	Maximum Capacity
Node123	Node123	16.58	390492.934	830190.884	Link Invert to 2D	Maximum Capacity
Node124	Node124	15.508	390497.396	830295.447	Link Invert to 2D	Maximum Capacity
Node125	Node125	13.93	390523.844	830437.416	Link Invert to 2D	Maximum Capacity
Node126	Node126	17.915	390507.197	830089.527	Link Invert to 2D	Maximum Capacity
Node13	Node13	0.1603	390181.707	830808.359	Link Invert to 2D	Maximum Capacity
Node134	Node134	23.88	389637.57	829041.964	Link Invert to 2D	Maximum Capacity
Node14	Node14	0.22	390221.859	830886.276	Link Invert to 2D	Maximum Capacity
Node143	Node143	22.464	390527.054	829736.499	Link Invert to 2D	Maximum Capacity
Node144	Node144	21.83	390515.505	829783.568	Link Invert to 2D	Maximum Capacity
Node145	Node145	21.75	390512.138	829795.544	Link Invert to 2D	Maximum Capacity
Node146	Node146	21.435	390502.851	829825.972	Link Invert to 2D	Maximum Capacity
Node147	Node147	20.868	390500.521	829881.384	Link Invert to 2D	Maximum Capacity
Node148	Node148	19.58	390505.475	829963.454	Link Invert to 2D	Maximum Capacity
Node149	Node149	18.333	390495.782	830049.403	Link Invert to 2D	Maximum Capacity
Node15	Node15	-0.077	390239.982	830957.369	Link Invert to 2D	Maximum Capacity
Node150	Node150	36.54	389283.652	829636.661	Link Invert to 2D	Maximum Capacity
Node159	Node159	44.824	389130.157	829523.01	Link Invert to 2D	Maximum Capacity
Node16	Node16	0.274	390259.45	830985.84	Link Invert to 2D	Maximum Capacity

Node160	Node160	36.06	389102.492	829047.246	Link Invert to 2D	Maximum Capacity
Node160.1	Node160.1	30.2	389372.452	829121.34	Link Invert to 2D	Maximum Capacity
Node161	Node161	29.993	389375.219	828939.943	Link Invert to 2D	Maximum Capacity
Node168	Node168	26.837	390627.699	829496.156	Link Invert to 2D	Maximum Capacity
Node17	Node17	0.004	390326.41	830996.417	Link Invert to 2D	Maximum Capacity
Node178	Node178	7.99	390902.335	828787.492	Link Invert to 2D	Maximum Capacity
Node179	Node179	6.76	390994.978	828787.897	Link Invert to 2D	Maximum Capacity
Node18	Node18	-0.134	390404.117	831034.954	Link Invert to 2D	Maximum Capacity
Node180.1	Node180.1	11.988	390658.86	828617.787	Link Invert to 2D	Maximum Capacity
Node180.1.1	Node180.1.1	9.62	390872.05	828749.519	Link Invert to 2D	Maximum Capacity
Node180.1.1.1	Node180.1.1.1	9.34	390874.93	828762.612	Link Invert to 2D	Maximum Capacity
Node186	Node186	-1.28	391651.599	831489.29	Link Invert to 2D	Maximum Capacity
Node187	Node187	-1.34	392050.291	831561.049	Link Invert to 2D	Maximum Capacity
Node19	Node19	-0.12	390461.56	831088.471	Link Invert to 2D	Maximum Capacity
Node192	Node192	1.277	391327.868	828850.408	Link Invert to 2D	Maximum Capacity
Node194	Node194	-0.016	391899.237	828994.355	Link Invert to 2D	Maximum Capacity
Node195	Node195	0.03	392098.433	828889.23	Link Invert to 2D	Maximum Capacity
Node196	Node196	-0.285	392322.117	828895.377	Link Invert to 2D	Maximum Capacity
Node198	Node198	-0.51	392464.001	828796.297	Link Invert to 2D	Maximum Capacity
Node199	Node199	-0.678	393345.847	828972.505	Link Invert to 2D	Maximum Capacity
Node20	Node20	-0.25	390554.347	831108.65	Link Invert to 2D	Maximum Capacity
Node203	Node203	34.96	389000.188	830307.602	Link Invert to 2D	Maximum Capacity
Node206	Node206	18.815	389353.844	830230.372	Link Invert to 2D	Maximum Capacity
Node209	Node209	43.97	389264.177	829584.071	Link Invert to 2D	Maximum Capacity
Node21	Node21	-0.25	390698.628	831102.846	Link Invert to 2D	Maximum Capacity
Node21.1	Node21.1	-0.47	390715.127	831125.017	Link Invert to 2D	Maximum Capacity
Node21.2	Node21.2	-0.34	390707.67	831113.468	Link Invert to 2D	Maximum Capacity
Node22	Node22	5.87	389871.336	830460.858	Link Invert to 2D	Maximum Capacity
Node22.1	Node22.1	4.51	389942.611	830473.624	Link Invert to 2D	Maximum Capacity
Node22.1.1	Node22.1.1	4.45	389989.974	830472.236	Link Invert to 2D	Maximum Capacity
Node22.1.2	Node22.1.2	4.66	389979.511	830473.164	Link Invert to 2D	Maximum Capacity
Node25	Node25	10.19	390597.722	830562.939	Link Invert to 2D	Maximum Capacity
Node25.1	Node25.1	6.17	390655.161	830854.86	Link Invert to 2D	Maximum Capacity
Node25.1.1	Node25.1.1	4.68	390689.475	830965.836	Link Invert to 2D	Maximum Capacity
Node25.1.2	Node25.1.2	6.16	390655.689	830860.234	Link Invert to 2D	Maximum Capacity
Node25.2	Node25.2	8.88	390623.037	830712.51	Link Invert to 2D	Maximum Capacity
Node25.2.1	Node25.2.1	8.83	390624.239	830721.461	Link Invert to 2D	Maximum Capacity
Node25.3	Node25.3	10.33	390600.156	830564.113	Link Invert to 2D	Maximum Capacity
Node26a	Node26a	2.62	390502.824	831320.516	Link Invert to 2D	Maximum Capacity
Node27	Node27	-0.52	390716.358	831175.835	Link Invert to 2D	Maximum Capacity
Node28	Node28	-0.71	390889.117	831200.507	Link Invert to 2D	Maximum Capacity
Node29	Node29	-0.74	390914.635	831201.149	Link Invert to 2D	Maximum Capacity
Node34.1	Node34.1	2.64	390495.833	831326.28	Link Invert to 2D	Maximum Capacity
Node4	Node4	13.19	390117.819	829855.792	Link Invert to 2D	Maximum Capacity
Node4.1	Node4.1	13.473	390139.264	829896.454	Link Invert to 2D	Maximum Capacity
Node40	Node40	23.78	389646.077	829051.292	Link Invert to 2D	Maximum Capacity
Node41	Node41	22.81	389685.814	829091.165	Link Invert to 2D	Maximum Capacity
Node42	Node42	22.311	389711.315	829144.066	Link Invert to 2D	Maximum Capacity
Node43	Node43	21.52	389735.503	829216.797	Link Invert to 2D	Maximum Capacity
Node43.1	Node43.1	20.92	389775.027	829285.21	Link Invert to 2D	Maximum Capacity

Node44	Node44	20.83	389777.726	829290.258	Link Invert to 2D	Maximum Capacity
Node45	Node45	20.551	389801.673	829332.1	Link Invert to 2D	Maximum Capacity
Node46	Node46	19.98	389804.147	829348.198	Link Invert to 2D	Maximum Capacity
Node46.1	Node46.1	18.11	389912.608	829413.981	Link Invert to 2D	Maximum Capacity
Node46.1a	Node46.1a	17.97	389971.566	829476.09	Link Invert to 2D	Maximum Capacity
Node46.1b	Node46.1b	17.9	389995.357	829517.609	Link Invert to 2D	Maximum Capacity
Node46.2	Node46.2	19.84	389814.117	829355.719	Link Invert to 2D	Maximum Capacity
Node47	Node47	17.83	390020.041	829558.612	Link Invert to 2D	Maximum Capacity
Node47.1	Node47.1	16.882	390035.963	829586.499	Link Invert to 2D	Maximum Capacity
Node48	Node48	17.239	390048.943	829610.74	Link Invert to 2D	Maximum Capacity
Node49	Node49	15.25	390108.692	829694.422	Link Invert to 2D	Maximum Capacity
Node49.1	Node49.1	15.08	390096.026	829734.191	Link Invert to 2D	Maximum Capacity
Node49.2	Node49.2	15.19	390096.748	829731.925	Link Invert to 2D	Maximum Capacity
Node5	Node5	11.637	390135.622	829945.409	Link Invert to 2D	Maximum Capacity
Node50	Node50	14.14	390101.888	829797.933	Link Invert to 2D	Maximum Capacity
Node54	Node54	18.287	389254.992	830274.073	Link Invert to 2D	Maximum Capacity
Node55	Node55	17.237	389305.867	830312.606	Link Invert to 2D	Maximum Capacity
Node55.1	Node55.1	16.873	389334.759	830339.766	Link Invert to 2D	Maximum Capacity
Node56	Node56	16.432	389336.173	830354.135	Link Invert to 2D	Maximum Capacity
Node56.1	Node56.1	13.984	389498.551	830378.391	Link Invert to 2D	Maximum Capacity
Node56.2	Node56.2	14.65	389440.835	830364.371	Link Invert to 2D	Maximum Capacity
Node57	Node57	13.733	389505.49	830382.026	Link Invert to 2D	Maximum Capacity
Node57.1	Node57.1	13.652	389520.745	830390.58	Link Invert to 2D	Maximum Capacity
Node58	Node58	13.027	389562.004	830419.89	Link Invert to 2D	Maximum Capacity
Node59	Node59	12.015	389598.735	830459.228	Link Invert to 2D	Maximum Capacity
Node59.1	Node59.1	11.17	389663.227	830471.068	Link Invert to 2D	Maximum Capacity
Node6	Node6	10.849	390122.582	830049.539	Link Invert to 2D	Maximum Capacity
Node6.1	Node6.1	8.103	390047.33	830160.953	Link Invert to 2D	Maximum Capacity
Node6.2	Node6.2	8.575	390105.058	830116.041	Link Invert to 2D	Maximum Capacity
Node60	Node60	10.83	389670.982	830472.569	Link Invert to 2D	Maximum Capacity
Node61	Node61	9.04	389759.707	830461.047	Link Invert to 2D	Maximum Capacity
Node72	Node72	19.051	389321.668	828257.5	Link Invert to 2D	Maximum Capacity
Node73	Node73	17.146	389541.656	828505.942	Link Invert to 2D	Maximum Capacity
Node73.1	Node73.1	15.994	389673.745	828527.036	Link Invert to 2D	Maximum Capacity
Node74	Node74	12.039	389987.849	828799.277	Link Invert to 2D	Maximum Capacity
Node74.1	Node74.1	9.83	390068.106	828844.096	Link Invert to 2D	Maximum Capacity
Node74.2	Node74.2	11.6	390066.018	828829.077	Link Invert to 2D	Maximum Capacity
Node75	Node75	10.198	390227.444	828871.677	Link Invert to 2D	Maximum Capacity
Node76	Node76	9.055	390403.128	828968.39	Link Invert to 2D	Maximum Capacity
Node77	Node77	8.3	390574.816	829048.966	Link Invert to 2D	Maximum Capacity
Node78	Node78	7.11	390683.738	829036.302	Link Invert to 2D	Maximum Capacity
Node78.1	Node78.1	7.11	390765.2	829001.294	Link Invert to 2D	Maximum Capacity
Node78.2	Node78.2	6.35	390716.455	828981.236	Link Invert to 2D	Maximum Capacity
Node79	Node79	6.315	390831.54	829107.537	Link Invert to 2D	Maximum Capacity
Node8	Node8	4.59	389998.384	830343.08	Link Invert to 2D	Maximum Capacity
Node8.1	Node8.1	4.56	390001.515	830399.956	Link Invert to 2D	Maximum Capacity
Node8.1.1	Node8.1.1	4.46	390006.175	830444.532	Link Invert to 2D	Maximum Capacity
Node8.1.1.1	Node8.1.1.1	4.32	390007.196	830447.784	Link Invert to 2D	Maximum Capacity
Node80	Node80	5.19	390900.4	829099.932	Link Invert to 2D	Maximum Capacity
Node82	Node82	34.8	389292.649	829664.986	Link Invert to 2D	Maximum Capacity

Node82.1	Node82.1	26.368	389394.601	829844.178	Link Invert to 2D	Maximum Capacity
Node82.2	Node82.2	28.994	389300.418	829784.319	Link Invert to 2D	Maximum Capacity
Node83	Node83	19.441	389602.462	829896.157	Link Invert to 2D	Maximum Capacity
Node84	Node84	18.293	389662.074	829961.1	Link Invert to 2D	Maximum Capacity
Node85	Node85	16.371	389722.053	830083.34	Link Invert to 2D	Maximum Capacity
Node85.1	Node85.1	14.81	389740.551	830127.262	Link Invert to 2D	Maximum Capacity
Node85.1.1	Node85.1.1	14.78	389756.101	830144.817	Link Invert to 2D	Maximum Capacity
Node86	Node86	14.23	389773.508	830180.966	Link Invert to 2D	Maximum Capacity
Node87	Node87	11.74	389813.454	830214.091	Link Invert to 2D	Maximum Capacity
Node88	Node88	9.86	389902.906	830232.576	Link Invert to 2D	Maximum Capacity
Node89	Node89	24.86	389148.187	830372.404	Link Invert to 2D	Maximum Capacity
Node9	Node9	3.99	390003.36	830473.919	Link Invert to 2D	Maximum Capacity
Node90	Node90	23.846	389182.093	830362.075	Link Invert to 2D	Maximum Capacity
Node91	Node91	18.818	389296.699	830347.944	Link Invert to 2D	Maximum Capacity
Node95	Node95	20.91	389744.113	829324.369	Link Invert to 2D	Maximum Capacity
Node95.1	Node95.1	20.22	389774.744	829342.565	Link Invert to 2D	Maximum Capacity
Node95.1a	Node95.1a	20.22	389778.418	829339.137	Link Invert to 2D	Maximum Capacity
Node96	Node96	25.06	389546.04	829197.565	Link Invert to 2D	Maximum Capacity
Node97	Node97	24.98	389560.25	829192.891	Link Invert to 2D	Maximum Capacity
Node97.1	Node97.1	22.531	389638.956	829276.626	Link Invert to 2D	Maximum Capacity
Orewa C2	Orewa C2	15.32	388430.922	830585.273	Link Invert to 2D	Maximum Capacity
Orewa Contri1	Orewa Contri1	15.86	388263.823	830565.82	Link Invert to 2D	Maximum Capacity
Orewa Contri2	Orewa Contri2	15.59	388350.139	830585.522	Link Invert to 2D	Maximum Capacity
Orewa Contri3	Orewa Contri3	14.77	388565.501	830677.966	Link Invert to 2D	Maximum Capacity
Orewa_C3	Orewa_C3	13.69	388756.013	830932.835	Link Invert to 2D	Maximum Capacity
Orewa_Contri4	Orewa_Contri4	11.7	389083.635	831225.761	Link Invert to 2D	Maximum Capacity
Orewa_Contri5	Orewa_Contri5	8.908	389660.232	831548.956	Link Invert to 2D	Maximum Capacity
Orewa_Contri6	Orewa_Contri6	5.13	390146.566	831642.474	Link Invert to 2D	Maximum Capacity
Orewa_Contri7	Orewa_Contri7	3.57	390377.523	831407.877	Link Invert to 2D	Maximum Capacity
Orewa_Contri8	Orewa_Contri8	-0.2	390626.424	831271.403	Link Invert to 2D	Maximum Capacity
Orewa_Contri9	Orewa_Contri9	4.09	390285.039	831507.218	Link Invert to 2D	Maximum Capacity
Weiti_C1	Weiti_C1	14.769	389753.249	828662.428	Link Invert to 2D	Maximum Capacity
Weiti_Contri	Weiti_Contri	19.113	389346.741	828164.723	Link Invert to 2D	Maximum Capacity
Weiti_Contri2	Weiti_Contri2	22.926	389616.84	828218.568	Link Invert to 2D	Maximum Capacity
Weiti_Contri3	Weiti_Contri3	13.72	389850.037	828720.837	Link Invert to 2D	Maximum Capacity
Weiti_Contri4	Weiti_Contri4	17.257	390276.888	828808.223	Link Invert to 2D	Maximum Capacity
Weiti_Contri5	Weiti_Contri5	9.439	390449.796	828990.714	Link Invert to 2D	Maximum Capacity
Weiti_Contri6	Weiti_Contri6	15.517	390632.979	828920.551	Link Invert to 2D	Maximum Capacity
Weiti_Contri7	Weiti_Contri7	6.2	390866.521	829103.717	Link Invert to 2D	Maximum Capacity
Weiti_Contri8	Weiti_Contri8	1.419	391273.799	828775.679	Link Invert to 2D	Maximum Capacity
Weiti_Contri8.1	Weiti_Contri8.1	0.647	391594.469	828893	Link Invert to 2D	Maximum Capacity
Weiti_Contri9	Weiti_Contri9	15.232	390539.344	828354.986	Link Invert to 2D	Maximum Capacity
Weiti_Contri9.1	Weiti_Contri9.1	-0.64	392841.08	828814.576	Link Invert to 2D	Maximum Capacity
Weiti_Contri9.2	Weiti_Contri9.2	-0.78	393176.511	829015.146	Link Invert to 2D	Maximum Capacity
Weiti_Silverdale	Weiti_Silverdale	4.656	391146.039	828521.651	Link Invert to 2D	Maximum Capacity

XP STORM OUTPUTS -CHANNEL MANNINGS COEFFICENTS (SCENARIO 28)

Name	Main Channel Manning's n	Left Overbank Manning's n	Right Overbank Manning's n
Link50.1_SHP	0.06	0.08	0.08
Link51_SHP	0.06	0.08	0.08
Link110_SHP	0.06	0.08	0.08
Link49_SHP	0.06	0.08	0.08
Link78_SHP	0.06	0.08	0.08
Link101.2_SHP	0.06	0.08	0.08
Link101_SHP	0.06	0.08	0.08
Link114_SHP	0.06	0.08	0.08
Link115_SHP	0.06	0.08	0.08
Link77.1.1_SHP	0.06	0.08	0.08
Link103_SHP	0.06	0.08	0.08
Link79_SHP	0.06	0.08	0.08
Link6.1.1.1_SHP	0.06	0.08	0.08
Link48.1_SHP	0.06	0.08	0.08
Link156_SHP	0.06	0.08	0.08
Link33b_SHP	0.06	0.08	0.08
Link33c_SHP	0.06	0.08	0.08
Link182_SHP	0.06	0.08	0.08
Link183_SHP	0.06	0.08	0.08
Link185_SHP	0.06	0.08	0.08
Link186_SHP	0.06	0.08	0.08
Link187_SHP	0.06	0.08	0.08
Link190_SHP	0.06	0.08	0.08
Link192_SHP	0.06	0.08	0.08
Link172.1.1.1_SHP	0.06	0.08	0.08
Link172_SHP	0.06	0.08	0.08
Link172.1_SHP	0.06	0.08	0.08
Link189_SHP	0.06	0.08	0.08
Link188_SHP	0.06	0.08	0.08
Link177.1_SHP	0.06	0.08	0.08
Link178_SHP	0.06	0.08	0.08
Link178.1_SHP	0.06	0.08	0.08
Link92.1.1_SHP	0.06	0.08	0.08
Link160_SHP	0.06	0.08	0.08
Link65_SHP	0.06	0.08	0.08
Link66_SHP	0.06	0.08	0.08
Link66.2_SHP	0.06	0.08	0.08
Link66.1_SHP	0.06	0.08	0.08
Link66.1.1_SHP	0.06	0.08	0.08
Link67_SHP	0.06	0.08	0.08
Link67.1_SHP	0.06	0.08	0.08
Link157_SHP	0.06	0.08	0.08
Link68_SHP	0.06	0.08	0.08
Link69_SHP	0.06	0.08	0.08
Link69.1_SHP	0.06	0.08	0.08
Link70_SHP	0.06	0.08	0.08

Link71_SHP	0.06	0.08	0.08
Link71.2_SHP	0.06	0.08	0.08
Link71.1_SHP	0.06	0.08	0.08
Link72_SHP	0.06	0.08	0.08
Link193_SHP	0.06	0.08	0.08
Link112_SHP	0.06	0.08	0.08
Link184_SHP	0.06	0.08	0.08
Link191_SHP	0.06	0.08	0.08
Link191.1_SHP	0.06	0.08	0.08
Link20_SHP	0.06	0.08	0.08
Link31_SHP	0.06	0.08	0.08
Link31.4_SHP	0.06	0.08	0.08
Link31.3_SHP	0.06	0.08	0.08
Link31.2_SHP	0.06	0.08	0.08
Link31.1_SHP	0.06	0.08	0.08
Link32_SHP	0.06	0.08	0.08
Link32.1_SHP	0.06	0.08	0.08
Link33a_SHP	0.06	0.08	0.08
Link19a_SHP	0.06	0.08	0.08
Link177_SHP	0.06	0.08	0.08
Link176_SHP	0.06	0.08	0.08
Link175.1_SHP	0.06	0.08	0.08
Link117_SHP	0.06	0.08	0.08
Link92_SHP	0.06	0.08	0.08
Link60_SHP	0.06	0.08	0.08
Link72.1_SHP	0.06	0.08	0.08
Link4.1_SHP	0.06	0.08	0.08
Link150_SHP	0.06	0.08	0.08
Link5_SHP	0.06	0.08	0.08
Link6.1_SHP	0.06	0.08	0.08
Link25_SHP	0.06	0.08	0.08
Link7_SHP	0.06	0.08	0.08
Link9_SHP	0.06	0.08	0.08
Link10_SHP	0.06	0.08	0.08
Link11_SHP	0.06	0.08	0.08
Link12_SHP	0.06	0.08	0.08
Link116_SHP	0.06	0.08	0.08
Link94_SHP	0.06	0.08	0.08
Link95_SHP	0.06	0.08	0.08
Link23.1.1_SHP	0.06	0.08	0.08
Link203_SHP	0.06	0.08	0.08
Link55_SHP	0.06	0.08	0.08
Link54.1_SHP	0.06	0.08	0.08
Link83_SHP	0.06	0.08	0.08
Link59_SHP	0.06	0.08	0.08
Link4.2_SHP	0.06	0.08	0.08
Link4_SHP	0.06	0.08	0.08
Link3_SHP	0.06	0.08	0.08
Link2.1_SHP	0.06	0.08	0.08
Link2_SHP	0.06	0.08	0.08

Link48_SHP	0.06	0.08	0.08
Link47_SHP	0.06	0.08	0.08
Link14_SHP	0.06	0.08	0.08
Link15_SHP	0.06	0.08	0.08
Link16_SHP	0.06	0.08	0.08
Link17_SHP	0.06	0.08	0.08
Link18_SHP	0.06	0.08	0.08
Link19a.1_SHP	0.06	0.07	0.08
Link21_SHP	0.06	0.08	0.08
Orewa_SHP	0.06	0.08	0.08
Link175_SHP	0.06	0.08	0.08
Link20.1_SHP	0.06	0.08	0.08
Bridge_MWAY_SHP	0.06	0.08	0.08
Link207_SHP	0.06	0.08	0.08
Link101.1.2_SHP	0.06	0.08	0.08
Link101.1.1_SHP	0.06	0.08	0.08
Link53_SHP	0.06	0.08	0.08
Link54_SHP	0.06	0.08	0.08
Link81_SHP	0.06	0.08	0.08
Link82_SHP	0.06	0.08	0.08
Link200_SHP	0.06	0.08	0.08
Link55.1_SHP	0.06	0.08	0.08
Link56_SHP	0.06	0.08	0.08
CulvEx1800_SHP	0.06	0.08	0.08
Link56.1_SHP	0.06	0.08	0.08
Link57_SHP	0.06	0.08	0.08
Link58_SHP	0.06	0.08	0.08
Link74_SHP	0.06	0.08	0.08
Link74.2_SHP	0.06	0.08	0.08
Link76_SHP	0.06	0.08	0.08
Link77_SHP	0.06	0.08	0.08
Link89_SHP	0.06	0.08	0.08
Link89.1_SHP	0.06	0.08	0.08
Link87.1a_SHP	0.06	0.08	0.08
Link39_SHP	0.06	0.08	0.08
Link40_SHP	0.06	0.08	0.08
Link41_SHP	0.06	0.08	0.08
Link42_SHP	0.06	0.08	0.08
Link43_SHP	0.06	0.08	0.08
Link44_SHP	0.06	0.08	0.08
Link45.2_SHP	0.06	0.08	0.08
Link45.1_SHP	0.06	0.08	0.08
Link45.1.1_SHP	0.06	0.08	0.08
Link45.1.1.1_SHP	0.06	0.08	0.08
Link46_SHP	0.06	0.08	0.08
Link46.1_SHP	0.06	0.08	0.08
Link161_SHP	0.06	0.08	0.08
Link135_SHP	0.06	0.08	0.08
Link137_SHP	0.06	0.08	0.08
Link138_SHP	0.06	0.08	0.08

Link139_SHP	0.06	0.08	0.08
Link140_SHP	0.06	0.08	0.08
Link141_SHP	0.06	0.08	0.08
Link118_SHP	0.06	0.08	0.08
Link87_SHP	0.06	0.08	0.08
Link74.1_SHP	0.06	0.08	0.08
Link75_SHP	0.06	0.08	0.08
Link23_SHP	0.06	0.08	0.08
Link23.3_SHP	0.06	0.08	0.08
Link23.2.1_SHP	0.06	0.08	0.08
Link23.1.2_SHP	0.06	0.08	0.08

XP STORM OUTPUTS - RAIN + INFILTRATION (SCENARIO 28)

Name	Node Name	Catchment Number	Routing Method	Time of Concentration (or Parameter 2) min	Curve Number	Initial Abstraction Method	Initial Abstraction Depth mm
Highgate	User Input Hydrograph						
Millwater1	Millwater1	1	SCS Hydrology	42.865	74	Depth	5
Millwater1		2	SCS Hydrology	19.619	98	Depth	1
Millwater2	Millwater2	1	SCS Hydrology	17.559	74	Depth	5
Millwater2		2	SCS Hydrology	10	98	Depth	1
Millwater3	Millwater3	1	SCS Hydrology	25.389	74	Depth	5
Millwater3		2	SCS Hydrology	11.62	98	Depth	1
Millwater4	Millwater4	1	SCS Hydrology	18.281	74	Depth	5
Millwater4		2	SCS Hydrology	10	98	Depth	1
Node105.1	Node105.1	1	SCS Hydrology	11.355	74	Depth	5
Node105.1		2	SCS Hydrology	10	98	Depth	5
Node108	Node108	1	SCS Hydrology	19.148	74	Depth	5
Node108		2	SCS Hydrology	10	98	Depth	5
Node109	Node109	1	SCS Hydrology	19.587	74	Depth	5
Node109		2	SCS Hydrology	10	98	Depth	5
Node109.1.1	Node109.1.1	1	SCS Hydrology	16.849	74	Depth	5
Node109.1.1		2	SCS Hydrology	10	98	Depth	5
Node126	Node126	1	SCS Hydrology	13.414	74	Depth	5
Node126		2	SCS Hydrology	10	98	Depth	1
Node13	Node13	1	SCS Hydrology	15.445	74	Depth	5
Node13		2	SCS Hydrology	10	98	Depth	1
Node143	Node143	1	SCS Hydrology	12.498	74	Depth	5
Node143		2	SCS Hydrology	10	98	Depth	5
Node159	Node159	1	SCS Hydrology	10	74	Depth	1
Node159		2	SCS Hydrology	10	98	Depth	5
Node16	Node16	1	SCS Hydrology	22.993	74	Depth	5
Node16		2	SCS Hydrology	10.524	98	Depth	1
Node160	Node160	1	SCS Hydrology	15.447	74	Depth	5
Node160		2	SCS Hydrology	10	98	Depth	5
Node161	Node161	1	SCS Hydrology	13.566	74	Depth	5
Node161		2	SCS Hydrology	10	98	Depth	5
Node168	Node168	1	SCS Hydrology	30.23	74	Depth	5
Node168		2	SCS Hydrology	13.836	98	Depth	5
Node186	Node186	1	SCS Hydrology	10	74	Depth	5
Node186		2	SCS Hydrology	10	98	Depth	5
Node203	Node203	1	SCS Hydrology	10	74	Depth	5
Node203		2	SCS Hydrology	10	98	Depth	5
Node206	Node206	1	SCS Hydrology	10.871	74	Depth	5
Node206		2	SCS Hydrology	10	98	Depth	5
Node22	Node22	1	SCS Hydrology	12.812	74	Depth	1
Node22		2	SCS Hydrology	10	98	Depth	5
Node25.1	Node25.1	1	SCS Hydrology	23.294	74	Depth	1
Node25.1		2	SCS Hydrology	10.662	98	Depth	5
Node28	Node28	1	SCS Hydrology	15.755	74	Depth	5
Node28		2	SCS Hydrology	10	98	Depth	5
Node4	Node4	1	SCS Hydrology	11.009	74	Depth	1
Node4		2	SCS Hydrology	10	98	Depth	5
Node4.1	Node4.1	1	SCS Hydrology	13.243	74	Depth	5
Node4.1		2	SCS Hydrology	10	98	Depth	5
Node42	Node42	1	SCS Hydrology	14.23	74	Depth	5
Node42		2	SCS Hydrology	10	98	Depth	5
Node46.1	Node46.1	1	SCS Hydrology	20.509	74	Depth	5
Node46.1		2	SCS Hydrology	10	98	Depth	5
Node46.1a	Node46.1a	1	SCS Hydrology	33.712	74	Depth	5
Node46.1a		2	SCS Hydrology	15.43	98	Depth	5
Node46.1b	Node46.1b	1	SCS Hydrology	18.948	74	Depth	1
Node46.1b		2	SCS Hydrology	10	98	Depth	5
Node47	Node47	1	SCS Hydrology	16.084	74	Depth	1
Node47		2	SCS Hydrology	10	98	Depth	5
Node47.1	Node47.1	1	SCS Hydrology	20.281	74	Depth	1
Node47.1		2	SCS Hydrology	10	98	Depth	5
Node48	Node48	1	SCS Hydrology	16.241	74	Depth	5
Node48		2	SCS Hydrology	10	98	Depth	1
Node49	Node49	1	SCS Hydrology	15.649	74	Depth	5
Node49		2	SCS Hydrology	10	98	Depth	1
Node50	Node50	1	SCS Hydrology	19.208	74	Depth	5
Node50		2	SCS Hydrology	10	98	Depth	5
Node54	Node54	1	SCS Hydrology	12.533	74	Depth	5
Node54		2	SCS Hydrology	10	98	Depth	5

Node56	Node56	1	SCS Hydrology	10	74	Depth	5
Node56		2	SCS Hydrology	10	98	Depth	5
Node56.1	Node56.1	1	SCS Hydrology	13.484	74	Depth	5
Node56.1		2	SCS Hydrology	10	98	Depth	5
Node58	Node58	1	SCS Hydrology	10.062	74	Depth	1
Node58		2	SCS Hydrology	10	98	Depth	5
Node59	Node59	1	SCS Hydrology	13.033	74	Depth	5
Node59		2	SCS Hydrology	10	98	Depth	5
Node59.1	Node59.1	1	SCS Hydrology	11.001	74	Depth	5
Node59.1		2	SCS Hydrology	10	98	Depth	5
Node6	Node6	1	SCS Hydrology	10	74	Depth	5
Node6		2	SCS Hydrology	10	98	Depth	5
Node6.1	Node6.1	1	SCS Hydrology	10	74	Depth	5
Node6.1		2	SCS Hydrology	10	98	Depth	5
Node61	Node61	1	SCS Hydrology	15.29	74	Depth	5
Node61		2	SCS Hydrology	10	98	Depth	1
Node73	Node73	1	SCS Hydrology	23.018	74	Depth	5
Node73		2	SCS Hydrology	10.535	98	Depth	1
Node74	Node74	1	SCS Hydrology	10	74	Depth	5
Node74		2	SCS Hydrology	10	98	Depth	5
Node75	Node75	1	SCS Hydrology	15.139	74	Depth	5
Node75		2	SCS Hydrology	10	98	Depth	5
Node76	Node76	1	SCS Hydrology	10.71	74	Depth	5
Node76		2	SCS Hydrology	10	98	Depth	1
Node77	Node77	1	SCS Hydrology	12.425	74	Depth	5
Node77		2	SCS Hydrology	10	98	Depth	5
Node78	Node78	1	SCS Hydrology	15.505	74	Depth	5
Node78		2	SCS Hydrology	10	98	Depth	5
Node8	Node8	1	SCS Hydrology	10	74	Depth	5
Node8		2	SCS Hydrology	10	98	Depth	1
Node8.1	Node8.1	1	SCS Hydrology	16.268	74	Depth	5
Node8.1		2	SCS Hydrology	10	98	Depth	5
Node80	Node80	1	SCS Hydrology	16.141	74	Depth	5
Node80		2	SCS Hydrology	10	98	Depth	5
Node83	Node83	1	SCS Hydrology	18.276	74	Depth	1
Node83		2	SCS Hydrology	10	98	Depth	5
Node85.1	Node85.1	1	SCS Hydrology	11.044	74	Depth	5
Node85.1		2	SCS Hydrology	10	98	Depth	5
Node86	Node86	1	SCS Hydrology	11.627	74	Depth	1
Node86		2	SCS Hydrology	10	98	Depth	5
Node95	Node95	1	SCS Hydrology	13.741	74	Depth	1
Node95		2	SCS Hydrology	10	98	Depth	5
Node97.1	Node97.1	1	SCS Hydrology	10.87	74	Depth	5
Node97.1		2	SCS Hydrology	10	98	Depth	5
Orewa Contri1	Orewa Contri1	1	SCS Hydrology	54.785	74	Depth	1
Orewa Contri1		2	SCS Hydrology	25.075	98	Depth	5
Orewa Contri2	Orewa Contri2	1	SCS Hydrology	35.78	74	Depth	5
Orewa Contri2		2	SCS Hydrology	16.376	98	Depth	5
Orewa Contri3	Orewa Contri3	1	SCS Hydrology	24.612	74	Depth	5
Orewa Contri3		2	SCS Hydrology	11.265	98	Depth	5
Orewa_Contri4	Orewa_Contri4	1	SCS Hydrology	46.57	74	Depth	5
Orewa_Contri4		2	SCS Hydrology	21.315	98	Depth	1
Orewa_Contri5	Orewa_Contri5	1	SCS Hydrology	21.05	74	Depth	5
Orewa_Contri5		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri6	Orewa_Contri6	1	SCS Hydrology	10	74	Depth	5
Orewa_Contri6		2	SCS Hydrology	10	98	Depth	1
Orewa_Contri7	Orewa_Contri7	1	SCS Hydrology	11.532	74	Depth	5
Orewa_Contri7		2	SCS Hydrology	10	98	Depth	5
Orewa_Contri8	Orewa_Contri8	1	SCS Hydrology	10	74	Depth	1
Orewa_Contri8		2	SCS Hydrology	10	98	Depth	5
Orewa_Contri9	Orewa_Contri9	1	SCS Hydrology	46.54	74	Depth	1
Orewa_Contri9		2	SCS Hydrology	21.302	98	Depth	5
Weiti_Contri	Weiti_Contri	1	SCS Hydrology	110.085	74	Depth	1
Weiti_Contri		2	SCS Hydrology	50.386	98	Depth	5
Weiti_Contri2	Weiti_Contri2	1	SCS Hydrology	40.504	74	Depth	1
Weiti_Contri2		2	SCS Hydrology	18.539	98	Depth	5
Weiti_Contri3	Weiti_Contri3	1	SCS Hydrology	14.794	74	Depth	5
Weiti_Contri3		2	SCS Hydrology	10	98	Depth	5
Weiti_Contri4	Weiti_Contri4	1	SCS Hydrology	17.778	74	Depth	5
Weiti_Contri4		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri5	Weiti_Contri5	1	SCS Hydrology	19.417	74	Depth	5
Weiti_Contri5		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri6	Weiti_Contri6	1	SCS Hydrology	11.656	74	Depth	5
Weiti_Contri6		2	SCS Hydrology	10	98	Depth	5

Weiti_Contri7	Weiti_Contri7	1	SCS Hydrology	20.511	74	Depth	5
Weiti_Contri7		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri8	Weiti_Contri8	1	SCS Hydrology	11.5	74	Depth	5
Weiti_Contri8		2	SCS Hydrology	10	98	Depth	1
Weiti_Contri8.1	Weiti_Contri8.1	1	SCS Hydrology	18.21	74	Depth	5
Weiti_Contri8.1		2	SCS Hydrology	10	98	Depth	5
Weiti_Contri9	Weiti_Contri9	1	SCS Hydrology	58.199	74	Depth	5
Weiti_Contri9		2	SCS Hydrology	26.638	98	Depth	5
Weiti_Contri9.1	Weiti_Contri9.1	1	SCS Hydrology	40.85	74	Depth	1
Weiti_Contri9.1		2	SCS Hydrology	18.697	98	Depth	5
Weiti_Contri9.2	Weiti_Contri9.2	1	SCS Hydrology	17.067	74	Depth	1
Weiti_Contri9.2		2	SCS Hydrology	10	98	Depth	5
Weiti_Silverdale	Weiti_Silverdale	1	SCS Hydrology	95.448	74	Depth	1
Weiti_Silverdale		2	SCS Hydrology	43.686	98	Depth	5

Appendix B – Query List and Correspondence (Healthy Waters)

Shakti Singh

From: Juan Alvarez De Lugo
Sent: Thursday, 30 November 2023 4:21 pm
To: Shakti Singh
Subject: FW: SW Model Review & SMP Addendum - Milldale
Attachments: HW Milldale Queries List - Woods Reponse.xlsx

Follow Up Flag: Follow up
Flag Status: Flagged

Juan Alvarez De Lugo
Associate Engineer
CMEngNZ, CPEng IntPE(NZ)
[redacted]
woods.co.nz

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From: Kedan Li [redacted]
Sent: Friday, May 27, 2022 5:15 PM
To: Juan Alvarez De Lugo [redacted]
Cc: Pranil Wadan < [redacted] Dali Suljic [redacted]
Subject: RE: SW Model Review & SMP Addendum - Milldale

Hi Juan,

Thanks for your effort, I have checked the model, I agree on our most recent modelling queries list (as attached) which has closed off our previous queries.

Cheers,
Kedan

Kedan Li | Senior Healthy Waters Specialist
Healthy Waters | Infrastructure & Environmental Services
Auckland Council, Level 17, Auckland House, 135 Albert Street, Auckland
Visit our website: www.aucklandcouncil.govt.nz

From: Kedan Li
Sent: Wednesday, 25 May 2022 9:13 am
To: Juan Alvarez De Lugo [redacted]
Cc: Pranil Wadan [redacted] Dali Suljic < [redacted]
Subject: RE: SW Model Review & SMP Addendum - Milldale

Hi Juan,

Thank you. I am writing to acknowledge that I have received your email, but I am fully booked this week, hopefully I can get back to you by end of the week.

Thanks again.

Kind Regards,
Kedan

From: Juan Alvarez De Lugo [redacted]
Sent: Friday, 20 May 2022 5:40 pm
To: Kedan Li [redacted]
Cc: Pranil Wadan < [redacted] Dali Suljic [redacted]
Subject: RE: SW Model Review & SMP Addendum - Milldale

Hello Kedan,

Hope you have been well.

I have updated the models based on our latest conversation and uploaded them to the OneDrive link.

As agreed, those areas near the estuary have been assigned a stream bed roughness of 0.03 and the rest of the areas retained a stream bed roughness of 0.06 (considered conservative).

I am keen to lock-in the models so I can return to the reports.

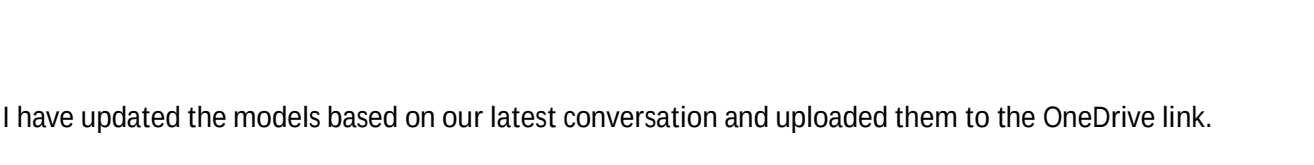
Any concerns please let me know.

Regards,

Juan Alvarez De Lugo
Associate Engineer
[redacted]
[redacted]
woods.co.nz

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From: Kedan Li [redacted]
Sent: Tuesday, 10 May 2022 4:28 pm
To: Juan Alvarez De Lugo [redacted]
Cc: Pranil Wadan [redacted] Dali Suljic [redacted]
Subject: RE: SW Model Review & SMP Addendum - Milldale

Hi Juan,

Thanks for checking. The roughness should really based on the site topography, I do not have concern for Site 2, but the low roughness for all other site have been applied are too wide and too low.

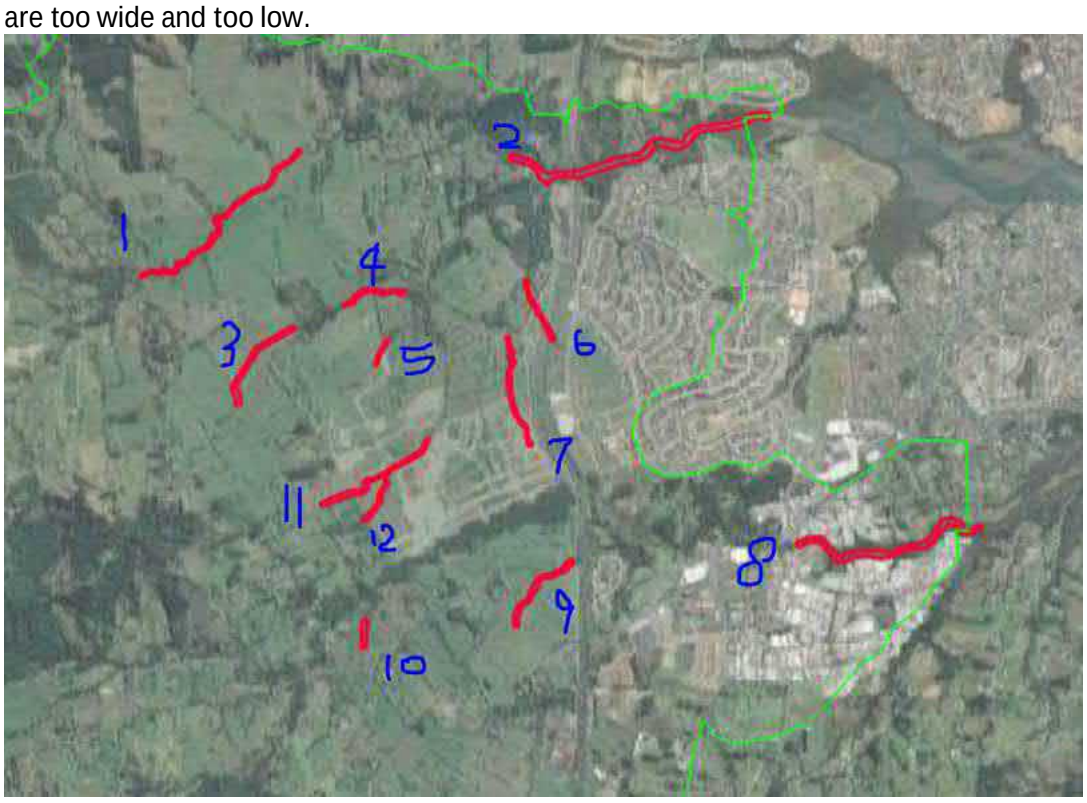
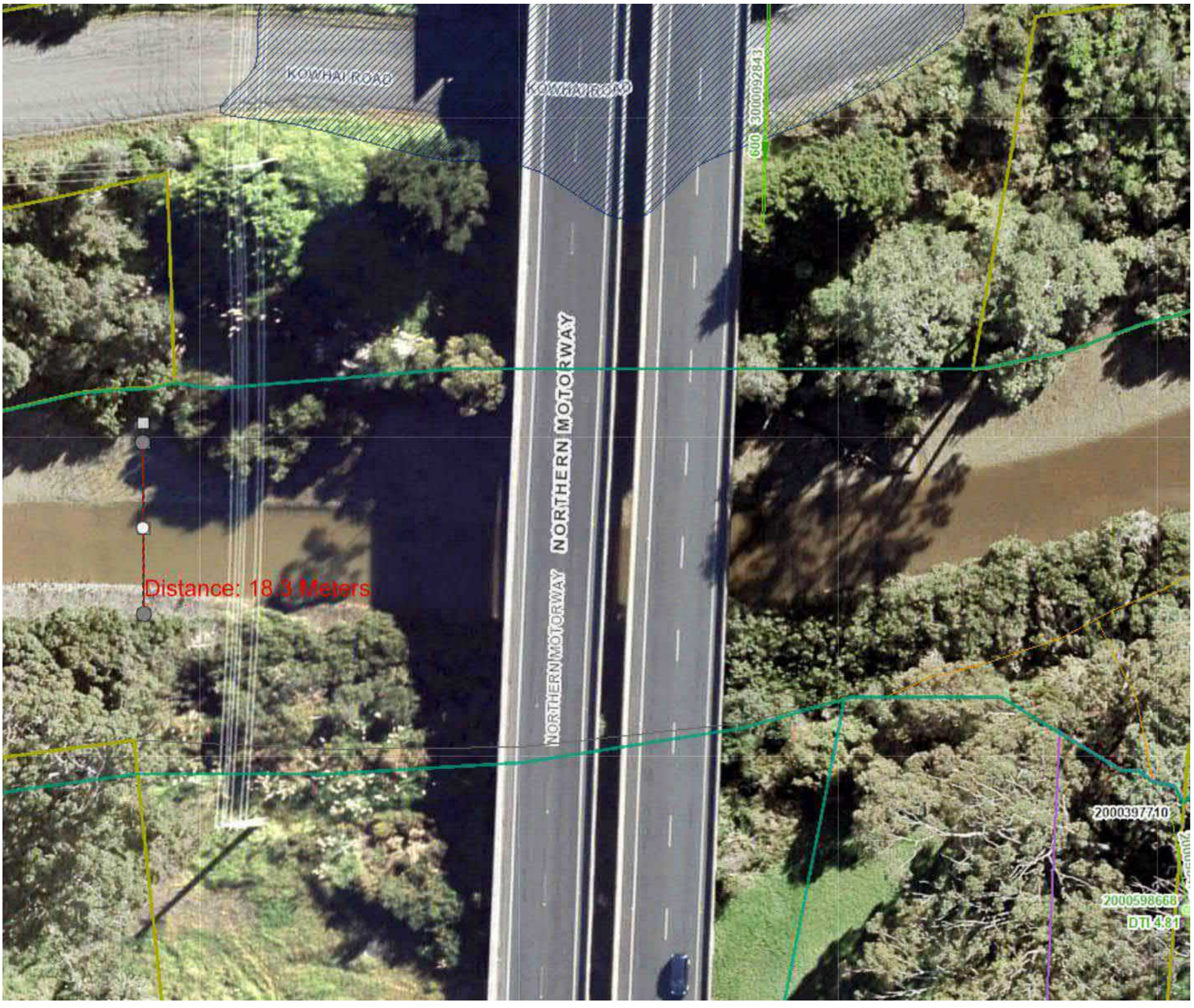
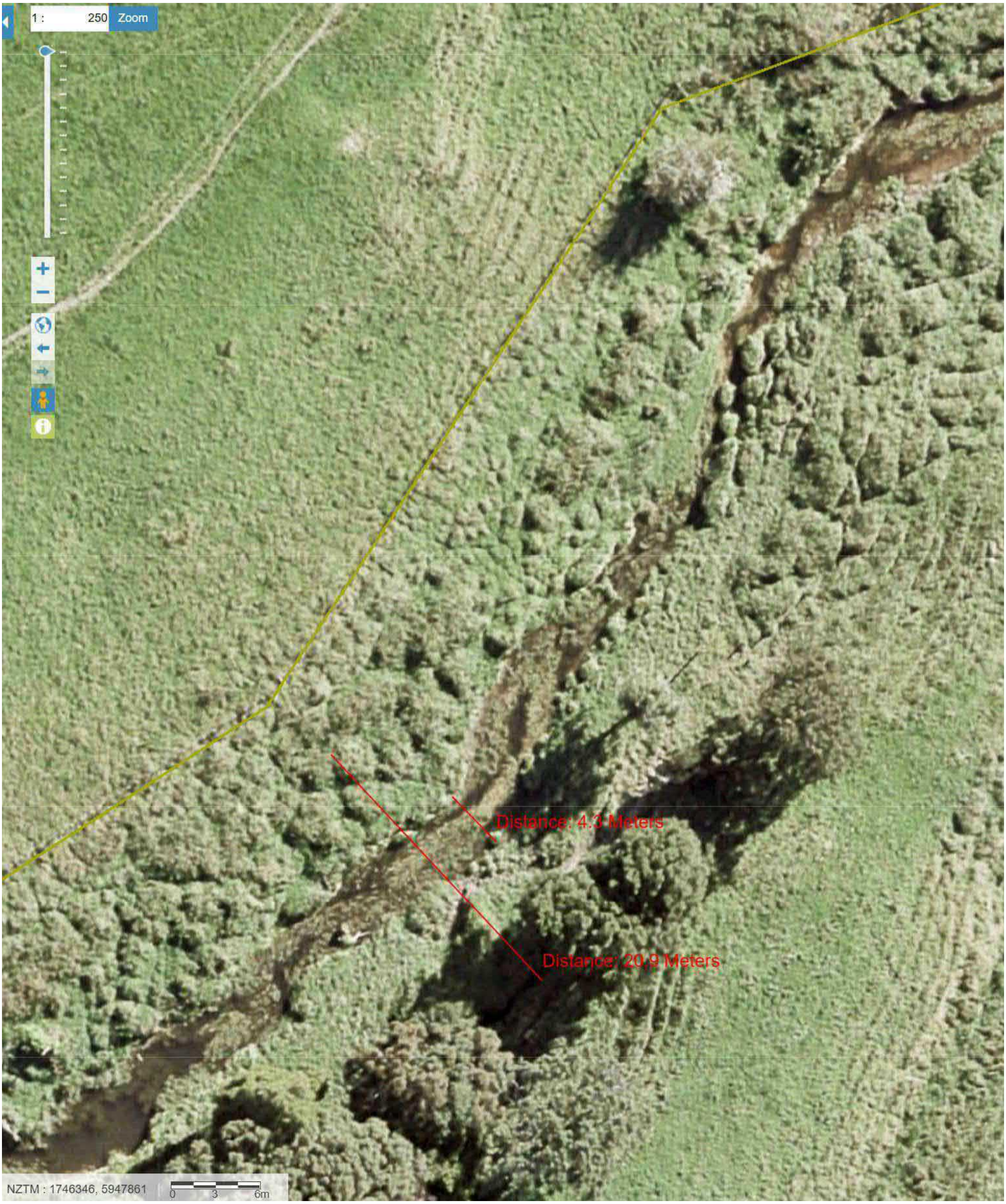


Photo of Site 2 is shown as below. As I mentioned previously, due to it is close to the sea estuary, and the stream bed is mostly clay without much vegetation, hence a low roughness of 0.03 should be applied.



Whereas other sites, for example, site 1, Link 31.2, the screen shot below shows the low roughness extend is less than 4m in cross section, whereas our current model implies more than 20m.



Please refer to the table below for roughness detail.

Table 5.2 Manning's n Roughness values for Channel, Bank & Floodplain Vegetation (DEFRA, 2004)

Channel, Bank, Floodplain Vegetation	Manning's n Roughness Values		
	Unit Roughness	Lower Roughness	Upper Roughness
Free-floating plants	0.054	0.035	0.065
Filamentous algae	0.015	0	0.05
Mosses	0.015	0	0.03
Trailing bank-side plants	0.05	0	0.1
Emergent reeds	0.15	0.02	0.2
Floating-leaved rooted plants	0.10	0.03	0.14
Emergent broad-leaved rooted plants	0.15	0.05	0.5
Submerged broad-leaved plants	0.10	0.02	0.2
Submerged fine-leaved plants (shallow)	0.3	0.02	0.45
Submerged fine-leaved plants (medium)	0.10	0.021	0.249
Submerged fine-leaved plants (deep)	0.08	0.01	0.12
Height-varying grass	0.041	0.02	0.08
Tall grass 1-1.8m	0.09	0.07	0.11
Medium grass 0.75-1m	0.08	0.07	0.09
Turf	0.021	0.018	0.024
Clean hedges (Separation distance - 50m)	0.053	0.035	0.07
Dirty hedges (Separation distance - 50m)	0.091	0.062	0.12
Corn (parallel to flow)	0.11	0.036	0.24
Cotton (parallel to flow)	0.06	0.008	0.14
Sorghum (parallel to flow)	0.12	0.019	0.26
Soybeans (parallel to flow)	0.095	0.05	0.21
Sunflowers (parallel to flow)	0.115	0.012	0.134
Wheat (parallel to flow)	0.057	0.042	0.065
Corn (perpendicular to flow)	0.05	0.012	0.134
Cotton (perpendicular to flow)	0.045	0.017	0.082
Sorghum (perpendicular to flow)	0.047	0.015	0.093
Soybeans (perpendicular to flow)	0.08	0.037	0.149
Sunflowers (perpendicular to flow)	0.07	0.012	0.12
Wheat (perpendicular to flow)	0.075	0.015	0.13
Wheat stems	0.028	0.022	0.031
Small supple trees saplings e.g willow	0.005	0.0001	0.05
Scattered brush and heavy weeds	0.05	0.035	0.07
Light brush and trees (winter)	0.05	0.035	0.06
Light brush and trees (summer)	0.06	0.04	0.08
Medium brush and trees (winter)	0.07	0.045	0.11
Medium brush and trees (summer)	0.10	0.07	0.16
Dense willows (summer)	0.15	0.11	0.2
Cleared land - tree stumps	0.04	0.03	0.05
Cleared land - tree stumps & heavy sprouts	0.06	0.05	0.08
Moderate to dense brush (depth below branches)	0.065	0.05	0.1
Heavy stand of trees with some downed (depth below branches)	0.10	0.08	0.12
Heavy stand of trees with some downed (depth above branches)	0.15	0.1	0.2
Coniferous trees (sparse coverage)	0.15	0.1	0.2
Coniferous trees (medium density coverage)	0.25	0.15	0.34
Coniferous trees (high density coverage)	0.28	0.2	0.4

I understand where you are coming from, but I hope we can address those issues before we finalise the modelling task and proceed on reporting.

Thank you.

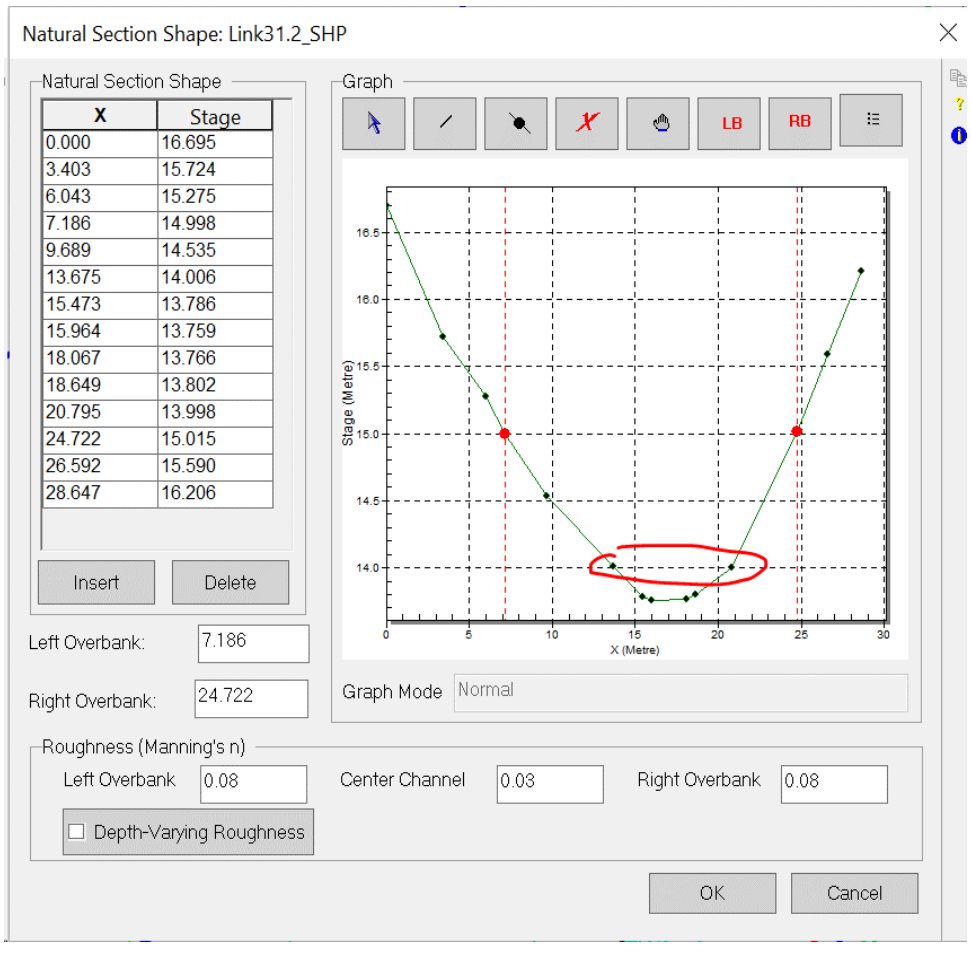
Kind Regards,
Kedan

From: Juan Alvarez De Lugo [redacted]
Sent: Monday, 9 May 2022 6:08 pm
To: Kedan Li [redacted]
Cc: Pranil Wadan [redacted] Dali Suljic [redacted]
Subject: RE: SW Model Review & SMP Addendum - Milldale

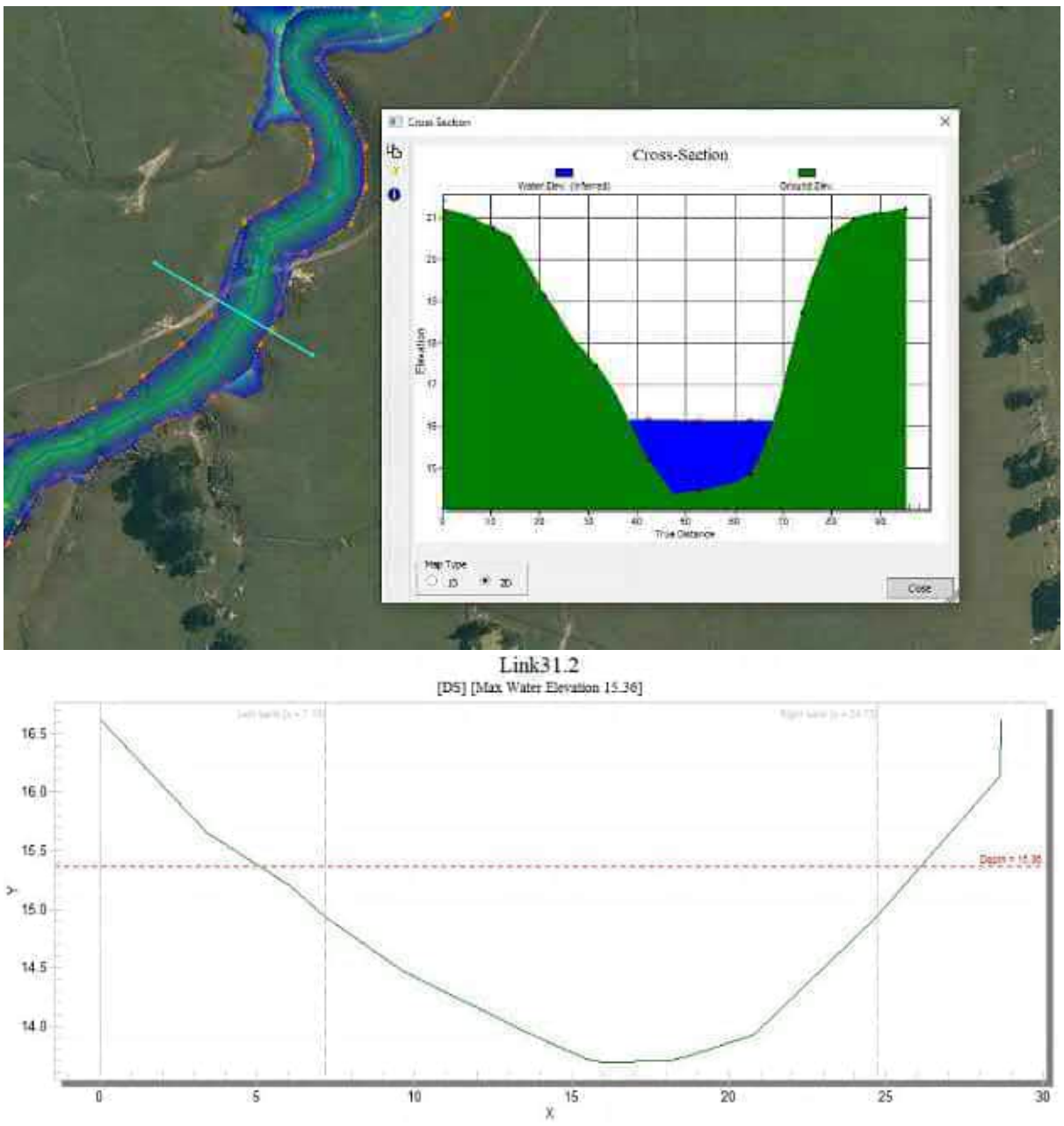
Hello Kedan,

Thanks for your email.

I have performed a check using 'Link 31.2' as a reference.
Based on your suggestion the 1D cross-section below should have the bank markers updated to better represent the low flows.



However, when the cross-section is expanded to also represent the 2D area, I could see that the channel is wider and the current markers are representative of the low flow channel already. Furthermore, I have also compared extracted the water levels of a previous run simulating the 2yr + CC storm event, and the water level fairly matched the bank markers shown in the 1D cross section. Please refer to the screenshots below:



I do not consider that making these adjustments to the bank markers in the 1D cross sections will result in any considerable difference in the models results overall and based on my findings I think they can remain as they are.

Nevertheless, I am happy to set up a meeting this week if you would like to discuss further.

Kind Regards,

Juan Alvarez De Lugo
Associate Engineer
[redacted]
woods.co.nz

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From: Kedan Li [redacted]
Sent: Friday, 6 May 2022 3:23 pm
To: Juan Alvarez De Lugo [redacted]
Cc: Pranil Wadan [redacted] Dali Suljic [redacted]
Subject: RE: SW Model Review & SMP Addendum - Milldale

Hi Juan,

Thanks for your quick response, I have some comments regarding the stream/ cross section roughness.

Thanks for your effort for changing the roughness on the previous discussed locations, however, I was anticipating that the low roughness should only apply to the low flow channel, should not include to the high stream banks. Please refer to the attached excel, tab 'Updated 1D roughness zones', I have spot checked some and was wondering if you could get them corrected and rerun the model please?

Happy to discuss as always.

Thank you.

Kind Regards,
Kedan

From: Juan Alvarez De Lugo [redacted]
Sent: Tuesday, 3 May 2022 12:10 pm
To: Kedan Li [redacted]
Cc: Pranil Wadan [redacted] Dali Suljic [redacted]
Subject: RE: SW Model Review & SMP Addendum - Milldale

Hello Kedan,

Please find attached a log with the model descriptions (also uploaded to OneDrive).

You should be able to open the models in XP-Viewer now.

Any problems or questions please let me know.

Regards,

Juan Alvarez De Lugo
Associate Engineer
[redacted]
woods.co.nz

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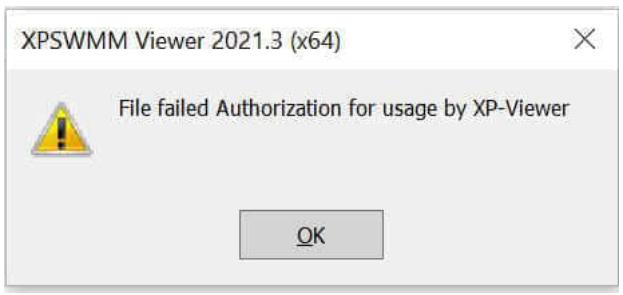
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From: Kedan Li [redacted]
Sent: Monday, 2 May 2022 5:24 pm
To: Juan Alvarez De Lugo [redacted]
Cc: Pranil Wadan [redacted] Dali Suljic [redacted]
Subject: RE: SW Model Review & SMP Addendum - Milldale

Hi Juan,

Thanks for sending them through. I have had a look on the "20210901 Stage 5 MPD 100YR CC MHWS10", looks like it is the 2.1cc results. I couldn't open the model of "20220426 Stage 5 MPD 10YR CC MHWS10" as shown in the screen shot below.



Would you be able to send me a model description so that would be able to help me to understand what is each model scenario stands for and also help me to repair the 10YR scenario?

Thanks!

Kind Regards,

Kedan Li | Senior Healthy Waters Specialist
Healthy Waters | Infrastructure & Environmental Services
Auckland Council, Level 17, Auckland House, 135 Albert Street, Auckland
Visit our website: www.aucklandcouncil.govt.nz

From: Juan Alvarez De Lugo [redacted]
Sent: Sunday, 1 May 2022 6:04 pm
To: Kedan Li [redacted]
Cc: Pranil Wadan [redacted] Dali Suljic [redacted]
Subject: RE: SW Model Review & SMP Addendum - Milldale

Hello Kedan,

Please find attached the updated "HW Milldale Queries List - Woods Response" spreadsheet.

I have also uploaded it to the OneDrive link along with the MPD and ED updated models based on our latest discussion.

Once you are ready please let me know if you would like to discuss further or you are happy for me to continue working in the Model Build Report and SMP.

Any issues or questions please let me know.

Regards,

Juan Alvarez De Lugo
Associate Engineer
[redacted]
woods.co.nz

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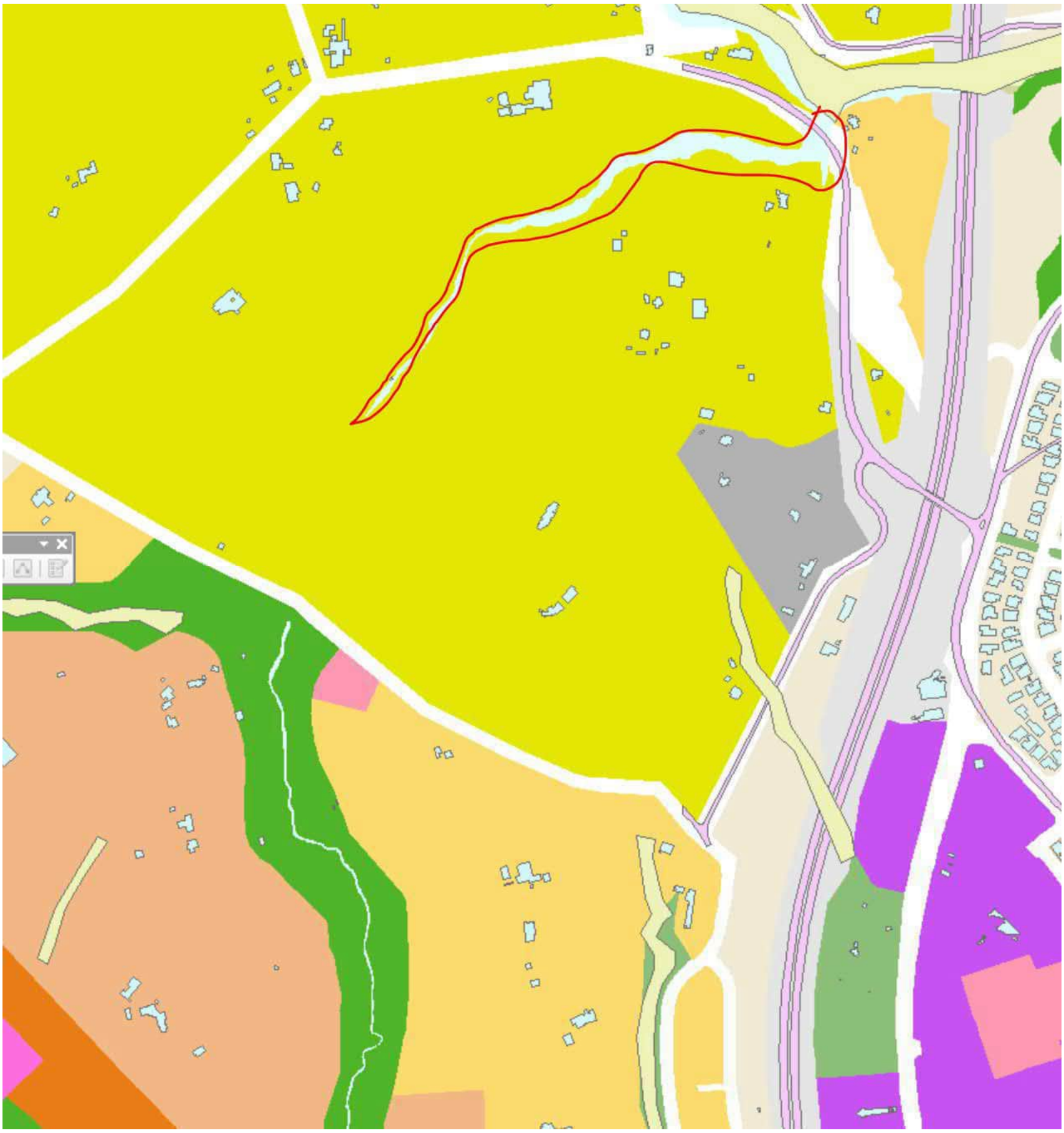
From: Kedan Li [redacted]
Sent: Tuesday, 19 April 2022 4:27 pm
To: Juan Alvarez De Lugo [redacted]
Cc: Pranil Wadan [redacted] Dali Suljic [redacted]
Subject: RE: SW Model Review & SMP Addendum - Milldale

Hello Juan,

Thanks for coming back to me so quickly.

Please see below, would you be able to edit the riverbed roughness for the area highlighted in the below as well?

Thanks!



Kedan

Kedan Li | Senior Healthy Waters Specialist
Healthy Waters | Infrastructure & Environmental Services
Auckland Council, Level 17, Auckland House, 135 Albert Street, Auckland
Visit our website: www.aucklandcouncil.govt.nz

From: Juan Alvarez De Lugo [redacted]
Sent: Tuesday, 19 April 2022 12:33 pm
To: Kedan Li [redacted]
Cc: Pranil Wadan [redacted] Dali Suljic [redacted]
Subject: RE: SW Model Review & SMP Addendum - Milldale

Hello Kedan,

Hope you had a good Easter break.

I have updated the imperviousness in the subcatchments you pointed out and the roughness at the arch culverts.

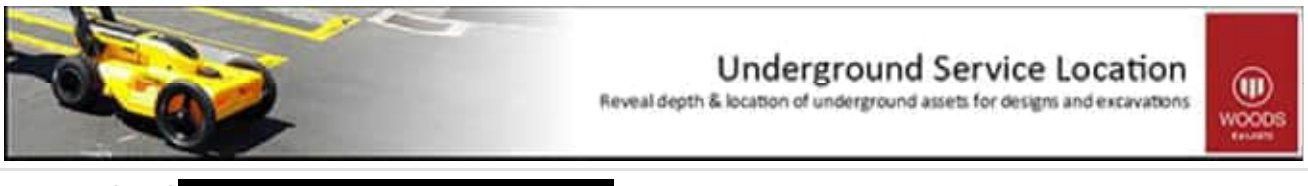
Please find attached a shapefile outlining the areas where the channel roughness is proposed to be updated as per your suggestion.
Let me know if you would like to see more areas included or excluded.
I will proceed and update the stream roughness once you confirm the extent.

Kind Regards

Juan Alvarez De Lugo
Associate Engineer
[redacted]
woods.co.nz

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From: Kedan Li [redacted]
Sent: Thursday, 14 April 2022 5:34 pm
To: Juan Alvarez De Lugo [redacted]
Cc: Pranil Wadan [redacted] Dali Suljic [redacted]
Subject: RE: SW Model Review & SMP Addendum - Milldale

Hi Juan and Pranil,

Thank you for your time this afternoon, please find the spreadsheet as attached.

Have a lovely Easter.

Thank you!

Kind Regards,
Kedan

From: Juan Alvarez De Lugo [redacted]
Sent: Wednesday, 13 April 2022 1:32 pm
To: Dali Suljic [redacted] Kedan Li [redacted]
Cc: Pranil Wadan [redacted]
Subject: RE: SW Model Review & SMP Addendum - Milldale

Hello Dali,

Tomorrow at 2 pm or next week is fine with me.

Regards,

Juan Alvarez De Lugo
Associate Engineer
[redacted]
woods.co.nz

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From: Dali Suljic [redacted]
Sent: Wednesday, 13 April 2022 1:26 pm
To: Juan Alvarez De Lugo [redacted] Kedan Li [redacted]
Cc: Pranil Wadan [redacted]
Subject: Re: SW Model Review & SMP Addendum - Milldale

Hi Juan and Pranil,

Trust all is well.

Kedan is working through the review but has a few additional queries that may be better to discuss over Teams. Any chance for a catchup tomorrow either 12pm or 2pm? Otherwise, can always do start of next week.

Cheers

Dali Suljic | Growth & Development

Healthy Waters | Infrastructure & Environmental Services

Phone 09 301 0101 I Mobile 021 0845 5043

Auckland Council I Bledisloe House I Level 3, 24 Wellesley Street Auckland

Private Bag 92300 I Auckland 1142

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From: Juan Alvarez De Lugo [redacted]
Sent: Monday, April 4, 2022 4:33 PM
To: Kedan Li [redacted]
Cc: Pranil Wadan [redacted] Dali Suljic [redacted]
Subject: RE: SW Model Review & SMP Addendum - Milldale

Hello Kedan,

Following our phone call today, please find below the information you requested:

1. WSEL

   Maximum Water Surface Elevation. Please refers to attachment for further explanation.

2. Motorway Bridge

   The motorway bridge over SH1 has been modelled as a natural channel as the bridge levels are well clear of any potential flood risk. Refer to section 3.2.4.2 Bridges of the Wainui Flood Model Build Report and Table 3: Modelled Bridges.

3. CoP v3 rainfall (3.8 °C climate change) model runs

   I have run and extracted results for the 10 year including climate change (3.8 °C CoP v3) MPD scenario and 100 year including climate change (3.8 °C CoP v3) MPD scenario.

   At this point I have only looked at the Wainui bridge location to determine if there is overtopping occurring because of the climate change factor increase. There results show that there is no overtopping for the 10-year including climate change (3.8 °C CoP v3) MPD scenario, however there is overtopping for the 100-year including climate change (3.8 °C CoP v3) MPD scenario. Please refer to attachments.

   An effects assessment has not been performed at this point under CoP V3 as it has not yet come into effect.

4. Model Reviews

   I have checked with Pranil and there has been a couple of HW reviews between now and since the SMP and Model Build Report were issued.

Any further questions please let me know.

Kind Regards,

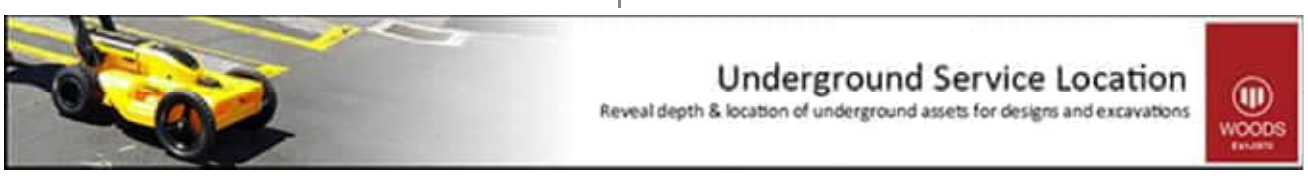
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Juan Alvarez De Lugo
Associate Engineer
[redacted]
[redacted]
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From: Kedan Li [redacted]
Sent: Tuesday, 29 March 2022 11:07 am
To: Juan Alvarez De Lugo [redacted]
Subject: RE: SW Model Review & SMP Addendum - Milldale

Hi Juan,

Thanks! It opens fine now.

Cheers,
Kedan

From: Juan Alvarez De Lugo [redacted]
Sent: Tuesday, 29 March 2022 1:45 am
To: Kedan Li [redacted] Dali Suljic [redacted]
Cc: Pranil Wadan [redacted]
Subject: RE: SW Model Review & SMP Addendum - Milldale

Hello Kedan,

XPSWMM Viewer 2021.3 has been uploaded to the OneDrive Link.

Please note that the background image and the surfaces have also been uploaded, in case you need to link them.

ED Surface: 20170908 - Revised Flood Analysisi tin - Existing ground.xptin

MPD Surface: Milldale Master Design Surface Combined.xptin

You can probably ignore the CAD files and the Shapefiles.

If you have any problems or you need anything else please let me know.

Regards,

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Juan Alvarez De Lugo
Associate Engineer
[redacted]
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From: Kedan Li [redacted]
Sent: Monday, 28 March 2022 4:35 pm
To: Juan Alvarez De Lugo [redacted] Dali Suljic [redacted]
Cc: Pranil Wadan [redacted]
Subject: RE: SW Model Review & SMP Addendum - Milldale

Hi Juan,

Would it be possible for you to upload the XPSWMM Viewer 2021.3 to the OneDrive link please? The one I have is 2021.2, and looks like you have updated it. 😉 ⬤
And by the way, the current model report is searchable now. Thanks!
Kedan

From: Kedan Li
Sent: Tuesday, 22 March 2022 9:42 am
To: Juan Alvarez De Lugo [redacted] Dali Suljic [redacted]
Cc: Pranil Wadan [redacted]
Subject: RE: SW Model Review & SMP Addendum - Milldale

Hi Juan,
Received with thanks, I will get in touch if I have any questions.
Thanks!
Kedan

From: Juan Alvarez De Lugo [redacted]
Sent: Tuesday, 22 March 2022 8:51 am
To: Kedan Li [redacted] Dali Suljic [redacted]
Cc: Pranil Wadan [redacted]
Subject: FW: SW Model Review & SMP Addendum - Milldale

Hello Kedan and Dali,

Please find attached the updated “HW Milldale Queries List – Woods response” document.

I have also uploaded it to the OneDrive link.

Any problems please let me know.

Regards,

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Juan Alvarez De Lugo
Associate Engineer
[redacted]
[redacted]
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From: Juan Alvarez De Lugo [redacted]
Sent: Monday, 21 March 2022 1:20 pm
To: Kedan Li [redacted] Pranil Wadan [redacted] Dali Suljic [redacted]
Subject: RE: SW Model Review & SMP Addendum - Milldale

Hello Kedan and Dali,

Thanks for your time earlier today. As agreed in the meeting I have uploaded the following models:

Scenario	*Landuse*	*Landform*	*Rainfall*	*Climate Change*	*MHWS*
5	*ED*	*Existing*	*10*	*Yes*	*As per MHWS recently provided*
6	*ED*	*Existing*	*100*	*Yes*	
7	*MPD*	*Future*	*10*	*Yes*	
8	*MPD*	*Future*	*100*	*Yes*	

Please follow the OneDrive Link:

2021-11-08 Milldale Stage 5 - Model Issue

In the folder “2022-03-21 Updated Model Issue” you will find the models along with a copy of a previous S92 response we issued regarding the different grid sizes initially used in the model.

I will update and send in the upcoming days the “HW Milldale Queries List – Woods response” document to reflect what was discussed in the meeting.

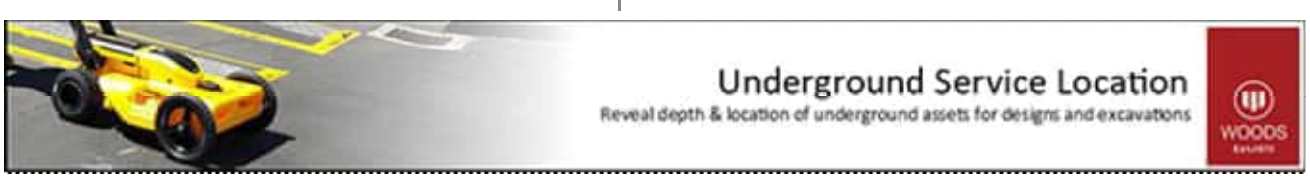
Any problems please let me know.

Regards,

Juan Alvarez De Lugo
Associate Engineer
[redacted]
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From: Kedan Li [redacted]
Sent: Monday, 21 March 2022 10:35 am
To: Pranil Wadan [redacted] Dali Suljic [redacted] Juan Alvarez De Lugo [redacted]
Subject: RE: SW Model Review & SMP Addendum - Milldale

Hi all,
Can we please jump back to the meeting, just got a quick question, sorry, forgot asking it earlier..
Kedan.

From: Pranil Wadan [redacted]
Sent: Tuesday, 15 March 2022 3:32 pm
To: Dali Suljic <[redacted] Emily Afoa [redacted] Juan Alvarez De Lugo [redacted] Kevin Fan [redacted]
Cc: Kedan Li [redacted] Euan Williams [redacted] Tim Rickards [redacted] Jamie Whyte [redacted]
Subject: RE: SW Model Review & SMP Addendum - Milldale

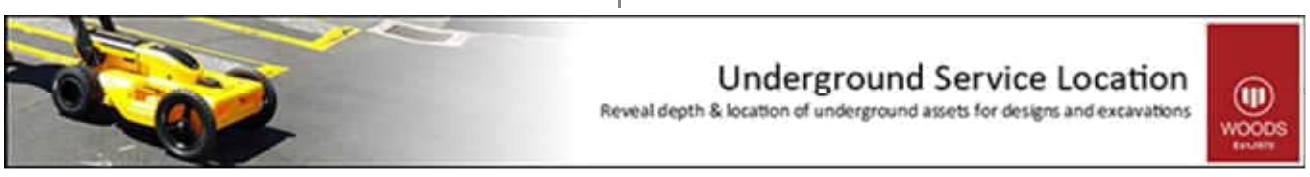
Hi Dali,

Monday 10am should work for us

Pranil Wadan
Principal Engineer - 3 Waters Manager
BE Civil, CPEng, IntPE(NZ), CMEngNZ
[redacted]
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From: Dali Suljic [redacted]
Sent: Tuesday, 15 March 2022 2:32 pm
To: Pranil Wadan [redacted] nz>; Emily Afoa [redacted] Juan Alvarez De Lugo [redacted] Kevin Fan [redacted]
Cc: Kedan Li [redacted] Euan Williams [redacted] Tim Rickards [redacted] Jamie Whyte [redacted]
Subject: Re: SW Model Review & SMP Addendum - Milldale

Hi Pranil,

Thanks for your email. We won't be able to do Friday, how about Monday/Tuesday next week say 9am?

Regards

Dali Suljic | Growth & Development

Healthy Waters | Infrastructure & Environmental Services

Phone 09 301 0101 I Mobile 021 0845 5043

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Private Bag 92300 I Auckland 1142

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From: Pranil Wadan [redacted]
Sent: Tuesday, March 15, 2022 11:37 AM
To: Dali Suljic <[redacted] Emily Afoa [redacted]; Juan Alvarez De Lugo [redacted] Kevin Fan [redacted]
Subject: RE: SW Model Review & SMP Addendum - Milldale

Hi Dali,

The modelling is more or less closed out – We are just waiting on the post processing of results, Apologies for the delay, but there was a bit of back and forth with Innovyze to confirm the approach to modelling the bridge structures and losses as suggested by Healthy Waters.

How are you and Kedan placed this Friday to go over the changes and updated results ? Myself and Juan are free from 11am? – This session would be to close out the changes that have been made. Once this is done then we can commence reporting and we are wanting to avoid any rework.

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Pranil Wadan
Principal Engineer - 3 Waters Manager
BE Civil, CPEng, IntPE(NZ), CMEngNZ
[redacted]
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From: Dali Suljic [redacted]
Sent: Friday, 11 March 2022 6:03 am
To: Pranil Wadan <[redacted] Emily Afoa [redacted] Juan Alvarez De Lugo [redacted] Kevin Fan [redacted]
Subject: Re: SW Model Review & SMP Addendum - Milldale

Hi Pranil,

Just following up to see how you are getting on with the modelling and SMP updates as per your email below.

Regards

Dali Suljic | Growth & Development

Healthy Waters | Infrastructure & Environmental Services

Phone 09 301 0101 I Mobile 021 0845 5043

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Private Bag 92300 I Auckland 1142

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From: Pranil Wadan [redacted]
Sent: Wednesday, February 16, 2022 10:29 AM
To: Dali Suljic [redacted] Emily Afoa <emily.afoa@aucklandcouncil.govt.nz>; Juan Alvarez De Lugo [redacted] Kevin Fan [redacted]
Subject: RE: SW Model Review & SMP Addendum - Milldale

Hello Dali and Kedan,

Apologies again for my late response, Juan had sent this to me last week so this had been sitting with me.

Key points from our session as follows:

- Whilst the review is being undertaken for the wider Milldale model, focus on Stage 5.
- Run a sensitivity assessment with the model boundary conditions to be updated with the latest MHWS data as per the "Coastal Marine Area Boundary for the Auckland Region" document provided.
- Bridges exit and entry losses parameters to be updated in the model
- Weir overflow representation to be updated in the model when not coupled to the 2D domain.

At this stage we are proposing of running the model for the following Climate Change Scenarios (as per current SWCoP 2.1ºc):

Scenario	*Landuse*	*Landform*	*Rainfall*	*Climate Change*	*MHWS*
1	*ED*	*Existing*	*10*	*Yes*	*As per Current SMP*
2	*ED*	*Existing*	*100*	*Yes*	
3	*MPD*	*Future*	*10*	*Yes*	
4	*MPD*	*Future*	*100*	*Yes*	
5	*ED*	*Existing*	*10*	*Yes*	*As per MHWS recently provided*
6	*ED*	*Existing*	*100*	*Yes*	
7	*MPD*	*Future*	*10*	*Yes*	
8	*MPD*	*Future*	*100*	*Yes*	

Depending on the model results we can then look to simulate the 2yr scenario, please confirm this is correct and if I have missed anything here.

Furthermore, attached is our response table addressing the queries that were initially raised. Kedan, Juan has uploaded the documents and files requested onto one drive already (including a PDF version of the SMP – Please let me know if this version is searchable)

We will need to have a follow-up discussion once the updated model results are available. At this stage Juans still away for another week so will likely be later this month.

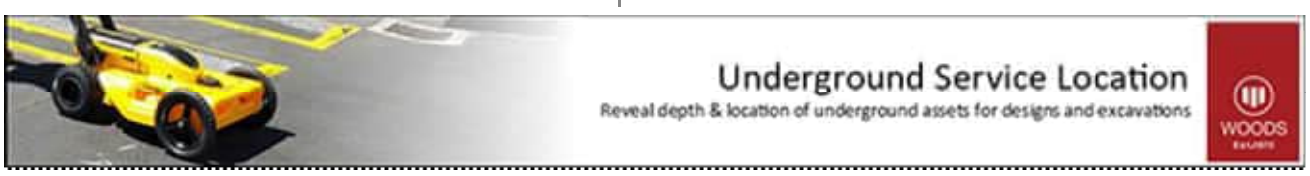
At this point we are looking to update the SMP and model build reports to reflect all stages up to Stage 5, we note that currently stage reports need to be read in conjunction with the different development stages reports to understand the various changes and updates.
The update of the SMP document aims to provide clarity and represent all the Milldale stages that have been consented to date.

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Pranil Wadan
Principal Engineer - 3 Waters Manager
BE Civil, CPEng, IntPE(NZ), CMEngNZ
[redacted]
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From: Dali Suljic [redacted]
Sent: Friday, 11 February 2022 11:32 am
To: Pranil Wadan [redacted] Emily Afoa [redacted] Juan Alvarez De Lugo [redacted] Kevin Fan [redacted]
Subject: Re: SW Model Review & SMP Addendum - Milldale

Hi Pranil,

Thanks again for your time and meeting on Wednesday. Was good to discuss things together.

Just following up to see whether you are still sending through a summary email with the queries tracking spreadsheet?

Have a good weekend.

Regards

Dali Suljic | Growth & Development

Healthy Waters | Infrastructure & Environmental Services

Phone 09 301 0101 I Mobile 021 0845 5043

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Private Bag 92300 I Auckland 1142

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From: Dali Suljic [redacted]
Sent: Friday, January 28, 2022 10:52 AM
To: Pranil Wadan [redacted] Emily Afoa [redacted]; Juan Alvarez De Lugo [redacted] Kevin Fan [redacted]
Subject: Re: SW Model Review & SMP Addendum - Milldale

Thanks Pranil,

Will send out a meeting invite for Wednesday 9th February at 9am. In the interim, Kedan will formulate and send through a list of queries, likely next week.

Enjoy your break next week!

Regards

Dali Suljic | Growth & Development

Healthy Waters | Infrastructure & Environmental Services

Phone 09 301 0101 I Mobile 021 0845 5043

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Private Bag 92300 I Auckland 1142

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From: Pranil Wadan [redacted]
Sent: Friday, January 28, 2022 9:49 AM
To: Dali Suljic [redacted] Emily Afoa [redacted] Juan Alvarez De Lugo [redacted] Kevin Fan [redacted]
Subject: RE: SW Model Review & SMP Addendum - Milldale

Hi Dali,

Apologies for the late reply, I'm working on and off until after Waitangi.

Happy to set up a meeting, however prior to this can we please get Kedan to send through a list of the questions and queries that he has, this will assist in making sure that we have what we need prepared to ensure a productive meeting.

Unfortunately I'm away all of next week – However depending on the questions Juan can attend without me, Note that I was involved in the original model build which at the time was reviewed by Healthy Waters, If questions relate to earlier work then it is best that I attend, however if they relate to earlier revisions then Juan should be able to assist.

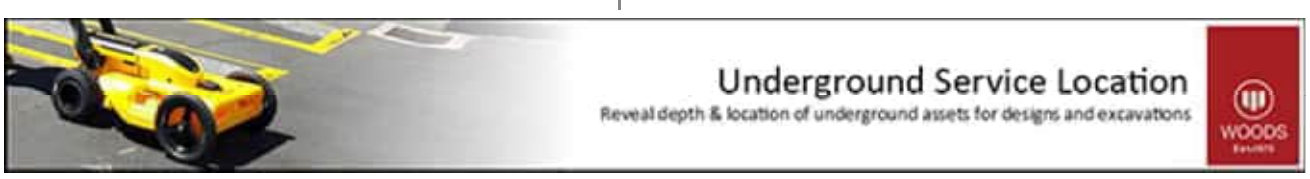
I'm back on the 8th Feb, so we can arrange a meeting that week, ideally if we could have this around 9am that work best for us as Juan is currently working from Spain.

Kind Regards

Pranil Wadan
Principal Engineer - 3 Waters Manager
BE Civil, CPEng, IntPE(NZ), CMEngNZ
[redacted]
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From: Dali Suljic [redacted]
Sent: Tuesday, 25 January 2022 6:39 am
To: Pranil Wadan [redacted] Emily Afoa [redacted] Juan Alvarez De Lugo [redacted]>; Kevin Fan <[redacted]
Cc: Kedan Li [redacted] Euan Williams [redacted]
Subject: Re: SW Model Review & SMP Addendum - Milldale

Hi Pranil,

Thanks again for sending this through.

Would you and your team be available either this Wednesday 10am - 11am or Thursday/Friday 10am - 12pm to meet with Kedan to do a model brief and go through the changes made.

Please let us know.

Regards

Dali Suljic | Growth & Development

Healthy Waters | Infrastructure & Environmental Services

Phone 09 301 0101 I Mobile 021 0845 5043

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Private Bag 92300 I Auckland 1142

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From: Pranil Wadan [redacted]
Sent: Wednesday, January 19, 2022 4:46 PM
To: Emily Afoa [redacted] Juan Alvarez De Lugo [redacted] Kevin Fan [redacted]
Cc: Kedan Li [redacted] Dali Suljic [redacted] Euan Williams [redacted]
Subject: RE: SW Model Review & SMP Addendum - Milldale

Hi All,

Hope you've all had a nice break, In Juans absence please find attached a copy of the meta data table and extents shapefiles as requested. The model build report is attached as an appendix to the SMP which Healthy Waters have a copy of already. Please let me know if I need to resend this.

Apologies for the delay, Juan had completed this before xmas, however I was unable to review it as I was away on leave.

@Kevin Fan let me know if you would like to arrange a teams meeting to go over any questions or queries you may have.

Pranil Wadan
Principal Engineer - 3 Waters Manager
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From: Emily Afoa [redacted]
Sent: Monday, 29 November 2021 2:42 pm
To: Juan Alvarez De Lugo [redacted]
Subject: Re: SW Model Review & SMP Addendum - Milldale

Kia ora Juan,

Can you please also provide the model built report and metadata (as shown below), to enable our review of the model. Any questions, please ensure Kevin is copied in the request as he will provide the clarification, if needed.

Model Files and Documentation	
File directory for model deliverables (MUST COMPLETE):	
Is model report supplied (must have, but can be draft):	
Is model extent polygon supplied (must have):	
Is model schematisation map supplied (must have):	
Is model data flag file supplied:	
Are model results supplied:	
List out all scenarios modelled (design storm events, validation events, sensitivity analysis runs, etc.)	
List relevant input/calculation files supplied:	
Is WaterRIDE file supplied (only at FINAL delivery):	
Model Metadata	
Hydrology Method	
LiDAR Source (2016, 2013, 2006-2010, etc.)	
Any DEM modifications? If yes, describe in more detail.	
Mesh Type	
Mesh Size	
Soakage representation	
Pipe network modelled (e.g. all pipes >=300mm, etc.)	
Key structures modelled? Describe type and number	
Open channel / stream representation description	
MPD representation (Unitary Plan, District Plan, etc.)	
Climate change allowances	
Tide Boundary Level (current and future)	
Simulation Duration (24hrs, etc.)	
Simulation Timesteps	
Model Run Time (How long did it take to run)	

Nāku noa, nā
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Healthy Waters | Infrastructure & Environmental Services
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From: Juan Alvarez De Lugo [redacted]
Date: Tuesday, 23 November 2021 at 12:46 PM
To: Emily Afoa [redacted] Pranil Wadan [redacted] Jamie Whyte [redacted]

Cc: [redacted]
Subject: RE: SW Model Review & SMP Addendum - Milldale
Hello Emily,

I have uploaded the models to One Drive for you to access, please follow this link:

2021-11-08 Milldale Stage 5 - Model Issue

As mentioned in our previous response to Section 5A (BUN60375453) query, the Milldale stormwater models have been refined with a 3m grid only.

The provision of the models for Healthy Waters review is on the basis that they will be used only to inform evaluations of current consents (as sought most recently through PRR00037660 Waterloo Reserve and BUN60382567 Stg 5B EW)

It was discussed and agreed that the SMP will be updated to reflect the changes at the Wainui Crossing as a result of the mesh refinement.

Thanks for your patience, any questions or problems accessing the link please let me know.

Kind Regards,

WOODS
Est.1970

Juan Alvarez De Lugo
Associate Engineer
[redacted]
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From: Emily Afoa [redacted]
Sent: Tuesday, 16 November 2021 9:59 am
To: Juan Alvarez De Lugo [redacted] Pranil Wadan [redacted] Jamie Whyte [redacted]
Subject: Re: SW Model Review & SMP Addendum - Milldale

Kia ora Juan,

Thanks for the update, will hear from you in due course once you resolve the challenges.

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Healthy Waters | Infrastructure & Environmental Services
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From: Juan Alvarez De Lugo [redacted]
Date: Monday, 15 November 2021 at 5:11 PM
To: Emily Afoa [redacted] Pranil Wadan [redacted], Jamie Whyte [redacted]
Subject: RE: SW Model Review & SMP Addendum - Milldale
Hello Emily,

I acknowledge it has taken longer than expected to deliver the model to you for review.

The reason for the delay has been because the model was run in the latest XPStorm version and the software license we currently have for some reason does not allow for the model to be encrypted. In addition I was only able to download the latest XPViewer software version recently, which I will need to attach along with the encrypted model so you can access them and review them.

I have been in contact with the software provider in order to fix the encrypting issue but I am still waiting for them to send me the updated file. In their last correspondence they said they would get back to me at some point this week.

I will arrange to get the model overt to you as soon as I hear back from the software provider.

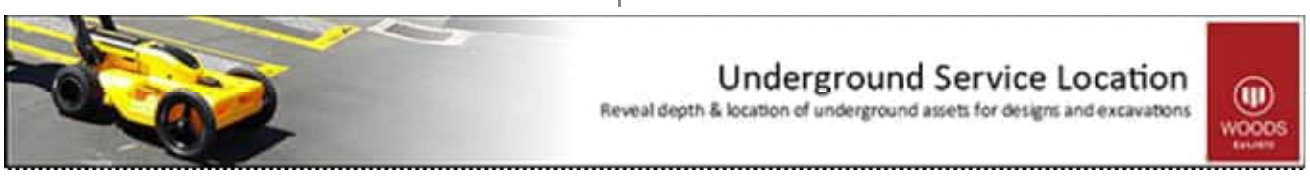
Once again apologies for the delay.

Kind Regards,

Juan Alvarez De Lugo
Associate Engineer
[redacted]
[redacted]
woods.co.nz

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From: Emily Afoa [redacted]
Sent: Monday, 15 November 2021 3:27 pm
To: Pranil Wadan [redacted] Jamie Whyte [redacted]
Cc: Juan Alvarez De Lugo [redacted] Mark Iszard [redacted]; Kedan Li [redacted]; Kevin Fan [redacted] Masato Nakamura [redacted] Dali Suljic <dali.suljic@AucklandCouncil.govt.nz>
Subject: Re: SW Model Review & SMP Addendum - Milldale

Kia ora Pranil,

Just checking in on progress re provision of the model for review. As noted prior, we are experiencing significant workloads, and so it would be good to be able to programme this review sooner rather than later so it does not become the critical path for future consents.

Nāku noa, nā
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Healthy Waters | Infrastructure & Environmental Services
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From: Emily Afoa [redacted]
Date: Thursday, 14 October 2021 at 4:46 PM
To: Pranil Wadan [redacted] Jamie Whyte [redacted]
Cc: Juan Alvarez De Lugo [redacted] Mark Iszard [redacted] Kedan Li [redacted] Kevin Fan <[redacted], Masato Nakamura [redacted]
Subject: Re: SW Model Review & SMP Addendum - Milldale
Thanks Pranil – happy with a OneDrive link if that is easiest.

Nāku noa, nā
Emily Afoa | Growth & Development
Healthy Waters | Infrastructure & Environmental Services
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From: Pranil Wadan [redacted]
Date: Thursday, 14 October 2021 at 4:41 PM
To: Emily Afoa [redacted] Jamie Whyte [redacted]
Cc: Juan Alvarez De Lugo [redacted] Mark Iszard [redacted] Kedan Li [redacted] Kevin Fan [redacted] Masato Nakamura [redacted]
Subject: RE: SW Model Review & SMP Addendum - Milldale
Hi Emily,

Apologies for the delayed response, but yes I will arrange to get this model over to you, The model files are large and with lockdown makes it a bit harder, but we could transfer them over onto OneDrive if your ok with that.

Pranil Wadan
Principal Engineer - 3 Waters Manager
BE Civil, CPEng, IntPE(NZ), CMEngNZ
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From: Emily Afoa [redacted]
Sent: Sunday, 10 October 2021 3:03 pm
To: Pranil Wadan [redacted] Jamie Whyte [redacted]
Subject: Re: SW Model Review & SMP Addendum - Milldale

Brilliant – thanks Pranil.

I have also sought provision of the model for HW review (most recently through PRR00037660 Waterloo Reserve and BUN60382567 Stg 5B EW), with Woods agreement on the basis that model review will be used solely to inform Healthy Waters evaluation of the current consents. This is the purpose of the request, so I see no further barrier.

Are you able to provide the model for us? I am conscious the review will take time, so it would be good to get this underway.

Nāku noa, nā
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Healthy Waters | Infrastructure & Environmental Services
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From: Pranil Wadan [redacted]
Date: Wednesday, 6 October 2021 at 9:59 AM
To: Emily Afoa [redacted] Jamie Whyte [redacted]
Cc: Juan Alvarez De Lugo [redacted], Mark Iszard [redacted]
Subject: RE: SW Model Review & SMP Addendum - Milldale
Thanks Emily,

Great, I think updating the SMP is the right thing to do in this instance, I'll provide you with a tracked changed version so you can verify/review the changes made.

Pranil Wadan
Principal Engineer - 3 Waters Manager
BE Civil, CPEng, IntPE(NZ), CMEngNZ
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From: Emily Afoa [redacted]
Sent: Tuesday, 5 October 2021 6:51 pm
To: Pranil Wadan [redacted] Jamie Whyte [redacted]
Cc: Juan Alvarez De Lugo [redacted] Mark Iszard [redacted]
Subject: Re: SW Model Review & SMP Addendum - Milldale

Kia ora Pranil,

I agree entirely – update to the SMP would certainly be cleaner. We actually thought the memo may be less onerous a request, but if you are happy to update the SMP then that is also our preference and we would be happy for you to proceed on that basis.

If possible, can you please provide a "tracked changes" version with the final "clean" version, so we have a clear record of the amendments made?

Happy to talk through if you prefer.

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From: Pranil Wadan [redacted]
Date: Tuesday, 5 October 2021 at 12:32 PM
To: Jamie Whyte [redacted], Emily Afoa [redacted]
Cc: Juan Alvarez De Lugo [redacted] Mark Iszard [redacted]
Subject: RE: SW Model Review & SMP Addendum - Milldale
Hi Emily,

Jamie forward this through to me, just reading through your comments and am wondering if instead of an addendum memo to address the Wainui Rd Bridge we just do an update to the SMP. I think going forward it would be much cleaner than having a separate addendum memo, however keen to hear your thoughts on this and how you would like us to proceed.

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Pranil Wadan
Principal Engineer - 3 Waters Manager
BE Civil, CPEng, IntPE(NZ), CMEngNZ
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From: Emily Afoa [redacted]
Sent: Tuesday, September 28, 2021 6:41 PM
To: Jamie Whyte
Cc: Mark Iszard
Subject: SW Model Review & SMP Addendum - Milldale

Kia ora Jamie,

Thanks for the confirmation below – please provide the model for RC review.

Mark and I have discussed the implications of the model error correction. In particular, the updated water levels and the key amendment that predicted flood flows do not overtop the Wainui Road Bridge, in both existing and proposed conditions, and therefore it is appropriate to pass flood flows forward.

We request a memo summarising the model updates, the revised results, and the conclusions drawn. This will form an addendum to the adopted SMP to amend the now incorrect values in Section 6.3 of the SMP, and in particular 6.3.2 Wainui Road Bridge (Waterloo Creek Crossing).

I anticipate this addendum would reflect the responses previously provided and directly reference the elements requiring update within the SMP. Previous correspondence attached for reference for Stage 5B. Refer Item 11 of the Woods s92 response, corresponding to Item 5 in HW table.

Nāku noa, nā
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Healthy Waters | Infrastructure & Environmental Services
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Visit our website www.aucklandcouncil.govt.nz

From: Jamie Whyte [redacted]
Date: Thursday, 16 September 2021 at 1:59 PM
To: Emily Afoa [redacted]
Cc: Mark Iszard [redacted]
Subject: RE: PRR00037660 Waterloo Reserve - Healthy Waters pre-application notes

Hi Emily,
We have said the model will be made available for purposes of processing the consent. No concerns here.

Happy to talk anytime. Tuesday works.

Cheers

Jamie Whyte
Engineer - Senior Associate
B.Surv, RPSurv, MNZIS, AMEngNZ
[redacted]
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From: Emily Afoa [redacted]
Sent: Thursday, 16 September 2021 11:45 am
To: Jamie Whyte [redacted]
Cc: Mark Iszard [redacted]
Subject: Re: PRR00037660 Waterloo Reserve - Healthy Waters pre-application notes

Kia ora Jamie,
Can we please book a time to chat briefly about the request below that 'the model will be reviewed solely for the purpose of the evaluation of the resource consent application'. It would be good to have clarity on your concerns here.

Are you available for a half hour within the window of Tues 21 12.30-2pm. Both Mark and I are free (unless there is anything not in Mark's calendar!).

Nāku noa, nā
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Healthy Waters | Infrastructure & Environmental Services
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From: Jessica Rainford [redacted]
Sent: Monday, 6 September 2021 12:29 pm
To: Masato Nakamura [redacted]
Cc: Jamie Whyte [redacted] Tim Rickards [redacted] Euan Williams [redacted] Juan Alvarez De Lugo [redacted]
Subject: RE: PRR00037660 Waterloo Reserve - Healthy Waters pre-application notes

Hi Masato,

Please see below (in blue) interim responses to the points raised Healthy Waters.

Feel free to give me a call back to discuss when it suits.

Kind regards,

Jessica Rainford
Intermediate Planner and Urban Designer
BSc(Hons), MUrbPlan(Hons), MUrbDes, Int. NZPI
[redacted]
[redacted]
woods.co.nz

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From: Masato Nakamura [redacted]
Sent: Friday, 25 June 2021 1:00 pm
To: Euan Williams [redacted]
Cc: Jamie Whyte [redacted] CONNOLLY, Sean [redacted] Junitta Fretton [redacted] Jessica Rainford [redacted] Samuel Holmes [redacted] Emily Afoa [redacted]
Subject: RE: PRR00037660 Waterloo Reserve - Notes

Good Afternoon Euan,

Further to the notes below, please see some high level feedback from Healthy Waters in relation to Waterloo Reserve.

- Primary element will be confidence in the hydrologic modelling informing the proposed design. To this effect HW has reached out to Woods, to have the ability to review the model and streamline the review process of future resource consents. Woods' hydrologic model may be provided for review following written confirmation from Healthy Waters hat the model will be reviewed solely for the purpose of the evaluation of the resource consent application.
- The Landscape concept plan refers to "Wetland / riparian area". From the perspective of Healthy Waters, these provide quite different functions (and form), which should be clarified through the application material. The proposed design will not include stormwater management devices. The resource consent application will confirm this.
- It is requested that clear cross-sections are provided in the application material for the stream corridor, including riparian margins with bank grades labelled, and depicting baseflows, 10-yr, and 100-yr flows to demonstrate the operation of the system and to enable consideration of risk / O&M access etc. These should include sections where the boardwalks / stream crossings are proposed, similar to those provided in Sheet E. This information will be provided as part of the resource consent application.
- It is noted that achieving the water quality / hydrology mitigation expectations of the SMP using devices that are mutually agreeable to Healthy Waters and Auckland Transport requires changes to the approach to stormwater management applied in previous stages of the development. It is recommended that the applicant team look to minimise in road raingardens and consider potential for distributed communal systems within the future scheme plans. Noted.
- It is acknowledged that SW management of the wider development is not part of this application, but Waterloo Reserve may provide part of this opportunity hence raising this now. Optioneering to reach the proposed recommended SW solution should be included within future application material. Recognising the importance of the reserve's recreational function, and the fact the stormwater management in this catchment is already designed and accounted for (in Stages 4B and 4D), the management of stormwater flows from the wider development will not be addressed as part of this resource consent application.
- Please confirm the proposed land title, and whether this is it intended to vest as recreation reserve, or something else. The first position of Healthy Waters is that we only consider land that has a specific SW function that cannot be carried out in private ownership i.e. communal SW Management devices. The resource consent application will confirm this.

Kind Regards,

Masato Nakamura | Principal Project Lead | Int.NZPI
Premium Resource Consents
Ph: (09) 353 9352 | Mob: (+64) 021 985 272
Auckland Council, Level 6, 135 Albert Street, Auckland
Visit our website: aucklandcouncil.govt.nz

From: Masato Nakamura
Sent: Tuesday, 22 June 2021 2:55 pm
To: Euan Williams [redacted]
Subject: RE: PRR00037660 Waterloo Reserve - Notes

Good Afternoon Euan,

Please see below the notes from the meeting for Waterloo Reserve.

Any questions, please let me know.

Cheers,
Masato Nakamura

Proposal and background

- The proposed reserve sits within Stage 4, to the south of this overall area. The reserve is one of the key features of this overall development in Milldale, as well as being a key feature within the Wainui Precinct.
- The reserve will be divided into two sections by the stream and its landscaped banks.
- The stream is proposed to be naturalisation by adding bends and landscaped banks.
- This will technically be considered a diversion of the stream, although its benefits are acknowledged.
- Landscaping, paths, bridges and other structures for recreation and amenity is proposed across the reserve.

Parks

- Parks generally support the proposal. A key question raised in relation to the design rationale to provide three bridges in close proximity to each other.
- The proposal will involve some changes in the drainage easement. There will need to be clarity over the difference in the quantum as existing and proposed. This is expected to be the same or similar in terms of quantum.
- A meeting will be held between Parks and FHLDL team. There will be further presentations to the Local Board.
- It is noted here that Parks specialist Jeff Lyford has been in discussion with the applicant team and is familiar with the park design.
- FHLDL will need to initiate IFA discussions in relation to this reserve.
- As information requirements, it is recommended that the application includes cross sections, planting schedules, fencing and retaining wall location and details. Generally, it is expected that fencing and retaining walls remain low, allowing for visual permeability across the park. Any details developed in relation to the playground is also welcomed to be provided.

Ecology

- Naturalisation may result in an SEV score that still require additional offset / mitigation. Further assessment and detail to be provided so that there is a level of agreement between the specialists.
- The officers welcome any seasonal wetlands to be included in the proposal. Examples can be shared and circulated to the FH team.
- The proposal is generally supported, subject to the details being provided.
- It was highlighted that there is a presence of some wetlands downstream of the works area. Clearance distances to these features will need to be clarified in the application documents.

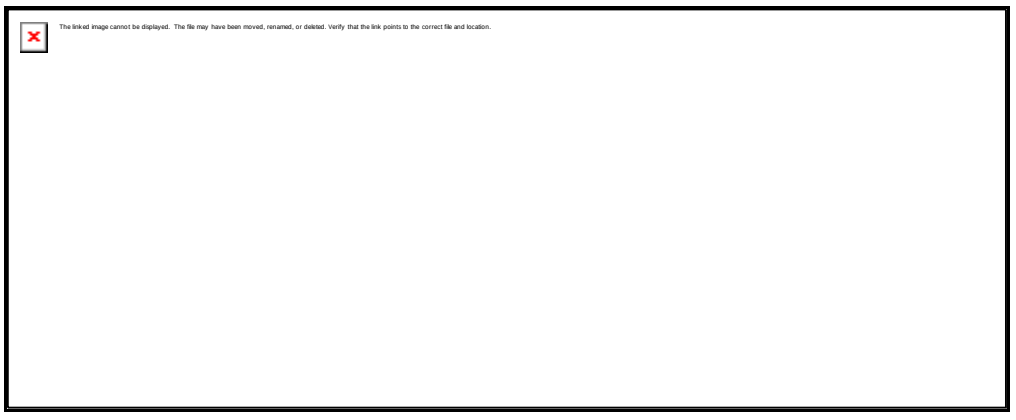
Planning and Other

- Interface with stage 4 requirements in terms of landscaping must be considered. Whilst we are open to changes, we should be mindful of any requirements to for a variation as necessary.
- In terms consenting strategy, stage 4 did not involve stream works. Preference is that there is a fresh resource consent noting scope issues if this was a variation.
- Whilst it is accepted that some of the information will be high level, noting that details are to be refined with Parks and the Local Board, the application documents should have sufficient detail for any relevant consenting matters under the underlying zone and other Auckland Wide Rules.
- Lodgement uncertain, but expected to be some weeks away.

Healthy Waters

- Comments are being sought to identify whether there are any high level concerns over maintenance, flooding and stormwater management.

Masato Nakamura | Principal Project Lead | Int.NZPI
Premium Resource Consents
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Auckland Council, Level 6, 135 Albert Street, Auckland
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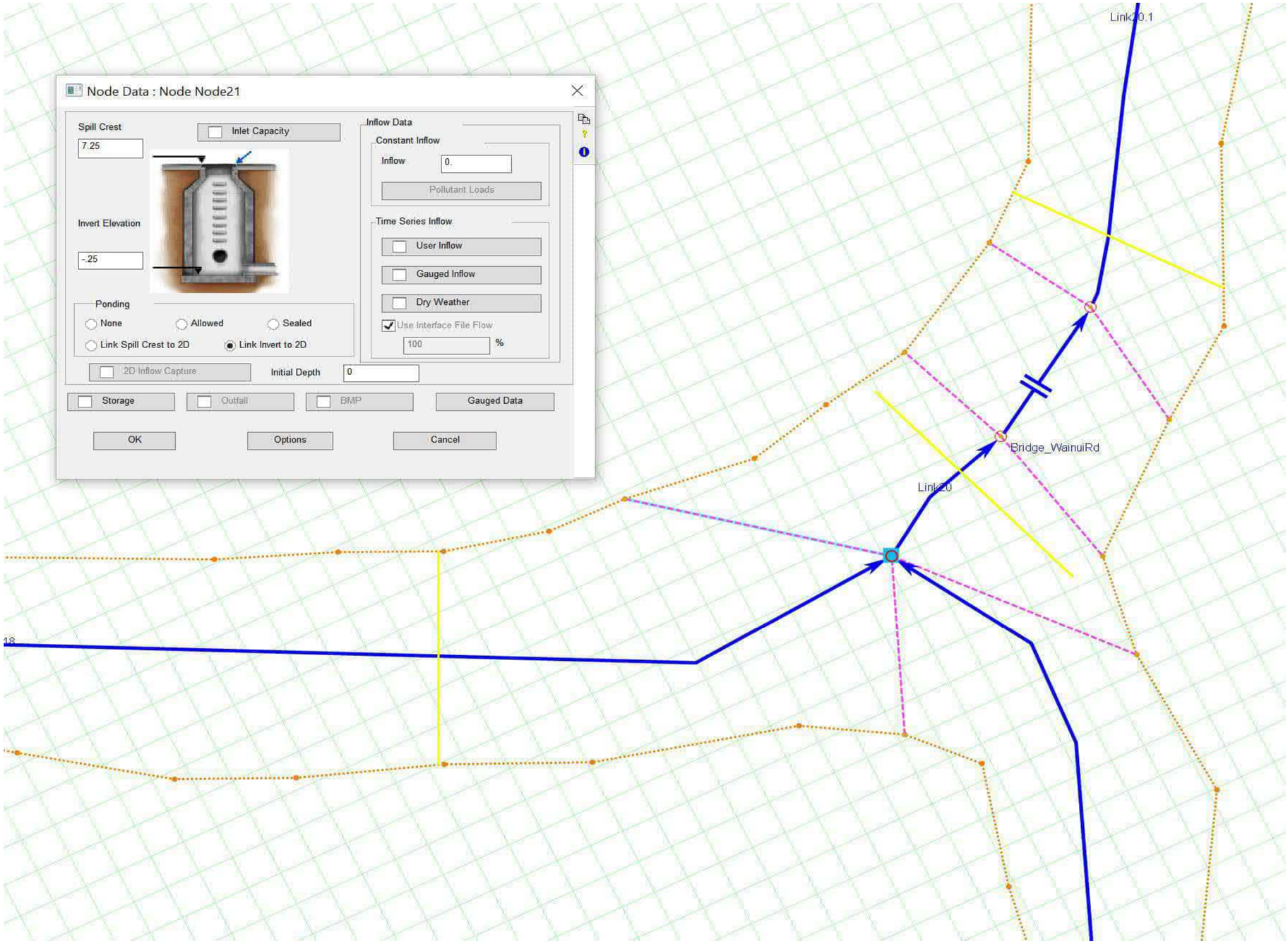
Model Metadata		HW List of questions
Hydrology Method	SCS Unit Hydrograph method - 'Flood Model Build Report Wainui East' Section 3.3	Ok
LiDAR Source (2016, 2013, 2006-2010, etc.)	Auckland Council LiDAR 2013 - 'Flood Model Build Report Wainui East' Section 3.2.1 , note this has been updated to LiDAR 2016 and model design surfaces for more recent development stages	Ok
Any DEM modifications? If yes, describe in more detail.	The Flood Model Build Report Wainui East Section 3.2.1 and Section 3.2.2 refer to using multiple terrain sets and grids, however this was corrected in later models and will be updated in the next Waiunui East - Stormwater Management Plan version.	Does it mean there is no DEM modification applied in MPD scenario? In the report sent in Dec Future scenario has 12D design surface, please explain. No legend on Figure 3, please add in.
Mesh Type	Grid	Ok
Mesh Size	3m grid size	Ok
Soakage representation	N/A	Ok
Pipe network modelled (e.g. all pipes >=300mm, etc.)	No existing public stormwater network.	Ok
Key structures modelled? Describe type and number	22 Culverts and 7 Bridges. Further details in Section 3.2.4 and Appendix B of the 'Flood Model Build Report Wainui East'	Could you please provide surveyed cross sections for spot checks please?
Open channel / stream representation description	Open channels were represented as 1D links using full topographical survey, hydrographic survey and LiDAR data. 'Flood Model Build Report Wainui East' Section 3.2.3 and Appendix B, D and K.	
MPD representation (Unitary Plan, District Plan, etc.)	Proposed Auckland Unitary Plan (PAUP). Rural Urban Boundary (RUB) zoned future urban at 65% impervious coverage. 'Flood Model Build Report Wainui East' Section	Ok
Climate change allowances	Yes, 2.1 °C	Ok
Tide Boundary Level (current and future)	MHWS of 1.258 (Existing) + 0.5 sea level rise allowance (Future) - 'Flood Model Build Report Wainui East' Section 3.5.2 and Appendix H	MHWS10,NIWA (July 2012) for Hibiscus Coast is 1.42 (Existing) and dur to the current climate change +1m should be used as the best practice. Please see the attached PDF, Orewa site should be using 1.44 as existing and 2.44 for future scenarios.
Simulation Duration (24hrs, etc.)	24 Hours	Ok
Simulation Timesteps	1 second	Ok
Model Run Time (How long did it take to run)	Approx 8 hours	Ok
		Other queries
		Please send modelling report in PDF
		Please refer footnote (2) in Table 8
		Page 30 Figure 8 please add overview map for location reference
		What is the consideration of 50% blockage scenario assessment?
		Modelling conclusion draw based on Argent Lane SHA, what is the difference between MPD and Argent Lane while modelling? Any surface changes?
		Could not load the rainfall values and profiles, please show me during meeting.
		How does the contraction and expansion losses been modelled in bridges?
		What is the consideration for the initial or permanent water levels and overtopping arrangements for Highgate SW Pond?

		Any use of weir /Orifice units in the model. Comment on the their representation and coefficients used if any.

Wood's Reponse 16/02/2022	Wood's Response 22/03/2022	Additional HW Comments 05/04/22	Wood's Response 02/05/2022
Closed			
Closed			
DEM Modifications have been applied depending on the stage being accessed. These have all be provided to council with each resource consent.	Closed		
Closed			
Closed			
Closed			
Closed			
Attached - Note that the survey data inclusion was reviewed as part of the model build process with HWs and survey locations agreed at the time. The data was incorporated in the DEM surface. Survey files have been uploaded to One Drive link.	Closed		
Discussed and closed			
Discussed and closed		Please provide3.8 °C results	3.8 C results provided. Closed
Tailwater level used was agreed with Healthy Waters at the time, 0.50m was best practice at the time. Models to be re run with updated MHWS boundary conditions. Results to be discussed once available.	Models updated and run including the newly provided MHWS boundary condition (2.44 m future scenarios). No effects observed at the development site or the Wainui Bridge (No overtopping). Results presented and discussed in the meeting. Closed		
Closed			
Closed			
Closed			
Closed			
The 'Flood Model Build Report Wainui East' has been uploaded to the One Drive link.	Closed		
Footnote 2 refers to - "Future Rainfall expected year 2100" aligned with MfE CC Change allowance 2.1°C Reference will be added in the body of the report when updated.	Closed		
Referring to the location of the Wainui Road crossings. Figure to be updated in the Model Build Report	Closed		
Blockage assessments are undertaken on a stage by stage assessment basis - These have been previously supplied for the development stages to understand secondary flow paths.	Closed		
MPD allowed for FUZ whist the SHA only related to the area being sought for rezoning at the time. These scenarios were agreed and disucssed with HWs at the time, to ensure that effects of having Argent Lane SHA were understood.	Closed		
Rainfall values and profiles shown and accepted during the meeting.	Closed		
Models to be updated to allow for losses in bridges. Entry loss = 0.5 Exit loss = 1.0 Results to be discussed once available after models are re run.	Models updated and run including entry/exit losses at Bridges. Water levels checked upstream of Wainui Bridge, slight increase due to losses applied but still no overtopping (Refer to table in separate sheet). Closed		
Please refer to Section 3.2.4.3 - Inflows from highgate pond were taken from the HEC HMS Time Series. This was discussed and agreed with the technical specialists at the time. No updates in the model required.	Closed		

Model to be updated to represent weirs in structures to represent overflows where not coupled to 2D. Results to be discussed once available after models are re run.	Models updated and run including weirs represented in either 1D or 2D. 1D/2D interce layers included at relevant structures. Model results and weir representation discussed in the meeting. Closed		
		Subcatchment Orewa_Contri6;Orewa_Contri7; Orewa_Contri8; Node 28 did not model future urban imperviousness	Subcatchment imperviousness increased to 65%. Closed
		Please provide survey photo for Wainui Bridge. Does Wainui bridge has any piers in the stream - non modelled	There are no piers at the Wainui bridge and therefore not included in the model. The bridge has been surveyed and it was confirmed during initial site walkover. Closed
		Roughness: 1D - river bed roughness 0.06 too high (do you have survey photos?). The river bed is mainly clay and earth, should consider a lower roughness. 2D - Road is 0.014, a bit low consider rural road mostly. (recommending 0.02-0.03) but impervious left as zero, please correct. 2D-pasture-0.08, ok.	1D roughness in river bed channels updated to 0.03 along agreed areas. 2D roughness to remain unchanged as the areas will be developed at MPD. Closed
		Culvert mannings too high, please correct.	Arch culverts along P9 roughness updated to 0.03, Closed

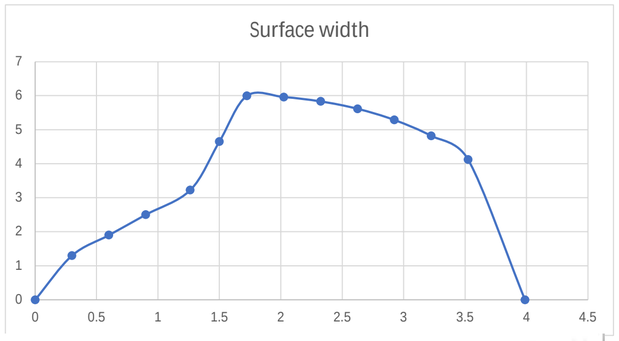
please explain - link to invert. Wouldn't it doube counting the flow? Why not link Spill crest to 2D? Spill crest too high as well.

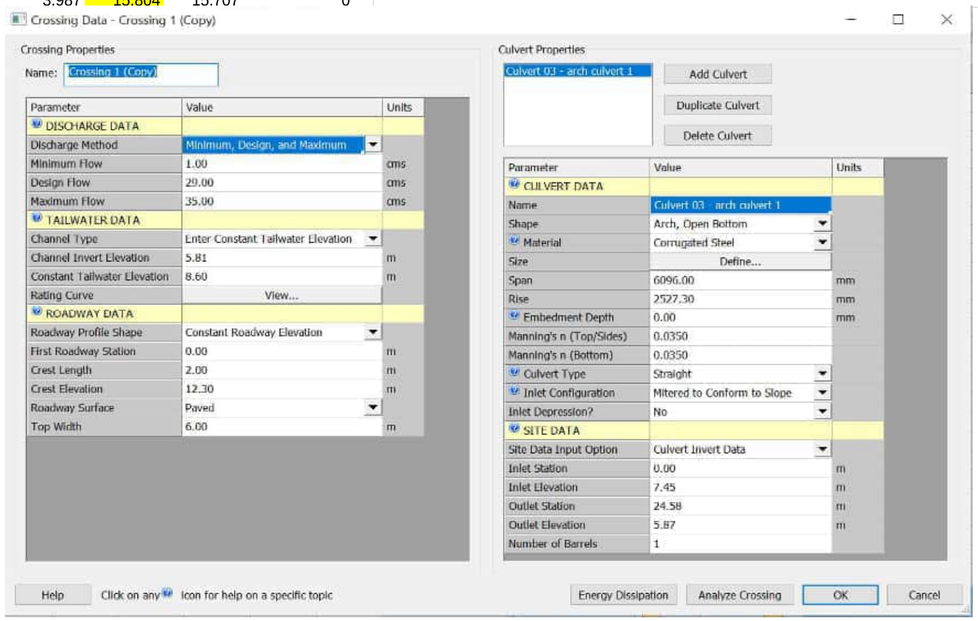


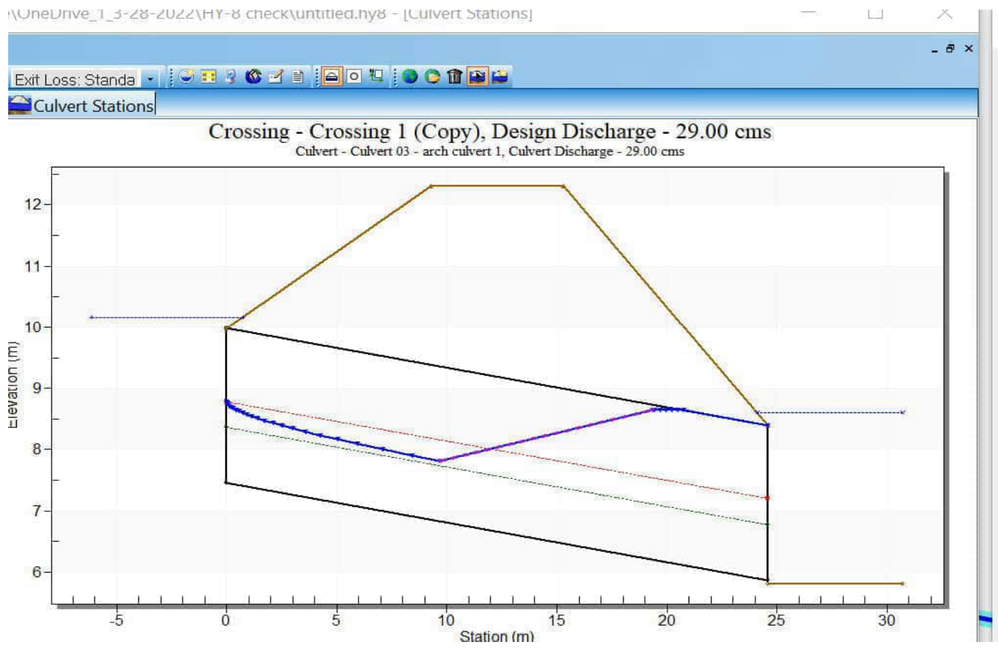
Flow checks via HY-8

Link60.1	Arch culvert - 6m span and 2.26m max height				
Arch Culvert 1)	us	7.45		length	24.58
	ds	5.87		n	0.06 too high
	us	10			
peak water level	ds	8.6			
Flow		29.2447	the head water is sensitive to inlet configuration, the modelled level is slightly lower than HY-8 simulation		
velocity		3.1			

Depth	area	WP	Surface width
0	0	0	0
0.3	0.3	1.55	1.301
0.6	0.781	2.398	1.902
0.9	1.441	3.247	2.502
1.262	2.478	4.271	3.226
1.5	3.415	5.775	4.653
1.724	4.61	7.193	5.997
2.024	6.404	7.793	5.959
2.324	8.175	8.407	5.833
2.624	9.895	9.046	5.615
2.924	11.533	9.731	5.287
3.224	13.053	10.494	4.817
3.524	14.401	11.411	4.125
3.987	15.804	15.707	0





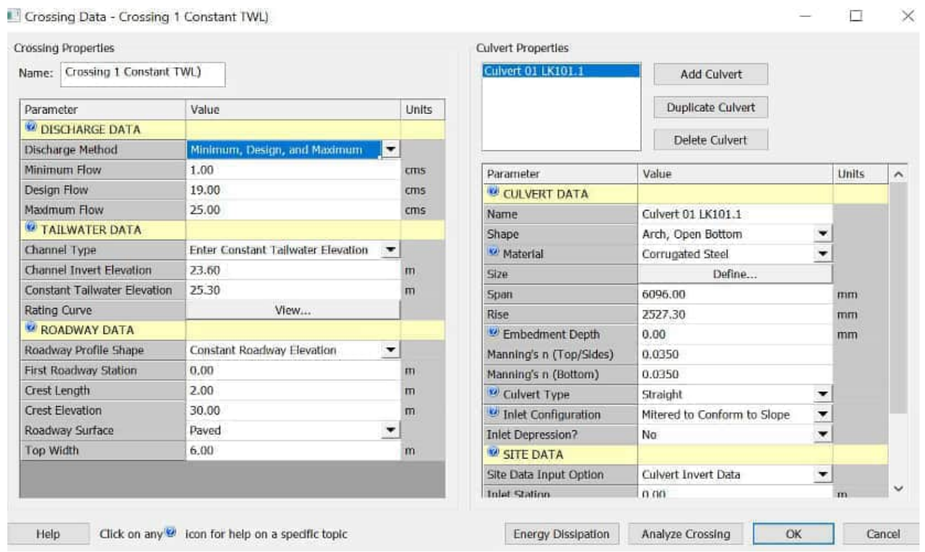


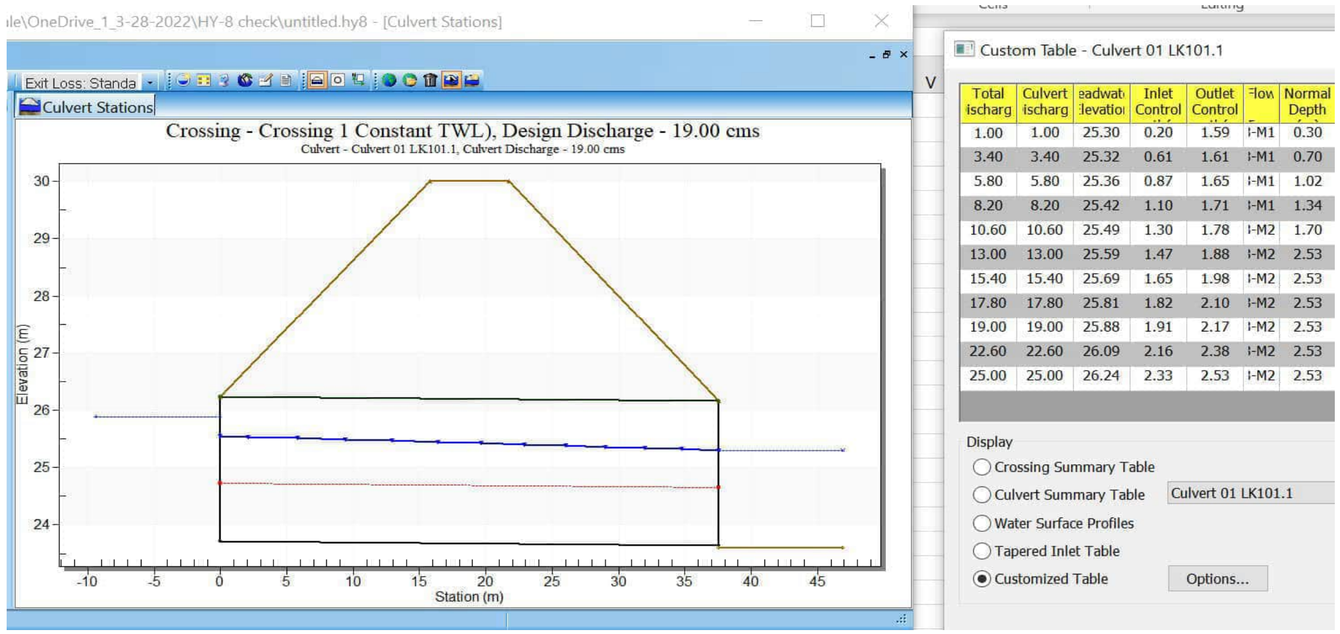


LK101.1	Arch culvert - 6m span and 2.26m max height				
	us	23.712		length	37.53
	ds	23.64		n	0.06 too high
peak water level	us	26.3			
	ds	25.3			
Flow		18.8	with same HW, HY predict flow of more than 25cms		

Depth	area	WP	Surface width
0	0	0	0
0.3	0.294	1.519	1.257
0.7	0.945	2.611	2
0.9	1.465	4.886	3.2
1.2	2.695	5.773	5
1.365	3.602	6.833	5.99
1.665	5.398	7.422	5.959

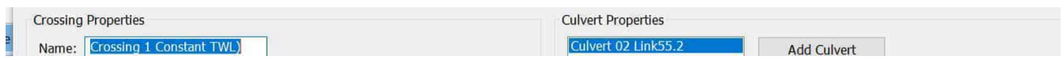
1.965	7.169	8.036	5.834
2.265	8.889	8.675	5.616
2.565	10.527	9.359	5.289
2.865	12.047	10.122	4.819
3.165	13.397	12.318	4.129
3.629	14.806	16.616	0

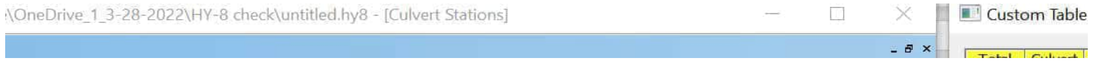




LINK55.2	Arch culvert - 14.5m span and 3.26m max height		
	us	15.55	length 29.16
	ds	14.65	n 0.06 too high
peak water level	us	18.1	
	ds	17.1	
Flow		25	oversized culvert
velocity		2	

0	0	0	0
0.343	0.169	1.283	0.985
0.368	0.195	1.394	1.075
0.4	0.23	1.475	1.121
0.412	0.243	1.552	1.193
0.537	0.405	1.878	1.399
1.052	1.394	3.344	2.441
1.184	1.73	3.677	2.636
1.895	5.101	8.253	6.845
2.119	6.86	10.363	8.907
2.436	10.263	14.046	12.456
2.596	12.337	15.244	13.468
3.447	23.466	17.125	12.67
4.094	31.292	19.414	10.898
4.725	35.075	30.39	0





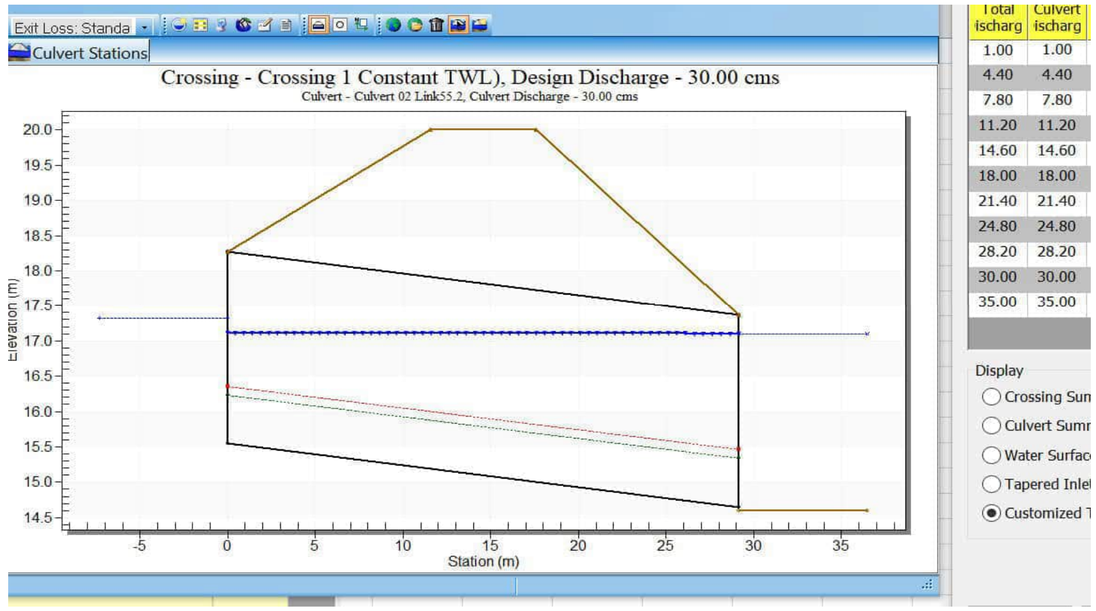
Parameter	Value	Units
DISCHARGE DATA		
Discharge Method	Minimum, Design, and Maximum	
Minimum Flow	1.00	cms
Design Flow	30.00	cms
Maximum Flow	35.00	cms
TAILWATER DATA		
Channel Type	Enter Constant Tailwater Elevation	
Channel Invert Elevation	14.60	m
Constant Tailwater Elevation	17.10	m
Rating Curve	View...	
ROADWAY DATA		
Roadway Profile Shape	Constant Roadway Elevation	
First Roadway Station	0.00	m
Crest Length	2.00	m
Crest Elevation	20.00	m
Roadway Surface	Paved	
Top Width	6.00	m

Duplicate Culvert

Delete Culvert

Parameter	Value	Units
CULVERT DATA		
Name	Culvert 02 Link55.2	
Shape	Arch, Open Bottom	
Material	Corrugated Steel	
Size	Define...	
Span	6705.60	mm
Rise	2717.80	mm
Embedment Depth	0.00	mm
Manning's n (Top/Sides)	0.0350	
Manning's n (Bottom)	0.0350	
Culvert Type	Straight	
Inlet Configuration	Mitered to Conform to Slope	
Inlet Depression?	No	
SITE DATA		
Site Data Input Option	Culvert Invert Data	
Inlet Station	0.00	m
Inlet Elevation	15.55	m
Outlet Station	29.16	m
Outlet Elevation	14.65	m
Number of Barrels	2	

Help Click on any icon for help on a specific topic Energy Dissipation Analyze Crossing OK Cancel



Total ischarg	Culvert ischarg
1.00	1.00
4.40	4.40
7.80	7.80
11.20	11.20
14.60	14.60
18.00	18.00
21.40	21.40
24.80	24.80
28.20	28.20
30.00	30.00
35.00	35.00

Display

- Crossing Sun
- Culvert Sumr
- Water Surfac
- Tapered Inle
- Customized T

h culvert 1

Outlet Control	Flow	Normal Depth	Critical Depth	Outlet Depth	Tailwater Depth	Outlet Velocity	Tailwater Velocity
1.15	l-S1	0.06	0.14	2.53	2.79	0.09	0.00
1.18	l-S1	0.26	0.38	2.53	2.79	0.39	0.00
1.25	l-S1	0.37	0.56	2.53	2.79	0.70	0.00
1.37	l-S1	0.47	0.71	2.53	2.79	1.00	0.00
1.55	l-S1	0.56	0.85	2.53	2.79	1.31	0.00
1.46	-JS1	0.65	0.97	2.53	2.79	1.61	0.00
1.59	-JS1	0.73	1.09	2.53	2.79	1.92	0.00
1.74	-JS1	0.81	1.20	2.53	2.79	2.22	0.00
1.92	-JS1	0.89	1.31	2.53	2.79	2.53	0.00
1.96	-JS1	0.91	1.33	2.53	2.79	2.60	0.00
2.33	-JS1	1.04	1.50	2.53	2.79	3.14	0.00

ert 03 - arch culvert 1

otions...

Geometry

Inlet Elevation:	7.45 m
Outlet Elevation:	5.87 m
Culvert Length:	24.63 m
Culvert Slope:	0.0643
Inlet Crest:	0.00 m
Inlet Throat:	0.00 m

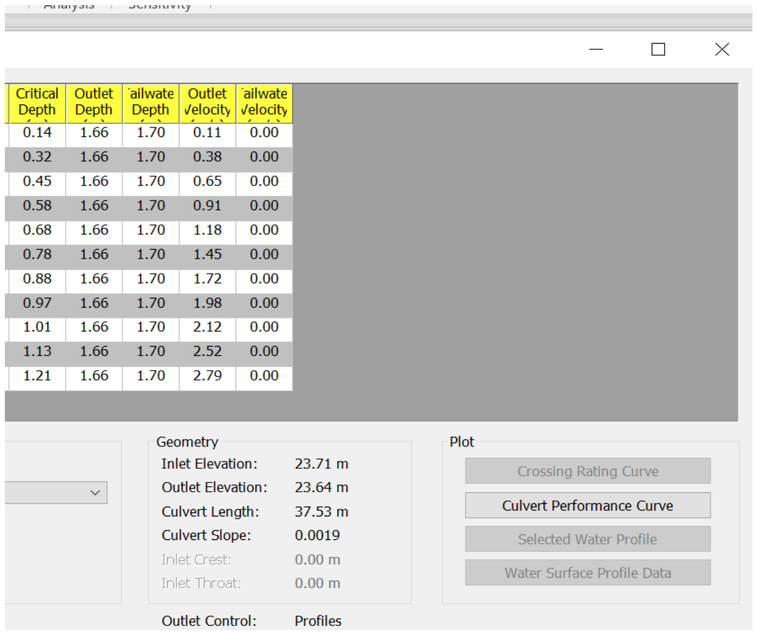
Plot

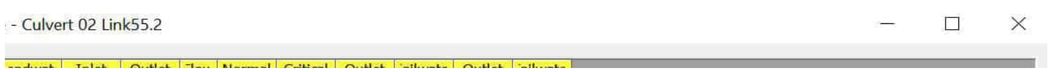
Crossing Rating Curve

Culvert Performance Curve

Selected Water Profile

Water Surface Profile Data


Analysis | Sensitivity
Critical Depth
Outlet Depth
Tailwater Depth
Outlet Velocity
Tailwater Velocity
0.14 1.66 1.70 0.11 0.00
0.32 1.66 1.70 0.38 0.00
0.45 1.66 1.70 0.65 0.00
0.58 1.66 1.70 0.91 0.00
0.68 1.66 1.70 1.18 0.00
0.78 1.66 1.70 1.45 0.00
0.88 1.66 1.70 1.72 0.00
0.97 1.66 1.70 1.98 0.00
1.01 1.66 1.70 2.12 0.00
1.13 1.66 1.70 2.52 0.00
1.21 1.66 1.70 2.79 0.00
Geometry
Inlet Elevation: 23.71 m
Outlet Elevation: 23.64 m
Culvert Length: 37.53 m
Culvert Slope: 0.0019
Inlet Crest: 0.00 m
Inlet Throat: 0.00 m
Outlet Control: Profiles
Plot
Crossing Rating Curve
Culvert Performance Curve
Selected Water Profile
Water Surface Profile Data


- Culvert 02 Link55.2

eadwat elevatio	Inlet Control	Outlet Control	Flow	Normal Depth	Critical Depth	Outlet Depth	ailwate Depth	Outlet Velocity	ailwate Velocity
17.10	0.13	1.55	t-S1	0.04	0.08	2.45	2.50	0.04	0.00
17.10	0.61	1.55	t-S1	0.18	0.22	2.45	2.50	0.17	0.00
17.11	1.02	1.56	t-S1	0.28	0.32	2.45	2.50	0.30	0.00
17.13	1.31	1.58	t-S1	0.35	0.41	2.45	2.50	0.43	0.00
17.15	1.48	1.60	t-S1	0.42	0.50	2.45	2.50	0.56	0.00
17.18	1.60	1.63	t-S1	0.49	0.57	2.45	2.50	0.69	0.00
17.26	1.71	1.66	t-S1	0.54	0.64	2.45	2.50	0.82	0.00
17.25	1.42	1.70	t-S1	0.60	0.71	2.45	2.50	0.95	0.00
17.30	1.53	1.75	t-S1	0.65	0.78	2.45	2.50	1.08	0.00
17.32	1.58	1.77	t-S1	0.68	0.81	2.45	2.50	1.15	0.00
17.40	1.74	1.85	t-S1	0.76	0.90	2.45	2.50	1.34	0.00

nmary Table

nary Table Culvert 02 Link55.2

e Profiles

t Table

Table Options...

Geometry

Inlet Elevation:	15.55 m
Outlet Elevation:	14.65 m
Culvert Length:	29.17 m
Culvert Slope:	0.0309
Inlet Crest:	0.00 m
Inlet Throat:	0.00 m
Outlet Control:	Profiles

Plot

Crossing Rating Curve

Culvert Performance Curve

Selected Water Profile

Water Surface Profile Data



Figure 3: Existing Contours

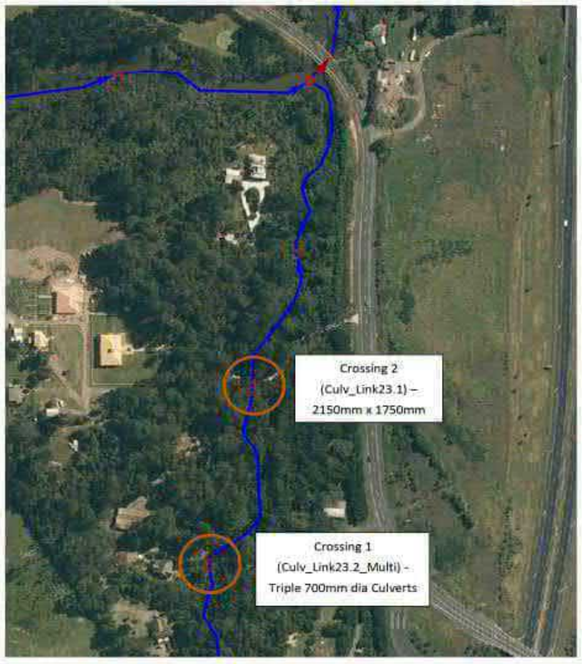


Figure 8: Wainui Road Crossings

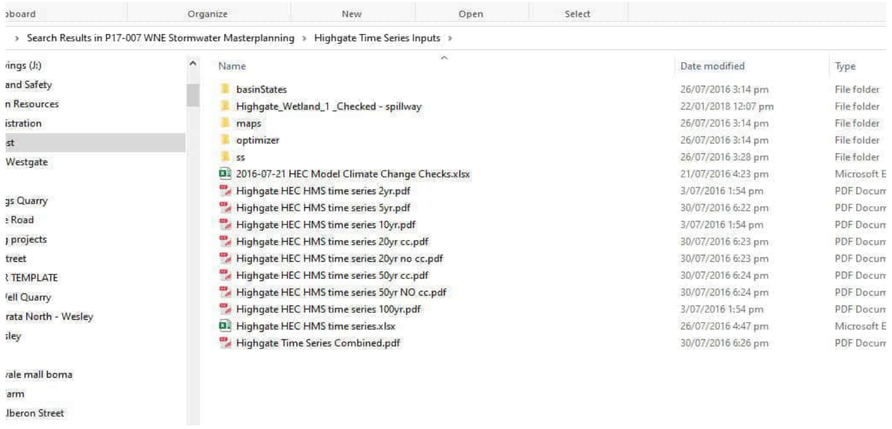
3.2.4.3 Highgate Stormwater Pond

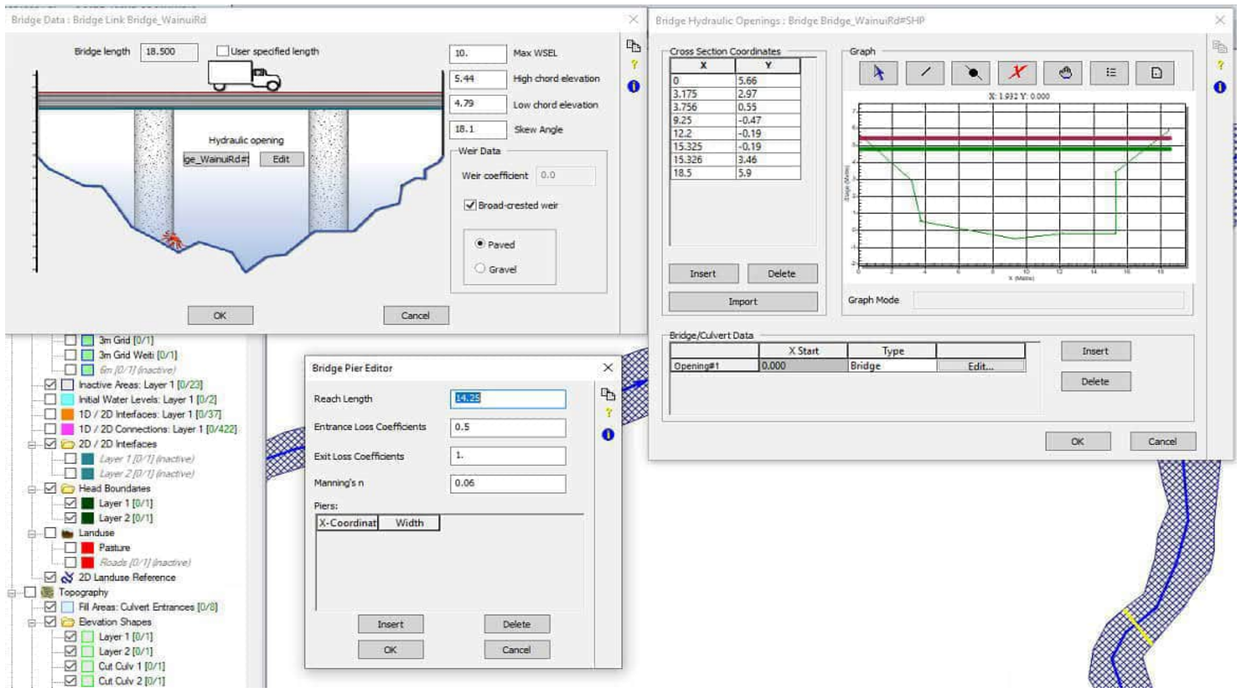
User inflows from the neighbouring Highgate Stormwater pond was included in the model, The Highgate development included the construction of a stormwater pond that discharges flows via a culvert into a watercourse within the Argent Lane SHA. The culvert is located under the Northern Motorway and has been surveyed as a 1600mm diameter circular culvert.

The stormwater pond has been modelled based on the information outlined in the Highgate Stormwater Pond Design report (Highgate catchment One - Stormwater Design Report, December 2014) along with updated design information provided by the project engineers who undertook the design at Woods. The report states that rainfall depths with allowance for climate change have been applied to a TP108 rain profile. The Highgate report modelled the 2, 10, 100 and 1000 year ARI events. The XP Storm model inputs the time series data as a user inflow hydrograph for the applicable ARI event for the ED, MPD and Argent Lane SHA scenarios.

The XP Storm model inputs this information as a user inflow hydrograph. The HEC-HMS model was re-simulated for the 5, 20 and 50 year ARI event as these events were not considered as part of the Highgate design. The 20 year and 50 year ARI events were inputted with the appropriate existing and future rainfall profiles.

Figure 4 shows the location of the stormwater pond. A copy of the time series data used in the model can be found in Appendix C.



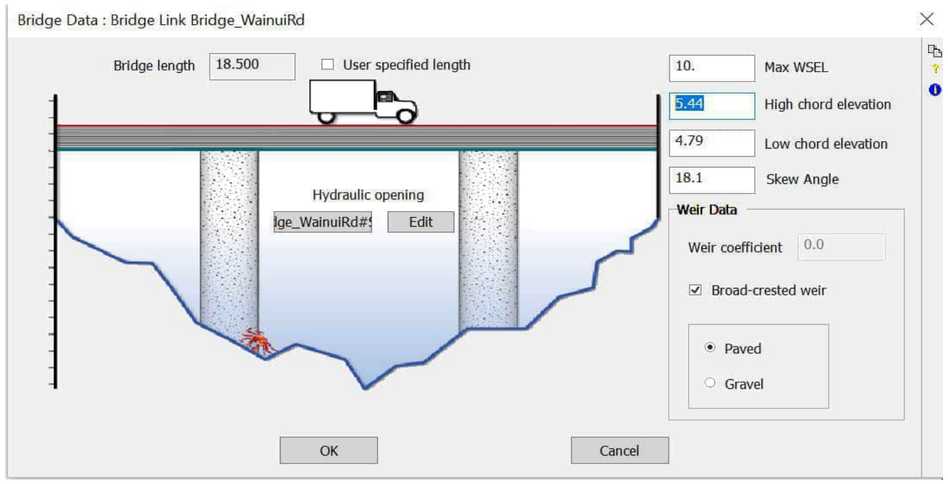

Bridge Data : Bridge Link Bridge_WainuiRd
Bridge length 18.500
User specified length
Hydraulic opening
ge_WainuiRd#
Edit
10.
Max WSEL
5.44
High chord elevation
4.79
Low chord elevation
18.1
Skew Angle
Weir Data
Weir coefficient 0.0
Broad-crested weir
Paved
Gravel
OK
Cancel
Bridge Hydraulic Openings : Bridge Bridge_WainuiRd#SHP
Cross Section Coordinates
X
Y
0 5.66
3.175 2.97
3.756 0.55
9.25 -0.47
12.2 -0.19
15.325 -0.19
15.326 3.46
18.5 5.9
Insert
Delete
Import
Graph
X: 1.932 Y: 0.000
Graph Mode
Bridge/Culvert Data
X Start
Type
Opening#1
0.000
Bridge
Edit...
Insert
Delete
OK
Cancel
Bridge Pier Editor
Reach Length 14.125
Entrance Loss Coefficients 0.5
Exit Loss Coefficients 1.
Manning's n 0.06
Piers:
X-Coordinat
Width
Insert
Delete
OK
Cancel
3m Grid [0/1]
3m Grid Weit [0/1]
6m [0/1] (inactive)
Inactive Areas: Layer 1 [0/23]
Initial Water Levels: Layer 1 [0/2]
1D / 2D Interfaces: Layer 1 [0/37]
1D / 2D Connections: Layer 1 [0/422]
2D / 2D Interfaces
Layer 1 [0/1] (inactive)
Layer 2 [0/1] (inactive)
Head Boundaries
Layer 1 [0/1]
Layer 2 [0/1]
Landuse
Pasture
Roads [0/1] (inactive)
2D Landuse Reference
Topography
Fill Areas: Culvert Entrances [0/8]
Elevation Shapes
Layer 1 [0/1]
Layer 2 [0/1]
Cut Culv 1 [0/1]
Cut Culv 2 [0/1]

2.1cc

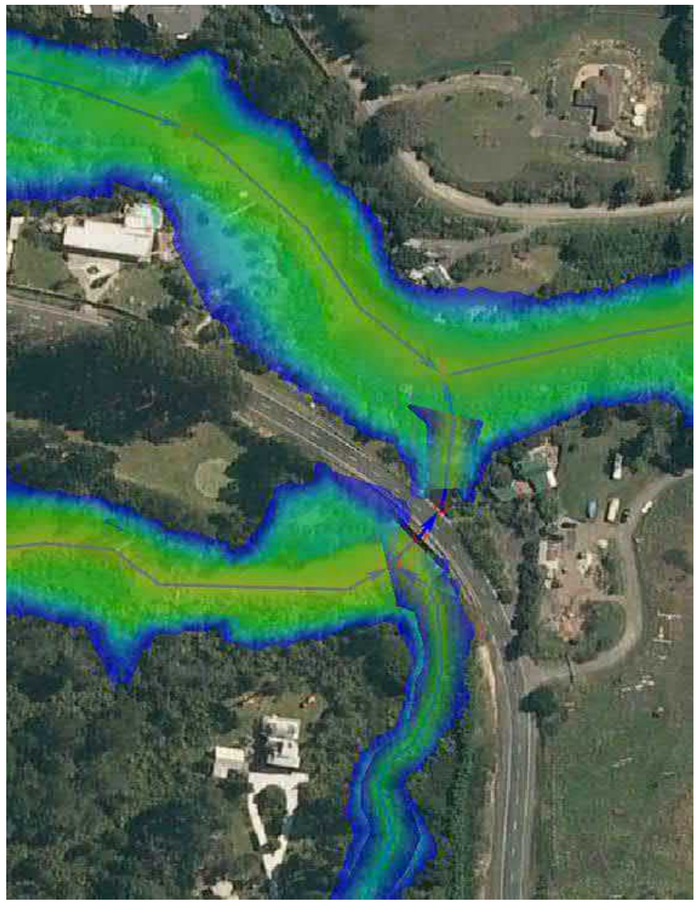
Wainui Bridge US Water Levels	SMP Model	Updated Model	
	SMP MHWS (1.758 m)	SMP MHWS (1.758 m)	Updated MHWS (2.44 m)
10 yrs	3.91 m	4.05 m	4.16 m
10 yrs (Updated)			3.82 m
100yrs	5.03 m	5.23 m	5.28 m
100yrs (Updated)			4.83 m

3.8cc

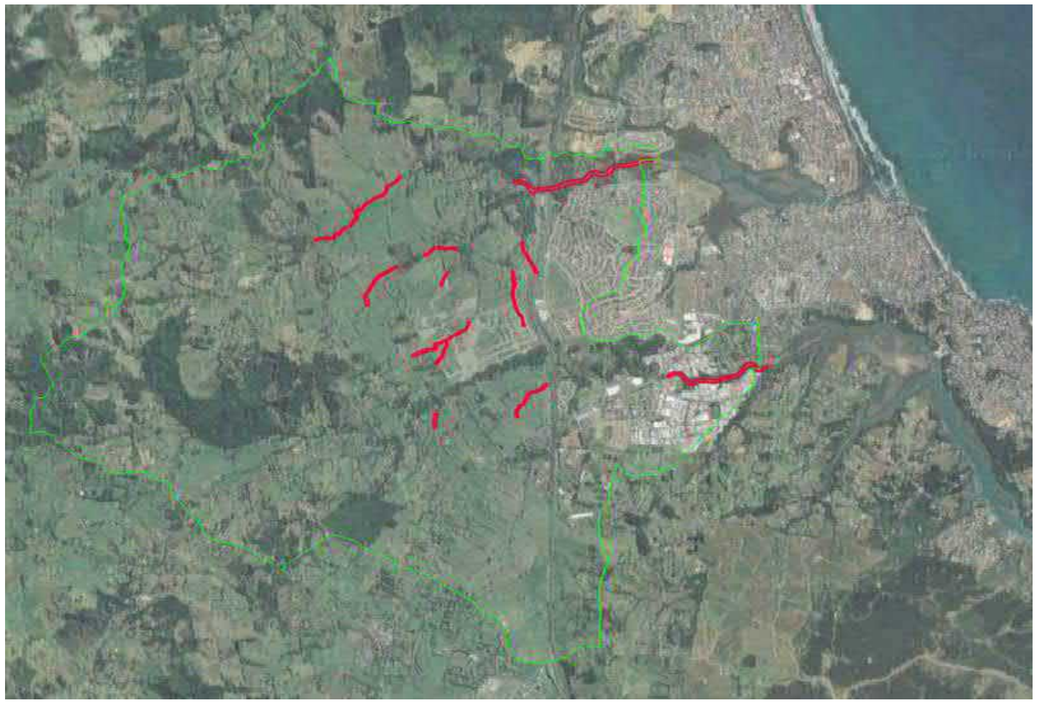
Wainui Bridge US Water Levels	SMP Model	Updated Model	
	SMP MHWS (1.758 m)	SMP MHWS (1.758 m)	Updated MHWS (2.44 m)
10 yrs (Updated)	N/A	N/A	4.25 m
100yrs (Updated)	N/A	N/A	5.36 m



Not enough freeboard



3.8 C 100 yrs model results





Bridge Link roadway overtopping can be represented as a Broad-crested weir with the following coefficient attributes based on the **FHWA Design Manual.**

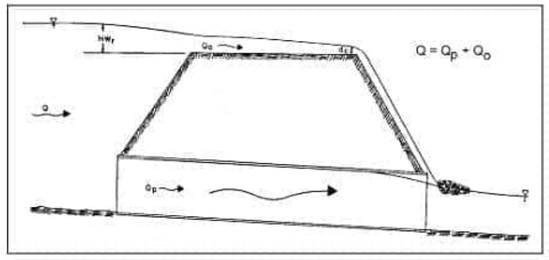


Figure 1: Roadway overtopping

Roadway overtopping will begin when the headwater rises to the elevation of the roadway (Figure 1). The overtopping will usually occur at the low point of a sag vertical curve on the roadway. The flow will be similar to flow over a broad crested weir. Flow coefficients for flow overtopping roadway embankments are found in HDS No. 1, Hydraulics of Bridge Waterways, as well as in documentation of HY-7, the Bridge Waterways Analysis Model. Curves from the Bridge Waterways Analysis Model reference are shown in Figure 2 below. Figure 2-A is for deep ovetopping, Figure 2-B is for shallow overtopping, and Figure 2-C is a correction factor for downstream submergence. The equation below defines the flow across the roadway.

$Q_0=C_dLHW_r^{1.5}$

Where:

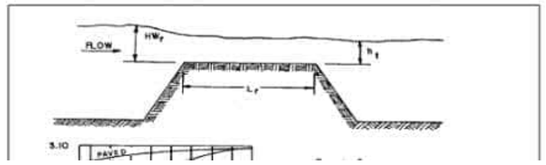
Q_0 = the overtopping flow rate in m^3/s (ft^3/s)

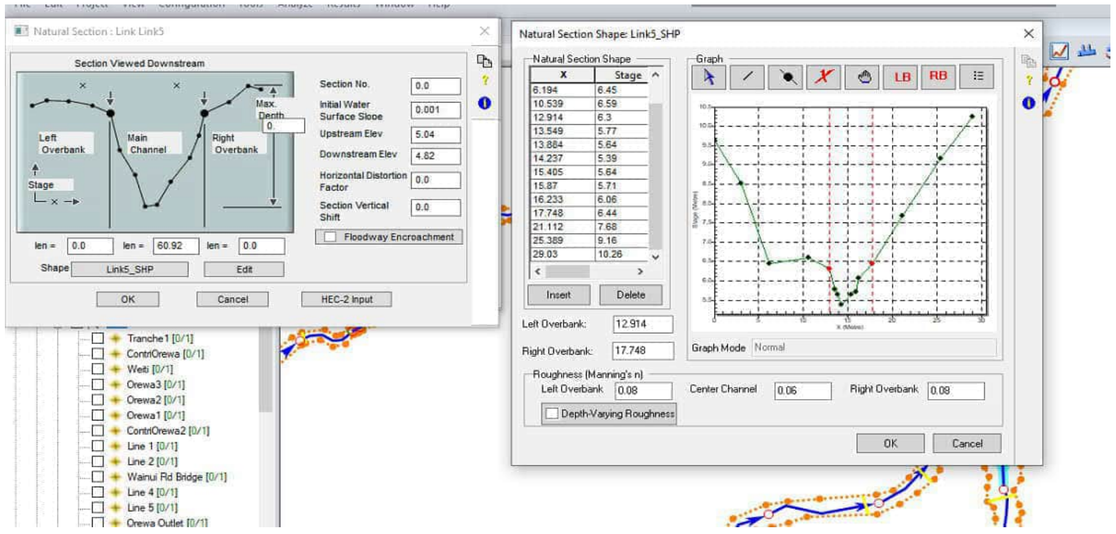
C_d = the overtopping discharge coefficient (for use in SI units, see note below)

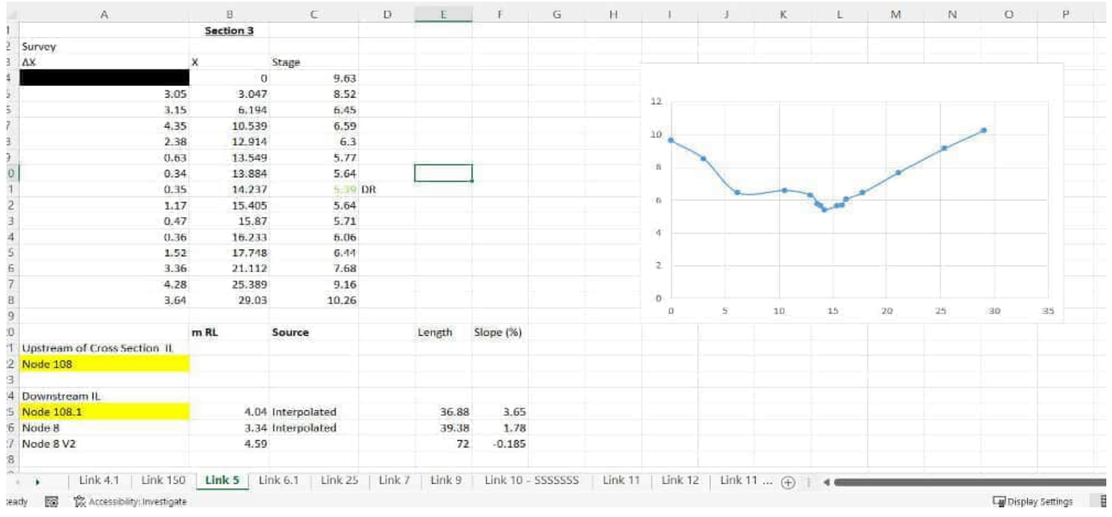
L = the length of the roadway crest, in m or ft

HW_r = the upstream depth, measured from the roadway crest to the water surface upstream of the weir drawdown, in m or ft.

⚠ C_d is determined from Figure 2, and other English unit research must be corrected by a factor of 0.552 [C_d (SI) = 0.552 (C_d English)]







	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1		**Section 3**														
2	Survey															
3	ΔX	X	Stage													
4		0	9.63													
5	3.05	3.047	8.52													
6	3.15	6.194	6.45													
7	4.35	10.539	6.59													
8	2.38	12.914	6.3													
9	0.63	13.549	5.77													
10	0.34	13.884	5.64													
11	0.35	14.237	5.39	DR												
12	1.17	15.405	5.64													
13	0.47	15.87	5.71													
14	0.36	16.233	6.06													
15	1.52	17.748	6.44													
16	3.36	21.112	7.68													
17	4.28	25.389	9.16													
18	3.64	29.03	10.26													
19																
20		**m RL**	**Source**		Length	Slope (%)										
21	Upstream of Cross Section IL															
22	Node 108															
23																
24	Downstream IL															
25	Node 108.1	4.04	Interpolated		36.88	3.65										
26	Node 8	3.34	Interpolated		39.38	1.78										
27	Node 8 V2	4.59			72	-0.185										
28																

Appendix C – Overall Site Plan and U-Culvert Sections

LEGEND

- Streams
- Culverts
- Proposed Lots
- Milldale Development Extent

Stage Boundaries

- Stage 10
- Stage 11
- Stage 12
- Stage 13
- Third Party Land

Stream 43
Stream 42
Culvert 43/2
Lysnar Road
Culvert 42/2
Culvert 43/1
Wainui Road
Stream 35
Culvert 43/1
U-Culvert 21/1
Culvert 35/1
U-Culvert 21/2
U-Culvert 21/3
Stream 21
Argent Lane
Stream 26
Culvert 26/2
Culvert 26/1
Culvert 21/1
Cemetery Road
Stream 20
Culvert 20/1
Culvert 9/1
Waterloo Creek
Endsley Stream
Culvert 2/1
Stream 2

REVISION DETAILS		INT	DATE	SURVEYED	-	8 NUGENT STREET, GRAFTIN, AUCKLAND
1.0	For Information	-	05/02/2025	DESIGNED	-	
-	-	-	-	DRAWN	RK	
-	-	-	-	CHECKED		
				APPROVED	-	WOODS.CO.NZ

MDL - Fast Track - Flood Assessment - P24-128
Site Plan
Stages 10-13

STATUS	ISSUED FOR INFORMATION	REV
SCALE	NTS	1.0
COUNCIL	AUCKLAND COUNCIL	
SHEET	SHEET 1 OF 1	

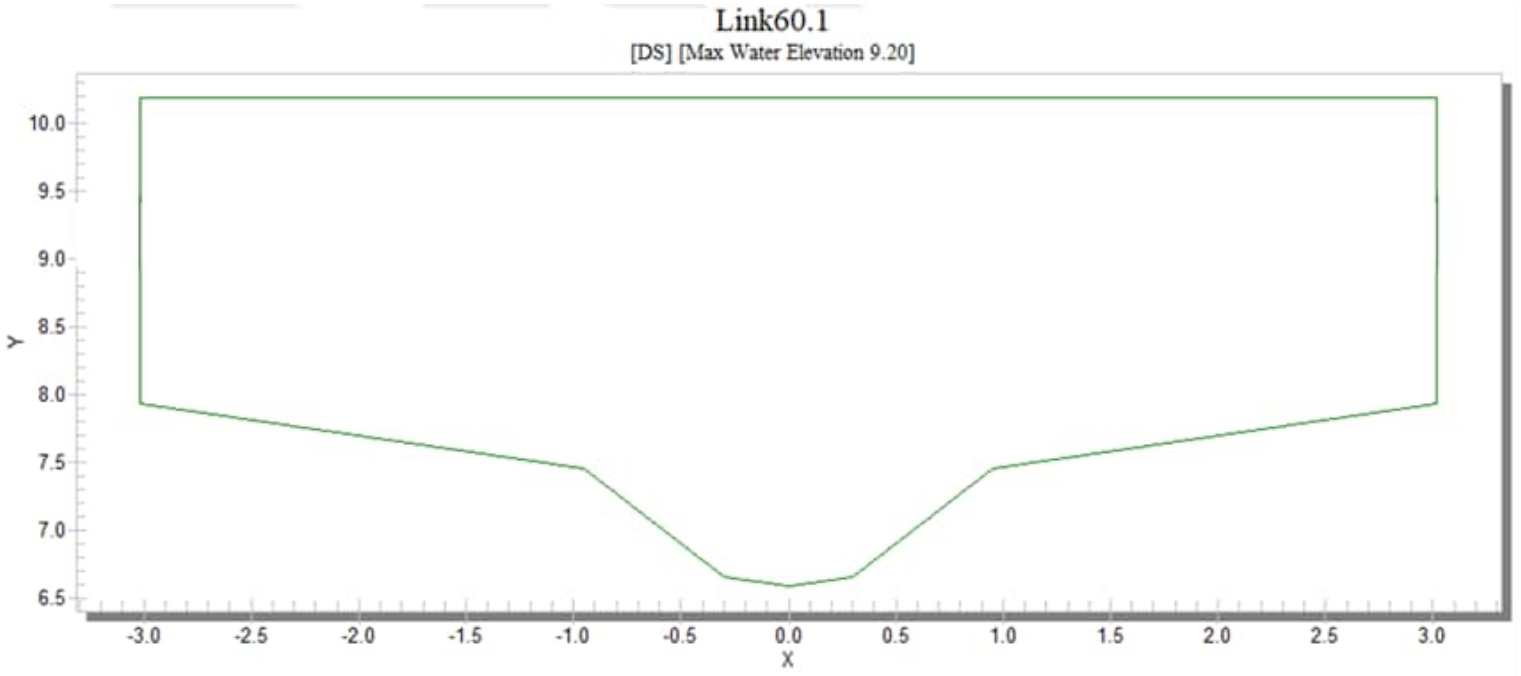


Figure 1. U-Culvert 21/1 cross-section

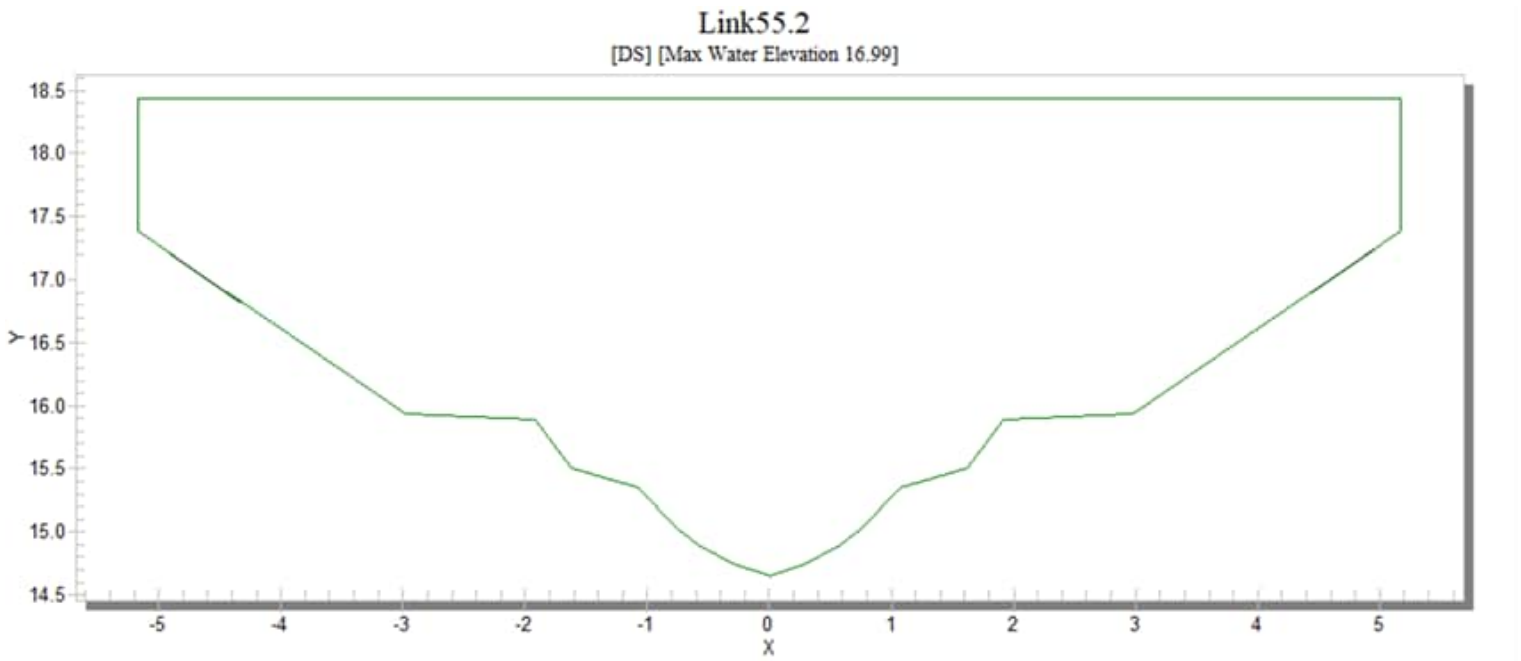


Figure 2. U-Culvert 21/2 cross-section

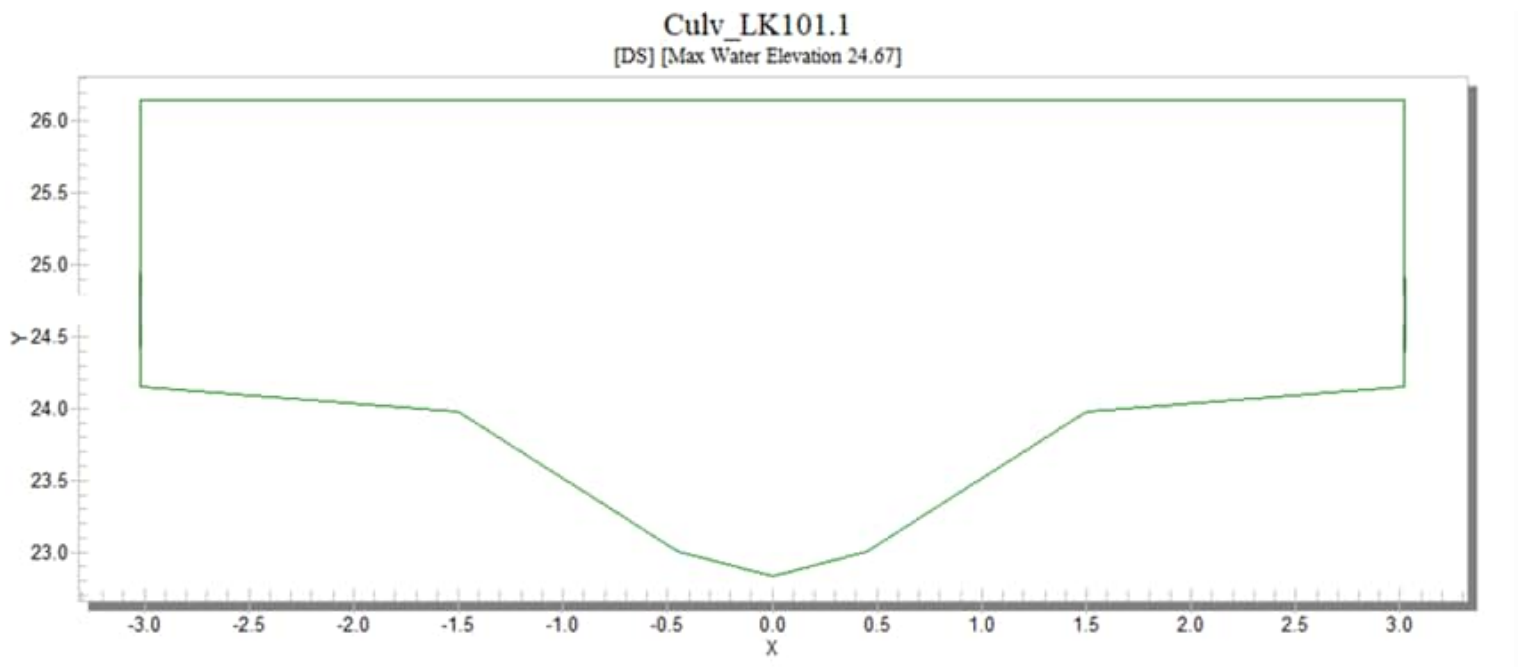


Figure 3. U-Culvert 21/3 cross-section

Appendix D – Argent Lane Overland Flow Path Assessment

To

Auckland Council
Auckland Transport

From

Woods
Boniface Kinnear – Senior Associate Engineer

W-REF: P23-086
21 March 2024
Reviewer – Tony Wang Engineer 3 Waters

Overland Flow Path Assessment - Memorandum

1. Introduction and Background

This memorandum has been prepared to support Engineering Plan Approval application for the construction of roads in Stages 6D, 6G, and Local Centre of the Milldale development with respect to the management of overland flows along the proposed roads. The memo is used to determine whether vehicular and pedestrian safety requirements in accordance with the Auckland Transport – Transport Design Manual (AT TDM) are met.

Stages 6D, 6G, and Local Centre form part of the wider Milldale development that comprises of numerous civil and stormwater infrastructure for residential, commercial and public entities. The extent of the stage is shown on Figure 1.1 covering approximately 14.3ha.

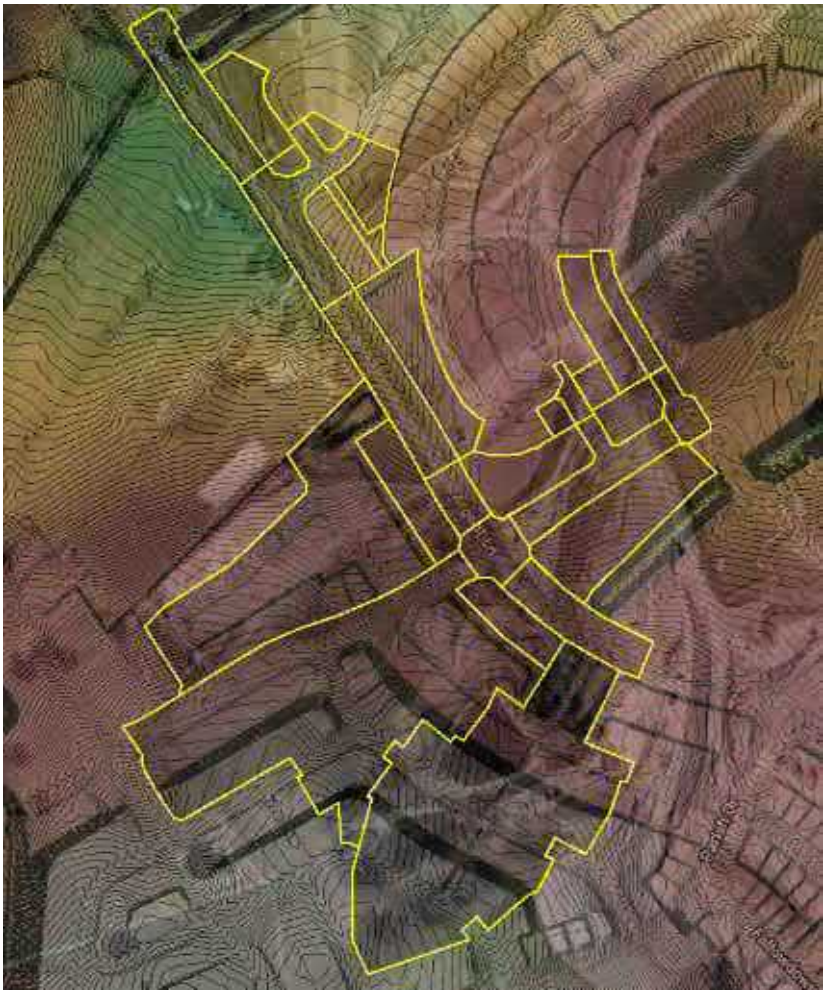


Figure 1.1: Development Extent

2. Modelling and Assessment

Hydrological and hydraulic modelling was undertaken to assess the flooding on the roads and determine the depths and velocities across the development and establish the associated hazards. A 100-year Annual Recurrence Interval (ARI) design storm with an allowance for 3.8°C climate change (CC) was adopted for the assessment. This is considered a resilience check (over and above the current design standard of 2.1°C) to confirm that the roads adequately convey flood waters even in extreme conditions.

2.1. Hydrology

The project extent was delineated into numerous subcatchments with varying impervious to pervious ratios based on the future usage. These are summarised on Table 2.1.

Table 2.1: Land-use summary

Areas	% Impervious
Roads catchments (RC)	73
Residential lot catchments with internal roads (SLC-LR)	65
Residential lot catchments no internal roads (SLC-L)	60
Residential townhouses catchments (THC)	70
Commercial (Local centre) catchment (LCC)	100

Using the USACE Hydrologic Engineering Center-Hydrologic Modelling System (HEC-HMS), the rainfall-runoff generated by the catchment was calculated based on parameters as shown on Table 2.2. The basic model summary is provided in Attachment 1.

Table 2.2: Hydrology Modelling Parameters

Parameter	Value
100-year rainfall depth (mm)[1]	294
Loss Method	SCS Curve Number
Transform Method	SCS Unit hydrograph
Lag time (min)	6.7
Curve Numbers	Pervious: 61 Impervious: 98
Initial abstraction	Pervious: 5mm Impervious: 0

Note:
1. Based on 221mm with 3.8°C climate change uplift factor

The hydrographs from the various catchments generated by the HEC-HMS model were used as upstream inputs to introduce flows into the hydraulic model as discussed in the next section. Model results summary for peak flows are provided in Attachment 1.

2.2. Hydraulic Model

To build the terrain model, the design surface for the proposed road construction merged with the survey of the surrounding area was utilised. To perform the analysis and determine flow behaviour, USACE Hydrologic Engineering Center-River Analysis System (HEC-RAS) version 6.5 was used. It was resolved to utilise a 2D method and a study area was developed within the terrain model for a boundary condition line loading approach. The study area was set up in a 2m x 2m grid format within the area. The grid was further modified to apply breaklines along the road kerblines for a more refined hydraulic assessment.

For the lot parcels, a Manning's 'n' value of 0.1 was used while for the roads a value of 0.02 was adopted in accordance with the Auckland Council Stormwater Code of Practice. For grassed areas n = 0.035 was used.

It was assumed that the primary stomwater pipe network is 100% blocked. It is noted that in this part of the Milldale Development there is a 1650mm diameter culvert under Argent Lane and for modelling purposes, a 25% blockage was applied to the culvert.

As noted above, the hydrographs calculated in the HEC-HMS model were used as upstream inputs (loaded as flow lines) to the HEC-RAS model while a normal depth boundary condition line was applied along the downstream edge of the study area to appropriately remove runoff from the surface.

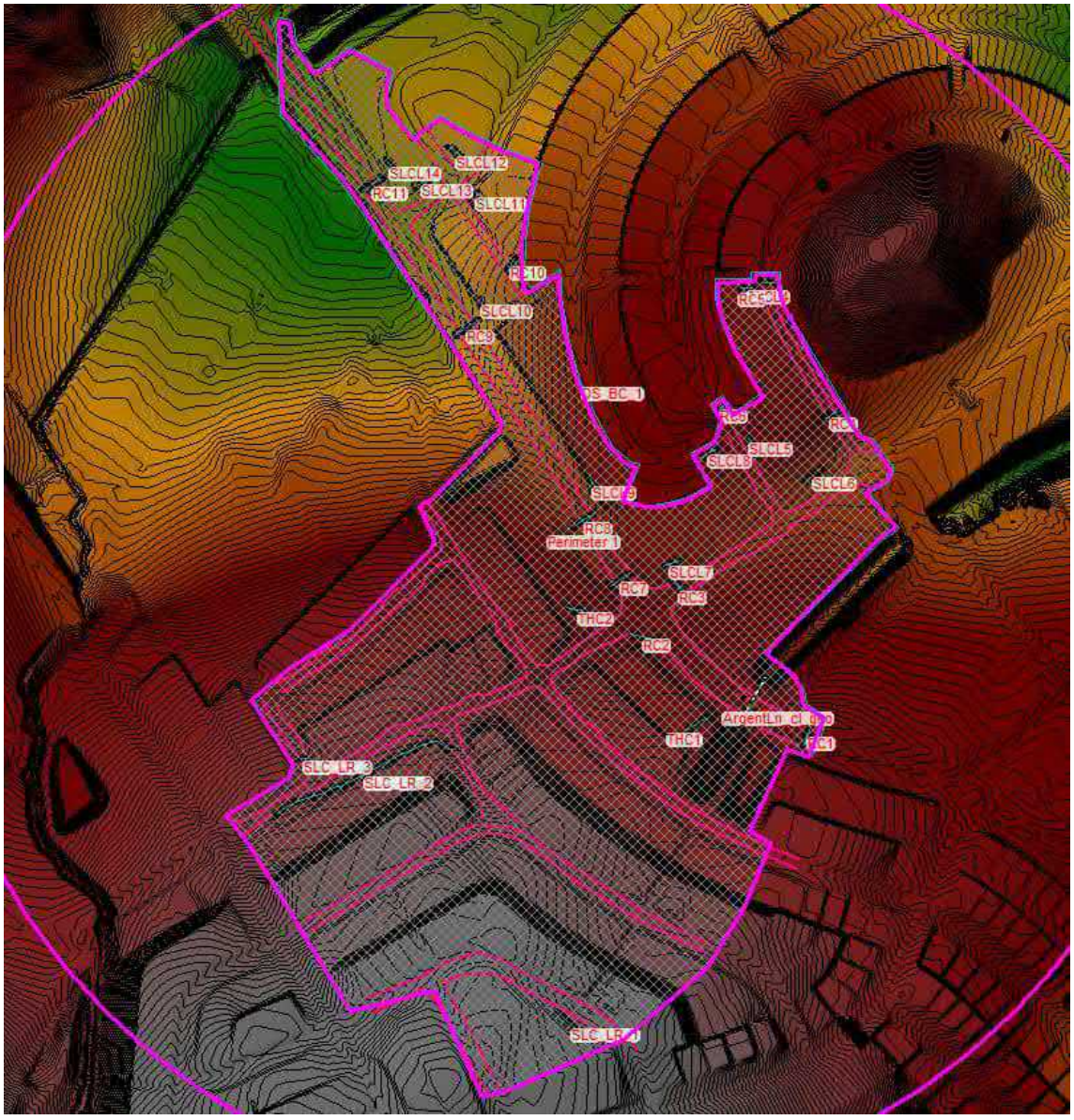


Figure 2.1: HEC-RAS Model Build Summary

2.3. Results Analysis and Assessment

The model was run for a 24-hour period at computational intervals of 1s output at the 1-minute interval. Modelling results indicate that overland flows will be mainly contained within the road corridors. Figure 2.2 and 2.3 shows the flood depths and velocities respectively across the study area. The depths of flow at peak have been noted to be mainly below 0.2m along the roads with only minor exceedances in some areas while the velocities were belows 2m/s.



Figure 2.2: Model Results – Depths



Figure 2.3: Model Results – Velocities

Several areas of interest were identified for closer inspection and assessment. This includes sections along Argent Lane, Collector Road 03 and the two roundabouts shown below in Figure 2.4.

Local Centre
Collector Road 3 and Argent Lane

Collector Road 3, as shown on Figure 2.4, intersects Argent Lane and other local roads. Speed tables are proposed at these intersections to enable safe crosssing points for pedestrians and cyclists.

Cross sections were extracted in order to determine flow characteristics at those locations. Figures 2.5 and 2.6 indicate the depths and velocities respectively at the locations. Using these results, depth x velocity (d x v) values were calculated in order to determine pedestrain and vehicle safety as outlined in the AT TDM Table 3 (extract shown on Figure 2.7). The results are shown on Figure 2.8 with a summary given in Table 2.3.

The results indicate that the safety thresholds as outlined in the AT TDM are not exceeded at any of the areas of interest thus the vehicle and pedestrian safety requirements are met for this part of the development.

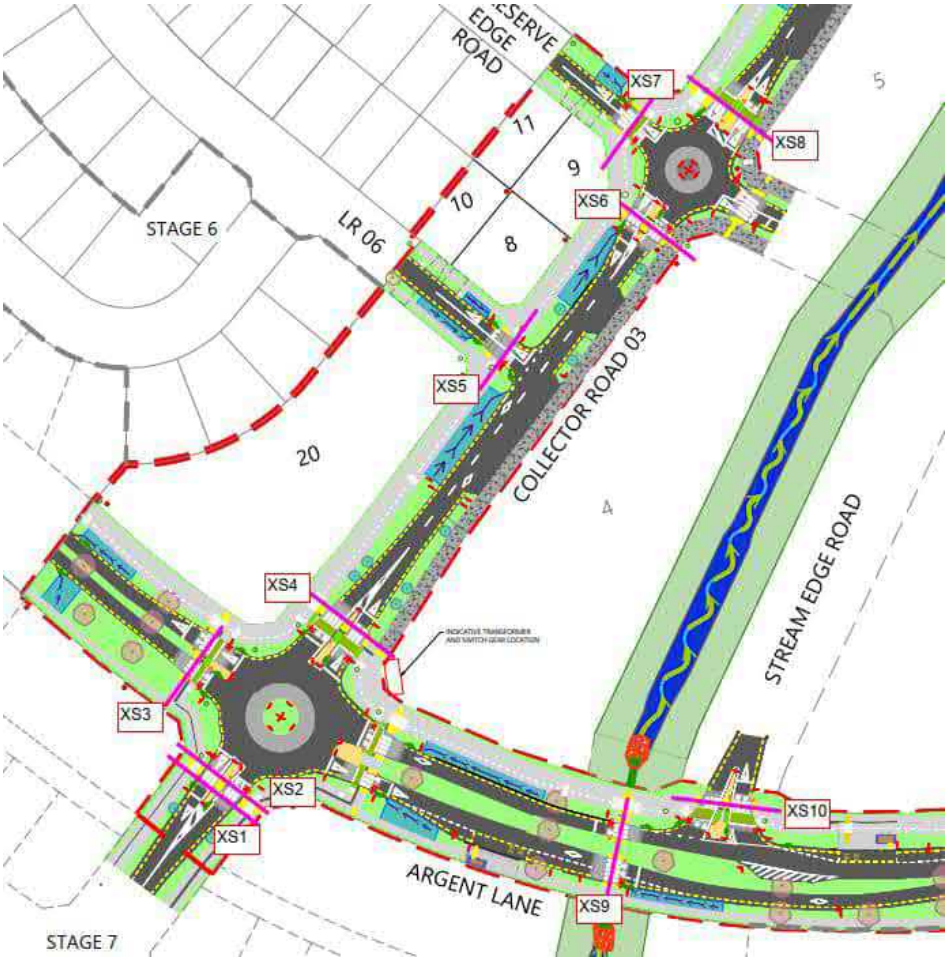


Figure 2.4: Locations of interest – Collector Road 3 – Argent Lane

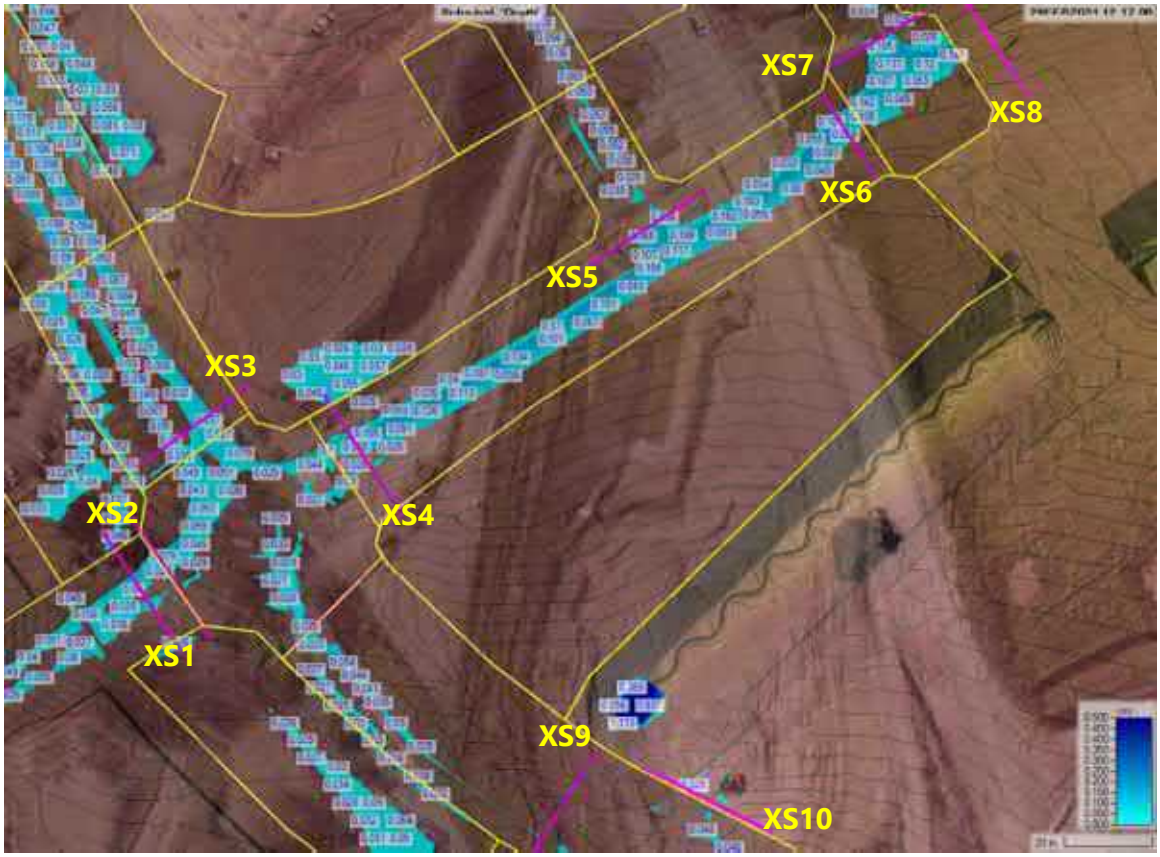


Figure 2.5: Depths Collector Road 3 – Argent Lane



Figure 2.6: Velocities Collector Road 3 and Argent Lane



Figure 2.7: D x V Collector Road 3 and Argent Lane

TABLE 3 MAJOR EVENT - ROADWAY FLOW LIMITATIONS

Situation	Requirement
Where floor levels of adjacent buildings are above road level	Total flow contained within road reserve. Freeboard from peak flow level to habitable floors in accord with Building Code and unitary plan.
Where floor levels of adjacent buildings are less than 350mm above the top of the kerb, and the fall on the footpath towards the kerb is..	**Greater than 100mm:** Water depth must be limited to 50mm above top of kerb. **Less than 100mm:** Water depth must be limited to top of kerb in conjunction with a footpath profile that prevents flow from the roadway entering onto the adjacent property. In these cases, compliance with Building Code and unitary plan may require separate approvals.
Where no kerb is provided	Above depths must be measured from the channel lip level plus 100mm.
Pedestrian safety[1]	**No obvious danger:** $d_s \times V_{ave} \leq 0.6m^2/s$. **Obvious danger:** $d_s \times V_{ave} \leq 0.4m^2/s$.
Vehicle safety	Maximum height of energy line300mm above roadway surface for areas subject to transverse flow. The exception is specific floodway design and additional vehicle warning and protection, where $d_{sp} \times V_{ave} \leq 0.3m^2/s$. On-street parking is not to be permitted where overland flow exceeds $0.3m^2/s$.

1 Obvious danger is interpreted as areas where pedestrians are directed to, or most likely to cross water paths, e.g. marked crossings and corners of intersections.

d_s = flow depth in the channel adjacent to the kerb, i.e. at the invert (m).

V_{ave} = average velocity of the flow (m/s). Source: Adapted from DNRW (2007a)

Figure 2.8: AT TDM Table 3 - d x v summary

Table 2.3: Cross Section Summary

Section	Max depth (m)	Maximum velocity (m/s)	Max d x v (m^2/s)
XS1	0.088	1.47	0.22
XS2	0.083	1.75	0.17
XS3	0.068	1.32	0.12
XS4	0.091	1.39	0.06
XS5	0.083	0.36	0.03
XS6	0.115	1.7	0.23
XS7	0.034	0.61	0.02
XS8	n/a	n/a	n/a
XS9	0.02	0.47	0
XS10	0.01	0.4	0

Note: The depths, velocities and d x v figures correspond to the maximum values along the section within the 2m x 2m computation grid used in the modelling. In all cases the d x v are well below the threshold.

Stage 6
Argent Lane/Local Road 4 Intersection

At the Argent Lane/Local Road 4 intersection (Figure 2.9), it was observed that runoff builds up, at the deepest points the depths exceed 0.3m (Figure 2.10). The velocities at this location were however noted to be relatively low at less than 0.5m/s, while along Argent Lane were less than 2m/s. The d x v values were calculated and determined to be less $0.3m^2/s$. As per the AT DTM, the values do not exceed the safety thresholds for vehicles and pedestrians thus the requirements are satisfied.



Figure 2.9: Location of interest - Argent Lane/Local Road 4 Intersection

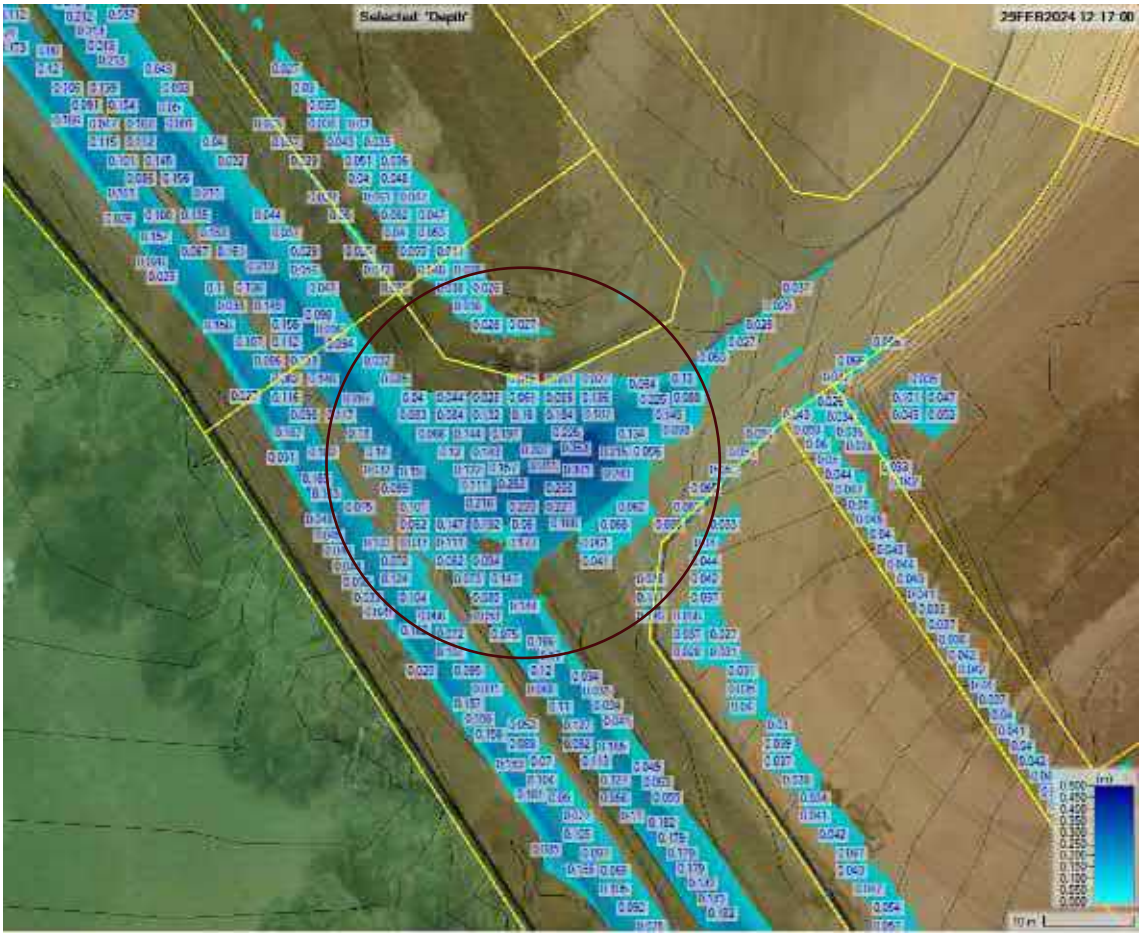


Figure 2.10: Depths Argent Lane/Local Road 4 Intersection

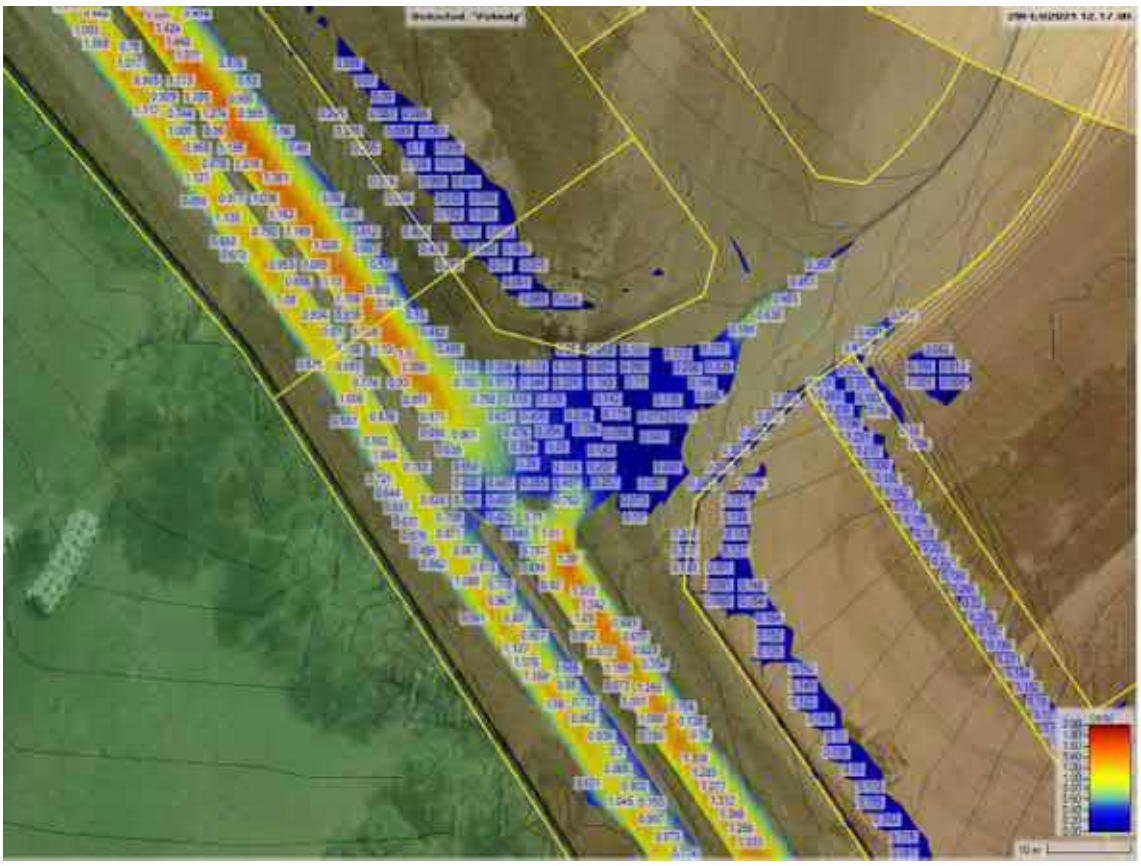


Figure 2.11: Velocities Argent Lane/Local Road 4 Intersection



Figure 2.11: D x V Argent Lane/Local Road 4 Intersection

3. Conclusion

The information presented in this memo confirms that the 100-year ARI flows (with 3.8°C climate change uplift) can be adequtely conveyed along the road corridors. The information further confirms that pedestrian and vehicle safety requirements as outlined in the AT TDM have been met i.e., the safety thresholds have not been exceeded thus the proposed road network design in considered appropriate.

Attachment A

HEC HMS Model Outputs

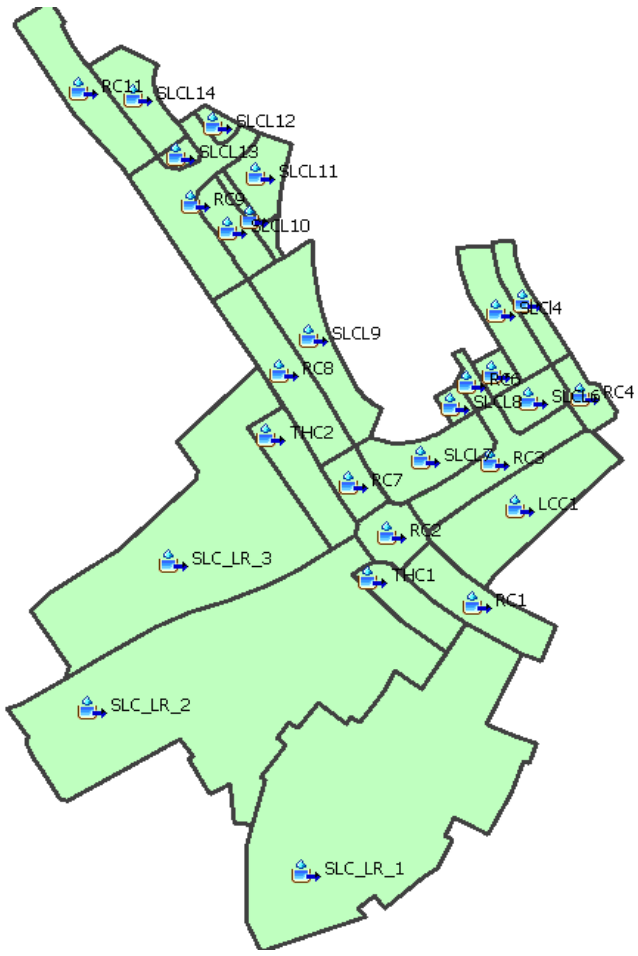
WOODS
Engineers. Surveyors. Planners.

MODEL RESULTS

PROJECT NUMBER:	P23-086
ADDRESS:	Milldale
BY:	B Kinnear
DATE:	21/03/2024

Basin Models

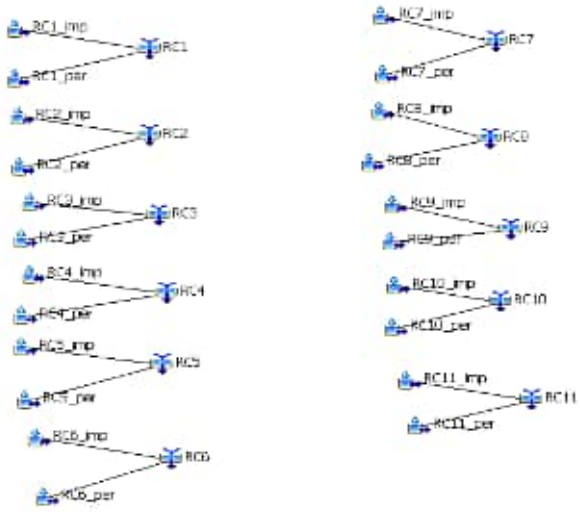
Overall catchment



Residential/commercial catchment



Road Catchments



Residential/commercial catchment

Project: OLFP_CatchmentA Simulation Run: 100yr_3.8Ccc_upstream

Start of Run: 01Jan2000, 00:00 Basin Model: UpstreamCatchments
End of Run: 02Jan2000, 00:00 Meteorologic Model: 100yr_hyeto
Compute Time: 22Mar2024, 10:22:32 Control Specifications: 24Hr_1min

Show Elements: Initial Selection | Volume Units: MM 1000 M3 | Sorting: Watershed Explorer

Hydrologic Element	Drainage Area (KM2)	Peak Discharge (M3/S)	Time of Peak	Volume (1000 M3)
SingleLotsCatch2	0.03153	1.58651	1 January 2000, 12:12	7.9154
SingleLotsCatch1	0.02955	1.47817	1 January 2000, 12:12	7.3634
SingleLotsCatch3	0.01954	0.98179	1 January 2000, 12:12	4.8961
SLCL4	0.00277	0.13736	1 January 2000, 12:12	0.6825
SLCL5	0.00077	0.03821	1 January 2000, 12:12	0.1899
SLCL6	0.00161	0.07983	1 January 2000, 12:12	0.3966
SLCL7	0.00361	0.17880	1 January 2000, 12:12	0.8883
SLCL8	0.00050	0.02493	1 January 2000, 12:12	0.1239
SLCL9	0.00482	0.23882	1 January 2000, 12:12	1.1866
SLCL10	0.00194	0.09630	1 January 2000, 12:12	0.4785
SLCL11	0.00199	0.09857	1 January 2000, 12:12	0.4897
SLCL12	0.00051	0.02535	1 January 2000, 12:12	0.1259
SLCL13	0.00046	0.02282	1 January 2000, 12:12	0.1134
SLCL14	0.00263	0.13009	1 January 2000, 12:12	0.6463
THC1	0.00227	0.11594	1 January 2000, 12:12	0.5810
THC2	0.00313	0.15996	1 January 2000, 12:12	0.8016
LCC1	0.00675	0.37857	1 January 2000, 12:12	1.9402

Road Catchments

Project: OLFP_CatchmentA Simulation Run: Roads100yr_3.8Ccc

Start of Run: 01Jan2000, 00:00 Basin Model: RoadCatchments
End of Run: 02Jan2000, 00:00 Meteorologic Model: 100yr_hyeto
Compute Time: 22Mar2024, 10:23:35 Control Specifications: 24Hr_1min

Show Elements: Initial Selection | Volume Units: MM 1000 M3 | Sorting: Watershed Explorer

Hydrologic Element	Drainage Area (KM2)	Peak Discharge (M3/S)	Time of Peak	Volume (1000 M3)
RC1	0.00366	0.18930	1 January 2000, 12:12	0.9510
RC2	0.00190	0.09818	1 January 2000, 12:12	0.4932
RC3	0.00395	0.20424	1 January 2000, 12:12	1.0260
RC4	0.00128	0.06620	1 January 2000, 12:12	0.3326
RC5	0.00160	0.08245	1 January 2000, 12:12	0.4142
RC6	0.00062	0.03208	1 January 2000, 12:12	0.1611
RC7	0.00149	0.07693	1 January 2000, 12:12	0.3865
RC8	0.00454	0.23467	1 January 2000, 12:12	1.1789
RC9	0.00505	0.26102	1 January 2000, 12:12	1.3113
RC10	0.00071	0.03675	1 January 2000, 12:12	0.1846
RC11	0.00416	0.21516	1 January 2000, 12:12	1.0809

Appendix E – Flood Depth, Afflux, and Flood Extent Plots

LEGEND

- Milldale Development Extent

Stage 10-13 Boundaries

- Stage 10
- Stage 11
- Stage 12
- Stage 13
- Third Party Land

MAXIMUM MODELLED FLOOD DEPTH - PRE DEVELOPMENT ED:
2-YEAR 2.1°C

- 0m - 0.05m
- 0.05m - 0.1m
- 0.1m - 0.2m
- 0.2m - 0.3m
- 0.3m - 0.4m
- 0.4m - 0.5m
- 0.5m - 0.7m
- 0.7m - 1.0m
- 1.0m - 2.0m
- >2.0m

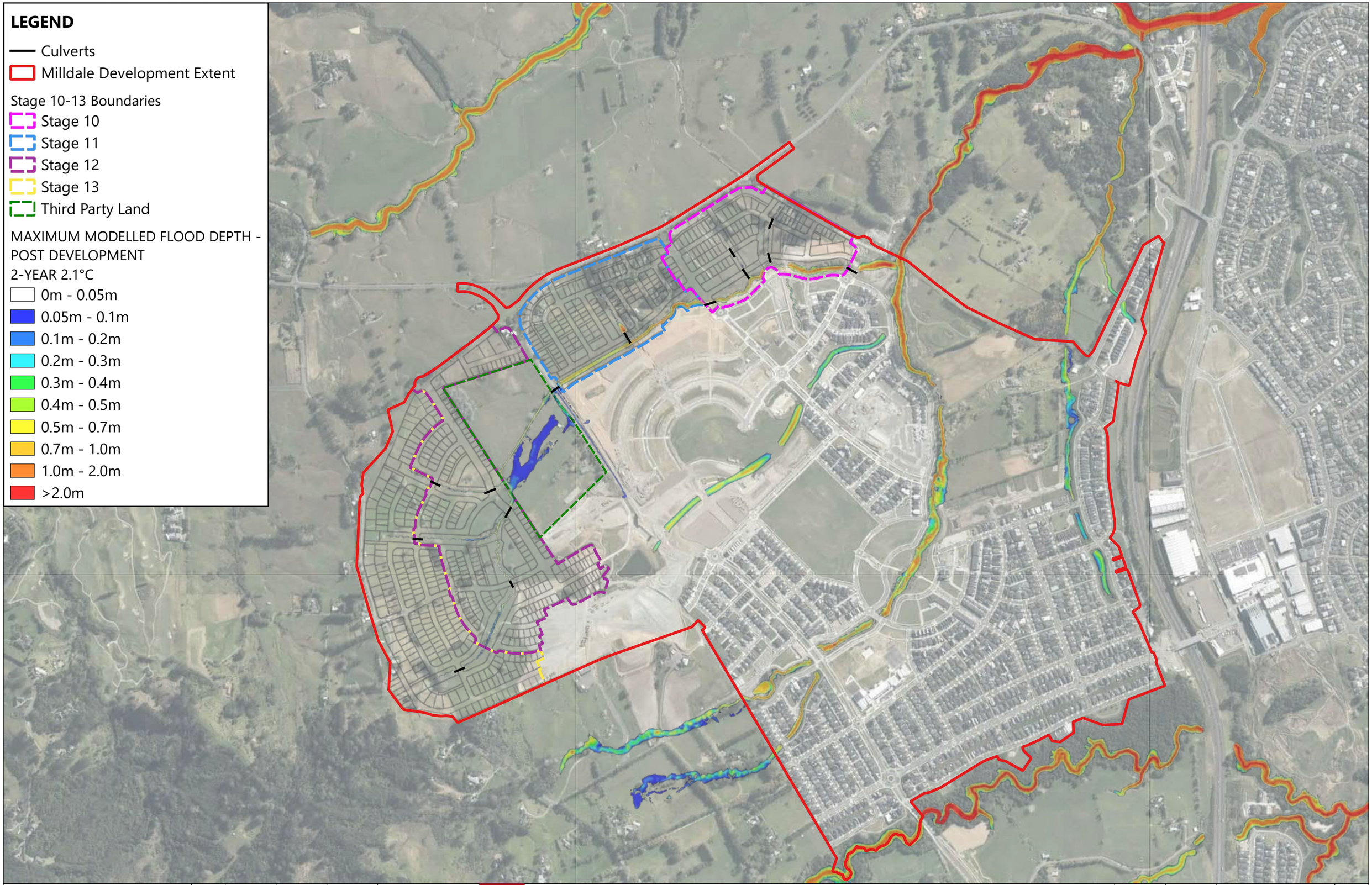
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-	-	-	-	CHECKED	JADL
				APPROVED	JADL

8 NUGENT STREET,
GRAFTON,
AUCKLAND

WOODS.CO.NZ

MDL - FAST TRACK - FLOOD ASSESSMENT - P24-128
PRE DEVELOPMENT FLOOD DEPTH (2YR 2.1°C)

STATUS	ISSUED FOR INFORMATION	REV
SCALE	NTS	1.0
COUNCIL	AUCKLAND COUNCIL	
SHEET	SHEET 1 OF 8	



REVISION DETAILS		INT	DATE		
1.0	For Information	-	05/08/2025	DESIGNED	-
-	-	-	-	DRAWN	CP
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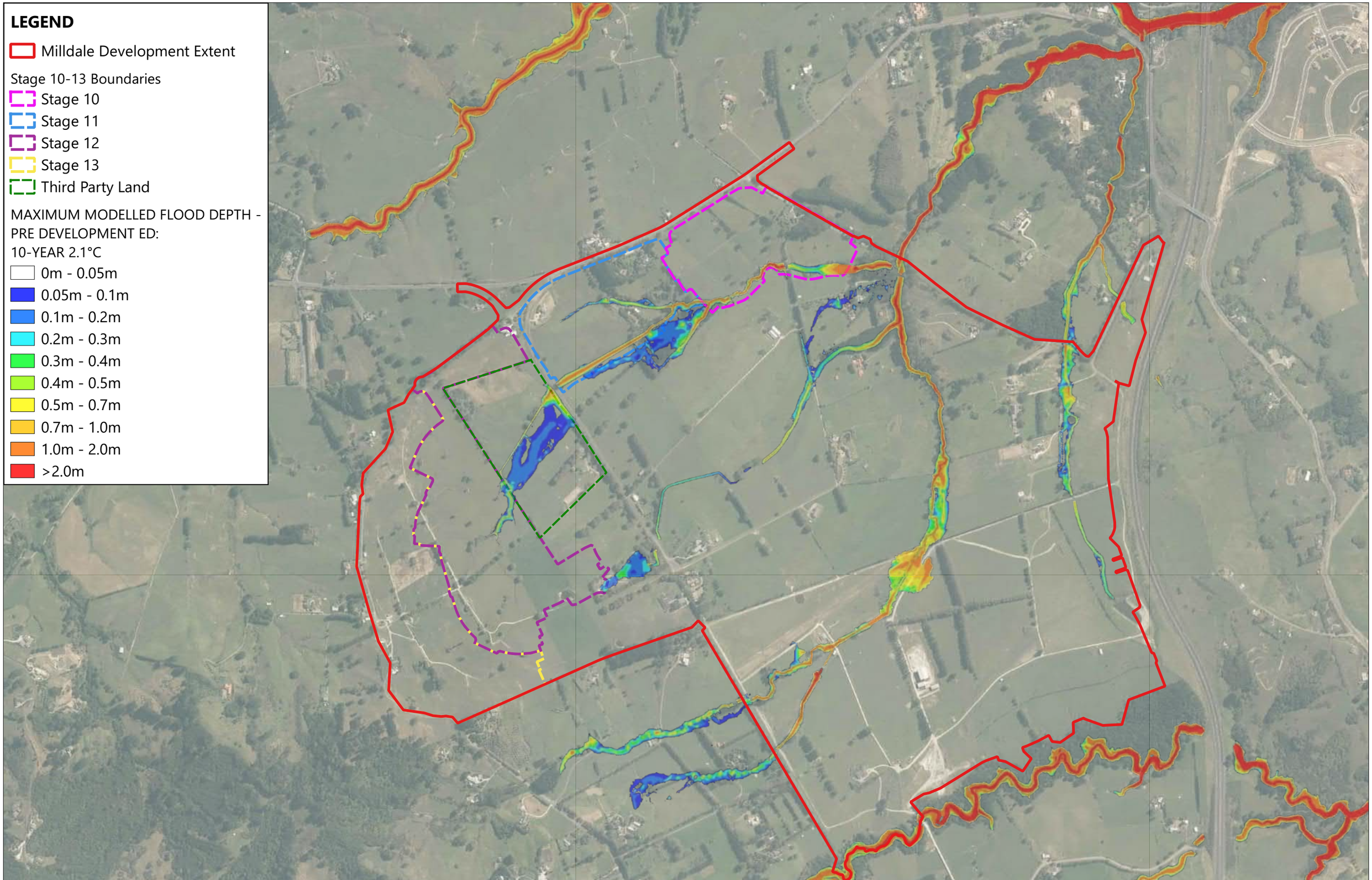
8 NUGENT STREET,
GRAFTON,
AUCKLAND

WOODS
EST.1875

WOODS.CO.NZ

MDL - FAST TRACK - FLOOD ASSESSMENT - P24-128
POST DEVELOPMENT FLOOD DEPTH (2YR 2.1°C)

STATUS	ISSUED FOR INFORMATION	REV
SCALE	NTS	1.0
COUNCIL	AUCKLAND COUNCIL	
SHEET	SHEET 2 OF 8	



REVISION DETAILS		INT	DATE		
1.0	For Information	-	05/08/2025	DESIGNED	-
-	-	-	-	DRAWN	CP
-	-	-	-	CHECKED	JADL
				APPROVED	JADL

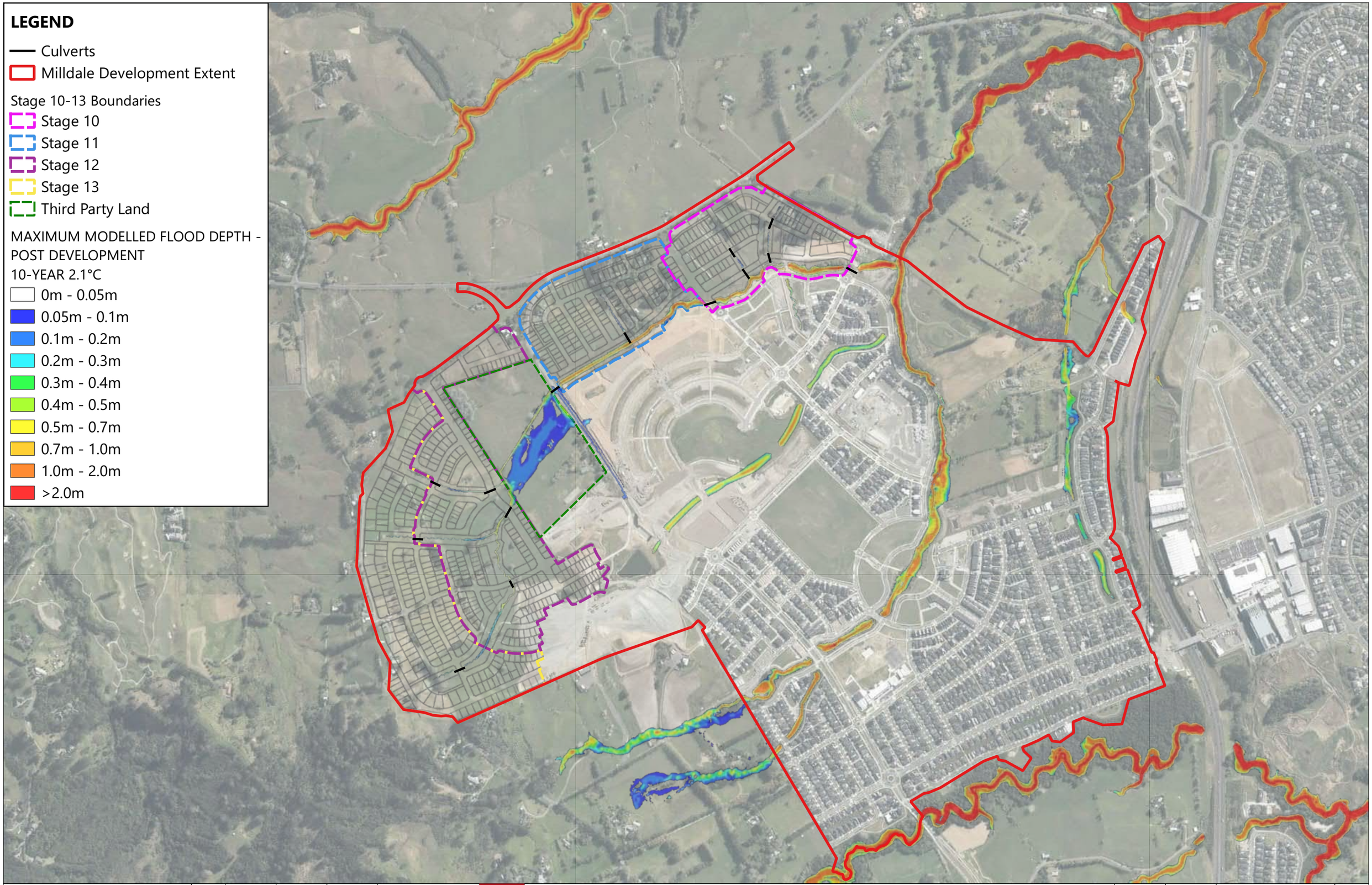
8 NUGENT STREET,
GRAFTON,
AUCKLAND

WOODS
EST.1870

WOODS.CO.NZ

MDL - FAST TRACK - FLOOD ASSESSMENT - P24-128
PRE DEVELOPMENT FLOOD DEPTH (10YR 2.1°C)

STATUS	ISSUED FOR INFORMATION	REV
SCALE	NTS	1.0
COUNCIL	AUCKLAND COUNCIL	
SHEET	SHEET 3 OF 8	



REVISION DETAILS		INT	DATE		
1.0	For Information	-	05/08/2025	DESIGNED	-
-	-	-	-	DRAWN	CP
-	-	-	-	CHECKED	JADL
				APPROVED	JADL

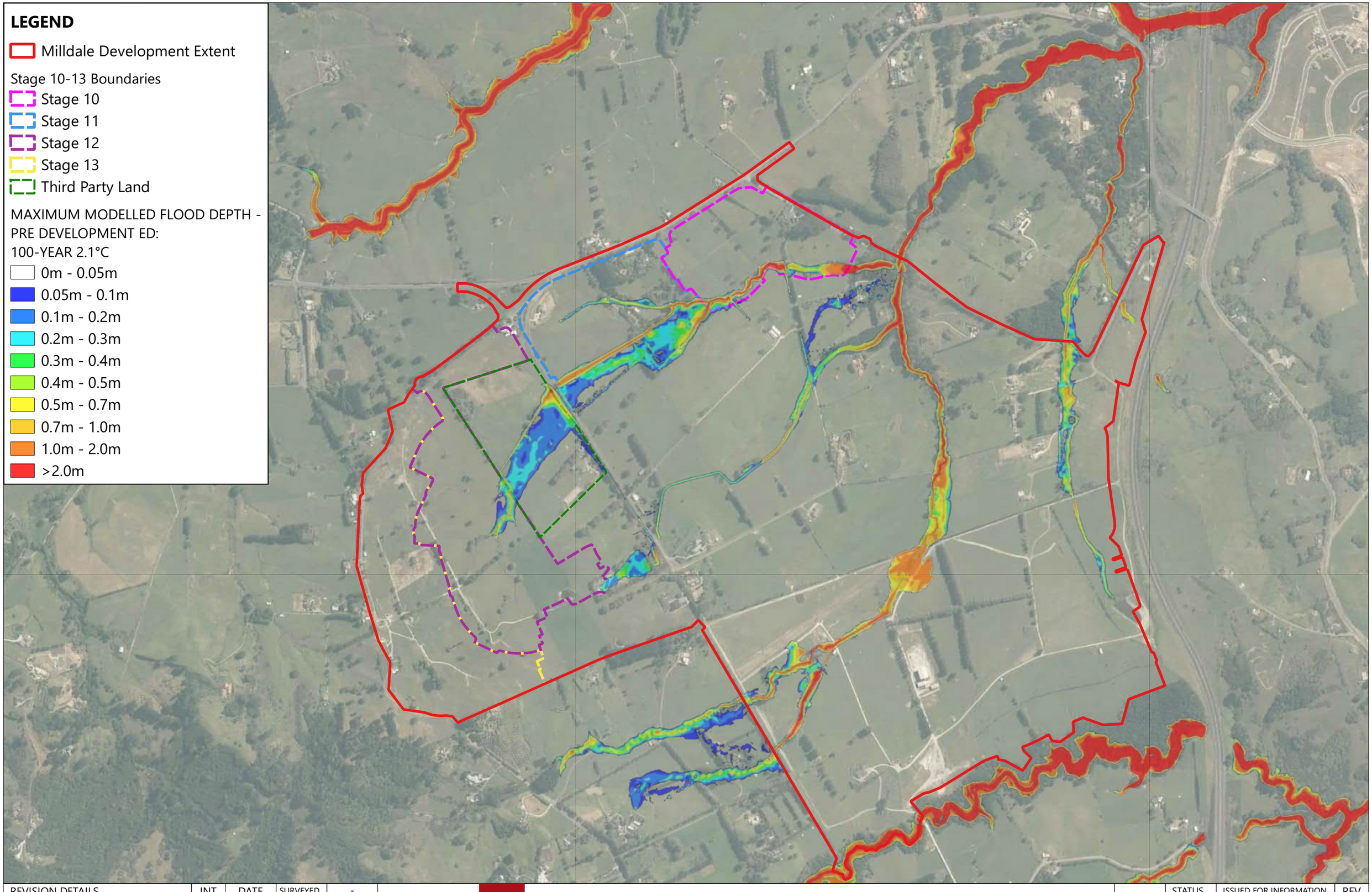
8 NUGENT STREET,
GRAFTON,
AUCKLAND

WOODS
EST.1870

WOODS.CO.NZ

MDL - FAST TRACK - FLOOD ASSESSMENT - P24-128
POST DEVELOPMENT FLOOD DEPTH (10YR 2.1°C)

STATUS	ISSUED FOR INFORMATION	REV
SCALE	NTS	1.0
COUNCIL	AUCKLAND COUNCIL	
SHEET	SHEET 4 OF 8	



REVISION DETAILS		INT	DATE		
1.0	For Information	-	05/08/2025	DESIGNED	-
-	-	-	-	DRAWN	CP
-	-	-	-	CHECKED	JADL
				APPROVED	JADL

8 NUGENT STREET,
GRAFTON,
AUCKLAND

WOODS.CO.NZ

MDL - FAST TRACK - FLOOD ASSESSMENT - P24-128
PRE DEVELOPMENT FLOOD DEPTH (100YR 2.1°C)

STATUS	ISSUED FOR INFORMATION	REV
SCALE	NTS	1.0
COUNCIL	AUCKLAND COUNCIL	
SHEET	SHEET 5 OF 8	

LEGEND

- Culverts
- Milldale Development Extent

Stage 10-13 Boundaries

- Stage 10
- Stage 11
- Stage 12
- Stage 13
- Third Party Land

MAXIMUM MODELLED FLOOD DEPTH - POST DEVELOPMENT MPD STAGE 10-13: 100-YEAR 2.1°C

- 0m - 0.05m
- 0.05m - 0.1m
- 0.1m - 0.2m
- 0.2m - 0.3m
- 0.3m - 0.4m
- 0.4m - 0.5m
- 0.5m - 0.7m
- 0.7m - 1.0m
- 1.0m - 2.0m
- >2.0m

REVISION DETAILS		INT	DATE		
1.0	For Information	-	05/08/2025	DESIGNED	-
-	-	-	-	DRAWN	CP
-	-	-	-	CHECKED	JADL
				APPROVED	JADL

8 NUGENT STREET,
GRAFTON,
AUCKLAND

WOODS
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MDL - FAST TRACK - FLOOD ASSESSMENT - P24-128
POST DEVELOPMENT FLOOD DEPTH (100YR 2.1°C)

STATUS	ISSUED FOR INFORMATION	REV
SCALE	NTS	1.0
COUNCIL	AUCKLAND COUNCIL	
SHEET	SHEET 6 OF 8	

LEGEND

- Culverts
- Milldale Development Extent

Stage 10-13 Boundaries

- Stage 10
- Stage 11
- Stage 12
- Stage 13
- Third Party Land

MAXIMUM MODELLED FLOOD DEPTH - POST DEVELOPMENT
100-YEAR 2.1°C BLOCKED

- 0m - 0.05m
- 0.05m - 0.1m
- 0.1m - 0.2m
- 0.2m - 0.3m
- 0.3m - 0.4m
- 0.4m - 0.5m
- 0.5m - 0.7m
- 0.7m - 1.0m
- 1.0m - 2.0m
- >2.0m

REVISION DETAILS		INT	DATE		
1.0	For Information	-	05/08/2025	DESIGNED	-
-	-	-	-	DRAWN	CP
-	-	-	-	CHECKED	JADL
				APPROVED	JADL

8 NUGENT STREET,
GRAFTON,
AUCKLAND

WOODS
EST.1875

WOODS.CO.NZ

MDL - FAST TRACK - FLOOD ASSESSMENT - P24-128
POST DEVELOPMENT FLOOD DEPTH (100YR 2.1°C BLOCKED)

STATUS	ISSUED FOR INFORMATION	REV
SCALE	NTS	1.0
COUNCIL	AUCKLAND COUNCIL	
SHEET	SHEET 7 OF 8	

LEGEND

- Culverts
- Milldale Development Extent

Stage 10-13 Boundaries

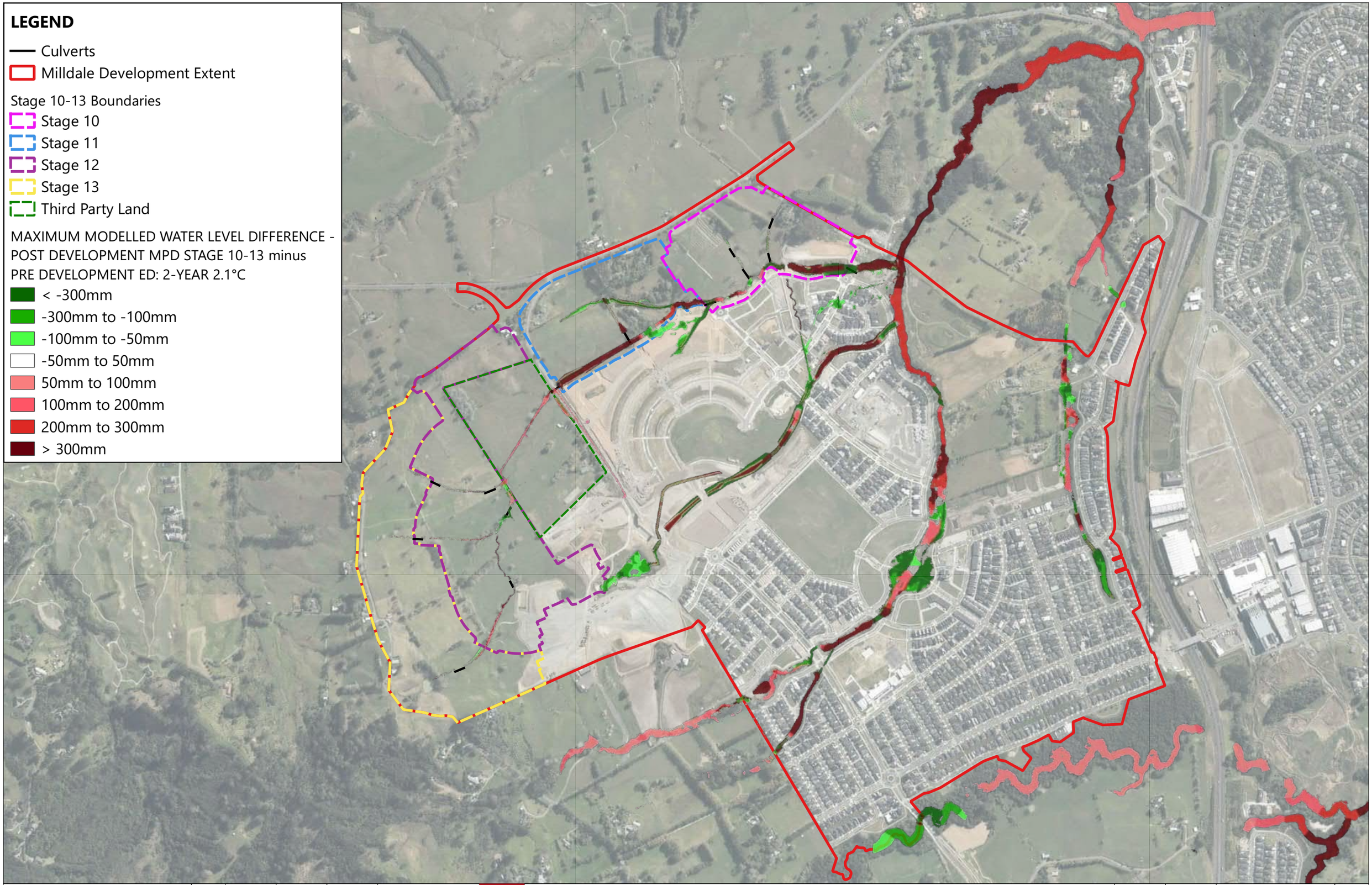
- Stage 10
- Stage 11
- Stage 12
- Stage 13
- Third Party Land

MAXIMUM MODELLED FLOOD DEPTH - POST DEVELOPMENT
100-YEAR 3.8°C

- 0m - 0.05m
- 0.05m - 0.1m
- 0.1m - 0.2m
- 0.2m - 0.3m
- 0.3m - 0.4m
- 0.4m - 0.5m
- 0.5m - 0.7m
- 0.7m - 1.0m
- 1.0m - 2.0m
- >2.0m

REVISION DETAILS		INT	DATE				
1.0	For Information	-	05/08/2025	DESIGNED	-	8 NUGENT STREET, GRAFTON, AUCKLAND	MDL - FAST TRACK - FLOOD ASSESSMENT - P24-128 POST DEVELOPMENT FLOOD DEPTH (100YR 3.8°C)
-	-	-	-	DRAWN	CP		
-	-	-	-	CHECKED	JADL		
				APPROVED	JADL	WOODS.CO.NZ	

STATUS	ISSUED FOR INFORMATION	REV
SCALE	NTS	1.0
COUNCIL	AUCKLAND COUNCIL	
SHEET	SHEET 8 OF 8	



REVISION DETAILS		INT	DATE		
1.0	For Information	-	05/08/2025	DESIGNED	-
-	-	-	-	DRAWN	CP
-	-	-	-	CHECKED	JADL
				APPROVED	JADL

8 NUGENT STREET,
GRAFTON,
AUCKLAND

WOODS
Est.1875

WOODS.CO.NZ

MDL - FAST TRACK - FLOOD ASSESSMENT - P24-128
WATER LEVEL DIFFERENCE
POST DEVELOPMENT vs PRE DEVELOPMENT 2YR 2.1°C

STATUS	ISSUED FOR INFORMATION	REV
SCALE	NTS	1.0
COUNCIL	AUCKLAND COUNCIL	
SHEET	SHEET 1 OF 3	

LEGEND

- Culverts
- Milldale Development Extent

Stage 10-13 Boundaries

- Stage 10
- Stage 11
- Stage 12
- Stage 13
- Third Party Land

MAXIMUM MODELLED WATER LEVEL DIFFERENCE - POST DEVELOPMENT MPD STAGE 10-13 minus PRE DEVELOPMENT ED: 10-YEAR 2.1°C

- < -300mm
- -300mm to -100mm
- -100mm to -50mm
- -50mm to 50mm
- 50mm to 100mm
- 100mm to 200mm
- 200mm to 300mm
- > 300mm

REVISION DETAILS		INT	DATE				
1.0	For Information	-	05/08/2025	SURVEYED	-	8 NUGENT STREET, GRAFTON, AUCKLAND	WOODS Est.1875
-	-	-	-	DESIGNED	-		
-	-	-	-	DRAWN	CP		
				CHECKED	JADL		
				APPROVED	JADL	WOODS.CO.NZ	

MDL - FAST TRACK - FLOOD ASSESSMENT - P24-128
WATER LEVEL DIFFERENCE
POST DEVELOPMENT vs PRE DEVELOPMENT 10YR 2.1°C

STATUS	ISSUED FOR INFORMATION	REV
SCALE	NTS	1.0
COUNCIL	AUCKLAND COUNCIL	
SHEET	SHEET 2 OF 3	

LEGEND

- Culverts
- Milldale Development Extent

Stage 10-13 Boundaries

- Stage 10
- Stage 11
- Stage 12
- Stage 13
- Third Party Land

MAXIMUM MODELLED WATER LEVEL DIFFERENCE - POST DEVELOPMENT MPD STAGE 10-13 minus PRE DEVELOPMENT ED: 100-YEAR 2.1°C

- < -300mm
- -300mm to -100mm
- -100mm to -50mm
- -50mm to 50mm
- 50mm to 100mm
- 100mm to 200mm
- 200mm to 300mm
- > 300mm

REVISION DETAILS		INT	DATE		
1.0	For Information	-	05/08/2025	DESIGNED	-
-	-	-	-	DRAWN	CP
-	-	-	-	CHECKED	JADL
				APPROVED	JADL

8 NUGENT STREET,
GRAFTON,
AUCKLAND

WOODS
Est.1875

WOODS.CO.NZ

MDL - FAST TRACK - FLOOD ASSESSMENT - P24-128
WATER LEVEL DIFFERENCE
POST DEVELOPMENT vs PRE DEVELOPMENT 100YR 2.1°C

STATUS	ISSUED FOR INFORMATION	REV
SCALE	NTS	1.0
COUNCIL	AUCKLAND COUNCIL	
SHEET	SHEET 3 OF 3	

LEGEND

- Culverts
- Pre Development Flood Extent
- Post Development Flood Extent
- Milldale Development Extent

Stage 10-13 Boundaries

- Stage 10
- Stage 11
- Stage 12
- Stage 13
- Third Party Land

REVISION DETAILS		INT	DATE		
1.0	For Information	-	05/08/2025	DESIGNED	-
-	-	-	-	DRAWN	CP
-	-	-	-	CHECKED	JADL
				APPROVED	JADL

8 NUGENT STREET,
GRAFTON,
AUCKLAND

WOODS.CO.NZ

MDL - FAST TRACK - FLOOD ASSESSMENT - P24-128
FLOOD EXTENT COMPARISON
POST DEVELOPMENT vs PRE DEVELOPMENT 2YR 2.1°C

STATUS	ISSUED FOR INFORMATION	REV
SCALE	NTS	1.0
COUNCIL	AUCKLAND COUNCIL	
SHEET	SHEET 1 OF 3	

LEGEND

- Culverts
- Post Development Flood Extent
- Pre Development Flood Extent
- Milldale Development Extent

Stage 10-13 Boundaries

- Stage 10
- Stage 11
- Stage 12
- Stage 13
- Third Party Land

REVISION DETAILS		INT	DATE		
1.0	For Information	-	05/08/2025	DESIGNED	-
-	-	-	-	DRAWN	CP
-	-	-	-	CHECKED	JADL
				APPROVED	JADL

8 NUGENT STREET,
GRAFTON,
AUCKLAND

WOODS.CO.NZ

MDL - FAST TRACK - FLOOD ASSESSMENT - P24-128
FLOOD EXTENT COMPARISON
POST DEVELOPMENT vs PRE DEVELOPMENT 10YR 2.1°C

STATUS	ISSUED FOR INFORMATION	REV
SCALE	NTS	1.0
COUNCIL	AUCKLAND COUNCIL	
SHEET	SHEET 2 OF 3	

LEGEND

- Culverts
- Pre Development Flood Extent
- Post Development Flood Extent
- Milldale Development Extent

Stage 10-13 Boundaries

- Stage 10
- Stage 11
- Stage 12
- Stage 13
- Third Party Land

REVISION DETAILS		INT	DATE		
1.0	For Information	-	05/08/2025	DESIGNED	-
-	-	-	-	DRAWN	CP
-	-	-	-	CHECKED	JADL
				APPROVED	JADL

8 NUGENT STREET,
GRAFTON,
AUCKLAND

WOODS.CO.NZ

MDL - FAST TRACK - FLOOD ASSESSMENT - P24-128
FLOOD EXTENT COMPARISON
POST DEVELOPMENT vs PRE DEVELOPMENT 100YR 2.1°C

STATUS	ISSUED FOR INFORMATION	REV
SCALE	NTS	1.0
COUNCIL	AUCKLAND COUNCIL	
SHEET	SHEET 3 OF 3	