Environmental Assessment (75W Modification)

Property:
Lot 32 DP 1014864 - 431 Masonite Road, Heatherbrae

Approved Development:
MP 10_0073 Sandvik Machine Manufacturing and Maintenance Project.

Proposed Modification:
Inclusion of a temporary Concrete Batching Plant

Applicant:
Hunter Ready Mixed Concrete Pty Ltd on behalf of Sandvik Mining and Construction Australia Pty Ltd

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Hunter Ready Mixed Concrete Pty Ltd on behalf of Sandvik Mining and Construction Australia Pty Ltd

Proposed Temporary Concrete Batching Plant

Lot 32 DP 1014864 – 431 Masonite Road, Heatherbrae

Environmental Assessment (75W Modification)

17/12/2010

Limitations Statement

This report has been prepared in accordance with the scope of services agreed between ADW Johnson Pty Ltd and the Client. The scope of services was defined by the requests of the Client and by time and budgetary constraints set by the Client.

All reasonable skill, diligence and care have been applied within the agreed scope of services and the resources made available to it by agreement with the Client. Any responsibility to the Client and others in respect of matters outside the scope of the above is disclaimed.

Unless otherwise specified in this report, information and advice received from external parties during the course of this project was not independently verified. However, to the best of our ability, checks were undertaken to determine relevancy and currency of information prior to use.

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1.0 Introduction

1.1 INTRODUCTION

Major Project 10_0073 was approved by the Minister for Planning on 27th October, 2010. The Project Application subject of the approval is for a Sandvik Machine Manufacturing and Maintenance Project (including manufacturing, assembly, aftermarket service, regional distribution centre and training facility) on Lot 32 DP 1014864, at 431 Masonite Road, Heatherbrae, in the Local Government Area of Port Stephens.

ADW Johnson Pty Limited has been commissioned by Hunter Ready Mixed Concrete Pty Ltd on behalf of Sandvik Mining and Construction Australia Pty Ltd to prepare a section 75W Modification to the approval (MP 10_0073) for a temporary concrete batching plant to service the construction of the Sandvik facility. The Director-General of the NSW Department of Planning confirmed the proposal is a modification under section 75W of the Environmental Planning and Assessment Act 1979 (EP&A Act) in their letter dated 25th November, 2010 (**Appendix A**).

The location of the proposed temporary concrete batching plant on the site during construction of the Sandvik facility will provide a number of benefits and efficiencies, including reduction in external noise and traffic impacts, operational efficiencies, and the minimising of transport costs.

The approved Sandvik Machine Manufacturing and Maintenance project involves the construction and operation of industrial scale workshop buildings, office, training and amenities buildings, 569 car parking spaces, concrete hardstand areas and a machinery testing area (refer to the Project Approval attached at **Appendix B**).

The proposed modification to the approval (MP 10_0073) is for the construction of a temporary concrete batching plant, with a production capacity of 18,000m^3 or 43,200 tonnes of pre-mixed concrete over 9 months, to be provided exclusively to the approved Sandvik Machine Manufacturing and Maintenance Facility on the site (refer to the proposed development plans attached at **Appendix C**). Construction of the Sandvik Facility must be completed by November 2011.

With the inclusion of the proposed temporary concrete batching plant on site, the development remains the same. Given that the proposed modification is not only minor in nature, but also reduces a number of environmental impacts, it is our view that notification of the 75W application is unnecessary in this instance.

The following information within this Environmental Assessment provides details of the proposal, and an assessment of key issues including the following:

- Traffic impacts;
- Stormwater and drainage;
- Acoustic impact; and
- Air quality.

2.0 Proposed Modification

2.1 THE PROPOSAL

The proposal is for the construction of a temporary concrete batching plant to be provided exclusively for the construction of the approved Sandvik Machine Manufacturing and Maintenance Facility on the site.

The proposal incorporates the following:

- 1 x cement silo including cement auger;
- 1 x transit mixer loading area;
- 4 x aggregate storage bins with dimensions 8m deep x 5m wide x 2m high;
- Admixture storage area (2 x 2,500Ltr bunded storage tanks); and
- Construction of a temporary access to the batching plant off Masonite Road.

Refer to the proposed development plans including overall site plan, site plan, and elevations attached at **Appendix C**.

2.1.1 Operational Details

Production Capacity & Process

The proposed concrete batching plant will have a production capacity of 18,000m^3 or 43,200 tonnes of pre-mixed concrete over a period of 9 months, which will be provided exclusively to the approved Sandvik Machine Manufacturing and Maintenance Facility on the site (MP 10_0073).

Aggregates and sand will be transported to the site by truck from Karuah and Vales Point. Cement will be stored in a water tight elevated silo, whilst aggregates and sand will be stored at ground level, in storage bins. Admixture will be stored in 2 x 2500Ltr bunded storage tanks.

The batching process involves loading aggregates into the aggregate weight hopper, discharging cement into the cement weigh hopper and then measuring the water and admixtures volumetrically through meters. The operator then discharges the materials, cement, water and admixtures at a pre-determined rate into the revolving transit mixer barrel. Additional water is added to the mixer after a final inspection of the concrete at the slump stand before the transit mixer leaves the loading area to deliver the concrete to the designated construction area within the site.

Hours of Operation

The proposed development will operate between 7:00am and 6:00pm Monday to Friday, and between 8:00am and 1:00pm on Saturdays. The batching plant will not operate on Sundays or public holidays.

Staff

The proposed development will employ two (2) batch plant operators and three (3) truck drivers.

Transport Routes / Trips / Number of Trucks

Concrete will be transported within the boundaries of the site, with approximately 10 to 50 trips per day, depending on project requirements.

Raw Materials and Deliveries

Aggregates and sand will be transported to the site from Karuah to the north, and cement from Vales Point to the south. The estimated number of material deliveries per day will be six (6). Articulated bulk tankers will deliver cement, while tipper trucks with articulated trailers will deliver aggregates. Delivery trucks will access the site via the proposed temporary access.

Storage of Raw Materials

Cement will be stored in a water tight elevated silo, 12.7m high (to the top of the structure), with a diameter of 3m and a total storage capacity of 65 tonnes. The actual storage capacity will be limited to 700mm below the roof of the silo through the installation of an Overfill Protection System comprising a high-level alarm system and automatic cut-off to prevent over-filling. Aggregates and sand will be stored at ground level, in storage bins that will have 2 metre high concrete dividing barriers. The bins will be open to one side to allow a loader to access the materials.

Admixture Storage

Admixture will be stored in 2 x 2500Ltr bunded storage tanks.

Diesel Storage

There will be no diesel stored on site.

Alarms and Safeguards

An Overfill Protection System comprising a high-level alarm system and automatic cut-off to prevent over-filling will be installed and operated on the cement silo.

Security and Lighting

Security will be implemented as per the site management plan. It is not expected that there will be any night work requiring lighting.

Water and Groundwater Management

Batch water will be sourced from town water supply and any run-off water will be collected for recycling.

Waste Production & Disposal

Waste from the plant requiring management can be classified as "production" and "non-production" wastes. By-products of concrete manufacture include both solid and liquid wastes.

Non-production Wastes

Non-production wastes generated during normal operations will be minimal. This waste will be disposed of via normal Council collection.

Production Wastes

Solid wastes would predominantly comprise coarse and fine aggregates, cement and small amounts of concrete from spillages, truck washout and cleaning of concrete agitators. These solid materials will be collected into an above-ground wash down storage tank, and any solidified concrete, or spilled material no longer suitable for concrete manufacture will be transported to an approved recycling facility.

Solid waste spillages will be washed into the slump stand sediment pit to minimise dust generation. Large spillages of aggregates will be collected and returned to the aggregate storage areas.

Liquid wastes produced as a result of concrete manufacture are primarily cementitious materials in aqueous suspension from the wash-down waters of the concrete agitator trucks. The wash-down waters may also contain alkaline salts in solution and will be re-used in the concrete manufacturing process.

2.2 CONSISTENCY WITH THE PROJECT APPROVAL

With the inclusion of the proposed temporary concrete batching plant on site, it is considered that the development still remains the same.

The proposed modification does not alter the nature of the approved project, but seeks only to allow the construction of a temporary concrete batching plant on site, to be provided exclusively for the construction of the approved Sandvik Machine Manufacturing and Maintenance Facility.

No additional environmental impacts have been identified and the proposal is therefore considered consistent with the Approved Project (MP 10_0073).

3.0 Assessment & Recommendations

3.1 PLANNING CONTROLS

3.1.1 Environmental Planning & Assessment Act 1979

Section 75W – Modification of Minister's Approval, under Part 3A of the Environmental Planning and Assessment Act 1979 is applicable to the proposed development and the Director-General of the NSW Department of Planning has confirmed the proposal to be subject to a modification application under section 75W of the EP&A Act in their letter dated 25th November, 2010 (refer to **Appendix A**).

3.1.2 Port Stephens Local Environmental Plan 2000

The subject site is zoned 4(a) Industrial General "A" Zone under the Port Stephens Local Environmental Plan (LEP) 2000. The proposed development is permissible within the zone, with consent.

3.2 TRAFFIC, ACCESS & PARKING

Intersect Traffic, previously trading as Insite Engineering Services Pty Ltd, have prepared an addendum to their original traffic impact assessment prepared for Sandvik to support the subject section 75W modification application (refer to **Appendix D** of this report).

The assessment considers the potential traffic impacts from the temporary concrete batching plant on the site during the construction phase. The report concludes:

- The concrete batching plant is likely to generate only up to 9 vehicle trips per hour on the public road network in the AM and PM peak hour period during the construction of the development.

- The concrete batching plant is likely to generate a maximum of 12 internal vehicle trips per hour (concrete deliveries) on the site during construction of the development. Whilst these will have no impact on the adjoining public road network as internal movements, they do represent a reduction in vehicle trips on the public road network as a result of the temporary concrete batching plant being provided on site.

- Peak hour traffic generation on the public road network associated with the construction / disassembly of the temporary concrete batching plant will not exceed the peak hour traffic generation on the public road network expected from the operation of the plant.

- Construction traffic peak hour volumes will continue to remain significantly less than the operational traffic volumes expected from the completed development, therefore the findings of the original traffic assessment, that the local road network has sufficient spare capacity to cater for the development, does not change as a result of the provision of the temporary concrete batching plant on the site.

- The temporary concrete batching plant proposed on the site would have a positive impact on the local road network through a reduction of heavy vehicle movements on the public road network during the construction phase. This will not only have a positive impact on the efficiency of the road network but would also reduce deterioration of the subject road pavements.

- The proposed access to the temporary concrete batching plant complies with the relevant Australian Standards, would provide a sufficient level of road safety for users, and would ensure forward entry and exit onto the public road network from the site by vehicles generated by the operation of the plant.

- The proposal would be able to cater for any on-site parking demand and that the on-site parking complies with the requirements of Australian Standard AS2890.1-2004 "Parking Facilities – off street car parking".

- The proposed temporary concrete batching plant will not generate sufficient additional demand on existing alternate transport mode services / facilities to require an upgrading of the services and / or infrastructure associated with these alternate transport modes.

The assessment recommends the proposal be supported from a traffic impact perspective, as the proposal is considered to have a positive impact on the local road network during the construction phase of the development and satisfies all relevant Council and RTA standards and policies associated with on-site parking, access and alternate transport modes.

3.3 WATER MANAGEMENT

A Water Management Plan has been prepared by GCA Engineering Solutions and is included in **Appendix D**. The Water Management Plan provides the following information and assessment in respect to the proposal:

- Description of the site and proposed facility;
- Anticipated water requirements;
- Proposed Water Management Strategy; and
- Conclusions regarding residual risk to the surface and ground water quality.

Based on the batching plant design characteristics, the water requirements and the Water Management Plan it is concluded that the potential impacts relating to water quality can be adequately mitigated. The design of the temporary concrete batching plant, (and specifically in relation to the concrete apron) will ensure that water containing cement cannot infiltrate into the ground water. The concrete apron will be graded towards the collection pit so that no runoff can occur outside the apron area which will satisfactorily reduce the residual risk to surface and ground water quality during the nine month construction period.

3.4 ACOUSTIC

A Construction Noise Impact Assessment has been undertaken by Advitech Pty Ltd to assess the potential noise impacts associated with the operation of a temporary onsite concrete batching

plant. The assessment builds on the existing assessment undertaken as part of the original Noise Impact Assessment for the Major Project. The assessment is located at **Appendix F**.

The assessment indicates that, in the context of aggregate construction noise levels, the proposed concrete batching plant would make only minor contributions to received noise levels at industrial receivers to the west of the site, and residential receivers to the west of the Pacific Highway. The assessment also indicates that unmitigated noise impacts will comply with the construction noise criteria at industrial receivers to the north of the development site. Despite this, mitigation measures in the form of localised barriers around transit mixer slumping and loading areas are proposed, to further reduce any potential noise impacts.

The assessment concludes that operation of an onsite concrete batching plant during standard work hours would not generate noise levels exceeding the construction noise criteria and that the proposed modification to the project approval would be consistent with the objectives of the NSW Interim Construction Noise Guideline.

3.5 AIR QUALITY

A Construction Air Quality Impact Assessment has been undertaken by Advitech Pty Ltd to assess the potential air impacts associated with the operation of a temporary onsite concrete batching plant. The assessment is located at **Appendix G** to this report.

The assessment used AUSPLUME air modelling to determine potential air emissions during the construction phase of the Sandvik facility. The report found that particulate dust emissions will be the primary air emission of significance during the construction phase of the Sandvik facility. The AUSPLUME model adopts worst case scenarios for both potential emissions and ambient background conditions. It does not incorporate any physical dust suppression on construction areas, the concrete batching plant operation or the unloading of sand and aggregate. It is proposed that use of a water cart will adequately suppress dust on unpaved grounds.

The report concludes that, subject to the mitigation measures proposed, no off site dust impacts will be experienced during the construction period.

4.0 Conclusion

The proposed modification to Major Project 10_0073, for the purpose of a temporary concrete batching plant, to be provided exclusively for the construction of the approved Sandvik Machine Manufacturing and Maintenance Facility, is considered to be a minor modification. The modifications proposed do not have an effect on the overall development as approved, and pose no significant additional environmental impacts.

Appendix A

DoP Confirmation of Section 75W Application

NSW GOVERNMENT | Planning

Contact: Andrew Hartcher
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File: 9043130

Mr Anthony Alliston
Senior Development Planner
ADW Johnson Pty Ltd
7/335 Hillsborough Road
WARNERS BAY NSW 2282

Mr Alliston

Sandvik Machine Manufacturing and Maintenance Project, Heatherbrae
s.75W Modification Confirmation

I refer to your letter dated 10 November 2010 requesting that the Department confirm that the proposed temporary concrete batching plant on the Sandvik Machine Manufacturing and Maintenance Project site (MP 10_0073) would be subject to a modification application under section 75W of the Environmental Planning and Assessment Act 1979 (EP&A Act).

The Department has reviewed the information provided in your correspondence and agrees that the proposed modification would fall under section 75W. Therefore, the Department invites you to submit a modification application and accompanying Environmental Assessment (EA). Please ensure that the EA addresses the key environmental impacts of the proposed modification such as air quality, noise, traffic, stormwater and drainage.

If you have any further enquiries, please contact Andrew Hartcher at the details above.

Yours sincerely

Chris Ritchie 25/11/10.
Manager - Industry
Mining and Industry Projects
as delegate of the Director General

Appendix B

Approved Plans MP 10_0073

Project Approval

Section 75J of the *Environmental Planning and Assessment Act 1979*

As delegate of the Minister for Planning, I approve the Project application referred to in Schedule 1, subject to the conditions in Schedules 2 and 3.

These conditions are required to:

- prevent, minimise, and/or offset adverse environmental impacts;
- set standards and performance measures for acceptable environmental performance;
- require regular monitoring and reporting; and
- provide for the ongoing environmental management of the Project.

Chris Wilson
A/Deputy Director-General
Development Assessment and Systems Performance

Sydney 27.10.10 2010

SCHEDULE 1

Application Number:	10_0073
Proponent:	Sandvik Mining and Construction Australia Pty Ltd
Approval Authority:	Minister for Planning
Land:	431 Masonite Road, Heatherbrae (Lot 32 DP 1014864)
Project:	Sandvik Machine Manufacturing and Maintenance Project

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DEFINITIONS

APZ	Asset Protection Zone
BCA	Building Code of Australia
Council	Port Stephens Council
Day	The period from 7am to 6pm on Monday to Saturday, and 8am to 6pm on Sundays and Public Holidays
DCP	Development Control Plan
DECCW	Department of Environment, Climate Change and Water
Department	Department of Planning
Director-General	Director-General of Department of Planning, or delegate
NOW	NSW Office of Water
EA	Environmental Assessment titled *Environmental Assessment Report – 431 Masonite Road, Heatherbrae* prepared by Sandvik Mining and Construction Australia P/L and received by the Department on 14 July 2010, including the Proponent's response to submissions and supplementary information dated 8 September 2010.
EP&A Act	*Environmental Planning and Assessment Act 1979*
EP&A Regulation	*Environmental Planning and Assessment Regulation 2000*
Evening	The period from 6pm to 10pm
HWC	Hunter Water Corporation
LHRCP	Lower Hunter Regional Conservation Plan (DECCW, Dec 2009)
Minister	Minister for Planning, or delegate
Night	The period from 10pm to 7am on Monday to Saturday, and 10pm to 8am on Sundays and Public Holidays
PBP 2006	*Planning for Bushfire Protection 2006*
Project	The development as described in the EA
Proponent	Sandvik Mining and Construction Australia Pty Ltd, or its successors in title
Reasonable and Feasible	Reasonable relates to the application of judgement in arriving at a decision, taking into account: mitigation benefits, cost of mitigation versus benefits provided, community views and the nature and extent of potential improvements. Feasible relates to engineering considerations and what is practical to build.
RTA	Roads and Traffic Authority
Site	The land referred to in Schedule 1
Statement of Commitments	The Proponent's commitments in the EA

SCHEDULE 2
ADMINISTRATIVE CONDITIONS

Obligation to Minimise Harm to the Environment

1. The Proponent shall implement all reasonable and feasible measures to prevent and/or minimise any harm to the environment that may result from the construction, operation, or decommissioning of the Project.

Terms of Approval

2. The Proponent shall carry out the Project generally in accordance with the:
   (a) EA;
   (b) statement of commitments (see Appendix 1);
   (c) site plan (see Appendix 2) and
   (d) conditions of this approval.

3. If there is any inconsistency between the above, the conditions of this approval shall prevail to the extent of the inconsistency.

4. The Proponent shall comply with any reasonable requirement/s of the Director-General arising from the Department's assessment of:
   (a) any reports, plans, programs, strategies or correspondence that are submitted in accordance with this approval; and
   (b) the implementation of any actions or measures contained in these reports, plans, programs, strategies or correspondence submitted by the Proponent.

Structural Adequacy

5. The Proponent shall ensure that all new buildings and structures, and any alterations or additions to existing buildings and structures, are constructed in accordance with the relevant requirements of the BCA.

   Notes:
   - *Under Part 4A of the EP&A Act, the Proponent is required to obtain construction and occupation certificates for the proposed building works.*
   - *Part 8 of the EP&A Regulation sets out the requirements for the certification of the Project.*

Protection of Public Infrastructure

6. The Proponent shall:
   (a) repair, or pay the full costs associated with repairing, any public infrastructure that is damaged by the Project; and
   (b) relocate, or pay the full costs associated with relocating, any public infrastructure that needs to be relocated as a result of the Project.

   Prior to the commencement of construction, the Proponent shall prepare a dilapidation report of the public infrastructure in the vicinity of the site (including roads, gutters, footpaths, etc) in consultation with Council, and submit a copy of this report to the Director-General.

Utilities

7. Prior to the construction of any utility works, the Proponent shall obtain the relevant approvals from service providers, including HWC and Council.

Operation of Plant and Equipment

8. The Proponent shall ensure that all plant and equipment used on site is:
   (a) maintained in a proper and efficient condition; and
   (b) operated in a proper and efficient manner.

Management Plans/Monitoring Programs

9. With the approval of the Director-General, the Proponent may submit any management plan or monitoring program required by this approval on a progressive basis.

Section 94 Contributions

10. Prior to the commencement of operations, the Proponent shall pay Council a contribution of 1% of the cost of the development, as determined in accordance with clause 25J of the *Environmental Planning and Assessment Regulation 2000* and the *Port Stephens Council Section 94A Development Contributions Plan, 2006*. The contribution is to be paid prior to the issue of the Construction Certificate, or as otherwise agreed by Council. A Quantity Surveyor's Detailed Cost Report (standard form to be obtained from council) setting out an estimate of the proposed cost of carrying out development must be approved by Council prior to issue of a Construction Certificate, or as otherwise agreed by Council. Payment of this contribution may be partially or completely made in the form of works in kind subject to the agreement of Council and/or the Director General. Subject to the further agreement from Council, this contribution may be paid in instalments in accordance with an agreed payment program.

Notes: This contribution is subject to indexation to reflect quarterly variations in the Consumer Price Index All Group Index Number for Sydney, as published by the Australian Bureau of Statistics.

SCHEDULE 3
SPECIFIC ENVIRONMENTAL CONDITIONS

FLORA AND FAUNA

Vegetation Clearing and Management

1. The Proponent shall prepare and implement a Vegetation Management Plan for the site to the satisfaction of the Director-General. The Plan shall:
   (a) be prepared by a suitably qualified and independent expert, and be submitted to the Director-General for approval within six (6) months of the date of this approval;
   (b) establish performance and completion criteria for the on-site vegetated areas (as detailed in the EA);
   (c) include a final Landscape Plan and procedures to protect, enhance and maintain the vegetation on site and monitor the performance of the plan over time.

2. The Proponent shall prepare and implement a Vegetation Clearing Protocol for the site to the satisfaction of the Director-General. The Protocol shall:
   (a) be submitted and approved by the Director-General prior to the clearing of any vegetation on site;
   (b) clearly identify the location and type of vegetation to be retained and to be removed from the site;
   (c) detail measures that would be implemented for vegetation clearing;
   (d) detail procedures to manage impacts on fauna including translocation of fauna (if appropriate); and
   (e) detail methods to minimise the impact of clearing during breeding times for key species on site.

3. The Proponent shall prepare and implement an Erosion and Sediment Control Plan for the land to be cleared to the satisfaction of the Director General. The Plan shall:
   (a) be submitted to the Director-General prior to the clearing of any vegetation on site; and
   (b) detail measures to manage the potential erosion and sedimentation impacts of vegetation clearing.

Offset Strategy

4. The Proponent shall prepare and implement an Offset Strategy for the Project to the satisfaction of the Director-General. The strategy shall:
   (a) be prepared by a suitably qualified and independent expert in consultation with DECCW, and be submitted and approved by the Director-General within 12 months of the date of this approval;
   (b) have an area of approximately 54 hectares;
   (c) meet the objectives of the LHRCP in particular, be identified on the LHRCP Map 1 as an extant vegetation community being a “reservation target not yet met” and on the LHRCP Map 3 as “a regional investment priority”;
   (d) adjoin or be adjacent to land granted or proposed to be granted to DECCW for addition to the Columbey National Park;
   (e) be incorporated into the draft Plan of Management for the Columbey National Park or include a Biodiversity Management Plan in accordance with Condition 5 below; and
   (f) detail how the offset will be managed and conserved in perpetuity.

   Note: In the event that the land is accepted for reservation under the National Parks and Wildlife Act 1974, the Offset Strategy must include details of how the offset will be incorporated into the draft Plan of Management for the Columbey National Park. However, if the offset is conserved in perpetuity by other measures, then the Proponent must prepare and implement a Biodiversity Management Plan in accordance with Condition 5 below.

5. The Proponent shall prepare and implement a Biodiversity Management Plan for the Offset Strategy to the satisfaction of the Director-General. The Plan shall include:
   (a) baseline biodiversity characteristics of the offset area, including flora and fauna surveys;
   (b) performance and completion criteria for the offset area;
   (c) a detailed description of the measures that would be implemented to:
      - re-establish and enhance the vegetation within the offset area;
      - maintain and conserve the biodiversity in the offset area;
      - control weeds, feral pests and access to the offset area;
      - manage bushfire hazards (e.g. APZs);
      - minimise edge effects and fragmentation;
      - manage stormwater and control erosion; and
      - enhance habitats (e.g. hollows, habitat trees, animal fencing to facilitate movement, artificial hollows and nest boxes);
   (d) a program to monitor the effectiveness and progress of the above measures against the performance and completion criteria;
   (e) a protocol for reporting on the implementation of the strategy;
   (f) outline measures to ensure conservation in perpetuity of the Offset Strategy;

(g) provide details of funding arrangements and financial commitment to any proposed conservation measures; and
(h) describe who would be responsible for the monitoring, review and implementation of the strategy.

Note: A Biodiversity Management Plan is required for the Offset Strategy if the offset is not incorporated into the draft Plan of Management for the Columbey National Park.

Long Term Conservation Security

6. Within 2 years of the date of this approval, the Proponent shall make suitable arrangements to provide appropriate long term conservation security for the:
   - Offset Strategy; and
   - native vegetation to be retained on the Project site (as identified in the EA), including the two hollow bearing trees;

   to the satisfaction of the Director-General.

   Note: Long term conservation security may take the form of restrictive covenants, voluntary conservation agreements, rezoning, etc.

TRAFFIC AND TRANSPORT

7. Prior to the commencement of operations, the Proponent shall undertake the following works, to the satisfaction of Council:
   (a) reconstruct and upgrade Masonite Road along the frontage of the site to a suitable standard for industrial development;
   (b) construct channelized right turn bays (CHR intersection type) at each access point to the Project (these right turn bays should provide storage for at least three (3) vehicles or one (1) heavy vehicle and must accommodate the swept turning path for the required design vehicle likely to use the access); and
   (c) install a concrete footpath from the main office to the start of the existing pedestrian facilities at the Masonite Road / Camfield Drive roundabout.

   Note: These works shall be undertaken in accordance with Council's requirements, the RTA Road Design Guide, Austroad guidelines and relevant Australian Standards, at full cost to the Proponent and no cost to the RTA or Council.

Design of Internal Roads, Heavy Vehicle Areas and Parking

8. The Proponent shall ensure that the internal road network, heavy vehicle areas and parking associated with the Project are designed, constructed and maintained in accordance with the latest versions of the Australian Standards *AS 2890.1:2004* and *AS 2890.2:2002*, the RTA's guide to Traffic Generating Development, and Council's DCP (2007 – Part B3: Parking, Traffic & Transport).

Vehicle Queuing and Parking

9. Prior to the commencement of operations, the Proponent shall ensure that:
   (a) all parking is provided prior to the commencement of operations;
   (b) all parking generated by the Project is accommodated on site, and that no vehicles associated with the Project shall park on the public road system at any stage;
   (c) all parking areas are appropriately signposted and line-marked to assist in directing vehicles;
   (d) there is provision of a covered parking area to accommodate 51 motorcycles and 38 bicycles; and
   (e) measures are undertaken to avoid vehicles queuing on the public road network.

Traffic Management Plan

10. Prior to the commencement of civil works (excluding vegetation clearing), the Proponent shall prepare and implement a Construction Traffic Management Plan for the Project to the satisfaction of the Council. The plan shall:
    (a) be submitted to Council prior to commencement of civil works (excluding vegetation clearing); and
    (b) include:
        - a risk assessment to identify hazards to traffic control associated with the site, the level of risk posed and control measure to be implemented;
        - a Vehicle Movement Plan for the management of construction traffic; and
        - a Traffic Control Plan in accordance with the RTA's *Traffic Control at Work Sites* manual.

SOILS AND WATER MANAGEMENT

Discharges

11. The Proponent shall comply with Section 120 of the *Protection of the Environment Operations Act 1997*.

Groundwater

12. The Proponent shall ensure that the Project complies with the following:
    (a) the *Water Management Act 2000*;
    (b) the *Water Sharing Plan for the Tomago Tomaree Stockton Groundwater Sources 2003;* and
    (c) the *Hunter Water Regulation 2010*.

13. The Proponent must ensure that, with the exception of the piles that will be constructed using timber driven piles and/or Continuous Flight Auger, construction of the Project (including the stormwater infiltration basins) is to remain at least 1 metre above the groundwater level at the site that is predicted to occur following the 90th percentile aggregate wet season rainfall.

14. The Proponent shall prepare and implement a Groundwater Management & Monitoring Plan for the Project, to the satisfaction of the Director-General. The Plan shall:
    (a) be prepared by a suitably qualified and independent expert, in consultation with NOW and HWC, and be submitted to the Director-General within 6 months of the date of this consent;
    (b) include a groundwater contour map for the Project and an assessment of the groundwater table elevation for the site that is predicted to occur following the 90th percentile wet season rainfall;
    (c) consider the potential impacts of the Project on HWC's drinking water bore network;
    (d) provide details of the design and installation of Stormwater Quality Improvement Devices and infiltration basins;
    (e) include a groundwater monitoring program which includes:
        - the location and design of monitoring bores;
        - a program to monitor the impact of the Project on groundwater quality and quantity (quality monitoring must take place at a frequency not less than every three months);
        - existing groundwater quality and groundwater levels, including baseline data and available historical data;
        - monitoring of the groundwater table;
        - provisions for when groundwater levels rise to within 1m of the base of any infiltration basins to:
            i. monitor daily until groundwater levels stabilise to more than 1m below the infiltration basins; and
            ii. groundwater quality monitoring on a fortnightly basis until groundwater has stabilised to more than 1m below the infiltration basin level;
        - groundwater impact assessment criteria; and
        - a Groundwater Emergency Response Plan which describes the measures that would be implemented to respond to any exceedances of the assessment criteria or pollution exceedances and procedures for the reporting of any exceedances of the assessment criteria.

15. In the event that the groundwater impact assessment criteria referred to in Condition 14 above is exceeded, in conjunction with groundwater levels be identified as occurring within 1m AHD of any of the infiltration basins, the Proponent shall commission a suitably qualified and independent expert to investigate and provide recommendations on options to remediate the issue and prevent future incidents occurring. This investigation shall be undertaken in consultation with NOW and HWC, and the measures to be implemented, and the timing of their implementation, to be to the satisfaction of the Director-General.

16. The Proponent must provide the Department, NOW, and HWC with monitoring results of the Groundwater Management & Monitoring program every 12 months. The Proponent must implement any actions or contingency measures recommended by the Department, NOW and/or HWC, following the review of the monitoring results, to the satisfaction of the Director-General.

Bunding

17. All chemicals, fuels and oils shall be stored in appropriately bunded areas, with impervious flooring and sufficient capacity to contain 110% of the largest container stored within the bund. The bund(s) shall be designed and installed in accordance with the:
    (a) requirements of all relevant Australian Standards; and

(b) DECCW's *Environmental Protection Manual Technical Bulletin Bunding and Spill Management*.

18. The Proponent shall ensure that the requirements for storage and handling of hazardous substances, and the potential impacts of breeching these requirements, are clearly communicated and explained to employees in site induction information.

Erosion and Sediment Control Plan

19. The Proponent shall prepare and implement an Erosion and Sediment Control Plan for the Project to the satisfaction of the Director-General. The plan must:
    (a) be prepared by a suitably qualified expert and be submitted to the Director-General prior to the commencement of construction;
    (b) be consistent with the requirements of Landcom's (2004) *Managing Urban Stormwater: Soils and Construction* manual;
    (c) identify activities that could cause soil erosion and generate sediment;
    (d) describe measures to minimise soil erosion and the potential for the transport of sediment to downstream waters;
    (e) describe the location, function, and capacity of erosion and sediment control structures; and
    (f) describe what measures would be implemented to maintain the structures over time.

Stormwater Management Plan

20. The Proponent shall prepare and implement a Stormwater Management Plan for the Project to the satisfaction of the Director-General. This plan must:
    (a) be submitted to the Director-General prior to the commencement of civil works (excluding vegetation clearing);
    (b) be prepared by a suitably qualified and independent expert in consultation with NOW;
    (c) include plans of the stormwater management system for the site, including any rainwater harvesting infrastructure;
    (d) be consistent with the guidelines *Managing Urban Stormwater: Harvesting and Reuse (DECCW);*
    (e) describe the procedures for the installation, inspection and maintenance of the stormwater system; and
    (f) detail procedures to be undertaken if any non-compliance is detected.

NOISE

Operating Hours

21. The Proponent shall comply with the restrictions in Table 1, unless otherwise agreed by the Director-General.

Table 1: Construction and Operation Hours for the Project

Activity	Day	Time
Construction	Monday – Friday	7:00am to 6:00pm
	Saturday	8:00am to 1:00pm
	Sunday and Public Holidays	Nil
Operation	All days	24 hours

Notes:

- *Construction activities may be conducted outside the hours in Table 1 provided that the activities are not audible at any residence beyond the boundary of the site.*

Noise Limits

22. At all times the Proponent must ensure that:
    (a) testing of mining machinery, specifically underground mining vehicles, continuous miners and drill rigs is restricted to the hours of 7am to 6pm;
    (b) testing of the DR460 drill rig, specifically purging of the drill head, does not occur within 30 m of the site boundary; and
    (c) external (drive-in and personal access) doorways on the western and northern façade on all buildings remain closed during the hours of 10pm to 7am.

23. The Proponent shall ensure that the noise from the operation of the Project does not exceed the noise limits presented in Table 2.

Table 2: Project Noise Limits (dB(A))

Location	Day		Evening	Night	
	Intrusive dBA $L_{Aeq\ (15\ minute)}$	**Amenity dBA $L_{Aeq\ (Noisiest\ 1\text{-}hour\ period)}$**	**Intrusive dBA $L_{Aeq\ (15\ minute)}$**	**Intrusive dBA $L_{Aeq\ (15\ minute)}$**	**dBA $L_{A1\ (1\ minute)}$**
Closest Residence - Adelaide St	58	-	56	47	57
Early Learning Centre - Archibald St (internal)	-	40	-	-	-

Notes:

a) To determine compliance with the $L_{Aeq\ (15\ minute)}$ *noise level limits in the above table, noise from the Project is to be measured at the most affected point within the residential boundary, or at the most affected point within 30 metres of a dwelling where the dwelling (rural situations) is more than 30 metres from the boundary. To determine compliance with the* $L_{A1\ (1\ minute)}$ *noise level limits and the* $L_{Aeq\ (Noisiest\ 1\text{-}hour\ period)}$ *in the above table, noise from the Project is to be measured at 1 metre from the dwelling façade. Where it can be demonstrated that direct measurement of noise from the Project is impractical, the DECCW may accept alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy).*

The modification factors in Section 4 of the NSW Industrial Noise Policy shall also be applied to the measured noise levels where applicable.

b) The noise emission limits identified in the above table apply under meteorological conditions of:

- *wind speeds of up to 3 m/s at 10 metres above ground level; and*
- *temperature inversion conditions of up to 3ºC/100m, and wind speeds of up to 2 m/s at 10 metres above ground level.*

Noise Audit

24. The Proponent shall conduct a Noise Audit for the premises within 3 months of operations or as otherwise agreed by the Director-General. This audit shall:
    (a) be undertaken by a suitability qualified and experienced person during a period in which the Project is operating at normal capacity;
    (b) assess whether the Project is complying with the noise limits in this approval;
    (c) identify what additional measures would be implemented to ensure compliance should any non-compliance be detected and clearly indicate who would implement these measures, when these measures would be implemented, and how the effectiveness of these measures would be measured and reported to the Director-General; and
    (d) provide details of any complaints received relating to noise generated by the Project, and action taken to respond to those complaints.

    Within 28 days of conducting the Noise Audit, the Proponent shall provide the Director-General with a copy of the Noise Audit report.

AIR QUALITY

Dust

25. The Proponent shall carry out all reasonable and feasible measures to minimise dust generated by the Project.

26. During construction, the Proponent shall ensure that:
    (a) all trucks entering or leaving the site with loads have their loads covered;
    (b) trucks associated with the Project do not track dirt onto the public road network; and
    (c) the public roads used by these trucks are kept clean.

BUSHFIRE

27. The Proponent must ensure that, prior to the commencement of building works and in perpetuity, a ten (10) metre wide APZ is provided along the southern property boundary and surrounding the retained vegetation onsite as an inner protection area as outlined in Appendices 2 & 5 of *PBP 2006* and the NSW Rural Fire Service's document *Standards for asset protection zones.*

28. The Proponent must ensure that:
    (a) water, electricity and gas comply with sections 4.1.3 of *PBP 2006;*

(b) public road access shall comply with section 4.1.3 (1) of *PBP 2006;* and
(c) landscaping complies with the principles of Appendix 5 of *PBP 2006.*

29. Prior to the commencement of operations, the Proponent shall prepare an Emergency and Evacuation Plan in accordance with the appropriate NSW Rural Fire Service Guidelines, to the satisfaction of the NSW Rural Fire Service.

ENERGY

Energy Savings Action Plan

30. The Proponent shall prepare and implement an Energy Savings Action Plan for the Project to the satisfaction of the Director-General. This plan must be prepared in accordance with the requirements and guidelines of DECCW, and be submitted to the Director-General for approval prior to the commencement of operations on site.

ABORIGINAL HERITAGE

The Proponent shall prepare and implement a Construction Aboriginal Heritage Management Plan to the satisfaction of the Director-General. The Plan shall:

(a) be submitted to the Director-General prior to the commencement of construction on site;
(b) be prepared by a suitably qualified and independent expert and in consultation with relevant Aboriginal stakeholders and DECCW;
(c) detail measures for monitoring initial earthworks in the moderate-low potential areas as identified within the EA;
(d) provide a strategy for the salvage and curation of salvaged objects, giving consideration to the measures for managing and housing objects; and
(e) detail the specific measures that would be applied should any objects be discovered during construction, including any skeletal remains.

VISUAL IMPACT

Signage

31. Prior to the commencement of operations, the Proponent shall submit detailed plans of signage to the Director-General for approval. These plans must be prepared in consultation with Council.

Lighting

32. The Proponent shall ensure that the lighting associated with the Project:
(a) complies with the latest version of Australian Standard *AS 4282(INT)-Control of Obtrusive Effects of Outdoor Lighting*; and
(b) is mounted, screened and directed in such a manner that it does not create a nuisance to surrounding properties or the public road network.

WASTE MANAGEMENT

33. The Proponent shall prepare and implement a Waste Management Plan to the satisfaction of the Director-General. The Plan shall:
(a) be submitted to the Director-General prior to the commencement of civil works (excluding vegetation clearing);
(b) identify the types and quantities of waste that would be generated during construction and operation, and the standards and performance measures for dealing with this waste;
(c) detail procedures to monitor the amount of waste generated by the Project;
(d) outline measures to minimise the production and impact of all wastes generated by the Project, including details of how this waste would be reused, recycled, and if necessary, appropriately treated and disposed of in accordance with the DECCW's guidelines on the *Assessment, Classification & Management of Liquid and Non-Liquid Waste*;
(e) describe how the effectiveness of these actions and measures would be monitored over time; and
(f) describe what procedures would be followed to ensure compliance if any non-compliance is detected.

SCHEDULE 4

ENVIRONMENTAL MANAGEMENT REPORTING AND AUDITING

ENVIRONMENTAL MANAGEMENT STRATEGY

1. The Proponent shall prepare and implement an Environmental Management Strategy for the Project to the satisfaction of the Director-General. This strategy must:
   (a) be submitted to the Director-General for approval within six (6) months of the date of this approval
   (b) provide the strategic context for environmental management of the Project;
   (c) identify the statutory requirements that apply to the Project;
   (d) describe in general how the environmental performance of the Project would be monitored and manage;
   (e) describe the procedures that would be implemented to:
      - keep the local community and relevant agencies informed about the operation and environmental performance of the Project;
      - receive, handle, respond to, and record complaints;
      - resolve any disputes that may arise during the course of the Project;
      - respond to any non-compliance;
      - manage cumulative impacts; and
      - respond to emergencies; and
   (f) describe the role, responsibility, authority, and accountability of all the key personnel involved in environmental management of the Project.

ENVIRONMENTAL REPORTING

Incident Reporting

2. Within 24 hours of detecting an exceedance of the limits/performance criteria in this approval or the occurrence of an incident that causes (or may cause) harm to the environment, the Proponent shall notify the Department and other relevant agencies of the exceedance/incident.

3. Within 6 days of notifying the Department and other relevant agencies of an exceedance/incident, the Proponent shall provide the Department and these agencies with a written report that:
   (a) describes the date, time, and nature of the exceedance/incident;
   (b) identifies the cause (or likely cause) of the exceedance/incident;
   (c) describes what action has been taken to date; and
   (d) describes the proposed measures to address the exceedance/incident.

AUDITING

Pre-Operation Compliance Audit

4. Prior to the commencement of operations, the Proponent shall submit work as executed plans to the Department for all the development associated with the Project. These plans must be prepared by a suitably qualified expert, and include plans showing the work as executed plans laid over the approved plans to demonstrate that the Project has been carried out in accordance with the approved plans.

APPENDIX 1 – Statement of Commitments

SECTION 7

DRAFT STATEMENT OF COMMITMENTS

The following draft Statement of Commitments outlines the measures that will be implemented with regard to the management and monitoring of the key environmental issues identified in the Environmental Assessment.

7.1 Plans, Documentation and Approvals

The proposed development will be completed in accordance with the submitted plans and descriptions of the proposed development provided in the Environmental Assessment.

It is noted that any changes to the proposed development will require further approval of the relevant authorities.

The proposed development will be carried out in accordance with all approvals granted by relevant authorities.

7.2 Environmental Management

A Construction Environmental Management Plan for the proposal will be implemented in accordance with the Construction Environmental Management Plan prepared by Drayton Building and Construction P/L.

7.3 Flora and Fauna

The proposed development will seek to minimise the impact on Flora and Fauna by adopting the recommendations made in the Ecological Assessment Report (June 2010) prepared by RPS Australia East Pty Ltd . This will involve the following:

- Retain the two hollow-bearing trees identified in site plans;
- Retain native vegetation as identified on site plans;
- Ensure an erosion and sediment control plan has been developed and appropriate controls are in place prior to commencement of vegetation clearing within the site;
- Implement the following clearing protocol:

    - Ensure that vegetation to be retained is accurately marked out and fenced prior to the commencement of vegetation clearing (using temporary fencing such as barrier tape) to ensure that vehicles and machinery do not accidently damage this area;

    - All hollow bearing trees to be removed within the site are to be located and marked by a qualified ecologist, prior to the commencement of vegetation clearing;

- The removal of hollow-bearing trees is to be supervised by a qualified ecologist to minimise potential impacts on resident fauna (including visual inspection, tapping tree trunk gently with machinery and observing, inspection after felling and fauna recovery);

- Nestboxes should be installed at a 1:1 ratio for each hollow removed. Nestboxes should reflect the range of sizes removed;

- Hollows from removed hollow-bearing trees should be placed on the ground within retained habitat under the supervision of a qualified ecologist to provide terrestrial shelter habitat for fauna;

- Ongoing weed management should occur within retained vegetation on site.

7.4 Offsets

The offset strategy involves the dedication of land for the purposes of conservation in perpetuity and to ensure that the principle of maintain or improve biodiversity values is met. The details include:

- The proponent will provide offset land to compensate for loss of biodiversity as a consequence of the proposed development. The offset land must:

    1. Have a minimum area of 54 hectares;

    2. Meet the objectives of the Lower Hunter Regional Conservation Plan (RCP), in particular:-

        a) Be identified on the RCP Map 1 as an extant vegetation community being a "reservation target not yet met";

        b) Identified on the RCP Map 3 as a regional investment priority

        c) Adjoin or be adjacent to land granted or proposed to be granted to DECCW for addition to the Columbey National Park

7.5 Traffic and access

The recommendations contained in the Traffic Impact Assessment prepared by Insite Engineering Services Pty Ltd dated June 2010. This plan includes the following measures:

- Reconstruction and upgrade of Masonite Road along the frontage of the site to a suitable standard for industrial development and in accordance with Council's requirements.

- Each access point to the development will be constructed with a channelized right turn bay (CHR intersection type). These right turn bays should provide storage for at least three (3) vehicles or one (1) heavy vehicle.

- The internal car park and heavy vehicle areas proposed for the development comply with the requirements of the RTA's Guide to Traffic Generating Development, PSDCP 2007 Part B3 – Parking, Traffic & Transport as well as AS 2890.1-2004 and AS 2890.2-2002.

- A concrete footpath will be provided from the main office to the start of the existing pedestrian facilities at the Masonite Road/Camfield Drive roundabout.

- The provision of a covered parking area to accommodate 51 motor cycles and 38 bicycles.

7.6 Acoustics

The proposed development will comply with the requirements of DECC in relation to criteria for noise emissions. In particular, the proposed development will comply with the recommendations provided in the Noise Impact Assessment prepared by Advitech Pty Ltd, dated 18 June 2010.

The Construction Environmental Management Plan will be prepared to manage noise emissions.

More specifically, the following will be included:

- testing of mining machinery, specifically underground mining vehicles, continuous miners and drill rigs should be restricted to the day (7:00 to 16:00) period;
- testing of the DR460 drill rig, specifically purging of the drill head should not be undertaken within 30m of the site boundary;
- ensuring external (drive-in and personal access) doorways on the western and northern façade remain closed during the hours 22:00 to 7:00 on all buildings; and,
- Construction activities will be restricted to 7:00 to 18:00.

7.7 Air Quality

The proposed development will comply with the recommendations provided in the Noise Impact Assessment prepared by Advitech Pty Ltd, dated 18 June 2010 comprising:-

- All vehicles and machinery will be maintained to minimise emissions to air.

- All spray-painting will be contained within the proposed spray booths. The spray booths will be designed to meet the specifications and standards of Workcover and DECCW.

- Dust will be controlled during the construction phase through implementation of appropriate management measures. Filling operations will involve the use of larger or heavier type of fill material, thus minimising the opportunity for smaller particulates to be carried by wind.

- The Construction Environmental Management Plan will be prepared to manage potential air emissions and submitted as required prior to construction. The plan will address dust control.

  Dust control measures include the following:

  - Covering loads when required;
  - Changing operations under excessive wind conditions including ceasing of operations if required;
  - Use of water tankers as required to control dust;
  - Rehabilitation through vegetation of surfaces to be left unsealed;
  - Truck wheel washes or other dust removal measures;
  - Ensuring that all service areas are sealed, or as a minimum treatment, covered with gravel;
  - Dirt tracked onto access routes will be cleaned away as soon as practicable;
  - Vehicles will be regularly washed when practicable.

7.8 Water Quality

Water quality measures will be installed in accordance with the report prepared by Geoff Craig and Associates (June 2010)

The Concept Drainage Plan details proposed stormwater quality improvement and proposed drainage measures for the site.

Rainwater tank storage will be provided to capture runoff from the roof areas of the development for reuse. The rainwater tanks are to overflow to the infiltration basins in larger storm events.

7.9 Soil Erosion and Sedimentation

During construction, the site will be protected from erosion and sedimentation by the installation and maintenance of standard erosion and sediment control measures, such as silt fences, lip drains and hay bale sediment traps. These control measures are to be designed and constructed in accordance with Managing Urban Stormwater: Soils and Construction 4th Edition – Vol 1 (the “Blue Book”) Landcom, 2004.

7.10 Acid Sulphate Soils

In the event that it is necessary to disturb acid sulphate soils, an Acid Sulphate Soils Management Plan will be prepared and submitted to the Department of Planning prior to the disturbance of such soils.

7.11 Waste Management

All waste as identified in the Environmental Assessment will be stored on-site with the waste stream separated into recyclable and non recyclable and disposed of or recycled by approved contractors. The proposed development will comply with the Waste Classification Guidelines (DECC) and the Waste Management Plan prepared by Drayton Building and Construction P/L.

7.12 Hazardous Material

Hazardous Materials will be stored in accordance with the requirements contained within the SEPP 33 Screening report prepared by Advitech and Workcover Requirements.

7.13 Archaeology

The proposed development will comply with the recommendations made in the Aboriginal Heritage Impact Assessment prepared by RPS (June 2010). These include:

- Ensuring all staff and contractors working on the site are:
    - Made aware that Aboriginal sites are found in the local area;
    - Provided sufficient training so that they are able to identify an Aboriginal site is uncovered;
    - Made aware of their legal obligations and who to report any such finds to.
- Aboriginal representatives will be consulted and given the opportunity to inspect the site after the vegetation has been removed and before other earth moving works commence.
- If any Aboriginal sites or objects are identified during future works, works in the vicinity must cease immediately. A suitably qualified archaeologist should inspect the site and determine an appropriate course of action for the site.
- If any skeletal remains are identified at any stage during the proposed works, all works in the vicinity must cease immediately. A suitably qualified forensic archaeologist and the Police should be contacted immediately and a suitable course of action determined.

7.14 Further Approvals

The proponent will obtain a Construction Certificate prior to the implementation of the engineering and building works.

7.15 Services

The proponent will obtain and comply with the requirements of relevant public authorities regarding connection to, relocation and/or adjustment of services required by or affected by the construction and operation of the proposed development.

7.16 Outdoor Lighting

All outdoor lighting will be designed to comply with the requirements of AS 4282, Control of Obtrusive Effects of Outdoor Lighting.

7.17 BCA

The proposed development will comply with either the 'deemed to satisfy' provisions of the Building Code of Australia, or alternatively provide a performance-based solution prepared by a suitably qualified person.

7.18 Landscaping

All landscaping will be carried out in accordance with the landscape concept prepared by GCA and included as Appendix J.

7.19 Section 94 Contribution

The proponent will pay contributions in accordance with the Port Stephens Section 94A Development Contribution Plan 2006.

The payment of this contribution will be made to Port Stephens Council prior to the issue of a Construction Certificate.

APPENDIX 2 – Site Plan

Amendment	Description	Drawn	App'd	Date
11	GENERAL REVISION	K.C.	K.C.	26.10.10
1	ORIGINAL ISSUE	K.C.	K.C.	05.05.10

Designed: K.C. | Cad Reference: 10096A dA01rSG3
Scale: 1:1000 (A1 SHEET), 1:2000 (A3 SHEET)
Project Approval: IAN HILL (BE.) Consulting Civil Engineer

GEOFF CRAIG & ASSOCIATES PTY LTD
Consulting Engineers & Project Managers
A.B.N. 92 086 017 745
PHONE: (02) 4964 1811
FAX: (02) 4964 1822
1 HARTLEY DRIVE THORNTON NSW 2322
PO BOX 3337 THORNTON NSW 2322

PROPOSED INDUSTRIAL DEVELOPMENT
431 (LOT 32) MASONITE ROAD, HEATHERBRAE
SITE PLAN
SANDVIK MINING AND CONSTRUCTION AUSTRALIA PTY LTD
PROJECT BY HUNTER LAND DEVELOPMENTS

Project No: 10096A
Drawing No: SG_01
Revision: 11

Appendix C

Proposed Development Plans - GCA

PROPOSED BATCHING PLANT

431 MASONITE ROAD

HEATHERBRAE

HUNTER READYMIXED CONCRETE PTY LTD

PORT STEPHENS COUNCIL

DP 1014864

CONCEPT

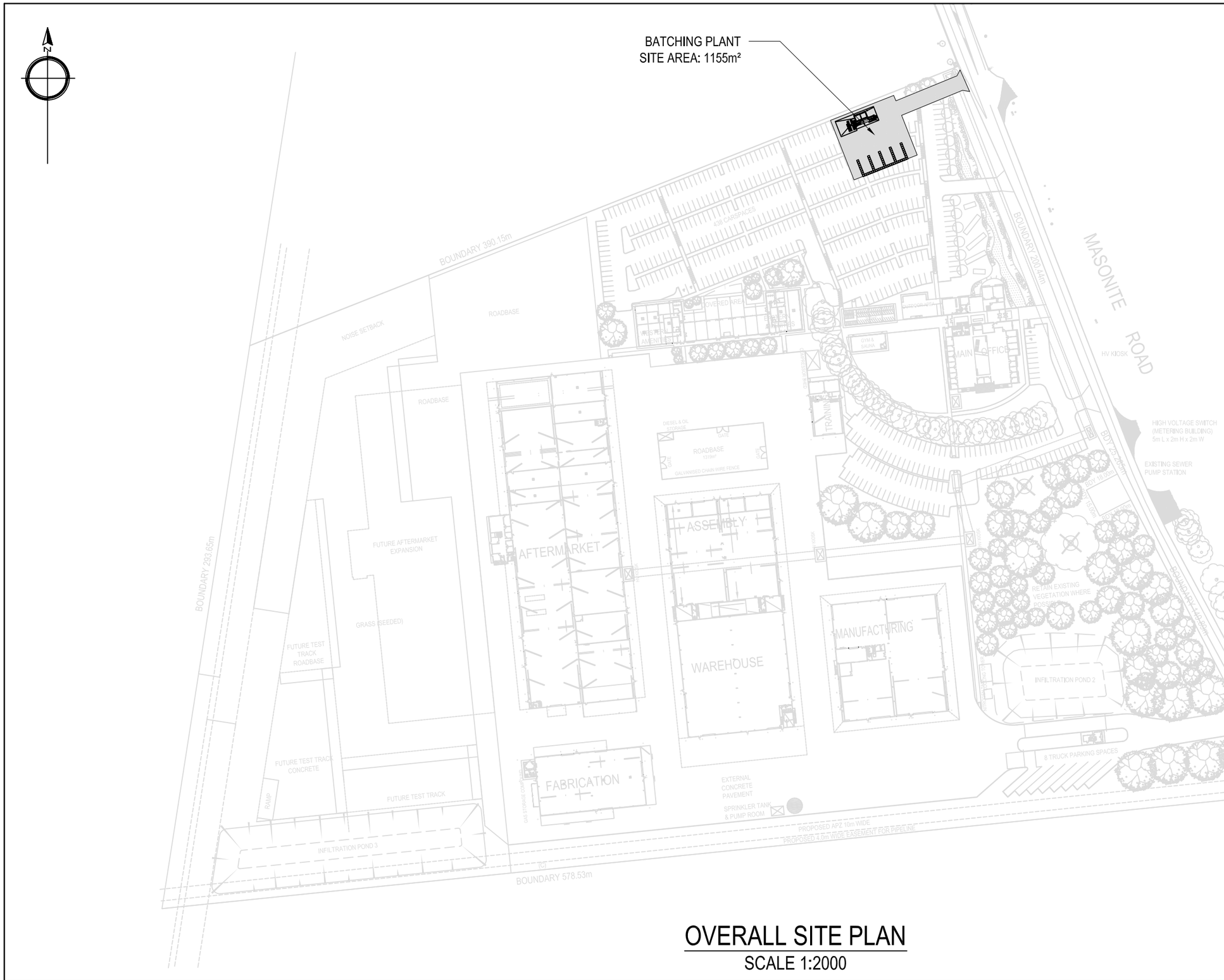
Project No: 10363A

DWG No.	SHEET TITLE	REV
A00	COVER SHEET	
A01	OVERALL SITE PLAN	3
A02	SITE PLAN	3
A03	ELEVATION PLAN (1 OF 2)	3
A04	ELEVATION PLAN (2 OF 2)	3

GCA ENGINEERING SOLUTIONS

A.B.N. 92 086 017 745

1 HARTLEY DRIVE, THORNTON NSW 2322
PO BOX 3337, THORNTON NSW 2322
PHONE: (02) 4964 1811 ◆ FAX: (02) 4964 1822



OVERALL SITE PLAN

SCALE 1:2000

No.	Description	Drawn	Date
3	UPDATED TO SUIT WATER MANAGEMENT PLAN	AS	15.12.10
2	CONCRETE BLOCKS & GRAVEL ADDED	K.C.	07.12.10
1	ORIGINAL ISSUE	K.C.	30.11.10

SANDVIK

Designed: K.C.	Cad Reference: 10363A dA01r2
Scale: 1:2000	A3 SHEET
Status: CONCEPT	

GCA ENGINEERING SOLUTIONS
A.B.N. 92 086 017 745
1 HARTLEY DRIVE, THORNTON NSW 2322
PO BOX 3337, THORNTON NSW 2322
PHONE: (02) 4964 1811 ◆ FAX: (02) 4964 1822

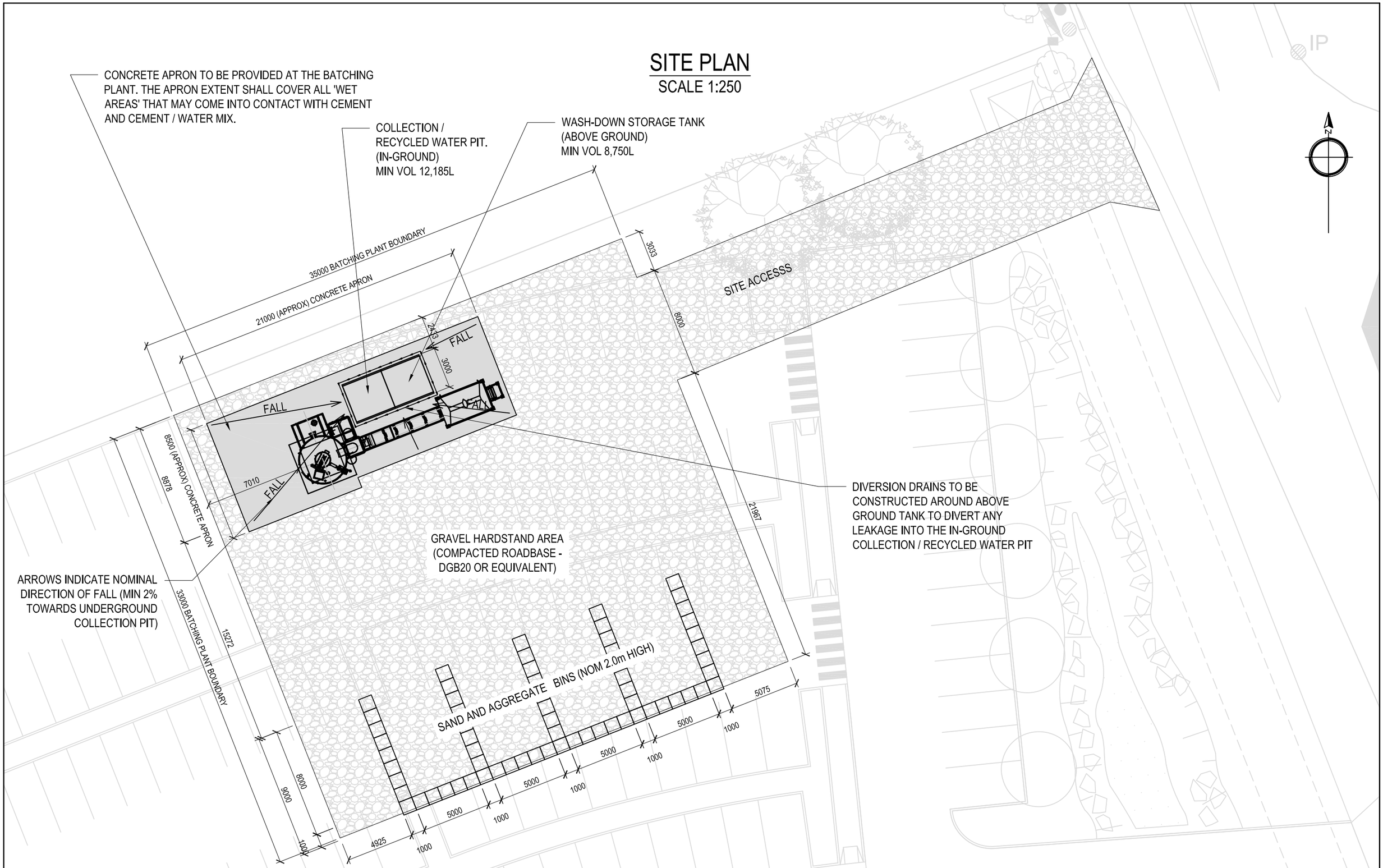
Property Information

Address: 431 MASONITE ROAD,
Suburb: HEATHERBRAE
Lot: 32 **Area:** 16 heactares
DP: 1014864
Council: PORT STEPHENS COUNCIL
Zone: 4A

PROPOSED BATCHING PLANT
431 MASONITE ROAD, HEATHERBRAE
OVERALL SITE PLAN
SANDVIK MINING & CONSTRUCTION AUSTRALIA PTY LTD
HUNTER READYMIXED CONCRETE PTY LTD

Project No	
10363A	
Drawing No: A01	Revision: 3

SITE PLAN
SCALE 1:250



No.	Description	Drawn	Date
3	UPDATED TO SUIT WATER MANAGEMENT PLAN	A.S.	14.12.10
2	CONCRETE BLOCKS & GRAVEL ADDED	K.C.	07.12.10
1	ORIGINAL ISSUE	K.C.	30.11.10

SANDVIK

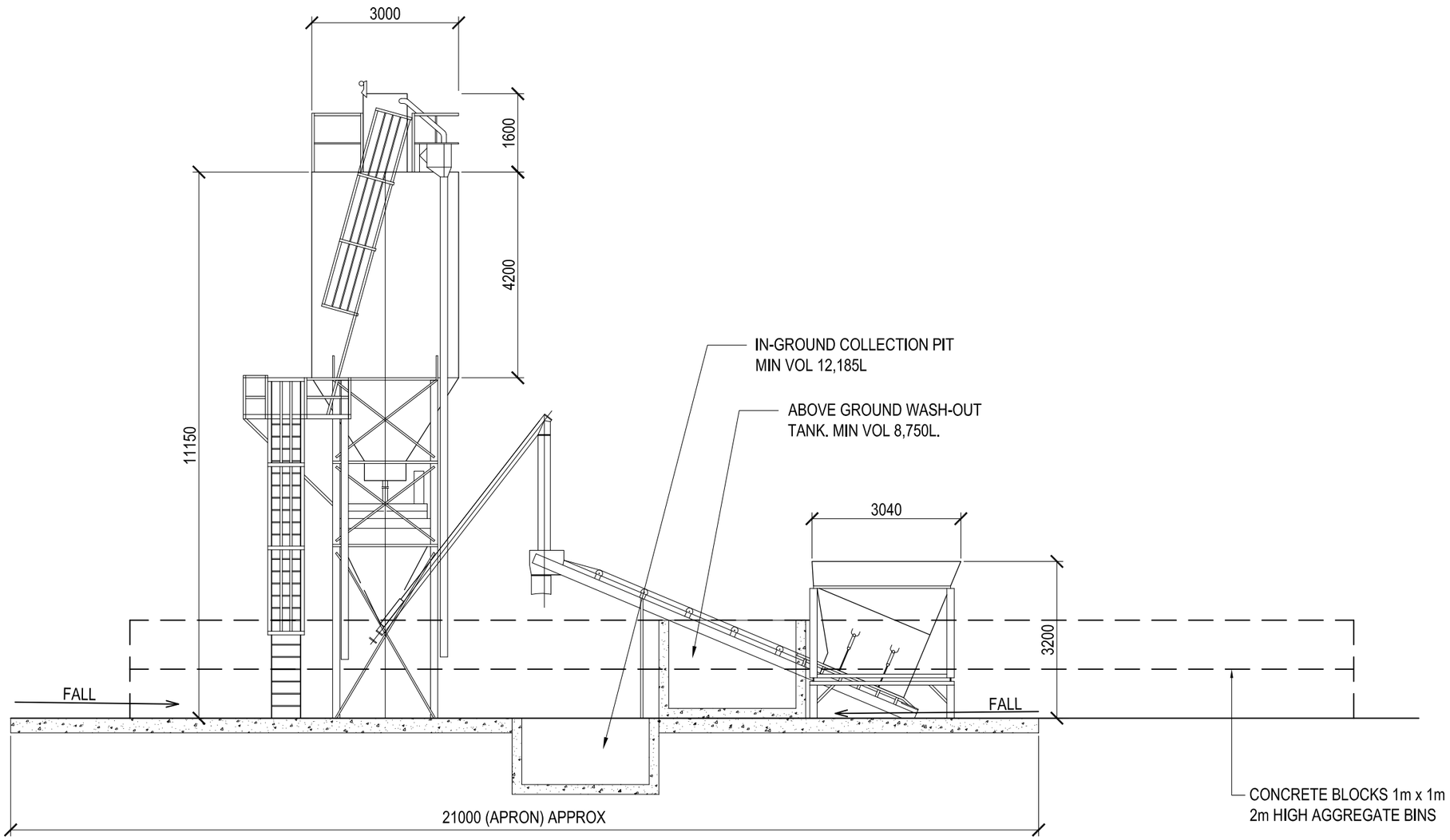
Designed K.C.	Cad Reference 10363A dA01r2
Scale 1:250	A3 SHEET
Status: CONCEPT	

GCA ENGINEERING SOLUTIONS
A.B.N. 92 086 017 745
1 HARTLEY DRIVE, THORNTON NSW 2322
PO BOX 3337, THORNTON NSW 2322
PHONE: (02) 4964 1811 ◆ FAX: (02) 4964 1822

Property Information
Address: 431 MASONITE ROAD,
Suburb: HEATHERBRAE
Lot: 32 **Area:** 16 heactares
DP: 1014864
Council: PORT STEPHENS COUNCIL
Zone: 4A

PROPOSED BATCHING PLANT
431 MASONITE ROAD, HEATHERBRAE
SITE PLAN
SANDVIK MINING & CONSTRUCTION AUSTRALIA PTY LTD
HUNTER READYMIXED CONCRETE PTY LTD

Project No	
10363A	
Drawing No	Revision
A02	3



SOUTH ELEVATION

No.	Description	Drawn	Date
3	UPDATED TO SUIT WATER MANAGEMENT PLAN	A.S.	15.12.10
2	CONCRETE BLOCKS & GRAVEL ADDED	K.C.	07.12.10
1	ORIGINAL ISSUE	P.K	06.12.10

SANDVIK

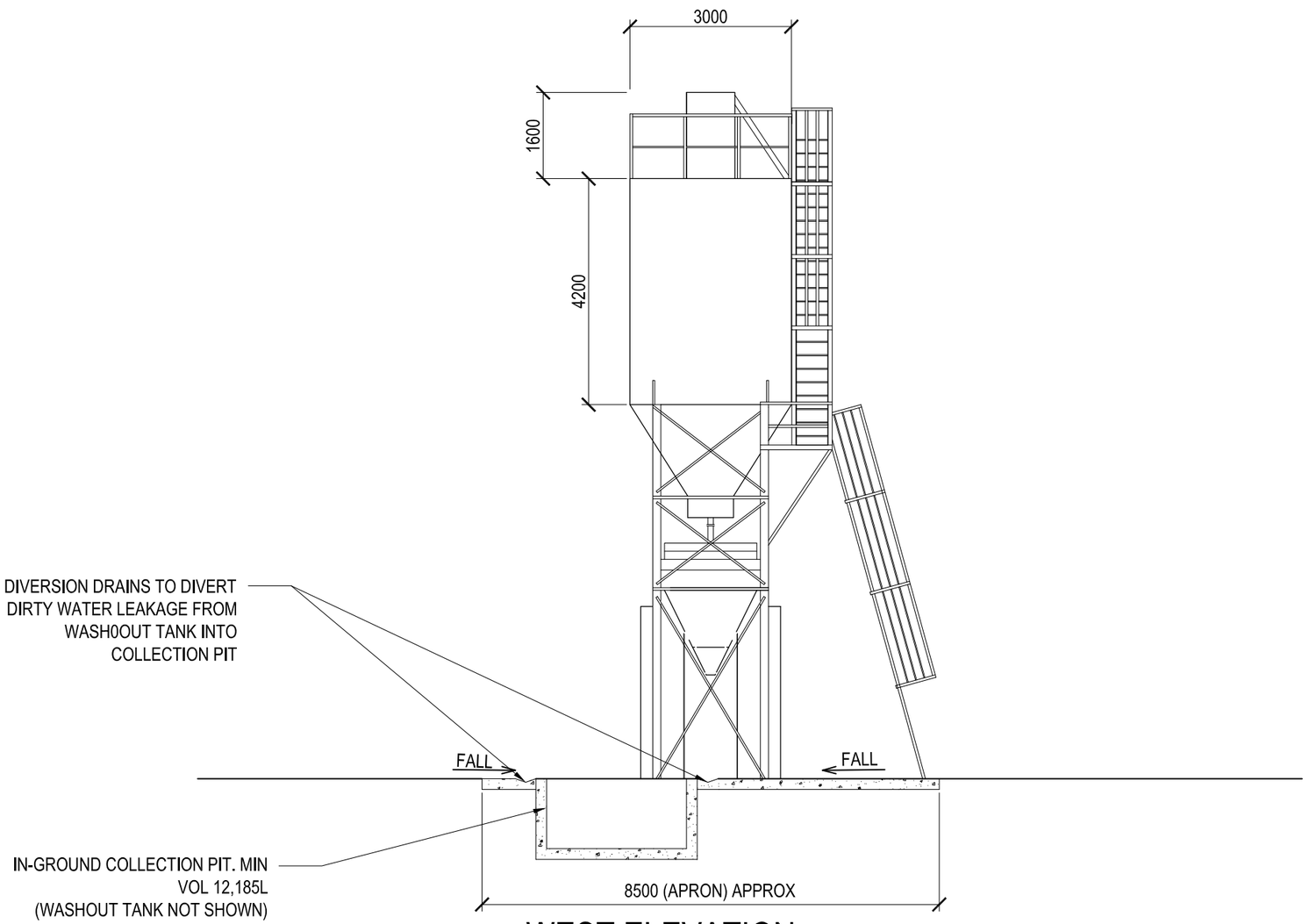
Designed K.C.	Cad Reference 10363A dA01r2
Scale 1:100	A3 SHEET
Status: CONCEPT	

GCA ENGINEERING SOLUTIONS
A.B.N. 92 086 017 745
1 HARTLEY DRIVE, THORNTON NSW 2322
PO BOX 3337, THORNTON NSW 2322
PHONE: (02) 4964 1811 ◆ FAX: (02) 4964 1822

Property Information
Address: 431 MASONITE ROAD,
Suburb: HEATHERBRAE
Lot: 32 **Area:** 16 heactares
DP: 1014864
Council: PORT STEPHENS COUNCIL
Zone: 4A

PROPOSED BATCHING PLANT
431 MASONITE ROAD, HEATHERBRAE
ELEVATION PLAN (1 OF 2)
SANDVIK MINING & CONSTRUCTION AUSTRALIA PTY LTD
HUNTER READYMIXED CONCRETE PTY LTD

Project No	
10363A	
Drawing No	Revision
A03	3



WEST ELEVATION

No.	Description	Drawn	Date
3	UPDATED TO SUIT WATER MANAGEMENT PLAN	A.S.	15.12.10
2	CONCRETE BLOCKS & GRAVEL ADDED	K.C.	07.12.10
1	ORIGINAL ISSUE	P.K	06.12.10

SANDVIK

Designed K.C.	Cad Reference 10363A dA01r2
Scale 1:100	A3 SHEET
Status: CONCEPT	

GCA ENGINEERING SOLUTIONS
A.B.N. 92 086 017 745
1 HARTLEY DRIVE, THORNTON NSW 2322
PO BOX 3337, THORNTON NSW 2322
PHONE: (02) 4964 1811 ◆ FAX: (02) 4964 1822

Property Information
Address: 431 MASONITE ROAD,
Suburb: HEATHERBRAE
Lot: 32 **Area:** 16 heactares
DP: 1014864
Council: PORT STEPHENS COUNCIL
Zone: 4A

PROPOSED BATCHING PLANT
431 MASONITE ROAD, HEATHERBRAE
ELEVATION PLAN (2 OF 2)
SANDVIK MINING & CONSTRUCTION AUSTRALIA PTY LTD
HUNTER READYMIXED CONCRETE PTY LTD

Project No	
10363A	
Drawing No	Revision
A04	3

Appendix D

Traffic Impact Assessment – Intersect Traffic

Intersect Traffic

TRAFFIC AND CIVIL ENGINEERING CONSULTANTS

Addendum to Traffic Impact Assessment

Manufacturing, Assembly, Aftermarket Service, Regional Distribution Centre and Training Facility (inclusion of temporary concrete batching plant)

Lot 32 DP 1014864

431 Masonite Road, Heatherbrae

PREPARED FOR: Hunter Ready Mixed Concrete P/L on behalf of Sandvik Mining & Manufacturing P/L.

DECEMBER 2010

Introduction

ADW Johnson Pty Ltd on behalf of Hunter Ready Mixed Concrete Pty Ltd have engaged Intersect Traffic Pty Ltd (Intersect) to prepare an addendum to the Traffic Impact Assessment for the construction of a manufacturing, assembly, regional distribution centre and training facility at 431 Masonite Road, Heatherbrae. Intersect then trading as Insite Engineering Services Pty Ltd (Insite) prepared this original traffic impact assessment for Sandvik Mining and Manufacturing Pty Ltd to support a development application to the NSW Department of Planning for the proposal.

The development was approved by the Department however ADW Johnson are now preparing a Section 75W application to the Department to amend the development to include a temporary concrete batching plant operated by Hunter Ready Mixed Concrete on the site during construction of the development. This addendum to the traffic assessment is required to support this application.

The aim of the addendum is to report on the traffic impacts of the proposed change to the development and determine if any additional measures are required to ensure traffic generated by the construction of the development does not adversely impact on the local road network. This addendum should be read in conjunction with the original Traffic Impact Assessment carried out for the development and dated June 2010 (Insite).

Amendment to the Development

The proposed change to the original development involves the construction of a temporary concrete batching plant on the site for use during construction of the development. This concrete batching plant will be in operation for a period of approximately 9 months during the construction phase producing on average 500 m^3 of concrete per week. At the completion of the project the concrete batching plant will be disassembled and removed from the site. The location and set-up of the temporary concrete batching plant is shown on the plans provided within Appendix 1 of this report.

Operation of the concrete batching plant will be limited to the site working hours being 7.00 am to 6.00 pm Monday to Friday and 8.00 am to 1.00 pm on Saturdays. The plant will not operate on Sundays and Public Holidays.

During the construction phase of the development the concrete batching plant will operate with a total of five (5) staff, being two (2) batch plant operators and three (3) truck drivers. It is estimated that between 10 and 50 internal concrete agitator trips will be generated by the concrete batching plant during the construction phase of the development.

The concrete batching plant will be serviced by up to six (6) raw material deliveries per day (semi-trailer or B-Double) with the sand and aggregate sourced from Karuah to the north and the cement sourced from Vales Point to the south.

Traffic Generation

Concrete Batching Plant Operation

The concrete batching plant on operation will generate the following traffic on the local road network.

- Maximum of five (5) employee vehicle trips to and from the site in the AM and PM peak hour periods respectively. These are assumed to coincide with the road network peak. Three (3) of these trips will be in concrete agitators which will be stored off site at Hunter Ready Mixed's Thornton plant overnight and when not required.
- Maximum of twelve (12) delivery vehicle trips per day (six (6) to the site and six (6) from the site). Delivery of raw materials will occur throughout the day as required therefore a conservative assumption would be that two (2) inward trips and two (2) outward trips would occur during either the AM or PM peak hour periods.

Therefore it is expected that the concrete batching plant will generate up to nine (9) vehicle trips per hour in the AM and PM peak hour periods.

The concrete batching plant will also generate internal traffic movements associated with the delivery of the concrete to the site construction works. With a plant capacity of 40 m^3 per hour this would represent a maximum number of concrete agitator movements in the hour of six (6) delivery and possibly six (6) return trips. However these trips are internal to the site and will have no impact on the external road network. However they do represent a reduction in traffic on the public road network as a result of the temporary concrete batching plant being in operation on the site.

Concrete Batching Plant Construction and Disassembly

The construction and disassembly of the temporary concrete batching plant will also generate traffic on the external road network. Advice from Hunter Ready Mixed Concrete Pty Ltd indicates that approximately four (4) staff will be associated with these tasks for a 7 to 10 day period. With some deliveries/removal of building material throughout the whole day it is not likely that the peak hour traffic generation of the construction/disassembly of the concrete batching plant will exceed the peak hour traffic generation associated with the operation of the concrete batching plant estimated to be in the order of 9 vehicle trips per hour in the AM and PM peak periods.

Traffic Impact Assessment

Based on the above data it is likely that the construction and operation of the temporary concrete batching plant will generate a peak traffic generation volume in the order of 9 vehicle trips per hour in the AM and PM peak hour periods. This is less than 10 % of the peak hour traffic volumes on both Masonite Road and the Pacific Highway (determined in the original traffic assessment) therefore is within the normal daily variations expected in peak hour traffic volumes on these roads. Therefore the additional traffic will most likely be unnoticeable and will not have an adverse impact on the operation and efficiency of the local road network.

The original traffic assessment for the Sandvik development determined that on full operation the peak hour traffic generation for the site would be in the order of 317 vph and 322 vph in the AM (5 am to 6 am) and PM (3 pm to 4 pm) peak development traffic periods respectively. It also stated that the construction traffic generation from the site would be significantly less than the operational peaks and thus as the road network would be able to cater for the operational peaks it would also be able to cater for the construction traffic peaks.

The original traffic assessment also determined construction traffic volumes would peak during the pouring of the slabs for the buildings when significant numbers of concrete trucks would be delivering to the site. The provision of an on-site concrete batching plant would therefore significantly reduce peak hour construction traffic volumes to the site during this identified peak construction traffic period. This would not only reduce the impact of construction traffic on the operation and efficiency of the road network but would also reduce the impact of the construction traffic on the condition/deterioration of the road pavements within the adjoining road network by reducing the overall number of heavy vehicle movements on the public road network during the construction phase of the development.

It is therefore concluded that the temporary concrete batching plant proposed on the site would have a positive impact on the local road network through a reduction of heavy vehicle movements on the public road network during construction.

Access and Parking Provision

The temporary concrete batching plant is to be provided with its own independent access to Masonite Road in the north-eastern corner of the site during the development construction period. Sight distance in both directions is excellent and the access will easily meet the requirements of Australian Standard AS2890.1-2004 "Parking Facilities – off street car parking" and Australian Standard AS2890.1-2002 "Parking facilities – off street commercial vehicle facilities" particularly given that a temporary speed reduction associated with a construction zone is likely to be in place during the construction of the development.

A Construction Traffic Management Plan incorporating a Traffic Control Plan will be in place during the construction of the development which will ensure vehicle speeds past the development site will be suitably managed as will traffic movements to and from the development site and adjoining sites. Sufficient area has been provided within the concrete batching plant compound to allow raw material delivery vehicles to enter in a forward direction and unload before proceeding to exit the site in a forward direction.

It is concluded the proposed access to the concrete batching plant complies with the relevant Australian Standards, would provide a sufficient level of road safety for users and would ensure forward entry and exit onto the public road network from the site by vehicles generated by the operation of the concrete batching plant.

The concrete batching plant will operate with five (5) employees on site during its operation. Three (3) of the employees will be truck drivers who will drive the concrete agitators from the Hunter Ready Mixed plant at Thornton to and from the site each day for use on the site. Therefore the concrete batching plant is only expected to generate a peak parking demand of 2 vehicles during the development construction period. The plans for the concrete batching plant show that there is sufficient room on site to accommodate this parking demand without interfering with the operation of the concrete batching plant.

It is concluded the proposal would be able to cater for any on-site parking demand generated by employees and that the parking complies with the requirements of Australian Standard AS2890.1-2004 "Parking Facilities – off street car parking".

Alternate Transport Modes

As a temporary facility to be provided during the construction phase of the development only, it is considered an assessment of alternate transport modes to the site is not relevant for this assessment.

Notwithstanding, the original traffic assessment considered alternate transport modes and determined the site was accessible from a limited public transport service and pedestrian footpath network. With only up to a maximum of two (2) employees likely to utilise private/public transport to the site it is highly unlikely

the proposed temporary concrete batching plant will generate sufficient additional demand on these existing services / facilities to require an upgrading of the service and/or infrastructure associated with these alternate transport modes.

Conclusions

This addendum to the original traffic impact assessment for the proposed Sandvik development site at 431 Masonite Road, Heatherbrae, prepared to consider the traffic impacts from the provision of a temporary concrete batching plant on the site during the construction phase has concluded the following;

- The concrete batching plant is likely to generate only up to 9 vehicle trips per hour on the public road network in the AM and PM peak hour period during the construction of the development.
- The concrete batching plant is likely to generate a maximum of 12 internal vehicle trips per hour (concrete deliveries) on the site during construction of the development. Whilst these will have no impact on the adjoining public road network as internal movements they do represent a reduction in vehicle trips on the public road network as a result of the temporary concrete batching plant being provided on site.
- Peak hour traffic generation on the public road network associated with the construction/disassembly of the temporary concrete batching plant will not exceed the peak hour traffic generation on the public road network expected from the operation of the plant.
- Construction traffic peak hour volumes will continue to remain significantly less than the operational traffic volumes expected from the completed development therefore the findings of the original traffic assessment that the local road network has sufficient spare capacity to cater for the development does not change as a result of the provision of the temporary concrete batching plant on the site.
- The temporary concrete batching plant proposed on the site would have a positive impact on the local road network through a reduction of heavy vehicle movements on the public road network during the construction phase. This will not only have a positive impact on the efficiency of the road network but would also reduce deterioration of the subject road pavements.
- The proposed access to the temporary concrete batching plant complies with the relevant Australian Standards, would provide a sufficient level of road safety for users and would ensure forward entry and exit onto the public road network from the site by vehicles generated by the operation of the plant.
- The proposal would be able to cater for any on-site parking demand and that the on-site parking complies with the requirements of Australian Standard AS2890.1-2004 “Parking Facilities – off street car parking”.
- The proposed temporary concrete batching plant will not generate sufficient additional demand on existing alternate transport mode services / facilities to require an upgrading of the services and/or infrastructure associated with these alternate transport modes.

Recommendation

Having completed this assessment of the proposed temporary concrete batching plant on the Sandvik super site at 431 Masonite Road, Heatherbrae I would recommend the proposal be supported from a traffic impact perspective. This recommendation is made as I consider the proposal will have a positive impact on the local road network during the construction phase of the development and satisfies all relevant Council and RTA standards and policies associated with on-site parking, access and alternate transport modes.

Jeff Garry
Director
Intersect Traffic Pty Ltd (formerly Insite Engineering Services Pty Ltd)
BE (Civil), Masters of Traffic

Appendix 1 – Development Plans.

PROPOSED BATCHING PLANT

431 MASONITE ROAD

HEATHERBRAE

HUNTER READYMIXED CONCRETE PTY LTD

PORT STEPHENS COUNCIL

DP 1014864

CONCEPT

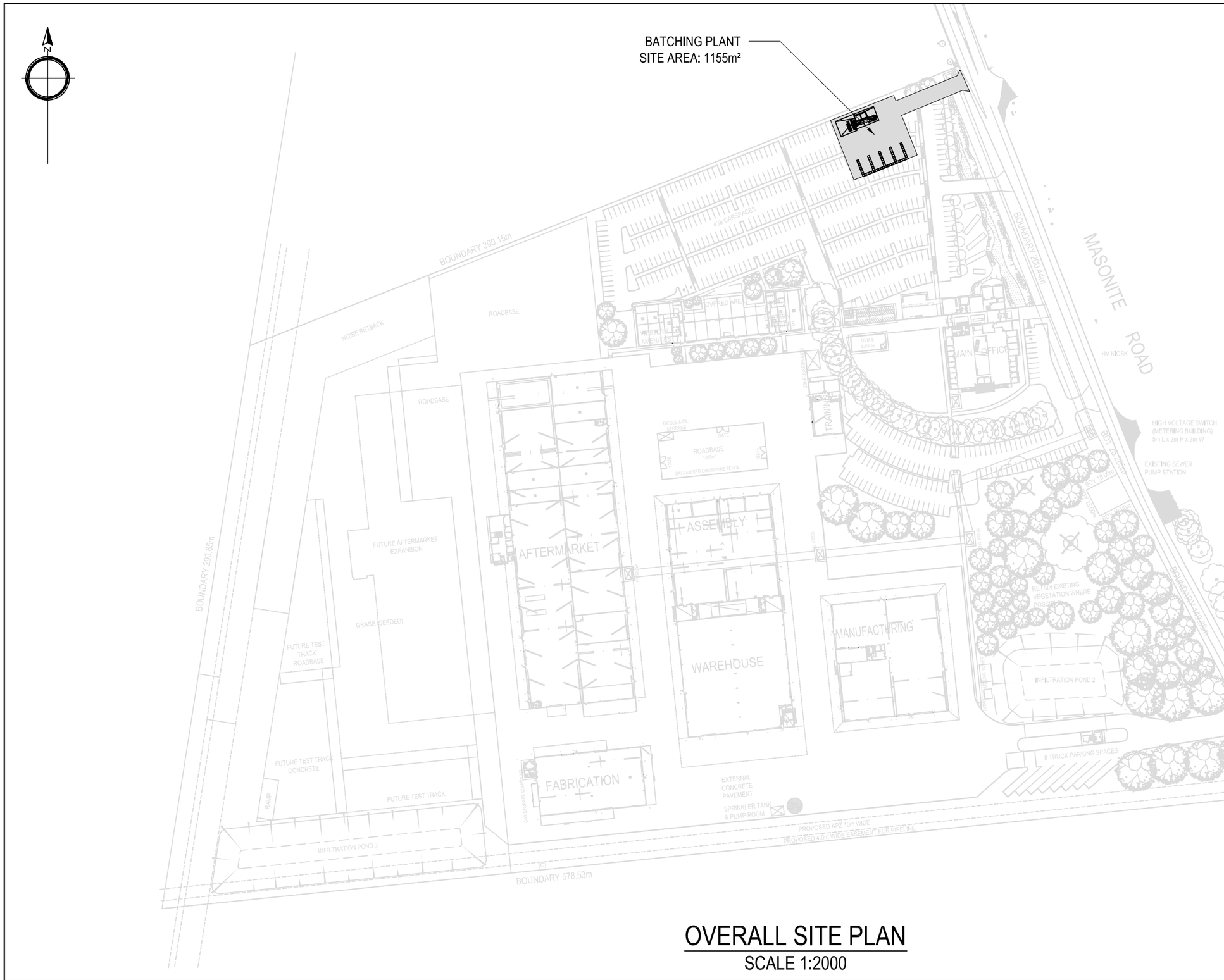
Project No: 10363A

DWG No.	SHEET TITLE	REV
A00	COVER SHEET	
A01	OVERALL SITE PLAN	3
A02	SITE PLAN	3
A03	ELEVATION PLAN (1 OF 2)	3
A04	ELEVATION PLAN (2 OF 2)	3

GCA ENGINEERING SOLUTIONS

A.B.N. 92 086 017 745

1 HARTLEY DRIVE, THORNTON NSW 2322
PO BOX 3337, THORNTON NSW 2322
PHONE: (02) 4964 1811 ◆ FAX: (02) 4964 1822



OVERALL SITE PLAN

SCALE 1:2000

No.	Description	Drawn	Date
3	UPDATED TO SUIT WATER MANAGEMENT PLAN	AS	15.12.10
2	CONCRETE BLOCKS & GRAVEL ADDED	K.C.	07.12.10
1	ORIGINAL ISSUE	K.C.	30.11.10

SANDVIK

Designed: K.C.	Cad Reference: 10363A dA01r2
Scale: 1:2000	A3 SHEET
Status: CONCEPT	

GCA ENGINEERING SOLUTIONS
A.B.N. 92 086 017 745
1 HARTLEY DRIVE, THORNTON NSW 2322
PO BOX 3337, THORNTON NSW 2322
PHONE: (02) 4964 1811 ◆ FAX: (02) 4964 1822

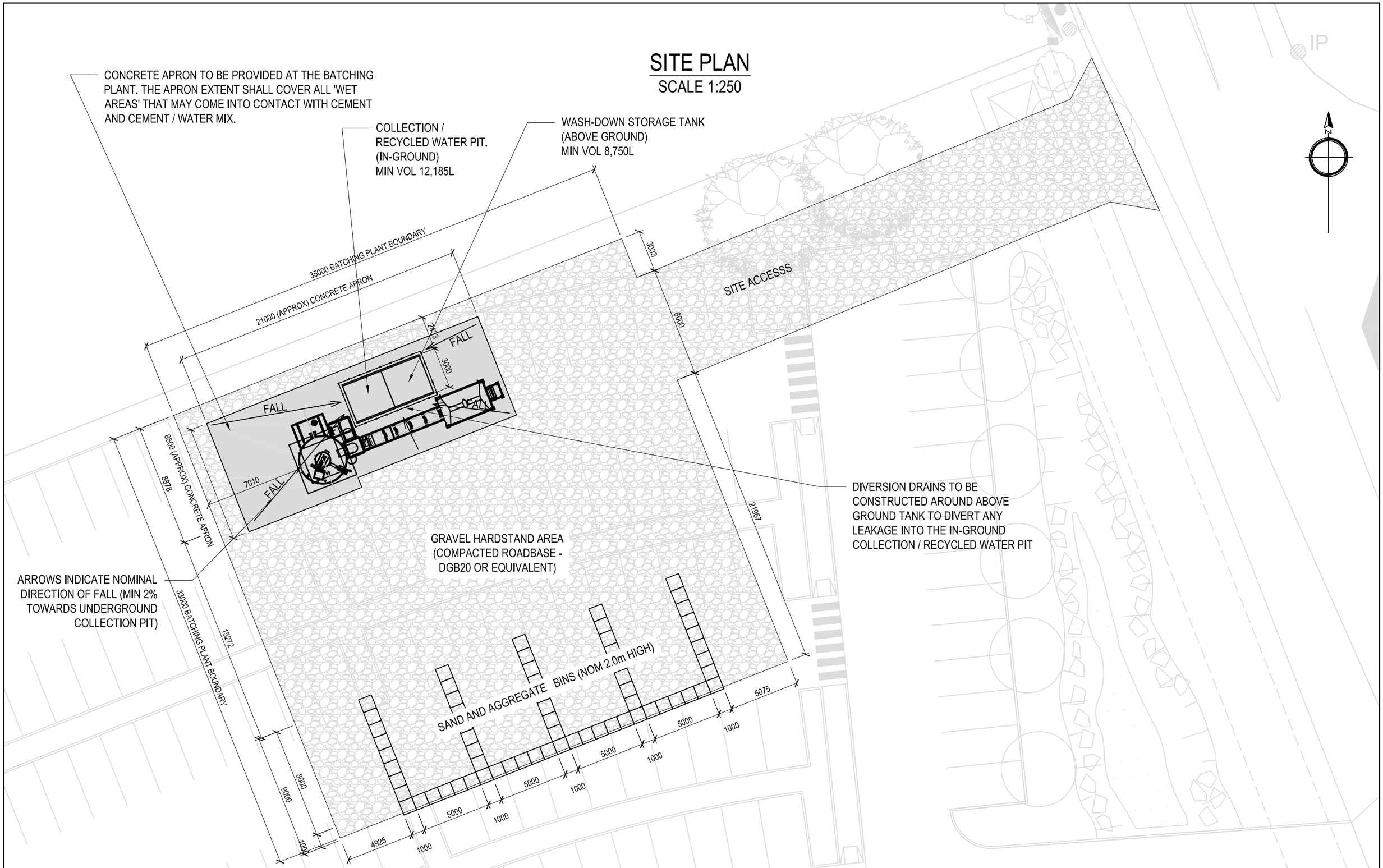
Property Information

Address: 431 MASONITE ROAD,
Suburb: HEATHERBRAE
Lot: 32 **Area:** 16 heactares
DP: 1014864
Council: PORT STEPHENS COUNCIL
Zone: 4A

PROPOSED BATCHING PLANT
431 MASONITE ROAD, HEATHERBRAE
OVERALL SITE PLAN
SANDVIK MINING & CONSTRUCTION AUSTRALIA PTY LTD
HUNTER READYMIXED CONCRETE PTY LTD

Project No	
10363A	
Drawing No: A01	Revision: 3

SITE PLAN
SCALE 1:250



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2	CONCRETE BLOCKS & GRAVEL ADDED	K.C.	07.12.10
1	ORIGINAL ISSUE	K.C.	30.11.10

SANDVIK

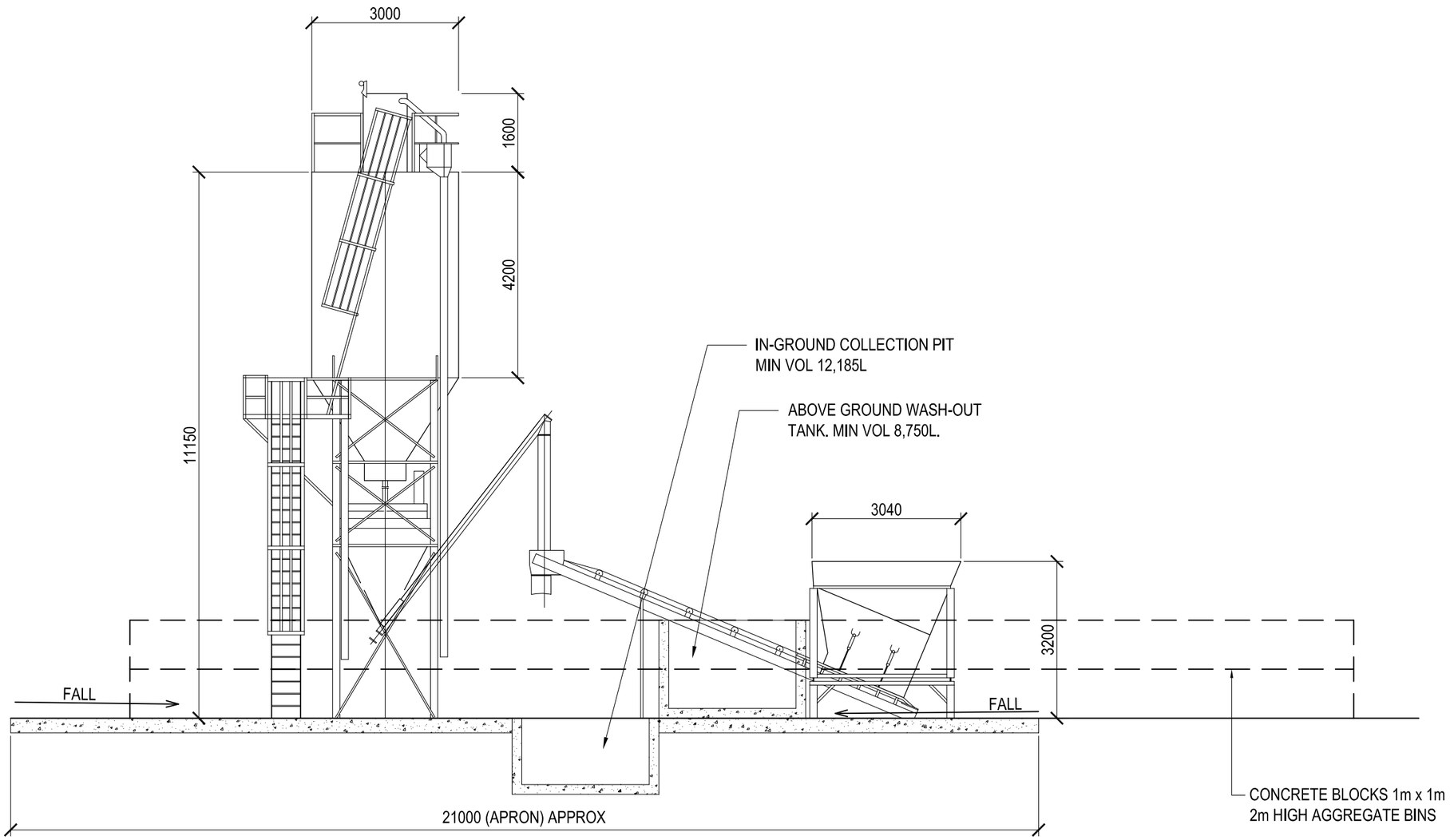
Designed K.C.	Cad Reference 10363A dA01r2
Scale 1:250	A3 SHEET
Status: CONCEPT	

GCA ENGINEERING SOLUTIONS
A.B.N. 92 086 017 745
1 HARTLEY DRIVE, THORNTON NSW 2322
PO BOX 3337, THORNTON NSW 2322
PHONE: (02) 4964 1811 ◆ FAX: (02) 4964 1822

Property Information
Address: 431 MASONITE ROAD,
Suburb: HEATHERBRAE
Lot: 32 **Area:** 16 heactares
DP: 1014864
Council: PORT STEPHENS COUNCIL
Zone: 4A

PROPOSED BATCHING PLANT
431 MASONITE ROAD, HEATHERBRAE
SITE PLAN
SANDVIK MINING & CONSTRUCTION AUSTRALIA PTY LTD
HUNTER READYMIXED CONCRETE PTY LTD

Project No	
10363A	
Drawing No	Revision
A02	3



SOUTH ELEVATION

No.	Description	Drawn	Date
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2	CONCRETE BLOCKS & GRAVEL ADDED	K.C.	07.12.10
1	ORIGINAL ISSUE	P.K	06.12.10

SANDVIK

Designed K.C.	Cad Reference 10363A dA01r2
Scale 1:100	A3 SHEET
Status: CONCEPT	

GCA ENGINEERING SOLUTIONS
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1 HARTLEY DRIVE, THORNTON NSW 2322
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PHONE: (02) 4964 1811 ◆ FAX: (02) 4964 1822

Property Information
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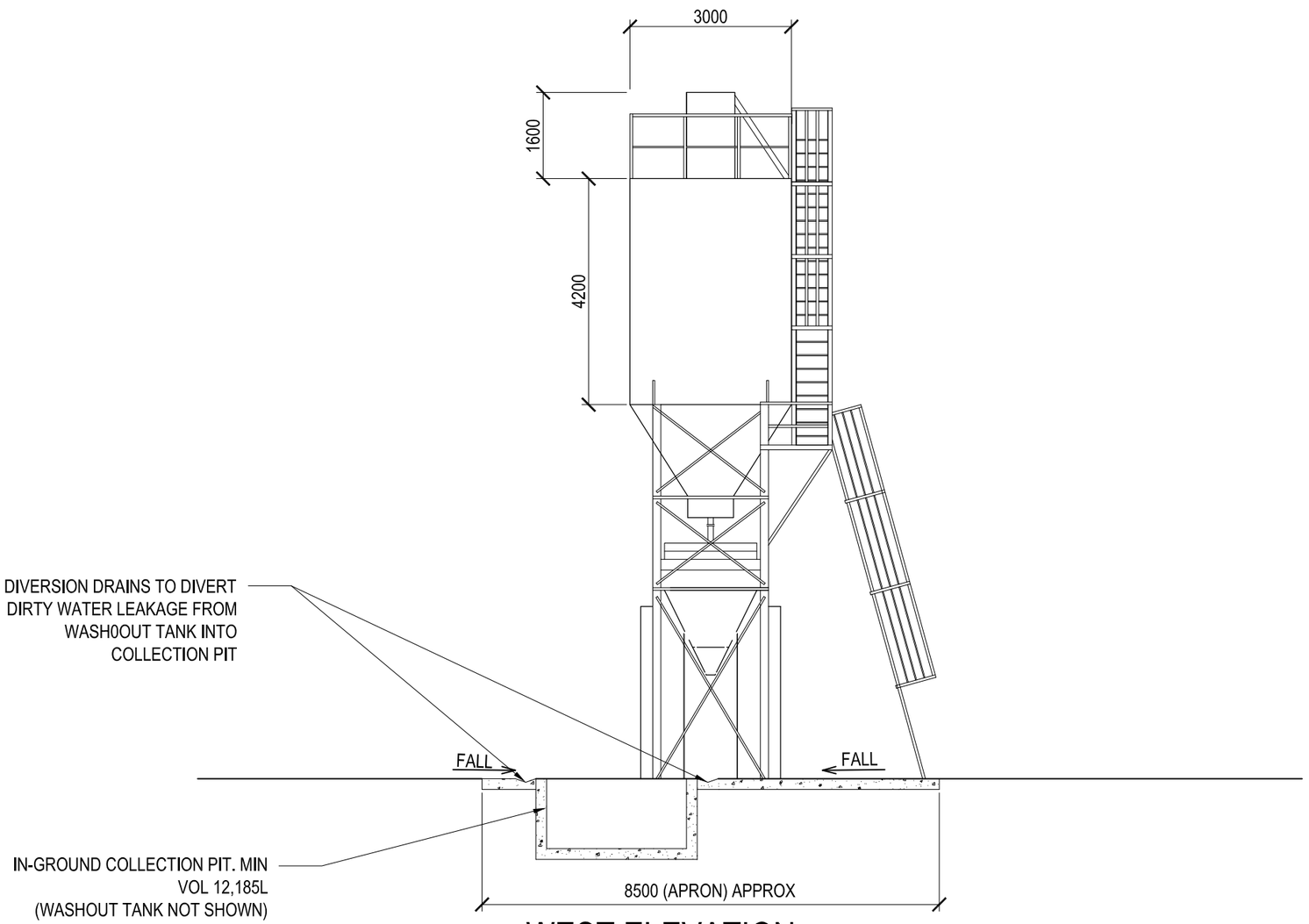
Suburb: HEATHERBRAE
Lot: 32 **Area:** 16 heactares
DP: 1014864
Council: PORT STEPHENS COUNCIL
Zone: 4A

PROPOSED BATCHING PLANT
431 MASONITE ROAD, HEATHERBRAE
ELEVATION PLAN (1 OF 2)
SANDVIK MINING & CONSTRUCTION AUSTRALIA PTY LTD
HUNTER READYMIXED CONCRETE PTY LTD

Project No	
10363A	
Drawing No	Revision
A03	3



WEST ELEVATION

No.	Description	Drawn	Date
3	UPDATED TO SUIT WATER MANAGEMENT PLAN	A.S.	15.12.10
2	CONCRETE BLOCKS & GRAVEL ADDED	K.C.	07.12.10
1	ORIGINAL ISSUE	P.K	06.12.10

SANDVIK

Designed K.C.	Cad Reference 10363A dA01r2
Scale 1:100	A3 SHEET
Status: CONCEPT	

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Council: PORT STEPHENS COUNCIL
Zone: 4A

PROPOSED BATCHING PLANT
431 MASONITE ROAD, HEATHERBRAE
ELEVATION PLAN (2 OF 2)
SANDVIK MINING & CONSTRUCTION AUSTRALIA PTY LTD
HUNTER READYMIXED CONCRETE PTY LTD

Project No	
10363A	
Drawing No	Revision
A04	3

Appendix E

Water Management Plan - GCA

Geoff Craig & Associates Pty Ltd
PO Box 3337 - 1 Hartley Drive
Thornton NSW 2322
T: 02 4964 1811 F: 02 4964 1822
E: admin@gca.net.au

ABN 92 086 017 745

17 December 2010

Our reference: 10363 WMP r2
Your reference:

Mr Anthony Allison
Senior Development Planner
ADW Johnson
7/335 Hillsborough Road
Warners Bay NSW2282
(by e-mail)

Dear Anthony

Proposed temporary concrete batching facility, 431 Masonite Road, Heatherbrae

Hunter Readymixed Concrete Pty Ltd, on behalf of Sandvik Construction and Mining Australia Pty Ltd, is proposing to construct a temporary concrete batching facility on 431 Masonite Road, Heatherbrae, for on-site manufacture of concrete throughout the construction of the Sandvik Machinery and Maintenance Facility. The batching facility will only be present on the site for the construction phase, with duration of operation not expected to exceed 9 months during the 2011 calendar year.

This water management letter has been prepared in support of a Section 75W application to modify the consent for the Sandvik Machinery and Maintenance Facility.

The following information is provided in this letter for the proposed temporary concrete batching facility:

- description of the site and proposed facility
- anticipated water requirements
- proposed water management strategy
- conclusions regarding residual risk to surface and groundwater quality.

1. Site and batching plant characteristics

The temporary concrete batching plant is illustrated on drawings 10363A-A00 to –A04 which were prepared by GCA using information provided by Hunter Readymixed Concrete Pty Ltd. The batching plant will be used to manufacture concrete for the construction of the Sandvik Machinery and Maintenance Facility, which was approved as a Major Project under Part 3A of the Environmental Planning and Assessment Act. The main criteria for the water management features are provided in this letter.

The plant will be located in the north-eastern corner of the construction site, on an area that will eventually become a bitumen-sealed car park once the facility has been demobilised. The concrete batching facility, including plant, gravel 'hardstand' areas and aggregate storage bins, will cover approximately 1,155m^2. The site's existing natural topography is quite flat, with existing slopes in the vicinity of the proposed batching facility grading at less than 2% to the north. Natural site soils are dominated by medium to fine grained sands.

431 Masonite Road is within the Hunter Water Corporation special areas zone. Although the site is located several hundred metres from the nearest HWC drinking water abstraction bore, the potential for impact on the underlying groundwater storage aquifer needs to be considered due to the importance of the underlying aquifer as a long term drinking water resource for the region.

2. Potable and recycled water requirements

Water will be required for:

- Concrete manufacture
- Wash-out of trucks
- Dust suppression

It is proposed that water will be sourced from a temporary construction service tapping in the HWC water main along Masonite Road. Should the application for a construction service connection be denied by HWC, there is a hydrant service within the site that may be used. Potable (clean) water storage tanks will be used on site to store water prior to use, providing a buffer against low flow rates from HWC potable supply points. It is expected that concrete manufacture will require 80,000 litres per week of potable water, on average, over the 9 month construction period. The maximum weekly water usage could be up to 216,000 litres.

Water used in wash-out of trucks will be re-used in the concrete manufacture process, such that no additional potable water is required for this activity.

Clean water will be drawn upon for dust suppression over the gravel hardstand area, as required.

Generally, there is no need to dispose of wash out water as it is re-used for concrete manufacture. However, in the event that disposal is required, unsuitable water will be transported offsite and disposed of at Hunter Readymixed Concrete's Thornton depot in accordance with existing wastewater disposal licenses.

3. Water management strategy

A water cycle schematic for the concrete batching facility is provided as Figure1 below.

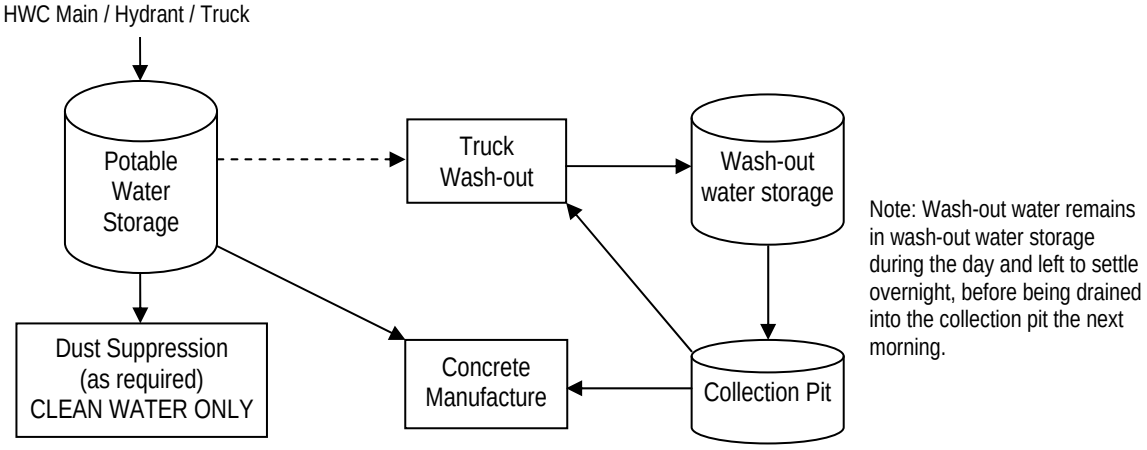


Figure 1: Water cycle schematic for on-site concrete batching facility

The batching plant water management features are depicted on drawing 10363A-A02, and include:

- Potable water storage tank – above ground, nominal capacity 25kL.
- Concrete apron – to be provided around the main concrete batching plant. This will delineate the 'wet area' where cement and cement/water mixes could come in contact with the ground during concrete manufacture, truck loading, and truck wash-out. The concrete apron will be graded towards an in-ground collection pit (discussed below). Diversion drains will be provided within the apron to drain any leakage from the wash-out tank directly into the collection pit.
- Wash-out water storage tank - above-ground tank into which dirty water from washing out the concrete trucks will be diverted throughout the construction day. Wash-out water will remain in this tank throughout the day and left overnight so that the entrained fine material and aggregates can settle out, before being drained into the collection pit the following morning.
- In-ground water collection pit to collect any surface runoff from the concrete apron area, as well water drained from the wash-out water tank.

Minimum capacities of wash-out tank and collection pit

The minimum storage of the wash-out storage tank (above ground) is 8,750L, which is based on holding the expected maximum daily wash-out water volume from the following assumptions:

- 43 truckloads per day (300m^3/d maximum production rate and 7m^3 truck capacity)
- Loading bay sprays – 20 litres per truckload
- Washing of trucks – 50 litres per truckload
- Thorough truck wash-out at the end of each day – 4 trucks at 1000L each
- additional 25% surplus to the above, to allow for accumulation of aggregates and sediments prior to removal.

The minimum storage of the collection pit is 12,185L, which has been evaluated using:

- daily maximum wash-out volume (7,000L)
- storm allowance of 5,185L based on 30.5mm design 5-day 80th percentile rainfall depth over the 170m^2 concrete apron area.

Note that the adoption of the 5-day 80th percentile rainfall depth is as recommended by Managing Urban Stormwater: Soils and Construction (Landcom, 2004) for 'sensitive sites', in the absence of specific design guidelines for water management at concrete batching facilities.

A maintenance schedule will be implemented by Hunter Readymixed Concrete Pty Ltd such that:

- the collection pit is inspected and cleaned after every significant rainfall event in excess of 10mm or once every calendar month, whichever results in the lesser time interval
- the wash-out tank is inspected and any accumulated sediments removed prior to the spare capacity reducing to 7,000L (80%).

4. Risk to surface and groundwater quality

Risks to surface and groundwater quality arising from general construction activities and use of vehicle / construction equipment will be addressed by Drayton Building and Construction Pty Ltd (the Principal Contractor), and will not be discussed in this letter.

There is an additional risk to surface and groundwater quality due to the on-site concrete manufacture from the cement, aggregate and water. The potable water and aggregate components are both considered relatively 'clean'. However, cement primarily contains calcium oxide (CaO, 60-70%) and silicon oxide (SiO_2, 20-25%) and other minor constituents such as aluminium oxide (Al_20_3), ferric oxide (Fe_2O_3) and sulfates (SO_3) (less than 5% each). The cement constituents are considered hazardous due to the very high pH (above 12.0) when mixed with water, which is the primary concern from a surface and groundwater management perspective.

As discussed earlier, a concrete apron will extend under all 'wet' areas as shown on drawing 10363A-A02. The apron will:

1) Provide an impermeable barrier so that water containing cement cannot infiltrate to groundwater.
2) Be graded towards the collection pit, so that no runoff can occur outside of the apron area.

No wash down of trucks or concrete production shall take place outside of the concrete apron. Residue traces of water / cement on truck tyres will be removed by the gravel road base upon leaving the concrete apron, and present little hazard to groundwater or surface water from that point.

The apron and pit arrangement, combined with ongoing proper site water management to be implemented by Hunter Readymixed Concrete Pty Ltd, will satisfactorily reduce the residual risk to surface and groundwater quality.

Yours sincerely,

Adam Shaw MIEAust CPEng
Senior Civil / Environmental Engineer
GCA

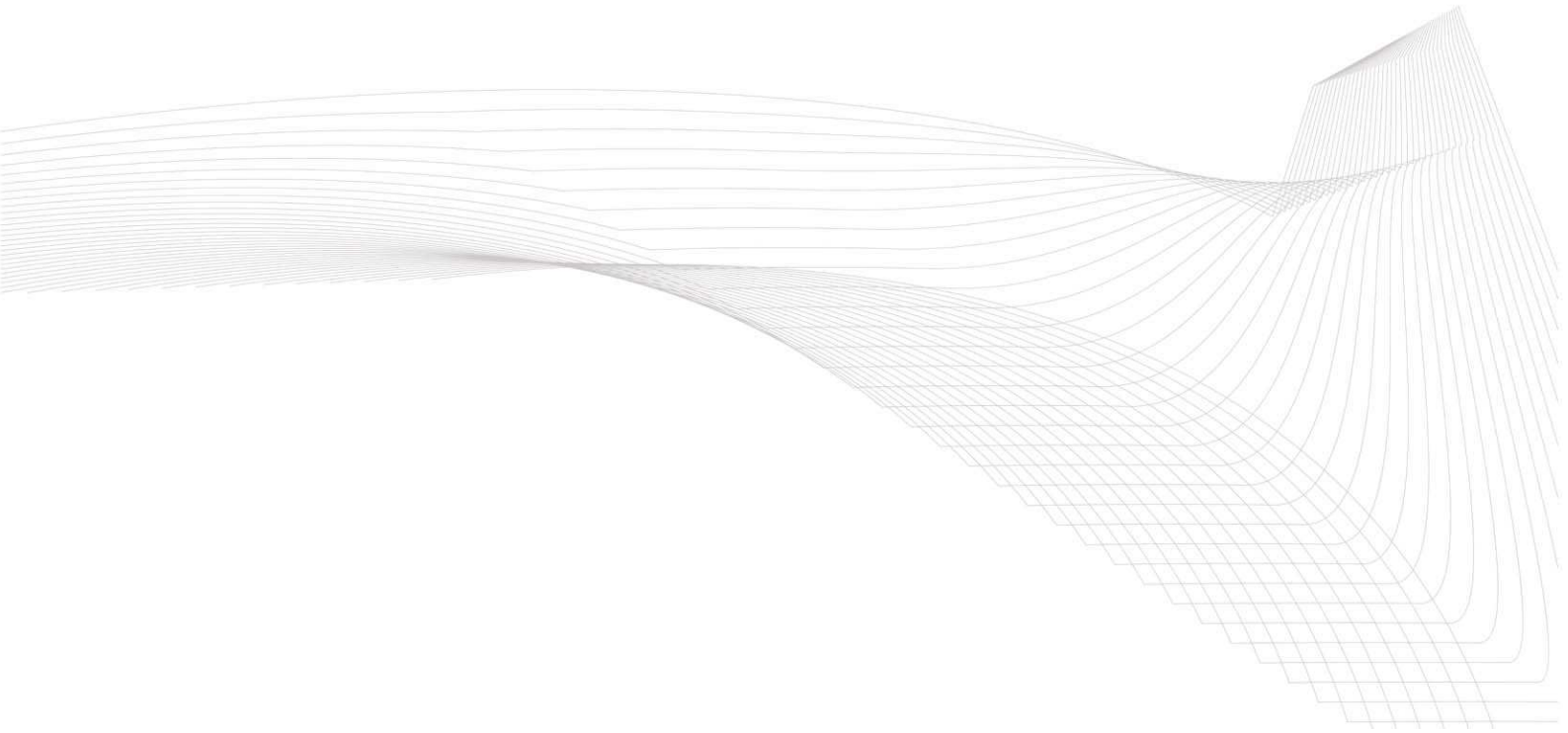
Appendix F

Construction Noise Impact Assessment - Advitech

Construction Noise Impact Assessment

Industrial Facility Heatherbrae

Hunter Ready Mixed Concrete Pty Ltd



Prepared For:

Hunter Ready Mixed Concrete Pty Ltd

(on behalf of Sandvik Mining and Construction Australia Pty Ltd)

Construction Noise Impact Assessment

Industrial Facility Heatherbrae

Hunter Ready Mixed Concrete Pty Ltd

Contact:

Darryl Scotman

General Manager
Hunter Ready Mixed Concrete Pty Ltd
Telephone: 0412 775 904

Prepared By:

Advitech Pty Limited

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Web: www.advitech.com.au

Report Details:

Filename: 11329 CNIA Rev0.doc
Job #: J0100312-00 Folder #: F11329
Revision: 0 (Final)
Date: 13 December 2010

Endorsements:

Function	Signature	Name and Title	Date
Written By		Clayton Sparke Environmental Scientist	13 December 2010
Checked By		Rod Bennison Lead Environmental Scientist	13 December 2010
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1. INTRODUCTION

Advitech Pty Limited was engaged by ADW Johnson Pty Ltd (on behalf of Sandvik Mining and Construction Australia) to prepare an assessment of potential noise impacts associated with the construction of an industrial facility at Heatherbrae, NSW.

It should be noted that this report was prepared by Advitech Pty Limited for Sandvik Mining and Construction Australia Pty Ltd ("the customer") in accordance with the scope of work and specific requirements agreed between Advitech and the customer. This report was prepared with background information, terms of reference and assumptions agreed with the customer. The report is not intended for use by any other individual or organisation and as such, Advitech will not accept liability for use of the information contained in this report, other than that which was intended at the time of writing.

2. BACKGROUND AND OBJECTIVES

Advitech prepared detailed assessment of construction and operation stage noise impacts to support the Environmental Assessment (EA) and project application for the proposed industrial facility in June 2010. Approval for the development (10_0073) was provided by NSW Department of Planning (DoP) in October 2010.

Detailed construction planning undertaken since the approval was issued indicates onsite concrete batching would be required during the construction phase of the development. The concrete batch plant would be temporary (operated only for the duration of the construction phase) and produce approximately 18,000m^3 of pre-mixed concrete over approximately 9 months. ADW Johnson Pty Ltd intends to submit an application to modify the project approval (10_0073), to allow temporary concrete batching facility to operate on the development site as part of construction works.

This review seeks to assess potential noise impacts associated with the operation of a temporary concrete batching plant, and build on existing assessment undertaken as part of the original Noise Impact Assessment (NIA).

3. REFERENCES

The following information was used in the preparation of this report:

1. Advitech (2010). *Noise Impact Assessment – Industrial Facility Heatherbrae*, prepared for Sandvik Mining and Construction Australia Pty Ltd.
2. AS1055.1-1997: *Acoustics – Description and measurement of environmental noise. Part 1: General procedures*;
3. AS 2706-1984: *Numerical Values: Rounding and interpretation of limiting values;*
4. DEFRA (2005). *Update on noise database for prediction of noise on construction and open sites*, Department of Environment, Food and Rural Affairs (UK), London, viewed 3 December 2010, http://www.defra.gov.uk/environment/quality/noise/research/construct-noise/constructnoise-database.pdf
5. NSW Department of Environment and Climate Change (2009). *Interim Construction Noise Guideline*, Department of Environment and Climate Change, Sydney*; and*
6. NSW Environment Protection Agency (2000). *NSW Industrial Noise Policy*, NSW Environment Protection Agency, Sydney.

4. CONSTRUCTION NOISE ASSESSMENT

The report entitled *Noise Impact Assessment – Industrial Facility Heatherbrae* (referred to herein as the original assessment), presents an assessment of potential noise impacts associated with the construction works as proposed during June 2010. Assessment of cumulative noise impacts associated with concrete batching and aggregate construction operations will be undertaken on the basis of the original methodology.

4.1 Quantitative Assessment of Airborne Construction Noise

4.1.1 Construction Noise Management Levels

It is understood that all construction activities would be carried out during standard working hours (7am to 6pm Monday to Friday, and 8am to 1pm Saturdays). **Table 1** presents the construction noise management levels at sensitive receivers adjacent to the development site. These are the limits with which construction noise impacts would have to comply. It should be noted an additional receiver point was included at the boundary of the site nearest to the proposed concrete batch plant as shown in **Figure 1**.

Table 1: Construction noise management levels

Receiver Location	Receiver Type	Management Level, $L_{Aeq,15minute}$	Construction Noise Criteria, dB(A)
Industrial Units	Industrial	75 dB(A)	75
Heatherbrae Early Learning Centre	Industrial	75 dB(A)	75
Adelaide St	Residential	RBL + 10	63
High School	Classroom	50 dB(A) (internal)	60[1]
Kingston Pde	Residential	RBL + 10	63
Archibald Place (nth site boundary)	Industrial	75 dB(A)	75

Note: 1. As a guide the difference between the internal noise level and the external noise level is typically 10dB(A) with windows open for adequate ventilation.

4.1.2 Construction Equipment

Construction works associated with the proposed development will consist of the following activities:

- operation of a temporary concrete batching plant with a maximum production capacity of approximately 40 m^3 per hour;
- clearing vegetation and establishing finished site levels;
- laying foundations and pouring concrete hardstand areas;
- erecting workshop structures consisting of pre-cast concrete panels and colorbond sheeting;
- installation of internal services; and
- establishing site landscaping.

An inventory of the acoustically significant equipment to be utilised during construction works is provided in **Table 2**. Operating Sound Power Levels (SWL) for each item of plant were calculated based on typical operating L_{Aeq} Sound Pressure Levels published by the UK Department for Environment, Food and Rural Affairs (DEFRA, 2005).

Table 2: Construction equipment and typical SWL

Construction Equipment	Typical Operating SPL[1], dB(A)
Crane (40-50t)	67
Concrete Truck and Boom Pump	75
Excavator (CAT225)	77
Backhoe	67
Bulldozer (CATD8)	80

Note: 1. Typical SPL measured at 10m from the source, DEFRA (2005).

Table 3 outlines SWL and expected utilisation rates associated with acoustically significant plant and processes that contribute to concrete batching operations. These data were supplied by the construction contractor, and are based on assessment undertaken at batching operations of commensurate capacity to that proposed at the Heatherbrae site.

Table 3: SWL for concrete batching operations

Description	Utilisation (per 15 minutes)	Sound Power Level dB(A)	Sound Power Level dB(Lin)
Front end loader	100%	108	114
Transit mixer loading	50%	109	119
Transit mixer slumping	50%	114	118
Cement delivery truck	100%	108	117
Raw materials delivery truck	100%	106	110

Figure 1: Site location, noise sources and sensitive receivers

Figure 1 provides the location of construction noise sources within the development site. The concrete batching plant is located in the proposed car park area, approximately 100 metres from the northern boundary of the site.

As detailed construction plans were not available at the time of the assessment, the location of aggregate construction sources (concrete pouring and building construction) was assumed to be adjacent to the north western corner of the aftermarket building. While it is acknowledged these sources would be mobile within the development site, the majority of the works will take place east of this location. Consequently, previous assessment based on minimum separation distances between this location and adjacent sensitive receivers was considered to provide a conservative assessment of potential impacts.

4.1.3 Predicted Construction Noise Impact

4.1.3.1 Existing Assessment

The original noise impact assessment considered construction noise impacts only in terms of distance attenuation that may occur between noise sources and adjacent receivers, as described by the relationship:

$$SPL = SWL - 20\log(r) + 10\log(d) - 11$$

Where: SWL is the source sound power level in dB;
r, is the distance between source and receiver in metres; and
d, is a directivity constant.

A noise model was constructed using ENM for the purposes of assessing cumulative impacts associated with the concrete batch plant and aggregate construction noise sources. ENM accounts for additional factors that influence noise propagation, including ground absorption, meteorological, and terrain effects. The model was constructed based on the same assumptions (including sound power levels and source receiver separation distances) as the original assessment.

The construction noise impact predictions presented in the original assessment are reproduced in **Table 4**. Predicted construction noise levels from the ENM construction noise model are provided for comparison.

Table 4: Comparison of aggregate construction noise impacts

Receiver Location	Construction Noise Criteria, dB(A)	Predicted Impact, dB(A)[1]	
		Existing	ENM
Industrial Units	75	63	60
Childcare Centre	75	60	55
Adelaide St.	63	55	49
High School	60	53	46
Kingston Pde	63	53	46

Note: 1. Impact associated with aggregate construction sources only, does not include noise generated by concrete batch plant. Refer to Section 4.1.3.2 for assessment of cumulative construction noise impacts.

The results of this analysis indicate the previous assessment excluded the impacts of excess attenuation factors, and may have overestimated the construction noise impacts between 3 and 7dB(A).

4.1.3.2 Cumulative Construction Noise Assessment

Noise sources associated with the operation of the concrete batch plant were included in the ENM model in order to assess cumulative impacts associated with all onsite construction noise sources. Meteorological and terrain input assumptions applied to the operational phase noise model were retained for assessment of construction noise impacts. The modelling results are provided in **Table 5**.

Table 5: Predicted cumulative construction noise levels, dB(A)

Receiver Location	Construction Noise Criteria, dB(A)	Predicted Impact[1]	
		Unmitigated	3m Barrier
Industrial Units	75	60	60
Childcare Centre	75	61	59
Adelaide St.	63	51	50
High School	60	46	46
Kingston Pde	63	46	46
Archibald Place (nth site boundary)	75	72	68

Note: 1. Predicted impact includes +5dB MF to account for potentially annoying noise characteristics.

The results presented in **Table 5** indicate cumulative construction noise impacts may approach, but would comply with the construction noise criteria at industrial receivers adjacent to the development site. The greatest impacts are expected at receivers nearest to the concrete batching operation.

Review of detailed model outputs indicates that the loading and slumping of transit mixer trucks is likely to make the greatest contribution to received noise levels at adjacent receivers. Further assessment indicates noise impact reductions may be achieved through development of operational controls to take advantage of localised barrier effects provided by structures within the batching operations area. Establishment of a dedicated transit mixer slumping area adjacent to a barrier approximately three metres in height would reduce noise impacts at the site boundary by approximately 4 dB(A). Construction noise impact contours following implementation of this control are provided in **Figure 2**.

Following this reduction, received noise levels at the site boundary would be likely dominated by the contribution from cement and other raw materials deliveries. As these are not anticipated to occur continuously throughout the day, the predicted noise level represents the worst case noise impact with all plant operating simultaneously within the batch plant area.

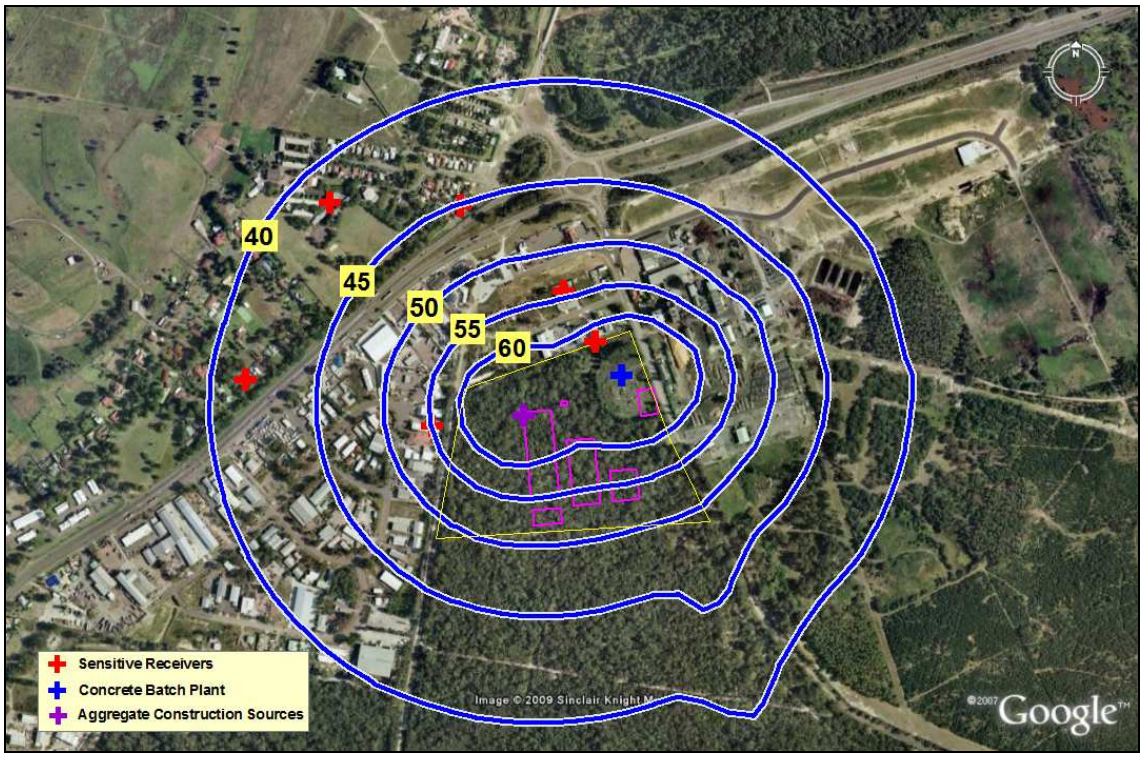


Figure 2: Impact prediction contours, construction phase

It should also be noted the reported noise impacts contain a +5dB modifying factor to account for potentially annoying noise characteristics such as tonality, dominant low frequency, or impulsive impacts. Therefore, noise levels actually received at the site boundary may be up to 5dB below the reported impact level.

The analysis presented in **Table 5** indicates that construction noise impacts will comply with the criteria established in accordance with the NSW Draft Construction Noise Guideline.

5. RECOMMENDATIONS AND CONCLUSIONS

Sandvik Mining and Construction Australia Pty Ltd propose to construct and operate a manufacturing, assembly, aftermarket service and regional distribution centre at Heatherbrae, NSW. Following review of construction requirements, Hunter Ready Mixed Conrete (on behalf of Sandvik) seeks to modify an existing project approval (10_0073) to allow the operation of a temporary on-site concrete batching plant for the construction phase of the development.

Review of the existing construction noise assessment was undertaken for the purpose of assessing cumulative construction noise impacts associated with operation of a concrete batch plant at the development site. This assessment indicates, in the context of aggregate construction noise levels, the proposed concrete batching plant would make only minor contributions to received noise levels at industrial receivers to the west of the site, and residential receivers to the west of the Pacific Highway.

Review of model outputs indicates unmitigated noise impacts may approach, but would ultimately comply with, the construction noise criteria at industrial receivers to the north of the development site. Further assessment indicates that the impact associated with batching operations may be reduced, through the establishment of localised barriers around transit mixer slumping and loading areas.

It is recommended this control should be included in a Construction Noise Management Plan (CNMP), which should also seek to implement work practices as outlined in Section 6 of the *NSW Interim Construction Noise Guideline* to actively manage noise impacts.

Assessment indicates that operation of an onsite concrete batching plant during standard work hours would not generate noise levels exceeding the construction noise criteria. It is therefore considered the proposed modification to the project approval would be consistent with the objectives of the *NSW Interim Construction Noise Guideline*.

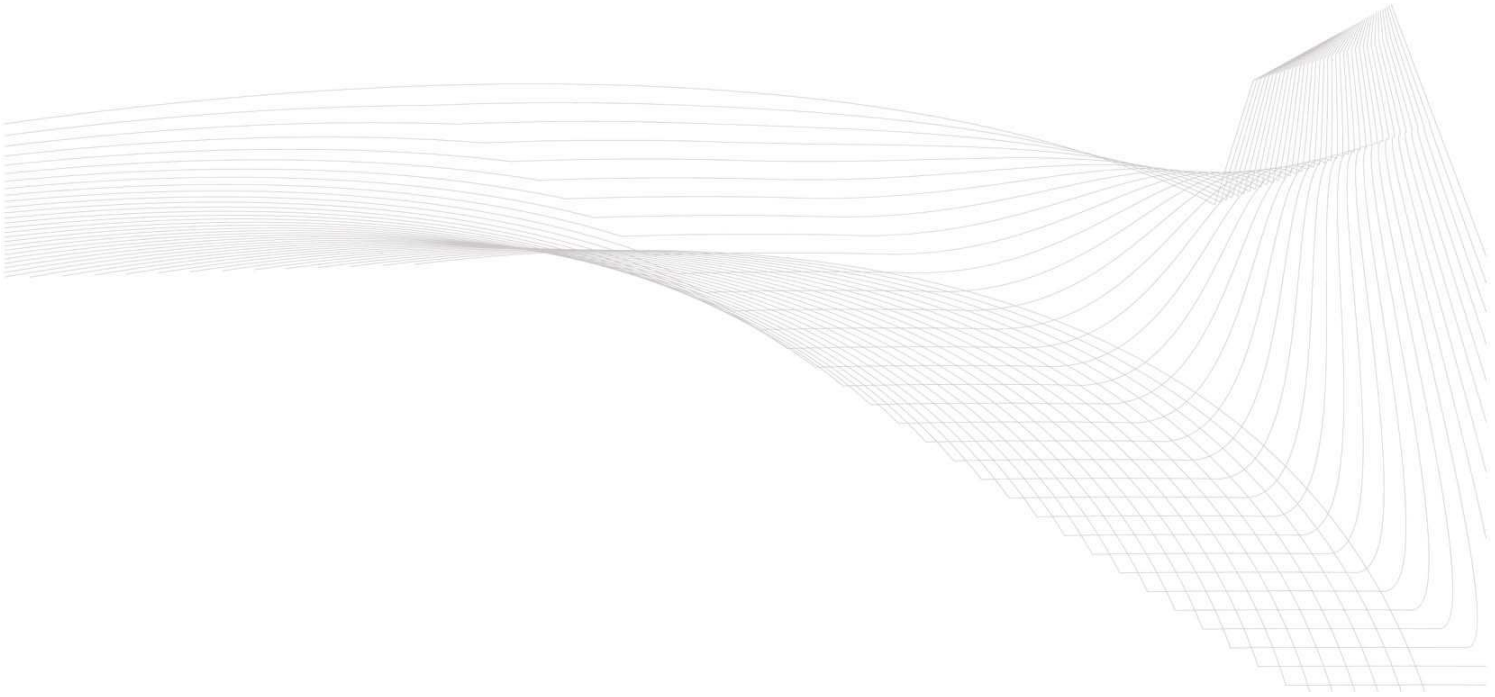
Appendix G

Construction Air Quality Assessment - Advitech

Construction Air Quality Impact Assessment

Industrial Facility Heatherbrae

Hunter Ready Mixed Concrete for Sandvik Mining and Construction Australia Pty Ltd



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Construction Air Quality Impact Assessment

Industrial Facility Heatherbrae

Hunter Ready Mixed Concrete for Sandvik Mining and Construction Australia Pty Ltd

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Meteorological Data Report

1. INTRODUCTION

Advitech Pty Limited was engaged by Hunter Ready Mixed Concrete Pty Ltd (on behalf of Sandvik Mining and Construction Australia) to prepare an assessment of potential air impacts associated with the construction of an industrial facility at Heatherbrae, NSW.

It should be noted that this report was prepared by Advitech Pty Limited for Sandvik Mining and Construction Australia Pty Ltd ("the customer") in accordance with the scope of work and specific requirements agreed between Advitech and the customer. This report was prepared with background information, terms of reference and assumptions agreed with the customer. The report is not intended for use by any other individual or organisation and as such, Advitech will not accept liability for use of the information contained in this report, other than that which was intended at the time of writing.

2. BACKGROUND AND OBJECTIVES

Advitech prepared a detailed assessment of operation stage air impacts to support the Environmental Assessment (EA) and project application for the proposed industrial facility in June 2010. Approval for the development (10_0073) was provided by NSW Department of Planning (DoP) in October 2010.

Detailed construction planning undertaken since the approval was issued indicates onsite concrete batching would be required during the construction phase of the development. The concrete batch plant would be temporary (operated only for the duration of the construction phase) and produce approximately 18,000 m^3 of pre-mixed concrete over approximately nine months. ADW Johnson Pty Ltd intend to submit an application to modify the project approval (10_0073), to allow a temporary concrete batching facility to operate on the development site as part of construction works.

This review seeks to assess potential air impacts associated with the operation of this temporary facility.

3. SITE LOCATION AND SURROUNDING LAND USES

The site is located at Lot 32, DP1014864 Masonite Road, Heatherbrae (**Figure 1**). The site has an area of 16 hectares and is zoned 4(a) Industrial pursuant to the *Port Stephens Local Environmental Plan*, 2000. The site surrounds are also zoned 4(a) Industrial.

3.1 Sensitive Receivers

A number of potential sensitive receivers were identified adjacent to the proposed development site including:

- R1 - Heatherbrae Early Learning Centre;
- R2 - industrial receivers to the west of the site;
- R3 - Hunter River High School; and
- R4 and R5 - residential receivers to the west of the Pacific Highway.

The location of sensitive receivers and the location of the concrete batch plant is shown in **Figure 1.**

Figure 1: Site Location (Concrete Batching Plant shown as Blue Square)

4. AIR QUALITY GUIDELINES

The NSW Department of Environment, Climate Change and Water (DECCW) specify impact assessment criteria in the publication *Approved Methods for the Modelling and Assessment of Air Pollutants in NSW*, 2005. The relevant sections from this publication are reproduced below in **Table 1** which presents the applicable ground level concentration (GLC) criteria for each applicable air pollutant.

Table 1: DECCW Impact Assessment Criteria

Pollutant	DECC Design Criteria	Units	Averaging Time
TSP	90	$\mu g/m^3$	Annual
PM_{10}	50	$\mu g/m^3$	24 hours
	30		Annual

5. EMISSION SOURCES

Emissions from the proposed activities within this development have been modelled to assess potential cumulative air quality impacts. Emissions of particulate dust during construction activities are of primary concern. The activities associated with the proposed operations with the potential to generate dust are:

- Concrete batching operations including:
  - Sand and aggregate transfer to elevated bins;
  - Cement unloading to elevated storage silo;
  - Weigh hopper loading;
  - Mixer loading (central mix);
  - Truck loading (truck mix); and
  - Wind erosion from sand and aggregate storage piles.
- Dumping of delivered sand and aggregate materials into batch plant storage areas; and
- Dust generated by transit mixers within the site construction area.

The relevant air impurities for the concrete batch plant and construction site pouring activities are total suspended particulates (TSP), particulate material less than ten microns in aerodynamic diameter (PM_{10}). Details of each emission source are given in **Table 2**.

Table 2: Emission Sources

Emitter Identifier	Emitter Name	Emission Factor			Vehicle Travelled (km/week)	Modelled days (Days)[1]	Modelled Working hours (hours/day)[1]	Emission Rate[3](kg/hr)	
		TSP	PM_{10}	Units				TSP	PM_{10}
CBP	Concrete Batching Plant	0.1	0.05	kg/t	n/a	274	11	2.0	1.0
DUMP	Material Unloading into storage bins	0.012	0.0043	kg/t	n/a	274	6	0.184	0.066
TV1-TV6[5,6]	Wheel Generated Dust (haulage)	1.72	0.53	kg/VKT[4]	150[2]	274	11	0.715	0.221

Notes:

1 - Days and hours of operation obtained from ADW Johnson. Operations to only occur between autumn, winter and spring. There is no operation during months of summer (December thru to February).

2 - Kilometres travelled by transit mixers estimated from average weekly volume of concrete produced and maximum vehicle travel return distance anticipated from concrete batching plant to construction site pouring location.

3 - While equipment is operational or active dumping of delivered materials into batch plant storage bins.

4 - VKT equates to vehicle kilometres travelled.

5 - Transit mixer movements are assumed to occur along a virtual unpaved roadway. The roadway is assumed to be a straight line between the furthest boundary of the construction site and the concrete batching plant.

6 - Wheel generated dust from transit mixers within the construction site was modelled as a volume source in Ausplume. Each volume source has a separation distance of less than one quarter of the distance to the nearest sensitive receiver.

Table 3 details modelled sources and the emission source release parameters that have been used in the dispersion modelling.

Table 3: Emission Source Characteristics

Source Description	Activity	Horizontal Spread (m)	Vertical Spread (m)	Height (m)	Pollutants
CBP	Concrete batching activities	1.25	1.8	4.0	TSP, PM_{10}
DUMP	Dumping of sand and aggregate materials at concrete batching plant	2.0	0.75	2.0	TSP, PM_{10}
TV1- TV6	Transit mixers	1.25	0.75	1.0	TSP, PM_{10}

6. BACKGROUND AIR QUALITY

Assessment of background air quality data has been undertaken for the airshed in the vicinity of the proposed development at Heatherbrae.

The NSW DECCW operate an air quality monitoring program that collects accurate real-time measurements of ambient level pollutants at 24 monitoring sites within the air quality monitoring network (AQMN), located around the greater metropolitan area of Sydney, the Illawarra, the Lower Hunter and selected rural sites around NSW. The monitoring location that is considered to be most representative of the Heatherbrae area is located at Beresfield approximately eight kilometres to the south west of the proposed development.

The Beresfield monitoring station commenced operation in 1998 and provides data on the following air quality parameters.

- Ozone;
- Particulates;
- NO, NO_2, NOx; and
- SO_2.

A Level 1 assessment of background concentrations has been prepared for the pollutants listed in **Table 4** for the 2003 monitoring year to correspond with the meteorological data. The maximum reported PM_{10} background concentration for the 2003 monitoring period was 87 $\mu g/m^3$, which is above the DECCW impact assessment criteria. As such, a Level 2 or contemporaneous assessment of the PM_{10} background concentration is required to understand the cumulative impact of the concrete batching plant.

Figure 2 displays the PM_{10} 24 hour average background concentrations for 2003 and indicates existing exceedences of the DECCW impact assessment criteria.

Table 4: Background Air Quality

Pollutant	Background Concentration (µg/m3)	Units	Average Time
TSP	NA	$\mu g/m^3$	Annual
PM_{10}	**Figure 2** 22	$\mu g/m^3$	24 hours Annual

[1] Reported value is the maximum result

NA - Not available

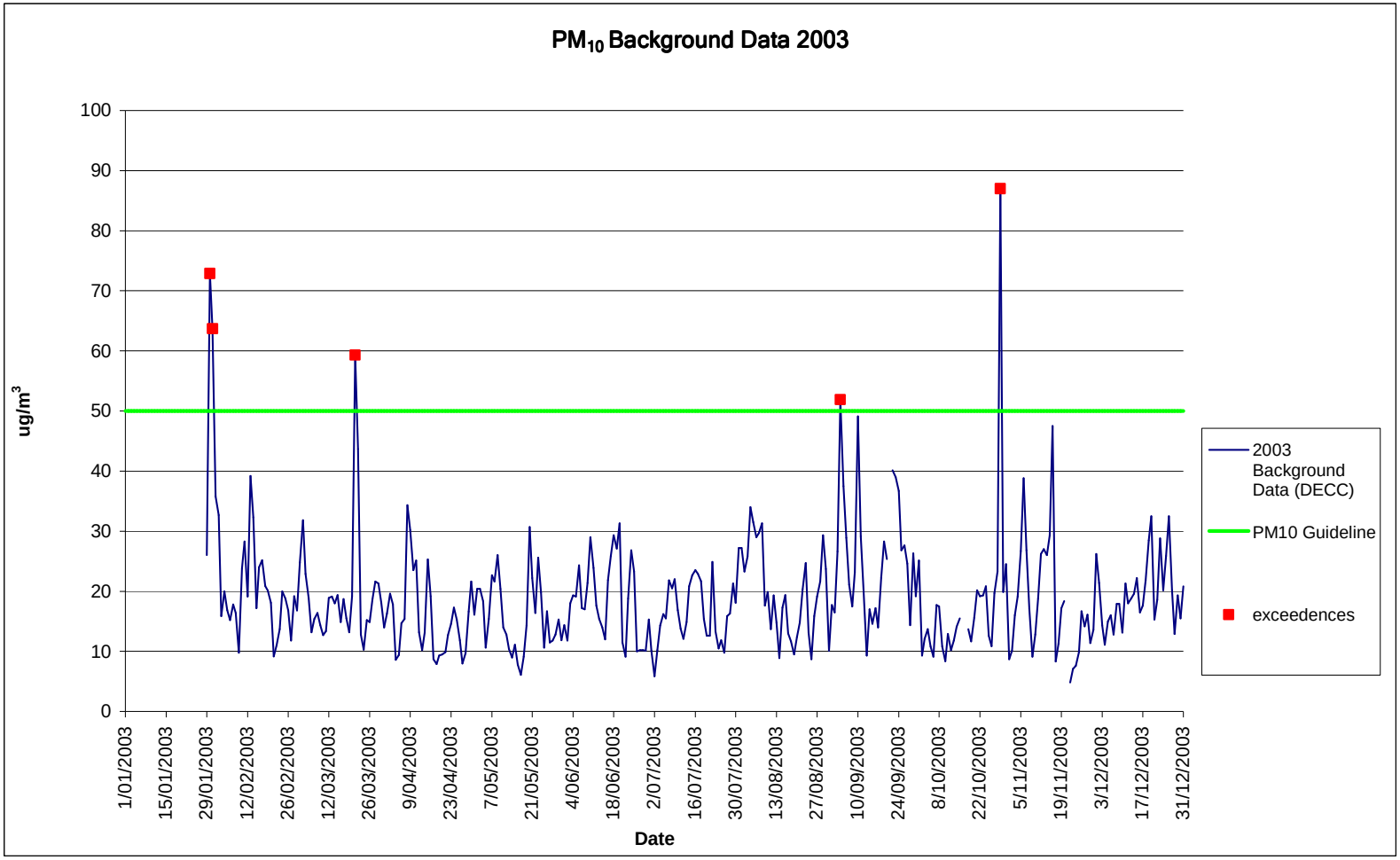


Figure 2: Background PM_{10} Concentrations (24 Hour Averaging Period)

7. GAUSSIAN DISPERSION MODELLING

Gaussian plume dispersion models such as AUSPLUME are predictive models that are used to estimate pollution from stationary sources. The use of AUSPLUME is the recommended regulatory modelling software for use in most applications in NSW.

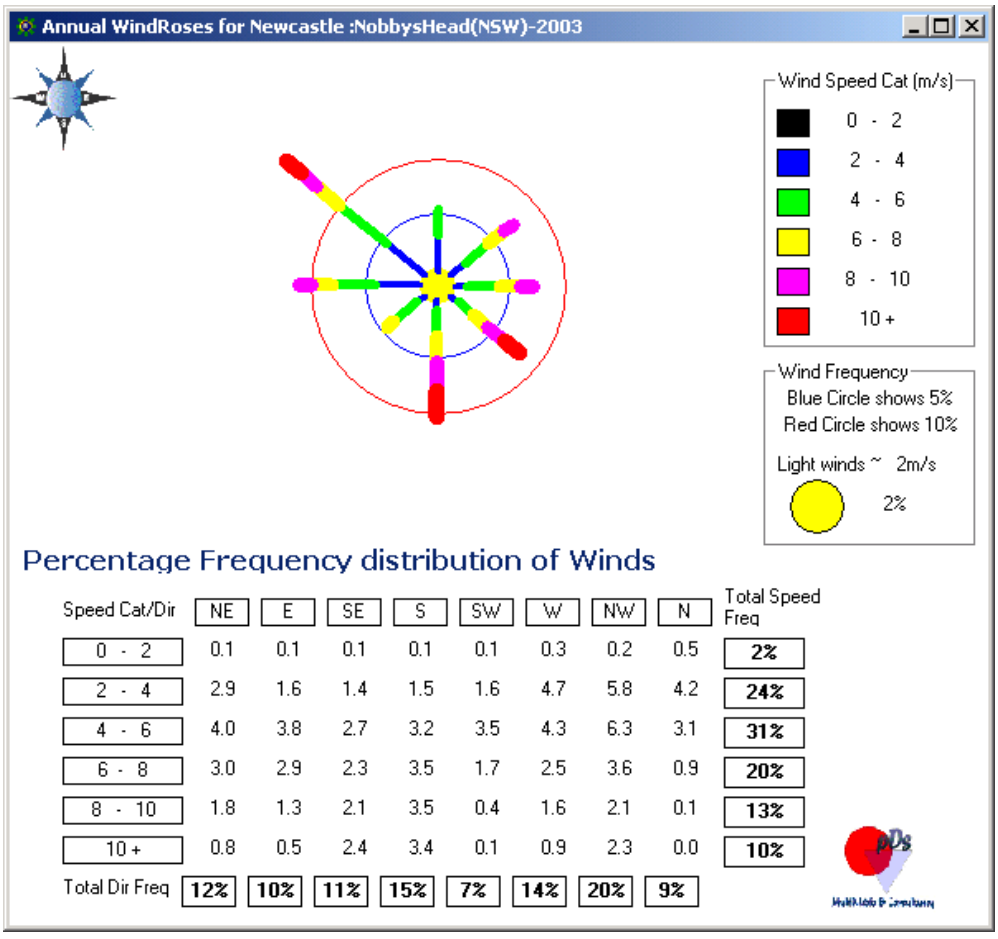
Appendix I outlines the assumptions made during the modelling. AUSPLUME output files are provided in **Appendix II**.

7.1 Meteorological Data

Meteorological data representative of the Heatherbrae site was obtained from the following sources:

- Nobby's Head AWS data Bureau of Meteorology NSW Regional Office; and
- Williamtown Airport, cloud data and vertical temperature profiles, dew point and rainfall records.

Figure 3 shows the frequency of wind direction for the 2003 calendar year supplied by the Bureau of Meteorology. The Meteorological Data Report is provided in **Appendix III**.



Speed Cat/Dir	NE	E	SE	S	SW	W	NW	N	Total Speed Freq
0 - 2	0.1	0.1	0.1	0.1	0.1	0.3	0.2	0.5	2%
2 - 4	2.9	1.6	1.4	1.5	1.6	4.7	5.8	4.2	24%
4 - 6	4.0	3.8	2.7	3.2	3.5	4.3	6.3	3.1	31%
6 - 8	3.0	2.9	2.3	3.5	1.7	2.5	3.6	0.9	20%
8 - 10	1.8	1.3	2.1	3.5	0.4	1.6	2.1	0.1	13%
10 +	0.8	0.5	2.4	3.4	0.1	0.9	2.3	0.0	10%
Total Dir Freq	12%	10%	11%	15%	7%	14%	20%	9%	

Figure 3: Annual Wind Rose, 2003

8. DISPERSION MODELLING

The following tables and figures present the predicted ground level concentrations (GLC) for construction activities at the site boundary and surrounding sensitive receivers. Background concentrations have not been included in the GLC contour figures; however, where a background concentration is available, that data is presented in the results tables.

All results have been rounded to reflect the level of accuracy inherent in air modelling and the relevant impact assessment criteria.

8.1 Particulates

Figure 4, **Table 5**, **Figure 5**, and **Table 6** shows the predicted ground level concentration contours for particulates for annual averaging periods. Concrete batching operations are only between autumn, winter and spring periods with no emissions over summer period.

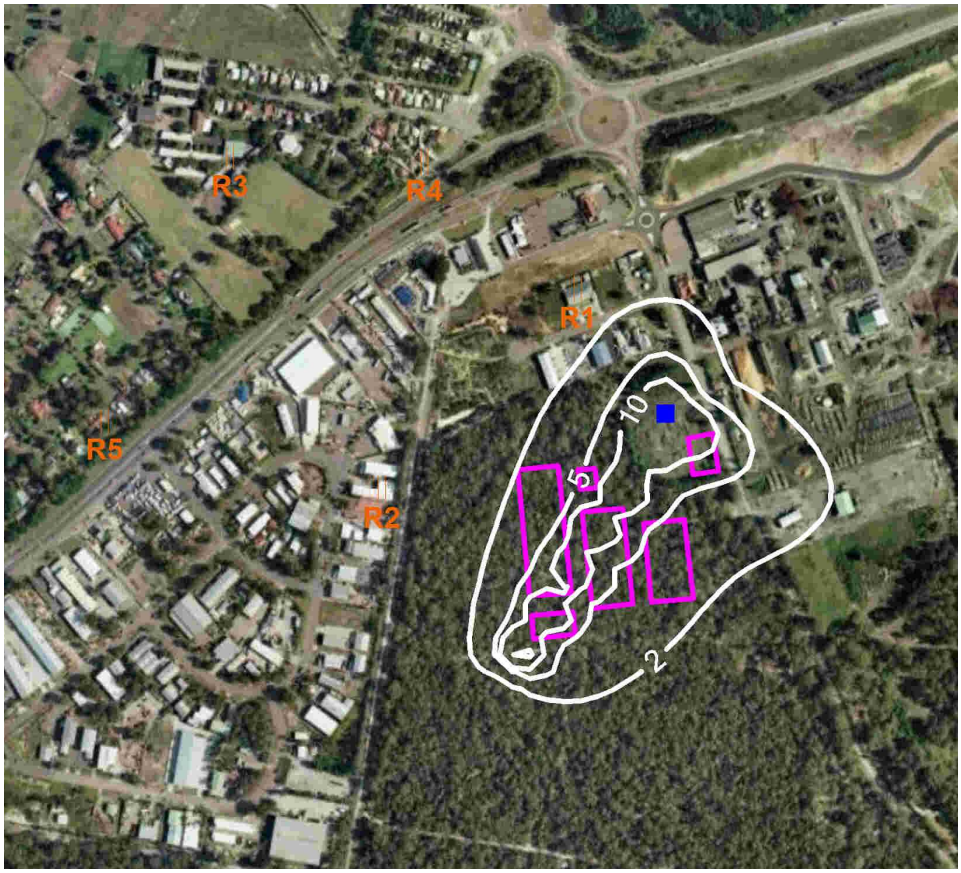


Figure 4: GLC Contours for PM_{10} (µg/m^3) Annual Averaging Period

Table 5: Annual Average PM_{10} ($\mu g/m^3$)

Receiver ID	Background Concentration	Maximum Predicted Increment ($\mu g/m^3$)	Total Predicted GLC Concentration ($\mu g/m^3$)	PM_{10} Impact Assessment Criteria ($\mu g/m^3$)
R1	22	1.19	23	30
R2		0.629	23	
R3		0.155	22	
R4		0.318	22	
R5		0.160	22	
Site Boundary[1]		6.42	28	

[1] *Reported value is the maximum predicted result*

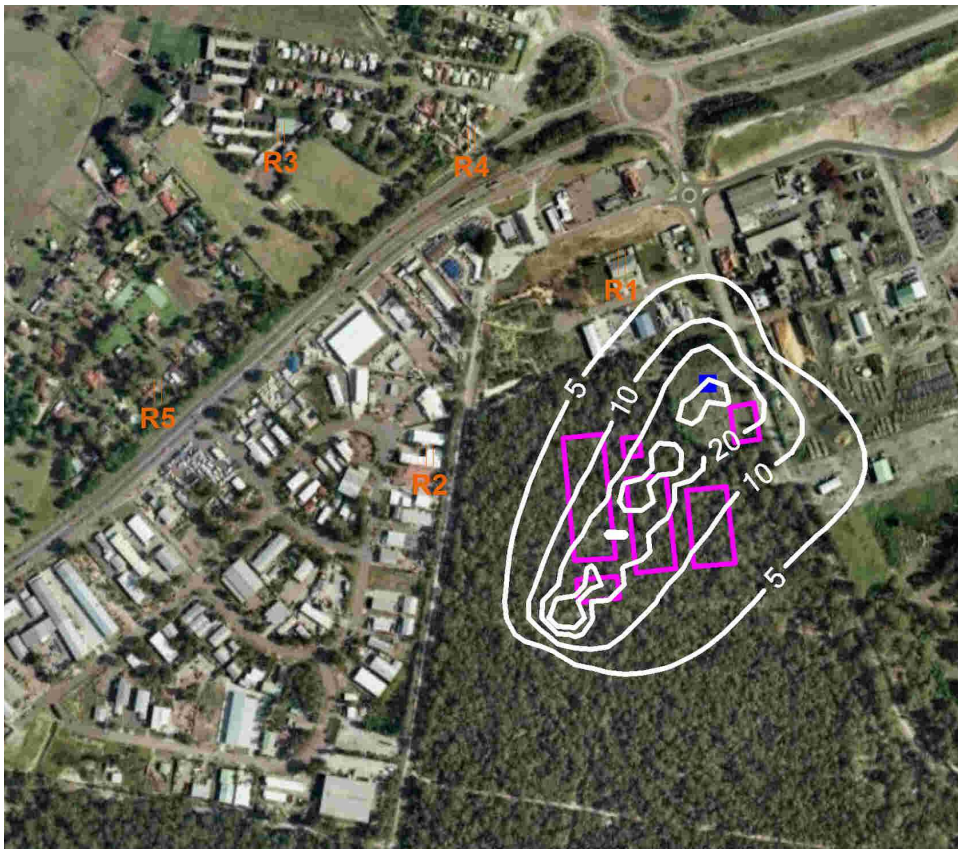


Figure 5: GLC Contours for TSP ($\mu g/m^3$) Annual Averaging Period

Table 6: Annual Average TSP (µg/m^3)

Receiver ID	Background Concentration	Maximum Predicted Increment (µg/m^3)	TSP Impact Assessment Criteria (µg/m^3)
R1	NA	3.03	90
R2		1.78	
R3		0.425	
R4		0.858	
R5		0.437	
Site Boundary[1]		15.5	

[1] *Reported value is the maximum predicted result*

The modelling results indicate that the predicted ground level concentrations for annual average PM_{10} and TSP will not exceed the impact assessment criteria of 30 µg/m^3 and 90 µg/m^3 respectively at any of the adjacent receivers.

A Level 2 contemporaneous assessment of incremental and background concentrations of PM_{10} for the 2003 monitoring period was undertaken to assess the cumulative impact of the construction period. This assessment accounts for short term variability in prevailing meteorology and ambient air quality conditions that, coupled with the constant emission rate from on-site construction activities, may generate cumulative offsite air quality impacts above that of the impact assessment criteria.

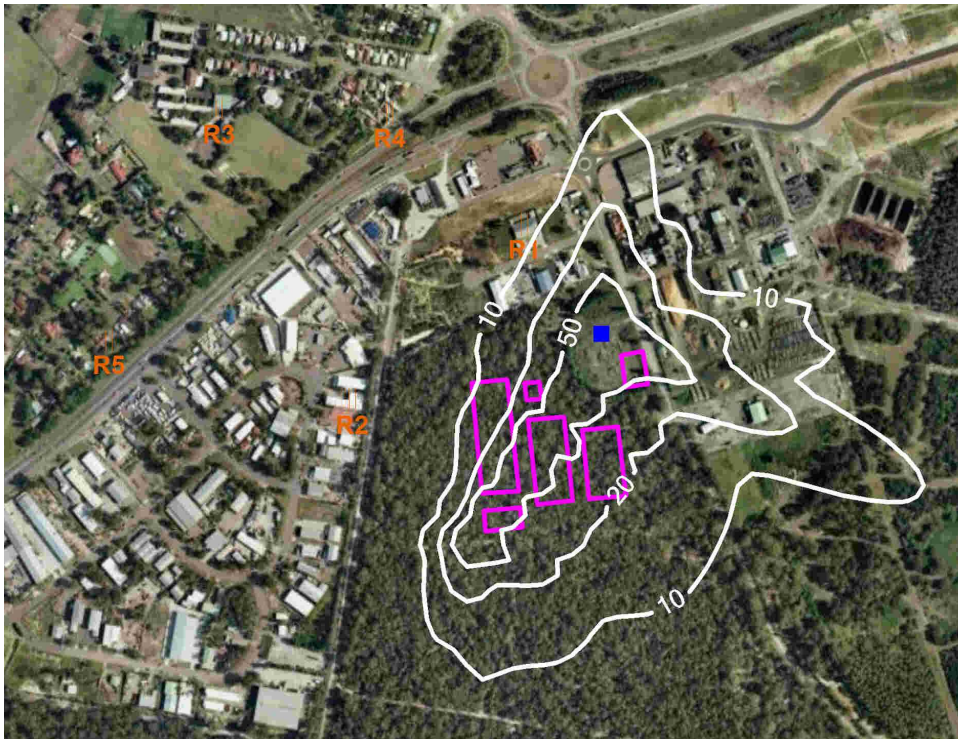


Figure 6: GLC Contours for PM_{10} (µg/m^3) 24 Hour Averaging Period

Table 7 provides an assessment of additional predicted exceedences of the 24-hour impact assessment criteria at the site boundary and surrounding receivers.

Table 7: Number of Annual Exceedences of 24-hour PM_{10} Criteria – Construction

Receiver ID	No. of Exceedences of 24-hour PM_{10} Criterion[1,2,3]
R1	1
R2	1
R3	0
R4	1
R5	0
Site Boundary[1]	5

[1] Reported value is the site boundary receptor with the greatest number of exceedences

[2] Predicted increment + corresponding background value

[3] Number of additional exceedences above that recorded in the background air quality data.

Table 7 indicates that during the construction period up to an additional one exceedence of the impact assessment criteria at surrounding receivers may occur. **Table 8** displays the predicted concentration (increment) at each receiver where exceedences are observed and the corresponding background data to provide a concentration for each receiver. The greyed rows display the maximum predicted concentration at each receiver and the corresponding background data.

Table 8: 24-hour Average PM_{10} (µg/m^3) - Construction

Receiver ID	Date	Predicted increment	Background	Increment + background	Impact assessment criteria
R1	10-9-2003	3.08	49.1	**52.2**	50
	29-5-2003	8.20	12.8	**21.0**	
R2	10-9-2003	1.26	49.1	**50.36**	
	24-10-2003	4.12	20.8	**24.92**	
R4	10-9-2003	1.18	49.1	**50.28**	
	21-4-2003	9.90	12.31	**22.2**	
Site Boundary	22-3-2003	25.4	43.7	**69.1**	
	26-3-2003	50.4	14.9	**65.3**	
	22-4-2003	42.4	12.7	**55.1**	
	7-11-2003	26.8	23.3	**50.1**	
	16-11-2003	5.04	47.5	**52.54**	
	26-3-2003	50.4	14.9	**65.3**	

Table 7 and **Table 8** indicate that exceedences at sensitive receptors above 50 µg/m^3 will only occur during the construction period when elevated background concentrations are close to 50 µg/m^3.

9. CONCLUSIONS

Sandvik Mining and Construction Australia propose to construct and operate a manufacturing, assembly, aftermarket service and regional distribution centre at Heatherbrae, NSW. Following review of construction requirements, Sandvik seeks to modify an existing project approval (10_0073) to allow the operation of a temporary on-site concrete batching plant for the construction phase of the development.

AUSPLUME air modelling has considered particulate dust emissions as being the primary air emission of significance during site construction activities. The outcomes of the air assessment indicate that off-site air impacts above the DECCW air impact criteria of 50 $\mu g/m^3$ will be restricted to industrial areas immediately adjacent to the development site. Detailed assessment indicates worst case ambient background conditions (49.1 $\mu g/m^3$) will contribute to impacts above the PM_{10} 24-hour average criteria at three sensitive receivers under specific meteorological and ambient conditions.

The AUSPLUME model does not incorporate any physical dust suppression on construction areas, concrete batching plant operation and unloading of sand and aggregate, and the results should be considered as worst-case anticipated impact. The proponent has proposed a Construction Environmental Management Plan to mitigate dust emissions which includes the use of a water cart to suppress dust generation on unpaved grounds.

Provided that Sandvik Mining and Construction Australia adopt and implement their Construction Environmental Management Plan to mitigate dust emissions, no off-site dust impacts should be expected for the duration of the construction period.

10. REFERENCES

Environment Australia, 2001. *Emission Estimation Technique Manual for Fugitive Emissions*, National Pollutant Inventory.

Environment Australia, 2001. *Emission Estimation Technique Manual for Mining*, Version 2.3. National Pollutant Inventory.

Environment Australia, 1999. *Emission Estimation Technique Manual for Concrete Batching and Concrete Product Manufacturing,* National Pollutant Inventory.

NSW Department of Environment and Conservation, 2005. *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales.*

NSW Department of Environment and Conservation, 2003. *Quarterly Air Quality Monitoring Report 2003 1-4.*

pDs Multi Media and Consulting Service, 2003. *Report on Input Meteorological Data File for Nobby's*

Perry, Robert H. & Green, Don, 1999. *Perry's Chemical Engineers Handbook*. McGraw Hill.

Appendix I

Assumptions used in Air Assessment

MODELLING BASIS AND ASSUMPTIONS

- The topography surrounding the proposed site at Heatherbrae is flat.
- Default options within the Ausplume model are used as required by the NSW DECCW.
- Sigma theta values or Pasquill-Gifford curves are used for horizontal dispersion curves.
- Pasquill-Gifford curves are used for vertical dispersion curves.
- Pasquill-Gifford formulae are adjusted for roughness height.
- The concrete batching plant and vehicle dust emissions were modelled as a constant emission between the hours of 7 am to 6 pm for a seven-day-cycle for autumn, winter and spring.
- Dumping of sand and aggregate materials delivered to the site were modelled as six evenly spaced one-hourly emissions between the hours of 7 am to 6 pm for a seven-day-cycle for autumn, winter and spring.
- Hourly weather data from Newcastle 2003 between 1 January 2003 and 31 December 2003 is used to characterise the meteorological conditions at the construction site.
- Moisture content for wheel generated dust emission factor estimation assumed to be 16 per cent for dense uniform sand (Emission Estimation Technique Manual for Fugitive Emissions (2001)).
- Silt content for wheel generated dust emission factor estimation assumed to be 11 per cent for compacted dirt (Emission Estimation Technique Manual for Fugitive Emissions (2001)).
- The proposed concrete batching plant will produce 500 m^3 (1,200 tonnes) of concrete per week over the entire construction period.
- The bulk density of sand delivered to site is 1.6 g/cm^3.
- The bulk density of 10 mm aggregate delivered to site is 1.3 g/cm^3.
- Wet deposition of PM_{10} and TSP has been selected.
- A particulate density of 2,050 kg/m^3, which is equivalent to soil (Perry, pg 2-337, Table 2-382), has been applied in particulate dispersion and deposition calculations. This is lower than the density of sand (2,200 kg/m^3) but represents a worst-cast scenario.
- Wheel generated dust from transit mixers within the construction area was modelled as a volume source in Ausplume. Each volume source was located along the straight line separating the concrete batching plant and the furthest boundary of the Sandvik construction site. Each volume source has a separation distance of less than one quarter of the distance to the nearest residential receiver. Particulate emissions were equally divided between volume sources.
- A wet scavenging rate coefficient of 6.8 $x10^{-4}$ 1/s.mm/hr has been applied in air dispersion calculations.

Appendix II

Ausplume Output Files

1

11329200 Heatherbrae PM10 Concrete Batching Plant and Operations

Concentration or deposition	Concentration
Emission rate units	kg/hour
Concentration units	microgram/m3
Units conversion factor	2.78E+05
Constant background concentration	0.00E+00
Terrain effects	None
Plume depletion due to wet removal mechanisms included.	
Smooth stability class changes?	No
Other stability class adjustments ("urban modes")	None
Ignore building wake effects?	Yes
Decay coefficient (unless overridden by met. file)	0.000
Anemometer height	10 m
Roughness height at the wind vane site	0.300 m
Averaging time for sigma-theta values	60 min.

DISPERSION CURVES

Horizontal dispersion curves for sources <100m high	Sigma-theta
Vertical dispersion curves for sources <100m high	Pasquill-Gifford
Horizontal dispersion curves for sources >100m high	Briggs Rural
Vertical dispersion curves for sources >100m high	Briggs Rural
Enhance horizontal plume spreads for buoyancy?	Yes
Enhance vertical plume spreads for buoyancy?	Yes
Adjust horizontal P-G formulae for roughness height?	Yes
Adjust vertical P-G formulae for roughness height?	Yes
Roughness height	0.800m
Adjustment for wind directional shear	None

PLUME RISE OPTIONS

Gradual plume rise?	Yes
Stack-tip downwash included?	Yes
Building downwash algorithm:	PRIME method.
Entrainment coeff. for neutral & stable lapse rates	0.60,0.60
Partial penetration of elevated inversions?	No
Disregard temp. gradients in the hourly met. file?	No

and in the absence of boundary-layer potential temperature gradients given by the hourly met. file, a value from the following table (in K/m) is used:

Wind Speed Category	Stability Class A	B	C	D	E	F
1	0.000	0.000	0.000	0.000	0.020	0.035
2	0.000	0.000	0.000	0.000	0.020	0.035
3	0.000	0.000	0.000	0.000	0.020	0.035
4	0.000	0.000	0.000	0.000	0.020	0.035
5	0.000	0.000	0.000	0.000	0.020	0.035
6	0.000	0.000	0.000	0.000	0.020	0.035

WIND SPEED CATEGORIES
Boundaries between categories (in m/s) are: 1.54, 3.09, 5.14, 8.23, 10.80

WIND PROFILE EXPONENTS: "Irwin Rural" values (unless overridden by met. file)

AVERAGING TIMES
24 hours

SOURCE CHARACTERISTICS

VOLUME SOURCE: CBP

X(m)	Y(m)	Ground Elevation	Height	Hor. spread	Vert. spread
2986	2840	0m	4m	1m	2m

Emission rates by season and hour, in kg/hour:

Summer:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4 0.00E+00
	5	0.00E+00	6	0.00E+00	7	0.00E+00	8 0.00E+00
	9	0.00E+00	10	0.00E+00	11	0.00E+00	12 0.00E+00
	13	0.00E+00	14	0.00E+00	15	0.00E+00	16 0.00E+00
	17	0.00E+00	18	0.00E+00	19	0.00E+00	20 0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24 0.00E+00
Autumn:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4 0.00E+00
	5	0.00E+00	6	0.00E+00	7	1.00E+00	8 1.00E+00
	9	1.00E+00	10	1.00E+00	11	1.00E+00	12 1.00E+00
	13	1.00E+00	14	1.00E+00	15	1.00E+00	16 1.00E+00
	17	1.00E+00	18	1.00E+00	19	0.00E+00	20 0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24 0.00E+00
Winter:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4 0.00E+00
	5	0.00E+00	6	0.00E+00	7	1.00E+00	8 1.00E+00
	9	1.00E+00	10	1.00E+00	11	1.00E+00	12 1.00E+00
	13	1.00E+00	14	1.00E+00	15	1.00E+00	16 1.00E+00
	17	1.00E+00	18	1.00E+00	19	0.00E+00	20 0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24 0.00E+00
Spring:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4 0.00E+00
	5	0.00E+00	6	0.00E+00	7	1.00E+00	8 1.00E+00
	9	1.00E+00	10	1.00E+00	11	1.00E+00	12 1.00E+00
	13	1.00E+00	14	1.00E+00	15	1.00E+00	16 1.00E+00
	17	1.00E+00	18	1.00E+00	19	0.00E+00	20 0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24 0.00E+00

Particle Mass fraction	Particle Size (micron)	Particle Density (g/cm3)	Precipitation-Scavenging Coefficients (1/(s-mm/hr)) ----Liquid	--------Ice-----
1.0000	10.0	2.05	0.00068	0.00000

VOLUME SOURCE: DUMP

X(m)	Y(m)	Ground Elevation	Height	Hor. spread	Vert. spread
3016	2810	0m	2m	2m	1m

Emission rates by season and hour, in kg/hour:

Summer:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4 0.00E+00
	5	0.00E+00	6	0.00E+00	7	0.00E+00	8 0.00E+00
	9	0.00E+00	10	0.00E+00	11	0.00E+00	12 0.00E+00
	13	0.00E+00	14	0.00E+00	15	0.00E+00	16 0.00E+00
	17	0.00E+00	18	0.00E+00	19	0.00E+00	20 0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24 0.00E+00
Autumn:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4 0.00E+00
	5	0.00E+00	6	0.00E+00	7	6.58E-02	8 0.00E+00
	9	6.58E-02	10	0.00E+00	11	6.58E-02	12 0.00E+00
	13	6.58E-02	14	0.00E+00	15	6.58E-02	16 0.00E+00
	17	6.58E-02	18	0.00E+00	19	0.00E+00	20 0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24 0.00E+00
Winter:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4 0.00E+00
	5	0.00E+00	6	0.00E+00	7	6.58E-02	8 0.00E+00
	9	6.58E-02	10	0.00E+00	11	6.58E-02	12 0.00E+00
	13	6.58E-02	14	0.00E+00	15	6.58E-02	16 0.00E+00

	17	6.58E-02	18	0.00E+00	19	0.00E+00	20	0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24	0.00E+00
Spring:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4	0.00E+00
	5	0.00E+00	6	0.00E+00	7	6.58E-02	8	0.00E+00
	9	6.58E-02	10	0.00E+00	11	6.58E-02	12	0.00E+00
	13	6.58E-02	14	0.00E+00	15	6.58E-02	16	0.00E+00
	17	6.58E-02	18	0.00E+00	19	0.00E+00	20	0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24	0.00E+00

Particle Mass fraction	Particle Size (micron)	Particle Density (g/cm3)	Precipitation-Scavenging Coefficients (1/(s-mm/hr)) ----Liquid	--------Ice-----
1.0000	10.0	2.05	0.00068	0.00000

VOLUME SOURCE: TV1

X(m)	Y(m)	Ground Elevation	Height	Hor. spread	Vert. spread
2789	2526	0m	1m	1m	1m

Emission rates by season and hour, in kg/hour:

Summer:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4	0.00E+00
	5	0.00E+00	6	0.00E+00	7	0.00E+00	8	0.00E+00
	9	0.00E+00	10	0.00E+00	11	0.00E+00	12	0.00E+00
	13	0.00E+00	14	0.00E+00	15	0.00E+00	16	0.00E+00
	17	0.00E+00	18	0.00E+00	19	0.00E+00	20	0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24	0.00E+00
Autumn:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4	0.00E+00
	5	0.00E+00	6	0.00E+00	7	2.21E-01	8	2.21E-01
	9	2.21E-01	10	2.21E-01	11	2.21E-01	12	2.21E-01
	13	2.21E-01	14	2.21E-01	15	2.21E-01	16	2.21E-01
	17	2.21E-01	18	2.21E-01	19	0.00E+00	20	0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24	0.00E+00
Winter:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4	0.00E+00
	5	0.00E+00	6	0.00E+00	7	2.21E-01	8	2.21E-01
	9	2.21E-01	10	2.21E-01	11	2.21E-01	12	2.21E-01
	13	2.21E-01	14	2.21E-01	15	2.21E-01	16	2.21E-01
	17	2.21E-01	18	2.21E-01	19	0.00E+00	20	0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24	0.00E+00
Spring:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4	0.00E+00
	5	0.00E+00	6	0.00E+00	7	2.21E-01	8	2.21E-01
	9	2.21E-01	10	2.21E-01	11	2.21E-01	12	2.21E-01
	13	2.21E-01	14	2.21E-01	15	2.21E-01	16	2.21E-01
	17	2.21E-01	18	2.21E-01	19	0.00E+00	20	0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24	0.00E+00

Particle Mass fraction	Particle Size (micron)	Particle Density (g/cm3)	Precipitation-Scavenging Coefficients (1/(s-mm/hr)) ----Liquid	--------Ice-----
1.0000	10.0	2.05	0.00068	0.00000

VOLUME SOURCE: TV2

X(m)	Y(m)	Ground Elevation	Height	Hor. spread	Vert. spread
2823	2580	0m	1m	1m	1m

Emission rates by season and hour, in kg/hour:

Summer:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4	0.00E+00
	5	0.00E+00	6	0.00E+00	7	0.00E+00	8	0.00E+00
	9	0.00E+00	10	0.00E+00	11	0.00E+00	12	0.00E+00
	13	0.00E+00	14	0.00E+00	15	0.00E+00	16	0.00E+00
	17	0.00E+00	18	0.00E+00	19	0.00E+00	20	0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24	0.00E+00

Autumn:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4	0.00E+00
	5	0.00E+00	6	0.00E+00	7	2.21E-01	8	2.21E-01
	9	2.21E-01	10	2.21E-01	11	2.21E-01	12	2.21E-01
	13	2.21E-01	14	2.21E-01	15	2.21E-01	16	2.21E-01
	17	2.21E-01	18	2.21E-01	19	0.00E+00	20	0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24	0.00E+00
Winter:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4	0.00E+00
	5	0.00E+00	6	0.00E+00	7	2.21E-01	8	2.21E-01
	9	2.21E-01	10	2.21E-01	11	2.21E-01	12	2.21E-01
	13	2.21E-01	14	2.21E-01	15	2.21E-01	16	2.21E-01
	17	2.21E-01	18	2.21E-01	19	0.00E+00	20	0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24	0.00E+00
Spring:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4	0.00E+00
	5	0.00E+00	6	0.00E+00	7	2.21E-01	8	2.21E-01
	9	2.21E-01	10	2.21E-01	11	2.21E-01	12	2.21E-01
	13	2.21E-01	14	2.21E-01	15	2.21E-01	16	2.21E-01
	17	2.21E-01	18	2.21E-01	19	0.00E+00	20	0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24	0.00E+00

Particle Mass fraction	Particle Size (micron)	Particle Density (g/cm3)	Precipitation-Scavenging Coefficients (1/(s-mm/hr)) ----Liquid	--------Ice-----
1.0000	10.0	2.05	0.00068	0.00000

VOLUME SOURCE: TV3

X(m)	Y(m)	Ground Elevation	Height	Hor. spread	Vert. spread
2857	2634	0m	1m	1m	1m

Emission rates by season and hour, in kg/hour:

Summer:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4	0.00E+00
	5	0.00E+00	6	0.00E+00	7	0.00E+00	8	0.00E+00
	9	0.00E+00	10	0.00E+00	11	0.00E+00	12	0.00E+00
	13	0.00E+00	14	0.00E+00	15	0.00E+00	16	0.00E+00
	17	0.00E+00	18	0.00E+00	19	0.00E+00	20	0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24	0.00E+00
Autumn:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4	0.00E+00
	5	0.00E+00	6	0.00E+00	7	2.21E-01	8	2.21E-01
	9	2.21E-01	10	2.21E-01	11	2.21E-01	12	2.21E-01
	13	2.21E-01	14	2.21E-01	15	2.21E-01	16	2.21E-01
	17	2.21E-01	18	2.21E-01	19	0.00E+00	20	0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24	0.00E+00
Winter:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4	0.00E+00
	5	0.00E+00	6	0.00E+00	7	2.21E-01	8	2.21E-01
	9	2.21E-01	10	2.21E-01	11	2.21E-01	12	2.21E-01
	13	2.21E-01	14	2.21E-01	15	2.21E-01	16	2.21E-01
	17	2.21E-01	18	2.21E-01	19	0.00E+00	20	0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24	0.00E+00
Spring:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4	0.00E+00
	5	0.00E+00	6	0.00E+00	7	2.21E-01	8	2.21E-01
	9	2.21E-01	10	2.21E-01	11	2.21E-01	12	2.21E-01
	13	2.21E-01	14	2.21E-01	15	2.21E-01	16	2.21E-01
	17	2.21E-01	18	2.21E-01	19	0.00E+00	20	0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24	0.00E+00

Particle Mass fraction	Particle Size (micron)	Particle Density (g/cm3)	Precipitation-Scavenging Coefficients (1/(s-mm/hr)) ----Liquid	--------Ice-----
1.0000	10.0	2.05	0.00068	0.00000

VOLUME SOURCE: TV4

X(m)	Y(m)	Ground Elevation	Height	Hor. spread	Vert. spread

X(m)	Y(m)	Ground Elevation	Height	Hor. spread	Vert. spread
2891	2688	0m	1m	1m	1m

Emission rates by season and hour, in kg/hour:

Summer:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4 0.00E+00
	5	0.00E+00	6	0.00E+00	7	0.00E+00	8 0.00E+00
	9	0.00E+00	10	0.00E+00	11	0.00E+00	12 0.00E+00
	13	0.00E+00	14	0.00E+00	15	0.00E+00	16 0.00E+00
	17	0.00E+00	18	0.00E+00	19	0.00E+00	20 0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24 0.00E+00
Autumn:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4 0.00E+00
	5	0.00E+00	6	0.00E+00	7	2.21E-01	8 2.21E-01
	9	2.21E-01	10	2.21E-01	11	2.21E-01	12 2.21E-01
	13	2.21E-01	14	2.21E-01	15	2.21E-01	16 2.21E-01
	17	2.21E-01	18	2.21E-01	19	0.00E+00	20 0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24 0.00E+00
Winter:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4 0.00E+00
	5	0.00E+00	6	0.00E+00	7	2.21E-01	8 2.21E-01
	9	2.21E-01	10	2.21E-01	11	2.21E-01	12 2.21E-01
	13	2.21E-01	14	2.21E-01	15	2.21E-01	16 2.21E-01
	17	2.21E-01	18	2.21E-01	19	0.00E+00	20 0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24 0.00E+00
Spring:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4 0.00E+00
	5	0.00E+00	6	0.00E+00	7	2.21E-01	8 2.21E-01
	9	2.21E-01	10	2.21E-01	11	2.21E-01	12 2.21E-01
	13	2.21E-01	14	2.21E-01	15	2.21E-01	16 2.21E-01
	17	2.21E-01	18	2.21E-01	19	0.00E+00	20 0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24 0.00E+00

Particle Mass fraction	Particle Size (micron)	Particle Density (g/cm3)	Precipitation-Scavenging Coefficients (1/(s-mm/hr)) ----Liquid	--------Ice-----
1.0000	10.0	2.05	0.00068	0.00000

VOLUME SOURCE: TV5

X(m)	Y(m)	Ground Elevation	Height	Hor. spread	Vert. spread
2925	2742	0m	1m	1m	1m

Emission rates by season and hour, in kg/hour:

Summer:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4 0.00E+00
	5	0.00E+00	6	0.00E+00	7	0.00E+00	8 0.00E+00
	9	0.00E+00	10	0.00E+00	11	0.00E+00	12 0.00E+00
	13	0.00E+00	14	0.00E+00	15	0.00E+00	16 0.00E+00
	17	0.00E+00	18	0.00E+00	19	0.00E+00	20 0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24 0.00E+00
Autumn:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4 0.00E+00
	5	0.00E+00	6	0.00E+00	7	2.21E-01	8 2.21E-01
	9	2.21E-01	10	2.21E-01	11	2.21E-01	12 2.21E-01
	13	2.21E-01	14	2.21E-01	15	2.21E-01	16 2.21E-01
	17	2.21E-01	18	2.21E-01	19	0.00E+00	20 0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24 0.00E+00
Winter:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4 0.00E+00
	5	0.00E+00	6	0.00E+00	7	2.21E-01	8 2.21E-01
	9	2.21E-01	10	2.21E-01	11	2.21E-01	12 2.21E-01
	13	2.21E-01	14	2.21E-01	15	2.21E-01	16 2.21E-01
	17	2.21E-01	18	2.21E-01	19	0.00E+00	20 0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24 0.00E+00
Spring:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4 0.00E+00
	5	0.00E+00	6	0.00E+00	7	2.21E-01	8 2.21E-01
	9	2.21E-01	10	2.21E-01	11	2.21E-01	12 2.21E-01
	13	2.21E-01	14	2.21E-01	15	2.21E-01	16 2.21E-01
	17	2.21E-01	18	2.21E-01	19	0.00E+00	20 0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24 0.00E+00

Particle Mass fraction	Particle Size (micron)	Particle Density (g/cm3)	Precipitation-Scavenging Coefficients (1/(s-mm/hr)) ----Liquid	--------Ice-----
1.0000	10.0	2.05	0.00068	0.00000

VOLUME SOURCE: TV6

X(m)	Y(m)	Ground Elevation	Height	Hor. spread	Vert. spread
2959	2796	0m	1m	1m	1m

Emission rates by season and hour, in kg/hour:

Summer:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4 0.00E+00
	5	0.00E+00	6	0.00E+00	7	0.00E+00	8 0.00E+00
	9	0.00E+00	10	0.00E+00	11	0.00E+00	12 0.00E+00
	13	0.00E+00	14	0.00E+00	15	0.00E+00	16 0.00E+00
	17	0.00E+00	18	0.00E+00	19	0.00E+00	20 0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24 0.00E+00
Autumn:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4 0.00E+00
	5	0.00E+00	6	0.00E+00	7	2.21E-01	8 2.21E-01
	9	2.21E-01	10	2.21E-01	11	2.21E-01	12 2.21E-01
	13	2.21E-01	14	2.21E-01	15	2.21E-01	16 2.21E-01
	17	2.21E-01	18	2.21E-01	19	0.00E+00	20 0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24 0.00E+00
Winter:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4 0.00E+00
	5	0.00E+00	6	0.00E+00	7	2.21E-01	8 2.21E-01
	9	2.21E-01	10	2.21E-01	11	2.21E-01	12 2.21E-01
	13	2.21E-01	14	2.21E-01	15	2.21E-01	16 2.21E-01
	17	2.21E-01	18	2.21E-01	19	0.00E+00	20 0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24 0.00E+00
Spring:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4 0.00E+00
	5	0.00E+00	6	0.00E+00	7	2.21E-01	8 2.21E-01
	9	2.21E-01	10	2.21E-01	11	2.21E-01	12 2.21E-01
	13	2.21E-01	14	2.21E-01	15	2.21E-01	16 2.21E-01
	17	2.21E-01	18	2.21E-01	19	0.00E+00	20 0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24 0.00E+00

Particle Mass fraction	Particle Size (micron)	Particle Density (g/cm3)	Precipitation-Scavenging Coefficients (1/(s-mm/hr)) ----Liquid	--------Ice-----
1.0000	10.0	2.05	0.00068	0.00000

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11329200 Heatherbrae PM10 Concrete Batching Plant and Operations

RECEPTOR LOCATIONS

The Cartesian receptor grid has the following x-values (or eastings):

1760.m	1783.m	1805.m	1828.m	1850.m	1873.m	1895.m
1917.m	1940.m	1963.m	1985.m	2008.m	2030.m	2053.m
2075.m	2098.m	2120.m	2143.m	2165.m	2187.m	2210.m
2233.m	2255.m	2278.m	2300.m	2323.m	2345.m	2368.m
2390.m	2413.m	2435.m	2458.m	2480.m	2503.m	2525.m
2547.m	2570.m	2593.m	2615.m	2638.m	2660.m	2683.m
2705.m	2727.m	2750.m	2772.m	2795.m	2817.m	2840.m
2863.m	2885.m	2907.m	2930.m	2953.m	2975.m	2998.m
3020.m	3043.m	3065.m	3088.m	3110.m	3133.m	3155.m
3178.m	3200.m	3223.m	3245.m	3268.m	3290.m	3313.m
3335.m	3357.m	3380.m	3403.m	3425.m	3448.m	3470.m
3493.m	3515.m	3538.m	3560.m	3583.m	3605.m	3628.m

3650.m	3673.m	3695.m	3717.m	3740.m	3763.m	3785.m
3808.m	3830.m	3853.m	3875.m	3898.m	3920.m	3942.m
3965.m	3988.m	4010.m				

and these y-values (or northings):

2090.m	2113.m	2136.m	2159.m	2182.m	2205.m	2228.m
2251.m	2274.m	2297.m	2320.m	2343.m	2366.m	2389.m
2412.m	2435.m	2458.m	2481.m	2504.m	2527.m	2550.m
2573.m	2596.m	2619.m	2642.m	2665.m	2688.m	2711.m
2734.m	2757.m	2780.m	2803.m	2826.m	2849.m	2872.m
2895.m	2918.m	2941.m	2964.m	2987.m	3010.m	3033.m
3056.m	3079.m	3102.m	3125.m	3148.m	3171.m	3194.m
3217.m	3240.m	3263.m	3286.m	3309.m	3332.m	3355.m
3378.m	3401.m	3424.m	3447.m	3470.m	3493.m	3516.m
3539.m	3562.m					

DISCRETE RECEPTOR LOCATIONS (in metres)

No.	X	Y	ELEVN	HEIGHT	No.	X	Y	ELEVN	HEIGHT
1	2869	3006	0.0	0.0	12	2926	2902	0.0	0.0
2	2609	2741	0.0	0.0	13	3002	2927	0.0	0.0
3	2406	3181	0.0	0.0	14	3034	2854	0.0	0.0
4	2665	3174	0.0	0.0	15	3066	2772	0.0	0.0
5	2240	2831	0.0	0.0	16	3093	2713	0.0	0.0
6	2619	2511	0.0	0.0	17	3132	2628	0.0	0.0
7	2634	2616	0.0	0.0	18	3169	2548	0.0	0.0
8	2649	2710	0.0	0.0	19	3096	2540	0.0	0.0
9	2661	2799	0.0	0.0	20	2985	2539	0.0	0.0
10	2746	2831	0.0	0.0	21	2869	2530	0.0	0.0
11	2840	2868	0.0	0.0	22	2732	2513	0.0	0.0

METEOROLOGICAL DATA : BoM AWS Data BoM Williamtown Clouds Williamtown Uair

24_HOUR AVERAGES FOR THE PERIOD ENDING WITH HOUR No.24 of 3/ 1/ 3

[each hour of yearly data not shown to save space. Please request if required]

1 Peak values for the 100 worst cases (in microgram/m3)
Averaging time = 24 hours

Rank	Value	Time Recorded hour,date	Coordinates (* denotes polar)		
1	3.28E+02	24,09/07/03	(2795,	2527,	0.0)
2	3.23E+02	24,24/10/03	(2885,	2688,	0.0)
3	3.22E+02	24,15/03/03	(2795,	2527,	0.0)
4	3.07E+02	24,07/03/03	(2885,	2688,	0.0)
5	2.86E+02	24,19/05/03	(2840,	2573,	0.0)
6	2.79E+02	24,12/03/03	(2885,	2688,	0.0)
7	2.68E+02	24,17/10/03	(2885,	2688,	0.0)
8	2.68E+02	24,23/10/03	(2885,	2688,	0.0)
9	2.66E+02	24,27/07/03	(2795,	2527,	0.0)
10	2.66E+02	24,23/06/03	(2795,	2527,	0.0)
11	2.63E+02	24,10/11/03	(2818,	2573,	0.0)
12	2.48E+02	24,06/10/03	(2795,	2527,	0.0)
13	2.39E+02	24,27/06/03	(2795,	2527,	0.0)
14	2.35E+02	24,08/05/03	(2930,	2734,	0.0)
15	2.31E+02	24,21/08/03	(2795,	2527,	0.0)
16	2.24E+02	24,16/03/03	(2885,	2688,	0.0)
17	2.23E+02	24,16/06/03	(2795,	2527,	0.0)
18	2.22E+02	24,23/08/03	(2930,	2734,	0.0)
19	2.17E+02	24,02/06/03	(2930,	2734,	0.0)
20	2.15E+02	24,25/04/03	(2885,	2688,	0.0)
21	2.14E+02	24,11/08/03	(2930,	2734,	0.0)

22	2.10E+02	24,13/04/03	(2818,	2573,	0.0)
23	2.09E+02	24,17/05/03	(2795,	2527,	0.0)
24	2.09E+02	24,25/03/03	(2795,	2527,	0.0)
25	2.08E+02	24,01/07/03	(2795,	2527,	0.0)
26	2.02E+02	24,12/07/03	(2930,	2734,	0.0)
27	1.99E+02	24,28/03/03	(2885,	2688,	0.0)
28	1.98E+02	24,08/03/03	(2795,	2527,	0.0)
29	1.94E+02	24,20/06/03	(2885,	2688,	0.0)
30	1.94E+02	24,19/07/03	(2863,	2642,	0.0)
31	1.93E+02	24,10/07/03	(2885,	2688,	0.0)
32	1.91E+02	24,28/04/03	(2795,	2527,	0.0)
33	1.91E+02	24,01/05/03	(2795,	2527,	0.0)
34	1.86E+02	24,27/10/03	(2885,	2688,	0.0)
35	1.83E+02	24,03/07/03	(2863,	2642,	0.0)
36	1.82E+02	24,17/03/03	(2885,	2688,	0.0)
37	1.81E+02	24,07/08/03	(2885,	2688,	0.0)
38	1.81E+02	24,24/06/03	(2885,	2688,	0.0)
39	1.79E+02	24,13/03/03	(2885,	2688,	0.0)
40	1.79E+02	24,26/08/03	(2795,	2527,	0.0)
41	1.78E+02	24,11/05/03	(2795,	2527,	0.0)
42	1.78E+02	24,06/08/03	(2795,	2527,	0.0)
43	1.78E+02	24,13/11/03	(2885,	2688,	0.0)
44	1.77E+02	24,13/09/03	(2795,	2527,	0.0)
45	1.76E+02	24,18/06/03	(2795,	2527,	0.0)
46	1.76E+02	24,20/08/03	(2863,	2642,	0.0)
47	1.76E+02	24,17/07/03	(2795,	2527,	0.0)
48	1.74E+02	24,27/09/03	(2795,	2527,	0.0)
49	1.74E+02	24,16/08/03	(2885,	2688,	0.0)
50	1.72E+02	24,24/05/03	(2795,	2527,	0.0)
51	1.71E+02	24,07/05/03	(2885,	2688,	0.0)
52	1.70E+02	24,22/04/03	(2795,	2527,	0.0)
53	1.69E+02	24,30/08/03	(2930,	2734,	0.0)
54	1.67E+02	24,01/04/03	(2885,	2688,	0.0)
55	1.67E+02	24,15/06/03	(2795,	2527,	0.0)
56	1.67E+02	24,12/06/03	(2930,	2734,	0.0)
57	1.66E+02	24,13/05/03	(2885,	2688,	0.0)
58	1.66E+02	24,11/07/03	(2818,	2573,	0.0)
59	1.66E+02	24,30/05/03	(2930,	2734,	0.0)
60	1.65E+02	24,08/07/03	(2795,	2527,	0.0)
61	1.65E+02	24,01/10/03	(2930,	2734,	0.0)
62	1.64E+02	24,31/10/03	(2930,	2734,	0.0)
63	1.63E+02	24,13/06/03	(2930,	2734,	0.0)
64	1.63E+02	24,22/07/03	(2930,	2734,	0.0)
65	1.61E+02	24,11/06/03	(2930,	2734,	0.0)
66	1.60E+02	24,13/07/03	(2795,	2527,	0.0)
67	1.58E+02	24,14/04/03	(2885,	2688,	0.0)
68	1.58E+02	24,26/04/03	(2885,	2688,	0.0)
69	1.57E+02	24,08/11/03	(2885,	2688,	0.0)
70	1.57E+02	24,13/08/03	(2930,	2734,	0.0)
71	1.56E+02	24,29/06/03	(2795,	2527,	0.0)
72	1.56E+02	24,18/03/03	(2930,	2734,	0.0)
73	1.56E+02	24,25/05/03	(2795,	2527,	0.0)
74	1.56E+02	24,08/08/03	(2885,	2688,	0.0)
75	1.56E+02	24,14/10/03	(2885,	2688,	0.0)
76	1.54E+02	24,21/05/03	(2795,	2527,	0.0)
77	1.54E+02	24,01/11/03	(2795,	2527,	0.0)
78	1.53E+02	24,21/07/03	(2818,	2573,	0.0)
79	1.52E+02	24,15/07/03	(2930,	2734,	0.0)
80	1.52E+02	24,21/04/03	(2953,	2803,	0.0)
81	1.51E+02	24,26/07/03	(2795,	2527,	0.0)
82	1.51E+02	24,30/10/03	(2795,	2527,	0.0)
83	1.51E+02	24,14/05/03	(2818,	2573,	0.0)
84	1.51E+02	24,09/11/03	(2885,	2688,	0.0)
85	1.50E+02	24,28/10/03	(2885,	2688,	0.0)
86	1.50E+02	24,04/06/03	(2930,	2734,	0.0)
87	1.49E+02	24,28/11/03	(2885,	2688,	0.0)
88	1.48E+02	24,25/06/03	(2795,	2527,	0.0)
89	1.48E+02	24,14/11/03	(2885,	2688,	0.0)

90	1.47E+02	24,23/04/03	(2863,	2642,	0.0)
91	1.46E+02	24,28/05/03	(2885,	2688,	0.0)
92	1.45E+02	24,22/08/03	(2930,	2734,	0.0)
93	1.44E+02	24,18/07/03	(2863,	2642,	0.0)
94	1.43E+02	24,14/08/03	(2795,	2527,	0.0)
95	1.43E+02	24,04/03/03	(2818,	2573,	0.0)
96	1.42E+02	24,26/03/03	(2863,	2642,	0.0)
97	1.42E+02	24,29/11/03	(2885,	2688,	0.0)
98	1.42E+02	24,17/08/03	(2930,	2734,	0.0)
99	1.41E+02	24,14/06/03	(2795,	2527,	0.0)
100	1.41E+02	24,10/10/03	(2795,	2527,	0.0)

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11329200 Heatherbrae PM10 Concrete Batching Plant and Operations

Concentration or deposition	Concentration
Emission rate units	kg/hour
Concentration units	microgram/m3
Units conversion factor	2.78E+05
Constant background concentration	0.00E+00
Terrain effects	None
Plume depletion due to wet removal mechanisms included.	
Smooth stability class changes?	No
Other stability class adjustments ("urban modes")	None
Ignore building wake effects?	Yes
Decay coefficient (unless overridden by met. file)	0.000
Anemometer height	10 m
Roughness height at the wind vane site	0.300 m
Averaging time for sigma-theta values	60 min.

DISPERSION CURVES

Horizontal dispersion curves for sources <100m high	Sigma-theta
Vertical dispersion curves for sources <100m high	Pasquill-Gifford
Horizontal dispersion curves for sources >100m high	Briggs Rural
Vertical dispersion curves for sources >100m high	Briggs Rural
Enhance horizontal plume spreads for buoyancy?	Yes
Enhance vertical plume spreads for buoyancy?	Yes
Adjust horizontal P-G formulae for roughness height?	Yes
Adjust vertical P-G formulae for roughness height?	Yes
Roughness height	0.800m
Adjustment for wind directional shear	None

PLUME RISE OPTIONS

Gradual plume rise?	Yes
Stack-tip downwash included?	Yes
Building downwash algorithm:	PRIME method.
Entrainment coeff. for neutral & stable lapse rates	0.60,0.60
Partial penetration of elevated inversions?	No
Disregard temp. gradients in the hourly met. file?	No

and in the absence of boundary-layer potential temperature gradients given by the hourly met. file, a value from the following table (in K/m) is used:

Wind Speed Category	Stability Class A	B	C	D	E	F
1	0.000	0.000	0.000	0.000	0.020	0.035
2	0.000	0.000	0.000	0.000	0.020	0.035
3	0.000	0.000	0.000	0.000	0.020	0.035
4	0.000	0.000	0.000	0.000	0.020	0.035
5	0.000	0.000	0.000	0.000	0.020	0.035
6	0.000	0.000	0.000	0.000	0.020	0.035

WIND SPEED CATEGORIES
Boundaries between categories (in m/s) are: 1.54, 3.09, 5.14, 8.23, 10.80

WIND PROFILE EXPONENTS: "Irwin Rural" values (unless overridden by met. file)

AVERAGING TIMES
average over all hours

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SOURCE CHARACTERISTICS

VOLUME SOURCE: CBP

X(m)	Y(m)	Ground Elevation	Height	Hor. spread	Vert. spread
2986	2840	0m	4m	1m	2m

Emission rates by season and hour, in kg/hour:

Summer:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4 0.00E+00
	5	0.00E+00	6	0.00E+00	7	0.00E+00	8 0.00E+00
	9	0.00E+00	10	0.00E+00	11	0.00E+00	12 0.00E+00
	13	0.00E+00	14	0.00E+00	15	0.00E+00	16 0.00E+00
	17	0.00E+00	18	0.00E+00	19	0.00E+00	20 0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24 0.00E+00
Autumn:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4 0.00E+00
	5	0.00E+00	6	0.00E+00	7	1.00E+00	8 1.00E+00
	9	1.00E+00	10	1.00E+00	11	1.00E+00	12 1.00E+00
	13	1.00E+00	14	1.00E+00	15	1.00E+00	16 1.00E+00
	17	1.00E+00	18	1.00E+00	19	0.00E+00	20 0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24 0.00E+00
Winter:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4 0.00E+00
	5	0.00E+00	6	0.00E+00	7	1.00E+00	8 1.00E+00
	9	1.00E+00	10	1.00E+00	11	1.00E+00	12 1.00E+00
	13	1.00E+00	14	1.00E+00	15	1.00E+00	16 1.00E+00
	17	1.00E+00	18	1.00E+00	19	0.00E+00	20 0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24 0.00E+00
Spring:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4 0.00E+00
	5	0.00E+00	6	0.00E+00	7	1.00E+00	8 1.00E+00
	9	1.00E+00	10	1.00E+00	11	1.00E+00	12 1.00E+00
	13	1.00E+00	14	1.00E+00	15	1.00E+00	16 1.00E+00
	17	1.00E+00	18	1.00E+00	19	0.00E+00	20 0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24 0.00E+00

Particle Mass fraction	Particle Size (micron)	Particle Density (g/cm3)	Precipitation-Scavenging Coefficients (1/(s-mm/hr)) ----Liquid	--------Ice-----
1.0000	10.0	2.05	0.00068	0.00000

VOLUME SOURCE: DUMP

X(m)	Y(m)	Ground Elevation	Height	Hor. spread	Vert. spread
3016	2810	0m	2m	2m	1m

Emission rates by season and hour, in kg/hour:

Summer:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4 0.00E+00
	5	0.00E+00	6	0.00E+00	7	0.00E+00	8 0.00E+00
	9	0.00E+00	10	0.00E+00	11	0.00E+00	12 0.00E+00
	13	0.00E+00	14	0.00E+00	15	0.00E+00	16 0.00E+00
	17	0.00E+00	18	0.00E+00	19	0.00E+00	20 0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24 0.00E+00
Autumn:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4 0.00E+00
	5	0.00E+00	6	0.00E+00	7	6.58E-02	8 0.00E+00
	9	6.58E-02	10	0.00E+00	11	6.58E-02	12 0.00E+00
	13	6.58E-02	14	0.00E+00	15	6.58E-02	16 0.00E+00
	17	6.58E-02	18	0.00E+00	19	0.00E+00	20 0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24 0.00E+00
Winter:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4 0.00E+00
	5	0.00E+00	6	0.00E+00	7	6.58E-02	8 0.00E+00
	9	6.58E-02	10	0.00E+00	11	6.58E-02	12 0.00E+00
	13	6.58E-02	14	0.00E+00	15	6.58E-02	16 0.00E+00

	17	6.58E-02	18	0.00E+00	19	0.00E+00	20 0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24 0.00E+00
Spring:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4 0.00E+00
	5	0.00E+00	6	0.00E+00	7	6.58E-02	8 0.00E+00
	9	6.58E-02	10	0.00E+00	11	6.58E-02	12 0.00E+00
	13	6.58E-02	14	0.00E+00	15	6.58E-02	16 0.00E+00
	17	6.58E-02	18	0.00E+00	19	0.00E+00	20 0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24 0.00E+00

Particle Mass fraction	Particle Size (micron)	Particle Density (g/cm3)	Precipitation-Scavenging Coefficients (1/(s-mm/hr)) ----Liquid	--------Ice-----
1.0000	10.0	2.05	0.00068	0.00000

VOLUME SOURCE: TV1

X(m)	Y(m)	Ground Elevation	Height	Hor. spread	Vert. spread
2789	2526	0m	1m	1m	1m

Emission rates by season and hour, in kg/hour:

Summer:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4 0.00E+00
	5	0.00E+00	6	0.00E+00	7	0.00E+00	8 0.00E+00
	9	0.00E+00	10	0.00E+00	11	0.00E+00	12 0.00E+00
	13	0.00E+00	14	0.00E+00	15	0.00E+00	16 0.00E+00
	17	0.00E+00	18	0.00E+00	19	0.00E+00	20 0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24 0.00E+00
Autumn:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4 0.00E+00
	5	0.00E+00	6	0.00E+00	7	2.21E-01	8 2.21E-01
	9	2.21E-01	10	2.21E-01	11	2.21E-01	12 2.21E-01
	13	2.21E-01	14	2.21E-01	15	2.21E-01	16 2.21E-01
	17	2.21E-01	18	2.21E-01	19	0.00E+00	20 0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24 0.00E+00
Winter:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4 0.00E+00
	5	0.00E+00	6	0.00E+00	7	2.21E-01	8 2.21E-01
	9	2.21E-01	10	2.21E-01	11	2.21E-01	12 2.21E-01
	13	2.21E-01	14	2.21E-01	15	2.21E-01	16 2.21E-01
	17	2.21E-01	18	2.21E-01	19	0.00E+00	20 0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24 0.00E+00
Spring:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4 0.00E+00
	5	0.00E+00	6	0.00E+00	7	2.21E-01	8 2.21E-01
	9	2.21E-01	10	2.21E-01	11	2.21E-01	12 2.21E-01
	13	2.21E-01	14	2.21E-01	15	2.21E-01	16 2.21E-01
	17	2.21E-01	18	2.21E-01	19	0.00E+00	20 0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24 0.00E+00

Particle Mass fraction	Particle Size (micron)	Particle Density (g/cm3)	Precipitation-Scavenging Coefficients (1/(s-mm/hr)) ----Liquid	--------Ice-----
1.0000	10.0	2.05	0.00068	0.00000

VOLUME SOURCE: TV2

X(m)	Y(m)	Ground Elevation	Height	Hor. spread	Vert. spread
2823	2580	0m	1m	1m	1m

Emission rates by season and hour, in kg/hour:

Summer:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4 0.00E+00
	5	0.00E+00	6	0.00E+00	7	0.00E+00	8 0.00E+00
	9	0.00E+00	10	0.00E+00	11	0.00E+00	12 0.00E+00
	13	0.00E+00	14	0.00E+00	15	0.00E+00	16 0.00E+00
	17	0.00E+00	18	0.00E+00	19	0.00E+00	20 0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24 0.00E+00

Autumn:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4	0.00E+00
	5	0.00E+00	6	0.00E+00	7	2.21E-01	8	2.21E-01
	9	2.21E-01	10	2.21E-01	11	2.21E-01	12	2.21E-01
	13	2.21E-01	14	2.21E-01	15	2.21E-01	16	2.21E-01
	17	2.21E-01	18	2.21E-01	19	0.00E+00	20	0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24	0.00E+00
Winter:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4	0.00E+00
	5	0.00E+00	6	0.00E+00	7	2.21E-01	8	2.21E-01
	9	2.21E-01	10	2.21E-01	11	2.21E-01	12	2.21E-01
	13	2.21E-01	14	2.21E-01	15	2.21E-01	16	2.21E-01
	17	2.21E-01	18	2.21E-01	19	0.00E+00	20	0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24	0.00E+00
Spring:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4	0.00E+00
	5	0.00E+00	6	0.00E+00	7	2.21E-01	8	2.21E-01
	9	2.21E-01	10	2.21E-01	11	2.21E-01	12	2.21E-01
	13	2.21E-01	14	2.21E-01	15	2.21E-01	16	2.21E-01
	17	2.21E-01	18	2.21E-01	19	0.00E+00	20	0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24	0.00E+00

Particle Mass fraction	Particle Size (micron)	Particle Density (g/cm3)	Precipitation-Scavenging Coefficients (1/(s-mm/hr)) ----Liquid	--------Ice-----
1.0000	10.0	2.05	0.00068	0.00000

VOLUME SOURCE: TV3

X(m)	Y(m)	Ground Elevation	Height	Hor. spread	Vert. spread
2857	2634	0m	1m	1m	1m

Emission rates by season and hour, in kg/hour:

Summer:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4	0.00E+00
	5	0.00E+00	6	0.00E+00	7	0.00E+00	8	0.00E+00
	9	0.00E+00	10	0.00E+00	11	0.00E+00	12	0.00E+00
	13	0.00E+00	14	0.00E+00	15	0.00E+00	16	0.00E+00
	17	0.00E+00	18	0.00E+00	19	0.00E+00	20	0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24	0.00E+00
Autumn:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4	0.00E+00
	5	0.00E+00	6	0.00E+00	7	2.21E-01	8	2.21E-01
	9	2.21E-01	10	2.21E-01	11	2.21E-01	12	2.21E-01
	13	2.21E-01	14	2.21E-01	15	2.21E-01	16	2.21E-01
	17	2.21E-01	18	2.21E-01	19	0.00E+00	20	0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24	0.00E+00
Winter:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4	0.00E+00
	5	0.00E+00	6	0.00E+00	7	2.21E-01	8	2.21E-01
	9	2.21E-01	10	2.21E-01	11	2.21E-01	12	2.21E-01
	13	2.21E-01	14	2.21E-01	15	2.21E-01	16	2.21E-01
	17	2.21E-01	18	2.21E-01	19	0.00E+00	20	0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24	0.00E+00
Spring:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4	0.00E+00
	5	0.00E+00	6	0.00E+00	7	2.21E-01	8	2.21E-01
	9	2.21E-01	10	2.21E-01	11	2.21E-01	12	2.21E-01
	13	2.21E-01	14	2.21E-01	15	2.21E-01	16	2.21E-01
	17	2.21E-01	18	2.21E-01	19	0.00E+00	20	0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24	0.00E+00

Particle Mass fraction	Particle Size (micron)	Particle Density (g/cm3)	Precipitation-Scavenging Coefficients (1/(s-mm/hr)) ----Liquid	--------Ice-----
1.0000	10.0	2.05	0.00068	0.00000

VOLUME SOURCE: TV4

X(m)	Y(m)	Ground Elevation	Height	Hor. spread	Vert. spread

2891	2688	0m	1m	1m	1m		

Emission rates by season and hour, in kg/hour:

Summer:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4	0.00E+00
	5	0.00E+00	6	0.00E+00	7	0.00E+00	8	0.00E+00
	9	0.00E+00	10	0.00E+00	11	0.00E+00	12	0.00E+00
	13	0.00E+00	14	0.00E+00	15	0.00E+00	16	0.00E+00
	17	0.00E+00	18	0.00E+00	19	0.00E+00	20	0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24	0.00E+00
Autumn:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4	0.00E+00
	5	0.00E+00	6	0.00E+00	7	2.21E-01	8	2.21E-01
	9	2.21E-01	10	2.21E-01	11	2.21E-01	12	2.21E-01
	13	2.21E-01	14	2.21E-01	15	2.21E-01	16	2.21E-01
	17	2.21E-01	18	2.21E-01	19	0.00E+00	20	0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24	0.00E+00
Winter:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4	0.00E+00
	5	0.00E+00	6	0.00E+00	7	2.21E-01	8	2.21E-01
	9	2.21E-01	10	2.21E-01	11	2.21E-01	12	2.21E-01
	13	2.21E-01	14	2.21E-01	15	2.21E-01	16	2.21E-01
	17	2.21E-01	18	2.21E-01	19	0.00E+00	20	0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24	0.00E+00
Spring:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4	0.00E+00
	5	0.00E+00	6	0.00E+00	7	2.21E-01	8	2.21E-01
	9	2.21E-01	10	2.21E-01	11	2.21E-01	12	2.21E-01
	13	2.21E-01	14	2.21E-01	15	2.21E-01	16	2.21E-01
	17	2.21E-01	18	2.21E-01	19	0.00E+00	20	0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24	0.00E+00

Particle Mass fraction	Particle Size (micron)	Particle Density (g/cm3)	Precipitation-Scavenging Coefficients (1/(s-mm/hr)) ----Liquid	--------Ice-----
1.0000	10.0	2.05	0.00068	0.00000

VOLUME SOURCE: TV5

X(m)	Y(m)	Ground Elevation	Height	Hor. spread	Vert. spread
2925	2742	0m	1m	1m	1m

Emission rates by season and hour, in kg/hour:

Summer:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4	0.00E+00
	5	0.00E+00	6	0.00E+00	7	0.00E+00	8	0.00E+00
	9	0.00E+00	10	0.00E+00	11	0.00E+00	12	0.00E+00
	13	0.00E+00	14	0.00E+00	15	0.00E+00	16	0.00E+00
	17	0.00E+00	18	0.00E+00	19	0.00E+00	20	0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24	0.00E+00
Autumn:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4	0.00E+00
	5	0.00E+00	6	0.00E+00	7	2.21E-01	8	2.21E-01
	9	2.21E-01	10	2.21E-01	11	2.21E-01	12	2.21E-01
	13	2.21E-01	14	2.21E-01	15	2.21E-01	16	2.21E-01
	17	2.21E-01	18	2.21E-01	19	0.00E+00	20	0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24	0.00E+00
Winter:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4	0.00E+00
	5	0.00E+00	6	0.00E+00	7	2.21E-01	8	2.21E-01
	9	2.21E-01	10	2.21E-01	11	2.21E-01	12	2.21E-01
	13	2.21E-01	14	2.21E-01	15	2.21E-01	16	2.21E-01
	17	2.21E-01	18	2.21E-01	19	0.00E+00	20	0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24	0.00E+00
Spring:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4	0.00E+00
	5	0.00E+00	6	0.00E+00	7	2.21E-01	8	2.21E-01
	9	2.21E-01	10	2.21E-01	11	2.21E-01	12	2.21E-01
	13	2.21E-01	14	2.21E-01	15	2.21E-01	16	2.21E-01
	17	2.21E-01	18	2.21E-01	19	0.00E+00	20	0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24	0.00E+00

Particle Mass fraction	Particle Size (micron)	Particle Density (g/cm3)	Precipitation-Scavenging Coefficients (1/(s-mm/hr)) ----Liquid	--------Ice-----
1.0000	10.0	2.05	0.00068	0.00000

VOLUME SOURCE: TV6

X(m)	Y(m)	Ground Elevation	Height	Hor. spread	Vert. spread
2959	2796	0m	1m	1m	1m

Emission rates by season and hour, in kg/hour:

Summer:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4	0.00E+00
	5	0.00E+00	6	0.00E+00	7	0.00E+00	8	0.00E+00
	9	0.00E+00	10	0.00E+00	11	0.00E+00	12	0.00E+00
	13	0.00E+00	14	0.00E+00	15	0.00E+00	16	0.00E+00
	17	0.00E+00	18	0.00E+00	19	0.00E+00	20	0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24	0.00E+00
Autumn:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4	0.00E+00
	5	0.00E+00	6	0.00E+00	7	2.21E-01	8	2.21E-01
	9	2.21E-01	10	2.21E-01	11	2.21E-01	12	2.21E-01
	13	2.21E-01	14	2.21E-01	15	2.21E-01	16	2.21E-01
	17	2.21E-01	18	2.21E-01	19	0.00E+00	20	0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24	0.00E+00
Winter:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4	0.00E+00
	5	0.00E+00	6	0.00E+00	7	2.21E-01	8	2.21E-01
	9	2.21E-01	10	2.21E-01	11	2.21E-01	12	2.21E-01
	13	2.21E-01	14	2.21E-01	15	2.21E-01	16	2.21E-01
	17	2.21E-01	18	2.21E-01	19	0.00E+00	20	0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24	0.00E+00
Spring:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4	0.00E+00
	5	0.00E+00	6	0.00E+00	7	2.21E-01	8	2.21E-01
	9	2.21E-01	10	2.21E-01	11	2.21E-01	12	2.21E-01
	13	2.21E-01	14	2.21E-01	15	2.21E-01	16	2.21E-01
	17	2.21E-01	18	2.21E-01	19	0.00E+00	20	0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24	0.00E+00

Particle Mass fraction	Particle Size (micron)	Particle Density (g/cm3)	Precipitation-Scavenging Coefficients (1/(s-mm/hr)) ----Liquid	--------Ice-----
1.0000	10.0	2.05	0.00068	0.00000

1

11329200 Heatherbrae PM10 Concrete Batching Plant and Operations

RECEPTOR LOCATIONS

The Cartesian receptor grid has the following x-values (or eastings):

1760.m	1783.m	1805.m	1828.m	1850.m	1873.m	1895.m
1918.m	1940.m	1963.m	1985.m	2008.m	2030.m	2053.m
2075.m	2098.m	2120.m	2143.m	2165.m	2188.m	2210.m
2233.m	2255.m	2278.m	2300.m	2323.m	2345.m	2368.m
2390.m	2413.m	2435.m	2458.m	2480.m	2503.m	2525.m
2548.m	2570.m	2593.m	2615.m	2638.m	2660.m	2683.m
2705.m	2728.m	2750.m	2773.m	2795.m	2818.m	2840.m
2863.m	2885.m	2908.m	2930.m	2953.m	2975.m	2998.m
3020.m	3043.m	3065.m	3088.m	3110.m	3133.m	3155.m
3178.m	3200.m	3223.m	3245.m	3268.m	3290.m	3313.m
3335.m	3358.m	3380.m	3403.m	3425.m	3448.m	3470.m
3493.m	3515.m	3538.m	3560.m	3583.m	3605.m	3628.m

3650.m	3673.m	3695.m	3718.m	3740.m	3763.m	3785.m
3808.m	3830.m	3853.m	3875.m	3898.m	3920.m	3943.m
3965.m	3988.m	4010.m				

and these y-values (or northings):

2090.m	2113.m	2136.m	2159.m	2182.m	2205.m	2228.m
2251.m	2274.m	2297.m	2320.m	2343.m	2366.m	2389.m
2412.m	2435.m	2458.m	2481.m	2504.m	2527.m	2550.m
2573.m	2596.m	2619.m	2642.m	2665.m	2688.m	2711.m
2734.m	2757.m	2780.m	2803.m	2826.m	2849.m	2872.m
2895.m	2918.m	2941.m	2964.m	2987.m	3010.m	3033.m
3056.m	3079.m	3102.m	3125.m	3148.m	3171.m	3194.m
3217.m	3240.m	3263.m	3286.m	3309.m	3332.m	3355.m
3378.m	3401.m	3424.m	3447.m	3470.m	3493.m	3516.m
3539.m	3562.m					

DISCRETE RECEPTOR LOCATIONS (in metres)

No.	X	Y	ELEVN	HEIGHT	No.	X	Y	ELEVN	HEIGHT
1	2869	3006	0.0	0.0	12	2926	2902	0.0	0.0
2	2609	2741	0.0	0.0	13	3002	2927	0.0	0.0
3	2406	3181	0.0	0.0	14	3034	2854	0.0	0.0
4	2665	3174	0.0	0.0	15	3066	2772	0.0	0.0
5	2240	2831	0.0	0.0	16	3093	2713	0.0	0.0
6	2619	2511	0.0	0.0	17	3132	2628	0.0	0.0
7	2634	2616	0.0	0.0	18	3169	2548	0.0	0.0
8	2649	2710	0.0	0.0	19	3096	2540	0.0	0.0
9	2661	2799	0.0	0.0	20	2985	2539	0.0	0.0
10	2746	2831	0.0	0.0	21	2869	2530	0.0	0.0
11	2840	2868	0.0	0.0	22	2732	2513	0.0	0.0

METEOROLOGICAL DATA : BoM AWS Data BoM Williamtown Clouds Williamtown Uair

AVERAGE OVER ALL HOURS AND FOR ALL SOURCES
in microgram/m3

X (km):	1.760	1.783	1.805	1.828	1.850	1.873
Y (km)						
3.562	4.09E-02	4.19E-02	4.30E-02	4.41E-02	4.53E-02	4.66E-02
3.539	4.14E-02	4.24E-02	4.35E-02	4.46E-02	4.59E-02	4.71E-02
3.516	4.19E-02	4.29E-02	4.40E-02	4.52E-02	4.64E-02	4.77E-02
3.493	4.24E-02	4.35E-02	4.46E-02	4.58E-02	4.70E-02	4.83E-02
3.470	4.30E-02	4.41E-02	4.52E-02	4.64E-02	4.76E-02	4.89E-02
3.447	4.37E-02	4.47E-02	4.59E-02	4.70E-02	4.83E-02	4.96E-02
3.424	4.43E-02	4.54E-02	4.65E-02	4.77E-02	4.90E-02	5.03E-02
3.401	4.50E-02	4.61E-02	4.73E-02	4.85E-02	4.98E-02	5.11E-02
3.378	4.57E-02	4.69E-02	4.80E-02	4.93E-02	5.06E-02	5.19E-02
3.355	4.65E-02	4.76E-02	4.88E-02	5.01E-02	5.14E-02	5.28E-02
3.332	4.73E-02	4.85E-02	4.97E-02	5.10E-02	5.23E-02	5.37E-02
3.309	4.81E-02	4.93E-02	5.06E-02	5.19E-02	5.32E-02	5.47E-02
3.286	4.90E-02	5.02E-02	5.15E-02	5.28E-02	5.42E-02	5.57E-02
3.263	4.99E-02	5.11E-02	5.24E-02	5.38E-02	5.52E-02	5.67E-02
3.240	5.08E-02	5.21E-02	5.34E-02	5.48E-02	5.63E-02	5.78E-02
3.217	5.17E-02	5.31E-02	5.44E-02	5.59E-02	5.74E-02	5.89E-02
3.194	5.27E-02	5.41E-02	5.55E-02	5.69E-02	5.85E-02	6.01E-02
3.171	5.37E-02	5.51E-02	5.65E-02	5.80E-02	5.96E-02	6.13E-02
3.148	5.47E-02	5.61E-02	5.76E-02	5.92E-02	6.08E-02	6.25E-02
3.125	5.57E-02	5.72E-02	5.87E-02	6.03E-02	6.20E-02	6.38E-02
3.102	5.67E-02	5.82E-02	5.98E-02	6.15E-02	6.32E-02	6.50E-02
3.079	5.77E-02	5.93E-02	6.09E-02	6.26E-02	6.44E-02	6.63E-02

3.056	5.87E-02	6.03E-02	6.20E-02	6.38E-02	6.56E-02	6.76E-02
3.033	5.97E-02	6.13E-02	6.31E-02	6.49E-02	6.68E-02	6.89E-02
3.010	6.06E-02	6.24E-02	6.42E-02	6.60E-02	6.80E-02	7.01E-02
2.987	6.16E-02	6.34E-02	6.52E-02	6.72E-02	6.92E-02	7.14E-02
2.964	6.25E-02	6.43E-02	6.63E-02	6.83E-02	7.04E-02	7.26E-02
2.941	6.34E-02	6.53E-02	6.73E-02	6.93E-02	7.15E-02	7.38E-02
2.918	6.43E-02	6.62E-02	6.82E-02	7.04E-02	7.26E-02	7.50E-02
2.895	6.51E-02	6.71E-02	6.92E-02	7.14E-02	7.37E-02	7.61E-02
2.872	6.59E-02	6.79E-02	7.01E-02	7.23E-02	7.47E-02	7.72E-02
2.849	6.66E-02	6.87E-02	7.09E-02	7.32E-02	7.56E-02	7.82E-02
2.826	6.73E-02	6.95E-02	7.17E-02	7.40E-02	7.65E-02	7.91E-02
2.803	6.80E-02	7.02E-02	7.24E-02	7.48E-02	7.73E-02	8.00E-02
2.780	6.86E-02	7.08E-02	7.31E-02	7.55E-02	7.81E-02	8.08E-02
2.757	6.91E-02	7.13E-02	7.37E-02	7.62E-02	7.88E-02	8.16E-02
2.734	6.96E-02	7.19E-02	7.42E-02	7.67E-02	7.94E-02	8.22E-02
2.711	7.00E-02	7.23E-02	7.47E-02	7.72E-02	7.99E-02	8.28E-02
2.688	7.04E-02	7.27E-02	7.51E-02	7.77E-02	8.04E-02	8.33E-02
2.665	7.07E-02	7.30E-02	7.55E-02	7.81E-02	8.08E-02	8.37E-02
2.642	7.10E-02	7.33E-02	7.58E-02	7.84E-02	8.11E-02	8.40E-02
2.619	7.12E-02	7.35E-02	7.60E-02	7.86E-02	8.14E-02	8.43E-02
2.596	7.13E-02	7.37E-02	7.61E-02	7.87E-02	8.15E-02	8.45E-02
2.573	7.14E-02	7.38E-02	7.62E-02	7.88E-02	8.16E-02	8.46E-02
2.550	7.15E-02	7.38E-02	7.63E-02	7.89E-02	8.17E-02	8.46E-02
2.527	7.15E-02	7.38E-02	7.63E-02	7.89E-02	8.16E-02	8.46E-02
2.504	7.15E-02	7.38E-02	7.62E-02	7.88E-02	8.16E-02	8.45E-02
2.481	7.14E-02	7.37E-02	7.61E-02	7.87E-02	8.15E-02	8.44E-02
2.458	7.13E-02	7.36E-02	7.60E-02	7.86E-02	8.13E-02	8.42E-02
2.435	7.12E-02	7.34E-02	7.59E-02	7.84E-02	8.11E-02	8.40E-02
2.412	7.10E-02	7.33E-02	7.56E-02	7.82E-02	8.08E-02	8.37E-02
2.389	7.08E-02	7.30E-02	7.54E-02	7.79E-02	8.05E-02	8.33E-02
2.366	7.06E-02	7.28E-02	7.51E-02	7.76E-02	8.02E-02	8.29E-02
2.343	7.03E-02	7.25E-02	7.48E-02	7.72E-02	7.97E-02	8.24E-02
2.320	7.00E-02	7.21E-02	7.44E-02	7.67E-02	7.92E-02	8.18E-02
2.297	6.96E-02	7.17E-02	7.39E-02	7.62E-02	7.86E-02	8.11E-02
2.274	6.92E-02	7.12E-02	7.34E-02	7.56E-02	7.79E-02	8.03E-02
2.251	6.87E-02	7.07E-02	7.28E-02	7.49E-02	7.71E-02	7.94E-02
2.228	6.82E-02	7.01E-02	7.20E-02	7.41E-02	7.62E-02	7.84E-02
2.205	6.75E-02	6.94E-02	7.12E-02	7.32E-02	7.52E-02	7.73E-02
2.182	6.68E-02	6.85E-02	7.03E-02	7.22E-02	7.40E-02	7.60E-02
2.159	6.60E-02	6.76E-02	6.93E-02	7.10E-02	7.27E-02	7.45E-02
2.136	6.50E-02	6.66E-02	6.81E-02	6.97E-02	7.13E-02	7.30E-02
2.113	6.40E-02	6.54E-02	6.69E-02	6.83E-02	6.98E-02	7.12E-02
2.090	6.29E-02	6.42E-02	6.55E-02	6.68E-02	6.81E-02	6.94E-02

X (km):	1.895	1.918	1.940	1.963	1.985	2.008
Y (km)						
3.562	4.79E-02	4.94E-02	5.08E-02	5.24E-02	5.41E-02	5.58E-02
3.539	4.85E-02	4.99E-02	5.14E-02	5.30E-02	5.46E-02	5.64E-02
3.516	4.90E-02	5.05E-02	5.20E-02	5.36E-02	5.52E-02	5.70E-02
3.493	4.97E-02	5.11E-02	5.26E-02	5.42E-02	5.59E-02	5.77E-02
3.470	5.03E-02	5.18E-02	5.33E-02	5.49E-02	5.66E-02	5.84E-02
3.447	5.10E-02	5.24E-02	5.40E-02	5.56E-02	5.73E-02	5.91E-02
3.424	5.17E-02	5.32E-02	5.48E-02	5.64E-02	5.81E-02	6.00E-02
3.401	5.25E-02	5.40E-02	5.56E-02	5.72E-02	5.90E-02	6.08E-02
3.378	5.33E-02	5.49E-02	5.64E-02	5.81E-02	5.99E-02	6.18E-02
3.355	5.42E-02	5.58E-02	5.74E-02	5.91E-02	6.09E-02	6.28E-02
3.332	5.52E-02	5.67E-02	5.84E-02	6.01E-02	6.19E-02	6.39E-02
3.309	5.62E-02	5.77E-02	5.94E-02	6.12E-02	6.30E-02	6.50E-02
3.286	5.72E-02	5.88E-02	6.05E-02	6.23E-02	6.42E-02	6.62E-02
3.263	5.83E-02	5.99E-02	6.17E-02	6.35E-02	6.54E-02	6.75E-02
3.240	5.94E-02	6.11E-02	6.29E-02	6.47E-02	6.67E-02	6.89E-02
3.217	6.06E-02	6.23E-02	6.41E-02	6.61E-02	6.81E-02	7.03E-02
3.194	6.18E-02	6.36E-02	6.54E-02	6.74E-02	6.95E-02	7.18E-02
3.171	6.30E-02	6.49E-02	6.68E-02	6.88E-02	7.10E-02	7.33E-02
3.148	6.43E-02	6.62E-02	6.82E-02	7.03E-02	7.25E-02	7.49E-02
3.125	6.56E-02	6.76E-02	6.96E-02	7.18E-02	7.41E-02	7.66E-02

3.102	6.70E-02	6.90E-02	7.11E-02	7.34E-02	7.58E-02	7.84E-02
3.079	6.83E-02	7.04E-02	7.26E-02	7.49E-02	7.75E-02	8.01E-02
3.056	6.96E-02	7.18E-02	7.41E-02	7.65E-02	7.92E-02	8.20E-02
3.033	7.10E-02	7.32E-02	7.56E-02	7.81E-02	8.09E-02	8.37E-02
3.010	7.23E-02	7.46E-02	7.71E-02	7.98E-02	8.26E-02	8.56E-02
2.987	7.36E-02	7.61E-02	7.86E-02	8.14E-02	8.43E-02	8.74E-02
2.964	7.50E-02	7.75E-02	8.01E-02	8.29E-02	8.60E-02	8.92E-02
2.941	7.62E-02	7.88E-02	8.16E-02	8.45E-02	8.76E-02	9.10E-02
2.918	7.75E-02	8.01E-02	8.30E-02	8.60E-02	8.92E-02	9.27E-02
2.895	7.87E-02	8.14E-02	8.44E-02	8.75E-02	9.08E-02	9.44E-02
2.872	7.98E-02	8.27E-02	8.57E-02	8.89E-02	9.23E-02	9.60E-02
2.849	8.09E-02	8.38E-02	8.69E-02	9.02E-02	9.37E-02	9.75E-02
2.826	8.19E-02	8.49E-02	8.81E-02	9.15E-02	9.51E-02	9.90E-02
2.803	8.29E-02	8.59E-02	8.92E-02	9.26E-02	9.63E-02	1.00E-01
2.780	8.38E-02	8.69E-02	9.02E-02	9.37E-02	9.75E-02	1.02E-01
2.757	8.45E-02	8.77E-02	9.11E-02	9.47E-02	9.85E-02	1.03E-01
2.734	8.52E-02	8.85E-02	9.19E-02	9.55E-02	9.95E-02	1.04E-01
2.711	8.59E-02	8.91E-02	9.26E-02	9.63E-02	1.00E-01	1.05E-01
2.688	8.64E-02	8.97E-02	9.32E-02	9.69E-02	1.01E-01	1.05E-01
2.665	8.68E-02	9.01E-02	9.37E-02	9.74E-02	1.01E-01	1.06E-01
2.642	8.72E-02	9.05E-02	9.41E-02	9.79E-02	1.02E-01	1.06E-01
2.619	8.74E-02	9.08E-02	9.43E-02	9.82E-02	1.02E-01	1.07E-01
2.596	8.76E-02	9.10E-02	9.45E-02	9.84E-02	1.02E-01	1.07E-01
2.573	8.77E-02	9.11E-02	9.46E-02	9.85E-02	1.03E-01	1.07E-01
2.550	8.78E-02	9.11E-02	9.47E-02	9.85E-02	1.03E-01	1.07E-01
2.527	8.77E-02	9.10E-02	9.46E-02	9.84E-02	1.02E-01	1.07E-01
2.504	8.76E-02	9.09E-02	9.45E-02	9.82E-02	1.02E-01	1.07E-01
2.481	8.75E-02	9.08E-02	9.43E-02	9.80E-02	1.02E-01	1.06E-01
2.458	8.73E-02	9.05E-02	9.40E-02	9.77E-02	1.02E-01	1.06E-01
2.435	8.70E-02	9.02E-02	9.36E-02	9.73E-02	1.01E-01	1.05E-01
2.412	8.67E-02	8.98E-02	9.32E-02	9.68E-02	1.01E-01	1.05E-01
2.389	8.63E-02	8.94E-02	9.27E-02	9.62E-02	9.99E-02	1.04E-01
2.366	8.58E-02	8.88E-02	9.20E-02	9.54E-02	9.90E-02	1.03E-01
2.343	8.52E-02	8.82E-02	9.13E-02	9.46E-02	9.81E-02	1.02E-01
2.320	8.45E-02	8.74E-02	9.04E-02	9.36E-02	9.69E-02	1.00E-01
2.297	8.38E-02	8.65E-02	8.94E-02	9.24E-02	9.56E-02	9.89E-02
2.274	8.29E-02	8.55E-02	8.83E-02	9.11E-02	9.41E-02	9.72E-02
2.251	8.18E-02	8.43E-02	8.70E-02	8.96E-02	9.24E-02	9.53E-02
2.228	8.07E-02	8.31E-02	8.55E-02	8.80E-02	9.06E-02	9.32E-02
2.205	7.94E-02	8.16E-02	8.38E-02	8.61E-02	8.85E-02	9.09E-02
2.182	7.79E-02	8.00E-02	8.20E-02	8.41E-02	8.62E-02	8.84E-02
2.159	7.63E-02	7.82E-02	8.00E-02	8.19E-02	8.38E-02	8.57E-02
2.136	7.46E-02	7.62E-02	7.79E-02	7.96E-02	8.12E-02	8.28E-02
2.113	7.27E-02	7.42E-02	7.56E-02	7.71E-02	7.85E-02	7.99E-02
2.090	7.07E-02	7.20E-02	7.33E-02	7.45E-02	7.57E-02	7.69E-02

X (km):	2.030	2.053	2.075	2.098	2.120	2.143
Y (km)						
3.562	5.76E-02	5.95E-02	6.16E-02	6.37E-02	6.59E-02	6.83E-02
3.539	5.82E-02	6.02E-02	6.22E-02	6.44E-02	6.67E-02	6.91E-02
3.516	5.89E-02	6.09E-02	6.29E-02	6.51E-02	6.74E-02	6.99E-02
3.493	5.96E-02	6.16E-02	6.37E-02	6.59E-02	6.82E-02	7.07E-02
3.470	6.03E-02	6.23E-02	6.44E-02	6.67E-02	6.91E-02	7.17E-02
3.447	6.11E-02	6.31E-02	6.53E-02	6.76E-02	7.00E-02	7.26E-02
3.424	6.19E-02	6.40E-02	6.62E-02	6.85E-02	7.10E-02	7.36E-02
3.401	6.28E-02	6.49E-02	6.71E-02	6.95E-02	7.20E-02	7.47E-02
3.378	6.38E-02	6.59E-02	6.81E-02	7.05E-02	7.31E-02	7.58E-02
3.355	6.48E-02	6.70E-02	6.92E-02	7.17E-02	7.43E-02	7.71E-02
3.332	6.59E-02	6.81E-02	7.04E-02	7.29E-02	7.56E-02	7.85E-02
3.309	6.71E-02	6.93E-02	7.17E-02	7.43E-02	7.70E-02	8.00E-02
3.286	6.84E-02	7.06E-02	7.31E-02	7.57E-02	7.85E-02	8.16E-02
3.263	6.97E-02	7.20E-02	7.45E-02	7.72E-02	8.01E-02	8.33E-02
3.240	7.11E-02	7.35E-02	7.61E-02	7.89E-02	8.19E-02	8.51E-02
3.217	7.26E-02	7.51E-02	7.77E-02	8.06E-02	8.37E-02	8.70E-02
3.194	7.41E-02	7.67E-02	7.95E-02	8.25E-02	8.57E-02	8.90E-02
3.171	7.58E-02	7.85E-02	8.13E-02	8.44E-02	8.77E-02	9.12E-02

3.148	7.75E-02	8.03E-02	8.32E-02	8.64E-02	8.98E-02	9.34E-02
3.125	7.93E-02	8.22E-02	8.52E-02	8.85E-02	9.20E-02	9.57E-02
3.102	8.11E-02	8.41E-02	8.73E-02	9.07E-02	9.43E-02	9.81E-02
3.079	8.30E-02	8.61E-02	8.94E-02	9.29E-02	9.66E-02	1.01E-01
3.056	8.49E-02	8.81E-02	9.15E-02	9.52E-02	9.91E-02	1.03E-01
3.033	8.69E-02	9.02E-02	9.37E-02	9.75E-02	1.02E-01	1.06E-01
3.010	8.88E-02	9.22E-02	9.59E-02	9.98E-02	1.04E-01	1.08E-01
2.987	9.07E-02	9.43E-02	9.81E-02	1.02E-01	1.06E-01	1.11E-01
2.964	9.26E-02	9.64E-02	1.00E-01	1.04E-01	1.09E-01	1.14E-01
2.941	9.46E-02	9.84E-02	1.02E-01	1.07E-01	1.11E-01	1.16E-01
2.918	9.64E-02	1.00E-01	1.05E-01	1.09E-01	1.14E-01	1.19E-01
2.895	9.82E-02	1.02E-01	1.07E-01	1.11E-01	1.16E-01	1.22E-01
2.872	9.99E-02	1.04E-01	1.09E-01	1.14E-01	1.19E-01	1.24E-01
2.849	1.02E-01	1.06E-01	1.11E-01	1.16E-01	1.21E-01	1.27E-01
2.826	1.03E-01	1.08E-01	1.12E-01	1.17E-01	1.23E-01	1.29E-01
2.803	1.05E-01	1.09E-01	1.14E-01	1.19E-01	1.25E-01	1.31E-01
2.780	1.06E-01	1.11E-01	1.16E-01	1.21E-01	1.27E-01	1.33E-01
2.757	1.07E-01	1.12E-01	1.17E-01	1.23E-01	1.28E-01	1.35E-01
2.734	1.08E-01	1.13E-01	1.18E-01	1.24E-01	1.30E-01	1.36E-01
2.711	1.09E-01	1.14E-01	1.19E-01	1.25E-01	1.31E-01	1.38E-01
2.688	1.10E-01	1.15E-01	1.20E-01	1.26E-01	1.32E-01	1.39E-01
2.665	1.11E-01	1.16E-01	1.21E-01	1.27E-01	1.33E-01	1.40E-01
2.642	1.11E-01	1.16E-01	1.22E-01	1.27E-01	1.34E-01	1.41E-01
2.619	1.11E-01	1.16E-01	1.22E-01	1.28E-01	1.34E-01	1.41E-01
2.596	1.12E-01	1.17E-01	1.22E-01	1.28E-01	1.34E-01	1.41E-01
2.573	1.12E-01	1.17E-01	1.22E-01	1.28E-01	1.35E-01	1.41E-01
2.550	1.12E-01	1.17E-01	1.22E-01	1.28E-01	1.34E-01	1.41E-01
2.527	1.11E-01	1.16E-01	1.22E-01	1.28E-01	1.34E-01	1.41E-01
2.504	1.11E-01	1.16E-01	1.22E-01	1.27E-01	1.34E-01	1.40E-01
2.481	1.11E-01	1.16E-01	1.21E-01	1.27E-01	1.33E-01	1.39E-01
2.458	1.10E-01	1.15E-01	1.20E-01	1.26E-01	1.32E-01	1.38E-01
2.435	1.10E-01	1.14E-01	1.19E-01	1.25E-01	1.31E-01	1.37E-01
2.412	1.09E-01	1.13E-01	1.18E-01	1.24E-01	1.29E-01	1.35E-01
2.389	1.08E-01	1.12E-01	1.17E-01	1.22E-01	1.27E-01	1.33E-01
2.366	1.07E-01	1.11E-01	1.16E-01	1.20E-01	1.25E-01	1.31E-01
2.343	1.06E-01	1.10E-01	1.14E-01	1.18E-01	1.23E-01	1.28E-01
2.320	1.04E-01	1.08E-01	1.12E-01	1.16E-01	1.20E-01	1.25E-01
2.297	1.02E-01	1.06E-01	1.10E-01	1.14E-01	1.18E-01	1.22E-01
2.274	1.00E-01	1.04E-01	1.07E-01	1.11E-01	1.14E-01	1.18E-01
2.251	9.83E-02	1.01E-01	1.04E-01	1.08E-01	1.11E-01	1.14E-01
2.228	9.59E-02	9.86E-02	1.01E-01	1.04E-01	1.07E-01	1.10E-01
2.205	9.33E-02	9.57E-02	9.82E-02	1.01E-01	1.03E-01	1.06E-01
2.182	9.05E-02	9.27E-02	9.48E-02	9.69E-02	9.90E-02	1.01E-01
2.159	8.76E-02	8.94E-02	9.13E-02	9.30E-02	9.47E-02	9.64E-02
2.136	8.45E-02	8.60E-02	8.75E-02	8.90E-02	9.04E-02	9.17E-02
2.113	8.12E-02	8.25E-02	8.38E-02	8.49E-02	8.60E-02	8.70E-02
2.090	7.80E-02	7.90E-02	8.00E-02	8.09E-02	8.17E-02	8.24E-02

X (km):	2.165	2.188	2.210	2.233	2.255	2.278
Y (km)						
3.562	7.08E-02	7.34E-02	7.61E-02	7.90E-02	8.19E-02	8.51E-02
3.539	7.16E-02	7.43E-02	7.71E-02	8.00E-02	8.31E-02	8.64E-02
3.516	7.25E-02	7.52E-02	7.81E-02	8.12E-02	8.43E-02	8.77E-02
3.493	7.34E-02	7.62E-02	7.91E-02	8.23E-02	8.56E-02	8.91E-02
3.470	7.43E-02	7.72E-02	8.02E-02	8.35E-02	8.69E-02	9.06E-02
3.447	7.53E-02	7.82E-02	8.14E-02	8.47E-02	8.83E-02	9.20E-02
3.424	7.64E-02	7.94E-02	8.26E-02	8.60E-02	8.97E-02	9.36E-02
3.401	7.75E-02	8.06E-02	8.40E-02	8.75E-02	9.12E-02	9.52E-02
3.378	7.88E-02	8.19E-02	8.53E-02	8.90E-02	9.28E-02	9.69E-02
3.355	8.01E-02	8.34E-02	8.68E-02	9.05E-02	9.45E-02	9.87E-02
3.332	8.16E-02	8.49E-02	8.84E-02	9.22E-02	9.63E-02	1.01E-01
3.309	8.31E-02	8.65E-02	9.02E-02	9.40E-02	9.82E-02	1.03E-01
3.286	8.48E-02	8.83E-02	9.20E-02	9.60E-02	1.00E-01	1.05E-01
3.263	8.66E-02	9.02E-02	9.40E-02	9.80E-02	1.02E-01	1.07E-01
3.240	8.85E-02	9.22E-02	9.61E-02	1.00E-01	1.05E-01	1.10E-01
3.217	9.05E-02	9.43E-02	9.83E-02	1.03E-01	1.07E-01	1.12E-01

3.194	9.27E-02	9.65E-02	1.01E-01	1.05E-01	1.10E-01	1.15E-01
3.171	9.49E-02	9.89E-02	1.03E-01	1.08E-01	1.13E-01	1.18E-01
3.148	9.72E-02	1.01E-01	1.06E-01	1.11E-01	1.16E-01	1.21E-01
3.125	9.97E-02	1.04E-01	1.09E-01	1.13E-01	1.19E-01	1.24E-01
3.102	1.02E-01	1.07E-01	1.11E-01	1.17E-01	1.22E-01	1.28E-01
3.079	1.05E-01	1.09E-01	1.14E-01	1.20E-01	1.25E-01	1.32E-01
3.056	1.08E-01	1.12E-01	1.18E-01	1.23E-01	1.29E-01	1.35E-01
3.033	1.10E-01	1.15E-01	1.21E-01	1.26E-01	1.33E-01	1.39E-01
3.010	1.13E-01	1.18E-01	1.24E-01	1.30E-01	1.36E-01	1.43E-01
2.987	1.16E-01	1.21E-01	1.27E-01	1.33E-01	1.40E-01	1.47E-01
2.964	1.19E-01	1.24E-01	1.30E-01	1.37E-01	1.44E-01	1.52E-01
2.941	1.22E-01	1.28E-01	1.34E-01	1.40E-01	1.48E-01	1.56E-01
2.918	1.25E-01	1.31E-01	1.37E-01	1.44E-01	1.52E-01	1.60E-01
2.895	1.27E-01	1.34E-01	1.40E-01	1.48E-01	1.55E-01	1.64E-01
2.872	1.30E-01	1.37E-01	1.43E-01	1.51E-01	1.59E-01	1.68E-01
2.849	1.33E-01	1.39E-01	1.46E-01	1.54E-01	1.63E-01	1.72E-01
2.826	1.35E-01	1.42E-01	1.49E-01	1.57E-01	1.66E-01	1.76E-01
2.803	1.38E-01	1.45E-01	1.52E-01	1.60E-01	1.69E-01	1.79E-01
2.780	1.40E-01	1.47E-01	1.55E-01	1.63E-01	1.73E-01	1.83E-01
2.757	1.42E-01	1.49E-01	1.57E-01	1.66E-01	1.75E-01	1.86E-01
2.734	1.43E-01	1.51E-01	1.59E-01	1.68E-01	1.78E-01	1.89E-01
2.711	1.45E-01	1.53E-01	1.61E-01	1.70E-01	1.80E-01	1.91E-01
2.688	1.46E-01	1.54E-01	1.63E-01	1.72E-01	1.82E-01	1.93E-01
2.665	1.47E-01	1.55E-01	1.64E-01	1.73E-01	1.84E-01	1.95E-01
2.642	1.48E-01	1.56E-01	1.65E-01	1.74E-01	1.85E-01	1.96E-01
2.619	1.49E-01	1.57E-01	1.65E-01	1.75E-01	1.85E-01	1.97E-01
2.596	1.49E-01	1.57E-01	1.66E-01	1.75E-01	1.86E-01	1.97E-01
2.573	1.49E-01	1.57E-01	1.66E-01	1.75E-01	1.86E-01	1.97E-01
2.550	1.49E-01	1.57E-01	1.65E-01	1.75E-01	1.85E-01	1.97E-01
2.527	1.48E-01	1.56E-01	1.65E-01	1.74E-01	1.84E-01	1.96E-01
2.504	1.47E-01	1.55E-01	1.64E-01	1.73E-01	1.83E-01	1.94E-01
2.481	1.46E-01	1.54E-01	1.62E-01	1.71E-01	1.81E-01	1.91E-01
2.458	1.45E-01	1.53E-01	1.60E-01	1.69E-01	1.78E-01	1.88E-01
2.435	1.43E-01	1.51E-01	1.58E-01	1.66E-01	1.75E-01	1.84E-01
2.412	1.41E-01	1.48E-01	1.55E-01	1.63E-01	1.71E-01	1.80E-01
2.389	1.39E-01	1.45E-01	1.52E-01	1.59E-01	1.67E-01	1.75E-01
2.366	1.36E-01	1.42E-01	1.49E-01	1.55E-01	1.62E-01	1.69E-01
2.343	1.33E-01	1.39E-01	1.45E-01	1.50E-01	1.57E-01	1.63E-01
2.320	1.30E-01	1.35E-01	1.40E-01	1.45E-01	1.51E-01	1.57E-01
2.297	1.26E-01	1.31E-01	1.35E-01	1.40E-01	1.45E-01	1.50E-01
2.274	1.22E-01	1.26E-01	1.30E-01	1.34E-01	1.38E-01	1.42E-01
2.251	1.18E-01	1.21E-01	1.24E-01	1.28E-01	1.31E-01	1.34E-01
2.228	1.13E-01	1.16E-01	1.19E-01	1.21E-01	1.24E-01	1.27E-01
2.205	1.08E-01	1.10E-01	1.13E-01	1.15E-01	1.17E-01	1.19E-01
2.182	1.03E-01	1.05E-01	1.07E-01	1.08E-01	1.10E-01	1.11E-01
2.159	9.79E-02	9.94E-02	1.01E-01	1.02E-01	1.03E-01	1.04E-01
2.136	9.28E-02	9.39E-02	9.49E-02	9.57E-02	9.64E-02	9.70E-02
2.113	8.79E-02	8.86E-02	8.93E-02	8.99E-02	9.03E-02	9.07E-02
2.090	8.30E-02	8.36E-02	8.40E-02	8.43E-02	8.46E-02	8.49E-02

X (km):	2.300	2.323	2.345	2.368	2.390	2.413
Y (km)						
3.562	8.83E-02	9.17E-02	9.53E-02	9.89E-02	1.03E-01	1.07E-01
3.539	8.98E-02	9.34E-02	9.71E-02	1.01E-01	1.05E-01	1.09E-01
3.516	9.13E-02	9.50E-02	9.89E-02	1.03E-01	1.07E-01	1.12E-01
3.493	9.28E-02	9.68E-02	1.01E-01	1.05E-01	1.10E-01	1.14E-01
3.470	9.44E-02	9.85E-02	1.03E-01	1.07E-01	1.12E-01	1.17E-01
3.447	9.61E-02	1.00E-01	1.05E-01	1.09E-01	1.14E-01	1.19E-01
3.424	9.77E-02	1.02E-01	1.07E-01	1.12E-01	1.17E-01	1.22E-01
3.401	9.95E-02	1.04E-01	1.09E-01	1.14E-01	1.19E-01	1.25E-01
3.378	1.01E-01	1.06E-01	1.11E-01	1.16E-01	1.22E-01	1.28E-01
3.355	1.03E-01	1.08E-01	1.13E-01	1.19E-01	1.24E-01	1.31E-01
3.332	1.05E-01	1.10E-01	1.15E-01	1.21E-01	1.27E-01	1.34E-01
3.309	1.07E-01	1.12E-01	1.18E-01	1.24E-01	1.30E-01	1.37E-01
3.286	1.10E-01	1.15E-01	1.21E-01	1.27E-01	1.33E-01	1.40E-01
3.263	1.12E-01	1.17E-01	1.23E-01	1.29E-01	1.36E-01	1.43E-01

3.240	1.15E-01	1.20E-01	1.26E-01	1.33E-01	1.40E-01	1.47E-01
3.217	1.18E-01	1.23E-01	1.29E-01	1.36E-01	1.43E-01	1.51E-01
3.194	1.20E-01	1.26E-01	1.33E-01	1.40E-01	1.47E-01	1.55E-01
3.171	1.24E-01	1.30E-01	1.36E-01	1.44E-01	1.51E-01	1.60E-01
3.148	1.27E-01	1.33E-01	1.40E-01	1.48E-01	1.56E-01	1.64E-01
3.125	1.31E-01	1.37E-01	1.44E-01	1.52E-01	1.61E-01	1.70E-01
3.102	1.34E-01	1.41E-01	1.49E-01	1.57E-01	1.66E-01	1.75E-01
3.079	1.38E-01	1.46E-01	1.53E-01	1.62E-01	1.71E-01	1.81E-01
3.056	1.42E-01	1.50E-01	1.58E-01	1.67E-01	1.77E-01	1.88E-01
3.033	1.47E-01	1.55E-01	1.63E-01	1.73E-01	1.83E-01	1.94E-01
3.010	1.51E-01	1.59E-01	1.68E-01	1.78E-01	1.89E-01	2.01E-01
2.987	1.55E-01	1.64E-01	1.74E-01	1.84E-01	1.95E-01	2.08E-01
2.964	1.60E-01	1.69E-01	1.79E-01	1.90E-01	2.02E-01	2.15E-01
2.941	1.64E-01	1.74E-01	1.84E-01	1.96E-01	2.08E-01	2.22E-01
2.918	1.69E-01	1.79E-01	1.90E-01	2.01E-01	2.15E-01	2.29E-01
2.895	1.73E-01	1.84E-01	1.95E-01	2.07E-01	2.21E-01	2.36E-01
2.872	1.78E-01	1.88E-01	2.00E-01	2.13E-01	2.27E-01	2.43E-01
2.849	1.82E-01	1.93E-01	2.05E-01	2.18E-01	2.33E-01	2.50E-01
2.826	1.86E-01	1.97E-01	2.10E-01	2.24E-01	2.39E-01	2.57E-01
2.803	1.90E-01	2.02E-01	2.15E-01	2.29E-01	2.45E-01	2.63E-01
2.780	1.94E-01	2.06E-01	2.19E-01	2.34E-01	2.51E-01	2.69E-01
2.757	1.97E-01	2.10E-01	2.23E-01	2.39E-01	2.56E-01	2.75E-01
2.734	2.00E-01	2.13E-01	2.27E-01	2.43E-01	2.60E-01	2.80E-01
2.711	2.03E-01	2.16E-01	2.31E-01	2.47E-01	2.65E-01	2.85E-01
2.688	2.05E-01	2.19E-01	2.34E-01	2.50E-01	2.69E-01	2.89E-01
2.665	2.07E-01	2.21E-01	2.36E-01	2.53E-01	2.72E-01	2.93E-01
2.642	2.09E-01	2.23E-01	2.38E-01	2.55E-01	2.74E-01	2.96E-01
2.619	2.10E-01	2.24E-01	2.39E-01	2.57E-01	2.76E-01	2.98E-01
2.596	2.10E-01	2.24E-01	2.40E-01	2.57E-01	2.76E-01	2.98E-01
2.573	2.10E-01	2.24E-01	2.39E-01	2.57E-01	2.76E-01	2.97E-01
2.550	2.09E-01	2.23E-01	2.38E-01	2.55E-01	2.74E-01	2.95E-01
2.527	2.08E-01	2.21E-01	2.36E-01	2.52E-01	2.70E-01	2.90E-01
2.504	2.06E-01	2.19E-01	2.33E-01	2.48E-01	2.65E-01	2.84E-01
2.481	2.03E-01	2.15E-01	2.28E-01	2.43E-01	2.59E-01	2.77E-01
2.458	1.99E-01	2.11E-01	2.23E-01	2.37E-01	2.52E-01	2.68E-01
2.435	1.94E-01	2.05E-01	2.17E-01	2.29E-01	2.43E-01	2.57E-01
2.412	1.89E-01	1.99E-01	2.10E-01	2.21E-01	2.33E-01	2.46E-01
2.389	1.83E-01	1.92E-01	2.02E-01	2.12E-01	2.22E-01	2.34E-01
2.366	1.77E-01	1.85E-01	1.93E-01	2.02E-01	2.11E-01	2.20E-01
2.343	1.70E-01	1.77E-01	1.84E-01	1.91E-01	1.99E-01	2.06E-01
2.320	1.62E-01	1.68E-01	1.74E-01	1.80E-01	1.86E-01	1.92E-01
2.297	1.54E-01	1.59E-01	1.64E-01	1.69E-01	1.73E-01	1.77E-01
2.274	1.46E-01	1.50E-01	1.54E-01	1.57E-01	1.60E-01	1.63E-01
2.251	1.38E-01	1.40E-01	1.43E-01	1.46E-01	1.48E-01	1.50E-01
2.228	1.29E-01	1.31E-01	1.33E-01	1.35E-01	1.36E-01	1.37E-01
2.205	1.20E-01	1.22E-01	1.23E-01	1.24E-01	1.25E-01	1.26E-01
2.182	1.12E-01	1.13E-01	1.14E-01	1.15E-01	1.16E-01	1.16E-01
2.159	1.05E-01	1.05E-01	1.06E-01	1.06E-01	1.07E-01	1.07E-01
2.136	9.76E-02	9.80E-02	9.84E-02	9.88E-02	9.92E-02	9.97E-02
2.113	9.10E-02	9.13E-02	9.16E-02	9.19E-02	9.24E-02	9.30E-02
2.090	8.51E-02	8.53E-02	8.56E-02	8.60E-02	8.64E-02	8.71E-02

X (km):	2.435	2.458	2.480	2.503	2.525	2.548
Y (km)						
3.562	1.11E-01	1.15E-01	1.19E-01	1.23E-01	1.27E-01	1.31E-01
3.539	1.13E-01	1.18E-01	1.22E-01	1.27E-01	1.31E-01	1.36E-01
3.516	1.16E-01	1.21E-01	1.25E-01	1.30E-01	1.35E-01	1.40E-01
3.493	1.19E-01	1.24E-01	1.29E-01	1.34E-01	1.39E-01	1.45E-01
3.470	1.22E-01	1.27E-01	1.33E-01	1.38E-01	1.44E-01	1.50E-01
3.447	1.25E-01	1.30E-01	1.36E-01	1.42E-01	1.48E-01	1.55E-01
3.424	1.28E-01	1.34E-01	1.40E-01	1.46E-01	1.53E-01	1.60E-01
3.401	1.31E-01	1.37E-01	1.44E-01	1.50E-01	1.58E-01	1.65E-01
3.378	1.34E-01	1.41E-01	1.48E-01	1.55E-01	1.62E-01	1.70E-01
3.355	1.37E-01	1.44E-01	1.51E-01	1.59E-01	1.67E-01	1.76E-01
3.332	1.41E-01	1.48E-01	1.56E-01	1.64E-01	1.72E-01	1.81E-01
3.309	1.44E-01	1.52E-01	1.60E-01	1.68E-01	1.77E-01	1.87E-01

3.286	1.47E-01	1.55E-01	1.64E-01	1.73E-01	1.83E-01	1.93E-01
3.263	1.51E-01	1.59E-01	1.68E-01	1.78E-01	1.88E-01	1.99E-01
3.240	1.55E-01	1.64E-01	1.73E-01	1.83E-01	1.94E-01	2.06E-01
3.217	1.59E-01	1.68E-01	1.78E-01	1.88E-01	2.00E-01	2.12E-01
3.194	1.64E-01	1.73E-01	1.83E-01	1.94E-01	2.06E-01	2.19E-01
3.171	1.69E-01	1.78E-01	1.89E-01	2.00E-01	2.13E-01	2.26E-01
3.148	1.74E-01	1.84E-01	1.95E-01	2.07E-01	2.20E-01	2.35E-01
3.125	1.80E-01	1.90E-01	2.02E-01	2.15E-01	2.28E-01	2.43E-01
3.102	1.86E-01	1.97E-01	2.09E-01	2.23E-01	2.37E-01	2.53E-01
3.079	1.92E-01	2.04E-01	2.17E-01	2.31E-01	2.47E-01	2.64E-01
3.056	1.99E-01	2.12E-01	2.26E-01	2.41E-01	2.57E-01	2.75E-01
3.033	2.06E-01	2.20E-01	2.35E-01	2.51E-01	2.69E-01	2.88E-01
3.010	2.14E-01	2.28E-01	2.44E-01	2.61E-01	2.81E-01	3.02E-01
2.987	2.22E-01	2.37E-01	2.54E-01	2.73E-01	2.93E-01	3.16E-01
2.964	2.30E-01	2.46E-01	2.64E-01	2.84E-01	3.06E-01	3.31E-01
2.941	2.38E-01	2.55E-01	2.74E-01	2.96E-01	3.20E-01	3.46E-01
2.918	2.46E-01	2.64E-01	2.84E-01	3.07E-01	3.33E-01	3.62E-01
2.895	2.54E-01	2.73E-01	2.94E-01	3.19E-01	3.46E-01	3.77E-01
2.872	2.61E-01	2.82E-01	3.04E-01	3.30E-01	3.59E-01	3.92E-01
2.849	2.69E-01	2.90E-01	3.14E-01	3.41E-01	3.72E-01	4.07E-01
2.826	2.76E-01	2.98E-01	3.23E-01	3.51E-01	3.83E-01	4.21E-01
2.803	2.83E-01	3.06E-01	3.31E-01	3.61E-01	3.95E-01	4.34E-01
2.780	2.90E-01	3.13E-01	3.40E-01	3.70E-01	4.05E-01	4.46E-01
2.757	2.96E-01	3.20E-01	3.47E-01	3.79E-01	4.15E-01	4.58E-01
2.734	3.02E-01	3.27E-01	3.55E-01	3.87E-01	4.25E-01	4.68E-01
2.711	3.07E-01	3.33E-01	3.62E-01	3.95E-01	4.34E-01	4.79E-01
2.688	3.12E-01	3.38E-01	3.68E-01	4.02E-01	4.42E-01	4.88E-01
2.665	3.17E-01	3.43E-01	3.74E-01	4.09E-01	4.50E-01	4.97E-01
2.642	3.20E-01	3.47E-01	3.78E-01	4.14E-01	4.56E-01	5.04E-01
2.619	3.22E-01	3.50E-01	3.81E-01	4.17E-01	4.59E-01	5.09E-01
2.596	3.23E-01	3.50E-01	3.82E-01	4.18E-01	4.60E-01	5.09E-01
2.573	3.21E-01	3.49E-01	3.80E-01	4.15E-01	4.57E-01	5.05E-01
2.550	3.18E-01	3.44E-01	3.75E-01	4.09E-01	4.49E-01	4.95E-01
2.527	3.13E-01	3.38E-01	3.66E-01	3.99E-01	4.36E-01	4.80E-01
2.504	3.05E-01	3.29E-01	3.55E-01	3.85E-01	4.20E-01	4.60E-01
2.481	2.96E-01	3.18E-01	3.42E-01	3.69E-01	4.00E-01	4.36E-01
2.458	2.85E-01	3.05E-01	3.26E-01	3.51E-01	3.78E-01	4.09E-01
2.435	2.73E-01	2.90E-01	3.09E-01	3.30E-01	3.53E-01	3.79E-01
2.412	2.60E-01	2.75E-01	2.91E-01	3.08E-01	3.26E-01	3.46E-01
2.389	2.45E-01	2.58E-01	2.71E-01	2.84E-01	2.98E-01	3.12E-01
2.366	2.30E-01	2.40E-01	2.50E-01	2.59E-01	2.69E-01	2.77E-01
2.343	2.14E-01	2.21E-01	2.28E-01	2.35E-01	2.40E-01	2.45E-01
2.320	1.97E-01	2.03E-01	2.07E-01	2.11E-01	2.15E-01	2.17E-01
2.297	1.81E-01	1.84E-01	1.87E-01	1.90E-01	1.92E-01	1.94E-01
2.274	1.66E-01	1.68E-01	1.70E-01	1.71E-01	1.73E-01	1.74E-01
2.251	1.51E-01	1.53E-01	1.54E-01	1.55E-01	1.56E-01	1.58E-01
2.228	1.38E-01	1.39E-01	1.40E-01	1.41E-01	1.43E-01	1.45E-01
2.205	1.27E-01	1.28E-01	1.28E-01	1.30E-01	1.31E-01	1.34E-01
2.182	1.17E-01	1.18E-01	1.19E-01	1.20E-01	1.22E-01	1.24E-01
2.159	1.08E-01	1.09E-01	1.10E-01	1.12E-01	1.13E-01	1.16E-01
2.136	1.00E-01	1.01E-01	1.03E-01	1.04E-01	1.06E-01	1.08E-01
2.113	9.38E-02	9.49E-02	9.62E-02	9.78E-02	9.96E-02	1.02E-01
2.090	8.80E-02	8.92E-02	9.05E-02	9.20E-02	9.39E-02	9.54E-02

X (km):	2.570	2.593	2.615	2.638	2.660	2.683
Y (km)						
3.562	1.35E-01	1.40E-01	1.44E-01	1.48E-01	1.51E-01	1.55E-01
3.539	1.40E-01	1.45E-01	1.49E-01	1.53E-01	1.58E-01	1.62E-01
3.516	1.45E-01	1.50E-01	1.55E-01	1.60E-01	1.64E-01	1.69E-01
3.493	1.50E-01	1.55E-01	1.61E-01	1.66E-01	1.71E-01	1.76E-01
3.470	1.55E-01	1.61E-01	1.67E-01	1.73E-01	1.79E-01	1.84E-01
3.447	1.61E-01	1.67E-01	1.74E-01	1.80E-01	1.86E-01	1.93E-01
3.424	1.67E-01	1.74E-01	1.81E-01	1.88E-01	1.95E-01	2.02E-01
3.401	1.72E-01	1.80E-01	1.88E-01	1.95E-01	2.03E-01	2.11E-01
3.378	1.78E-01	1.87E-01	1.95E-01	2.04E-01	2.12E-01	2.21E-01
3.355	1.85E-01	1.94E-01	2.03E-01	2.12E-01	2.22E-01	2.32E-01

3.332	1.91E-01	2.01E-01	2.11E-01	2.21E-01	2.32E-01	2.43E-01
3.309	1.97E-01	2.08E-01	2.19E-01	2.31E-01	2.43E-01	2.54E-01
3.286	2.04E-01	2.16E-01	2.28E-01	2.40E-01	2.53E-01	2.67E-01
3.263	2.11E-01	2.23E-01	2.37E-01	2.50E-01	2.65E-01	2.80E-01
3.240	2.18E-01	2.31E-01	2.46E-01	2.61E-01	2.77E-01	2.93E-01
3.217	2.25E-01	2.40E-01	2.55E-01	2.72E-01	2.89E-01	3.08E-01
3.194	2.33E-01	2.49E-01	2.65E-01	2.83E-01	3.02E-01	3.22E-01
3.171	2.41E-01	2.57E-01	2.75E-01	2.94E-01	3.15E-01	3.38E-01
3.148	2.50E-01	2.67E-01	2.86E-01	3.07E-01	3.29E-01	3.54E-01
3.125	2.60E-01	2.78E-01	2.98E-01	3.20E-01	3.44E-01	3.71E-01
3.102	2.70E-01	2.90E-01	3.11E-01	3.34E-01	3.60E-01	3.89E-01
3.079	2.82E-01	3.03E-01	3.25E-01	3.50E-01	3.78E-01	4.08E-01
3.056	2.95E-01	3.17E-01	3.41E-01	3.68E-01	3.97E-01	4.30E-01
3.033	3.09E-01	3.33E-01	3.59E-01	3.88E-01	4.20E-01	4.55E-01
3.010	3.25E-01	3.50E-01	3.78E-01	4.10E-01	4.45E-01	4.84E-01
2.987	3.41E-01	3.69E-01	4.00E-01	4.34E-01	4.73E-01	5.16E-01
2.964	3.58E-01	3.89E-01	4.23E-01	4.61E-01	5.04E-01	5.52E-01
2.941	3.76E-01	4.10E-01	4.48E-01	4.90E-01	5.38E-01	5.92E-01
2.918	3.95E-01	4.31E-01	4.73E-01	5.20E-01	5.74E-01	6.35E-01
2.895	4.13E-01	4.53E-01	4.98E-01	5.50E-01	6.11E-01	6.80E-01
2.872	4.30E-01	4.74E-01	5.24E-01	5.81E-01	6.48E-01	7.26E-01
2.849	4.48E-01	4.94E-01	5.48E-01	6.11E-01	6.85E-01	7.71E-01
2.826	4.64E-01	5.14E-01	5.72E-01	6.40E-01	7.21E-01	8.16E-01
2.803	4.79E-01	5.32E-01	5.94E-01	6.68E-01	7.55E-01	8.60E-01
2.780	4.94E-01	5.49E-01	6.16E-01	6.95E-01	7.89E-01	9.02E-01
2.757	5.07E-01	5.66E-01	6.36E-01	7.21E-01	8.22E-01	9.46E-01
2.734	5.20E-01	5.81E-01	6.56E-01	7.45E-01	8.55E-01	9.89E-01
2.711	5.32E-01	5.96E-01	6.74E-01	7.69E-01	8.86E-01	1.03E+00
2.688	5.44E-01	6.10E-01	6.91E-01	7.90E-01	9.13E-01	1.07E+00
2.665	5.54E-01	6.22E-01	7.04E-01	8.07E-01	9.36E-01	1.10E+00
2.642	5.62E-01	6.31E-01	7.14E-01	8.19E-01	9.53E-01	1.13E+00
2.619	5.67E-01	6.36E-01	7.21E-01	8.26E-01	9.63E-01	1.15E+00
2.596	5.67E-01	6.37E-01	7.22E-01	8.29E-01	9.68E-01	1.16E+00
2.573	5.63E-01	6.32E-01	7.17E-01	8.25E-01	9.68E-01	1.16E+00
2.550	5.51E-01	6.19E-01	7.03E-01	8.11E-01	9.57E-01	1.16E+00
2.527	5.33E-01	5.97E-01	6.77E-01	7.81E-01	9.22E-01	1.13E+00
2.504	5.08E-01	5.66E-01	6.38E-01	7.31E-01	8.55E-01	1.03E+00
2.481	4.78E-01	5.29E-01	5.90E-01	6.67E-01	7.65E-01	8.96E-01
2.458	4.44E-01	4.86E-01	5.34E-01	5.91E-01	6.58E-01	7.31E-01
2.435	4.07E-01	4.38E-01	4.72E-01	5.08E-01	5.42E-01	5.71E-01
2.412	3.66E-01	3.88E-01	4.08E-01	4.26E-01	4.41E-01	4.55E-01
2.389	3.25E-01	3.37E-01	3.47E-01	3.56E-01	3.65E-01	3.78E-01
2.366	2.85E-01	2.92E-01	2.97E-01	3.03E-01	3.12E-01	3.23E-01
2.343	2.50E-01	2.54E-01	2.58E-01	2.64E-01	2.72E-01	2.83E-01
2.320	2.20E-01	2.23E-01	2.28E-01	2.34E-01	2.41E-01	2.50E-01
2.297	1.96E-01	1.99E-01	2.04E-01	2.10E-01	2.16E-01	2.24E-01
2.274	1.77E-01	1.80E-01	1.85E-01	1.90E-01	1.95E-01	2.02E-01
2.251	1.61E-01	1.64E-01	1.69E-01	1.73E-01	1.78E-01	1.84E-01
2.228	1.48E-01	1.51E-01	1.55E-01	1.59E-01	1.63E-01	1.69E-01
2.205	1.36E-01	1.40E-01	1.43E-01	1.46E-01	1.51E-01	1.57E-01
2.182	1.27E-01	1.30E-01	1.32E-01	1.36E-01	1.40E-01	1.46E-01
2.159	1.18E-01	1.21E-01	1.23E-01	1.26E-01	1.30E-01	1.37E-01
2.136	1.10E-01	1.13E-01	1.15E-01	1.18E-01	1.22E-01	1.28E-01
2.113	1.03E-01	1.05E-01	1.08E-01	1.10E-01	1.15E-01	1.21E-01
2.090	9.71E-02	9.89E-02	1.01E-01	1.04E-01	1.09E-01	1.15E-01

X (km):	2.705	2.728	2.750	2.773	2.795	2.818
Y (km)						
3.562	1.59E-01	1.62E-01	1.66E-01	1.69E-01	1.72E-01	1.75E-01
3.539	1.66E-01	1.70E-01	1.73E-01	1.77E-01	1.80E-01	1.83E-01
3.516	1.73E-01	1.77E-01	1.82E-01	1.86E-01	1.89E-01	1.93E-01
3.493	1.81E-01	1.86E-01	1.90E-01	1.95E-01	1.99E-01	2.03E-01
3.470	1.90E-01	1.95E-01	2.00E-01	2.05E-01	2.09E-01	2.14E-01
3.447	1.99E-01	2.05E-01	2.10E-01	2.16E-01	2.21E-01	2.26E-01
3.424	2.08E-01	2.15E-01	2.21E-01	2.27E-01	2.33E-01	2.39E-01
3.401	2.19E-01	2.26E-01	2.33E-01	2.40E-01	2.46E-01	2.53E-01

3.378	2.30E-01	2.38E-01	2.46E-01	2.54E-01	2.61E-01	2.68E-01
3.355	2.41E-01	2.50E-01	2.60E-01	2.68E-01	2.77E-01	2.85E-01
3.332	2.53E-01	2.64E-01	2.75E-01	2.85E-01	2.94E-01	3.03E-01
3.309	2.67E-01	2.79E-01	2.90E-01	3.02E-01	3.13E-01	3.23E-01
3.286	2.80E-01	2.94E-01	3.08E-01	3.21E-01	3.34E-01	3.46E-01
3.263	2.95E-01	3.11E-01	3.26E-01	3.41E-01	3.56E-01	3.70E-01
3.240	3.11E-01	3.28E-01	3.46E-01	3.64E-01	3.81E-01	3.97E-01
3.217	3.27E-01	3.47E-01	3.67E-01	3.88E-01	4.08E-01	4.28E-01
3.194	3.44E-01	3.67E-01	3.90E-01	4.14E-01	4.38E-01	4.61E-01
3.171	3.62E-01	3.87E-01	4.14E-01	4.42E-01	4.70E-01	4.98E-01
3.148	3.81E-01	4.09E-01	4.40E-01	4.72E-01	5.06E-01	5.39E-01
3.125	4.00E-01	4.32E-01	4.67E-01	5.05E-01	5.44E-01	5.84E-01
3.102	4.21E-01	4.57E-01	4.96E-01	5.39E-01	5.85E-01	6.34E-01
3.079	4.43E-01	4.83E-01	5.26E-01	5.76E-01	6.30E-01	6.88E-01
3.056	4.68E-01	5.10E-01	5.59E-01	6.15E-01	6.77E-01	7.47E-01
3.033	4.96E-01	5.42E-01	5.95E-01	6.57E-01	7.29E-01	8.13E-01
3.010	5.27E-01	5.78E-01	6.36E-01	7.05E-01	7.87E-01	8.83E-01
2.987	5.65E-01	6.20E-01	6.84E-01	7.60E-01	8.50E-01	9.62E-01
2.964	6.07E-01	6.69E-01	7.42E-01	8.27E-01	9.28E-01	1.05E+00
2.941	6.54E-01	7.26E-01	8.09E-01	9.07E-01	1.02E+00	1.16E+00
2.918	7.06E-01	7.89E-01	8.86E-01	1.00E+00	1.14E+00	1.30E+00
2.895	7.61E-01	8.57E-01	9.71E-01	1.11E+00	1.27E+00	1.47E+00
2.872	8.18E-01	9.28E-01	1.06E+00	1.22E+00	1.42E+00	1.67E+00
2.849	8.74E-01	9.99E-01	1.15E+00	1.33E+00	1.57E+00	1.87E+00
2.826	9.30E-01	1.07E+00	1.24E+00	1.45E+00	1.71E+00	2.06E+00
2.803	9.85E-01	1.14E+00	1.33E+00	1.56E+00	1.86E+00	2.25E+00
2.780	1.04E+00	1.21E+00	1.42E+00	1.68E+00	2.02E+00	2.47E+00
2.757	1.10E+00	1.28E+00	1.51E+00	1.81E+00	2.19E+00	2.69E+00
2.734	1.15E+00	1.36E+00	1.62E+00	1.95E+00	2.37E+00	2.93E+00
2.711	1.21E+00	1.44E+00	1.72E+00	2.09E+00	2.59E+00	3.28E+00
2.688	1.26E+00	1.51E+00	1.84E+00	2.26E+00	2.85E+00	3.77E+00
2.665	1.31E+00	1.59E+00	1.97E+00	2.48E+00	3.20E+00	4.33E+00
2.642	1.36E+00	1.67E+00	2.11E+00	2.78E+00	3.82E+00	5.49E+00
2.619	1.40E+00	1.77E+00	2.29E+00	3.09E+00	4.63E+00	7.15E+00
2.596	1.43E+00	1.87E+00	2.58E+00	3.68E+00	5.81E+00	1.50E+01
2.573	1.45E+00	1.93E+00	2.87E+00	4.62E+00	7.72E+00	2.06E+01
2.550	1.47E+00	2.00E+00	3.09E+00	6.42E+00	9.46E+00	5.74E+00
2.527	1.45E+00	2.05E+00	3.53E+00	1.10E+01	5.58E+01	8.71E+00
2.504	1.30E+00	1.78E+00	2.72E+00	3.89E+00	7.26E+00	8.50E+00
2.481	1.07E+00	1.27E+00	1.44E+00	1.73E+00	2.51E+00	3.16E+00
2.458	7.96E-01	8.49E-01	9.28E-01	1.14E+00	1.46E+00	1.66E+00
2.435	5.96E-01	6.31E-01	6.88E-01	8.48E-01	1.01E+00	1.11E+00
2.412	4.75E-01	5.04E-01	5.51E-01	6.69E-01	7.73E-01	8.31E-01
2.389	3.96E-01	4.18E-01	4.62E-01	5.50E-01	6.23E-01	6.64E-01
2.366	3.38E-01	3.57E-01	3.99E-01	4.65E-01	5.20E-01	5.52E-01
2.343	2.94E-01	3.13E-01	3.50E-01	4.02E-01	4.45E-01	4.72E-01
2.320	2.60E-01	2.79E-01	3.13E-01	3.54E-01	3.88E-01	4.11E-01
2.297	2.34E-01	2.52E-01	2.81E-01	3.15E-01	3.44E-01	3.64E-01
2.274	2.12E-01	2.30E-01	2.55E-01	2.84E-01	3.08E-01	3.26E-01
2.251	1.94E-01	2.11E-01	2.34E-01	2.58E-01	2.79E-01	2.94E-01
2.228	1.79E-01	1.95E-01	2.15E-01	2.36E-01	2.54E-01	2.68E-01
2.205	1.67E-01	1.81E-01	1.99E-01	2.18E-01	2.34E-01	2.46E-01
2.182	1.56E-01	1.69E-01	1.85E-01	2.02E-01	2.16E-01	2.27E-01
2.159	1.46E-01	1.59E-01	1.73E-01	1.88E-01	2.01E-01	2.11E-01
2.136	1.38E-01	1.49E-01	1.62E-01	1.75E-01	1.87E-01	1.96E-01
2.113	1.30E-01	1.41E-01	1.53E-01	1.65E-01	1.75E-01	1.84E-01
2.090	1.23E-01	1.33E-01	1.44E-01	1.55E-01	1.64E-01	1.72E-01

X (km):	2.840	2.863	2.885	2.908	2.930	2.953
Y (km)						
3.562	1.78E-01	1.80E-01	1.83E-01	1.85E-01	1.87E-01	1.89E-01
3.539	1.86E-01	1.89E-01	1.92E-01	1.95E-01	1.97E-01	1.99E-01
3.516	1.96E-01	1.99E-01	2.02E-01	2.05E-01	2.07E-01	2.10E-01
3.493	2.06E-01	2.10E-01	2.13E-01	2.16E-01	2.19E-01	2.21E-01
3.470	2.18E-01	2.22E-01	2.25E-01	2.28E-01	2.31E-01	2.34E-01
3.447	2.30E-01	2.34E-01	2.38E-01	2.42E-01	2.45E-01	2.48E-01

3.424	2.44E-01	2.48E-01	2.53E-01	2.57E-01	2.60E-01	2.63E-01
3.401	2.58E-01	2.64E-01	2.68E-01	2.73E-01	2.77E-01	2.80E-01
3.378	2.74E-01	2.80E-01	2.86E-01	2.91E-01	2.95E-01	2.99E-01
3.355	2.92E-01	2.99E-01	3.05E-01	3.10E-01	3.15E-01	3.20E-01
3.332	3.12E-01	3.19E-01	3.26E-01	3.33E-01	3.38E-01	3.43E-01
3.309	3.33E-01	3.42E-01	3.50E-01	3.57E-01	3.63E-01	3.69E-01
3.286	3.57E-01	3.68E-01	3.77E-01	3.85E-01	3.92E-01	3.98E-01
3.263	3.84E-01	3.96E-01	4.07E-01	4.16E-01	4.24E-01	4.31E-01
3.240	4.13E-01	4.28E-01	4.40E-01	4.52E-01	4.61E-01	4.69E-01
3.217	4.46E-01	4.64E-01	4.79E-01	4.92E-01	5.03E-01	5.12E-01
3.194	4.83E-01	5.04E-01	5.23E-01	5.38E-01	5.51E-01	5.62E-01
3.171	5.25E-01	5.50E-01	5.73E-01	5.92E-01	6.08E-01	6.21E-01
3.148	5.72E-01	6.02E-01	6.30E-01	6.54E-01	6.74E-01	6.90E-01
3.125	6.24E-01	6.62E-01	6.97E-01	7.28E-01	7.53E-01	7.72E-01
3.102	6.83E-01	7.31E-01	7.76E-01	8.17E-01	8.49E-01	8.74E-01
3.079	7.49E-01	8.11E-01	8.69E-01	9.23E-01	9.66E-01	9.99E-01
3.056	8.24E-01	9.02E-01	9.80E-01	1.05E+00	1.11E+00	1.16E+00
3.033	9.06E-01	1.01E+00	1.11E+00	1.21E+00	1.29E+00	1.36E+00
3.010	9.96E-01	1.12E+00	1.26E+00	1.40E+00	1.52E+00	1.62E+00
2.987	1.09E+00	1.25E+00	1.44E+00	1.64E+00	1.82E+00	1.97E+00
2.964	1.20E+00	1.40E+00	1.64E+00	1.92E+00	2.22E+00	2.47E+00
2.941	1.34E+00	1.56E+00	1.87E+00	2.26E+00	2.73E+00	3.19E+00
2.918	1.51E+00	1.77E+00	2.13E+00	2.65E+00	3.39E+00	4.26E+00
2.895	1.73E+00	2.05E+00	2.50E+00	3.14E+00	4.18E+00	5.86E+00
2.872	1.99E+00	2.41E+00	3.00E+00	3.87E+00	5.26E+00	7.98E+00
2.849	2.26E+00	2.80E+00	3.58E+00	4.83E+00	7.08E+00	1.14E+01
2.826	2.52E+00	3.17E+00	4.13E+00	5.62E+00	8.54E+00	1.48E+01
2.803	2.78E+00	3.53E+00	4.68E+00	6.45E+00	9.59E+00	2.91E+01
2.780	3.06E+00	3.87E+00	5.13E+00	7.37E+00	9.94E+00	1.10E+01
2.757	3.39E+00	4.37E+00	5.82E+00	9.70E+00	1.72E+01	7.04E+00
2.734	3.73E+00	5.07E+00	7.20E+00	1.22E+01	4.02E+01	1.38E+01
2.711	4.24E+00	6.04E+00	1.11E+01	7.90E+00	6.61E+00	7.34E+00
2.688	5.25E+00	8.14E+00	4.35E+01	2.01E+01	7.24E+00	5.17E+00
2.665	6.88E+00	9.07E+00	7.46E+00	9.84E+00	7.82E+00	5.25E+00
2.642	1.06E+01	2.45E+01	7.06E+00	5.25E+00	4.91E+00	4.33E+00
2.619	9.05E+00	1.50E+01	1.21E+01	6.16E+00	4.31E+00	3.62E+00
2.596	7.47E+00	5.37E+00	5.52E+00	4.94E+00	4.01E+00	3.33E+00
2.573	2.46E+01	7.62E+00	4.65E+00	3.83E+00	3.34E+00	2.94E+00
2.550	6.42E+00	6.17E+00	4.57E+00	3.53E+00	2.97E+00	2.61E+00
2.527	4.83E+00	4.07E+00	3.56E+00	3.07E+00	2.67E+00	2.36E+00
2.504	5.31E+00	3.65E+00	2.96E+00	2.57E+00	2.30E+00	2.08E+00
2.481	3.29E+00	2.90E+00	2.51E+00	2.21E+00	1.99E+00	1.82E+00
2.458	1.90E+00	1.96E+00	1.90E+00	1.79E+00	1.68E+00	1.57E+00
2.435	1.24E+00	1.34E+00	1.39E+00	1.39E+00	1.37E+00	1.32E+00
2.412	9.03E-01	9.83E-01	1.04E+00	1.08E+00	1.10E+00	1.09E+00
2.389	7.10E-01	7.63E-01	8.15E-01	8.57E-01	8.85E-01	8.98E-01
2.366	5.84E-01	6.21E-01	6.60E-01	6.98E-01	7.27E-01	7.46E-01
2.343	4.96E-01	5.23E-01	5.52E-01	5.83E-01	6.09E-01	6.28E-01
2.320	4.31E-01	4.52E-01	4.74E-01	4.97E-01	5.19E-01	5.36E-01
2.297	3.81E-01	3.97E-01	4.15E-01	4.32E-01	4.49E-01	4.64E-01
2.274	3.40E-01	3.54E-01	3.68E-01	3.82E-01	3.95E-01	4.07E-01
2.251	3.07E-01	3.19E-01	3.30E-01	3.42E-01	3.52E-01	3.61E-01
2.228	2.80E-01	2.90E-01	3.00E-01	3.09E-01	3.17E-01	3.24E-01
2.205	2.57E-01	2.66E-01	2.74E-01	2.81E-01	2.87E-01	2.93E-01
2.182	2.37E-01	2.45E-01	2.52E-01	2.58E-01	2.63E-01	2.67E-01
2.159	2.19E-01	2.27E-01	2.32E-01	2.38E-01	2.42E-01	2.45E-01
2.136	2.04E-01	2.11E-01	2.16E-01	2.20E-01	2.23E-01	2.26E-01
2.113	1.91E-01	1.96E-01	2.01E-01	2.05E-01	2.08E-01	2.10E-01
2.090	1.79E-01	1.84E-01	1.88E-01	1.91E-01	1.93E-01	1.95E-01

X (km):	2.975	2.998	3.020	3.043	3.065	3.088
Y (km)						
3.562	1.91E-01	1.92E-01	1.92E-01	1.92E-01	1.91E-01	1.89E-01
3.539	2.01E-01	2.02E-01	2.02E-01	2.02E-01	2.01E-01	1.98E-01
3.516	2.11E-01	2.13E-01	2.13E-01	2.13E-01	2.11E-01	2.08E-01
3.493	2.23E-01	2.24E-01	2.25E-01	2.24E-01	2.22E-01	2.19E-01

3.470	2.36E-01	2.37E-01	2.38E-01	2.37E-01	2.35E-01	2.31E-01
3.447	2.50E-01	2.51E-01	2.52E-01	2.51E-01	2.48E-01	2.44E-01
3.424	2.66E-01	2.67E-01	2.67E-01	2.66E-01	2.63E-01	2.58E-01
3.401	2.83E-01	2.84E-01	2.84E-01	2.82E-01	2.79E-01	2.73E-01
3.378	3.02E-01	3.03E-01	3.03E-01	3.01E-01	2.96E-01	2.89E-01
3.355	3.23E-01	3.24E-01	3.24E-01	3.21E-01	3.16E-01	3.08E-01
3.332	3.46E-01	3.48E-01	3.47E-01	3.44E-01	3.37E-01	3.28E-01
3.309	3.72E-01	3.74E-01	3.73E-01	3.69E-01	3.61E-01	3.49E-01
3.286	4.02E-01	4.04E-01	4.02E-01	3.97E-01	3.87E-01	3.74E-01
3.263	4.36E-01	4.38E-01	4.35E-01	4.29E-01	4.17E-01	4.00E-01
3.240	4.74E-01	4.76E-01	4.73E-01	4.65E-01	4.50E-01	4.30E-01
3.217	5.18E-01	5.20E-01	5.16E-01	5.05E-01	4.88E-01	4.62E-01
3.194	5.69E-01	5.71E-01	5.66E-01	5.52E-01	5.30E-01	4.99E-01
3.171	6.29E-01	6.31E-01	6.24E-01	6.06E-01	5.78E-01	5.39E-01
3.148	7.00E-01	7.02E-01	6.92E-01	6.69E-01	6.32E-01	5.85E-01
3.125	7.85E-01	7.87E-01	7.74E-01	7.43E-01	6.95E-01	6.35E-01
3.102	8.90E-01	8.92E-01	8.73E-01	8.31E-01	7.68E-01	6.92E-01
3.079	1.02E+00	1.02E+00	9.95E-01	9.37E-01	8.52E-01	7.56E-01
3.056	1.18E+00	1.18E+00	1.15E+00	1.07E+00	9.50E-01	8.28E-01
3.033	1.40E+00	1.40E+00	1.34E+00	1.22E+00	1.06E+00	9.07E-01
3.010	1.68E+00	1.68E+00	1.59E+00	1.41E+00	1.19E+00	9.93E-01
2.987	2.07E+00	2.07E+00	1.92E+00	1.64E+00	1.34E+00	1.09E+00
2.964	2.63E+00	2.62E+00	2.36E+00	1.92E+00	1.51E+00	1.18E+00
2.941	3.49E+00	3.48E+00	2.97E+00	2.26E+00	1.68E+00	1.27E+00
2.918	4.93E+00	4.88E+00	3.80E+00	2.64E+00	1.85E+00	1.38E+00
2.895	7.62E+00	7.45E+00	4.87E+00	3.02E+00	2.08E+00	1.58E+00
2.872	1.34E+01	1.25E+01	6.00E+00	3.64E+00	2.65E+00	2.10E+00
2.849	2.42E+01	1.88E+01	1.04E+01	6.62E+00	4.50E+00	3.28E+00
2.826	1.76E+01	3.56E+01	2.41E+01	1.21E+01	7.21E+00	4.81E+00
2.803	1.45E+01	1.29E+01	1.72E+01	1.27E+01	8.64E+00	6.00E+00
2.780	1.80E+01	1.14E+01	8.99E+00	8.40E+00	7.21E+00	5.80E+00
2.757	6.82E+00	6.99E+00	6.38E+00	5.90E+00	5.43E+00	4.81E+00
2.734	6.91E+00	5.34E+00	4.73E+00	4.40E+00	4.18E+00	3.89E+00
2.711	6.24E+00	4.87E+00	4.04E+00	3.60E+00	3.37E+00	3.18E+00
2.688	4.62E+00	4.05E+00	3.52E+00	3.13E+00	2.88E+00	2.71E+00
2.665	4.10E+00	3.48E+00	3.05E+00	2.74E+00	2.52E+00	2.37E+00
2.642	3.70E+00	3.17E+00	2.76E+00	2.46E+00	2.25E+00	2.11E+00
2.619	3.18E+00	2.81E+00	2.50E+00	2.25E+00	2.05E+00	1.91E+00
2.596	2.88E+00	2.54E+00	2.26E+00	2.05E+00	1.88E+00	1.75E+00
2.573	2.61E+00	2.32E+00	2.08E+00	1.88E+00	1.73E+00	1.61E+00
2.550	2.33E+00	2.11E+00	1.91E+00	1.74E+00	1.60E+00	1.49E+00
2.527	2.11E+00	1.91E+00	1.74E+00	1.59E+00	1.47E+00	1.38E+00
2.504	1.90E+00	1.73E+00	1.58E+00	1.46E+00	1.36E+00	1.27E+00
2.481	1.67E+00	1.55E+00	1.43E+00	1.33E+00	1.24E+00	1.17E+00
2.458	1.47E+00	1.37E+00	1.28E+00	1.20E+00	1.13E+00	1.07E+00
2.435	1.27E+00	1.20E+00	1.14E+00	1.08E+00	1.02E+00	9.74E-01
2.412	1.07E+00	1.04E+00	9.97E-01	9.56E-01	9.17E-01	8.82E-01
2.389	8.97E-01	8.84E-01	8.64E-01	8.40E-01	8.15E-01	7.92E-01
2.366	7.54E-01	7.53E-01	7.45E-01	7.33E-01	7.20E-01	7.06E-01
2.343	6.40E-01	6.44E-01	6.43E-01	6.39E-01	6.33E-01	6.26E-01
2.320	5.48E-01	5.55E-01	5.58E-01	5.59E-01	5.57E-01	5.55E-01
2.297	4.75E-01	4.83E-01	4.88E-01	4.90E-01	4.91E-01	4.92E-01
2.274	4.17E-01	4.24E-01	4.29E-01	4.33E-01	4.35E-01	4.37E-01
2.251	3.69E-01	3.76E-01	3.81E-01	3.84E-01	3.88E-01	3.90E-01
2.228	3.30E-01	3.36E-01	3.40E-01	3.43E-01	3.47E-01	3.50E-01
2.205	2.98E-01	3.02E-01	3.06E-01	3.09E-01	3.12E-01	3.15E-01
2.182	2.71E-01	2.74E-01	2.77E-01	2.79E-01	2.82E-01	2.85E-01
2.159	2.48E-01	2.50E-01	2.52E-01	2.54E-01	2.57E-01	2.60E-01
2.136	2.28E-01	2.30E-01	2.31E-01	2.33E-01	2.35E-01	2.37E-01
2.113	2.11E-01	2.12E-01	2.13E-01	2.14E-01	2.16E-01	2.18E-01
2.090	1.96E-01	1.97E-01	1.97E-01	1.98E-01	1.99E-01	2.01E-01

X (km):	3.110	3.133	3.155	3.178	3.200	3.223
Y (km)						
3.562	1.86E-01	1.83E-01	1.78E-01	1.73E-01	1.67E-01	1.60E-01
3.539	1.95E-01	1.91E-01	1.86E-01	1.80E-01	1.73E-01	1.66E-01

3.516	2.05E-01	2.00E-01	1.94E-01	1.87E-01	1.80E-01	1.72E-01
3.493	2.15E-01	2.09E-01	2.03E-01	1.95E-01	1.87E-01	1.79E-01
3.470	2.26E-01	2.20E-01	2.12E-01	2.04E-01	1.95E-01	1.86E-01
3.447	2.38E-01	2.31E-01	2.22E-01	2.13E-01	2.03E-01	1.93E-01
3.424	2.51E-01	2.43E-01	2.33E-01	2.22E-01	2.11E-01	2.00E-01
3.401	2.65E-01	2.56E-01	2.44E-01	2.33E-01	2.20E-01	2.08E-01
3.378	2.80E-01	2.69E-01	2.57E-01	2.43E-01	2.30E-01	2.16E-01
3.355	2.97E-01	2.84E-01	2.70E-01	2.55E-01	2.39E-01	2.24E-01
3.332	3.15E-01	3.00E-01	2.84E-01	2.67E-01	2.50E-01	2.33E-01
3.309	3.35E-01	3.17E-01	2.99E-01	2.79E-01	2.60E-01	2.42E-01
3.286	3.56E-01	3.36E-01	3.14E-01	2.93E-01	2.72E-01	2.52E-01
3.263	3.79E-01	3.56E-01	3.31E-01	3.07E-01	2.84E-01	2.62E-01
3.240	4.05E-01	3.77E-01	3.49E-01	3.22E-01	2.96E-01	2.72E-01
3.217	4.33E-01	4.00E-01	3.68E-01	3.38E-01	3.09E-01	2.82E-01
3.194	4.63E-01	4.25E-01	3.89E-01	3.54E-01	3.22E-01	2.93E-01
3.171	4.96E-01	4.52E-01	4.10E-01	3.71E-01	3.35E-01	3.04E-01
3.148	5.32E-01	4.81E-01	4.32E-01	3.88E-01	3.49E-01	3.15E-01
3.125	5.72E-01	5.11E-01	4.56E-01	4.06E-01	3.63E-01	3.25E-01
3.102	6.15E-01	5.44E-01	4.80E-01	4.25E-01	3.77E-01	3.36E-01
3.079	6.63E-01	5.78E-01	5.06E-01	4.43E-01	3.90E-01	3.46E-01
3.056	7.14E-01	6.15E-01	5.32E-01	4.62E-01	4.04E-01	3.57E-01
3.033	7.69E-01	6.53E-01	5.57E-01	4.80E-01	4.18E-01	3.70E-01
3.010	8.26E-01	6.91E-01	5.83E-01	5.00E-01	4.35E-01	3.84E-01
2.987	8.83E-01	7.28E-01	6.11E-01	5.23E-01	4.57E-01	4.05E-01
2.964	9.40E-01	7.70E-01	6.46E-01	5.55E-01	4.86E-01	4.33E-01
2.941	1.01E+00	8.23E-01	6.95E-01	6.02E-01	5.32E-01	4.78E-01
2.918	1.10E+00	9.10E-01	7.79E-01	6.83E-01	6.10E-01	5.50E-01
2.895	1.28E+00	1.08E+00	9.40E-01	8.29E-01	7.39E-01	6.64E-01
2.872	1.72E+00	1.44E+00	1.23E+00	1.06E+00	9.29E-01	8.21E-01
2.849	2.51E+00	2.00E+00	1.63E+00	1.37E+00	1.16E+00	1.01E+00
2.826	3.47E+00	2.64E+00	2.09E+00	1.70E+00	1.42E+00	1.20E+00
2.803	4.33E+00	3.25E+00	2.53E+00	2.03E+00	1.67E+00	1.40E+00
2.780	4.57E+00	3.59E+00	2.86E+00	2.31E+00	1.90E+00	1.59E+00
2.757	4.14E+00	3.49E+00	2.93E+00	2.45E+00	2.06E+00	1.74E+00
2.734	3.52E+00	3.13E+00	2.75E+00	2.40E+00	2.09E+00	1.81E+00
2.711	2.97E+00	2.74E+00	2.49E+00	2.24E+00	2.00E+00	1.79E+00
2.688	2.55E+00	2.39E+00	2.22E+00	2.04E+00	1.87E+00	1.70E+00
2.665	2.23E+00	2.11E+00	1.98E+00	1.85E+00	1.72E+00	1.59E+00
2.642	1.99E+00	1.89E+00	1.79E+00	1.68E+00	1.58E+00	1.48E+00
2.619	1.80E+00	1.71E+00	1.62E+00	1.54E+00	1.46E+00	1.38E+00
2.596	1.64E+00	1.56E+00	1.48E+00	1.41E+00	1.35E+00	1.28E+00
2.573	1.51E+00	1.43E+00	1.37E+00	1.31E+00	1.25E+00	1.19E+00
2.550	1.40E+00	1.32E+00	1.26E+00	1.21E+00	1.16E+00	1.11E+00
2.527	1.29E+00	1.23E+00	1.17E+00	1.12E+00	1.08E+00	1.04E+00
2.504	1.20E+00	1.14E+00	1.09E+00	1.04E+00	1.00E+00	9.67E-01
2.481	1.11E+00	1.05E+00	1.01E+00	9.70E-01	9.35E-01	9.02E-01
2.458	1.02E+00	9.74E-01	9.35E-01	9.00E-01	8.70E-01	8.41E-01
2.435	9.33E-01	8.96E-01	8.64E-01	8.34E-01	8.08E-01	7.84E-01
2.412	8.50E-01	8.21E-01	7.95E-01	7.71E-01	7.49E-01	7.28E-01
2.389	7.69E-01	7.48E-01	7.28E-01	7.09E-01	6.92E-01	6.75E-01
2.366	6.91E-01	6.77E-01	6.63E-01	6.50E-01	6.36E-01	6.23E-01
2.343	6.18E-01	6.10E-01	6.01E-01	5.92E-01	5.83E-01	5.74E-01
2.320	5.51E-01	5.47E-01	5.43E-01	5.38E-01	5.32E-01	5.26E-01
2.297	4.91E-01	4.90E-01	4.89E-01	4.87E-01	4.84E-01	4.81E-01
2.274	4.39E-01	4.40E-01	4.40E-01	4.40E-01	4.40E-01	4.39E-01
2.251	3.93E-01	3.95E-01	3.97E-01	3.99E-01	3.99E-01	4.00E-01
2.228	3.53E-01	3.56E-01	3.59E-01	3.61E-01	3.63E-01	3.65E-01
2.205	3.19E-01	3.22E-01	3.25E-01	3.28E-01	3.30E-01	3.33E-01
2.182	2.89E-01	2.92E-01	2.95E-01	2.98E-01	3.01E-01	3.04E-01
2.159	2.62E-01	2.66E-01	2.69E-01	2.72E-01	2.75E-01	2.78E-01
2.136	2.40E-01	2.43E-01	2.46E-01	2.49E-01	2.52E-01	2.55E-01
2.113	2.20E-01	2.23E-01	2.26E-01	2.29E-01	2.32E-01	2.35E-01
2.090	2.03E-01	2.05E-01	2.08E-01	2.11E-01	2.14E-01	2.17E-01

X (km):	3.245	3.268	3.290	3.313	3.335	3.358

Y (km)

3.562	1.54E-01	1.47E-01	1.40E-01	1.34E-01	1.28E-01	1.21E-01
3.539	1.59E-01	1.52E-01	1.45E-01	1.38E-01	1.31E-01	1.24E-01
3.516	1.64E-01	1.57E-01	1.49E-01	1.41E-01	1.34E-01	1.27E-01
3.493	1.70E-01	1.62E-01	1.53E-01	1.45E-01	1.38E-01	1.31E-01
3.470	1.76E-01	1.67E-01	1.58E-01	1.50E-01	1.41E-01	1.34E-01
3.447	1.82E-01	1.72E-01	1.63E-01	1.54E-01	1.45E-01	1.37E-01
3.424	1.89E-01	1.78E-01	1.68E-01	1.58E-01	1.49E-01	1.40E-01
3.401	1.96E-01	1.84E-01	1.73E-01	1.63E-01	1.53E-01	1.44E-01
3.378	2.03E-01	1.90E-01	1.78E-01	1.67E-01	1.57E-01	1.47E-01
3.355	2.10E-01	1.96E-01	1.84E-01	1.72E-01	1.61E-01	1.50E-01
3.332	2.18E-01	2.03E-01	1.89E-01	1.76E-01	1.65E-01	1.54E-01
3.309	2.25E-01	2.09E-01	1.95E-01	1.81E-01	1.69E-01	1.57E-01
3.286	2.33E-01	2.16E-01	2.00E-01	1.86E-01	1.72E-01	1.60E-01
3.263	2.42E-01	2.23E-01	2.06E-01	1.90E-01	1.76E-01	1.64E-01
3.240	2.50E-01	2.30E-01	2.12E-01	1.95E-01	1.80E-01	1.67E-01
3.217	2.58E-01	2.37E-01	2.17E-01	2.00E-01	1.84E-01	1.70E-01
3.194	2.67E-01	2.44E-01	2.23E-01	2.04E-01	1.88E-01	1.73E-01
3.171	2.75E-01	2.50E-01	2.28E-01	2.09E-01	1.92E-01	1.77E-01
3.148	2.84E-01	2.57E-01	2.34E-01	2.13E-01	1.96E-01	1.81E-01
3.125	2.92E-01	2.64E-01	2.39E-01	2.18E-01	2.01E-01	1.85E-01
3.102	3.00E-01	2.70E-01	2.45E-01	2.24E-01	2.06E-01	1.90E-01
3.079	3.09E-01	2.78E-01	2.52E-01	2.30E-01	2.12E-01	1.96E-01
3.056	3.19E-01	2.86E-01	2.60E-01	2.38E-01	2.19E-01	2.03E-01
3.033	3.30E-01	2.97E-01	2.71E-01	2.48E-01	2.29E-01	2.13E-01
3.010	3.44E-01	3.11E-01	2.84E-01	2.61E-01	2.42E-01	2.26E-01
2.987	3.63E-01	3.30E-01	3.02E-01	2.80E-01	2.60E-01	2.44E-01
2.964	3.91E-01	3.57E-01	3.29E-01	3.06E-01	2.85E-01	2.68E-01
2.941	4.34E-01	3.98E-01	3.69E-01	3.43E-01	3.21E-01	3.01E-01
2.918	5.02E-01	4.61E-01	4.26E-01	3.95E-01	3.68E-01	3.44E-01
2.895	6.00E-01	5.47E-01	5.01E-01	4.61E-01	4.26E-01	3.95E-01
2.872	7.31E-01	6.56E-01	5.93E-01	5.40E-01	4.94E-01	4.54E-01
2.849	8.79E-01	7.78E-01	6.94E-01	6.25E-01	5.67E-01	5.17E-01
2.826	1.04E+00	9.06E-01	8.01E-01	7.15E-01	6.44E-01	5.83E-01
2.803	1.20E+00	1.04E+00	9.09E-01	8.06E-01	7.21E-01	6.50E-01
2.780	1.36E+00	1.17E+00	1.02E+00	9.00E-01	8.01E-01	7.19E-01
2.757	1.49E+00	1.29E+00	1.12E+00	9.91E-01	8.80E-01	7.87E-01
2.734	1.57E+00	1.38E+00	1.21E+00	1.07E+00	9.53E-01	8.53E-01
2.711	1.59E+00	1.41E+00	1.26E+00	1.13E+00	1.01E+00	9.08E-01
2.688	1.55E+00	1.40E+00	1.27E+00	1.15E+00	1.04E+00	9.44E-01
2.665	1.47E+00	1.36E+00	1.25E+00	1.14E+00	1.05E+00	9.60E-01
2.642	1.39E+00	1.29E+00	1.20E+00	1.11E+00	1.03E+00	9.56E-01
2.619	1.30E+00	1.22E+00	1.15E+00	1.07E+00	1.00E+00	9.38E-01
2.596	1.22E+00	1.15E+00	1.09E+00	1.03E+00	9.67E-01	9.10E-01
2.573	1.14E+00	1.08E+00	1.03E+00	9.77E-01	9.25E-01	8.76E-01
2.550	1.06E+00	1.02E+00	9.73E-01	9.27E-01	8.83E-01	8.40E-01
2.527	9.96E-01	9.56E-01	9.17E-01	8.78E-01	8.40E-01	8.02E-01
2.504	9.32E-01	8.98E-01	8.64E-01	8.30E-01	7.97E-01	7.64E-01
2.481	8.72E-01	8.42E-01	8.13E-01	7.84E-01	7.55E-01	7.27E-01
2.458	8.15E-01	7.89E-01	7.64E-01	7.39E-01	7.14E-01	6.90E-01
2.435	7.61E-01	7.39E-01	7.17E-01	6.96E-01	6.75E-01	6.54E-01
2.412	7.09E-01	6.90E-01	6.72E-01	6.54E-01	6.36E-01	6.18E-01
2.389	6.59E-01	6.44E-01	6.29E-01	6.14E-01	5.99E-01	5.83E-01
2.366	6.11E-01	5.99E-01	5.87E-01	5.74E-01	5.62E-01	5.49E-01
2.343	5.64E-01	5.55E-01	5.46E-01	5.36E-01	5.26E-01	5.16E-01
2.320	5.20E-01	5.13E-01	5.06E-01	4.99E-01	4.92E-01	4.84E-01
2.297	4.77E-01	4.73E-01	4.68E-01	4.63E-01	4.58E-01	4.52E-01
2.274	4.37E-01	4.35E-01	4.32E-01	4.29E-01	4.25E-01	4.21E-01
2.251	4.00E-01	3.99E-01	3.98E-01	3.96E-01	3.94E-01	3.92E-01
2.228	3.66E-01	3.66E-01	3.66E-01	3.66E-01	3.65E-01	3.64E-01
2.205	3.35E-01	3.36E-01	3.37E-01	3.38E-01	3.38E-01	3.38E-01
2.182	3.06E-01	3.08E-01	3.10E-01	3.11E-01	3.12E-01	3.13E-01
2.159	2.81E-01	2.83E-01	2.86E-01	2.87E-01	2.89E-01	2.90E-01
2.136	2.58E-01	2.61E-01	2.63E-01	2.66E-01	2.67E-01	2.69E-01
2.113	2.38E-01	2.41E-01	2.43E-01	2.46E-01	2.48E-01	2.50E-01
2.090	2.20E-01	2.22E-01	2.25E-01	2.27E-01	2.30E-01	2.32E-01

X (km):	3.380	3.403	3.425	3.448	3.470	3.493

Y (km)						
3.562	1.16E-01	1.10E-01	1.05E-01	9.98E-02	9.50E-02	9.06E-02
3.539	1.18E-01	1.12E-01	1.07E-01	1.02E-01	9.67E-02	9.20E-02
3.516	1.21E-01	1.15E-01	1.09E-01	1.04E-01	9.83E-02	9.35E-02
3.493	1.24E-01	1.17E-01	1.11E-01	1.05E-01	1.00E-01	9.49E-02
3.470	1.27E-01	1.20E-01	1.13E-01	1.07E-01	1.02E-01	9.63E-02
3.447	1.29E-01	1.22E-01	1.15E-01	1.09E-01	1.03E-01	9.77E-02
3.424	1.32E-01	1.25E-01	1.18E-01	1.11E-01	1.05E-01	9.91E-02
3.401	1.35E-01	1.27E-01	1.20E-01	1.13E-01	1.06E-01	1.00E-01
3.378	1.38E-01	1.30E-01	1.22E-01	1.15E-01	1.08E-01	1.02E-01
3.355	1.41E-01	1.32E-01	1.24E-01	1.16E-01	1.10E-01	1.03E-01
3.332	1.44E-01	1.34E-01	1.26E-01	1.18E-01	1.11E-01	1.05E-01
3.309	1.46E-01	1.37E-01	1.28E-01	1.20E-01	1.13E-01	1.06E-01
3.286	1.49E-01	1.39E-01	1.30E-01	1.22E-01	1.14E-01	1.08E-01
3.263	1.52E-01	1.42E-01	1.32E-01	1.24E-01	1.16E-01	1.09E-01
3.240	1.55E-01	1.44E-01	1.34E-01	1.26E-01	1.18E-01	1.11E-01
3.217	1.57E-01	1.46E-01	1.37E-01	1.28E-01	1.20E-01	1.13E-01
3.194	1.60E-01	1.49E-01	1.39E-01	1.30E-01	1.23E-01	1.16E-01
3.171	1.64E-01	1.52E-01	1.42E-01	1.33E-01	1.25E-01	1.18E-01
3.148	1.67E-01	1.56E-01	1.46E-01	1.36E-01	1.29E-01	1.21E-01
3.125	1.71E-01	1.60E-01	1.49E-01	1.40E-01	1.32E-01	1.25E-01
3.102	1.76E-01	1.64E-01	1.54E-01	1.45E-01	1.37E-01	1.30E-01
3.079	1.82E-01	1.70E-01	1.60E-01	1.51E-01	1.43E-01	1.35E-01
3.056	1.90E-01	1.78E-01	1.67E-01	1.58E-01	1.50E-01	1.42E-01
3.033	1.99E-01	1.87E-01	1.77E-01	1.67E-01	1.59E-01	1.51E-01
3.010	2.12E-01	2.00E-01	1.89E-01	1.79E-01	1.71E-01	1.63E-01
2.987	2.29E-01	2.16E-01	2.05E-01	1.95E-01	1.86E-01	1.77E-01
2.964	2.53E-01	2.39E-01	2.26E-01	2.15E-01	2.05E-01	1.95E-01
2.941	2.84E-01	2.68E-01	2.53E-01	2.40E-01	2.27E-01	2.16E-01
2.918	3.22E-01	3.02E-01	2.85E-01	2.69E-01	2.54E-01	2.41E-01
2.895	3.68E-01	3.44E-01	3.22E-01	3.02E-01	2.84E-01	2.68E-01
2.872	4.20E-01	3.89E-01	3.62E-01	3.38E-01	3.16E-01	2.97E-01
2.849	4.74E-01	4.37E-01	4.04E-01	3.75E-01	3.50E-01	3.27E-01
2.826	5.32E-01	4.87E-01	4.48E-01	4.15E-01	3.85E-01	3.58E-01
2.803	5.90E-01	5.38E-01	4.93E-01	4.54E-01	4.20E-01	3.90E-01
2.780	6.49E-01	5.90E-01	5.39E-01	4.95E-01	4.56E-01	4.22E-01
2.757	7.09E-01	6.43E-01	5.86E-01	5.37E-01	4.93E-01	4.56E-01
2.734	7.68E-01	6.95E-01	6.33E-01	5.78E-01	5.31E-01	4.89E-01
2.711	8.20E-01	7.43E-01	6.77E-01	6.18E-01	5.67E-01	5.23E-01
2.688	8.58E-01	7.82E-01	7.14E-01	6.54E-01	6.01E-01	5.54E-01
2.665	8.80E-01	8.07E-01	7.41E-01	6.82E-01	6.28E-01	5.80E-01
2.642	8.85E-01	8.18E-01	7.56E-01	7.00E-01	6.48E-01	6.01E-01
2.619	8.75E-01	8.15E-01	7.60E-01	7.07E-01	6.59E-01	6.14E-01
2.596	8.55E-01	8.02E-01	7.53E-01	7.06E-01	6.61E-01	6.19E-01
2.573	8.28E-01	7.82E-01	7.38E-01	6.96E-01	6.56E-01	6.18E-01
2.550	7.98E-01	7.57E-01	7.18E-01	6.81E-01	6.45E-01	6.10E-01
2.527	7.65E-01	7.30E-01	6.95E-01	6.62E-01	6.30E-01	5.99E-01
2.504	7.32E-01	7.01E-01	6.70E-01	6.41E-01	6.12E-01	5.84E-01
2.481	6.99E-01	6.71E-01	6.44E-01	6.18E-01	5.92E-01	5.67E-01
2.458	6.66E-01	6.41E-01	6.18E-01	5.94E-01	5.71E-01	5.49E-01
2.435	6.33E-01	6.12E-01	5.91E-01	5.70E-01	5.50E-01	5.30E-01
2.412	6.00E-01	5.82E-01	5.64E-01	5.46E-01	5.28E-01	5.10E-01
2.389	5.68E-01	5.52E-01	5.37E-01	5.21E-01	5.06E-01	4.90E-01
2.366	5.36E-01	5.23E-01	5.10E-01	4.97E-01	4.83E-01	4.70E-01
2.343	5.06E-01	4.95E-01	4.84E-01	4.72E-01	4.61E-01	4.49E-01
2.320	4.75E-01	4.66E-01	4.57E-01	4.48E-01	4.38E-01	4.28E-01
2.297	4.45E-01	4.39E-01	4.31E-01	4.24E-01	4.16E-01	4.07E-01
2.274	4.17E-01	4.11E-01	4.06E-01	4.00E-01	3.93E-01	3.87E-01
2.251	3.89E-01	3.85E-01	3.81E-01	3.77E-01	3.71E-01	3.66E-01
2.228	3.62E-01	3.60E-01	3.57E-01	3.54E-01	3.50E-01	3.46E-01
2.205	3.37E-01	3.36E-01	3.34E-01	3.32E-01	3.29E-01	3.26E-01
2.182	3.13E-01	3.13E-01	3.12E-01	3.11E-01	3.09E-01	3.07E-01
2.159	2.91E-01	2.91E-01	2.91E-01	2.91E-01	2.90E-01	2.89E-01
2.136	2.70E-01	2.71E-01	2.72E-01	2.72E-01	2.72E-01	2.71E-01
2.113	2.51E-01	2.52E-01	2.54E-01	2.54E-01	2.55E-01	2.55E-01
2.090	2.34E-01	2.35E-01	2.37E-01	2.38E-01	2.38E-01	2.39E-01

X (km):	3.515	3.538	3.560	3.583	3.605	3.628
Y (km)						
3.562	8.63E-02	8.23E-02	7.85E-02	7.50E-02	7.16E-02	6.85E-02
3.539	8.76E-02	8.34E-02	7.95E-02	7.58E-02	7.24E-02	6.91E-02
3.516	8.89E-02	8.45E-02	8.05E-02	7.67E-02	7.32E-02	6.98E-02
3.493	9.01E-02	8.56E-02	8.15E-02	7.76E-02	7.39E-02	7.05E-02
3.470	9.14E-02	8.67E-02	8.24E-02	7.84E-02	7.47E-02	7.12E-02
3.447	9.26E-02	8.78E-02	8.34E-02	7.93E-02	7.55E-02	7.19E-02
3.424	9.38E-02	8.89E-02	8.43E-02	8.02E-02	7.63E-02	7.27E-02
3.401	9.50E-02	9.00E-02	8.53E-02	8.10E-02	7.71E-02	7.35E-02
3.378	9.62E-02	9.11E-02	8.63E-02	8.20E-02	7.81E-02	7.44E-02
3.355	9.75E-02	9.22E-02	8.74E-02	8.30E-02	7.90E-02	7.53E-02
3.332	9.88E-02	9.34E-02	8.86E-02	8.41E-02	8.00E-02	7.63E-02
3.309	1.00E-01	9.47E-02	8.98E-02	8.52E-02	8.11E-02	7.75E-02
3.286	1.02E-01	9.60E-02	9.11E-02	8.66E-02	8.25E-02	7.87E-02
3.263	1.03E-01	9.76E-02	9.26E-02	8.81E-02	8.39E-02	8.01E-02
3.240	1.05E-01	9.94E-02	9.43E-02	8.97E-02	8.56E-02	8.18E-02
3.217	1.07E-01	1.01E-01	9.63E-02	9.16E-02	8.75E-02	8.36E-02
3.194	1.09E-01	1.04E-01	9.85E-02	9.38E-02	8.96E-02	8.58E-02
3.171	1.12E-01	1.06E-01	1.01E-01	9.64E-02	9.22E-02	8.84E-02
3.148	1.15E-01	1.09E-01	1.04E-01	9.95E-02	9.53E-02	9.14E-02
3.125	1.19E-01	1.13E-01	1.08E-01	1.03E-01	9.89E-02	9.50E-02
3.102	1.23E-01	1.18E-01	1.12E-01	1.08E-01	1.03E-01	9.94E-02
3.079	1.29E-01	1.23E-01	1.18E-01	1.13E-01	1.09E-01	1.05E-01
3.056	1.36E-01	1.30E-01	1.25E-01	1.20E-01	1.15E-01	1.11E-01
3.033	1.45E-01	1.39E-01	1.33E-01	1.28E-01	1.23E-01	1.19E-01
3.010	1.56E-01	1.49E-01	1.44E-01	1.38E-01	1.33E-01	1.28E-01
2.987	1.70E-01	1.63E-01	1.56E-01	1.50E-01	1.44E-01	1.39E-01
2.964	1.87E-01	1.78E-01	1.71E-01	1.64E-01	1.57E-01	1.51E-01
2.941	2.06E-01	1.96E-01	1.88E-01	1.80E-01	1.72E-01	1.65E-01
2.918	2.28E-01	2.17E-01	2.07E-01	1.97E-01	1.88E-01	1.80E-01
2.895	2.53E-01	2.39E-01	2.27E-01	2.16E-01	2.05E-01	1.96E-01
2.872	2.79E-01	2.63E-01	2.49E-01	2.36E-01	2.23E-01	2.12E-01
2.849	3.06E-01	2.88E-01	2.71E-01	2.56E-01	2.42E-01	2.30E-01
2.826	3.35E-01	3.13E-01	2.94E-01	2.77E-01	2.62E-01	2.47E-01
2.803	3.63E-01	3.39E-01	3.18E-01	2.99E-01	2.81E-01	2.65E-01
2.780	3.92E-01	3.66E-01	3.42E-01	3.20E-01	3.01E-01	2.84E-01
2.757	4.22E-01	3.93E-01	3.66E-01	3.43E-01	3.21E-01	3.02E-01
2.734	4.53E-01	4.20E-01	3.91E-01	3.65E-01	3.42E-01	3.21E-01
2.711	4.83E-01	4.48E-01	4.16E-01	3.88E-01	3.63E-01	3.40E-01
2.688	5.12E-01	4.74E-01	4.41E-01	4.11E-01	3.84E-01	3.60E-01
2.665	5.37E-01	4.99E-01	4.64E-01	4.32E-01	4.04E-01	3.78E-01
2.642	5.58E-01	5.19E-01	4.84E-01	4.51E-01	4.22E-01	3.95E-01
2.619	5.73E-01	5.34E-01	4.99E-01	4.67E-01	4.38E-01	4.11E-01
2.596	5.80E-01	5.44E-01	5.10E-01	4.79E-01	4.50E-01	4.23E-01
2.573	5.82E-01	5.48E-01	5.16E-01	4.86E-01	4.58E-01	4.32E-01
2.550	5.78E-01	5.47E-01	5.17E-01	4.89E-01	4.63E-01	4.38E-01
2.527	5.69E-01	5.41E-01	5.14E-01	4.88E-01	4.63E-01	4.40E-01
2.504	5.57E-01	5.32E-01	5.07E-01	4.83E-01	4.60E-01	4.39E-01
2.481	5.43E-01	5.20E-01	4.97E-01	4.76E-01	4.55E-01	4.35E-01
2.458	5.27E-01	5.06E-01	4.86E-01	4.66E-01	4.47E-01	4.29E-01
2.435	5.10E-01	4.91E-01	4.73E-01	4.55E-01	4.38E-01	4.21E-01
2.412	4.93E-01	4.76E-01	4.59E-01	4.43E-01	4.27E-01	4.12E-01
2.389	4.75E-01	4.59E-01	4.45E-01	4.30E-01	4.15E-01	4.01E-01
2.366	4.56E-01	4.43E-01	4.29E-01	4.16E-01	4.03E-01	3.90E-01
2.343	4.37E-01	4.25E-01	4.14E-01	4.02E-01	3.90E-01	3.79E-01
2.320	4.18E-01	4.08E-01	3.97E-01	3.87E-01	3.77E-01	3.66E-01
2.297	3.99E-01	3.90E-01	3.81E-01	3.72E-01	3.63E-01	3.54E-01
2.274	3.79E-01	3.72E-01	3.64E-01	3.57E-01	3.49E-01	3.41E-01
2.251	3.60E-01	3.54E-01	3.48E-01	3.41E-01	3.35E-01	3.28E-01
2.228	3.41E-01	3.36E-01	3.31E-01	3.26E-01	3.20E-01	3.14E-01
2.205	3.23E-01	3.19E-01	3.15E-01	3.10E-01	3.06E-01	3.01E-01
2.182	3.05E-01	3.02E-01	2.99E-01	2.95E-01	2.91E-01	2.87E-01
2.159	2.87E-01	2.85E-01	2.83E-01	2.80E-01	2.77E-01	2.74E-01
2.136	2.70E-01	2.69E-01	2.67E-01	2.65E-01	2.63E-01	2.60E-01
2.113	2.54E-01	2.53E-01	2.52E-01	2.51E-01	2.49E-01	2.48E-01

2.090	2.39E-01	2.39E-01	2.38E-01	2.37E-01	2.36E-01	2.35E-01

X (km):	3.650	3.673	3.695	3.718	3.740	3.763
Y (km)						
3.562	6.55E-02	6.27E-02	6.01E-02	5.77E-02	5.55E-02	5.34E-02
3.539	6.61E-02	6.33E-02	6.06E-02	5.82E-02	5.59E-02	5.38E-02
3.516	6.67E-02	6.38E-02	6.11E-02	5.86E-02	5.63E-02	5.42E-02
3.493	6.74E-02	6.44E-02	6.17E-02	5.91E-02	5.68E-02	5.46E-02
3.470	6.80E-02	6.50E-02	6.23E-02	5.97E-02	5.73E-02	5.52E-02
3.447	6.87E-02	6.57E-02	6.29E-02	6.03E-02	5.79E-02	5.57E-02
3.424	6.94E-02	6.64E-02	6.36E-02	6.09E-02	5.85E-02	5.63E-02
3.401	7.02E-02	6.71E-02	6.42E-02	6.16E-02	5.92E-02	5.70E-02
3.378	7.10E-02	6.79E-02	6.50E-02	6.24E-02	6.00E-02	5.77E-02
3.355	7.19E-02	6.88E-02	6.59E-02	6.33E-02	6.09E-02	5.86E-02
3.332	7.29E-02	6.98E-02	6.69E-02	6.42E-02	6.18E-02	5.95E-02
3.309	7.40E-02	7.09E-02	6.80E-02	6.53E-02	6.29E-02	6.06E-02
3.286	7.53E-02	7.21E-02	6.92E-02	6.65E-02	6.41E-02	6.18E-02
3.263	7.67E-02	7.35E-02	7.06E-02	6.79E-02	6.55E-02	6.32E-02
3.240	7.83E-02	7.51E-02	7.22E-02	6.95E-02	6.70E-02	6.48E-02
3.217	8.02E-02	7.70E-02	7.41E-02	7.14E-02	6.89E-02	6.66E-02
3.194	8.23E-02	7.91E-02	7.62E-02	7.35E-02	7.10E-02	6.87E-02
3.171	8.49E-02	8.17E-02	7.87E-02	7.60E-02	7.35E-02	7.11E-02
3.148	8.79E-02	8.46E-02	8.17E-02	7.89E-02	7.64E-02	7.40E-02
3.125	9.15E-02	8.82E-02	8.52E-02	8.24E-02	7.98E-02	7.74E-02
3.102	9.58E-02	9.24E-02	8.94E-02	8.65E-02	8.39E-02	8.14E-02
3.079	1.01E-01	9.75E-02	9.44E-02	9.14E-02	8.87E-02	8.61E-02
3.056	1.07E-01	1.04E-01	1.00E-01	9.73E-02	9.44E-02	9.16E-02
3.033	1.15E-01	1.11E-01	1.07E-01	1.04E-01	1.01E-01	9.79E-02
3.010	1.24E-01	1.19E-01	1.16E-01	1.12E-01	1.08E-01	1.05E-01
2.987	1.34E-01	1.29E-01	1.25E-01	1.20E-01	1.16E-01	1.13E-01
2.964	1.45E-01	1.40E-01	1.35E-01	1.30E-01	1.26E-01	1.21E-01
2.941	1.58E-01	1.52E-01	1.46E-01	1.41E-01	1.36E-01	1.31E-01
2.918	1.72E-01	1.65E-01	1.58E-01	1.52E-01	1.46E-01	1.41E-01
2.895	1.87E-01	1.78E-01	1.71E-01	1.64E-01	1.57E-01	1.51E-01
2.872	2.02E-01	1.93E-01	1.84E-01	1.76E-01	1.68E-01	1.61E-01
2.849	2.18E-01	2.07E-01	1.98E-01	1.89E-01	1.80E-01	1.72E-01
2.826	2.34E-01	2.22E-01	2.12E-01	2.02E-01	1.92E-01	1.84E-01
2.803	2.51E-01	2.38E-01	2.26E-01	2.15E-01	2.04E-01	1.95E-01
2.780	2.68E-01	2.53E-01	2.40E-01	2.28E-01	2.17E-01	2.06E-01
2.757	2.85E-01	2.69E-01	2.54E-01	2.41E-01	2.29E-01	2.18E-01
2.734	3.02E-01	2.85E-01	2.69E-01	2.55E-01	2.42E-01	2.30E-01
2.711	3.20E-01	3.01E-01	2.84E-01	2.69E-01	2.55E-01	2.42E-01
2.688	3.37E-01	3.17E-01	2.99E-01	2.83E-01	2.68E-01	2.54E-01
2.665	3.55E-01	3.34E-01	3.14E-01	2.97E-01	2.80E-01	2.66E-01
2.642	3.71E-01	3.49E-01	3.29E-01	3.10E-01	2.93E-01	2.78E-01
2.619	3.86E-01	3.63E-01	3.42E-01	3.23E-01	3.05E-01	2.89E-01
2.596	3.98E-01	3.75E-01	3.54E-01	3.35E-01	3.16E-01	3.00E-01
2.573	4.08E-01	3.85E-01	3.64E-01	3.44E-01	3.26E-01	3.09E-01
2.550	4.14E-01	3.92E-01	3.72E-01	3.52E-01	3.34E-01	3.17E-01
2.527	4.18E-01	3.97E-01	3.77E-01	3.58E-01	3.40E-01	3.24E-01
2.504	4.18E-01	3.98E-01	3.79E-01	3.61E-01	3.44E-01	3.28E-01
2.481	4.16E-01	3.97E-01	3.79E-01	3.63E-01	3.46E-01	3.31E-01
2.458	4.11E-01	3.94E-01	3.77E-01	3.62E-01	3.46E-01	3.32E-01
2.435	4.05E-01	3.89E-01	3.74E-01	3.59E-01	3.45E-01	3.31E-01
2.412	3.97E-01	3.82E-01	3.68E-01	3.54E-01	3.41E-01	3.28E-01
2.389	3.88E-01	3.74E-01	3.62E-01	3.49E-01	3.37E-01	3.25E-01
2.366	3.78E-01	3.66E-01	3.54E-01	3.42E-01	3.31E-01	3.20E-01
2.343	3.67E-01	3.56E-01	3.45E-01	3.35E-01	3.24E-01	3.14E-01
2.320	3.56E-01	3.46E-01	3.36E-01	3.27E-01	3.17E-01	3.08E-01
2.297	3.45E-01	3.36E-01	3.27E-01	3.18E-01	3.09E-01	3.01E-01
2.274	3.33E-01	3.25E-01	3.17E-01	3.09E-01	3.01E-01	2.93E-01
2.251	3.21E-01	3.13E-01	3.06E-01	2.99E-01	2.92E-01	2.85E-01
2.228	3.08E-01	3.02E-01	2.96E-01	2.89E-01	2.83E-01	2.77E-01
2.205	2.95E-01	2.90E-01	2.85E-01	2.79E-01	2.74E-01	2.68E-01
2.182	2.83E-01	2.78E-01	2.74E-01	2.69E-01	2.64E-01	2.59E-01
2.159	2.70E-01	2.66E-01	2.62E-01	2.58E-01	2.54E-01	2.51E-01

2.136	2.58E-01	2.55E-01	2.51E-01	2.48E-01	2.45E-01	2.42E-01
2.113	2.45E-01	2.43E-01	2.40E-01	2.38E-01	2.35E-01	2.33E-01
2.090	2.33E-01	2.32E-01	2.30E-01	2.28E-01	2.26E-01	2.24E-01

X (km):	3.785	3.808	3.830	3.853	3.875	3.898
Y (km)						
3.562	5.14E-02	4.95E-02	4.78E-02	4.62E-02	4.47E-02	4.32E-02
3.539	5.18E-02	4.99E-02	4.82E-02	4.65E-02	4.50E-02	4.35E-02
3.516	5.22E-02	5.03E-02	4.85E-02	4.69E-02	4.54E-02	4.39E-02
3.493	5.26E-02	5.07E-02	4.90E-02	4.73E-02	4.58E-02	4.44E-02
3.470	5.31E-02	5.12E-02	4.95E-02	4.78E-02	4.63E-02	4.48E-02
3.447	5.36E-02	5.17E-02	5.00E-02	4.83E-02	4.68E-02	4.53E-02
3.424	5.42E-02	5.23E-02	5.05E-02	4.89E-02	4.74E-02	4.59E-02
3.401	5.49E-02	5.30E-02	5.12E-02	4.95E-02	4.80E-02	4.66E-02
3.378	5.56E-02	5.37E-02	5.19E-02	5.03E-02	4.87E-02	4.73E-02
3.355	5.65E-02	5.45E-02	5.27E-02	5.11E-02	4.95E-02	4.81E-02
3.332	5.74E-02	5.55E-02	5.37E-02	5.20E-02	5.04E-02	4.90E-02
3.309	5.85E-02	5.65E-02	5.47E-02	5.30E-02	5.15E-02	5.00E-02
3.286	5.97E-02	5.77E-02	5.59E-02	5.42E-02	5.27E-02	5.12E-02
3.263	6.11E-02	5.91E-02	5.73E-02	5.56E-02	5.40E-02	5.25E-02
3.240	6.26E-02	6.07E-02	5.88E-02	5.71E-02	5.55E-02	5.40E-02
3.217	6.44E-02	6.25E-02	6.06E-02	5.89E-02	5.73E-02	5.58E-02
3.194	6.65E-02	6.45E-02	6.27E-02	6.09E-02	5.93E-02	5.78E-02
3.171	6.90E-02	6.69E-02	6.51E-02	6.33E-02	6.17E-02	6.01E-02
3.148	7.18E-02	6.98E-02	6.79E-02	6.61E-02	6.44E-02	6.28E-02
3.125	7.52E-02	7.31E-02	7.11E-02	6.93E-02	6.76E-02	6.59E-02
3.102	7.91E-02	7.70E-02	7.49E-02	7.30E-02	7.12E-02	6.95E-02
3.079	8.37E-02	8.14E-02	7.93E-02	7.73E-02	7.53E-02	7.35E-02
3.056	8.90E-02	8.66E-02	8.43E-02	8.21E-02	8.00E-02	7.80E-02
3.033	9.51E-02	9.24E-02	8.98E-02	8.74E-02	8.51E-02	8.29E-02
3.010	1.02E-01	9.88E-02	9.60E-02	9.33E-02	9.07E-02	8.83E-02
2.987	1.09E-01	1.06E-01	1.03E-01	9.98E-02	9.69E-02	9.41E-02
2.964	1.17E-01	1.14E-01	1.10E-01	1.07E-01	1.03E-01	1.00E-01
2.941	1.26E-01	1.22E-01	1.18E-01	1.14E-01	1.10E-01	1.07E-01
2.918	1.35E-01	1.31E-01	1.26E-01	1.22E-01	1.18E-01	1.14E-01
2.895	1.45E-01	1.40E-01	1.34E-01	1.30E-01	1.25E-01	1.21E-01
2.872	1.55E-01	1.49E-01	1.43E-01	1.38E-01	1.33E-01	1.28E-01
2.849	1.65E-01	1.58E-01	1.52E-01	1.46E-01	1.41E-01	1.36E-01
2.826	1.76E-01	1.68E-01	1.61E-01	1.55E-01	1.49E-01	1.43E-01
2.803	1.86E-01	1.78E-01	1.70E-01	1.63E-01	1.57E-01	1.51E-01
2.780	1.97E-01	1.88E-01	1.80E-01	1.72E-01	1.65E-01	1.58E-01
2.757	2.07E-01	1.98E-01	1.89E-01	1.81E-01	1.73E-01	1.66E-01
2.734	2.18E-01	2.08E-01	1.99E-01	1.90E-01	1.81E-01	1.74E-01
2.711	2.30E-01	2.18E-01	2.08E-01	1.99E-01	1.90E-01	1.82E-01
2.688	2.41E-01	2.29E-01	2.18E-01	2.08E-01	1.98E-01	1.90E-01
2.665	2.52E-01	2.39E-01	2.28E-01	2.17E-01	2.07E-01	1.98E-01
2.642	2.63E-01	2.50E-01	2.38E-01	2.26E-01	2.16E-01	2.06E-01
2.619	2.74E-01	2.60E-01	2.47E-01	2.35E-01	2.24E-01	2.14E-01
2.596	2.84E-01	2.70E-01	2.56E-01	2.44E-01	2.33E-01	2.22E-01
2.573	2.93E-01	2.79E-01	2.65E-01	2.52E-01	2.41E-01	2.30E-01
2.550	3.01E-01	2.87E-01	2.73E-01	2.60E-01	2.48E-01	2.37E-01
2.527	3.08E-01	2.93E-01	2.80E-01	2.67E-01	2.54E-01	2.43E-01
2.504	3.13E-01	2.99E-01	2.85E-01	2.72E-01	2.60E-01	2.49E-01
2.481	3.16E-01	3.02E-01	2.89E-01	2.76E-01	2.65E-01	2.53E-01
2.458	3.18E-01	3.04E-01	2.92E-01	2.80E-01	2.68E-01	2.57E-01
2.435	3.18E-01	3.05E-01	2.93E-01	2.81E-01	2.70E-01	2.60E-01
2.412	3.16E-01	3.04E-01	2.93E-01	2.82E-01	2.71E-01	2.61E-01
2.389	3.13E-01	3.02E-01	2.91E-01	2.81E-01	2.71E-01	2.62E-01
2.366	3.09E-01	2.99E-01	2.89E-01	2.79E-01	2.70E-01	2.61E-01
2.343	3.04E-01	2.95E-01	2.85E-01	2.76E-01	2.68E-01	2.60E-01
2.320	2.99E-01	2.90E-01	2.81E-01	2.73E-01	2.65E-01	2.58E-01
2.297	2.92E-01	2.84E-01	2.76E-01	2.69E-01	2.62E-01	2.55E-01
2.274	2.85E-01	2.78E-01	2.71E-01	2.64E-01	2.58E-01	2.51E-01
2.251	2.78E-01	2.72E-01	2.65E-01	2.59E-01	2.53E-01	2.47E-01
2.228	2.71E-01	2.65E-01	2.59E-01	2.54E-01	2.48E-01	2.42E-01
2.205	2.63E-01	2.58E-01	2.53E-01	2.48E-01	2.43E-01	2.37E-01

2.182	2.55E-01	2.50E-01	2.46E-01	2.41E-01	2.37E-01	2.32E-01
2.159	2.47E-01	2.43E-01	2.39E-01	2.35E-01	2.31E-01	2.26E-01
2.136	2.38E-01	2.35E-01	2.31E-01	2.28E-01	2.24E-01	2.20E-01
2.113	2.30E-01	2.27E-01	2.24E-01	2.21E-01	2.18E-01	2.14E-01
2.090	2.21E-01	2.19E-01	2.16E-01	2.14E-01	2.11E-01	2.08E-01

X (km):	3.920	3.943	3.965	3.988	4.010
Y (km)					
3.562	4.18E-02	4.06E-02	3.94E-02	3.82E-02	3.72E-02
3.539	4.22E-02	4.09E-02	3.97E-02	3.86E-02	3.75E-02
3.516	4.26E-02	4.13E-02	4.01E-02	3.90E-02	3.79E-02
3.493	4.30E-02	4.18E-02	4.06E-02	3.94E-02	3.84E-02
3.470	4.35E-02	4.22E-02	4.10E-02	3.99E-02	3.88E-02
3.447	4.40E-02	4.27E-02	4.16E-02	4.04E-02	3.94E-02
3.424	4.46E-02	4.33E-02	4.21E-02	4.10E-02	4.00E-02
3.401	4.52E-02	4.40E-02	4.28E-02	4.17E-02	4.06E-02
3.378	4.59E-02	4.47E-02	4.35E-02	4.24E-02	4.14E-02
3.355	4.68E-02	4.55E-02	4.43E-02	4.32E-02	4.22E-02
3.332	4.77E-02	4.64E-02	4.52E-02	4.41E-02	4.31E-02
3.309	4.87E-02	4.74E-02	4.63E-02	4.51E-02	4.41E-02
3.286	4.99E-02	4.86E-02	4.74E-02	4.63E-02	4.53E-02
3.263	5.12E-02	4.99E-02	4.87E-02	4.76E-02	4.66E-02
3.240	5.27E-02	5.14E-02	5.02E-02	4.91E-02	4.80E-02
3.217	5.44E-02	5.31E-02	5.19E-02	5.08E-02	4.97E-02
3.194	5.64E-02	5.51E-02	5.39E-02	5.27E-02	5.17E-02
3.171	5.87E-02	5.74E-02	5.61E-02	5.50E-02	5.39E-02
3.148	6.13E-02	6.00E-02	5.87E-02	5.75E-02	5.63E-02
3.125	6.44E-02	6.30E-02	6.16E-02	6.04E-02	5.91E-02
3.102	6.79E-02	6.63E-02	6.49E-02	6.35E-02	6.22E-02
3.079	7.17E-02	7.01E-02	6.85E-02	6.71E-02	6.57E-02
3.056	7.61E-02	7.42E-02	7.25E-02	7.09E-02	6.94E-02
3.033	8.08E-02	7.88E-02	7.69E-02	7.51E-02	7.35E-02
3.010	8.59E-02	8.37E-02	8.17E-02	7.97E-02	7.78E-02
2.987	9.15E-02	8.91E-02	8.67E-02	8.45E-02	8.25E-02
2.964	9.75E-02	9.47E-02	9.21E-02	8.96E-02	8.73E-02
2.941	1.04E-01	1.01E-01	9.77E-02	9.50E-02	9.24E-02
2.918	1.10E-01	1.07E-01	1.04E-01	1.00E-01	9.77E-02
2.895	1.17E-01	1.13E-01	1.09E-01	1.06E-01	1.03E-01
2.872	1.24E-01	1.20E-01	1.16E-01	1.12E-01	1.09E-01
2.849	1.31E-01	1.26E-01	1.22E-01	1.18E-01	1.14E-01
2.826	1.38E-01	1.33E-01	1.28E-01	1.24E-01	1.20E-01
2.803	1.45E-01	1.40E-01	1.35E-01	1.30E-01	1.26E-01
2.780	1.52E-01	1.46E-01	1.41E-01	1.36E-01	1.31E-01
2.757	1.59E-01	1.53E-01	1.47E-01	1.42E-01	1.37E-01
2.734	1.67E-01	1.60E-01	1.54E-01	1.48E-01	1.43E-01
2.711	1.74E-01	1.67E-01	1.60E-01	1.54E-01	1.49E-01
2.688	1.82E-01	1.74E-01	1.67E-01	1.61E-01	1.55E-01
2.665	1.89E-01	1.81E-01	1.74E-01	1.67E-01	1.61E-01
2.642	1.97E-01	1.88E-01	1.81E-01	1.74E-01	1.67E-01
2.619	2.04E-01	1.96E-01	1.88E-01	1.80E-01	1.73E-01
2.596	2.12E-01	2.03E-01	1.94E-01	1.87E-01	1.79E-01
2.573	2.19E-01	2.10E-01	2.01E-01	1.93E-01	1.85E-01
2.550	2.26E-01	2.16E-01	2.08E-01	1.99E-01	1.91E-01
2.527	2.32E-01	2.23E-01	2.14E-01	2.05E-01	1.97E-01
2.504	2.38E-01	2.28E-01	2.19E-01	2.11E-01	2.03E-01
2.481	2.43E-01	2.33E-01	2.24E-01	2.16E-01	2.07E-01
2.458	2.47E-01	2.37E-01	2.28E-01	2.20E-01	2.12E-01
2.435	2.50E-01	2.41E-01	2.32E-01	2.23E-01	2.15E-01
2.412	2.52E-01	2.43E-01	2.34E-01	2.26E-01	2.18E-01
2.389	2.53E-01	2.44E-01	2.36E-01	2.28E-01	2.20E-01
2.366	2.53E-01	2.45E-01	2.37E-01	2.29E-01	2.22E-01
2.343	2.52E-01	2.44E-01	2.37E-01	2.30E-01	2.23E-01
2.320	2.50E-01	2.43E-01	2.36E-01	2.29E-01	2.22E-01
2.297	2.48E-01	2.41E-01	2.34E-01	2.28E-01	2.22E-01
2.274	2.45E-01	2.38E-01	2.32E-01	2.26E-01	2.20E-01
2.251	2.41E-01	2.35E-01	2.30E-01	2.24E-01	2.18E-01

2.228	2.37E-01	2.32E-01	2.26E-01	2.21E-01	2.16E-01
2.205	2.32E-01	2.27E-01	2.23E-01	2.18E-01	2.13E-01
2.182	2.28E-01	2.23E-01	2.18E-01	2.14E-01	2.09E-01
2.159	2.22E-01	2.18E-01	2.14E-01	2.10E-01	2.06E-01
2.136	2.17E-01	2.13E-01	2.09E-01	2.05E-01	2.02E-01
2.113	2.11E-01	2.08E-01	2.04E-01	2.01E-01	1.97E-01
2.090	2.05E-01	2.02E-01	1.99E-01	1.96E-01	1.93E-01

Concentrations at the discrete receptors (No. : Value):

1:1.19E+00 2:6.29E-01 3:1.55E-01 4:3.18E-01 5:1.60E-01
6:6.67E-01 7:8.09E-01 8:8.27E-01
9:7.65E-01 10:1.19E+00 11:2.03E+00 12:3.72E+00 13:4.13E+00
14:6.42E+00 15:6.48E+00 16:3.18E+00
17:1.77E+00 18:1.22E+00 19:1.40E+00 20:2.12E+00 21:4.06E+00
22:2.09E+00

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11329200 Heatherbrae TSP Concrete Batching Plant and Operations

Concentration or deposition	Concentration
Emission rate units	kg/hour
Concentration units	microgram/m3
Units conversion factor	2.78E+05
Constant background concentration	0.00E+00
Terrain effects	None
Plume depletion due to wet removal mechanisms included.	
Smooth stability class changes?	No
Other stability class adjustments ("urban modes")	None
Ignore building wake effects?	Yes
Decay coefficient (unless overridden by met. file)	0.000
Anemometer height	10 m
Roughness height at the wind vane site	0.300 m
Averaging time for sigma-theta values	60 min.

DISPERSION CURVES

Horizontal dispersion curves for sources <100m high	Sigma-theta
Vertical dispersion curves for sources <100m high	Pasquill-Gifford
Horizontal dispersion curves for sources >100m high	Briggs Rural
Vertical dispersion curves for sources >100m high	Briggs Rural
Enhance horizontal plume spreads for buoyancy?	Yes
Enhance vertical plume spreads for buoyancy?	Yes
Adjust horizontal P-G formulae for roughness height?	Yes
Adjust vertical P-G formulae for roughness height?	Yes
Roughness height	0.800m
Adjustment for wind directional shear	None

PLUME RISE OPTIONS

Gradual plume rise?	Yes
Stack-tip downwash included?	Yes
Building downwash algorithm:	PRIME method.
Entrainment coeff. for neutral & stable lapse rates	0.60,0.60
Partial penetration of elevated inversions?	No
Disregard temp. gradients in the hourly met. file?	No

and in the absence of boundary-layer potential temperature gradients given by the hourly met. file, a value from the following table (in K/m) is used:

Wind Speed Category	Stability Class A	B	C	D	E	F
1	0.000	0.000	0.000	0.000	0.020	0.035
2	0.000	0.000	0.000	0.000	0.020	0.035
3	0.000	0.000	0.000	0.000	0.020	0.035
4	0.000	0.000	0.000	0.000	0.020	0.035
5	0.000	0.000	0.000	0.000	0.020	0.035
6	0.000	0.000	0.000	0.000	0.020	0.035

WIND SPEED CATEGORIES
Boundaries between categories (in m/s) are: 1.54, 3.09, 5.14, 8.23, 10.80

WIND PROFILE EXPONENTS: "Irwin Rural" values (unless overridden by met. file)

AVERAGING TIMES
average over all hours

SOURCE CHARACTERISTICS

VOLUME SOURCE: CBP

X(m)	Y(m)	Ground Elevation	Height	Hor. spread	Vert. spread
2986	2840	0m	4m	1m	2m

Emission rates by season and hour, in kg/hour:

Summer:	1 0.00E+00	2 0.00E+00	3 0.00E+00	4 0.00E+00
	5 0.00E+00	6 0.00E+00	7 0.00E+00	8 0.00E+00
	9 0.00E+00	10 0.00E+00	11 0.00E+00	12 0.00E+00
	13 0.00E+00	14 0.00E+00	15 0.00E+00	16 0.00E+00
	17 0.00E+00	18 0.00E+00	19 0.00E+00	20 0.00E+00
	21 0.00E+00	22 0.00E+00	23 0.00E+00	24 0.00E+00
Autumn:	1 0.00E+00	2 0.00E+00	3 0.00E+00	4 0.00E+00
	5 0.00E+00	6 0.00E+00	7 2.00E+00	8 2.00E+00
	9 2.00E+00	10 2.00E+00	11 2.00E+00	12 2.00E+00
	13 2.00E+00	14 2.00E+00	15 2.00E+00	16 2.00E+00
	17 2.00E+00	18 2.00E+00	19 0.00E+00	20 0.00E+00
	21 0.00E+00	22 0.00E+00	23 0.00E+00	24 0.00E+00
Winter:	1 0.00E+00	2 0.00E+00	3 0.00E+00	4 0.00E+00
	5 0.00E+00	6 0.00E+00	7 2.00E+00	8 2.00E+00
	9 2.00E+00	10 2.00E+00	11 2.00E+00	12 2.00E+00
	13 2.00E+00	14 2.00E+00	15 2.00E+00	16 2.00E+00
	17 2.00E+00	18 2.00E+00	19 0.00E+00	20 0.00E+00
	21 0.00E+00	22 0.00E+00	23 0.00E+00	24 0.00E+00
Spring:	1 0.00E+00	2 0.00E+00	3 0.00E+00	4 0.00E+00
	5 0.00E+00	6 0.00E+00	7 2.00E+00	8 2.00E+00
	9 2.00E+00	10 2.00E+00	11 2.00E+00	12 2.00E+00
	13 2.00E+00	14 2.00E+00	15 2.00E+00	16 2.00E+00
	17 2.00E+00	18 2.00E+00	19 0.00E+00	20 0.00E+00
	21 0.00E+00	22 0.00E+00	23 0.00E+00	24 0.00E+00

Particle Mass fraction	Particle Size (micron)	Particle Density (g/cm3)	Precipitation-Scavenging Coefficients (1/(s-mm/hr)) ----Liquid	--------Ice-----
0.5000	10.0	2.05	0.00068	0.00000
0.5000	30.0	2.05	0.00068	0.00000

VOLUME SOURCE: DUMP

X(m)	Y(m)	Ground Elevation	Height	Hor. spread	Vert. spread
3016	2810	0m	2m	2m	1m

Emission rates by season and hour, in kg/hour:

Summer:	1 0.00E+00	2 0.00E+00	3 0.00E+00	4 0.00E+00
	5 0.00E+00	6 0.00E+00	7 0.00E+00	8 0.00E+00
	9 0.00E+00	10 0.00E+00	11 0.00E+00	12 0.00E+00
	13 0.00E+00	14 0.00E+00	15 0.00E+00	16 0.00E+00
	17 0.00E+00	18 0.00E+00	19 0.00E+00	20 0.00E+00
	21 0.00E+00	22 0.00E+00	23 0.00E+00	24 0.00E+00
Autumn:	1 0.00E+00	2 0.00E+00	3 0.00E+00	4 0.00E+00
	5 0.00E+00	6 0.00E+00	7 1.84E-01	8 0.00E+00
	9 1.84E-01	10 0.00E+00	11 1.84E-01	12 0.00E+00
	13 1.84E-01	14 0.00E+00	15 1.84E-01	16 0.00E+00
	17 1.84E-01	18 0.00E+00	19 0.00E+00	20 0.00E+00
	21 0.00E+00	22 0.00E+00	23 0.00E+00	24 0.00E+00
Winter:	1 0.00E+00	2 0.00E+00	3 0.00E+00	4 0.00E+00
	5 0.00E+00	6 0.00E+00	7 1.84E-01	8 0.00E+00
	9 1.84E-01	10 0.00E+00	11 1.84E-01	12 0.00E+00

	13	1.84E-01	14	0.00E+00	15	1.84E-01	16 0.00E+00
	17	1.84E-01	18	0.00E+00	19	0.00E+00	20 0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24 0.00E+00
Spring:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4 0.00E+00
	5	0.00E+00	6	0.00E+00	7	1.84E-01	8 0.00E+00
	9	1.84E-01	10	0.00E+00	11	1.84E-01	12 0.00E+00
	13	1.84E-01	14	0.00E+00	15	1.84E-01	16 0.00E+00
	17	1.84E-01	18	0.00E+00	19	0.00E+00	20 0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24 0.00E+00

Particle Mass fraction	Particle Size (micron)	Particle Density (g/cm3)	Precipitation-Scavenging Coefficients (1/(s-mm/hr)) ----Liquid--------	Ice-----
0.2600	10.0	2.05	0.00068	0.00000
0.7400	30.0	2.05	0.00068	0.00000

VOLUME SOURCE: TV1

X(m)	Y(m)	Ground Elevation	Height	Hor. spread	Vert. spread
2789	2526	0m	1m	1m	1m

Emission rates by season and hour, in kg/hour:

Summer:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4 0.00E+00
	5	0.00E+00	6	0.00E+00	7	0.00E+00	8 0.00E+00
	9	0.00E+00	10	0.00E+00	11	0.00E+00	12 0.00E+00
	13	0.00E+00	14	0.00E+00	15	0.00E+00	16 0.00E+00
	17	0.00E+00	18	0.00E+00	19	0.00E+00	20 0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24 0.00E+00
Autumn:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4 0.00E+00
	5	0.00E+00	6	0.00E+00	7	7.15E-01	8 7.15E-01
	9	7.15E-01	10	7.15E-01	11	7.15E-01	12 7.15E-01
	13	7.15E-01	14	7.15E-01	15	7.15E-01	16 7.15E-01
	17	7.15E-01	18	7.15E-01	19	0.00E+00	20 0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24 0.00E+00
Winter:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4 0.00E+00
	5	0.00E+00	6	0.00E+00	7	7.15E-01	8 7.15E-01
	9	7.15E-01	10	7.15E-01	11	7.15E-01	12 7.15E-01
	13	7.15E-01	14	7.15E-01	15	7.15E-01	16 7.15E-01
	17	7.15E-01	18	7.15E-01	19	0.00E+00	20 0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24 0.00E+00
Spring:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4 0.00E+00
	5	0.00E+00	6	0.00E+00	7	7.15E-01	8 7.15E-01
	9	7.15E-01	10	7.15E-01	11	7.15E-01	12 7.15E-01
	13	7.15E-01	14	7.15E-01	15	7.15E-01	16 7.15E-01
	17	7.15E-01	18	7.15E-01	19	0.00E+00	20 0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24 0.00E+00

Particle Mass fraction	Particle Size (micron)	Particle Density (g/cm3)	Precipitation-Scavenging Coefficients (1/(s-mm/hr)) ----Liquid--------	Ice-----
0.2000	10.0	2.05	0.00068	0.00000
0.8000	30.0	2.05	0.00068	0.00000

VOLUME SOURCE: TV2

X(m)	Y(m)	Ground Elevation	Height	Hor. spread	Vert. spread
2823	2580	0m	1m	1m	1m

Emission rates by season and hour, in kg/hour:

Summer:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4 0.00E+00
	5	0.00E+00	6	0.00E+00	7	0.00E+00	8 0.00E+00
	9	0.00E+00	10	0.00E+00	11	0.00E+00	12 0.00E+00

	13	0.00E+00	14	0.00E+00	15	0.00E+00	16 0.00E+00
	17	0.00E+00	18	0.00E+00	19	0.00E+00	20 0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24 0.00E+00
Autumn:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4 0.00E+00
	5	0.00E+00	6	0.00E+00	7	7.15E-01	8 7.15E-01
	9	7.15E-01	10	7.15E-01	11	7.15E-01	12 7.15E-01
	13	7.15E-01	14	7.15E-01	15	7.15E-01	16 7.15E-01
	17	7.15E-01	18	7.15E-01	19	0.00E+00	20 0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24 0.00E+00
Winter:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4 0.00E+00
	5	0.00E+00	6	0.00E+00	7	7.15E-01	8 7.15E-01
	9	7.15E-01	10	7.15E-01	11	7.15E-01	12 7.15E-01
	13	7.15E-01	14	7.15E-01	15	7.15E-01	16 7.15E-01
	17	7.15E-01	18	7.15E-01	19	0.00E+00	20 0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24 0.00E+00
Spring:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4 0.00E+00
	5	0.00E+00	6	0.00E+00	7	7.15E-01	8 7.15E-01
	9	7.15E-01	10	7.15E-01	11	7.15E-01	12 7.15E-01
	13	7.15E-01	14	7.15E-01	15	7.15E-01	16 7.15E-01
	17	7.15E-01	18	7.15E-01	19	0.00E+00	20 0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24 0.00E+00

Particle Mass fraction	Particle Size (micron)	Particle Density (g/cm3)	Precipitation-Scavenging Coefficients (1/(s-mm/hr)) ----Liquid--------	Ice-----
0.2000	10.0	2.05	0.00068	0.00000
0.8000	30.0	2.05	0.00068	0.00000

VOLUME SOURCE: TV3

X(m)	Y(m)	Ground Elevation	Height	Hor. spread	Vert. spread
2857	2634	0m	1m	1m	1m

Emission rates by season and hour, in kg/hour:

Summer:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4 0.00E+00
	5	0.00E+00	6	0.00E+00	7	0.00E+00	8 0.00E+00
	9	0.00E+00	10	0.00E+00	11	0.00E+00	12 0.00E+00
	13	0.00E+00	14	0.00E+00	15	0.00E+00	16 0.00E+00
	17	0.00E+00	18	0.00E+00	19	0.00E+00	20 0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24 0.00E+00
Autumn:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4 0.00E+00
	5	0.00E+00	6	0.00E+00	7	7.15E-01	8 7.15E-01
	9	7.15E-01	10	7.15E-01	11	7.15E-01	12 7.15E-01
	13	7.15E-01	14	7.15E-01	15	7.15E-01	16 7.15E-01
	17	7.15E-01	18	7.15E-01	19	0.00E+00	20 0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24 0.00E+00
Winter:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4 0.00E+00
	5	0.00E+00	6	0.00E+00	7	7.15E-01	8 7.15E-01
	9	7.15E-01	10	7.15E-01	11	7.15E-01	12 7.15E-01
	13	7.15E-01	14	7.15E-01	15	7.15E-01	16 7.15E-01
	17	7.15E-01	18	7.15E-01	19	0.00E+00	20 0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24 0.00E+00
Spring:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4 0.00E+00
	5	0.00E+00	6	0.00E+00	7	7.15E-01	8 7.15E-01
	9	7.15E-01	10	7.15E-01	11	7.15E-01	12 7.15E-01
	13	7.15E-01	14	7.15E-01	15	7.15E-01	16 7.15E-01
	17	7.15E-01	18	7.15E-01	19	0.00E+00	20 0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24 0.00E+00

Particle Mass fraction	Particle Size (micron)	Particle Density (g/cm3)	Precipitation-Scavenging Coefficients (1/(s-mm/hr)) ----Liquid--------	Ice-----
0.2000	10.0	2.05	0.00068	0.00000
0.8000	30.0	2.05	0.00068	0.00000

VOLUME SOURCE: TV4

X(m)	Y(m)	Ground Elevation	Height	Hor. spread	Vert. spread
2891	2688	0m	1m	1m	1m

Emission rates by season and hour, in kg/hour:

Summer:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4 0.00E+00
	5	0.00E+00	6	0.00E+00	7	0.00E+00	8 0.00E+00
	9	0.00E+00	10	0.00E+00	11	0.00E+00	12 0.00E+00
	13	0.00E+00	14	0.00E+00	15	0.00E+00	16 0.00E+00
	17	0.00E+00	18	0.00E+00	19	0.00E+00	20 0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24 0.00E+00
Autumn:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4 0.00E+00
	5	0.00E+00	6	0.00E+00	7	7.15E-01	8 7.15E-01
	9	7.15E-01	10	7.15E-01	11	7.15E-01	12 7.15E-01
	13	7.15E-01	14	7.15E-01	15	7.15E-01	16 7.15E-01
	17	7.15E-01	18	7.15E-01	19	0.00E+00	20 0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24 0.00E+00
Winter:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4 0.00E+00
	5	0.00E+00	6	0.00E+00	7	7.15E-01	8 7.15E-01
	9	7.15E-01	10	7.15E-01	11	7.15E-01	12 7.15E-01
	13	7.15E-01	14	7.15E-01	15	7.15E-01	16 7.15E-01
	17	7.15E-01	18	7.15E-01	19	0.00E+00	20 0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24 0.00E+00
Spring:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4 0.00E+00
	5	0.00E+00	6	0.00E+00	7	7.15E-01	8 7.15E-01
	9	7.15E-01	10	7.15E-01	11	7.15E-01	12 7.15E-01
	13	7.15E-01	14	7.15E-01	15	7.15E-01	16 7.15E-01
	17	7.15E-01	18	7.15E-01	19	0.00E+00	20 0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24 0.00E+00

Particle Mass fraction	Particle Size (micron)	Particle Density (g/cm3)	Precipitation-Scavenging Coefficients (1/(s-mm/hr)) ----Liquid	--------Ice-----
0.2000	10.0	2.05	0.00068	0.00000
0.8000	30.0	2.05	0.00068	0.00000

VOLUME SOURCE: TV5

X(m)	Y(m)	Ground Elevation	Height	Hor. spread	Vert. spread
2925	2742	0m	1m	1m	1m

Emission rates by season and hour, in kg/hour:

Summer:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4 0.00E+00
	5	0.00E+00	6	0.00E+00	7	0.00E+00	8 0.00E+00
	9	0.00E+00	10	0.00E+00	11	0.00E+00	12 0.00E+00
	13	0.00E+00	14	0.00E+00	15	0.00E+00	16 0.00E+00
	17	0.00E+00	18	0.00E+00	19	0.00E+00	20 0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24 0.00E+00
Autumn:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4 0.00E+00
	5	0.00E+00	6	0.00E+00	7	7.15E-01	8 7.15E-01
	9	7.15E-01	10	7.15E-01	11	7.15E-01	12 7.15E-01
	13	7.15E-01	14	7.15E-01	15	7.15E-01	16 7.15E-01
	17	7.15E-01	18	7.15E-01	19	0.00E+00	20 0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24 0.00E+00
Winter:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4 0.00E+00
	5	0.00E+00	6	0.00E+00	7	7.15E-01	8 7.15E-01
	9	7.15E-01	10	7.15E-01	11	7.15E-01	12 7.15E-01
	13	7.15E-01	14	7.15E-01	15	7.15E-01	16 7.15E-01
	17	7.15E-01	18	7.15E-01	19	0.00E+00	20 0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24 0.00E+00
Spring:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4 0.00E+00

	5	0.00E+00	6	0.00E+00	7	7.15E-01	8 7.15E-01
	9	7.15E-01	10	7.15E-01	11	7.15E-01	12 7.15E-01
	13	7.15E-01	14	7.15E-01	15	7.15E-01	16 7.15E-01
	17	7.15E-01	18	7.15E-01	19	0.00E+00	20 0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24 0.00E+00

Particle Mass fraction	Particle Size (micron)	Particle Density (g/cm3)	Precipitation-Scavenging Coefficients (1/(s-mm/hr)) ----Liquid	--------Ice-----
0.2000	10.0	2.05	0.00068	0.00000
0.8000	30.0	2.05	0.00068	0.00000

VOLUME SOURCE: TV6

X(m)	Y(m)	Ground Elevation	Height	Hor. spread	Vert. spread
2959	2796	0m	1m	1m	1m

Emission rates by season and hour, in kg/hour:

Summer:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4 0.00E+00
	5	0.00E+00	6	0.00E+00	7	0.00E+00	8 0.00E+00
	9	0.00E+00	10	0.00E+00	11	0.00E+00	12 0.00E+00
	13	0.00E+00	14	0.00E+00	15	0.00E+00	16 0.00E+00
	17	0.00E+00	18	0.00E+00	19	0.00E+00	20 0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24 0.00E+00
Autumn:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4 0.00E+00
	5	0.00E+00	6	0.00E+00	7	7.15E-01	8 7.15E-01
	9	7.15E-01	10	7.15E-01	11	7.15E-01	12 7.15E-01
	13	7.15E-01	14	7.15E-01	15	7.15E-01	16 7.15E-01
	17	7.15E-01	18	7.15E-01	19	0.00E+00	20 0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24 0.00E+00
Winter:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4 0.00E+00
	5	0.00E+00	6	0.00E+00	7	7.15E-01	8 7.15E-01
	9	7.15E-01	10	7.15E-01	11	7.15E-01	12 7.15E-01
	13	7.15E-01	14	7.15E-01	15	7.15E-01	16 7.15E-01
	17	7.15E-01	18	7.15E-01	19	0.00E+00	20 0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24 0.00E+00
Spring:	1	0.00E+00	2	0.00E+00	3	0.00E+00	4 0.00E+00
	5	0.00E+00	6	0.00E+00	7	7.15E-01	8 7.15E-01
	9	7.15E-01	10	7.15E-01	11	7.15E-01	12 7.15E-01
	13	7.15E-01	14	7.15E-01	15	7.15E-01	16 7.15E-01
	17	7.15E-01	18	7.15E-01	19	0.00E+00	20 0.00E+00
	21	0.00E+00	22	0.00E+00	23	0.00E+00	24 0.00E+00

Particle Mass fraction	Particle Size (micron)	Particle Density (g/cm3)	Precipitation-Scavenging Coefficients (1/(s-mm/hr)) ----Liquid	--------Ice-----
0.2000	10.0	2.05	0.00068	0.00000
0.8000	30.0	2.05	0.00068	0.00000

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11329200 Heatherbrae TSP Concrete Batching Plant and Operations

RECEPTOR LOCATIONS

The Cartesian receptor grid has the following x-values (or eastings):

1760.m	1783.m	1805.m	1828.m	1850.m	1873.m	1895.m
1917.m	1940.m	1963.m	1985.m	2008.m	2030.m	2053.m
2075.m	2098.m	2120.m	2143.m	2165.m	2187.m	2210.m
2233.m	2255.m	2278.m	2300.m	2323.m	2345.m	2368.m

2390.m	2413.m	2435.m	2458.m	2480.m	2503.m	2525.m
2547.m	2570.m	2593.m	2615.m	2638.m	2660.m	2683.m
2705.m	2727.m	2750.m	2772.m	2795.m	2817.m	2840.m
2863.m	2885.m	2907.m	2930.m	2953.m	2975.m	2998.m
3020.m	3043.m	3065.m	3088.m	3110.m	3133.m	3155.m
3178.m	3200.m	3223.m	3245.m	3268.m	3290.m	3313.m
3335.m	3357.m	3380.m	3403.m	3425.m	3448.m	3470.m
3493.m	3515.m	3538.m	3560.m	3583.m	3605.m	3628.m
3650.m	3673.m	3695.m	3717.m	3740.m	3763.m	3785.m
3808.m	3830.m	3853.m	3875.m	3898.m	3920.m	3942.m
3965.m	3988.m	4010.m				

and these y-values (or northings):

2090.m	2113.m	2136.m	2159.m	2182.m	2205.m	2228.m
2251.m	2274.m	2297.m	2320.m	2343.m	2366.m	2389.m
2412.m	2435.m	2458.m	2481.m	2504.m	2527.m	2550.m
2573.m	2596.m	2619.m	2642.m	2665.m	2688.m	2711.m
2734.m	2757.m	2780.m	2803.m	2826.m	2849.m	2872.m
2895.m	2918.m	2941.m	2964.m	2987.m	3010.m	3033.m
3056.m	3079.m	3102.m	3125.m	3148.m	3171.m	3194.m
3217.m	3240.m	3263.m	3286.m	3309.m	3332.m	3355.m
3378.m	3401.m	3424.m	3447.m	3470.m	3493.m	3516.m
3539.m	3562.m					

DISCRETE RECEPTOR LOCATIONS (in metres)

No.	X	Y	ELEVN	HEIGHT	No.	X	Y	ELEVN	HEIGHT
1	2869	3006	0.0	0.0	12	2926	2902	0.0	0.0
2	2609	2741	0.0	0.0	13	3002	2927	0.0	0.0
3	2406	3181	0.0	0.0	14	3034	2854	0.0	0.0
4	2665	3174	0.0	0.0	15	3066	2772	0.0	0.0
5	2240	2831	0.0	0.0	16	3093	2713	0.0	0.0
6	2619	2511	0.0	0.0	17	3132	2628	0.0	0.0
7	2634	2616	0.0	0.0	18	3169	2548	0.0	0.0
8	2649	2710	0.0	0.0	19	3096	2540	0.0	0.0
9	2661	2799	0.0	0.0	20	2985	2539	0.0	0.0
10	2746	2831	0.0	0.0	21	2869	2530	0.0	0.0
11	2840	2868	0.0	0.0	22	2732	2513	0.0	0.0

METEOROLOGICAL DATA : BoM AWS Data BoM Williamtown Clouds Williamtown Uair

AVERAGE OVER ALL HOURS AND FOR ALL SOURCES
in microgram/m3

X (km):	1.760	1.783	1.805	1.828	1.850	1.873
Y (km)						
3.562	1.11E-01	1.14E-01	1.17E-01	1.20E-01	1.24E-01	1.27E-01
3.539	1.12E-01	1.15E-01	1.18E-01	1.22E-01	1.25E-01	1.28E-01
3.516	1.14E-01	1.17E-01	1.20E-01	1.23E-01	1.26E-01	1.30E-01
3.493	1.15E-01	1.18E-01	1.21E-01	1.24E-01	1.28E-01	1.31E-01
3.470	1.17E-01	1.20E-01	1.23E-01	1.26E-01	1.29E-01	1.33E-01
3.447	1.18E-01	1.21E-01	1.24E-01	1.28E-01	1.31E-01	1.35E-01
3.424	1.20E-01	1.23E-01	1.26E-01	1.29E-01	1.33E-01	1.37E-01
3.401	1.22E-01	1.25E-01	1.28E-01	1.31E-01	1.35E-01	1.39E-01
3.378	1.24E-01	1.27E-01	1.30E-01	1.33E-01	1.37E-01	1.41E-01
3.355	1.26E-01	1.29E-01	1.32E-01	1.36E-01	1.39E-01	1.43E-01
3.332	1.28E-01	1.31E-01	1.34E-01	1.38E-01	1.41E-01	1.45E-01
3.309	1.30E-01	1.33E-01	1.37E-01	1.40E-01	1.44E-01	1.48E-01
3.286	1.32E-01	1.36E-01	1.39E-01	1.43E-01	1.46E-01	1.50E-01
3.263	1.35E-01	1.38E-01	1.42E-01	1.45E-01	1.49E-01	1.53E-01

3.240	1.37E-01	1.41E-01	1.44E-01	1.48E-01	1.52E-01	1.56E-01
3.217	1.40E-01	1.43E-01	1.47E-01	1.51E-01	1.55E-01	1.59E-01
3.194	1.42E-01	1.46E-01	1.50E-01	1.54E-01	1.58E-01	1.62E-01
3.171	1.45E-01	1.49E-01	1.53E-01	1.57E-01	1.61E-01	1.65E-01
3.148	1.48E-01	1.52E-01	1.56E-01	1.60E-01	1.64E-01	1.69E-01
3.125	1.50E-01	1.54E-01	1.59E-01	1.63E-01	1.67E-01	1.72E-01
3.102	1.53E-01	1.57E-01	1.62E-01	1.66E-01	1.71E-01	1.76E-01
3.079	1.56E-01	1.60E-01	1.65E-01	1.69E-01	1.74E-01	1.79E-01
3.056	1.59E-01	1.63E-01	1.68E-01	1.73E-01	1.77E-01	1.83E-01
3.033	1.62E-01	1.66E-01	1.71E-01	1.76E-01	1.81E-01	1.86E-01
3.010	1.64E-01	1.69E-01	1.74E-01	1.79E-01	1.84E-01	1.90E-01
2.987	1.67E-01	1.72E-01	1.77E-01	1.82E-01	1.88E-01	1.93E-01
2.964	1.70E-01	1.75E-01	1.80E-01	1.85E-01	1.91E-01	1.97E-01
2.941	1.72E-01	1.77E-01	1.83E-01	1.88E-01	1.94E-01	2.00E-01
2.918	1.75E-01	1.80E-01	1.86E-01	1.91E-01	1.97E-01	2.04E-01
2.895	1.77E-01	1.83E-01	1.88E-01	1.94E-01	2.01E-01	2.07E-01
2.872	1.80E-01	1.85E-01	1.91E-01	1.97E-01	2.03E-01	2.10E-01
2.849	1.82E-01	1.87E-01	1.93E-01	2.00E-01	2.06E-01	2.13E-01
2.826	1.84E-01	1.90E-01	1.96E-01	2.02E-01	2.09E-01	2.16E-01
2.803	1.86E-01	1.92E-01	1.98E-01	2.04E-01	2.11E-01	2.19E-01
2.780	1.88E-01	1.94E-01	2.00E-01	2.07E-01	2.14E-01	2.21E-01
2.757	1.89E-01	1.95E-01	2.02E-01	2.09E-01	2.16E-01	2.24E-01
2.734	1.91E-01	1.97E-01	2.03E-01	2.10E-01	2.18E-01	2.26E-01
2.711	1.92E-01	1.98E-01	2.05E-01	2.12E-01	2.20E-01	2.28E-01
2.688	1.93E-01	2.00E-01	2.06E-01	2.13E-01	2.21E-01	2.29E-01
2.665	1.94E-01	2.01E-01	2.07E-01	2.15E-01	2.22E-01	2.30E-01
2.642	1.95E-01	2.02E-01	2.08E-01	2.16E-01	2.23E-01	2.32E-01
2.619	1.96E-01	2.02E-01	2.09E-01	2.16E-01	2.24E-01	2.32E-01
2.596	1.96E-01	2.03E-01	2.10E-01	2.17E-01	2.25E-01	2.33E-01
2.573	1.97E-01	2.03E-01	2.10E-01	2.17E-01	2.25E-01	2.34E-01
2.550	1.97E-01	2.03E-01	2.10E-01	2.18E-01	2.25E-01	2.34E-01
2.527	1.97E-01	2.04E-01	2.10E-01	2.18E-01	2.26E-01	2.34E-01
2.504	1.97E-01	2.04E-01	2.10E-01	2.18E-01	2.25E-01	2.34E-01
2.481	1.97E-01	2.03E-01	2.10E-01	2.17E-01	2.25E-01	2.33E-01
2.458	1.97E-01	2.03E-01	2.10E-01	2.17E-01	2.25E-01	2.33E-01
2.435	1.96E-01	2.03E-01	2.10E-01	2.17E-01	2.24E-01	2.32E-01
2.412	1.96E-01	2.02E-01	2.09E-01	2.16E-01	2.24E-01	2.32E-01
2.389	1.95E-01	2.02E-01	2.08E-01	2.15E-01	2.23E-01	2.31E-01
2.366	1.95E-01	2.01E-01	2.08E-01	2.15E-01	2.22E-01	2.30E-01
2.343	1.94E-01	2.00E-01	2.07E-01	2.14E-01	2.21E-01	2.28E-01
2.320	1.93E-01	1.99E-01	2.06E-01	2.12E-01	2.19E-01	2.27E-01
2.297	1.92E-01	1.98E-01	2.05E-01	2.11E-01	2.18E-01	2.25E-01
2.274	1.91E-01	1.97E-01	2.03E-01	2.09E-01	2.16E-01	2.23E-01
2.251	1.90E-01	1.96E-01	2.02E-01	2.08E-01	2.14E-01	2.21E-01
2.228	1.89E-01	1.94E-01	2.00E-01	2.06E-01	2.12E-01	2.18E-01
2.205	1.87E-01	1.92E-01	1.98E-01	2.03E-01	2.09E-01	2.15E-01
2.182	1.85E-01	1.90E-01	1.95E-01	2.01E-01	2.06E-01	2.12E-01
2.159	1.83E-01	1.88E-01	1.93E-01	1.98E-01	2.03E-01	2.08E-01
2.136	1.81E-01	1.85E-01	1.90E-01	1.94E-01	1.99E-01	2.04E-01
2.113	1.78E-01	1.82E-01	1.86E-01	1.91E-01	1.95E-01	1.99E-01
2.090	1.75E-01	1.79E-01	1.83E-01	1.87E-01	1.91E-01	1.94E-01

X (km):	1.895	1.917	1.940	1.963	1.985	2.008
Y (km)						
3.562	1.31E-01	1.35E-01	1.39E-01	1.43E-01	1.48E-01	1.53E-01
3.539	1.32E-01	1.36E-01	1.40E-01	1.45E-01	1.49E-01	1.54E-01
3.516	1.34E-01	1.38E-01	1.42E-01	1.46E-01	1.51E-01	1.56E-01
3.493	1.35E-01	1.39E-01	1.43E-01	1.48E-01	1.53E-01	1.58E-01
3.470	1.37E-01	1.41E-01	1.45E-01	1.50E-01	1.54E-01	1.59E-01
3.447	1.39E-01	1.43E-01	1.47E-01	1.52E-01	1.56E-01	1.61E-01
3.424	1.41E-01	1.45E-01	1.49E-01	1.54E-01	1.58E-01	1.64E-01
3.401	1.43E-01	1.47E-01	1.51E-01	1.56E-01	1.61E-01	1.66E-01
3.378	1.45E-01	1.49E-01	1.53E-01	1.58E-01	1.63E-01	1.68E-01
3.355	1.47E-01	1.51E-01	1.56E-01	1.60E-01	1.65E-01	1.71E-01
3.332	1.49E-01	1.54E-01	1.58E-01	1.63E-01	1.68E-01	1.73E-01
3.309	1.52E-01	1.56E-01	1.61E-01	1.66E-01	1.71E-01	1.76E-01

3.286	1.55E-01	1.59E-01	1.64E-01	1.69E-01	1.74E-01	1.79E-01
3.263	1.57E-01	1.62E-01	1.67E-01	1.72E-01	1.77E-01	1.83E-01
3.240	1.60E-01	1.65E-01	1.70E-01	1.75E-01	1.81E-01	1.86E-01
3.217	1.64E-01	1.68E-01	1.73E-01	1.79E-01	1.84E-01	1.90E-01
3.194	1.67E-01	1.72E-01	1.77E-01	1.82E-01	1.88E-01	1.94E-01
3.171	1.70E-01	1.75E-01	1.80E-01	1.86E-01	1.92E-01	1.98E-01
3.148	1.74E-01	1.79E-01	1.84E-01	1.90E-01	1.96E-01	2.02E-01
3.125	1.77E-01	1.82E-01	1.88E-01	1.94E-01	2.00E-01	2.07E-01
3.102	1.81E-01	1.86E-01	1.92E-01	1.98E-01	2.05E-01	2.12E-01
3.079	1.85E-01	1.90E-01	1.96E-01	2.02E-01	2.09E-01	2.17E-01
3.056	1.88E-01	1.94E-01	2.00E-01	2.07E-01	2.14E-01	2.22E-01
3.033	1.92E-01	1.98E-01	2.05E-01	2.11E-01	2.19E-01	2.27E-01
3.010	1.96E-01	2.02E-01	2.09E-01	2.16E-01	2.24E-01	2.32E-01
2.987	2.00E-01	2.06E-01	2.13E-01	2.21E-01	2.28E-01	2.37E-01
2.964	2.03E-01	2.10E-01	2.17E-01	2.25E-01	2.33E-01	2.42E-01
2.941	2.07E-01	2.14E-01	2.22E-01	2.30E-01	2.38E-01	2.47E-01
2.918	2.11E-01	2.18E-01	2.26E-01	2.34E-01	2.43E-01	2.52E-01
2.895	2.14E-01	2.22E-01	2.30E-01	2.38E-01	2.47E-01	2.57E-01
2.872	2.18E-01	2.25E-01	2.34E-01	2.42E-01	2.52E-01	2.62E-01
2.849	2.21E-01	2.29E-01	2.37E-01	2.46E-01	2.56E-01	2.67E-01
2.826	2.24E-01	2.32E-01	2.41E-01	2.50E-01	2.60E-01	2.71E-01
2.803	2.27E-01	2.35E-01	2.44E-01	2.54E-01	2.64E-01	2.75E-01
2.780	2.29E-01	2.38E-01	2.47E-01	2.57E-01	2.68E-01	2.79E-01
2.757	2.32E-01	2.41E-01	2.50E-01	2.60E-01	2.71E-01	2.82E-01
2.734	2.34E-01	2.43E-01	2.53E-01	2.63E-01	2.74E-01	2.85E-01
2.711	2.36E-01	2.45E-01	2.55E-01	2.65E-01	2.76E-01	2.88E-01
2.688	2.38E-01	2.47E-01	2.57E-01	2.67E-01	2.78E-01	2.91E-01
2.665	2.39E-01	2.48E-01	2.58E-01	2.69E-01	2.80E-01	2.93E-01
2.642	2.40E-01	2.50E-01	2.60E-01	2.70E-01	2.82E-01	2.94E-01
2.619	2.41E-01	2.51E-01	2.61E-01	2.71E-01	2.83E-01	2.95E-01
2.596	2.42E-01	2.51E-01	2.61E-01	2.72E-01	2.84E-01	2.96E-01
2.573	2.42E-01	2.52E-01	2.62E-01	2.73E-01	2.84E-01	2.97E-01
2.550	2.43E-01	2.52E-01	2.62E-01	2.73E-01	2.84E-01	2.97E-01
2.527	2.43E-01	2.52E-01	2.62E-01	2.73E-01	2.84E-01	2.97E-01
2.504	2.42E-01	2.52E-01	2.62E-01	2.73E-01	2.84E-01	2.96E-01
2.481	2.42E-01	2.51E-01	2.61E-01	2.72E-01	2.83E-01	2.95E-01
2.458	2.42E-01	2.51E-01	2.61E-01	2.71E-01	2.82E-01	2.94E-01
2.435	2.41E-01	2.50E-01	2.60E-01	2.70E-01	2.81E-01	2.93E-01
2.412	2.40E-01	2.49E-01	2.59E-01	2.69E-01	2.80E-01	2.91E-01
2.389	2.39E-01	2.48E-01	2.57E-01	2.67E-01	2.78E-01	2.89E-01
2.366	2.38E-01	2.46E-01	2.56E-01	2.65E-01	2.76E-01	2.87E-01
2.343	2.36E-01	2.45E-01	2.54E-01	2.63E-01	2.73E-01	2.84E-01
2.320	2.35E-01	2.43E-01	2.52E-01	2.61E-01	2.70E-01	2.80E-01
2.297	2.33E-01	2.41E-01	2.49E-01	2.58E-01	2.67E-01	2.77E-01
2.274	2.30E-01	2.38E-01	2.46E-01	2.54E-01	2.63E-01	2.72E-01
2.251	2.28E-01	2.35E-01	2.43E-01	2.50E-01	2.59E-01	2.67E-01
2.228	2.25E-01	2.32E-01	2.39E-01	2.46E-01	2.54E-01	2.62E-01
2.205	2.21E-01	2.28E-01	2.34E-01	2.41E-01	2.48E-01	2.55E-01
2.182	2.18E-01	2.24E-01	2.30E-01	2.36E-01	2.42E-01	2.49E-01
2.159	2.13E-01	2.19E-01	2.24E-01	2.30E-01	2.36E-01	2.41E-01
2.136	2.09E-01	2.14E-01	2.19E-01	2.24E-01	2.29E-01	2.34E-01
2.113	2.04E-01	2.08E-01	2.13E-01	2.17E-01	2.21E-01	2.25E-01
2.090	1.98E-01	2.02E-01	2.06E-01	2.10E-01	2.13E-01	2.17E-01

X (km):	2.030	2.053	2.075	2.098	2.120	2.143
Y (km)						
3.562	1.58E-01	1.63E-01	1.69E-01	1.74E-01	1.81E-01	1.87E-01
3.539	1.59E-01	1.65E-01	1.70E-01	1.76E-01	1.83E-01	1.89E-01
3.516	1.61E-01	1.67E-01	1.72E-01	1.78E-01	1.85E-01	1.91E-01
3.493	1.63E-01	1.68E-01	1.74E-01	1.80E-01	1.87E-01	1.94E-01
3.470	1.65E-01	1.70E-01	1.76E-01	1.83E-01	1.89E-01	1.96E-01
3.447	1.67E-01	1.72E-01	1.78E-01	1.85E-01	1.92E-01	1.99E-01
3.424	1.69E-01	1.75E-01	1.81E-01	1.87E-01	1.94E-01	2.01E-01
3.401	1.71E-01	1.77E-01	1.83E-01	1.90E-01	1.97E-01	2.04E-01
3.378	1.74E-01	1.80E-01	1.86E-01	1.93E-01	2.00E-01	2.07E-01
3.355	1.76E-01	1.82E-01	1.89E-01	1.96E-01	2.03E-01	2.11E-01

3.332	1.79E-01	1.85E-01	1.92E-01	1.99E-01	2.06E-01	2.14E-01
3.309	1.82E-01	1.88E-01	1.95E-01	2.02E-01	2.10E-01	2.18E-01
3.286	1.85E-01	1.92E-01	1.99E-01	2.06E-01	2.14E-01	2.22E-01
3.263	1.89E-01	1.95E-01	2.02E-01	2.10E-01	2.18E-01	2.27E-01
3.240	1.93E-01	1.99E-01	2.06E-01	2.14E-01	2.22E-01	2.31E-01
3.217	1.96E-01	2.03E-01	2.11E-01	2.19E-01	2.27E-01	2.36E-01
3.194	2.01E-01	2.08E-01	2.15E-01	2.23E-01	2.32E-01	2.42E-01
3.171	2.05E-01	2.12E-01	2.20E-01	2.28E-01	2.37E-01	2.47E-01
3.148	2.09E-01	2.17E-01	2.25E-01	2.34E-01	2.43E-01	2.53E-01
3.125	2.14E-01	2.22E-01	2.30E-01	2.39E-01	2.49E-01	2.59E-01
3.102	2.19E-01	2.27E-01	2.36E-01	2.45E-01	2.55E-01	2.65E-01
3.079	2.24E-01	2.33E-01	2.42E-01	2.51E-01	2.61E-01	2.72E-01
3.056	2.30E-01	2.38E-01	2.48E-01	2.57E-01	2.68E-01	2.79E-01
3.033	2.35E-01	2.44E-01	2.54E-01	2.64E-01	2.75E-01	2.86E-01
3.010	2.40E-01	2.50E-01	2.60E-01	2.70E-01	2.82E-01	2.94E-01
2.987	2.46E-01	2.56E-01	2.66E-01	2.77E-01	2.88E-01	3.01E-01
2.964	2.51E-01	2.61E-01	2.72E-01	2.83E-01	2.96E-01	3.09E-01
2.941	2.57E-01	2.67E-01	2.78E-01	2.90E-01	3.03E-01	3.16E-01
2.918	2.62E-01	2.73E-01	2.84E-01	2.97E-01	3.10E-01	3.24E-01
2.895	2.68E-01	2.79E-01	2.91E-01	3.03E-01	3.17E-01	3.31E-01
2.872	2.73E-01	2.84E-01	2.97E-01	3.10E-01	3.24E-01	3.39E-01
2.849	2.78E-01	2.90E-01	3.02E-01	3.16E-01	3.30E-01	3.46E-01
2.826	2.82E-01	2.95E-01	3.08E-01	3.22E-01	3.37E-01	3.53E-01
2.803	2.87E-01	2.99E-01	3.13E-01	3.27E-01	3.43E-01	3.59E-01
2.780	2.91E-01	3.04E-01	3.18E-01	3.33E-01	3.49E-01	3.66E-01
2.757	2.95E-01	3.08E-01	3.22E-01	3.37E-01	3.54E-01	3.71E-01
2.734	2.98E-01	3.12E-01	3.26E-01	3.42E-01	3.58E-01	3.77E-01
2.711	3.01E-01	3.15E-01	3.30E-01	3.46E-01	3.63E-01	3.81E-01
2.688	3.04E-01	3.18E-01	3.33E-01	3.49E-01	3.66E-01	3.85E-01
2.665	3.06E-01	3.20E-01	3.35E-01	3.52E-01	3.69E-01	3.88E-01
2.642	3.07E-01	3.22E-01	3.37E-01	3.54E-01	3.71E-01	3.91E-01
2.619	3.09E-01	3.23E-01	3.39E-01	3.55E-01	3.73E-01	3.93E-01
2.596	3.10E-01	3.24E-01	3.40E-01	3.56E-01	3.74E-01	3.94E-01
2.573	3.10E-01	3.24E-01	3.40E-01	3.57E-01	3.75E-01	3.95E-01
2.550	3.10E-01	3.25E-01	3.40E-01	3.57E-01	3.75E-01	3.94E-01
2.527	3.10E-01	3.24E-01	3.40E-01	3.56E-01	3.74E-01	3.94E-01
2.504	3.09E-01	3.24E-01	3.39E-01	3.55E-01	3.73E-01	3.92E-01
2.481	3.08E-01	3.22E-01	3.38E-01	3.54E-01	3.71E-01	3.90E-01
2.458	3.07E-01	3.21E-01	3.36E-01	3.52E-01	3.69E-01	3.87E-01
2.435	3.06E-01	3.19E-01	3.34E-01	3.49E-01	3.66E-01	3.84E-01
2.412	3.04E-01	3.17E-01	3.31E-01	3.46E-01	3.62E-01	3.79E-01
2.389	3.01E-01	3.14E-01	3.28E-01	3.42E-01	3.58E-01	3.74E-01
2.366	2.98E-01	3.11E-01	3.24E-01	3.38E-01	3.52E-01	3.68E-01
2.343	2.95E-01	3.07E-01	3.19E-01	3.33E-01	3.47E-01	3.61E-01
2.320	2.91E-01	3.02E-01	3.14E-01	3.27E-01	3.40E-01	3.53E-01
2.297	2.87E-01	2.97E-01	3.08E-01	3.20E-01	3.32E-01	3.45E-01
2.274	2.82E-01	2.92E-01	3.02E-01	3.13E-01	3.23E-01	3.35E-01
2.251	2.76E-01	2.85E-01	2.95E-01	3.04E-01	3.14E-01	3.24E-01
2.228	2.70E-01	2.78E-01	2.86E-01	2.95E-01	3.04E-01	3.13E-01
2.205	2.63E-01	2.70E-01	2.78E-01	2.85E-01	2.93E-01	3.01E-01
2.182	2.55E-01	2.62E-01	2.68E-01	2.75E-01	2.81E-01	2.88E-01
2.159	2.47E-01	2.53E-01	2.59E-01	2.64E-01	2.69E-01	2.75E-01
2.136	2.39E-01	2.43E-01	2.48E-01	2.53E-01	2.57E-01	2.61E-01
2.113	2.30E-01	2.34E-01	2.38E-01	2.41E-01	2.45E-01	2.48E-01
2.090	2.20E-01	2.24E-01	2.27E-01	2.30E-01	2.32E-01	2.34E-01

X (km):	2.165	2.187	2.210	2.233	2.255	2.278
Y (km)						
3.562	1.94E-01	2.01E-01	2.08E-01	2.16E-01	2.24E-01	2.32E-01
3.539	1.96E-01	2.03E-01	2.11E-01	2.19E-01	2.27E-01	2.36E-01
3.516	1.99E-01	2.06E-01	2.14E-01	2.22E-01	2.31E-01	2.40E-01
3.493	2.01E-01	2.09E-01	2.17E-01	2.25E-01	2.34E-01	2.44E-01
3.470	2.04E-01	2.11E-01	2.20E-01	2.29E-01	2.38E-01	2.48E-01
3.447	2.06E-01	2.14E-01	2.23E-01	2.32E-01	2.42E-01	2.52E-01
3.424	2.09E-01	2.17E-01	2.26E-01	2.36E-01	2.46E-01	2.56E-01
3.401	2.12E-01	2.21E-01	2.30E-01	2.40E-01	2.50E-01	2.61E-01

3.378	2.15E-01	2.24E-01	2.34E-01	2.44E-01	2.54E-01	2.65E-01
3.355	2.19E-01	2.28E-01	2.38E-01	2.48E-01	2.59E-01	2.70E-01
3.332	2.23E-01	2.32E-01	2.42E-01	2.52E-01	2.64E-01	2.76E-01
3.309	2.27E-01	2.36E-01	2.46E-01	2.57E-01	2.69E-01	2.81E-01
3.286	2.31E-01	2.41E-01	2.51E-01	2.62E-01	2.74E-01	2.87E-01
3.263	2.36E-01	2.46E-01	2.56E-01	2.68E-01	2.80E-01	2.93E-01
3.240	2.41E-01	2.51E-01	2.62E-01	2.73E-01	2.86E-01	2.99E-01
3.217	2.46E-01	2.56E-01	2.68E-01	2.80E-01	2.92E-01	3.06E-01
3.194	2.52E-01	2.62E-01	2.74E-01	2.86E-01	2.99E-01	3.14E-01
3.171	2.57E-01	2.68E-01	2.80E-01	2.93E-01	3.07E-01	3.21E-01
3.148	2.63E-01	2.75E-01	2.87E-01	3.00E-01	3.14E-01	3.30E-01
3.125	2.70E-01	2.82E-01	2.94E-01	3.08E-01	3.23E-01	3.38E-01
3.102	2.77E-01	2.89E-01	3.02E-01	3.16E-01	3.31E-01	3.47E-01
3.079	2.84E-01	2.96E-01	3.10E-01	3.24E-01	3.40E-01	3.57E-01
3.056	2.91E-01	3.04E-01	3.18E-01	3.33E-01	3.50E-01	3.67E-01
3.033	2.99E-01	3.12E-01	3.27E-01	3.42E-01	3.59E-01	3.78E-01
3.010	3.07E-01	3.21E-01	3.36E-01	3.52E-01	3.69E-01	3.89E-01
2.987	3.14E-01	3.29E-01	3.45E-01	3.61E-01	3.80E-01	4.00E-01
2.964	3.23E-01	3.38E-01	3.54E-01	3.71E-01	3.90E-01	4.11E-01
2.941	3.31E-01	3.46E-01	3.63E-01	3.81E-01	4.01E-01	4.23E-01
2.918	3.39E-01	3.55E-01	3.73E-01	3.92E-01	4.12E-01	4.35E-01
2.895	3.47E-01	3.64E-01	3.82E-01	4.02E-01	4.23E-01	4.46E-01
2.872	3.55E-01	3.72E-01	3.91E-01	4.12E-01	4.34E-01	4.58E-01
2.849	3.63E-01	3.81E-01	4.00E-01	4.22E-01	4.45E-01	4.70E-01
2.826	3.70E-01	3.89E-01	4.09E-01	4.31E-01	4.55E-01	4.81E-01
2.803	3.77E-01	3.97E-01	4.18E-01	4.41E-01	4.66E-01	4.93E-01
2.780	3.84E-01	4.04E-01	4.26E-01	4.50E-01	4.75E-01	5.03E-01
2.757	3.91E-01	4.11E-01	4.33E-01	4.58E-01	4.84E-01	5.13E-01
2.734	3.96E-01	4.17E-01	4.40E-01	4.65E-01	4.93E-01	5.22E-01
2.711	4.01E-01	4.23E-01	4.46E-01	4.72E-01	5.00E-01	5.31E-01
2.688	4.05E-01	4.28E-01	4.52E-01	4.78E-01	5.06E-01	5.38E-01
2.665	4.09E-01	4.32E-01	4.56E-01	4.83E-01	5.12E-01	5.44E-01
2.642	4.12E-01	4.35E-01	4.59E-01	4.86E-01	5.16E-01	5.49E-01
2.619	4.14E-01	4.37E-01	4.62E-01	4.89E-01	5.19E-01	5.52E-01
2.596	4.15E-01	4.38E-01	4.63E-01	4.91E-01	5.21E-01	5.54E-01
2.573	4.16E-01	4.39E-01	4.64E-01	4.92E-01	5.22E-01	5.55E-01
2.550	4.16E-01	4.39E-01	4.64E-01	4.91E-01	5.21E-01	5.54E-01
2.527	4.15E-01	4.38E-01	4.62E-01	4.89E-01	5.19E-01	5.51E-01
2.504	4.13E-01	4.36E-01	4.60E-01	4.86E-01	5.15E-01	5.47E-01
2.481	4.11E-01	4.33E-01	4.56E-01	4.82E-01	5.10E-01	5.41E-01
2.458	4.07E-01	4.29E-01	4.52E-01	4.77E-01	5.04E-01	5.33E-01
2.435	4.03E-01	4.24E-01	4.46E-01	4.70E-01	4.96E-01	5.24E-01
2.412	3.98E-01	4.18E-01	4.39E-01	4.62E-01	4.86E-01	5.12E-01
2.389	3.92E-01	4.11E-01	4.31E-01	4.52E-01	4.75E-01	4.99E-01
2.366	3.85E-01	4.03E-01	4.21E-01	4.41E-01	4.62E-01	4.84E-01
2.343	3.77E-01	3.93E-01	4.11E-01	4.29E-01	4.48E-01	4.68E-01
2.320	3.68E-01	3.83E-01	3.99E-01	4.15E-01	4.32E-01	4.49E-01
2.297	3.58E-01	3.71E-01	3.85E-01	4.00E-01	4.15E-01	4.30E-01
2.274	3.47E-01	3.59E-01	3.71E-01	3.84E-01	3.96E-01	4.09E-01
2.251	3.35E-01	3.45E-01	3.56E-01	3.66E-01	3.77E-01	3.87E-01
2.228	3.22E-01	3.31E-01	3.39E-01	3.48E-01	3.57E-01	3.65E-01
2.205	3.08E-01	3.15E-01	3.23E-01	3.29E-01	3.36E-01	3.42E-01
2.182	2.94E-01	3.00E-01	3.05E-01	3.11E-01	3.16E-01	3.20E-01
2.159	2.79E-01	2.84E-01	2.88E-01	2.92E-01	2.96E-01	2.99E-01
2.136	2.65E-01	2.68E-01	2.71E-01	2.74E-01	2.77E-01	2.78E-01
2.113	2.50E-01	2.53E-01	2.55E-01	2.57E-01	2.59E-01	2.60E-01
2.090	2.37E-01	2.38E-01	2.40E-01	2.41E-01	2.42E-01	2.43E-01

X (km):	2.300	2.323	2.345	2.368	2.390	2.413
Y (km)						
3.562	2.41E-01	2.50E-01	2.59E-01	2.68E-01	2.78E-01	2.88E-01
3.539	2.45E-01	2.54E-01	2.64E-01	2.74E-01	2.85E-01	2.95E-01
3.516	2.49E-01	2.59E-01	2.69E-01	2.80E-01	2.91E-01	3.02E-01
3.493	2.54E-01	2.64E-01	2.75E-01	2.86E-01	2.98E-01	3.10E-01
3.470	2.58E-01	2.69E-01	2.80E-01	2.92E-01	3.04E-01	3.17E-01
3.447	2.63E-01	2.74E-01	2.86E-01	2.98E-01	3.11E-01	3.25E-01

3.424	2.67E-01	2.79E-01	2.92E-01	3.05E-01	3.18E-01	3.33E-01
3.401	2.72E-01	2.85E-01	2.98E-01	3.11E-01	3.26E-01	3.41E-01
3.378	2.78E-01	2.90E-01	3.04E-01	3.18E-01	3.33E-01	3.49E-01
3.355	2.83E-01	2.96E-01	3.10E-01	3.25E-01	3.40E-01	3.57E-01
3.332	2.88E-01	3.02E-01	3.16E-01	3.32E-01	3.48E-01	3.65E-01
3.309	2.94E-01	3.08E-01	3.23E-01	3.39E-01	3.56E-01	3.74E-01
3.286	3.00E-01	3.15E-01	3.30E-01	3.47E-01	3.65E-01	3.83E-01
3.263	3.07E-01	3.22E-01	3.38E-01	3.55E-01	3.73E-01	3.93E-01
3.240	3.14E-01	3.29E-01	3.46E-01	3.64E-01	3.83E-01	4.03E-01
3.217	3.21E-01	3.37E-01	3.54E-01	3.73E-01	3.92E-01	4.14E-01
3.194	3.29E-01	3.45E-01	3.63E-01	3.82E-01	4.03E-01	4.25E-01
3.171	3.37E-01	3.54E-01	3.73E-01	3.93E-01	4.14E-01	4.37E-01
3.148	3.46E-01	3.64E-01	3.83E-01	4.04E-01	4.26E-01	4.50E-01
3.125	3.55E-01	3.74E-01	3.94E-01	4.15E-01	4.39E-01	4.64E-01
3.102	3.65E-01	3.84E-01	4.05E-01	4.28E-01	4.52E-01	4.79E-01
3.079	3.76E-01	3.96E-01	4.17E-01	4.41E-01	4.67E-01	4.95E-01
3.056	3.86E-01	4.07E-01	4.30E-01	4.55E-01	4.82E-01	5.11E-01
3.033	3.98E-01	4.19E-01	4.43E-01	4.69E-01	4.97E-01	5.29E-01
3.010	4.09E-01	4.32E-01	4.57E-01	4.84E-01	5.14E-01	5.47E-01
2.987	4.21E-01	4.45E-01	4.71E-01	5.00E-01	5.31E-01	5.66E-01
2.964	4.34E-01	4.59E-01	4.86E-01	5.16E-01	5.49E-01	5.85E-01
2.941	4.46E-01	4.72E-01	5.00E-01	5.32E-01	5.66E-01	6.05E-01
2.918	4.59E-01	4.86E-01	5.16E-01	5.48E-01	5.84E-01	6.25E-01
2.895	4.72E-01	5.00E-01	5.31E-01	5.65E-01	6.03E-01	6.45E-01
2.872	4.85E-01	5.14E-01	5.46E-01	5.81E-01	6.21E-01	6.65E-01
2.849	4.97E-01	5.28E-01	5.61E-01	5.98E-01	6.39E-01	6.85E-01
2.826	5.10E-01	5.41E-01	5.76E-01	6.15E-01	6.57E-01	7.05E-01
2.803	5.22E-01	5.55E-01	5.91E-01	6.31E-01	6.75E-01	7.24E-01
2.780	5.34E-01	5.68E-01	6.05E-01	6.46E-01	6.92E-01	7.44E-01
2.757	5.45E-01	5.80E-01	6.18E-01	6.61E-01	7.09E-01	7.62E-01
2.734	5.55E-01	5.91E-01	6.31E-01	6.75E-01	7.25E-01	7.80E-01
2.711	5.64E-01	6.02E-01	6.43E-01	6.88E-01	7.39E-01	7.96E-01
2.688	5.72E-01	6.11E-01	6.53E-01	7.00E-01	7.52E-01	8.11E-01
2.665	5.79E-01	6.18E-01	6.62E-01	7.10E-01	7.64E-01	8.24E-01
2.642	5.85E-01	6.24E-01	6.69E-01	7.18E-01	7.73E-01	8.35E-01
2.619	5.89E-01	6.29E-01	6.74E-01	7.24E-01	7.80E-01	8.43E-01
2.596	5.91E-01	6.31E-01	6.76E-01	7.27E-01	7.83E-01	8.47E-01
2.573	5.92E-01	6.32E-01	6.77E-01	7.27E-01	7.83E-01	8.47E-01
2.550	5.90E-01	6.30E-01	6.75E-01	7.24E-01	7.80E-01	8.42E-01
2.527	5.87E-01	6.26E-01	6.70E-01	7.18E-01	7.72E-01	8.32E-01
2.504	5.82E-01	6.20E-01	6.62E-01	7.08E-01	7.60E-01	8.17E-01
2.481	5.75E-01	6.11E-01	6.51E-01	6.96E-01	7.44E-01	7.98E-01
2.458	5.65E-01	6.00E-01	6.38E-01	6.79E-01	7.25E-01	7.74E-01
2.435	5.54E-01	5.86E-01	6.22E-01	6.60E-01	7.01E-01	7.47E-01
2.412	5.40E-01	5.70E-01	6.03E-01	6.38E-01	6.75E-01	7.16E-01
2.389	5.25E-01	5.52E-01	5.82E-01	6.13E-01	6.46E-01	6.81E-01
2.366	5.07E-01	5.32E-01	5.58E-01	5.85E-01	6.14E-01	6.44E-01
2.343	4.88E-01	5.10E-01	5.33E-01	5.56E-01	5.79E-01	6.03E-01
2.320	4.68E-01	4.86E-01	5.05E-01	5.24E-01	5.43E-01	5.61E-01
2.297	4.45E-01	4.61E-01	4.76E-01	4.90E-01	5.05E-01	5.18E-01
2.274	4.22E-01	4.34E-01	4.45E-01	4.57E-01	4.67E-01	4.76E-01
2.251	3.97E-01	4.06E-01	4.15E-01	4.23E-01	4.30E-01	4.36E-01
2.228	3.72E-01	3.79E-01	3.85E-01	3.90E-01	3.95E-01	3.99E-01
2.205	3.47E-01	3.52E-01	3.56E-01	3.60E-01	3.63E-01	3.65E-01
2.182	3.24E-01	3.27E-01	3.30E-01	3.32E-01	3.34E-01	3.35E-01
2.159	3.01E-01	3.03E-01	3.05E-01	3.06E-01	3.08E-01	3.09E-01
2.136	2.80E-01	2.82E-01	2.83E-01	2.84E-01	2.85E-01	2.87E-01
2.113	2.61E-01	2.62E-01	2.63E-01	2.64E-01	2.65E-01	2.67E-01
2.090	2.43E-01	2.44E-01	2.45E-01	2.46E-01	2.47E-01	2.49E-01

X (km):	2.435	2.458	2.480	2.503	2.525	2.547
Y (km)						
3.562	2.98E-01	3.09E-01	3.19E-01	3.30E-01	3.40E-01	3.51E-01
3.539	3.06E-01	3.17E-01	3.29E-01	3.40E-01	3.51E-01	3.63E-01
3.516	3.14E-01	3.26E-01	3.38E-01	3.50E-01	3.63E-01	3.75E-01
3.493	3.22E-01	3.35E-01	3.48E-01	3.61E-01	3.74E-01	3.88E-01

3.470	3.30E-01	3.44E-01	3.58E-01	3.72E-01	3.87E-01	4.01E-01
3.447	3.39E-01	3.53E-01	3.68E-01	3.84E-01	3.99E-01	4.15E-01
3.424	3.48E-01	3.63E-01	3.79E-01	3.95E-01	4.12E-01	4.29E-01
3.401	3.56E-01	3.73E-01	3.90E-01	4.07E-01	4.25E-01	4.44E-01
3.378	3.65E-01	3.83E-01	4.01E-01	4.20E-01	4.39E-01	4.59E-01
3.355	3.74E-01	3.93E-01	4.12E-01	4.32E-01	4.53E-01	4.75E-01
3.332	3.84E-01	4.03E-01	4.24E-01	4.45E-01	4.67E-01	4.91E-01
3.309	3.93E-01	4.14E-01	4.36E-01	4.58E-01	4.82E-01	5.07E-01
3.286	4.04E-01	4.25E-01	4.48E-01	4.72E-01	4.97E-01	5.24E-01
3.263	4.14E-01	4.36E-01	4.60E-01	4.86E-01	5.13E-01	5.42E-01
3.240	4.25E-01	4.48E-01	4.74E-01	5.00E-01	5.29E-01	5.60E-01
3.217	4.37E-01	4.61E-01	4.88E-01	5.16E-01	5.46E-01	5.79E-01
3.194	4.49E-01	4.75E-01	5.02E-01	5.32E-01	5.64E-01	5.99E-01
3.171	4.62E-01	4.89E-01	5.18E-01	5.50E-01	5.83E-01	6.20E-01
3.148	4.76E-01	5.05E-01	5.35E-01	5.68E-01	6.04E-01	6.43E-01
3.125	4.91E-01	5.21E-01	5.53E-01	5.88E-01	6.26E-01	6.67E-01
3.102	5.08E-01	5.39E-01	5.73E-01	6.10E-01	6.50E-01	6.94E-01
3.079	5.25E-01	5.58E-01	5.94E-01	6.33E-01	6.76E-01	7.23E-01
3.056	5.43E-01	5.78E-01	6.17E-01	6.58E-01	7.04E-01	7.54E-01
3.033	5.62E-01	6.00E-01	6.40E-01	6.85E-01	7.34E-01	7.88E-01
3.010	5.83E-01	6.22E-01	6.66E-01	7.13E-01	7.66E-01	8.24E-01
2.987	6.04E-01	6.46E-01	6.92E-01	7.43E-01	8.00E-01	8.63E-01
2.964	6.25E-01	6.70E-01	7.20E-01	7.75E-01	8.36E-01	9.04E-01
2.941	6.47E-01	6.95E-01	7.47E-01	8.06E-01	8.72E-01	9.46E-01
2.918	6.70E-01	7.20E-01	7.76E-01	8.39E-01	9.09E-01	9.89E-01
2.895	6.92E-01	7.45E-01	8.04E-01	8.72E-01	9.47E-01	1.03E+00
2.872	7.15E-01	7.70E-01	8.33E-01	9.04E-01	9.85E-01	1.08E+00
2.849	7.37E-01	7.95E-01	8.61E-01	9.36E-01	1.02E+00	1.12E+00
2.826	7.59E-01	8.20E-01	8.89E-01	9.67E-01	1.06E+00	1.16E+00
2.803	7.80E-01	8.43E-01	9.16E-01	9.98E-01	1.09E+00	1.20E+00
2.780	8.02E-01	8.67E-01	9.42E-01	1.03E+00	1.13E+00	1.24E+00
2.757	8.22E-01	8.90E-01	9.68E-01	1.06E+00	1.16E+00	1.28E+00
2.734	8.42E-01	9.12E-01	9.92E-01	1.08E+00	1.19E+00	1.32E+00
2.711	8.60E-01	9.33E-01	1.02E+00	1.11E+00	1.22E+00	1.35E+00
2.688	8.78E-01	9.53E-01	1.04E+00	1.14E+00	1.25E+00	1.39E+00
2.665	8.93E-01	9.70E-01	1.06E+00	1.16E+00	1.28E+00	1.42E+00
2.642	9.05E-01	9.85E-01	1.08E+00	1.18E+00	1.30E+00	1.45E+00
2.619	9.14E-01	9.96E-01	1.09E+00	1.20E+00	1.32E+00	1.47E+00
2.596	9.19E-01	1.00E+00	1.09E+00	1.20E+00	1.33E+00	1.48E+00
2.573	9.18E-01	1.00E+00	1.09E+00	1.20E+00	1.33E+00	1.48E+00
2.550	9.12E-01	9.92E-01	1.08E+00	1.19E+00	1.31E+00	1.46E+00
2.527	9.00E-01	9.76E-01	1.06E+00	1.16E+00	1.28E+00	1.42E+00
2.504	8.82E-01	9.54E-01	1.04E+00	1.13E+00	1.24E+00	1.37E+00
2.481	8.58E-01	9.25E-01	1.00E+00	1.09E+00	1.18E+00	1.30E+00
2.458	8.29E-01	8.90E-01	9.58E-01	1.03E+00	1.12E+00	1.22E+00
2.435	7.96E-01	8.51E-01	9.10E-01	9.76E-01	1.05E+00	1.13E+00
2.412	7.59E-01	8.07E-01	8.57E-01	9.12E-01	9.71E-01	1.03E+00
2.389	7.19E-01	7.58E-01	7.99E-01	8.42E-01	8.86E-01	9.31E-01
2.366	6.74E-01	7.06E-01	7.37E-01	7.68E-01	7.99E-01	8.26E-01
2.343	6.27E-01	6.51E-01	6.73E-01	6.94E-01	7.12E-01	7.28E-01
2.320	5.79E-01	5.95E-01	6.10E-01	6.23E-01	6.33E-01	6.42E-01
2.297	5.30E-01	5.41E-01	5.50E-01	5.58E-01	5.64E-01	5.70E-01
2.274	4.84E-01	4.90E-01	4.96E-01	5.01E-01	5.05E-01	5.11E-01
2.251	4.41E-01	4.45E-01	4.48E-01	4.52E-01	4.56E-01	4.62E-01
2.228	4.02E-01	4.04E-01	4.07E-01	4.11E-01	4.15E-01	4.21E-01
2.205	3.67E-01	3.70E-01	3.72E-01	3.76E-01	3.81E-01	3.88E-01
2.182	3.37E-01	3.39E-01	3.43E-01	3.47E-01	3.52E-01	3.59E-01
2.159	3.11E-01	3.14E-01	3.17E-01	3.21E-01	3.27E-01	3.33E-01
2.136	2.89E-01	2.91E-01	2.95E-01	3.00E-01	3.05E-01	3.12E-01
2.113	2.69E-01	2.72E-01	2.76E-01	2.81E-01	2.86E-01	2.92E-01
2.090	2.52E-01	2.55E-01	2.59E-01	2.64E-01	2.69E-01	2.74E-01

X (km):	2.570	2.593	2.615	2.638	2.660	2.683
Y (km)						
3.562	3.61E-01	3.72E-01	3.82E-01	3.91E-01	4.01E-01	4.10E-01
3.539	3.74E-01	3.85E-01	3.96E-01	4.07E-01	4.18E-01	4.28E-01

3.516	3.87E-01	4.00E-01	4.12E-01	4.24E-01	4.35E-01	4.46E-01
3.493	4.01E-01	4.15E-01	4.28E-01	4.41E-01	4.54E-01	4.66E-01
3.470	4.16E-01	4.30E-01	4.45E-01	4.59E-01	4.73E-01	4.87E-01
3.447	4.31E-01	4.47E-01	4.63E-01	4.79E-01	4.94E-01	5.10E-01
3.424	4.47E-01	4.64E-01	4.82E-01	4.99E-01	5.16E-01	5.33E-01
3.401	4.63E-01	4.82E-01	5.01E-01	5.20E-01	5.40E-01	5.59E-01
3.378	4.80E-01	5.00E-01	5.22E-01	5.43E-01	5.64E-01	5.85E-01
3.355	4.97E-01	5.20E-01	5.43E-01	5.67E-01	5.90E-01	6.14E-01
3.332	5.15E-01	5.40E-01	5.65E-01	5.91E-01	6.18E-01	6.44E-01
3.309	5.33E-01	5.60E-01	5.88E-01	6.17E-01	6.46E-01	6.76E-01
3.286	5.52E-01	5.82E-01	6.12E-01	6.44E-01	6.76E-01	7.10E-01
3.263	5.72E-01	6.04E-01	6.37E-01	6.72E-01	7.08E-01	7.45E-01
3.240	5.93E-01	6.27E-01	6.63E-01	7.02E-01	7.41E-01	7.82E-01
3.217	6.14E-01	6.51E-01	6.90E-01	7.32E-01	7.76E-01	8.22E-01
3.194	6.36E-01	6.76E-01	7.19E-01	7.64E-01	8.13E-01	8.63E-01
3.171	6.60E-01	7.02E-01	7.49E-01	7.98E-01	8.51E-01	9.07E-01
3.148	6.85E-01	7.30E-01	7.79E-01	8.33E-01	8.91E-01	9.53E-01
3.125	7.12E-01	7.61E-01	8.13E-01	8.71E-01	9.34E-01	1.00E+00
3.102	7.41E-01	7.93E-01	8.50E-01	9.12E-01	9.79E-01	1.05E+00
3.079	7.73E-01	8.29E-01	8.89E-01	9.56E-01	1.03E+00	1.11E+00
3.056	8.09E-01	8.68E-01	9.33E-01	1.01E+00	1.08E+00	1.17E+00
3.033	8.47E-01	9.11E-01	9.82E-01	1.06E+00	1.15E+00	1.24E+00
3.010	8.88E-01	9.58E-01	1.04E+00	1.12E+00	1.21E+00	1.32E+00
2.987	9.32E-01	1.01E+00	1.09E+00	1.19E+00	1.29E+00	1.41E+00
2.964	9.79E-01	1.06E+00	1.16E+00	1.26E+00	1.38E+00	1.51E+00
2.941	1.03E+00	1.12E+00	1.22E+00	1.34E+00	1.47E+00	1.61E+00
2.918	1.08E+00	1.18E+00	1.29E+00	1.42E+00	1.57E+00	1.73E+00
2.895	1.13E+00	1.24E+00	1.37E+00	1.51E+00	1.67E+00	1.86E+00
2.872	1.18E+00	1.30E+00	1.44E+00	1.60E+00	1.78E+00	1.99E+00
2.849	1.23E+00	1.36E+00	1.51E+00	1.69E+00	1.89E+00	2.13E+00
2.826	1.28E+00	1.42E+00	1.58E+00	1.78E+00	2.00E+00	2.27E+00
2.803	1.33E+00	1.48E+00	1.66E+00	1.86E+00	2.11E+00	2.41E+00
2.780	1.38E+00	1.54E+00	1.73E+00	1.95E+00	2.22E+00	2.55E+00
2.757	1.42E+00	1.59E+00	1.79E+00	2.04E+00	2.33E+00	2.69E+00
2.734	1.47E+00	1.65E+00	1.86E+00	2.12E+00	2.45E+00	2.84E+00
2.711	1.51E+00	1.70E+00	1.93E+00	2.21E+00	2.56E+00	2.99E+00
2.688	1.55E+00	1.75E+00	1.99E+00	2.28E+00	2.66E+00	3.13E+00
2.665	1.59E+00	1.79E+00	2.04E+00	2.35E+00	2.75E+00	3.26E+00
2.642	1.62E+00	1.83E+00	2.09E+00	2.41E+00	2.83E+00	3.38E+00
2.619	1.65E+00	1.86E+00	2.12E+00	2.45E+00	2.88E+00	3.47E+00
2.596	1.66E+00	1.88E+00	2.14E+00	2.48E+00	2.92E+00	3.53E+00
2.573	1.66E+00	1.87E+00	2.15E+00	2.49E+00	2.95E+00	3.58E+00
2.550	1.63E+00	1.85E+00	2.12E+00	2.46E+00	2.93E+00	3.60E+00
2.527	1.59E+00	1.79E+00	2.05E+00	2.38E+00	2.84E+00	3.50E+00
2.504	1.52E+00	1.71E+00	1.94E+00	2.24E+00	2.64E+00	3.21E+00
2.481	1.44E+00	1.60E+00	1.79E+00	2.04E+00	2.36E+00	2.79E+00
2.458	1.34E+00	1.47E+00	1.63E+00	1.81E+00	2.03E+00	2.26E+00
2.435	1.22E+00	1.32E+00	1.43E+00	1.55E+00	1.66E+00	1.75E+00
2.412	1.10E+00	1.17E+00	1.23E+00	1.29E+00	1.34E+00	1.38E+00
2.389	9.73E-01	1.01E+00	1.05E+00	1.07E+00	1.10E+00	1.14E+00
2.366	8.50E-01	8.71E-01	8.88E-01	9.07E-01	9.33E-01	9.69E-01
2.343	7.42E-01	7.54E-01	7.67E-01	7.85E-01	8.09E-01	8.43E-01
2.320	6.50E-01	6.60E-01	6.73E-01	6.91E-01	7.14E-01	7.41E-01
2.297	5.77E-01	5.87E-01	6.00E-01	6.17E-01	6.38E-01	6.60E-01
2.274	5.18E-01	5.28E-01	5.41E-01	5.58E-01	5.74E-01	5.94E-01
2.251	4.70E-01	4.80E-01	4.92E-01	5.06E-01	5.21E-01	5.40E-01
2.228	4.30E-01	4.40E-01	4.52E-01	4.63E-01	4.76E-01	4.95E-01
2.205	3.96E-01	4.06E-01	4.15E-01	4.25E-01	4.38E-01	4.57E-01
2.182	3.66E-01	3.75E-01	3.83E-01	3.93E-01	4.05E-01	4.25E-01
2.159	3.41E-01	3.48E-01	3.56E-01	3.65E-01	3.77E-01	3.97E-01
2.136	3.18E-01	3.24E-01	3.31E-01	3.40E-01	3.53E-01	3.73E-01
2.113	2.97E-01	3.03E-01	3.10E-01	3.19E-01	3.32E-01	3.52E-01
2.090	2.79E-01	2.84E-01	2.91E-01	3.00E-01	3.13E-01	3.33E-01

X (km):	2.705	2.727	2.750	2.772	2.795	2.817
Y (km)						

3.562	4.19E-01	4.28E-01	4.36E-01	4.44E-01	4.52E-01	4.59E-01
3.539	4.38E-01	4.47E-01	4.56E-01	4.65E-01	4.73E-01	4.81E-01
3.516	4.57E-01	4.68E-01	4.78E-01	4.87E-01	4.97E-01	5.05E-01
3.493	4.78E-01	4.90E-01	5.01E-01	5.12E-01	5.22E-01	5.31E-01
3.470	5.01E-01	5.13E-01	5.26E-01	5.38E-01	5.49E-01	5.60E-01
3.447	5.24E-01	5.39E-01	5.53E-01	5.66E-01	5.78E-01	5.90E-01
3.424	5.50E-01	5.66E-01	5.81E-01	5.96E-01	6.10E-01	6.24E-01
3.401	5.77E-01	5.95E-01	6.12E-01	6.29E-01	6.45E-01	6.60E-01
3.378	6.06E-01	6.26E-01	6.46E-01	6.65E-01	6.83E-01	6.99E-01
3.355	6.37E-01	6.60E-01	6.82E-01	7.03E-01	7.23E-01	7.43E-01
3.332	6.70E-01	6.96E-01	7.21E-01	7.45E-01	7.68E-01	7.90E-01
3.309	7.05E-01	7.34E-01	7.63E-01	7.91E-01	8.17E-01	8.42E-01
3.286	7.43E-01	7.76E-01	8.09E-01	8.40E-01	8.71E-01	9.00E-01
3.263	7.82E-01	8.20E-01	8.58E-01	8.94E-01	9.30E-01	9.63E-01
3.240	8.25E-01	8.67E-01	9.10E-01	9.53E-01	9.94E-01	1.03E+00
3.217	8.69E-01	9.18E-01	9.67E-01	1.02E+00	1.06E+00	1.11E+00
3.194	9.17E-01	9.72E-01	1.03E+00	1.09E+00	1.14E+00	1.20E+00
3.171	9.67E-01	1.03E+00	1.09E+00	1.16E+00	1.23E+00	1.29E+00
3.148	1.02E+00	1.09E+00	1.17E+00	1.24E+00	1.32E+00	1.40E+00
3.125	1.08E+00	1.16E+00	1.24E+00	1.33E+00	1.42E+00	1.52E+00
3.102	1.14E+00	1.22E+00	1.32E+00	1.42E+00	1.53E+00	1.65E+00
3.079	1.20E+00	1.30E+00	1.41E+00	1.53E+00	1.66E+00	1.79E+00
3.056	1.27E+00	1.38E+00	1.50E+00	1.64E+00	1.79E+00	1.95E+00
3.033	1.35E+00	1.47E+00	1.60E+00	1.76E+00	1.93E+00	2.13E+00
3.010	1.44E+00	1.57E+00	1.72E+00	1.89E+00	2.09E+00	2.32E+00
2.987	1.54E+00	1.68E+00	1.85E+00	2.05E+00	2.27E+00	2.54E+00
2.964	1.65E+00	1.82E+00	2.01E+00	2.23E+00	2.49E+00	2.80E+00
2.941	1.78E+00	1.97E+00	2.19E+00	2.45E+00	2.75E+00	3.10E+00
2.918	1.92E+00	2.15E+00	2.40E+00	2.70E+00	3.06E+00	3.48E+00
2.895	2.08E+00	2.34E+00	2.64E+00	2.99E+00	3.42E+00	3.94E+00
2.872	2.24E+00	2.54E+00	2.89E+00	3.31E+00	3.83E+00	4.47E+00
2.849	2.41E+00	2.75E+00	3.16E+00	3.65E+00	4.27E+00	5.05E+00
2.826	2.58E+00	2.96E+00	3.43E+00	4.00E+00	4.72E+00	5.65E+00
2.803	2.76E+00	3.19E+00	3.72E+00	4.38E+00	5.21E+00	6.29E+00
2.780	2.94E+00	3.43E+00	4.02E+00	4.78E+00	5.75E+00	7.03E+00
2.757	3.13E+00	3.68E+00	4.36E+00	5.22E+00	6.34E+00	7.84E+00
2.734	3.33E+00	3.94E+00	4.72E+00	5.71E+00	7.02E+00	8.75E+00
2.711	3.53E+00	4.22E+00	5.10E+00	6.26E+00	7.84E+00	1.00E+01
2.688	3.73E+00	4.51E+00	5.52E+00	6.86E+00	8.76E+00	1.18E+01
2.665	3.93E+00	4.81E+00	6.01E+00	7.67E+00	9.99E+00	1.37E+01
2.642	4.12E+00	5.12E+00	6.54E+00	8.71E+00	1.21E+01	1.76E+01
2.619	4.29E+00	5.48E+00	7.17E+00	9.78E+00	1.48E+01	2.31E+01
2.596	4.43E+00	5.86E+00	8.15E+00	1.17E+01	1.87E+01	4.91E+01
2.573	4.52E+00	6.08E+00	9.13E+00	1.49E+01	2.51E+01	6.80E+01
2.550	4.61E+00	6.33E+00	9.88E+00	2.08E+01	3.09E+01	1.87E+01
2.527	4.56E+00	6.52E+00	1.14E+01	3.60E+01	1.86E+02	2.85E+01
2.504	4.10E+00	5.65E+00	8.75E+00	1.26E+01	2.38E+01	2.77E+01
2.481	3.35E+00	4.01E+00	4.55E+00	5.50E+00	8.08E+00	1.01E+01
2.458	2.47E+00	2.64E+00	2.90E+00	3.59E+00	4.61E+00	5.26E+00
2.435	1.83E+00	1.94E+00	2.12E+00	2.64E+00	3.18E+00	3.47E+00
2.412	1.45E+00	1.54E+00	1.69E+00	2.07E+00	2.40E+00	2.59E+00
2.389	1.20E+00	1.27E+00	1.41E+00	1.69E+00	1.92E+00	2.05E+00
2.366	1.01E+00	1.08E+00	1.21E+00	1.42E+00	1.59E+00	1.70E+00
2.343	8.79E-01	9.38E-01	1.06E+00	1.22E+00	1.36E+00	1.44E+00
2.320	7.74E-01	8.33E-01	9.40E-01	1.07E+00	1.18E+00	1.25E+00
2.297	6.91E-01	7.49E-01	8.43E-01	9.51E-01	1.04E+00	1.10E+00
2.274	6.26E-01	6.81E-01	7.64E-01	8.53E-01	9.28E-01	9.81E-01
2.251	5.72E-01	6.24E-01	6.97E-01	7.73E-01	8.37E-01	8.83E-01
2.228	5.27E-01	5.76E-01	6.40E-01	7.05E-01	7.61E-01	8.01E-01
2.205	4.89E-01	5.35E-01	5.91E-01	6.48E-01	6.97E-01	7.33E-01
2.182	4.56E-01	4.99E-01	5.49E-01	5.99E-01	6.42E-01	6.74E-01
2.159	4.27E-01	4.67E-01	5.12E-01	5.56E-01	5.94E-01	6.23E-01
2.136	4.02E-01	4.38E-01	4.79E-01	5.18E-01	5.52E-01	5.79E-01
2.113	3.79E-01	4.13E-01	4.50E-01	4.85E-01	5.16E-01	5.39E-01
2.090	3.59E-01	3.90E-01	4.23E-01	4.55E-01	4.83E-01	5.04E-01

X (km):	2.840	2.863	2.885	2.907	2.930	2.953

Y (km)						
3.562	4.66E-01	4.72E-01	4.79E-01	4.84E-01	4.90E-01	4.94E-01
3.539	4.89E-01	4.96E-01	5.03E-01	5.09E-01	5.14E-01	5.19E-01
3.516	5.14E-01	5.21E-01	5.29E-01	5.35E-01	5.41E-01	5.46E-01
3.493	5.40E-01	5.49E-01	5.57E-01	5.64E-01	5.71E-01	5.76E-01
3.470	5.70E-01	5.79E-01	5.88E-01	5.96E-01	6.03E-01	6.09E-01
3.447	6.01E-01	6.12E-01	6.21E-01	6.30E-01	6.38E-01	6.44E-01
3.424	6.36E-01	6.47E-01	6.58E-01	6.67E-01	6.76E-01	6.83E-01
3.401	6.74E-01	6.86E-01	6.98E-01	7.09E-01	7.18E-01	7.25E-01
3.378	7.15E-01	7.29E-01	7.42E-01	7.54E-01	7.64E-01	7.73E-01
3.355	7.60E-01	7.77E-01	7.91E-01	8.04E-01	8.16E-01	8.25E-01
3.332	8.10E-01	8.29E-01	8.45E-01	8.60E-01	8.73E-01	8.83E-01
3.309	8.66E-01	8.87E-01	9.06E-01	9.22E-01	9.36E-01	9.48E-01
3.286	9.27E-01	9.51E-01	9.73E-01	9.92E-01	1.01E+00	1.02E+00
3.263	9.95E-01	1.02E+00	1.05E+00	1.07E+00	1.09E+00	1.10E+00
3.240	1.07E+00	1.10E+00	1.13E+00	1.16E+00	1.18E+00	1.20E+00
3.217	1.15E+00	1.19E+00	1.23E+00	1.26E+00	1.28E+00	1.30E+00
3.194	1.25E+00	1.30E+00	1.34E+00	1.38E+00	1.40E+00	1.43E+00
3.171	1.36E+00	1.41E+00	1.47E+00	1.51E+00	1.54E+00	1.57E+00
3.148	1.48E+00	1.55E+00	1.61E+00	1.66E+00	1.71E+00	1.74E+00
3.125	1.61E+00	1.70E+00	1.78E+00	1.85E+00	1.90E+00	1.94E+00
3.102	1.76E+00	1.87E+00	1.97E+00	2.06E+00	2.13E+00	2.18E+00
3.079	1.93E+00	2.07E+00	2.20E+00	2.32E+00	2.42E+00	2.48E+00
3.056	2.13E+00	2.31E+00	2.48E+00	2.64E+00	2.77E+00	2.85E+00
3.033	2.35E+00	2.57E+00	2.81E+00	3.02E+00	3.20E+00	3.33E+00
3.010	2.59E+00	2.88E+00	3.19E+00	3.49E+00	3.75E+00	3.95E+00
2.987	2.86E+00	3.23E+00	3.64E+00	4.07E+00	4.46E+00	4.77E+00
2.964	3.16E+00	3.62E+00	4.16E+00	4.78E+00	5.40E+00	5.93E+00
2.941	3.53E+00	4.07E+00	4.77E+00	5.63E+00	6.63E+00	7.57E+00
2.918	4.00E+00	4.64E+00	5.49E+00	6.65E+00	8.22E+00	1.00E+01
2.895	4.58E+00	5.39E+00	6.46E+00	7.94E+00	1.02E+01	1.37E+01
2.872	5.28E+00	6.33E+00	7.77E+00	9.86E+00	1.30E+01	1.87E+01
2.849	6.06E+00	7.42E+00	9.34E+00	1.24E+01	1.77E+01	2.73E+01
2.826	6.88E+00	8.59E+00	1.10E+01	1.48E+01	2.22E+01	3.82E+01
2.803	7.73E+00	9.80E+00	1.30E+01	1.80E+01	2.72E+01	9.07E+01
2.780	8.74E+00	1.11E+01	1.48E+01	2.19E+01	3.01E+01	3.36E+01
2.757	9.97E+00	1.30E+01	1.76E+01	3.03E+01	5.51E+01	2.13E+01
2.734	1.13E+01	1.56E+01	2.25E+01	3.91E+01	1.32E+02	4.41E+01
2.711	1.31E+01	1.90E+01	3.56E+01	2.51E+01	2.08E+01	2.30E+01
2.688	1.66E+01	2.61E+01	1.43E+02	6.59E+01	2.30E+01	1.60E+01
2.665	2.20E+01	2.93E+01	2.41E+01	3.17E+01	2.50E+01	1.64E+01
2.642	3.45E+01	8.04E+01	2.28E+01	1.67E+01	1.55E+01	1.35E+01
2.619	2.94E+01	4.93E+01	3.94E+01	1.97E+01	1.36E+01	1.12E+01
2.596	2.42E+01	1.73E+01	1.77E+01	1.58E+01	1.27E+01	1.04E+01
2.573	8.13E+01	2.47E+01	1.49E+01	1.22E+01	1.05E+01	9.16E+00
2.550	2.08E+01	1.99E+01	1.46E+01	1.12E+01	9.33E+00	8.11E+00
2.527	1.56E+01	1.30E+01	1.14E+01	9.74E+00	8.40E+00	7.35E+00
2.504	1.71E+01	1.17E+01	9.42E+00	8.13E+00	7.21E+00	6.48E+00
2.481	1.06E+01	9.28E+00	7.96E+00	6.96E+00	6.21E+00	5.64E+00
2.458	6.03E+00	6.21E+00	5.99E+00	5.63E+00	5.25E+00	4.87E+00
2.435	3.89E+00	4.23E+00	4.36E+00	4.34E+00	4.24E+00	4.08E+00
2.412	2.81E+00	3.06E+00	3.24E+00	3.35E+00	3.37E+00	3.34E+00
2.389	2.19E+00	2.35E+00	2.51E+00	2.63E+00	2.70E+00	2.73E+00
2.366	1.79E+00	1.90E+00	2.02E+00	2.12E+00	2.20E+00	2.25E+00
2.343	1.51E+00	1.59E+00	1.67E+00	1.76E+00	1.83E+00	1.88E+00
2.320	1.31E+00	1.36E+00	1.43E+00	1.49E+00	1.55E+00	1.60E+00
2.297	1.15E+00	1.19E+00	1.24E+00	1.29E+00	1.33E+00	1.37E+00
2.274	1.02E+00	1.06E+00	1.09E+00	1.13E+00	1.17E+00	1.20E+00
2.251	9.18E-01	9.49E-01	9.77E-01	1.01E+00	1.03E+00	1.06E+00
2.228	8.33E-01	8.59E-01	8.82E-01	9.04E-01	9.24E-01	9.44E-01
2.205	7.61E-01	7.83E-01	8.02E-01	8.20E-01	8.36E-01	8.50E-01
2.182	6.99E-01	7.19E-01	7.35E-01	7.49E-01	7.61E-01	7.72E-01
2.159	6.45E-01	6.63E-01	6.77E-01	6.88E-01	6.97E-01	7.06E-01
2.136	5.99E-01	6.14E-01	6.26E-01	6.35E-01	6.43E-01	6.49E-01
2.113	5.58E-01	5.71E-01	5.82E-01	5.89E-01	5.95E-01	5.99E-01
2.090	5.21E-01	5.33E-01	5.42E-01	5.49E-01	5.53E-01	5.56E-01

X (km):	2.975	2.998	3.020	3.043	3.065	3.088
Y (km)						
3.562	4.97E-01	4.99E-01	5.00E-01	4.99E-01	4.95E-01	4.90E-01
3.539	5.23E-01	5.25E-01	5.25E-01	5.23E-01	5.19E-01	5.13E-01
3.516	5.50E-01	5.52E-01	5.53E-01	5.50E-01	5.46E-01	5.38E-01
3.493	5.80E-01	5.82E-01	5.82E-01	5.80E-01	5.74E-01	5.65E-01
3.470	6.13E-01	6.15E-01	6.15E-01	6.11E-01	6.04E-01	5.94E-01
3.447	6.48E-01	6.51E-01	6.50E-01	6.46E-01	6.38E-01	6.26E-01
3.424	6.88E-01	6.90E-01	6.89E-01	6.84E-01	6.74E-01	6.61E-01
3.401	7.31E-01	7.33E-01	7.31E-01	7.25E-01	7.14E-01	6.98E-01
3.378	7.78E-01	7.80E-01	7.78E-01	7.70E-01	7.57E-01	7.39E-01
3.355	8.31E-01	8.33E-01	8.30E-01	8.21E-01	8.05E-01	7.83E-01
3.332	8.89E-01	8.91E-01	8.87E-01	8.76E-01	8.58E-01	8.32E-01
3.309	9.55E-01	9.57E-01	9.51E-01	9.38E-01	9.16E-01	8.85E-01
3.286	1.03E+00	1.03E+00	1.02E+00	1.01E+00	9.80E-01	9.44E-01
3.263	1.11E+00	1.11E+00	1.10E+00	1.08E+00	1.05E+00	1.01E+00
3.240	1.21E+00	1.21E+00	1.20E+00	1.17E+00	1.13E+00	1.08E+00
3.217	1.31E+00	1.31E+00	1.30E+00	1.27E+00	1.22E+00	1.16E+00
3.194	1.44E+00	1.44E+00	1.42E+00	1.38E+00	1.32E+00	1.24E+00
3.171	1.59E+00	1.58E+00	1.56E+00	1.51E+00	1.44E+00	1.34E+00
3.148	1.76E+00	1.75E+00	1.72E+00	1.66E+00	1.56E+00	1.45E+00
3.125	1.96E+00	1.96E+00	1.91E+00	1.83E+00	1.71E+00	1.57E+00
3.102	2.21E+00	2.20E+00	2.15E+00	2.04E+00	1.88E+00	1.70E+00
3.079	2.52E+00	2.51E+00	2.43E+00	2.28E+00	2.08E+00	1.85E+00
3.056	2.90E+00	2.89E+00	2.78E+00	2.58E+00	2.31E+00	2.02E+00
3.033	3.40E+00	3.38E+00	3.22E+00	2.93E+00	2.57E+00	2.20E+00
3.010	4.05E+00	4.02E+00	3.79E+00	3.37E+00	2.87E+00	2.40E+00
2.987	4.94E+00	4.90E+00	4.53E+00	3.89E+00	3.20E+00	2.62E+00
2.964	6.22E+00	6.15E+00	5.53E+00	4.53E+00	3.58E+00	2.84E+00
2.941	8.15E+00	8.05E+00	6.88E+00	5.28E+00	3.98E+00	3.06E+00
2.918	1.13E+01	1.11E+01	8.72E+00	6.14E+00	4.39E+00	3.32E+00
2.895	1.72E+01	1.67E+01	1.11E+01	7.02E+00	4.91E+00	3.76E+00
2.872	2.98E+01	2.75E+01	1.36E+01	8.43E+00	6.17E+00	4.87E+00
2.849	5.30E+01	4.10E+01	2.33E+01	1.49E+01	1.01E+01	7.39E+00
2.826	4.21E+01	7.65E+01	5.30E+01	2.66E+01	1.59E+01	1.07E+01
2.803	4.15E+01	3.22E+01	4.16E+01	2.95E+01	1.96E+01	1.35E+01
2.780	5.56E+01	3.27E+01	2.32E+01	2.04E+01	1.70E+01	1.35E+01
2.757	1.98E+01	1.99E+01	1.75E+01	1.53E+01	1.35E+01	1.16E+01
2.734	2.08E+01	1.54E+01	1.33E+01	1.19E+01	1.09E+01	9.83E+00
2.711	1.90E+01	1.44E+01	1.16E+01	1.01E+01	9.12E+00	8.37E+00
2.688	1.40E+01	1.21E+01	1.03E+01	8.99E+00	8.05E+00	7.36E+00
2.665	1.25E+01	1.04E+01	9.02E+00	7.99E+00	7.22E+00	6.62E+00
2.642	1.13E+01	9.57E+00	8.24E+00	7.26E+00	6.55E+00	6.01E+00
2.619	9.73E+00	8.52E+00	7.51E+00	6.69E+00	6.04E+00	5.54E+00
2.596	8.83E+00	7.71E+00	6.84E+00	6.15E+00	5.59E+00	5.14E+00
2.573	8.04E+00	7.09E+00	6.31E+00	5.68E+00	5.18E+00	4.78E+00
2.550	7.19E+00	6.44E+00	5.80E+00	5.26E+00	4.81E+00	4.44E+00
2.527	6.52E+00	5.86E+00	5.30E+00	4.84E+00	4.45E+00	4.13E+00
2.504	5.85E+00	5.31E+00	4.83E+00	4.44E+00	4.11E+00	3.82E+00
2.481	5.16E+00	4.74E+00	4.37E+00	4.05E+00	3.77E+00	3.53E+00
2.458	4.52E+00	4.20E+00	3.91E+00	3.66E+00	3.43E+00	3.23E+00
2.435	3.88E+00	3.68E+00	3.47E+00	3.28E+00	3.10E+00	2.95E+00
2.412	3.27E+00	3.16E+00	3.03E+00	2.91E+00	2.78E+00	2.67E+00
2.389	2.72E+00	2.68E+00	2.62E+00	2.55E+00	2.47E+00	2.39E+00
2.366	2.28E+00	2.27E+00	2.25E+00	2.21E+00	2.17E+00	2.13E+00
2.343	1.92E+00	1.93E+00	1.93E+00	1.92E+00	1.91E+00	1.88E+00
2.320	1.63E+00	1.66E+00	1.67E+00	1.67E+00	1.67E+00	1.66E+00
2.297	1.41E+00	1.43E+00	1.45E+00	1.46E+00	1.47E+00	1.47E+00
2.274	1.23E+00	1.25E+00	1.27E+00	1.28E+00	1.29E+00	1.30E+00
2.251	1.08E+00	1.10E+00	1.12E+00	1.13E+00	1.15E+00	1.16E+00
2.228	9.63E-01	9.79E-01	9.94E-01	1.01E+00	1.02E+00	1.03E+00
2.205	8.64E-01	8.78E-01	8.90E-01	9.02E-01	9.15E-01	9.27E-01
2.182	7.83E-01	7.93E-01	8.03E-01	8.13E-01	8.24E-01	8.35E-01
2.159	7.13E-01	7.21E-01	7.28E-01	7.37E-01	7.46E-01	7.57E-01
2.136	6.54E-01	6.60E-01	6.65E-01	6.72E-01	6.80E-01	6.89E-01
2.113	6.03E-01	6.07E-01	6.11E-01	6.16E-01	6.22E-01	6.30E-01

2.090	5.59E-01	5.61E-01	5.64E-01	5.67E-01	5.72E-01	5.78E-01

X (km):	3.110	3.133	3.155	3.178	3.200	3.223
Y (km)						
3.562	4.82E-01	4.72E-01	4.60E-01	4.46E-01	4.30E-01	4.14E-01
3.539	5.04E-01	4.93E-01	4.79E-01	4.63E-01	4.46E-01	4.28E-01
3.516	5.28E-01	5.15E-01	4.99E-01	4.82E-01	4.63E-01	4.44E-01
3.493	5.53E-01	5.39E-01	5.21E-01	5.02E-01	4.81E-01	4.60E-01
3.470	5.81E-01	5.64E-01	5.45E-01	5.23E-01	5.00E-01	4.76E-01
3.447	6.11E-01	5.92E-01	5.69E-01	5.45E-01	5.20E-01	4.94E-01
3.424	6.43E-01	6.21E-01	5.96E-01	5.69E-01	5.41E-01	5.12E-01
3.401	6.77E-01	6.52E-01	6.24E-01	5.94E-01	5.63E-01	5.31E-01
3.378	7.15E-01	6.86E-01	6.54E-01	6.20E-01	5.86E-01	5.51E-01
3.355	7.55E-01	7.22E-01	6.86E-01	6.48E-01	6.10E-01	5.72E-01
3.332	7.99E-01	7.61E-01	7.20E-01	6.77E-01	6.35E-01	5.94E-01
3.309	8.47E-01	8.03E-01	7.56E-01	7.08E-01	6.62E-01	6.17E-01
3.286	8.98E-01	8.48E-01	7.95E-01	7.41E-01	6.89E-01	6.41E-01
3.263	9.55E-01	8.96E-01	8.35E-01	7.76E-01	7.19E-01	6.65E-01
3.240	1.02E+00	9.48E-01	8.79E-01	8.12E-01	7.49E-01	6.90E-01
3.217	1.08E+00	1.00E+00	9.25E-01	8.50E-01	7.80E-01	7.15E-01
3.194	1.16E+00	1.06E+00	9.74E-01	8.90E-01	8.12E-01	7.41E-01
3.171	1.23E+00	1.13E+00	1.03E+00	9.31E-01	8.45E-01	7.68E-01
3.148	1.32E+00	1.20E+00	1.08E+00	9.74E-01	8.79E-01	7.95E-01
3.125	1.41E+00	1.27E+00	1.14E+00	1.02E+00	9.13E-01	8.21E-01
3.102	1.52E+00	1.35E+00	1.20E+00	1.06E+00	9.47E-01	8.47E-01
3.079	1.63E+00	1.43E+00	1.26E+00	1.11E+00	9.80E-01	8.72E-01
3.056	1.75E+00	1.52E+00	1.32E+00	1.15E+00	1.01E+00	8.99E-01
3.033	1.88E+00	1.61E+00	1.38E+00	1.20E+00	1.05E+00	9.30E-01
3.010	2.01E+00	1.70E+00	1.44E+00	1.25E+00	1.09E+00	9.65E-01
2.987	2.15E+00	1.79E+00	1.51E+00	1.30E+00	1.14E+00	1.01E+00
2.964	2.28E+00	1.89E+00	1.59E+00	1.37E+00	1.21E+00	1.08E+00
2.941	2.44E+00	2.01E+00	1.70E+00	1.48E+00	1.31E+00	1.18E+00
2.918	2.65E+00	2.20E+00	1.89E+00	1.66E+00	1.48E+00	1.34E+00
2.895	3.06E+00	2.58E+00	2.24E+00	1.98E+00	1.76E+00	1.59E+00
2.872	4.00E+00	3.35E+00	2.86E+00	2.49E+00	2.18E+00	1.93E+00
2.849	5.70E+00	4.56E+00	3.76E+00	3.16E+00	2.71E+00	2.35E+00
2.826	7.81E+00	5.99E+00	4.77E+00	3.91E+00	3.28E+00	2.81E+00
2.803	9.80E+00	7.40E+00	5.80E+00	4.68E+00	3.88E+00	3.27E+00
2.780	1.05E+01	8.28E+00	6.61E+00	5.37E+00	4.44E+00	3.74E+00
2.757	9.86E+00	8.26E+00	6.89E+00	5.76E+00	4.85E+00	4.12E+00
2.734	8.72E+00	7.65E+00	6.66E+00	5.77E+00	5.00E+00	4.33E+00
2.711	7.64E+00	6.91E+00	6.19E+00	5.52E+00	4.91E+00	4.35E+00
2.688	6.77E+00	6.22E+00	5.69E+00	5.17E+00	4.69E+00	4.24E+00
2.665	6.11E+00	5.66E+00	5.23E+00	4.82E+00	4.43E+00	4.06E+00
2.642	5.57E+00	5.19E+00	4.83E+00	4.49E+00	4.17E+00	3.87E+00
2.619	5.13E+00	4.79E+00	4.48E+00	4.19E+00	3.92E+00	3.67E+00
2.596	4.77E+00	4.45E+00	4.18E+00	3.93E+00	3.69E+00	3.48E+00
2.573	4.44E+00	4.15E+00	3.90E+00	3.68E+00	3.48E+00	3.29E+00
2.550	4.14E+00	3.88E+00	3.66E+00	3.46E+00	3.28E+00	3.11E+00
2.527	3.86E+00	3.62E+00	3.42E+00	3.25E+00	3.09E+00	2.94E+00
2.504	3.59E+00	3.38E+00	3.20E+00	3.05E+00	2.90E+00	2.77E+00
2.481	3.32E+00	3.14E+00	2.99E+00	2.85E+00	2.72E+00	2.61E+00
2.458	3.06E+00	2.92E+00	2.78E+00	2.66E+00	2.55E+00	2.45E+00
2.435	2.81E+00	2.69E+00	2.58E+00	2.48E+00	2.38E+00	2.29E+00
2.412	2.57E+00	2.47E+00	2.38E+00	2.30E+00	2.22E+00	2.14E+00
2.389	2.32E+00	2.25E+00	2.18E+00	2.12E+00	2.05E+00	1.99E+00
2.366	2.08E+00	2.04E+00	1.99E+00	1.94E+00	1.89E+00	1.85E+00
2.343	1.86E+00	1.83E+00	1.80E+00	1.77E+00	1.73E+00	1.70E+00
2.320	1.65E+00	1.64E+00	1.62E+00	1.60E+00	1.58E+00	1.56E+00
2.297	1.47E+00	1.47E+00	1.46E+00	1.45E+00	1.44E+00	1.43E+00
2.274	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.31E+00	1.30E+00
2.251	1.17E+00	1.17E+00	1.18E+00	1.18E+00	1.18E+00	1.18E+00
2.228	1.04E+00	1.05E+00	1.06E+00	1.07E+00	1.07E+00	1.08E+00
2.205	9.39E-01	9.50E-01	9.60E-01	9.69E-01	9.76E-01	9.82E-01
2.182	8.47E-01	8.58E-01	8.69E-01	8.79E-01	8.88E-01	8.96E-01
2.159	7.67E-01	7.79E-01	7.90E-01	8.00E-01	8.09E-01	8.18E-01

2.136	6.98E-01	7.09E-01	7.19E-01	7.30E-01	7.40E-01	7.49E-01
2.113	6.38E-01	6.48E-01	6.58E-01	6.68E-01	6.78E-01	6.87E-01
2.090	5.86E-01	5.95E-01	6.04E-01	6.13E-01	6.23E-01	6.32E-01

X (km):	3.245	3.268	3.290	3.313	3.335	3.357
Y (km)						
3.562	3.97E-01	3.80E-01	3.63E-01	3.46E-01	3.30E-01	3.15E-01
3.539	4.10E-01	3.92E-01	3.73E-01	3.56E-01	3.39E-01	3.22E-01
3.516	4.24E-01	4.04E-01	3.84E-01	3.65E-01	3.47E-01	3.30E-01
3.493	4.38E-01	4.16E-01	3.96E-01	3.75E-01	3.56E-01	3.38E-01
3.470	4.53E-01	4.30E-01	4.07E-01	3.86E-01	3.65E-01	3.46E-01
3.447	4.68E-01	4.43E-01	4.19E-01	3.96E-01	3.75E-01	3.54E-01
3.424	4.84E-01	4.57E-01	4.32E-01	4.07E-01	3.84E-01	3.62E-01
3.401	5.01E-01	4.72E-01	4.44E-01	4.18E-01	3.94E-01	3.71E-01
3.378	5.19E-01	4.87E-01	4.58E-01	4.29E-01	4.03E-01	3.79E-01
3.355	5.37E-01	5.03E-01	4.71E-01	4.41E-01	4.13E-01	3.88E-01
3.332	5.56E-01	5.19E-01	4.85E-01	4.53E-01	4.23E-01	3.96E-01
3.309	5.75E-01	5.35E-01	4.99E-01	4.65E-01	4.33E-01	4.04E-01
3.286	5.95E-01	5.52E-01	5.13E-01	4.77E-01	4.43E-01	4.13E-01
3.263	6.15E-01	5.69E-01	5.27E-01	4.88E-01	4.53E-01	4.21E-01
3.240	6.36E-01	5.86E-01	5.41E-01	5.00E-01	4.63E-01	4.29E-01
3.217	6.57E-01	6.03E-01	5.55E-01	5.11E-01	4.72E-01	4.37E-01
3.194	6.78E-01	6.20E-01	5.69E-01	5.23E-01	4.82E-01	4.45E-01
3.171	6.99E-01	6.37E-01	5.82E-01	5.34E-01	4.91E-01	4.54E-01
3.148	7.20E-01	6.54E-01	5.96E-01	5.46E-01	5.02E-01	4.64E-01
3.125	7.40E-01	6.70E-01	6.10E-01	5.58E-01	5.13E-01	4.74E-01
3.102	7.60E-01	6.87E-01	6.25E-01	5.71E-01	5.26E-01	4.86E-01
3.079	7.82E-01	7.06E-01	6.41E-01	5.87E-01	5.41E-01	5.01E-01
3.056	8.06E-01	7.26E-01	6.61E-01	6.06E-01	5.59E-01	5.18E-01
3.033	8.32E-01	7.52E-01	6.85E-01	6.29E-01	5.82E-01	5.41E-01
3.010	8.65E-01	7.84E-01	7.16E-01	6.60E-01	6.12E-01	5.71E-01
2.987	9.09E-01	8.27E-01	7.59E-01	7.02E-01	6.53E-01	6.11E-01
2.964	9.73E-01	8.89E-01	8.19E-01	7.61E-01	7.10E-01	6.66E-01
2.941	1.07E+00	9.81E-01	9.07E-01	8.45E-01	7.90E-01	7.42E-01
2.918	1.22E+00	1.12E+00	1.03E+00	9.61E-01	8.96E-01	8.38E-01
2.895	1.44E+00	1.31E+00	1.20E+00	1.11E+00	1.03E+00	9.57E-01
2.872	1.73E+00	1.56E+00	1.41E+00	1.29E+00	1.19E+00	1.09E+00
2.849	2.07E+00	1.84E+00	1.65E+00	1.49E+00	1.36E+00	1.24E+00
2.826	2.43E+00	2.14E+00	1.90E+00	1.70E+00	1.54E+00	1.40E+00
2.803	2.81E+00	2.45E+00	2.16E+00	1.92E+00	1.73E+00	1.56E+00
2.780	3.19E+00	2.76E+00	2.42E+00	2.15E+00	1.92E+00	1.73E+00
2.757	3.53E+00	3.06E+00	2.68E+00	2.37E+00	2.12E+00	1.90E+00
2.734	3.77E+00	3.30E+00	2.91E+00	2.58E+00	2.30E+00	2.07E+00
2.711	3.86E+00	3.43E+00	3.06E+00	2.74E+00	2.46E+00	2.21E+00
2.688	3.83E+00	3.46E+00	3.13E+00	2.83E+00	2.56E+00	2.32E+00
2.665	3.73E+00	3.41E+00	3.12E+00	2.86E+00	2.61E+00	2.39E+00
2.642	3.58E+00	3.32E+00	3.06E+00	2.83E+00	2.61E+00	2.41E+00
2.619	3.43E+00	3.19E+00	2.98E+00	2.77E+00	2.58E+00	2.40E+00
2.596	3.27E+00	3.06E+00	2.87E+00	2.69E+00	2.52E+00	2.36E+00
2.573	3.11E+00	2.93E+00	2.76E+00	2.60E+00	2.45E+00	2.30E+00
2.550	2.95E+00	2.79E+00	2.65E+00	2.50E+00	2.37E+00	2.24E+00
2.527	2.79E+00	2.66E+00	2.53E+00	2.40E+00	2.28E+00	2.16E+00
2.504	2.64E+00	2.52E+00	2.41E+00	2.30E+00	2.19E+00	2.09E+00
2.481	2.50E+00	2.39E+00	2.29E+00	2.19E+00	2.10E+00	2.00E+00
2.458	2.35E+00	2.26E+00	2.17E+00	2.08E+00	2.00E+00	1.92E+00
2.435	2.21E+00	2.13E+00	2.05E+00	1.98E+00	1.91E+00	1.83E+00
2.412	2.07E+00	2.00E+00	1.94E+00	1.87E+00	1.81E+00	1.75E+00
2.389	1.93E+00	1.88E+00	1.82E+00	1.77E+00	1.71E+00	1.66E+00
2.366	1.80E+00	1.75E+00	1.71E+00	1.66E+00	1.62E+00	1.57E+00
2.343	1.67E+00	1.63E+00	1.59E+00	1.56E+00	1.52E+00	1.48E+00
2.320	1.54E+00	1.51E+00	1.48E+00	1.45E+00	1.43E+00	1.40E+00
2.297	1.41E+00	1.39E+00	1.37E+00	1.35E+00	1.33E+00	1.31E+00
2.274	1.29E+00	1.28E+00	1.27E+00	1.26E+00	1.24E+00	1.22E+00
2.251	1.18E+00	1.18E+00	1.17E+00	1.16E+00	1.15E+00	1.14E+00
2.228	1.08E+00	1.08E+00	1.08E+00	1.07E+00	1.07E+00	1.06E+00
2.205	9.86E-01	9.89E-01	9.89E-01	9.89E-01	9.87E-01	9.83E-01

2.182	9.02E-01	9.06E-01	9.10E-01	9.12E-01	9.13E-01	9.12E-01
2.159	8.26E-01	8.32E-01	8.37E-01	8.41E-01	8.44E-01	8.45E-01
2.136	7.57E-01	7.65E-01	7.71E-01	7.76E-01	7.80E-01	7.83E-01
2.113	6.96E-01	7.04E-01	7.11E-01	7.17E-01	7.22E-01	7.27E-01
2.090	6.41E-01	6.49E-01	6.56E-01	6.63E-01	6.69E-01	6.74E-01

X (km):	3.380	3.403	3.425	3.448	3.470	3.493
Y (km)						
3.562	3.00E-01	2.86E-01	2.73E-01	2.60E-01	2.48E-01	2.36E-01
3.539	3.07E-01	2.92E-01	2.78E-01	2.65E-01	2.52E-01	2.40E-01
3.516	3.14E-01	2.98E-01	2.83E-01	2.69E-01	2.56E-01	2.44E-01
3.493	3.20E-01	3.04E-01	2.89E-01	2.74E-01	2.60E-01	2.47E-01
3.470	3.27E-01	3.10E-01	2.94E-01	2.79E-01	2.64E-01	2.51E-01
3.447	3.35E-01	3.17E-01	3.00E-01	2.83E-01	2.68E-01	2.55E-01
3.424	3.42E-01	3.23E-01	3.05E-01	2.88E-01	2.73E-01	2.58E-01
3.401	3.49E-01	3.29E-01	3.10E-01	2.93E-01	2.77E-01	2.62E-01
3.378	3.56E-01	3.35E-01	3.16E-01	2.97E-01	2.81E-01	2.65E-01
3.355	3.64E-01	3.41E-01	3.21E-01	3.02E-01	2.85E-01	2.69E-01
3.332	3.71E-01	3.48E-01	3.26E-01	3.07E-01	2.89E-01	2.72E-01
3.309	3.78E-01	3.54E-01	3.31E-01	3.11E-01	2.93E-01	2.76E-01
3.286	3.85E-01	3.60E-01	3.37E-01	3.16E-01	2.97E-01	2.80E-01
3.263	3.92E-01	3.66E-01	3.42E-01	3.21E-01	3.01E-01	2.84E-01
3.240	3.99E-01	3.72E-01	3.47E-01	3.26E-01	3.06E-01	2.88E-01
3.217	4.06E-01	3.78E-01	3.54E-01	3.31E-01	3.11E-01	2.94E-01
3.194	4.13E-01	3.85E-01	3.60E-01	3.37E-01	3.17E-01	2.99E-01
3.171	4.22E-01	3.92E-01	3.67E-01	3.44E-01	3.24E-01	3.06E-01
3.148	4.30E-01	4.01E-01	3.75E-01	3.52E-01	3.32E-01	3.14E-01
3.125	4.40E-01	4.11E-01	3.85E-01	3.61E-01	3.41E-01	3.23E-01
3.102	4.52E-01	4.22E-01	3.96E-01	3.73E-01	3.52E-01	3.34E-01
3.079	4.66E-01	4.36E-01	4.10E-01	3.86E-01	3.66E-01	3.47E-01
3.056	4.84E-01	4.53E-01	4.27E-01	4.03E-01	3.82E-01	3.64E-01
3.033	5.06E-01	4.76E-01	4.49E-01	4.25E-01	4.04E-01	3.85E-01
3.010	5.36E-01	5.04E-01	4.77E-01	4.53E-01	4.31E-01	4.11E-01
2.987	5.75E-01	5.43E-01	5.14E-01	4.89E-01	4.66E-01	4.45E-01
2.964	6.28E-01	5.94E-01	5.63E-01	5.35E-01	5.10E-01	4.86E-01
2.941	6.98E-01	6.60E-01	6.24E-01	5.92E-01	5.62E-01	5.35E-01
2.918	7.86E-01	7.40E-01	6.98E-01	6.60E-01	6.25E-01	5.93E-01
2.895	8.93E-01	8.36E-01	7.84E-01	7.37E-01	6.95E-01	6.57E-01
2.872	1.01E+00	9.42E-01	8.79E-01	8.23E-01	7.73E-01	7.27E-01
2.849	1.14E+00	1.06E+00	9.81E-01	9.14E-01	8.54E-01	8.00E-01
2.826	1.28E+00	1.18E+00	1.09E+00	1.01E+00	9.40E-01	8.78E-01
2.803	1.42E+00	1.30E+00	1.20E+00	1.11E+00	1.03E+00	9.57E-01
2.780	1.57E+00	1.43E+00	1.31E+00	1.21E+00	1.12E+00	1.04E+00
2.757	1.72E+00	1.56E+00	1.43E+00	1.31E+00	1.21E+00	1.12E+00
2.734	1.87E+00	1.70E+00	1.55E+00	1.42E+00	1.31E+00	1.21E+00
2.711	2.00E+00	1.82E+00	1.66E+00	1.52E+00	1.40E+00	1.29E+00
2.688	2.11E+00	1.93E+00	1.76E+00	1.62E+00	1.49E+00	1.37E+00
2.665	2.19E+00	2.01E+00	1.84E+00	1.70E+00	1.57E+00	1.45E+00
2.642	2.22E+00	2.05E+00	1.90E+00	1.76E+00	1.63E+00	1.51E+00
2.619	2.23E+00	2.07E+00	1.93E+00	1.79E+00	1.67E+00	1.55E+00
2.596	2.21E+00	2.06E+00	1.93E+00	1.80E+00	1.69E+00	1.58E+00
2.573	2.17E+00	2.04E+00	1.91E+00	1.80E+00	1.69E+00	1.59E+00
2.550	2.11E+00	2.00E+00	1.88E+00	1.78E+00	1.68E+00	1.59E+00
2.527	2.05E+00	1.95E+00	1.85E+00	1.75E+00	1.66E+00	1.57E+00
2.504	1.99E+00	1.89E+00	1.80E+00	1.71E+00	1.63E+00	1.55E+00
2.481	1.91E+00	1.83E+00	1.75E+00	1.67E+00	1.59E+00	1.52E+00
2.458	1.84E+00	1.76E+00	1.69E+00	1.62E+00	1.55E+00	1.48E+00
2.435	1.76E+00	1.70E+00	1.63E+00	1.56E+00	1.50E+00	1.44E+00
2.412	1.69E+00	1.63E+00	1.57E+00	1.51E+00	1.45E+00	1.40E+00
2.389	1.61E+00	1.55E+00	1.50E+00	1.45E+00	1.40E+00	1.35E+00
2.366	1.53E+00	1.48E+00	1.44E+00	1.39E+00	1.35E+00	1.30E+00
2.343	1.45E+00	1.41E+00	1.37E+00	1.33E+00	1.29E+00	1.25E+00
2.320	1.36E+00	1.33E+00	1.30E+00	1.27E+00	1.23E+00	1.20E+00
2.297	1.28E+00	1.26E+00	1.23E+00	1.20E+00	1.18E+00	1.15E+00
2.274	1.20E+00	1.18E+00	1.16E+00	1.14E+00	1.12E+00	1.09E+00
2.251	1.13E+00	1.11E+00	1.09E+00	1.08E+00	1.06E+00	1.04E+00

2.228	1.05E+00	1.04E+00	1.03E+00	1.01E+00	1.00E+00	9.85E-01
2.205	9.78E-01	9.71E-01	9.63E-01	9.54E-01	9.43E-01	9.31E-01
2.182	9.10E-01	9.06E-01	9.01E-01	8.95E-01	8.87E-01	8.79E-01
2.159	8.45E-01	8.44E-01	8.42E-01	8.38E-01	8.33E-01	8.27E-01
2.136	7.85E-01	7.86E-01	7.86E-01	7.84E-01	7.82E-01	7.78E-01
2.113	7.30E-01	7.32E-01	7.33E-01	7.34E-01	7.33E-01	7.31E-01
2.090	6.79E-01	6.82E-01	6.84E-01	6.86E-01	6.87E-01	6.86E-01

X (km):	3.515	3.538	3.560	3.583	3.605	3.628
Y (km)						
3.562	2.26E-01	2.15E-01	2.06E-01	1.97E-01	1.88E-01	1.80E-01
3.539	2.29E-01	2.18E-01	2.08E-01	1.99E-01	1.90E-01	1.82E-01
3.516	2.32E-01	2.21E-01	2.11E-01	2.01E-01	1.92E-01	1.83E-01
3.493	2.35E-01	2.24E-01	2.13E-01	2.03E-01	1.94E-01	1.85E-01
3.470	2.38E-01	2.27E-01	2.16E-01	2.05E-01	1.96E-01	1.87E-01
3.447	2.41E-01	2.29E-01	2.18E-01	2.07E-01	1.98E-01	1.89E-01
3.424	2.45E-01	2.32E-01	2.20E-01	2.10E-01	2.00E-01	1.91E-01
3.401	2.48E-01	2.35E-01	2.23E-01	2.12E-01	2.02E-01	1.93E-01
3.378	2.51E-01	2.38E-01	2.26E-01	2.14E-01	2.04E-01	1.95E-01
3.355	2.54E-01	2.41E-01	2.28E-01	2.17E-01	2.07E-01	1.97E-01
3.332	2.57E-01	2.44E-01	2.31E-01	2.20E-01	2.09E-01	2.00E-01
3.309	2.61E-01	2.47E-01	2.34E-01	2.23E-01	2.12E-01	2.02E-01
3.286	2.64E-01	2.50E-01	2.37E-01	2.26E-01	2.15E-01	2.06E-01
3.263	2.68E-01	2.54E-01	2.41E-01	2.30E-01	2.19E-01	2.09E-01
3.240	2.73E-01	2.58E-01	2.45E-01	2.34E-01	2.23E-01	2.13E-01
3.217	2.78E-01	2.63E-01	2.50E-01	2.38E-01	2.28E-01	2.18E-01
3.194	2.83E-01	2.69E-01	2.56E-01	2.44E-01	2.33E-01	2.23E-01
3.171	2.90E-01	2.75E-01	2.62E-01	2.50E-01	2.39E-01	2.29E-01
3.148	2.97E-01	2.83E-01	2.69E-01	2.57E-01	2.46E-01	2.36E-01
3.125	3.06E-01	2.92E-01	2.78E-01	2.66E-01	2.55E-01	2.45E-01
3.102	3.17E-01	3.02E-01	2.89E-01	2.77E-01	2.66E-01	2.56E-01
3.079	3.30E-01	3.16E-01	3.02E-01	2.90E-01	2.78E-01	2.68E-01
3.056	3.47E-01	3.32E-01	3.18E-01	3.05E-01	2.94E-01	2.83E-01
3.033	3.68E-01	3.52E-01	3.38E-01	3.25E-01	3.13E-01	3.02E-01
3.010	3.94E-01	3.77E-01	3.62E-01	3.48E-01	3.36E-01	3.24E-01
2.987	4.26E-01	4.08E-01	3.92E-01	3.77E-01	3.62E-01	3.49E-01
2.964	4.65E-01	4.45E-01	4.27E-01	4.09E-01	3.93E-01	3.78E-01
2.941	5.11E-01	4.88E-01	4.67E-01	4.47E-01	4.28E-01	4.11E-01
2.918	5.64E-01	5.37E-01	5.12E-01	4.89E-01	4.67E-01	4.47E-01
2.895	6.22E-01	5.90E-01	5.61E-01	5.34E-01	5.09E-01	4.86E-01
2.872	6.86E-01	6.48E-01	6.14E-01	5.83E-01	5.54E-01	5.28E-01
2.849	7.52E-01	7.09E-01	6.69E-01	6.34E-01	6.01E-01	5.71E-01
2.826	8.22E-01	7.72E-01	7.27E-01	6.86E-01	6.49E-01	6.15E-01
2.803	8.94E-01	8.37E-01	7.86E-01	7.40E-01	6.99E-01	6.61E-01
2.780	9.67E-01	9.04E-01	8.47E-01	7.96E-01	7.50E-01	7.08E-01
2.757	1.04E+00	9.73E-01	9.10E-01	8.53E-01	8.02E-01	7.55E-01
2.734	1.12E+00	1.04E+00	9.73E-01	9.11E-01	8.55E-01	8.04E-01
2.711	1.20E+00	1.11E+00	1.04E+00	9.70E-01	9.09E-01	8.54E-01
2.688	1.27E+00	1.18E+00	1.10E+00	1.03E+00	9.63E-01	9.03E-01
2.665	1.34E+00	1.25E+00	1.16E+00	1.08E+00	1.01E+00	9.52E-01
2.642	1.40E+00	1.30E+00	1.22E+00	1.14E+00	1.06E+00	9.98E-01
2.619	1.45E+00	1.35E+00	1.26E+00	1.18E+00	1.11E+00	1.04E+00
2.596	1.48E+00	1.38E+00	1.30E+00	1.22E+00	1.14E+00	1.08E+00
2.573	1.49E+00	1.40E+00	1.32E+00	1.24E+00	1.17E+00	1.10E+00
2.550	1.50E+00	1.41E+00	1.33E+00	1.26E+00	1.19E+00	1.12E+00
2.527	1.49E+00	1.41E+00	1.34E+00	1.27E+00	1.20E+00	1.14E+00
2.504	1.47E+00	1.40E+00	1.33E+00	1.26E+00	1.20E+00	1.14E+00
2.481	1.45E+00	1.38E+00	1.32E+00	1.25E+00	1.20E+00	1.14E+00
2.458	1.42E+00	1.35E+00	1.30E+00	1.24E+00	1.18E+00	1.13E+00
2.435	1.38E+00	1.33E+00	1.27E+00	1.22E+00	1.17E+00	1.12E+00
2.412	1.34E+00	1.29E+00	1.24E+00	1.19E+00	1.15E+00	1.10E+00
2.389	1.30E+00	1.26E+00	1.21E+00	1.17E+00	1.12E+00	1.08E+00
2.366	1.26E+00	1.22E+00	1.18E+00	1.14E+00	1.10E+00	1.06E+00
2.343	1.22E+00	1.18E+00	1.14E+00	1.10E+00	1.07E+00	1.03E+00
2.320	1.17E+00	1.14E+00	1.10E+00	1.07E+00	1.04E+00	1.01E+00
2.297	1.12E+00	1.09E+00	1.06E+00	1.03E+00	1.00E+00	9.77E-01

2.274	1.07E+00	1.05E+00	1.02E+00	9.95E-01	9.70E-01	9.45E-01
2.251	1.02E+00	9.99E-01	9.78E-01	9.56E-01	9.34E-01	9.12E-01
2.228	9.69E-01	9.52E-01	9.34E-01	9.16E-01	8.97E-01	8.78E-01
2.205	9.19E-01	9.05E-01	8.90E-01	8.75E-01	8.59E-01	8.42E-01
2.182	8.69E-01	8.58E-01	8.46E-01	8.34E-01	8.21E-01	8.07E-01
2.159	8.20E-01	8.12E-01	8.03E-01	7.93E-01	7.82E-01	7.71E-01
2.136	7.73E-01	7.67E-01	7.61E-01	7.53E-01	7.44E-01	7.35E-01
2.113	7.28E-01	7.24E-01	7.19E-01	7.14E-01	7.07E-01	7.00E-01
2.090	6.85E-01	6.83E-01	6.80E-01	6.76E-01	6.71E-01	6.66E-01

X (km):	3.650	3.673	3.695	3.717	3.740	3.763
Y (km)						
3.562	1.72E-01	1.65E-01	1.58E-01	1.52E-01	1.46E-01	1.41E-01
3.539	1.74E-01	1.66E-01	1.60E-01	1.53E-01	1.47E-01	1.42E-01
3.516	1.75E-01	1.68E-01	1.61E-01	1.54E-01	1.48E-01	1.43E-01
3.493	1.77E-01	1.69E-01	1.62E-01	1.56E-01	1.50E-01	1.44E-01
3.470	1.79E-01	1.71E-01	1.64E-01	1.57E-01	1.51E-01	1.45E-01
3.447	1.80E-01	1.73E-01	1.65E-01	1.59E-01	1.52E-01	1.47E-01
3.424	1.82E-01	1.74E-01	1.67E-01	1.60E-01	1.54E-01	1.48E-01
3.401	1.84E-01	1.76E-01	1.69E-01	1.62E-01	1.56E-01	1.50E-01
3.378	1.86E-01	1.78E-01	1.71E-01	1.64E-01	1.58E-01	1.52E-01
3.355	1.88E-01	1.80E-01	1.73E-01	1.66E-01	1.60E-01	1.54E-01
3.332	1.91E-01	1.83E-01	1.75E-01	1.68E-01	1.62E-01	1.56E-01
3.309	1.94E-01	1.85E-01	1.78E-01	1.71E-01	1.65E-01	1.59E-01
3.286	1.97E-01	1.88E-01	1.81E-01	1.74E-01	1.68E-01	1.62E-01
3.263	2.00E-01	1.92E-01	1.84E-01	1.77E-01	1.71E-01	1.65E-01
3.240	2.04E-01	1.96E-01	1.88E-01	1.81E-01	1.75E-01	1.69E-01
3.217	2.09E-01	2.00E-01	1.93E-01	1.86E-01	1.79E-01	1.73E-01
3.194	2.14E-01	2.06E-01	1.98E-01	1.91E-01	1.85E-01	1.79E-01
3.171	2.20E-01	2.12E-01	2.04E-01	1.97E-01	1.91E-01	1.85E-01
3.148	2.27E-01	2.19E-01	2.11E-01	2.04E-01	1.98E-01	1.91E-01
3.125	2.36E-01	2.27E-01	2.20E-01	2.12E-01	2.06E-01	2.00E-01
3.102	2.46E-01	2.38E-01	2.30E-01	2.22E-01	2.16E-01	2.09E-01
3.079	2.59E-01	2.50E-01	2.42E-01	2.34E-01	2.27E-01	2.21E-01
3.056	2.73E-01	2.64E-01	2.56E-01	2.48E-01	2.41E-01	2.34E-01
3.033	2.91E-01	2.82E-01	2.73E-01	2.64E-01	2.56E-01	2.49E-01
3.010	3.12E-01	3.02E-01	2.92E-01	2.83E-01	2.74E-01	2.66E-01
2.987	3.37E-01	3.25E-01	3.14E-01	3.04E-01	2.94E-01	2.85E-01
2.964	3.64E-01	3.51E-01	3.39E-01	3.27E-01	3.16E-01	3.06E-01
2.941	3.95E-01	3.80E-01	3.66E-01	3.53E-01	3.41E-01	3.29E-01
2.918	4.29E-01	4.12E-01	3.96E-01	3.81E-01	3.67E-01	3.53E-01
2.895	4.65E-01	4.45E-01	4.27E-01	4.10E-01	3.94E-01	3.79E-01
2.872	5.03E-01	4.81E-01	4.60E-01	4.41E-01	4.23E-01	4.06E-01
2.849	5.43E-01	5.18E-01	4.94E-01	4.73E-01	4.52E-01	4.34E-01
2.826	5.84E-01	5.56E-01	5.30E-01	5.05E-01	4.83E-01	4.62E-01
2.803	6.26E-01	5.95E-01	5.66E-01	5.39E-01	5.14E-01	4.91E-01
2.780	6.69E-01	6.34E-01	6.02E-01	5.73E-01	5.46E-01	5.21E-01
2.757	7.13E-01	6.75E-01	6.40E-01	6.08E-01	5.78E-01	5.51E-01
2.734	7.58E-01	7.16E-01	6.78E-01	6.43E-01	6.11E-01	5.81E-01
2.711	8.04E-01	7.58E-01	7.17E-01	6.79E-01	6.44E-01	6.12E-01
2.688	8.49E-01	8.00E-01	7.56E-01	7.15E-01	6.78E-01	6.43E-01
2.665	8.95E-01	8.43E-01	7.95E-01	7.51E-01	7.11E-01	6.75E-01
2.642	9.38E-01	8.83E-01	8.33E-01	7.87E-01	7.45E-01	7.06E-01
2.619	9.78E-01	9.21E-01	8.69E-01	8.21E-01	7.77E-01	7.36E-01
2.596	1.01E+00	9.55E-01	9.02E-01	8.52E-01	8.07E-01	7.65E-01
2.573	1.04E+00	9.84E-01	9.30E-01	8.80E-01	8.34E-01	7.91E-01
2.550	1.06E+00	1.01E+00	9.54E-01	9.04E-01	8.57E-01	8.14E-01
2.527	1.08E+00	1.02E+00	9.72E-01	9.23E-01	8.77E-01	8.34E-01
2.504	1.09E+00	1.03E+00	9.83E-01	9.36E-01	8.91E-01	8.49E-01
2.481	1.09E+00	1.04E+00	9.90E-01	9.44E-01	9.01E-01	8.60E-01
2.458	1.08E+00	1.04E+00	9.91E-01	9.47E-01	9.06E-01	8.67E-01
2.435	1.07E+00	1.03E+00	9.87E-01	9.46E-01	9.07E-01	8.69E-01
2.412	1.06E+00	1.02E+00	9.79E-01	9.40E-01	9.03E-01	8.68E-01
2.389	1.04E+00	1.00E+00	9.67E-01	9.31E-01	8.96E-01	8.63E-01
2.366	1.02E+00	9.87E-01	9.52E-01	9.19E-01	8.86E-01	8.55E-01
2.343	1.00E+00	9.67E-01	9.35E-01	9.04E-01	8.74E-01	8.44E-01

2.320	9.75E-01	9.45E-01	9.16E-01	8.87E-01	8.59E-01	8.31E-01
2.297	9.49E-01	9.21E-01	8.94E-01	8.67E-01	8.42E-01	8.16E-01
2.274	9.20E-01	8.95E-01	8.71E-01	8.46E-01	8.22E-01	7.99E-01
2.251	8.90E-01	8.67E-01	8.45E-01	8.24E-01	8.02E-01	7.81E-01
2.228	8.58E-01	8.39E-01	8.19E-01	7.99E-01	7.80E-01	7.61E-01
2.205	8.26E-01	8.09E-01	7.91E-01	7.74E-01	7.57E-01	7.40E-01
2.182	7.93E-01	7.78E-01	7.63E-01	7.48E-01	7.33E-01	7.18E-01
2.159	7.59E-01	7.47E-01	7.34E-01	7.21E-01	7.08E-01	6.96E-01
2.136	7.26E-01	7.15E-01	7.04E-01	6.94E-01	6.83E-01	6.73E-01
2.113	6.92E-01	6.84E-01	6.75E-01	6.66E-01	6.58E-01	6.49E-01
2.090	6.60E-01	6.53E-01	6.46E-01	6.40E-01	6.32E-01	6.25E-01

X (km):	3.785	3.808	3.830	3.853	3.875	3.898
Y (km)						
3.562	1.36E-01	1.31E-01	1.26E-01	1.22E-01	1.18E-01	1.14E-01
3.539	1.37E-01	1.32E-01	1.27E-01	1.23E-01	1.19E-01	1.15E-01
3.516	1.38E-01	1.33E-01	1.28E-01	1.24E-01	1.20E-01	1.16E-01
3.493	1.39E-01	1.34E-01	1.29E-01	1.25E-01	1.21E-01	1.17E-01
3.470	1.40E-01	1.35E-01	1.30E-01	1.26E-01	1.22E-01	1.18E-01
3.447	1.41E-01	1.36E-01	1.32E-01	1.27E-01	1.23E-01	1.20E-01
3.424	1.43E-01	1.38E-01	1.33E-01	1.29E-01	1.25E-01	1.21E-01
3.401	1.44E-01	1.39E-01	1.35E-01	1.31E-01	1.26E-01	1.23E-01
3.378	1.46E-01	1.41E-01	1.37E-01	1.32E-01	1.28E-01	1.25E-01
3.355	1.48E-01	1.43E-01	1.39E-01	1.34E-01	1.30E-01	1.27E-01
3.332	1.51E-01	1.46E-01	1.41E-01	1.37E-01	1.33E-01	1.29E-01
3.309	1.53E-01	1.48E-01	1.44E-01	1.39E-01	1.35E-01	1.31E-01
3.286	1.56E-01	1.51E-01	1.46E-01	1.42E-01	1.38E-01	1.34E-01
3.263	1.60E-01	1.55E-01	1.50E-01	1.45E-01	1.41E-01	1.37E-01
3.240	1.64E-01	1.58E-01	1.54E-01	1.49E-01	1.45E-01	1.41E-01
3.217	1.68E-01	1.63E-01	1.58E-01	1.54E-01	1.49E-01	1.45E-01
3.194	1.73E-01	1.68E-01	1.63E-01	1.59E-01	1.54E-01	1.50E-01
3.171	1.79E-01	1.74E-01	1.69E-01	1.64E-01	1.60E-01	1.56E-01
3.148	1.86E-01	1.81E-01	1.76E-01	1.71E-01	1.67E-01	1.63E-01
3.125	1.94E-01	1.88E-01	1.83E-01	1.79E-01	1.74E-01	1.70E-01
3.102	2.03E-01	1.98E-01	1.93E-01	1.88E-01	1.83E-01	1.79E-01
3.079	2.14E-01	2.09E-01	2.03E-01	1.98E-01	1.93E-01	1.88E-01
3.056	2.27E-01	2.21E-01	2.15E-01	2.10E-01	2.04E-01	1.99E-01
3.033	2.42E-01	2.35E-01	2.29E-01	2.23E-01	2.17E-01	2.11E-01
3.010	2.58E-01	2.51E-01	2.44E-01	2.37E-01	2.31E-01	2.25E-01
2.987	2.76E-01	2.68E-01	2.60E-01	2.53E-01	2.46E-01	2.39E-01
2.964	2.96E-01	2.87E-01	2.78E-01	2.70E-01	2.62E-01	2.55E-01
2.941	3.18E-01	3.07E-01	2.98E-01	2.88E-01	2.80E-01	2.71E-01
2.918	3.41E-01	3.29E-01	3.18E-01	3.08E-01	2.98E-01	2.88E-01
2.895	3.65E-01	3.52E-01	3.39E-01	3.28E-01	3.17E-01	3.06E-01
2.872	3.90E-01	3.75E-01	3.62E-01	3.49E-01	3.36E-01	3.25E-01
2.849	4.16E-01	4.00E-01	3.84E-01	3.70E-01	3.57E-01	3.44E-01
2.826	4.43E-01	4.25E-01	4.08E-01	3.92E-01	3.77E-01	3.63E-01
2.803	4.70E-01	4.50E-01	4.32E-01	4.14E-01	3.98E-01	3.83E-01
2.780	4.97E-01	4.76E-01	4.56E-01	4.37E-01	4.19E-01	4.03E-01
2.757	5.25E-01	5.02E-01	4.80E-01	4.60E-01	4.41E-01	4.23E-01
2.734	5.54E-01	5.28E-01	5.05E-01	4.83E-01	4.63E-01	4.44E-01
2.711	5.82E-01	5.55E-01	5.30E-01	5.06E-01	4.85E-01	4.64E-01
2.688	6.12E-01	5.82E-01	5.55E-01	5.30E-01	5.07E-01	4.85E-01
2.665	6.41E-01	6.10E-01	5.81E-01	5.54E-01	5.29E-01	5.06E-01
2.642	6.70E-01	6.37E-01	6.06E-01	5.78E-01	5.52E-01	5.27E-01
2.619	6.98E-01	6.64E-01	6.32E-01	6.02E-01	5.74E-01	5.49E-01
2.596	7.26E-01	6.90E-01	6.56E-01	6.25E-01	5.96E-01	5.69E-01
2.573	7.51E-01	7.14E-01	6.79E-01	6.47E-01	6.17E-01	5.90E-01
2.550	7.74E-01	7.36E-01	7.01E-01	6.68E-01	6.37E-01	6.09E-01
2.527	7.93E-01	7.55E-01	7.20E-01	6.87E-01	6.56E-01	6.27E-01
2.504	8.09E-01	7.72E-01	7.36E-01	7.03E-01	6.72E-01	6.43E-01
2.481	8.21E-01	7.84E-01	7.50E-01	7.17E-01	6.86E-01	6.57E-01
2.458	8.29E-01	7.93E-01	7.59E-01	7.27E-01	6.97E-01	6.69E-01
2.435	8.33E-01	7.99E-01	7.66E-01	7.35E-01	7.05E-01	6.78E-01
2.412	8.33E-01	8.01E-01	7.69E-01	7.40E-01	7.11E-01	6.85E-01
2.389	8.30E-01	7.99E-01	7.70E-01	7.41E-01	7.14E-01	6.89E-01

2.366	8.24E-01	7.95E-01	7.67E-01	7.40E-01	7.15E-01	6.91E-01
2.343	8.16E-01	7.88E-01	7.62E-01	7.37E-01	7.13E-01	6.90E-01
2.320	8.05E-01	7.79E-01	7.54E-01	7.31E-01	7.09E-01	6.88E-01
2.297	7.92E-01	7.68E-01	7.45E-01	7.24E-01	7.03E-01	6.83E-01
2.274	7.77E-01	7.55E-01	7.34E-01	7.14E-01	6.95E-01	6.76E-01
2.251	7.60E-01	7.41E-01	7.22E-01	7.03E-01	6.86E-01	6.68E-01
2.228	7.42E-01	7.25E-01	7.08E-01	6.91E-01	6.74E-01	6.58E-01
2.205	7.24E-01	7.08E-01	6.92E-01	6.77E-01	6.62E-01	6.47E-01
2.182	7.04E-01	6.90E-01	6.76E-01	6.62E-01	6.48E-01	6.34E-01
2.159	6.83E-01	6.71E-01	6.58E-01	6.46E-01	6.33E-01	6.21E-01
2.136	6.62E-01	6.51E-01	6.40E-01	6.29E-01	6.18E-01	6.06E-01
2.113	6.40E-01	6.30E-01	6.21E-01	6.11E-01	6.01E-01	5.91E-01
2.090	6.17E-01	6.09E-01	6.01E-01	5.93E-01	5.84E-01	5.75E-01

X (km):	3.920	3.942	3.965	3.988	4.010
Y (km)					
3.562	1.11E-01	1.07E-01	1.04E-01	1.01E-01	9.84E-02
3.539	1.12E-01	1.08E-01	1.05E-01	1.02E-01	9.93E-02
3.516	1.13E-01	1.09E-01	1.06E-01	1.03E-01	1.00E-01
3.493	1.14E-01	1.10E-01	1.07E-01	1.04E-01	1.01E-01
3.470	1.15E-01	1.12E-01	1.08E-01	1.05E-01	1.03E-01
3.447	1.16E-01	1.13E-01	1.10E-01	1.07E-01	1.04E-01
3.424	1.18E-01	1.14E-01	1.11E-01	1.08E-01	1.05E-01
3.401	1.19E-01	1.16E-01	1.13E-01	1.10E-01	1.07E-01
3.378	1.21E-01	1.18E-01	1.15E-01	1.12E-01	1.09E-01
3.355	1.23E-01	1.20E-01	1.17E-01	1.14E-01	1.11E-01
3.332	1.25E-01	1.22E-01	1.19E-01	1.16E-01	1.13E-01
3.309	1.28E-01	1.25E-01	1.21E-01	1.19E-01	1.16E-01
3.286	1.31E-01	1.27E-01	1.24E-01	1.21E-01	1.19E-01
3.263	1.34E-01	1.31E-01	1.28E-01	1.25E-01	1.22E-01
3.240	1.38E-01	1.34E-01	1.31E-01	1.28E-01	1.25E-01
3.217	1.42E-01	1.39E-01	1.35E-01	1.32E-01	1.30E-01
3.194	1.47E-01	1.43E-01	1.40E-01	1.37E-01	1.34E-01
3.171	1.52E-01	1.49E-01	1.46E-01	1.43E-01	1.40E-01
3.148	1.59E-01	1.55E-01	1.52E-01	1.49E-01	1.46E-01
3.125	1.66E-01	1.62E-01	1.59E-01	1.56E-01	1.53E-01
3.102	1.75E-01	1.71E-01	1.67E-01	1.64E-01	1.60E-01
3.079	1.84E-01	1.80E-01	1.76E-01	1.72E-01	1.69E-01
3.056	1.95E-01	1.90E-01	1.86E-01	1.82E-01	1.78E-01
3.033	2.06E-01	2.01E-01	1.97E-01	1.92E-01	1.88E-01
3.010	2.19E-01	2.14E-01	2.08E-01	2.04E-01	1.99E-01
2.987	2.33E-01	2.27E-01	2.21E-01	2.16E-01	2.11E-01
2.964	2.48E-01	2.41E-01	2.35E-01	2.29E-01	2.23E-01
2.941	2.63E-01	2.56E-01	2.49E-01	2.42E-01	2.36E-01
2.918	2.80E-01	2.71E-01	2.64E-01	2.56E-01	2.49E-01
2.895	2.97E-01	2.88E-01	2.79E-01	2.71E-01	2.63E-01
2.872	3.14E-01	3.04E-01	2.95E-01	2.86E-01	2.77E-01
2.849	3.32E-01	3.21E-01	3.11E-01	3.01E-01	2.92E-01
2.826	3.51E-01	3.38E-01	3.27E-01	3.16E-01	3.06E-01
2.803	3.69E-01	3.56E-01	3.44E-01	3.32E-01	3.21E-01
2.780	3.88E-01	3.74E-01	3.60E-01	3.48E-01	3.36E-01
2.757	4.07E-01	3.92E-01	3.77E-01	3.64E-01	3.52E-01
2.734	4.26E-01	4.10E-01	3.94E-01	3.80E-01	3.67E-01
2.711	4.45E-01	4.28E-01	4.12E-01	3.96E-01	3.82E-01
2.688	4.65E-01	4.46E-01	4.29E-01	4.13E-01	3.98E-01
2.665	4.85E-01	4.65E-01	4.47E-01	4.30E-01	4.14E-01
2.642	5.05E-01	4.84E-01	4.65E-01	4.47E-01	4.30E-01
2.619	5.25E-01	5.03E-01	4.82E-01	4.64E-01	4.46E-01
2.596	5.45E-01	5.22E-01	5.00E-01	4.81E-01	4.62E-01
2.573	5.64E-01	5.40E-01	5.18E-01	4.98E-01	4.78E-01
2.550	5.82E-01	5.58E-01	5.35E-01	5.14E-01	4.94E-01
2.527	6.00E-01	5.75E-01	5.52E-01	5.30E-01	5.10E-01
2.504	6.16E-01	5.91E-01	5.67E-01	5.45E-01	5.24E-01
2.481	6.30E-01	6.05E-01	5.81E-01	5.59E-01	5.38E-01
2.458	6.42E-01	6.17E-01	5.94E-01	5.71E-01	5.50E-01
2.435	6.52E-01	6.28E-01	6.04E-01	5.82E-01	5.61E-01

2.412	6.60E-01	6.36E-01	6.13E-01	5.91E-01	5.70E-01
2.389	6.65E-01	6.42E-01	6.19E-01	5.98E-01	5.78E-01
2.366	6.68E-01	6.45E-01	6.24E-01	6.03E-01	5.83E-01
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2.297	6.63E-01	6.44E-01	6.25E-01	6.07E-01	5.89E-01
2.274	6.58E-01	6.40E-01	6.22E-01	6.05E-01	5.88E-01
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2.182	6.21E-01	6.07E-01	5.94E-01	5.80E-01	5.67E-01
2.159	6.08E-01	5.96E-01	5.83E-01	5.71E-01	5.59E-01
2.136	5.95E-01	5.84E-01	5.72E-01	5.61E-01	5.50E-01
2.113	5.81E-01	5.70E-01	5.60E-01	5.50E-01	5.40E-01
2.090	5.66E-01	5.57E-01	5.47E-01	5.38E-01	5.28E-01

Concentrations at the discrete receptors (No. : Value):

1:3.03E+00 2:1.78E+00 3:4.25E-01 4:8.58E-01 5:4.37E-01
6:2.03E+00 7:2.40E+00 8:2.38E+00
9:2.14E+00 10:3.28E+00 11:5.41E+00 12:9.13E+00 13:9.48E+00
14:1.45E+01 15:1.55E+01 16:8.29E+00
17:4.95E+00 18:3.51E+00 19:4.19E+00 20:6.53E+00 21:1.30E+01
22:6.65E+00

Report on

Newcastle-Nobby's Head(for Kooragang)
Input Metrological data file
For
AUSPLUME

(Victoria, Regulatory Pollution Dispersion Model)

Exclusively Prepared for

Advitech Australia Pty Ltd

By

pDs MultiMedia and Consultancy service

pDs Consultancy metfile@tpg.com.au

AUSPLUME input Meteorological Data File for Kooragang (NSW)

DATA Processing

Mandatory data such as wind direction; speed and ambient temperature were obtained from NSW regional office of the Bureau of Meteorology

QA/QC on Raw data

This data set was treated as follows

- Incomplete days removed
- Suspected wind stalls (both wind direction and speed) carefully examined.
- Wind Speed converted to m/s from knots (The speed was recorded for the nearest knot).
- Wind Direction found to be recorded in 10-degree resolution. Therefore last digit of the wind direction has been randomised to meet air quality standard.
- Temperature was checked for unusual values

BoM Data for Williamtown

- Pressure, Dewpoint Temperature and cloud amount were checked for unusual values
- Hourly accumulation of rainfall records at Williamtown processed to get rainfall rate 9mm/hour). This records were merged with the Nobby's Head other records.

Williamtown (BoM)Vertical Temperature Profiles

- Gaps in vertical temperature profiles (twice daily) were filled with previous or following day data for the completeness.

92% data recovered for 2003.

Important Notes:

1. Sensitivity of Anemometers (not known) may not be up to air quality standard.

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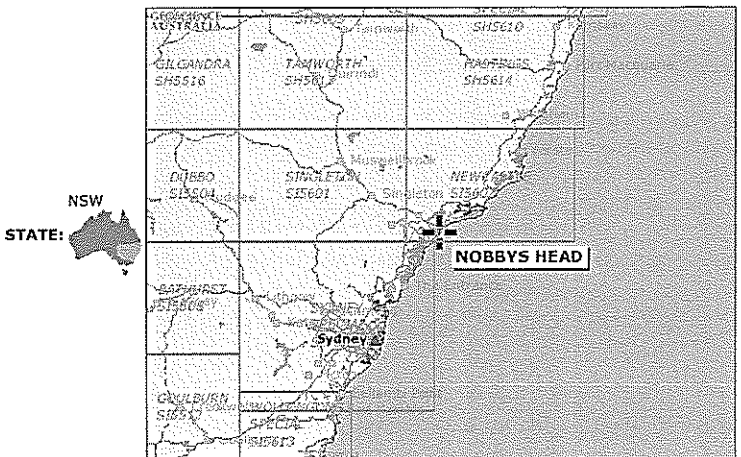
2. Zero wind speed is allowed, which may not be acceptable to older versions of AUSPLUME.

FILE INFORMATION

Nobby's Head-NSW



NSW
STATE:

POSTCODE:
LATITUDE: -32.91°
LONGITUDE: 151.79°
EASTING: 388000
NORTHING: 6357000
Source: Geo Science Australia

Anemometer Height : 10 m
Surface Roughness : 0.3 m

Data Source

1. **Nobby's Head** AWS Data- NSW Regional Office
2. Surface data + Rainfall records Williamtown
3. Vertical temperature Profiles-Williamtown –National Climate Centre-Bureau of Meteorology, Melbourne.

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Input Information

- Onsite (**Nobby's Head**) parameters

    a. Wind speed (knots)
    b. Wind direction
    c. Ambient Temperature (C)

    Wind was measured at 10m (Anemometer Height)

Offsite

- **Williamtown (NSW)**
    d. Dew point
    e. Surface Pressure
    f. Cloud cover (Total amount)
    g. Rainfall Records
- **Williamtown (NSW)**
    a. Vertical temperature profiles; Temperature, Dewpoint (1 profile per day)

Standard Analysis

Data Coverage

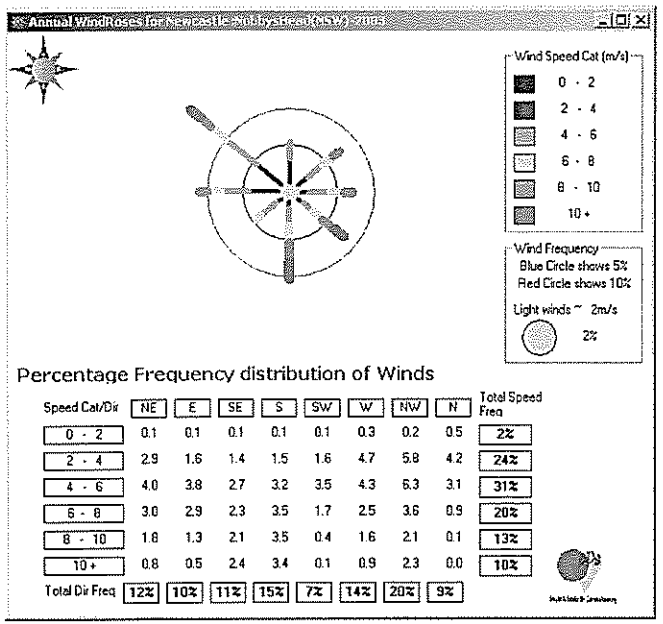
Summer	:64	days
Autumn	:91	
Winter	:92	
Spring	:90	
Number of days covered :337		% Coverage :92%

All 4 seasons are covered and Autumn, Winter and Spring well represented.

Stability Distribution

Stability Category	% Distribution	Avg Wind Speed	Avg Temperature	Avg Mixing Height
A		1.8	22.1	1135
B	4	3.6	20.9	1101
C	10	5.	19.4	1282
D	65	7.3	17.7	1693
E	16	3.8	16.1	910
F	5	2.2	17.2	570

Annual Wind Roses



Percentage Frequency distribution of Winds

Speed Cat/Dir	NE	E	SE	S	SW	W	NW	N	Total Speed Freq
0 - 2	0.1	0.1	0.1	0.1	0.1	0.3	0.2	0.5	2%
2 - 4	2.9	1.6	1.4	1.5	1.6	4.7	5.8	4.2	24%
4 - 6	4.0	3.8	2.7	3.2	3.5	4.3	6.3	3.1	31%
6 - 8	3.0	2.9	2.3	3.5	1.7	2.5	3.6	0.9	20%
8 - 10	1.8	1.3	2.1	3.5	0.4	1.6	2.1	0.1	13%
10 +	0.8	0.5	2.4	3.4	0.1	0.9	2.3	0.0	10%
Total Dir Freq	12%	10%	11%	15%	7%	14%	20%	9%	

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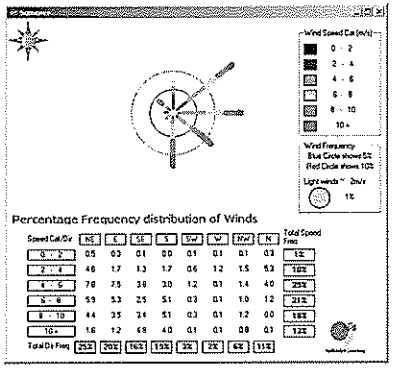
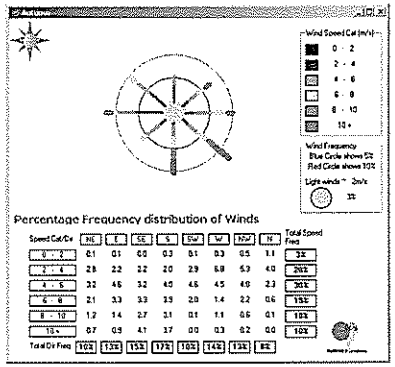
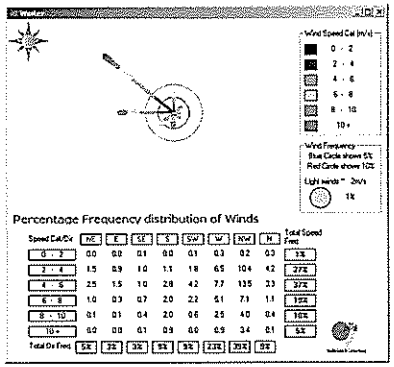
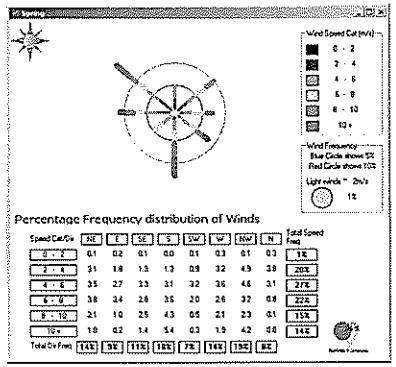
Seasonal Wind Roses









Secondary parameters

Vertical Stability

Solar Radiation for day time and Modified Pasquill Stability Class outlined in the reference, Davis and Singh, JI of Hazardous Materials, 11 was used to determine night-time stability class. Solar radiation was theoretically calculated using off site cloud observations.

Table 1 for daytime and part of Table 2 for night-time were used.

Table 1: Stability Classification for Daytime Using Solar Radiation and Wind Speed

	Solar Radiation (W/m^2)			
Wind Speed(m/s)	≥925	≥675	≥175	< 175
< 2	A	A	B	D
< 3	A	B	C	D
< 5	B	B	C	D
< 6	C	C	D	D
≥ 6	C	D	D	D

Table 2: Modified Pasquill stability calsses

Surface Wind Speed m/s at 10m	Daytime Incoming solar radiation				Within 1 h before sunset or after sunrise	Night-time cloud amount(Oktas)		
	Strong (>600)	Moderate (300-600)	Slight (<300)	Overcast		0-3	4-7	8
≤ 2	A	A-B	B	C	D	F	F	D
≤ 3	A-B	B	C	C	D	F	E	D
≤ 5	B	B-C	C	C	D	E	D	D
≤ 6	C	C-D	D	D	D	D	D	D
> 6	C	D	D	D	D	D	D	D

Mixing height

Definition:

The mixing height, the depth of the surface mixed layer is the height of the atmosphere above the ground, which is well mixed due either to mechanical turbulence or convective turbulence. The air layer above this height is stable.

The mixing height was determined by using the methodology of Benkley and Schulman (Journal of Applied Meteorology, Volume 18, 1979,pp 772-780). **Williamtown** upper air observation containing temperature and moisture profiles were used to determine daytime mixing height.

Surface wind speeds and roughness are used to calculate the depth of the mechanically forced boundary layer during the night time

$MixH_m$=0.185* Ustar/Cterm

Where Ustar=.35*Usfc/Ln (Ht_{anemo}/Z_0)

Cterm = Coriolis Term =2 Ω Sin(ϕ)

Where Ω is the angular velocity of the earth
ϕ is the latitude

Ht_{anemo}= Anemometer Height, Z_0 is the roughness

Height of the convective boundary layer was determined using daytime temperature sounding (Vertical temperature and dewpoint profiles) in between sunrise and sunset. Evening or nighttime sounding for the same day is used to compensate daytime sounding to calculate convective mixing height at different daylight hours (Temperature difference at 700 hPa layer is used to allow advection). Larger value of the mechanical turbulence or convective turbulence was taken as Mixing height for the daylight hours.

Statistics of Nobby's Head (NSW) input Meteorological data file-2003

Stability	Statistics	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
A	Max of Temp	25.0		24.0						16.0	24.0	21.0		25.0
	Min of Temp	22.0		22.0						16.0	18.0	21.0		16.0
	Average of Temp	23.7		23.0						16.0	20.0	21.0		22.1
	Max of WS	2.6		2.6						1.5	2.6	2.1		2.6
	Min of WS	0.5		1.0						1.5	0.5	2.1		0.5
	Average of WS	1.8		1.5						1.5	1.9	2.1		1.8
	Max of MixH	1930		1531						1104	1306	852		1930
	Min of MixH	356		796						1104	915	852		356
	Average of MixH	1263		1026						1104	1128	852		1135
B	Max of Temp	27.0	25.0	26.0	24.0	23.0	18.0	21.0	19.0	21.0	24.0	24.0	28.0	28.0
	Min of Temp	21.0	23.0	20.0	16.0	19.0	18.0	18.0	12.0	14.0	15.0	15.0	20.0	12.0
	Average of Temp	23.7	23.8	22.7	21.1	20.6	18.0	19.5	15.6	17.9	19.5	20.3	23.5	20.9
	Max of WS	4.6	4.6	4.6	4.6	4.6	1.5	1.5	4.6	4.6	4.6	4.6	4.6	4.6
	Min of WS	2.1	3.1	1.5	1.5	2.1	1.5	1.0	0.5	2.1	1.5	2.1	2.1	0.5
	Average of WS	3.9	4.2	3.3	3.3	3.5	1.5	1.3	3.6	3.6	3.7	3.6	3.9	3.6
	Max of MixH	1905	1226	1648	1540	1449	603	1117	1881	2168	2335	1893	1921	2335
	Min of MixH	660	783	547	666	1029	603	798	450	456	462	571	695	450
	Average of MixH	1169	1027	1083	1003	1201	603	958	1215	1186	1137	1016	1044	1101
C	Max of Temp	36.0	26.0	25.0	26.0	25.0	23.0	20.0	20.0	28.0	25.0	33.0	32.0	36.0
	Min of Temp	19.0	21.0	17.0	13.0	12.0	10.0	10.0	8.0	10.0	12.0	13.0	18.0	8.0
	Average of Temp	24.1	23.1	21.6	19.5	18.6	16.2	15.3	14.8	17.3	17.5	20.3	23.7	19.4
	Max of WS	11.8	7.7	8.2	5.7	5.7	4.6	5.7	5.7	14.4	12.4	12.9	13.9	14.4
	Min of WS	3.1	2.1	2.1	1.5	1.0	1.5	2.1	1.5	2.1	2.1	2.1	1.5	1.0
	Average of WS	7.4	4.6	4.5	3.7	3.7	3.8	3.8	4.0	5.4	5.8	6.0	6.6	5.0
	Max of MixH	2739	1740	1828	2019	1967	1670	2135	2256	3305	2792	2797	2949	3305
	Min of MixH	1075	607	607	491	362	446	607	508	753	564	666	596	362
	Average of MixH	1800	1093	1254	1012	1026	962	1064	1059	1410	1451	1469	1566	1282
D	Max of Temp	39.0	25.0	30.0	26.0	25.0	23.0	22.0	23.0	33.0	27.0	28.0	34.0	39.0
	Min of Temp	18.0	21.0	15.0	12.0	9.0	8.0	5.0	6.0	9.0	10.0	10.0	16.0	5.0
	Average of Temp	22.1	22.0	20.7	19.0	17.1	15.0	13.1	14.2	17.4	16.9	18.3	21.4	17.7
	Max of WS	15.4	15.4	11.8	14.9	18.0	17.5	16.0	19.9	17.0	17.5	16.5	15.4	19.9
	Min of WS	0.5	2.1	1.0	1.5	1.0	1.0	2.1	2.1	1.5	0.5	0.5	0.5	0.5
	Average of WS	7.9	6.9	6.2	7.3	8.0	6.4	6.7	6.8	8.2	7.4	7.8	7.6	7.3
	Max of MixH	3597	3335	2698	3305	4059	3936	3463	4438	3942	3580	3854	3481	4438
	Min of MixH	175	578	450	350	456	405	607	456	508	385	385	327	175
	Average of MixH	1830	1589	1431	1681	1851	1486	1549	1582	1906	1726	1816	1757	1693
E	Max of Temp	25.0	22.0	23.0	22.0	23.0	23.0	18.0	22.0	24.0	20.0	24.0	30.0	30.0
	Min of Temp	18.0	20.0	14.0	13.0	10.0	8.0	6.0	7.0	9.0	11.0	10.0	17.0	6.0
	Average of Temp	20.7	21.1	19.5	18.0	15.6	13.9	12.4	12.3	15.0	15.9	16.8	20.5	16.1
	Max of WS	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
	Min of WS	3.1	2.6	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.6	2.1	2.1	2.1

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	Average of WS	4.0	3.9	3.7	3.8	3.7	3.8	3.8	3.7	3.9	3.8	3.8	3.8	3.8
	Max of MixH	1647	1291	1413	1442	1618	1442	1378	1501	1291	1197	1407	1291	1647
	Min of MixH	666	607	426	426	572	491	456	520	491	607	485	491	426
	Average of MixH	951	935	893	900	909	930	908	884	935	900	904	910	910
F	Max of Temp	24.0	21.0	22.0	20.0	22.0	22.0	15.0	19.0	26.0	20.0	24.0	23.0	26.0
	Min of Temp	19.0	20.0	16.0	14.0	13.0	11.0	11.0	8.0	9.0	13.0	10.0	17.0	8.0
	Average of Temp	20.4	20.7	18.9	17.0	16.4	14.7	12.6	13.1	17.6	15.8	17.8	20.0	17.2
	Max of WS	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
	Min of WS	0.5	1.5	0.5	0.5	0.5	0.5	1.0	0.5	1.0	0.5	0.5	0.5	0.5
	Average of WS	2.3	2.3	1.9	2.2	2.2	2.1	2.3	2.3	2.3	2.2	2.2	2.2	2.2
	Max of MixH	999	876	958	806	730	876	847	841	876	847	1057	1203	1203
	Min of MixH	117	350	117	234	362	200	450	350	350	333	234	200	117
	Average of MixH	573	630	492	590	580	558	632	621	610	590	575	585	570

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